Service Manual

SONY
Tektronix

371A
Programmable High Power Curve Tracer

070-8044-06

Warning
The servicing instructions are for use by qualified personnel only. To avoid personal injury, do not perform any servicing unless you are qualified to do so. Refer to the Safety Summary prior to performing service.

CE

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Tektronix warrants that this product will be free from defects in materials and workmanship for a period of one (1) year from the date of shipment. If any such product proves defective during this warranty period, Tektronix, at its option, either will repair the defective product without charge for parts and labor, or will provide a replacement in exchange for the defective product.

In order to obtain service under this warranty, Customer must notify Tektronix of the defect before the expiration of the warranty period and make suitable arrangements for the performance of service. Customer shall be responsible for packaging and shipping the defective product to the service center designated by Tektronix, with shipping charges prepaid. Tektronix shall pay for the return of the product to Customer if the shipment is to a location within the country in which the Tektronix service center is located. Customer shall be responsible for paying all shipping charges, duties, taxes, and any other charges for products returned to any other locations.

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EC Declaration of Conformity

We

Tektronix Holland N.V.
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The Netherlands

declare under sole responsibility that the

371A Programmable Curve Tracer

meets the intent of Directive 89/336/EEC for Electromagnetic Compatibility. Compliance was demonstrated to the following specifications as listed in the official Journal of the European Communities:

EN 55011 Class B Radiated and Conducted Emissions

EN 50081-1 Emissions:

EN 60555-2 AC Power Line Harmonic Emissions

EN 50082-1 Immunity:

IEC 801-2 Electrostatic Discharge Immunity
IEC 801-3 RF Electromagnetic Field Immunity
IEC 801-4 Electrical Fast Transient/Burst Immunity
IEC 801-5 Power Line Surge Immunity

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Safety Summary

Safety Terms

The following terms may be found in this manual or printed on the 371A and its accessories.

In this manual:

CAUTION

Caution statements identify conditions or practices that could result in damage to the equipment or other property

WARNING

Warning statements identify conditions or practices that could result in personal injury or loss of life.

As marked on equipment:

CAUTION indicates a personal injury hazard not immediately accessible as one reads the marking, or a hazard to property including the equipment itself.

DANGER indicates a personal injury hazard immediately accessible as on reads the marking.

Symbols

The following symbols may be found on the 371A and its accessories.

DANGER–High Voltage

Protective ground (earth) potential

ATTENTION–Refer to manual

Power Source

The 371A is intended to operate connected to a power source that will not apply more that 250 V rms between the supply conductors or between either supply conductor and ground. A protective ground connection, by way of the grounding conductor in the mainframe power cord, is essential for safe instrument operation.

Grounding the Product

The 371A is ground through the grounding conductor of the mainframe power cord. To avoid electric shock, plug the mainframe power cord into a properly wired receptacle. A protective-ground c connection, by way of the grounding conductor in the mainframe power cord, is essential for safe operation.

Danger Arising from Loss of Ground

Upon loss of the protective-ground connection, all accessible conductive parts (including knobs and controls that may appear to be insulating), can render an electric shock.

Line Voltage Indicator and Power Supply Configuration

To prevent damage to the instrument, always check the settings of the LINE VOLTAGE indicator on the rear panel of the 371A before connecting the instrument to the power source. If the indicated setting differs from the available line voltage, refer a qualified service technician to the 371A Service manual for verification of power supply configuration.

Do Not Operate in Explosive Atmospheres

To avoid explosions, do not operate this product in an atmosphere of explosive gasses.

Prolonged Use of 371A

Prolonged use of the 371A can cause high temperatures which may damage the instrument or device under test. When applying current in the 3 KW range, test time should be limited to four minutes, followed by at least 11 minutes of cooling.

Test Adapters

To prevent equipment damage, do not short together the collector and emitter terminals of the test adapters.

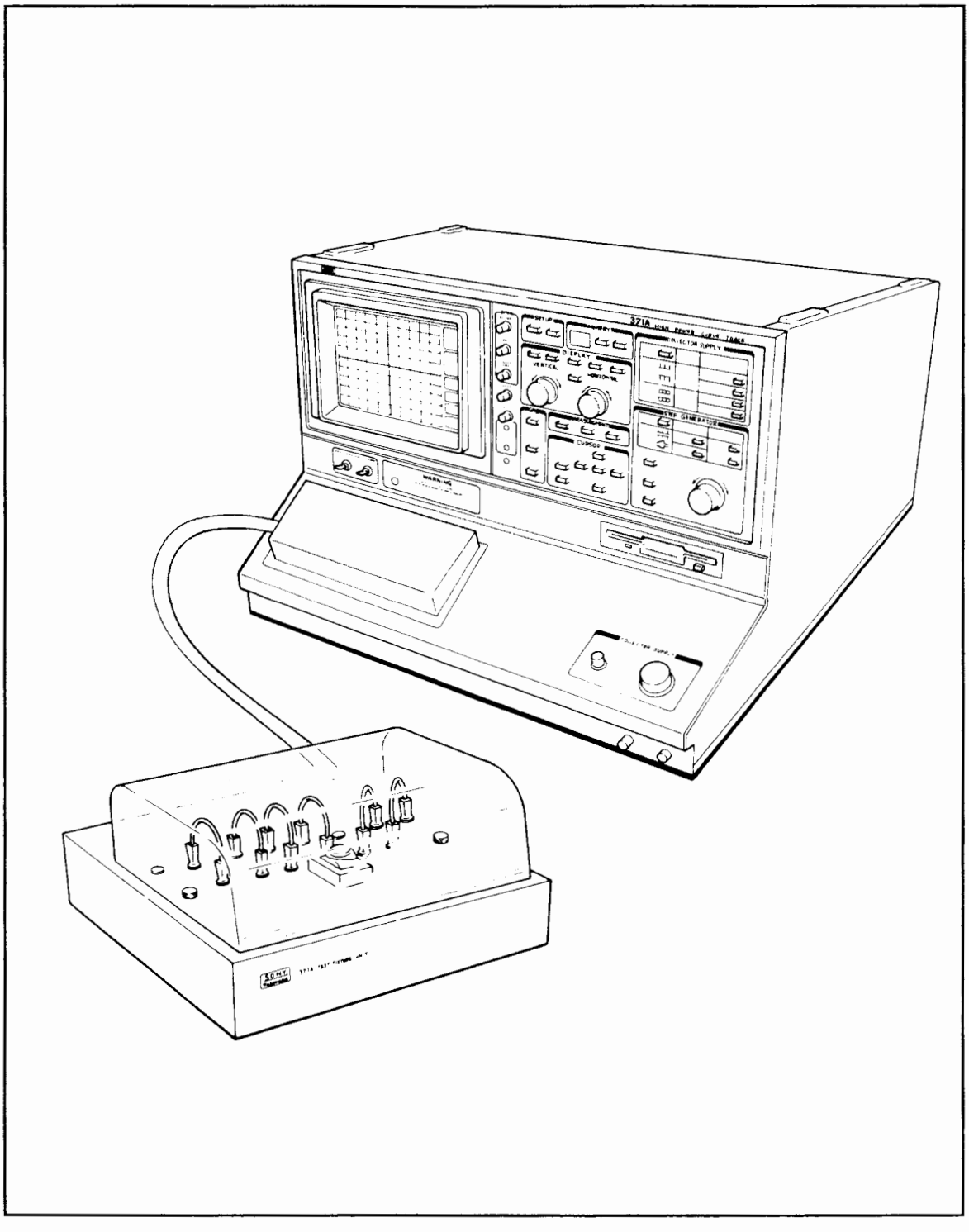
Do Not Service Alone

Do not perform internal service or adjustment of this product unless another person capable of rendering first aid and resuscitation is present.

Use Care When Servicing with Power On

Dangerous voltages exist at several points in this product. To avoid personal injury, do not touch exposed connections and components while the power is on.

Disconnect the power before removing protective panels, or replacing components.



The 371A Programmable High-Power Curve Tracer.

General Information

Chapter 1
GENERAL INFORMATION

INTRODUCTION

The 371A is a high-power, GPIB-programmable digital-storage curve tracer that provides static and dynamic semiconductor device testing. This versatile instrument stimulates, measures, and displays the semiconductor characteristics of a variety of two-, three-, and four-terminal devices; including bipolar transistors, field effect transistors, silicon-controlled rectifiers, diodes, and thyristors. A variety of measurements can be performed using either grounded-emitter or grounded-base configurations.

The collector supply produces either high-current pulses (up to 400 A) or a sine-square high-voltage waveform (up to 3 kV). The high-current pulses enable dynamic testing of high-power devices while keeping the internal heating of these devices to a minimum. The high-voltage/low-current output enables measurement of static characteristics, such as breakdown voltage. A step generator produces voltage steps or current pulses, or steps, of either polarity for application to the base or emitter terminal.

In addition to conventional curve tracer performance features, the 371A includes the following features.

- Digital storage capability that allows bright and stable display of characteristic data.
- A mass storage system that consists of non-volatile memory and a 3.5 inch floppy disk drive. Up to 64 families of characteristic curves and 64 front-panel setups can be stored in a floppy disk. Up to 16 families of characteristic curves and 16 front-panel setups can also be stored in non-volatile IC memory. The stored characteristic curves can be recalled for additional analysis and comparison.
- Program control of almost all of the 371A front-panel settings using GPIB commands. (Exceptions are those controls intended only for manual operation, such as INTENSITY, FOCUS and LOOPING COMPENSATION. Also, curve data can be sent to or received from an external controller through the GPIB.
- Plotter interface that permits sending displayed curve data and digital on-screen readouts to a digital plotter without having to use an external controller.
- Other features such as cursor measurement readout and diagnostic routines.

RELATED MANUALS

In addition to this service manual, the following manuals support the 371A.

371A Operator Manual. This manual provides information that enables you to effectively and efficiently use the measurement features of the 371A. Information is presented in an order in which a first-time user can quickly learn measurement concepts and begin applying the 371A to a particular measurement application.

Other manuals are provided to support the IBM PC Utility software, 371A rack-mounting, and to document several service-related accessories. Refer to "Product Accessories and Options" in Chapter 1: General Information of the *371A Operator* manual for a complete listing of 371A accessories and options.

INSTALLATION NOTES

Refer to Appendix D: Installing and Repacking in the *371A Operator* manual for installation instructions and related information. Also, note the following information.

Power Source

This instrument is designed for operation from a power source with its neutral conductor at or near ground (earth) potential. It is not intended for operation from two phases of a multi--wire system.

The 371A will be shipped from the factory configured for one of the voltage ranges listed in Table 1-1. The line voltage setting is indicated by a screw on the LINE VOLTAGE INDICATOR located on the rear panel (shown in Figure 1-1). Chapter 3: Maintenance provides instructions on how to reconfigure the power supply transformer wiring in the event such changes are needed.

Table 1-1
Line Voltage Ranges

RANGE Switch	NOMINAL Switch Setting
240	216 to 250 VAC
200	180 to 220 VAC
120	108 to 132 VAC
100	90 to 110 VAC
Line frequency range:	48 to 63 Hz

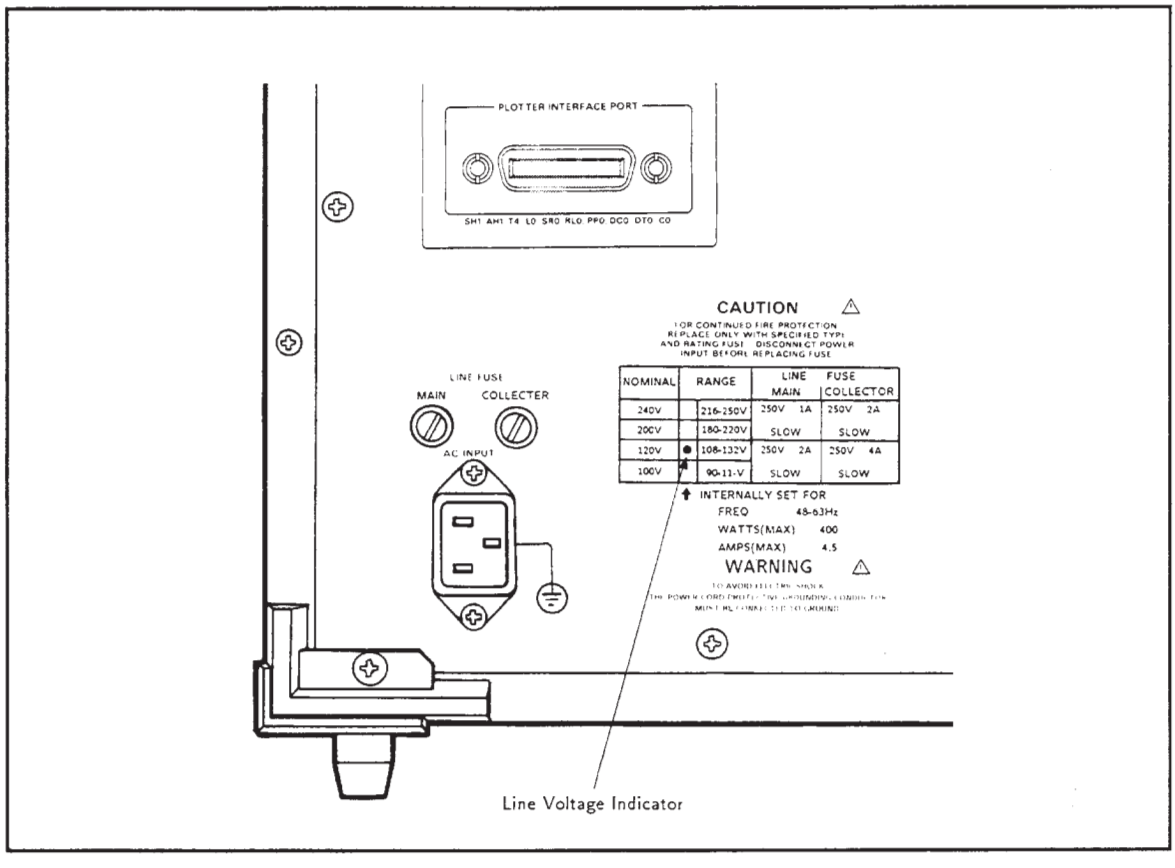


Figure 1-1. Line Voltage Indicator.

Top and Side Panels

The side, top, and bottom cabinet panels provide protection for personnel from high-voltage potentials present within the instrument. In addition, they reduce radiation of electromagnetic interference from the instrument. Operate the instrument with the panels in place to protect the interior from dust and to maintain cooling airflow.

Operating Temperature

The 371A can be operated where the ambient temperature is between +10° C and +40° C and stored in ambient temperatures from -22° C to +60° C. After storage at temperatures outside the operating limits, allow the instrument temperature to reach the safe operating limits before applying power.

The 371A is cooled by air drawn through the fan from the rear and blown out through holes on the side panels. To ensure proper cooling of the instrument, maintain clearance at top, sides, and rear of the instrument.

REPACKING FOR SHIPMENT

If you must ship the 371A long distances, we recommend that you repackage the instrument the same as when it initially arrived are your site. The packaging material in which the instrument was shipped should be saved and used for this purpose.

If the instrument is shipped to a Tektronix service center for service or repair, attach a tag to the instrument showing the following information.

- owner of the instrument (with address)
- name of a person at your firm to contact
- instrument type and instrument serial number
- description of the service requested

If the original packaging is unfit for use or not available, package the instrument as follows:

1. Obtain a corrugated cardboard shipping carton with a 375 lb test strength and with inside dimensions at least six inches greater than the instrument dimensions.
2. Surround the instrument with polyethylene sheeting to protect the finish.
3. Cushion the instrument on all sides by tightly packing dunnage or urethane foam between the carton and the instrument, allowing three inches on all sides.
4. Seal the carton with shipping tape or with an industrial stapler.
5. Write the address of the Tektronix service center and your return address on the carton in one or more prominent locations.

Theory of Operation

Chapter 2
THEORY OF OPERATION

INTRODUCTION

This chapter describes the operation of the 371A circuits. The chapter is divided into two parts:

- block diagram description
- detailed circuit description

When reading this chapter, refer to the foldout schematic diagrams located in Chapter 7 at the rear of this manual.

BLOCK DIAGRAM DESCRIPTION

The following description provides an overview of 371A operation. Figure 2-1 provides an overall block diagram of the 371A. Within each circuit block, you will note numbers enclosed in diamonds. These numbers indicate the schematic diagram(s) associated with each circuit block.

The 371A is a static high-power semiconductor tester that displays and enables measurement of semiconductor characteristics obtained under simulated operating conditions.

The 371A electronics consists of five major functional circuits:

- Collector supply and step generator
- Data acquisition and display
- Control and processing
- Interface
- Power supply

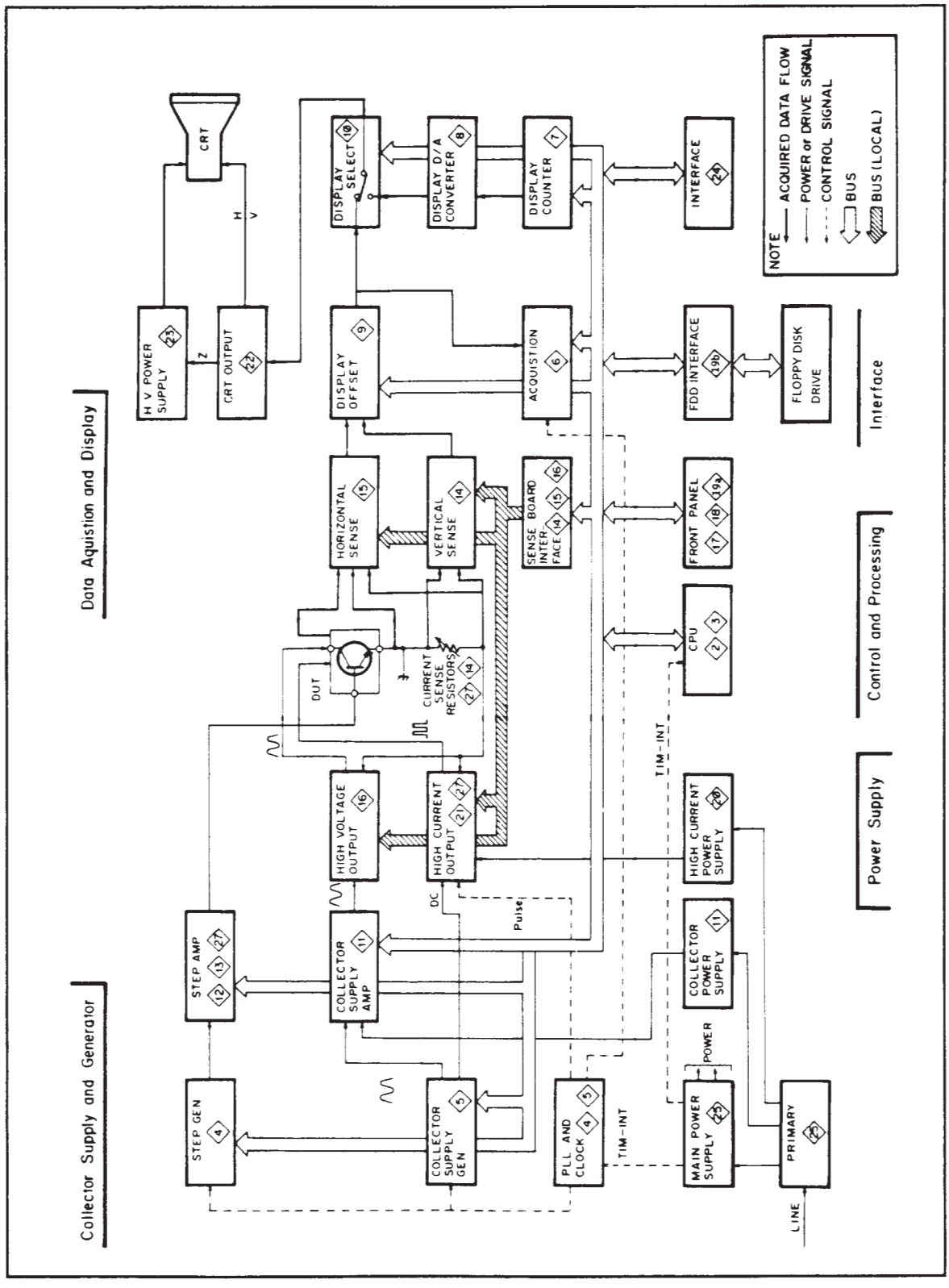


Figure 2-1. 371A block diagram.

Collector Supply and Step Generator

This circuitry supplies stimulus to the device under test. It consists of the following circuits:

Phase lock loop (PLL) and clock circuit – Diagrams 4 and 5

Step generator circuit – Diagram 4

Step amplifier circuit – Diagrams 12, 13, and 27

Collector supply generator – Diagram 5

Collector supply amplifier – Diagram 11

High-voltage output – Diagram 16

High-current output – Diagrams 21 and 27

The PLL and clock circuit supplies clock signals to the collector supply generator, step generator, high current output, and acquisition circuits. These clock signals are synchronized to the line frequency.

The step generator circuit generates a fixed-amplitude step voltage and an offset voltage from the clock signal received from the PLL and clock circuit. The signal is amplified as a current step signal or voltage signal by the step amplifier, then output to the STEP GENERATOR VOLTAGE or STEP GENERATOR CURRENT connector.

The collector supply generator generates two types of signals: a sine-square waveform generated from the clock signal received from the PLL and clock circuit, and a DC signal. These signals are output at an amplitude selected by the collector supply VARIABLE control on the front panel.

The collector supply amplifier amplifies the sine-square waveform and sends it to the high voltage output circuit. There the signal is stepped up by a transformer, then output to the COLLECTOR SUPPLY HIGH VOLTAGE connector.

The high-current output circuit reshapes the DC signal into a voltage pulse signal by means of control signals from the PLL and clock circuit. Then it is amplified and sent to the COLLECTOR SUPPLY HIGH CURRENT connector.

Data Acquisition and Display

This group of circuitry consists of circuits that sense, acquire, and display the effect that the collector supply and step generator circuits have on the device under test (DUT). These circuits include:

Horizontalsense circuit – Diagram 15

Vertical sense circuit – Diagram 14

Sense board interface circuit – Diagrams 14, 15, and 16

Display offset circuit – Diagram 9

Acquisition circuit – Diagram 6

Display counter circuit – Diagram 7

Display digital to analog (D/A) converter circuit – Diagram 8

Display select circuit – Diagram 10

Cathode-Ray Tube (CRT) output circuit – Diagram 22

High voltage power supply circuit – Diagram 23

The horizontal sense circuit senses and amplifies the voltage between the collector and emitter (or base and emitter) of the DUT. The vertical sense circuit senses and amplifies the collector current of the device under test. The display offset circuit determines the polarity of the output signals from these circuits according to whether PNP or NPN is selected for collector supply, then sends them to the display select and acquisition circuits.

The analog signal sent to the acquisition circuit is converted to a digital signal and stored in memory in the acquisition circuit. The stored data are processed by the CPU, then set to the display memory in the display counter circuit. Next, they are reconverted to an analog signal in the display D/A converter circuit.

In non store mode, the display select circuit selects the signal from the display offset circuit and sends it to the CRT output circuit. In store mode, the signal from the display D/A converter circuit is selected and output to the CRT output circuit.

Control and Processing

This group of circuitry consists of circuits that control the 371A and circuits that process acquired data. These circuits are:

CPU circuit – Diagrams 2 and 3

Front panel circuit – Diagrams 17, 18, and 19a

Floppy disk drive (FDD) interface circuit – Diagram 19b

The CPU circuit controls all operations of the 371A: such as, collector supply and step generator control, sense circuit control, CRT display control, front panel control, and floppy disk control. The CPU circuit also processes the data acquired from the DUT. These operations are controlled by the microprocessor and its operation programs through its address, data, and control bus lines.

The front panel circuit reads keys, switches, and rotary encoder information to set the 371A to the desired measurement conditions. This circuit also displays these settings to the operator by LED and numerical displays.

The floppy disk circuit stores data acquired from the DUT and 371A setting information. The data and information are stored on a 3.5-inch floppy disk.

Interface

This group of circuitry (Diagram 24) includes a plotter interface and a GPIB interface for transfer of data between the CPU and external devices.

Power Supply

The power supply consists of the following circuits:

Primary circuit – Diagram 25

Main power circuit – Diagram 25

Collector power supply circuit – Diagram 11

High current power supply circuit – Diagram 20

The primary circuit receives line voltage at a transformer and converts it to the voltages required by the main power supply circuit, collector power supply circuit and high-current power supply circuit.

The main power supply circuit supplies low-voltage operating power to the circuits of the 371A. It also outputs a TIM-INT signal synchronized to the frequency of the power line to the PLL and clock circuit and the CPU circuit. The function operates synchronously with the line frequency.

The collector power supply circuit provides collector supply power in the high voltage mode.

The high current power supply circuit provides collector supply power in the high current mode.

DETAILED CIRCUIT DESCRIPTION

This section provides a detailed description of the electrical operation of the 371A. These descriptions, together with the troubleshooting/diagnostics information provided in Chapter 3: Maintenance, and appropriate test equipment, enable you to isolate a problem to the faulty component.

Complete schematic diagrams are provided in Chapter 7: Diagrams and Circuit Board Illustrations.

Conventions

Digital Logic. Digital logic techniques are used to perform logic functions within electrical circuits. The functions and operations of the logic circuits are represented by standard logic symbols and terms. Logic functions are described using the positive logic convention. (Where voltages above the logic threshold voltage are the true, or 1 state, and voltages below the threshold are the false, or 0 state.)

In logic descriptions the logic true state voltages are referred to as high and logic false states are referred to as low.

NOTE

The specific voltages that constitute a high or low state vary between different families of electronic devices (e.g., ECL, CMOS, and TTL logic).

Active-low signals are indicated by an (L) following the signal name. Signal names without indicators are considered to be either active-high or to have both active high and active low states.

Assembly Numbers. The following circuit descriptions are presented according to their schematic number. For example, the A1 Mother Board, is discussed first and is thus preceded by a diamond 1 symbol. The diamond 1 symbol is also placed on the schematic tab and is the first electrical schematic in Chapter 7: Diagrams and Component Location Illustations. The A2 MPU Board is discussed second. Its electrical circuits are shown on the MPU schematic identified with a diamond 2, and so on.

Schematic Standards. Refer to the first page of Chapter 7: Diagrams and Component Location Illustrations, for an explanation of schematic standards used in this manual.

 Mother Board

The A1 Mother Board connects inter-board signals of the 371A. These include control, drive, data, reference, and sense signals, as well as power supply and ground lines.

2 Microprocessor Unit (MPU)

The A2 CPU board contains the MPU circuits which consist of a 68000 Microprocessor, power-up reset circuit, clock generator, buffers, wait timing generator, and an interrupt logic circuit.

Microprocessor

The 68000 is a 16-data bit, 23-address bit microprocessor. The input and output signals can be grouped in eight categories. The following paragraphs describe each group and the signals in that group.

Address Bus (A1 through A23). The address bus is a uni-directional, tri-state, 23-bit bus that provides address information for all on and off board functions requiring address control.

Data Bus (D0 through D15). The data bus is a 16-bit, bi-directional, tri-state bus which is the general purpose data path. It can transfer data in either byte (8-bit) or word (16-bit) format.

Address Strobe (AS). This signal indicates that there is a valid address on the address bus.

Read/Write (R/W). This signal defines the data bus transfer as a read cycle (logic high) or a write cycle (logic low). the R/W signal also works in conjunction with the upper and lower data strobes as explained in the next paragraph.

Upper and Lower Data Strobes (UDS and LDS). These signals control the data on the data bus, as shown in Table 2-1. When the R/W line is high, the microprocessor reads from the data bus as indicated. When the R/W line is low, the microprocessor writes to the data bus as shown.

Table 2-1
Data Strobe Control of Data Bus

UDS	LDS	R/W	D8-D15	D0-D7
high	high	----	no valid data	no valid data
low	low	high	valid data bits 8-15	valid data bits 0-7
high	low	high	no valid data	valid data bits 0-7
low	high	high	valid data bits 8-15	no valid data
low	low	low	valid data bits 8-15	valid data bits 0-7
high	low	low	valid data bits 0-7	valid data bits 0-7
low	high	low	valid data bits 8-15	valid data bits 8-15

Data Transfer Acknowledge (DTACK). This input signal indicates that a data transfer is completed. When the microprocessor recognizes DTACK during a read cycle, data is latched and the bus cycle is terminated. When DTACK is recognized during a write cycle, the bus cycle is terminated.

Interrupt Control (IPL0, IPL1, IPL2). These input pins indicate the encoded priority level of the device requesting the interrupt. Seven interrupt levels are possible using these three pins, with level zero (no pins active) meaning no interrupt is requested.

System Control. The system control inputs, HALT and RESET, reset the microprocessor at power on. When the HALT and RESET inputs are driven simultaneously, the microprocessor enters the reset cycle starting at the address pointed by the reset vector.

Valid Peripheral Address (VPA). This input indicates that the microprocessor should use automatic vectoring for an interrupt.

Processor Status (FC0, FC1, FC2). These function outputs indicate the cycle type currently being executed. When the cycle type is the interrupt acknowledge cycle, all three outputs go high.

Clock (CLK). This is the clock input. The clock signal is derived from U100 and divided by two in U120A, resulting in an 8 MHz clock signal applied to the microprocessor.

Power-Up Reset

The power-up reset circuit consists of reset controller U400, transistor Q400, resistor R409, and capacitors C400, C404. When the instrument is first powered up, the reset controller RESET(L) output (pin 5) is low, holding the microprocessor reset. The reset controller then monitors the power supply voltage at its SENSE input at pin 7. When the supply voltage at this input reaches normal operating voltage, the reset controller allows an internal current source to begin charging C400 at pin 3. After the time determined by C400, the voltage on C400 triggers an internal comparator in the reset controller and pin 5 of the reset controller goes high to enable normal execution to begin. At this time, the microprocessor is directed to the starting address of the power-up routine (stored in ROM), which it then performs.

The reset controller continues to monitor the power supply voltage at its SENSE input (pin 7). This voltage is divided by an internal voltage divider and continuously compared against an internal voltage reference. If the power supply drops below operating limits for some reason, the reset controller drives RESET(L) low to reset the microprocessor, and at the same time, it discharges C400. The normal power-up sequence previously described can then occur when and if the power supply comes back within limits.

Clock Generator

The clock generator consists of 16 MHz oscillator U100 and divider U120A. This circuit generates the 8 MHz clock signal for the microprocessor.

Address Bus Buffer

Buffers U450 and U452 isolate the address bus (A1-A16) for the A3 A/D board, A4 Digital Display board, A5 Display Control board, A11 Main Key board, A14 Lower Key and Floppy Disk Drive board, and A22 Interface board.

Data Bus Buffer

Buffers U454 and U456 isolate the data bus when the microprocessor is transceiving data to and from circuits off the CPU board. The CRD(L) lines selects which direction data is transmitted through the buffer; the line is high when data is sent from the microprocessor. The N-10(L) line enables or disables the data output.

Control Bus Buffer

Buffer U458 isolates the control bus.

Silent Bus Buffer

Buffer U462 isolates the address bus (SA1-SA7) and data line SD0 for the A7 Step Generator board and the A10 Sense board.

Wait Timing Generator

The wait timing generator consists of U120B, U300A, U300B, U300D, U310A, U310B, U340A, and U340B. This circuit inserts wait cycles by controlling the DTACK(L) input to ensure that I/O devices have time to read or write the data on the bus.

In the following discussion, note that the WAIT(L) line is activated only when the microprocessor communicates with the A4 Digital Display board.

When the microprocessor communicates with the CPU board memories, no wait cycle is required. In this case, the microprocessor sets address line CA19 low, which sets pin 5 of U310A high. Pin 8 of U310B goes low at the next clock, enabling the DTACK(L) input.

When the microprocessor communicates with I/O devices (except the A4 Digital Display board), two wait cycles are required. In this case, the microprocessor sets address line CA19 high, disabling the preset inputs of latches U120B and U310A. When the microprocessor sets the CAS(L) (address strobe) line low, the clear inputs of the latches U120B and U310A are disabled, which enables the latches to be clocked by the 8 MHz clock. Three clock cycles following the activation of the CAS(L) line, pin 8 of U310B goes low and enables the DTACK(L) input.

When the microprocessor communicates with the A4 Digital Display board, the DTACK(L) input is controlled by the WAIT(L) signal. The A4 Digital Display board sets the WAIT(L) line low when the microprocessor accesses it. This sets pin 13 of U310B low, which sets pin 8 of U310B high, disabling the DTACK(L) signal. When the A4 Digital Display board sets the WAIT(L) line high, pin 8 of U310B goes low at the next clock, activating the DTACK(L) signal.

Counters U340A and U340B prevent the microprocessor from waiting for longer than 128 clock cycles (16 µs). When the WAIT(L) line goes low, the counters begin to count. When the count reaches 128, pin 8 of U340 goes high and cancels the WAIT(L) signal on pin 5 of U300B. The output of U340B is also sent to pin 11 of U240B as the TIME OUT-INT interrupt signal.

Interrupt Control

The interrupt control circuit consists of buffer U460, interrupt signal latches U240A, U240B, U250A, and U250B, interrupt priority encoder U260, and interrupt acknowledge logic U200, U210, and U270.

Interrupts inform the microprocessor that something needs attention. There are six interrupt signals; power fail (PF-INT) and timer (TIM-INT) from the A25 Main Power Supply board, time-out (TIME OUT-INT) from the wait control circuit, acquisition-done (DONE-INT) from the A3 A/D board, and interrupts the GPIB and Plotter Interface (GPIB-INT and PLOT-INT(L)). Each interrupt has its own priority level, as shown in Table 2-2.

Table 2-2
Interrupt Priority

Priority	Interrupt Inputs	Function
1 (level 7)	PF-INT	Power failure (Non maskable)
2 (level 6)	reserved for future use	
3 (level 5	TIM-INT	Timer (line frequencey)
4 (level 4)	TIM OUT-INT	Time out
5 (level 3)	GPIB-INT	GPIB request
6 (level 6)	DONE-INT	Acquisition completed
7 (level 7)	PLOT-INT(L)	Plotter request

When an interrupt occurs, the interrupt signal is latched into U240 or U250 and fed to priority encoder U260. U260 encodes the level of the interrupt to the three-bit binary code onto the IPL0(L), IPL1(L) and IPL2(L) lines. For example, assume that an interrupt line is set low. If the interrupt level is higher than that of the current process, the microprocessor

enters the interrupt acknowledge cycle after the completion of the current instruction. It outputs the interrupt level on address lines CA1, CA2, and CA3, asserts CAS(L), and sets the function code lines CFC0, CFC1, and CFC2 high. U210 decodes the address lines CA1, CA2 and CA3, and outputs a clear signal to the interrupt latch. The high on the function code lines set pin 7 of U200 low, causing the microprocessor to enter auto vector mode.

3 Memory

The A2 CPU board also contains the memory circuits which consist of the ROM, RAM, battery backup, address selector, and buffers.

ROM

The 371A firmware is located in two 128Kbyte EPROMs (U600 and (U610). The EPROMs are paired to form 16-bit words.

RAM

RAMs U800 and U810 provide temporary storage of data used in execution of the various control functions of the CPU. In addition, they provide long-term power-off storage of front-panel settings and characteristic curves. U800 provides lower byte storage and U810 provides upper byte storage. Address strobe signals LCS1(L) and UCS1(L) select addressing for either the lower byte or the upper byte.

Data Bus Buffer

Buffers U484 and U486 isolate the data bus. CRD(L) input selects which direction data is transmitted through the buffer. A high on CRD(L) transmits data from the microprocessor to the memories. A low on CRD(L) transmits data from the memories to the microprocessor.

Address Bus Buffer

Buffers U480 and U482 isolate the address bus. U480 isolates the lower address and U482 isolates the upper address.

Address Selector

Decoders U500A, U520, U540, U270A, U270C, and U720D decode address lines A15 through A20 and select addressing for memory or devices on and off the CPU board. See Table 2-3 for the address assignments.

Table 2-3
Decoder Address Assignments

A20	A19	A18	A17	A16	A15	A14-A1	Selection
0	0	0	X	X	X	X	ROM (U600 and U610)
0	0	1	X	X	X	X	RAM (U800 and U810)
0	1	0	0	0	0	X	not used
0	1	0	0	0	1	X	AD(L) (A3 board)
0	1	0	0	1	0	X	DSP-RAM(L) (A4 board)
0	1	0	0	1	1	X	DSP-10(L) (A5 board)
0	1	0	1	0	0	X	KEY(L) (A11 board)
0	1	0	1	0	1	X	L-KEY (L) A14 board)
0	1	0	1	1	0	X	IF-CS(L) (A22 board)
0	1	0	1	1	1	X	FDD(L) (A14 board)
0	1	1	0	0	0	X	not used
0	1	1	0	0	1	X	SG(L) (A7 board)
0	1	1	0	1	0	X	SENSE(L) (A10 board)

Battery Backup

The battery backup circuit consists of voltage detector U740, transistor Q747, three-state bus buffer U770 and associated components. This circuit provides a standby power source used to maintain the contents of the RAMs (U800 and U810) when instrument power is off.

During normal instrument operation, the +5VM3 power line will be operating within its tolerance limits. This initially pulls the voltage detector VTH sensing input (U740, pin 3) to approximately +1.25 volts through resistive divider R740, R741, and R742. This level is compared to an internal voltage reference of +1.15 volts and switches the Vo control output (pin 4) low, indicating that the normal power supply is operational.

When pin 4 of U740 goes low, an internal transistor turns on and switches the VHYS output (pin 2) to the +5 supply level, raising the VTH input level to about +1.3 volts. This hysteresis provides positive, noise-free switching of the output control level. The low on U740 pin 4 also turns on transistor switch Q747 and the +5VB1 through +5VB6 supply lines are then connected to the normal +5VM3 supply line. Battery BT740 charges through R744, R745, CR742 as long as normal instrument power is on.

When instrument power is turned off, the +5VM3 supply line voltage will drop as power is drawn from its storage capacitors. When the voltage level reaches approximately +4.3 volts, the level at the VTH input drops below the internal +1.5 volt level and pin 4 of U740 goes high. This high disables U770 before the power supplies decay to the point where data and enable levels go out of tolerance. Disabling U770 also disables RAMs U800, U810 and prevents erroneous data from being written into the RAMs as the power goes down.

This high on U740 pin 4 also turns Q747 off and battery BT740 begins supplying a positive voltage to +5VB1, +5VB2, +5VB5 and +5VB6 inputs through R744. This is the positive standby voltage and it is used to maintain the contents of the RAMs when normal power is off.

4 A/D Control and Step Generator Circuit

The A/D control and step generator circuit, located on the A3 A/D (analog to digital) board, consists of an acquisition and step generator control circuit, pulse generator circuit, step generator circuit, and control latch and decoder circuit.

These circuits generate a variety of signals for the step generator, and generate pulse timing signals for the high-current mode.

Control Latch and Decoder

Addressable latches U930 and U940 and decoders U920 and U950 supply the other circuits on this board with control signals from the CPU on the A2 CPU board. Table 2-4 indicates the functions of these control signals.

Acquisition and Step Generator Control

This circuit supplies line frequency synchronized clock signals to the A/D converter circuit (diagram 6), step generator circuit and pulse generator circuit. The following clock signals are provided by this circuit:

- The PLL (phase-lock loop) circuit U310 uses the TIM-INT signal from the A25 Main Power Supply board to generate a signal with 4096 times the line frequency (f). Counters U320 and U300 divide this signal to create signals with frequencies of 2048f, 128f, 2f, f, f/2 and f/4.
- The 2048f signal (2048 times the line frequency) is divided by a 1/N divider including U330, U340A, U350 and U430C, and becomes the ACQ-TRG (acquisition trigger) signal for the high voltage mode.
- The 128f signal (128 times the line frequency) is supplied to the pulse generator circuit.
- The 2f signal (twice the line frequency) is supplied to the step generator circuit.
- The f (line frequency) signal is used to generate a staircase signal in the high voltage mode.
- The f/2 signal (1/2 the line frequency) is used to generate the ACQ-TRG signal and staircase signal in the 300 W mode.
- The f/4 signal (1/4 the line frequency) is used to generate the ACQ-TRG signal and staircase signal in 3 kW mode.

Table 2-4
Microprocessor Control Signals

<table>
<tr><th>Signal</th><th colspan="11">Function</th></tr>
<tr><td>S0 to S4</td><td colspan="11">The values of these signals depend on the number of steps and measurement mode settings as indicated below.</td></tr>
<tr><td></td><td>Number of Steps</td><td colspan="5">Repeat and Single</td><td colspan="5">Sweep</td></tr>
<tr><td></td><td></td><td>S4</td><td>S3</td><td>S2</td><td>S1</td><td>S0</td><td>S4</td><td>S3</td><td>S2</td><td>S1</td><td>S0</td></tr>
<tr><td></td><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td></tr>
<tr><td></td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td></td><td>2</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td></td><td>3</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td></td><td>4</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td></td><td>5</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td></td><td>6</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td><td>1</td><td>0</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td></td><td>7</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td><td>1</td><td>0</td><td>0</td><td>0</td><td>1</td></tr>
<tr><td></td><td>8</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td><td>0</td><td>1</td><td>1</td><td>1</td><td>1</td></tr>
<tr><td></td><td>9</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td></tr>
<tr><td></td><td>10</td><td>0</td><td>1</td><td>0</td><td>1</td><td>1</td><td>0</td><td>1</td><td>0</td><td>1</td><td>1</td></tr>
<tr><td>MODE0 to MODE2</td><td colspan="11">The values of these signals depend on the high voltage, high current, and measurement mode settings as indicated below.</td></tr>
<tr><td></td><td>MODE2</td><td colspan="3">MODE1</td><td>MODE0</td><td colspan="6">Operation Mode</td></tr>
<tr><td></td><td>0</td><td colspan="3">0</td><td>0</td><td colspan="6">HV, SINGLE, & SWEEP</td></tr>
<tr><td></td><td>0</td><td colspan="3">0</td><td>1</td><td colspan="6">not used</td></tr>
<tr><td></td><td>0</td><td colspan="3">1</td><td>0</td><td colspan="6">HC 300 W, SINGLE, & SWEEP</td></tr>
<tr><td></td><td>0</td><td colspan="3">1</td><td>1</td><td colspan="6">HC 3 kW, SINGLE, & SWEEP</td></tr>
<tr><td></td><td>1</td><td colspan="3">0</td><td>0</td><td colspan="6">HV, REPEAT</td></tr>
<tr><td></td><td>1</td><td colspan="3">0</td><td>1</td><td colspan="6">not used</td></tr>
<tr><td></td><td>1</td><td colspan="3">1</td><td>0</td><td colspan="6">HC 300 W, REPEAT</td></tr>
<tr><td></td><td>1</td><td colspan="3">1</td><td>1</td><td colspan="6">HC 3 kW, REPEAT</td></tr>
<tr><td>SG-POL</td><td colspan="11">0: Step Generator – Positive (POS+)
1: Step Generator – Negative (NEG-)</td></tr>
<tr><td>X.1</td><td colspan="11">0: STEP MULTI .1X – OFF
1: STEP MULTI .1X – ON</td></tr>
</table>

(Table continued on next page)

Table 2-4 (cont.)
Microprocessor Control Signals

Signal	Function
C S.1X	0: Collector Supply High Current and High Voltage (3 kV Peak) 1: Collector Supply High Voltage (300 V Peak)
CS-POL	0: Collector Supply High Curent NPN and High Voltage 1: Collector Supply High Current PNP
VIEW(L)	0: Stops output of all measurement signals from the 371A
CSTOP(L)	In any of the states listed below, this signal goes to 0, stopping the output of measurement signals and display of data from the 371A. • Protective cover – open • Test Fixture – not connected • Collector supply fuse – open • Collector supply – overheated • PLL – unlocked
V/I	0: step generator – current mode 1: step generator – voltage mode
RSTM(L)	0: sets the acquisition memory counter to 0 at every data acquisition
FIRE(L)	Starts data acquisition
ACQM(L)	0: the CPU is accessing acquisition memory
ABT	0: erases the contents of acquisition memory and generates the DONE signal
VAR(L)	Latches the digital value of the COLLECTOR SUPPLY VARIABLE control in the D/A converter (U200)
OFFSET(L)	Latches the digital value of the step generator offset in the D/A converter (U550)
STATUS(L)	0: used when PLL unlock information is read

The clock signals from the acquisition and step generator control circuit clock signals, (which are synchronized to the line frequency), are switched by the four-to-one line switch U350 and supplied as clock signals for the high-voltage and high-current modes. Table 2-5 indicates which clock signals are selected in each mode.

The ACQ-TRG signal selected by U350 is supplied to the A/D timing circuit (diagram 6). The A/D dircuit detects the rising edge of this signal and begins A/D conversion.

The SG-TRG signal is supplied to the step generator and pulse generator circuits and triggers the operation of each circuit.

Table 2-5
Clock Signals for ACQ-TRG and SG-TRG

Control Signal for U350		Operation	Number	Output Signal from U350	
MODE1	MODE0	Mode	Of Steps	ACQ-TRG	SG-SIG
0	0	High Voltage	0	0	f
0	0	High Voltage	1	1024f	f
0	0	High Voltage	2	512f	f
0	0	High Voltage	3	341.3f	f
0	0	High Voltage	4	256f	f
0	0	High Voltage	5	204.8f	f
0	0	High Voltage	6	170.7f	f
0	0	High Voltage	7	146.3f	f
0	0	High Voltage	8	128f	f
0	0	High Voltage	9	113.8f	f
0	0	High Voltage	10	102.4f	f
0	1	not used			
1	0	High Current 300W	all	f/2	f/2
1	1	High Current 3kW	all	f/4	f/4

Step Generator

When triggered by the SG-TRG signal, the step generator circuit generates a staircase signal with the number of steps set by the NUMBER OF STEPS control on the front panel. Figure 2-2 shows a timing chart of this circuit.

The two-to-one line switch U370 selects whether to operate in single mode or repeat mode.

In single mode, the step generator circuit samples the FIRE(L) signal (U950 pin 14) from the A2 CPU board on the falling edge of the SG-TRG signal. When a high value is sampled, the counters U380 and U390 that generate the signal begin counting. When all outputs from U390 go high, pin 15 (CARRY OUT) of U390 also goes high and pin 5 of U360B goes low. Next, the circuit waits for the FIRE(L) signal. A staircase signal with N (number) steps can therefore be generated by U380, D/A converter U500, and operational amplifier U510 by presetting U390 to 16-N.

In repeat mode the staircase signal is output in freerun mode. The signal at pin 5 of U360B is sampled on the rising edge of pin 15 of U390. While pin 9 of U360A is high, the ACQ-TRG signal gate enables operation of the A/D converter (diagram 6).

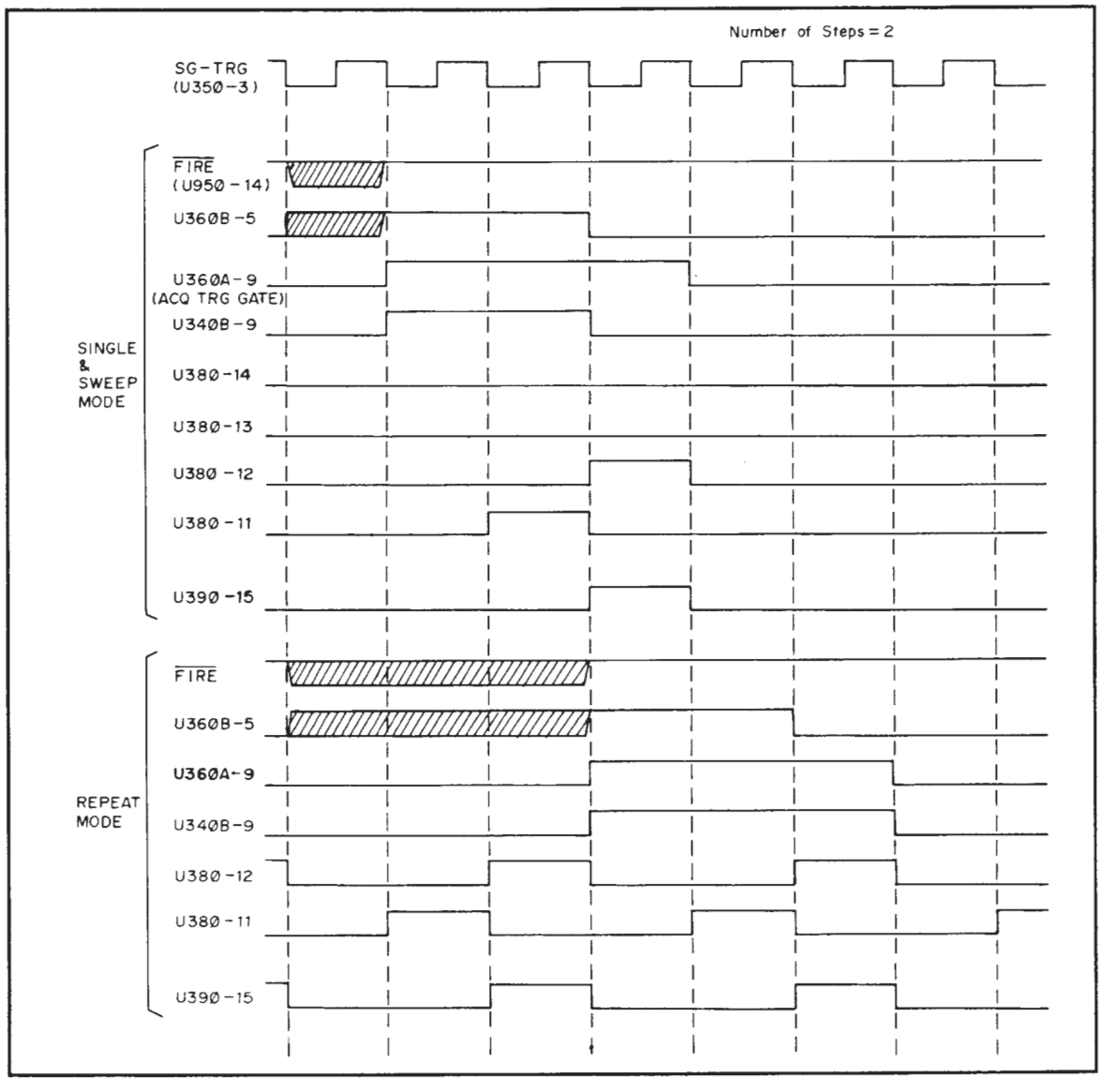


Figure 2-2. Step generator timing.

The staircase signal (200 mV/step) from U510 is amplified by a factor of 1 or 1/10 (when STEP MULTI .1X is on) by U520A and U530. U550 and U560 generate the offset signal which is added to the staircase signal in U530.

The signal from U530 is input to two-to-one line switch U520B. U520B receives a switching signal from the pulse generator circuit and converts the staircase signal to a pulse signal.

The output signal from U520B passes through buffer U540 and output control switch U590C to the A7 Step Generator board. U590C is controlled by an output control logic circuit consisting of U440B, U570 and other components.

The output control logic circuit stops output from the step generator and collector supply according to the UNLOCK(L), ARC(L), RESET(L) and VIEW(L) signals as shown in Table 2-6.

Table 2-6
Output Control Logic

Input					Output		
UN-LOCK(L) U570-13	CSTOP(L) U570-10	ARC(L) U570-9	RESET(L) U570-2	VIEW(L) U570-12	COLLEC-TOR	STEP GEN	DISPLAY
X	X	X	X	0	OFF	OFF	ON
X	X	X	0	1	OFF	OFF	OFF
X	X	0	X	1	OFF	OFF	OFF
X	0	X	X	1	OFF	OFF	OFF
0	X	X	X	1	OFF	OFF	OFF
1	1	1	1	1	ON	ON	ON

When these signals go high and output resumes, the 2f signal is controlled by U710A and U440B to resume at a zero-crossing point of the power-line signal.

Pulse Generator

The pulse generator circuit uses the SG-TRG signal from the acquisition and step generator control circuit and the 128f signal to generate 250 µs and 500 µs pulses for high-current mode.

U420A is a monostable multivibrator that generates a 500 µs pulse in response to the SG-TRG signal. The 500 µs pulse is supplied to the step generator circuit and high-current amplifier circuit (diagram 21).

U440A is a delay circuit that delays the SG-TRG signal by 1/128f (approximately 130 µs at 60 Hz). U420B receives this delayed SG-TRG signal and generates a 250 µs pulse, which is supplied to the high-current amplifier circuit (diagram 21) and unblanking and Z select circuit (diagram 10).

5 Collector Supply Generator

The collector supply generator circuit, located on the A3 A/D board, consists of a sine-square wave timing generator, sine-square wave generator, collector level control circuit and high voltage sine-square wave attenuator circuit. These circuits generate a sine-square wave synchronized to the line frequency, which is the source of the collector signal in the high voltage mode, and DC signal which is the source of the collector signal in high current mode.

Sine-Square Wave Timing Generator

This circuit consists of PLL (Phase-Lock Loop) U110, counter U120 and window comparator U130.

U110 is synchronized with line frequency. It supplies the clock signal for U120, which generates signals 32f, 16f, 8f, 4f, 2f and f.

U130A and U10B check the input voltage of the VCA (voltage controlled oscillator) and determine whether the PLL is locked.

Sine-Square Wave Generator

The sine-square wave generator circuit consists of U140, U150, U160, U170 and U220B. From the 32f, 16f, 8f and 4f signals, U140 generates the switching signal for the one-to-eight line switch U150.

U150, U160, U170 and U220B are an integrating-type ramp signal generator. U150 and U220B control the slope of the ramp waveform. Feedback from U160B generates a sine-square wave with a fixed amplitude as shown in Figure 2-3.

Collector Level Control

The collector level control circuit controls the amplitude of the collector supply.

U200 and U210A convert a digital value set by the collector supply VARIABLE control on the front panel to a DC signal in the range from +2 V to -2 V.

This DC signal is supplied to the A16 High-Current Control board as a source signal for determining the output level of the collector supply in high current mode.

This DC signal is also supplied to the high voltage sine-square wave attenuator circuit to control the amplitude of the sine-square signal, thereby controlling the output level of the collector supply in high voltage mode.

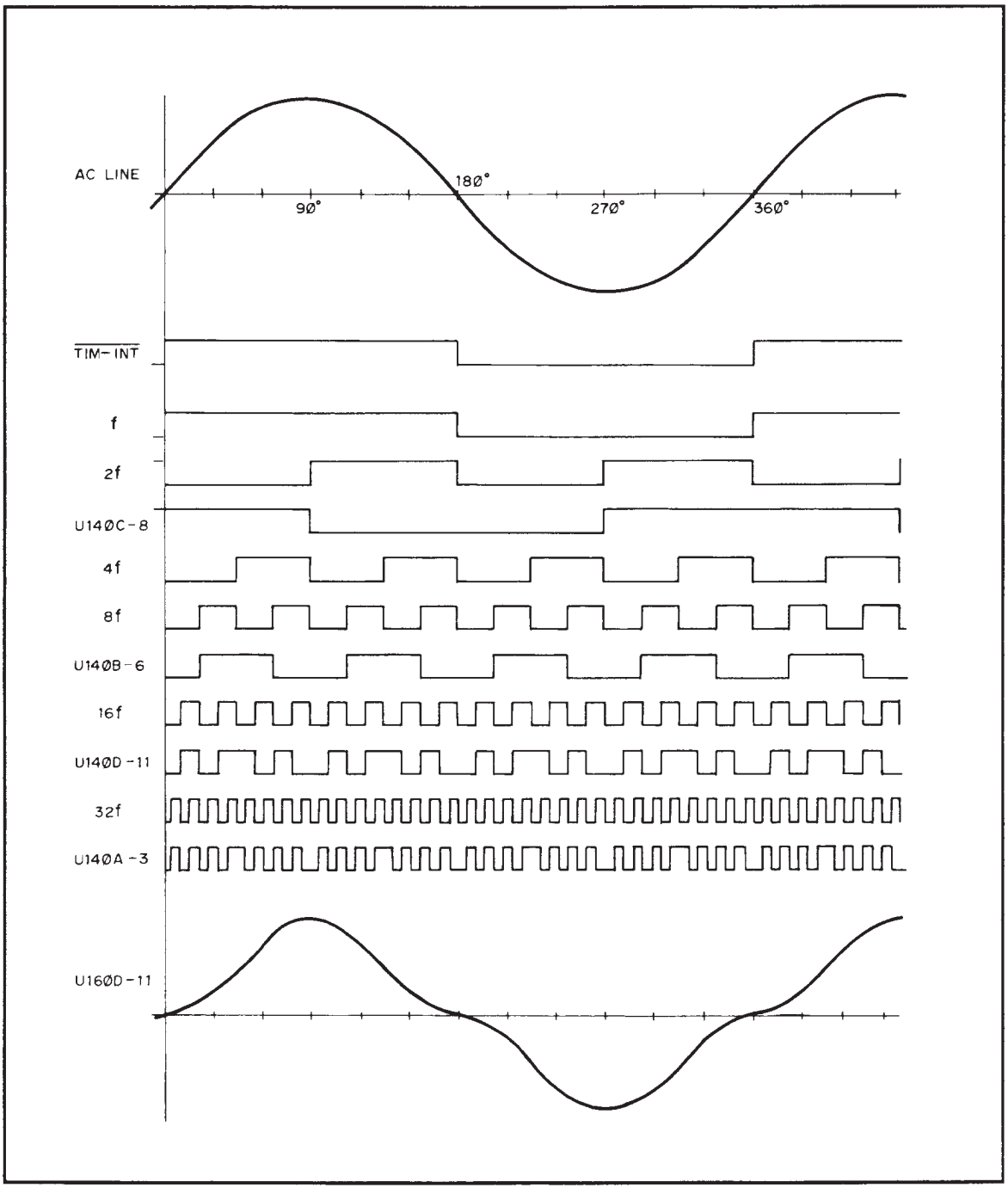


Figure 2-3. Sine-square wave generator timing.

High Voltage Sine-Square Wave Attenuator

The high voltage sine-square wave attenuator circuit consists of a VCA (voltage controlled amplifier) comprising U260A, U210B and U505B and an output control switch comprising U520C and U590B.

The VCA attenuates the amplitude of a 4 V p-p sine-square signal supplied from the sine-square wave generator circuit by means of a DC signal supplied from the collector level control circuit, and outputs the result to the A6 collector amplifier board. U505B selects the feedback resistor of U210B. When the 371A is in 300 V peak mode (peak power watts setting = 300 mW or 30 mW), one end of R261 is connected to pin 7 of U210B. Figure 2-4 shows the characteristic of the VCA.

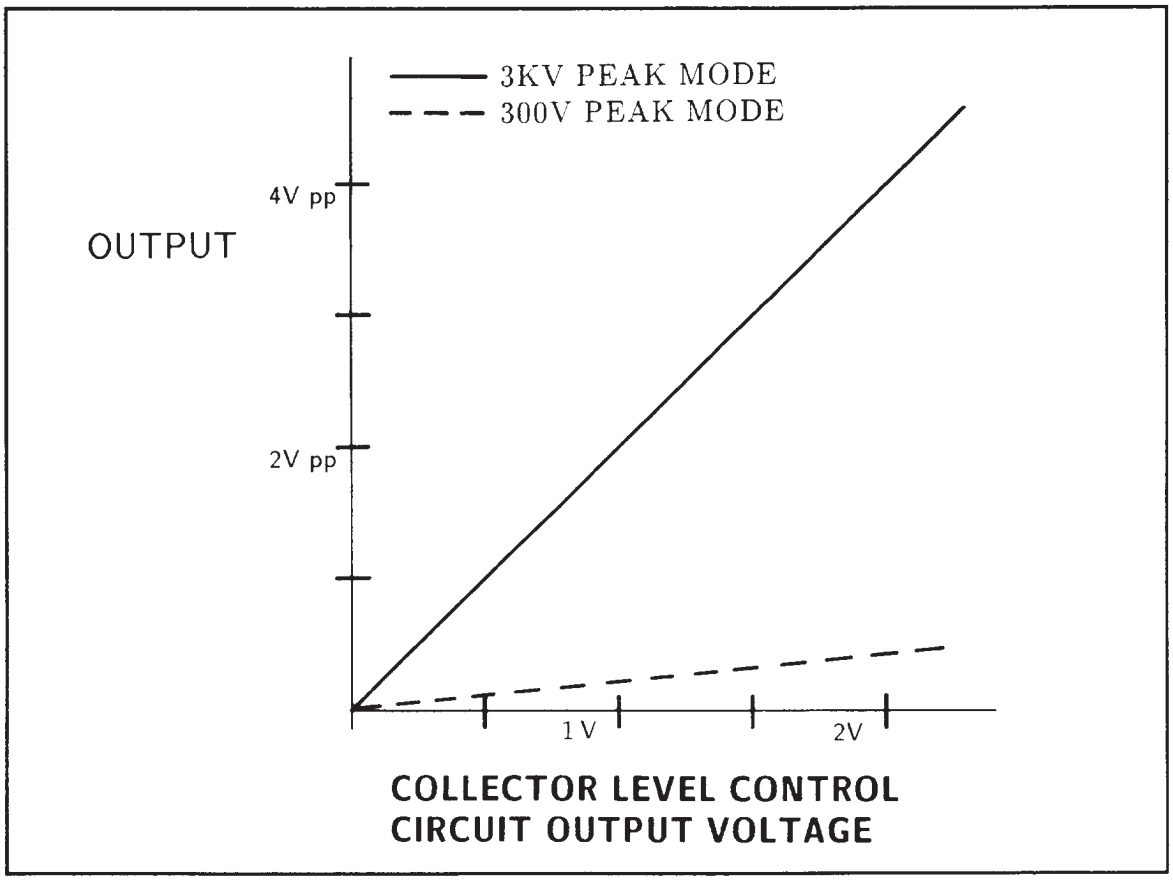


Figure 2-4. VCA characteristic.

The output control switch is switched by the output control logic. (See the description for schematic 4, A/D control and step generator circuits.)

6 Acquisition

The acquisition circuitry, located on the A3 A/D board, consists of an S/H (sample and hold) and select circuit, A/D circuit, A/D timing circuit, acquisition memory control circuit, acquisition memory circuit and bus driver circuit.

These circuits perform A/D conversion of the HD and VD signals from the A5 Display Control board, write them into acquisition memory, and transfer data to the CPU.

S/H and Select

The S/H (sample and hold) and select circuit consists of U600, U610 and U620. U600 and U610 sample and hold the HD and VD signals respectively, acting on control signals from the A/D timing circuit. The VD and HD signals, after being sampled, held, and converted to DC, are selected by four-to-one line switch U620, and supplied to the A/D circuit.

A/D

The A/D circuit consists of U630, U640 and U650. U630 is an operational amplifier that converts the -1 V to +1 V output signal from U620 to the 0 to 5V signal required by A/D converter U640.

A/D Timing

The A/D timing circuit controls the timing of operations from sample and hold of the analog signal through storage in memory. This circuit operates on a 2.5 MHz clock from pin 18 of A/D converter U640. The following description should be read with reference to the timing chart in Figure 2-5.

The A/D timing circuit begins operation on the rising edge of the ACQ-TRG signal from the acquisition and step generator control circuit. When the ACQ-TRG signal sets D flip-flop U660A, U600 and U610 go into the hold state. Two clock cycles later pin 12 of U690B goes low and A/D conversion starts.

Fourteen clock cycles after the start of A/D conversion, pin 12 of U690B goes high and the data are latched in acquisition memory U750 and U760. At the same time pin 6 of U680A goes low, address counter U720 increments by one, counter U680 increments by one, and U620 switches over to the vertical signal (VD).

After the vertical signal has been stored in memory in the same way as the horizontal signal, U680 increments by one and pin 10 of U680 goes high. This resets U660A and U660B, and U600 and U610 begin sampling data again while U660A waits for the next ACQ-TRG signal.

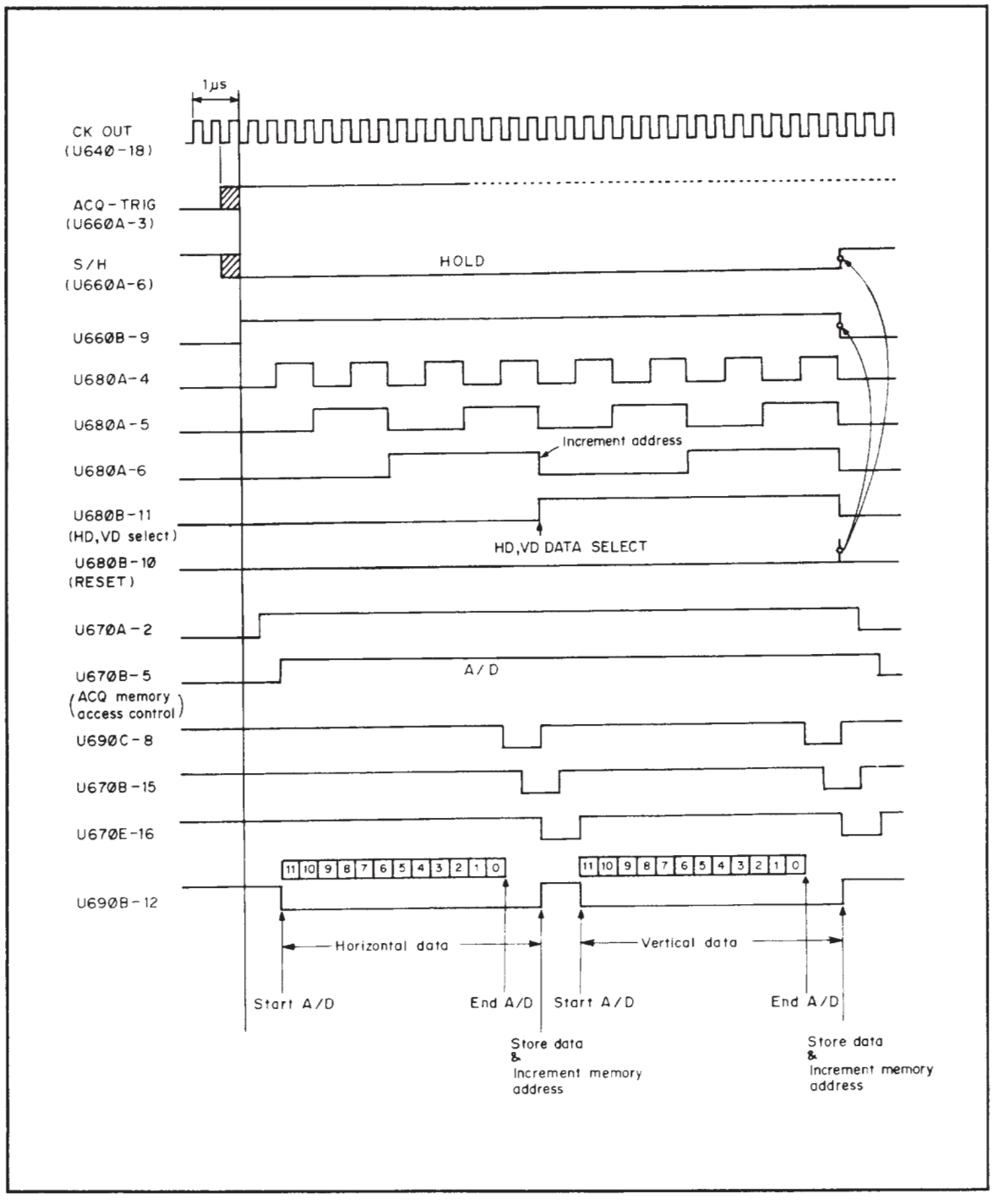


Figure 2-5. Acquisition timing.

Acquisition Memory Control

This circuit consists of U710C, U710F, U700 and U720. U700 switches acquisition memory access between the microprocessor on the A2 CPU board and the A/D circuit. Switching is controlled by the output from pin 5 of U670B. (See Figure 2-5.)

U720 is a 12-bit counter that generates the address signals supplied to acquisition memory.

Acquisition Memory

The acquisition memory circuit consists of U750 and U760. It stores 10-bit data from the A/D circuit under control of the acquisition memory control circuit and is accessed by the CPU.

Bus Driver

The bus driver circuit consists of U770, U780 and U960. U770 and U780 are located between the acquisition memory data bus and CPU bus and perform control functions to prevent collisions between the two buses. U960 notifies the CPU of the lock state of the PLL circuit (U110 of the sine-square wave timing generator; see diagram 5) when requested by the STATUS(L) signal from the CPU control circuit.

7 Display Counter Circuit

The display counter circuitry is located on the A4 Digital Display board. The display counter circuit consists of the bus buffer, the 4.5 MHz oscillator, display counter, address switch & CPU control, display RAM, bus transceiver, dot dursor Generator and character & latch controller.

These circuits determine if the CPU accesses the display RAM, or the display counter reads out the display RAM contents to display them on the CRT. This circuit also generates the necessary control signals for the digital display. For the display timing, see Figure 2-6.

Bus Buffer

The bus buffer circuit consists of U200, U210 and U220; it isolates address bus lines A1-A14 and control signals (UDS(L), LDS(L), RD(L), WR(L), DISP-RAM(L), RESET(L), WAIT(L), STATUS-0 and STATUS-1).

4.5-MHz Oscillator

CMOS oscillator U100 provides the 4.5-MHz clock for the display counter.

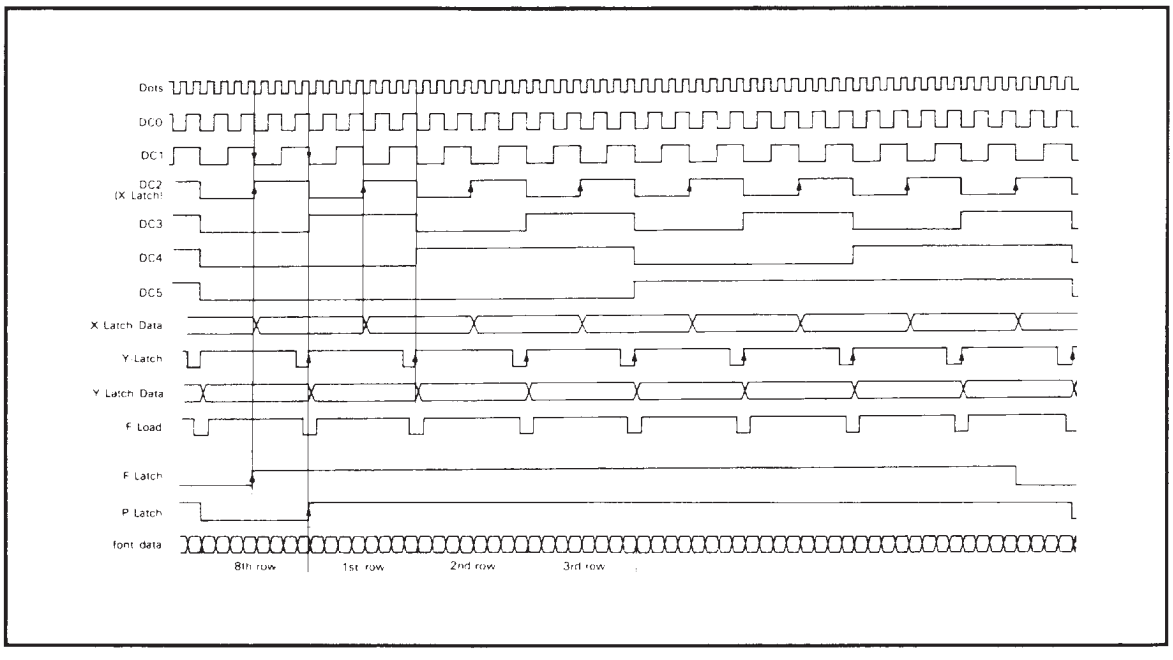


Figure 2-6. Display timing.

Display Counter

Dual four-bit binary counters U110 and U120 make up the 16-bit display counter. This circuit counts the output of U100, producing the DC0 through DC14 signals. U110A is clocked by the dot cursor generator output. The DC2 through DC14 signals are supplied to the address switch & CPU control circuit and become display RAM address inputs.

Address Switch & CPU Control

This circuit consists of data selector/multiplexer U130, U140, U150, U160, D flip-flop U350B, gates U310A, U310D, U320B, U330B, and inverter U340F. The circuit provides address inputs and control signals for the display RAM. The address switch, composed of data selector U130 through U160, is controlled by D flip-flop U350B. When U350B pin 9 is high and U280A pin 4 is low, the read/write access of the display RAM by the CPU is enabled. When U350 pin 9 is low, the address switch selects the display counter outputs DC2 through DC14 for display RAM address inputs to display the display RAM contents on the CRT. In this case, when U280A pin 4 is low, U330B and U320B supplies CPU control signal WAIT(L) for the CPU until pin 9 of U350B returns high. Table 2-7 shows the relationship between the pin 9 output of U350B and the pin 4 output of U280A.

Table 2-7
Display RAM States

U350B pin 9	U280A pin 4	WAIT(L)	Display RAM Address	Display RAM Status
1	0	1	CPU address	CPU accesses display RAM
1	1	1	CPU address	Display RAM not accessed
0	0	0	Display counter	Counter accesses display RAM
0	1	1	Display counter	Counter accesses display RAM

Display RAM

The display RAM consists of 8-kbyte static RAM devices U230 and U240. It stores the display data. Figure 2-7 shows the display RAM memory map.

Bus Transceiver

The bus transceiver consists of octal bus tranceivers U250, U260 and gate U320A. When the pin 9 output of U350B is high and the pin 4 output of U280A is low, the bus transceiver is enabled and the display RAM bus is connected to the CPU bus.

Dot Cursor Generator

The dot cursor generator consists of dual four-bit counter U170, gate U310C, U330A, U330C, U330D and inverter U340C, U340D. The circuit generates the dot cursor signal by stopping the display counter clock. When both the STATUS-1 signal and pin 12 of U330D are high, the clock input for U110A is inhibited for 128 cycles of the pin 8 output of U110B.

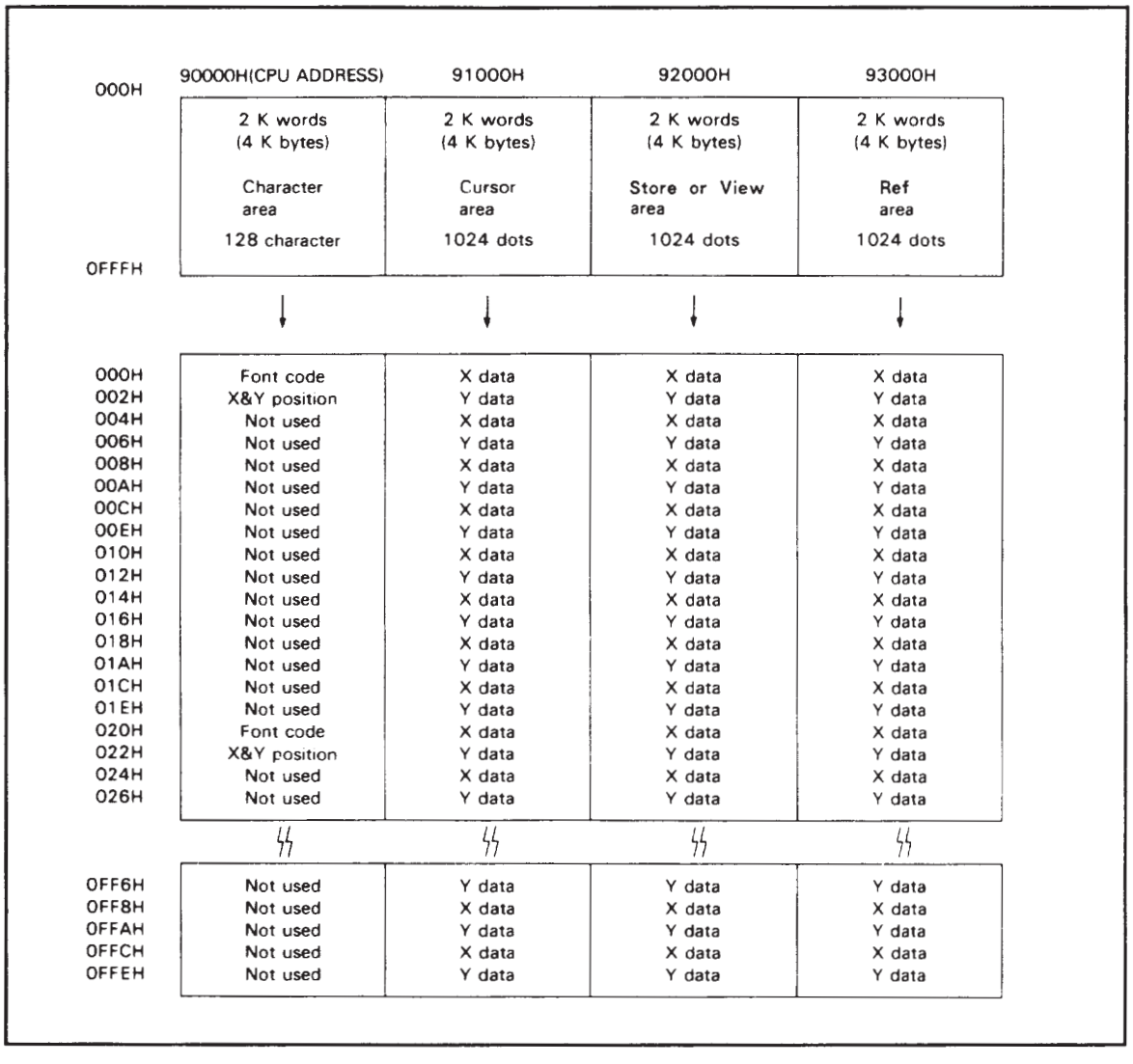


Figure 2-7. Display RAM memory map.

Character & Latch Controller

The character & latch controller circuit consists of D flip-flops U350A, U360A and B, U370A and B, and U380, plus gates U300A and C, U320D, and U340A, B, and E. This circuit provides necessary control signals to the display D/A converter circuit (diagram 8). STATUS-0 and STATUS-1 signals that determine the display cycle are also produced by this circuit. The display cycle is shown in Figure 2-8. If the RECALL/DIRECTORY button is pressed while holding down the SHIFT button to place the 371A in the directory display mode, pin 4 of U270 goes high. This forces the STATUS-0 and STATUS-1 signals low, causing the characteristic curves and readouts to disappear from the display, in which place appears characters representing the directory. U280 generates a chip select signal for U270.

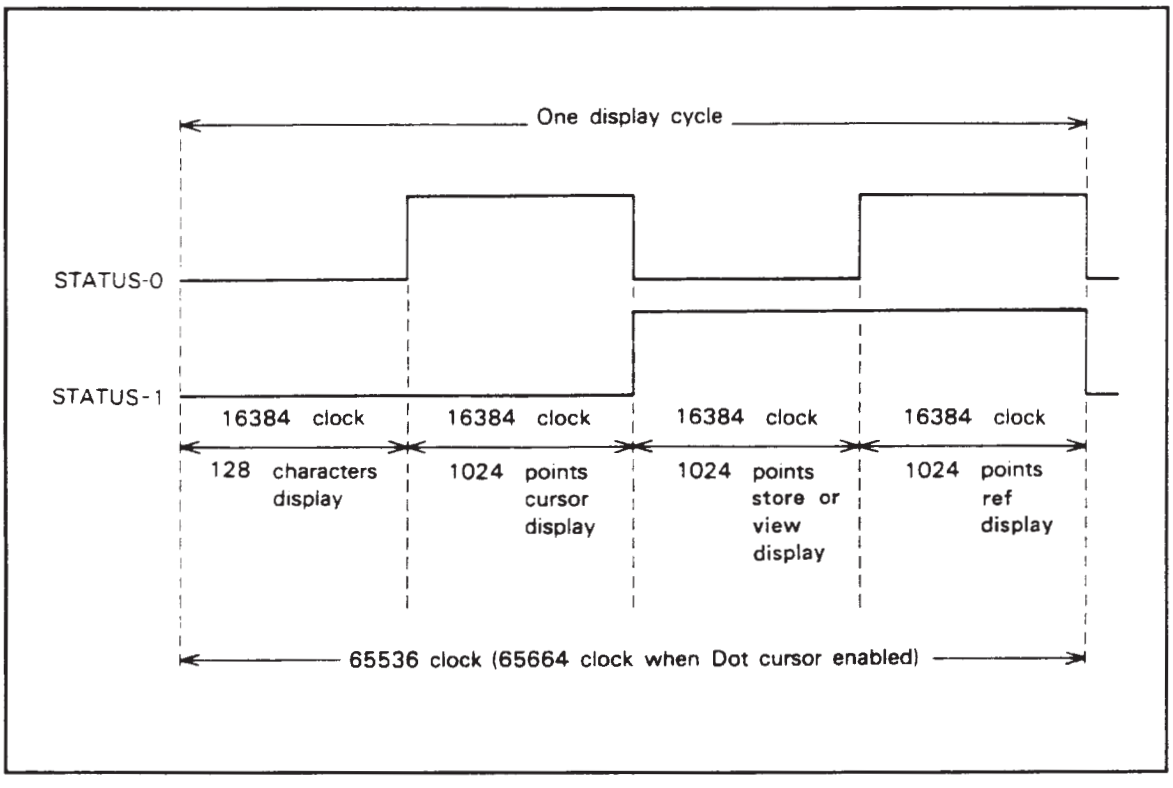


Figure 2-8. Display cycle.

The STATUS-1 signal provides a display refresh rate of 68.7 Hz (68.5 Hz if the dot cursor is enabled). The F-LATCH signal latches the character font data. The P-LATCH signal latches the character position data. The F-LOAD signal latches the output of character ROM U620. DC2 latches the curve X data and attributes data (X-LATCH). Y-LATCH latches the curve X, Y data and attributes data. R-SEL selects Z-SEL and DZ(L) signals. DCL3-DCL5 generate Y readout position data.

8 Display D/A Converter Circuit

The display D/A converter circuitry is located on A4 Digital Display board. The display D/A converter circuitry consists of the following circuits:

1. X data & attribute prefetch latch
2. X-Y data & attribute load latch
3. X 10-bit DAC & Y 10-bit DAC
4. X & Y low-pass filter
5. Font latch
6. Character ROM & shift register
7. X & Y readout position latch
8. Readout attribute latch
9. 8-bit adder
10. X readout step generator
11. X readout DAC and Y readout DAC

These circuits convert the digitized waveform data, readout data and cursor data from the display RAM into an analog signal and generate the Z-axis signal.

X Data & Attribute Prefetch Latch

The X data & attribute prefetch latch consists of octal D flip-flops U400 and U420. Because X coordinate data comes prior to Y coordinate data from the display RAM, and X and Y curve data must simultaneously be latched into the X-Y data & attribute load latch (attribute data is included in X data), temporary storage of the X curve data is needed. X data is latched by the positive edge of DC2.

X-Y Data & Attribute Load Latch

This circuit consists of octal D flip-flops U440, U460 and U480. The Y-LATCH signal latches X curve data and Y curve data provides the data to the X and Y 10-bit DAC. Attribute data included in the X data are also latched. Figure 2-9 shows the X and Y data organization.

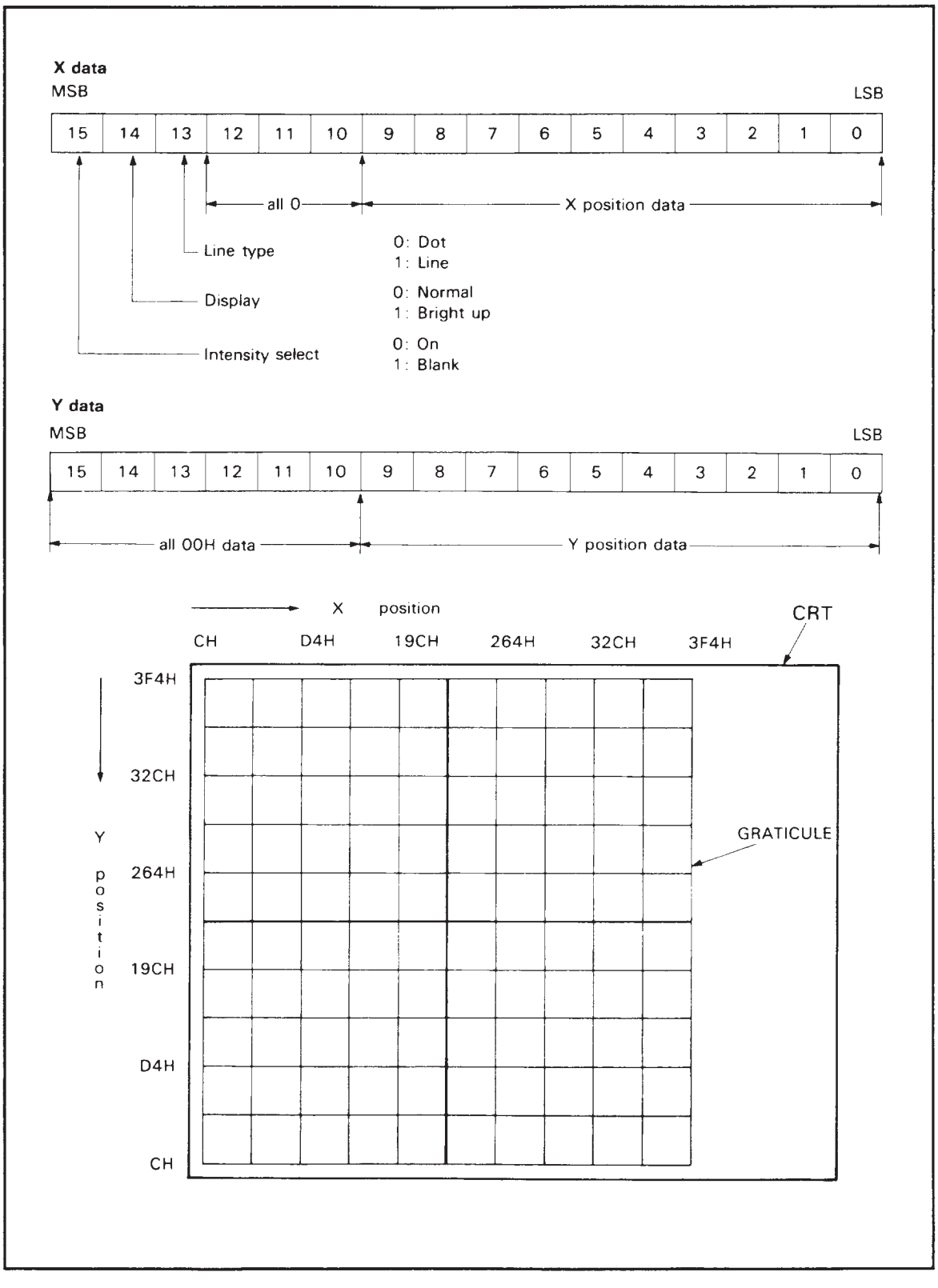


Figure 2-9. X and Y data organization.

X 10-Bit DAC & Y 10-Bit DAC

The X 10-bit DAC consists of 12-bit DAC U500, operational amplifier U502A and associated components. This circuit converts 10-bit X digital signals (X curve data) from the X-Y data & attribute load latch circuit into a ±1 V Y analog signal.

The Y 10-bit DAC consists of 12-bit DAC U520, operational amplifier U502B and associated components. Operation of this circuit is the same as the X 10-bit DAC and a ±1 V Y analog signal is generated.

X Low-pass Filter & Y Low-pass Filter

The X low-pass filter consists of operational amplifier U522A, analog switch U540B resistors R512, R514 and capacitors C508, C510, C512, C528. This circuit is enabled when the pin 17 output of U440 is high, reducing the high-frequency elements of the X analog signal so that the dots displayed on the CRT seem to be a line.

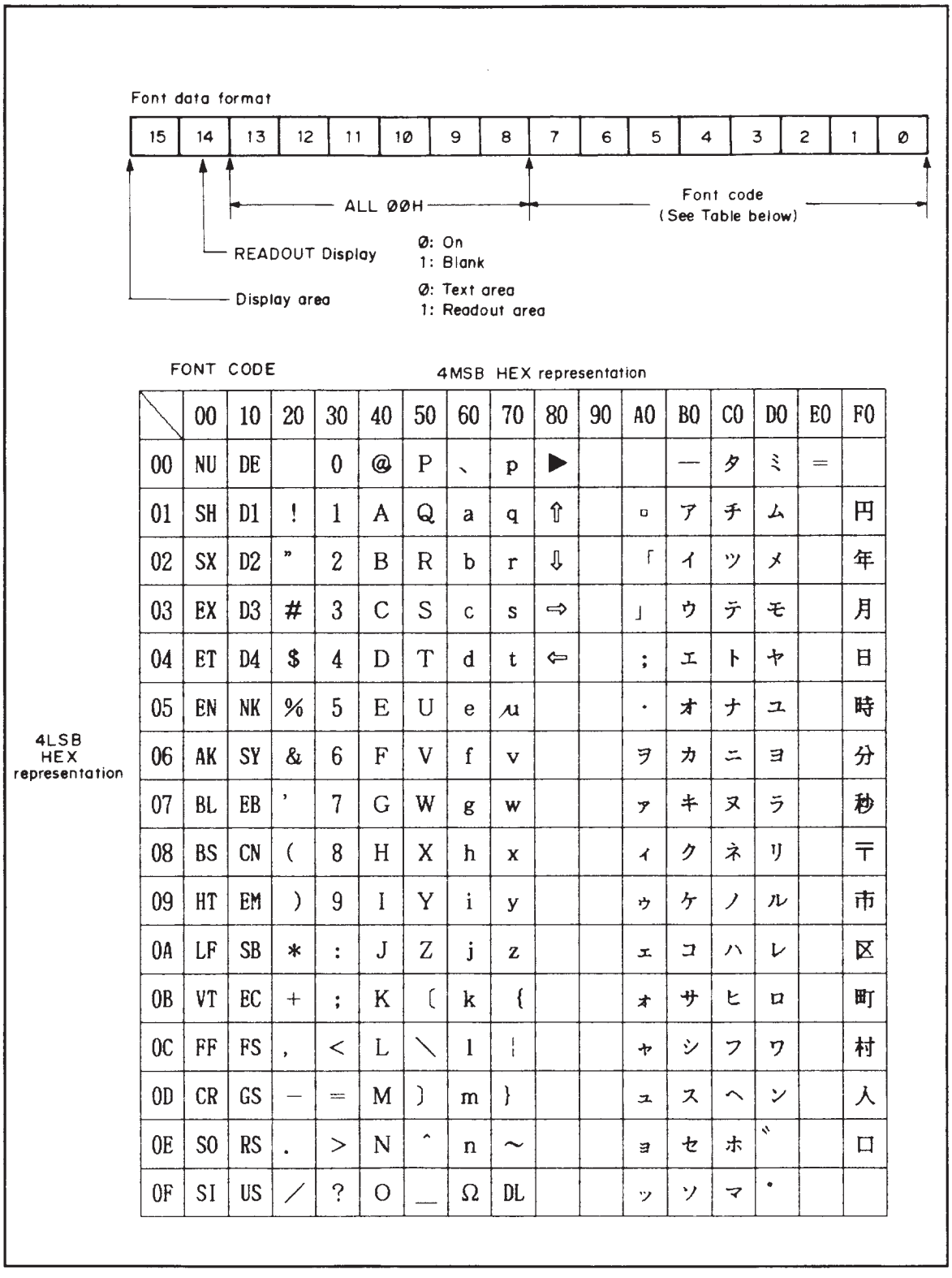
The Y low-pass filter consists of operational amplifier U522B, analog switch U540C, resistors R532, R534 and capacitors C530, C532. This circuit acts just like the X low-pass filter.

Font Latch

The font latch consists of octal D flip-flop U600. The font data of the readout character is stored by the F-LATCH signal. Figure 2-10 shows the data format of the font data word.

Character ROM & Shift Register

This circuit consists of character ROM U620, shift register U640 and NAND gate U310B. This circuit generates Z signals for the readout character. When the F-LOAD signal is low, the output of character ROM U620 is loaded into shift register U640 by DOTS(L) signal. When the F-LOAD signal returns to high, loaded data are shifted by the DOTS(L) signal to become the serial readout Z signal. U310B shortens the readout Z signal active duration.



FONT CODE — 4MSB HEX representation

4LSB HEX representation

	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
00	NU	DE		0	@	P	、	p	▶			—	タ	ミ	=	
01	SH	D1	!	1	A	Q	a	q	⇧		▫	ア	チ	ム		円
02	SX	D2	"	2	B	R	b	r	⇩		「	イ	ツ	メ		年
03	EX	D3	#	3	C	S	c	s	⇨		」	ウ	テ	モ		月
04	ET	D4	$	4	D	T	d	t	⇦		;	エ	ト	ヤ		日
05	EN	NK	%	5	E	U	e	ぃ			・	オ	ナ	ユ		時
06	AK	SY	&	6	F	V	f	v			ヲ	カ	ニ	ヨ		分
07	BL	EB	'	7	G	W	g	w			ァ	キ	ヌ	ラ		秒
08	BS	CN	(	8	H	X	h	x			ィ	ク	ネ	リ		干
09	HT	EM	)	9	I	Y	i	y			ゥ	ケ	ノ	ル		市
0A	LF	SB	*	:	J	Z	j	z			ェ	コ	ハ	レ		区
0B	VT	EC	+	;	K	〔	k	{			ォ	サ	ヒ	ロ		町
0C	FF	FS	,	<	L	＼	l	¦			ャ	シ	フ	ワ		村
0D	CR	GS	−	=	M	〕	m	}			ュ	ス	ヘ	ン		人
0E	SO	RS	.	>	N	^	n	～			ョ	セ	ホ	゛		口
0F	SI	US	／	?	O	_	Ω	DL			ッ	ソ	マ	゜		

Figure 2-10. Data format of the font data word.

X & Y Readout Position Latch

The X & Y readout position latch consists of octal D flip-flops U700 and U710. This circuit stores the X and Y position data for the readout character. The position data are located by the P-LATCH signal. Figure 2-11 shows the readout position data format.

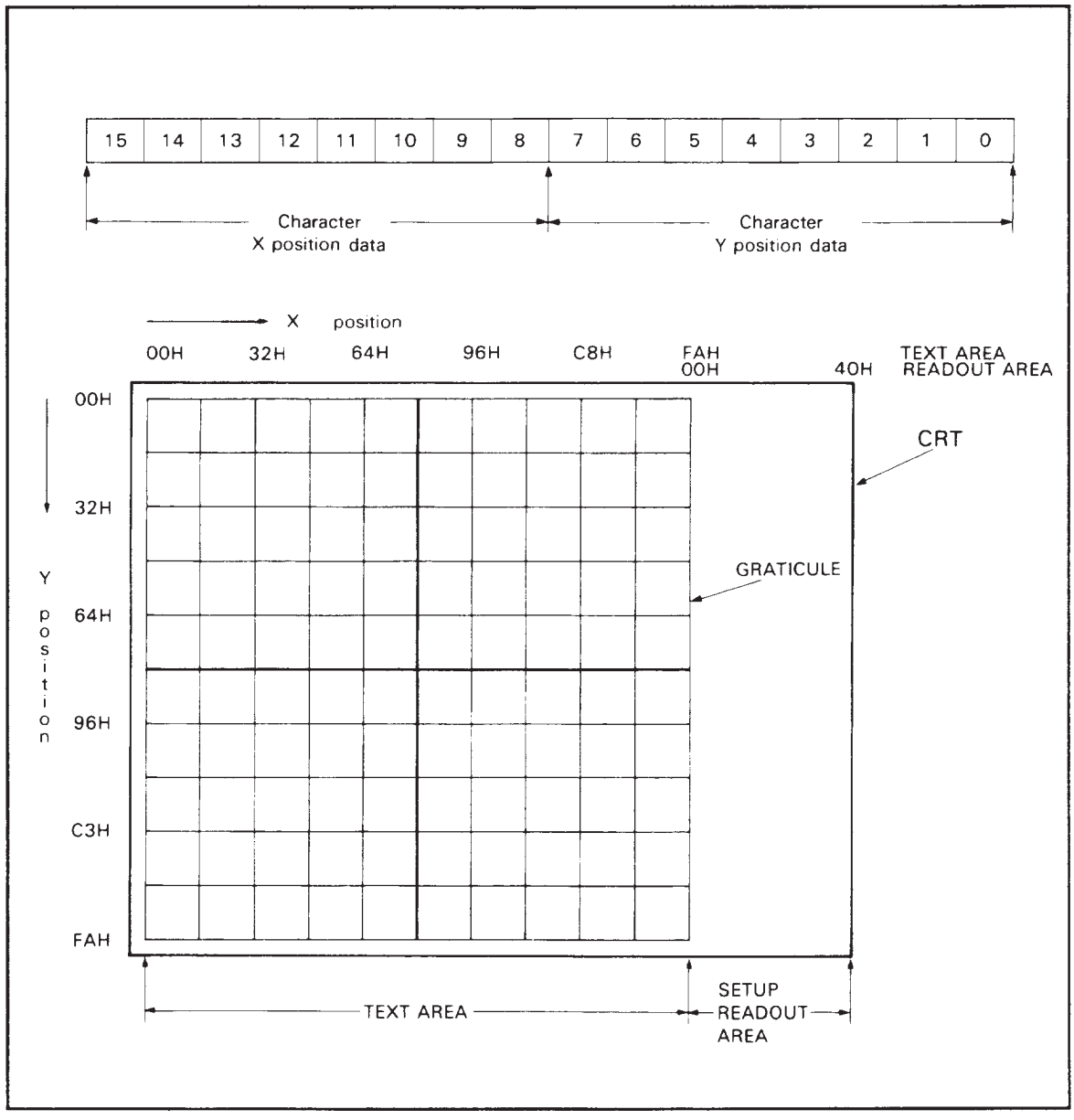


Figure 2-11. Data format of readout character position.

Readout Attribute Latch

Dual D-type flip-flop U660 is the attribute latch; it stores readout attribute data prefetched in the X data & attribute prefetch latch. The readout attribute data are latched by the P-LATCH signal.

8-Bit Adder

The 8-bit adder consists of adder U760 and U770. It adds DCL3 through DCL5 to Y readout position data PY0 through PY7. The RY0 through RY7 outputs of this circuit are supplied to the Y readout DAC as the Y readout data.

X Readout Step Generator

The X readout step generator consists of U720B, C, D and resistors R700, R702, R704, R710, R712, R714, R716, R718, and R720. This circuit generates the X step signal from DC0 through DC2 signals and combines this step signal with the X readout DAC output as the X readout signal, RX.

X & Y Readout DAC

The X readout DAC consists of eight-bit DAC U800, operational amplifier U802A and B, analog switch U540A and their associated components. This circuit converts the X position data output PX0 through PX7 from the X & Y readout position latch into an X analog signal and adds the output of the X readout step generator to the converted output. If pin 5 of the readout attribute latch U660A is high, U540A switched to offset the U802B by the U822B reference voltage so that the readout can be written in the SETUP readout area. The output of U802B provides the X readout signal, RX.

The Y readout DAC consists of 8-bit DAC U820, operational amplifier U822A and associated components. This circuit converts the RY0 through RY7 outputs of the 8-bit adder into the Y readout signal, RY.

9 Display Offset Circuit

The display offset circuitry is located on the A5 Display Control board. The display offset circuitry consists of the control logic circuit, offset D/A converter circuit, polarity select circuit, source select circuit, zero & invert select circuit, and X and Y gain select circuits. These circuits select the horizontal and vertical source inputs for the CRT display and provide them with calibrated offset voltages to execute display functions such as cal ful, display invert, collector supply polarity, and peak power watts.

Control Logic

U100, U120 and U140 are eight-bit addressable latches and U160 form a three-line to eight-line decoder/multiplexer. These components form the control logic stage. This circuit decodes the address A1 through A6 from the CPU. D0 data from the CPU determines the display functions. Table 2-8 shows the display functions that are controlled by the address lines A1 through A6 and data line D0.

Offset D/A Converter

The offset D/A converter consists of dual D/A converter U670, operational amplifiers U662A, U662B, U674, U677 and analog switches U640B, U650B. This circuit is used only when the 371A is in 300 V peak mode (peak power watts = 300 mW or 30 mW) and supplies display offset voltages to the polarity select circuit.

Polarity Select

The polarity select circuit consists of analog switches U680, U685, operational amplifiers U690, U695 and their associated components. This circuit provides display offset resulting from the setting of the front panel collector supply POLARITY and peak power watts switches.

Source Select

The source select circuit consists of analog switches U600 and U610. U610 selects the horizontal source input from the (NPN or PNP) cal full voltages or H-OUT signal. U600 selects the vertical source input from the (NPN or PNP) cal full voltages or V-OUT signal.

Zero & Invert Select

The zero & invert select circuit consists of analog switches U605 and U615. This circuit determines if the zero offset voltage (0 volt) is used for the source input if the source input is inverted.

Table 2-8
Display Function

Address								Display Function
A6	A5	A4	A3	A2	A1	HEX	Signal	Determined by D0
0	0	0	0	0	0	00	DO0	vertical offset
0	0	0	0	0	1	02	DO1	vertical offset
0	0	0	0	1	0	04	DO2	vertical offset
0	0	0	0	1	1	06	DO3	vertical offset
0	0	0	1	0	0	08	DO4	vertical offset
0	0	0	1	0	1	0A	DO5	vertical offset
0	0	0	1	1	0	0C	DO6	vertical offset
0	0	0	1	1	1	0E	X-Y	D/A select
0	0	1	0	0	0	10	VO0	1 for NPN mode
0	0	1	0	0	1	12	VO1	1 for AC mode
0	0	1	0	1	0	14	HO0	1 for NPN mode
0	0	1	0	1	1	16	HO1	1 for AC mode
0	0	1	1	0	0	18	VSRC	1 for SG signal
0	0	1	1	0	1	1A	HSRC	1 for SG signal
0	0	1	1	1	0	IC	MOV	1 for offset
0	0	1	1	1	1	1E	MOH	1 for offset
0	1	0	0	0	0	20	FULL	0 for cal full
0	1	0	0	0	1	22	ZERO	1 for cal zero
0	1	0	0	1	0	24	INV	1 for invert
0	1	0	0	1	1	26	VMAG	1 for 30 mW and 300 mW mode
0	1	0	1	0	0	28	HMAG	1 for 30 mW and 300 mW mode
0	1	0	1	0	1	2A	NON-ST	1 for non-store
0	1	0	1	1	0	2C	VOPOL	vertical offset polarity
0	1	0	1	1	1	2E	HOPOL	Horizontal offset polarity
0	1	1	0	0	0	30	DO0	horizontal offset
0	1	1	0	0	1	32	DO1	horizontal offset
0	1	1	0	1	0	34	DO2	horizontal offset
0	1	1	0	1	1	36	DO3	horizontal offset
0	1	1	1	0	0	38	DO4	horizontal offset
0	1	1	1	0	1	3A	DO5	horizontal offset
0	1	1	1	1	0	3C	DO6	horizontal offset
0	1	1	1	1	1	3E	X-Y	D/A select
1	0	0	x	x	x	40	LATCH	D/A latch

X Gain Select

The X gain select circuit consists of operational amplifier U630, U635, U655, analog switches U650A, U650C and associated components. This circuit determines the gain of the selected X source input as set by the HMAG signal from the control logic. When the collector supply is set to 30 mW or 300 mW, the VMAG signal is high and analog switch U650A and U650C switch so that the X source input is magnified 10 times. The output of this circuit, HD, is supplied to the S/H and select circuit (part of A3 A/D board).

Y Gain Select

The Y gain select circuit consists of operational amplifier U620, U625,U645, analog switches U640A, U640C and their associated components. This circuit operates the same as the X gain select circuit. The output of this circuit, VD, is supplied to the S/H and select circuit (part of A3 A/D board).

10 Display Select

The display select circuitry is located on the A5 Display Control board. This circuitry consists of the signal select logic circuit, unblank & Z select circuit, and the horizontal & vertical preamp circuit. This block of circuitry selects and amplifies the source inputs that are displayed on the CRT. Selection of the source inputs are performed by the signal select logic circuit. The Z signal for the source inputs is controlled by the unblank & Z select circuit. Figure 2-12 and Figure 2-13 show the display select timing.

Signal Select Logic

The signal select logic circuit consists of decoder U800B, the lower half of data selector U810, operational amplifier U820A, NAND gate U850A, B, C, D, U860A, inverter U840A, C, F and associated components. This circuit generates two kinds of select signals: AS (AS0, AS1) and BS (BS0, BS1). Decoder U800B and NAND gate U850B, C, D generate the BS0 and BS1 select signals as described in the following:

Display cycle signals STATUS-0 and STATUS-1 are applied to decoder U800B, so when the pin 6 output of U850B is high, outputs of U800B are inverted by NAND gate U850C and U850D, becoming the BS0 and BS1 signals. When the pin 6 output of the NAND gate U850B is low, the BS0 and BS1 signals are both high.

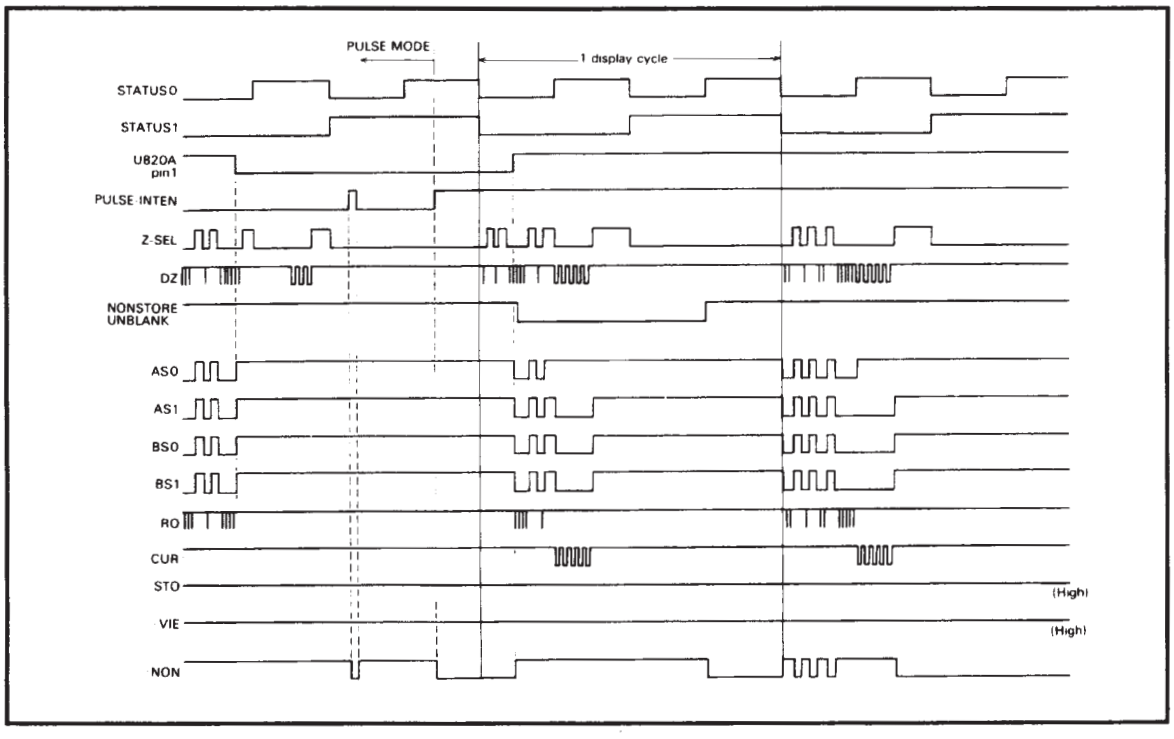


Figure 2-12. Display select timing (with NON-ST signal high).

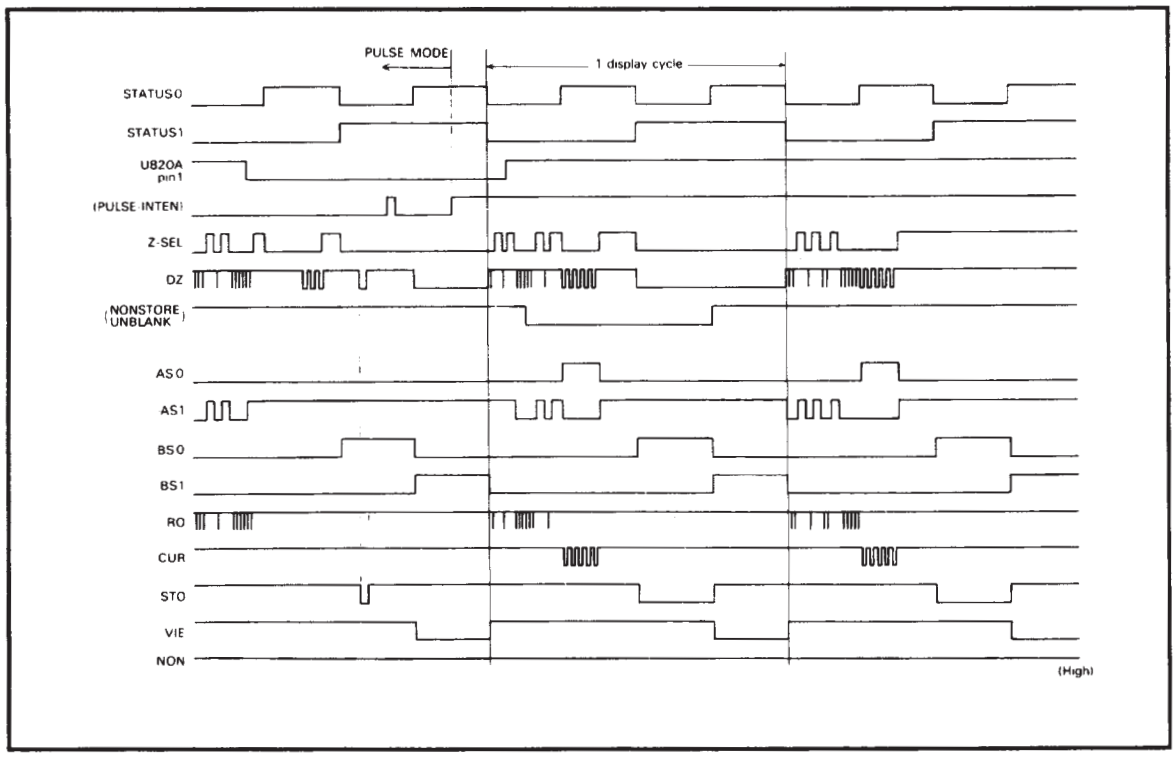


Figure 2-13. Display select timing (with NON-ST signal low).

The two input signals to NAND gate U850B (NON-ST and AS1) determine the non-store display cycle. When NON-ST is high, the active AS1 signal provides the non-store waveform display cycle. This AS1 signal goes active (high) in one of the following conditions:

- STATUS-1 is high
- Z-SEL is high
- Output of comparator U820A is low (this occurs if the front panel READOUT/CURSOR INTENSITY control is adjusted counterclockwise to lower the voltage level of the A-INTERN below 2.5 V).

The AS1 signal determines the AS0 signal. AS1 signal is applied to the select input (pin 2) of data selector U810 and provides either the NON-ST signal or STATUS-0 signal to its output as AS0.

Unblank & Z Select

The unblank & Z select circuit consists of transistors Q850, Q852, Q860, Q862, Q870 the upper half of data selector U810, demultiplexer U800A, U830B, gate U860C, U860D, U870A and associated components. The unblank logic consists of U810, U860C, U860D and U870A. This circuit is provided to cut off the Z signal when the front panel switches are changed. When the display mode is non-store, U810 selects the pin 3 input. This input is controlled by the P-INTERN and NST-UNBLK signals. When either of these signals turns low, pin 3 input of U810 turns to high, and the pin 7 output of U810 turns all outputs of demultiplexer U800A and U830B high, so that the Z signal is disabled. The Z select circuit outputs the Z signal that corresponds with the display cycle. The Z signal is selected by the AS0, AS1, BS0 and BS1 signals.

Horizontal & Vertical Preamp

The horizontal and vertical preamp circuit consists of data selector U500, U520, decoder U830A, transistor Q540A, Q540B, Q542A, Q542B, Q556, Q576, NAND gate U860B, inverter U840B and D and their associated components. This circuit selects the horizontal and vertical signals and amplifies the selected signals. The horizontal signal is selected in data selector U500. AS0 and AS1 signals are decoded by U830A, U840B, U840D, and U860B into signals RON, SON, and NON to provide the select input of U500. The selected horizontal signal is applied to the base of Q540A and the H-POS level is applied to the base of Q540B. Transistors Q540A and Q540B are configured as an emitter-coupled, paraphrase amplifier, with Q556 acting as a constant-current emitter source. The Vertical Preamp operates the same as the horizontal preamp but has a different amplification factor.

11 Collector Supply Amplifier

The collector supply amplifier consists of a collector power supply circuit and collector supply amplifier circuit.

The collector supply amplifier amplifies signals from the sine-square wave generator (located on the A3 A/D board) to provide driving voltage for the collector supply transformer A0T800.

Collector Power Supply

The collector power supply circuit consists of a power supply supply for the high voltage collector supply, consisting of CR710, CR720, CR730, C710 and C720. This circuitry supplies power to the A6 Collector Supply Output board.

The collector power supply alarm detect circuit consists of U750, R750, and C750. This circuit outputs the CSPD(L) signal if an abnormal condition in the collector power supply should open the fuse (A0F100) or cut off the collector transformer (A0T200).

Collector Supply Amplifier

The collector supply amplifier consists of operational amplifiers U400A and U400B, transistors Q424 and Q524, FETs Q438, Q440, Q538, and Q540, and diodes CR402 and CR404. This circuit amplifies the signal from the sine-square wave attenuator circuit (A3 A/D board) into the driving voltage for collector supply transformer T200. U400B and associated components form a low-pass filter, and U400A is an inverter. Transistors Q424, Q524, Q438, Q538, Q440, and Q540 form a differential output, non-capacitor single-ended push-pull circuit. Resistor R412 adjusts the final stage offset.

Transistors Q444 and Q544, resistors R450 and R550, and associated components form a current limiter. This limiter is designed to limit the amplifier output current to 2 A.

When the output swing reaches the limit, the voltage drop of R450 or R550 turns Q444 or Q544 on and the emitter currents of Q424 and Q524 decrease correspondingly. This in turn limits the gate-to-source voltages of Q438 and Q440 or Q538 and Q540. As a result, output current of this circuit is clamped within the current limit.

12 Step Generator Voltage Amplifier

The step generator voltage amplifier consists of the 1-2-5 ranging circuit, the +55 and -55 V power supply circuit and the voltage amplifier circuit. This circuit transforms the output of the step generator on the A3 A/D board into voltage steps of various amplitudes to be applied to the device under test. The STEP/OFFSET AMPLITUDE control on the front panel determines the amplitude of the steps.

1-2-5 Ranging

The 1-2-5 ranging circuit consists of operational amplifiers U200 and U210, multiplexer U212, and R202, R204, R212, R214 and R216. This circuit amplifies or attenuates the step signal from the step generator on the A3 A/D board according to the setting of the STEP/OFFSET AMPLITUDE control on the front panel. The output signal from this circuit is supplied to the voltage amplifier circuit and current amplifier circuit (diagram 13). The gain of this circuit is selected as 1/3, 2/3 or 5/3 by control signals SG1 and SG2.

+55 and -55 V Power Supply

This circuit consists of transistors Q700, Q704, Q720 and Q724, operational amplifiers U704A and U704B, and resistors R708, R710, R728 and R730. It supplies voltage to the voltage amplifier circuit.

Voltage Amplifier

When the step generator SOURCE is set to VOLTAGE, the V signal (diagram 13) goes high, output relay K600 closes, and a voltage step signal is output.

The signal from 1-2-5 ranging circuit is applied to an inverting amplifier consisting of R400, R402, R404, R406 and U406. When the STEP/OFFSET AMPLITUDE control on the front panel is set to 1 V/step, 2 V/step or 5 V/step, the X10 signal goes high and R400, R403 and R404 are selected by U300A and U300B, making the voltage gain of the inverting amplifier U406 equal 1.5. At other settings of the STEP/OFFSET AMPLITUDE control the X10 signal is low, so R401, R402 and R406 are selected and the voltage gain is 0.15. The output signal from this inverting amplifier is applied to an inverting amplifier with voltage gain 10 consisting of U420, Q430, Q436, Q440 and Q446, then via relay K600S to the DUT. The circuit consisting of Q430, Q436, Q440 and Q446 is a power amplifier with a voltage gain of approximately 20.

U418 adds the voltage at the COMMON SENSE connector on the Test Fixture unit to the negative input of U420 to maintain the voltage between the STEP GENERATOR VOLTAGE connector and the COMMON connector at the correct value.

CR436, CR438, CR446, CR448, R438 and R448 form a current limiter circuit that limits the current flowing through R438 and R448 to 100 mA.

13 Step Generator Current Amplifier

The step generator current amplifier consists of a control signal latche circuit, a relay driver circuit, and a current amplifier circuit. It transforms the output of the 1-2-5 ranging circuit (diagram 12) into current steps of various amplitudes to be applied to the DUT. The STEP/OFFSET AMPLITUDE control on the front panel determines the amplitude of the steps.

Control Signal Latches

This circuit consists of decoder U150 and eight-bit addressable latches U152, U154 and U156. U152, U154 and U156 control signals from the microprocessor on the A2 CPU board. U150 decodes address signals for the latches.

Relay Driver

Transistor arrays U158 and U160 drive relays K502 through K602. The STEP/OFFSET AMPLITUDE control, step generator POLARITY button, and step generator SOURCE buttons determine the state of the input signals to U158 and U160. When the input signal of a driver is high, the corresponding relay is energized. Table 2-9 shows the control signals for the relays.

Table 2-9
Range Control of Step Generator Current

Step/Offset Amplitude	Relay Control Signals					
	10μ	100μ	1m	10m	100m	1
1-5 μA	0	0	0	0	0	0
10-50 μA	1	0	0	0	0	0
100-500 μA	0	1	0	0	0	0
1-5 mA	0	0	1	0	0	0
10-50 mA	0	0	0	1	0	0
100-500 mA	0	0	0	0	1	0
1-2 A	0	0	0	0	0	1

Current Amplifier

When the step generator SOURCE control is set to the CURRENT position, the I signal goes high. This high I signal opens K602, causing output of a current step signal.

The signal from the 1-2-5 ranging circuit (diagram 12) passes through as inverting amplifier with voltage gain 1.5 consisting of U302, R300 and R302 and is applied to U310. U310 and Q332 to Q352 form a voltage follower circuit in which the output voltage is identical to the input voltage to U310. The circuit consisting of Q332, Q334, Q336, Q348, and Q352 amplifies negative current.

When the step generator POLARITY setting on the front panel is POS+, the POS signal is high and K552 selects the circuit consisting of Q332, Q334, Q346 and Q350. The output from this circuit passes through one of the current setting resistors R500 to R512 to the DUT. The voltage applied to the DUT is fed back via U320 to the non-inverting input of U302. Figure 2-14 shows a block diagram of this circuit. The current flowing through the current setting resistor is given the following formula:

$$Iout = 1.5\ Vin/Rs$$

where *Iout* is the current to the DUT

Vin is the input from the 0.5-1-2 ranging circuit

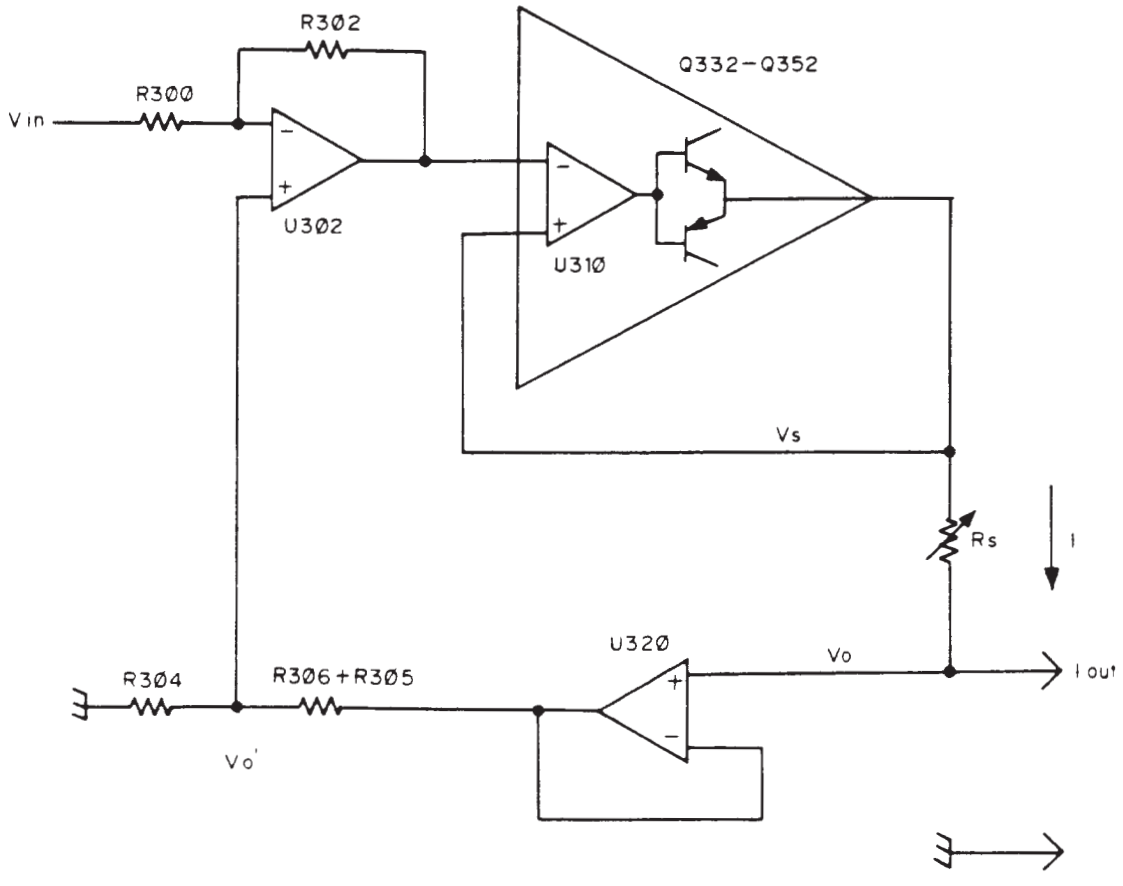
Rs is the value of the current-setting resistor.

The current flowing to the DUT is therefore determined by the output voltage of the 1-2-5 ranging circuit (diagram 12) and the value of the current setting resistor.

Q370, Q372, CR370, CR372, VR370, VR372 and U320 form a floating power supply for U302 and U310. This circuit shifts the power supplies of U302 and U302 according to the output voltage level of U320 to enlarge the operating range of U302 and U310.

14 Vertical Sense

The vertical sense circuitry consists of a current sense circuit, 1-2-5 ranging circuit, looping compensator circuit and control latch circuit. The vertical sense circuitry measures the collector current of the DUT, excluding stray capacitance effects.



Notes)

1) $n * R300 = R302 = n * R304 = R306 + R305$

2) Rs is the Resistors from R500 to R512 (100 kΩ ~ 0.1 Ω)

$$Vo' = \frac{Vo}{n+1}$$

$$Vs = -n * Vin + (n + 1)Vo'$$

$$I = (Vs - Vo) / Rs$$

$$I = -n * \frac{Vin}{Rs}$$

Figure 2-14. Simplified block diagram of step generator current amplifier.

Control Latch

The control latch circuit consists of U602 and U604. U602 latches signals from the A2 CPU board. U604 drives relays K102 to K112. Table 2-10 indicates the relations between control signals V1 to V7 and the VERTICAL CURRENT/DIV control range setting in three different modes of operation.

Table 2-10
Range Control of Vertical Sensing

Vertical Current/DIV		Control Signal						
		V1	V2	V3	V4	V5	V6	V7
High Current Mode	50 A	0	0	0	1	0	0	0
	20 A	1	0	0	1	0	0	0
	10 A	0	1	0	1	0	0	0
	5 A	1	1	0	1	0	0	0
	2 A	0	0	1	1	0	0	0
	1 A	1	0	1	1	0	0	0
	500 mA	0	1	1	1	0	0	0
High Voltage (3 kV Peak) Mode	5 mA	0	0	0	0	1	1	0
	2 mA	1	0	0	0	1	1	0
	1 mA	0	1	0	0	1	1	0
	500 µA	1	1	0	0	1	1	0
	200 µA	0	0	1	0	1	1	0
	100 µA	1	0	1	0	1	1	0
	50 µA	0	0	0	0	1	1	0
	20 µA	1	0	0	0	1	0	1
	10 µA	0	1	0	0	1	0	1
High Voltage (300 V Peak) Mode	500 µA	0	0	0	0	1	1	0
	200 µA	1	0	0	0	1	1	0
	100 µA	0	1	0	0	1	1	0
	50 µA	1	1	0	0	1	1	0
	20 µA	0	0	1	0	1	1	0
	10 µA	1	0	1	0	1	1	0
	5 µA	0	0	0	0	1	0	1
	2 µA	1	0	0	0	1	0	1
	1 µA	0	1	0	0	1	0	1

Current Sense

The current sense circuit consists of R102 to R106, U110, U112, U116 and A0R100 in diagram 27. Figure 2-15 shows a simplified block diagram of this circuit. A0R100 is the current sense resistor in high current mode. R102 to R106 sense current in high voltage mode. The voltages across these resistors are amplified by an instrumentation amplifier consisting of U110, U112 and U116, then sent to the 1-2-5 ranging circuit. This instrumentation amplifier has a large input impedance, due to the presence of a voltage follower stage consisting of U110 and U112 preceding differential amplifier U116, which improves measurement accuracy.

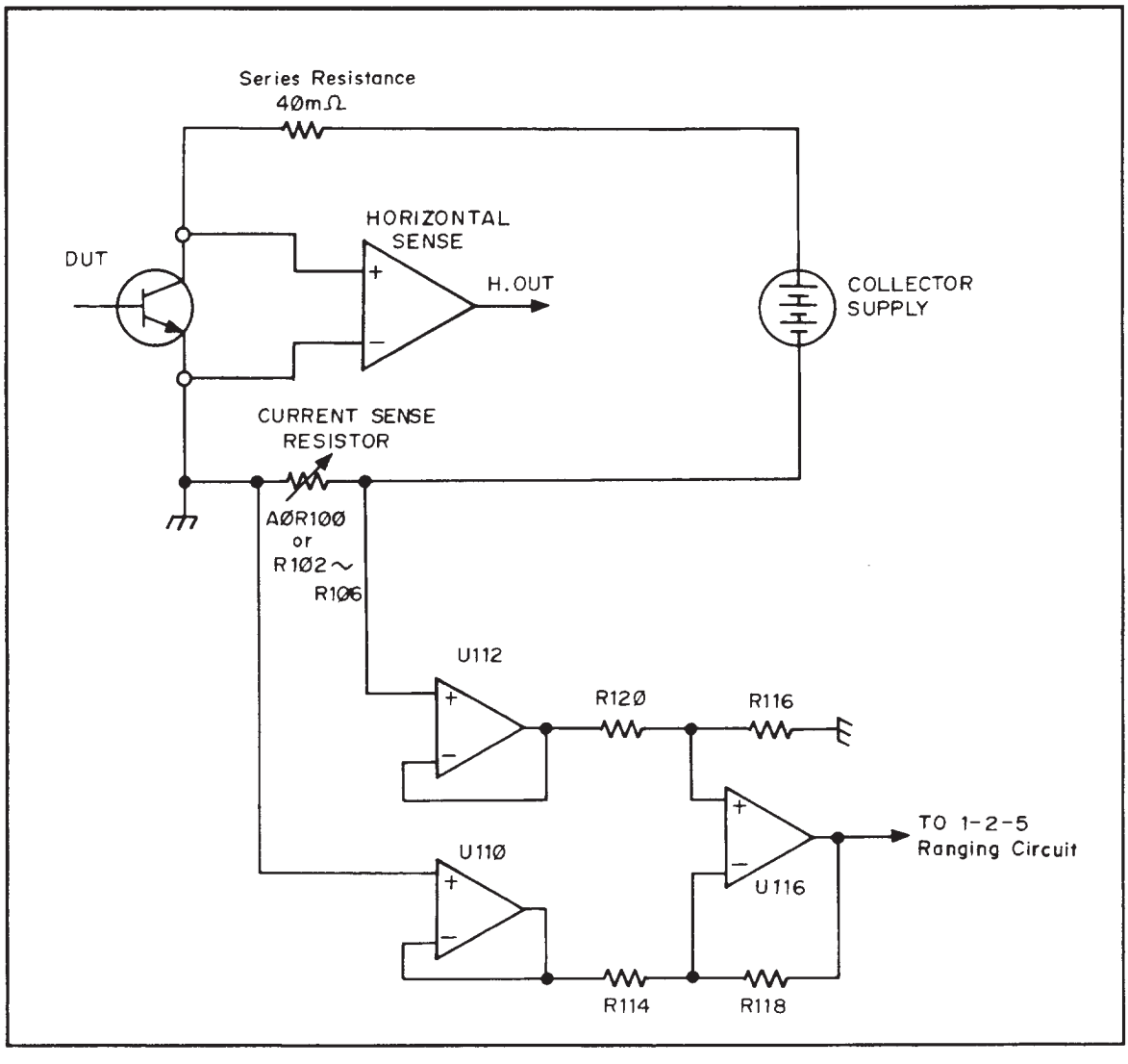


Figure 2-15. Simplified block diagram of vertical sense circuit.

1-2-5 Ranging

The 1-2-5 ranging circuit consists of eight-to-one decoder U130, operational amplifier U146 and resistors R122 to R152. This circuit amplifies or attenuates the measurement signals from the current sense circuit according to the setting of the VERTICAL VOLTS/DIV control on the front panel and sends them to the A5 Display Control board. The gain of this circuit is selected as 0.4, 1, ,2, 4, 10, 20 or 40 by control signals V1, V2 and V3.

Looping Compensator

The looping compensator circuit consists of C400 to C410, U412, U450 and R412. This circuit removes measurement error due to looping. It operates only in high voltage mode when the collector voltage is high and the current measurement sensitivity is high,

Looping is a phenomenon that occurs because of current flow in the current sense resistors owing to stray capacitance between the collector supply and ground. This can occur at two points, A and B in Figure 2-16. There are accordingly two looping compensators: a cancel

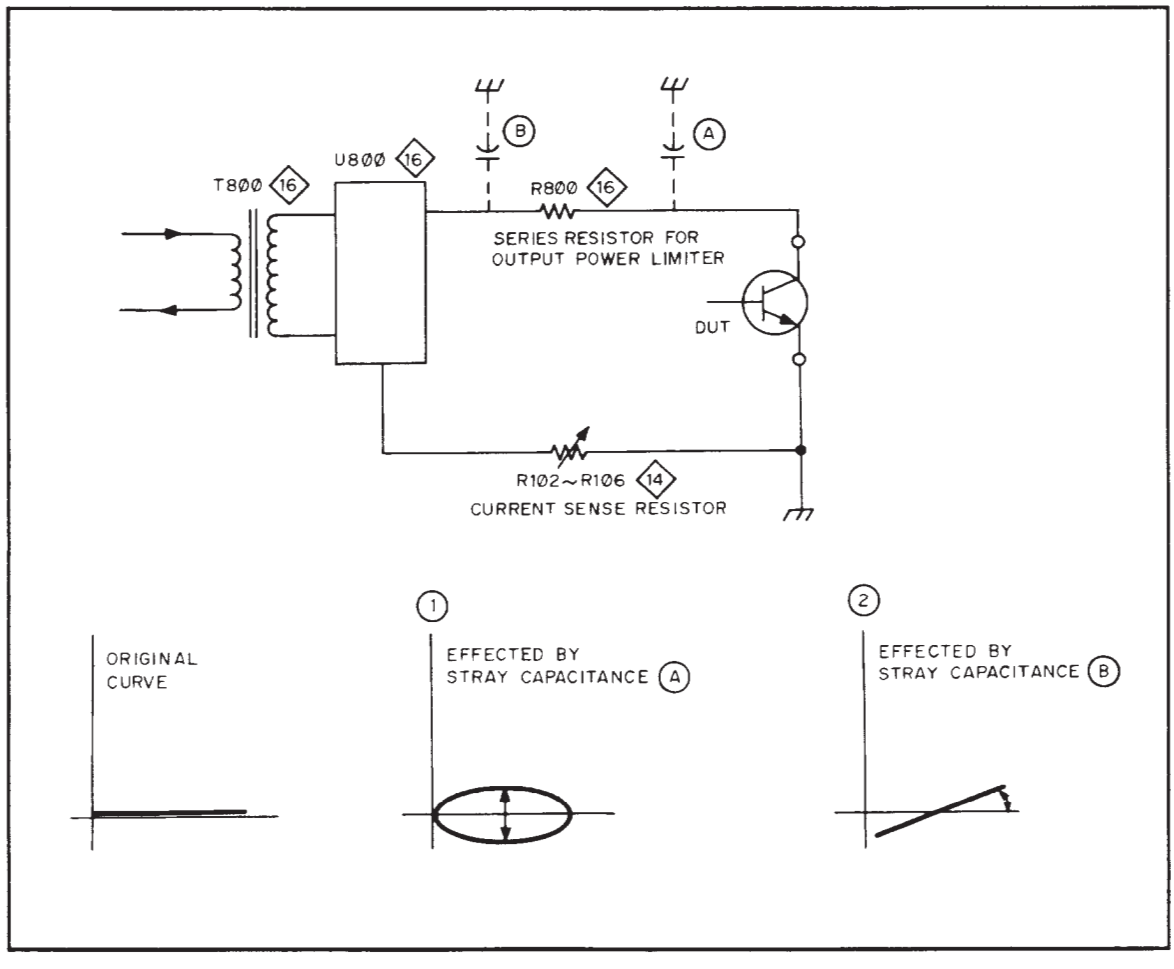


Figure 2-16. Effect of stray capacitance.

circuit to remove the effect of stray capacitance A, and a tangential circuit to remove the effect of stray capacitance B. The cancel circuit consists of C400 to C410, R412 and U412. The tangential circuit consists of U450A, U450B, and R450 to R464 and C464. (See Figure 2-17.) The output from these compensators is amplified by U422. The gain is selected by U420 according to signals V6 and V7. The output of U422 is added to the measurement signal in U116, thus subtracting the voltage caused by stray capacitance. The LOOPING COMPENSATION knob on the front panel controls the amplitude of the output signal from the looping compensators circuit.

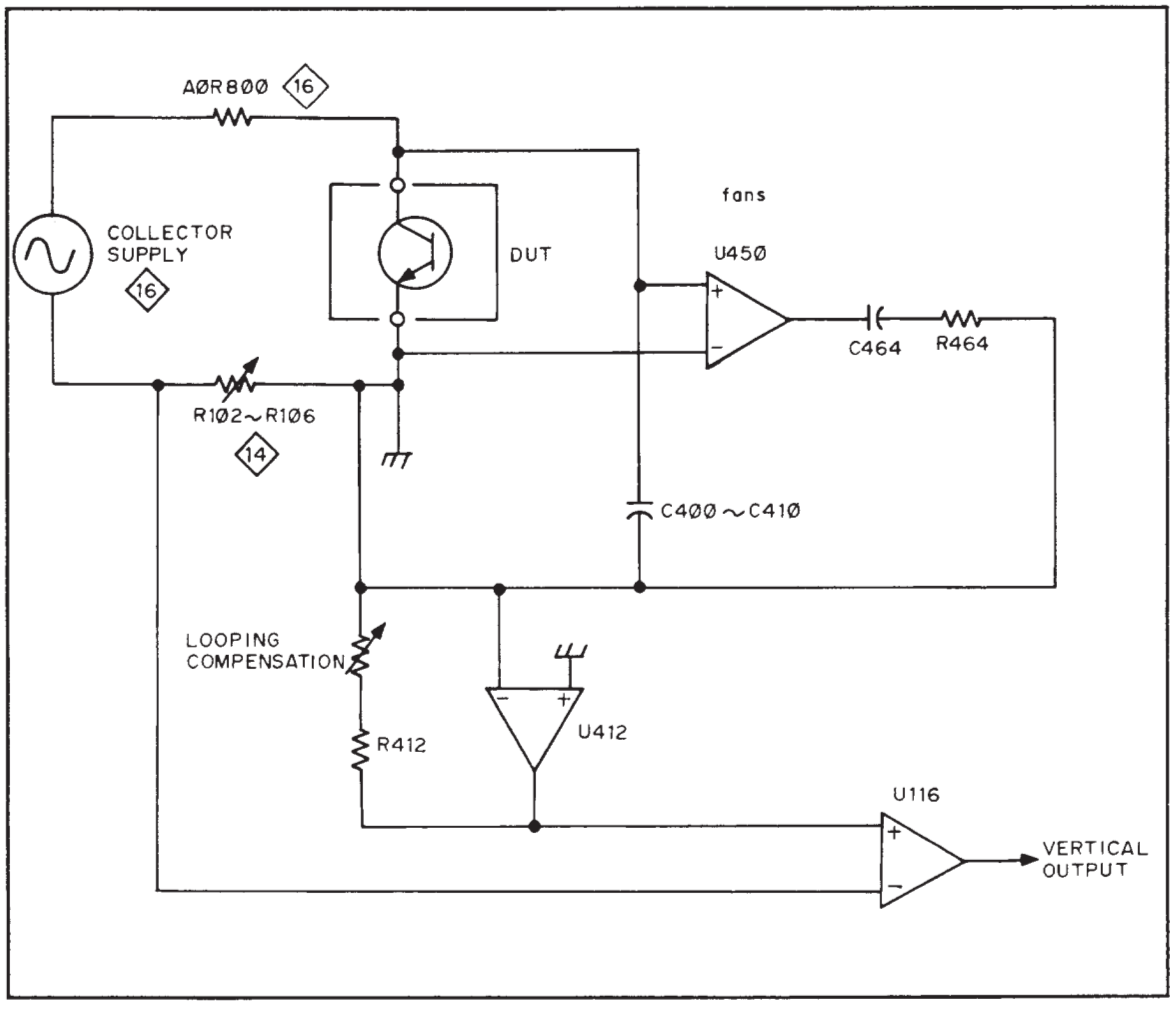


Figure 2-17. Simplified block diagram of looping compensator.

15 Horizontal Sense

This circuitry consists of the voltage sense circuit, 1-2-5 ranging circuit, and control latch circuit. It measures the collector voltage or base voltage of the DUT.

Control Latch

The control latch circuit consists of U600, U606, U608 and U610. U600 is an address decoder. U606 and U610 latch control signals from the microprocessor on the A2 CPU board. U608 drives relays K202 to K302. Tables 2-11 and 2-12 show the relationships between the control signals and the range setting of the HORIZONTAL VOLTS/DIV control.

Table 2-11
Range Control of Horizontal Sensing at COLLECTOR Range

HORIZONTAL VOLTS/ DIV (Collector Range)		Control Signal										
		X1	X10-2	X10-3	VBE	VGS	H1	H2	H3	H4	H5	H6
High Voltage (3kV Peak) Mode	500 V	0	0	1	0	0	1	1	0	0	1	1
	200 V	0	0	1	0	0	1	1	0	0	0	1
	100 V	0	0	1	0	0	1	1	0	0	1	0
	50 V	0	1	0	0	0	0	1	0	0	1	1
High Voltage (300 V Peak) Mode	50 V	0	0	1	0	0	1	1	0	0	1	1
	20 V	0	0	1	0	0	1	1	0	0	0	1
	10 V	0	0	1	0	0	1	1	0	0	1	0
	5 V	0	1	0	0	0	0	1	0	0	1	1
High Current Mode	5 V	1	0	0	0	0	0	0	0	1	1	1
	2 V	1	0	0	0	0	0	0	0	1	0	1
	1 V	1	0	0	0	0	0	0	0	1	1	0
	500 mV	1	0	0	0	0	0	0	1	0	1	1
	100 mV	1	0	0	0	0	0	0	1	0	0	1
	200 mV	1	0	0	0	0	0	0	1	0	1	0

Table 2-12
Range Control of Horizontal Sensing at STEP GEN Range

HORIZONTAL VOLTS/ DIV (Step Gen Range)		Control Signal										
		X1	X10-2	X10-3	VBE	VGS	H1	H2	H3	H4	H5	H6
Current Source	5 V	0	0	0	1	0	0	0	0	1	1	1
	2 V	0	0	0	1	0	0	0	0	1	0	1
	1 V	0	0	0	1	0	0	0	0	1	1	0
	500 mV	0	0	0	1	0	0	0	1	0	1	1
	200 mV	0	0	0	1	0	0	0	1	0	0	1
	100 mV	0	0	0	1	0	0	0	1	0	1	1
Voltage Source	5 V	0	0	0	0	1	0	0	0	1	1	1
	2 V	0	0	0	0	1	0	0	0	1	0	1
	1 V	0	0	0	0	1	0	0	0	1	1	0
	500 mV	0	0	0	0	1	0	0	1	0	1	1
	200 mV	0	0	0	0	1	0	0	1	0	0	1
	100 mV	0	0	0	0	1	0	0	1	0	1	0

Voltage Sense

The voltage sense circuit is divided into a circuit that measures collector voltage in high voltage mode and a circuit that measures base voltage or collector voltage in high current mode.

The circuit that measures collector voltage in high voltage mode consists of U232, U234, U250, U260, R200, R204, R208 and other components. Figure 2-18 shows a block diagram. The collector voltage is divided by R200, R204 and R208 and input to U230. The voltage division ratio is 1/100 and 1/1000. The voltage applied to U230 includes a voltage due to the current flowing through the current sensing resistors R102 to R106. This voltage is detected by U232 and U234 and subtracted in U260. The resistors, labeled RG, RE and RF in diagram 13, are switched between 1/100 and 1/1000 according to the voltage division ratio.

The circuit that measures base voltage or collector voltage in high current mode consists of U300, U234, U260 and other components. Figure 2-19 shows a simplified block diagram. The gain of this circuit can be switched between 1 and 0.1. The power supply of U300 is floated by Q316 to Q322, VR316, VR322 and other components to extend the input voltage range of U300 to +50 V to -50 V.

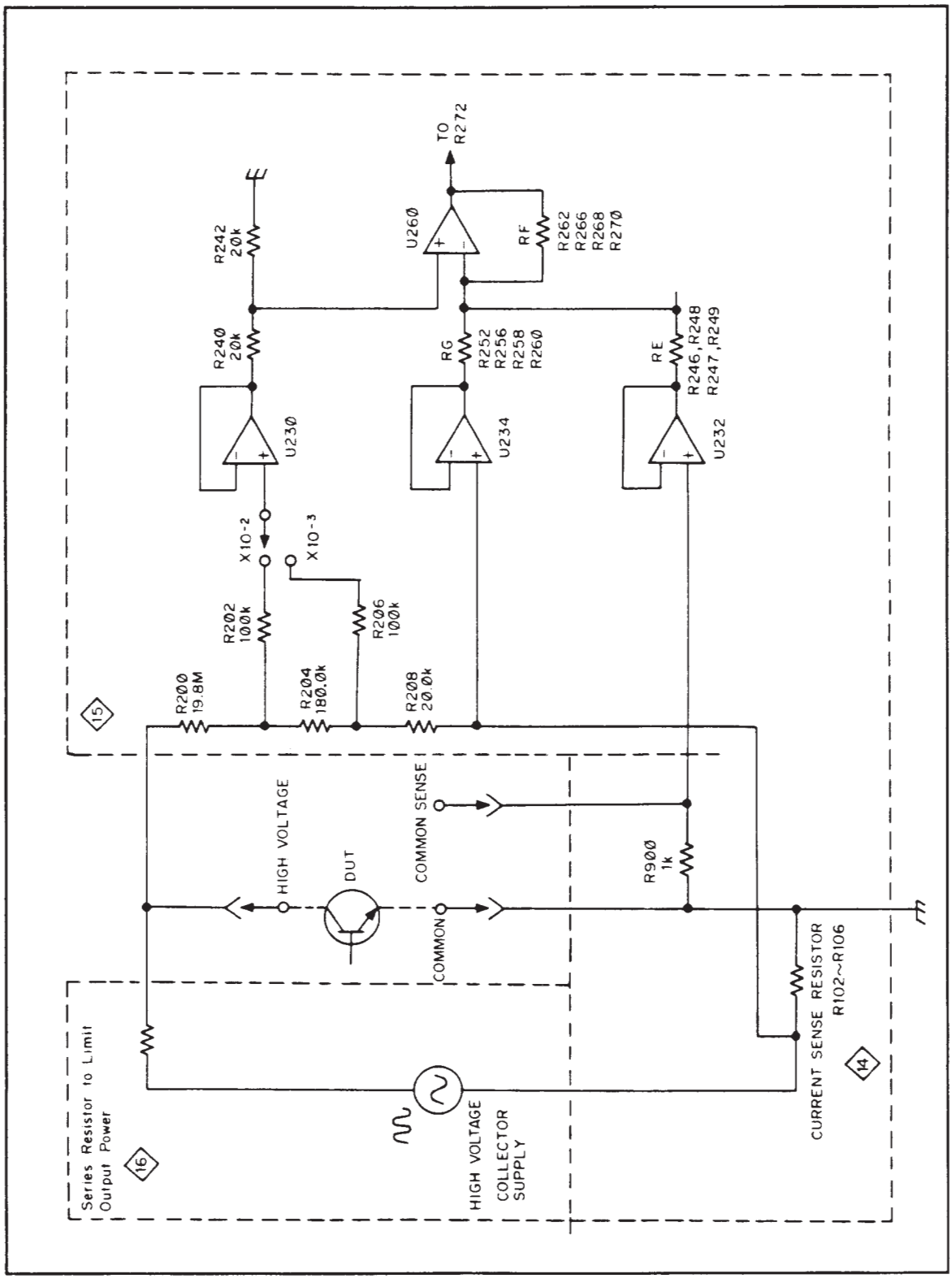


Figure 2-18. Simplified block diagram of horizontal sensing in high voltage mode.

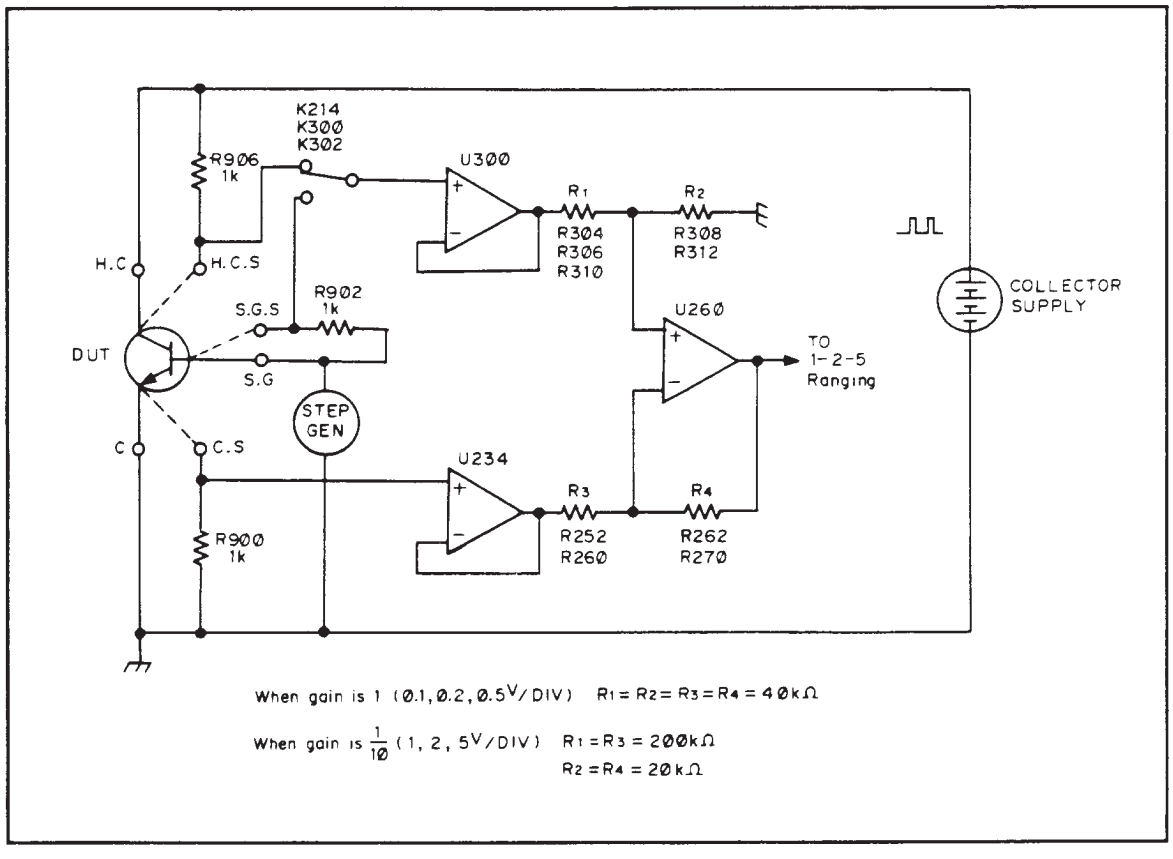


Figure 2-19. Simplified block diagram of collector voltage measurement in high-current mode and base voltage measurement.

1-2-5 Ranging

The 1-2-5 ranging circuit consists of U270, U280, R272, R274, R278 and R280. The gain of this circuit can be set to 0.4, 1 or 2 by control signals H5 and H6.

16 Collector Supply Interface and High-Voltage Output

This circuit consists of an interlock and overheat circuit, high-voltage control circuit, high-current control circuit and high-voltage output circuit. The collector supply interface and high voltage output controls the collector supply output, step generator output and collector supply output relays by means of an interlock.

Interlock and Overheat Circuit

The interlock and overheat circuit consists of relays K700 and K704, temperature switches A0S92 (diagram 11), A0S904 and A0S906, microswitches A0S600, A0S602, A0S1000, A0S1002 and A0S1004 (diagram 27), monostable multivibrators U724A and U724B, and transistor Q740. Figure 2-20 is a simplified drawing of this circuit.

When the Text Fixture is not connected to the test fixture connector or the protective cover of the Test Fixture is open, this circuit shuts off the collector supply and step generator outputs to prevent the output of dangerous voltages. A0S600 and A0S602 detect whether the Test Fixture is connected to the test fixture connector. A0S1000, A0S1002 and A0S1004 detect whether the protective cover of the Test Fixture is open.

A0S92, A0S904 and A0S906 are temperature switches that operate at 60° C or 70° C. A0S92 detects overheating of MOS FETs Q438, Q440, Q538 and Q540 on the A6 Collector Supply Output board. A0S904 detects overheating of series resistor A0R800 in the high-voltage output circuit. A0S906 detects overheating of series resistor A0R960 in the high-current output circuit. If overheating is detected, the collector supply and step generator outputs are shut off.

When the Text Fixture is removed from the 371A, the protective cover of the Test Fixture is opened, or the 371A overheats, U724A outputs a positive pulse at pin 13. When the COLLECTOR SUPPLY HIGH VOLTAGE breaker on the front panel is set to the DISABLED position, U724B outputs a positive pulse at pin 5. These pulse signals cause an ARC(L) signal at the collector of Q740. The ARC(L) signal stops collector signal output from the A3 A/D board immediately before the contact of the collector supply output relay breaks, preventing arcing at the collector supply output relay contact.

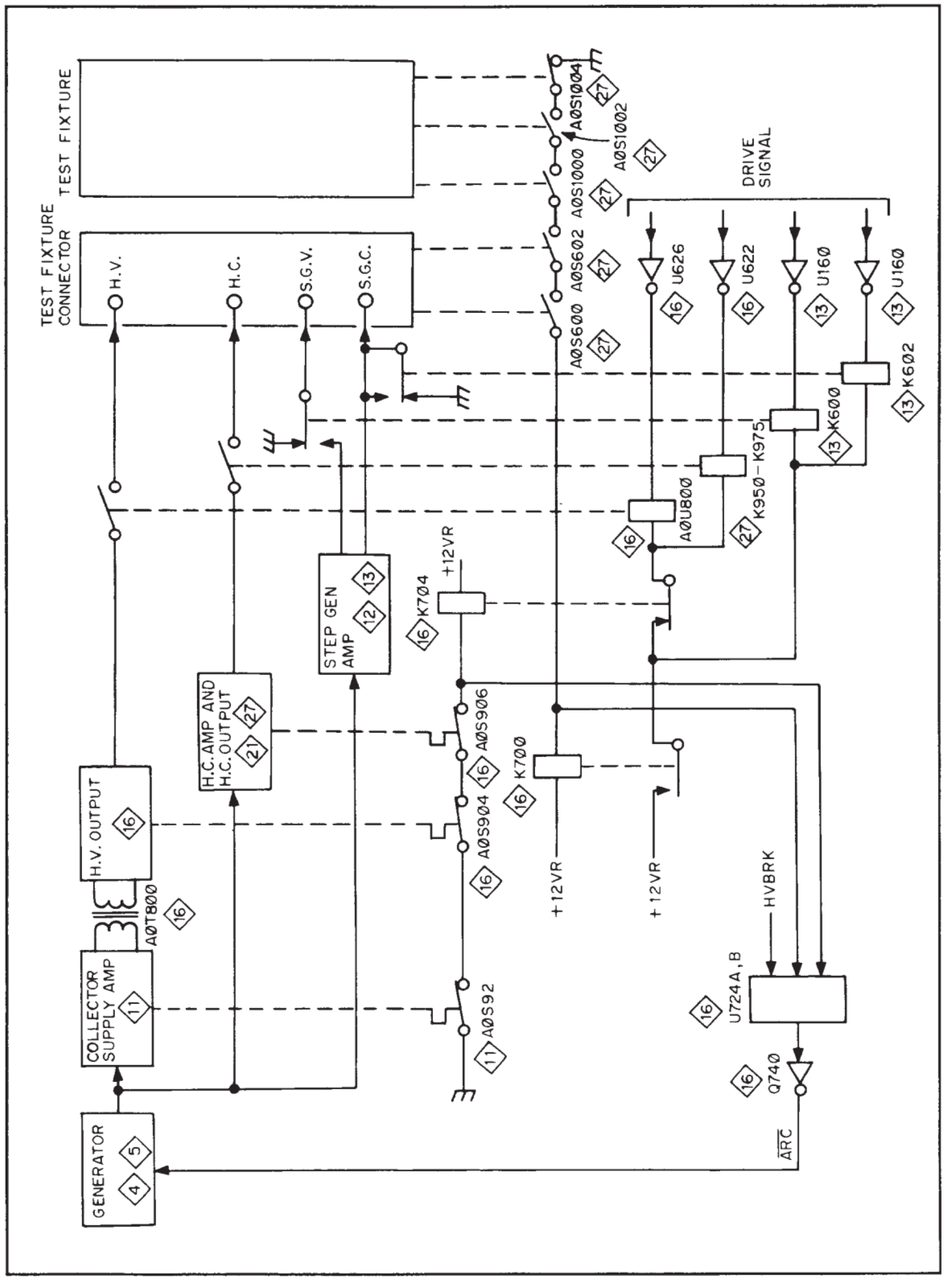


Figure 2-20. Interlock and overheat circuit.

High-Voltage Control

The high-voltage control circuit consists of eight-bit addressable latch U624 and transistor array U626. This circuit latches control signals from the microprocessor on the A2 CPU board and drives the relays in the high voltage relay module A0U800 in the high output circuit. Table 2-13 lists the relay control signals.

Table 2-13
Relay Control Signals for HV Collector Supply

COLLECTOR SUPPLY Setting			Relay Control Signal		
Mode	**Polarity**	**Peak Power Watts**	**30 W**	**+3 KV**	**-3 KV**
High Voltage	NPN+	3 W, 300 mW	1	1	0
		3 W, 30 mW	0	1	0
	PNP-	30 W, 300 mW	1	0	1
		3 W, 30 mW	0	0	1

High-Current Control

The high-current control circuit consists of 8-bit addressable latch U620 and transistor array U662. This circuit latches control signals from the microprocessor on the A2 CPU board and drives relays on the A31 Relay board. Table 2-14 lists the relay control signals.

Table 2-14
Relay Control Signals for HC Collector Supply

COLLECTOR SUPPLY Setting			Relay Control Signal		
Mode	**Polarity**	**Peak Power Watts**	**3 KW**	**+3 0 V**	**-30 V**
High Current	NPN+	3 kW	1	1	0
		300 W	0	1	0
	PNP-	3 kW	1	0	1
		300 W	0	0	1

High-Voltage Output

The high-voltage output circuit consists of transformer A0T800, high voltage relay module A0U800 and resistor A0R800. This circuit steps up the signal from the collector supply amplifier on the A6 Collector Supply Output board to a maximum 3000 V. A0R800 limits the maximum output power to 3 W (30 mW) or 30 W (300 mW).

17 Main Key

The main key circuitry is located on the A11 Main Key board, and consists of the bus buffer circuit, the address decoder circuit, the variable control circuit, and the switch matrix circuit. These circuits interface signals between the A2 CPU board and the A12 Sub Key board, and control set ups such as; VERTICAL CURRENT/DIV, HORIZONTAL VOLTS/DIV and STEP/OFFSET AMPLITUDE settings, and control focus.

Bus Buffer

Bus buffer U120 isolates the data bus (D0 through D7) from the A2 CPU board. Once through U120, the signal titles are changed to KD0 through KD7 and are sent to the A12 Sub Key board. The direction of buffering is controlled by the RD(L) select signal from the A2 CPU board. This buffering function is activated while the KEY(L) signal from the A2 CPU board is activated low.

Address Decoder

The address decoder consists of two-to-eight demultiplexers U140 and U160 and dual two-to-four demultiplexer U180. The circuit decodes address signals A2 through A7 from the A2 CPU board and generates corresponding chip select signals L0(L) through L7(L) and K0(L) through K6(L). The decoding function of U140 and U160 is activated when control signal KEY(L) and function and RD(L) (for U160) or WR(L) (for U140) are activated low. The KEY(L) signal is activated low when the microprocessor on the A2 CPU board accesses address A0000 (hex) through A7FFF (hex). U180A is activated only when the decoded signal from U160 is the key read signal for S210, S220 and S230, and U160 transfers the chip select signal from pin 7. This selection occurs when the microprocessor accesses address A007x (hex) and A7(L), RD(L) and KEY(L) signals are all activated low. All these decoded signals read data from the key or switch matrix and write to the LED display.

Variable Control

This circuit consists of variable resistors R302, R312, R330, R340, R350, R360 and R370 and resistors R300, R304, R310, R314, R320 and R324. This circuit adjusts the NON STORE/STORE/VIEW INTENSITY, the REF INTENSITY, the READOUT /CURSOR INTENSITY, the FOCUS, the GRAT ILLUM, the VERT POSITION, the HORIZ POSITION and the TRACE POSITION.

Switch Matrix

The switch matrix circuit consists of rotary switches S210, S220 and S230 and diodes CR210 through CR236. S210 and its associated diodes CR210, CR213, CR214 and CR216 set the vertical current per division as selected by the VERTICAL CURRENT/DIV control. S230 and diodes CR230, CR232, CR234 and CR236 set the STEP/OFFSET AMPLITUDE. Address signals A2 and A3 from the A2 CPU board are decoded by U180A, and applied as A0070, A0074 and A0078 to the switch matrix circuit. Depending on the switch setting, these signals are transferred to data bus KD0 through KD3 through switches and diodes (see Table 2-15).

Table 2-15
Switch Matrix Data Input/Output

Input	Outupt	Switch	Data
A0070	KD0	S210	VERTICAL LSB
	KD1		VERTICAL
	KD2		VERTICAL
	KD3		VERTICAL MSB
A0074	KD0	S220	HORIZONTAL LSB
	KD1		HORIZONTAL
	KD2		HORIZONTAL
	KD3		HORIZONTAL MSB
A0078	KD0	S301	STEP/OFFSET LSB
	KD1		STEP/OFFSET
	KD2		STEP/OFFSET
	KD3		STEP/OFFSET MSB

18 Sub Key

The sub key circuit is located on the A12 Sub Key board, and consists of the front panel display circuit and the front panel key matrix circuit. The circuit is controlled by the A11 Main Key board; it displays the main key setting information and transfers key input data from the key matrix.

Front Panel Display

This circuit consists of eight-bit addressable latches U100, U110, U120, U130, U140, U150 and U160, BCD-to-seven segment decoder/latch/drivers U200 and U400. LEDs DS100 through DS157 and seven segments numerical displays DS200 and DS210. This circuit controls and drives the front-panel LEDs and the numerical display under the control of control signals L0(L) through L7(L) and KD0 and address signals A1 through A3. This display information is sent from the A2 CPU board and processed through the A11 Main Key board.

Among these signals, L0(L) through L7(L) are chip select signals, A1 through A3 are display codes, and KD0 is the enable signal. The chip select signals select one latch among U100 through U160 to fetch and store display information. The enable signal enables information fetching and storing. The stored information is transferred directly to the corresponding LED, with the exception of U160. The signals ID0 through ID7 are the 371A memory index display information from U160. These signals are decoded to BCD by seven-segment decoder/latch/drivers U200 and U400 and transferred to numerical displays DS200 and DS210.

Front Panel Key Matrix

This circuit consists of keys S500 through S567 and diodes CR500 through CR567, connected as a matrix. The key matrix sweep signals are applied to the matrix as row signal K0(L) through K6(L). The resultant output signals are obtained from the column of the matrix KD0 through KD7.

19a Lower Key

This circuitry is located on the A14 Lower Key & FDD board, and consists of the bus buffer circuit, the address decoder circuit, the rotary encoder circuit, and the status port circuit. These circuits interface signals with the A2 CPU board, set up collector supply VARIABLE settings, and transfer the status data to the A2 CPU board.

Bus Buffer

The bus buffer circuit consists of bus buffer U100. This circuit isolates the data bus (D0 through D7) from the A2 CPU board. After isolation, names of these signals are changed to LD0 through LD7. The direction of buffering is controlled by the RD(L) signal from the A2 CPU board. This buffering function is activated when the L-KEY(L) signal from the A2 CPU board is activated low.

Address Decoder

This circuit consists of dual two-to-four demultiplexer U140, and decodes address signals A4 and A5 from the A2 CPU board, generating corresponding chip select signals STATUS, CCW(L) and CW(L). The L-KEY(L) signal is activated low when the microprocessor accesses address A8000 (hex) through AFFFF (hex). All these decoded signals read data from the status port of the rotary encoder.

Rotary Encoder

The rotary encoder circuit consists of hex inverter U200, dual D flip-flop U220, dual four-bit binary counters U240 and U260, octal tri-state D flip-flops U300 and U320 and associated components. U240 and U260 operate as up-and-down counters. Rotary encoder A0A140 encodes its rotation into the number of pulses that is proportional to the angle of rotation; this circuit counts these with the up-or-down counter according to the direction of rotation. The pulse shape of the generated pulse train is improved by U200, then sent to U240 and U260. The rotary encoder generates two pulse trains; each is 90 degrees away from the other. Making use of this phase difference, the direction of rotation can be detected.

If A0S140 rotates clockwise, the pulse train only appears at U220 pin 8, and up counter U240 counts, because the D flip-flop is cleared by the leading pulse. Conversely, if A0S140 rotates counter-clockwise, the pulse train appears only at U220 pin 6, and down counter U260 counts down. This counted data is periodically cleared by the microprocessor of the A2 CPU board and as a result, the counted data expresses the velocity of rotation during a given interval. The rotation velocity data is applied to U300 and U320. The microprocessor on the A2 CPU board reads the rotating velocity at address A8000 (hex) and A8010 (hex).

Status Port

This circuit consists of hex tri-state bus buffer U400, and reads the 371A status information such as HVBRK (HIGH VOLTAGE breaker information), CSPD(L) (collector supply power down), OH1, OH2 (overheat 1, 2) and 12VE (interlock). To obtain the data, the microprocessor reads address A8020 (hex).

19b FDD Interface

This circuitry is located on the A14 Lower Key & FDD board. The circuit consists of the bus buffer circuit, the address decoder circuit, the FDD controller circuit and the FDD bus driver circuit. The function of this circuit is to communicate with the FDD unit.

Bus Buffer

The bus buffer circuit consists of U500 and U520; it isolates data bus D0-D7, address bus A1 A5, A6 and control signals RD(L), WR(L), and FDD(L). After isolation, the names of data bus signals are changed to DF0 through DF7. Because the data bus (DF0 through DF7) is a bidirectional bus, data bus driver U500 switches the direction of the buffer under the control of the RD(L) signal. The address bus and control signals are unidirectional signals from the A2 CPU board and are isolated by U520.

Address Decoder

The address decoder circuit consists of two-to-four demultiplexer U540B. This circuit generates chip select signals for FDD controller U800 and tri-state buffer U700 by decoding address signals of A5 and A6, which are derived from the A2 CPU board. The decoded signals are transferred to the corresponding circuit of the board when the FDD(L) control signal is asserted. Address signal A1 is used to select internal registers of FDD controller U800.

FDD Controller

The FDD controller circuit consists of FDD controller U800. This circuit manages all interfacing procedures needed to complete data communication. Octal tri-state buffer U700 reads the interrupt signal from FDD controller U800. To obtain the data, the microprocessor reads address B8020(hex).

FDD Bus Driver

The FDD bus driver consists of U840 and U860; this circuit transfers the signals between the FDD controller and the FDD bus.

20 High-Current Power Supply

This circuitry operates as the power supply for the collector supply circuit in high-current mode. It consists of capacitors C400 and C418, comparator U310, opto-isolators U312 and U330, transistor A0Q902, diode CR100 and associated components. U310 and U312 form a control circuit that switches A0Q902 so that the charging voltage of C400 and C418 is approximately 60 V. As C400 to C418 are charged and the voltage rises, the voltage at pin 6 of U310 also rises: when it exceeds the voltage at pin 5 of U310, the output from U310 goes low. The low output from U310 turns opto-isolator U312 on, removing base drive from A0Q902. A0Q902 turns off the charging ceases. In high voltage mode, the CHARGE(L) signal goes high, turning on opto-isolator U330, which also stops the charging of C400 to C418. This prevents noise caused by charge current.

21 High-Current Amplifier

This circuitry consists of a high-current pulse generator circuit, high-current pulse filter circuit, high-current pulse driver circuit, power MOS FETs circuit and high-current output circuit. Figure 2-21 shows a block diagram and Figure 2-22 shows waveform processing.

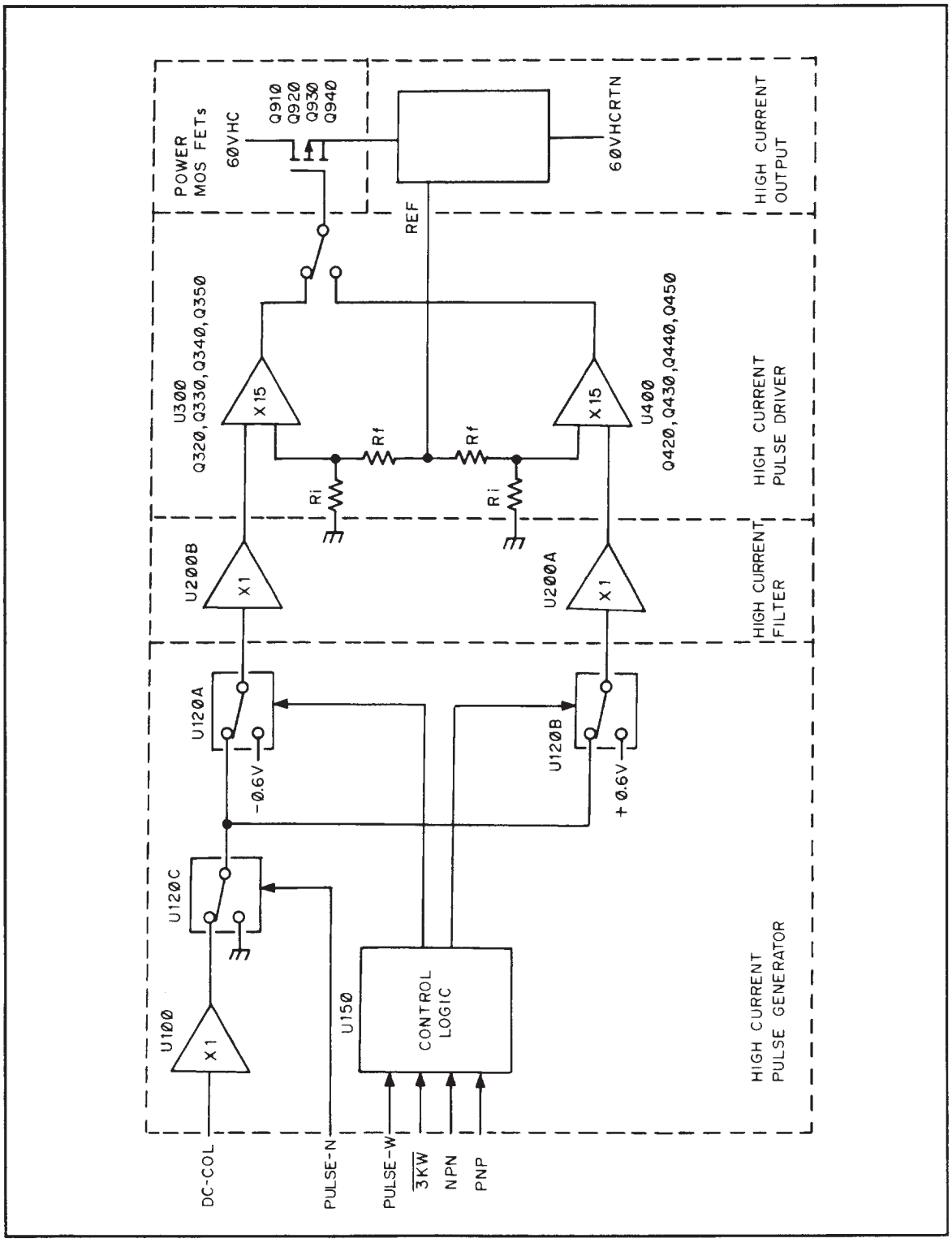


Figure 2-21. Simplified block diagram of high-current amplifier.

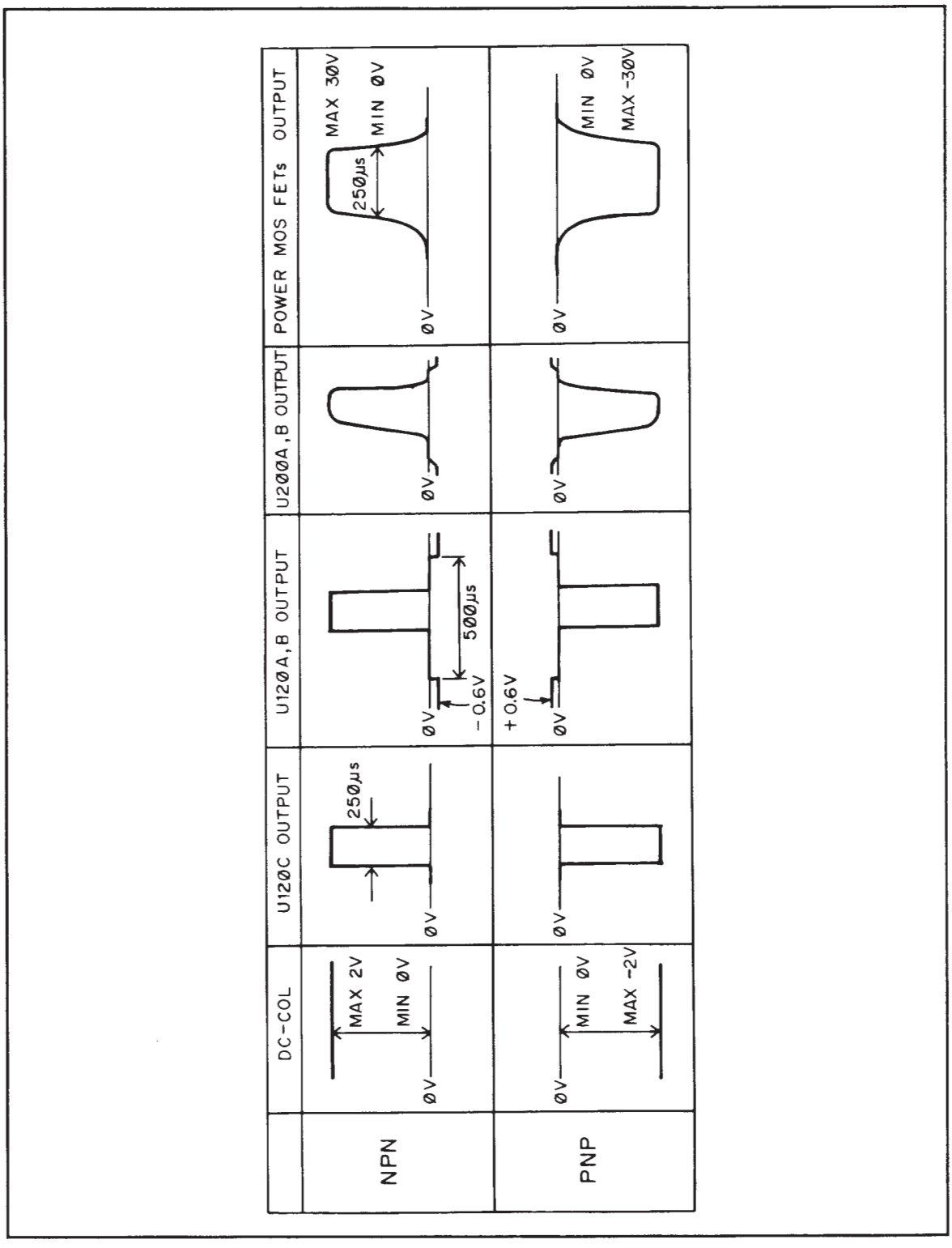


Figure 2-22. Waveform processing of high-current amplifier.

High-Current Pulse Generator

The high-current pulse generator consists of operational amplifier U100, analog switches U120A, U120B and U120C, and NAND gates U150A, U150B, U150C and U150D and associated components. It converts the DC-COL signal to two pulse signals for the high current pulse driver circuit, one for NPN and the other for PNP.

High-Current Pulse Filter

The high-current pulse filter circuit, consisting of operational amplifiers U200A and U200B, is a low-pass filter with a cutoff frequency of 10 kHz.

High-Current Pulse Driver

The high-current pulse driver circuit comprises an NPN driver consisting of operational amplifier U300 and transistors Q320, Q330, Q340 and Q350, and a PNP driver consisting of operational amplifier U400 and transistors Q420, Q430, Q440 and Q450. This circuit forms an amplifier with a gain of 15, which drives the power MOS FETs circuit.

Power MOS FETs

The power MOS FETs circuit, shown in diagram 27, consists of eight power MOS FETs connected in parallel: Q910-1, Q910-2, Q920-1, Q920-2, Q930-1, Q930-2, Q940-1, and Q940-2.

High-Current Output

The high current output circuit consists of the A30 Connector board and A31 Relay board. This circuit connects the power MOS FETs circuit as a grounded drain circuit when the collector supply POLARITY is NPN+, and as a grounded source circuit when the collector supply POLARITY is PNP-, thereby supplying high current to the DUT. See Figure 2-23.

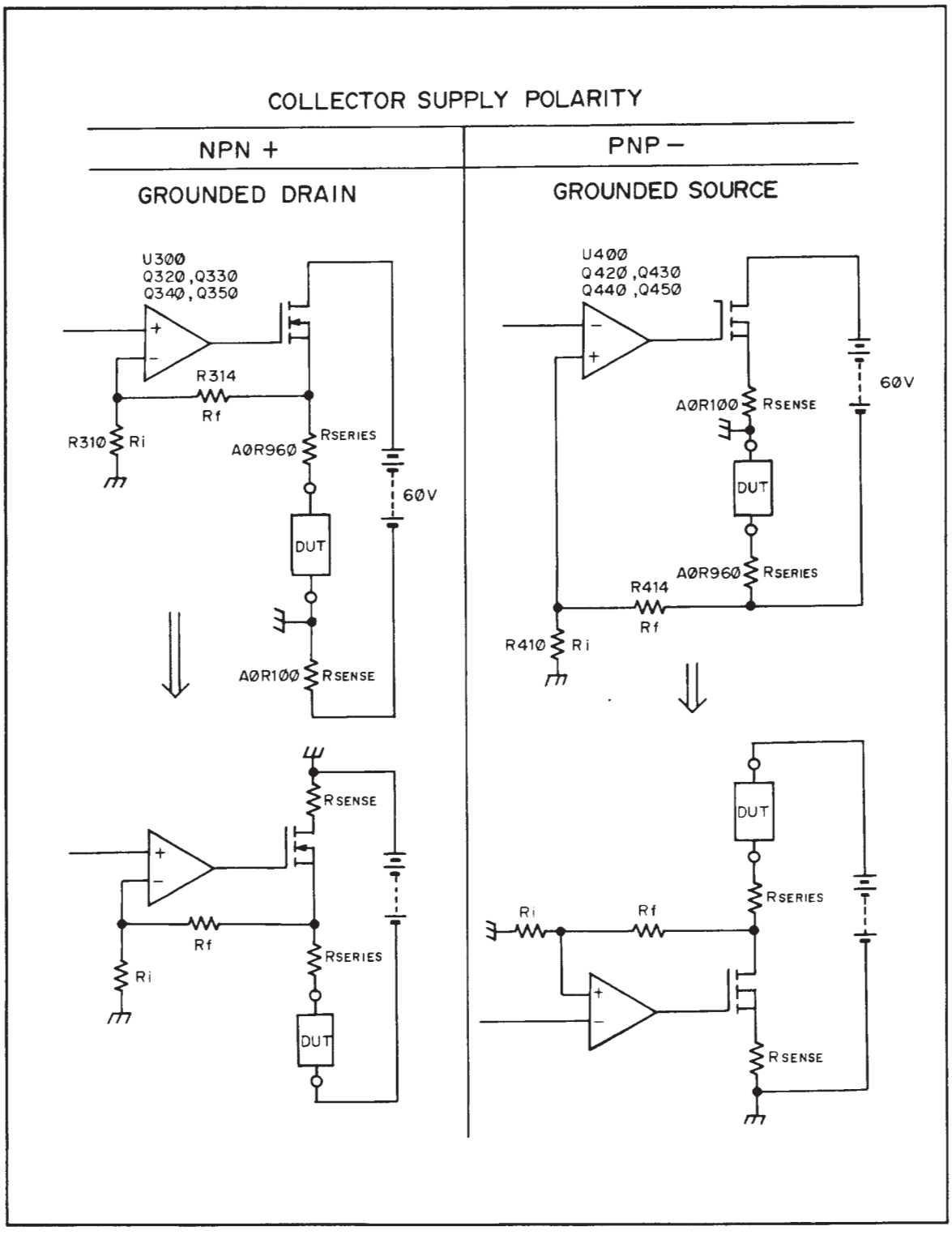


Figure 2-23. Power MOS FET connection.

22 CRT Output Amplifier

The CRT output amplifier is located on the A18 Output board, and consists of the horizontal output amplifier, the vertical output amplifier, and the Z-axis amplifier. The horizontal and vertical output amplifiers convert current signals from the preamplifier of the A5 Display Control board into deflection plate driving voltages for the CRT. The Z-axis amplifier converts the current signal from the unblanking logic of the A5 Display Control board into the driving voltage for the grid bias and DC restorer circuit of the A20 H.V. Regulator board. The horizontal and vertical output amplifiers are similar, so only the horizontal output amplifier is discussed here.

Horizontal Output Amplifier

The horizontal output amplifier consists of transistors Q100, Q102, Q110, Q112, Q120, Q122, Q130 and Q132, Schottky diodes CR102 and CR104, Zener diode VR100, diodes CR100, CR110 and CR112 and associated components. This circuit symmetrically amplifies both +H and -H signals. Thus, only the -H amplifier circuit is discussed here.

The bias network, which is composed of CR100 and R100, sets up base bias voltage of Q100. This constant voltage is obtained from the subtraction of the voltage drop at diode CR100 from +6.5 V. As a result, the emitter voltage of Q100 is nearly constant +6.5 V, which forces the preamplifiers of the A5 Display Control board to operate as a current amplifier, making the output signal (-H) into constant voltage and variable current. The output stage of this amplifier consists of Q110, Q120 and Q130 and uses a self-biasing configuration, where the bias current Q110 is supplied through R130. The voltage at the collector of Q120 balances at a level where the current through R130 and CR110 raises the voltage at the collector of Q100 to about zero volts. At this point any change in current through Q100 results in an equal but opposite change in current through R130. The output voltage (-H DEF) change is equal to the change in voltage across R130. Transistor Q130, Zener diode VR100 and resistor R128 form a constant current supply circuit for the output stage. Schottky diodes CR102 and CR104 prevent excessive signal difference.

Vertical Output Amplifier

This circuit consists of transistors Q200, Q202, Q210, Q212, Q220, Q222, Q230 and Q232, Schottky diodes CR202 and CR204, Zener diode VR200, diodes CR200, CR210 and CR212 and associated components. This circuit operates in the same way as the horizontal output amplifier description.

Z-Axis Amplifier

The Z-Axis amplifier consists of transistors Q300, Q310, Q312, Q320 and Q330, Schottky diode CR306, diodes CR300, CR302 and CR304 and associated components. The circuit converts the current signal from the unblanking logic of the A5 Display Control board into the driving voltage for the grid bias and DC restorer circuit of the A20 H.V. Regulator board. The bias network, which is composed of CR300 and R300, sets the base bias voltage of

Q300 to a constant voltage. This constant voltage is obtained through the subtraction of voltage drop at diode CR300 from +6.5 V. As a result, the emitter voltage of Q300 is an almost constant voltage of +6.5 V and this, in turn, forces the unblanking logic of the A5 Display Control board to operate as a current amplifier and the output signal Z to be a constant voltage and varying current.

The signal current Z from the A5 Display Control board via Q300 develops a voltage across R306. When the Z signal is blanked, the developed voltage turns off diodes CR302 and CR304. Schottky diode CR306 prevents this voltage from exceeding approximately +0.4 V. Q310, Q312, Q320 and Q330 and associated components form a current-to-voltage inverting amplifier. For a blanked signal, the output voltage from the collectors of Q320 and Q330 is approximately +3.8 V, and this voltage provides current flow through feedback resistor R308 to bias resistor R310. This provides bias voltage for Q310 and Q312. Because diodes CR302 and CR304 are reverse biased and cut off, they don't affect the output of Q310 and Q312.

To unblank the CRT, the unblanking logic of the A5 Display Control board reduces the current signal Z. This in turn reduces the voltage across R306 and turns on diodes CR302 and CR304 by forward biasing. The forward-biased diodes sink bias currents of Q310 and Q312 away from each base terminal. These reduced bias currents lower the Q310 base bias and increase Q312 base bias. As a result, the collectors of Q320 and Q330 are forced high, so that the current through R308 can maintain the forward bias current of diodes CR302 and CR304. This output voltage supplies current through R308 to diodes CR302 and CR304. If this current is equal to the current that can maintain diodes CR302 and CR304 at the cut off level, the circuit balances. The maximum output voltage of the amplifier is approximately +25 V and CRT intensity may be set anywhere between these limits, depending on the value of the Z current signal.

23 CRT HV Power Supply

The CRT HV power supply is located on the A20 H.V. Regulator board. This circuit consists of the high-voltage generator circuit, the high voltage regulator circuit, the grid bias and DC restorer circuit, the focus amplifier and DC restorer circuit, the anode multiplier circuit, the rectifier rilter circuit, and the CRT circuit. The CRT HV power supply circuitry provides the various high voltage operating potentials required by the CRT, and displays the 371A data.

High-Voltage Generator

This circuit consists of transistor Q100 and transformer T100 and associated components. Q100 and the primary windings of T100 are connected to form an oscillator. The frequency of oscillation is approximately 20 kHz. The 20 kHz AC voltage includes high voltage in the secondary windings of T100.

High-Voltage Regulator

The high-voltage regulator circuit consists of U200A and associated components. This circuit monitors the cathode voltage of the CRT and controls the base bias current of Q100. Because Q100 produces the 20 kHz AC supply voltage for T100, base current control of Q100 results in a controlled high voltage output from the T100 secondary windings.

Grid Bias and DC Restorer

The grid bias and restorer circuit provides the CRT control-grid bias voltage and couples both the DC and low-frequency components of the Z-OUT drive signal to the CRT control-grid. The circuit operates by impressing the grid bias setting and the Z-OUT drive signal on an AC waveform. This shaped waveform is then AC-coupled to the high potential CRT environment where the DC components of the original signal are restored. An AC drive voltage of approximately 400 V p-p is applied to this circuit from pin 7 of transformer T100. This signal is coupled to the junction of a positive clamp (made up of R208, R210, CR202, VR200 and VR202) and a negative clamp (made up of CR204) through resistor R204 and R206 and capacitor C202. Grid bias potentiometer R210 determines the overall CRT intensity. The positive and negative clamped AC waveform is applied to pin 9 the Z-OUT signal is applied to pin 10 of U100 high voltage module. The capacitor connected to pin 9 and the two diodes attached to its other terminal in U100 form a rectifier circuit. This circuit changes the capacitor connected to pin 10 to a potential below the -2400 volt level of the CRT cathode. A positive transition of the Z-OUT signal voltage moves the control-grid bias positive by approximately the same voltage, thereby increasing CRT beam current.

Focus Amplifier and DC Restorer

The focus amplifier and DC restorer circuit provides the level shifting of the operator-controlled FOCUS signal to the high potential environment of the CRT. This level shifting is done in a manner similar to that just described for the last stage, the grid bias and DC restorer. The active positive clamp, made up of U200B, Q200 and their associated components, provides a variable voltage clamp that limits the positive swing of the AC waveform. Diode CR200 limits the negative swing. The 800 V of AC signal is applied to the clamping node through resistors R200 and R202 and capacitor C200. Operational amplifier U200B changes its output so that feedback through R222 maintains the voltage on pin 6 equal to that on pin 5, which is zero volts.

The FOCUS signal from the A11 Main Key board is divided by R226 and R224. FOCUS can be adjusted from zero to +6.5 V. This provides a range of clamping levels from +650 V (FOCUS equals zero volts) to +344 V (FOCUS equals +6.5 volts). Q200 provides voltage isolation for the output of U200B. When CR210 is forward biased by a voltage swing that exceeds the clamping level, U200B absorbs the excess current through R220, Q200 and R228 so that feedback current through R222 can remain unchanged.

The positive and negative clamped AC signal from T100 is fed to pin 7 of U100. The capacitor connected to pin 7 and the two diodes attached to the other terminal of the capacitor within U100 form a rectifier circuit. This circuit changes the capacitor connected to pin 8 to a potential above the -2400 V-level of the CRT cathode. This voltage is applied to the focus-grid of the CRT to control spot size.

Anode Multiplier

Anode multiplier U300 is a conventional voltage multiplier of 12 stages; it produces 12 kV accelerating potential for the CRT.

Rectifier Filter

The rectifier filter circuit consists of diodes CR300, CR310 and CR320 and capacitors C300, C310 and C320. This circuit provides approximately +100 V and +200 V to the CRT output amplifier from 200 V p-p AC supplied by T100.

CRT

This circuit consists of the CRT, orthogonality coil L120, trace rotation coil L100 and associated components. This circuit displays the 371A curves and data. L100 and L120 control trace rotation and orthogonality of the CRT. Pin assignment of CRT is described in Table 2-16.

Table 2-16
CRT Pin Assignment

Pin Number	Pin Name	Connected Signal
1, 14	Heater power supply	6.3 V heater line
2	Cathode	Cathode (-2400 V)
3	No. 1 grid	Intensity control line
4	No. 1 plate	Focus control line
5	No. 2 grid	Geometry
6	Collector	GND
7	Vertical deflection plates	+V DEF
9	Vertical deflection plates	-V DEF
11	Horizontal deflection plates	-H DEF
12	Horizontal deflection plates	+H DEF

24 GPIB & Plotter Interface

The GPIB and plotter interface circuitry is located on the A22 Interface board. The circuit consists of the bus buffer circuit, the interrupt driver circuit, the address decoder circuit, the GPIB address switch circuit, the GPIB controller circuit, the GPIB bus driver circuit, the plotter controller circuit and the plotter bus driver circuit. The function of this circuitry is to transfer data to the plotter and to communicate with other instruments via the bidirectional general purpose interface bus (GPIB). These functions are under control of the microprocessor and the communication handling software, which are located on the A2 CPU board.

Bus Buffer

The bus buffer circuit consists of U210 and U140; it isolates data bus D0 through D7, address bus A1 through A4 and control signals RD(L), WR(L), RESET(L) and IF-CS(L) from the A2 CPU board. After isolation, the names of these signals are changed to IFD0 through IFD7 (data bus), IFA1 through IFA4 (address bus) and IFRD(L), IFWR(L), IFRESET(L) and IFCE(L) (control signals), respectively. Because the data bus (IFD0 through IFD7) is a bidirectional bus, data bus driver U140 switches the direction of buffering under the control of the IFRD(L) signal. The address bus and control signals are unidirectional signals only from the A2 CPU board and are isolated by U120 and changed in name as mentioned before.

Interrupt Driver

The interrupt driver circuit consists of bus driver U100B. This circuit transfers the interrupt signals from the GPIBA controllers U300 and U400 to the A2 CPU board.

Address Decoder

The address decoder circuit consists of dual two-to-four demultiplexers U220. This circuit generates chip select signals for GPIB controller U300, plotter controller U400, and GPIB address switch U360 by decoding address signals of IFA2, IFA3 and IFA4, which are derived from the A2 CPU board. The decoded signals are transferred to the corresponding circuit of the board when the IFCE(L) control signal occurs. (Address signals IFA1 through IFA4 are also used to select internal registers of GPIB controllers U300 and U400 for reference by the microprocessor.)

GPIB Address Switch

The GPIB address switch circuit consists of DIP switch S360 and U360. These components determine the GPIB address and data delimiter. The right five digits of the switch (No. 2 through No. 6) set GPIB address from zero to 31 in binary notation. The left-most digit of the switch (No. 1) sets the data delimiter.

GPIB Controller

The GPIB controller circuit consists of GPIB controller U300. This circuit manages all interfacing procedures needed to complete GPIB data communication.

GPIB Bus Driver

GPIB bus driver U320 and U340 transfers signals to and from the GPIB bus and the GPIB controller Ccircuit. U340 drives the GPIB control signals and U320 drives the GPIB data signals.

Plotter Controller

The plotter controller circuit consists of GPIB controller U400. This circuit manages all interfacing procedures needed to complete data communication.

Plotter Driver

The plotter driver consists of U440 and U460; this circuit transfers the signals between the plotter controller and the plotter bus. U440 drives the plotter control signals and U460 drives data.

25 Power Supply

This circuitry is located on the A25 Main Power Supply board and the A27 Primary board. This circuitry consists of the primary circuit, the main power supply circuit and the interrupt generator circuit. These circuits supply low voltage power for the 371A and generate interrupt signals.

Primary

The primary circuit consists of the line filter FL100, line voltage selector P100, transformers T100 and T200, spark gaps E100 and E200 and air cooling fan B100. This circuit provides AC line power voltages for the 371A. The 371A can be operated from either a 100 V, 120 V, 200 V, or 240 V nominal line voltage source by setting the line voltage selector P100. Spark gaps E100 and E200 protect the rectifier and filter circuit from line surges over 230 V p-p. This circuit also supplies AC power voltages to air cooling fan B100.

Main Power Supplies

The main power supply circuit provides five regulated voltages (+5 V, +6.5 V, +12 V, -6.5 V, -12 V) and two unregulated voltages (+50 V UNREG and -50 V UNREG). The two reference voltages (+2 V-REF and -2 V-REF) and the scale illumination voltage are also provided by this circuit.

+5 V Supply. The +5 V supply circuit provides regulated +5 V for the digital circuits and consists of diode CR100, capacitors C100, C102 and C104 and voltage regulator U100. Fixed resistor R102 sets the output of U100 to +5.2 V.

+6.5 and -6.5 V Supply. The +6.5 and -6.5 V supply circuit provides regulated voltage for analog circuits. The circuits consist of transistors Q130 and Q230, capacitors C134 and C234 and operational amplifier U130. The reference voltage for U130 is supplied by U120,elsewhere on the board. The output voltages of +6.5 V and -6.5 V are sensed and divided by resistor pair R134 and R136 (+6.5 V) or R234 and R236 (-6.5 V). These divided voltages are compared with the reference voltage of +2.5 V and the differential voltages are obtained by U130. U130 amplifies each differential voltage, and this output controls Q130 and Q230, respectively, to make the +6.5 V and -6.5 V constant.

+12 V Supply. The +12 V supply circuit consists of diode pair CR300, capacitors C300 and C302 and voltage regulator U300.

-12 V Supply. The -12 V supply circuit consists of diode pair CR400, capacitors C400, C402 an C404 and voltage regulator U400.

+50 V and -50 V Unregulated Supplies. These supply circuits provide operating power for the step generator and other circuits. The unregulated +50 and -50 V supplies consist of diode bridge CR500, capacitors C500 and C502 and resistor R501.

ILLUM Voltage Supply. This circuit consists of transistors Q600 and Q602. The circuit supplies current to the A28 LAMP A and A29 LAMP B boards under the control of the ILLUM signal, the level of which is set by the GRAT ILLUM control of the A11 Main Key board.

+2.0 V REF and -2.0 V REF. These reference supply circuits consist of operational amplifier U500 and reference regulator U1220. Resistor R500 adjusts the +2.0 V and resistor R516 adjusts the -2.0 V.

Interrupt Generators 1 and 2

This circuit consists of comparators U560A and U560B and associated components. The circuit provides interrupt signals for the A2 CPU board and the A3 A/D board, namely, TIM-INT (line frequency timer interrupt) and PF-INT (power fail interrupt).

The TIM-INT generator circuit synchronizes the line frequency. Comparator U560A produces the clock signal of the AC line frequency for the PLL and the microprocessor. It consists of diodes CR570 and CR572 and U560A. This TIM-INT clock signal is used by the PLL Circuit on the A3 A/D board to synchronize waveform generation timing and by the A2 CPU board to initiate periodical input procedures such as keyboard data reading on the microprocessor.

The PF-INT generator circuit includes diodes CR560 and CR562, resistor R562, and capacitors C562 and comparator U560B. When the AC line shuts down, this circuit produces the active high PF-INT signal for the microprocessor before the +5 V supply shuts down, so that the microprocessor has time to initiate and complete the power failure support procedure.

Maintenance

Chapter 3
MAINTENANCE

This chapter of the manual contains information for performing preventive maintenance, troubleshooting, and corrective maintenance for the 371A.

PREVENTIVE MAINTENANCE

Preventive maintenance performed on a regular basis can prevent instrument breakdown and may improve the reliability of the instrument. The severity of the environment to which the instrument is subjected will determine the frequency of maintenance. A convenient time to perform preventive maintenance is preceding electrical adjustment of the instrument.

CABINET PANELS

WARNING

Dangerous high-voltage potentials exist at several points throughout this instrument. When the instrument is operated with the covers removed, do not touch exposed connections or components. Some transistors have voltages present on the case. Disconnect power before cleaning the instrument or replacing parts.

The side, top, and bottom cabinet panels provide protection to personnel from high-voltage potentials present within the instrument. In addition, they reduce radiation of electromagnetic interference from the instrument. Operate the instrument with the panels in place to protect the interior from dust, and to maintain cooling airflow.

CLEANING

The 371A should be cleaned as often as operating conditions require. Accumulation of dirt in the instrument can cause overheating and component breakdown. Dirt on components acts as an insulating blanket and prevents efficient heat dissipation. It also provides an electrical conduction path that may result in instrument failure.

CAUTION

Avoid the use of chemical cleaning agents that might damage the plastics in this instrument. Use a non-residue type of cleaner, preferably isopropyl alcohol or totally denatured ethyl alcohol. Before using any other type of cleaner, consult your Tektronix service center or field representative.

Exterior

Loose dust accumulated on the outside of the instrument can be removed with a soft cloth or small brush. The brush is particularly useful for dislodging dirt on and around the front-panel controls. Dirt that remains can be removed with a soft cloth dampened in a mild detergent and water solution. Abrasive cleaners should not be used.

Air Filter

Inspect and clean the air filter periodically to maintain cooling air flow. Remove the filter retainer (remove four attaching screws) from the rear of the 371A. Wash the filter in soapy water, rinse, dry, and replace on the 371A.

CRT

Clean the plastic light filter, implosion shield, and the CRT faceplate with a soft, light-free cloth dampened with denatured alcohol.

Interior

Cleaning the interior of the instrument should only be necessary occasionally. The best way to clean the interior is to blow off the accumulated dust with dry, low-velocity air (approximately 5 lbs/sq in). Remove any dirt that remains with a soft brush or a cloth dampened with a mild detergent and water solution. A cotton swab is useful for cleaning in narrow spaces or for cleaning more delicate circuit components.

CAUTION

Circuit boards and components must be dry before applying power to prevent damage from electrical arcing.

The high-voltage circuit should receive special attention. Excessive dirt in this area may cause high-voltage arcing and result in improper instrument operation.

VISUAL INSPECTION

The 371A should be inspected occasionally for such defects as broken connections, improperly seated semiconductors, damaged or improperly installed circuit boards, and heat-damaged parts. The corrective procedure for most visible defects is obvious; however, particular care must be taken if heat-damaged parts are found. Overheating usually indicates other trouble in the instrument; therefore, correcting the cause of overheating is important to prevent recurrence of the damage.

SEMICONDUCTOR CHECKS

Periodic checks of the semiconductors are not recommended. The best check of semiconductor performance is actual operation in the instrument. More details on semiconductors are given under "Troubleshooting" later in this chapter

PERIODIC ELECTRICAL ADJUSTMENT

To ensure accurate measurements, check the electrical adjustment of this instrument after each 2000 hours of operation or every 12 months if used infrequently. In addition, replacement of components may necessitate adjustment of the affected circuits. Complete adjustment instructions are given in Chapter Four: Performance Check and Adjustment. Performing all or selected performance checks and adjustments procedures can be helpful in localizing certain troubles in the instrument and in some cases may correct them.

TROUBLESHOOTING

The following information is provided to facilitate troubleshooting the 371A:

- troubleshooting aids
- troubleshooting equipment
- troubleshooting techniques
- diagnostics

Information contained in other chapters of this manual should be used in conjunction with the following data to aid in locating a defective component. An understanding of the circuit operation is helpful in locating troubles. See Chapter Two: Theory of Operation, for this information.

Troubleshooting Aids

The following is a brief description of the variety of troubleshooting aids provided in this manual and how to use them to facilitate troubleshooting the 371A.

Diagrams

Complete schematic diagrams are given on the pullout pages in Chapter 7: Diagrams and Circuit Board Illustrations. The component number and electrical value of each component in this instrument is shown on these diagrams. (See the first page of Chapter 7 for definitions of the reference designators and symbols used to identify components in this instrument.) Important voltages and numbered waveform test points are also shown on the diagrams. Waveforms and the numbered test points where each waveform was obtained are located adjacent to each diagram. The portions of circuitry mounted on circuit boards are enclosed with heavy solid-black lines.

Circuit Board Illustrations

To aid in locating circuit boards, a circuit board location illustration appears on the back of the pullout page that faces the appropriate schematic diagram. In addition, the circuit board illustrations are included that show the physical location of the components and waveform test points that appear on the schematic diagram. Each circuit board illustration includes a grid locator with an index to aid rapid location of components contained in the schematic diagrams.

Troubleshooting Charts

Troubleshooting charts are given in Chapter 7: Diagrams and Circuit Board Illustrations, to aid in locating a defective circuit. The shaded blocks on the troubleshooting charts indicate circuits that may cause the indicated malfunction. The circuits listed are discussed in detail in Chapter 2: Theory of Operation.

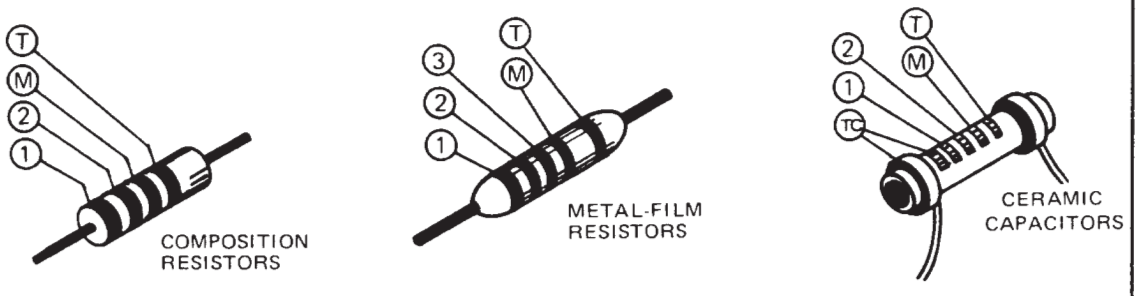
Adjustment and Test Point Location

To aid in locating test points and adjustable components called out in the various portions of the adjustment procedure, the "Adjustment and Test Point Locations" pullout pages appear in Chapter 7: Diagrams and Circuit Board Illustrations.

Component Color Coding

The instrument contains brown composition resistors, some metal-film resistors, and some wire-wound resistors. The resistance value of a wire-wound resistor is usually printed on the component using the EIA color code. (Some metal-film resistors may have the value printed on the body.) The color code is read starting with the stripe nearest the end of the resistor. Composition resistors have four stripes, which consist of two significant figures, a multiplier, and a tolerance value. Metal-film resistors have five stripes that consist of three significant figures, a multiplier, and a tolerance value (see Figure 3-1).

COLOR CODE



① ② and ③ - 1ST, 2ND, AND 3RD SIGNIFICANT FIGS. Ⓣ AND/OR ⓉⒸ COLOR CODE MAY NOT BE PRESENT ON SOME CAPACITORS;
Ⓜ - MULTIPLIER Ⓣ - TOLERANCE;
ⓉⒸ - TEMPERATURE COEFFICIENT.

COLOR	SIGNIFICANT FIGURES	RESISTORS		CAPACITORS		
		MULTIPLIER (OHMS)	TOLERANCE	MULTIPLIER (pF)	TOLERANCE	
					OVER 10pF	UNDER 10pF
BLACK	0	1	---	1	±20%	± 2pF
BROWN	1	10	±1%	10	±1%	±0.1pF
RED	2	10^2 or 100	±2%	10^2or 100	±2%	---
ORANGE	3	10^3or 1 K	±3%	10^3 or 1000	±3%	---
YELLOW	4	10^4 or 10K	±4%	10^4 or 10,000	+100% −0%	---
GREEN	5	10^5 or 100 K	±1/2%	10^5or 100,000	±5%	±0.5pF
BLUE	6	10^6 or 1 M	±1/4%	10^6 or 1,000,000	---	---
VIOLET	7	---	±1/10%	10^7 or 10,000,000	---	---
GRAY	8	---	---	10^{-2} or 0.01	+80% −20%	±0.25pF
WHITE	9	---	---	10^{-1} or 0.1	±10%	±1pF
GOLD	---	10^{-1} or 0.1	±5%	---	---	---
SILVER	---	10^{-2} or 0.01	±10%	---	---	---
NONE	---	---	±20%	---	±10%	±1pF

Figure 3-1. Resistor and capacitor color coding.

The values of common disc capacitors and small electrolytic capacitors are marked on the side of the component body. The white ceramic and epoxy-coated tantalum capacitors used in the instrument are color coded using a modified EIA code (see Figure 3-1).

The cathode end of glass-encased diodes is indicated by a stripe, a series of stripes, or a dot. The cathode and anode ends of meta-encased diodes can be identified by the diode symbol marked on the body.

Semiconductor Lead Configurations

Lead configurations for semiconductor devices used in the 371A are shown in Figure 3-2.

Static-sensitive Device Classification

CAUTION

Static discharge can damage any semiconductor component in this instrument.

This instrument contains electrical components that are susceptible to damage from static discharge. See Table 3-1 to determine the relative susceptibility of various classes of semiconductors. Static voltages of 1 kV to 30 kV are in unprotected environments. (Voltage is discharged from a 100 pF capacitor through a resistance of 100Ω.)

Table 3-1
Relative Susceptibility to Damage from Static Discharge

Semiconductor Class	Relative Susceptibility Level
MOS or CMOS microcircuits and discrete or linear microcircuits with MOS inputs (most sensitive)	1 (100 to 500 V)
ECL	2 (200 to 500 V)
Schottky Signal Diodes	3 (250 V)
Schottky TTL	4 (500 V)
High-frequency bipolar transistors	5 (640 to 800 V)
JFETS	6 (600 to 800 V)
Linear Microcircuits	7 (700 to 1000 V)
Low-power Schottky TTL	8 (900 V)
TTL (least sensitive)	9 (1200 V)

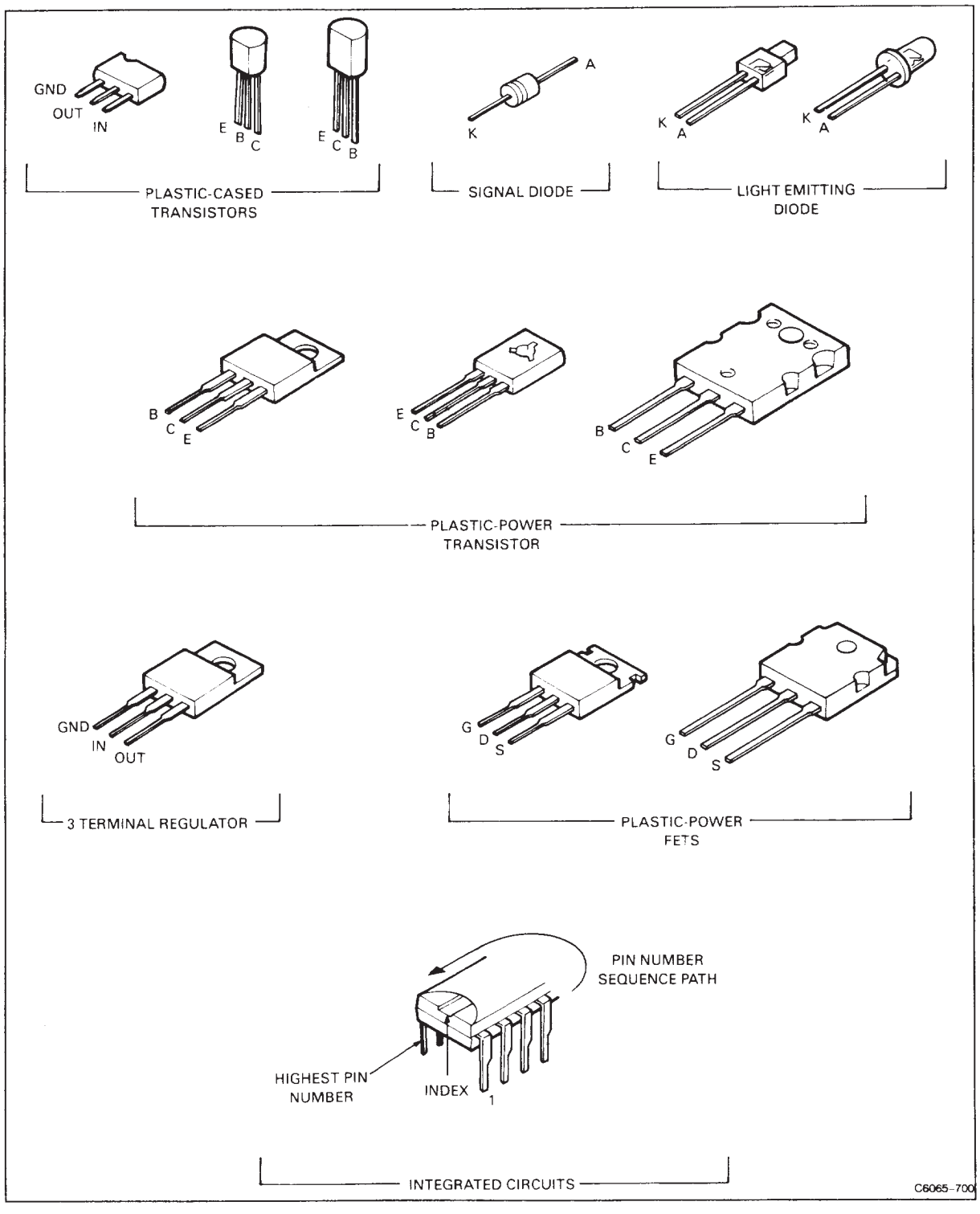


Figure 3-2. Semiconductor lead configurations.

Observe the following precautions to avoid damage due to static electricity:

1. Minimize handling of static-sensitive components.
2. Transport and store static-sensitive components or assemblies in the original container on a metal rail or on conductive foam.
3. Discharge the static voltage from your body by wearing a wrist strap while handling static-sensitive components. Servicing static-sensitive components should be performed only at a static-free work station by qualified service personnel. We recommend use of the Static Control Mat, Tektronix part 006-3414-00, and Wrist Strap, Tektronix part 006-3415-00.
4. Allow nothing capable of generating or holding a static charge on the work station surface.
5. Keep the component leads shorted together whenever possible.
6. Pick up components by the body, never by the leads.
7. Do not slide the component over any surface.
8. Avoid handling components in areas that have a floor or work-surface covering capable of generating a static charge.
9. Use a soldering iron that is connected to earth ground.
10. Use only special antistatic suction desoldering tools.

Multi-pin Connector Identification

Multi-pin (harmonica, ribbon cable) connector pins are marked with a triangle, dot, or square symbol on the connector to denote pin 1 of the connector. When making a connection to a circuit board, match the symbol position on the connector to the index symbol that is printed on the board near the connector (see Figure 3-3).

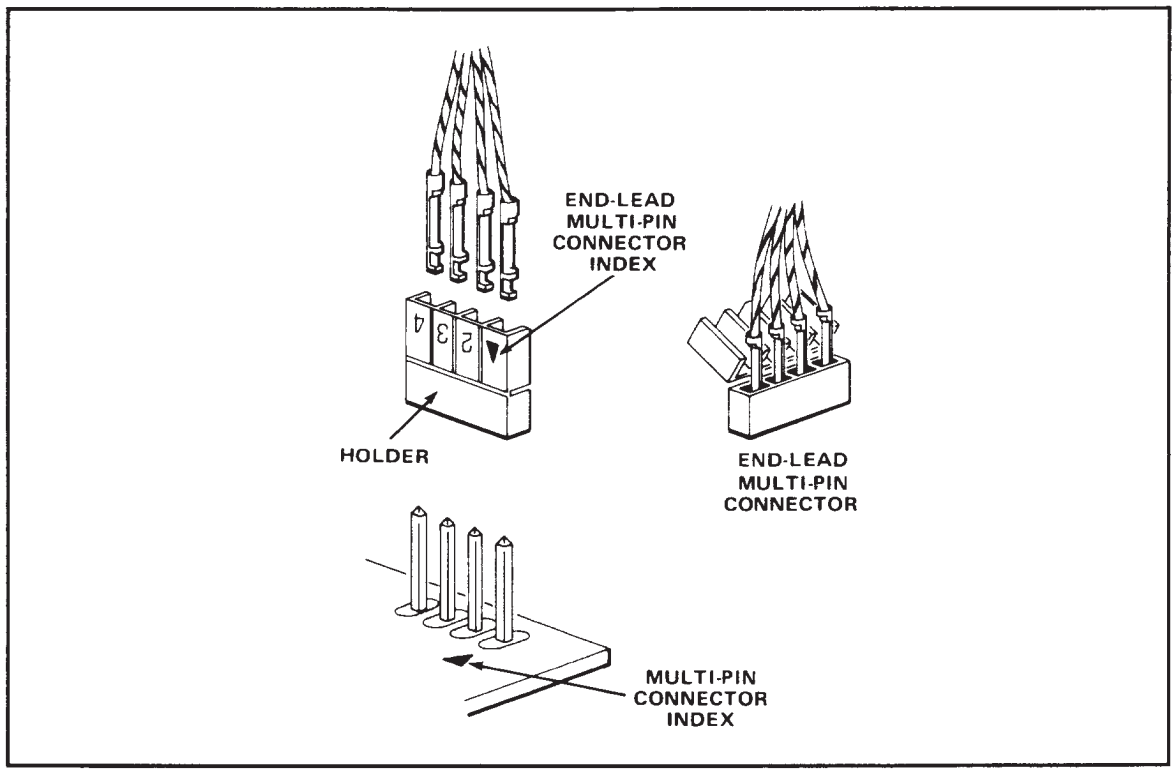


Figure 3-3. Connector pin indexing.

NOTE

Exceptions to the FUJITSU holders are as follows. The F mark identifies pin 1. From the F mark each slot in the connector is sequentially numbered (2, 3, 4, 5, etc.). Notice that the "." mark does not identify pin 1 but rather, the fifth slot from the "F" mark.

Troubleshooting Equipment

The following equipment is useful for troubleshooting the 371A.

1. **Transistor Tester**

   Description: Dynamic tester.

   Purpose: Tests semiconductors.

   Recommended type: SONY/Tek 370A Programmable Curve Tracer.

2. **Digital Multiplier**

   Description: 10-MΩ input impedance and 0 to 1 kV range, AC and DC; ohmmeter, accuracy, within 0.1%. Test probes must be insulated to prevent accidental shorting.

   Purpose: Checks voltages and resistances.

   Recommended type: Tektronix DM501A Digital Multiplier.

3. **Test Oscilloscope**

   Description: Frequency response, DC to 150-MHz minimum; deflection factor, 2 mV to 5 V/division. A 10X, 10-MΩ voltage probe should be used to reduce circuit loading for voltage measurements.

   Purpose: Checks operating waveforms.

   Recommended type: Tektronix 2445B Oscilloscope.

4. **Variable Autotransformer**

   Description: Output variable from 0 V to 140 V, 10 amperes minimum rating. Must have three-wire power cord, plug, and receptacle.

   Purpose: Varies line voltage when troubleshooting the power-supply.

   Recommended type: General Radio W10MT3W Variac Autotransformer.

5. **Calibration Fixtures**

   a. *Extender Board*

   Purpose: Troubleshooting the circuit boards.

   Recommended type: Tektronix Extender board (part number 670-9303-00).

   b. *Extension Cables*

   Purpose: Troubleshooting with the drawer unit extended.

   Recommended type: Tektronix cables (part numbers 174-1999-00 and 174-0352-00).

Troubleshooting Techniques

The information presented here guides you through a troubleshooting sequence that is arranged to help you check the basic trouble possibilities before you proceed with extensive troubleshooting. The first few checks ensure proper connection and operation of associated equipment. If the trouble is not located by these checks, the remaining steps aid in locating the defective component.

1. **Power-Up Diagnostics.** When the 371A is powered on, it automatically runs diagnostic routines that execute RAM, LED, display quality, and push button checks. If one of these routines notes a failure, an appropriate message is displayed on the CRT. If any RAM diagnostic routine notes a failure, an appropriate error message is displayed and the power on process is terminated. Refer to "Diagnostics" described later in this chapter for additional information.

2. **Check Control Settings.** Incorrect control settings can indicate a trouble that does not exist. If there is any question about the correct function or operation of any control on the instrument, refer to the *371A Operator* manual.

   Also, a user-initiated diagnostic routine allows you to check the functionality of each front panel push button or rotary switch. Refer to "Diagnostic" described later in this chapter for additional information.

3. **Check Associated Equipment.** Before proceeding with troubleshooting, check that the equipment used with this instrument is operating correctly. Make sure that the input signals are properly connected and that the interconnecting cables are not defective. Also check the line-voltage source.

4. **Visual Check.** Visually check the portion of the instrument where the trouble is located. Many troubles can be found by visible indications such as unsoldered connections, loose cable connections, broken wires, damaged circuit boards,and damaged components.

5. **Check Instrument Adjustment.** Check the overall electrical adjustment of this instrument or of the affected circuit if the trouble appears in one circuit. The apparent trouble may only be a result of misadjustment. Complete adjustment instructions are given in Chapter 4: Performance Check and Adjustment.

6. **Isolate Trouble to a Circuit.** Note the trouble symptom. The symptom often identifies the circuit in which the trouble is located. When trouble symptoms appear in more than one circuit, check the affected circuits by taking voltage and waveform measurements.

   Incorrect operation of all circuits often indicates trouble in the power supply. Check first the correct voltage of the individual supplies. However, a defective component elsewhere in the instrument can appear as a power-supply trouble and may also affect the operation of other circuits

   The 371A Troubleshooting charts in the Chapter 7: Diagram and Circuit Board Illustrations, provides a guide for locating defective circuits. Start at the top of the chart and perform the checks until one of the checks fails.

7. **Check Voltages.** Often the defective component can be located by checking for the correct voltages in the circuit. Typical voltages are given in Chapter 7: Diagrams and Circuit Board Illustrations.

NOTE

Voltages provided in Chapter 7: Diagrams and Circuit Board Illustrations, are not absolute and may vary slightly between 371A instruments. To obtain operating conditions used to take these readings, see the "Voltage Conditions" adjacent to the schematic diagram.

8. **Check Individual Components.** The following procedures describe methods of checking individual components in the 371A. Components that are soldered in place (excluding integrated circuits) are best checked by first disconnecting one end. This isolates the measurement from the effects of the surrounding circuitry.

CAUTION

To avoid electric shock hazard, always turn off the mainframe power switch before removing or replacing components.

Fuses: Check for open fuses by checking continuity with an ohmmeter.

WARNING

Before replacing an open fuse, determine the cause of failure. Refer to the Power Supply board, interconnect diagrams and the adjacent board illustrations in the foldout chapter at the rear of this manual for component locations.

Transistors: A good check of transistor operation is in actual performance under operating conditions. A transistor can most effectively be checked by substituting a new component for it (or one that has been previously checked). However, be sure that circuit conditions are not such that a replacement transistor might also be damaged. If substitute transistors are not available, use a dynamic tester. Static testers are not recommended because they do not check operation under simulated operating conditions.

Integrated Circuits: These can be checked using an oscilloscope, digital tester, or by direct substitution.

CAUTION

Direct substitution must not be attempted with soldered-in integrated circuits. The I.C., circuit board, or both, may be damaged due to the heat required to melt the solder from the connections. Use care when checking voltages and waveforms around the integrated circuits so that adjacent leads are not shorted together. An integrated circuit test clip provides a convenient means of clipping a test probe to the in-line, multi-pin, integrated circuit.

A good understanding of the circuit operation is essential to troubleshooting circuits using integrated circuits. Operating conditions and other information for the integrates circuits are given in Chapter 2: Theory of Operation and Chapter 7: Diagrams and Circuit Board Illustrations.

Diodes: A diode can be checked for an open or shorted condition by measuring the resistance between terminals with an ohmmeter on a scale having a low internal source current, such as the R x 1k scale. The resistance should be very high in one direction on very low when the meter leads are reversed.

CAUTION

When checking diodes do not use an ohmmeter scale setting that has high internal current because high currents may damage the diodes under test.

Resistors: Check the resistors with an ohmmeter. Resistor tolerances are given in Chapter 6: Replaceable Electrical Parts. Normally, resistors need not be replaced unless the measured value varies widely from the specified value.

Capacitors: A leaky or shorted capacitor can best be detected by checking resistance with an ohmmeter on the highest scale. Do not exceed the voltage rating of the capacitor. The resistance reading should be high after initial charge of the capacitor. An open capacitor can best be detected with a capacitance meter or by checking if the capacitor passes AC signals.

9. **Repair and Adjust the Circuit.** If any defective parts are located, follow the replacement procedures given under "Disassembly/Assembly" later in this chapter. Check the performance of any circuit that has been repaired or that has had any electrical components replaced. Adjustment of the circuit may be necessary.

Diagnostics

The 371A has three sets of diagnostic routines.

- Power-up diagnostics are run every time the 371A is powered up. There is a default set and and an extended set that can be run during power up.
- User-initiated diagnostics can be used to verify the operation of the front-panel controls.
- GPIB controlled diagnostics can be used by a GPIB controller to obtain 371A system ROM and RAM information.

The following provides additional information on each set of diagnostic tests.

Power-up Diagnostics

There are seven power-up tests. Five tests are run automatically each time the 371A is powered up. Two additional (extended) tests can be run by pressing the cursor SHIFT key and then powering up the instrument. These tests are listed in Table 3-2 in the sequence they occur during power-up.

Table 3-2
Default and Extended Power-up Routines

Diagnostic Test	Routine Default	Sequence Extended
System ROM check	yes	yes
System RAM check	yes	yes
Display RAM Check	yes	yes
Acquisition RAM check	yes	yes
LED check	no	yes
Display quality check	no	yes
Push button test	yes	yes

At power-up, the 371A displays the message `SELFTEST START` in the message area of the CRT and runs the power-up tests listed in Table 3-2. After completing the power-up tests, it displays the message `SELFTEST PASS` and sets the front-panel settings to their default (initial state).

You can exit the power-up diagnostics by pressing the cursor SHIFT key during power-up.

The following is a description of each power-up test.

Table 3-2 (preceding page) lists the ROM and RAM power-up error messages.

System ROM Check. During power-up diagnostics, the ROM is checked by checksum methodology. If a checksum error is found, the error message is displayed in the error message area of the CRT graticule and the 371A does not advance to the next routine. ROM must function properly in order to continue with power-up diagnostics.

The message format is as follows:

```
ROM 000X
```

If a fatal error is found in the system ROM (such as a mis-insertion), the memory location LED blinks 0 and 1 alternately, and the 371A does not advance to the next routine.

System RAM Check. The 371A checks the system RAM with read/write operations. If read/write errors are found, the error message is displayed in the error message area of the CRT graticule and the 371A does not advance to the next routine.

The message format is as follows:

```
RAM XXXXX YYYY
```

If a fatal system RAM error is found (such as a shorted bus), the memory location LED blinks 0 and 2 alternately, and the 371A does not advance to the next routine

Display RAM Check. The 371A checks the display RAM with a read/write operation. If a read/write error is found (such as a shorted bus), the memory location LED blinks 0 and 3 alternately, and the 371A does not advance to the next routine.

Acquisition RAM Check. The 371A checks the acquisition RAM with a read/write operation. If a read/write error is found (such as a shorted bus), the memory location LED blinks 0 and 4 alternately, and the 371A does not advance to the next routine.

Table 3-3 lists the power-up system error messages displayed in the memory location LED.

Table 3-3
Power-up System Error Messages

Display	Description
0/1 (blink)	System ROM error (e.g., mis-insertion)
0/2 (blink)	System RAM error (e.g., shorted bus)
0/3 (blink)	Display RAM read/write error (e.g., shorted bus)
0/4 (blink)	Acquisition RAM read/write error (e.g., shorted bus)

LED Check. This is the first of two extended power-up diagnostic routines. This test runs when the operator presses the cursor SHIFT key and holds it pressed when pressing the POWER switch. When the power-up sequence reaches this test, it displays a SONY/Tektronix logo while it sequentially lights all front-panel LEDs.

NOTE

You may have to adjust the NON STORE/STORE/VIEW intensity control to display the SONY/Tektronix logo.

The operator can follow the lighting sequence to obtain a visual indication that the LEDs are operating.

When all LEDs have been lit in sequence, the 371A diagnostic software advances to the display quality check.

CAUTION

Be sure to turn the NON STORE/STORE/VIEW intensity control to a level that prevents burning the CRT when the display quality test pattern is displayed.

Display Quality Check. This is second of two extended power-up diagnostic routines. When the extended power-up sequence reaches this test, the 371A displays a test pattern as shown in Figure 3-4. The operator can use this text pattern as a template to align the display vertically and horizontally using the display ROTATION screwdriver adjustments. Use these adjustments to position the display as shown in Figure 3-4.

The NON STORE/STORE/VIEW intensity control adjusts the intensity of the bright alignment dots. These dots are displayed at the center, outer corners, and mid-outer lines of the display graticule. The READOUT CURSOR intensity control adjusts the intensity of the double-line, dotted box.

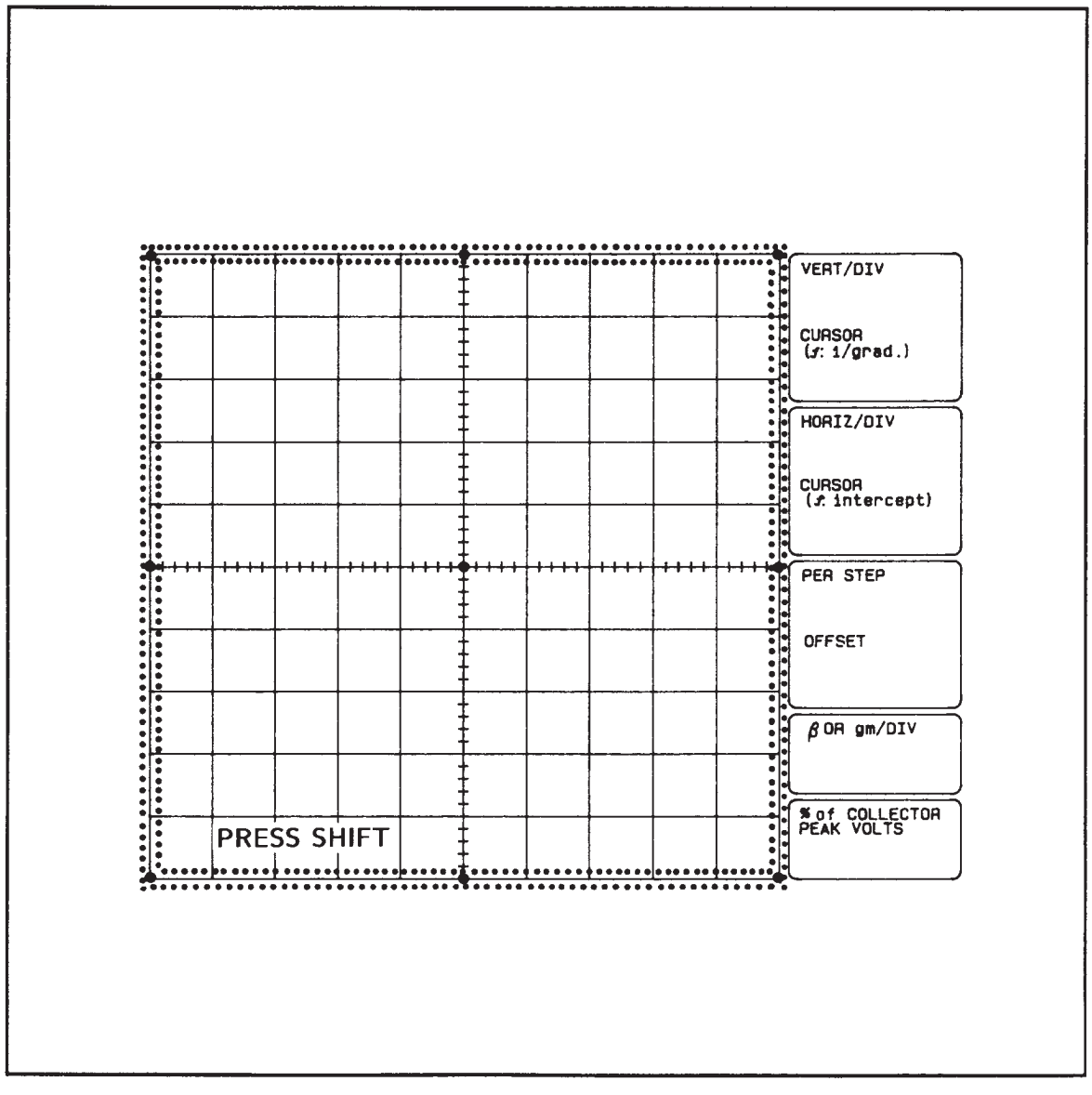


Figure 3-4. Display quality test pattern.

After you have positioned the display pattern, press the cursor SHIFT key to continue power-up diagnostics sequence.

Push Button Test. This is the final power-up test for both the default test string and the extended test string. This test includes a push button stack test. It does not check the functionality of the push buttons. If an error is found, the error message is displayed at the bottom of the CRT. The error message is in the following format:

```
<STRING> KEY ERROR
```

where:
<STRING> identifies the front-panel control as listed in Table 3-4.

The following message also appears in the text area of the display graticule.

```
PUSH SHIFT KEY TO GO ON
```

The displayed error can be ignored and the test continued by pressing the cursor SHIFT button. However, keep in mind that the front-panel control may not operate correctly.

User-initiated Push Button Diagnostic Routine

This routine displays a number or message that corresponds to the last front panel control used. This routine can be used to determine whether a front-panel control is operating normally.

To start this routine, simultaneously press the cursor SHIFT key, and the NON STORE button. To exit this routine, press the cursor SHIFT key, then press the NON STORE button once again.

Table 3-4 lists the 371A controls and the corresponding numbers or messages.

Table 3-4
Front Panel Control Identification Messages

Control	Message
Display SAVE	SAVE
Display RECALL	RECALL
Memory location (up arrow)	MEMORY (up arrow)
Memory location (down arrow)	MEMORY (down arrow)
Display NON STORE	NONSTORE
Display STORE	STORE
Display REF	REF
Display VIEW	VIEW
Display ENTER	ENTER
Display INVERT	INVERT
Measurement REPEAT	REPEAT
Measurement SINGLE	SINGLE
Measurement SWEEP	SWEEP
GPIB RESET TO LOCAL	RESET TO LOCAL
GPIB USER REQUEST	USER REQUEST
GPIB PLOT	PLOT
Cursor mode (up arrow)	CURSOR MODE (up arrow)
Cursor mode (down arrow)	CURSOR MODE (down arrow)
Cursor (left arrow)	CURSOR (left arrow)
Cursor (up arrow)	CURSOR (up arrow)
Cursor (right arrow)	CURSOR (right arrow)
Cursor (down arrow)	CURSOR (down arrow)
Cursor SHIFT	SHIFT
Collector supply POLARITY	POLARITY
PEAK POWER WATTS 3 KW	3KW
PEAK POWER WATTS 300 W	300W
PEAK POWER WATTS 30 W	30W
PEAK POWER WATTS 3 W	3W
Step generator INVERT	STEP INVERT
Step generator current source	CURRENT
Step generator voltage source	VOLTAGE
NUMBER OF STEPS (up arrow)	# OF STEPS (up arrow)
NUMBER OF STEPS (down arrow)	# OF STEPS (down arrow)
Step generator OFFSET (up arrow)	OFFSET up (up arrow)
Step generator OFFSET (down arrow)	OFFSET down (down arrow)
Step generator STEP MULTI .1X	STEP MULTI
VERTICAL CURRENT/DIV	VERTICAL XX (XX: 0 - 16)
HORIZONTAL VOLTS/DIV	HORIZONTAL XX (XX: 0 - 16)
STEP/OFFSET AMPLITUDE	STEP AMP XX (XX: 0 - 16)
VARIABLE	VARIABLE XX (XX: 0 - 25)
HIGH CURRENT	H.C. ENABLED: H.C. DISABLED
HIGH VOLTAGE	H.V. ENABLED: H.V. DISABLED
INTERLOCK	INTERLOCK ON: INTERLOCK OFF
GPIB TERMINATOR and ADDRESS	GPIB:XX,term (XX: 0 - 31; term: EOI or LF/EOI)

GPIB Diagnostic Routine

This routine allows a GPIB controller to obtain system ROM and RAM information over the GPIB.

To initiate this routine, the GPIB controller sends the **TESt?** query over the GPIB. The 371A responds by running its system ROM and RAM diagnostic routines and returning system ROM and RAM information to the controller as follows:

```
TEST ROM:000X, RAM:YYYY
```

Refer to **TESt?** command description in Chapter 5: GPIB of the *371A Operator* manual for additional information.

DISASSEMBLY/ASSEMBLY

WARNING

To avoid electric shock hazard, always disconnect the instrument from the power source before removing or replacing sub-assemblies or components.

Overview

In the following procedures, directional terms (top, bottom, left, right) are based on the assumption that your 371A is in a normal, upright position and that you are facing the front of the instrument.

Installation or reassembly procedures are the reverse of the disassembly procedures unless otherwise noted. In some cases, installation hints are provided to aid in reassembly.

The mechanical drawings associated with Chapter 8: Replaceable Mechanical Parts, are helpful in the removal or disassembly of sub-assemblies or individual components. Refer to these drawings as required.

The 371A has many types of connectors; some of them are very similar in appearance. Tag each connector for identification before removing it from its respective board or component connection. This will greatly aid reassembly.

Some connectors have latches to prevent accidental removal during operation. These latches must be "released" before they connectors can be removed.

Some connectors are "keyed" to ensure proper orientation (alignment) when reconnected. Other board connectors have either an alignment dot or small arrow-like designator to indicate pin 1. Be sure to orient each connector properly when reconnecting it.

The disassembly/assembly procedures are organized as follows:

1. Panel removal
2. Drawer unit removal and related components
3. Main unit and related components

Tools Required

The following tools are required to perform disassembly and assembly of 371A assemblies and subassemblies.

magnetic screwdriver, 1/4 inch drive

POZIDRIV bit #1

POZIDRIV bit #2

Phillips bit #1

Phillips- bit #2

3/16 Spin Tight

5/15 Spin Tight

Panel Removal

These procedures describe how to remove the top, side and rear panels.

Top and Side Panels

Before any assembly can be removed, the top and side panels must be removed.

1. Remove the four cabinet panel retainers from each corner of the 371A rear panel.
2. Remove the securing screw at the middle rear of the top panel. Slide the panel back to remove it from the 371A.
3. Remove the right and left cabinet panels by first removing a securing screw at the rear-middle of each panel.
4. Press the palm of your hand on the panel and push back slightly to release the panel from the front casting. Move the top of the panel outward and lift it from the bottom groove to remove the panel from the 371A.
5. Install panels in the reverse order of removal, beginning with Step 4.

Rear Panel

For most disassembly/assembly purposes, the rear panel does not have to be completely removed from the main unit. Simply "open" the rear panel as described in Steps 1 through 4 of the following procedure. Step 5 describes how to completely disconnect the rear panel from the main unit.

1. Remove any connectors attached to the outside of the rear panel.
2. Remove the top and side panels are previously described.
3. Remove the six screws that secure the rear panel to the main unit.
4. Tilt the rear panel out from the top and carefully lower it away from the main unit. Do not stretch any connector wires inside the panel.
5. To completely disconnect the rear panel from the main unit, perform the following:
   a. Remove the drawer unit from the main unit as described in its removal/assembly procedure (immediately following).
   b. Remove the two screws that secure the power switch to the rear chassis. The power switch is located to the right of the main unit/drawer unit connectors.
   c. Remove J274 and J276 from the A27 Primary board.
   d. Remove the A2 CPU and A3 A/D boards. Refer to the A2, A3, A4, and A5 Plug-In boards procedures later in this chapter for removal instructions.
   e. Remove J220 fro the A1 Mother board.
   f. Remove both ground wires that attach the rear panel to the main unit.
   g. Replace the rear panel in the reverse order of removal.

NOTE

Procedures are provided later in this chapter for removing the A22 Interface board, the A27 Primary board, and the B100 Cooling Fan from the rear panel. Refer to the applicable procedure as needed.

Drawer Unit and Associated Assemblies and Components

The following describes how to remove the drawer unit from the main unit. The drawer unit should be completely removed from the main unit before attempting to remove any associated assembly or chassis-mounted component.

Figure 7-2, in Chapter 7: Diagrams and Component Locations, shows the location of related electrical assemblies. Refer to the "Drawer Unit" and "Front Porch" drawings in Chapter 8: Replaceable Mechanical Parts for location of related chassis-mounted sub-assemblies and components.

Drawer Unit

Perform the following to remove the drawer unit from the 371A.

1. Remove the right and left cabinet panels from the main unit.

   The drawer unit is secured to the main unit using a long metal bracket on each side.

2. Remove the eight screws (four flat-head and four round-head) that secure the bracket to the main unit/drawer unit.

3. Pull the drawer unit forward away from the 371A.

   You may have to place the fore and index fingers of each hand at the left- and right-rear corners of the drawer unit. Then pry toward you with a slight rocking motion to slide the drawer unit from the 371A.

   NOTE

   Before installing the mounting bracket (upon re-assembly), make certain that the bracket that contains potentiometer identification is installed on the right side (the brackets are interchangeable).

4. Install the drawer unit in the reverse order of removal.

A24 Floppy Disk Driver

The Floppy Disk Drive (FDD) unit with mounting bracket is secured to the drawer unit with four screws. Note that the bracket mounting holes are slotted to allow the FDD to be aligned flush with its front panel bezel.

1. Remove the connector from the rear of the FDD.
2. Remove the four screws the secure the mounting bracket to the drawer unit.
3. Push the FDD to the rear, away from its front bezel, and remove the FDD from the drawer unit.
4. If replacing the FDD with a new unit, remove the mounting bracket from the FDD (four screws) and install the bracket on the new FDD.
5. Install the A24 FDD in the reverse order of removal.

A14 Lower Key and FDD Circuit Board

Remove and replace the A14 Lower Key and FDD board as follows:

1. Pull out the drawer unit from the 371A.
2. Remove the connector from the A24 FDD assembly, and remove the J140, J146, J142, and J148 from the A14 Lower key and FDD board.
3. Remove the four screws that secure the A14 board to the drawer unit.
4. Remove the A14 board from the drawer unit.
5. Install the A14 Lower Key and FDD board in the reverse order of removal.

A10 Sense Circuit Board

Remove and install the A10 Sense board as follows:

1. Pull out the drawer unit from the 371A.
2. Remove J140, J146, J142, and J148 from the A14 Lower Key and FDD board.
3. Remove the six screws that secure the support bracket for the A24 FDD assembly and the A14 Lower Key and FDD board to the drawer unit chassis.
4. Remove the bracket with the A24 FDD and A14 Lower Key and FDD board assemblies attached.
5. Remove the following connectors from the A10 Sense board: J670, J146, J612, J614, J690, J610, J617, J616, J620, J695, J630, J632, J626, J622, J618, J634, and J636.
6. Remove the six screws that secure the A10 Sense board to the drawer unit chassis.
7. Lift the A10 Sense board from the drawer unit.
8. Install the A10 Sense board in the reverse order of removal.

Front Porch Assembly

The Front Porch assembly must be unfastened from the drawer unit in order to access the A30 Connector board and various chassis-mounted components.

1. Remove the shield (four screws) that covers the A16 High-Current Control and A31 Relay boards.
2. Remove the 5/16 inch nut that attaches the Front Porch assembly to the center brace of the drawer unit.

3. Remove the three screws from each side of the drawer unit.

   Tilt the Front Porch assembly up and back to access the A30 Connector board and chassis-mounted components. Be careful not to stretch the cabling between the Front Porch and other drawer unit assemblies.

4. Install the Front Porch assembly in the reverse order of removal.

A30 Connector Board

The A30 Connector board is fastened to the underside of the Front Porch panel.

1. Unfasten the Front Porch assembly from the drawer unit as previously described.
2. Tilt the Front Porch assembly up and back to access the A30 Connector board. Be careful not to stretch the cabling between the Front Porch and other drawer unit assemblies.
3. Remove the nuts at J700, J702, J704, J706, J708, J710, J712, J714, J716, and J720 on the A30 board.

   NOTE

   Several of the above nuts are used to attach wiring to the connectors. Be sure to tag such wires to identify their location to ensure proper placement upon re-assembly.

4. Two cable assemblies, W622 and W632 are hardwired to the A30 Connector board. Remove these cables at J622 and J632, respectively, on the A10 Sense board. Remove the cables from the chassis clamps.
5. Remove the A30 board from the Front Porch assembly.
6. Install the A30 Connector board in the reverse order of removal.

Front Porch Chassis-Mounted Components

The Front Porch assembly contains several chassis-mounted subassemblies and components. Refer to the Front Porch Assembly drawing in Chapter 8: Replaceable Mechanical Parts for location of these subassemblies and components. The Front Porch assembly must be removed in order to access these chassis-mounted subassemblies and components.

A31 Relay Board

Perform the following to remove the A31 Relay board.

1. Remove the drawer unit from the 371A.
2. Remove the shield (four screws) that covers the A31 Relay board and the A15 High-Current Control board.
3. Remove the Front Porch assembly as described earlier in this chapter. Pull the Front Porch away from the drawer unit slightly to access the A31 Relay board.
4. Remove J914 and J695 from the A31 Relay board.
5. Remove the eight screws that secure wires to J920, J921, J924, J926, J928, J932, and J934.
6. Remove the 10 screws that secure the A31 Relay board to the drawer unit chassis.
7. Lift the A31 Relay board from the drawer unit.
8. Install the A31 Relay board in the reverse order of removal.

A15 High-Current Power Supply Circuit Board

Perform the following to remove the A15 High Current Power Supply board.

1. Remove the drawer unit from the main unit.
2. Remove the shield (four screws) that covers the A31 Relay board and the A15 High Current Control board.
3. Remove J800, J802, J804, J900, J902, J904, and J906 from the A15 board.
4. Remove the eleven screws that secure the A15 board to the drawer unit chassis.
5. Lift the A15 High Current Power Supply board from the drawer unit.
6. Install the A15 High Current Power Supply board in the reverse order of removal.

A16 High-Current Control Board

Perform the following to remove the A16 High-Current Control board from the drawer unit.

1. Remove the drawer unit from the 371A.
2. Remove the shield (four screws) that covers the A31 Relay board and the A16 High-Current Control board.

3. Remove J690, J906, J908, J912, and J914 from the A16 High-Current Control board.
4. Remove the four screws that secure the A16 High-Current Control board to the drawer unit chassis.
5. Lift the A16 High Current board from the drawer unit chassis.
6. Install the A16 High Current Control board in the reverse order of removal.

FETs Q910, Q920, Q930, and Q940

These field effect transistors are chassis-mounted under the A16 High Current Control board. Perform the following to access and remove these transistors.

1. Remove the drawer unit from the 371A.
2. Remove the shield (four screws) that covers the A31 Relay board and the A15 High Current Control board.
3. Remove the A16 High Current Control board as previously explained.
4. Remove the four spacer posts, using a 7/32 inch Spintite, that attach the rectangular shield to the chassis standoffs.
5. Lift the electrical shield from the drawer unit.
6. Remove the eight 5/16 inch nuts that attach the FET assembly to the drawer unit chassis.
7. Remove the yellow and black wires from the FET assembly
8. Lift the FET assembly from the drawer unit.
9. Install the A16 High-Current Control board in the reverse order of removal.

Other Drawer Unit Chassis-mounted Sub-assemblies and Components

The drawer unit contains several chassis-mounted subassemblies and components. Refer to the "Drawer Chassis" drawing in Chapter 8: Replaceable Mechanical Parts for location of these subassembies and components.

Main Unit Assemblies and Components

The following describes how to remove assemblies from the main unit.

Figure 7-2, in Chapter 7: Diagrams and Component Locations shows the location of related electrical assemblies and chassis-mounted components. Refer to related drawings in Chapter 8: Replaceable Mechanical Parts for location of related chassis-mounted subassemblies and components.

CRT Removal

NOTE

Before removing the CRT, check associated circuits to be certain that removal is necessary.

WARNING

Use extreme care when handling a CRT. Breakage of the CRT causes a high-velocity scattering of glass fragments (implosion). Wear protective clothing and safety glasses. Avoid striking the CRT on any object,that might cause it to crack or implode. When storing a CRT, place it in a protective carton or face down in a protected location on a smooth surface with a soft mat under the faceplate.

The CRT may retain a dangerous electrical charge. Before removing the CRT, the anode must be fully discharged by shorting the CRT anode to the chassis. Wait at least 10 minutes and again firmly short the anode to the chassis, then proceed with the CRT removal procedures.

Perform the following to remove the CRT from the main unit chassis.

1. Remove the rear, top, and left side panels.
2. Loosen the two CRT base clamp screws (at the rear of the CRT) until the tension of the springs is released (springs are loose on the screws).
3. Remove the CRT base-pin socket from the rear of the CRT.
4. Disconnect the CRT anode cap from the jack located on the left side of the CRT. Ground the CRT anode to the chassis to discharge any stored charge remaining in the CRT.
5. Remove the CRT bezel cover from the under side of the CRT bezel by pulling it off with your fingernail.
6. Remove the two screws exposed on the lower side of the CRT bezel, and remove the CRT bezel from the front panel.
7. Remove the CRT filter, spacer, and implosion shield from the CRT frame.

8. Remove the four screws located on the inner side of the frame.
9. Remove the CRT frame by removing the four remaining screws located on the outer corners of the CRT frame.
10. Pull the graticule illumination lamp assemblies from the sides of the CRT faceplate.
11. Hold one hand on the CRT faceplate and gently pull out the CRT while pushing on the base of the CRT.

CRT Installation

Perform the following to install the CRT.

1. Check to ensure that each guide slot contains a CRT retainer at each corner of the front panel CRT opening.
2. Check the CRT base pins for proper alignment. Align as necessary to ensure that the base socket can be easily installed once the CRT is placed in the CRT shield.
3. Inset the CRT into the front panel opening and set its base into the CRT clamp ring located at the rear of the CRT shield.
4. Clean the CRT faceplate and place the A28 and A29 lamp board assemblies on the right and left side of the CRT, respectively. Place the lamp retainer springs between the lamp boards and the chassis.
5. Fasten the CRT frame to the chassis by installing the four screws located on the outer corners of the CRT frame.
6. Install and tighten to 5 kg/cm (4.3 in/lb) the four screws located on the inner corners of the CRT.
7. Tighten the two CRT base clamp screws until the springs on the screws are fully compressed.
8. Install the CRT base-pin socked on the CRT base pins.
9. Install the CRT implosion shield, spacer, and filter.
10. Install the CRT bezel and bezel cover.
11. Reconnect the CRT anode cap.
12. If you installed a replacement CRT, perform the adjustment procedures provided in Chapter 4: Performance Check and Adjustment.
13. Install the right side, rear, and top panels.

A2, A3, A4, and A5 Plug-In Boards

These circuit boards plug into the A1 Mother board. Figure 7-2 in Chapter 8: Diagrams and Component Locations shows their location in the 371A.

1. Remove the top panel from the 371A.
2. Remove the two board retainer strips holding the boards in the card cage.
3. Pull-up on the ejector tabs at each end of the board to remove the board from the card cage.
4. To install a plug-in board, perform the following:
   a. Align the board with the alignment guide in its assigned slot (component side away from the CRT). Insert it holding the tabs parallel to the top of the board.
   b. Slide the board down through the slots until the edge connectors rest on the bus slot connectors on the A1 Mother board.
   c. Push the plug in card down into the bus slot connectors of the A1 Mother board. Press firmly on the board, but do not press on components.
5. Replace the two circuit board retainers.
6. Install the top panel.

A1 Mother Circuit Board

Perform the following to remove and replace the A1 Mother board.

1. Remove the top, left, and right side panels.
2. Remove the A2, A3, A4, and A5 boards from the main body as instructed in the "A2, A3, A4, and A5 Plug-in Boards procedure.)
3. Remove J10, J12, J110, J180, J190, J220, J400, J410, J412, and J420 from the A1 Mother board.
4. Remove J60 from the A6 Collector Supply Output Circuit board (located at left rear of 371A).

   Remove J70 from the A7 Step Generator board.

   Remove J192 from the A25 Main Power Supply board.
5. Remove the eight screws from the A1 Mother board.
6. Lift the A1 Mother board from the 371A.
7. Replace the A1 Mother board in the reverse order of removal.

A6 Collector Supply Output Board

Perform the following to remove the install the A6 Collector Supply Output board.

1. Remove the top, rear, and left side panels.
2. Remove the electrical shield over the A6 board.
3. Remove J60, J62, and J66 from the board.
4. Remove J64 from the A26 Collector Power Supply board.
5. Remove the four screws that secure the heat sink of the A6 board to the chassis.
6. Remove the two screws that secure the A6 Collector Supply Output board to the chassis and remove the board from the main unit.
7. Install the A6 Collector Supply Output board in the reverse order of removal.

CAUTION

If you have removed Q438, Q440, Q538, and Q540 from the heat sink, upon re-assembly, make sure that all four insulation washers are placed in position. Without these insulator, destructive electric short circuits will occur.

NOTE

Do not apply silicon grease to the insulation washers. No grease is required because of the high heat conductivity of the insulation washers.

A7 Step Generator Circuit Board

Perform the following to remove and install the A7 Step Generator board.

1. Remove the top, rear, and right side panels from the 371A.
2. Remove J70, J72, J74, J76, and J78 from the A7 board.
3. Remove the three screws located on the lower side of the A7 Step Generator board.
4. Remove the three screws that fasten the heat sink of the A7 Step Generator board to the chassis. Support the board as these screws are removed so it does not fall and become damaged.
5. Remove the A7 Step Generator board from the 371A.
6. Replace the A7 Step Generator board in the reverse order of removal.

A11 Main Key Board

Perform the following to remove and install the A11 Main Key board.

1. Remove the top, rear, and side panels from the 371A.
2. Remove the CRT bezel from the front panel (refer to the CRT removal procedure).
3. Remove two screws that secure the right side of the A11 Main Key board to the front panel frame. Tilt the A11 Front Panel assembly down and away from the 371A.
4. Remove J110 from the A1 Mother board, then remove the front panel away from the 371A.
5. Pull off the eight knobs (three large and five small) from the front panel.

   For reassembly, note that the five small knobs have dot position indicators.
6. Remove the six screws that secure the A11 Main Key board to the A12 Sub Key board.

NOTE

The A11Main Key board and A12 Sub Key board are connected by circuit board connectors J100/P100 and J120/P120. Be careful not to damage the connectors when removing and reassembling the boards.

7. Replace the A11 Main Key board in the reverse order of removal.

A12 Sub Key Board

Perform the following to remove and install the A12 Sub key board.

1. Remove the A11 Main Key board as previously described
2. Remove the six spacers from the A12 Sub Key board.
3. Lift the A12 Sub Key Board from the front panel casting.
6. Replace the A12 Sub Key board in the reverse order of removal.

A18 CRT Output Board

Perform the following to remove and install the A18 CRT Output board.

1. Remove the top panel from the 371A.
2. Remove the four screws that secure the clear insulator panel to the A18 CRT Output board. Set the insulator panel aside.
3. Remove J180, J182, J184, and J186 from the board.
4. Remove the four spacers that secure the A18 board to the chassis and lift the A18 board from the main unit.
5. Replace the A18 CRT Output board in the reverse order of removal.

A20 High Voltage (H.V.) Regulator Circuit Board

Perform the following to remove and install the A20 H. V. Regulator board.

1. Remove the left side panel from the 371A.

WARNING

The CRT anode circuit retains a charge of up to 12000 V. Be sure that the circuit is completely grounded to the chassis before handling the circuit board, otherwise, serious injury or death may result.

2. Remove four screws that secure the shield over the A20 H.V. Regulator board. Set the shield aside.
3. Remove the screw that holds the retainer clip for Q100 to the chassis.
4. Remove the CRT anode cap from the jack located on the left side of the CRT. Ground the CRT anode cap to the chassis to discharge any stored charge.
5. Remove J182, J194, and J200 from the A20 H.V. Regulator board.
6. Remove the four screws that secure the A20 H.V. Regulator board to the chassis, and remove the board from the main unit..
7. Replace the A20 H.V. Regulator board in the reverse order of removal.

A22 Interface Board

Perform the following to remove and install the A22 Interface board.

1. Remove the top and rear panels from the 371A.
2. Remove J220 from the A1 Mother board. Refer to the "A2, A3, A4, and A5 Plug-In Circuit board" removal procedure.
3. Remove the four screws that secure the IEEE STD 488 port connector and PLOTTER INTERFACE port connectors to the rear panel.
4. Remove four screws that secure the A22 Interface board and lift the board with its insulation cover away from the rear panel.
5. Replace the A22 Interface board in the reverse order of removal.

A25 Main Power Supply Board

Perform the following to remove and install the A25 Main Power Supply board.

1. Remove the top and rear panels from the 371A.
2. Remove J72, J190, J192, J194, J250, J252, J280, and J290 from the A25 board.
3. Remove the three screws that secure the A25 heat sink to the chassis.
4. Remove the remaining two screws that secure the A25 Main Power Supply board to the chassis.
5. Lift the board from the main unit.
6. Replace the A25 Main Power Supply board in the reverse order of removal.

A26 Collector Power Supply Assembly

The A26 Collector Power Supply assembly consists of a transformer and a small circuit board. Perform the following to remove and install the A26 Collector Supply assembly.

1. Remove the top, right and rear side panels.
2. Remove J64, J260, and J262 from the A26 Collector Power Supply assembly.
3. Remove J276 from the A27 Primary board.
4. Remove the four screws that secure the A26 Collector Power Supply assembly to the chassis (two on the bottom side rail and two on the floor of the chassis).
5. Lift the A26 Collector Power Supply assembly from the main unit.
6. Replace the A26 Collector Power Supply assembly in the reverse order of removal.

A27 Primary Board

Perform the following to remove and install the A27 Primary board.

1. Remove the rear panel from the 371A.
2. Remove the protective cover over the A27 Primary Circuit board by crimping the tip of the plastic standoff and pulling the cover from board.
3. Remove J274 and J276 from the board.
4. Remove the three screws and two spacer posts from the board; lift the A27 Primary board from the rear panel.
5. Replace the A27 Primary board in the reverse order of removal.

A28 and A29 Graticule Illumination Lamp Boards

Perform the following to remove and install the A28 and A29 Graticule Illumination Lamp boards.

1. Remove the top panel from the 371A.
2. Remove the CRT bezel cover from the lower side of the CRT bezel by pulling it off with your fingernail.
3. Remove the two exposed screws to remove the CRT bezel from front panel.
4. Remove the CRT filter, space, and implosion shield from the CRT frame.
5. Remove J280 and/or J290 from the A25 Main Power Supply board.
6. Remove the (internal scale illumination) light reflector, the light reflector retainer, and the retainer spring by pulling them out from alongside the CRT faceplate.
7. Remove the A28 and A29 Graticule Illumination boards by removing the two screws that secure each board to the light assembly.
6. Replace the A28 and A29 Graticule Illumination Lamp boards in the reverse order of removal.

Low-Voltage Power Supply Transformer

The Low-Voltage Power Supply transformer is located under the A25 Main Power Supply board. Perform the following to remove and install the Low Voltage Power Supply Transformer.

1. Remove the top and rear panels.
2. Remove the A25 main Power Supply board as previously described.
3. Disconnect J274 from the A27 Primary board.
4. Remove the four screws that secure the transformer to the floor of the main unit.
5. Lift the transformer from the main unit.
6. Replace the Low Voltage Transformer in the reverse order of removal.

Cooling Fan

Perform the following to remove and install the Cooling Fan.

1. Remove the rear panel from the 371A.
2. Remove the protective cover over the A27 Primary board by crimping the tip of the plastic standoff and pulling the cover from board.
3. To aid re-assembly, note how the fan is placed on the rear panel. The fan AC connector is located close to the center of the rear panel.

   Also check that the air flow arrow marked on the fan is pointing toward the inside of the 371A.
4. Remove the four screws and nuts that secure the Cooling Fan to the rear panel. Lift the Cooling Fan, fan cover, filter, and fan guard from the rear panel.
5. Replace the Cooling Fan assembly in the reverse order of removal.

Performance Check and Adjustment

Chapter 4
PERFORMANCE CHECK AND ADJUSTMENT

Information in this section instructs a qualified technician on how to

- check key electrical specifications
- determine whether adjustment is necessary
- perform all internal adjustments
- perform optional functional check procedures

Adjustment is generally required after a repair has been made, or after a long time interval in which normal aging of components may affect instrument accuracy. The 371A should be checked and, if necessary adjusted after each 2000 hours of operation or at least once every year, to ensure that it is operating properly. At the same time, Tektronix recommends that you thoroughly inspect and clean the 371A as instructed in Chapter 3: Maintenance of this manual.

Check the performance of this instrument at an ambient temperature between +10° C and +40° C unless otherwise stated. Make adjustments at an ambient temperature between +15° C and +25° C in order to ensure that the specified tolerances can be met.

NOTE

Adjustment of the 371A should only be performed by a qualified service technician.

If problems occur while performing the procedures in this section, you should correct them before continuing. Troubleshooting, repair, and servicing information is provided in Chapter 3: Maintenance.

TEKTRONIX FIELD SERVICE

Tektronix field service centers and the Factory Service Center provide instrument repair and adjustment services. Contact your Tektronix field representative or service center for further information.

TEST EQUIPMENT

The test equipment listed in Table 4-1 is required for a complete performance check and adjustment of the instrument. However, complete checking or adjustment may not always be necessary or desirable. You may be satisfied with checking only selected characteristics, thereby reducing the amount of test equipment actually required.

The specifications for test equipment listed in Table 4-1 are the minimum required to check performance requirements of the 371A. Detailed operating instructions for test equipment are not given in these procedures; refer to the test equipment instruction manual if more information is needed.

Table 4-1
Test Equipment

Item	Minimum Specification	Purpose	Example of Applicable Test Equipment
Test Oscilloscope	Bandwidth: DC to 150 MHz; Deflection factor: 2 mV to 5 V/DIV (with 1X probe)	Used to check ripple, noise, and pulse shape	a. Tektronix 2445B 150 MHz Oscilloscope with P6137 Probe b. Refer to Tektronix Products catalog for compatible equipment
DC Voltage Source	Voltage range: 0 mV to 1000 V; Accuracy: 0.1 mV; Resolution: 0.1 mV	Supplies a reference voltage to the 371A	Fluke 5101B
DC Current Source	Current range: 0 μA to 1.9999 A; Accuracy: 0.1 % Resolution: 0.1 μA	Supplies a reference current to the 371A	Fluke 5101B
Digital Multimeter	DCV: 1000 V, 4.5 digit Accuracy: 0.05% Resolution: 0.1 mV Input imp: >10 MΩ DCA: 2 A Accuracy: 0.1 % Resolution: 0.1 nA OHM: 2 kΩ Accuracy: 0.05% Resolution: 0.1 Ω	Used throughout the checks and adjustments to measure voltage, current, and resistance	a. Fluke 8505A and Tektronix DM501A (for 2 A measurement only) b. Keithley 195A W/OP 1950
Tool, Alignment	Screwdriver tips for electronics use	Used to perform internal adjustments	Tektronix Part No. 003-0489-00
Calibration Fixture		Used in many procedures	Tektronix Part No. 067-1345-00
Screwdriver	POZIDRIVE; Length: 8.5 inch; Point Size: #1, #2	Used in many procedures	Tektronix Part No. 003-0293-00

table continued on next page

Table 4-1 (cont.)
Test Equipment

Item	Minimum Specification	Purpose	Example of applicable Test Equipment
Patch Cord	Banana plug-jack to Banana plug-jack	Used in many procedures	Tektronix Part No. 012-1371-00
High Voltage Probe	Voltage range: 0–3 kV (DC,AC); Accuracy: ±1 %	Used to examine -2400 V	Fluke 80K-6
Test lead		Used in many procedures	Tektronix Part No. 198-5625-00 (included with Calibration Fixture)
Transistor	2SC2527G (TO220) or 2N3055H (TO3)	Used as DUT for acquisition of curve data	Tektronix Part No. 151-0701-00 or 151-0336-00
Plotter	GPIB interface; HPGL support	Used to check the plotter interface port	Tektronix HC100
Controller	GPIB support	Used to check the GPIB Port	Hewlett-Packard 9836A
Micro Floppy Disk	3.5 inch, double-sided	Used to store displayed curve data and instrument settings	Tektronix Part No. 119-3446-00
Test Adapter		Used to hold the DUT	Tektronix A1002 or A1003

Test Equipment Alternatives

The checks and adjustment procedures are based on the first item of equipment given as an example. When other equipment is substituted, control settings or setups may have to be altered. If the exact item of equipment given as an example in Table 4-3 is not available, first check the Minimum Specifications column carefully to see if any other equipment might suffice. Then check the Purpose column to see where this item is used. If used for a performance check or adjustment that is of little or no importance for your measurement requirements, the item and corresponding procedure(s) can be deleted.

Special Fixtures

Special fixtures are used to facilitate instrument adjustment. These fixtures are available from Tektronix, Inc. Order by part number from Tektronix field representatives.

PERFORMANCE CHECK AND ADJUSTMENT ALTERNATIVES

When you perform the complete set of performance check and adjustment procedures provided in this chapter, the 371A is thoroughly checked and adjusted to meet performance characteristics. Tektronix recommends that the complete set of checks and adjustments be performed after 2,000 hours of operation or at least once a year.

It is not necessary to perform all the checks and adjustments whenever you make a minor repair or whenever a specific area of 371A performance is questioned. The performance check and adjustment procedures are designed to check a specific electrical specification or to perform a specific adjustment. Thus, in most cases, you need to perform only those performance check and adjustment tasks required based on the level of repair made or the scope of electrical specification(s) in question. Carefully read Table 4-2 to select the appropriate procedure alternative.

Table 4-2
Performance Check and Adjustment Alternatives

Task	Procedure Alternatives
Performance Check (Checking key electrical specifications)	• Perform the "371A Setup and Initialization" procedure provided later in this chapter. • Perform those procedures identified by the word "Checking" in the procedure title. **IMPORTANT:** If a "Checking" procedure also contains the word "Adjusting" in the title description, ignore those parts of the procedure with adjustment instructions.
Adjustment	• Perform the "Initialization" procedure provided later in this chapter. • Perform only those procedures identified by the word "Adjusting" in the procedure title (see the Procedure Index at the beginning of the performance check and adjustment procedures. **IMPORTANT:** Perform all steps of these adjustment procedures. Most adjustments are preceded by instructions for determining whether the adjustment is necessary and are followed by instructions for verifying that the adjustment was correctly performed.

(table continued on next page)

Table 4-2 (cont.)
Performance Check and Adjustment Alternatives

Task	Procedure Alternatives
Performance Check and Adjustment	• Perform the "Initialization" procedure provided later in this chapter. • Perform all procedures identified by the words "Checking" or "Adjusting" in the procedure title. **IMPORTANT:** Steps for "Examining" characteristics only (i.e., those with no "Checking" or "adjusting" instructions included) are not necessary for checking specifications or making adjustments.
Partial Performance Check or Adjustment	• Perform the "Initialization" procedure provided later in this chapter. • Perform the desired procedures (e.g., A1, B3, etc.) using the EQUIPMENT SETUP information at the beginning of each procedure **IMPORTANT:** Although a partial adjustment can be performed, we recommend that the entire subsection (e.g., A Power Supply, D. ÍStep Generator, etc.) be performed if any adjustments are made.
Functional Check of Front Panel Controls and Connectors	• Perform the "First-Time Operating Exercises" in Section 3 of the 371A Operators manual. • Perform the "User-Initiated Push Button Diagnostic Routine" in Chapter 3: Maintenance.
Complete Functional Check	• Perform the "Initialization" procedure provided later in this chapter. • Perform only those procedures identified by the words "Checking" or "Adjusting" in the procedure title. **IMPORTANT:** If a "Checking" or an "Examining" procedure also contains the word "Adjusting" in the procedure title, ignore those parts of the procedure with adjustment instructions.

PERFORMANCE CHECK SUMMARY

Table 4-3 lists key characteristics checked in this chapter and the order in which they are checked. Also listed are procedures containing adjustment instructions which may affect the performance of a specified characteristic. The specifications for characteristics listed in Table 4-3 are given at the beginning of the procedure in which they are checked.

Table 4-3
Performance Check Summary

Procedures	Characteristic	Examined	Checked	Adjusted
Power Supplies	Reference Voltage		A2, A3	A2, A3
	Deviation and Ripple	A1		
	Cathode Supply	A4		
Display	Offset	B1		
	Bias	B2		B2
	Astigmatism	B3		B3
	Intensity	B4, B5, B6		
	Accuracy			B7
	Orthogonality and Geometry		B8	B8
	Position and Size		B8	B8
	Looping			B9
Measurement Accuracy	Horizontal Balance			C1
	Vertical Balance			C2
	Step Generator Voltage Measurement		C3	
	Collector Low Voltage Measurement		C4	
	Collector High Voltage Measurement		C5	
	Collector Current Voltage Measurement in High Voltage Mode		C6	
	Collector Current Voltage Measurement in High Current Mode		C7	

(table continued on next page)

Table 4-3 (cont.)
Performance Check Summary

Procedures	Characteristic	Examined	Checked	Adjusted
Step Generator	Multi .1X Balance and Offset			D1
	Voltage Balance			D2
	Gain (Voltage)			D3
	Current Zero and Balance			D4
	Gain (Current)			D5
	Rate and Pulse Form		D6	
	Ripple and Noise (Voltage)		D7	
	Incremental Accuracy		D8	
	Amplitude Accuracy (Voltage)		D9	
	Maximum Voltage		D10	
	Offset Accuracy		D11	
	Short Circuit Limit		D12	
	Amplitude Accuracy (Current)		D13, D15	
	Maximum Current		D14, D16	
	Maximum Voltage in Current Mode		D17	
	Ripple and Noise		D18	
Collector Supply	Calibrator Voltage			E1
	Gain			E2
	Pulse Form		E3	
	Minimum Current		E4	
	Maximum Voltage		E5	
Test Fixture	Sense lead Resistance		F1	
	Continuity		F2	

371A SETUP AND INITIALIZATION

Perform the following to setup and initialize the 371A before making any performance checks or adjustments.

Setup

1. Check that the 371A is set for the proper power source and that a suitable power cord has been attached.
2. Remove the 371A cabinet panels to gain access to internal adjustments and test points.

   For instructions on cabinet panel removal, refer the the description under the heading "Component Removal and Replacement" in Chapter 3: Maintenance of this manual.

WARNING

Use extreme care when operating the 371A with the covers removed, due to the line voltage, high-voltage, and high-current levels present.

3. Connect the 371A to a suitable power source.
4. Press the POWER button and allow at least 20 minutes warm-up before proceeding.

Initializing

During the power-up process, the 371A sets front panel controls to initial (default) settings. At the beginning of most procedures, you will be instructed to "initialize the 371A." This means that you are to have first saved the power up settings in memory before you can "recall" them in order to initialize the 371A. Perform the following procedure to save the power-up default settings.

1. Press the setup SAVE button to store the default settings in memory location 1.
2. Check that the `SAVE COMPLETE` message is displayed.

   These default settings together with the manual initialization settings are used as the initial control settings throughout the procedure, except as noted otherwise.

With the power up settings in memory, you can initialize the 371A, as instructed, by performing the following:

1. Press the setup RECALL button (with the memory location set to location 1).
2. Check that the `SET 1` message is displayed.

The initial (power-up) default control settings are:

DISPLAY
- Mode ..... STORE
- VERTICAL ..... 1 A/DIV
- HORIZONTAL ..... 1 V/DIV
- INVERT ..... Off

STEP GENERATOR
- SOURCE ..... CURRENT
- STEP/OFFSET AMPLITUDE ..... 1 mA
- NUMBER OF STEPS 2
- OFFSET ..... 0.00 mA
- STEP MULTI 1X ..... Off
- INVERT ..... Off

COLLECTOR SUPPLY
- VARIABLE 0.0%
- PEAK POWER WATTS 300W
- POLARITY ..... NPN+

MEASUREMENT ..... REPEAT

CURSOR ..... OFF

MEMORY
- INDEX NUMBER 1

PERFORMANCE CHECK AND ADJUSTMENT PROCEDURES

Information in the remainder of this chapter is organized as follows:

- organization of the performance check and adjustment procedures
- procedure index
- procedures

Organization of the Performance Check and Adjustment Procedures

The following describes how the performance check and adjustment procedures are organized.

Procedure Index. The "Procedure Index" lists all procedures included in each subsection. The beginning page number is given for each procedure for easy location if you intend to perform only a selected procedure or part of a procedure.

Subsection Headings. The procedures are organized according to major circuit function. For example: A. Power Supply, B. Display, etc.

Procedure Titles. The title of each procedure begins with Checking, Adjusting, Examining, or a combination of these words.

- "Checking" indicates that an electrical characteristic is checked.
- "Adjusting" indicates that instructions are given to make one or more internal adjustments.
- "Examining" indicates that a functional check of the circuit is performed and that no electrical specifications are checked.

371A Setup and Initialization. Each procedure has an "Equipment Setup" illustration that shows pertinent 371A and test equipment connections and that provides initialization instructions and control settings.

NOTE

You will be instructed to initialize the 371A at the beginning of most procedures to prevent the carry-over of inappropriate setup conditions from previous procedures. Initialization also allows you to perform each procedure independently when only selected parts of the procedure are performed.

When a procedure instructs you to "initialize the 371A," perform the initializing instructions under "371A Setup and Initializing" provided earlier in this chapter.

Parts of Procedure. Each procedure is composed of sequentially-numbered steps. Functional headings, such as "Examining CRT Bias" and "Adjusting CRT Bias" are provided to help identify steps associated with a specific task.

Procedure Index

A. POWER SUPPLIES

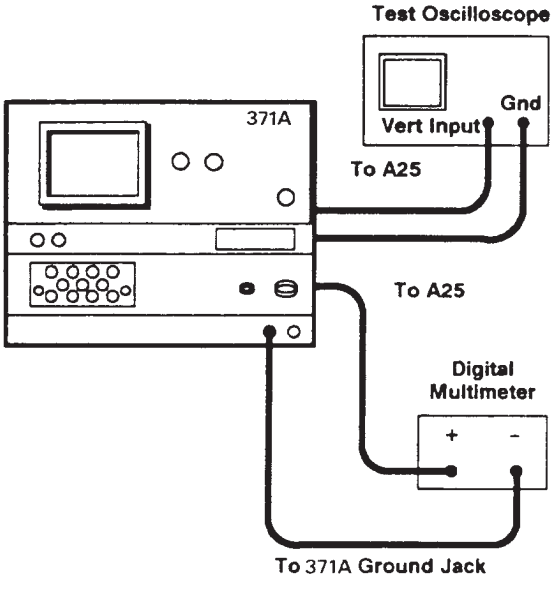
Equipment Required (See Table 4-3)	• Test Oscilloscope • Digital Multimeter • High Voltage Probe

A1. EXAMINING VOLTAGE DEVIATION AND RIPPLE

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Setup the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A.

Test Equipment Settings:
DIGITAL MULTIMETER
Mode.....DC Voltage
TEST OSCILLOSCOPE
VERTICAL.....20 mV/DIV
TIME.....5ms/DIV
TRIGGER.....AUTO

NOTE: *See "Test Point and Adjustment Locations Pullout 3" in Chapter 7 for the location of test points for this step.*

Examining Voltage Deviation

1. Connect the digital multimeter to the +5 V test point on the A25 Main Power Supply board.
2. **EXAMINE** the digital multiplier reading at the +5 V test point and each of the other power supply test points listed in Table 4-4 for voltage levels within the given deviation.

Examining Ripple

3. Disconnect the digital multimeter and connect the test oscilloscope to the +5 V test point.
4. **EXAMINE** the test oscilloscope display at each of the test points listed in Table 4-4 for the ripple displays within the given deviation.

Removing the Setup

5. Disconnect the test oscilloscope.

Table 4-4
Voltage Regulation and Ripple

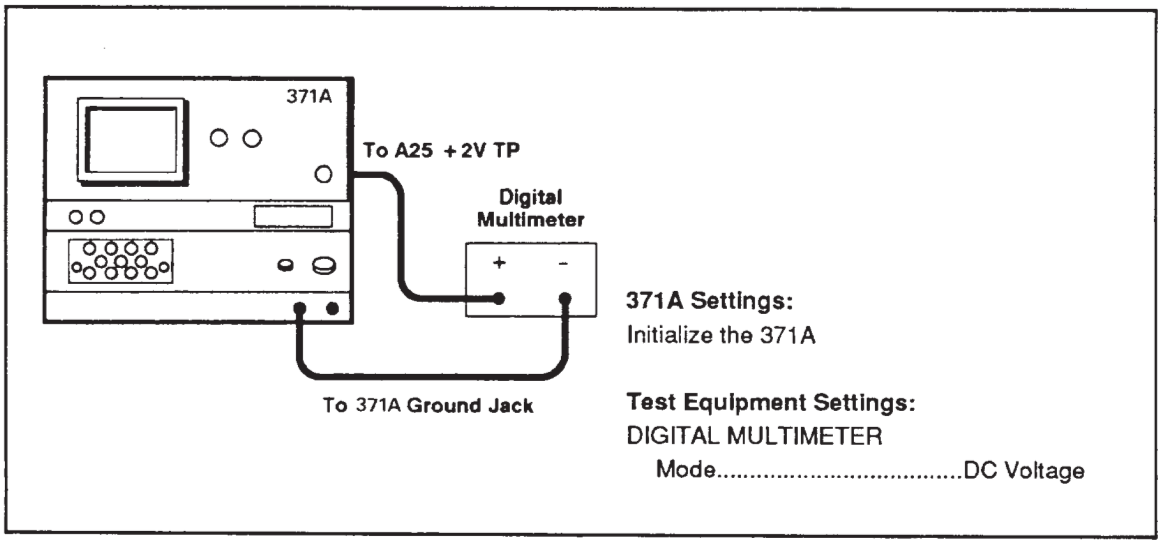
Voltage	Test Point	Deviation Limits(V)	Ripple (mv)
+5.2 V	+5 V	4.992 to 5.408	≤200
-12 V	-12	-11.4 to -12.6	≤100
+12 V	+12	+11.4 to +12.6	≤100
-6.5 V	-6.5	-6.37 to -6.67	≤50
+6.5 V	+6.5	+6.37 to +6.67	≤50

A2. CHECKING THE +2 V REFERENCE ADJUSTING THE+2 V REFERENCE (A25R500)

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



NOTE: *See "Test Point and Adjustment Locations Pullout 3" in Chapter 7 for the location of test points for this step.*

Checking the +2 V Reference

1. CHECK for digital multimeter reading of +1.999 V to +2.001 V.

   If not within these limits, the following adjustment is necessary.

Adjusting the +2 V Reference

2. ADJUST R500 (+2ADJ) on the A25 Main Power Supply board, for a digital multimeter reading of +2.000 V.

Removing the Setup

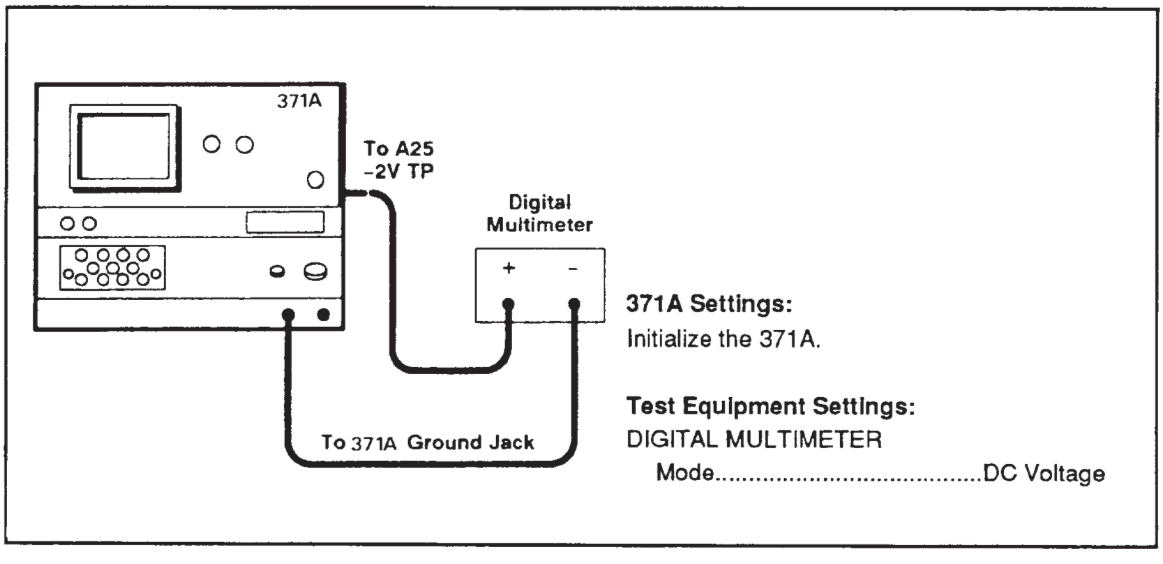
3. Disconnect the positive lead of the digital multimeter from the test point.

A3. CHECKING THE -2 V REFERENCE
ADJUSTING THE - 2 V REFERENCE (A25R516)

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



NOTE: *See "Test Point and Adjustment Locations Pullout 3" in Chapter 7 for the location of test points for this step.*

Checking the -2 V Reference

1. CHECK for digital multimeter reading of -1.999 V to -2.001 V.

   If not within these limits, perform Step 2.

Adjusting the -2 V Reference

2. ADJUST R516 (-2 V ADJ) on the A25 Main Power Supply board, for a digital multimeter reading of -2.000 V.

Removing the Setup

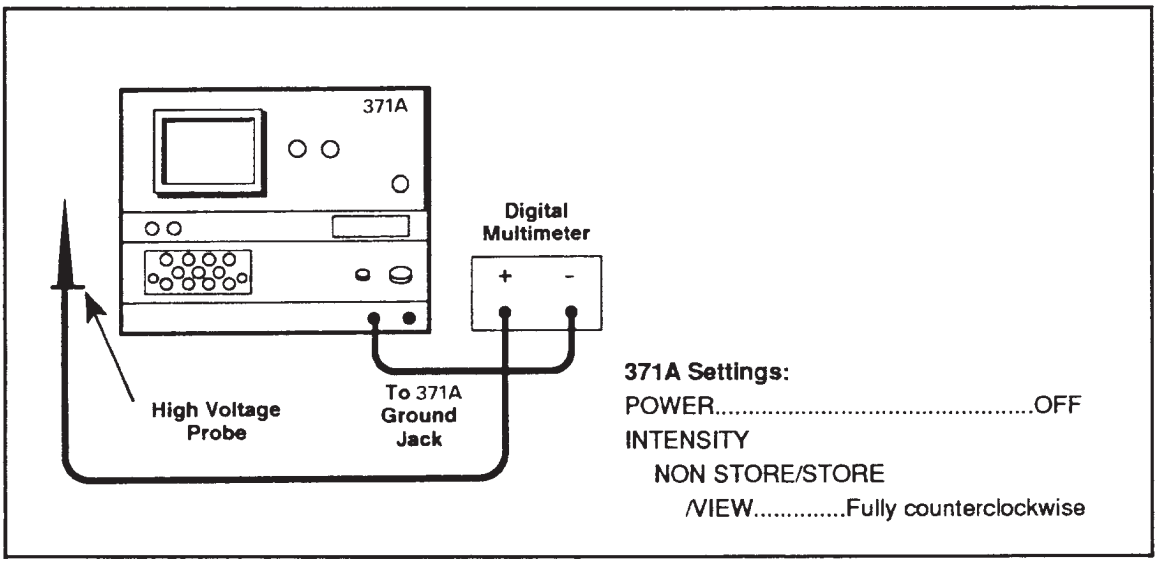
3. Disconnect the digital multimeter leads from the 371A.

A4. EXAMINING THE -2400 V CATHODE SUPPLY

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



NOTE: *See "Test Point and Adjustment Locations Pullout 3" in Chapter 7 for the location of test points for this step.*

Removing the High Voltage Shield

WARNING

To avoid electric shock hazard, be certain the 371A POWER switch is set to OFF before removing or replacing the high-voltage shield and connecting the digital multimeter to the 371A. Be certain that the digital multimeter ground lead is connected to the 371A ground terminal.

1. Use a #1 POZIDRIV screwdriver to remove the high-voltage shield from the left side of the 371A. There are three shields on the left side; remove the center shield.

Measuring the Cathode Voltage

NOTE: *See "Test Point Adjustment Locations Pullout 3" in Chapter 7 for the location of the test point used in this step.*

2. Connect the high voltage probe to TP400 on the A20 H.V. Regulator board.
3. Change the following 371A setting:
   POWER. . . . . ON
4. **EXAMINE** the digital multimeter for a reading of -2304 V to -2496 V.

Disconnecting the Meter

5. Change the following 371A setting:
   POWER. . . . . OFF

WARNING

To avoid electric shock hazard, be certain the 371A POWER switch is set to OFF before disconnecting the digital multimeter leads.

6. Disconnect the high voltage digital multimeter probe and negative lead from the 371A.

Replacing the High Voltage Shield

WARNING

To avoid electric shock hazard, be certain the 371A POWER switch is set OFF before replacing the high high voltage shield.

7. Replace the high voltage shield.
8. Change the following 371A setting:
   POWER. . . . . .ON

B. DISPLAY

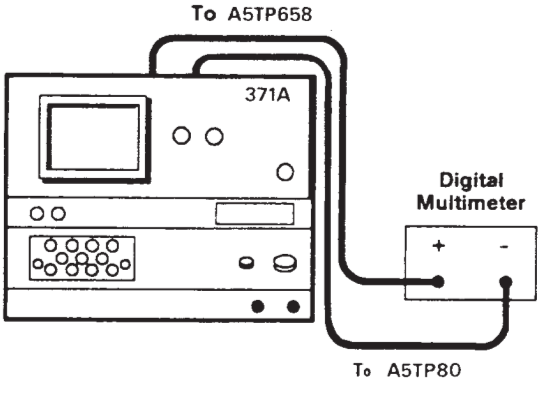
Equipment Required (See Table 4-3)	• Digital Multimeter

B1. EXAMINING CALIBRATOR VOLTAGE

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A

Test Equipment Settings:
DIGITAL MULTIMETER
Mode.....DC Voltage

NOTE: *See "Test Point and Adjustment Locations Pullout 1" in Chapter 7 for the location of test points for this step.*

Examining Horizontal CAL ZERO

1. Change the following 371A setting:
   DISPLAY
   Mode. . . . . .CAL ZERO

   Cal zero mode is initiated by pressing the VIEW button while holding down the SHIFT button.

2. **EXAMINE** the digital multimeter for reading between -0.995 and -1.005 V.

Examining Horizontal CAL FULL

3. Change the following 371A setting:
   DISPLAY
   Mode. . . . . .CAL FULL

   Cal full mode is initiated by pressing the STORE button while holding down the SHIFT button.
4. **EXAMINE** the digital multimeter for reading between +0.995 V and +1.005 V.
5. Disconnect the digital multimeter positive lead from TP658.

Examining Vertical CAL FULL

6. Connect the digital multimeter positive lead to TP648 of the A5 Display Control board.
7. **EXAMINE** the digital multimeter for reading between +0.995 V and +1.005 V.

Examining Vertical CAL ZERO

8. Change the following 371A setting:
   DISPLAY
   Mode. . . . . .CAL ZERO
9. **EXAMINE** the digital multimeter for reading between -0.995 V and -1.005 V.

Removing the Setup

10. Change the following 371A setting
    DISPLAY
    Mode. . . . . CAL OFF

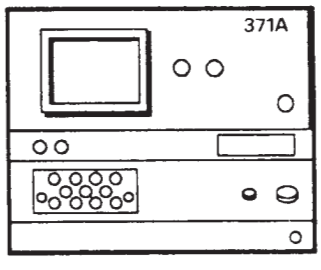
    Cal off mode is initiated by pressing the REF button while holding down the SHIFT button.
11. Disconnect the digital multimeter from TP648 and TP80.

B2. EXAMINING CRT BIAS
ADJUSTING CRT BIAS (A20R210)

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation to aid in the adjustment of R210;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:

POWER.....OFF
INTENSITY
  NONSTORE/STORE
    /VIEW.....Fully counterclockwise
  REF.....Fully counterclockwise
  READOUT
    Cursor.....Fully counterclockwise
  GRAT ILLUM.....Fully counterclockwise

1. While pressing the cursor SHIFT button, set the 371A POWER switch to ON. This displays the frame test pattern on the CRT.

Examining CRT Bias

2. **EXAMINE** the CRT for the center spot to be barely visible. If the spot is bright or not visible at all, the following adjustment may be necessary.

Adjusting CRT Bias

NOTE: *R210 can be adjusted through the access hole in the high voltage shield.*

3. **ADJUST** GRID BIAS adjustment R210 on the A20 H.V. Regulator board until the CRT spot is barely visible.

Removing the Setup

4. Change the following 371A settings:
   INTENSITY
   NON STORE/STORE/VIEW. . . . . Optimum intensity
   READOUT/CURSOR. . . . . .Optimum intensity

NOTE: *The frame test pattern is also used in procedure B3 ("Examining and Adjusting Astigmatism"). Proceed to Step 5 only if procedure B3 will not be performed.*

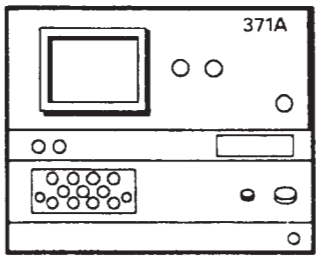
5. Press the cursor SHIFT button to remove the test pattern.

B3. EXAMINING ASTIGMATISM ADJUSTING ASTIG (A18R420)

NOTE: *The characteristics examined in this procedure are provided as examples of typical instrument operation to aid in the adjustment of R420;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
POWER.....OFF
FOCUS.....Fully counterclockwise

1. While pressing the cursor SHIFT button, set the 371A POWER switch to ON. This displays the Frame Test Pattern on the CRT.

Examining Astigmatism

2. Change the following 371A settings:
   INTENSITY
   NON STORE/STORE/VIEW. . . . . .Largest possible displayed center spot
   READOUT CURSOR. . . . . Fully counterclockwise
3. **EXAMINE** the center spot for a circular shape.

   If the center spot is not circular, the following adjustment may be necessary.

Adjusting Astigmatism

NOTE: *See "Test Point Adjustment Location Pullout 2" in Chapter 7 for the location of the adjustment associated with this step.*

4. **ADJUST** ASTIG adjustment R420 on the A18 CRT Output board for a circular spot shape.
5. Change the following 371A settings:
   FOCUS. . . . . .Clockwise for smallest possible spot
   INTENSITY
   NON STORE/STORE/VIEW. . . . . .Normal viewing
   READOUT/CURSOR. . . . . Normal Viewing
6. **EXAMINE** the CRT for the frame test pattern to be similarly in focused.

   If the frame test pattern is not similarly focusing, the following adjustment may be necessary.
7. **READJUST** ASTIG adjustment R420 on the A18 CRT Output board for a slight compromise between the center dot and the outer frame.

Removing the Setup

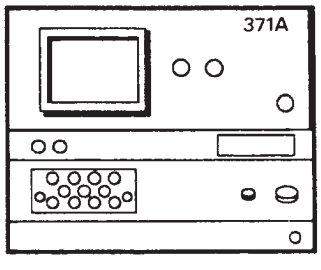
8. Press the cursor SHIFT key to remove the frame test pattern.

B4. EXAMINING NON STORE/STORE/VIEW INTENSITY OPERATION

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A

Examining STORE

1. **CHECK** that the STORE LED is lit.
2. **EXAMINE** the CRT for a continuous increase in spot brightness when the NON STORE/STORE/VIEW INTENSITY control is turned from full counterclockwise to full clockwise.

Examining VIEW

3. Press the ENTER button to store the displayed trace (spot) in memory location 1.
4. **EXAMINE** the display for `ENTER COMPLETE` message.
5. Change the following 371A setting:
   DISPLAY
   Mode. . . . . VIEW
6. **CHECK** that the VIEW LED is lit.
7. **EXAMINE** the CRT for continuous increase in brightness of the viewed trace (spot) as the NON STORE/STORE/VIEW INTENSITY control is turned from full counterclockwise to full clockwise.

Examining NON STORE

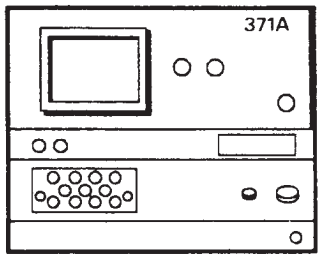
8. Change the following 371A setting:
   DISPLAY
   Mode. . . . . NON STORE
9. **CHECK** that the NON STORE LED is lit
10. **EXAMINE** the CRT for a continuous increase in spot brightness as the NON STORE/STORE/VIEW INTENSITY control is turned from fully counterclockwise to fully clockwise.
11. Change the following 371A settings:
    INTENSITY
    NON STORE/STORE/VIEW. . . . . Normal viewing level
    DISPLAY
    Mode. . . . . STORE

B5. EXAMINING REF INTENSITY OPERATION

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A

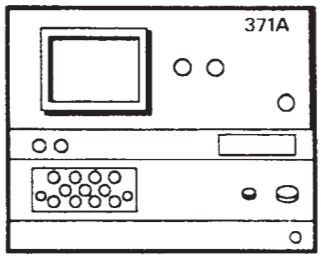
1. Press the REF button.
2. **CHECK** that the REF LED is lit.
3. Change the following 371A setting:
   DISPLAY
   INVERT. . . . . .ON
4. **EXAMINE** the CRT for a continuous increase in brightness of the trace (spot) as the REF INTENSITY control is turned from full counterclockwise to full clockwise:
5. Change the following 371A settings:
   INTENSITY
   REF. . . . . .Normal viewing level
   DISPLAY
   REF. . . . . .OFF

B6. EXAMINING READOUT/CURSOR INTENSITY OPERATION

NOTE: *The characteristics examined in this procedure are examples of typical operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A; then set the following control as indicated.

CURSOR
Mode.....WINDOW

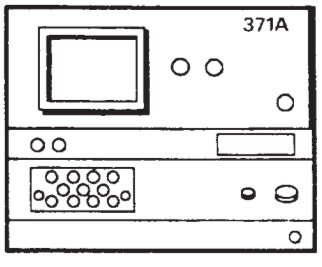
1. Examine the display for a continuous increase in readout and brightness as the READOUT/CURSOR INTENSITY control is turned from full counterclockwise to full clockwise.
2. Change the following 371A settings:
   INTENSITY
   READOUT/CURSOR. . . . . Normal viewing level
   CURSOR
   Mode. . . . . .OFF

B7. ADJUSTING V ZERO AND H ZERO (A3R614 and A3R604) ADJUSTING STORE GAIN (A3R622)

NOTE: *The characteristics examined in this procedure are provided as examples of typical instrument operation to aid in the adjustment of R604 and R614;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A; then set the following controls as indicated.

CURSOR
Mode.....DOT
DISPLAY
Mode.....CAL ZERO

NOTE: *CAL ZERO is initiated by pressing the VIEW button while holding down the cursor SHIFT button.*

Determining if Adjustment is Necessary

1. **EXAMINE** the vertical CURSOR readout for a reading that does not exceed ±0.02 A and the horizontal CURSOR readout for a reading that does not exceed ±0.02 V.

   If the CURSOR readouts are not within these limits, the following adjustment is necessary.

Adjusting H Zero and V Zero

NOTE: *See "Test Point Adjustment Locations Pullout 1" in Chapter 7 for the location of adjustments in the following steps.*

2. **ADJUST** H ZERO adjustment R604 and V Zero adjustment R614 on the A3 A/D board for a CURSOR readout of 0.00 for Vertical and 0.00 for horizontal.
3. Change the following 371A setting:
   DISPLAY
   INVERT. . . . . .ON
4. **CHECK** that the INVERT LED is lit, and that the displayed spot moved from the lower left to the upper right corner of the CRT.
5. Repeat Steps 1 and 2.
6. Change the following 371A settings:
   DISPLAY
   INVERT. . . . . OFF
   Mode. . . . . CAL FULL

   Cal full mode is initiated by pressing the STORE button while holding the cursor SHIFT button.

Examining Cal Full

7. **EXAMINE** the 371A for the following:
   - The vertical CURSOR readout is between 9.98 A and 10.02 A.
   - The horizontal CURSOR readout is between 9.98 V and 10.02 V.
8. Change the following 371A setting:
   INVERT. . . . . ON

   The indicator above the INVERT button will be lit.
9. Repeat Step 7.
10. Change the following 371A setting:
    DISPLAY
    INVERT. . . . . OFF

Returning to Cal Off Mode

11. If the cal zero mode and cal full mode readouts are within the given limits, proceed to Step 13. If they are not within the limits, the following adjustments are necessary.

Adjusting Store Gain

NOTE: *See "Test Point Adjustment Locations 1 in Chapter 7" for the location of adjustments performed in this procedure.*

12. **ADJUST** STORE GAIN adjustment R622 on the A3 A/D board so that the difference in vertical CURSOR readouts is 10.00 A between the cal zero and cal full modes.

    Example: Cal Zero -0.05 A, Cal Full 9.95 A, difference equals 10.00 A.

13. Press the REF button while pressing the cursor SHIFT button.

    This initiates cal off mode.

B8. CHECKING ORTHOGONALITY AND GEOMETRY

EXAMINING STORE POSITION, NON STORE GAIN, AND D/A GAIN

ADJUSTING SX POSITION (A5R508), SY POSITION (A5R528), D/A GAIN (A4R842), X-GAIN (A5R554), Y-GAIN (A5R574), ORTHOGONALITY (A5R80), GEOM (A18R410)

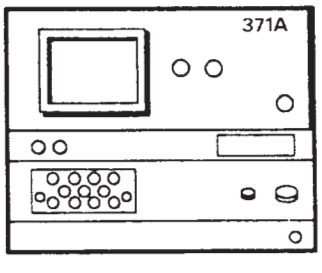
SPECIFICATIONS

- Orthogonality is 90^0 +/- 0.5 minor division.
- Geometry includes two categories: (1) tilt or bowing is no more that 0.5 minor division; (2) keystone effect is no more than 0.75 minor division.

NOTE: *Characteristics in EXAMINE steps are provided as examples of typical instrument operation to aid in adjustment;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:

POWER.....OFF

NOTE: *See "Test Point and Adjustment Location Pullouts 1 and 2" in Chapter 7 for the location of adjustments associated with this procedure.*

Initiating the Test Pattern

1. While pressing the cursor SHIFT button, set the 371A POWER switch to ON.

   This initiates the diagnostic routine. The SONY/Tektronix logo first appears, followed by the display test pattern shown in Figure 4-1.

   The test pattern consists of a frame test pattern overlaid over a dot test pattern.

2. Turn the GRAT ILLUM control fully clockwise for the maximum brightness.

3. Set the frame test pattern to the same intensity as the graticule using the READOUT/CURSOR INTENSITY control and set the dot test pattern slightly brighter using the intensity NON STORE/STORE/VIEW INTENSITY control.

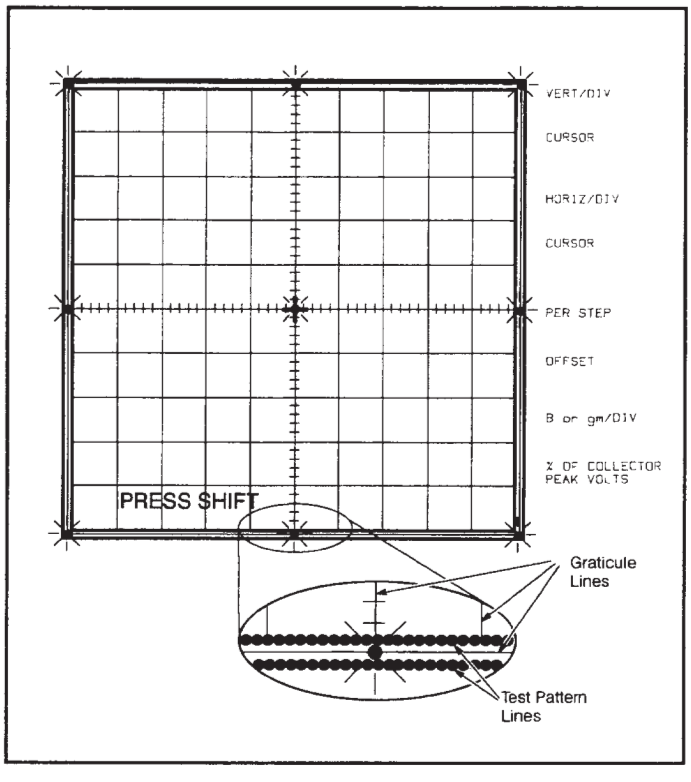


Figure 4-1. Diagnostic test pattern display.

Examining Store Position

4. **EXAMINE** the display to determine whether the center cross mark of the frame test pattern aligns with the center dot of the dot test pattern.

   If the pattern centers do not align, the following adjustments are necessary.

Adjusting SY POSITION and SX POSITION

The SX and SY POSITION controls change the frame test pattern position without changing the dot test pattern position.

5. **ADJUST** SY POSITION adjustment R528 and SX POSITION adjustment R508 on the A5 Display Control board so that the center cross mark of the frame test pattern conforms to the center dot of the dot pattern (not the center of the graticule).

Examining and Adjusting D/A Gain

6. **EXAMINE** the display to determine whether the outer eight dots of the dot pattern are located between the inner frame and outer frame of the frame test pattern.

   If the location is not correct, the following adjustment is necessary.

7. **ADJUST** D/A GAIN adjustment R842 on the A4 Digital Display board to position the outer eight dots between the inner frame and outer frame of the frame test pattern.

   D/A Gain adjusts the size of the frame test pattern without changing the dot test pattern size.

Checking and Adjusting the Display

The dot frame test patterns are visual aids for display alignment. Positioning, straightening and sizing of the display involves several adjustments. Three of these adjustments, GEOMETRY, TRACE ROTATION, and ORTHOGONALITY, are interactive.

- GEOMETRY adjusts the curvature of the sides, top and bottom of the test pattern.
- TRACE ROTATION tilts the test pattern about a pivot point approximately 2.5 divisions from the right side of the graticule on the horizontal line.
- ORTHOGONALITY changes the test pattern shape from the rhombus to rectangular.
- X-GAIN and Y-GAIN change the test pattern from rectangular to square.
- Front-panel POSITION controls change the position of the whole display.

Checking Orthogonality

8. Change the following 371A settings:

   POSITION

   Vertical and Horizontal . . . .Position the center dot to graticule center

   TRACE ROTATION. . . . . .Position the three intermediate horizontal dots on the center horizontal graticule line

9. **CHECK** that the three intermediate vertical dots conform to the center vertical graticule line within 0.5 minor division.

   If the dots do not conform, the following adjustment is necessary.

Adjusting Orthogonality

10. **ADJUST** ORTHOGONALITY adjustment R80 on the A5 Display Control board so that the three intermediate vertical dots conform to the center vertical graticule line.

Examining Non-Store Gain

11. **EXAMINE** the display to determine if the outer eight dots of the test pattern are positioned within the inner and outer frame patterns.

    If the positioning is not correct, the following adjustment is necessary.

Adjusting X-Gain and Y-Gain

12. **ADJUST** X-GAIN adjustment R554 and Y-GAIN adjustment R574 on the A5 Display Control board to position the outer eight dots of the dot pattern within the inner and outer frame patterns.

Checking and Adjusting Geometry

13. Change the following 371A settings:
    POSITION
    Horizontal and Vertical. . . . . Position the center dot pattern at graticule center
14. **CHECK** the frame test pattern for ≤ 0.5 minor division of bowing and ≤ 0.75 minor division of keystone effect.

    If the bowing and keystone effect are not within these limits, the following adjustment may be necessary.
15. **ADJUST** GEOMETRY adjustment R410 on the A18 CRT Output board (if necessary) for minimum display bowing.

Examining the Display for Adjustment Interaction

16. **EXAMINE** the display for the graticule periphery to be between the outer frame and inner frame of the frame test pattern, within 0.5 minor division.

    If not, repeat Steps 9 through 13.
17. **EXAMINE** the display for the center dot to be at graticule center, within 0.5 minor division.

Removing the Test Pattern

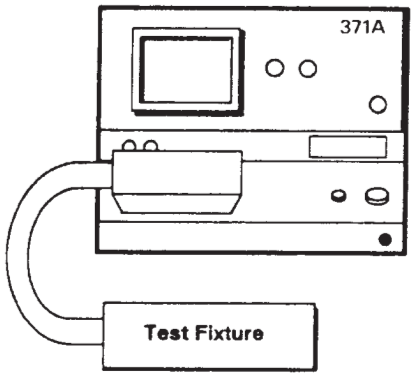
18. Press the cursor SHIFT button to exit the diagnostic routine.

B9. ADJUSTING TANGENT ZERO (A10R462), LOOPING BALANCE (A10R422), LOOPING ZERO (A10R413)

NOTE: *The characteristics in this procedure are examples of typical instrument operation; **they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

COLLECTOR SUPPLY
- PEAK POWER WATTS.....3 mW
- HIGH VOLTAGE.....ENABLED
- VARIABLE.....100%

DISPLAY
- Mode.....NON STORE
- VERTICAL..... 1 µA/DIV
- HORIZONTAL. .....500 V/DIV COLLECTOR

Protective Cover.....CLOSED

1. Turn the LOOPING COMPENSATION control throughout its range.
2. **CHECK** that the looping passes through minimum curve separation.

NOTE: *See "Test Point and Adjustment Locations Pullout 2" in Chapter 7 for the location of adjustments R462, R422, and R413.*

3. **ADJUST** TAN ZERO adjustment R462 on the A10 Sense board to align the trace with the horizontal graticule line.
4. Change the following 371A setting:
   COLLECTOR SUPPLYVARIABLE. 0.0%
   LOOPING COMPENSATION. . . . . .Fully clockwise
5. **ADJUST** LOOP BAL R422 on A10 Sense board so that spot conforms to the intersection on the left side and lower side of the graticule.
6. ADJUST LOOP ZERO R413 on A10 Sense board for minimum spot shift while turning front-panel LOOPING COMPENSATION control from one extreme to the other.
7. Change the following 371A setting:
   COLLECTOR SUPPLY
   HIGH VOLTAGE. . . . . . DISABLED

C. MEASUREMENT ACCURACY

Equipment Required (See Table 4-3)	• Digital Multimeter • DC Current Source • DC Voltage Source • Calibration Fixture (067-1345-00)

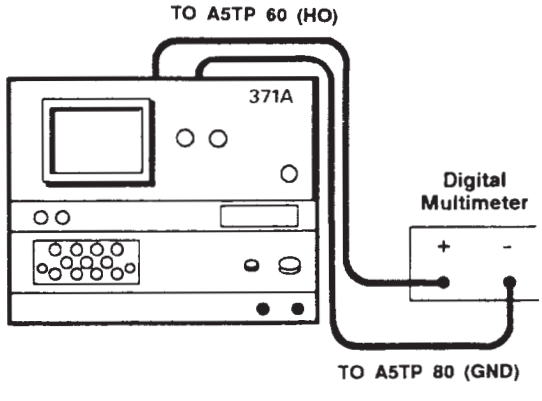
C1. ADJUSTING HORIZONTAL BALANCE (A5R655, R945, A10R276)

SPECIFICATIONS

- Cursor accuracy is less than 1.5% of READOUT plus 10% of HORIZONTAL VOLTS/DIV setting. (100 mV/DIV setting accuracy is 5.0% of READOUT plus 20 mV.)

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

DISPLAY
HORIZONTAL.....100 mV/DIV COLLECTOR
CURSOR
Mode.....DOT

Test Equipment Setting:
Mode.....DC VOLTAGE

Determining Whether Adjustment is Necessary

1. **EXAMINE** the horizontal CURSOR readout for a reading within the limits given in Table 4-5 while setting the HORIZONTAL VOLTS/DIV switch and peak power watts selectors as indicated.

   If within the given limits, no adjustment is necessary. Go on to the next procedure.

NOTE: *When you want to set the PEAK POWER WATTS to 300mW or 30 mW, simultaneously press the cursor SHIFT button and the 300 mW or 30 mW button. The indicator to the left of HIGH or LOW will change color from red to green.*

Adjusting Horizontal Balance

2. Change the following 371A settings:
   DISPLAY
   Mode. . . . . .NON STORE
   COLLECTOR SUPPLY
   PEAK POWER WATTS. . . . . 30 mW

Table 4-5
Horizontal Balance Limits

PEAK POWER WATTS Setting	HORIZONTAL (COLLECTOR) Setting	HORIZONTAL CURSOR READOUT
3 kW or 300 W	100 mV/DIV	±20 mV
	200 mV/DIV	±20 mV
	500 mV/DIV	±50 mV
	1 V/DIV	±0.10 V
	2 V/DIV	±0.20 V
	5 V/DIV	±0.50 V
30 W or 3 W	50 V/DIV	±5 V
	100 V/DIV	±20 V
	200 V/DIV	±20 V
	500 V/DIV	±50 V
300 mW or 30 mW	5 V/DIV	±0.50 V
	10 V/DIV	±1 V
	20 V/DIV	±2 V
	50 V/DIV	±5 V

NOTE: *See "Test Point and Adjustment Location Pullouts 1 and 2" in Chapter 7 for the location of adjustment R655 and R276.*

3. **ADJUST** +W.LVL R945 on the A5 Display Control board to minimize deviation from 100.0 mV for NPN mode and from -100.0 mV for PNP mode while switching COLLECTOR SUPPLY POLARITY.
4. Change the positive lead of digital multimeter from TP 60 (HO) to TP 658 (HD).
5. **ADJUST** X-MAG R655 on the A5 Display Control board to minimize the deviation from -1.000 V for NPN mode and from +1.000 V for PNP mode while switching COLLECTOR SUPPLY POLARITY

6. **ADJUST** H BAL adjustment R276 on the A10 Sense board for minimum spot shift while setting HORIZONTAL VOLTS/DIV from 50 V/DIV COLLECTOR to 500 V/DIV COLLECTOR.

Rechecking After Adjustment

7. Change the following 371A setting:
   DISPLAY
   Mode. . . . . STORE
8. Repeat Step 1.

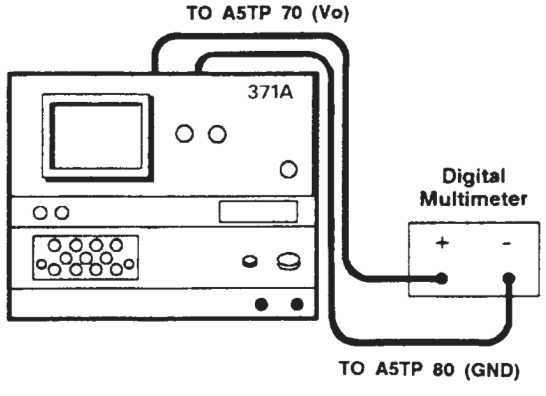
C2. ADJUSTING VERTICAL BALANCE (A5R645, R955, A10R146)

SPECIFICATIONS

- Cursor accuracy is less than 1.5% of READOUT plus 10% of VERTICAL CURRENT/DIV setting.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

COLLECTOR SUPPLY
PEAK POWER WATTS.....30 mW
DISPLAY
VERTICAL.....1 µA/DIV
CURSOR
Mode.....DOT

Test Equipment Setting:
Mode.....DC VOLTAGE

NOTE: *When you want to set the PEAK POWER WATTS to 300mW or 30 mW, simultaneously press the cursor SHIFT button and the 300 mW or 30 mW button. The indicator to the left of HIGH or LOW will change color from red to green.*

Determining Whether Adjustment is Necessary

1. **EXAMINE** the vertical CURSOR readout for a reading within the limits in Table 4-6, while setting the VERTICAL CURRENT/DIV control and peak power watts selector as indicated.

   If the CURSOR readout is within the given limits, go on to the next procedure.

Adjusting Vertical Balance

NOTE: *See "Test Point and Adjustment Location Pullouts 1 and 2" in Chapter 7 for the location of adjustment R645 and R146.*

2. Change the following 371A settings:
   DISPLAY
   Mode. . . . . ..NON STORE
   COLLECTOR SUPPLY
   PEAK POWER WATTS. . . . . ..30 mW
3. **ADJUST** -W.LVL R955 on A5 Display Control board to minimize deviation from 100.0 mV for NPN mode and from -100 mV for PNP mode while switching COLLECTOR SUPPLY POLARITY.

Table 4-6
Vertical Zero Limits

PEAK POWER WATTS Setting	VERTICAL Setting	VERTICAL CURSOR Readout (±)
3 0 mW	1 µA/DIV	0.1 µA
30 mW	2 µA/DIV	0.2 µA
30 mW	5 µA/DIV	0.5 µA
30 mW, 300 mW, 3 W	10 µA/DI:V	1.0 µA
30 mW, 300 mW, 3 W	20 µA/DIV	2.0 µA
30 mW, 300 mW, 3 W	50 µA/DIV	5.0 µA
300 mW, 3 W, 30 W	100 µA/DIV	10 µA
300 mW, 3 W, 30 W	200 µA/DIV	20 µA
300 mW, 3 W, 30 W	500 µA/DIV	50 µA
30 W	1 mA/DIV	0.10 mA
30 W	2 mA/DIV	0.20 mA
30 W	5 mA/DIV	0.50 mA
300 W	500 mA/DIV	50 mA
300 W, 3 kW	1 A/DIV	0.10 A
300 W, 3 kW	2 A/DIV	0.20 A
300 W, 3 kW	5 A/DIV	0.50 A
3 kW	10 A/DIV	1.0 A
3 kW	20 A/DIV	2.0 A
3 kW	50 A/DIV	5.0 A

4. Change the positive lead of the digital multimeter from TP 70 (VO) to TP 648 (VD).
5. **ADJUST** Y-MAG R645 on the A5 Digital Control board to minimize the deviation from -1.00 V for NPN mode and from +1.000 V for PNP mode while switching COLLECTOR SUPPLY POLARITY.
6. Remove the voltmeter leads.
7. **ADJUST** V BAL adjustment R146 on the A10 Sense board for minimum spot shift while VERTICAL CURRENT/DIV is alternately set to 5uA/DIV and 10 uA/DIV.

Rechecking After Adjustment

7. Change the following 371A settings:
   DISPLAY
   Mode. . . . . STORE
   COLLECTOR SUPPLY
   PEAK POWER WATTS. . . . . .30 mW

8 Repeat Step 1.

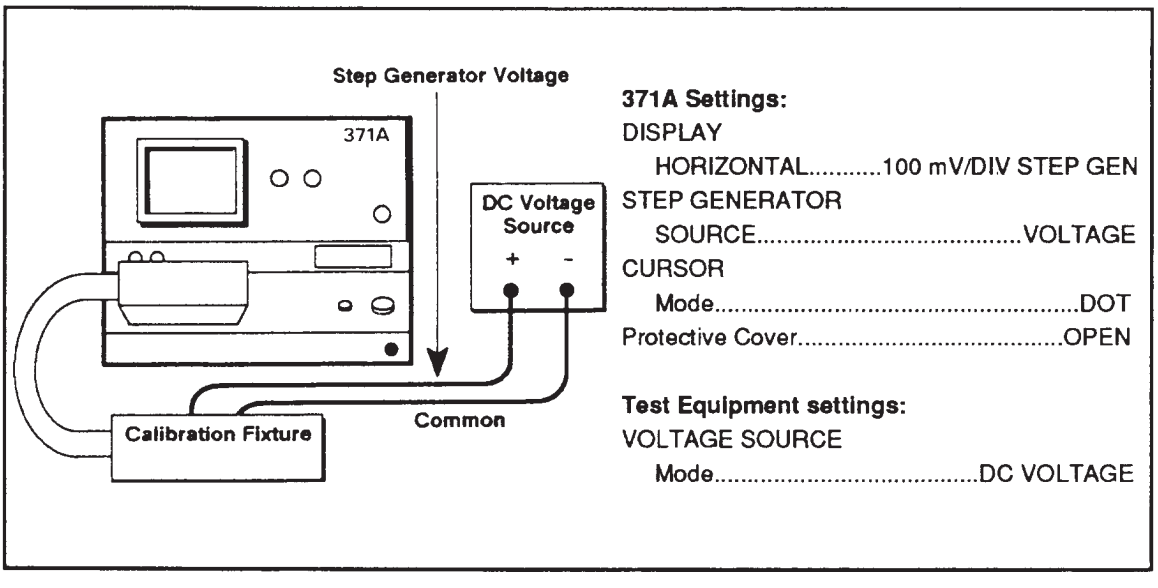
C3. CHECKING STEP GENERATOR (VBE) VOLTAGE MEASUREMENT ACCURACY

SPECIFICATIONS

- Cursor accuracy is less than 1.5% of READOUT plus 10% of HORIZONTAL VOLTS/DIV setting. (100 mV/DIV setting accuracy is 5.0% of READOUT plus 20 mV.)

Equipment Setup

1. Turn off the 371A.
2. Remove the connector at J76 on the A7 Step Generator board.
3. Turn on the 371A and configure as shown in the setup illustration below.



NOTE: *Leave the Protective Cover open until the end of this procedure.*

4. Connect the voltage source between the COMMON and STEP GENERATOR VOLTAGE terminals using two long patch cords as shown in Figure 4-2.
5. Set the voltage source to 0 V.
6. **CHECK** that the horizontal CURSOR readout is within the limits shown in Table 4-7 for a voltage source of 0.000 V at each setting of HORIZONTAL VOLTS/DIV STEP GEN.
7. Set HORIZONTAL to 100 mV/DIV STEP GEN.

8. Repeat Step 6, this time setting the voltage source to the non-zero value shown in Table 4-7 for each setting of HORIZONTAL VOLTS/DIV STEP GEN.
9. **CHECK** that the horizontal CURSOR readout is within the limits shown in Table 4-7.
10. Set the voltage source to 0 V output.
11. Disconnect the patch cords from the Calibration Fixture.
12. Set the 371A POWER switch to OFF.
13. Connect the connector at J76 on the A7 Step Generator board.

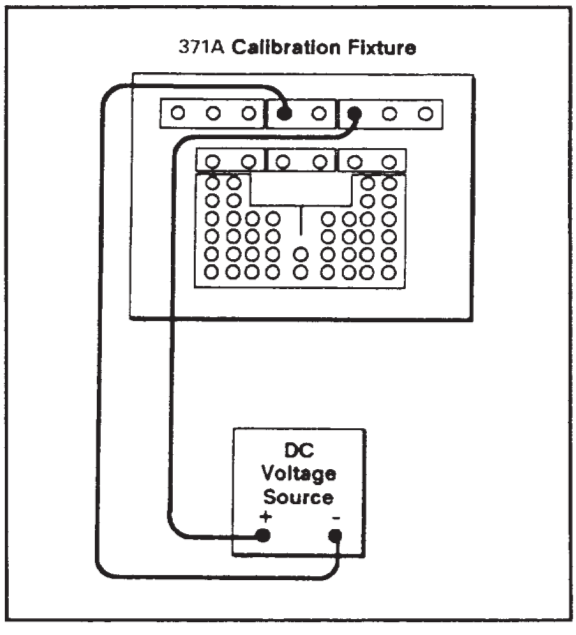


Figure 4-2. Setup for determining voltage measurement accuracy.

Table 4-7
Step Generator Voltage Measurement Accuracy

HORIZONTAL V/DIV STEP GEN Setting	VOLTAGE SOURCE Setting	HORIZONTAL CURSOR Readout
100 mV	0.000V	±20 mV
	900 mV	835 – 965 mV
200 mV	0.000V	±20 mV
	1800 mV	1752 – 1824 mV
500 mV	0.000V	±50 mV
	4500 mV	4380 – 4620 mV
1 V	0.000 V	±0.10 V
	9.00 V	8.76 – 9.24 V
2 V	0.000V	±0.20 V
	18.00 V	1752 – 18.48 V
5 V	0.000V	±0.50 V
	45.00 V	43.80 – 46.20 V

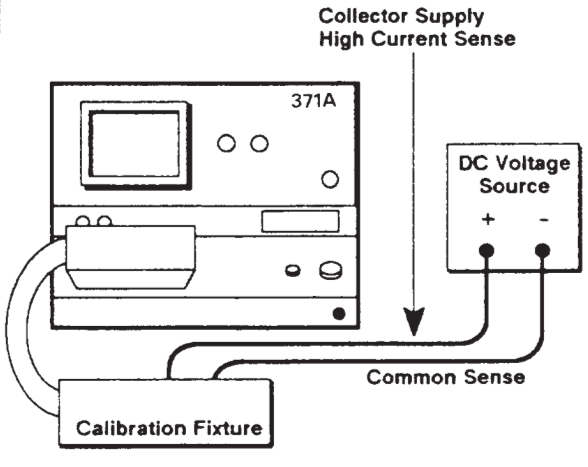
C4. CHECKING COLLECTOR (VCE) LOW VOLTAGE MEASUREMENT ACCURACY

SPECIFICATIONS

- Cursor accuracy is less than 1.5% of READOUT plus 10% of HORIZONTAL VOLTS/DIV setting. (100 mV/DIV setting accuracy is 5.0% of READOUT plus 20 mV.)

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

DISPLAY
HORIZONTAL.....100 mV/DIV COLLECTOR
CURSOR
Mode.....DOT
HIGH CURRENT.....DISABLED
Protective Cover.....OPEN

Test Equipment settings:
VOLTAGE SOURCE
Mode.....DC VOLTAGE

NOTE: *Leave the protective cover open until the end of this procedure.*

1. Connect the voltage source between the HIGH CURRENT SENSE terminal and the COMMON SENSE terminal by using two long patch cords a shown in Figure 4-3.
2. **CHECK** that the horizontal CURSOR readout is within the limits shown in Table 4-8 at each setting of HORIZONTAL VOLTS/DIV COLLECTOR with changing each Voltage setting.

3. Set the voltage source to 0 V output.
4. Disconnect the patch cords from the Calibration Fixture.
5. Initialize the 371A.

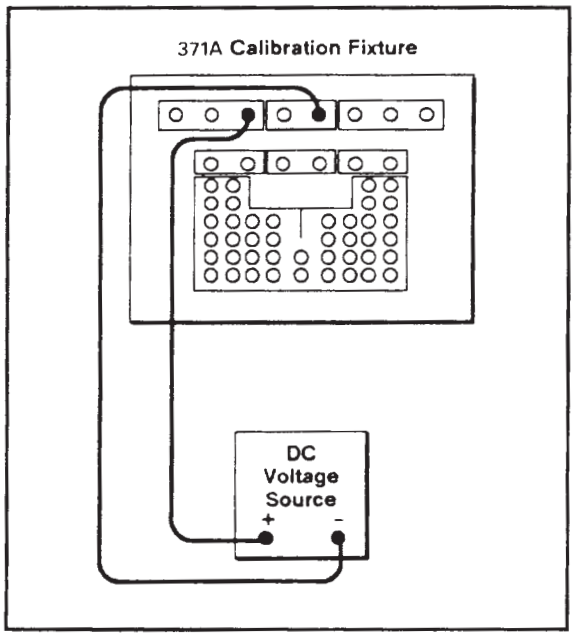


Figure 4-3. Setup for determining low voltage measurement accuracy.

Table 4-8
Collector Low Voltage Measurement Accuracy

HORIZONTAL VOLTS/DIV COLLECTOR Setting	VOLTAGE SOURCE Setting	HORIZONTAL CURSOR Readout
100 mV	0.9V	835 – 965mV
200 mV	1.8 V	1752 – 1824 mV
500 mV	4.5 V	4380 – 4620 mV
1 V	9. V	8.76 –9.24 V
2 V	18. V	17.52 –18.48 V
5 V	45. V	43.80 – 46.20 V

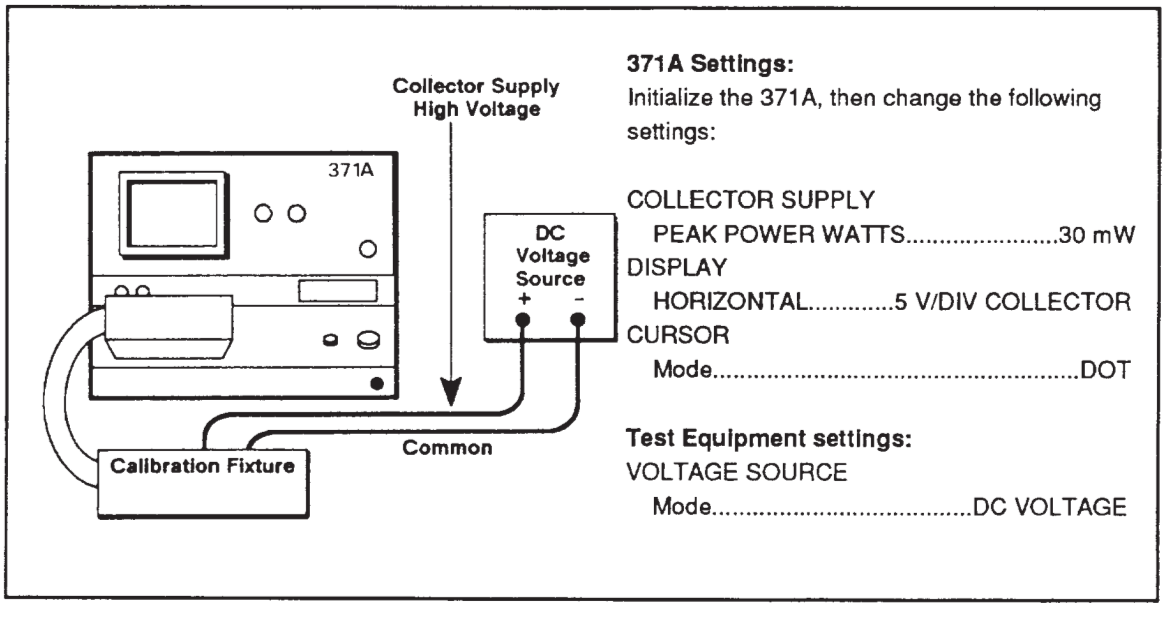
C5. CHECKING COLLECTOR (V_{CE}) HIGH VOLTAGE MEASUREMENT ACCURACY

SPECIFICATIONS

- Cursor accuracy is less than 1.5% of READOUT plus 10% of HORIZONTAL VOLTS/DIV setting.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



NOTE: *When you want to set the PEAK POWER WATTS to 30 mW, simultaneously press the cursor SHIFT button and the 30 mW button. The indicator to the left of LOW will change color from red to green.*

1. Connect the voltage source between the COLLECTOR SUPPLY HIGH VOLTAGE terminal and the COMMON terminal by using two long patch cords as shown in Figure 4-4.
2. Set the voltage source to 0 V.
3. Set the COLLECTOR SUPPLY HIGH VOLTAGE breaker to ENABLED.
4. Close the protective cover.
5. **CHECK** that the horizontal CURSOR readout is within the limits shown in Table 4-9 for each setting of the peak power watts controls, HORIZONTAL VOLTS/DIV COLLECTOR and VOLTAGE SOURCE Setting.

6. Set the voltage source to 0 V.

   Before disconnecting the voltage source, make sure that the voltage source has been set to 0 V or disabled.

7. Disconnect the voltage source from the Calibration Fixture.

8. Initialize the 371A.

CAUTION

Before disconnecting the voltage source, make sure that the voltage source has been set to 0 V or disabled.

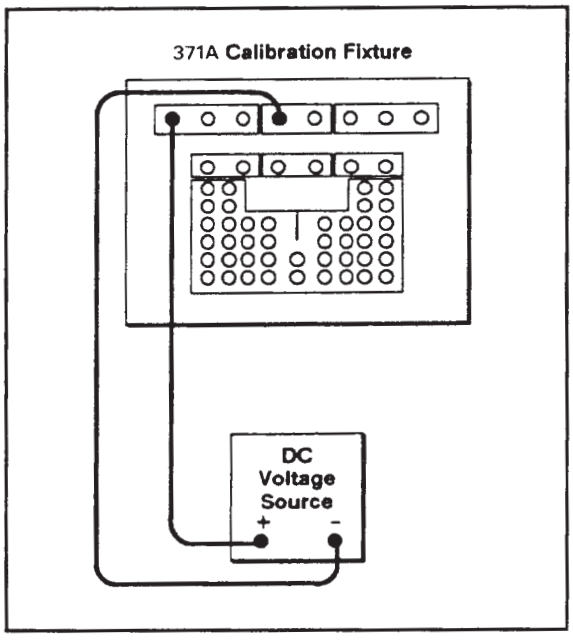


Figure 4-4. Setup for determining low voltage measurement accuracy.

Table 4-9
Collector High Voltage Measurement Accuracy

PEAK POWER WATTS Setting	HORHZONTAL VOLTS/DIV Setting	VOLTAGE SOURCE Setting	HORIZONTAL CURSOR Readout
30 mW	5 V/DIV	45 V	43.80 - 46.20 V
	10 V/DIV	90 V	87.60 - 92.40 V
	20 V/DIV	180 V	175.2 - 184.8 V
	50 V/DIV	450 V	438.0 - 462.0 V
3 W	50 V/DIV	450 V	438.0 - 462.0 V
	100 V/DIV	900 V	876 - 924 V
	200 V/DIV	900 V	866 - 934 V
	500 V/DIV	900 V	836 - 964 V

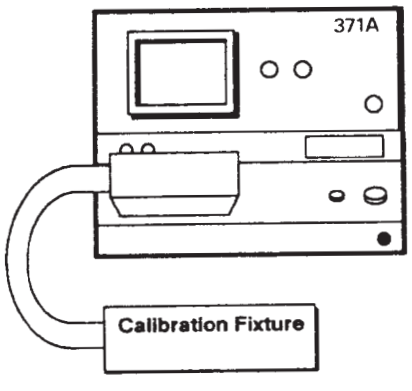
C6. CHECKING COLLECTOR CURRENT MEASUREMENT ACCURACY IN HIGH VOLTAGE MODE

SPECIFICATIONS

- Cursor accuracy is less than 1.5% of READOUT plus 10% of HORIZONTAL VOLTS/DIV setting.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

COLLECTOR SUPPLY
PEAK POWER WATTS.....30 mW
DISPLAY
VERTICAL.....1 μ A/DIV
CURSOR
Mode.....DOT

Test Equipment settings:
VOLTAGE SOURCE
Mode.....DC CURRENT

NOTE: *When you want to set the PEAK POWER WATTS to 30 mW, simultaneously press the cursor SHIFT button and the 30 mW button. The indicator to the left of LOW will change color from red to green.*

1. Press the POLARITY button while pressing the SHIFT button to enter vertical amplifier check mode.
2. Set the peak power watts controls to 20 mW and the VERTICAL VOLTS/DIV control to 1 μA/DIV.
3. Connect the current source between the COLLECTOR SUPPLY HIGH VOLTAGE and the COMMON terminals on the Calibration Fixture by using two long patch cords as shown in Figure 4-5.
4. Verify that vertical CURSOR readout is within the limit shown in Table 4-10 at each setting of the current source, peak power watts, and VERTICAL CURRENT/DIV
5. Disable the current source, then disconnect the patch cords.
6. Initialize the 371A.

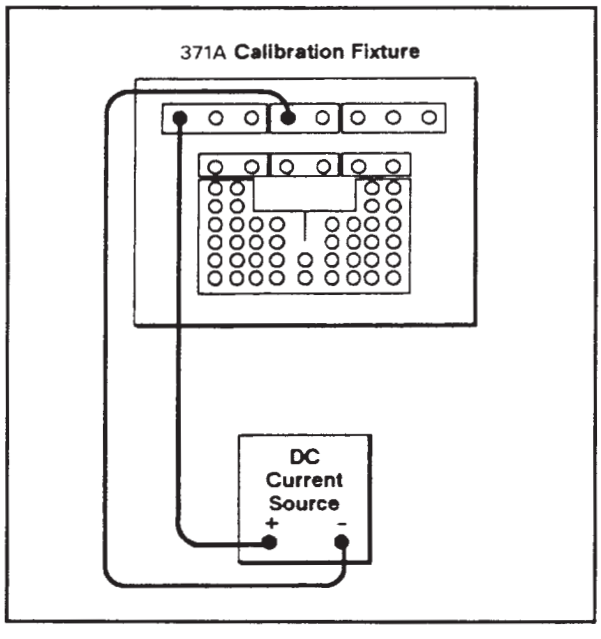


Figure 4-5. Calibration Fixture setup for checking collector current measurement accuracy in high voltage mode.

Table 4-10
Cursor Readout with Current

CURRENT SOURCE Setting	PEAK POWER WATTS Setting	VERTICAL CURRENT/DIV Setting	VERTICAL CURSOR Readout
-9.0 μA	30 mW	1 μA	8.76 to 9.24 μA
-18 .0 μA		2 μA	17.52 to 18.48 μA
-45.0 μA		5 μA	43.80 to 46.20 μA
-90 μA	3 W	10 μA	87.6 to 92.4 μA
-180 μA		20 μA	175.2 to 184.8 μA
-450 μA		50 μA	438.0 to 462.0 μA
-0.9 mA		100 μA	876 to 924 μA
-1.8 mA		200 μA	1752 to 1848 μA
-4.5 mA		500 μA	4380 to 4620 μA
-9.0 mA	30 W	1 mA	8.76 to 9.24 mA
-18.0 mA		2 mA	1752 to 18.48 mA
-45.0 mA		5 mA	43.80 to 46.20 mA

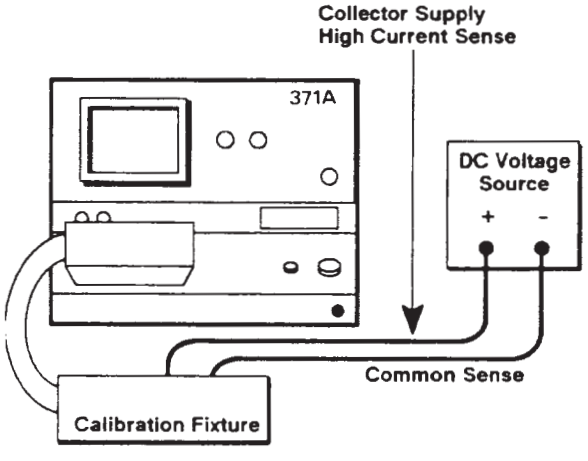
C7. CHECKING ACCURACY OF COLLECTOR CURRENT MEASUREMENT IN HIGH CURRENT MODE

SPECIFICATIONS

- Cursor accuracy is less than 1.5% of READOUT plus 10% of HORIZONTAL VOLTS/DIV setting.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:

Initialize the 371A, then change the following settings:

DISPLAY
VERTICAL..... 500 mA/DIV
HORIZONTAL.....500 mV/DIV COLLECTOR
CURSOR
Mode..... DOT
Protective Cover .....OPEN

Test Equipment settings:

VOLTAGE SOURCE
Mode.....DC CURRENT

NOTE: *The accuracy of the vertical CURSOR readout is verified by forcing a known voltage across load resistors in the Calibration Fixture using the collector supply and reading the resulting calibrated current with the vertical CURSOR.*

1. Connect long patch cords between the Calibration Fixture and the voltage source as shown in Figure 4-6.
2. Set the voltage source to 4.000 V and note the reading of the horizontal CURSOR readout.
3. Set the voltage source to 4.500 V and note the reading of the horizontal CURSOR readout.
4. Set the HORIZONTAL to 1 V/DIV COLLECTOR, the voltage source to 9.000 V and note the reading of the horizontal CURSOR readout.
5. Set the HORIZONTAL VOLTS/DIV control to 500 mV/DIV COLLECTOR.
6. Set the voltage source output to 0 V and disconnect the long patch cords.

7. Connect the short patch cords and plug the two shorting bars over the 1 Ω load resistor label as shown in Figure 4-7.
8. Close the protective cover.
9. Set the HIGH CURRENT breaker to ENABLED.
10. Turn the COLLECTOR SUPPLY VARIABLE control clockwise until the horizontal CURSOR readout reaches the exact value noted in Steps 2, 3, or 4 for the voltage listed in the voltage source column of Table 4-11.
11. **CHECK** that the vertical CURSOR readout is within a reading specified in Table 4-11.
12. Repeat Steps 7 through 10 for each setting of peak power watts, VERTICAL VOLTS/DIV, HORIZONTAL VOLTS/DIV, VOLTAGE SOURCE, and load resistor shown in Table 4-11.
13. Set the HIGH CURRENT breaker to DISABLED.
14. Remove the patch cords from the Calibration Fixture.
15. Initialize the 371A.

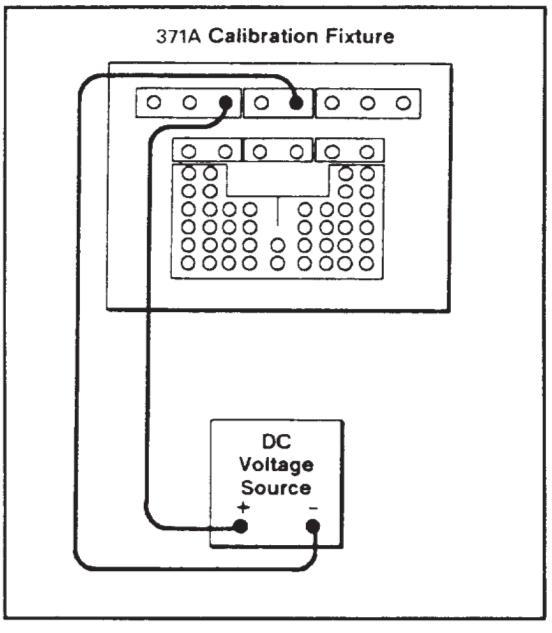


Figure 4-6. Calibrating CURSOR readout for checking accuracy of collector current measurement.

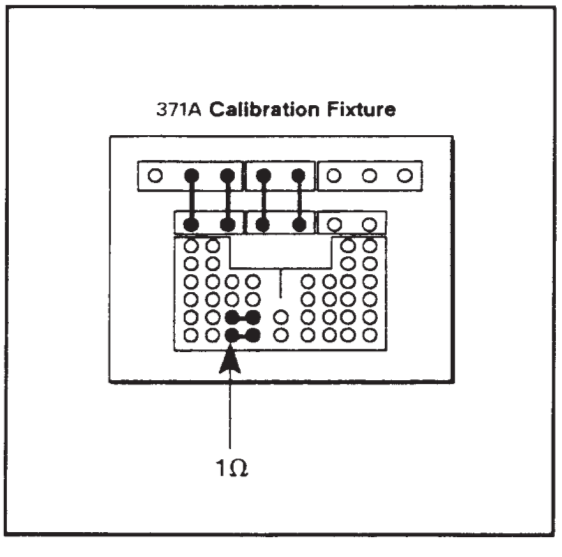


Figure 4-7. Calibration Fixture setup for measuring high collector current measurement accuracy.

Table 4-11
High Collector Current Measurement Accuracy

PEAK POWER WATTS Setting	VERTICAL Setting	HORIZONTAL (COLLECTOR) Setting	VOLTAGE SOURCE Setting	Calibration Fixture Load Resistor Setting	VERTICAL CURSOR Readout
300 W	500 mA/DIV	500 mV/DIV	4.5 V	1 Ω	4380 - 4620 mA
	1 A/DIV	1 V/DIV	9 V	1 Ω	8.76 - 9.24 A
	2 A/DIV	500 mV/DIV	4.5 V	250 mΩ	17.52 - 18.48 A
3 kW	5 A/DIV	500 mV/DIV	4.5 V	100 mΩ	43.80 46.20 A
	10 A/DIV	1 V/DIV	9 V	100 mΩ	87.6 - 92.4 A
	20 A/DIV	500 mv/DIV	4.5 V	25 mΩ	175.2 - 184.8 A
	50 A/DIV	500 mv/DIV	4.0 V	10 mΩ	389.0 - 411.0 A

D. STEP GENERATOR

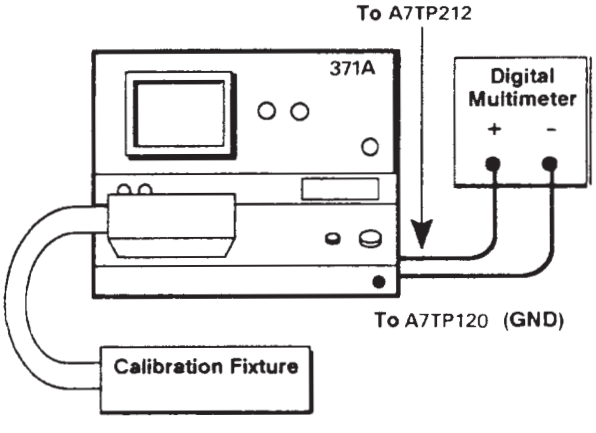
Equipment Required (See Table 4-3)	• Digital Multimeter • DC Voltage Source • Calibration Fixture (067-1345-00) • Patch Cords

D1. ADJUSTING STEP GENERATOR BALANCE (A7R210), STEP GENERATOR OFFSET (A3R560), STEP MULTI .1X BALANCE (A3R510)

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

STEP GENERATOR
SOURCE.....VOLTAGE
STEP/OFFSET AMPLITUDE.....5 V
NUMBER OF STEPS.....0
Protective Cover .....CLOSED

Test Equipment settings:
DIGITAL MULTIMETER
Mode.....DC VOLTAGE

NOTE: *See "Test Point and Adjustment Locations Pullout 2" in Chapter 7 for the location of test points.*

Determining Whether Adjustment is Necessary

1. **EXAMINE** the digital multimeter for a reading of 0 mV ±1 mV when the STEP/OFFSET AMPLITUDE is set to 5 V, 2 V, and 1 V.
2. Change the following 371A setting:
   STEP GENERATOR
   STEP MULTI .1X. . . . . .On

   The indicator above the STEP MULTI .1X button will be lit.
3. **EXAMINE** the digital multimeter for a reading of 0 mV ±1 mV when STEP/OFFSET AMPLITUDE is set to 100 mV, 200 mV, and 500 mV.

   If the digital multimeter reading is within the given limits in Steps 1 and 3 , no adjustment is necessary and the remainder of this procedure may be skipped.

Adjusting Step Generator (SG) Balance

NOTE: *See "Test and Point Adjustment Locations Pullout 2" in Chapter 7 for the location of adjustments R210.*

4. Change the following 371A settings:
   STEP GENERATOR
   STEP MULTI .1X. . . . . Off
   STEP/OFFSET AMPLITUDE. . . . .5 V
   Protective Cover. . . . . .Open
5. **ADJUST** SG BALANCE adjustment R210 on the A7 Step Generator board for a digital multimeter reading of 0 V ±1 mV.

Adjusting .1X Balance

NOTE: *See Test Point and Adjustment Locations Pullout 1" in Chapter 7 for the location of adjustments R510.*

6. Close the Protective Cover.
7. **ADJUST** .1X BALANCE adjustment R510 on the A3 A/D board so the difference of digital multimeter reading is 1mV when the step generator STEP MULTI .1 X is set between ON and OFF.

Adjusting Step Generator (SG) Offset

NOTE: *See "Test Point and Adjustment Locations Pullout 1 in Chapter 7 for the location of adjustments R560.*

8. Protective Cover remains closed.
9. **ADJUST** SG OFFSET adjusing R560 on the A3 A/D board for a digital multimeter reading of 0 V ±1 mV when STEP GENERATOR INVERT is set to ON and OFF.

Rechecking the Adjustments

10. **EXAMINE** the digital multimeter for a reading of 0 V ±mV when the STEP/OFFSET AMPLITUDE is set to 5 V, 2 V, and 1 V.
11. If further adjustments are required, repeat Steps 4 through 9.

Removing the Setup

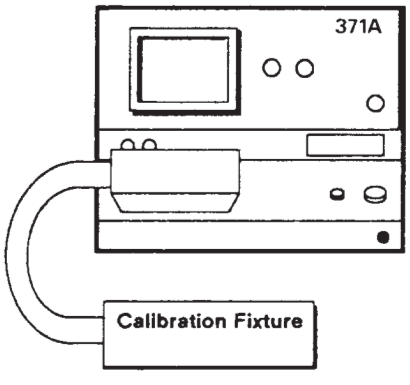
12. Disconnect the digital multimeter leads and patch cords.

D2. ADJUSTING STEP GENERATOR VOLTAGE SOURCE BALANCE (A7R405)), AND VOLTAGE SOURCE CMR (A7R417)

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

COLLECTOR SUPPLY
  PEAK POWER WATTS.....30 W
DISPLAY
  Mode.....NON STORE
  HORIZONTAL.....100 mV/DIV STEP GEN
STEP GENERATOR
  NUMBER OF STEPS.....0
  SOURCE.....VOLTAGE
  STEP/OFFSET AMPLITUDE.....500 mV
Protective Cover .....CLOSED

Test Equipment settings:
DC VOLTAGE SOURCE
  Mode.....VOLTAGE

NOTE: *See "Test Point and Adjustment Locations Pullout 2" in Chapter 7 for the location of adjustments R405 and R417.*

Adjusting SGV Balance

1. **ADJUST** SGV BALANCE adjustment R405 on the A7 Step Generator board for no horizontal display shift when STEP/OFFSET AMPLITUDE is set back and forth between 500 mV and 1 V.

Changing the Setup

2. Change the following 371A settings:
   DISPLAY
   Mode. . . . . STORE
   STEP GENERATOR
   STEP/OFFSET AMPLITUDE. . . . . .200 mV
   CURSOR
   Mode. . . . . DOT
3. Connect the DC voltage source to the COMMON and the COMMON SENSE terminals as shown in Figure 4-8, and close the protective cover.

Adjusting V CMR

4. Change the following test equipment setting:
   DC VOLTAGE SOURCE
   VOLTAGE. . . . . 0 V
5. Note the horizontal CURSOR readout for use in Step 7.
6. Change the following test equipment setting:
   DC VOLTAGE SOURCE
   VOLTAGE. . . . . .2 V
7. **ADJUST** V CMR adjustment R417 on the A7 Step Generator board for the horizontal CURSOR value noted in Step 5, ±8 mV.

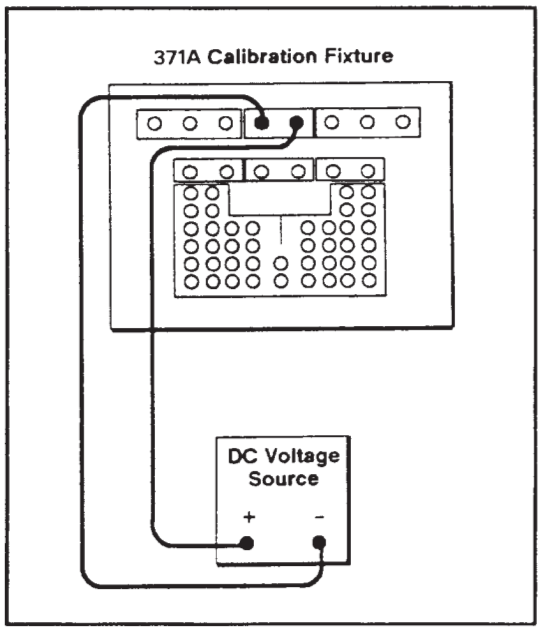


Figure 4-8. Calibration Fixture connections for procedure D2.

Adjusting for Interaction

8. Change the following test equipment:
   DC VOLTAGE SOURCE
   VOLTAGE. . . . . 0 V
9. Repeat Steps 5 through 8 to determine if further adjustment is necessary.

Removing the Setup

10. Disconnect the DC voltage source from the 371A.

D3. ADJUSTING STEP GENERATOR GAIN (A3R518)

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Moving the Cal Jumper

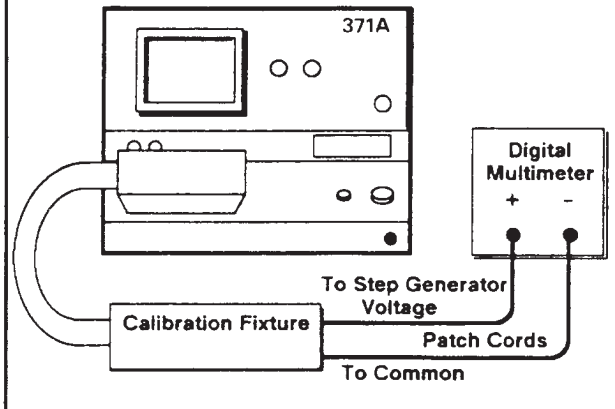
1. Change the following 371A setting:
   POWER. . . . . .OFF

NOTE: *See "Test Point Adjustment Locations Pullout 1" in Section 7 for the location of jumper J340.*

2. Change the position of jumper J340 on the A3 A/D board to the CAL position.
3. Change the following 371A setting:
   POWER. . . . . .ON

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Change the following settings:

COLLECTOR SUPPLY
  PEAK POWER WATTS.....30W
DISPLAY
  Mode.....NON STORE
  HORIZONTAL.....1 V/DIV STEP GEN
STEP GENERATOR
  SOURCE .....VOLTAGE
  NUMBER OF STEPS.....5
  STEP/OFFSET AMPLITUDE.....2 V

Test Equipment Setting:
DIGITAL MULTIMETER
  Mode.....DC Voltage

Connecting the Patch Cords

4. Connect the digital multimeter between the STEP GEN VOLTAGE terminal and the COMMON terminal with long patch cords as shown in Figure 4-9.
5. Close the protective cover.

Adjusting Step Generator Gain

6. Press the REPEAT button several times to move the spot 10 divisions to the right.

NOTE: *See "Test Point and Adjustment Locations Pullout 1" in Chapter 7 for the location of adjustment R518.*

7. **ADJUST** SG GAIN adjustment R518 on the A3 A/D board for a digital multimeter reading of 10.00 V ±0.01 V.

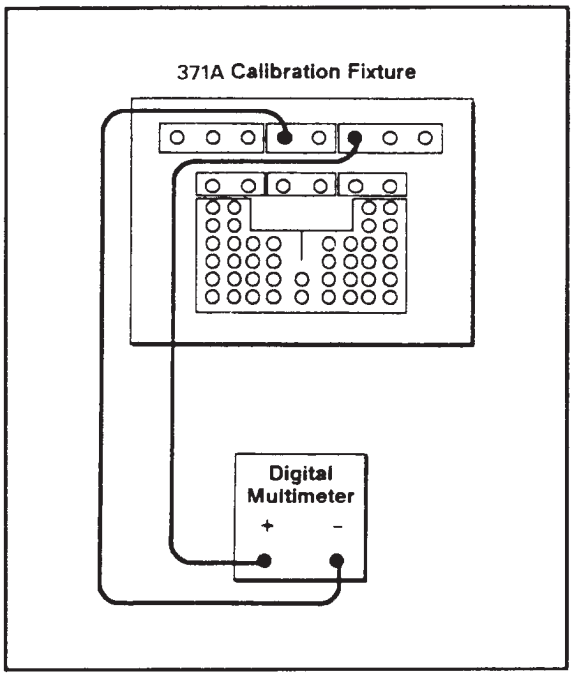


Figure 4-9. Calibration Fixture connections for adjusting Step Generator Gain.

Returning Jumper J340 to the Zero Position

8. Change the following 371A setting:
   POWER. . . . . OFF
9. Change the position of jumper J340 on the A3 A/D board to the Zero position.
10. Change the following 371A setting:
    POWER. . . . . ON

Removing the Setup

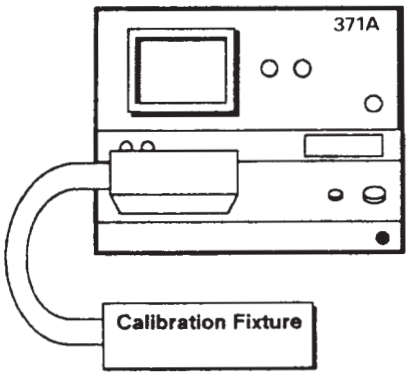
11. Disconnect the digital multimeter.

D4 ADJUSTING STEP GENERATOR CURRENT ZERO (A7R322) AND NEGATIVE CURRENT BALANCE (A7R380)

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

DISPLAY
Mode.....NON STORE
HORIZONTAL.....100 mV/DIV STEP GEN
STEP GENERATOR
NUMBER OF STEPS.....0
STEP/OFFSET AMPLITUDE.....1A

Connecting the Patch Cords

1. Connect the patch cords and shorting bars as shown in Figure 4-10.
2. Close the protective cover.

Adjusting Step Generator Current Zero

NOTE: *See "Test Point and Adjustment Locations Pullout 2" in Section 7 for the location of adjustment R322.*

3. **ADJUST** SGI ZERO adjustment R322 on the A7 Step Generator board for minimum spot shift when STEP/OFFSET AMPLITUDE is set back and forth between 1 A/STEP and 500 mA/STEP

Correcting for Unsatisfactory Adjustment

NOTE: *Repeat procedures D1 through D2 if R322 cannot be satisfactorily adjusted.*

Adjusting Negative Current Balance

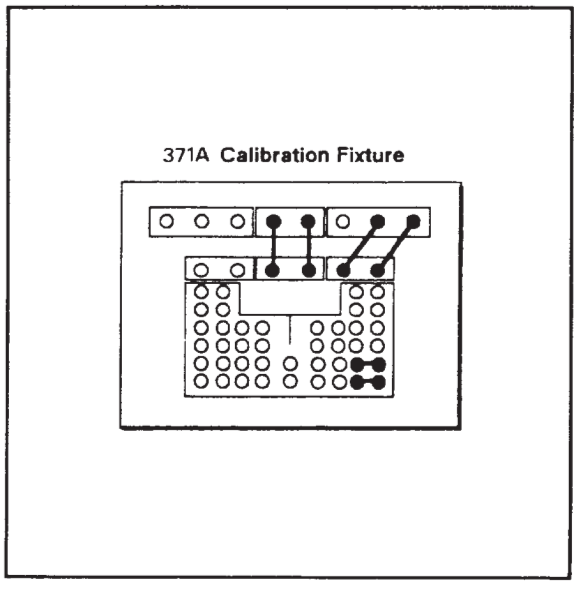


Figure 4-10. Calibration Fixture connections for adjusting Step Generator Current Zero and Negative Current Balance.

4. Change the following 371A setting:
   STEP GENERATOR
   INVERT. . . . . .ON

   The indicator beside the INVERT button will be lit.

NOTE: *See "Test Point and Adjustment Locations Pullout 2" in Section 7 for the location of adjustment R380.*

5. **ADJUST** NEG CURRENT BALANCE adjustment R380 on the A7 Step Generator board for minimum spot shift through the same settings used for Step 3.

Remove the Setup

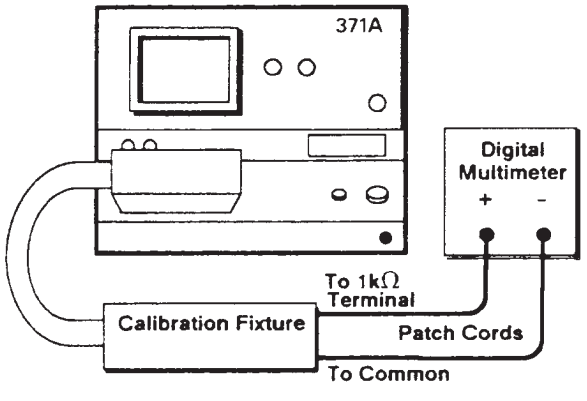
6. Remove the patch cords and shorting bars.

D5. ADJUSTING LOOP GAIN IN CURRENT SOURCE MODE (A7R305)

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

COLLECTOR SUPPLY
PEAK POWER WATTS.....30 W
DISPLAY
HORIZONTAL.....1 V/DIV STEP GEN
STEP GENERATOR
NUMBER OF STEPS.....0
STEP/OFFSET AMPLITUDE.....1 mA
OFFSET.....5 mA

Test Equipment settings:
DIGITAL MULTIMETER
Mode.....DC CURRENT

Connecting the Patch Cords

1. Connect a patch cord between the STEP GENERATOR CURRENT and 1 KΩ terminal.
2. Connect a long patch cord between the other 1 KΩ terminal and the digital multimeter positive input.
3. Connect a long patch cord between the COMMON terminal and the digital multimeter negative input.
4. Connect a shorting bar over the 1 KΩ terminals as shown in Figure 4-11.
5. Close the protective cover.

Noting the Reference Value

6. Note the digital multimeter reading. This reading will be used in Step 9.
7. Disconnect the shorting bar.
8. Close the protective cover.

Adjusting Loop Gain

NOTE: *See "Test Point and Adjustment Locations Pullout 2" in Section 7 for the location of adjustment R305.*

9. **ADJUST** SGI LOOP GAIN adjustment R305 on the A7 Step Generator board for the digital multimeter reading noted in Step 6, ±0.13 mA.

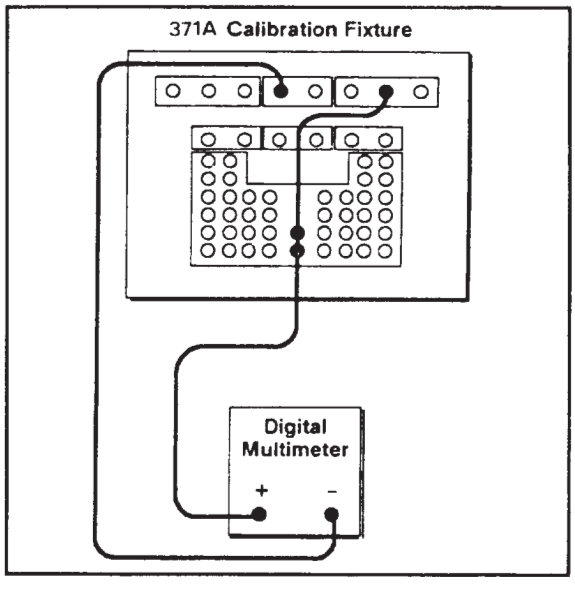


Figure 4-11. Calibration Fixture connections for adjusting Loop Gain in current source mode.

Readjusting for Interaction

10. Repeat Steps 4 to 9 to determine if further adjustment is necessary.

Removing the Setup

11. Disconnect the patch cords.

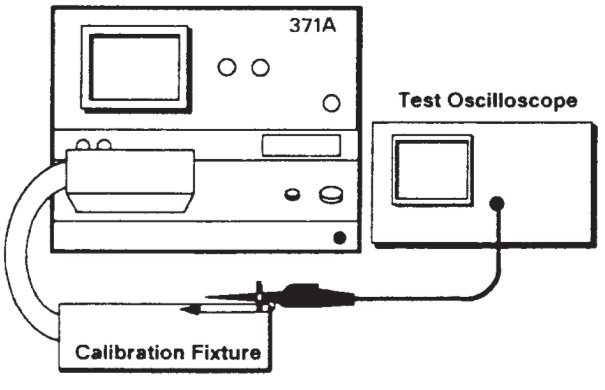
D6. CHECKING STEP RATES, PULSE FORM

SPECIFICATIONS:

- Step rate is 2 X line frequency at 30 W, 3 W, 300 mW and 30 mW; 0.25 X line frequency at 3 kW and 0.5 X line frequency at 300 W.
- Pulse width is 500 μs ±10% with 1 kΩ load at 1 mA/step.
- Rise and fall time are less than 40 μs with 1 kΩ load at 1 mA/step.
- Undershoot and overshoot are less than 10% of output.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

STEP GENERATOR
NUMBER OF STEPS.....1

Test Equipment settings:
TEST OSCILLOSCOPE:
COUPLING.....DC
VERTICAL.....200mV/DIV
HORIZONTAL.....10 ms/DIV

1 Connect a patch cord between the COMMON and one of the 1 KΩ terminals.

2. Connect a patch cord between the STEP GEN CURRENT and the remaining 1 KΩ terminals.

3. Connect the probe from the test oscilloscope by using terminal plugs as shown in Figure 4-12.

4. Close the protective cover.
5. Set the test oscilloscope to DC coupling.
6. **CHECK** that the pulse rate is approximately 80 ms at 50 Hz line frequency or 66.7 ms at 60 Hz line frequency.
7. Set peak power watts to 3 kW, and set the test oscilloscope time/division to 20 ms/DIV
8. **CHECK** that the pulse rate is approximately 160 ms at 50 Hz line frequency or 133.3 ms at 60 Hz line frequency.
9. Set the test oscilloscope time/division to 50 μs/division.
10. **CHECK** that the pulse width is 450 μs to 550 μs at half amplitude and overshoot or undershoot is within 10% of full amplitude.
11. Set the test oscilloscope time/division to 10 μs/division.

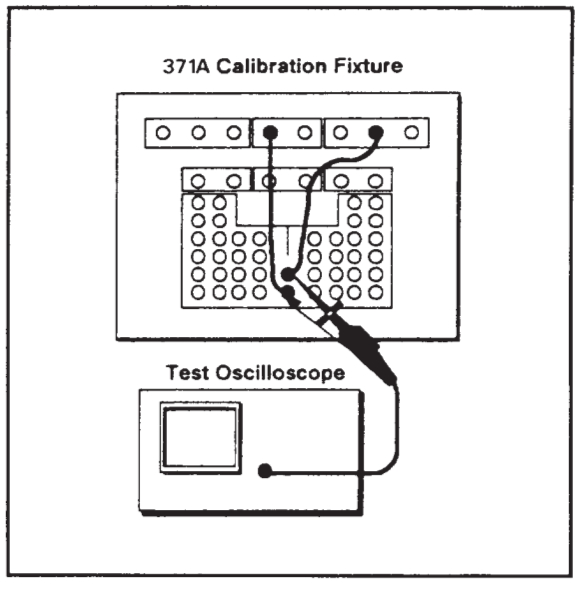


Figure 4-12. Calibration Fixture connections for checking step rates, pulse form.

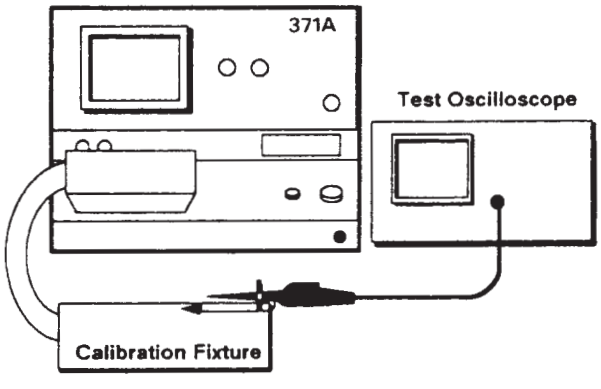
12. **CHECK** that the rise and fall time are less than 40 μs between 10% and 90% of full amplitude.
13. Set the test oscilloscope to 1 V/division, and 10 ms/division.
14. Change the following 371A settings:
    COLLECTOR SUPPLY
    PEAK POWER WATT. . . . . 30 W
    STEP GENERATOR
    STEP/OFFSET AMPLITUDE. . . . . 1 mA
    NUMBER OF STEPS. 5
15. **CHECK** that the staircase repetition rate is approximately 60 ms at 50 Hz line frequency of 50 ms at 60 Hz frequency.
16. Remove the probe and the patch cords.

D7. CHECKING RIPPLE PULSE NOISE OF VOLTAGE SOURCE MODE

SPECIFICATIONS: • Less than 1% of AMPLIUTUDE setting + 10 mV.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

STEP GENERATOR
- SOURCE.....VOLTAGE
- STEP/OFFSET AMPLITUDE.....200 mV
- NUMBER OF STEPS.....0
- OFFSET.....0 mV

Test Equipment settings:
TEST OSCILLOSCOPE
- COUPLING.....AC
- VERTICAL .....10 mV/DIV
- HORIZONTAL.....10 ms/DIV
- TRIGGERING.....LINE
- BANDWIDTH.....20 MHz

1. Connecting the X1 probe tip from the test oscilloscope to the STEP GENERATOR VOLTAGE terminal and the ground lead to the COMMON terminal plugs as shown in Figure 4-14.
2. Close the protective cover.
3. **CHECK** for the ripple pulse noise within the value specified in Table 4-12.
4. Set the STEP/OFFSET AMPLITUDE to next amplitude setting.
5. Repeat Steps 3 and 4 for each STEP/OFFSET AMPLITUDE setting in Table 4-12.
6. Remove the X1 probe.

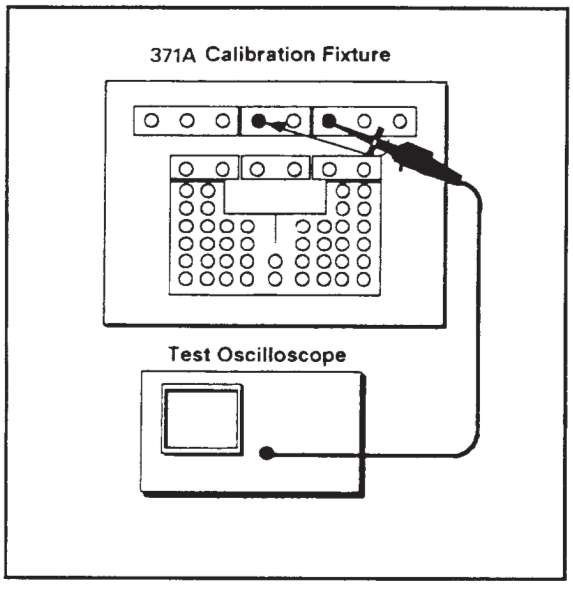


Figure 4-13. **Calibration Fixture connections for checking ripple pulse noise of voltage source mode.**

Table 4-12
Ripple and Noise Amplitude

Amplitude Setting	Oscilloscope Reading
200 mV	12 mV p-p
500 mV	15 mV p-p
1 V	20 mV p-p
2 V	30 mV p-p
5 V	60 mV p-p

D8. CHECKING INCREMENTAL ACCURACY

SPECIFICATIONS

- Each step is within 2% of total output + 3% of Step Amplitude + 2 mV.
- Less than 2% variation between step amplitudes.
- With STEP MULTI .1X on, each step is within 4% of total output + 5% of step AMPLITUDE + 2 mV.
- With STEP MULTI .1X on, variation between step amplitudes is less than 5%.

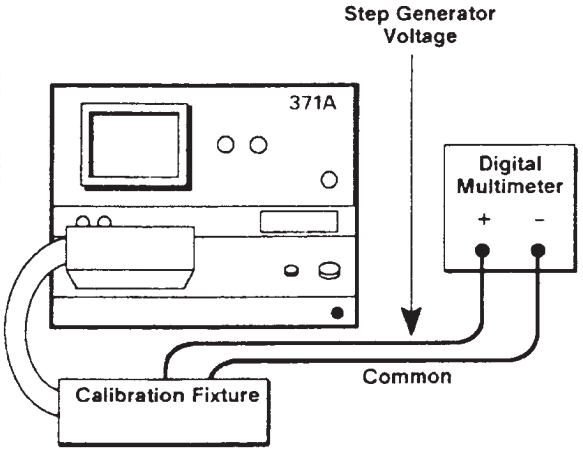
1. Change the following 371A setting:
   POWER . . . . . .OFF
2. Change the position of jumper J340 on A3 A/D board from ZERO to CAL.

NOTE: *When the jumper J340 position is changed from ZERO to CAL, store mode is disabled.*

3. Change the following 371A setting:
   POWER. . . . . ON

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Change the following settings:

COLLECTOR SUPPLY
PEAK POWER WATTS.....30 W
DISPLAY
Mode.....NON STORE
HORIZONTAL.....1 V/DIV STEP GEN

STEP GENERATOR
SOURCE.....VOLTAGE
STEP/OFFSET AMPLITUDE.....1V
NUMBER OF STEPS.....10
OFFSET.....0.00 V

Test Equipment settings:
DIGITAL MULTIMETER
MODE.....DC VOLTAGE

4. Connect the digital multimeter between the STEP GENERATOR VOLTAGE terminal and the COMMON terminal as shown in Figure 4-14.
5. Close the protective cover.
6. Press the SINGLE button so that the spot moves to the left-most vertical graticule line.
7. CHECK the digital multimeter reading for the value specified for STEP 0 of Table 4-13. Note the reading for use in Step 10.
8. Press the REPEAT button once so that the spot moves right 1 divisions.
9. CHECK the digital multimeter reading for the value specified in the next STEP of Table 4-13. Note the reading for use in Step 10.

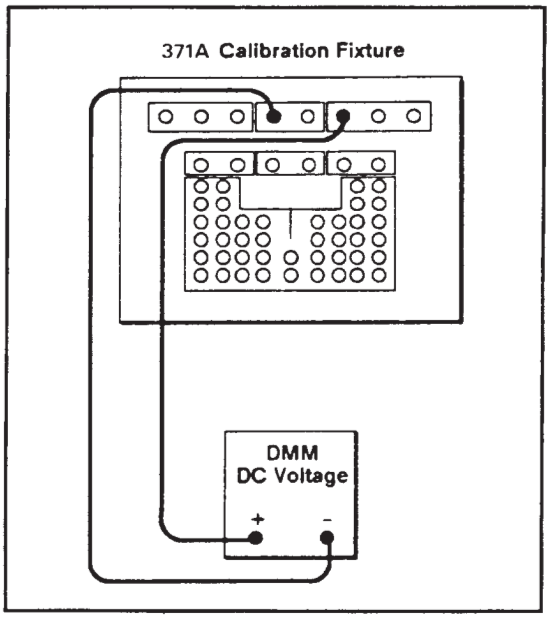


Figure 4-14. Calibration Fixture connections for checking Incremental Accuracy.

10. CHECK that the voltage difference between adjacent steps is within 1000 mV ±20 mV.
11. Repeat Steps 8 to 10 for each STEP in Table 4-13.
12. Press the step generator INVERT button to turn invert on.
13. Press the SINGLE button so that the spot moves to the right-most vertical graticule line.
14. CHECK the digital multimeter reading for the value specified for STEP 0 for Table 4-13. Note the reading for use in Step 17.
15. Press the REPEAT button once so that the spot moves left 1 division.
16. CHECK the digital multimeter reading for the value specified in the next STEP of Table 4-13. Note the reading for use in Step 17.
17. CHECK that the voltage difference between adjacent steps is within 1000 mV ±20 mV.
18. Repeat Steps 15 to 17 for each STEP in Table 4-13.
19. Press the step generator INVERT button to turn invert off.

Table 4-13
Incremental Accuracy

STEP	DMM Reading (±)
0	-32 to +32 mV
1	0.948 to 1.052 V
2	1.928 to 2.072 V
3	2.908 to 3.092 V
4	3.888 to 4.112 V
5	4.868 to 5.132 V
6	5.848 to 6.152 V
7	6.828 to 7.172 V
8	7.808 to 8.192 V
9	8.788 to 9.212 V
10	9.768 to 10.232 V

Voltage difference between adjacent STEPs is 1.00 ±0.02 V.

20. Set the STEP MULTI .1Xcontrol to on, and the horizontal sensitivity to 100mV/DIV STEP GEN.
21. Repeat Steps 6 through 19 using Table 4-14 instead of Table 4-13.
22. Proceed to the "Setup Conditions" for procedure D9 to check step generator amplitude accuracy in voltage mode. Otherwise, perform the following steps.
23. Set POWER switch to off.
24. Change the position of the jumper J340 from CAL to ZERO on the A3 A/D board.

Table 4-14
Incremental Accuracy Using STEP MULTI .1X

STEP	DMM Reading (±)
0	-7 to +7 mV
1	89 to 111 mV
2	185 to 215 mV
3	281 to 319 mV
4	377 to 423 mV
5	473 to 527 mV
6	569 to 631 mV
7	665 to 735 mV
8	761 to 839 mV
9	857 to 943 mV
10	953 to 1047 mV

Voltage difference between adjacent STEPs is 100 ± 5 mV.

D9. CHECKING AMPLITUDE ACCURACY OF VOLTAGE SOURCE MODE

SPECIFICATIONS

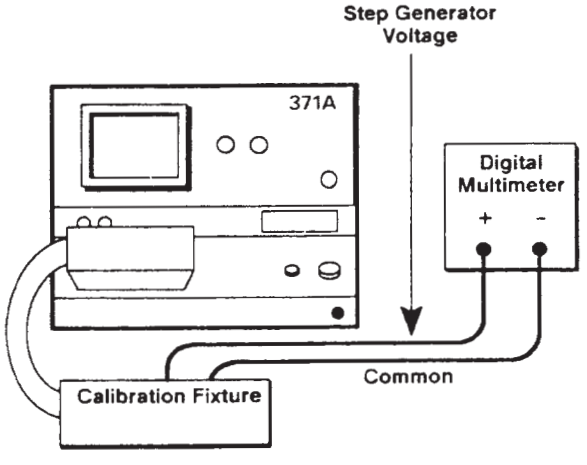
- Each step is within 2% of total output + 3% of Step Amplitude + 2 mV.
- With STEP MULTI .1X on, each step is within 4% of total output + 5% of Step AMPLITUDE+ 2 mV.

1. Change the following 371A setting:
   POWER. . . . . OFF
2. Change the position of jumper J340 from ZERO to CAL on the A3 A/D board and turn the POWER switch to ON.

NOTE: *When the jumper position is chagned from ZERO to CAL, store mode is disabled.*

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Change the following settings:

POWER.....ON
COLLECTOR SUPPLY
PEAK POWER WATTS.....30 W
DISPLAY
Mode.....NON STORE
HORIZONTAL.....200 mV/DIV STEP GEN

STEP GENERATOR
SOURCE.....VOLTAGE
STEP/OFFSET AMPLITUDE.....200mV
NUMBER OF STEPS.....10

Test Equipment settings:
DIGITAL MULTIMETER
MODE.....DC VOLTAGE

3. Connect the digital multimeter between the STEP GENERATOR VOLTAGE terminal and the COMMON terminal as shown in Figure 4-15.
4. Close the protective cover.
5. Press the REPEAT button several times until the spot moves to the right-most vertical graticule line.
6. **CHECK** that the digital multiplier reading is within the range specified in Table 4-15 for each STEP/OFFSET AMPLITUDE setting from 200 mV to 5 V.
7. Press the step generator INVERT button to turn invert on.
8. **CHECK** that the digital multiplier reading is within the range specified in Table 4-15 for each STEP/OFFSET AMPLITUDE setting from 200 mV to 5 V.
9. Press the step generator INVERT button to turn invert off.
10. Set the STEP MULTI .1X to on.
11. **CHECK** that the digital multiplier reading is within the range specified in Table 4-16 for each STEP/OFFSET AMPLITUDE setting from 20 mV to 500 mV.

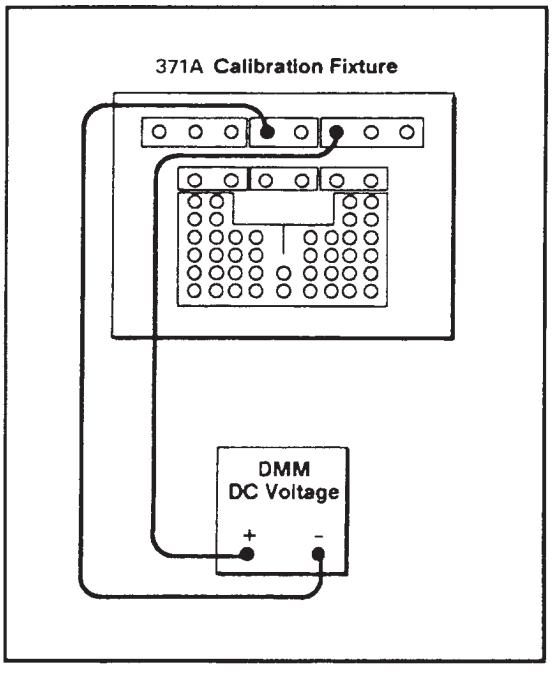


Figure 4-15. Setup for checking amplitude accuracy of voltage source mode.

Table 4-15
Voltage Amplitude Accuracy

AMPLITUDE Setting	DMM Reading (±)
200 mV	1.952 to 2.048 V
500 mV	4.883 to 5.117 V
1 v	9.768 to 10.232 V
2 V	19.538 to 20.462 V
5 V	48.848 to 51.152 V

Table 4-16
Voltage Amplitude Accuracy Using MULTI.1X

AMPLITUDE Setting	DMM Reading (±)
20 mV	189 to 211 mV
50 mV	475.5 to 524.5 mV
100 mV	0.953 to 1.047 V
200 mV	1.908 to 2.092 V
500 mV	4.773 to 5.227 V

12. Disconnect the digital multiplier.
13. Press the RECALL button to initialize the 371A.
14. Proceed to the "Setup Conditions" for procedure D10 to check maximum voltage accuracy. Otherwise perform the following steps.
15. Set the 371A POWER switch to OFF.
16. Change the position of the jumper J340 from CAL to ZERO on A3 A/D board.

D10. CHECKING MAXIMUM VOLTAGE ACCURACY OF VOLTAGE SOURCE MODE

SPECIFICATIONS

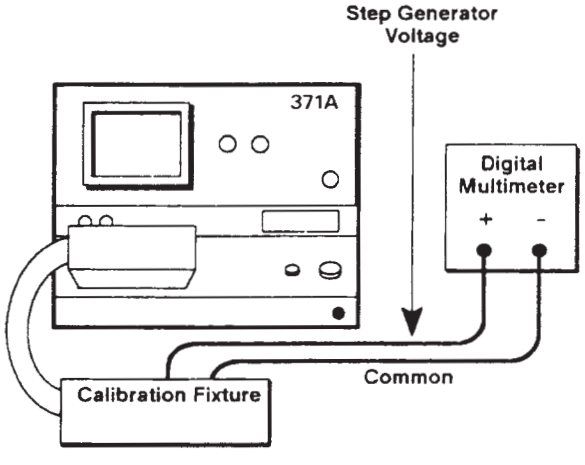
- Each step is within 2% of total output + 3% of Step AMPLITUDE +2 mV.
- Maximum Voltage is 20 times of Step AMPLITUDE except 5V of Step AMPLITUDE.
- Maximum Voltage is 10 times of Step AMPLITUDE except 5V of Step AMPLITUDE.

1. Change the following 371A setting:
   POWER. . . . . OFF
2. Change the position of jumper J340 from ZERO to CAL on the A3 A/D board.

NOTE: *When the jumper position is changed from ZERO to CAL, store mode is disabled.*

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Change the following 371A setting:
POWER.....ON
COLLECTOR SUPPLY
PEAK POWER WATTS.....30 W
DISPLAY
Mode.....NON STORE
HORIZONTAL.....1 V/DIV STEP GEN

STEP GENERATOR
SOURCE.....VOLTAGE
STEP/OFFSET AMPLITUDE.....500 mV
NUMBER OF STEPS.....10
OFFSET..... 5000 mV

Test Equipment settings:
DIGITAL MULTIMETER
MODE.....DC VOLTAGE

3. Connect the digital multimeter between the STEP GENERATOR VOLTAGE terminal and the COMMONterminal as shown in Figure 4-16.
4. Close the protective cover and press the SHINGLE button.

5. Press the REPEAT button ten times until the spot moves to the right-most vertical graticule line, and set the STEP/OFFSET AMPLITUDE to 200 mV.
6. **CHECK** that the digital multimeter reading is within the range specified in Table 4-17 for each STEP/OFFSET AMPLITUDE setting from 200 mV to 2 V.
7. Change the following 371A settings:
   STEP GENERATOR
   INVERT. . . . . .On
   STEP/OFFSET
   AMPLITUDE. . . . . 200 mV
   NUMBER OF STEPS. 10
   OFFSET. . . . . 2000 mV
8. **CHECK** that the digital multimeter reading is within the range specified in Table 4-17 for each STEP/OFFSET AMPLITUDE setting from 200 mV to 2 V.
9. Press the SHINGLE button and change the following 371A settings:
   DISPLAY
   HORIZONTAL. .. .. . . 5 V STEP GEN
   STEP GENERATOR
   STEP/OFFSET AMPLITUDE. . . 5 V
   NUMBER OF STEPS. 5
   OFFSET. . . . . . 25.00 V

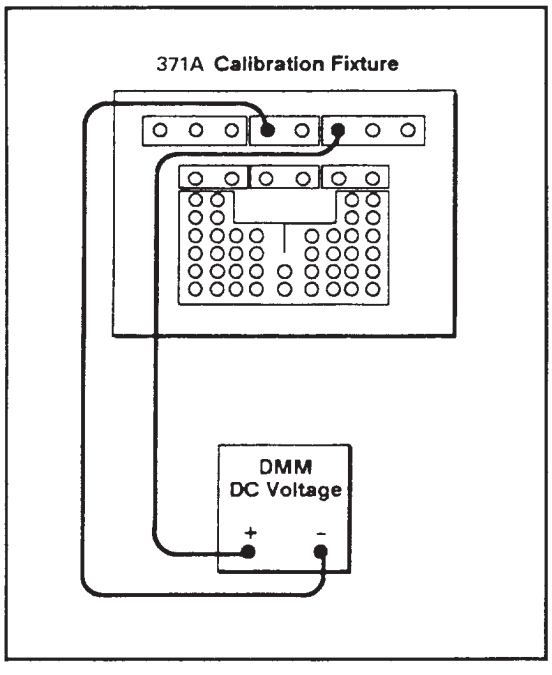


Figure 4-16. Setup for checking maximum voltage accuracy of voltage source mode.

10. Press the REPEAT button five times until the spot moves to the right-most vertical graticule line.
11. CHECK that the digital multimeter reading is within the specified in Table 4-18 for 5 V STEP/OFFSET AMPLITUDE.
12. Press the STEP GENERATOR INVERT button, and repeat step 11.
13. Disconnect the digital multiplier.
14. Set the 371A POWER switch to OFF.
15. Change the position of the jumper J340 from CAL to ZERO on A3 A/D board.

Table 4-17
Maximum Voltage Accuracy

AMPLITUDE Setting	DMM Reading
200 mV	±(3.912 - 4.088) V
500 mV	±(9.783 - 10.217) V
1 V	±(19.568 - 20. 432) V
2 V	±(39.138 - 40.862) V
5 V	±(48.85 - 51.15) V

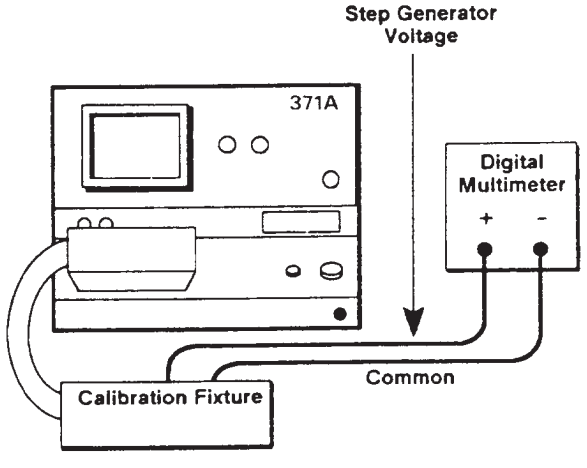
D11. CHECKING OFFSET ACCURACY

SPECIFICATIONS

- Each step is within 2% of total output + 3% of step AMPLITUDE +2 mV.
- Maximum Offset Voltage is 10 times of Step AMPLITUDE except 5V of Step AMPLITUDE.
- Maximum Offset Voltage is 5 times of Step AMPLITUDE except 5V of Step AMPLITUDE.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

COLLECTOR SUPPLY
PEAK POWER WATTS.....3 W
HIGH VOLTAGE.....DISABLED
DISPLAY
HORIZONTAL.....5 V/DIV STEP GEN
STEP GENERATOR
SOURCE.....VOLTAGE
STEP/OFFSET AMPLITUDE.....200mV
NUMBER OF STEPS.....0
Protective Cover.....CLOSED

Test Equipment Settings:
DIGITAL MULTIMETER
MODE.....DC VOLTAGE

1. Connect the digital multimeter between the STEP GENERATOR VOLTAGE terminal and the COMMON terminal as shown in Figure 4-17.
2. Close the protective cover.
3. **CHECK** the digital multimeter reading is within the limit shown in the 0% of OFFSET column in Table 4-18 for each setting of STEP/OFFSET AMPLITUDE from 200 mV to 5 V.
4. Press the step generator INVERT button to turn invert on.
5. Repeat Step 3.
6. Change the following 371A settings:
   STEP GENERATOR
   INVERT. . . . . .OFF
   STEP/OFFSET AMPLITUDE. . . 200mV
   OFFSET. . . . . 2000 mV

7. **CHECK** that the digital multimeter reading is within the limit shown in the 100% of OFFSET column in Table 4-18 for each setting of STEP/OFFSET AMPLITUDE from 200 mV to 5 V.
8. Change the following 371A settings:
   STEP GENERATOR
   INVERT. . . . . .ON
   STEP/OFFSET AMPLITUDE. . 200mV
   OFFSET. . . . . .-2000 mV
9. Repeat Step 7.
10. Remove the patch cords from the STEP GENERATOR VOLTAGE OUTPUT and the COMMON terminals.
11. Initialize the 371A.

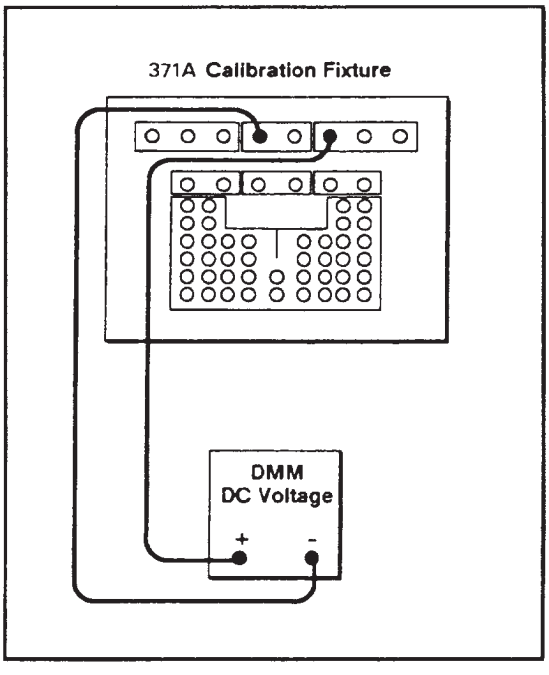


Figure 4-17. Setup for checking offset accuracy.

Table 4-18
Offset Accuracy

STEP/OFFSET AMPLITUDE Setting	DMM ()% of OFFSET) Reading	DMM (100% of OFFSET) Reading
200 mV	±8 mV	±(1952 - 2048) mV
500 mV	±17 mV	±(4883 - 5117) mV
1 V	±32 mV	±(9.768 - 10. 232) V
2 V	±62 mV	±(19.538 - 20.462) V
5 V	±152 mV	±(24.35 - 25.65) V

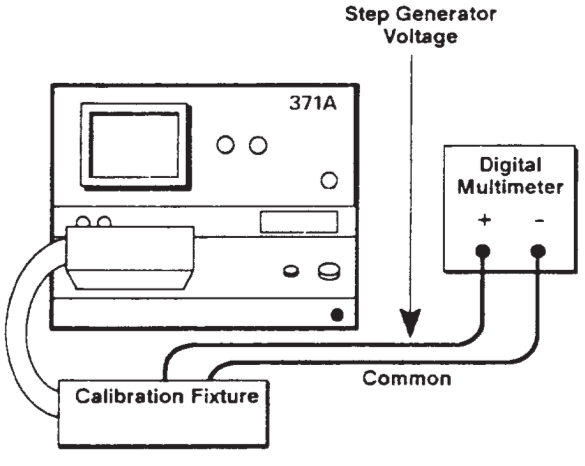
D12 CHECKING SHORT CIRCUIT CURRENT LIMIT OF VOLTAGE SOURCE MODE

SPECIFICATIONS

- Short circuit current limit is 80 to 150 mA.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

STEP GENERATOR
SOURCE.....VOLTAGE
STEP/OFFSET AMPLITUDE.....200mV
NUMBER OF STEPS.....0
OFFSET.....2000mV

Test Equipment settings:
DIGITAL MULTIMETER
MODE.....DC CURRENT

1. Connect the digital multimeter between the STEP GENERATOR VOLTAGE and the COMMON terminals as shown in Figure 4-18.
2. Close the protective cover.
3. **CHECK** that the digital multimeter reading is between 80 mA and 150 mA.
4. Press the step generator INVERT button to change step generator polarity.
5. **CHECK** that the digital multimeter reading is between -80 mA and -150 mA, then disconnect the digital multimeter.
6. Initialize the 371A.

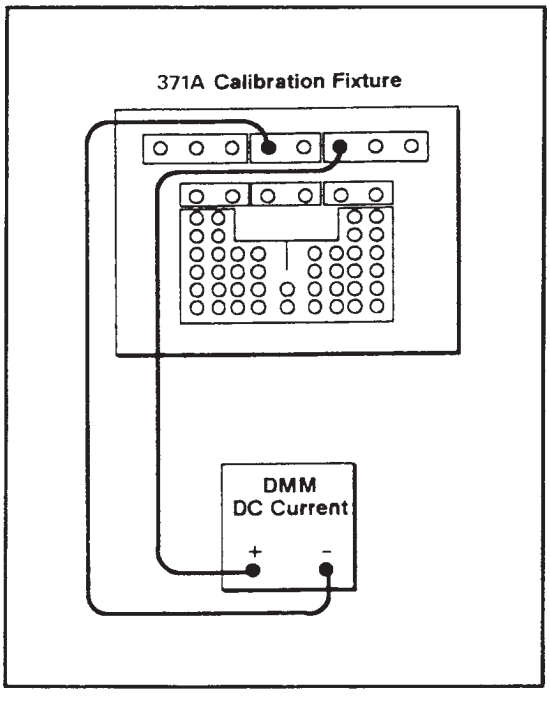


Figure 4-18 Setup for checking short circuit current limit of voltage source mode.

D13 CHECKING AMPLITUDE ACCURACY OF NORMAL STEP CURRENT SOURCE MODE

SPECIFICATIONS

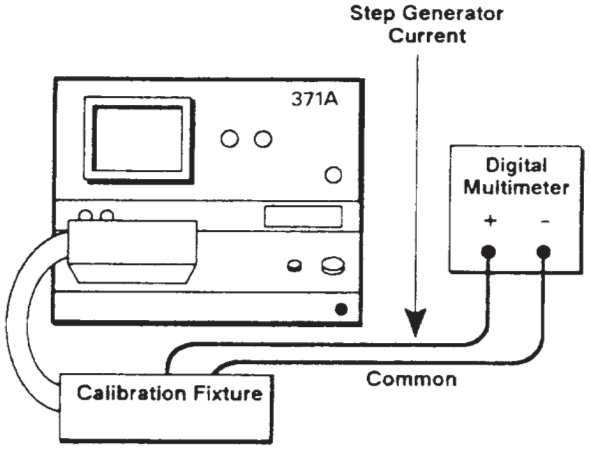
- Each step is within 2% of total output + 3% of step AMPLITUDE + 10 nA .
- With STEP MULTI .1X on, each step is within 4% of total output + 5% of step AMPLITUDE + 10 nA.

1. Change the following 371A setting:
   POWER. . . . . OFF
2. Change the position of jumper J340 from ZERO to CAL on the A3 A/D board.

NOTE: *When the jumper position is changed from ZERO to CAL, store mode is disabled.*

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



Change the following 371A setting:
POWER.....ON

371A Settings:
Change the following settings:

COLLECTOR SUPPLY
  PEAK POWER WATTS.....3 W
DISPLAY
  Mode.....NONSTORE
  VERTICAL.....10 µA/DIV
STEP GENERATOR
  INVERT.....ON
  SOURCE.....CURRENT
  STEP/OFFSET AMPLITUDE.....10 µA
  NUMBER OF STEPS.....10

Test Equipment Settings:
DIGITAL MULTIMETER
  MODE.....DC CURRENT

3. Connect the digital multimeter between the STEP GENERATOR CURRENT terminal and the COLLECTOR SUPPLY HIGH VOLTAGE terminal as shown in Figure 4-19, and close the protective cover.
4. Simultaneously press the SHIFT and COLLECTOR SUPPLY POLARITY buttons to set VERTICAL AMP CHECK MODE.
5. Press the SHINGLE button, and press the REPEAT button ten times until the spot moves to the upper-most horizontal graticule line Then change the following 371A settings:
   COLLECTOR SUPPLY
   MAX PEAK POWER WATTS . . 30 W
   DISPLAY
   VERTICAL. . . . . 5 mA/DIV
   STEP GENERATOR
   INVERT. . . . . OFF
6. **CHECK** that the digital multimeter reading is within the limit specified in Table 4-19 for each STEP/OFFSET AMPLITUDE setting from 1 μA to 2 mA.
7. Press the step generator INVERT button to turn invert on.
8. **CHECK** that the digital multimeter reading is within the limit specified in Table 4-19 for each STEP/OFFSET AMPLITUDE setting from 1 μA to 2 mA.

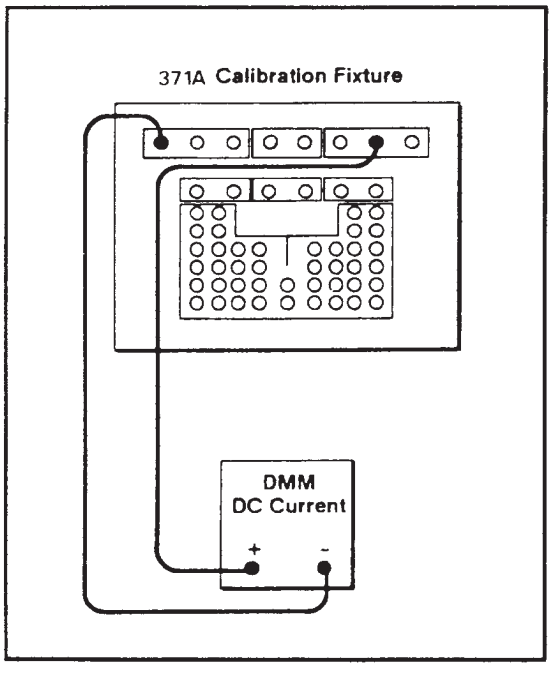


Figure 4-19. Setup for checking amplitude accuracy of normal step current source mode.

9. Press the step generator INVERT button to turn invert off.
10. Set the STEP MULTI .1X to on.
11. **CHECK** that the digital multimeter reading is within the limit specified in Table 4-20 for each STEP/OFFSET AMPLITUDE setting from 100 nA to 200 μA.
12. **PRESS** the step generator INVERT button to turn invert on.
13. CHECK that the digital multimeter reading is within the limit specified in Table 4-20 for each STEP/OFFSET AMPLITUDE setting from 100 nA to 200 μA.
14. Disconnect the digital multimeter.
15. To check maximum current accuracy, proceed to the "Setup Conditions" for procedure D14; otherwise perform the following steps.
16. Set the 371A POWER switch to OFF.
17. Change the position of jumper J340 from CAL to ZERO on A3 A/D board.

Table 4-19
Current Amplitude Accuracy

AMPLITUDE Setting	DMM Reading
1 µA	±(9.76 - 10.24) µA
2 µA	±(19.53 - 20.47) µA
5 µA	±(48.84 - 51.16) µA
10 µA	±(97.69 - 102.31) µA
20 µA	±(195.39 - 204.61) µA
50 µA	±(488.5 - 511.5) µA
100 µA	±(977.0 - 1023.0) µA
200 µA	±(1954.0 - 2046.0) µA
500 µA	±(4.885 - 5.115) mA
1 mA	±(9.770 - 10.230) mA
2 mA	±(19.540 - 20.460) mA

Table 4-20
Current Amplitude Accuracy Using MULTI.1X

AMPLITUDE Setting	DMM Reading
100 nA	±(945 - 1055) nA
200 nA	±(1900 - 2100) nA
500 nA	±(4.765 - 5.235) µA
1 µA	±(9.540 - 10.460) µA
2 µA	±(19.09 - 20.910) µA
5 µA	±(47.74 - 52.26) µA
10 µA	±(94.49 - 104.51) µA
20 µA	±(191.0 - 209.0) µA
50 µA	±(477.5 - 522.5) µA
100 µA	±(955.0 - 1045.0) µA
200 µA	±(1910.0 - 2090.0) µA

D14. CHECKING MAXIMUM CURRENT ACCURACY OF NORMAL STEP CURRENT MODE

SPECIFICATIONS

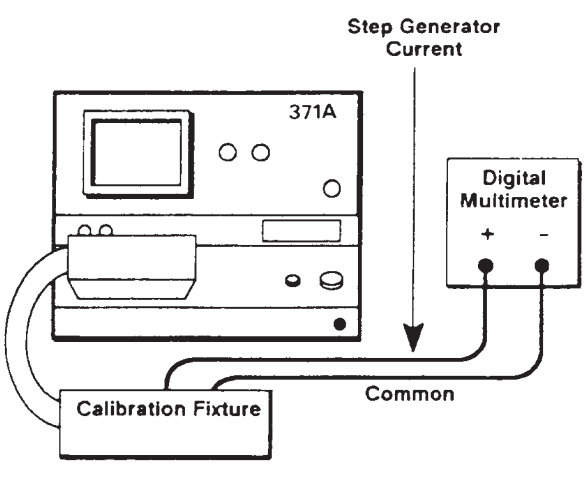
- Each step is within 2% of total output + 3% of step AMPLITUDE + 10 nA .

1. Change the following 371A setting:
   POWER. . . . . OFF
2. Change the position of jumper J340 from ZERO to CAL on the A3 A/D board.

NOTE: *When the jumper position is changed from ZERO to CAL, store mode is disabled.*

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



Change the following 371A setting:
POWER.....ON

371A Settings:
Change the following settings:

COLLECTOR SUPPLY
  PEAK POWER WATTS.....3 W
DISPLAY
  Mode.....NONSTORE
  VERTICAL.....20 µA/DIV
STEP GENERATOR
  INVERT.....ON
  SOURCE.....CURRENT
  STEP/OFFSET AMPLITUDE.....10 µA
  NUMBER OF STEPS.....10
  OFFSET.....-100.0 µA

Test Equipment Settings:
DIGITAL MULTIMETER
  MODE.....DC CURRENT

3. Connect the digital multimeter between the STEP GENERATOR CURRENT terminal and the COLLECTOR SUPPLY HIGH VOLTAGE terminal as shown in Figure 4-19, and close the protective cover.
4. Simultaneously press the SHIFT and COLLECTOR SUPPLY POLARITY buttons to set VERTICAL AMP CHECK MODE.
5. Press the SHINGLE button, and press the REPEAT button ten times until the spot moves to the upper-most horizontal graticule line. Then change the following 371A settings:

COLLECTOR SUPPLY
  MAX PEAK POWER WATTS . . 30 W
DISPLAY
  VERTICAL. . . . . 5 mA/DIV
STEP GENERATOR
  INVERT. . . . . OFF

6. CHECK that the digital multimeter reading is within the limit specified in Table 4-21 for each STEP/OFFSET AMPLITUDE setting from 1 μA to 2 mA.
7. Press the step generator INVERT button to turn invert on.
8. CHECK that the digital multimeter reading is within the limits specified in Table 4-21 for each STEP/OFFSET AMPLITUDE setting from 1 μA to 2 mA.
9. Press the step generator INVERT button to turn invert off and disconnect the digital multimeter.
10. Set the 371A POWER switch to OFF.
11. Change the position of the jumper J340 from CAL to ZERO.

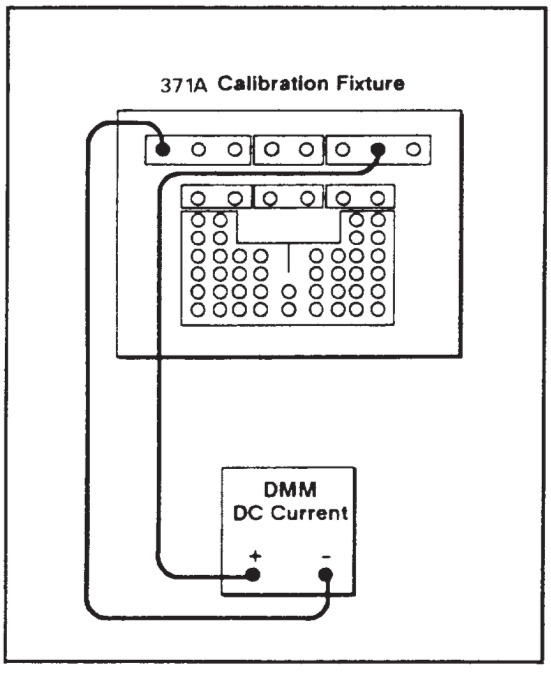


Figure 4-20. Setup for checking maximum current accuracy of normal step current source mode.

Table 4-21
Maximum Current Accuracy

AMPLITUDE Setting	DMM Reading
1 μA	±(19.56 - 20.44) μA
2 μA	±(39.13 - 40.87) μA
5 μA	±(97.84 - 102.16) μA
10 μA	±(195.69 - 204.31) μA
20 μA	±(391.4 - 408.6) μA
50 μA	±(978.5 - 1021.5) μA
100 μA	±(1957.0 - 2043.0) μA
200 μA	±(3.914 - 4.086) mA
500 μA	±(9.785 - 10.215) mA
1 mA	±(19.57 - 20.43) mA
2 mA	±(39.14 - 40.86) mA

D15. CHECKING AMPLITUDE ACCURACY OF PULSED STEP CURRENT SOURCE MODE

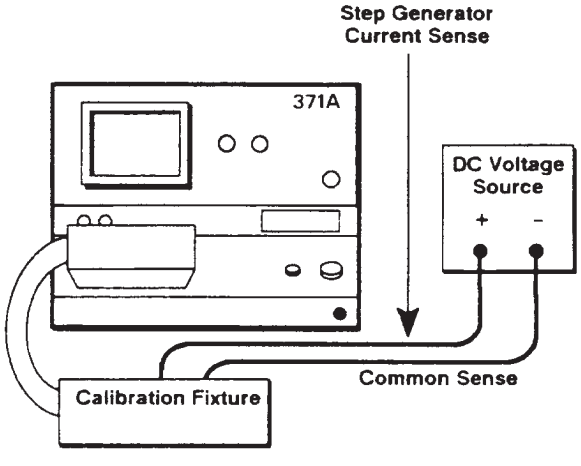
SPECIFICATIONS

- Each step is within 2% of total output + 3% of step AMPLITUDE + 10 nA .

NOTE *The following procedure checks the amplitude of step generator current pulses by forcing these pulses through load resistors and measuring the pulse voltage across the resistors using the dot cursor. The measurement variation noted in the* CURSOR readout, *determined by measuring a calibrated voltage source, is added to each pulse voltage measurement and compared to a table of limit values.*

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

STEP GENERATOR
NUMBER OF STEPS.....10
DISPLAY
HORIZONTAL.....100 mV/DIV STEP GEN
CURSOR
Mode.....DOT
Protective Cover.....OPEN

Test Equipment Settings:
VOLTAGE SOURCE
Mode.....DC VOLTAGE

1. Connect long patch cords between the Calibration Fixture and the voltage source as shown in Figure 4-21.
2. Apply 0.750 V from the voltage source.
3. Note the reading of the horizontal CURSOR readout.
4. Calculate:
   Horizontal Cursor - Applied Voltage = Variation

   Example:

Applied Voltage	750 mV
Cursor Readout	-760 mV
Variation	-10 mV

5. Record the variation in the VARIATION column of Table 4-22, in each row where the HORIZONTAL VOLTS/DIV STEP GEN setting is 100 mV.
6. Set the horizontal sensitivity to 200 mV/DIV STEP GEN and apply 1.500 V from the voltage source.
7. Repeat Steps 3 and 4.
8. Record the variation in the VARIATION column of Table 4-22, in each row where the HORIZONTAL VOLTS/DIV STEP GEN setting is 200 mV.
9. Set the horizontal sensitivity to 500 mV/DiV STEP GEN and apply 3.750 V from the voltage source.
10. Repeat Steps 3 and 4.
11. Record the variation in the VARIATION column of Table 4-22, in each row where the HORIZONTAL VOLTS/DIV STEP GEN setting is 500 mV.

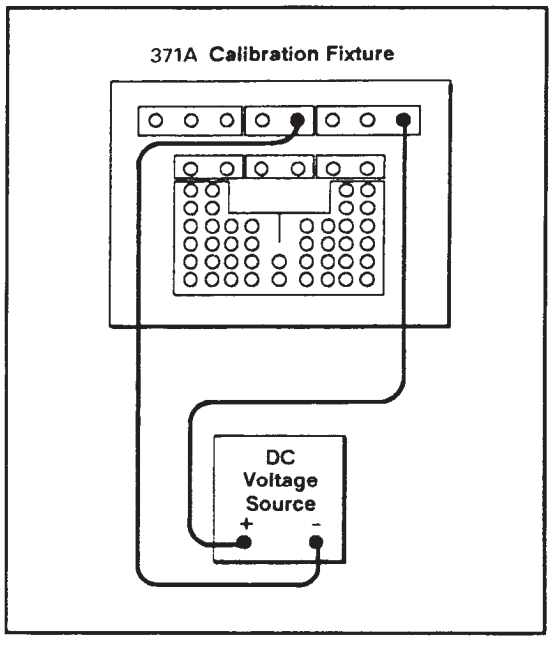


Figure 4-21. Setup for determining cursor measurement variation.

Table 4-22
Pulsed Step Current Amplitude Accuracy

STEP/ OFFSET AMPLITUDE Setting	HORIZONTAL VOLTS/DIV STEP GEN Setting	LOAD RESISTOR Setting	VARIATION plus/minus	CURSOR reading	PULSE AMPLITUDE (Cursor Reading ± Variation)	LIMIT VALUE ±
1 mA	100 mV	75 Ω				733 to 767 mV
2 mA	200 mV	75 Ω				1466 to 1534 mV
5 mA	500 mV	75 Ω				3665 to 3835 mV
10 mA	100 mV	7.5 Ω				733 to 767 mV
20 mA	200 mV	7.5 Ω				1466 to 1534 mV
50 mA	500 mV	7.5 Ω				3665 to 3835 mV
100 mA	100 mV	750 mΩ				733 to 767 mV
200 mA	200 mV	750 mΩ				1466 to 1534 mV
500 mA	500 mV	750 mΩ				3665 to 3835 mV
1 A	100 mV	75 mΩ				733 to 767 mV
2 A	100 mV	75 mΩ				731 to 769 mV

When setting the STEP/OFFSET AMPLITUDE to 2A, automatically change the NUMBER OF STEPS to 5.

12. Set the voltage source output to 0 V and disconnect the voltage source.
13. Connect the patch cords as shown in Figure 4-22.
14. Set the STEP/OFFSET AMPLITUDE, HORIZONTAL VOLTS/DIV STEP GEN, and load resistor as indicated in the first row of Table 4-22 (The load resistor shorting bars are correctly placed for a 75 Ω load in Figure 4-22.)
15. Close the protective cover.
16. Move the dot cursor, using the cursor position buttons, to the right-most dot, representing the tenth step generator pulse.

17. Record the horizontal cursor readout in the CURSOR reading column of Table 4-22 in the first row.
18. Repeat Steps 14 and 17 for each row of Table 4-22.
19. Calculate:

    Cursor Reading - Variation = Pulse Amplitude

    Example:

Cursor Reading	3760 mV
Variation	-30 mV
Pulse Amplitude	3730 mV

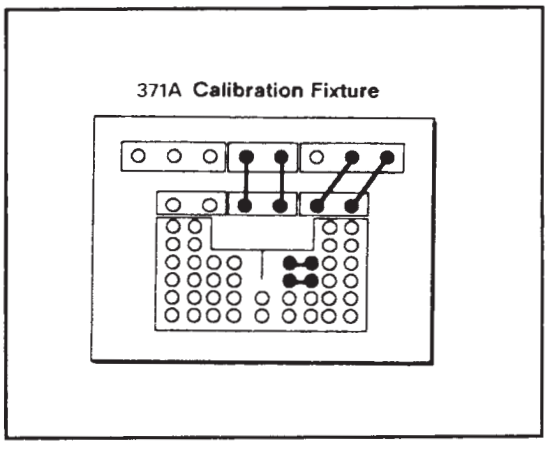


Figure 4-22. Setup for measuring pulse amplitude accuracy.

20. Compare the calculated value of PULSE AMPLITUDE with the LIMIT VALUE for each row of Table 4-22.
21. Press the step generator INVERT button to reverse step polarity.
22. Repeat Steps 14 through 20.
23. Disconnect the patch cords.

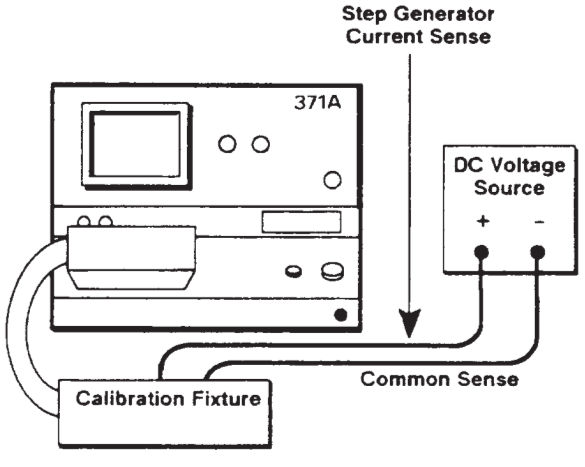
D16. CHECKING MAXIMUM CURRENT ACCURACY OF PULSED STEP CURRENT SOURCE MODE

SPECIFICATIONS

- Each step is within 2% of total output + 3% of step AMPLITUDE + 10 nA .

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:

Initialize the 371A, then change the following settings:

STEP GENERATOR
- STEP/OFFSET AMPLITUDE.....1 mA
- NUMBER OF STEPS.....10
- OFFSET.....10.00 mA

DISPLAY
- HORIZONTAL.....100 mV/DIV STEP GEN

CURSOR
- Mode.....DOT

Protective Cover.....OPEN

Test Equipment Settings:

VOLTAGE SOURCE
- Mode.....DC VOLTAGE

1. Connect long patch cords between the Calibration Fixture and the voltage source as shown in Figure 4-23.
2. Apply 0.750 V from the voltage source.
3. Note the reading of the horizontal CURSOR readout.
4. Calculate:
   Horizontal Cursor - Applied Voltage = Variation

   Example:

Applied Voltage	750 mV
Cursor Readout	-760 mV
Variation	-10 mV

5. Record the variation in the VARIATION column of Table 4-23 in each row where the HORIZONTAL VOLTS/DIV STEP GEN setting is 100 mV.
6. Set the horizontal sensitivity to 200 mV/DIV STEP GEN and apply 1.500 V from the voltage source.

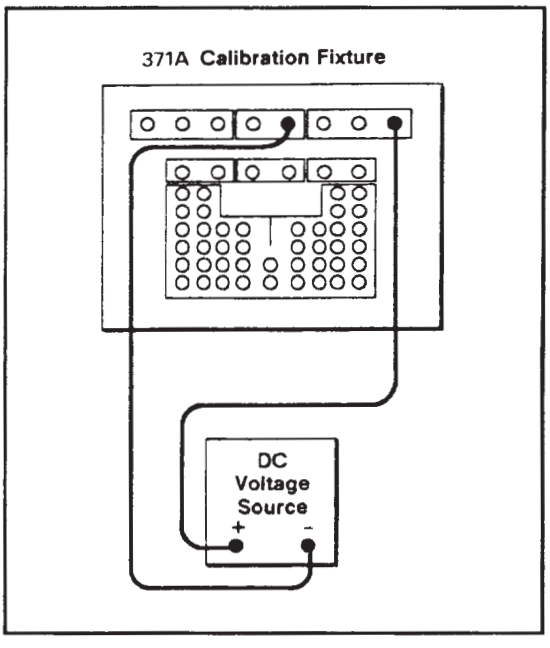


Figure 4-23. Setup for determining cursor measurement variation.

7. Repeat Steps 3 and 4.
8. Record the variation in the VARIATION column of Table 4-23, in each row where the HORIZONTAL VOLTS/DIV STEP GEN setting is 200 mV.
9. Set the horizontal sensitivity to 500 mV/DiV STEP GEN and apply 3.000 V from the voltage source.
10. Repeat Steps 3 and 4.
11. Record the variation in the VARIATION column of Table 4-23, in each row where the HORIZONTAL VOLTS/DIV STEP GEN setting is 500 mV.

Table 4-23
Pulsed Step Current Amplitude Accuracy

STEP/ OFFSET AMPLITUDE Setting (OFFSET)	HORIZONTAL VOLTS/DIV STEP GEN Setting	LOAD RESISTOR Setting	VARIATION plus/minus	CURSOR reading	PULSE AMPLITUDE (Cursor Reading ± Variation)	LIMIT VALUE ±
1 mA (10.00 mA)	200 mV	75 Ω				1468 to 1532 mV
2 mA (20.00 mA)	500 mV	75 Ω				2940 to 3060 mV
5 mA (50.00 mA)	100 mV	7.5 Ω				734 to 766 mV
10 mA (100.0 mA)	200 mV	7.5 Ω				1468 to 1532 mV
20 mA (200.0 mA)	500 mV	7.5 Ω				2940 to 3060 mV
50 mA (500.0 mA)	100 mV	750 mΩ				734 to 766 mV
100 mA (1000 mA)	200 mV	750 mΩ				1468 to 1532 mV
200 mA (2000 mA)	500 mV	750 mΩ				2940 to 3060 mV
500 mA (5000 mA)	100 mV	75 mΩ				734 to 766 mV
1 A (10.00 A)	200 mV	75 mΩ				1468 to 1532 mV
2 A (10.00 A)	200 mV	75 mΩ				1466 to 1534 mV

When setting the STEP/OFFSET AMPLITUDE to 2A, automatically change the NUMBER OF STEPS to 5, and OFFSET to 10.00 A.

12. Set the voltage source output to 0 V and disconnect the voltage source.
13. Connect the patch cords as shown in Figure 4-24.
14. Set the STEP/OFFSET AMPLITUDE, HORIZONTAL VOLTS/DIV STEP GEN, and load resistor as indicated in the first row of Table 4-23. (The load resistor shorting bars are correctly placed for a 75 Ω load in Figure 4-24.)
15. Close the protective cover.
16. Move the dot cursor, using the cursor position buttons, to the right-most dot.

17. Record the horizontal CURSOR readout in the CURSOR Reading column of Table 4-23 in the first row.
18. Repeat Steps 14 and 16 for each row of Table 4-23.
19. Calculate:

    CURSOR Reading ± VARIATION = PULSE AMPLITUDE

    Example:

Cursor Reading	3760 mV
Variation	-30 mV
Pulse Amplitude	3730 mV

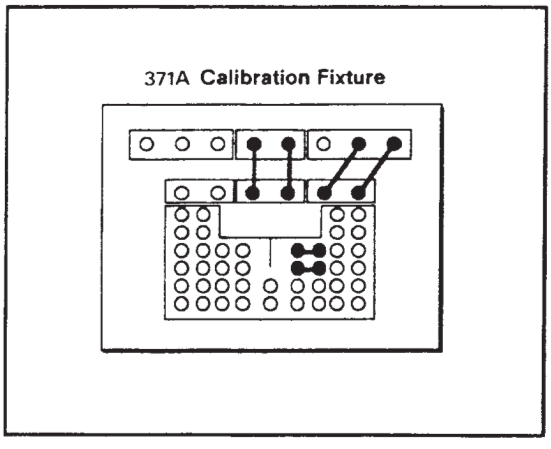


Figure 4-24. Setup for measuring maximum pulse amplitude accuracy.

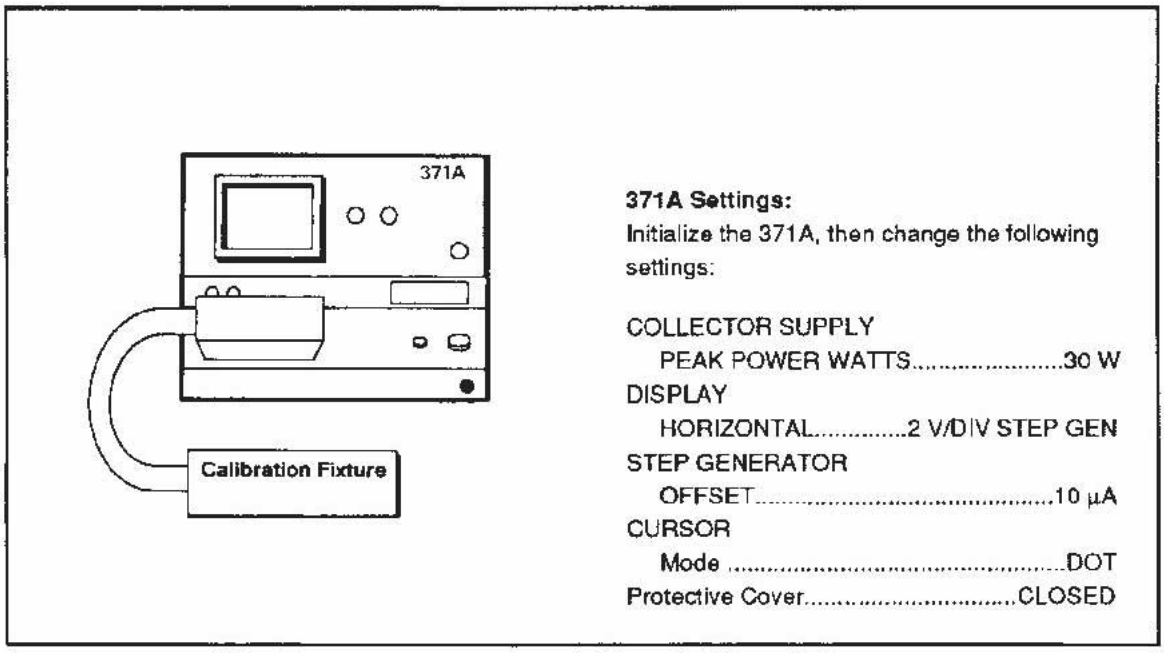
20. Compare the calculated value of PULSE AMPLITUDE with the LIMIT VALUE for each row of Table 4-23.
21. Press the step generator INVERT button to reverse step polarity.
22. Repeat Steps 14 through 19.
23. Disconnect the patch cords.
24. Initialize the 371A.

D17. CHECKING MAXIMUM VOLTAGE OF CURRENT SOURCE MODE

SPECIFICATIONS ・Maximum output voltage in current mode is 12V±30%.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



1. CHECK that the horizontal CURSOR readout is between 8.4V and 15.6V when the STEP/OFFSET AMPLITUDE is turned throughout its range.
2. Press the step generator INVERT button to reverse step polarity.
3. CHECK that the horizontal CURSOR readout is between –8.4V and –15.6V when the STEP/OFFSET AMPLITUDE is turned throughout its range.
4. Press the step generator INVERT button to resume normal operation.
5. Set the peak power watts to 300W.
6. Repeat Steps 1 though 4.
7. Initialize the 371A.

D18. CHECKING RIPPLE PLUS NOISE OF CURRENT SOURCE MODE

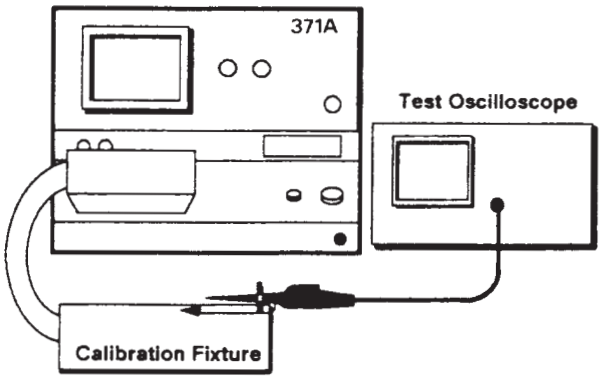
SPECIFICATIONS

- Ripple plus noise is within 1% of step amplitude + 10 nA.

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

COLLECTOR
PEAK POWER WATTS.....30 W
STEP GENERATOR
STEP/OFFSET AMPLITUDE.....1 mA
NUMBER OF STEPS.....0

Test Equipment Settings:
TEST OSCILLOSCOPE
COUPLING.....AC
VERTICAL.....5 mV/DIV
HORIZONTAL.....10 ms/DIV
TRIGGERING.....LINE

1. Connect a patch cord between the COMMON and one of the 1 KΩ terminals.
2. Connect a patch cord between the STEP GENERATOR CURRENT and the other 1 KΩ terminal.
3. Connect the X1 probe tip from the test oscilloscope by using terminal plugs as shown in Figure 4-25.
4. Close the protective cover.
5. **CHECK** that the ripple pulse noise is less than 20 mV p-p.
6. Disconnect the X1 probe and the patch cords.
7. Initialize the 371A.

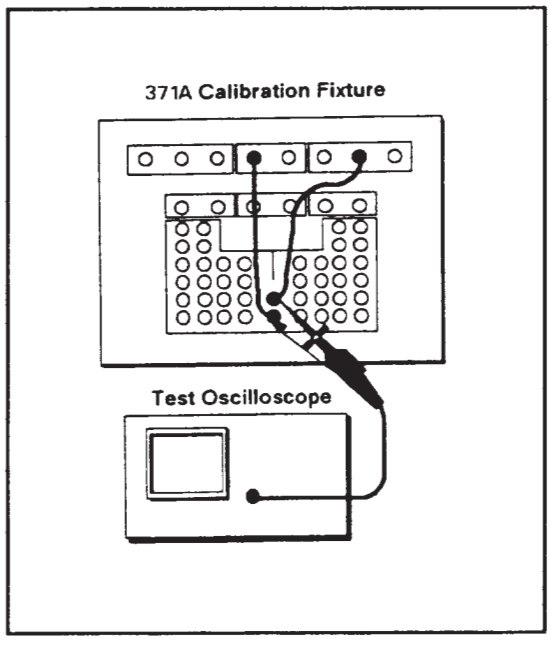


Figure 4-25. Setup for checking ripple and pulse noise.

E. COLLECTOR SUPPLY

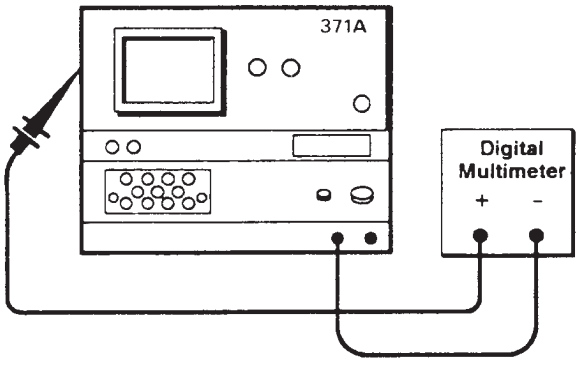
Equipment Required (See Table 4-3)	• Test Oscilloscope • Digital Multimeter

E1. ADJUSTING COLLECTOR SUPPLY OFFSET (A6R412)

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



Test Equipment Settings:
DIGITAL MULTIMETER
Mode.....DC Voltage

Removing the Shield Panel and Connecting the Meter

1. Change the following 371A setting:
   POWER. . . . . OFF
2. Remove the shield panel on the A6 Collector Supply board.
3. Connect the positive lead of the digital multimeter to J62 pin 1 on the A6 Collector Supply Output board and the negative lead to ground.

Adjusting Collector Supply Offset

4. Change the following 371A settings:
   POWER. . . . . .ON
   COLLECTOR SUPPLY
   PEAK POWER WATTS. . . . . .30 W
5. Close the protective cover.

NOTE *See "Test Point and Adjustment Locations Pullout 2" in Section 7 for the location of adjustment R412.*

6. **ADJUST** HV CS OFFSET adjustment R412 on the A6 Collector Supply Output board for a digital multimeter reading of 0 V ±1.00 mV.

Disconnecting the Meter and Replacing the Shield Panel

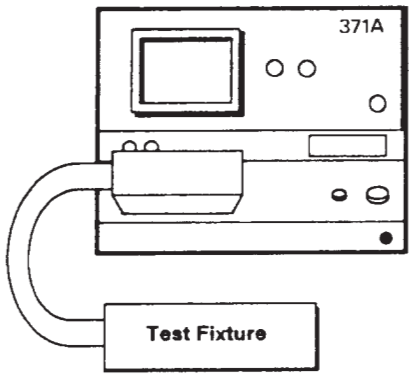
7. Change the following 371A setting:
   POWER. . . . . OFF
8. Disconnect the digital multimeter from the 371A.
9. Replace the shield panel.
10. Change the following 371A setting:
    POWER. . . . . ON

E2. ADJUSTING COLLECTOR SUPPLY GAIN FOR HIGH VOLTAGE (A6R401)

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

COLLECTOR SUPPLY
PEAK POWER WATTS.....30 W
HIGH VOLTAGE.....ENABLED
VARIABLE.....100%
DISPLAY
HORIZONTAL.....500 V/DIV
CURSOR
Mode.....DOT

Determining Whether Adjustment is Necessary

1. Close the protective cover.
2. Press the cursor position buttons to move the dot cursor to the end of the trace.
3. **EXAMINE** the display for a horizontal CURSOR readout between 3000 V and 3300 V.
4. Change the following 371A setting:
   COLLECTOR SUPPLY
   PEAK POWER WATTS. . . . . .3 W
5. **EXAMINE** the display for a horizontal CURSOR readout between 3000 V and 3300 V.
6. Change the following 371A setting:
   COLLECTOR SUPPLY
   PEAK POWER WATTS. . . . . .300 mW

7. **EXAMINE** the display for a horizontal CURSOR readout between 300 V and 345 V.
8. Change the following 371A setting:
   COLLECTOR SUPPLY
   PEAK POWER WATTS. . . . . 30 mW
9. **EXAMINE** the display for a horizontal CURSOR readout between 300 V and 345 V.

   If the readouts are both within these limits, proceed to Step 13. If either readout is not within these limits, the following adjustment is necessary.

Adjusting Collector Supply Gain

10. Change the following 371A setting:
    COLLECTOR SUPPLY
    PEAK POWER WATT. . . . . 30 W

NOTE *See "Test Point and Adjustment Locations Pullout 2" in Section 7 for the location of adjustment R410.*

11. **ADJUST** HV CS GAIN adjustment R401 on the A6 Collector Supply Output board for a horizontal CURSOR readout of approximately 3150 volts (midway between 3000 V and 3300 V).

NOTE *R401 can be adjusted through the access hole in the electrical shield.*

Determining Whether Further Adjustment is Necessary

12. Repeat Steps 3 to 8 to determine whether further adjustment is necessary.

Removing the Setup

13. Change the following 371A setting:
    COLLECTOR SUPPLY
    HIGH VOLTAGE. . . . . DISABLED

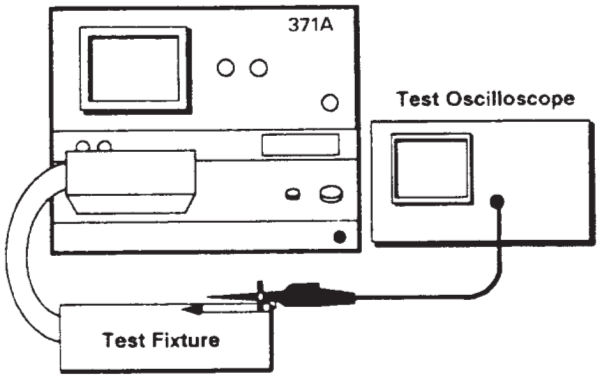
E3. CHECKING PULSE FORM

SPECIFICATIONS

- Repetition rate is 0.25 X line frequency at 3 kW and 0.5 X line frequency at 300 W.
- Pulse width is 250 µs ±10% above 30% of collector supply VARIABLE and from 150 to 250 µs from 5% to 30%.
- Rise and Fall time are between 40 and 120 µs with collector supply VARIABLE set at 50%.
- Undershoot and overshoot are less than 5% of pulse amplitude.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A

Test Equipment Settings:
TEST OSCILLOSCOPE
COUPLING.....DC
VERTICAL.....5 V/DIV
HORIZONTAL.....10 ms/DIV

1. Connect the X1 probe tip from the test oscilloscope to the HIGH CURRENT and the ground lead to the COMMON terminals with plugs as shown in Figure 4-26.
2. Close the protective cover and set the HIGH CURRENT breaker to the ENABLED position.
3. Set the collector supply VARIABLE control to 50%.
4. **CHECK** that the repetition rate is 40 ms at 50 Hz line frequency or 33.3 ms. at 60 Hz line frequency.
5. Set peak power watts to 3 kW.
6. **CHECK** that the repetition rate is 80 ms at 50 Hz line frequency or 66.7 ms at 60 Hz line frequency.
7. Set the test oscilloscope time/DIV to 50 µs/DIV.

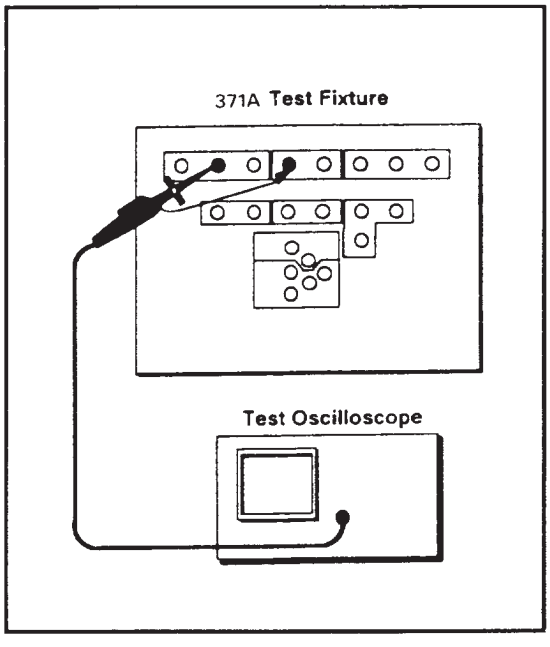


Figure 4-26. Setup for checking pulse form.

8. **CHECK** that the half-amplitude pulse width is between 225 µs and 275 µs.
9. **CHECK** that the rise and fall time is between 40 µs and 120 µs from 10% to 90% of full amplitude.
10. Set the collector supply VARIABLE control to 5% and test oscilloscope to 500 mV/DIV.
11. **CHECK** that the half-amplitude pulse width is between 150 µs and 250 µs.
12. **CHECK** that the overshoot and undershoot is within 5% of full amplitude.
13. Set the HIGH CURRENT breaker to DISABLED.
14. Disconnect the X1 probe.

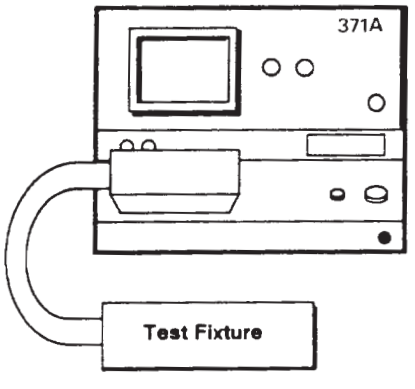
E4. CHECKING MAXIMUM PEAK CURRENT

SPECIFICATIONS

- Collector supply output exceeds 400 A at 3 kW, 40 A at 300 W. Output is 40 mA ±20% at 30 W, 4 mA ±20 % at 3 W and 300 mW and 400 μA ±20% at 30 mW.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

COLLECTOR SUPPLY
PEAK POWER WATTS.....3 kW
DISPLAY
VERTICAL.....50 A/DIV

1. Connect a patch cord between the HIGH CURRENT terminal and the COMMON terminal as shown in Figure 4-27.
2. Close the protective cover.
3. Set the HIGH CURRENT breaker to ENABLED position.

4. **CHECK** that the spot can reach the value specified in Table 4-24 when the collector supply VARIABLE control is turned clockwise.
5. Set the collector supply VARIABLE control to 0%.
6. Set the peak power watts to 300 W.
7. Repeat Step 4.
8. Set the HIGH CURRENT breaker to the DISABLED position.
9. Move the patch cord from the HIGH CURRENT terminal to the HIGH VOLTAGE terminal as shown in Figure 4-28 and close the protective cover.
10. Set the HIGH VOLTAGE breaker to the ENABLED position and the peak power watts to 30 W.
11. **CHECK** that the trace reaches the value specified in Table 4-24 when the VARIABLE control is turned to 100%.
12. Set the peak power watts to 3 W.
13. Repeat Step 11.
14. Set the peak power watts to 300 mW.
15. Repeat Step 11.
16. Set the peak power watts to 30 mW.
17. Repeat Step 11.
18. Initialize the 371A.
19. Disconnect the patch cord.

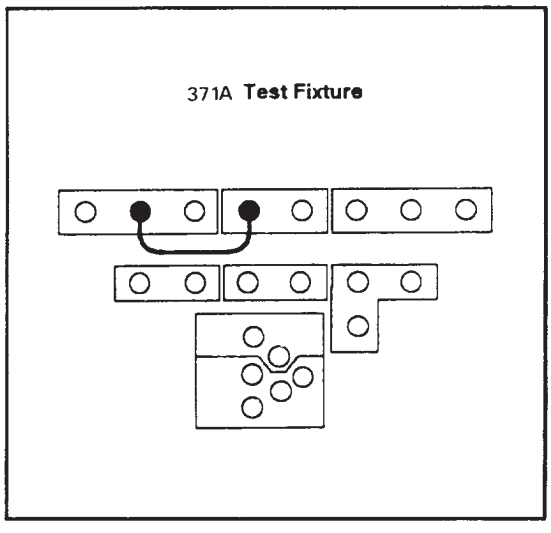


Figure 4-27. Setup for checking maximum peak current in HIGH CURRENT mode.

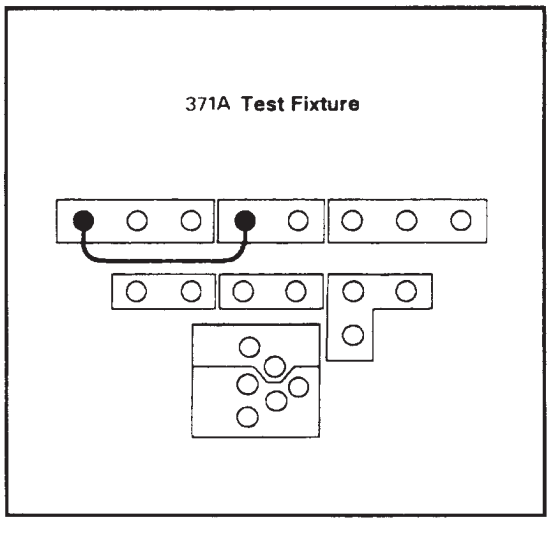


Figure 4-28. Setup for checking maximum peak current in HIGH VOLTAGE mode.

Table 4-24
Minimum Output Current

Peak Power Watts Setting	Current Output Reading
3 kW	400 A
300 W	40 A
30 W	32 mA to 48 mA
3 W	3.2 mA to 4.8 mA
300 mW	3.2 mA to 4.8 mA
30 mW	320µA to 480 µA

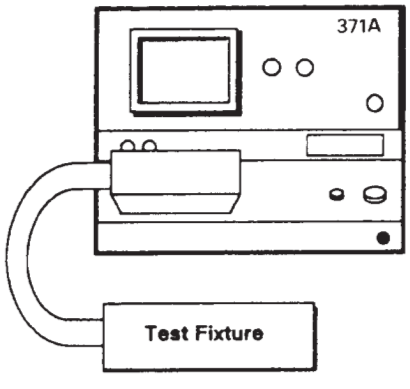
E5. CHECKING MAXIMUM PEAK VOLTAGE

SPECIFICATIONS

- Maximum peak voltage is 30 V + 10%, -5% at 3 kW and 300 W; it is 3 kV + 10%, -0% at 30 W and 3 W; it is 300 V + 15%, -0% at 300 mW and 30 mW.

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



371A Settings:
Initialize the 371A, then change the following settings:

COLLECTOR SUPPLY
PEAK POWER WATTS.....30 mW
HIGH VOLTAGE.....ENABLED
VARIABLE.....100.0
DISPLAY
HORIZONTAL.....50 V/DIV COLLECTOR
CURSOR
Mode.....DOT
Protective Cover.....CLOSED

1. Turn the LOOPING COMPENSATION control to minimum looping and press the cursor position buttons to move the cursor dot to the end of the trace.
2. CHECK that the horizontal CURSOR reading is the value specified in Table 4-25.
3. Set the peak power watts to 300 mW.
4. Repeat Step 2.
5. Set the peak power watts to 3 W, and VARIABLE control to 100.0.
6. Repeat Step 2.
7. Set the peak power watts to 30 W.
8. Repeat Step 2.

Table 4-25
Maximum Peak Voltage

Peak Power Watts Setting	Voltage Output Reading (Horizontal CURSOR readout)
30 mW	300 V to 345 V
300 mW	300 V to 345 V
3 W	3000 V to 3300 V
30 W	3000 V to 3300 V

9. Set the HIGH VOLTAGE breaker to the DISABLED position.
10. Set the peak power watts to 300 W.
11. Set the HIGH CURRENT breaker to the ENABLED position.
12. Set the VARIABLE control to 100%.
13. CHECK that the value of the horizontal CURSOR readout is set between 28.5 V to 33.0 V.
14. Set the peak power watts to 3 kW.
15. Repeat Step 13.
16. Change the following 371A settings:
    COLLECTOR SUPPLY
    POLARITY. . . . . .PNP -
    PEAK POWER WATTS. . . . . .30 mW
    HIGH VOLTAGE. . . . . .ENABLED
    HIGH CURRENT. . . . . .DISABLED
    VARIABLE. 100.0
    DISPLAY
    HORIZONTAL. . . . . .50 V/DIV COLLECTOR
17. Repeat Steps 1 to 15. The horizontal CURSOR readout in Step 13 will be a negative value.
18. Set the HIGH CURRENT breaker to the DISABLED position.
19. Initialize the 371A.

F. TEST FIXTURE

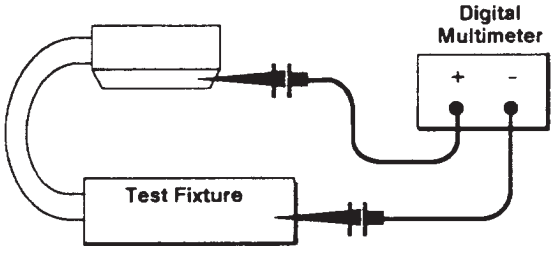
Equipment Required (See Table 4-3)	• Digital Multimeter

F1. CHECKING SENSE LOAD RESISTANCE

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



Test Equipment Settings:
DIGITAL MULTIMETER
Mode.....OHMS

1 Connect the patch cords as shown in Figure 4-29 on the Test Fixture.

2. **CHECK** that the resistance between the COLLECTOR SENSE and #1 is less than 1Ω.

3. **CHECK** that the resistance between the BASE SENSE and #2 is less than 1Ω.

4. **CHECK** that the resistance between the EMITTER SENSE and #3 is less than 1Ω.

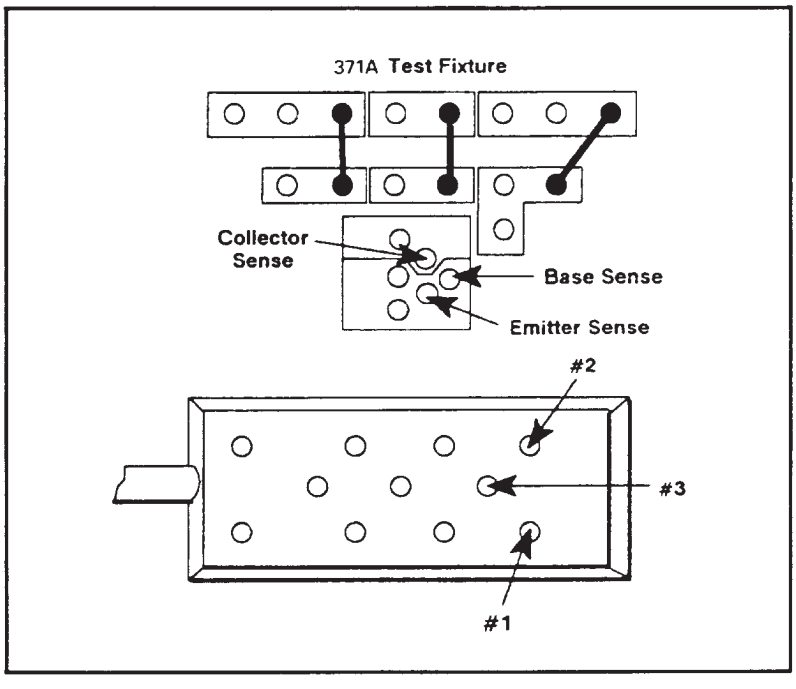


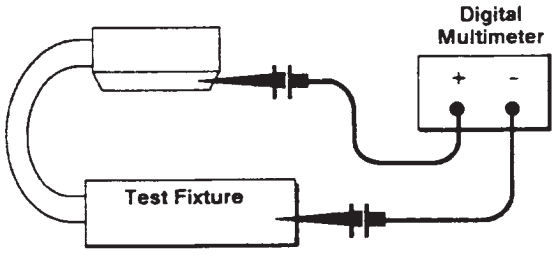
Figure 4-29. Setup for checking sense load resistance.

F2. CHECKING TEST FIXTURE CONTINUITY

NOTE: *The characteristics examined in this procedure are examples of typical instrument operation;* ***they are not specifications.***

Equipment Setup

Set up the equipment as shown in the following illustration and set controls as described.



Test Equipment Settings:

DIGITAL MULTIMETER
Mode.....OHMS

1. Connect the patch cords on the Test Fixture as shown in Figure 4-30.
2. **CHECK** that the resistance between the COLLECTOR and #4 is less than 1Ω.
3. **CHECK** that the resistance between the BASE and #5 is less than 1Ω.
4. **CHECK** that the resistance between the EMITTER and #6 is less than 1Ω.
5. Connect the patch cords on the Test Fixture as shown in Figure 4-31.
6. **CHECK** that the resistance between the COLLECTOR and #7 is less that 1Ω.
7. **CHECK** that the resistance between the BASE and #8 is less than 1Ω.
8. **CHECK** that the resistance between the 1 KΩ terminal and #8 is about 1 KΩ.
9. **CHECK** that the resistance between #9 and #10 is less than 1Ω.

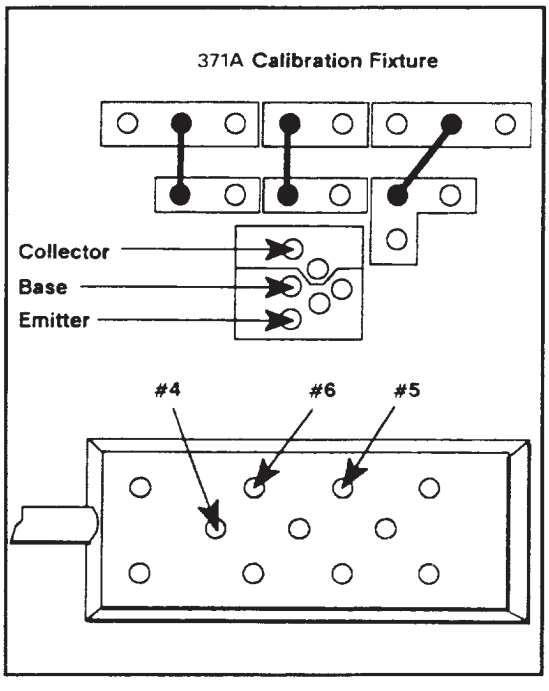


Figure 4-30. Setup A for checking Test Fixture continuity.

10. **CHECK** that the resistance between #10 and #11 is less than 1Ω with the protective cover closed and open circuit when the protective cover is open.

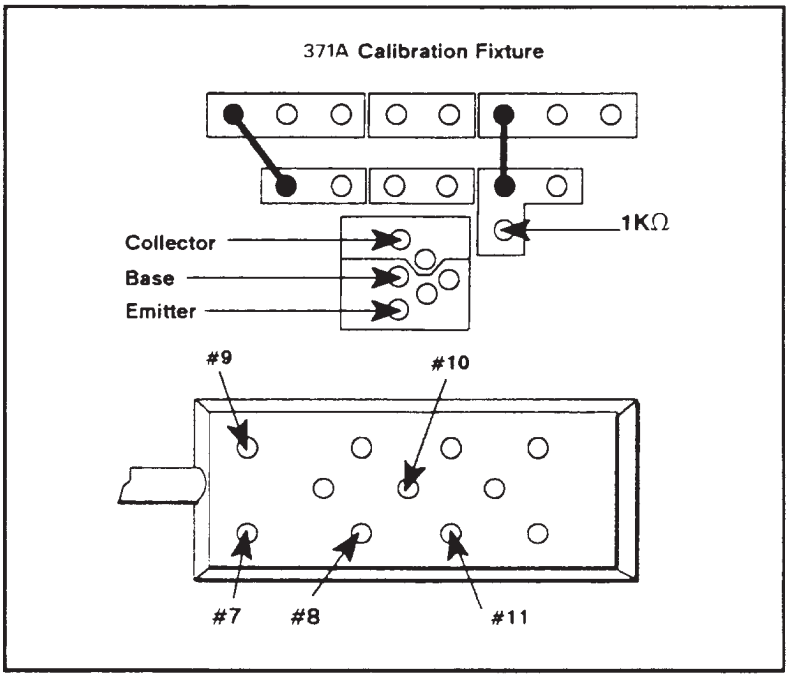


Figure 4-31. Setup B for Checking Test Fixture continuity.

RECONFIGURE THE 371A

This completes the performance check and adjustment procedures. To reconfigure the 371A perform the following:

1. Turn off 371A power.
2. Disconnect all test equipment from the 371A.
3. Install any protective covers/panels removed during the performance check and adjustment procedures.
4. Install the top and side panels to the 371A.

The 371A is ready for use.

Instrument Options

Chapter 5
INSTRUMENT OPTIONS

Your instrument may be equipped with one or more instrument options. A brief description of each option is provided in Chapter 1: General Information of the *371A Operator* manual. As required, information about options and accessories is incorporated into the appropriate chapters of this manual.

Replaceable Electrical Parts

Replaceable Electrical Parts

This section contains a list of the electrical components for the 371A. Use this list to identify and order replacement parts.

Parts Ordering Information

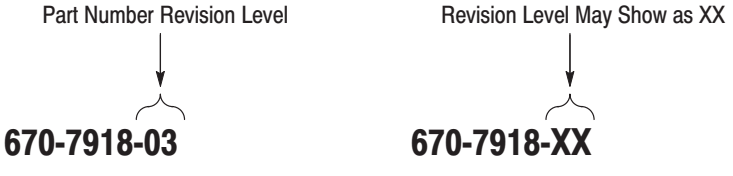
Replacement parts are available through your local Tektronix field office or representative.
Changes to Tektronix products are sometimes made to accommodate improved components as they become available and to give you the benefit of the latest improvements. Therefore, when ordering parts, it is important to include the following information in your order.

- Part number (see Part Number Revision Level below)
- Instrument type or model number
- Instrument serial number
- Instrument modification number, if applicable

If you order a part that has been replaced with a different or improved part, your local Tektronix field office or representative will contact you concerning any change in part number.
Change information, if any, is located at the rear of this manual.

Part Number Revision Level

Tektronix part numbers contain two digits that show the revision level of the part. For most parts in this manual, you will find the letters XX in place of the revision level number.



When you order parts, Tektronix will provide you with the most current part for your product type, serial number, and modification (if applicable). At the time of your order, Tektronix will determine the part number revision level needed for your product, based on the information you provide.

Using the Replaceable Electrical Parts List

The tabular information in the Replaceable Electrical Parts List is arranged for quick retrieval. Understanding the structure and features of the list will help you find all of the information you need for ordering replacement parts. The following table describes each column of the electrical parts list.

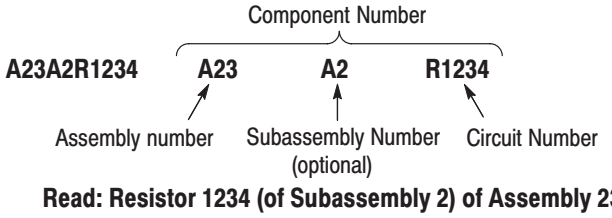
Parts List Column Descriptions

Column	Column Name	Description
1	Component Number	The component number appears on diagrams and circuit board illustrations, located in the diagrams section. Assembly numbers are clearly marked on each diagram and circuit board illustration in the *Diagrams* section, and on the mechanical exploded views in the *Replaceable Mechanical Parts* list section. The component number is obtained by adding the assembly number prefix to the circuit number (see Component Number illustration following this table). The electrical parts list is arranged by assemblies in numerical sequence (A1, with its subassemblies and parts, precedes A2, with its subassemblies and parts). Chassis-mounted parts have no assembly number prefix, and they are located at the end of the electrical parts list.
2	Tektronix Part Number	Use this part number when ordering replacement parts from Tektronix.
3 and 4	Serial Number	Column three indicates the serial number at which the part was first effective. Column four indicates the serial number at which the part was discontinued. No entry indicates the part is good for all serial numbers.
5	Name & Description	An item name is separated from the description by a colon (:). Because of space limitations, an item name may sometimes appear as incomplete. Use the U.S. Federal Catalog handbook H6-1 for further item name identification.
6	Mfr. Code	This indicates the code number of the actual manufacturer of the part.
7	Mfr. Part Number	This indicates the actual manufacturer's or vendor's part number.

Abbreviations

Abbreviations conform to American National Standard ANSI Y1.1–1972.

Component Number



Read: Resistor 1234 (of Subassembly 2) of Assembly 23

List of Assemblies

A list of assemblies is located at the beginning of the electrical parts list. The assemblies are listed in numerical order. When a part's complete component number is known, this list will identify the assembly in which the part is located.

Chassis Parts

Chassis-mounted parts and cable assemblies are located at the end of the Replaceable Electrical Parts List.

Mfr. Code to Manufacturer Cross Index

The table titled Manufacturers Cross Index shows codes, names, and addresses of manufacturers or vendors of components listed in the parts list.

CROSS INDEX – MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
S0167	FUJITSU LTD	2–3–13 TORANOMON MINATO–KU	TOKYO JAPAN
S0293	MATSUSHITA ELECTRIC WORKS LTD	1048 KADOMA KADOMA–SHI	OSAKA 571 JAPAN
S0319	MITSUBISHI ELECTRIC CORP	2–2–3 MARUNOUCHI CHIYODA–KU	TOKYO JAPAN
S3385	SANKEN ELECTRIC CO LTD	1–22–8 NISHI–IKEBUKURO TOSHIMA–KU	TOKYO JAPAN
S3774	OSHINO ELECTRIC LAMP WORKS LTD	5 2 MINAMI SHINAGAWA 2 CHORE SHINAGAWA KU	TOKYO JAPAN
S4091	SANYO ELECTRIC CO LTD		OSAKA JAPAN
S4217	NIPPON CHEMI–CON CORP	167–1 HIGASHIOME 1 CHOME OME	TOKYO JAPAN
S4431	MURATA MFG CO LTD	16 KAIDEN NISHIJM CHO NAGAOKAKY–CITY	KYOTO JAPAN
S4549	JAPAN AVIATION ELECTRONICS IND LTD	21 6 DOGUZAKA SHILHUYA QU 1 CHOME	TOKYO JAPAN
S4997	HITACHI KOKI CO LTD ELECTRONICS DEVICES GROUP	6–2 OTEMACHI 2 CHOME CHIYODA KU	TOKYO 100 JAPAN
S5011	ISHIZUKA ELECTRONICS CORP	16–7 HIGASHIKOIWA 3 CHOME EDOGAWA–KU	TOKYO JAPAN
S5218	SANKYO INTERNATIONAL CO LTD	1–31– TAITO TAITO–KU	TOKYO 110 JAPAN
S5302	KOA CO LTD	3672 INA NATANO–PREF 396	JAPAN
S5518	ROHM CO LTD	21 SAIIN MIZOSAKI CHO UKYO KU	KYOTO 615 JAPAN
TK0AB	NATIONAL SEMICONDUCTOR CORP	4–403 IKEBUKURO TOSHIMA–KU	TOKYO JAPAN
TK0AC	ANALOG DEVICES INC	4–7–8 KOUJIMACHI CHIYODA–KU	TOKYO JAPAN
TK0AE	P C N CO LTD	721–8 YOSHIOKA MANO–MACHI SADO–GUN	NIIGATA JAPAN
TK0BD	TAISHO ELECTRIC IND CO LTD	5–28–16 OKUSAWA SETAGAYA–KU	TOKYO JAPAN
TK0BW	MULTI CONTACT	2–7–2 SHINYOKOHAMA KITA–KU YOKOHAMA–CITY	KANAGAWA JAPAN
TK0BX	NIHON FINE CHEMICAL CO LTD	5–3–7 HIGASHI–YAHATA HIRATSUKA–CITY	KANAGAWA JAPAN
TK0BY	SANKEN ELECTRIC CO LTD	3–6–3 KITANO NIIZA–CITY	SAITAMA JAPAN
TK0BZ	SANSHIN DENKI CO LTD	4–12 SHIBA, 4–CHOME MINATO–KU	TOKYO JAPAN
TK0CG	ELCO INTERNATIONAL CORP	1794 NIPPA–CHO KOHOKU–KU YOKOHAMA–CITY	KANAGAWA JAPAN
TK0CH	IWAKI MUSEN KENKYUSHO CO LTD	485 FUTAKO TAKATSU KU KAWASAKI–CITY	KANAGAWA JAPAN
TK0CI			

CROSS INDEX – MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
TK0CJ	NIKO DENSHI CO LTD	23–15 OHARA 2–CHOME SETAGAYA–KU	TOKYO JAPAN
TK0FY	SANSHIN ELECTRIC CO LTD	10 NOZUTAMACHI MACHINDA–CITY	TOKYO JAPAN
TK0HD	TOKIN CORP	2–5–8 KITA–AOYAMA MINATO–KU	TOKYO JAPAN
TK00I	MATSUSHITA ELECTRIC IND CO LTD	1–1–2 SHIBAKOEN MINATO–KU	TOKYO JAPAN
TK00L	TOSHIBA CO LTD	1–1–1 SHIBAURA MINATO–KU	TOKYO JAPAN
TK00M	NIPPON CHEMI–CON COPR.	2–7–8 TOYOMACHI SHINAGAWA–KU	TOKYO JAPAN
TK0191	SONY/TEKTRONIX	5–9–31 KITASHINAGAWA, SHINAGAWA–KU, TOKYO	TOKYO JAPAN 141–0001
TK0891	MICONICS	1 FAIRCHILD AVE	PLAINVIEW NY 11803
TK1727	PHILIPS NEDERLAND BV AFD ELONCO	POSTBUS 90050	5600 PB EINDHOVEN THE NETHERLANDS
TK1743	UNITRODE (UK) LTD	6 CRESSWELL PARK BLACKHEATH	LONDON SE 3 9RD ENGLAND
TK2058	TDK CORPORATION OF AMERICA	1600 FEEHANVILLE DRIVE	MOUNT PROSPECT, IL 60056
0C8T6	CITEL AMERICA INC	1111 PARK CENTRE BLVD SUITE 474	MIAMI, FL 33169
0H1N5	TOSHIBA MARCON ELECTRONICS AMERICA CORPORATION	998 FIRST EDGE DRIVE	VERNON HILLS IL 60061
0JR04	TOSHIBA AMERICA INC ELECTRONICS COMPONENTS DIV	9775 TOLEDO WAY	IRVINE CA 92718
0J260	COMTEK MANUFACTURING OF OREGON (METALS)	PO BOX 4200	BEAVERTON OR 97076–4200
01295	TEXAS INSTRUMENTS INC SEMICONDUCTOR GROUP	13500 N CENTRAL EXPY PO BOX 655303	DALLAS TX 75262–5303
04222	AVX/KYOCERA DIV OF AVX CORP	19TH AVE SOUTH P O BOX 867	MYRTLE BEACH SC 29577
04713	MOTOROLA INC SEMICONDUCTOR PRODUCTS SECTOR	5005 E MCDOWELL RD	PHOENIX AZ 85008–4229
07716	IRC, INC	2850 MT PLEASANT AVE	BURLINGTON IA 52601
14552	MICROSEMI CORP	2830 S FAIRVIEW ST	SANTA ANA CA 92704–5948
19701	PHILIPS COMPONENTS DISCRETE PRODUCTS DIV RESISTIVE PRODUCTS FACILITY AIRPORT ROAD	PO BOX 760	MINERAL WELLS TX 76067–0760
22526	BERG ELECTRONICS INC (DUPONT)	857 OLD TRAIL RD	ETTERS PA 17319
23875	M–TRON INDUSTRIES INC	PO BOX 630 100 DOUGLAS ST	YANKTON SD 57078–0630
24355	ANALOG DEVICES INC	1 TECHNOLOGY DRIVE	NORWOOD MA 02062
27014	NATIONAL SEMICONDUCTOR CORP	2900 SEMICONDUCTOR DR	SANTA CLARA CA 95051–0606

CROSS INDEX – MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
32997	BOURNS INC TRIMPOT DIV	1200 COLUMBIA AVE	RIVERSIDE CA 92507–2114
34371	HARRIS CORP HARRIS SEMICONDUCTOR PRODUCTS GROUP	200 PALM BAY BLVD PO BOX 883	MELBOURNE FL 32919
50139	ALLEN–BRADLEY CO ELECTRONIC COMPONENTS	1414 ALLEN BRADLEY DR	EL PASO TX 79936
50434	HEWLETT–PACKARD CO OPTOELECTRONICS DIV	370 W TRIMBLE RD	SAN JOSE CA 95131–1008
51642	CENTRE ENGINEERING INC	2820 E COLLEGE AVE	STATE COLLEGE PA 16801–7515
55680	NICHICON /AMERICA/ CORP	927 E STATE PKY	SCHAUMBURG IL 60195–4526
57668	ROHM CORPORATION	15375 BARRANCA PARKWAY SUITE B207	IRVINE CA 92718
59660	TUSONIX INC	7741 N BUSINESS PARK DR PO BOX 37144	TUCSON AZ 85740–7144
61058	MATSUSHITA ELECTRIC CORP OF AMERICA PANASONIC INDUSTRIAL CO DIV	TWO PANASONIC WAY	SECAUCUS NJ 07094
62643	UNITED CHEMICON INC	9801 W HIGGINS ST SUITE 430	ROSEMONT, IL 60018–4771
71400	BUSSMANN DIV OF COOPER INDUSTRIES INC	114 OLD STATE RD PO BOX 14460	ST LOUIS MO 63178
80009	TEKTRONIX INC	14150 SW KARL BRAUN DR PO BOX 500	BEAVERTON OR 97077–0001
91637	DALE ELECTRONICS INC	2064 12TH AVE PO BOX 609	COLUMBUS NE 68601–3632

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1	671−0236−XX			CIRCUIT BD ASSY:MOTHER	80009	6710236XX
A2	671−1064−XX			CIRCUIT BD ASSY:CPU	80009	6711064XX
A3	671−0235−XX			CKT BD ASSY:A/D	80009	6710235XX
A4	670−9306−XX			CIRCUIT BD ASSY:DIGITAL DISPLAY	80009	6709306XX
A5	670−9307−XX			CIRCUIT BD ASSY:DISPLAY CONTROL	80009	6709307XX
A6	670−9308−XX			CIRCUIT BD ASSY:COLLECTOR SUPPLY	80009	6709308XX
A7	671−0234−XX			CIRCUIT BD ASSY:STEP GENERATOR	80009	6710234XX
A10	671−0233−XX			CIRCUIT BD ASSY:SENSE	80009	6710233XX
A11	671−1766−XX			CIRCUIT BD ASSY:MAIN KEY	80009	6711766XX
A12	671−1768−XX			CIRCUIT BD ASSY:SUB KEY	80009	6711768XX
A14	671−1767−XX			CIRCUIT BD ASSY:LOW KEY/FDD	80009	6711767XX
A15	671−0226−XX			CIRCUIT BD ASSY:HIGH CURRENT POWER SUPPLY	80009	6710226XX
A16	671−0225−XX			CIRCUIT BD ASSY:HIGH CURRENT CONTROL	80009	6710225XX
A18	670−9319−XX			CIRCUIT BD ASSY:CRT OUTPUT	80009	6709319XX
A20	670−9321−XX			CIRCUIT BD ASSY:H.V. REGULATOR	TK0191	ORDER BY DESC
A22	671−1182−XX			CIRCUIT BD ASSY:INTERFACE	80009	6711182XX
A24	119−3456−XX			FLOPPY DISK UNI:3.5 INCH W/INTERFACE	80009	1193456XX
A25	671−0229−XX			CIRCUIT BD ASSY:MAIN POWER SUPPLY	80009	6710229XX
A26	671−0228−XX			CIRCUIT BD ASSY:COLLECTOR PWR SPLY	TK0191	ORDER BY DESC
A27	671−0227−XX			CIRCUIT BD ASSY:PRIMARY	TK0191	ORDER BY DESC
A28	670−9324−XX			CIRCUIT BD ASSY:LAMP(R)	80009	6709324XX
A29	670−9324−XX			CIRCUIT BD ASSY:LAMP(L)	80009	6709324XX
A30	671−0305−XX			CIRCUIT BD ASSY:CONNECTOR	80009	6710305XX
A31	671−0306−XX			CIRCUIT BD ASSY:RELAY	80009	6710306XX

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A1	671−0236−XX			CIRCUIT BD ASSY:MOTHER;	80009	6710236XX
A1J10	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE	22526	48283−018
A1J12	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE	22526	48283−018
A1J20	131−3651−00			CONN,RCPT,ELEC:HEADER,2 X 32,0.1 SPACING	80009	131365100
A1J22	131−3649−00			CONN,RCPT,ELEC:CKT BD,RTANG,2 X 22	80009	131364900
A1J30	131−3651−00			CONN,RCPT,ELEC:HEADER,2 X 32,0.1 SPACING	80009	131365100
A1J32	131−3649−00			CONN,RCPT,ELEC:CKT BD,RTANG,2 X 22	80009	131364900
A1J40	131−3651−00			CONN,RCPT,ELEC:HEADER,2 X 32,0.1 SPACING	80009	131365100
A1J42	131−3649−00			CONN,RCPT,ELEC:CKT BD,RTANG,2 X 22	80009	131364900
A1J50	131−3651−00			CONN,RCPT,ELEC:HEADER,2 X 32,0.1 SPACING	80009	131365100
A1J52	131−3649−00			CONN,RCPT,ELEC:CKT BD,RTANG,2 X 22	80009	131364900
A1J110	131−3660−00			CONN,RCPT,ELEC:HEADER,2 X 20	80009	131366000
A1J180	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A1J190	131−3668−00			CONN,RCPT,ELEC:CKT BD,4 PIN	80009	131366800
A1J220	131−3661−00			CONN,RCPT,ELEC:HEADER,2 X 13	80009	131366100
A1J400	131−3662−00			CONN,RCPT,ELEC:HEADER,2 X 17	80009	131366200
A1J410	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A1J412	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A1J420	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A1W60	174−0291−00			CA ASSY,SP,ELEC:16,28 AWG,18.5 L,RIBBON	80009	174029100
A1W70	174−0292−00			CA ASSY,SP,ELEC:16,28 AWG,4.3 L,RIBBON	80009	174029200
A1W100	131−0566−04			BUS,COND:DUMMY RES,18MM OD X 3.2MM L	80009	131056604
A1W192	174−0294−00			CA ASSY,SP,ELEC:16,28 AWG,12.6 L,RIBBON	80009	174029400
A1W200	131−0566−04			BUS,COND:DUMMY RES,18MM OD X 3.2MM L	80009	131056604
A1W300	131−0566−04			BUS,COND:DUMMY RES,18MM OD X 3.2MM L	80009	131056604

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2	671−1064−XX			CIRCUIT BD ASSY:CPU	80009	6711064XX
A2BT740	146−0078−00			BATTERY,STORAGE:8.6V,0.25AH,@8.3MA,NI CAD	80009	146007800
A2C20	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A2C120	290−0778−00			CAP,FXD,ALUM:;1UF,20%,50V,5 X 11 MM	62643	SMEBP50VB1R0M5X
A2C400	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A2C404	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C410	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A2C412	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C460	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A2C740	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A2C741	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C900	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A2C902	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C904	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C906	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C908	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C910	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C920	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A2C922	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C924	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C926	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C928	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C930	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C932	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C934	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C936	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C938	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C940	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A2C942	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C944	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C946	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C948	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C954	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C956	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C958	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C970	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C972	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C974	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C976	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C978	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2C980	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C982	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C984	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C986	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2C988	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2CR120	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V,D2X5,BAX13	80009	152032700
A2CR740	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V,D2X5,BAX13	80009	152032700
A2CR742	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V,D2X5,BAX13	80009	152032700
A2E710	276−0524−00			SHLD BEAD,ELEK:FERRITE	80009	276052400
A2E720	276−0524−00			SHLD BEAD,ELEK:FERRITE	80009	276052400
A2E750	276−0524−00			SHLD BEAD,ELEK:FERRITE	80009	276052400
A2FL400	119−1762−00			FILTER,RFI:0.022UF,+50/−20%,50VW/FERRITE	80009	119176200
A2L900	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A2L900	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A2L920	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A2L920	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A2L940	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A2L940	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A2P20	131−3650−00			CONN,PLUG,ELEC:CKT BD,RTANG,2 X 32,0.1 SP	80009	131365000
A2P22	131−3648−00			CONN,PLUG,ELEC:CKT BD,RTANG,2 X 22,0.1 SP	80009	131364800
A2Q400	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A2Q747	151−0188−00			TRANSISTOR,SIG:BIPOLAR,PNP;40V,200MA	04713	2N3906
A2R110	315−0472−00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R121	315−0203−00			RES,FXD,FILM:20K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R122	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R300	315−0472−00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R406	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R408	315−0103−00	J300000	J300440	RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R408	315−0102−00	J300441		RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R409	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R410	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R412	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R414	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R416	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R418	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R420	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R422	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R450	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R452	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R454	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300

Component Number	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2R456	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R458	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R460	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R462	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2R465	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R466	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R740	321−0217−00			RES,FXD,FILM:1.78K OHM,1%,0.125W,TC=T0	TK1727	MR25−2322−151−1
A2R741	321−0332−00			RES,FXD,FILM:28.0K OHM,1%,0.125W,TC=T0	19701	5043ED28K00F
A2R742	321−0289−00			RES,FXD,FILM:10.0K OHM,1%,0.125W,TC=T0	19701	5043ED10K00F
A2R744	315−0472−00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R745	315−0510−00			RES,FXD,FILM:51 OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R747	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R750	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A2R770	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A2TP100	214−0579−00	J300000	J300585	TERM,TEST POINT:PCB,TEST POINT	0J260	ORDER BY DESC
A2TP400	214−0579−00	J300000	J300585	TERM,TEST POINT:PCB,TEST POINT	0J260	ORDER BY DESC
A2U100	119−1408−00			OSC,XTAL CLOCK:16MHZ,0.01%,TTL,4 PIN 14 PIN	23875	792−010
A2U120	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A2U200	156−2316−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156231600
A2U210	156−2316−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156231600
A2U240	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A2U250	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A2U260	156−2833−00			IC,DIGITAL:HCMOS,MUX/ENCODER	80009	156283300
A2U270	156−2820−00			IC,DIGITAL:HCMOS,GATE;TRIPLE 3−INPUT NAND	80009	156282000
A2U300	156−2026−00			IC,DIGITAL:HCMOS,GATE;QUAD 2−INPUT NOR	04713	MC74HC02AN
A2U310	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A2U340	156−2813−00			IC,DIGITAL:HCMOS,COUNTER;DUAL 4−BIT BINARY	80009	156281300
A2U400	156−2396−00			IC,MISC:BIPOLAR,PWR SUPPLY SUPERVISOR	01295	TL7705ACP
A2U410	156−1445−04			IC,PROCESSOR:NMOS,MICROPROCESSOR	80009	156144504
A2U430	156−2253−00			IC,DIGITAL:HCMOS,GATE;QUAD 2−INPUT NAND	80009	156225300
A2U450	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A2U452	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A2U454	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A2U456	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A2U458	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A2U460	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A2U462	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A2U480	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A2U482	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A2U484	156−1921−00			IC,DIGITAL:HCTCMOS,TRANSCEIVER	04713	MC74HCT245AN

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A2U486	156−1921−00			IC,DIGITAL:HCTCMOS,TRANSCEIVER	04713	MC74HCT245AN
A2U500	156−2825−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156282500
A2U520	156−2316−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156231600
A2U540	156−2316−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156231600
A2U600	160−7545−02	J300000	J300418	MICROCKT,DGTL:128K X 8 EPROM,PRGM	80009	160754502
A2U600	160−7545−03	J300419		MICROCKT,DGTL:128K X 8 EPROM,PRGM	80009	160754532
A2U610	160−7546−02	J300000	J300418	MICROCKT,DGTL:128K X 8 EPROM,PRGM	80009	160754602
A2U610	160−7546−03	J300419		MICROCKT,DGTL:128K X 8 EPROM,PRGM	80009	160754632
A2U720	156−2808−00			IC,DIGITAL:HCMOS,GATE;QUAD 2−INPUT	80009	156280800
A2U740	156−2445−00			IC,LINEAR:BIPOLAR,PWR SUPPLY SUPERVISOR	34371	ICL8212CPA
A2U770	156−3681−00			IC,DIGITAL:HCMOS,BUFFER;HEX, 3−STATE	80009	156368100
A2U800	156−3399−00			IC,MEMORY:CMOS,SRAM;128K X 8,120NS,MODULE	S4997	H66204 L−12 32
A2U810	156−3399−00			IC,MEMORY:CMOS,SRAM;128K X 8,120NS,MODULE	S4997	H66204 L−12 32

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3	671−0235−XX			CKT BD ASSY:A/D	80009	6710235XX
A3C10	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A3C20	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A3C30	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A3C40	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A3C50	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A3C60	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A3C70	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A3C100	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A3C101	281−0773−00			CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V,,	TK1743	CGB103KEX
A3C102	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C110	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C112	290−0746−00			CAP,FXD,ALUM:;47UF,+50%−20%,16V	55680	UVX1J470MPA
A3C114	283−0603−00			CAP,FXD,MICA DI:113PF,2%,300V	TK0891	RDM15FD1130G03
A3C120	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C136	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C140	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C150	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C152	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C156	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C158	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A3C160	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C162	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C167	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A3C168	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A3C169	290−0804−00			CAP,FXD,ELCTLT:10UF,+50−20%,25V	0H1N5	CEUSM1E100
A3C170	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C172	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C200	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C210	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C212	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C214	281−0823−00			CAP,FXD,CER DI:470PF,10%,50V	04222	SA101A471KAA
A3C216	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A3C220	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C222	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C260	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C262	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A3C264	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A3C266	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A3C268	290−0778−00			CAP,FXD,ALUM:;1UF,20%,50V,5 X 11 MM	62643	SMEBP50VB1R0M5X

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A3C300	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C310	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C312	290−0746−00			CAP,FXD,ALUM:;47UF,+50%−20%,16V	55680	UVX1J470MPA
A3C314	283−0603−00			CAP,FXD,MICA DI:113PF,2%,300V	TK0891	RDM15FD1130G03
A3C320	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C330	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C340	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C350	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C360	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C370	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C380	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C390	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C400	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C414	285−1117−00			CAP,FXD,PLASTIC:0.018UF,2%,100V	80009	285111700
A3C418	285−1117−00			CAP,FXD,PLASTIC:0.018UF,2%,100V	80009	285111700
A3C420	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C430	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C440	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C450	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C500	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C505	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C507	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C510	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C512	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C514	281−0823−00			CAP,FXD,CER DI:470PF,10%,50V	04222	SA101A471KAA
A3C516	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A3C520	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C522	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C530	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C532	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C538	281−0811−00			CAP,FXD,CERAMIC:MLC;10PF,10%,200V	04222	SA102A100KAA
A3C540	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C542	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C550	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C552	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C560	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C562	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C564	281−0823−00			CAP,FXD,CER DI:470PF,10%,50V	04222	SA101A471KAA
A3C566	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A3C570	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA

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A3C590	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C592	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C600	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C602	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C604	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A3C608	281−0770−00			CAP,FXD,CER DI:1000PF,20%,100V	04222	SA101C102MAA
A3C610	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C612	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C614	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A3C618	281−0770−00			CAP,FXD,CER DI:1000PF,20%,100V	04222	SA101C102MAA
A3C620	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C622	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C630	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C632	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C634	290−1197−00			CAP,FXD,ELCTLT:22UF,10%,16V	S4091	16SC22MK
A3C636	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C640	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C642	290−1197−00			CAP,FXD,ELCTLT:22UF,10%,16V	S4091	16SC22MK
A3C644	281−0762−00			CAP,FXD,CERAMIC:MLC;27PF,10%,100V,NPO,0.100	04222	SA102A270KAA
A3C646	281−0762−00			CAP,FXD,CERAMIC:MLC;27PF,10%,100V,NPO,0.100	04222	SA102A270KAA
A3C650	290−1197−00			CAP,FXD,ELCTLT:22UF,10%,16V	S4091	16SC22MK
A3C652	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C654	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C656	290−1197−00			CAP,FXD,ELCTLT:22UF,10%,16V	S4091	16SC22MK
A3C660	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C670	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C680	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C690	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C700	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C710	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C720	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C750	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C760	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C770	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C780	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C910	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C920	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C930	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C940	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3C950	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA

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A3C960	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A3CR164	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V,D2X5,BAX13	80009	152032700
A3CR168	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V,D2X5,BAX13	80009	152032700
A3CR169	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V,D2X5,BAX13	80009	152032700
A3CR170	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V,D2X5,BAX13	80009	152032700
A3CR604	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V,D2X5,BAX13	80009	152032700
A3J340	131−0590−03			TERMINAL,PIN:0.38 L X 0.025 SQ,NO FERRULE	80009	131059003
A3L10	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A3L10	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A3L20	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A3L20	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A3L30	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A3L30	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A3L40	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A3L40	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A3L50	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A3L50	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A3L60	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A3L60	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A3L70	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A3L70	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A3L650	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A3L650	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A3L654	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A3L654	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A3P30	131−3650−00			CONN,PLUG,ELEC:CKT BD,RTANG,2 X 32,0.1 SP	80009	131365000
A3P32	131−3648−00			CONN,PLUG,ELEC:CKT BD,RTANG,2 X 22,0.1 SP	80009	131364800
A3P340	131−4311−00			BUS,CONDUCTOR:WHITE,SHUNT ASSY	80009	131431100
A3R100	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R102	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R110	315−0473−00			RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R112	315−0472−00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R116	321−0339−00			RES,FXD,FILM:33.2K OHM,1%,0.125W,TC=T0	19701	5043ED33K20F
A3R118	321−0358−00			RES,FXD,FILM:52.3K OHM,1%,0.125W,TC=T0	19701	5043ED52K30F
A3R130	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R132	315−0303−00			RES,FXD,FILM:30K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R134	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R136	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R145	307−0729−00			RES NTWK,FXD,FI:4,10K OHM,10%,0.125W	80009	307072900
A3R150	321−0403−00			RES,FXD,FILM:154K OHM,1%,0.125W,TC=T0	19701	5043ED154K0F

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3R151	321−0357−00			RES,FXD,FILM:51.1K OHM,1%,0.125W,TC=T0	19701	5043ED51K10F
A3R152	321−0337−00			RES,FXD,FILM:31.6K OHM,1%,0.125W,TC=T0	19701	5043ED31K60F
A3R153	321−0325−00			RES,FXD,FILM:23.7K OHM,1%,0.125W,TC=T0	19701	5043ED23K70F
A3R154	321−0316−00			RES,FXD,FILM:19.1K OHM,1%,0.125W,TC=T0	07716	CEAD19101F
A3R155	321−0311−00			RES,FXD,FILM:16.9K OHM,1%,0.125W,TC=T0	19701	5043ED16K90F
A3R156	321−0307−00			RES,FXD,FILM:15.4K OHM,1%,0.125W,TC=T0	TK1727	MR25−2322−151−1
A3R157	321−0306−00			RES,FXD,FILM:15.0K OHM,1%,0.125W,TC=T0	19701	5043ED15K00F
A3R158	321−0289−00			RES,FXD,FILM:10.0K OHM,1%,0.125W,TC=T0	19701	5043ED10K00F
A3R159	321−0289−00			RES,FXD,FILM:10.0K OHM,1%,0.125W,TC=T0	19701	5043ED10K00F
A3R160	315−0203−00			RES,FXD,FILM:20K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R162	315−0203−00			RES,FXD,FILM:20K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R164	315−0304−00			RES,FXD,FILM:300K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R165	315−0472−00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R166	315−0302−00			RES,FXD,FILM:3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R167	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R168	315−0472−00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R170	315−0304−00			RES,FXD,FILM:300K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R172	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R176	321−0289−00			RES,FXD,FILM:10.0K OHM,1%,0.125W,TC=T0	19701	5043ED10K00F
A3R178	321−0289−00			RES,FXD,FILM:10.0K OHM,1%,0.125W,TC=T0	19701	5043ED10K00F
A3R180	315−0622−00			RES,FXD,FILM:6.2K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R182	315−0112−00			RES,FXD,FILM:1.1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R212	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R220	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R230	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R260	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R261	321−0226−00			RES,FXD,FILM:2.21K OHM,1%,0.125W,TC=T0	19701	5043ED2K210F
A3R262	315−0203−00			RES,FXD,FILM:20K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R266	315−0473−00			RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R268	315−0473−00			RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R290	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R310	315−0473−00			RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R312	315−0472−00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R316	321−0339−00			RES,FXD,FILM:33.2K OHM,1%,0.125W,TC=T0	19701	5043ED33K20F
A3R318	321−0358−00			RES,FXD,FILM:52.3K OHM,1%,0.125W,TC=T0	19701	5043ED52K30F
A3R410	321−0329−00			RES,FXD,FILM:26.1K OHM,1%,0.125W,TC=T0	91637	CMF55116G26101F
A3R414	321−0300−00			RES,FXD,FILM:13.0K OHM,1%,0.125W,TC=T0	19701	5043ED13K00F
A3R420	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R430	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R504	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3R506	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R507	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R510	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A3R512	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R516	321−0260−00	J300000	J300365	RES,FXD,FILM:4.99K OHM,1%,0.125W,TC=T0	19701	5033ED4K990F
A3R516	321−0246−00	J300366		RES,FXD,FILM:3.57K OHM,1%,0.125W,TC=T0	TK1727	MR25−2322−151−3
A3R518	311−1979−01	J300000	J300365	RES,VAR,NONWW:2K OHM,20%,0.5W	80009	311197901
A3R518	311−1238−01	J300366		RES,VAR,NONWW:TRMR,5K OHM,20%,0.5W	80009	311123801
A3R520	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R522	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R530	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R532	321−0414−04			RES,FXD,FILM:200K OHM,0.1%,0.125W,TC=T2	19701	5033RC200K0B
A3R534	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A3R535	321−0226−00			RES,FXD,FILM:2.21K OHM,1%,0.125W,TC=T0	19701	5043ED2K210F
A3R536	321−1317−07			RES,FXD,FILM:19.8K OHM,0.1%,0.125W,TC=T9	S5518	CRB25BZ19.8K
A3R538	321−0615−01			RES,FXD,FILM:20.4K OHM,0.5%,0.125W,TC=T0	80009	321061501
A3R540	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R560	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A3R562	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R570	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R571	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R602	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R604	311−1740−02			RES,VAR,NONWW:1K OHM,20%,0.5W	80009	311174002
A3R606	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R612	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R614	311−1740−02			RES,VAR,NONWW:1K OHM,20%,0.5W	80009	311174002
A3R616	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R620	321−0202−00			RES,FXD,FILM:1.24K OHM,1%,0.125W,TC=T0	TK1727	MR25 2322−151−1
A3R622	311−1740−02			RES,VAR,NONWW:1K OHM,20%,0.5W	80009	311174002
A3R624	321−0280−00			RES,FXD,FILM:8.06K OHM,1%,0.125W,TC=T0	19701	5033ED8K060F
A3R630	315−0822−00			RES,FXD,FILM:8.2K OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R632	321−0291−00			RES,FXD,FILM:10.5K OHM,1%,0.125W,TC=T0	19701	5033ED10K50F
A3R634	321−0340−00			RES,FXD,FILM:34.0K OHM,1%,0.125W,TC=T0	TK1727	2322−151−34K0
A3R638	321−0309−00			RES,FXD,FILM:16.2K OHM,1%,0.125W,TC=T0	19701	5033ED16K20F
A3R640	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A3R770	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A3R780	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A3R900	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A3R910	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A3R960	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3TP230	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A3TP290	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A3TP500	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A3TP510	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A3TP540	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A3TP560	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A3U110	156−0704−00			IC,MISC:CMOS,PLL;LOW SPEED	04713	MC14046BCP
A3U120	156−2835−00			IC,DIGITAL:HCMOS,COUNTER;12−BIT BINARY	80009	156283500
A3U130	156−1778−00			MICROCKT,LINEAR:DUAL COMPARATOR	80009	156177800
A3U140	156−2836−00			IC,DIGITAL:HCMOS,GATE;QUAD 2−INPUT XOR	80009	156283600
A3U150	156−0513−00			IC,MISC:CMOS,ANALOG MUX;8 CHANNEL	04713	MC14051BCP
A3U160	156−0495−00			IC,LINEAR:BIPOLAR,OP−AMP;QUAD	01295	LM324N
A3U170	156−0158−00			IC,LINEAR:BIPOLAR,OP−AMP;DUAL	01295	MC1458P
A3U200	156−2810−00			MICROCKT,LINEAR:12 BIT,D/A CONV	80009	156281000
A3U210	156−0158−00			IC,LINEAR:BIPOLAR,OP−AMP;DUAL	01295	MC1458P
A3U220	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A3U260	156−3358−00			MICROCKT,LINEAR:VOLTAGE CONTROL AMPL	80009	156335800
A3U300	156−2813−00			IC,DIGITAL:HCMOS,COUNTER;DUAL 4−BIT	80009	156281300
A3U310	156−0704−00			IC,MISC:CMOS,PLL;LOW SPEED	04713	MC14046BCP
A3U320	156−2835−00			IC,DIGITAL:HCMOS,COUNTER;12−BIT BINARY	80009	156283500
A3U330	156−1762−00			IC,DIGITAL:HCMOS,COUNTER;SYNCH 4−BIT	0JR04	TC74HC161AP
A3U340	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A3U350	156−0514−00			IC,MISC:CMOS,ANALOG MUX;DUAL 4 CHANNEL	04713	MC14052BCP
A3U360	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A3U370	156−2088−00			IC,DIGITAL:HCMOS,MUX/ENCODER;QUAD	80009	156208800
A3U380	156−1762−00			IC,DIGITAL:HCMOS,COUNTER;SYNCH 4−BIT	0JR04	TC74HC161AP
A3U390	156−1762−00			IC,DIGITAL:HCMOS,COUNTER;SYNCH 4−BIT	0JR04	TC74HC161AP
A3U400	156−2253−00			IC,DIGITAL:HCMOS,GATE;QUAD 2−INPUT NAND	80009	156225300
A3U420	156−3202−01			IC,DIGITAL:HCMOS, MULTIVIBRATOR;DUAL RETRIG	80009	156320201
A3U430	156−2820−00			IC,DIGITAL:HCMOS,GATE;TRIPLE 3−INPUT NAND	80009	156282000
A3U440	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A3U450	156−2820−00			IC,DIGITAL:HCMOS,GATE;TRIPLE 3−INPUT NAND	80009	156282000
A3U500	156−0719−01			IC,CONVERTER:CMOS,D/A	24355	AD7533LN
A3U505	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A3U510	156−2795−00			MICROCKT,LINEAR:OPERATIONAL PRECISION	80009	156279500
A3U520	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A3U530	156−2795−00			MICROCKT,LINEAR:OPERATIONAL PRECISION	80009	156279500
A3U540	156−2795−00			MICROCKT,LINEAR:OPERATIONAL PRECISION	80009	156279500
A3U550	156−2810−00			MICROCKT,LINEAR:12 BIT,D/A CONV	80009	156281000
A3U560	156−2795−00			MICROCKT,LINEAR:OPERATIONAL PRECISION	80009	156279500

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A3U570	156−2820−00			IC,DIGITAL:HCMOS,GATE;TRIPLE 3−INPUT NAND	80009	156282000
A3U590	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A3U600	156−2812−00			IC,MISC:SAMPLE/HOLD	80009	156281200
A3U610	156−2812−00			IC,MISC:SAMPLE/HOLD	80009	156281200
A3U620	156−0514−00			IC,MISC:CMOS,ANALOG MUX;DUAL 4 CHANNEL	04713	MC14052BCP
A3U630	156−2832−01			MICROCKT,DGTL:OP AMP,BIFET	TK0AB	LF411CN
A3U640	156−3195−00			IC,CONVERTER:TTL,A/D;12−BIT,5US,SAR	TK0AC	AD7572JN05
A3U650	156−3196−00			MICROCKT,DGTL:DC−DC CONVERTER	TK2058	RZC15N20
A3U660	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A3U670	156−2315−00			MICROCKT,DGTL:3 STATE OCTAL D TYPE FF	80009	156231500
A3U680	156−2813−00			IC,DIGITAL:HCMOS,COUNTER;DUAL 4−BIT	80009	156281300
A3U690	156−2814−00			IC,DIGITAL:HCMOS,GATE;TRIPLE 3−INPUT NAND	80009	156281400
A3U700	156−2088−00			IC,DIGITAL:HCMOS,MUX/ENCODER;QUAD	80009	156208800
A3U710	156−2027−00			IC,DIGITAL:HCMOS,GATE;HEX INV	01295	SN74HC04N
A3U720	156−2835−00			IC,DIGITAL:HCMOS,COUNTER;12−BIT BINARY	80009	156283500
A3U750	156−3253−01			IC,MEMORY:CMOS,SRAM;2K X 8,55NS	80009	156325301
A3U760	156−3253−01			IC,MEMORY:CMOS,SRAM;2K X 8,55NS	80009	156325301
A3U770	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A3U780	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A3U920	156−2316−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156231600
A3U930	156−2824−00			IC,DIGITAL:HCMOS,LATCH;8−BIT ADDRESSABLE	01295	SN74HC259N
A3U940	156−2824−00			IC,DIGITAL:HCMOS,LATCH;8−BIT ADDRESSABLE	01295	SN74HC259N
A3U950	156−2316−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156231600
A3U960	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A3VR100	152−0195−00	J300000	J300678	DIODE,ZENER:,;5.1V,5%,0.4W	14552	CD332125
A3VR100	152−0697−01	J300679		DIODE,ZENER:,;5.1V,+1.5%−2.5%		
A3VR604	152−1039−00			SEMICOND DVC,DI:ZENER,SI,3V,500MW,DO035	S4997	HZ3ALL
A3VR640	152−0195−00			DIODE,ZENER:,;5.1V,5%,0.4W	14552	CD332125
A3Y642	158−0336−00			XTAL UNIT,QTZ:2.5MHZ,30PPM,SER	TK0CJ	ORDER BY DESC

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A4	670−9306−XX			CIRCUIT BD ASSY:DIGITAL DISPLAY	80009	6709306XX
A4C10	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A4C20	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A4C30	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A4C40	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A4C110	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C120	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C130	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C140	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C150	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C160	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C170	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C200	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C210	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C220	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C230	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C240	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C250	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C260	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C300	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C310	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C320	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C330	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C340	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C350	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C360	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C370	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C380	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C400	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C420	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C440	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C460	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C480	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C500	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C502	281−0811−00			CAP,FXD,CERAMIC:MLC;10PF,10%,200V	04222	SA102A100KAA
A4C504	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C506	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C508	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C510	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A4C512	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN

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A4C520	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C522	281−0811−00			CAP,FXD,CERAMIC:MLC;10PF,10%,200V	04222	SA102A100KAA
A4C524	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C526	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C528	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C530	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A4C532	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A4C540	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C542	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C600	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C620	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C640	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C660	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C670	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C680	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C700	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C710	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C720	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C760	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C770	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C800	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C802	281−0759−00			CAP,FXD,CERAMIC:MLC;22PF,10%,100V	04222	SA102A220KAA
A4C804	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C806	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C808	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C820	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C822	281−0759−00			CAP,FXD,CERAMIC:MLC;22PF,10%,100V	04222	SA102A220KAA
A4C824	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C826	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C840	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C842	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C900	281−0745−00			CAP,FXD,CER DI:4.7PF,0.5%,400V	80009	281074500
A4C1000	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4C1002	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A4CR220	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V,D2X5,BAX13	80009	152032700
A4L10	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A4L10	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A4L20	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A4L20	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A4L30	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800

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A4L30	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A4L40	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A4L40	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A4L900	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A4L900	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A4P40	131−3650−00			CONN,PLUG,ELEC:CKT BD,RTANG,2 X 32,0.1 SP	80009	131365000
A4P42	131−3648−00			CONN,PLUG,ELEC:CKT BD,RTANG,2 X 22,0.1 SP	80009	131364800
A4R200	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A4R210	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A4R220	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A4R250	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A4R260	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A4R500	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A4R502	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A4R504	321−0928−07			RES,FXD,FILM:250 OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A4R506	321−0927−07			RES,FXD,FILM:125 OHM,0.1%,0.125W,TC=T9	19701	5033RE125ROB
A4R508	321−0928−07			RES,FXD,FILM:250 OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A4R510	315−0100−00			RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322−182
A4R512	315−0432−00			RES,FXD,FILM:4.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A4R514	315−0432−00			RES,FXD,FILM:4.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A4R520	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A4R522	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A4R524	321−0928−07			RES,FXD,FILM:250 OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A4R526	321−0927−07			RES,FXD,FILM:125 OHM,0.1%,0.125W,TC=T9	19701	5033RE125ROB
A4R528	321−0928−07			RES,FXD,FILM:250 OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A4R530	315−0100−00			RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322−182
A4R532	315−0432−00			RES,FXD,FILM:4.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A4R534	315−0432−00			RES,FXD,FILM:4.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A4R700	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A4R702	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A4R704	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A4R710	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A4R712	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A4R714	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A4R716	321−0193−00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	TK1727	MR25 2322−151−1
A4R718	321−0193−00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	TK1727	MR25 2322−151−1
A4R720	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A4R722	321−0399−00			RES,FXD,FILM:140K OHM,1%,0.125W,TC=T0	19701	5043ED140K0F
A4R724	321−0399−00			RES,FXD,FILM:140K OHM,1%,0.125W,TC=T0	19701	5043ED140K0F
A4R726	321−0193−00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	TK1727	MR25 2322−151−1

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A4R800	321−0193−00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	TK1727	MR25 2322−151−1
A4R802	321−0193−00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	TK1727	MR25 2322−151−1
A4R804	321−0612−00			RES,FXD,FILM:500 OHM,1%,0.125W,TC=T0	19701	5033RD500R0F
A4R806	321−0928−07			RES,FXD,FILM:250 OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A4R808	321−0612−00			RES,FXD,FILM:500 OHM,1%,0.125W,TC=T0	19701	5033RD500R0F
A4R810	321−0612−00			RES,FXD,FILM:500 OHM,1%,0.125W,TC=T0	19701	5033RD500R0F
A4R812	321−0612−00			RES,FXD,FILM:500 OHM,1%,0.125W,TC=T0	19701	5033RD500R0F
A4R814	315−0100−00			RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322−182
A4R820	321−0193−00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	TK1727	MR25 2322−151−1
A4R822	321−0193−00			RES,FXD,FILM:1K OHM,1%,0.125W,TC=T0	TK1727	MR25 2322−151−1
A4R824	321−0612−00			RES,FXD,FILM:500 OHM,1%,0.125W,TC=T0	19701	5033RD500R0F
A4R826	321−0928−07			RES,FXD,FILM:250 OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A4R828	321−0612−00			RES,FXD,FILM:500 OHM,1%,0.125W,TC=T0	19701	5033RD500R0F
A4R830	315−0100−00			RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322−182
A4R840	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A4R842	311−1621−01			RES,VAR,NONWW:200 OHM,20%,0.5W	80009	311162101
A4R844	321−0239−00			RES,FXD,FILM:3.01K OHM,1%,0.125W,TC=T0	TK1727	2322−151−3K01
A4R846	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A4R848	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A4TP10	214−0579−00	J300000	J300585	TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A4TP20	214−0579−00	J300000	J300585	TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A4U100	119−2312−00			OSCILLATOR:4.5MHZ,CRYSTAL	80009	119231200
A4U110	156−2813−00			IC,DIGITAL:HCMOS,COUNTER;DUAL 4−BIT	80009	156281300
A4U120	156−2813−00			IC,DIGITAL:HCMOS,COUNTER;DUAL 4−BIT	80009	156281300
A4U130	156−2088−00			IC,DIGITAL:HCMOS,MUX/ENCODER;QUAD	80009	156208800
A4U140	156−2088−00			IC,DIGITAL:HCMOS,MUX/ENCODER;QUAD	80009	156208800
A4U150	156−2088−00			IC,DIGITAL:HCMOS,MUX/ENCODER;QUAD	80009	156208800
A4U160	156−2088−00			IC,DIGITAL:HCMOS,MUX/ENCODER;QUAD	80009	156208800
A4U170	156−2813−00			IC,DIGITAL:HCMOS,COUNTER;DUAL 4−BIT	80009	156281300
A4U200	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A4U210	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A4U220	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A4U230	156−1817−00			IC,MEMORY:CMOS,SRAM;8K X 8	80009	156181700
A4U240	156−1817−00			IC,MEMORY:CMOS,SRAM;8K X 8	80009	156181700
A4U250	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A4U260	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A4U270	156−2824−00			IC,DIGITAL:HCMOS,LATCH;8−BIT ADDRESSABLE	01295	SN74HC259N
A4U280	156−2825−00			IC,DIGITAL:HCMOS,DEMUX/DECODER;DUAL	80009	156282500
A4U300	156−2814−00			IC,DIGITAL:HCMOS,GATE;TRIPLE 3−INPUT NAND	80009	156281400
A4U310	156−2253−00			IC,DIGITAL:HCMOS,GATE;QUAD 2−INPUT NAND	80009	156225300

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A4U320	156−2808−00			IC,DIGITAL:HCMOS,GATE;QUAD 2−INPUT	80009	156280800
A4U330	156−2820−00			IC,DIGITAL:HCMOS,GATE;TRIPLE 3−INPUT NAND	80009	156282000
A4U340	156−2309−00			IC,DIGITAL:HCMOS,GATE;HEX INV	80009	156230900
A4U350	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A4U360	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A4U370	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A4U380	156−2310−00			IC,DIGITAL:HCMOS,FLIP FLOP;HEX, D−TYPE	80009	156231000
A4U400	156−2821−00			IC,DIGITAL:HCMOS,FLIP FLOP;OCTAL D−TYPE	80009	156282100
A4U420	156−2821−00			IC,DIGITAL:HCMOS,FLIP FLOP;OCTAL D−TYPE	80009	156282100
A4U440	156−2821−00			IC,DIGITAL:HCMOS,FLIP FLOP;OCTAL D−TYPE	80009	156282100
A4U460	156−2821−00			IC,DIGITAL:HCMOS,FLIP FLOP;OCTAL D−TYPE	80009	156282100
A4U480	156−2821−00			IC,DIGITAL:HCMOS,FLIP FLOP;OCTAL D−TYPE	80009	156282100
A4U500	156−1589−00			IC,CONVERTER:BIPOLAR,D/A;12 BIT,CURRENT	24355	DAC312HP
A4U502	156−2822−00			MICROCKT,LINEAR:OP−AMP	80009	156282200
A4U520	156−1589−00			IC,CONVERTER:BIPOLAR,D/A;12 BIT,CURRENT	24355	DAC312HP
A4U522	156−1699−00			IC,LINEAR:BIFET,OP−AMP;DUAL,LOW OFFSET	27014	LF412CN
A4U540	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A4U600	156−2821−00			IC,DIGITAL:HCMOS,FLIP FLOP;OCTAL D−TYPE	80009	156282100
A4U620	160−3916−01			MICROCKT,DGTL:16384 X 8 EPROM,PRGM	80009	160391601
A4U640	156−2834−00			IC,DIGITAL:HCMOS,REGISTER;8−BIT PISO	01295	SN74HC166N
A4U660	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A4U670	156−2827−00			IC,DIGITAL:HCMOS,MUX/ENCODER;DUAL	80009	156282700
A4U680	156−2088−00			IC,DIGITAL:HCMOS,MUX/ENCODER;QUAD	80009	156208800
A4U700	156−2821−00			IC,DIGITAL:HCMOS,FLIP FLOP;OCTAL D−TYPE	80009	156282100
A4U710	156−2821−00			IC,DIGITAL:HCMOS,FLIP FLOP;OCTAL D−TYPE	80009	156282100
A4U720	156−2820−00			IC,DIGITAL:HCMOS,GATE;TRIPLE 3−INPUT NAND	80009	156282000
A4U760	156−2823−00			IC,DIGITAL:HCMOS,ARITH FUNC;4−BIT	80009	156282300
A4U770	156−2823−00			IC,DIGITAL:HCMOS,ARITH FUNC;4−BIT	80009	156282300
A4U800	156−1255−02			MICROCKT,LINEAR:8 BIT HS MULTI D/A CONV	80009	156125502
A4U802	156−2822−00			MICROCKT,LINEAR:OP−AMP	80009	156282200
A4U820	156−1255−02			MICROCKT,LINEAR:8 BIT HS MULTI D/A CONV	80009	156125502
A4U822	156−2822−00			MICROCKT,LINEAR:OP−AMP	80009	156282200
A4W300	131−0566−04			BUS,COND:DUMMY RES,18MM OD X 3.2MM L	80009	131056604

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A5	670−9307−XX			CIRCUIT BD ASSY:DISPLAY CONTROL	80009	6709307XX
A5C10	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A5C20	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A5C30	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A5C40	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A5C50	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A5C60	290−0745−00			CAP,FXD,ALUM:;22UF,20%,50V,8 X 11MM	0H1N5	CEUSM1J220
A5C100	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C120	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C140	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C160	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C500	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C502	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C505	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A5C520	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C522	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C525	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A5C555	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A5C562	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C565	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C575	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A5C582	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C585	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C600	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C602	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C605	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C607	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C610	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C612	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C615	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C617	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C620	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C622	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C625	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C627	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C630	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C632	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C635	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C637	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C640	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA

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A5C641	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A5C642	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C643	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A5C645	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C647	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C650	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C651	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A5C652	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C653	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A5C655	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C657	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C662	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C670	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C674	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A5C677	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A5C680	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C682	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C685	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C687	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C690	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C691	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A5C692	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C695	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C696	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A5C697	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C800	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C810	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C820	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C830	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C840	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C850	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C860	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5C865	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A5C870	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A5CR590	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V,D2X5,BAX13	80009	152032700
A5L10	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A5L10	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A5L20	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A5L20	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A5L30	108−0948−00	J300000	J300450	COIL,RF:FIXED,100UH,10%	80009	108094800

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A5L30	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A5L40	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A5L40	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A5L50	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A5L50	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A5L60	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A5L60	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A5P50	131−3650−00			CONN,PLUG,ELEC:CKT BD,RTANG,2 X 32,0.1 SP	80009	131365000
A5P52	131−3648−00			CONN,PLUG,ELEC:CKT BD,RTANG,2 X 22,0.1 SP	80009	131364800
A5Q540	151−0582−00			TRANSISTOR:NPN,SI,DIFFERENTIAL,DUAL50V	80009	151058200
A5Q542	151−0582−00			TRANSISTOR:NPN,SI,DIFFERENTIAL,DUAL50V	80009	151058200
A5Q556	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A5Q576	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A5Q850	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A5Q852	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A5Q860	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A5Q862	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A5Q870	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A5R10	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R12	315−0105−00			RES,FXD,FILM:1M OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R15	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R20	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R22	315−0105−00			RES,FXD,FILM:1M OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R25	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R30	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R32	315−0105−00			RES,FXD,FILM:1M OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R35	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R80	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A5R82	315−0470−00			RES,FXD,FILM:47 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R90	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R91	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R92	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R93	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R94	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R95	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R96	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R97	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R98	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R99	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R102	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181

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A5R103	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R104	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R105	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R106	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R107	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R108	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R109	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R120	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R121	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R122	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R123	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R124	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R125	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R126	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R127	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R140	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R141	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R142	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R143	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R144	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R145	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R146	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R147	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R500	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R502	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R504	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R506	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R508	311−1981−01			RES,VAR,NONWW:20K OHM,20%,0.5W	80009	311198101
A5R520	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R522	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R524	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R526	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R528	311−1981−01			RES,VAR,NONWW:20K OHM,20%,0.5W	80009	311198101
A5R550	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R552	321−0226−00			RES,FXD,FILM:2.21K OHM,1%,0.125W,TC=T0	19701	5043ED2K210F
A5R554	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A5R558	321−0201−00			RES,FXD,FILM:1.21K OHM,1%,0.125W,TC=T0	TK1727	MR252322−151−1K
A5R559	321−0201−00			RES,FXD,FILM:1.21K OHM,1%,0.125W,TC=T0	TK1727	MR252322−151−1K
A5R562	315−0302−00			RES,FXD,FILM:3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R563	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A5R564	315−0202−00			RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R566	321−0217−00			RES,FXD,FILM:1.78K OHM,1%,0.125W,TC=T0	TK1727	MR25−2322−151−1
A5R568	321−0217−00			RES,FXD,FILM:1.78K OHM,1%,0.125W,TC=T0	TK1727	MR25−2322−151−1
A5R569	315−0562−00			RES,FXD,FILM:5.6K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R570	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R572	321−0258−00			RES,FXD,FILM:4.75K OHM,1%,0.125W,TC=T0	19701	5043ED4K750F
A5R574	311−1980−01			RES,VAR,NONWW:5K OHM,20%,0.5W	80009	311198001
A5R578	321−0202−00			RES,FXD,FILM:1.24K OHM,1%,0.125W,TC=T0	TK1727	MR25 2322−151−1
A5R579	321−0202−00			RES,FXD,FILM:1.24K OHM,1%,0.125W,TC=T0	TK1727	MR25 2322−151−1
A5R582	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R583	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R584	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R586	321−0230−00			RES,FXD,FILM:2.43K OHM,1%,0.125W,TC=T0	TK1727	2322−151−2K43
A5R588	321−0230−00			RES,FXD,FILM:2.43K OHM,1%,0.125W,TC=T0	TK1727	2322−151−2K43
A5R590	321−0258−00			RES,FXD,FILM:4.75K OHM,1%,0.125W,TC=T0	19701	5043ED4K750F
A5R592	321−0204−00			RES,FXD,FILM:1.30K OHM,1%,0.125W,TC=T0	TK1727	MR25−2322−151−1
A5R594	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R596	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R620	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R621	315−0332−00			RES,FXD,FILM:3.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R622	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R623	315−0332−00			RES,FXD,FILM:3.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R624	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R625	315−0332−00			RES,FXD,FILM:3.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R626	321−0385−07			RES,FXD,FILM:100K OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A5R627	315−0332−00			RES,FXD,FILM:3.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R630	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R631	315−0332−00			RES,FXD,FILM:3.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R632	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R633	315−0332−00			RES,FXD,FILM:3.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R634	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R635	315−0332−00			RES,FXD,FILM:3.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R636	321−0385−07			RES,FXD,FILM:100K OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A5R637	315−0332−00			RES,FXD,FILM:3.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R640	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R642	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R644	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R645	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A5R646	321−0385−07			RES,FXD,FILM:100K OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A5R647	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A5R648	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R650	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R652	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R654	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A5R655	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A5R656	321−0385−07			RES,FXD,FILM:100K OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A5R657	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R658	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R675	321−0393−00			RES,FXD,FILM:121K OHM,1%,0.125W,TC=T0	TK1727	2322−151−121K
A5R678	321−0393−00			RES,FXD,FILM:121K OHM,1%,0.125W,TC=T0	TK1727	2322−151−121K
A5R680	315−0304−00			RES,FXD,FILM:300K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R682	321−1747−07			RES,FXD,FILM:320K OHM,0.1%,0.125W,TC=T9	80009	321174707
A5R684	321−1748−07			RES,FXD,FILM:160K OHM,0.1%,0.125W,TC=T9	80009	321174807
A5R686	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R688	315−0753−00			RES,FXD,FILM:75K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R690	315−0304−00			RES,FXD,FILM:300K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R692	321−1747−07			RES,FXD,FILM:320K OHM,0.1%,0.125W,TC=T9	80009	321174707
A5R694	321−1748−07			RES,FXD,FILM:160K OHM,0.1%,0.125W,TC=T9	80009	321174807
A5R696	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R698	315−0753−00			RES,FXD,FILM:75K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R800	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R801	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R802	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R803	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R804	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R805	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R820	315−0432−00			RES,FXD,FILM:4.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R822	315−0512−00			RES,FXD,FILM:5.1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R824	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R826	315−0512−00			RES,FXD,FILM:5.1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R850	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R852	315−0681−00			RES,FXD,FILM:680 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R854	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R860	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R862	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R864	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R865	315−0203−00			RES,FXD,FILM:20K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R870	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R872	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A5R880	315−0911−00			RES,FXD,FILM:910 OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A5R945	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A5R955	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A5R1002	315−0100−00			RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322−182
A5TP10	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5TP20	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5TP30	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5TP60	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5TP70	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5TP80	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5TP90	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5TP100	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5TP500	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5TP502	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5TP648	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5TP658	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A5U100	156−2824−00			IC,DIGITAL:HCMOS,LATCH;8−BIT ADDRESSABLE	01295	SN74HC259N
A5U120	156−2824−00			IC,DIGITAL:HCMOS,LATCH;8−BIT ADDRESSABLE	01295	SN74HC259N
A5U140	156−2824−00			IC,DIGITAL:HCMOS,LATCH;8−BIT ADDRESSABLE	01295	SN74HC259N
A5U160	156−2316−00			IC,DIGITAL:HCMOS,DEMUX/DECODER;3−TO−8	80009	156231600
A5U500	156−1834−00			MICROCKT,LINEAR:ANALOG MULTIPLEXER HYBRID	80009	156183400
A5U520	156−1834−00			MICROCKT,LINEAR:ANALOG MULTIPLEXER HYBRID	80009	156183400
A5U600	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A5U605	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A5U610	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A5U615	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A5U620	156−2826−00			MICROCKT,LINEAR:OP−AMP,BIFET	80009	156282600
A5U625	156−2826−00			MICROCKT,LINEAR:OP−AMP,BIFET	80009	156282600
A5U630	156−2826−00			MICROCKT,LINEAR:OP−AMP,BIFET	80009	156282600
A5U635	156−2826−00			MICROCKT,LINEAR:OP−AMP,BIFET	80009	156282600
A5U640	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A5U645	156−2826−00			MICROCKT,LINEAR:OP−AMP,BIFET	80009	156282600
A5U650	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A5U655	156−2826−00			MICROCKT,LINEAR:OP−AMP,BIFET	80009	156282600
A5U662	156−0158−00			IC,LINEAR:BIPOLAR,OP−AMP;DUAL	01295	MC1458P
A5U670	156−1815−00			MICROCKT,DGTL:DA CONVERTER DUAL	80009	156181500
A5U674	156−2795−00			MICROCKT,LINEAR:OPERATIONAL PRECISION	80009	156279500
A5U677	156−2795−00			MICROCKT,LINEAR:OPERATIONAL PRECISION	80009	156279500
A5U680	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A5U685	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A5U690	156−2795−00			MICROCKT,LINEAR:OPERATIONAL PRECISION	80009	156279500

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A5U695	156−2795−00			MICROCKT,LINEAR:OPERATIONAL PRECISION	80009	156279500
A5U800	156−2825−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156282500
A5U810	156−2827−00			IC,DIGITAL:HCMOS,MUX/ENCODER	80009	156282700
A5U820	156−1778−00			MICROCKT,LINEAR:DUAL COMPARATOR	80009	156177800
A5U830	156−2825−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156282500
A5U840	156−2309−00			IC,DIGITAL:HCMOS,GATE;HEX INV	80009	156230900
A5U850	156−2253−00			IC,DIGITAL:HCMOS,GATE;QUAD 2−INPUT NAND	80009	156225300
A5U860	156−2253−00			IC,DIGITAL:HCMOS,GATE;QUAD 2−INPUT NAND	80009	156225300
A5U870	156−2253−00			IC,DIGITAL:HCMOS,GATE;QUAD 2−INPUT NAND	80009	156225300

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6	670−9308−XX			CIRCUIT BD ASSY:COLLECTOR SUPPLY	80009	6709308XX
A6C302	281−0707−00			CAP,FXD,CER DI:15000PF,10%,200V	04222	MA302C153KAA
A6C304	281−0773−00			CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V	TK1743	CGB103KEX
A6C305	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A6C306	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A6C406	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A6C407	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A6C424	283−0923−00			CAP,FXD,CER DI:47PF,10%,500V	80009	283092300
A6C452	283−0000−00			CAP,FXD,CER DI:0.001UF,+100−0%,500V	80009	283000000
A6C480	290−1168−00	J300000	J300525	CAP,FXD,ELCTLT:47UF,20%,16V	TK00M	ORDER BY DESC
A6C480	290−0848−00	J300526		CAP,FXD,ALUM:;47UF,+100%−20%,16V,NONPOLA	0H1N5	CEBPM1E470M
A6C524	283−0923−00			CAP,FXD,CER DI:47PF,10%,500V	80009	283092300
A6C552	283−0000−00			CAP,FXD,CER DI:0.001UF,+100−0%,500V	80009	283000000
A6CR402	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A6CR404	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A6J60	131−3672−00			CONN,RCPT,ELEC:HEADER,16 PIN	80009	131367200
A6J62	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A6J66	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A6L306	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A6L306	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A6L406	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A6L406	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A6L407	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A6L407	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A6Q424	151−0559−00			TRANSISTOR:NPN,SI,PWR	S0167	2SC2071B
A6Q438	151−1201−00			TRANSISTOR:PMOS,FET,PWR,200V	80009	151120100
A6Q440	151−1201−00			TRANSISTOR:PMOS,FET,PWR,200V	80009	151120100
A6Q444	151−0558−00			TRANSISTOR:PNP,SI	80009	151055800
A6Q524	151−0558−00			TRANSISTOR:PNP,SI	80009	151055800
A6Q538	151−1202−00			TRANSISTOR:NMOS,FET,PWR,200V	80009	151120200
A6Q540	151−1202−00			TRANSISTOR:NMOS,FET,PWR,200V	80009	151120200
A6Q544	151−0559−00			TRANSISTOR:NPN,SI,PWR	S0167	2SC2071B
A6R300	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R302	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R304	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R305	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R400	321−0929−07			RES,FXD,FILM:2.5K OHM,0.1%,0.125W,TC=T9	TK1727	2322−1412K5
A6R401	311−0634−04			RES,VAR,NONWW:TRMR,500 OHM,20%,0.5W	80009	311063404
A6R402	321−0220−07			RES,FXD,FILM:1.91K OHM,0.1%,0.125WTC=T9	S5518	CRB25 BZ 1.91 K
A6R404	321−0414−04			RES,FXD,FILM:200K OHM,0.1%,0.125W,TC=T2	19701	5033RC200K0B

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A6R406	315−0392−00			RES,FXD,FILM:3.9K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R408	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R410	315−0221−00			RES,FXD,FILM:220 OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R412	311−2388−00			RES,VAR,NONWW:TRMR,10K OHM,10%,0.5W	S4431	POT1102P−1−103
A6R414	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R420	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R422	315−0392−00			RES,FXD,FILM:3.9K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R424	307−1247−00			RES,FXD,FILM:1K OHM,5%,0.25W	80009	307124700
A6R428	307−1248−00			RES,FXD,FILM:5.1K OHM,5%,0.5W	80009	307124800
A6R434	307−1249−00			RES,FXD,FILM:100 OHM,5%,0.5W	80009	307124900
A6R436	307−1249−00			RES,FXD,FILM:100 OHM,5%,0.5W	80009	307124900
A6R438	307−1286−00			RES,FXD,FILM:1 OHM,5%,2W	80009	307128600
A6R440	307−1286−00			RES,FXD,FILM:1 OHM,5%,2W	80009	307128600
A6R442	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R450	308−0885−00			RES,FXD,WW:0.3 OHM,1%,2W	80009	308088500
A6R452	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R480	315−0153−00			RES,FXD,FILM:15K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R481	323−0295−00			RES,FXD,FILM:11.5K OHM,1%,0.5W,TC=T0	91637	CMF65116G11501F
A6R520	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R522	315−0392−00			RES,FXD,FILM:3.9K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R524	307−1247−00			RES,FXD,FILM:1K OHM,5%,0.25W	80009	307124700
A6R528	307−1248−00			RES,FXD,FILM:5.1K OHM,5%,0.5W	80009	307124800
A6R534	307−1249−00			RES,FXD,FILM:100 OHM,5%,0.5W	80009	307124900
A6R536	307−1249−00			RES,FXD,FILM:100 OHM,5%,0.5W	80009	307124900
A6R538	307−1286−00			RES,FXD,FILM:1 OHM,5%,2W	80009	307128600
A6R540	307−1286−00			RES,FXD,FILM:1 OHM,5%,2W	80009	307128600
A6R542	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6R550	308−0885−00			RES,FXD,WW:0.3 OHM,1%,2W	80009	308088500
A6R552	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A6S92	260−2332−01			SWITCH,THRMSTC:NC,OPEN 70 DEG C,3A,250V	S3385	ORDER BY DESC
A6U400	156−1699−00			IC,LINEAR:BIFET,OP−AMP;DUAL,LOW OFFSET	27014	LF412CN
A6W64	174−0301−00			CA ASSY,SP,ELEC:4,22 AWG,16.0 L	80009	174030100

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A7	671−0234−XX			CIRCUIT BD ASSY:STEP GENERATOR	80009	6710234XX
A7C100	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A7C102	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A7C104	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A7C106	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A7C108	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A7C110	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A7C150	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A7C204	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A7C210	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A7C220	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A7C222	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A7C224	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A7C302	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A7C310	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A7C322	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A7C340	281−0774−00			CAP,FXD,CER DI:0.022MFD,20%,100V	04222	SA101E223MAA
A7C370	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A7C372	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A7C374	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A7C376	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A7C406	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A7C420	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A7C430	281−0809−00			CAP,FXD,CERAMIC:MLC;200 PF,5%,100V	04222	SA101A201JAA
A7C432	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A7C438	290−1009−00	J300000	J300531	CAP,FXD,ELCTLT:10UF,160V	80009	290100900
A7C438	290−0821−00	J300532		CAP,FXD,ELCTLT:10UF,+50−10%,160V	80009	290082100
A7C440	281−0809−00			CAP,FXD,CERAMIC:MLC;200 PF,5%,100	04222	SA101A201JAA
A7C442	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A7C448	290−1009−00	J300000	J300531	CAP,FXD,ELCTLT:10UF,160V	80009	290100900
A7C448	290−0821−00	J300532		CAP,FXD,ELCTLT:10UF,+50−10%,160V	80009	290082100
A7C470	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A7C472	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A7C474	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A7C704	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A7C708	290−1009−00	J300000	J300531	CAP,FXD,ELCTLT:10UF,160V	80009	290100900
A7C708	290−0821−00	J300532		CAP,FXD,ELCTLT:10UF,+50−10%,160V	80009	290082100
A7C724	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A7C728	290−1009−00	J300000	J300531	CAP,FXD,ELCTLT:10UF,160V	80009	290100900
A7C728	290−0821−00	J300532		CAP,FXD,ELCTLT:10UF,+50−10%,160V	80009	290082100

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A7C900	290−1196−00			CAP,FXD,ELCTLT:2200UF,20%,50V	S0293	ECEA 1HU 22
A7C902	290−1196−00			CAP,FXD,ELCTLT:2200UF,20%,50V	S0293	ECEA 1HU 22
A7CR310	152−0246−00			SEMICOND DVC,DI:SW,SI,40V,200MA,DO−7	27014	FDH5227.03
A7CR312	152−0246−00			SEMICOND DVC,DI:SW,SI,40V,200MA,DO−7	27014	FDH5227.03
A7CR314	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR316	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR320	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR322	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR324	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR326	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR350	152−1033−00			SEMICOND DVC,DI:CRD,5.6MA,10%,100V,0.3W	S5011	E−562
A7CR351	152−1033−00			SEMICOND DVC,DI:CRD,5.6MA,10%,100V,0.3W	S5011	E−562
A7CR352	152−1033−00			SEMICOND DVC,DI:CRD,5.6MA,10%,100V,0.3W	S5011	E−562
A7CR353	152−1033−00			SEMICOND DVC,DI:CRD,5.6MA,10%,100V,0.3W	S5011	E−562
A7CR370	152−0460−00			DIODE,SIG:,REGLTR;100V,1.20MA IP,1.45V VL	04713	1N5299
A7CR372	152−0460−00			DIODE,SIG:,REGLTR;100V,1.20MA IP,1.45V VL	04713	1N5299
A7CR430	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR436	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR437	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR438	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR440	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR446	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR447	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR448	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A7CR600	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A7CR602	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A7CR900	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A7CR902	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A7J70	131−3672−00			CONN,RCPT,ELEC:HEADER,16 PIN	80009	131367200
A7J72	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A7J74	131−3666−00			CONN,RCPT,ELEC:CKT BD,2 PIN	80009	131366600
A7J76	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A7J78	131−3667−00			CONN,RCPT,ELEC:CKT BD,3 PIN	80009	131366700
A7K502	148−0186−00			RELAY,ARM:1 FORM C,3A,200V,COIL 12VDC	80009	148018600
A7K504	148−0186−00			RELAY,ARM:1 FORM C,3A,200V,COIL 12VDC	80009	148018600
A7K506	148−0186−00			RELAY,ARM:1 FORM C,3A,200V,COIL 12VDC	80009	148018600
A7K508	148−0186−00			RELAY,ARM:1 FORM C,3A,200V,COIL 12VDC	80009	148018600
A7K510	148−0189−00			RELAY,ARM:DPST,8A,380V,COIL,12VDC	80009	148018900
A7K512	148−0189−00			RELAY,ARM:DPST,8A,380V,COIL,12VDC	80009	148018900
A7K522	148−0209−00			RELAY,ARM:DPST,250V,8A,COIL,12VDC,600 OHM	S0293	AR20139

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A7K600	148−0186−00			RELAY,ARM:1 FORM C,3A,200V,COIL 12VDC	80009	148018600
A7K602	148−0209−00			RELAY,ARM:DPST,250V,8A,COIL,12VDC,600 OHM	S0293	AR20139
A7L100	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A7L100	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A7L102	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A7L102	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A7L104	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A7L104	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A7L106	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A7L106	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A7L108	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A7L108	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A7L110	108−1013−00	J300000	J300425	COIL,RF:FIXED,8.2UH	80009	108101300
A7L110	108−1507−00	J300426		INDUCTOR,FXD:SIGNAL;8.2UH,10%	80009	108150700
A7Q332	151−1237−00			TRANSISTOR:FET,NMOS,0.5A,30W,T0−220AB	S4997	TO−220AB 2SK214
A7Q333	151−1239−00			TRANSISTOR:FET,PMOS,0.5A,30W,160V,TO−220AB	S4997	TO−220AB 2SJ77
A7Q334	151−0561−00			TRANSISTOR:NPN,SI,PWR	80009	151056100
A7Q336	151−0562−00			TRANSISTOR:PNP,SI,PWR	80009	151056200
A7Q346	151−1238−00			TRANSISTOR:FET,PMOS,10A,120V,50W,TO−220	S4997	TO−220AB 2SJ127
A7Q348	151−1236−00			TRANSISTOR:FET,NMOS,10A,120V,50W,T0−220	S4997	TO−220AB 2SK551
A7Q350	151−1238−00			TRANSISTOR:FET,PMOS,10A,120V,50W,TO−220	S4997	TO−220AB 2SJ127
A7Q352	151−1236−00			TRANSISTOR:FET,NMOS,10A,120V,50W,T0−220	S4997	TO−220AB 2SK551
A7Q370	151−0770−01			TRANSISTOR:NPN,SI,TO−126	80009	151077001
A7Q372	151−0739−01			TRANSISTOR:PNP,SI,TO−126	80009	151073901
A7Q430	151−0559−00			TRANSISTOR:NPN,SI,PWR	S0167	2SC2071B
A7Q436	151−0897−00			TRANSISTOR:PNP,SI,15A,200V,150W,T0−3P	TK00L	25A1302−0
A7Q440	151−0558−00			TRANSISTOR:PNP,SI	80009	151055800
A7Q446	151−0895−00			TRANSISTOR:NPN,SI,15A,120V,150W,T0−3P	TK00L	25C3281−0
A7Q700	151−0897−00			TRANSISTOR:PNP,SI,15A,200V,150W,T0−3P	TK00L	25A1302−0
A7Q704	151−0770−01			TRANSISTOR:NPN,SI,TO−126	80009	151077001
A7Q720	151−0895−00			TRANSISTOR:NPN,SI,15A,120V,150W,T0−3P	TK00L	25C3281−0
A7Q724	151−0739−01			TRANSISTOR:PNP,SI,TO−126	80009	151073901
A7R120	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A7R122	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A7R152	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R154	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R160	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R200	315−0105−00			RES,FXD,FILM:1M OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R202	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A7R204	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B

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A7R206	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R210	311−2041−00			RES,VAR,NONWW:CKT BD,10K OHM,10%,0.5W	80009	311204100
A7R211	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R212	321−0929−07			RES,FXD,FILM:2.5K OHM,0.1%,0.125W,TC=T9	TK1727	2322−1412K5
A7R214	321−0210−07			RES,FXD:METAL FILM;1.5K OHM,0.1%,0.125W	91637	CMF55116C15000B
A7R216	321−0193−07			RES,FXD,FILM:1K OHM,0.1%,0.125W,TC=T9	19701	5033RE1K000B
A7R300	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A7R302	321−0603−07			RES,FXD,FILM:15K OHM,0.1%,0.125W,TC=T9	19701	5033RE15K00B
A7R304	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A7R305	311−0605−03			RES,VAR,NONWW:TRMR,200 OHM,20%,0.5W	80009	311060503
A7R306	321−0603−07			RES,FXD,FILM:15K OHM,0.1%,0.125W,TC=T9	19701	5033RE15K00B
A7R310	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R312	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R320	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R322	311−2041−00			RES,VAR,NONWW:CKT BD,10K OHM,10%,0.5W	80009	311204100
A7R323	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R330	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R331	315−0202−00			RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R332	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R333	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R334	315−0470−00			RES,FXD,FILM:47 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R335	315−0470−00			RES,FXD,FILM:47 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R336	315−0470−00			RES,FXD,FILM:47 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R337	315−0470−00			RES,FXD,FILM:47 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R338	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R340	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R342	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R344	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R346	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R348	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R350	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R352	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R370	307−1373−00			RES,FXD,FILM:3K OHM,5%,1W	S5302	SPR1−3KJ
A7R372	307−1373−00			RES,FXD,FILM:3K OHM,5%,1W	S5302	SPR1−3KJ
A7R380	311−2041−00			RES,VAR,NONWW:CKT BD,10K OHM,10%,0.5W	80009	311204100
A7R382	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R384	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R386	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R388	315−0105−00			RES,FXD,FILM:1M OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R400	321−0193−07			RES,FXD,FILM:1K OHM,0.1%,0.125W,TC=T9	19701	5033RE1K000B

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A7R401	315−0132−00			RES,FXD,FILM:1.3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R402	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A7R403	315−0621−00			RES,FXD,FILM:620 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R404	321−0210−07			RES,FXD:METAL FILM;1.5K OHM,0.1%,0.125W	91637	CMF55116C15000B
A7R405	311−2041−00			RES,VAR,NONWW:CKT BD,10K OHM,10%,0.5W	80009	311204100
A7R406	321−0210−07			RES,FXD:METAL FILM;1.5K OHM,0.1%,0.125W	91637	CMF55116C15000B
A7R410	321−0222−07			RES,FXD,FILM:2.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE2K000B
A7R412	321−0222−07			RES,FXD,FILM:2.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE2K000B
A7R414	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A7R416	321−1317−07			RES,FXD,FILM:19.8K OHM,0.1%,0.125W,TC=T9	S5518	CRB25BZ19.8K
A7R417	311−2328−00			RES,VAR,NONWW:500 OHM,20%,0.5W	80009	311232800
A7R418	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R430	315−0202−00			RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R431	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R432	315−0511−00			RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R433	301−0103−00			RES,FXD,FILM:10K OHM,5%,0.50W	TK1727	SFR30 2322−182
A7R434	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R436	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R438	307−0108−00			RES,FXD,CMPSN:6.8 OHM,5%,0.25W	50139	CB68G5
A7R440	315−0202−00			RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R441	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R442	315−0511−00			RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R443	301−0103−00			RES,FXD,FILM:10K OHM,5%,0.50W	TK1727	SFR30 2322−182
A7R444	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R446	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R448	307−0108−00			RES,FXD,CMPSN:6.8 OHM,5%,0.25W	50139	CB68G5
A7R500	321−0385−07			RES,FXD,FILM:100K OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A7R502	321−1293−07			RES,FXD,FILM:11.1K OHM,0.1%,0.125W,TC=T9	S5518	CRB25BZ11.1K
A7R504	321−1930−07			RES,FXD,FILM:1.01K OHM,0.1%,0.125W,TC=T9	80009	321193007
A7R506	321−0097−07			RES,FXD,FILM:100 OHM,0.1%,0.125W,TC=T9	57668	CRB14 BZE 100 O
A7R508	308−0923−00			RES,FXD,WW:10.0 OHM,0.1%,0.125W	TK0AE	T56E−10−B−Z
A7R510	308−0928−00			RES,FXD,WW:1.0 OHM,0.1%,0.25W	TK0AE	C1310E4−1−B−Z
A7R512	308−0927−00			RES,FXD,WW:0.1 OHM,0.1%,0.33W	TK0AE	C191OE4−0.1−B−Z
A7R520	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R700	315−0201−00			RES,FXD,FILM:200 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R702	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R704	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R706	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R708	321−0344−00			RES,FXD,FILM:37.4K OHM,1%,0.125W,TC=T0	19701	5033ED 37K40F
A7R710	321−0816−00			RES,FXD,FILM:5K OHM,1%,0.125W,TC=T0	19701	5033RD5K000F

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A7R720	315−0201−00			RES,FXD,FILM:200 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R722	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R724	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R726	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7R728	321−0344−00			RES,FXD,FILM:37.4K OHM,1%,0.125W,TC=T0	19701	5033ED 37K40F
A7R730	321−0816−00			RES,FXD,FILM:5K OHM,1%,0.125W,TC=T0	19701	5033RD5K000F
A7R904	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A7RT900	307−1496−00			RES,THERMAL:8 OHM,15%	S5011	ORDER BY DESC
A7TP100	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A7TP110	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A7TP120	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A7TP212	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A7U150	156−1827−00			MICROCKT,DGTL:C2MOS,3 LINE TO 8 LINE	80009	156182700
A7U152	156−1822−00			MICROCKT,DGTL:C2MOS,8 BIT ADDRESSABLE	80009	156182200
A7U154	156−1822−00			MICROCKT,DGTL:C2MOS,8 BIT ADDRESSABLE	80009	156182200
A7U156	156−1822−00			MICROCKT,DGTL:C2MOS,8 BIT ADDRESSABLE	80009	156182200
A7U158	156−1837−00	J300000	J300484	MICROCKT,LINEAR:DRIVER W/STROBE	80009	156183700
A7U158	156−4348−00	J300485		IC,LINEAR:BIPOLAR,TRANSISTOR ARRAY;HEX	80009	156434800
A7U160	156−1837−00	J300000	J300484	MICROCKT,LINEAR:DRIVER W/STROBE	80009	156183700
A7U160	156−4348−00	J300485		IC,LINEAR:BIPOLAR,TRANSISTOR ARRAY;HEX	80009	156434800
A7U200	156−2832−01			MICROCKT,DGTL:OP AMP,BIFET	TK0AB	LF411CN
A7U210	156−2832−01			MICROCKT,DGTL:OP AMP,BIFET	TK0AB	LF411CN
A7U212	156−0514−00			IC,MISC:CMOS,ANALOG MUX;DUAL 4 CHANNEL	04713	MC14052BCP
A7U300	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A7U302	156−2829−00			MICROCKT,LINEAR:OP−AMP	80009	156282900
A7U310	156−2793−00			MICROCKT,LINEAR:OPERATIONAL,BIFET	80009	156279300
A7U320	156−2793−00			MICROCKT,LINEAR:OPERATIONAL,BIFET	80009	156279300
A7U406	156−2829−00			MICROCKT,LINEAR:OP−AMP	80009	156282900
A7U418	156−2829−00			MICROCKT,LINEAR:OP−AMP	80009	156282900
A7U420	156−2829−00			MICROCKT,LINEAR:OP−AMP	80009	156282900
A7U704	156−0158−00			IC,LINEAR:BIPOLAR,OP−AMP;DUAL	01295	MC1458P
A7VR370	152−0243−00			DIODE,ZENER:,;15V,5%,0.4W	04713	SZ13203
A7VR372	152−0243−00			DIODE,ZENER:,;15V,5%,0.4W	04713	SZ13203
A7VR420	152−0166−00			DIODE,ZENER:,;6.2V,5%,0.4W	04713	1N5995BRL
A7VR422	152−0166−00			DIODE,ZENER:,;6.2V,5%,0.4W	04713	1N5995BRL

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A10	671−0233−XX			CIRCUIT BD ASSY:SENSE	80009	6710233XX
A10C102	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C104	281−0772−00			CAP,FXD,CERAMIC:MLC;4700PF,10%,100V	04222	SA101C472KAA
A10C110	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C112	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C114	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C116	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A10C118	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A10C130	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C132	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C146	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A10C204	283−0639−00			CAP,FXD,MICA DI:56PF,1%,500V	TK0891	RDM15ED560F03
A10C208	283−0620−00			CAP,FXD,MICA DI:470PF,1%,500V	TK0891	RDM15FD471F03
A10C220	283−0185−00			CAP,FXD,CER DI:2.5PF,0.5%,50V	51642	100−050−NPO−259
A10C234	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C240	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C250	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C260	283−0181−00			CAP,FXD,CER DI:1.8PF,+/−0.1%,100V	51642	100 100NP0189B
A10C262	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A10C270	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A10C272	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C274	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C300	283−0260−00			CAP,FXD,CER DI:5.6PF,+/−0.25PF,200V	04222	SR152A5R6CAA
A10C314	281−0788−00			CAP,FXD,CERAMIC:MLC;470PF,10%,100V	04222	SA102C471KAA
A10C318	283−0178−02			CAP,FXD,CER DI:0.1UF,+80−20%,100V	80009	283017802
A10C322	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C324	283−0178−02			CAP,FXD,CER DI:0.1UF,+80−20%,100V	80009	283017802
A10C400	281−0951−00			CAP,FXD,CER DI:120PF,5%,3.15KV	S4431	DE1107SL121J3.1
A10C402	281−0951−00			CAP,FXD,CER DI:120PF,5%,3.15KV	S4431	DE1107SL121J3.1
A10C404	281−0951−00			CAP,FXD,CER DI:120PF,5%,3.15KV	S4431	DE1107SL121J3.1
A10C406	281−0951−00			CAP,FXD,CER DI:120PF,5%,3.15KV	S4431	DE1107SL121J3.1
A10C408	281−0951−00			CAP,FXD,CER DI:120PF,5%,3.15KV	S4431	DE1107SL121J3.1
A10C410	281−0951−00			CAP,FXD,CER DI:120PF,5%,3.15KV	S4431	DE1107SL121J3.1
A10C411	281−0813−00			CAP,FXD,CERAMIC:MLC;0.047UF,20%,50V	04222	SA105E473MAA
A10C422	281−0814−00			CAP,FXD,CERAMIC:MLC;100 PF,10%,100V	TK1743	CGB101KEN
A10C454	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A10C460	281−0763−00			CAP,FXD,CERAMIC:MLC;47PF,10%,100V	04222	SA102A470KAA
A10C464	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C500	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A10C502	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200

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A10C504	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A10C506	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A10C508	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A10C510	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A10C520	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C600	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C606	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C612	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C650	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A10C705	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A10C724	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A10C730	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A10C734	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A10CR110	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR112	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR114	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR120	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR230	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR232	152−0936−00			SEMICOND DVC,DI:DUAL,1A,100V	80009	152093600
A10CR233	152−0937−00			SEMICOND DVC,DI:DUAL,1A,100V	80009	152093700
A10CR234	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR235	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR302	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR310	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR330	152−0460−00			DIODE,SIG:,REGLTR;100V,1.20MA IP,1.45V VL	04713	1N5299
A10CR332	152−0460−00			DIODE,SIG:,REGLTR;100V,1.20MA IP,1.45V VL	04713	1N5299
A10CR334	152−0460−00			DIODE,SIG:,REGLTR;100V,1.20MA IP,1.45V VL	04713	1N5299
A10CR336	152−0460−00			DIODE,SIG:,REGLTR;100V,1.20MA IP,1.45V VL	04713	1N5299
A10CR410	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR450	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR452	152−0939−00			SEMICOND DVC,DI:DUAL,100MA,20V	80009	152093900
A10CR700	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A10CR702	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A10CR703	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A10CR704	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A10CR706	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A10CR707	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A10CR724	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A10CR734	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A10CR754	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700

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A10J146	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10J610	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10J612	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10J614	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A10J616	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10J617	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10J618	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10J620	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10J622	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A10J626	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10J630	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10J632	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A10J634	131−3659−00			TERM,QIK DISC.:CKT,0.187 X 25,TAB	80009	131365900
A10J636	131−3659−00			TERM,QIK DISC.:CKT,0.187 X 25,TAB	80009	131365900
A10J670	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10J690	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10J695	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A10K102	148−0190−00			RELAY,REED:0.25A,100V,COIL,12VDC	80009	148019000
A10K108	148−0190−00			RELAY,REED:0.25A,100V,COIL,12VDC	80009	148019000
A10K112	148−0190−00			RELAY,REED:0.25A,100V,COIL,12VDC	80009	148019000
A10K202	148−0190−00			RELAY,REED:0.25A,100V,COIL,12VDC	80009	148019000
A10K206	148−0190−00			RELAY,REED:0.25A,100V,COIL,12VDC	80009	148019000
A10K214	148−0190−00			RELAY,REED:0.25A,100V,COIL,12VDC	80009	148019000
A10K300	148−0190−00			RELAY,REED:0.25A,100V,COIL,12VDC	80009	148019000
A10K302	148−0190−00			RELAY,REED:0.25A,100V,COIL,12VDC	80009	148019000
A10K700	148−0186−00			RELAY,ARM:1 FORM C,3A,200V,COIL 12VDC	80009	148018600
A10K704	148−0186−00			RELAY,ARM:1 FORM C,3A,200V,COIL 12VDC	80009	148018600
A10L110	108−1507−00	J300426		INDUCTOR,FXD:SIGNAL;8.2UH,10%	80009	108150700
A10L500	108−1013−00	J300000	J300425	COIL,RF:FIXED,8.2UH	80009	108101300
A10L500	108−1507−00	J300426		INDUCTOR,FXD:SIGNAL;8.2UH,10%	80009	108150700
A10L502	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A10L502	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A10L504	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A10L504	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A10L506	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A10L506	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A10L508	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A10L508	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A10L510	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A10L510	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A10Q316	151−0559−00			TRANSISTOR:NPN,SI,PWR	S0167	2SC2071B
A10Q320	151−0559−00			TRANSISTOR:NPN,SI,PWR	S0167	2SC2071B
A10Q322	151−0558−00			TRANSISTOR:PNP,SI	80009	151055800
A10Q740	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A10R102	321−0097−07			RES,FXD,FILM:100 OHM,0.1%,0.125W,TC=T9	57668	CRB14 BZE 100 O
A10R104	321−1317−07			RES,FXD,FILM:19.8K OHM,0.1%,0.125W,TC=T9	S5518	CRB25BZ19.8K
A10R106	321−1317−07			RES,FXD,FILM:19.8K OHM,0.1%,0.125W,TC=T9	S5518	CRB25BZ19.8K
A10R109	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R110	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R111	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R112	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R113	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R114	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R116	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R118	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R120	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R122	321−0986−07			RES,FXD,FILM:25K OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A10R124	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R126	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R128	321−0816−07			RES,FXD,FILM:5K OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A10R130	321−0193−07			RES,FXD,FILM:1K OHM,0.1%,0.125W,TC=T9	19701	5033RE1K000B
A10R132	321−0193−07			RES,FXD,FILM:1K OHM,0.1%,0.125W,TC=T9	19701	5033RE1K000B
A10R134	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R136	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R138	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R140	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R142	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R144	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R146	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A10R148	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R150	321−0612−07			RES,FXD,FILM:500 OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A10R152	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R200	325−0425−00			RES,FXD,FILM:19.8M OHM,0.1%,2W	TK0BX	RH2HVC19.8MB
A10R202	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R204	321−1409−07			RES,FXD,FILM:180.0K OHM,0.1%,0.125W,TC=T9	S5518	CRB25BZ180K
A10R206	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R208	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R218	307−1374−00			RES,FXD,FILM:100 OHM,5%,1W	S5302	SPR1−101J
A10R220	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R230	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181

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A10R231	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R232	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R233	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R234	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R240	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R242	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R246	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R247	321−0130−00			RES,FXD,FILM:221 OHM,1%,0.125W,TC=T0	19701	5043ED221ROF
A10R248	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R249	315−0220−00			RES,FXD,FILM:22 OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R250	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R252	321−0924−07			RES,FXD,FILM:40K OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A10R256	315−0205−00			RES,FXD,FILM:2M OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R258	315−0206−01			RES,FXD,CMPSN:20M OHM,5%,0.25W	50139	CB2065
A10R260	321−0414−00			RES,FXD,FILM:200K OHM,1%,0.125W,TC=T0	19701	5043ED200K0F
A10R262	321−0924−07			RES,FXD,FILM:40K OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A10R266	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R268	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R270	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R272	321−0603−07			RES,FXD,FILM:15K OHM,0.1%,0.125W,TC=T9	19701	5033RE15K00B
A10R274	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R275	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R276	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A10R278	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R280	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R284	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R300	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R302	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R304	322−0711−00			RES,FXD,FILM:30K OHM,0.1%,0.25W,TC=TO	80009	322071100
A10R306	321−0289−07			RES,FXD,FILM:10.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE10K00B
A10R308	321−0924−07			RES,FXD,FILM:40K OHM,0.1%,0.125W,TC=T9	TK1727	MPR24−2322−141
A10R310	321−0414−07			RES,FXD,FILM:200K OHM,0.1%,0.125W,TC=T9	07716	CEA 200 KOHM
A10R312	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R314	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R316	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R318	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R320	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R322	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R324	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R330	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181

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A10R332	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R334	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R336	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R410	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R411	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R412	321−0385−00			RES,FXD,FILM:100K OHM,1%,0.125W,TC=T0	19701	5043ED100K0F
A10R413	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A10R414	321−0414−00			RES,FXD,FILM:200K OHM,1%,0.125W,TC=T0	19701	5043ED200K0F
A10R415	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R416	321−0816−00			RES,FXD,FILM:5K OHM,1%,0.125W,TC=T0	19701	5033RD5K000F
A10R418	321−0816−00			RES,FXD,FILM:5K OHM,1%,0.125W,TC=T0	19701	5033RD5K000F
A10R420	321−0318−00			RES,FXD,FILM:20.0K OHM,1%,0.125W,TC=T0	19701	5033ED20K00F
A10R422	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A10R424	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R426	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R430	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R450	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R452	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R454	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R456	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R458	315−0206−01			RES,FXD,CMPSN:20M OHM,5%,0.25W	50139	CB2065 (ALLEN B
A10R460	321−0318−07			RES,FXD,FILM:20.0K OHM,0.1%,0.125W,TC=T9	19701	5033RE20K00BCM
A10R462	311−1743−02			RES,VAR,NONWW:10K OHM,20%,0.5W	80009	311174302
A10R464	315−0105−00			RES,FXD,FILM:1M OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R600	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A10R602	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R604	307−0909−00			RES NTWK,FXD,FI:(4)10K OHM,5%,0.25W EACH	80009	307090900
A10R610	307−0909−00			RES NTWK,FXD,FI:(4)10K OHM,5%,0.25W EACH	80009	307090900
A10R612	307−0909−00			RES NTWK,FXD,FI:(4)10K OHM,5%,0.25W EACH	80009	307090900
A10R620	315−0392−00			RES,FXD,FILM:3.9K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R622	315−0392−00			RES,FXD,FILM:3.9K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R624	315−0392−00			RES,FXD,FILM:3.9K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R650	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R690	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R692	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R694	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R702	315−0152−00			RES,FXD,FILM:1.5K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R703	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R704	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R706	315−0153−00			RES,FXD,FILM:15K OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A10R707	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R708	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R710	315−0153−00			RES,FXD,FILM:15K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R720	315−0153−00			RES,FXD,FILM:15K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R722	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R724	315−0512−00			RES,FXD,FILM:5.1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R730	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R734	315−0512−00			RES,FXD,FILM:5.1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R740	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R742	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R744	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R900	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R902	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10R906	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A10TP148	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A10TP284	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A10TP500	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A10U110	156−2793−00			MICROCKT,LINEAR:OPERATIONAL,BIFET	80009	156279300
A10U112	156−2793−00			MICROCKT,LINEAR:OPERATIONAL,BIFET	80009	156279300
A10U116	156−3756−00			IC,LINEAR:BIFET,OP−AMP;LOW NOISE,PRECISION	24355	AD711KN
A10U130	156−0513−00			IC,MISC:CMOS,ANALOG MUX;8 CHANNEL	04713	MC14051BCP
A10U146	156−3756−00			IC,LINEAR:BIFET,OP−AMP;LOW NOISE,PRECISION	24355	AD711KN
A10U230	156−2793−00			MICROCKT,LINEAR:OPERATIONAL,BIFET	80009	156279300
A10U232	156−2793−00			MICROCKT,LINEAR:OPERATIONAL,BIFET	80009	156279300
A10U234	156−2793−00			MICROCKT,LINEAR:OPERATIONAL,BIFET	80009	156279300
A10U240	156−0514−00			IC,MISC:CMOS,ANALOG MUX;DUAL 4 CHANNEL	04713	MC14052BCP
A10U250	156−0514−00			IC,MISC:CMOS,ANALOG MUX;DUAL 4 CHANNEL	04713	MC14052BCP
A10U260	156−3756−00			IC,LINEAR:BIFET,OP−AMP;LOW NOISE,PRECISION	24355	AD711KN
A10U270	156−3756−00			IC,LINEAR:BIFET,OP−AMP;LOW NOISE,PRECISION	24355	AD711KN
A10U280	156−0514−00			IC,MISC:CMOS,ANALOG MUX;DUAL 4 CHANNEL	04713	MC14052BCP
A10U300	156−2793−00			MICROCKT,LINEAR:OPERATIONAL,BIFET	80009	156279300
A10U412	156−2793−00			MICROCKT,LINEAR:OPERATIONAL,BIFET	80009	156279300
A10U420	156−0514−00			IC,MISC:CMOS,ANALOG MUX;DUAL 4 CHANNEL	04713	MC14052BCP
A10U422	156−2793−00			MICROCKT,LINEAR:OPERATIONAL,BIFET	80009	156279300
A10U450	156−1422−00			MICROCKT,LINEAR:DUAL OPNL AMPL	80009	156142200
A10U600	156−1827−00			MICROCKT,DGTL:C2MOS,3 LINE TO 8 LINE	80009	156182700
A10U602	156−1822−00			MICROCKT,DGTL:C2MOS,8 BIT ADDRESSABLE	80009	156182200
A10U604	156−1837−00	J300000	J300484	MICROCKT,LINEAR:DRIVER W/STROBE	80009	156183700
A10U604	156−4348−00	J300485		IC,LINEAR:BIPOLAR,TRANSISTOR ARRAY	80009	156434800
A10U606	156−1822−00			MICROCKT,DGTL:C2MOS,8 BIT ADDRESSABLE	80009	156182200

Component Number	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A10U608	156−1837−00	J300000	J300484	MICROCKT,LINEAR:DRIVER W/STROBE	80009	156183700
A10U608	156−4348−00	J300485		IC,LINEAR:BIPOLAR,TRANSISTOR ARRAY	80009	156434800
A10U610	156−1822−00			MICROCKT,DGTL:C2MOS,8 BIT ADDRESSABLE	80009	156182200
A10U620	156−1822−00			MICROCKT,DGTL:C2MOS,8 BIT ADDRESSABLE	80009	156182200
A10U622	156−3204−00			MICROCKT,DGTL:RELAY DRIVER	S0319	M54532P
A10U624	156−1822−00			MICROCKT,DGTL:C2MOS,8 BIT ADDRESSABLE	80009	156182200
A10U626	156−1837−00	J300000	J300484	MICROCKT,LINEAR:DRIVER W/STROBE	80009	156183700
A10U626	156−4348−00	J300485		IC,LINEAR:BIPOLAR,TRANSISTOR ARRAY	80009	156434800
A10U724	156−3202−01			IC,DIGITAL:HCMOS, MULTIVIBRATOR;DUAL RETRIG	80009	156320201
A10VR146	152−0166−00			DIODE,ZENER:,;6.2V,5%,0.4W	04713	1N5995BRL
A10VR148	152−0166−00			DIODE,ZENER:,;6.2V,5%,0.4W	04713	1N5995BRL
A10VR230	152−0166−00			DIODE,ZENER:,;6.2V,5%,0.4W	04713	1N5995BRL
A10VR232	152−0166−00			DIODE,ZENER:,;6.2V,5%,0.4W	04713	1N5995BRL
A10VR280	152−1039−00			SEMICOND DVC,DI:ZENER,SI,3V,500MW,DO035	S4997	HZ3ALL
A10VR282	152−1039−00			SEMICOND DVC,DI:ZENER,SI,3V,500MW,DO035	S4997	HZ3ALL
A10VR316	152−0166−00			DIODE,ZENER:,;6.2V,5%,0.4W	04713	1N5995BRL
A10VR322	152−0168−00			DIODE,ZENER:,;12V,5%,0.4W	04713	1N963BRL

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A11	671−1766−XX			CIRCUIT BD ASSY:MAIN KEY	80009	6711766XX
A11C10	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A11C20	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A11C30	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A11C120	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A11C140	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A11C160	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A11C180	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A11C300	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A11C302	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A11CR210	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11CR212	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11CR214	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11CR216	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11CR220	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11CR222	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11CR224	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11CR226	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11CR230	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11CR232	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11CR234	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11CR236	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A11L10	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A11L10	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A11L20	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A11L20	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A11L30	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A11L30	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A11P100	131−3656−01			CONN,RCPT,ELEC:HEADER,STR,15 PIN,0.1 SP	S4549	PS−15PA−S4T1−P
A11P120	131−3656−01			CONN,RCPT,ELEC:HEADER,STR,15 PIN,0.1 SP	S4549	PS−15PA−S4T1−P
A11R110	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R111	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R112	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R113	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R114	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R115	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R116	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R117	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R118	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R119	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A11R120	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R121	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R122	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R123	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R124	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R125	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R126	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R127	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R128	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R130	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R131	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R132	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R133	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R134	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R135	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R136	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R137	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R140	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R141	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R300	315−0153−00			RES,FXD,FILM:15K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R302	311−2457−00			RES,VAR,NONWW:PNL,10K OHM,1/2W,20%	80009	311245700
A11R304	315−0153−00			RES,FXD,FILM:15K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R310	315−0153−00			RES,FXD,FILM:15K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R312	311−2457−00			RES,VAR,NONWW:PNL,10K OHM,1/2W,20%	80009	311245700
A11R314	315−0153−00			RES,FXD,FILM:15K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R320	315−0153−00			RES,FXD,FILM:15K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R322	311−2457−00			RES,VAR,NONWW:PNL,10K OHM,1/2W,20%	80009	311245700
A11R324	315−0153−00			RES,FXD,FILM:15K OHM,5%,0.25W	TK1727	SFR25 2322−181
A11R330	311−2457−00			RES,VAR,NONWW:PNL,10K OHM,1/2W,20%	80009	311245700
A11R340	311−2457−00			RES,VAR,NONWW:PNL,10K OHM,1/2W,20%	80009	311245700
A11R350	311−2456−00			RES,VAR,NONWW:PNL,10K OHM,1/2W,20%	80009	311245600
A11R360	311−2456−00			RES,VAR,NONWW:PNL,10K OHM,1/2W,20%	80009	311245600
A11R370	311−2456−00			RES,VAR,NONWW:PNL,10K OHM,1/2W,20%	80009	311245600
A11S210	260−2325−00			SWITCH,ROTARY:4 BITS,GRAY	80009	260232500
A11S220	260−2325−00			SWITCH,ROTARY:4 BITS,GRAY	80009	260232500
A11S230	260−2325−00			SWITCH,ROTARY:4 BITS,GRAY	80009	260232500
A11U120	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A11U140	156−2316−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156231600
A11U160	156−2316−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156231600
A11U180	156−2825−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156282500
A11W110	174−0293−00			CA ASSY,SP,ELEC:40,28 AWG,4.3 L,RIBBON	80009	174029300

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A12	671−1768−XX			CIRCUIT BD ASSY:SUB KEY	80009	6711768XX
A12C100	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A12C120	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A12C140	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A12C160	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A12CR500	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR501	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR504	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR505	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR507	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR510	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR511	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR514	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR516	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR517	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR521	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR522	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR524	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR526	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR530	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR531	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR532	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR534	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR535	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR536	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR537	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR540	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR541	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR542	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR543	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR546	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR547	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR552	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR553	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR555	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR557	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR560	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR562	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR563	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12CR565	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A12CR567	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A12DS100	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS101	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS102	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS103	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS104	150−1173−00			LT EMITTING DIO:RED	80009	150117300
A12DS105	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS106	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS110	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS111	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS112	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS113	150−1173−00			LT EMITTING DIO:RED	80009	150117300
A12DS114	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS116	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS120	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS121	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS122	150−1249−00			LT EMITTING DIO:RED/GREEN,DUAL,CATHODE	80009	150124900
A12DS123	150−1249−00			LT EMITTING DIO:RED/GREEN,DUAL,CATHODE	80009	150124900
A12DS124	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS125	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS126	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS127	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS130	150−1173−00			LT EMITTING DIO:RED	80009	150117300
A12DS134	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS135	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS136	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS137	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS140	150−1249−00			LT EMITTING DIO:RED/GREEN,DUAL,CATHODE	80009	150124900
A12DS141	150−1249−00			LT EMITTING DIO:RED/GREEN,DUAL,CATHODE	80009	150124900
A12DS142	150−1249−00			LT EMITTING DIO:RED/GREEN,DUAL,CATHODE	80009	150124900
A12DS143	150−1249−00			LT EMITTING DIO:RED/GREEN,DUAL,CATHODE	80009	150124900
A12DS144	150−1249−00			LT EMITTING DIO:RED/GREEN,DUAL,CATHODE	80009	150124900
A12DS145	150−1249−00			LT EMITTING DIO:RED/GREEN,DUAL,CATHODE	80009	150124900
A12DS147	150−1173−00			LT EMITTING DIO:RED	80009	150117300
A12DS151	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS152	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS153	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS154	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS155	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS156	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A12DS157	150−1179−00			LT EMITTING DIO:GREEN	80009	150117900
A12DS200	150−1174−00			LT EMITTING DIO:YELLOW,7 SEGMENT	80009	150117400
A12DS210	150−1174−00			LT EMITTING DIO:YELLOW,7 SEGMENT	80009	150117400
A12J100	131−3657−01			CONN,PLUG,ELEC:STR,15 PIN,0.1 SPACING	S4549	PS−15SD−S4TS1
A12J120	131−3657−01			CONN,PLUG,ELEC:STR,15 PIN,0.1 SPACING	S4549	PS−15SD−S4TS1
A12R100	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R102	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R104	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R105	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R110	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R113	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R114	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R116	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R120	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R124	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R130	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R134	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R140	315−0331−00			RES,FXD,FILM:330 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R141	315−0331−00			RES,FXD,FILM:330 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R142	315−0331−00			RES,FXD,FILM:330 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R143	315−0331−00			RES,FXD,FILM:330 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R144	315−0331−00			RES,FXD,FILM:330 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R145	315−0331−00			RES,FXD,FILM:330 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R147	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R148	315−0331−00			RES,FXD,FILM:330 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R150	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R153	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R200	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R201	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R202	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R203	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R204	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R205	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R206	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R241	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R242	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R243	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R244	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R245	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R300	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A12R302	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A12R310	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R312	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R314	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R400	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R401	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R402	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R403	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R404	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R405	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12R406	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A12S500	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S501	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S504	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S505	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S507	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S510	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S511	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S514	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S516	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S517	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S521	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S522	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S524	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S526	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S530	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S531	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S532	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S534	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S535	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S536	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S537	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S540	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S541	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S542	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S543	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S546	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S547	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S552	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S553	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S555	260−2156−00			SWITCH,KEY:SPST	80009	260215600

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A12S557	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S560	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S562	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S563	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S565	260−2156−00			SWITCH,KEY:SPST	80009	260215600
A12S567	260−2156−00			SWITCH,KEY:SPST	80009	260215600

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A14	671−1767−XX			CIRCUIT BD ASSY:LOW KEY/FDD	80009	6711767XX
A14C10	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A14C20	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C30	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C40	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C172	281−0785−00	J300651		CAP,FXD,CERAMIC:MLC;68PF,5%,100V	04222	SA105E104MAA
A14C173	281−0785−00	J300651		CAP,FXD,CERAMIC:MLC;68PF,5%,100V	04222	SA105E104MAA
A14C200	281−0773−00	J300000	J300575	CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V	TK1743	CGB103KEX
A14C200	281−0775−00	J300576		CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V	04222	SA105E104MAA
A14C210	281−0773−00	J300000	J300575	CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V	TK1743	CGB103KEX
A14C210	281−0775−00	J300576		CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V	04222	SA105E104MAA
A14C500	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C520	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C540	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C600	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C700	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C760	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C800	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C820	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C830	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C840	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14C860	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A14CR830	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A14CR831	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A14FL10	119−1762−00			FILTER,RFI:0.022UF,+50/−20%,50VW/FERRITE	80009	119176200
A14J140	131−3662−00			CONN,RCPT,ELEC:HEADER,2 X 17	80009	131366200
A14J142	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A14J146	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A14J148	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A14R100	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A14R140	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A14R200	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R202	315−0103−00	J300000	J300575	RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R204	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R210	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R212	315−0103−00	J300000	J300575	RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R214	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R400	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A14R410	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R412	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A14R760	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R800	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R802	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R804	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R806	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R830	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R831	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R832	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R840	307−1181−00			RES NTWK,FXD,FI:(8) 10K OHM,5%,0.1W	80009	307118100
A14R850	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14R860	307−1181−00			RES NTWK,FXD,FI:(8) 10K OHM,5%,0.1W	80009	307118100
A14R870	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A14TP100	214−0579−00	J300000	J300585	TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A14TP200	214−0579−00	J300000	J300585	TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A14U100	156−1767−00			MICROCKT,DGTL:CMOS,OCTAL BUS XCVR	80009	156176700
A14U140	156−2316−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156231600
A14U200	156−2309−00			IC,DIGITAL:HCMOS,GATE;HEX INV	80009	156230900
A14U220	156−2009−00			IC,DIGITAL:HCMOS,FLIP FLOP;DUAL D−TYPE	04713	MC74HC74AN
A14U240	156−2813−00			IC,DIGITAL:HCMOS,COUNTER;DUAL 4−BIT	80009	156281300
A14U260	156−2813−00			IC,DIGITAL:HCMOS,COUNTER;DUAL 4−BIT	80009	156281300
A14U300	156−2315−00			MICROCKT,DGTL:3 STATE OCTAL D TYPE FF	80009	156231500
A14U320	156−2315−00			MICROCKT,DGTL:3 STATE OCTAL D TYPE FF	80009	156231500
A14U400	156−2809−00			MICROCKT,DGTL:6 BIT 3 STATE BUFFER	80009	156280900
A14U500	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A14U520	156−2743−00			IC,DIGITAL:HCMOS,BUFFER;OCTAL	80009	156274300
A14U540	156−2825−00			IC,DIGITAL:HCMOS,DEMUX/DECODER;DUAL	80009	156282500
A14U600	156−2027−00			IC,DIGITAL:HCMOS,GATE;HEX INV	01295	SN74HC04N
A14U700	156−2743−00			IC,DIGITAL:HCMOS,BUFFER;OCTAL	80009	156274300
A14U760	119−2314−00	J300000	J300495	OSCILLATOR,DI:32MHZ,CRYSTAL	80009	119231400
A14U760	119−2314−01	J300496		OSCILLATOR,RF:XTAL CONT,32MHZ	80009	119231401
A14U800	156−3701−00			MICROCKT,DGTL:FLOPPY DISK CONTROLLER	80009	156370100
A14U820	156−3698−00			IC,DIGITAL:HCMOS,MUX/ENCODER	80009	156369800
A14U840	156−3712−00			IC,DIGITAL:HCMOS,BUFFER;OCTAL INV, 3−STATE	80009	156371200
A14U860	156−2743−00			IC,DIGITAL:HCMOS,BUFFER;OCTAL	80009	156274300
A14W200	174−1611−00			CA ASSY,SP,ELEC:34,28 AWG,9.0 L,RIBBON	80009	174161100
A14W202	131−0566−04	J300576		BUS,COND:DUMMY RES,18MM OD X 3.2MM L	80009	131056604
A14W210	131−0566−04	J300576		BUS,COND:DUMMY RES,18MM OD X 3.2MM L	80009	131056604

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A15	671−0226−XX			CIRCUIT BD ASSY:HIGH CURRENT PWR SUPPLY	80009	6710226XX
A15C200	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A15C210	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A15C300	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A15C302	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A15C400	290−1188−00			CAP,FXD,ELCTLT:2200UF,20%,100V	S4217	KME100VNSN−2200
A15C402	290−1188−00			CAP,FXD,ELCTLT:2200UF,20%,100V	S4217	KME100VNSN−2200
A15C404	290−1188−00			CAP,FXD,ELCTLT:2200UF,20%,100V	S4217	KME100VNSN−2200
A15C406	290−1188−00			CAP,FXD,ELCTLT:2200UF,20%,100V	S4217	KME100VNSN−2200
A15C408	290−1188−00			CAP,FXD,ELCTLT:2200UF,20%,100V	S4217	KME100VNSN−2200
A15C410	290−1188−00			CAP,FXD,ELCTLT:2200UF,20%,100V	S4217	KME100VNSN−2200
A15C412	290−1188−00			CAP,FXD,ELCTLT:2200UF,20%,100V	S4217	KME100VNSN−2200
A15C414	290−1188−00			CAP,FXD,ELCTLT:2200UF,20%,100V	S4217	KME100VNSN−2200
A15C416	290−1188−00			CAP,FXD,ELCTLT:2200UF,20%,100V	S4217	KME100VNSN−2200
A15C418	290−1188−00			CAP,FXD,ELCTLT:2200UF,20%,100V	S4217	KME100VNSN−2200
A15CR100	152−0934−00			SEMICOND DVC,DI:10A,600V	80009	152093400
A15CR200	152−0460−00			DIODE,SIG:,REGLTR;100V,1.20MA IP,1.45V VL	04713	1N5299
A15J800	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A15J802	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A15J804	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A15J900	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A15J902	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A15J904	131−3666−00			CONN,RCPT,ELEC:CKT BD,2 PIN	80009	131366600
A15J906	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A15L210	108−1490−00			COIL,RF:FXD,8MH,20T	80009	108149000
A15R200	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A15R210	315−0220−00			RES,FXD,FILM:22 OHM,5%,0.25W	TK1727	SFR25 2322−181
A15R300	307−1371−00			RES,FXD,FILM:3K OHM,5%,3W	S5302	SPR3−3KJ
A15R302	315−0512−00			RES,FXD,FILM:5.1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A15R304	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A15R306	321−0385−00			RES,FXD,FILM:100K OHM,1%,0.125W,TC=T0	19701	5043ED100K0F
A15R308	321−0289−00			RES,FXD,FILM:10.0K OHM,1%,0.125W,TC=T0	19701	5043ED10K00F
A15R310	315−0204−00			RES,FXD,FILM:200K OHM,5%,0.25W	TK1727	SFR25 2322−181
A15R312	315−0512−00			RES,FXD,FILM:5.1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A15R800	301−0220−02			RES,FXD,CMPSN:22 OHM,5%,0.50W	80009	301022002
A15U310	156−1778−00			MICROCKT,LINEAR:DUAL COMPARATOR	80009	156177800
A15U312	156−1897−00			MICROCKT,DGTL:PHOTO COUPLER	80009	156189700
A15U330	156−1897−00			MICROCKT,DGTL:PHOTO COUPLER	80009	156189700
A15VR200	152−0590−00			DIODE,ZENER:,;18V,5%,0.4W	04713	1N967BRL
A15VR300	152−0816−00			SEMICOND DVC,DI:ZEN,SI,12V,5%,0.5W	80009	152081600
A15VR302	152−0823−00			SEMICOND DVC,DI:ZEN,SI,6.2V,5%,0.5WRD6.2EB2	80009	152082300

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A16	671−0225−XX			CIRCUIT BD ASSY:HIGH CURRENT CONTROL	80009	6710225XX
A16C100	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A16C102	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A16C200	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A16C202	281−0823−00			CAP,FXD,CER DI:470PF,10%,50V	04222	SA101A471KAA
A16C210	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A16C212	281−0823−00			CAP,FXD,CER DI:470PF,10%,50V	04222	SA101A471KAA
A16C300	283−0076−00			CAP,FXD,CER DI:27PF,10%,500V	59660	831−500S2L270K
A16C312	281−0767−00			CAP,FXD,CERAMIC:MLC;330PF,20%,100V	04222	SA102C331MAA
A16C314	281−0809−00			CAP,FXD,CERAMIC:MLC;200 PF,5%,100V	04222	SA101A201JAA
A16C320	281−0823−00			CAP,FXD,CER DI:470PF,10%,50V	04222	SA101A471KAA
A16C324	281−0798−00			CAP,FXD,CER DI:51PF,1%,100V	TK1743	CGB510GEN
A16C326	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A16C330	281−0785−00			CAP,FXD,CERAMIC:MLC;68PF,10%,100V	04222	SA102A680KAA
A16C412	281−0809−00			CAP,FXD,CERAMIC:MLC;200 PF,5%,100V	04222	SA101A201JAA
A16C414	281−0809−00			CAP,FXD,CERAMIC:MLC;200 PF,5%,100V	04222	SA101A201JAA
A16C420	281−0823−00			CAP,FXD,CER DI:470PF,10%,50V	04222	SA101A471KAA
A16C422	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A16C424	281−0823−00			CAP,FXD,CER DI:470PF,10%,50V	04222	SA101A471KAA
A16C426	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A16C430	281−0785−00			CAP,FXD,CERAMIC:MLC;68PF,10%,100V	04222	SA102A680KAA
A16C446	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A16C900	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A16C902	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A16C905	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A16C910	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A16C912	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A16C920	290−0769−00			CAP,FXD,ALUM:;10UF,+50%−10%,100V	61058	ECEB2AV100S
A16CR300	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A16CR310	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A16CR312	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A16CR324	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A16CR400	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A16CR410	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A16CR412	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A16CR424	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A16CR446	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A16CR905	152−0327−00			SEMICOND DVC,DI:SIG,SI,100MA,75V	80009	152032700
A16J690	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A16J906	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A16J908	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A16J912	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A16J914	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A16K390	148−0186−00			RELAY,ARM:1 FORM C,3A,200V,COIL 12VDC	80009	148018600
A16L100	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A16L100	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A16L300	108−1490−00			COIL,RF:FXD,8MH,20T	80009	108149000
A16L900	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A16L900	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A16L910	108−0948−00	J300000	J300405	COIL,RF:FIXED,100UH,10%	80009	108094800
A16L910	108−1506−00	J300406		INDUCTOR,FXD:SIGNAL;100UH,10%	80009	108150600
A16Q320	151−0770−01			TRANSISTOR:NPN,SI,TO−126	80009	151077001
A16Q330	151−0739−01			TRANSISTOR:PNP,SI,TO−126	80009	151073901
A16Q340	151−0423−00			TRANSISTOR,PWR:BIPOLAR,NPN;400V,1.0A	TK0BZ	2SC2333L
A16Q350	151−0423−00			TRANSISTOR,PWR:BIPOLAR,NPN;400V,1.0A	TK0BZ	2SC2333L
A16Q420	151−0770−01			TRANSISTOR:NPN,SI,TO−126	80009	151077001
A16Q430	151−0739−01			TRANSISTOR:PNP,SI,TO−126	80009	151073901
A16Q440	151−0423−00			TRANSISTOR,PWR:BIPOLAR,NPN;400V,1.0A	TK0BZ	2SC2333L
A16Q450	151−0423−00			TRANSISTOR,PWR:BIPOLAR,NPN;400V,1.0A	TK0BZ	2SC2333L
A16R100	315−0105−00			RES,FXD,FILM:1M OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R120	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R121	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R122	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R123	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R140	315−0472−00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R150	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R151	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R152	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R153	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R154	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R200	315−0203−00			RES,FXD,FILM:20K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R202	315−0203−00			RES,FXD,FILM:20K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R210	315−0203−00			RES,FXD,FILM:20K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R212	315−0203−00			RES,FXD,FILM:20K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R300	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R302	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R310	321−0289−00			RES,FXD,FILM:10.0K OHM,1%,0.125W,TC=T0	19701	5043ED10K00F
A16R312	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R314	321−0402−00			RES,FXD,FILM:150K OHM,1%,0.125W,TC=T0	19701	5033ED150K0F
A16R320	315−0222−00			RES,FXD,FILM:2.2K OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A16R321	315−0393−00			RES,FXD,FILM:39K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R322	315−0302−00			RES,FXD,FILM:3K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R324	315−0473−00			RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R326	315−0753−00			RES,FXD,FILM:75K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R330	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R332	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R338	315−0303−00			RES,FXD,FILM:30K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R340	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R342	315−0563−00			RES,FXD,FILM:56K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R350	315−0151−00			RES,FXD,FILM:150 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R360	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R365	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R370	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R375	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R390	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R400	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R410	321−0286−00			RES,FXD,FILM:9.31K OHM,1%,0.125W,TC=T0	19701	5043ED9K310F
A16R412	315−0334−00			RES,FXD,FILM:330K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R414	321−0402−00			RES,FXD,FILM:150K OHM,1%,0.125W,TC=T0	19701	5033ED150K0F
A16R420	315−0222−00			RES,FXD,FILM:2.2K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R421	315−0393−00			RES,FXD,FILM:39K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R422	315−0512−00			RES,FXD,FILM:5.1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R424	315−0473−00			RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R426	315−0753−00			RES,FXD,FILM:75K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R430	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R432	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R438	315−0303−00			RES,FXD,FILM:30K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R440	315−0301−00			RES,FXD,FILM:300 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R442	315−0563−00			RES,FXD,FILM:56K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R444	315−0473−00			RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R446	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R450	315−0151−00			RES,FXD,FILM:150 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R460	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R465	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R470	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R475	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A16R905	315−0472−00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322−181
A16U100	156−2832−01			MICROCKT,DGTL:OP AMP,BIFET	TK0AB	LF411CN
A16U120	156−0515−00			IC,MISC:CMOS,ANALOG MUX;TRIPLE SPDT	04713	MC14053BCP
A16U140	156−2277−00			MICROCKT,DGTL:TRANSISTOR	80009	156227700

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A16U150	156−1766−00			MICROCKT,DGTL:CMOS,QUAD 2 INPUT NAND	80009	156176600
A16U200	156−1699−00			IC,LINEAR:BIFET,OP−AMP;DUAL,LOW OFFSET	27014	LF412CN
A16U300	156−2795−00			MICROCKT,LINEAR:OPERATIONAL PRECISION	80009	156279500
A16U400	156−2795−00			MICROCKT,LINEAR:OPERATIONAL PRECISION	80009	156279500
A16VR360	152−0304−00			DIODE,ZENER:,;20V,5%,0.4W	04713	1N968BRL
A16VR370	152−0304−00			DIODE,ZENER:,;20V,5%,0.4W	04713	1N968BRL

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A18	670−9319−XX			CIRCUIT BD ASSY:CRT OUTPUT	80009	6709319XX
A18C50	290−0747−00			CAP,FXD,ELCTLT:100UF,+50−20%,25WVDC	0H1N5	CE02W1E101F
A18C52	290−0747−00			CAP,FXD,ELCTLT:100UF,+50−20%,25WVDC	0H1N5	CE02W1E101F
A18C60	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A18C62	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A18C70	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A18C82	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A18C100	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A18C102	283−0240−00	J300000	J300553	CAP,FXD,CER DI:1PF,20%,500V	80009	283024000
A18C102	281−0538−00	J300554		CAP,FXD,CERAMIC:MLC;1PF,20%,500V	TK2058	DA12COG2H010M
A18C104	283−0240−00	J300000	J300553	CAP,FXD,CER DI:1PF,20%,500V	80009	283024000
A18C104	281−0538−00	J300554		CAP,FXD,CERAMIC:MLC;1PF,20%,500V	TK2058	DA12COG2H010M
A18C106	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A18C120	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A18C122	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A18C200	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A18C202	283−0240−00	J300000	J300553	CAP,FXD,CER DI:1PF,20%,500V	80009	283024000
A18C202	281−0538−00	J300554		CAP,FXD,CERAMIC:MLC;1PF,20%,500V	TK2058	DA12COG2H010M
A18C204	283−0240−00	J300000	J300553	CAP,FXD,CER DI:1PF,20%,500V	80009	283024000
A18C204	281−0538−00	J300554		CAP,FXD,CERAMIC:MLC;1PF,20%,500V	TK2058	DA12COG2H010M
A18C206	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A18C220	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A18C222	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A18C300	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A18C302	283−0240−00	J300000	J300553	CAP,FXD,CER DI:1PF,20%,500V	80009	283024000
A18C302	281−0538−00	J300554		CAP,FXD,CERAMIC:MLC;1PF,20%,500V	TK2058	DA12COG2H010M
A18C304	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A18C306	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A18C400	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A18C420	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A18CR100	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A18CR102	152−0322−00			DIODE,SIG:SCHTKY,;15V,410MVF AT 1MA,1.2PF	50434	5082−2672−T25
A18CR104	152−0322−00			DIODE,SIG:SCHTKY,;15V,410MVF AT 1MA,1.2PF	50434	5082−2672−T25
A18CR110	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A18CR112	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A18CR200	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A18CR202	152−0322−00			DIODE,SIG:SCHTKY,;15V,410MVF AT 1MA,1.2PF	50434	5082−2672−T25
A18CR204	152−0322−00			DIODE,SIG:SCHTKY,;15V,410MVF AT 1MA,1.2PF	50434	5082−2672−T25
A18CR210	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A18CR212	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A18CR300	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A18CR302	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A18CR304	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A18CR306	152−0322−00			DIODE,SIG:SCHTKY,;15V,410MVF AT 1MA,1.2PF	50434	5082−2672−T25
A18J180	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A18J182	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A18J184	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A18J186	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A18Q100	151−0188−00			TRANSISTOR,SIG:BIPOLAR,PNP;40V,200MA	04713	2N3906
A18Q102	151−0188−00			TRANSISTOR,SIG:BIPOLAR,PNP;40V,200MA	04713	2N3906
A18Q110	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A18Q112	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A18Q120	151−0423−00			TRANSISTOR,PWR:BIPOLAR,NPN;400V,1.0A	TK0BZ	2SC2333L
A18Q122	151−0423−00			TRANSISTOR,PWR:BIPOLAR,NPN;400V,1.0A	TK0BZ	2SC2333L
A18Q130	151−0721−00			TRANSISTOR:PNP,SI,TO−220AB	80009	151072100
A18Q132	151−0721−00			TRANSISTOR:PNP,SI,TO−220AB	80009	151072100
A18Q200	151−0188−00			TRANSISTOR,SIG:BIPOLAR,PNP;40V,200MA	04713	2N3906
A18Q202	151−0188−00			TRANSISTOR,SIG:BIPOLAR,PNP;40V,200MA	04713	2N3906
A18Q210	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A18Q212	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A18Q220	151−0423−00			TRANSISTOR,PWR:BIPOLAR,NPN;400V,1.0A	TK0BZ	2SC2333L
A18Q222	151−0423−00			TRANSISTOR,PWR:BIPOLAR,NPN;400V,1.0A	TK0BZ	2SC2333L
A18Q230	151−0721−00			TRANSISTOR:PNP,SI,TO−220AB	80009	151072100
A18Q232	151−0721−00			TRANSISTOR:PNP,SI,TO−220AB	80009	151072100
A18Q300	151−0188−00			TRANSISTOR,SIG:BIPOLAR,PNP;40V,200MA	04713	2N3906
A18Q310	151−0190−00			TRANSISTOR,SIG:BIPOLAR,NPN;40V,200MA	04713	2N3904
A18Q312	151−0188−00			TRANSISTOR,SIG:BIPOLAR,PNP;40V,200MA	04713	2N3906
A18Q320	151−0721−00			TRANSISTOR:PNP,SI,TO−220AB	80009	151072100
A18Q330	151−0423−00			TRANSISTOR,PWR:BIPOLAR,NPN;400V,1.0A	TK0BZ	2SC2333L
A18R100	315−0123−00			RES,FXD,FILM:12K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R102	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R104	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A18R106	321−0222−00			RES,FXD,FILM:2.00K OHM,1%,0.125W,TC=T0	19701	5033ED2K00F
A18R108	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R110	315−0151−00			RES,FXD,FILM:150 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R112	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R114	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R116	315−0151−00			RES,FXD,FILM:150 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R118	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R120	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A18R128	315−0244−00			RES,FXD,FILM:240K OHM,5%,0.25W	S5302	CF 1/4 240K JTR
A18R130	323−0356−00			RES,FXD,FILM:49.9K OHM,1%,0.5W,TC=T0	91637	CMF65116G49901F
A18R132	323−0356−00			RES,FXD,FILM:49.9K OHM,1%,0.5W,TC=T0	91637	CMF65116G49901F
A18R140	315−0681−00			RES,FXD,FILM:680 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R142	315−0431−00			RES,FXD,FILM:430 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R200	315−0123−00			RES,FXD,FILM:12K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R202	315−0513−00			RES,FXD,FILM:51K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R204	321−0241−00			RES,FXD,FILM:3.16K OHM,1%,0.125W,TC=T0	19701	5043ED3K160F
A18R206	321−0241−00			RES,FXD,FILM:3.16K OHM,1%,0.125W,TC=T0	19701	5043ED3K160F
A18R208	315−0513−00			RES,FXD,FILM:51K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R210	315−0151−00			RES,FXD,FILM:150 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R212	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R214	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R216	315−0151−00			RES,FXD,FILM:150 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R218	315−0751−00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R220	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R228	315−0124−00			RES,FXD,FILM:120K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R230	322−0327−00			RES,FXD,FILM:24.9K OHM,1%,0.25W,TC=T0	91637	CMF6042G24901F
A18R232	322−0327−00			RES,FXD,FILM:24.9K OHM,1%,0.25W,TC=T0	91637	CMF6042G24901F
A18R240	315−0681−00			RES,FXD,FILM:680 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R242	315−0431−00			RES,FXD,FILM:430 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R300	315−0123−00			RES,FXD,FILM:12K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R306	315−0242−00			RES,FXD,FILM:2.4K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R308	322−0327−00			RES,FXD,FILM:24.9K OHM,1%,0.25W,TC=T0	91637	CMF6042G24901F
A18R310	315−0513−00			RES,FXD,FILM:51K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R312	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R314	315−0682−00			RES,FXD,FILM:6.8K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R316	315−0204−00			RES,FXD,FILM:200K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R318	315−0271−00			RES,FXD,FILM:270 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R320	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R322	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R410	311−2377−00			RES,VAR,NONWW:TRMR,500K OHM,0.5W	80009	311237700
A18R412	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18R420	311−2377−00			RES,VAR,NONWW:TRMR,500K OHM,0.5W	80009	311237700
A18R422	315−0164−00			RES,FXD,FILM:160K OHM,5%,0.25W	TK1727	SFR25 2322−181
A18TP100	214−0579−00	J300000	J300585	TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A18VR100	152−0195−00			DIODE,ZENER:,;5.1V,5%,0.4W	14552	CD332125
A18VR200	152−0195−00			DIODE,ZENER:,;5.1V,5%,0.4W	14552	CD332125

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A20	670−9321−XX			CIRCUIT BD ASSY:H.V. REGULATOR	TK0191	ORDER BY DESC
A20C54	281−0773−00			CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V	TK1743	CGB103KEX
A20C56	281−0773−00			CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V	TK1743	CGB103KEX
A20C100	290−0927−00			CAP,FXD,ELCTLT:330UF,20%,35V	80009	290092700
A20C102	285−0560−00			CAP,FXD,PLASTIC:0.022UF,10%,630V	80009	285056000
A20C104	281−0773−00			CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V	TK1743	CGB103KEX
A20C200	283−0000−00			CAP,FXD,CER DI:0.001UF,+100−0%,500V	80009	283000000
A20C202	283−0000−00			CAP,FXD,CER DI:0.001UF,+100−0%,500V	80009	283000000
A20C210	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A20C220	283−0013−00			CAP,FXD,CER DI:0.01UF,−0+100%,1000V	59660	818−602ZSUO103P
A20C228	281−0773−00			CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V	TK1743	CGB103KEX
A20C230	281−0773−00			CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V	TK1743	CGB103KEX
A20C232	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A20C300	290−0821−00	J300000	J300462	CAP,FXD,ELCTLT:10UF,+50−10%,160V	80009	290082100
A20C300	290−1304−00	J300463		CAP,FXD,ALUM:47UH,+/−20%,160V,12.5MM	80009	290130400
A20C310	290−0821−00	J300000	J300462	CAP,FXD,ELCTLT:10UF,+50−10%,160V	80009	290082100
A20C310	290−1304−00	J300463		CAP,FXD,ALUM:47UH,+/−20%,160V,12.5MM	80009	290130400
A20C320	290−0821−00	J300000	J300462	CAP,FXD,ELCTLT:10UF,+50−10%,160V	80009	290082100
A20C320	290−1304−00	J300463		CAP,FXD,ALUM:47UH,+/−20%,160V,12.5MM	80009	290130400
A20C340	285−1376−00			CAP,FXD,PLASTIC:0.01UF,20%,2.5KV	80009	285137600
A20CR200	152−0608−00			SEMICOND DVC,DI:POWER,SI,1000V,0.2A	80009	152060800
A20CR202	152−0242−00			DIODE,SIG:,;225V,200MA	14552	MT5129
A20CR204	152−0242−00			DIODE,SIG:,;225V,200MA	14552	MT5129
A20CR210	152−0608−00			SEMICOND DVC,DI:POWER,SI,1000V,0.2A	80009	152060800
A20CR300	152−0242−00			DIODE,SIG:,;225V,200MA	14552	MT5129
A20CR310	152−0242−00			DIODE,SIG:,;225V,200MA	14552	MT5129
A20CR320	152−0242−00			DIODE,SIG:,;225V,200MA	14552	MT5129
A20J182	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A20J194	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A20J200	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A20L100	108−1431−00			COIL,RF:FXD,300UH	TK0HD	ORDER BY DESC
A20Q100	151−0563−00			TRANSISTOR:NPN,SI	80009	151056300
A20Q200	151−0769−00			TRANSISTOR:NPN,SI,TO−220AB	80009	151076900
A20R50	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R52	321−0388−00			RES,FXD,FILM:107K OHM,1%,0.125W,TC=T0	07716	CEAD10702F
A20R54	321−0205−00			RES,FXD,FILM:1.33K OHM,1%,0.125W,TC=T0	TK1727	MR25−2322−151−1
A20R56	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R100	315−0152−00			RES,FXD,FILM:1.5K OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R200	315−0513−00			RES,FXD,FILM:51K OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R202	315−0513−00			RES,FXD,FILM:51K OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A20R204	315−0184−00			RES,FXD,FILM:180K OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R206	315−0184−00			RES,FXD,FILM:180K OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R208	315−0472−00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R210	311−1272−00			RES,VAR,NONWW:TRMR,100K OHM,0.5W	32997	3329P−L58−104
A20R214	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R216	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R218	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R220	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R222	315−0475−00			RES,FXD,FILM:4.7M OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R224	315−0473−00			RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R226	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R228	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A20R230	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A20RT100	307−1496−00			RES,THERMAL:8 OHM,15%	S5011	ORDER BY DESC
A20T100	120−1679−00			TRANSFORMER,RF:HIGH VOLTAGE	80009	120167900
A20TP200	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A20TP300	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A20TP400	214−0579−00			TERM,TEST POINT:PCB,TEST POINT;EYELET	0J260	ORDER BY DESC
A20U100	119−1684−01			MULTIPLIER,HV:2X,W/DC RESTORER	80009	119168401
A20U200	156−1422−00			MICROCKT,LINEAR:DUAL OPNL AMPL	80009	156142200
A20U300	119−2162−01			HV MODULER:2KV INPUT,12KV OUTPUT	80009	119216201
A20VR200	152−0286−00			DIODE,ZENER:,;75V,5%,0.4W	04713	SZG35009K16 1N9
A20VR202	152−0265−00			DIODE,ZENER:,;24V,5%,0.4W	04713	1N970BRL

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A22	671−1182−XX			CIRCUIT BD ASSY:INTERFACE	80009	6711182XX
A22C100	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C120	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C140	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C220	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C240	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C300	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C320	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C340	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C360	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C400	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C440	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C460	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A22C500	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A22C520	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A22C540	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A22FL200	119−1762−00			FILTER,RFI:0.022UF,+50/−20%,50VW/FERRITE	80009	119176200
A22FL500	119−1762−00			FILTER,RFI:0.022UF,+50/−20%,50VW/FERRITE	80009	119176200
A22FL520	119−1762−00			FILTER,RFI:0.022UF,+50/−20%,50VW/FERRITE	80009	119176200
A22FL540	119−1762−00			FILTER,RFI:0.022UF,+50/−20%,50VW/FERRITE	80009	119176200
A22J350	131−3652−00			CONN,RCPT,ELEC:CKT,BD,24 PIN,FEMALE	80009	131365200
A22J450	131−3652−00			CONN,RCPT,ELEC:CKT,BD,24 PIN,FEMALE	80009	131365200
A22R102	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R104	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R112	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R114	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R120	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A22R121	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R122	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R123	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R124	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R125	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R126	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R140	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A22R141	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R142	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R143	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R144	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R145	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R146	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A22R147	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R148	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R200	315−0101−00			RES,FXD,FILM:100 OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R300	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R302	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A22R320	307−0881−00			RES NTWK,FXD,FI:8,10K OHM,10%,0.125W	91637	CSC09A01−103G
A22R340	307−0881−00			RES NTWK,FXD,FI:8,10K OHM,10%,0.125W	91637	CSC09A01−103G
A22R360	307−0923−00			RES NTWK,FXD,FI:(8)330K OHM,5%,0.125W	80009	307092300
A22R440	307−0881−00			RES NTWK,FXD,FI:8,10K OHM,10%,0.125W	91637	CSC09A01−103G
A22R460	307−0881−00			RES NTWK,FXD,FI:8,10K OHM,10%,0.125W	91637	CSC09A01−103G
A22R550	315−0100−00			RES,FXD,FILM:10 OHM,5%,0.25W	TK1727	SFR25 2322−182
A22S360	260−2326−00			SWITCH,TOGGLE:DTS−6H	80009	260232600
A22U100	156−2828−00			IC,DIGITAL:HCMOS,BUFFER;OCTAL	80009	156282800
A22U120	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A22U140	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A22U200	119−2313−00			OSCILLATOR:4MHZ,CRYSTAL	80009	119231300
A22U220	156−2825−00			IC,DIGITAL:HCMOS,DEMUX/DECODER	80009	156282500
A22U240	156−2026−00			IC,DIGITAL:HCMOS,GATE;QUAD 2−INPUT NOR	04713	MC74HC02AN
A22U300	156−1444−01			IC,PROCESSOR:NMOS,CONTROLLER	80009	156144401
A22U320	156−1414−00			IC,DIGITAL:LSTTL,TRANSCEIVER;OCTAL	01295	SN75160BN
A22U340	156−1415−00			IC,DIGITAL:LSTTL,TRANSCEIVER;OCTAL	01295	SN75161BN
A22U360	156−2300−00			IC,DIGITAL:HCMOS,TRANSCEIVER;OCTAL	80009	156230000
A22U400	156−1444−01			IC,PROCESSOR:NMOS,CONTROLLER	80009	156144401
A22U440	156−1415−00			IC,DIGITAL:LSTTL,TRANSCEIVER;OCTAL	01295	SN75161BN
A22U460	156−1414−00			IC,DIGITAL:LSTTL,TRANSCEIVER;OCTAL	01295	SN75160BN
A22W220	174−0295−00			CA ASSY,SP,ELEC:26,28 AWG,11.0 L,RIBBON	80009	174029500

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A24	119−3456−XX			FLOPPY DISK UNI:3.5 INCH W/INTERFACE	80009	1193456XX

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A25	671−0229−XX			CIRCUIT BD ASSY:MAIN POWER SUPPLY	80009	6710229XX
A25C100	290−1136−00			CAP,FXD,ELCTLT:6800UF,20%,16V	80009	290113600
A25C102	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A25C104	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A25C120	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A25C132	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A25C134	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A25C150	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A25C200	290−1136−00			CAP,FXD,ELCTLT:6800UF,20%,16V	80009	290113600
A25C232	281−0812−00			CAP,FXD,CERAMIC:MLC;1000PF,10%,100V	04222	SA101C102KAA
A25C234	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A25C300	290−1189−00			CAP,FXD,ELCTLT:4700UF,20%,25V	S0293	ECEA1EU472
A25C302	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A25C400	290−1189−00			CAP,FXD,ELCTLT:4700UF,20%,25V	S0293	ECEA1EU472
A25C402	290−0779−00			CAP,FXD,ALUM:;10UF,20%,100V,.562 X 0.351	62643	511D106M100BB4D
A25C404	290−1142−00			CAP,FXD,ELCTLT:100UF,20%,25V	80009	290114200
A25C500	290−1141−00			CAP,FXD,ELCTLT:220UF,20%,100V	80009	290114100
A25C502	290−1141−00			CAP,FXD,ELCTLT:220UF,20%,100V	80009	290114100
A25C562	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A25C571	281−0775−00			CAP,FXD,CERAMIC:MLC;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A25CR100	152−1119−00			SEMICOND DVC,DI:RECT,SI,100V,10A	80009	152111900
A25CR102	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A25CR130	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A25CR200	152−1120−00			SEMICOND DVC,DI:RECT,SI,100V,10A	80009	152112000
A25CR230	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A25CR300	152−1119−00			SEMICOND DVC,DI:RECT,SI,100V,10A	80009	152111900
A25CR302	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A25CR400	152−1120−00			SEMICOND DVC,DI:RECT,SI,100V,10A	80009	152112000
A25CR402	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A25CR500	152−0931−00			SEMICOND DVC,DI:BRIDGE,1.5A,200V	80009	152093100
A25CR560	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A25CR562	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A25CR570	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A25CR572	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A25CR600	152−0832−00			SEMICOND DVC,DI:SW,SI,50V,0.12A,DO−34	80009	152083200
A25J72	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A25J190	131−3668−00			CONN,RCPT,ELEC:CKT BD,4 PIN	80009	131366800
A25J192	131−3658−00			CONN,PLUG,ELEC:HEADER,16 PIN	80009	131365800
A25J194	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A25J250	131−3670−00			CONN,RCPT,ELEC:CKT BD,9 PIN	80009	131367000

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A25J252	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A25J280	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A25J290	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A25Q130	151−0562−00			TRANSISTOR:PNP,SI,PWR	80009	151056200
A25Q230	151−0561−00			TRANSISTOR:NPN,SI,PWR	80009	151056100
A25Q600	151−0561−00			TRANSISTOR:NPN,SI,PWR	80009	151056100
A25Q602	151−0188−00			TRANSISTOR,SIG:BIPOLAR,PNP;40V,200MA	04713	2N3906
A25R100	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R102	315−0124−00			RES,FXD,FILM:120K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R130	315−0151−00			RES,FXD,FILM:150 OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R132	315−0201−00			RES,FXD,FILM:200 OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R134	321−0260−00			RES,FXD,FILM:4.99K OHM,1%,0.125W,TC=T0	19701	5033ED4K990F
A25R136	321−0280−00			RES,FXD,FILM:8.06K OHM,1%,0.125W,TC=T0	19701	5033ED8K060F
A25R150	315−0100−00			RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322−182
A25R200	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R230	315−0151−00			RES,FXD,FILM:150 OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R232	315−0201−00			RES,FXD,FILM:200 OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R234	321−0300−00			RES,FXD,FILM:13.0K OHM,1%,0.125W,TC=T0	19701	5043ED13K00F
A25R236	321−0260−00			RES,FXD,FILM:4.99K OHM,1%,0.125W,TC=T0	19701	5033ED4K990F
A25R300	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R400	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R500	311−2328−00			RES,VAR,NONWW:500 OHM,20%,0.5W	80009	311232800
A25R501	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R502	321−1216−03			RES,FXD,FILM:1.76K OHM,0.25%,0.125W,TC=T2	19701	5033RC1K760C
A25R504	321−0962−03			RES,FXD,FILM:8K OHM,0.25%,0.125W,TC=T2	TK1727	MPR24−2322−141
A25R506	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R508	315−0471−00			RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R510	315−0472−00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R512	321−0281−00			RES,FXD,FILM:8.25K OHM,1%,0.125W,TC=T0	TK1727	2322−151−8K25
A25R514	321−0289−00			RES,FXD,FILM:10.0K OHM,1%,0.125W,TC=T0	19701	5043ED10K00F
A25R516	311−2328−00			RES,VAR,NONWW:500 OHM,20%,0.5W	80009	311232800
A25R560	315−0154−00			RES,FXD,FILM:150K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R562	315−0154−00			RES,FXD,FILM:150K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R564	315−0103−00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R570	315−0752−00			RES,FXD,FILM:7.5K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R571	315−0202−00			RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R574	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R576	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R600	315−0511−00			RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322−181
A25R604	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A25R606	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A25TP100	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A25TP130	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A25TP150	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A25TP230	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A25TP300	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A25TP400	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A25TP500	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A25TP510	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A25U100	156−2831−00			MICROCKT,LINEAR:VOLTAGE REG,+5V STR9005	80009	156283100
A25U120	156−1173−00			IC,LINEAR:BIPOLAR,VOLTAGE REFERENCE	04713	MC1403U
A25U130	156−1771−00			MICROCKT,LINEAR:DUAL OP−AMP	80009	156177100
A25U300	156−2830−00			MICROCKT,LINEAR:VOLTAGE REG,+12V	80009	156283000
A25U400	156−0872−03			MICROCKT,LINEAR:VOLTAGE REGULATOR	80009	156087203
A25U500	156−1771−00			MICROCKT,LINEAR:DUAL OP−AMP	80009	156177100
A25U560	156−1778−00			MICROCKT,LINEAR:DUAL COMPARATOR	80009	156177800

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A26	671−0228−XX			CIRCUIT BD ASSY:COLLECTOR PWR SPLY	TK0191	ORDER BY DESC
A26C710	290−0922−00			CAP,FXD,ALUM:;1000UF,20%,50V,16 X 25MM	55680	UVX1J102MHA
A26C712	290−1009−00	J300000	J300531	CAP,FXD,ELCTLT:10UF,160V	80009	290100900
A26C712	290−0821−00	J300532		CAP,FXD,ELCTLT:10UF,+50−10%,160V	80009	290082100
A26C720	290−0922−00			CAP,FXD,ALUM:;1000UF,20%,50V,16 X 25MM	55680	UVX1J102MHA
A26C722	290−1009−00	J300000	J300531	CAP,FXD,ELCTLT:10UF,160V	80009	290100900
A26C722	290−0821−00	J300532		CAP,FXD,ELCTLT:10UF,+50−10%,160V	80009	290082100
A26C750	290−1007−00			CAP,FXD,ELCTLT:22UF,20%,16V	80009	290100700
A26CR710	152−1020−00			SEMICOND DVC,DI:RECT,SI,4A,400V	TK0BY	RB−404
A26CR720	152−1020−00			SEMICOND DVC,DI:RECT,SI,4A,400V	TK0BY	RB−404
A26CR730	152−1020−00			SEMICOND DVC,DI:RECT,SI,4A,400V	TK0BY	RB−404
A26J64	131−3668−00			CONN,RCPT,ELEC:CKT BD,4 PIN	80009	131366800
A26J260	131−3670−00			CONN,RCPT,ELEC:CKT BD,9 PIN	80009	131367000
A26J262	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A26R710	315−0513−00			RES,FXD,FILM:51K OHM,5%,0.25W	TK1727	SFR25 2322−181
A26R712	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A26R720	315−0513−00			RES,FXD,FILM:51K OHM,5%,0.25W	TK1727	SFR25 2322−181
A26R722	315−0104−00			RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322−181
A26R730	315−0100−00			RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322−182
A26R750	315−0203−00			RES,FXD,FILM:20K OHM,5%,0.25W	TK1727	SFR25 2322−181
A26R752	315−0512−00			RES,FXD,FILM:5.1K OHM,5%,0.25W	TK1727	SFR25 2322−181
A26U750	156−3203−00			MICROCKT,LINEAR:VOLTAGE REGULATOR	TK0CI	MAX611CP

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A27	671−0227−XX			CIRCUIT BD ASSY:PRIMARY	TK0191	ORDER BY DESC
A27C100	285−1377−00			CAP,FXD,PLASTIC:0.22UF,20%,250V	80009	285137700
A27C110	285−1377−00			CAP,FXD,PLASTIC:0.22UF,20%,250V	80009	285137700
A27C200	285−1438−00			CAP,FXD,PLASTIC:1UF,20%,250V	TK00I	ECQ−U2A−105MT
A27C220	285−1377−00			CAP,FXD,PLASTIC:0.22UF,20%,250V	80009	285137700
A27E100	307−1324−00			RES,V SENSITIVE:240VDC,0.8W	80009	307132400
A27E200	307−1324−00			RES,V SENSITIVE:240VDC,0.8W	80009	307132400
A27J100	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A27J120	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A27J200	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A27J240	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A27J270	131−3667−00			CONN,RCPT,ELEC:CKT BD,3 PIN	80009	131366700
A27J272	131−3666−00			CONN,RCPT,ELEC:CKT BD,2 PIN	80009	131366600
A27J274	131−4111−00			CONN,RCPT,ELEC:HEADER,1 X 5	TK0CG	00−9090−0501−16
A27J276	131−4111−00			CONN,RCPT,ELEC:HEADER,1 X 5	TK0CG	00−9090−0501−16
A27P100	174−1009−00			CA ASSY,SP,ELEC:1,22 AWG,3.0 L	80009	174100900

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A28	670−9324−XX			CIRCUIT BD ASSY:LAMP(R)	80009	6709324XX
A28DS100	150−0097−00			LAMP,INCAND:6.3V,0.2A,#7381,WIRE LEADS	S3774	0L381BP
A28DS102	150−0097−00			LAMP,INCAND:6.3V,0.2A,#7381,WIRE LEADS	S3774	0L381BP
A28DS104	150−0097−00			LAMP,INCAND:6.3V,0.2A,#7381,WIRE LEADS	S3774	0L381BP
A28W280	174−0313−00			CA ASSY,SP,ELEC:2,26 AWG,30.0 L,RIBBON	80009	174031300

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A29	670−9324−XX			CIRCUIT BD ASSY:LAMP(L)	80009	6709324XX
A29DS100	150−0097−00			LAMP,INCAND:6.3V,0.2A,#7381,WIRE LEADS	S3774	0L381BP
A29DS102	150−0097−00			LAMP,INCAND:6.3V,0.2A,#7381,WIRE LEADS	S3774	0L381BP
A29DS104	150−0097−00			LAMP,INCAND:6.3V,0.2A,#7381,WIRE LEADS	S3774	0L381BP
A29W290	174−0312−00			CA ASSY,SP,ELEC:2,26 AWG,22.0 L,RIBBON	80009	174031200

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A30	671−0305−XX			CIRCUIT BD ASSY:CONNECTOR	80009	6710305XX
A30C710	283−0002−00			CAP,FXD,CER DI:0.01UF,+80−20%,500V	59660	811−590−Z5UO−10
A30E100	119−0181−00			ARSR,ELEC SURGE:230V, +/−15%	0C8T6	BBS−230V +/−15%
A30E200	119−0181−00			ARSR,ELEC SURGE:230V, +/−15%	0C8T6	BBS−230V +/−15%
A30E300	119−0181−00			ARSR,ELEC SURGE:230V, +/−15%	0C8T6	BBS−230V +/−15%
A30J30	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A30J40	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A30J530	131−0589−00			TERMINAL,PIN:PRESSFIT/PCB,;MALE,STR	22526	48283−087
A30W622	174−0991−00			CA ASSY,SP,ELEC:6,26 AWG,23.6 L,RIBBON	TK0191	ORDER BY DESC
A30W632	174−0993−00			CA ASSY,SP,ELEC:6,26 AWG,23.6 L,RIBBON	TK0191	ORDER BY DESC

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
A31	671−0306−XX			CIRCUIT BD ASSY:RELAY	80009	6710306XX
A31CR950	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A31CR955	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A31CR960	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A31CR970	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A31CR975	152−0935−00			SEMICOND DVC,DI:SI,1.0A,280V	80009	152093500
A31J695	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A31J914	131−0608−00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR	22526	48283−018
A31J920	131−4216−00			CONN,RCPT,ELEC:PWR,FEMALE,15A	80009	131421600
A31J921	131−4216−00			CONN,RCPT,ELEC:PWR,FEMALE,15A	80009	131421600
A31J922	131−4216−00			CONN,RCPT,ELEC:PWR,FEMALE,15A	80009	131421600
A31J924	131−4216−00			CONN,RCPT,ELEC:PWR,FEMALE,15A	80009	131421600
A31J926	131−4216−00			CONN,RCPT,ELEC:PWR,FEMALE,15A	80009	131421600
A31J928	131−4216−00			CONN,RCPT,ELEC:PWR,FEMALE,15A	80009	131421600
A31J932	131−4216−00			CONN,RCPT,ELEC:PWR,FEMALE,15A	80009	131421600
A31J934	131−4216−00			CONN,RCPT,ELEC:PWR,FEMALE,15A	80009	131421600
A31K950	148−0210−00	J300000	J300593	RELAY,ARM:1 FORM A,250V,30A,COIL 12VDC	S0293	AR52119
A31K950	148−0210−02	J300594		RELAY,ARM:1 FORM A,250V,30A,COIL 12VDC	80009	148021002
A31K955	148−0210−00	J300000	J300593	RELAY,ARM:1 FORM A,250V,30A,COIL 12VDC	S0293	AR52119
A31K955	148−0210−02	J300594		RELAY,ARM:1 FORM A,250V,30A,COIL 12VDC	80009	148021002
A31K960	148−0210−00	J300000	J300593	RELAY,ARM:1 FORM A,250V,30A,COIL 12VDC	S0293	AR52119
A31K960	148−0210−02	J300594		RELAY,ARM:1 FORM A,250V,30A,COIL 12VDC	80009	148021002
A31K970	148−0210−00	J300000	J300593	RELAY,ARM:1 FORM A,250V,30A,COIL 12VDC	S0293	AR52119
A31K970	148−0210−02	J300594		RELAY,ARM:1 FORM A,250V,30A,COIL 12VDC	80009	148021002
A31K975	148−0210−00	J300000	J300593	RELAY,ARM:1 FORM A,250V,30A,COIL 12VDC	S0293	AR52119
A31K975	148−0210−02	J300594		RELAY,ARM:1 FORM A,250V,30A,COIL 12VDC	80009	148021002
A31R970	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181

Replaceable Electrical Parts

Component Number	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Name & Description	Mfr. Code	Mfr. Part No.
B100	119−3674−00	J300000	J300484	FAN,TUBEAXIAL:115 VAC,240MA,19W,2650 RPM	80009	119367400
B100	119−2310−01	J300485		FAN,TUBEXIAL:115VAC,230MA,16W,2650RPM	80009	119231001
C900	285−1423−00			CAP,FXD,PLASTIC:0.01UF,20%,250V	80009	285142300
DS140	150−1180−00	J300000	J300459	LT EMITTING DIO:RED	80009	150118000
DS140	150−1176−00	J300460		LT EMITTING DIO:RED	80009	150117600
F100	159−0238−00			FUSE,CARTRIDGE:3AG,2A,250V,SLOW	80009	159023800
F100	159−0291−00			FUSE,CARTRIDGE:4A,250V,SLOW BLOW	80009	159029100
F200	159−0238−00			FUSE,CARTRIDGE:3AG,2A,250V,SLOW	80009	159023800
F200	159−0022−01	J300000	J300440	FUSE,CARTRIDGE:3AG,1A,250V,FAST BLOW	80009	159002201
F200	159−0019−00	J300441		FUSE,CARTRIDGE:3AG,1A,250V,SLOW BLOW	71400	MDL 1
FL100	119−2683−00			FILTER,RFI:50/60HZ,250VAC,6A	TK2058	ZUB2206H−F
J700	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J702	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J704	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J706	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J708	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J710	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J712	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J714	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J716	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J718	136−0934−00			SOCKET,PIN TERM:0.16 DIA,RED	TK0BW	SLB4−F6.3−1
J720	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1002	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1004	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1008	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1010	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1012	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1014	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1016	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1018	136−0934−00			SOCKET,PIN TERM:0.16 DIA,RED	TK0BW	SLB4−F6.3−1
J1100	136−0934−00			SOCKET,PIN TERM:0.16 DIA,RED	TK0BW	SLB4−F6.3−1
J1102	136−0934−00			SOCKET,PIN TERM:0.16 DIA,RED	TK0BW	SLB4−F6.3−1
J1104	136−0934−00			SOCKET,PIN TERM:0.16 DIA,RED	TK0BW	SLB4−F6.3−1
J1106	136−0934−00			SOCKET,PIN TERM:0.16 DIA,RED	TK0BW	SLB4−F6.3−1
J1108	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1110	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1112	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1114	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1116	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1118	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
J1120	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1122	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
J1124	136−0933−00			SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
L100	108−1345−01			COIL,TUBE DEFL:TRACE ROTATION	80009	108134501
L120	108−1347−01			COIL,TUBE DEFL:Y−AXIS ALIGNMENT	80009	108134701
Q902	151−0896−00			TRANSISTOR:N−CHANNEL,100A,300W	TK00L	MG100H1BS1
Q910	151−1240−00		J310150	TRANSISTOR:MOSFET,PWR,50A,310W	S0319	FM50DZ−9
Q910	151−0995−00	J310151		TRANSISTOR:PWR,MOSFET,N−CH;75A,500W;P2H M755HA NIHON INTER/ TKY−1616	TK0191	P2HM755HA
Q920	151−1240−00		J310150	TRANSISTOR:MOSFET,PWR,50A,310W	S0319	FM50DZ−9
Q920	151−0995−00	J310151		TRANSISTOR:PWR,MOSFET,N−CH;75A,500W;P2H M755HA NIHON INTER/ TKY−1616	TK0191	P2HM755HA
Q930	151−1240−00		J310150	TRANSISTOR:MOSFET,PWR,50A,310W	S0319	FM50DZ−9
Q930	151−0995−00	J310151		TRANSISTOR:PWR,MOSFET,N−CH;75A,500W;P2H M755HA NIHON INTER/ TKY−1616	TK0191	P2HM755HA
Q940	151−1240−00		J310150	TRANSISTOR:MOSFET,PWR,50A,310W	S0319	FM50DZ−9
Q940	151−0995−00	J310151		TRANSISTOR:PWR,MOSFET,N−CH;75A,500W;P2H M755HA NIHON INTER/ TKY−1616	TK0191	P2HM755HA
−−−−	050−3414−00			PARTS REPLACEMENT KIT: FOR J310150 AND BELOW; INCLUDING Q910, Q920, Q930, Q940, BUS CONDUCTORS, WIRE KIT AND INSTRUCTIONS TKY−1616	TK0191	0503414XX
R100	308−0922−00			RES,FXD,WW:0.01 OHM,0.1%,8W	TK0AE	RHF−75ML0.01B
R626	311−1624−00			RES,VAR,NONWW:10K OHM,10%,0.25W	80009	311162400
R800	307−1372−00			RES,FXD,FILM:75K OHM,60W	TK0CH	STC−010−00
R940	308−0933−00			RES,FXD,WW:4.7 OHM,2%,8W	80009	308093300
R950	308−0926−00			RES,FXD,WW:0.675 OHM,2%,8W	TK0AE	RHF−25ML0.675G
R960	308−0925−01			RES,FXD,WW:0.04 OHM,2%,12W	80009	308092501
R1100	315−0102−00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322−181
S92	260−2332−01			SWITCH,THRMSTC:NC,OPEN 70 DEG C,3A,250V	S3385	ORDER BY DESC
S100	260−2323−00			SWITCH,PUSH:DPST,15A,250V,ON/OFF	80009	260232300
S140	260−2497−02			SWITCH,ROTARY:ENCODER	80009	260249702
S526	260−2156−00			SWITCH,KEY:SPST	80009	260215600
S600	260−2324−00			SW,SENSITIVE:SPDT,3A,250VAC,INTERLOCK	80009	260232400
S602	260−2324−00			SW,SENSITIVE:SPDT,3A,250VAC,INTERLOCK	80009	260232400
S800	260−2379−00			CIRCUIT BREAKER:1A,250V	TK0BY	T11−1RE−4−4−1.0
S900	260−2391−00			CIRCUIT BREAKER:3A,250V	TK0BY	T11−1RE−4−4−3.0
S904	260−2332−01			SWITCH,THRMSTC:NC,OPEN 70 DEG C,3A,250V	S3385	ORDER BY DESC
S906	260−2332−00			SWITCH,THRMSTC:NC,60 OPEN,3A,250V	80009	260233200
S1000	260−2324−00			SW,SENSITIVE:SPDT,3A,250VAC,INTERLOCK	80009	260232400
S1002	260−2324−00			SW,SENSITIVE:SPDT,3A,250VAC,INTERLOCK	80009	260232400
S1004	260−2324−00			SW,SENSITIVE:SPDT,3A,250VAC,INTERLOCK	80009	260232400
T100	120−1756−00			XFMR,PWR,STPDN:MAIN POWER	TK0BZ	STT−047−00

Component Number	Tektronix Part No.	Serial No. Effective	Dscont	Name & Description	Mfr. Code	Mfr. Part No.
T200	120−1755−01			XFMR,PWR,STU:CMOS,CLK GEN & READY INTFC	TK0FY	ORDER BY DESC
T800	120−1757−00			XFMR,PWR,STU:HIGH VOLTAGE	TK0BZ	STT0045−00
U800	119−2682−01			MODULE:HIGH VOL,W/3 RELAY	S5218	ORDER BY DESC
V100	154−0928−00			ELECTRON TUBE:CRT,P31,INT SCALE	80009	154092800
W14	196−3099−00			LEAD,ELECTRICAL:24 AWG,10.0 L	80009	196309900
W16	198−5667−01			WIRE SET,ELEC:LINE FILTER,371/371A	80009	198566701
W17	196−3112−01			LEAD,ELECTRICAL:18 AWG,6.0 L,5−4	80009	196311201
W18	198−5667−01			WIRE SET,ELEC:LINE FILTER,371/371A	80009	198566701
W20	196−3189−00			LEAD,ELECTRICAL:18 AWG,5.0 L,8−02	TK0191	ORDER BY DESC
W30	174−0981−00			CA ASSY,SP,ELEC:2,26 AWG,2.0 L,RIBBON	TK0191	ORDER BY DESC
W40	174−0981−00			CA ASSY,SP,ELEC:2,26 AWG,2.0 L,RIBBON	TK0191	ORDER BY DESC
W66	174−0304−00			CA ASSY,SP,ELEC:2,26 AWG,6.0 L,RIBBON	80009	174030400
W72	174−0982−00			CA ASSY,SP,ELEC:10,22 AWG,21.7 L	TK0191	ORDER BY DESC
W140	174−1693−00			CA ASSY,SP,ELEC:34,28 AWG,130.0 L,RIBBON	80009	174169300
W142	174−2302−00			CA ASSY,SP,ELEC:7,26 AWG,30CM L,RIBBON	80009	174230200
W146	174−0985−00			CA ASSY,SP,ELEC:5,26 AWG,7.8 L,RIBBON	TK0191	ORDER BY DESC
W180	174−0314−00			CA ASSY,SP,ELEC:9,26 AWG,7.5 L,RIBBON	80009	174031400
W182	174−0309−00			CA ASSY,SP,ELEC:10,22 AWG,5.0 L,RIBBON	80009	174030900
W190	174−0328−00			CA ASSY,SP,ELEC:4,18 AWG,15.5 L	80009	174032800
W194	174−0308−00			CA ASSY,SP,ELEC:6,22 AWG,20.0 L,RIBBON	80009	174030800
W270	174−0986−00			CA ASSY,SP,ELEC:3,18 AWG,10.0 L	TK0191	ORDER BY DESC
W272	161−0257−01	J300000	J300484	CABLE ASSY,PWR,:125V,1A.200MM L	80009	161025701
W400	174−0296−00			CA ASSY,SP,ELEC:34,28 AWG,5.5 L,RIBBON	80009	174029600
W410	198−5749−00			WIRE SET,ELEC:371A W/D−SUB 50 CONT,FEMALE	80009	198574900
W610	198−5750−00			WIRE SET,ELEC:371A W/D−SUB 50 CONT,MALE	80009	198575000
W617	174−0989−00			CA ASSY,SP,ELEC:2,26 AWG,15.7 L,RIBBON	TK0191	ORDER BY DESC
W618	174−0989−00			CA ASSY,SP,ELEC:2,26 AWG,15.7 L,RIBBON	TK0191	ORDER BY DESC
W626	174−0992−00			CA ASSY,SP,ELEC:3,26 AWG,8.6 L,RIBBON	TK0191	ORDER BY DESC
W690	174−0994−00			CA ASSY,SP,ELEC:6,26 AWG,15.7 L,RIBBON	TK0191	ORDER BY DESC
W695	174−0995−00			CA ASSY,SP,ELEC:7,26 AWG,20.0 L,RIBBON	TK0191	ORDER BY DESC
W706	198−5616−00			WIRE SET,ELEC:371	TK0191	ORDER BY DESC
W802	174−1146−00			CA ASSY,SP,ELEC:2,18 AWG,20 L,8−01 & 8−02	80009	174114600
W902	174−0996−00			CA ASSY,SP,ELEC:3,22 AWG,7.0 L	TK0191	ORDER BY DESC
W904	174−0997−00			CA ASSY,SP,ELEC:2,12 AWG,4.7 L	TK0191	ORDER BY DESC
W906	174−0998−00			CA ASSY,SP,ELEC:4,26 AWG,13.3 L,RIBBON	TK0191	ORDER BY DESC
W912	174−0999−00			CA ASSY,SP,ELEC:9,26 AWG,6.7 L,RIBBON	TK0191	ORDER BY DESC
W914	174−1000−00			CA ASSY,SP,ELEC:3,26 AWG,7.0 L,RIBBON	TK0191	ORDER BY DESC
W920	198−5616−00			WIRE SET,ELEC:371	TK0191	ORDER BY DESC
W1000	198−5627−00			WIRE SET,ELEC:371	TK0BD	ORDER BY DESC

Diagrams and Component Location Illustrations

Schematic Diagrams and Circuit Board Illustrations

Symbols

Graphic symbols and class designation letters are based on ANSI Standard Y32.2-1975.

Logic symbology is based on ANSI/IEEE Std 91-1984 in terms of positive logic. Logic symbols depict the logic function performed and may differ from the manufacturer's data.

The overline on a signal name indicates that the signal performs its intended function when it is in the low state.

Abbreviations are based on ANSI Y1.1-1972.

Other ANSI standards that are used in the preparation of diagrams by Tektronix, Inc. are:

Y14.15, 1966	Drafting Practices.
Y14.2, 1973	Line Conventions and Lettering.
Y10.5, 1968	Letter Symbols for Quantities Used in Electrical Science and Electrical Engineering.

American National Standard Institute
1430 Broadway
New York, New York 10018

Component Values

Electrical components shown on the diagrams are in the following units unless noted otherwise:

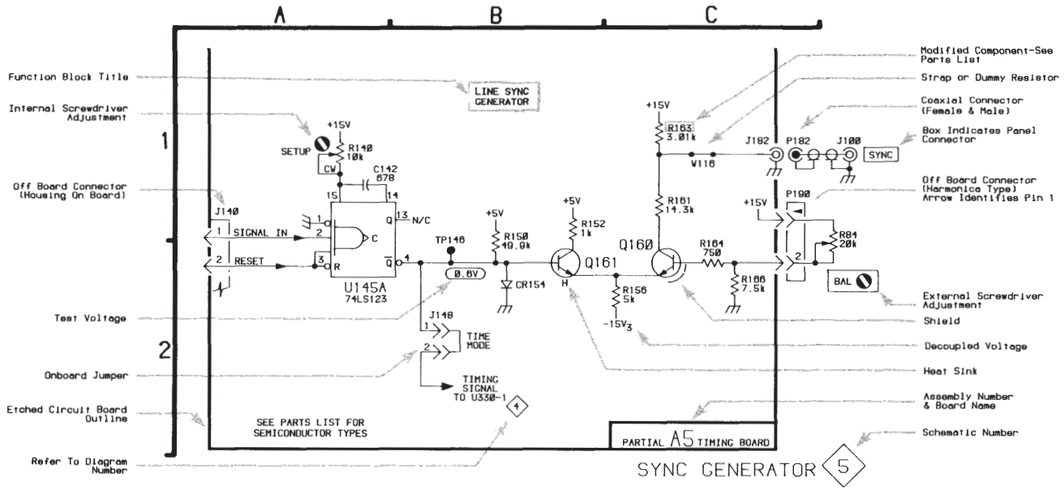
Capacitors =	Values one or greater are in picofarads (pF). Values less than one are in microfarads (µF).
Resistors =	Ohms (Ω).

The information and special symbols below may appear in this manual.

Assembly Numbers and Grid Coordinates

Each assembly in the instrument is assigned an assembly number (e.g., A20). The assembly number appears on the circuit board outline on the diagram, in the title for the circuit board component location illustration, and in the lookup table for the schematic diagram and corresponding component locator illustration. The Replaceable Electrical Parts list is arranged by assemblies in numerical sequence; the components are listed by component number.

The schematic diagram and circuit board component location illustration have grids. A lookup table with the grid coordinates is provided for ease of locating the component. Only the components illustrated on the following diagram are listed in the lookup table. When more than one schematic diagram is used to illustrate the circuitry on a circuit board, the circuit board illustration may only appear previous to the first diagram on which it was illustrated; the lookup table will list the diagram number of other diagrams that the circuitry of the circuit board appears on.



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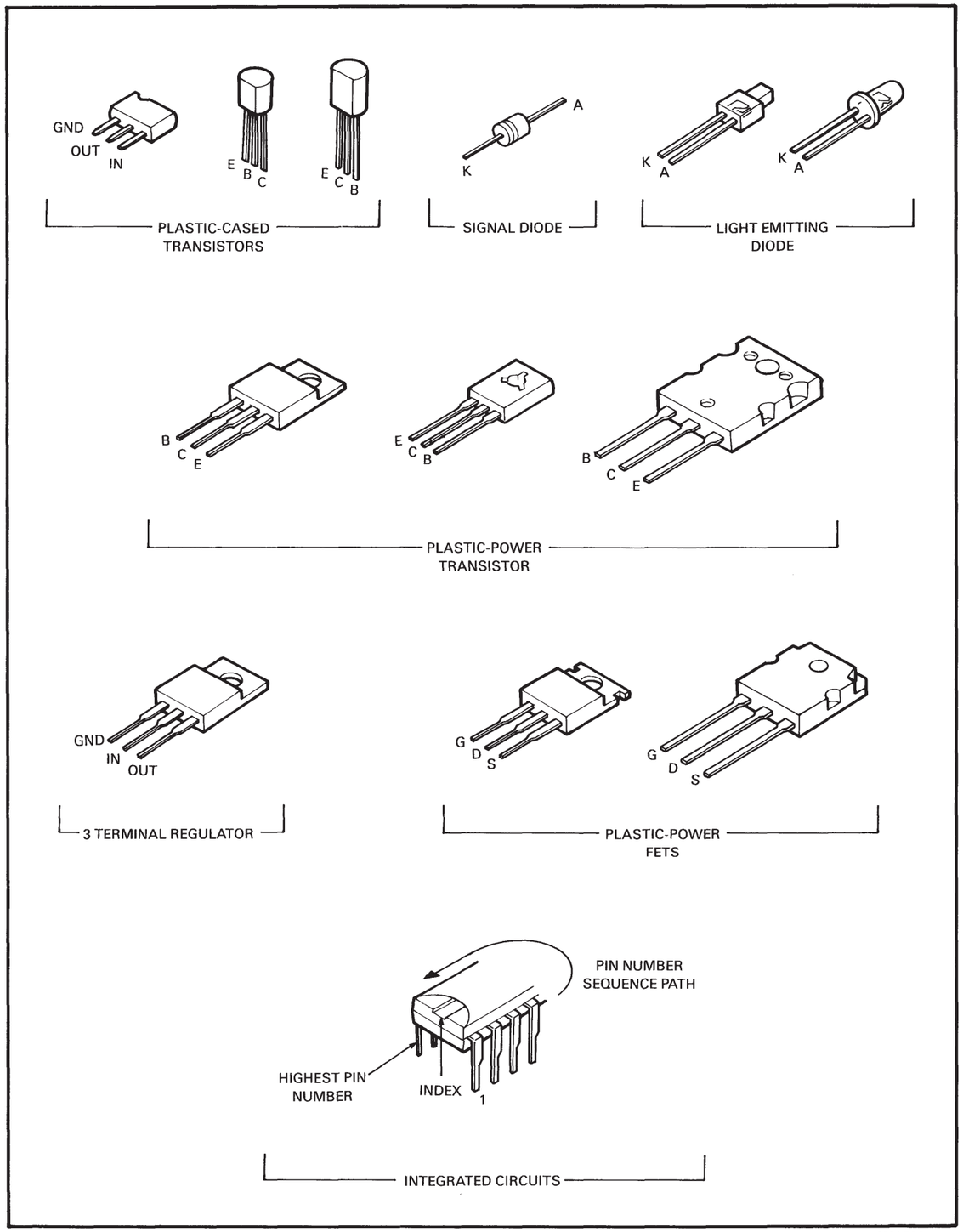
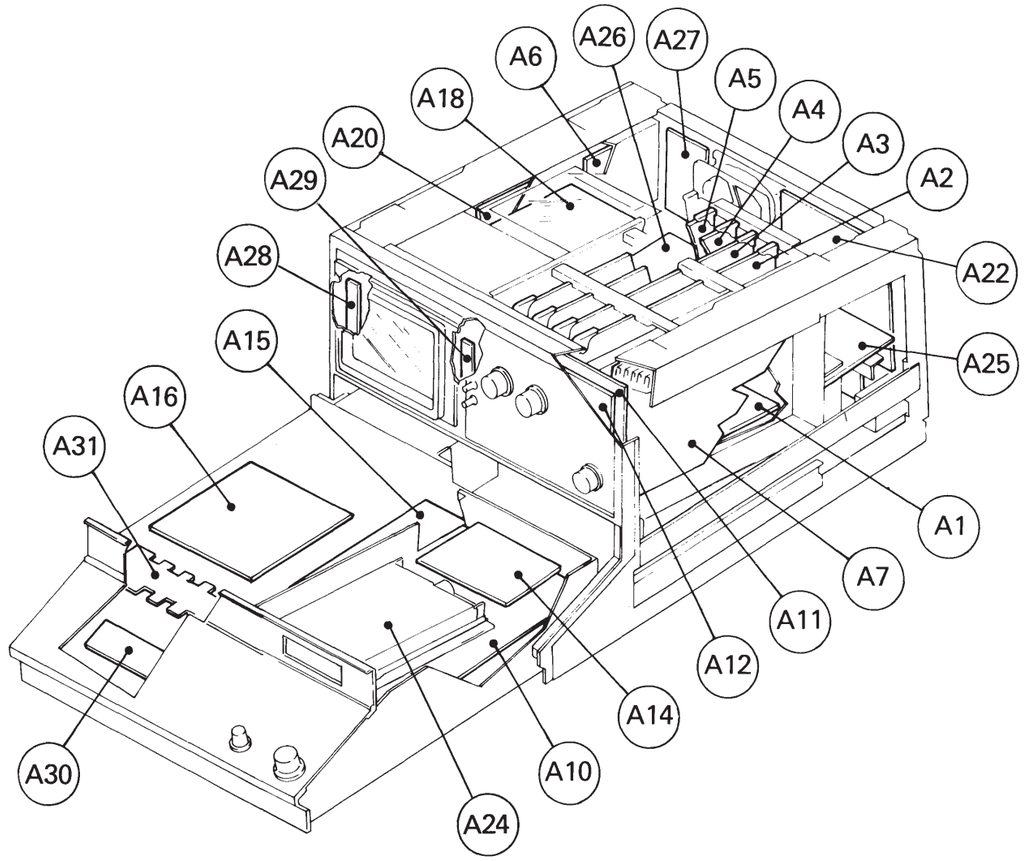


6804-700

Figure 7–1. Semiconductor Lead Configurations.

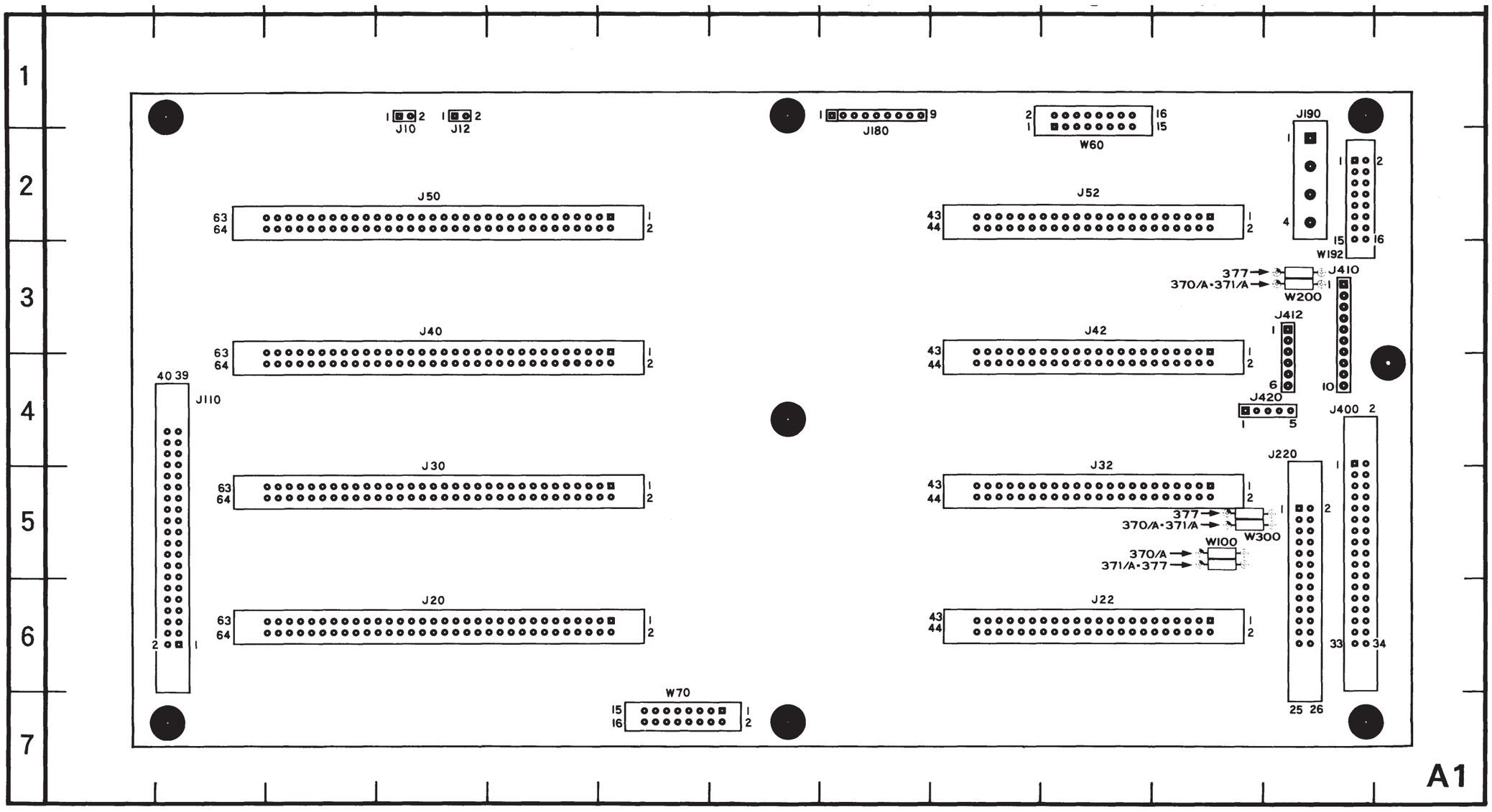


	Name	Diagram Number		Name	Diagram number
A1	Mother	1,10	A27	Primary	25
A2	CPU	2,3	A28	Lamp	25
A3	A/D	4,5,6	A29	Lamp	25
A4	Digital Display	7,8	A30	Connector	27
A5	Display Control	9,10	A31	Relay	27
A6	Collector Supply Output	11	CRT		23
A7	Step Generator	12,13	Fan		25,28
A10	Sense	14,15,16	FET High Current Drives		27
A11	Main Key	17,18	HV Output Module		16,29
A12	Sub Key	18,17	HV Resistors		16,29
A14	Lower Key & FDD	19a,19b	HV Transformer T800		16,29
A15	High Current Power Supply	20	Mains Power		25,28
A16	High Current Control	21	Patch Panel		27
A18	CRT Output	22	Primary Transformer T100		25
A20	H.V. Regulator	23	Primary Transformer T200		25,11
A22	Interface	24	Sense Resistor		27
A24	Floppy Disk Drive Assembly	19b	Test Fixture		27
A25	Main Power Supply	25	Thermal switches		27
A26	Collector Power Supply	11			

8044-31

Figure 7–2. Circuit Board Locator.

Please cut out the aria below the lines.

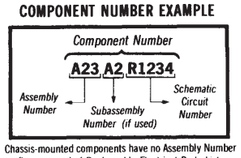


8044-32

Figure 7–3. A1—Mother circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Please cut out the aria below the lines.

MOTHER BOARD 1

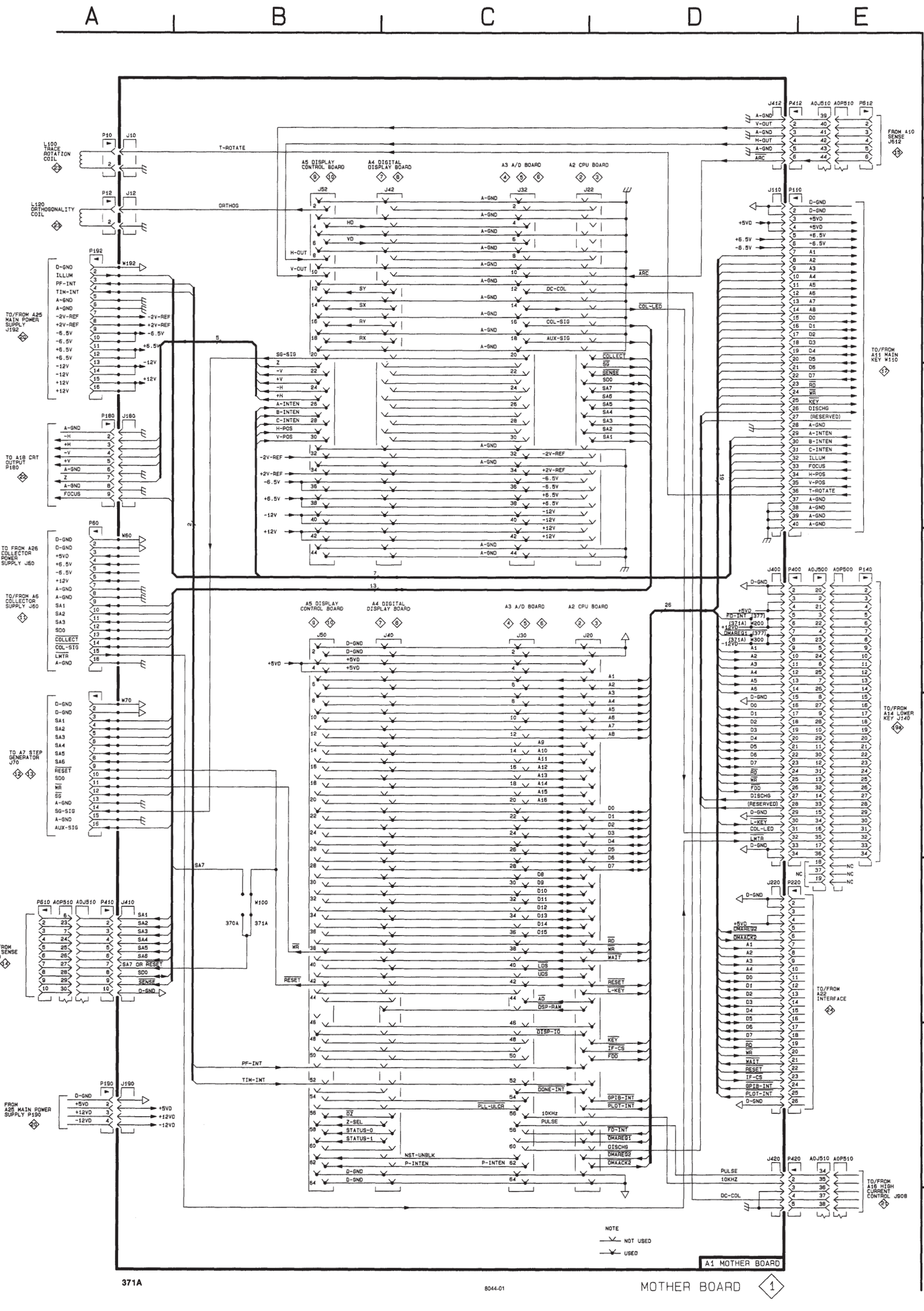
ASSEMBLY A1

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J10	A1	D1	J52	B1	J2	W60	A4	J2
J12	A2	D1	J110	D1	B4	W70	A5	F7
J20	D4	D6	J180	A3	H2	W100	B6	K5
J22	D1	J6	J190	A7	L1	W192	A2	L3
J30	C4	D5	J22	D6	L4	W200	D4	L3
J32	C1	J5	J400	D4	L4	W300	D4	K5
J40	C4	D3	J410	A6	L3			
J42	C1	J3	J412	D1	L3			
J50	B4	D2	J420	D7	L4			

CHASSIS MOUNTED PARTS

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J500	E4	CHASSIS	L100	A1	CHASSIS			
J510	A6, E1	CHASSIS	L120	A2	CHASSIS			

Please cut out the aria below the lines.



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Please cut out the aria below the lines.

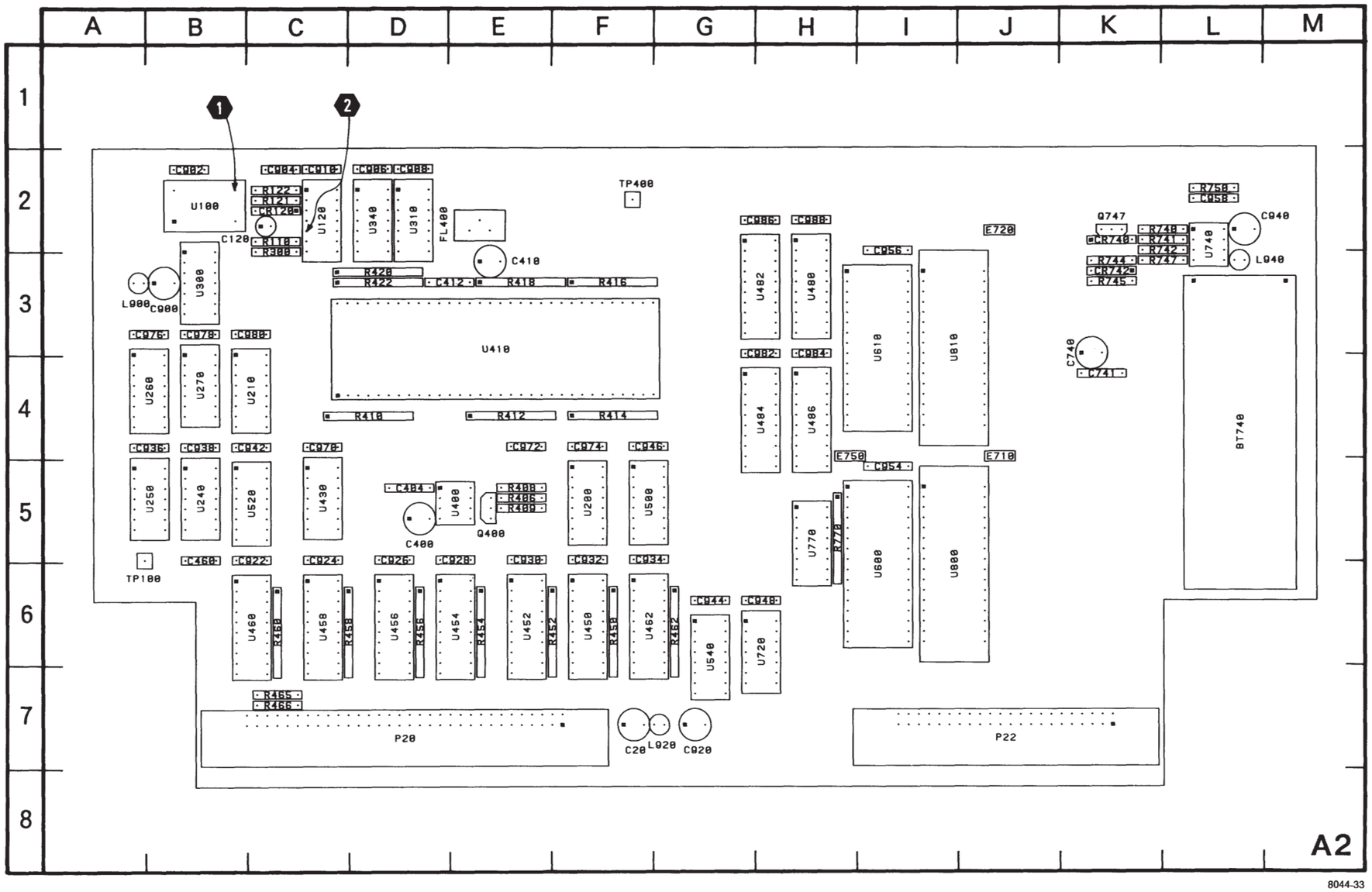
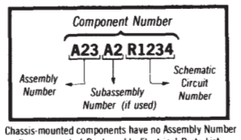


Figure 7–4. A2—CPU circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

A2–CPU circuit board illustration to be used with diagrams 2 and 3

Please cut out the aria below the lines.

MPU 2

ASSEMBLY A2

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C20	A5	F7
C120	B5	B2
C400	C5	D5
C404	C5	D5
C410	D4	E3
C412	D4	E3
C460	A2	B5
C900	A5	B3
C902	B5	B2
C904	B5	C2
C906	B5	D2
C908	B5	D2
C910	B5	C2
C920	A5	G7
C922	B5	C5
C924	B5	C5
C926	B5	D5
C928	B5	E5
C930	B5	E5
C932	B5	F5
C934	B5	F5
C936	B5	B4
C938	B5	B4
C940	A5	M2
C942	B5	C4
C944	B5	G6
C946	B5	F4
C948	B5	H6
C954	B5	I5
C956	B5	I2
C958	B5	L2
C970	B5	C4
C972	B5	E4
C974	B5	F4
C976	B5	B3
C978	B5	B3
C980	B5	C3
C982	B5	H3
C984	B5	H3
C986	B5	H2
C988	B5	H2

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
CR120	B5	C2
FL400	D4	E2
L900	A5	A3
L920	A5	G7
L940	A5	M3
P20	A1,H1,H3	D7
P22	H2	J7
Q400	C5	E5
R110	B4	C2
R121	B4	C2
R122	B4	C2
R300	A4	C2
R406	D4	E5
R408	D5	E5
R409	C4	E5
R410	E3,E4	D4
R412	D3,E5	E4
R414	D2,E1	F4
R416	E1	F3
R418	E2	E3
R420	E2,E4	D3
R422	E3	D3
R450	F1	F6
R452	G1	F6
R454	G3	E6
R456	G3	D6
R458	H4	C6
R460	A1	C6
R462	F2	G6
R465	A2	C7
R466	B2	C7
TP100	E3	A6

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
U100	A4	B2
U120A	B4	C2
U120B	C4	C2
U200	D2	F5
U210	C2	C4
U240A	C1	B5
U240B	C1	B5
U250A	C2	B5
U250B	C2	B5
U260	D1	B4
U270A	C3	B4
U270B	C3	B4
U270C	C3	B4
U270D	C3	B4
U300A	C3	B3
U300B	C3	B3
U300C	C5	B3
U300D	B4	B3
U310A	C4	D2
U310B	C4	D2
U340A	A3	D2
U340B	B3	D2
U400	C4	E5
U410	E1	E3
U430A	E5	C5
U430B	F4	C5
U430C	F5	C5
U430D	E4	C5
U450	F1	F6
U452	G1	E6
U454	F3	E6
U456	G3	D6
U458	F5	C6
U460	B1	C6
U462	F2	F6

MEMORY 3

ASSEMBLY A2

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
BT740	C3	L4
C740	C3	K3
C741	C3	K4
CR740	C3	K2
CR742	C3	K3
E710	C3	J4
E720	C3	J2
E750	C3	H4
P20	F1	D7
P22	F2	J7
Q747	C3	K2

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
R740	B3	L2
R741	B3	L2
R742	B3	L2
R744	C3	K3
R745	C3	K3
R747	C3	L3
R750	C4	L2
R770	C2	H5
TP 400	D3	F2

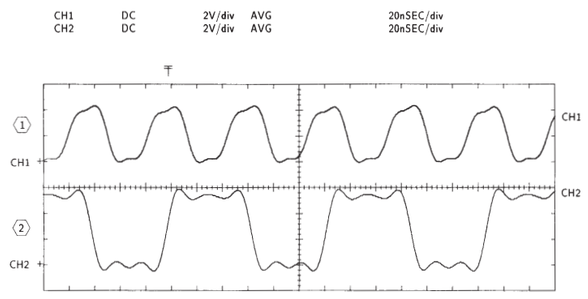
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
U480	B3	H3
U482	B4	H3
U484	A3	H4
U486	A4	H4
U500A	A2	F5
U500B	A1	F5
U520	A1	C5
U540	B1	G6
U600	D1	I6
U610	D1	I3
U720A	B2	H6
U720B	C2	H6
U720C	C1	H6
U720D	C2	H6
U740	C3	L2
U770	C3	H5
U800	E1	I6
U810	E1	I3

Please cut out the aria below the lines.

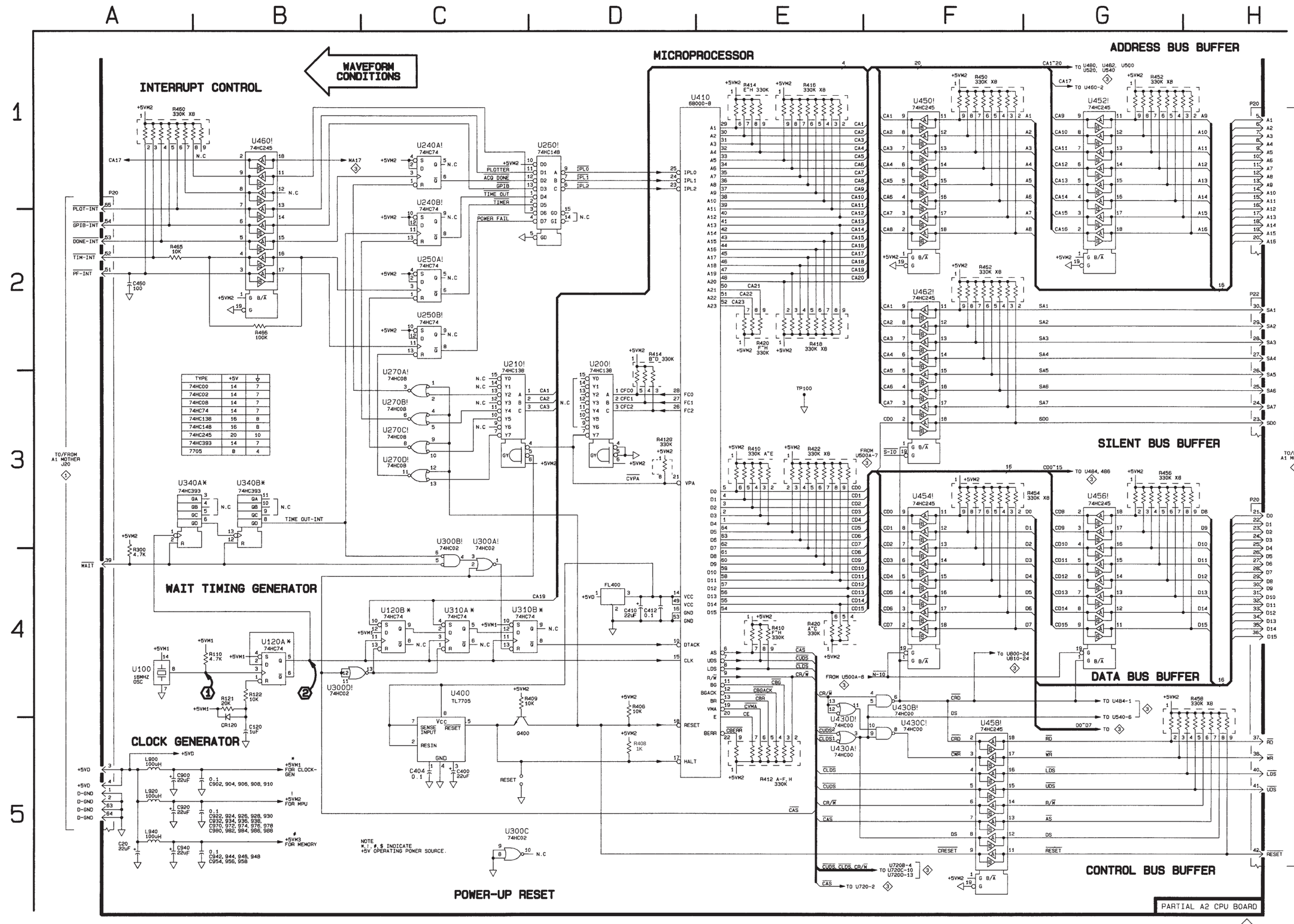
WAVEFORM CONDITIONS

Waveform Conditions

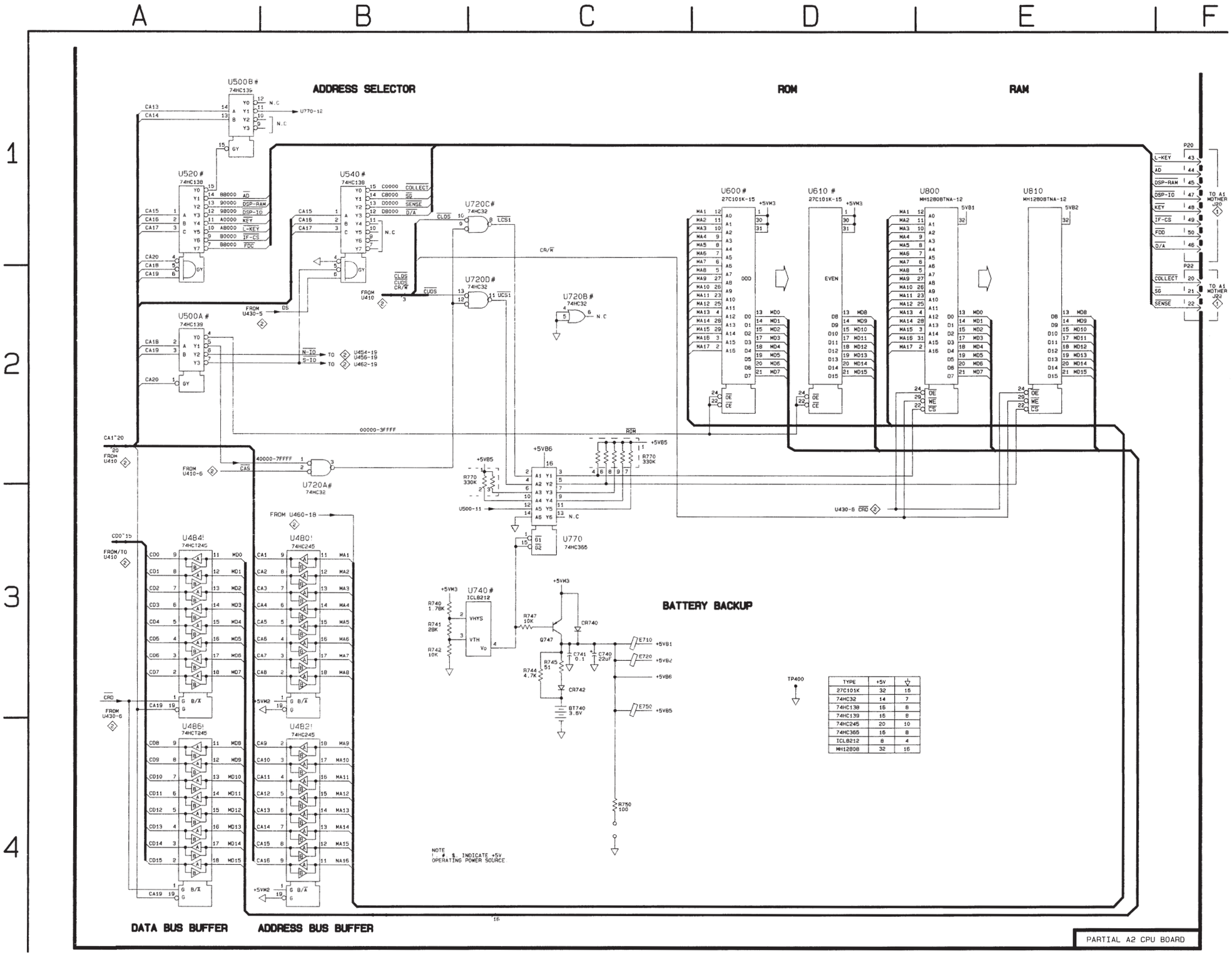
The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A set to the power-up default (initial) settings.



Please cut out the aria below the lines.



Please cut out the aria below the lines.



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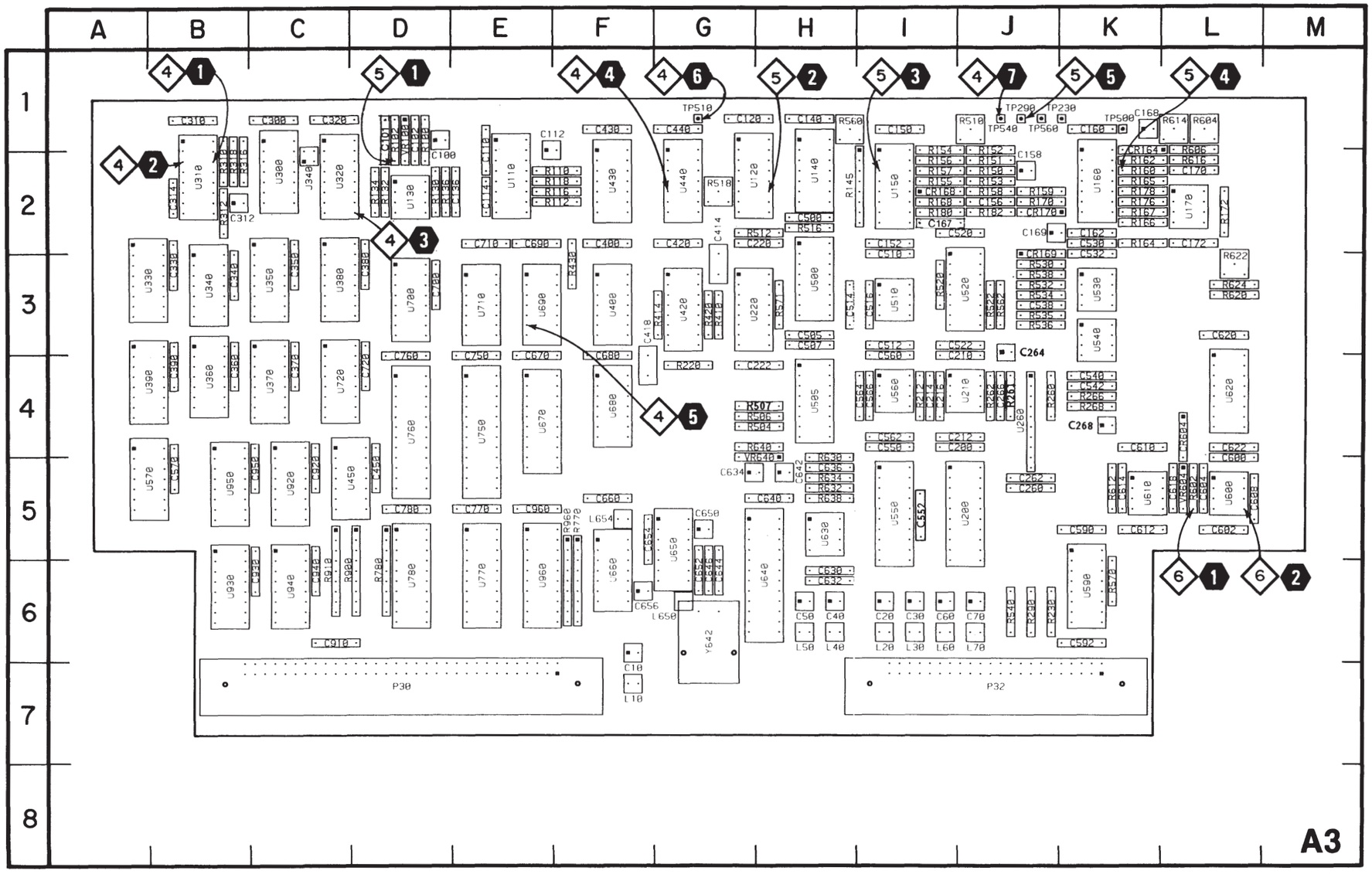
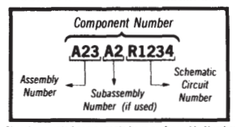


Figure 7–5. A3—A/D circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

A3–A/D circuit board illustration to be used with diagrams 4 , 5 and 6

Please cut out the aria below the lines.

A/D CONTROL & STEP GENERATOR 4

ASSEMBLY A3

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C10	I2	F6	C592	A4	K6	R562	G5	J3
C20	A4	I6	C600	A4	L5	R570	I4	K6
C30	A4	I6	C602	A5	L5	R571	H5	H3
C40	A5	H6	C610	B4	K4	R900	A2	D6
C50	A5	H6	C612	A4	K5	R910	A3	C6
C60	A5	I6	C620	B4	L3			
C70	A5	J6	C622	B4	L4	TP500	G5	K1
C120	H2	G1	C630	A5	H6	TP510	G3	G1
C140	H2	H1	C632	A5	H6	TP540	I4	J1
C150	A4	I1	C660	I2	F5	TP560	G5	J1
C152	A4	I2	C670	I2	E4			
C160	A4	K1	C680	I2	F4	U220A	I5	H3
C162	A4	K2	C690	I2	E2	U220C	H3	H3
C170	B4	L2	C700	H2	D3	U300A	D1	C2
C172	A4	L2	C710	H2	E2	U300B	E4	C2
C200	B4	J4	C720	I2	D4	U310	A1	B2
C210	B4	J4	C750	I2	E4	U320	B1	C2
C212	B4	J4	C760	I2	D4	U330	C1	B3
C220	A4	H2	C770	I2	E5	U340A	C1	B3
C222	B4	H4	C780	I2	D5	U340B	C3	B3
C260	A4	J5	C910	A4	C6	U350	D1	C3
C262	B4	J5	C920	H2	C5	U360A	D3	B4
C300	I2	C1	C930	H2	C6	U360B	D3	B4
C310	A1	B1	C940	I2	C6	U370	E3	C4
C312	B2	B2	C950	I2	C5	U380	F4	C3
C314	A1	B2	C960	I2	E5	U390	F3	B4
C320	I2	C1				U400A	E4	F3
C330	I2	B3	J340	F2	C2	U400B	F3	F3
C340	12	B3				U400C	H1	F3
C350	12	C3	L10	I2	F7	U400D	C1	F3
C360	H2	B4	L20	A4	I6	U420A	H2	G3
C370	H2	C4	L30	A4	I6	U420B	H1	G3
C380	I2	D3	L40	A4	H6	U430A	H1	F2
C390	I2	B4	L50	A5	H6	U430B	H3	F2
C400	12	F2	L60	A5	I6	U430C	C2	F2
C414	G2	G3	L70	A5	J6	U430D	E1	F2
C418	G1	F4				U440A	G1	G2
C420	I2	G2	P30	A2,I1	D7	U440B	H5	G2
C430	12	F1	P32	A4,I4	J7	U450A	E3	D5
C440	H2	G1				U450B	D4	D5
C450	H2	D5	R220	G3	G4	U450C	D4	D5
C500	B4	H2	R310	B2	B2	U450D	D4	D5
C505	B4	H3	R312	B2	B2	U500	F4	H3
C507	A4	H3	R316	A1	B2	U505C	E4	H4
C510	B4	I3	R318	A1	B2	U510	G4	I3
C512	A4	I3	R410	G2	G3	U520A	G4	J3
C514	G4	H3	R414	G1	G3	U520B	H4	J3
C516	G4	I3	R420	I2	G3	U530	H4	K3
C520	A4	J2	R430	I2	F3	U540	H4	K3
C522	A4	J3	R506	E5	H4	U550	F5	I5
C530	A4	K2	R510	G4	J1	U560	G5	I4
C532	B4	K3	R512	G4	H2	U570A	H4	B5
C538	H4	J3	R516	G4	H2	U570B	H4	B5
C540	B4	K4	R518	G4	G2	U570C	H5	B5
C542	B4	K4	R520	G4	I3	U570D	H4	B5
C550	B4	I4	R530	H4	J3	U590C	I4	K6
C552	G5	I5	R532	H4	J3	U690	E1	E3
C560	B4	I3	R534	G4	J3	U710A	H5	E3
C562	B4	I4	R535	H4	J3	U710B	E2	E3
C564	G5	I4	R536	H5	J3	U920	C4	C5
C566	G5	I4	R538	H4	J3	U930	B3	B6
C570	I2	B5	R540	I4	J6	U940	C3	C6
C590	A4	K5	R560	G5	H1	U950	C2	B5

COLLECTOR SUPPLY GEN 5

ASSEMBLY A3

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C100	A2	D1	R136	C1	D2	R522	F2	J3
C101	A2	D1	R145	C2	I2	TP230	G3	K1
C102	B2	D1	R150	D2	J2	TP290	G1	J1
C110	B2	E2	R151	D2	J2			
C112	B3	F2	R152	D2	J2	U110	B2	E2
C114	A2	E2	R153	D3	J2	U120	B2	G2
C136	C1	E2	R154	D3	I2	U130A	C1	D2
C156	E2	J2	R155	D3	I2	U130B	B1	D2
C158	E2	J2	R156	D3	I2	U140A	C2	H2
C167	A4	I2	R157	D3	I2	U140B	C2	H2
C168	D3	K1	R158	E2	J2	U140C	C3	H2
C169	D3	J2	R159	E2	J2	U140D	C2	H2
C214	F3	I4	R160	E3	K2	U150	D2	I2
C216	F3	I4	R162	E3	K2	U160A	E3	K2
C264	G1	J4	R164	D3	K2	U160B	D3	K2
C266	F1	J4	R165	B4	K2	U160C	B3	K2
C268	F2	K4	R166	D3	K2	UI60D	E3	K2
			R167	B4	K2	U170A	C2	L2
CR164	E3	K2	R168	B3	I2	UI70B	C3	L2
CR168	B4	I2	R170	D3	J2	U200	F3	J5
CR169	D3	J3	R172	D3	L2	U210A	F3	J4
CR170	D3	J2	R176	C3	K2	U210B	F2	J4
			R178	C3	K2	U220B	D3	H3
P30	A2	D7	R180	B3	I2	U260A	F1	J4
P32	G1	J7	R182	B3	J2	U260B	F3	J4
			R212	F3	I4	U505A	F4	H4
R100	A2	D1	R230	G3	J6	U520C	G2	J3
R102	A2	D1	R260	F1	J4	U590A	G3	K6
R110	B3	F2	R261	F1	J4	U590B	G2	K6
R112	B3	F2	R262	F1	J4			
R116	A2	F2	R266	F2	K4	VR100	A2	D2
R118	A2	F2	R268	F2	K4			
R130	B1	D2	R290	G1	J6			
R132	B1	D2	R504	F4	H4			
R134	C1	D2	R507	F1	H4			

ACQUISITION 6

ASSEMBLY A3

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C604	A3	L5	L650	E3	G6	R632	E3	H5
C608	B3	L5	L654	D3	F5	R634	E3	H5
C614	A3	K5				R638	E3	H5
C618	B3	L5	P30	A1	D7	R640	G3	H4
C634	E3	G5	P32	A3	J7	R770	B1	F5
C636	F3	H5				R780	B2	D6
C640	F3	H5	R602	A3	L5	R960	C1	F5
C642	F3	H5	R604	B3	L1			
C644	F4	G6	R606	B3	L2	U600	B3	L5
C646	F4	G6	R612	A3	K5	U610	B3	K5
C650	E3	G5	R614	B4	L1	U620	D3	L4
C652	E3	G6	R616	B4	L2	U630	E3	H5
C654	E3	F5	R620	D3	L3	U640	F3	H6
C656	E3	F6	R622	D3	L3	U650	E3	G5
			R624	D3	L3	U660A	B4	F6
CR604	B3	L4	R630	E3	H5			

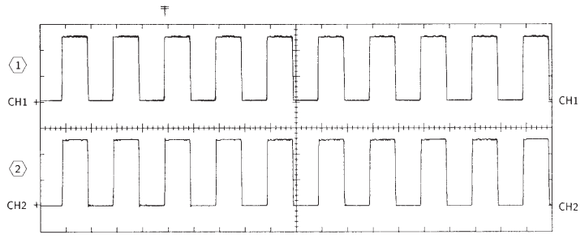
Please cut out the aria below the lines.

WAVEFORM CONDITIONS

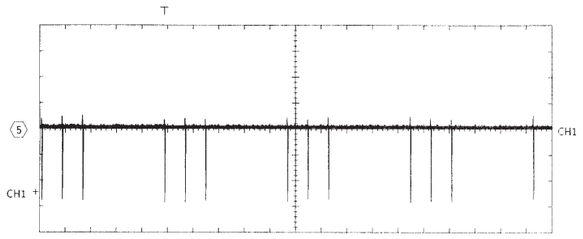
Waveform Conditions

The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A set to the power-up default (initial) settings.

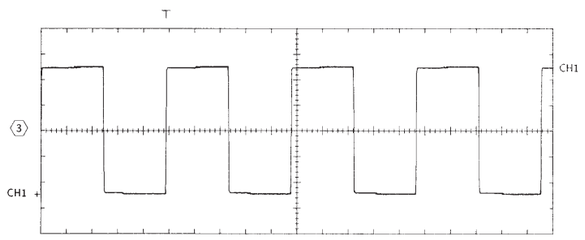
CH1 DC 2V/div AVG 10mSEC/div
CH2 DC 2V/div AVG 10mSEC/div



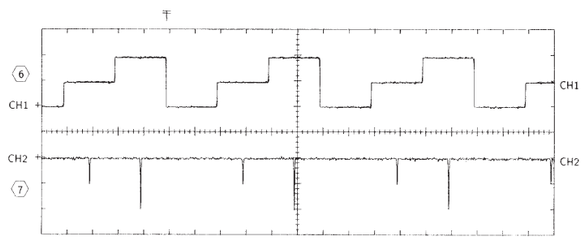
CH1 DC 2V/div ENV 50mSEC/div



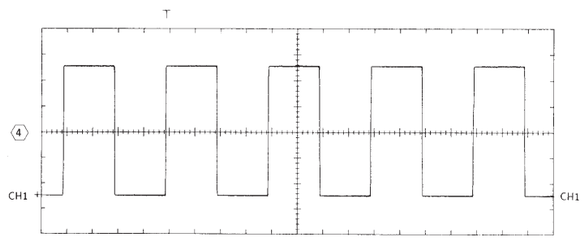
CH1 DC 1V/div AVG 2μSEC/div



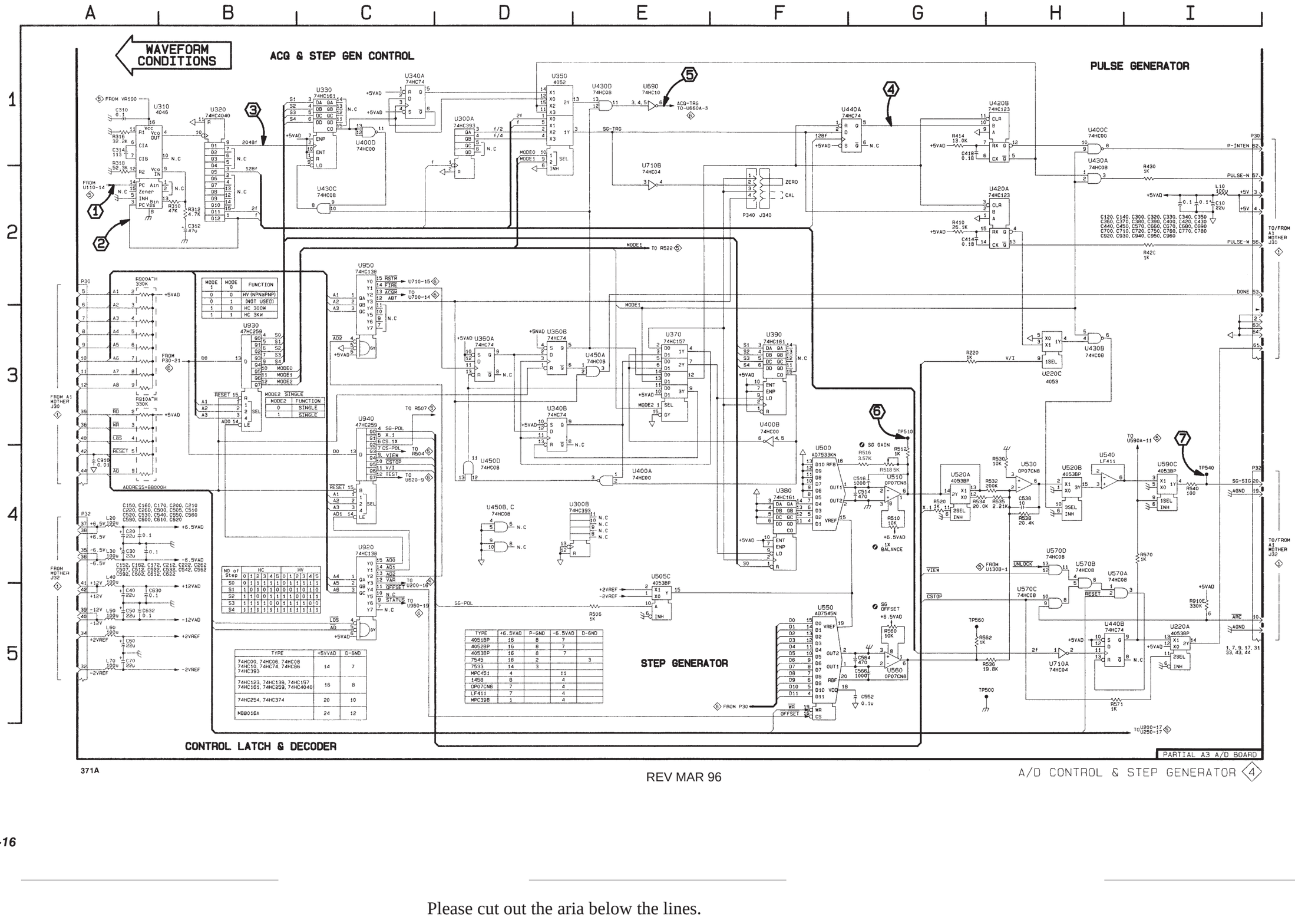
CH1 DC 200mV/div AVG 20mSEC/div
CH2 DC 200mV/div AVG 20mSEC/div



CH1 DC 1V/div AVG 10mSEC/div



Please cut out the aria below the lines.



Please cut out the aria below the lines.

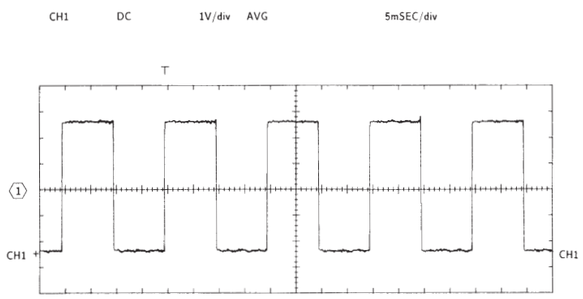
WAVEFORM CONDITIONS

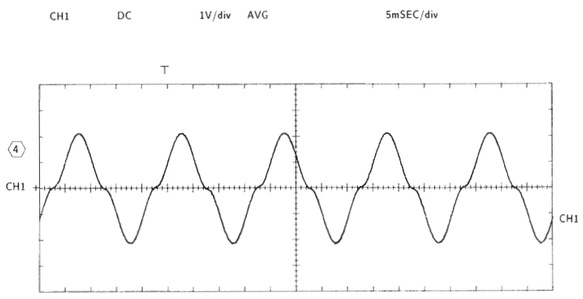
Waveform Conditions

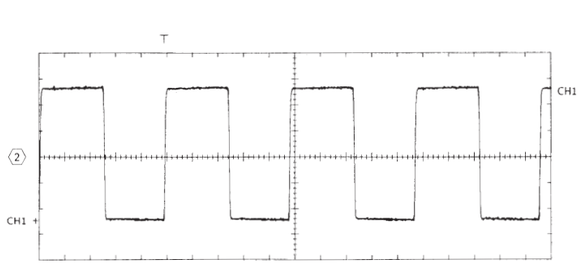
The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A under the following conditions:

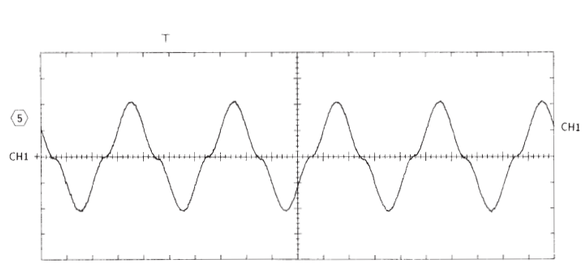
Waveform 1, 2, 3, and 4: These waveforms were obtained from the 371A set to the power–up default initial settings.

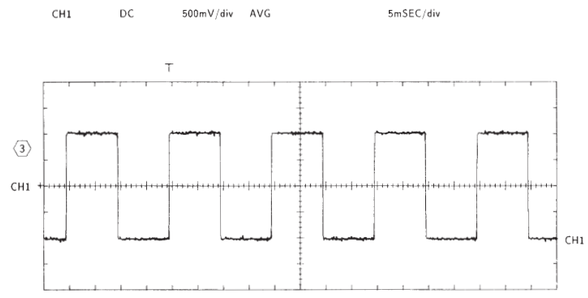
Waveform 5: This waveform was obtained from the 371A set to the initial settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 30 W and COLLECTOR SUPPLY VARIABLE is set to 50%.



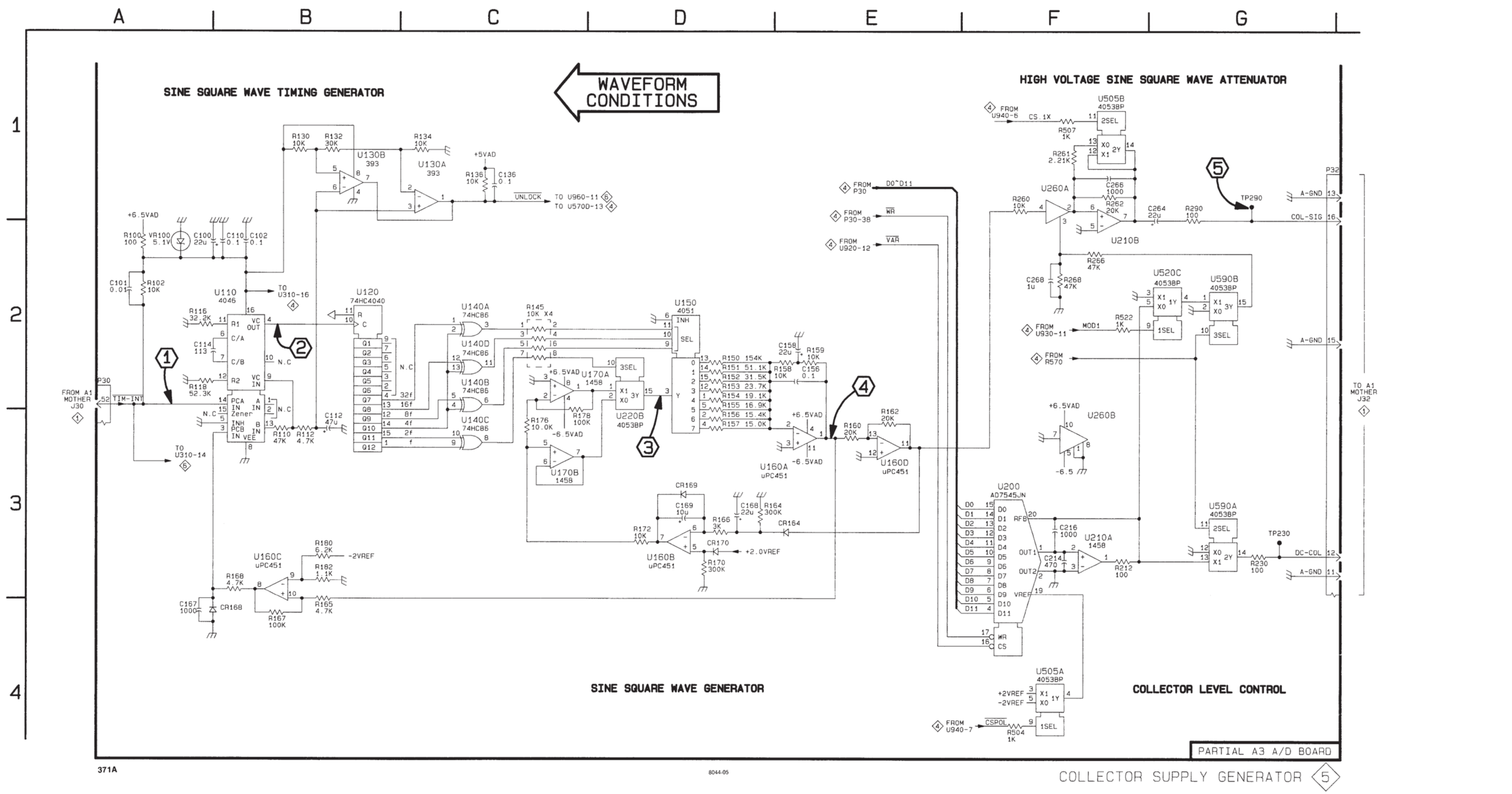








Please cut out the aria below the lines.

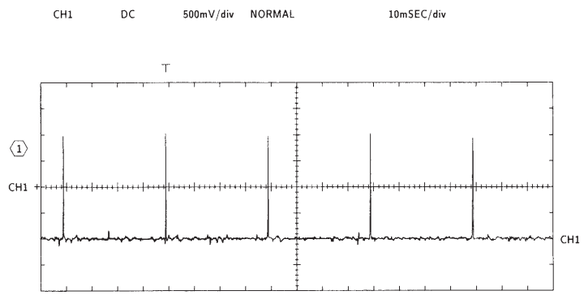


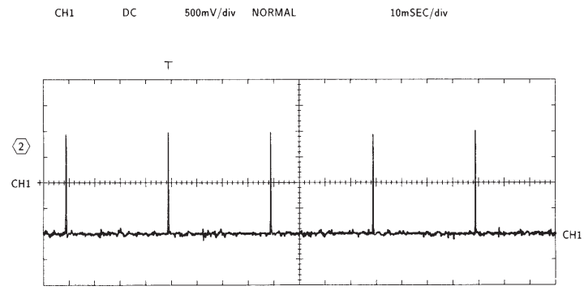
Please cut out the aria below the lines.

WAVEFORM CONDITIONS

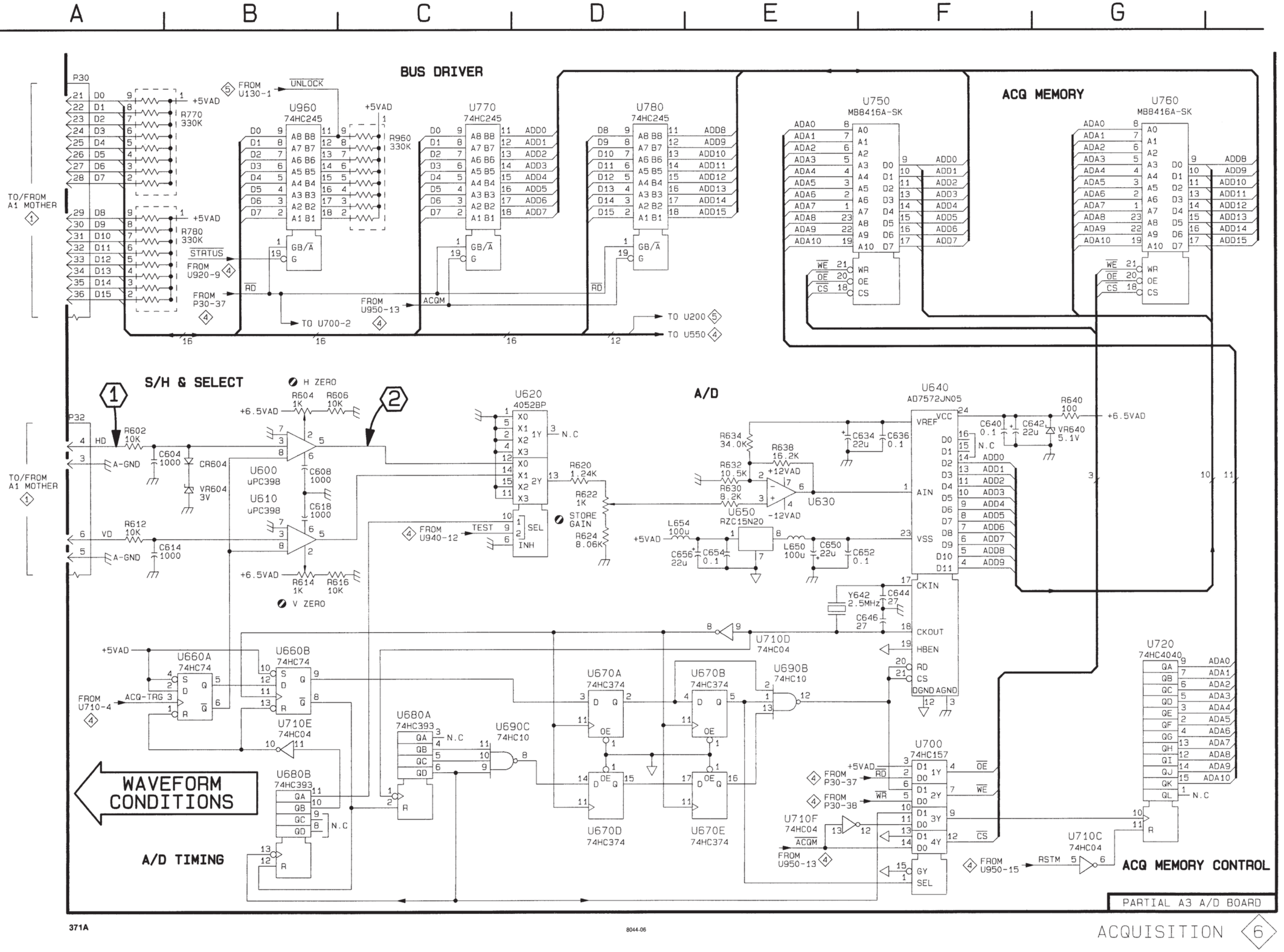
Waveform Conditions

The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY VARIABLE is set to 30%.





Please cut out the aria below the lines.



Please cut out the aria below the lines.

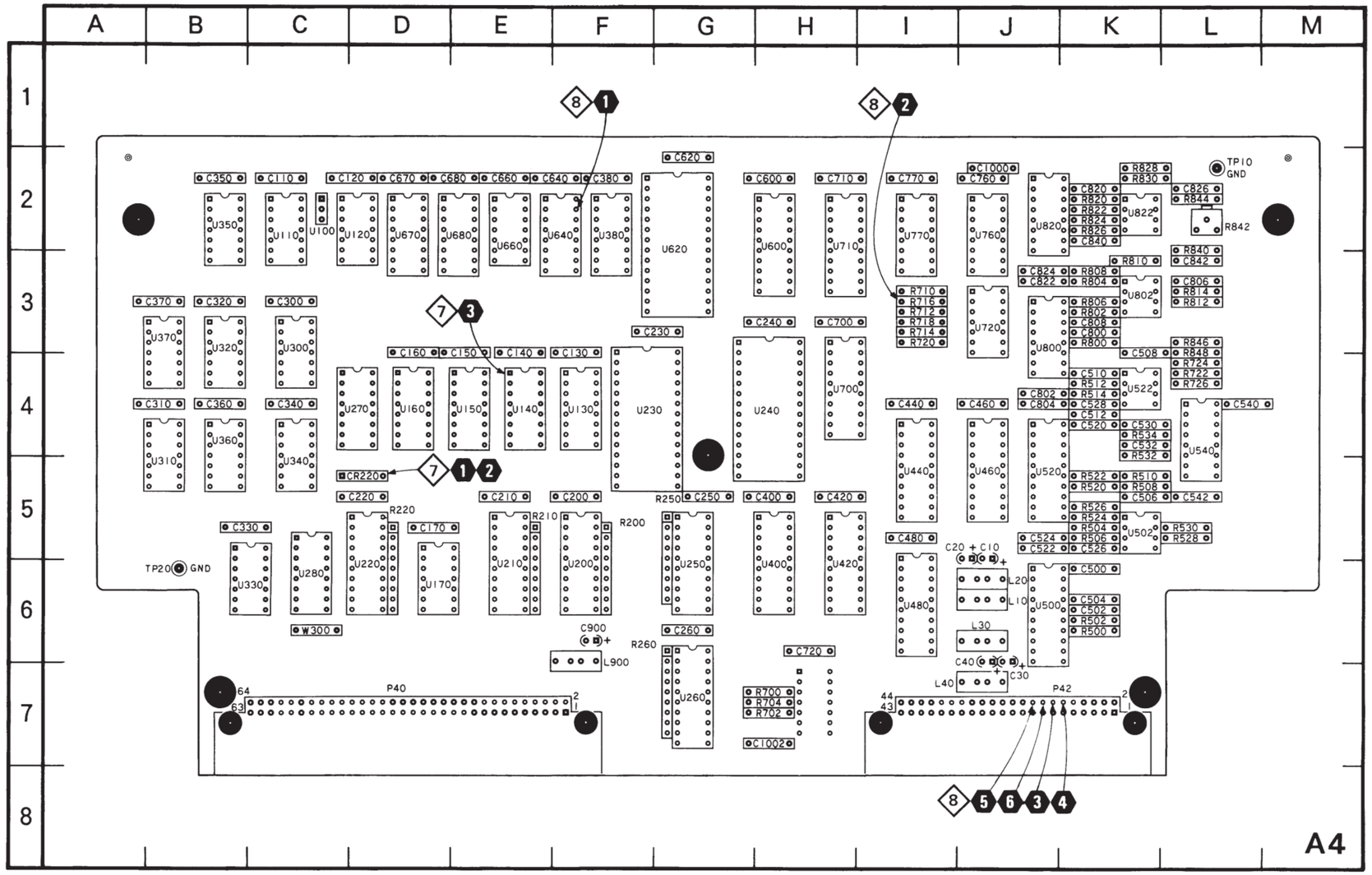
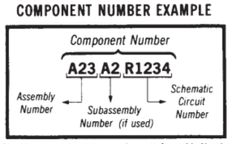


Figure 7–6. A4—Digital Display circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

A4–Digital Display circuit board illustration to be used with diagram 7 and 8

Please cut out the aria below the lines.

DISPLAY COUNTER 7

ASSEMBLY A4

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C30	G3	J7	C680	B3	E2	U230	F1	F4
C40	G3	J6	C700	B3	H3	U240	F2	H4
C110	B3	C2	C710	B3	H2	U250	F1	G6
C120	B3	D2	C720	G3	H6	U260	F2	G7
C130	B3	F3	C760	B3	J2	U270	D5	D4
C140	B3	E3	C770	B3	I2	U280A	C5	C6
C150	B3	E3	C900	A3	F6	U280B	C5	C6
C160	B3	D3				U300A	E5	C3
C170	B3	D5	CR220	B4	D5	U300B	E5	C3
C200	B3	F5				U300C	E4	C3
C210	B3	E5	L30	G2	J6	U310A	C2	B5
C220	B3	D5	L40	G3	J7	U310C	D3	B5
C230	B3	G3	L900	A3	F7	U310D	E2	B5
C240	B3	H3				U320A	F3	B3
C250	B3	G5	P40	A1,G1	D7	U320B	E4	B3
C260	B3	G6	P42	G2	K7	U320C	E2	B3
C300	B3	C3				U320D	G4	B3
C310	B3	B4	R200	A1	F5	U330A	E3	C6
C320	B3	B3	R210	A2	E5	U330B	D2	C6
C330	B3	B5	R220	A4	D5	U330C	C4	C6
C340	B3	C4	R250	G1	G5	U330D	B4	C6
C350	B3	B2	R260	G2	F6	U340A	G3	C5
C360	B3	B4				U340B	F4	C5
C370	B3	B3	U100	C3	C2	U340C	D4	C5
C380	B3	F2	U110A	D2	C2	U340D	C4	C5
C400	B3	H5	U110B	C2	C2	U340E	E5	C5
C420	B3	H5	U120A	D2	D2	U340F	E2	C5
C440	B3	I4	U120B	D2	D2	U350A	F4	B2
C460	B3	J4	U130	C1	F4	U350B	D2	B2
C480	B3	I5	U140	C1	E4	U360A	F5	B4
C540	G3	L4	U150	D1	E4	U360B	G5	B4
C542	G3	L5	U160	E1	D4	U370A	F4	B3
C600	B3	H2	U170A	D3	D6	U370B	F4	B3
C620	B3	G2	U170B	D3	D6	U380	F5	F2
C640	B3	F2	U200	B1	F6			
C660	B3	E2	U210	B2	E6	W300	B5	C6
C670	B3	D2	U220	B4	D6			

DISPLAY D/A CONVERTER 8

ASSEMBLY A4

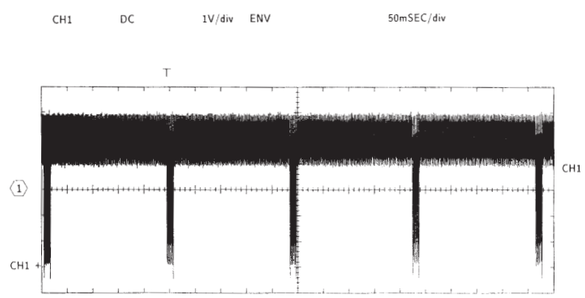
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C10	G1	J5	R512	F1	K4	TP10	F1	L2
C20	G1	I5	R514	F1	K4	TP20	F1	B6
C500	E1	K6	R520	E2	K5			
C502	E2	K6	R522	E3	K5	U310B	D4	B5
C504	E2	K6	R524	E2	K5	U400	B1	H6
C506	F1	K5	R526	E2	K5	U420	B2	H6
C508	F1	K3	R528	F2	L5	U440	C1	I5
C510	F1	K4	R530	F2	L5	U460	C2	J5
C512	F2	K4	R532	F2	K4	U480	C2	I6
C520	E2	K4	R534	F2	K4	U500	E1	J6
C522	E2	J5	R700	E4	H7	U502A	F1	K5
C524	E3	J5	R702	E4	H7	U502B	F2	K5
C526	F1	K5	R704	E5	H7	U520	E2	J5
C528	F2	K4	R710	F4	I3	U522A	F1	K4
C530	F2	K4	R712	F4	I3	U522B	F2	K4
C532	F3	K4	R714	F5	I3	U540A	G3	L4
C800	E3	K3	R716	F4	I3	U540B	G1	L4
C802	E3	J4	R718	F5	I3	U540C	G2	L4
C804	E3	J4	R720	F5	I3	U600	C4	H2
C806	F3	L3	R722	F3	L4	U620	D4	G2
C808	F3	K3	R724	F3	L4	U640	D4	F2
C820	E4	K2	R726	F3	L4	U660A	B5	E2
C822	E4	J3	R800	E3	K3	U660B	C5	E2
C824	E4	J3	R802	E3	K3	U670A	D1	D2
C826	F4	L2	R804	E3	K3	U670B	D1	D2
C840	F4	K2	R806	E3	K3	U680	E5	E2
C842	G4	L3	R806	E3	K3	U700	B3	H4
C1000	F3	J2	R808	F3	K3	U710	B4	H2
C1002	F3	H7	R810	F3	K3	U720A	F5	J3
			R812	G3	L3	U720B	F5	J3
L10	G1	J6	R814	G3	L3	U720C	F4	J3
L20	G1	J6	R820	E4	K2	U720D	F4	J3
			R822	E4	K2	U760	C3	J2
P40	G5	D7	R824	E4	K2	U770	C4	I2
P42	G1	K7	R826	E4	K2	U800	E3	J3
R500	E2	K6	R828	F3	K2	U802A	F3	K3
R502	E2	K6	R830	F4	K2	U802B	G3	K3
R504	E1	K5	R840	G4	L3	U820	E3	J2
R506	E1	K5	R842	G4	L2	U822A	F4	K2
R508	F1	K5	R844	G4	L2	U822B	G4	K2
R510	F1	K5	R846	F3	L3			
			R848	F3	L3			

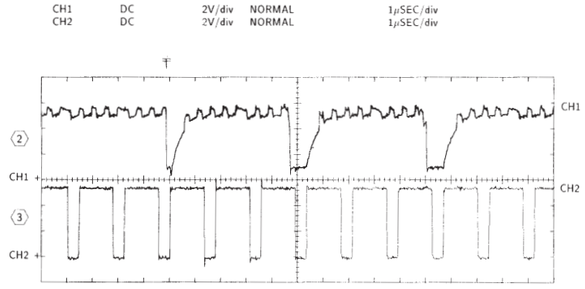
Please cut out the aria below the lines.

WAVEFORM CONDITIONS

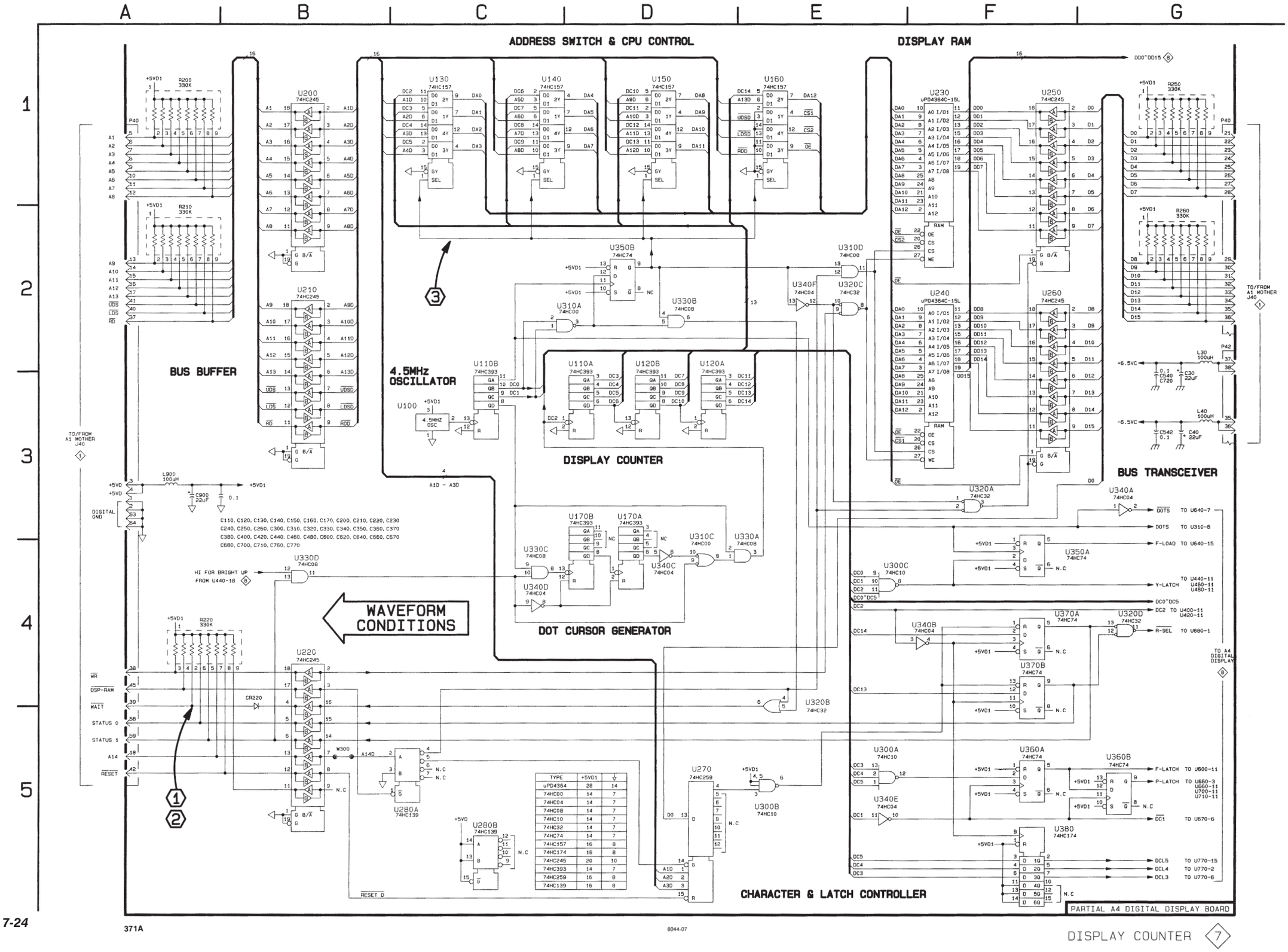
Waveform Conditions

The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A set to the power-up default (initial) settings.





Please cut out the aria below the lines.



371A

8044-07

DISPLAY COUNTER 7

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WAVEFORM CONDITIONS

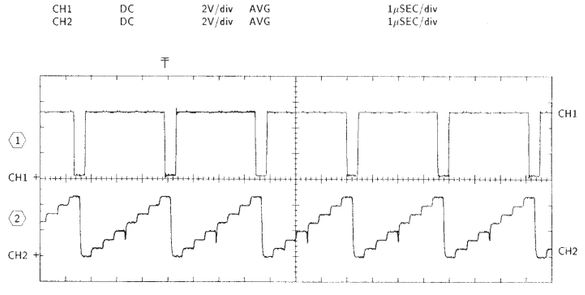
Waveform Conditions

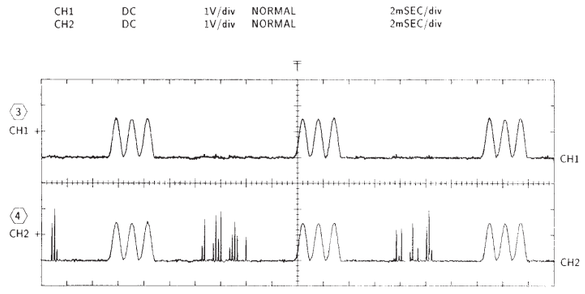
The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A under the following conditions:

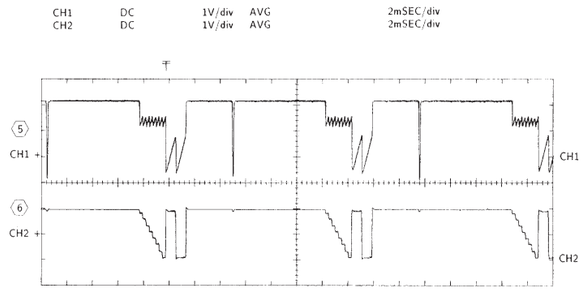
Waveform 1 and 2: These waveforms were obtained with the 371A set to the power-up default (initial) settings.

Waveform 3 and 4: These waveforms were obtained with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 300 mW, the VERTICAL CURRENT/DIV is set to 500 μA, the HORIZONTAL VOLTS/DIV is set to 5 V, the COLLECTOR SUPPLY VARIABLE is set to 100%, and a 10 kΩ resistor is connected between the Collector Supply HIGH VOLTAGE terminal and the COMMON terminal.

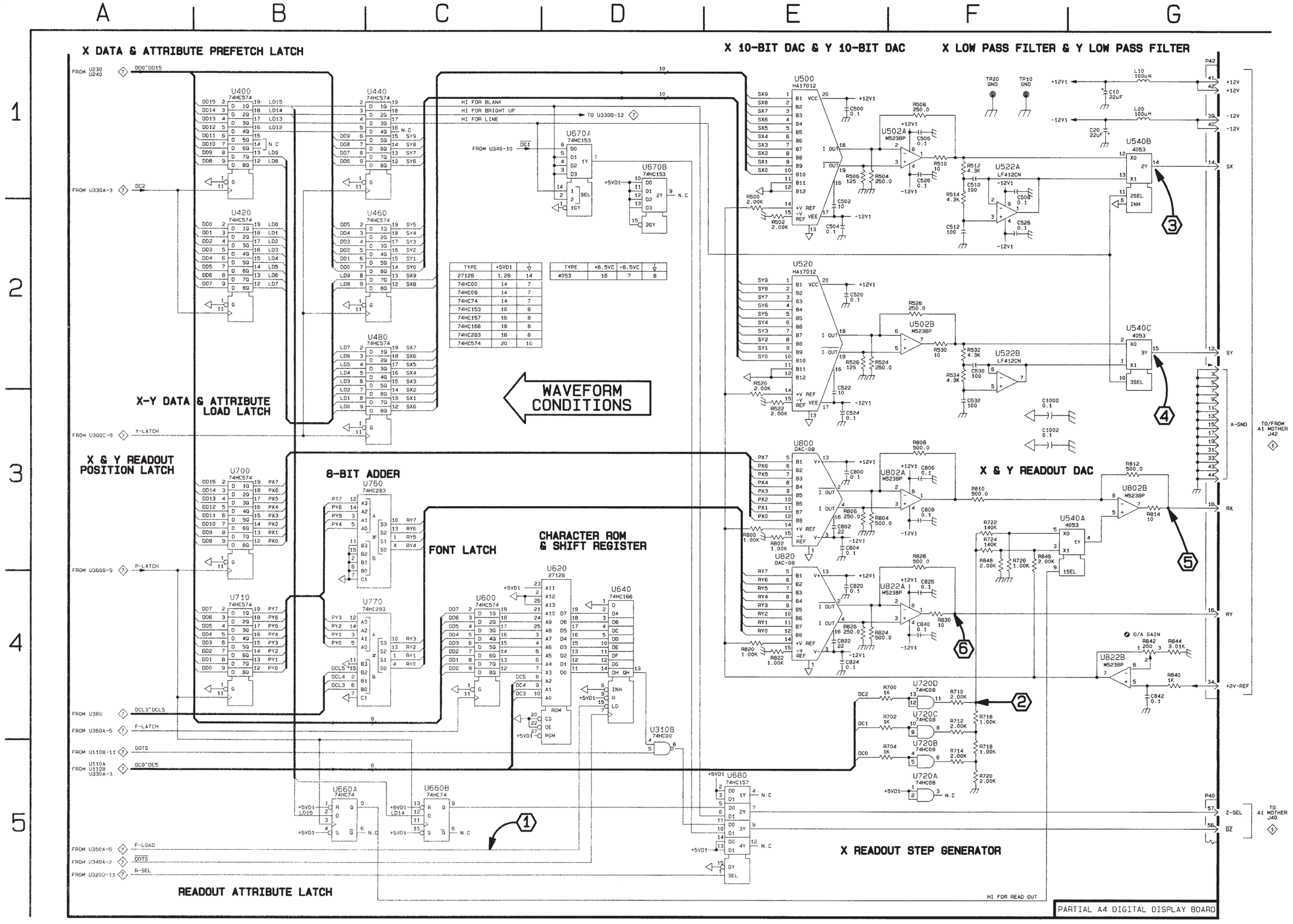
Waveform 5 and 6: These waveforms were obtained with the 371A set to the power-up default (initial) settings.







Please cut out the aria below the lines.



Please cut out the aria below the lines.

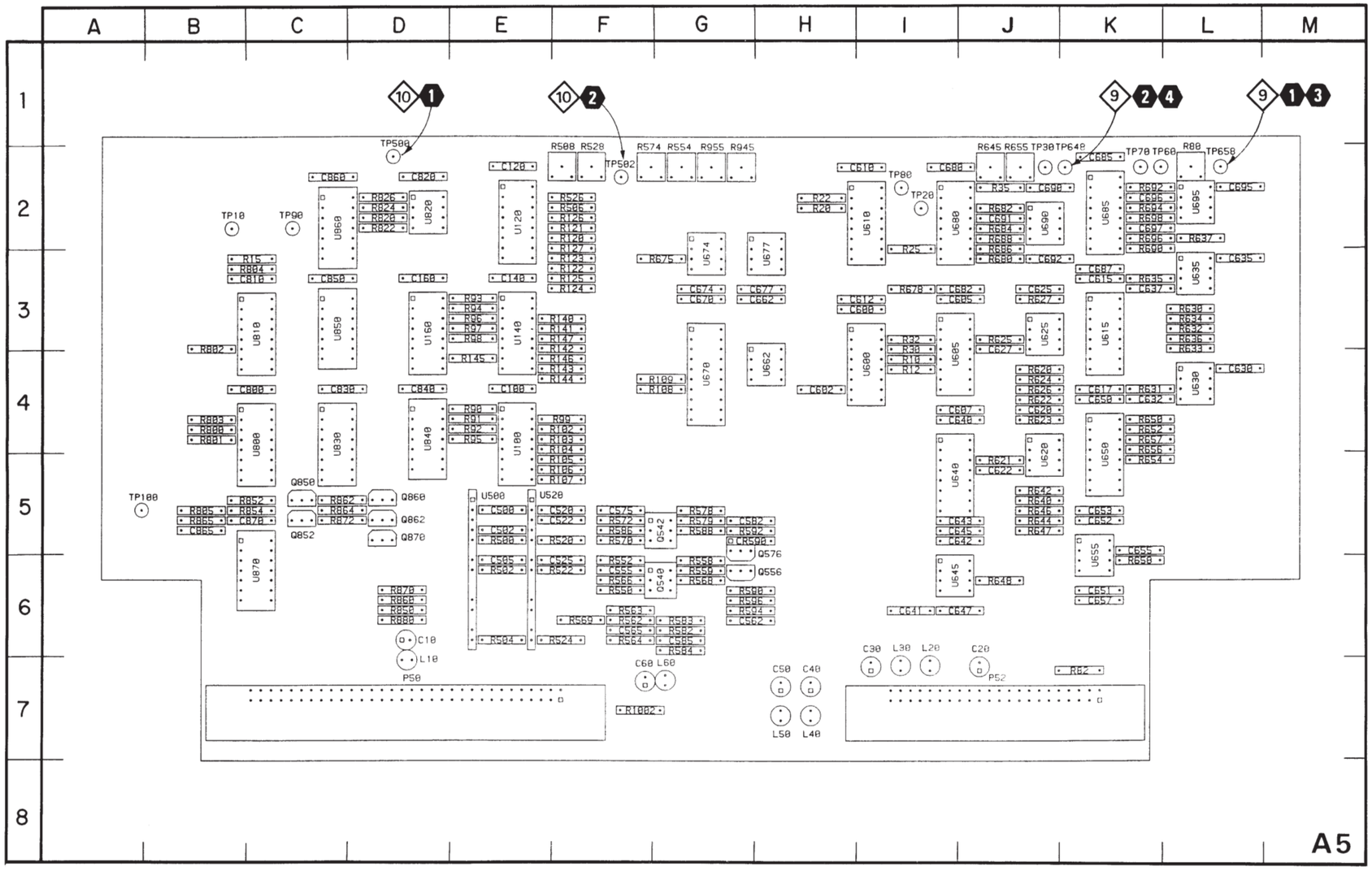
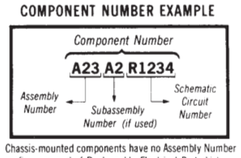


Figure 7–7. A5—Display Control circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

A5–CPU Display Control circuit board illustration to be used with diagrams 9 and 10

Please cut out the aria below the lines.

DISPLAY OFFSET 9

ASSEMBLY A5

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C40	F2	H7	R126	C2	F2	R690	D2	K2
C50	F2	H7	R127	C2	F3	R692	E2	K2
C641	F3	I6	R140	C3	F3	R694	E2	K2
C643	F3	J5	R141	C3	F3	R696	E2	K2
C651	F4	K6	R142	C3	F4	R698	E2	K2
C653	F4	K5	R143	C3	F4			
C674	C1	G3	R144	C3	F4	TP60	E2	L2
C677	C1	H3	R145	C3	F4	TP70	E1	K2
C691	E1	J2	R146	C3	F4	TP648	F3	K2
C696	E2	K2	R147	C3	F3	TP658	F3	L2
			R620	E3	J4			
L40	F2	H7	R621	E3	J5	U100	B1	E4
L50	F2	H7	R622	E3	J4	U120	B2	E2
			R623	E3	J4	U140	B3	E3
P50	A1	D7	R624	E3	J4	U160	B1	D3
P52	A4,G2	J7	R625	E3	J3	U600	D3	I4
			R626	E3	J4	U605	D3	J4
R10	B4	I4	R627	E3	J3	U610	D3	I2
R12	A4	I4	R630	E4	L3	U615	D3	K3
R20	B4	H2	R631	E4	K4	U620	E3	J5
R22	B4	H2	R632	E4	L3	U625	E3	J3
R30	B4	I4	R633	E4	L3	U630	E3	L4
R32	B4	I3	R634	E4	L3	U635	E4	L3
R90	A1	E4	R635	E4	K3	U640A	F3	J5
R91	A1	E4	R636	E4	L3	U640B	D1	J5
R92	A1	E4	R637	E4	L2	U640C	F3	J5
R93	A1	E3	R640	E3	J5	U645	F3	J6
R94	A1	E3	R642	E3	J5	U650A	F4	K5
R95	A2	E4	R644	E3	J5	U650B	D1	K5
R96	A2	E3	R645	F3	J2	U650C	F4	K5
R97	A2	E3	R646	E3	J5	U655	F4	K6
R98	A2	E3	R647	F3	J5	U662A	D1	H4
R99	A1	F4	R648	F3	J6	U662B	D1	H4
R102	C1	F4	R650	E4	K4	U670	C1	G4
R103	C1	F4	R652	E4	K4	U674	C1	G3
R104	C1	F5	R654	E4	K5	U677	C2	H3
R105	C1	F5	R655	E4	J2	U680	E1	J2
R106	C1	F5	R656	E4	K4	U685	E2	K2
R107	C1	F5	R657	F3	K4	U690	E1	J2
R108	C1	G4	R658	F4	K6	U695	E2	L2
R109	C1	G4	R675	D2	G3	U820B	F1	D2
R120	C2	F2	R678	D2	I3	U840E	A3	D4
R121	C2	F2	R680	D1	J3	U870B	A3	C6
R122	C2	F3	R682	E1	J2	U870C	B2	C6
R123	C2	F3	R684	E1	J2	U870D	B2	C6
R124	C2	F3	R686	E1	J2			
R125	C2	F3	R688	E1	J2			

CHASSIS MOUNTED PARTS

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
L120	G3							

DISPLAY SELECT 10

ASSEMBLY A5 (DISPLAY SELECT)

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C10	A5	D6	C860	B5	C2	R586	F2	F5
C20	F5	J6	C865	B3	B5	R588	F2	G5
C30	F4	I6	C870	B5	C5	R590	F2	G6
C60	F3	F7				R592	E2	G5
C100	B5	E4	CR590	E2	G5	R594	E2	G6
C120	B5	E2				R596	E2	G6
C140	B5	E3	L10	A4	D7	R800	A4	B4
C160	B5	D3	L20	G5	I6	R801	A4	B4
C500	F4	E5	L30	G4	I6	R802	A3	B4
C502	F5	E5	L60	G3	G7	R803	A3	B4
C505	D1	E6				R804	A3	C3
C520	F4	F5	P50	A3,A4	D7	R805	B3	B5
C522	F5	F5	P52	A1,A2,A4,G1	J7	R820	A3	D2
C525	D2	F6				R822	A3	D2
C555	F1	F6	Q540A	F1	G6	R824	B4	D2
C562	E2	G6	Q540B	F1	G6	R826	B3	D2
C565	F1	F6	Q542A	F2	G5	R850	B4	D6
C575	F3	F5	Q542B	F2	G5	R852	D4	C5
C582	E2	G5	Q556	E2	H6	R854	E4	C5
C585	F2	G6	Q576	E2	H6	R860	B4	D6
C600	F4	I3	Q850	D4	C5	R862	D4	C5
C602	F5	H4	Q852	E4	C5	R864	D4	C5
C605	F4	J3	Q860	D4	D5	R865	B3	B5
C607	F5	J4	Q862	D4	D5	R870	B4	D6
C610	F4	I2	Q870	D4	D5	R872	D4	C5
C612	F5	I3				R880	E3	D6
C615	F4	K3	R15	B4	C3	R945	G2	G2
C617	F5	K4	R25	F4	I3	R955	G2	G2
C620	F4	J4	R35	F4	J2	R1002	B3	F7
C622	F5	J5	R80	F3	L2			
C625	F4	J3	R82	G3	K7	TP10	B4	B2
C627	F5	J4	R500	D1	E5	TP20	F4	I2
C630	F4	L4	R502	D1	E6	TP30	F4	J2
C632	F5	K4	R504	D1	E6	TP80	F3	I2
C635	F4	L3	R506	D1	F2	TP90	A5	C2
C637	F5	K3	R508	D1	F2	TP100	F3	A5
C640	F4	J4	R520	D2	F5	TP500	E1	D1
C642	F5	J5	R522	D2	F6	TP502	E2	F2
C645	F4	J5	R524	D2	F6			
C647	F5	J6	R526	D2	F2	U500	D1	E5
C650	F4	K4	R528	D2	F2	U520	D2	E5
C652	F5	K5	R550	E1	F6	U800A	D4	C4
C655	F4	K5	R552	F1	F6	U800B	B4	C4
C657	F5	K6	R554	F1	G2	U810	C3	C3
C662	F5	H3	R558	F2	G6	U820A	B3	D2
C670	F4	G3	R559	F2	G6	U830A	D3	C4
C680	F4	I2	R562	F1	F6	U830B	D4	C4
C682	F5	J3	R563	F1	F6	U840A	B4	D4
C685	F4	K2	F564	G1	F6	U840B	D3	D4
C687	F5	K3	R566	F1	F6	U840C	B3	D4
C690	F4	J2	R568	F1	G6	U840D	D3	D4
C692	F5	J3	R569	G1	F6	U840F	B3	D4
C695	F4	L2	R570	E2	F5	U850A	B3	C3
C697	F5	K2	R572	F2	F5	U850B	C3	C3
C800	B5	C4	R574	F2	F2	U850C	C4	C3
C810	B5	C3	R578	F3	G5	U850D	C4	C3
C820	B5	D2	R579	F3	G5	U860A	B4	C2
C830	B5	C4	R582	F2	G6	U860B	D3	C2
C840	B5	D4	R583	F2	G6	U860C	B3	C2
C850	B5	C3	R584	G2	G7	U860D	B3	C2
						U870A	B3	C6

CHASSIS MOUNTED PARTS

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
L120	G3							

Please cut out the aria below the lines.

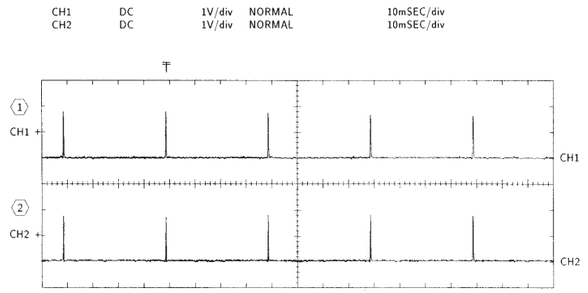
WAVEFORM CONDITIONS

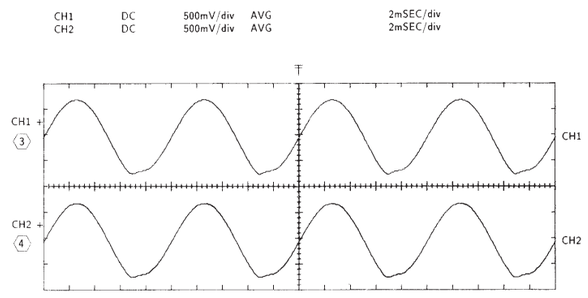
Waveform Conditions

The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A under the following conditions:

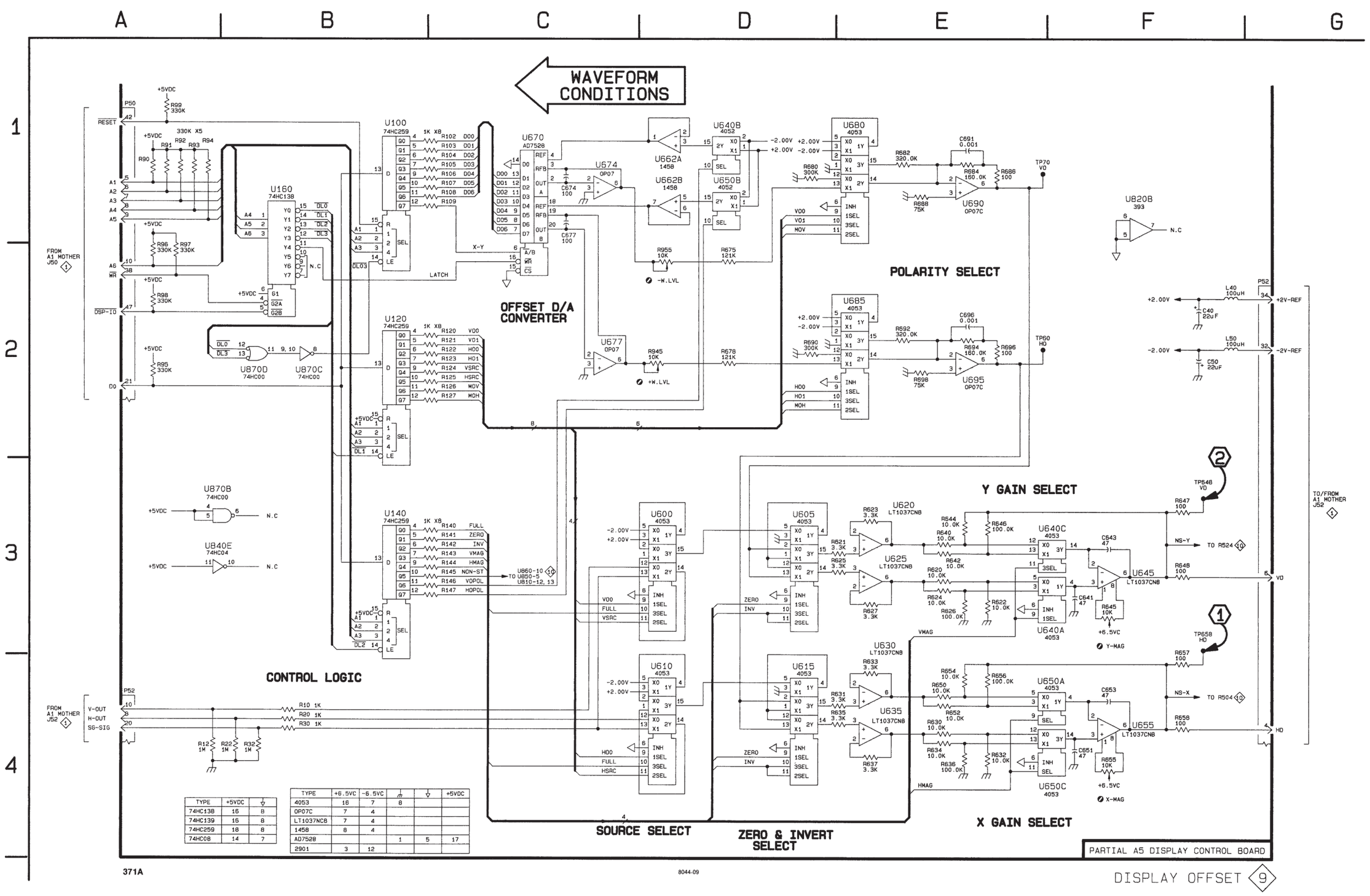
Waveform 1 and 2: These waveforms were obtained with the 371A set to the power-up default (initial) settings except that the COLLECTOR SUPPLY VARIABLE is set to 50% and a 1 Ω resistor is connected between the Collector Supply HIGH CURRENT terminal and the COMMON terminal.

Waveform 3 and 4: These waveforms were obtained with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 300 mW, the VERTICAL CURRENT/DIV is set to 500 μA, the HORIZONTAL VOLTS/DIV is set to 5 V, the COLLECTOR SUPPLY VARIABLE is set to 100%, and a 10 kΩ resistor is connected between the Collector Supply HIGH VOLTAGE terminal and the COMMON terminal.





Please cut out the aria below the lines.



TYPE	+5VDC	
74HC138	16	8
74HC139	16	8
74HC259	16	8
74HC08	14	7

TYPE	+6.5VC	-6.5VC			+5VDC
4053	16	7	8		
OP07C	7	4			
LT1037NC8	7	4			
1458	8	4			
AD7528			1	5	17
2901	3	12			

Please cut out the aria below the lines.

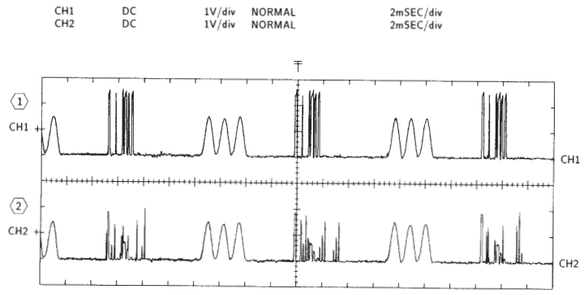
VOLTAGE AND WAVEFORM CONDITIONS

Voltage Conditions

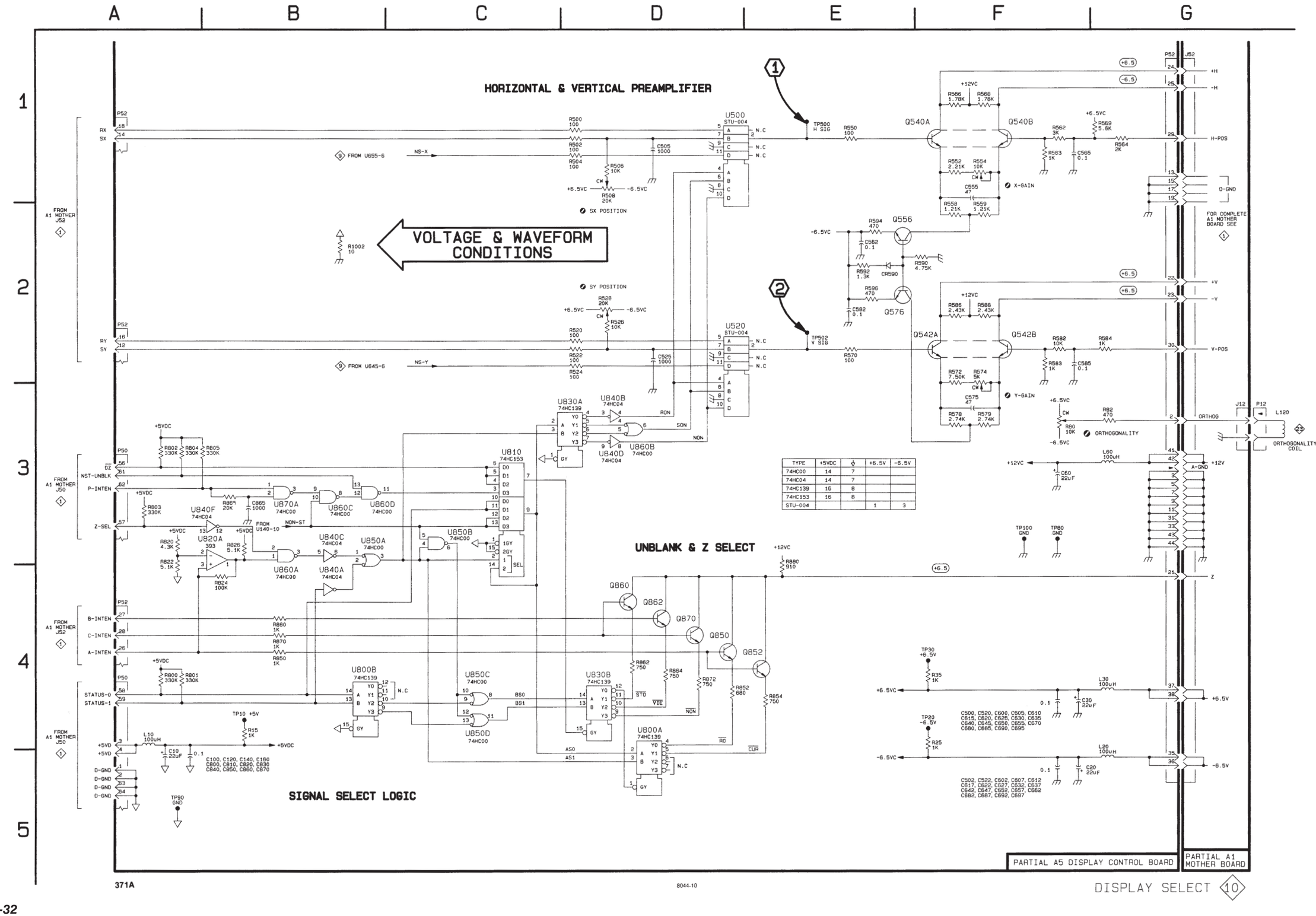
The voltages shown on the diagram were obtained using a digital multimeter with 10 MΩ input impedance. These voltages are not affected by the 371A settings.

Waveform Conditions

Waveform 3 and 4: These waveforms were obtained with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 300 mW, the VERTICAL CURRENT/DIV is set to 500 µA, the HORIZONTAL VOLTS/DIV is set to 5 V, the COLLECTOR SUPPLY VARIABLE is set to 100%, and a 10 kΩ resistor is connected between the Collector Supply HIGH VOLTAGE terminal and the COMMON terminal.

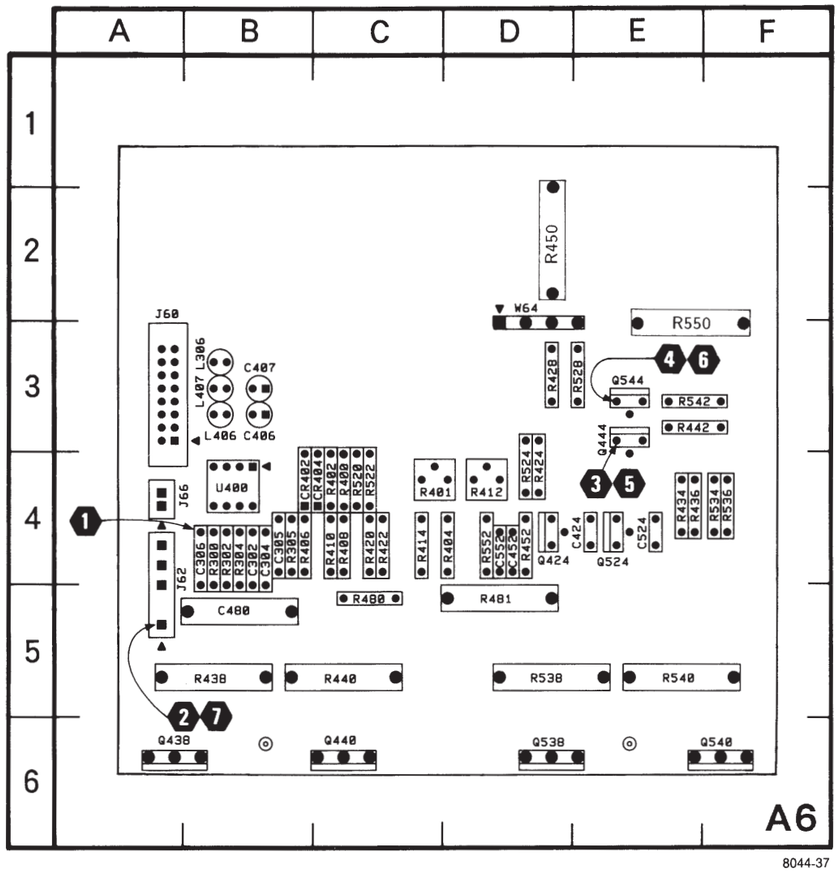


Please cut out the aria below the lines.



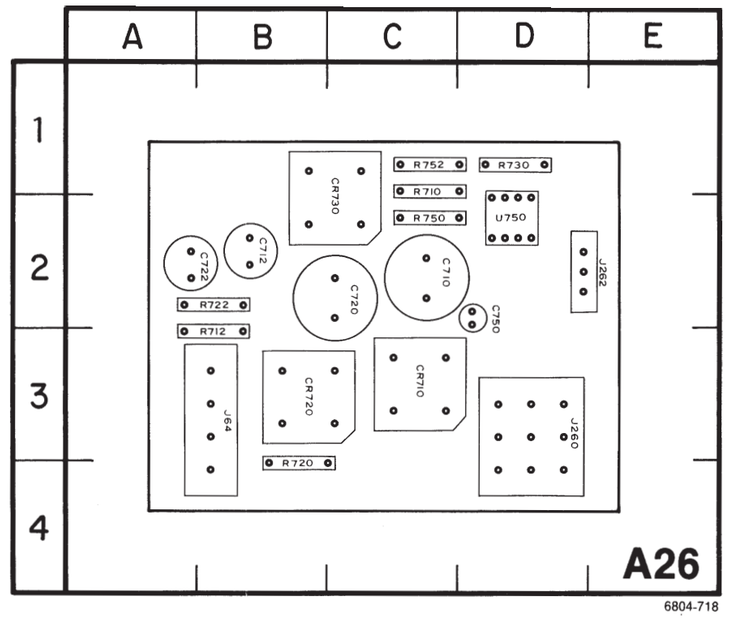
TYPE	+5VDC	⏚	+6.5V	-6.5V
74HC00	14	7		
74HC04	14	7		
74HC139	16	8		
74HC153	16	8		
STU-004			1	3

Please cut out the aria below the lines.



8044-37

Figure 7-8. A6—Collector Supply Output circuit board assembly.

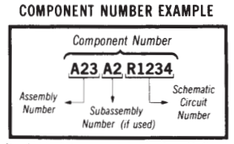


6804-718

Figure 7-9. A26—Collector Power Supply circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Please cut out the aria below the lines.

COLLECTOR SUPPLY AMPLIFIER 11

ASSEMBLY A6

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C302	B1	B4	Q440	E1	C6	R438	E1	B5
C304	B1	B4	Q444	D1	E3	R440	E1	C5
C305	B1	B4	Q524	D2	E4	R442	E1	E3
C306	B1	B4	Q538	E2	D6	R450	E1	D2
C406	B2	B3	Q540	E2	F6	R452	E1	D4
C407	A2	B3	Q544	D2	E3	R480	D2	C5
C424	D1	E4				R481	D2	D5
C452	E1	D4	R300	B1	B4	R520	D2	C4
C480	D2	B5	R302	B1	B4	R522	D2	C4
C524	D2	E4	R304	B1	B4	R524	D1	D4
C552	E2	D4	R305	B1	B4	R528	D2	E3
			R400	C1	C4	R534	D2	F4
CR402	D1	B4	R401	C1	C4	R536	E2	F4
CR404	D1	C4	R402	C1	C4	R538	E2	D5
			R404	D2	D4	R540	E2	E5
J60	A1	A2	R406	D1	B4	R542	E2	E3
J62	E1	A4	R408	C1	C4	R550	E2	E3
J66	E1	A4	R410	C1	C4	R552	E2	D4
			R412	C1	D4			
L306	A1	B3	R414	C1	C4	U400A	D1	B4
L406	A1	B3	R420	D1	C4	U400B	B1	B4
L407	A1	B3	R422	D1	C4			
			R424	D1	D4	W64	C2	D2
Q424	D1	D4	R428	D1	D3			
Q438	E1	A6	R434	D1	E4			
			R436	E1	E4			

ASSEMBLY A26

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C710	B2	C2	J64	C2	B3	R750	B3	C2
C712	B3	B2	J260	A2	D3	R752	C3	C1
C720	B3	C2	J262	C3	E2			
C722	C3	B2				U750	B4	D2
C750	C3	D2	R710	B2	C1			
			R712	B3	B3			
CR710	B2	C3	R720	B3	B4			
CR720	B3	B3	R722	C3	B2			
CR730	B3	C2	R730	C3	D1			

CHASSIS MOUNTED PARTS

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
AOJ510	F1		S92	F1		AOT200	A2	
AOP510	F1							

Please cut out the aria below the lines.

VOLTAGE AND WAVEFORM CONDITIONS

Voltage Conditions

The voltages shown on the diagram were obtained using a digital multimeter with 10 MΩ input impedance. These voltages are not affected by the 371A settings.

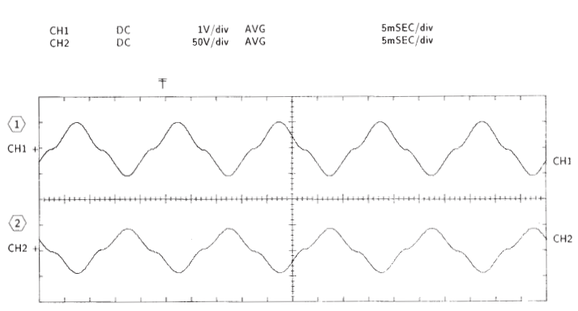
Waveform Conditions

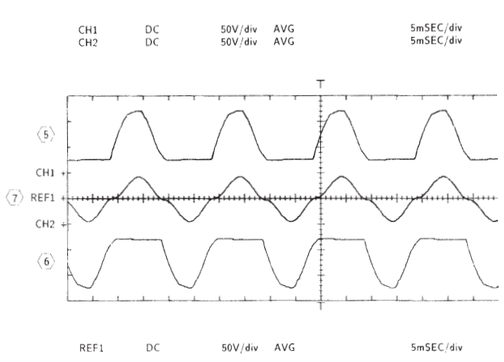
The waveforms shown below were obtained using a test oscilloscope with a 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A under the following conditions:

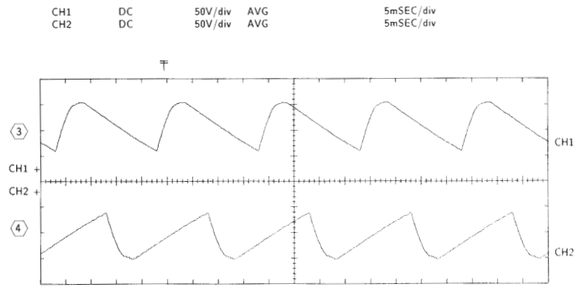
Waveform 1 and 2: These waveforms were obtained with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 30 W and the COLLECTOR SUPPLY VARIABLE is set to 50%.

Waveform 3 and 4: These waveforms were obtained with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 30 W, and the Collector Supply HIGH VOLTAGE terminal and the COMMON terminal is opened.

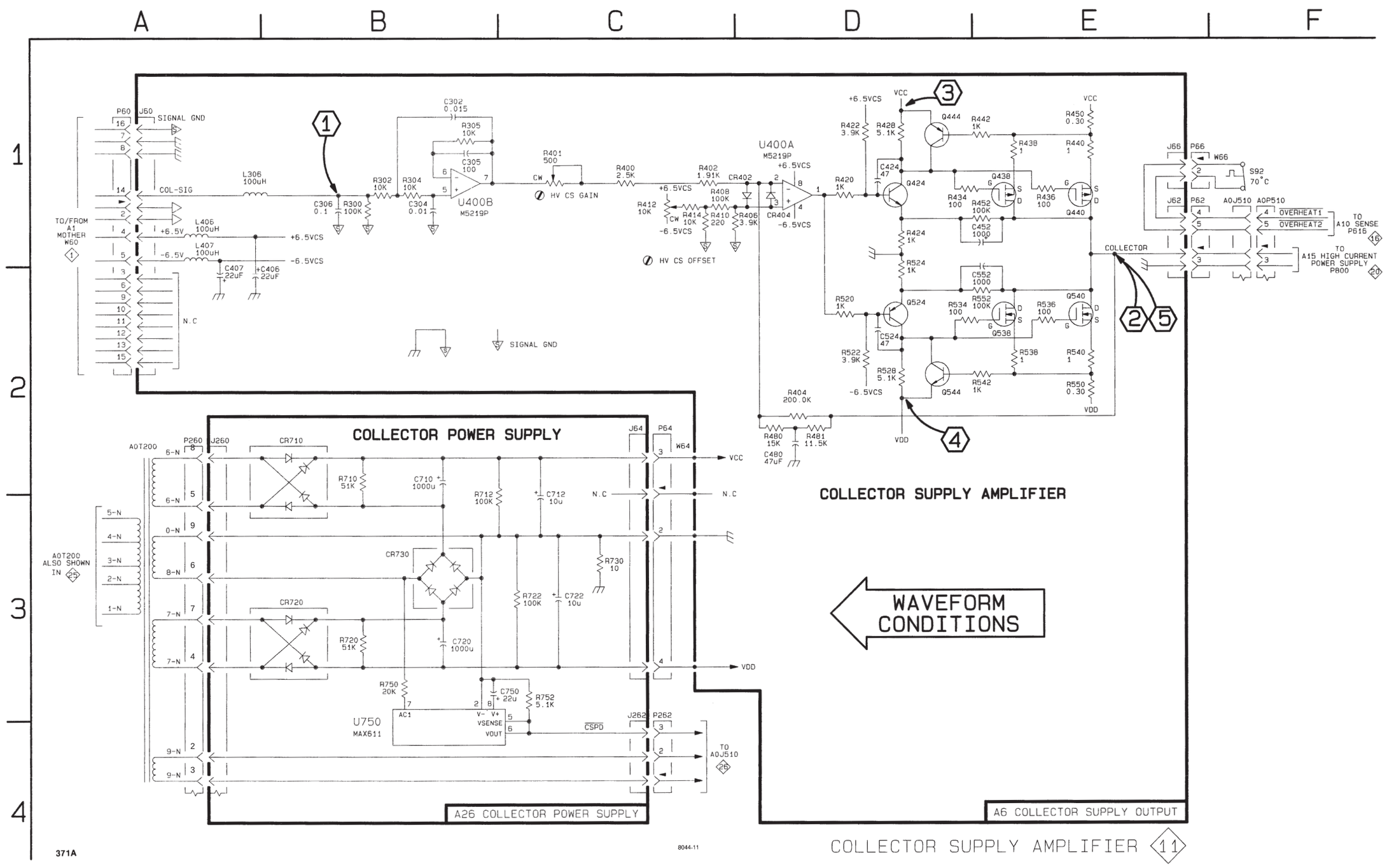
Waveform 5, 6 and 7: These waveforms were obtained with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 30 W and the COLLECTOR SUPPLY VARIABLE is set to 50%, and a patch cord is connected between the Collector Supply HIGH VOLTAGE terminal and the COMMON terminal.







Please cut out the aria below the lines.



Please cut out the aria below the lines.

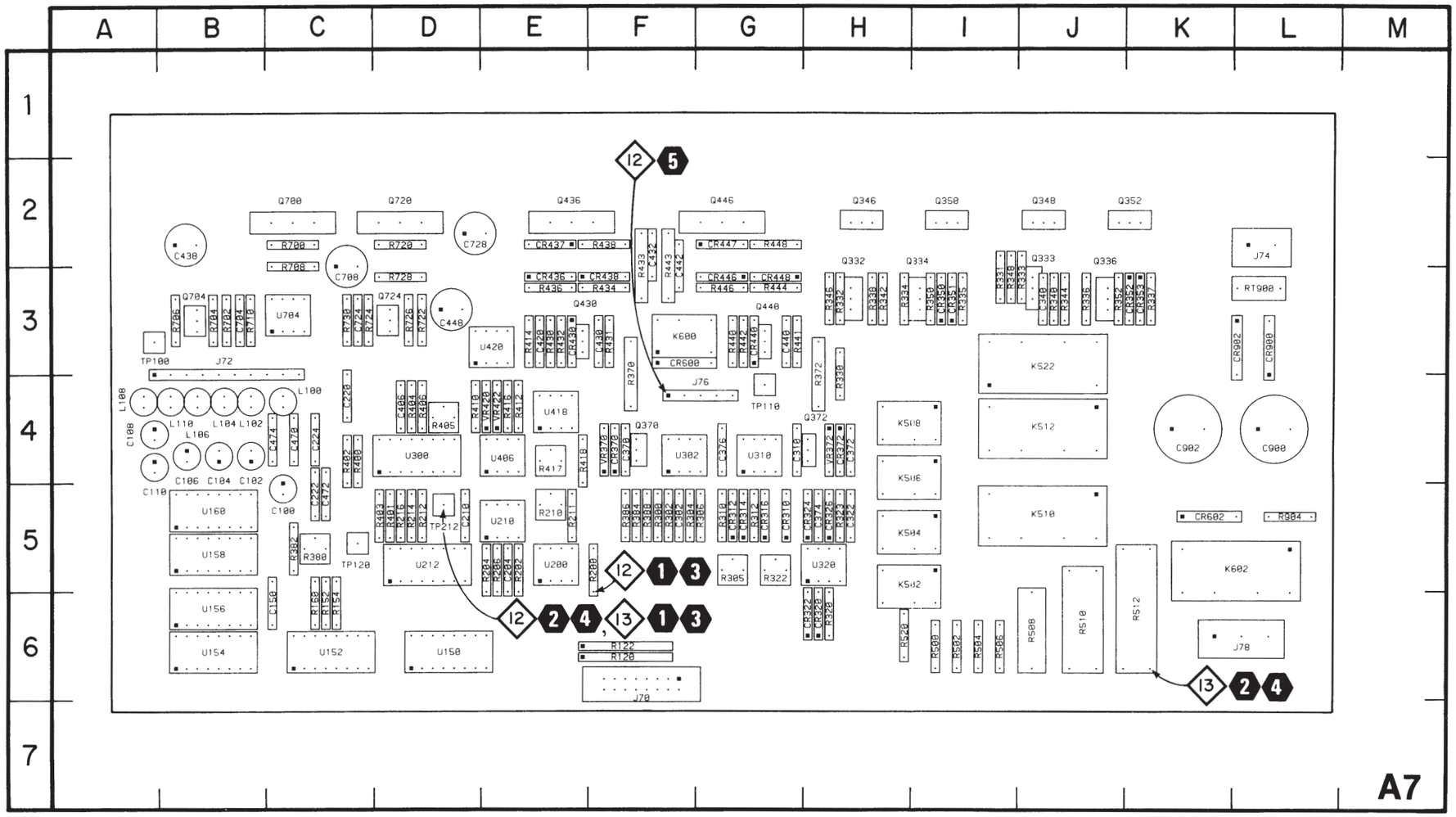
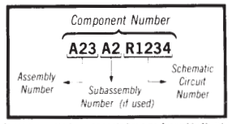


Figure 7–10. A7—Step Generator circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

A7–Step Generator circuit board illustration to be used with diagrams 12 and 13

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STEP GEN VOLTAGE AMPLIFIER 12

ASSEMBLY A7

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C204	B3	E5	R200	A3	F5	R444	E4	G3
C210	C3	D5	R202	B3	E5	R446	F4	G3
C406	D3	D4	R204	B3	E5	R448	F4	G2
C420	E2	E3	R206	B3	E5	R700	B5	C2
C430	E2	F3	R210	C2	E5	R702	B5	B3
C432	F2	F2	R211	C2	E5	R704	B5	B3
C440	E4	G3	R212	C3	D5	R706	B5	B3
C442	F4	F2	R214	C3	D5	R708	B5	C2
C704	B5	B3	R216	C3	D5	R710	C5	B3
C708	C5	C3	R400	D3	C4	R720	C5	D2
C724	D5	C3	R401	D3	D5	R722	C5	D3
C728	D5	D2	R402	D3	C4	R724	C5	C3
			R403	D4	D5	R726	C5	D3
CR430	E2	E3	R404	D2	D4	R728	D5	D3
CR436	E1	E3	R405	D3	D4	R730	D5	C3
CR437	F1	E2	R406	D2	D4			
CR438	F1	F3	R410	E3	D4	TP110	F3	G4
CR440	E3	G3	R412	E3	E4	TP120	C2	C5
CR446	F4	G3	R414	E2	E3	TP212	C3	D5
CR447	F4	G2	R416	E3	E4			
CR448	F4	G3	R417	E4	E4	U200	B2	E5
			R418	E5	E4	U210	C3	E5
J70	A2	F6	R430	E2	E3	U212	C3	D5
J76	G1	G4	R431	E2	F3	U300A	D3	D4
			R432	F2	E3	U300B	D3	D4
Q430	F2	E3	R433	F2	F3	U406	D3	E4
Q436	F1	E2	R434	E1	F3	U418	E5	E4
Q440	F4	G3	R436	F1	E3	U420	E3	E3
Q446	F4	G2	R438	F1	F2	U704A	B5	C3
Q700	B4	C2	R440	E3	G3	U704B	D5	C3
Q704	C4	B3	R441	E4	G3			
Q720	C5	D2	R442	F4	G3	VR420	E3	E4
Q724	C5	D3	R443	F3	F3	VR422	E3	E4

STEP GEN CURRENT AMPLIFIER 13

ASSEMBLY A7

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C100	B3	C5	K502	E4	H5	R333	E2	J3
C102	B2	B4	K504	E4	H5	R334	E1	H3
C104	B2	B4	K506	E4	H4	R335	F1	I3
C106	B2	B4	K508	F4	H4	R336	E2	J3
C108	B2	A4	K510	F4	J5	R337	F2	K3
C110	B2	A5	K512	F4	J4	R338	E1	H3
C150	B3	C6	K522	E5	J3	R340	E2	J3
C220	B2	C4	K600	F5	F3	R342	E1	H3
C222	B2	C5	K602	E5	L5	R344	E2	J3
C224	B2	C4				R346	F1	H3
C302	D1	F5	L100	B3	C4	R348	F2	I3
C310	E1	G4	L102	B2	B4	R350	F1	I3
C322	C2	H5	L104	B2	B4	R352	F2	J3
C340	E2	J3	L106	B2	B4	R370	D2	F4
C370	D2	F4	L108	B2	A4	R372	D3	H4
C372	D3	H4	L110	B2	B4	R380	C2	C5
C374	B2	H5				R382	C5	C5
C376	C2	G4	Q332	E1	H3	R384	C2	F5
C438	B1	B2	Q333	E2	J3	R386	C2	F5
C448	B2	D3	Q334	F1	I3	R388	C1	F5
C470	B2	C4	Q336	F2	J3	R500	E3	I6
C472	B2	C5	Q346	F1	H2	R502	E3	I6
C474	B2	C4	Q348	F2	J2	R504	E3	I6
C900	B4	L4	Q350	F1	I2	R506	E3	I6
C902	B5	K4	Q352	F2	K2	R508	F3	J6
			Q370	C2	F4	R510	F3	J6
CR310	D1	G5	Q372	C3	H4	R512	F3	K6
CR312	D1	G5				R520	E2	H6
CR314	D1	G5	R120	B3	F6	R904	B4	L5
CR316	E1	G5	R122	B4	F6			
CR320	D3	H6	R152	D3	C6	RT900	A4	L3
CR322	D2	H6	R154	D3	C6			
CR324	D2	H5	R160	E3	C6	TP100	A2	A3
CR326	D3	H5	R300	C1	F5			
CR350	F1	I3	R302	D1	F5	U150	C3	D6
CR351	F1	I3	R304	D1	F5	U152	D3	C6
CR352	F2	K3	R305	D2	G5	U154	D3	B6
CR353	E1	K3	R306	D2	G5	U156	D4	B6
CR370	C2	F4	R310	D1	G5	U158	E4	B5
CR372	C3	H4	R312	E2	G5	U160	E5	B5
CR600	F5	F3	R320	E3	H6	U300C	C2	D4
CR602	E5	K5	R322	D3	G5	U302	D1	F4
CR900	A4	L3	R323	D2	H5	U310	E1	G4
CR902	A5	L3	R330	E1	H4	U320	D3	H5
			R331	E2	I3			
J70	A3	F6	R332	E1	H3	VR370	D2	F4
J72	A2	B3				VR372	C3	H4
J74	A4	L2						
J78	G1	L6						

Please cut out the aria below the lines.

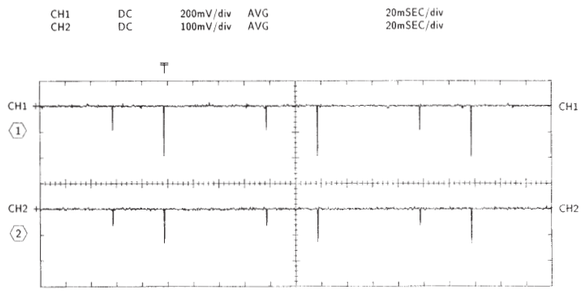
WAVEFORM CONDITIONS

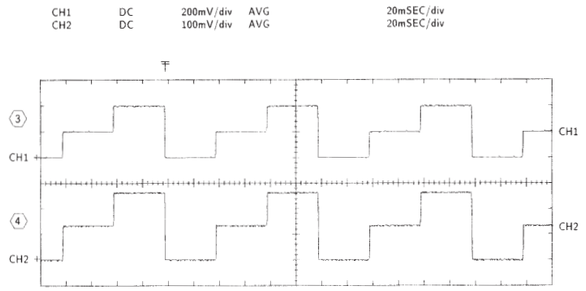
Waveform Conditions

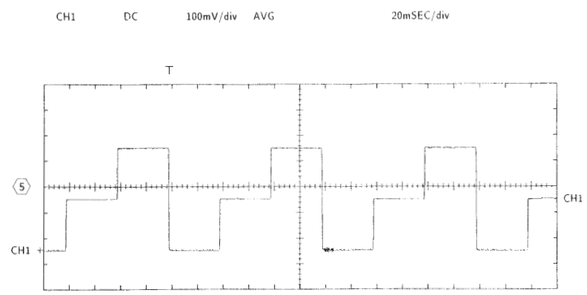
The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A under the following conditions:

Waveform 1 and 2: These waveforms were obtained with the 371A set to the power-up default (initial) settings.

Waveform 3, 4 and 5: These waveforms were obtained with the 371A set to the power-up default (initial) settings, except that the STEP GENERATOR SOURCE is set to VOLTAGE and the STEP/OFFSET AMPLITUDE is set to 200 mV.







Please cut out the aria below the lines.

TYPE	+6.5VSG	-6.5VSG	⏚	+12VSG	-12VSG
4052	16	7	8		
LF411				7	4
LT1007				7	4
uPC1458				8	4

WAVEFORM CONDITIONS

1-2-5 RANGING

VOLTAGE AMPLIFIER

+55V & -55V POWER SUPPLY

PARTIAL A7 STEP GENERATOR BOARD

STEP GEN VOLTAGE AMPLIFIER 12

Please cut out the aria below the lines.

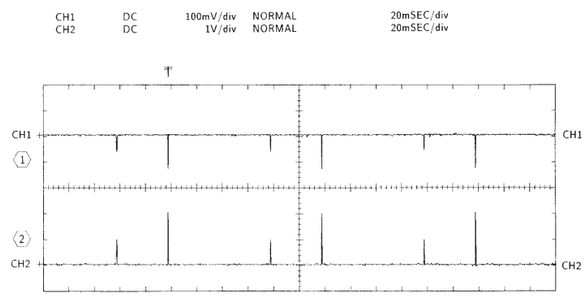
WAVEFORM CONDITIONS

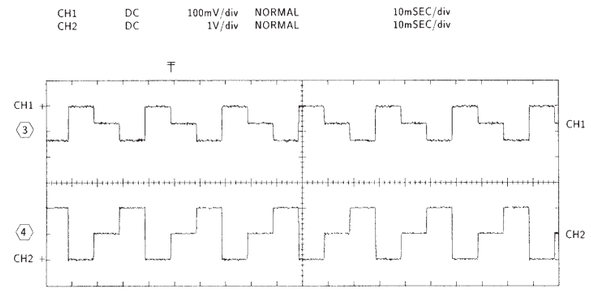
Waveform Conditions

The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A under the following conditions:

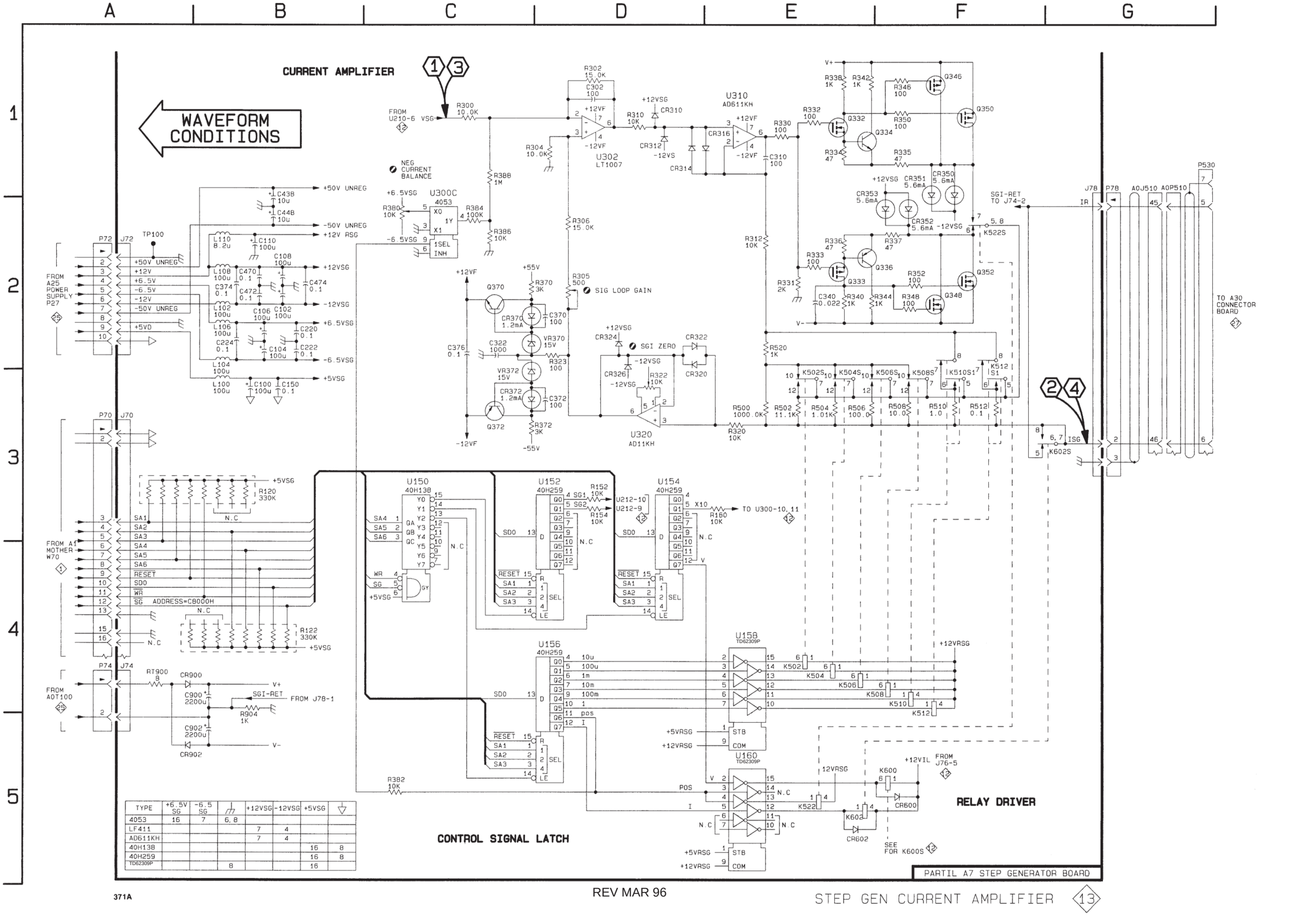
Waveform 1 and 2: These waveforms were obtained with the 371A set to the power-up default (initial) settings, and a 1 kΩ resistor is connected between the Step Generator CURRENT terminal and the COMMON terminal.

Waveform 3 and 4: These waveforms were obtained with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 30 W and the STEP/OFFSET AMPLITUDE is set to 1 mA, and a 1 kΩ resistor is connected between the Step Generator CURRENT terminal and the COMMON terminal.

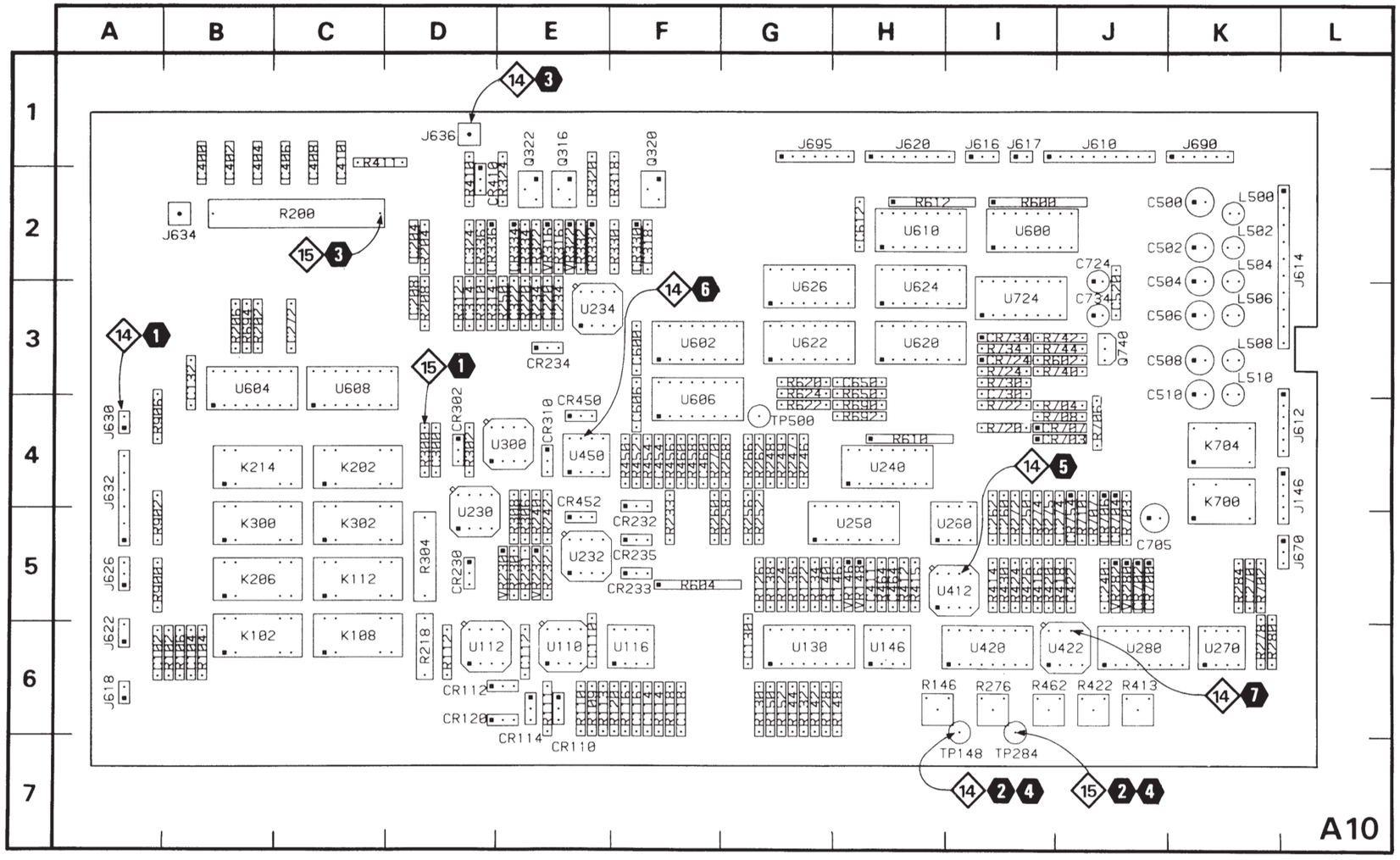




Please cut out the aria below the lines.



Please cut out the aria below the lines.

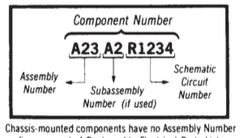


8044-39

Figure 7-11. A10—Sense circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

A10–Sense circuit board illustration to be used with diagrams 14, 15 and 16

Please cut out the aria below the lines.

VERTICAL SENSE 14

ASSEMBLY A10

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C102	E1	A6	J610	B2	J1	R410	D4	D2
C104	E2	B6	J612	H1	L4	R411	D4	C1
C110	C4	E6	J614	B4	L2	R412	D4	H5
C112	B5	E6	J626	E4	A5	R413	D5	J6
C114	C5	F6	J630	B1	A4	R414	E4	I5
C116	G2	F6	J636	B2	D1	R415	E4	H5
C118	G1	F6				R416	E4	I5
C130	C5	G6	K102	D2	B6	R418	E4	J5
C132	C5	B3	K108	E3	C6	R420	E4	I5
C146	H2	H5	K112	E3	C5	R422	F3	J6
C234	B5	E3				R424	E3	I5
C240	C5	J5	L500	B4	K2	R426	E3	I5
C250	C5	I5	L502	B4	K2	R430	E4	I5
C272	C4	C3	L504	B5	K2	R450	E5	F4
C274	C5	J5	L506	B5	K3	R452	E5	F4
C400	C4	B1	L508	B5	K3	R454	E5	F4
C402	C4	B1	L510	B5	K3	R456	E5	F4
C404	C4	B1				R458	E5	F4
C406	D4	C1	R102	E1	B6	R460	F5	F4
C408	D4	C1	R104	E2	B6	R462	F5	I6
C410	D4	C1	R106	E2	B6	R464	F5	H5
C411	E4	H5	R109	F1	E6	R600	B2	I2
C422	F3	J5	R110	E1	E6	R602	B2	I3
C454	E5	F4	R111	D1	E6	R604	C2	F5
C460	F5	F4	R112	E2	D6	R900	C1	A5
C464	F5	H5	R113	F2	E6			
C500	B4	K2	R114	F1	F6	TP148	H1	I7
C502	B4	K2	R116	G2	F6	TP500	B4	G4
C504	B5	K2	R118	G1	F6			
C506	B5	K3	R120	F2	F6	U110	F1	E6
C508	B5	K3	R122	G2	G5	U112	F2	D6
C510	B5	K3	R124	G2	G5	U116	G1	F6
C520	B5	J3	R126	G1	G5	U130	H2	G6
C600	C5	F3	R128	G1	G6	U146	H3	H6
C606	C5	F4	R130	G1	G6	U412	D4	I5
C612	C5	H2	R132	G1	G6	U420	F3	I6
			R134	H2	G5	U422	F3	J6
CR110	F1	E7	R136	H2	G5	U450A	E5	E4
CR112	F2	D6	R138	H1	G5	U450B	F5	E4
CR114	F1	E6	R140	H1	G5	U602	C3	F3
CR120	F2	D6	R142	H1	G6	U604	D3	B3
CR410	D4	D2	R144	H1	G6			
CR450	E5	E4	R146	H3	H6	VR146	H2	H5
CR452	E5	E4	R148	H1	H6	VR148	H2	H5
			R150	G1	G6			
			R152	H1	G6			

Please cut out the aria below the lines.

WAVEFORM CONDITIONS

Waveform Conditions

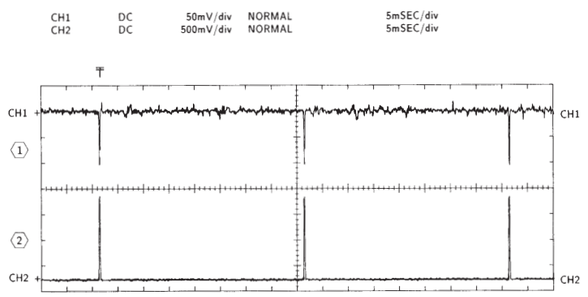
The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A under the following conditions:

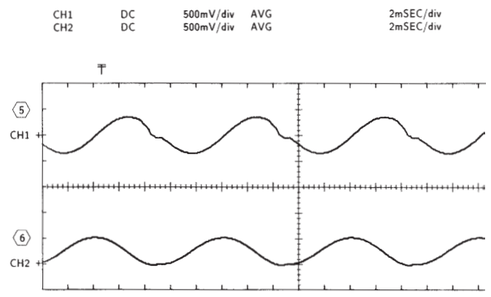
Waveform 1 and 2: These waveforms were obtained with the 371A set to the power–up default (initial) settings, except that the COLLECTOR SUPPLY VARIABLE is set to 20%, and a patch cord is connected between the Collector Supply HIGH CURRENT terminal and the COMMON terminal.

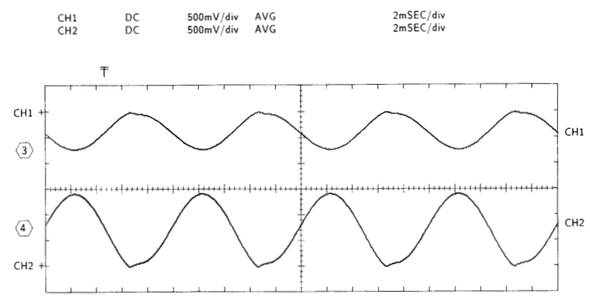
Waveform 3 and 4: These waveforms were obtained with the 371A set to the power–up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 30 W and the COLLECTOR SUPPLY VARIABLE is set to 20%, and a patch cord is connected between the Collector Supply HIGH VOLTAGE terminal and the COMMON terminal.

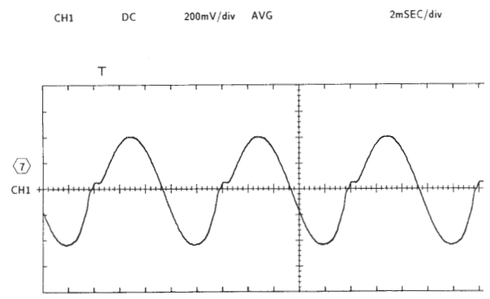
Waveform 5 and 6: These waveforms were obtained with the 371A set to the power–up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 3 W and the COLLECTOR SUPPLY VARIABLE is set to 20%.

Waveform 7: These waveforms were obtained with the 371A set to the power–up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 3 W and VERTICAL CURRENT/DIV is set to 10 μA, and the COLLECTOR SUPPLY VARIABLE IS SET TO 20%.

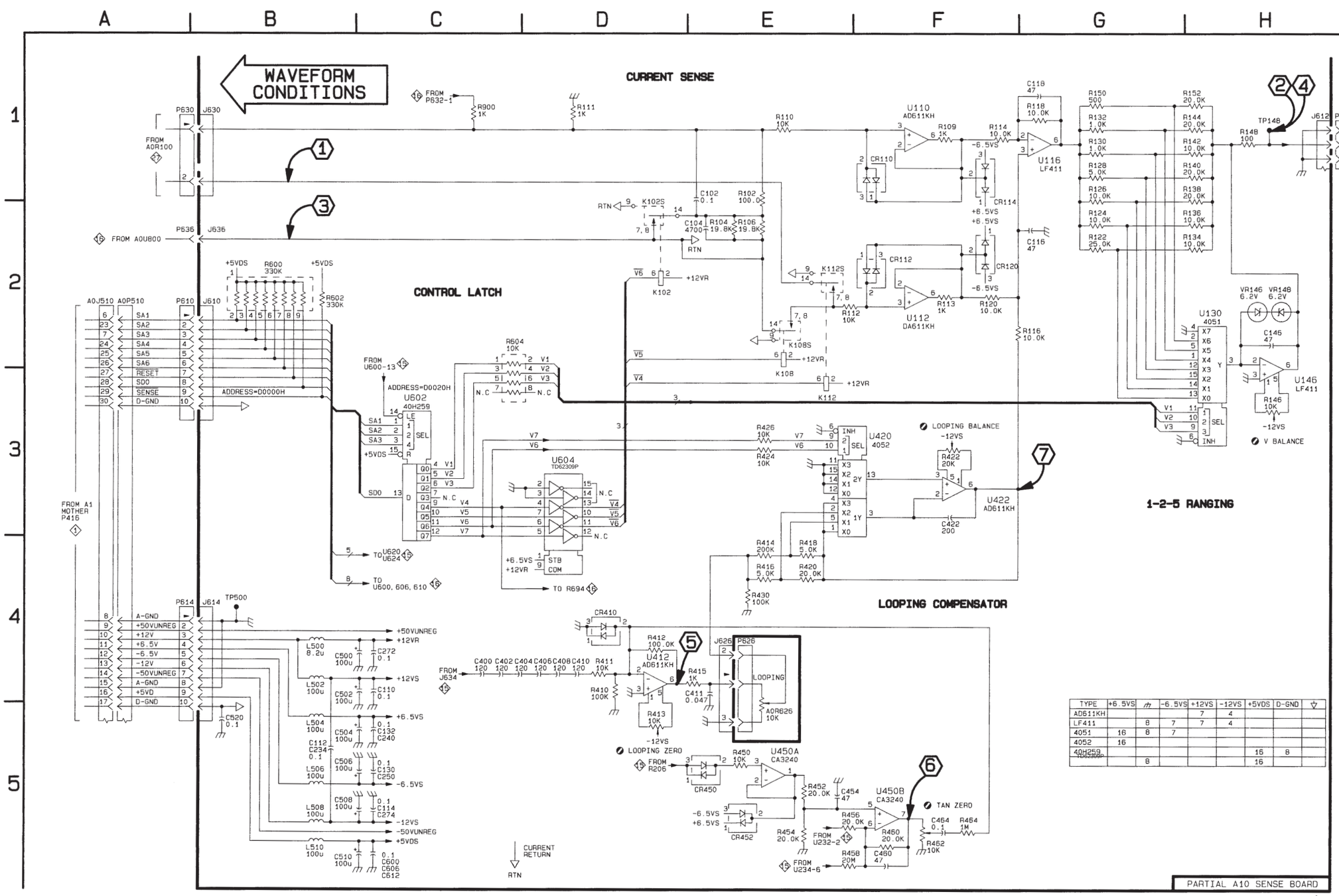








Please cut out the aria below the lines.



TYPE	+6.5VS	⏚	-6.5VS	+12VS	-12VS	+5VDS	D-GND	⏚
AD611KH				7	4			
LF411		8	7	7	4			
4051	16	8	7					
4052	16							
40H259						16	8	
TD62309P		8				16		

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HORIZONTAL SENSE 15

ASSEMBLY A10

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C204	C4	D2	R202	D4	B3	R314	F1	D3
C208	C4	D3	R204	C4	D2	R316	G1	E2
C22O	D5	E3	R206	D4	B3	R318	G1	F2
C260	G4	I5	R208	C4	D3	R320	G1	E2
C262	G4	I5	R218	D5	D6	R322	G2	E2
C270	H4	K5	R220	D5	E3	R324	H2	E2
C300	E2	D4	R230	E4	E5	R330	H1	F2
C314	G2	D3	R231	E4	E5	R332	H1	E2
C318	G1	F2	R232	E5	E5	R334	G2	E2
C322	G2	E3	R233	E5	F5	R336	G2	D2
C324	H2	D2	R234	E5	E3	R610	E3	H4
			R240	E4	E5	R612	E3	H2
CR230	E4	D5	R242	E4	E5	R902	B2	A5
CR232	D5	F5	R246	E4	G4	R906	B4	A4
CR233	D5	F5	R247	E4	G4			
CR234	E5	E3	R248	E4	G4	TP284	H4	I7
CR235	D5	F5	R249	E4	G4			
CR302	F2	D4	R250	E5	E3	U230	E4	D5
CR310	E2	E4	R252	E5	G5	U232	E5	E5
CR3301	G1	F2	R256	E5	G5	U234	E5	E3
CR332	G1	E2	R258	E5	G5	U240	F3	H4
CR334	G2	E2	R260	E5	F5	U250	F4	H5
CR336	G2	D2	R262	F5	G4	U260	G4	I5
			R266	F5	G4	U270	H4	K6
J612	I4	L4	R268	F5	G4	U280	G4	J6
J632	A1,A4	A4	R270	F5	F4	U300	F1	E4
J634	A4	B2	R272	G4	I5	U600	B2	I2
J670	I5	L5	R274	G4	I5	U606	C2	F4
			R275	G4	I5	U608	C3	C3
K202	D3	C4	R276	H4	I6	U610	E2	H2
K206	D3	B5	R278	H4	K6			
K214	D3	B4	R280	H4	K6	VR230	E4	E5
K300	D3	B5	R284	H4	K5	VR232	E4	E5
K302	D3	C5	R300	E1	D4	VR280	G4	J5
			R302	F1	D4	VR282	G4	J5
Q316	G2	E1	R304	F2	D5	VR316	G2	E2
Q320	G1	F1	R306	F2	E5	VR322	H2	E2
Q322	H2	E1	R308	F2	E5			
			R310	F2	D3			
R200	C4	C2	R312	F2	D3			

COLLECTOR SUPPLY INTERFACE & HIGH VOLTAGE OUTPUT 16

ASSEMBLY A10

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C650	C2	H3	J618	B4	A6	R704	B5	J4
C705	B4	J5	J620	E2	H1	R706	B5	J4
C724	C4	J2	J622	B3	A6	R707	B4	J5
C730	D5	I3	J690	E3	K1	R708	B4	J4
C734	D5	J3	J695	E3	G1	R710	B4	J5
						R720	B4	I4
CR700	B3	J5	K700	B2	K4	R722	B5	I4
CR702	B3	J5	K704	B4	K4	R724	C4	I3
CR703	B3	J4				R730	D5	I3
CR704	B4	J5	Q740	E4	J3	R734	D4	I3
CR706	B4	J5				R740	E4	J3
CR707	B4	J4	R620	D3	G3	R742	E4	J3
CR724	C4	I3	R622	D3	G4	R744	E4	J3
CR734	D5	I3	R624	D3	G3			
CR754	D2	J5	R650	C1	H3	U620	C3	H3
			R690	D3	H4	U622	D3	G3
J146	E5	L4	R692	D3	H4	U624	C3	H3
J616	B5	I1	R694	D3	B3	U626	D1	G3
J617	B4	I1	R702	C3	K5	U724A	C4	I3
			R703	B3	J5	U724B	D4	I3

CHASSIS MOUNTED PARTS

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
R626	E5		S906	A4		U800	E1	
R800	G1							
			T800	E1		P620	E2	
S904	A4					P804	D1	

Please cut out the aria below the lines.

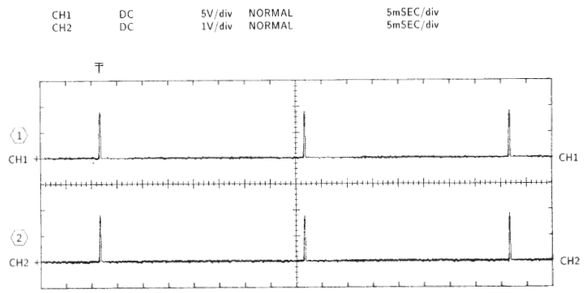
WAVEFORM CONDITIONS

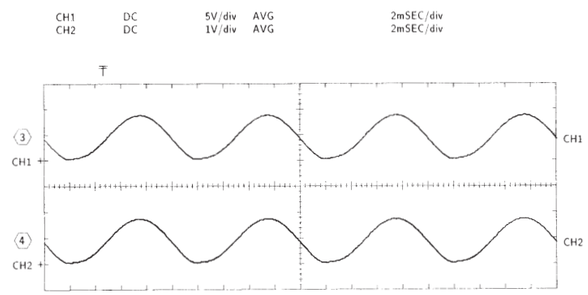
Waveform Conditions

The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A under the following conditions:

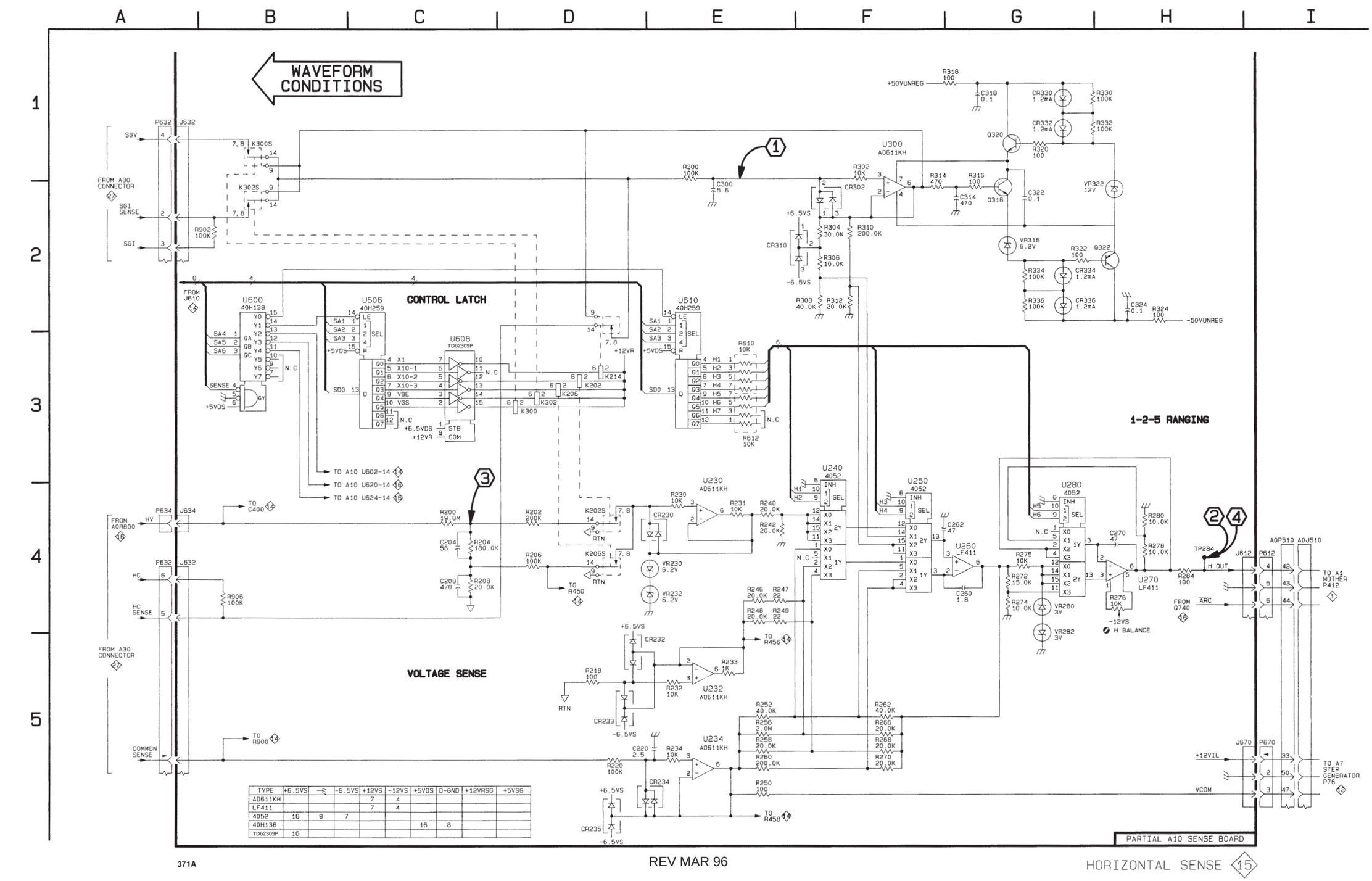
Waveform 1 and 2: These waveforms were obtained with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY VARIABLE is set to 30%.

Waveform 3 and 4: These waveforms were obtained with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 30 W and the COLLECTOR SUPPLY VARIABLE is set to 30%.



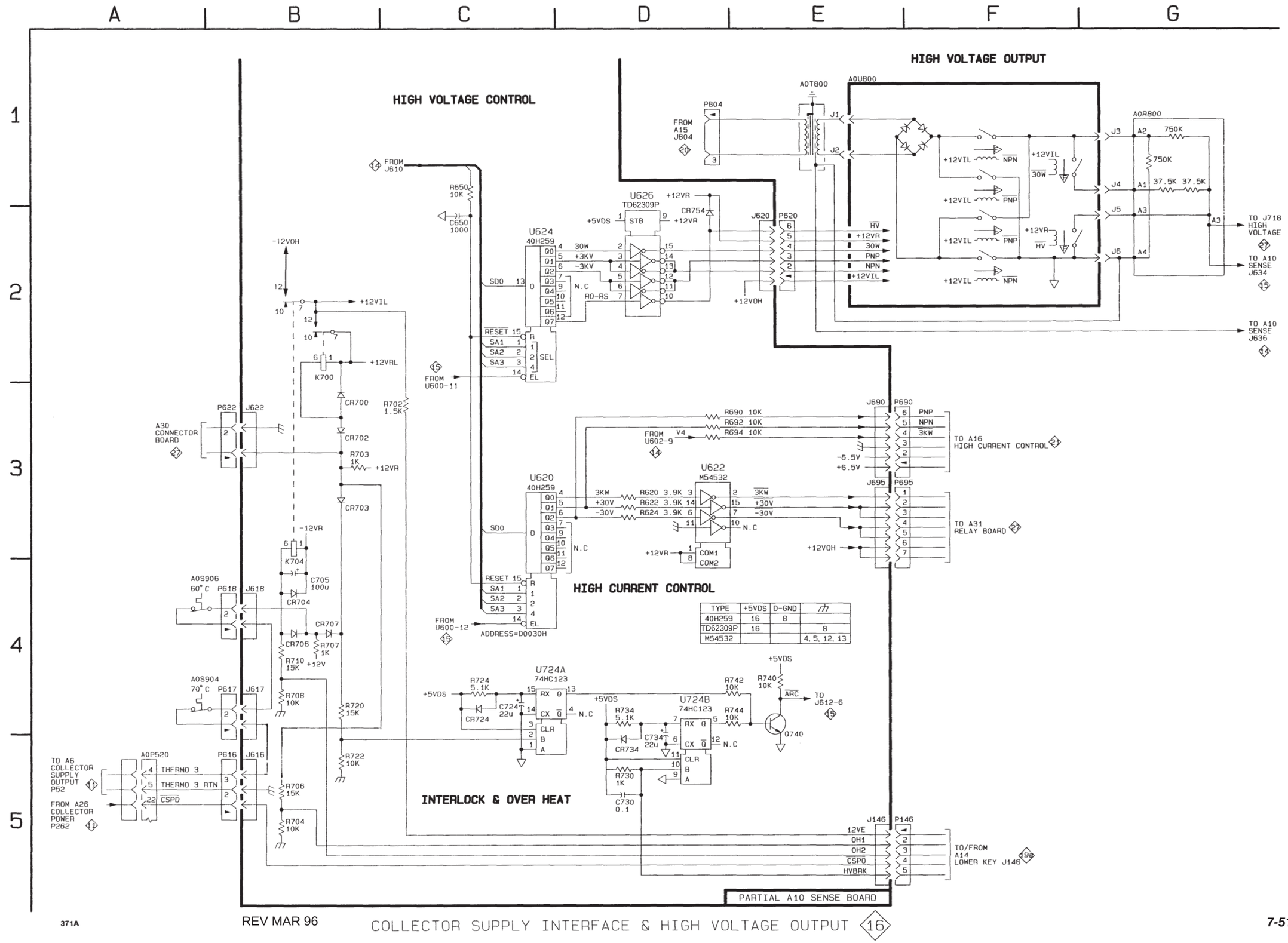


Please cut out the aria below the lines.



TYPE	+6.5VS	⏚	-6.5VS	+12VS	-12VS	+5VDS	D-GND	+12VRSG	+5VSG
AD611KH				7	4				
LF411				7	4				
4052	16	8	7						
40H138						16	8		
TD62309P	16								

Please cut out the aria below the lines.



TYPE	+5VDS	D-GND	
40H259	16	8	
TD62309P	16		8
M54532			4, 5, 12, 13

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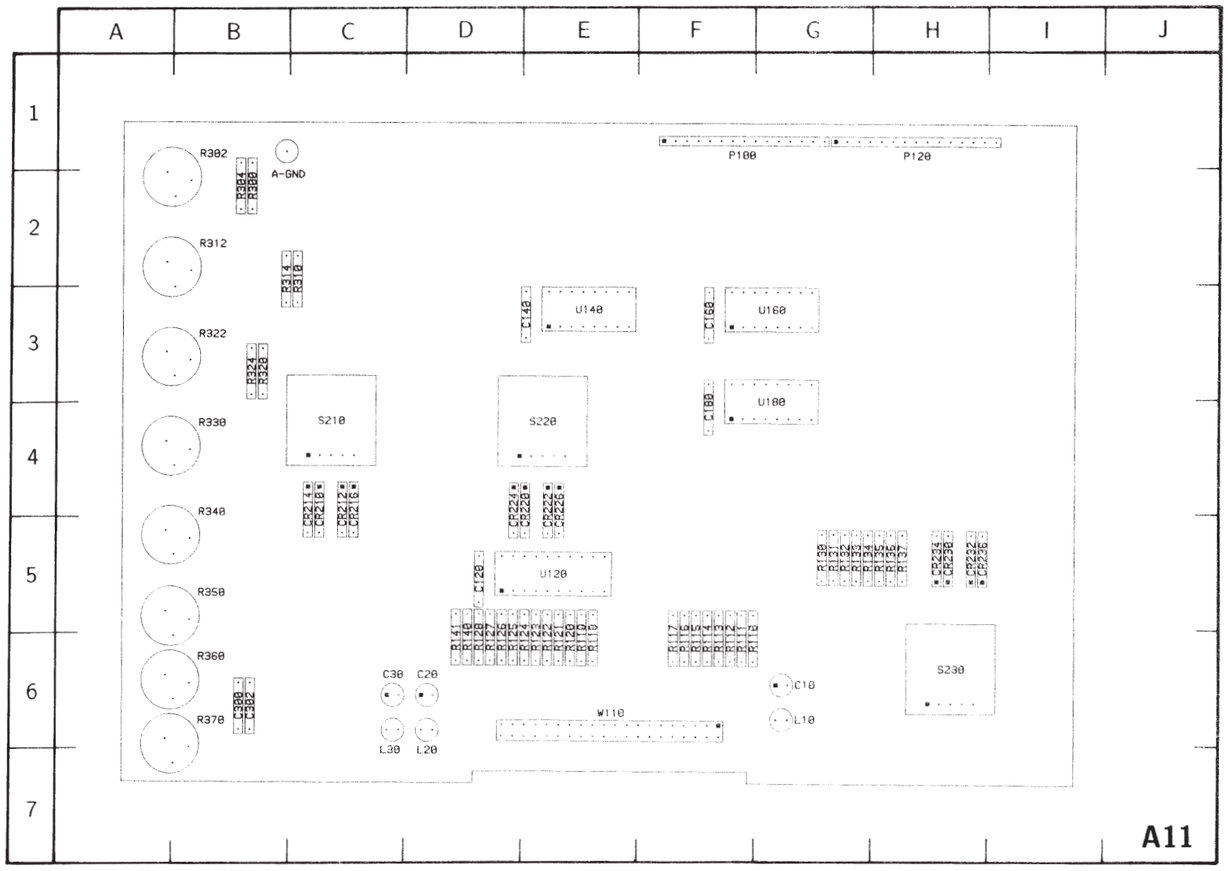


8044-40

Figure 7-12. A11—Main Key circuit board assembly.

MAIN KEY <17>

ASSEMBLY A11

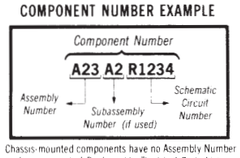
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C10	B2	G6	R110	A1	G6	R141	C3	D6
C20	B2	D6	R111	B1	F6	R300	C4	B2
C30	B2	C6	R112	B1	F6	R302	C4	B1
C120	B2	D5	R113	B1	F6	R304	C5	B2
C140	B2	E3	R114	B1	F6	R310	B4	C2
C160	B2	F3	R115	B1	F6	R312	B4	B2
C180	B2	F4	R116	B1	F6	R314	B5	B2
C300	B2	B6	R117	C1	F6	R320	B4	B3
C302	B2	B6	R118	A3	E6	R322	B4	B3
			R119	B3	E6	R324	B5	B3
CR210	F3	C4	R120	B3	E6	R330	C4	B4
CR212	F3	C4	R121	B3	E6	R340	C4	B5
CR214	F3	C4	R122	B3	E6	R350	C5	B5
CR216	F3	C4	R123	B3	E6	R360	C5	B6
CR220	F4	E4	R124	B3	E6	R370	C5	B6
CR222	F4	E4	R125	C3	D6			
CR224	F4	D4	R126	B3	D6	S210	F3	C4
CR226	F4	E4	R127	B3	D6	S220	F4	E4
CR230	F5	H5	R128	B3	D6	S230	F4	H6
CR232	F5	H5	R130	E2	G5			
CR234	F5	H5	R131	F2	G5	U120	E2	E5
CR236	F5	H5	R132	F2	G5	U140	D1	E3
			R133	F2	G5	U160	D2	G3
L10	B2	G6	R134	F2	G5	U180A	E4	G4
L20	B2	D6	R135	F2	H5	U180B	C1	G4
L30	B2	C6	R136	F2	H5			
			R137	G2	H5	W110	A1	E6
P100	G1	F1	R140	C3	D6			
P120	G3	H1						

ASSEMBLY A12

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J100	G1	F1						
J120	G3	G1						

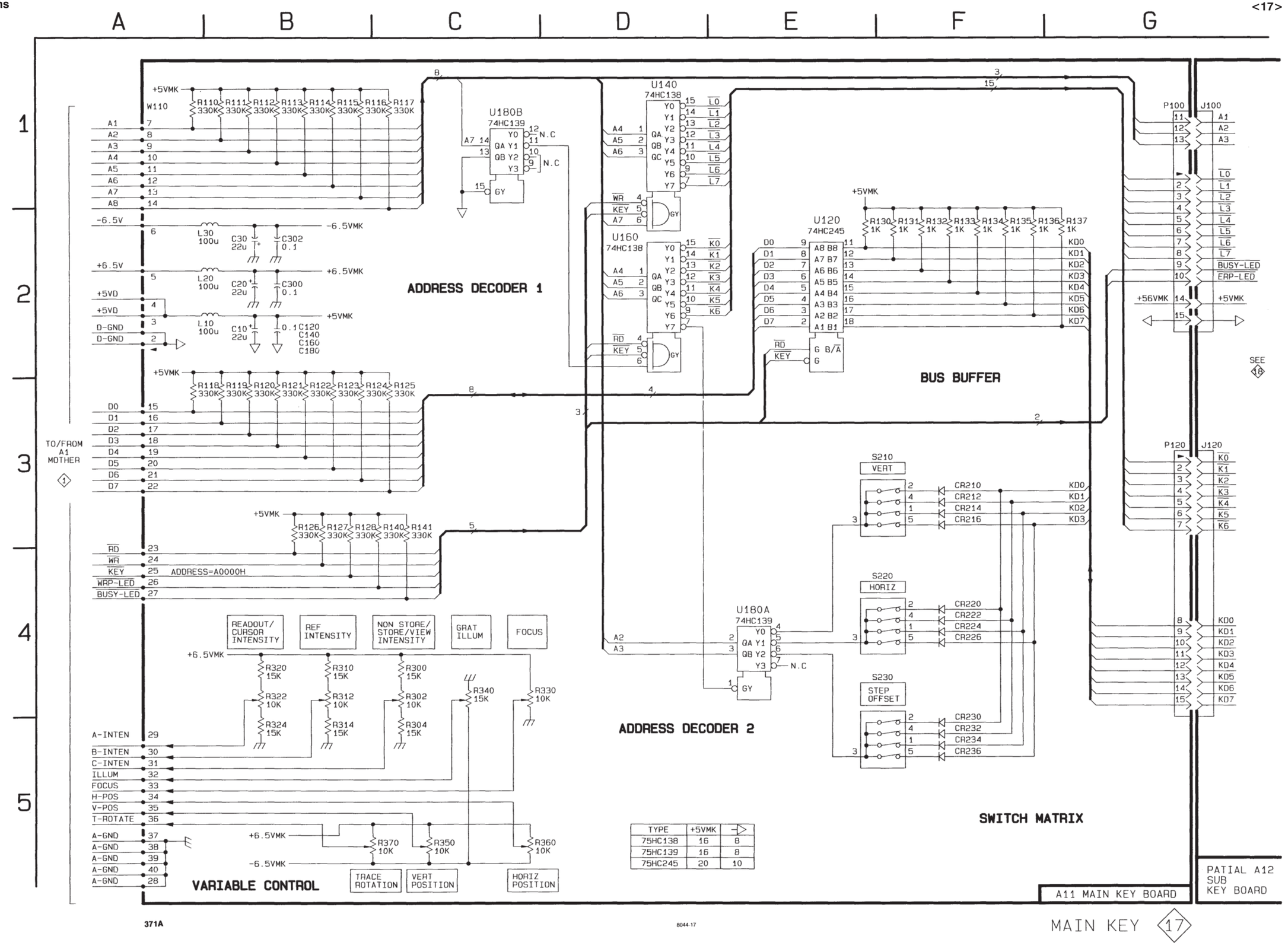
Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Please cut out the aria below the lines.



Please cut out the aria below the lines.

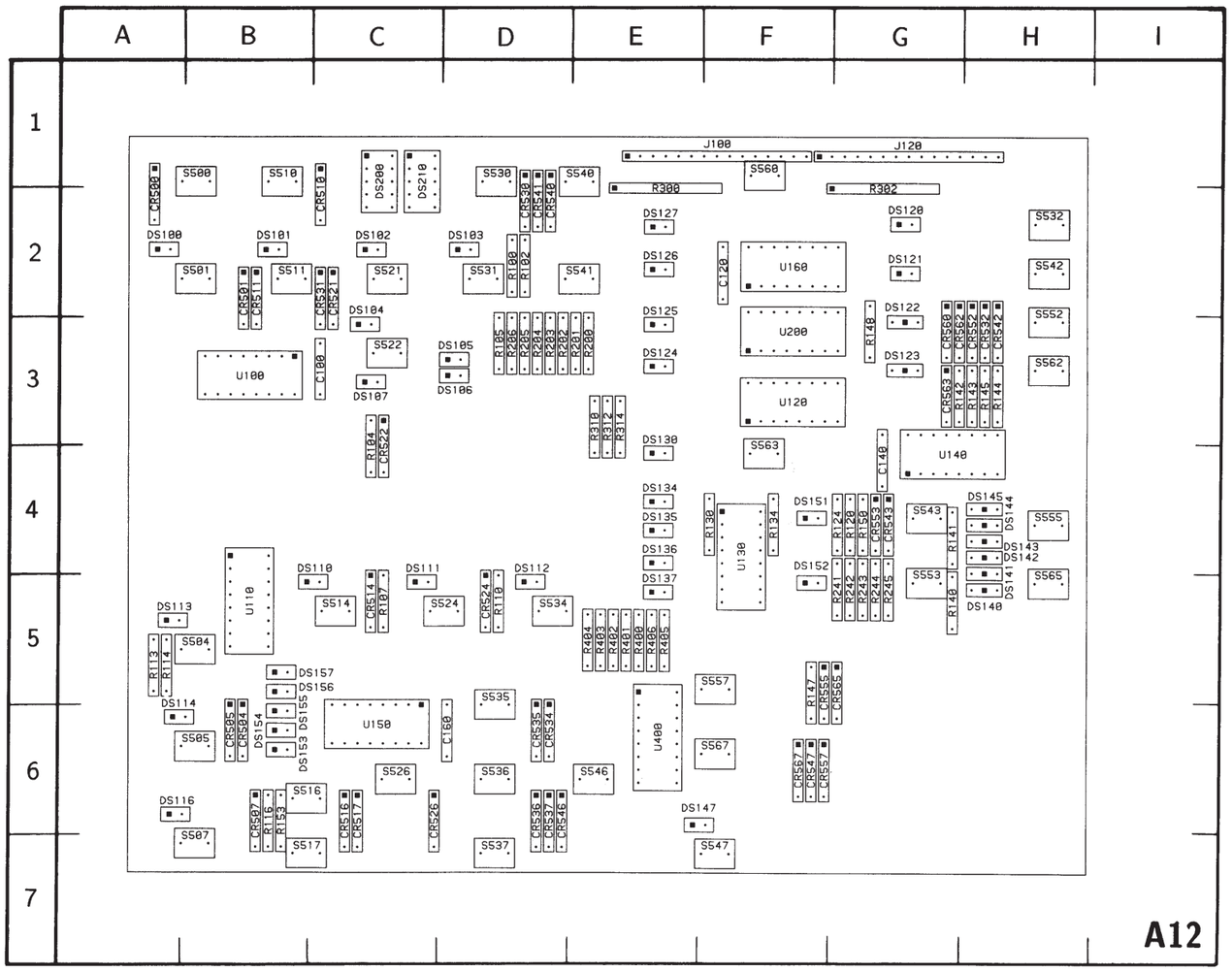
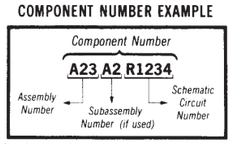


Figure 7-13. A12—Sub Key circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

SUB KEY 18

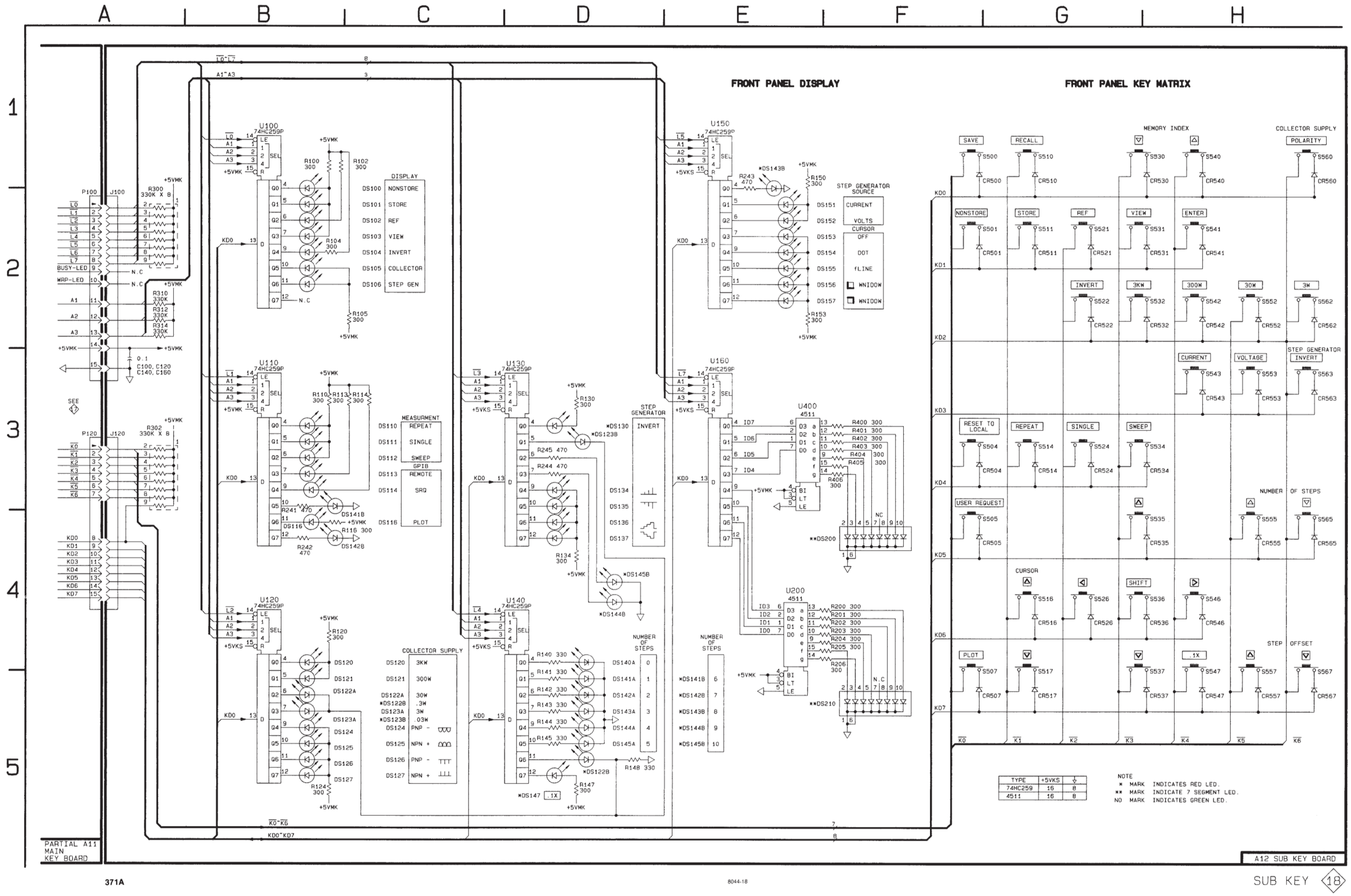
ASSEMBLY A12

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C100	A3	C3	DS126	B5	E2	R243	E1	G5
C120	A3	F2	DS127	B5	E2	R244	D3	G5
C140	A3	G4	DS130	D3	E3	R245	D3	G5
C160	A3	D6	DS134	D3	E4	R300	A2	E1
			DS135	D3	E4	R302	A3	G1
CR500	G1	A2	DS136	D4	E4	R310	A2	E3
CR501	G2	B2	DS137	D4	E5	R312	A2	E3
CR504	G3	B6	DS140	D4	H5	R314	A2	E3
CR505	G4	B6	DS141A	D5	H4	R400	F3	E5
CR507	G5	B6	DS141B	C4	H4	R401	F3	E5
CR510	G1	C2	DS142A	D5	H4	R402	F3	E5
CR511	G2	B2	DS142B	C4	H4	R403	F3	E5
CR514	G3	C5	DS143A	D5	H4	R404	F3	E5
CR516	G4	C6	DS143B	E1	H4	R405	F3	E5
CR517	G5	C6	DS144A	D5	H4	R406	F3	E5
CR521	G2	C2	DS144B	D4	H4			
CR522	G2	C3	DS145A	D5	H4	S500	G1	B1
CR524	G3	D5	DS145B	D4	H4	S501	G2	B2
CR526	G4	C6	DS147	D5	F6	S504	G3	B5
CR530	H1	D2	DS151	E2	F4	S505	G4	B6
CR531	H2	C2	DS152	E2	F4	S507	G4	B7
CR532	H2	H3	DS153	E2	B6	S510	G1	B1
CR534	H3	D6	DS154	E2	B6	S511	G2	B2
CR535	H4	D6	DS155	E2	B6	S514	G3	C5
CR536	H4	D6	DS156	E2	B5	S517	G4	B7
CR537	H5	D6	DS157	E2	B5	S521	G2	C2
CR540	H1	D2	DS200	F4	C1	S522	G2	C3
CR541	H2	D2	DS210	F5	C1	S524	G3	D5
CR542	H2	H3				S526	G4	C6
CR543	H3	G4	J100	A2	F1	S530	H1	D1
CR546	H4	D6	J120	A3	G1	S531	H2	D2
CR547	H5	F6				S532	H2	H2
CR522	H2	H3	R100	B1	D2	S534	H3	D5
CR553	H3	G4	R102	C1	D2	S535	H4	D5
CR555	H4	F5	R104	B2	C3	S536	H4	D6
CR557	H5	F6	R105	C2	D3	S537	H4	D7
CR560	H1	G3	R107	B2	C5	S540	H1	E1
CR562	H2	G3	R110	B3	D5	S541	H2	E2
CR563	H3	G3	R113	B3	A5	S542	H2	H2
CR565	H4	G5	R114	C3	A5	S543	H3	G4
CR567	H5	F6	R116	C4	B6	S546	H4	E6
			R120	B4	G4	S547	H4	F7
DS100	B2	A2	R124	B5	G4	S552	H2	H2
DS101	B2	B2	R130	D3	F4	S553	H3	G5
DS102	B2	C2	R134	D4	F4	S555	H4	H4
DS103	B2	D2	R140	D4	G5	S557	H4	F5
DS104	B2	C2	R141	D5	G4	S560	H1	F1
DS105	B2	D3	R142	D5	G3	S562	H2	H3
DS106	B2	D3	R143	D5	H3	S563	H3	F3
DS107	B2	C3	R144	D5	H3	S565	H4	H5
DS110	B3	C4	R145	D5	H3	S567	H4	F6
DS111	B3	C4	R147	D5	F5			
DS112	B3	D4	R148	D5	G3	U100	B1	B3
DS113	B3	A5	R150	E1	G4	U110	B3	B5
DS114	B3	A5	R153	E2	B6	U120	B4	F3
DS116	B4	A6	R200	F4	E3	U130	D3	F4
DS120	C4	G2	R201	F4	E3	U140	D4	G4
DS121	C5	G2	R202	F4	D3	U150	E1	C6
DS122A	B5	G2	R203	F4	D3	U160	E3	F2
DS122B	D5	G2	R204	F4	D3	U200	E4	F3
DS123A	B5	G3	R205	F4	D3	U400	E3	E6
DS123B	D3	G3	R206	F4	D3			
DS124	B5	E3	R241	B3	G5			
DS125	B5	E2	R242	B4	G5			

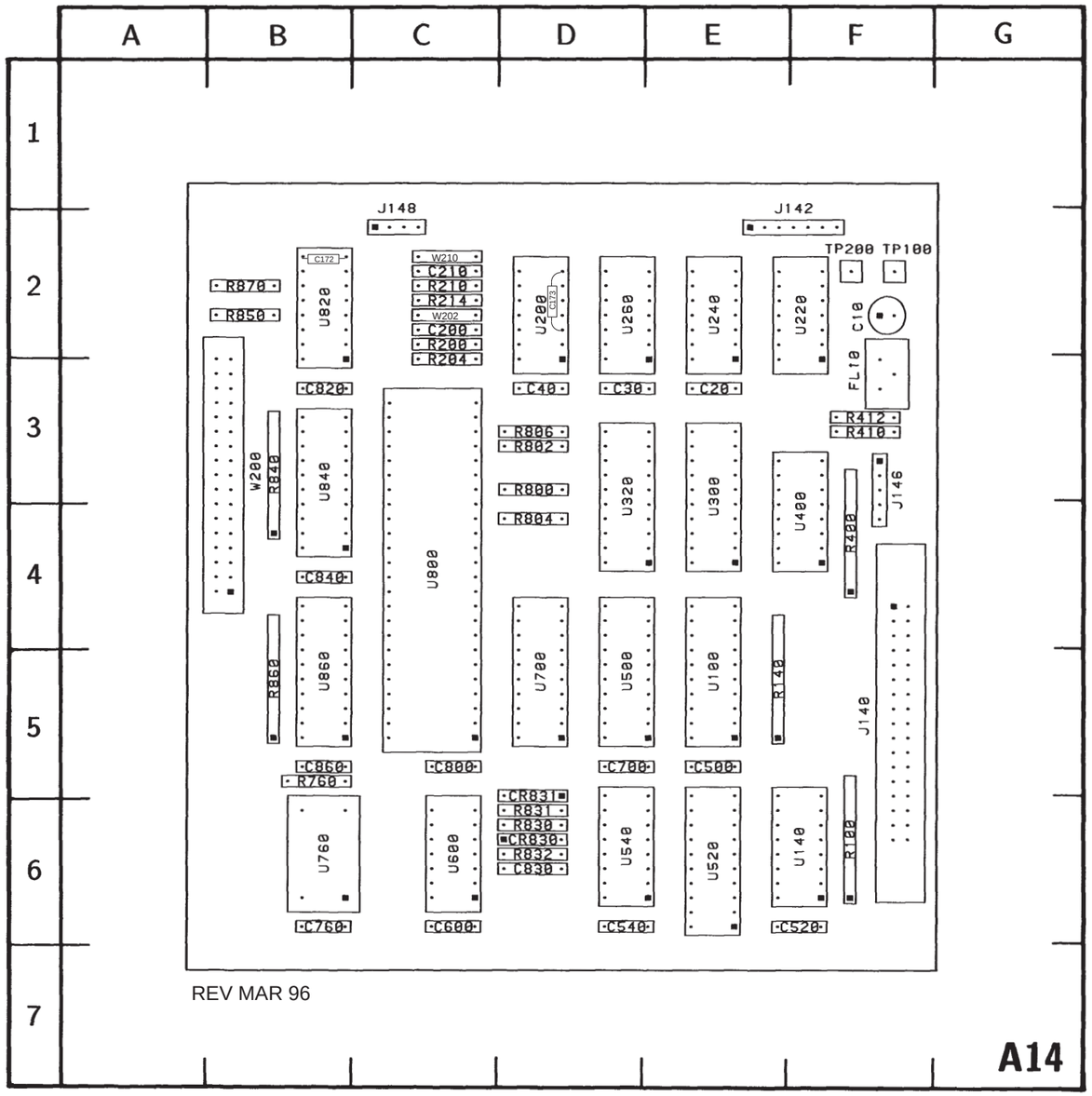
ASSEMBLY A11

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
P100	A2							
P120	A3							

Please cut out the aria below the lines.



Please cut out the aria below the lines.

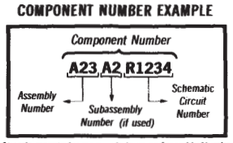


8044-42

Figure 7–14. A14—Lower Key & FDD circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List

LOWER KEY 19a

ASSEMBLY A14

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C10	B4	F2	R204	C1	C3	U100	D3	E5
C20	C4	E3	R210	C1	C2	U140	D2	F6
C30	C4	D3	R214	C1	C2	U200A	E2	D2
C40	C4	D3	R400A	C4	F4	U200B	C2	D2
C172	D2	D2	R400B	C4	F4	U200C	C2	D2
C173	C2	F2	R400C	C4	F4	U200D	C1	D2
C200	B2	C2	R400D	C4	F4	U200E	C1	D2
C210	B1	C2	R400E	C4	F4	U200F	F3	D2
FL10	B4	F3	R400F	B2	F4	U220A	D1	F2
			R400G	B2	F4	U220B	D1	F2
J140	B2	F5	R400H	C4	F4	U240A	E1	E2
J142	B5,G4	F2	R410	B5	F3	U240B	E1	E2
J146	B5	F3	R412	E4	F3	U260A	E3	D2
J148	B1	C2				U260B	E2	D2
			W202	B2	C2	U300	F1	E3
R100	C2	F6	W210	B1	C2	U320	F3	D3
R140	B4	E5				U400	E5	F4
R200	C1	C2						

CHASSIS MOUNTED PARTS

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
DS140	G5		P500	A2		S140	A1	
J500	A2							

REV MAR 96

FDD INTERFACE 19b

ASSEMBLY A14

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C500	A5	E5	R802	D4	D3	U540A	E5	D6
C520	B5	F6	R804	D3	D4	U540B	B3	D6
C540	A5	D6	R806	D4	D3	U600A	C3	C6
C600	A5	C6	R830	C4	D6	U600B	C4	C6
C700	B5	D5	R831	C4	D6	U600C	D5	C6
C760	B5	B6	R832	C4	D6	U600D	D5	C6
C800	A5	C5	R840	F1	B3	U600E	D5	C6
C820	B5	B3	R850	F2	B2	U600F	D5	C6
C830	C4	D6	R860	F3	B5	U700	C1	D5
C840	A5	B4	R870	F2	B2	U760	C3	B6
C860	B5	B5				U800	D1	C4
			TP100	B5	F2	U820	D2	B2
CR830	C4	D6	TP200	A5	F2	U840	E1	B3
CR831	C4	D5				U860	E3	B5
			U500	B1	D5			
R760	D3	B5	U520	B3	E6	W200	F1	B3
R800	C1	D3						

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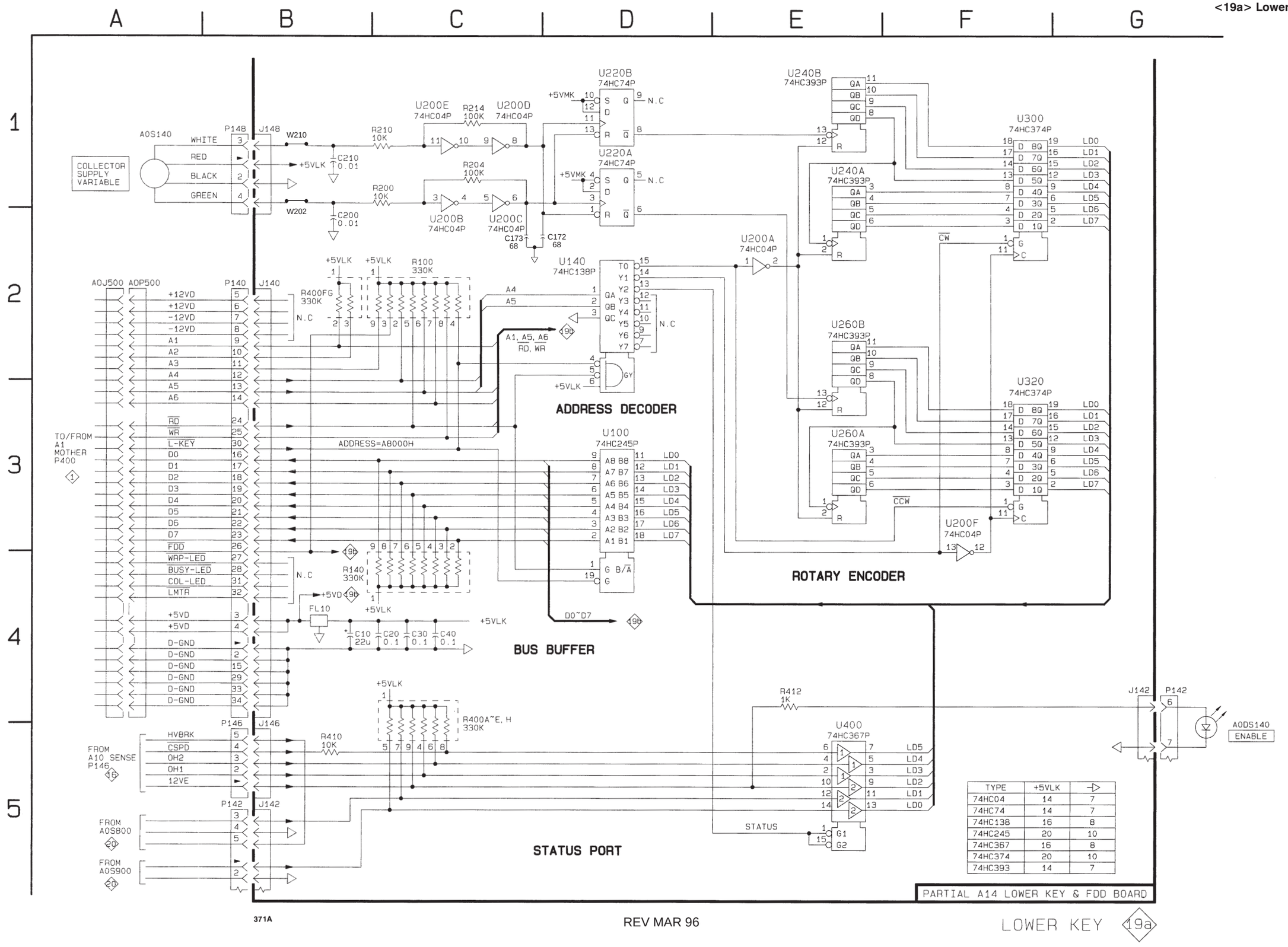
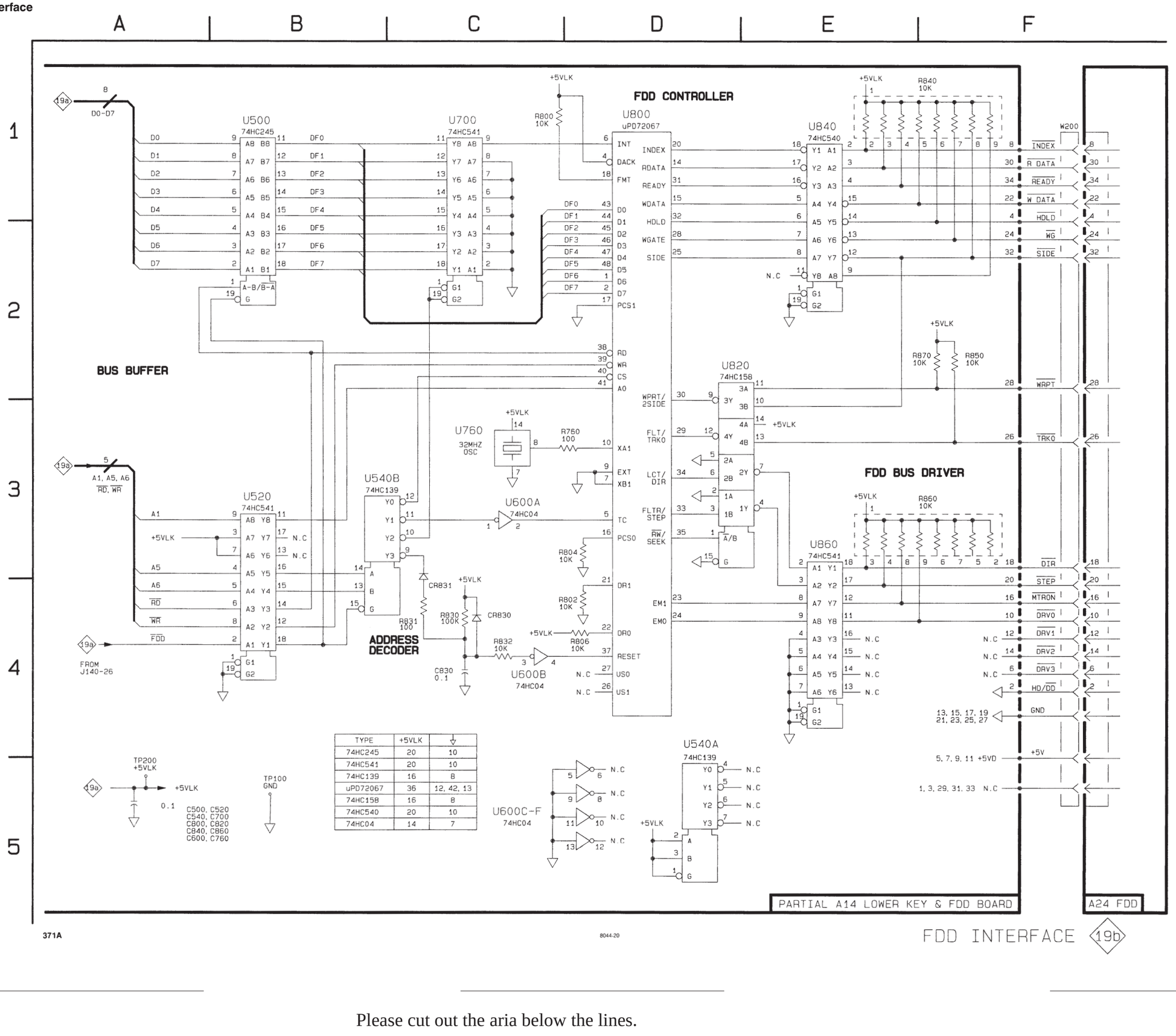


Please cut out the aria below the lines.



TYPE	+5VLK	
74HC245	20	10
74HC541	20	10
74HC139	16	8
uPD72067	36	12, 42, 13
74HC158	16	8
74HC540	20	10
74HC04	14	7

371A

8044-20

FDD INTERFACE 19b

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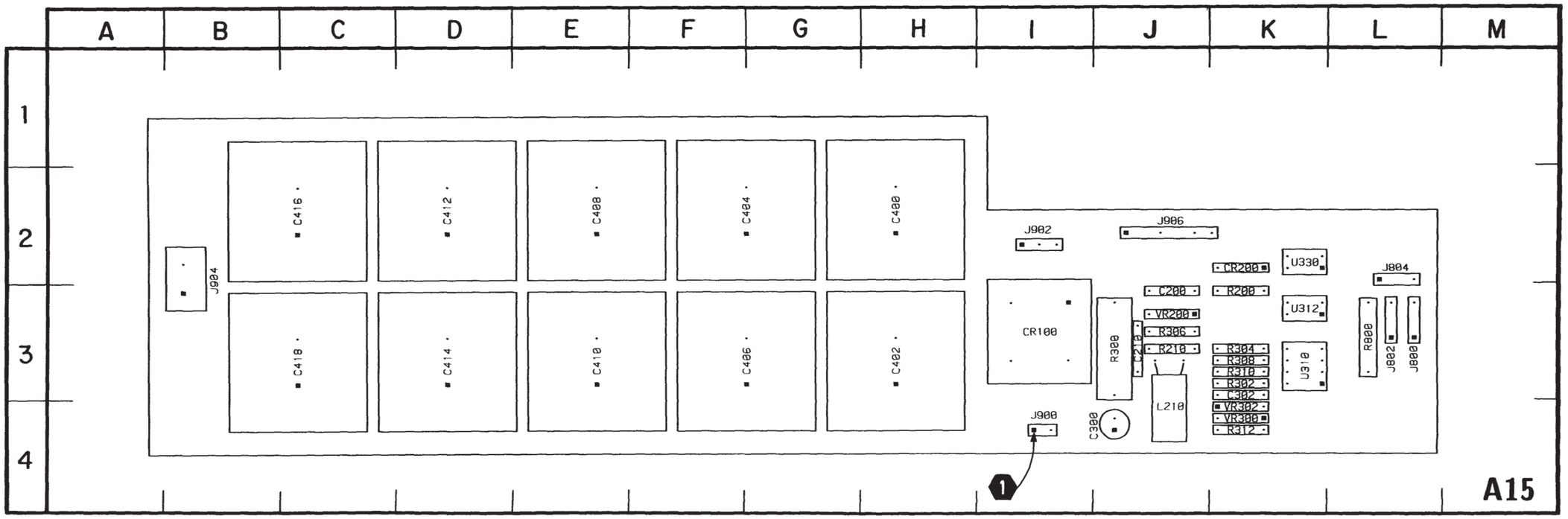
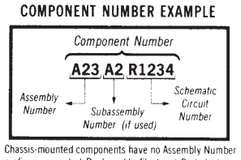


8044-43

Figure 7–15. A15—High Current Power Supply circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List

HIGH CURRENT POWER SUPPLY 20

ASSEMBLY A15

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C200	B1	J3	J800	B4	L3	R310	D2	K3
C210	B1	J3	J802	F4	L3	R312	D2	K4
C300	C2	J4	J804	F4	L2	R800	E4	L3
C302	C3	K3	J900	B3	I4			
C400	D1	H2	J902	B1	I2	U310	D3	K3
C402	E2	H3	J904	F1	B2	U312	D2	K3
C404	E1	G2	J906	F3	J2	U330	D3	K2
C406	E2	G3						
C408	E1	E2	L210	B1	J4	VR200	C1	J3
C410	E2	E3				VR300	C2	K4
C412	E1	D2	R200	B1	K3	VR302	C3	K4
C414	E2	D3	R210	B1	J3			
C416	E1	C2	R300	C2	J3			
C418	E2	C3	R302	C2	K3			
			R304	C3	K3			
CR100	B3	I3	R306	C2	J3			
CR200	C1	K2	R308	C3	K3			

CHASSIS MOUNTED PARTS

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C900	A3		P510	A3,B4		S800	F4	
						S900	A3	
J510	A3,A4		Q902	A1				

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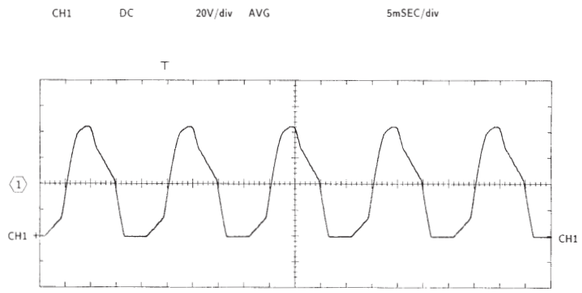
VOLTAGE AND WAVEFORM CONDITIONS

Voltage Conditions

The voltages shown on the diagram were obtained using a digital multimeter with 10 MΩ input impedance with the 371A COLLECTOR SUPPLY MODE set to HIGH CURRENT.

Waveform Conditions

The waveforms shown below were obtained using a test oscilloscope with a 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A set to the power-up default (initial) settings.



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Please cut out the aria below the lines.

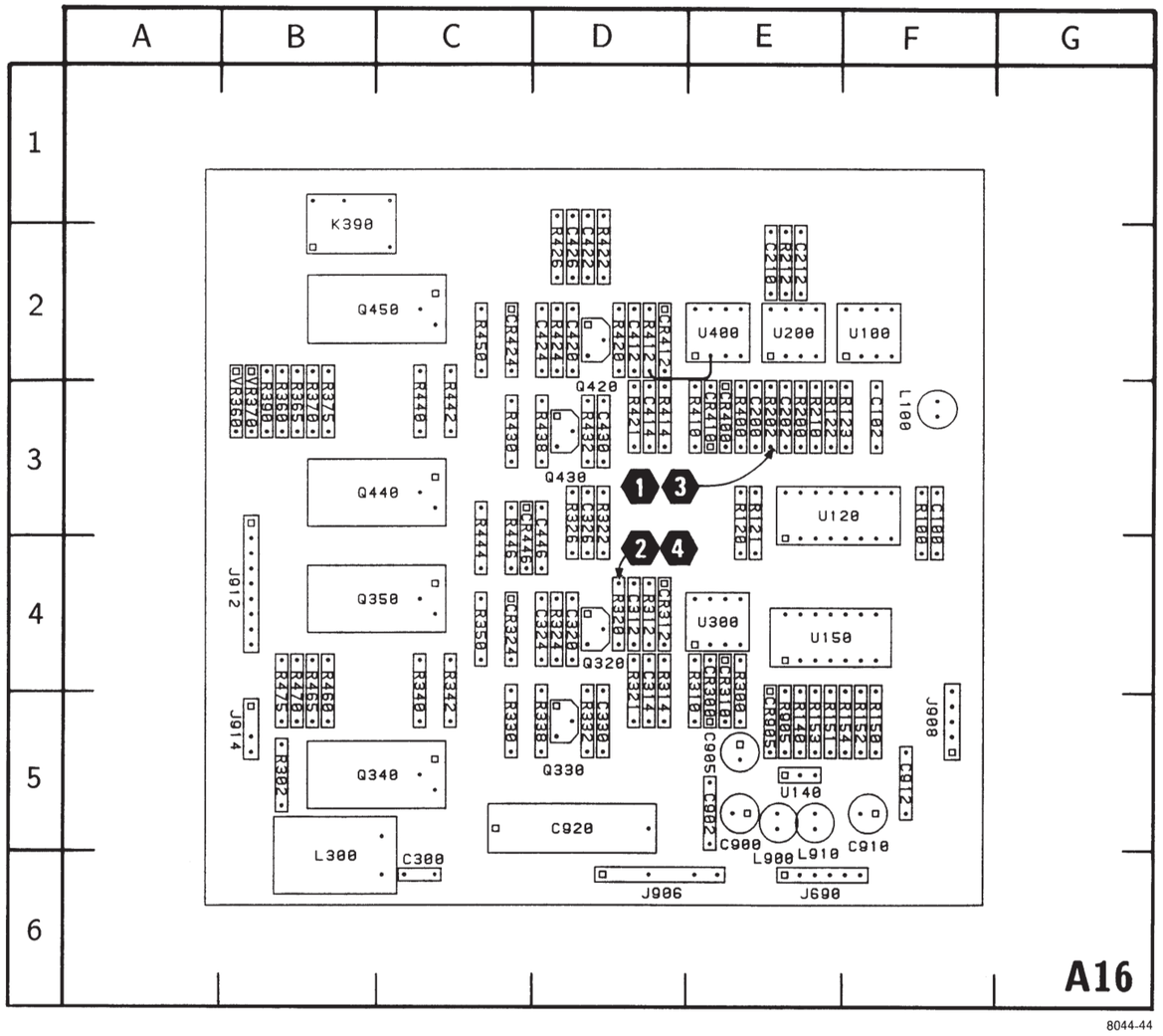


Figure 7-16. A16—High Current Control circuit board assembly.

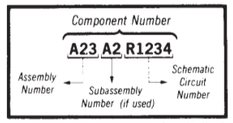
HIGH CURRENT AMPLIFIER 21

ASSEMBLY A16

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C100	B1	F3
C102	B1	F3
C200	D2	E3
C202	D2	E3
C210	D4	E2
C212	D4	E2
C300	E3	C6
C312	E2	D4
C314	E2	D4
C320	F1	D4
C324	F1	D4
C326	F3	D3
C330	F2	D5
C412	E4	D2
C414	E3	D3
C420	F4	D4
C422	F5	D2
C424	F4	D2
C426	F5	D2
C430	F4	D3
C446	G3	D3
C900	B4	E5
C902	B4	E5
C905	B4	E5
C910	B4	F5
C912	B4	F5
C920	B3	D5
CR300	E1	E4
CR310	E1	E4
CR312	E2	D4
CR324	F1	C4
CR400	E4	E3
CR410	E4	E3
CR412	E4	D2
CR424	F4	C2
CR446	G2	C3
CR905	B4	E5
J690	A4	E6
J906	A3	D6
J908	A1	F5
J912	H1	B4
J914	H3	B5
K390	G2	B1
L100	B1	F3
L300	E3	B6
L900	B4	E5
L910	B5	E5
Q320	F2	D4
Q330	F1	D5
Q340	G2	C5
Q350	G2	C4
Q420	F4	D2
Q430	F4	D3
Q440	G4	C3
Q450	G5	C2
R100	B1	F3
R120	C2	E3
R121	C2	E3
R122	C4	E3
R123	C5	F3
R140	B2	E5
R150	B2	F5
R151	B4	E5
R152	B4	F5
R153	B4	F5
R154	B2	F5
R200	D1	E3
R202	D1	E3
R210	D4	E3
R212	D4	E2
R300	E1	E4
R302	E3	B5
R310	E2	E4
R312	E2	D4
R314	E2	D4
R320	F2	D4
R321	F1	D4
R322	F2	D3
R324	F1	D4
R326	F2	D3
R330	F1	C5
R332	F1	D5
R338	F2	D5
R340	G2	C4
R342	G2	C4
R350	G2	C4
R360	G1	B3
R365	G1	B3
R370	G2	B3
R375	G2	B3
R390	G1	B3
R400	E4	E3
R410	E4	E3
R412	E4	D2
R414	E4	D3
R420	F4	D2
R421	F4	D3
R422	F5	D2
R424	F4	D2
R426	F5	D2
R430	F4	C3
R432	F4	D3
R438	F4	D3
R440	G4	C3
R442	G4	C3
R444	F3	C3
R446	G3	C3
R450	G5	C2
R460	G2	B4
R465	G2	B4
R470	G2	B4
R475	G2	B4
R905	B4	E5
U100	B1	F2
U120A	C1	F3
U120B	C4	F3
U120C	C1	F3
U140	B2	E5
U150A	C3	E4
U150B	B3	E4
U150C	C3	E4
U150D	C4	E4
U200A	D4	E2
U200B	D1	E2
U300	E1	E4
U400	E4	E2
VR360	G1	B3
VR370	G1	B3

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



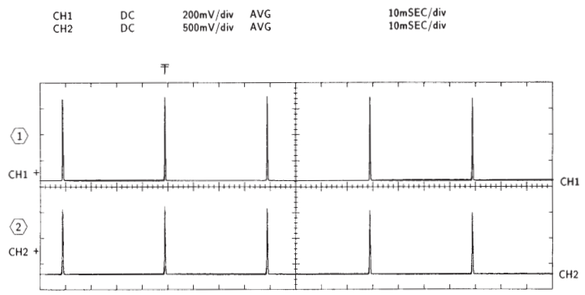
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

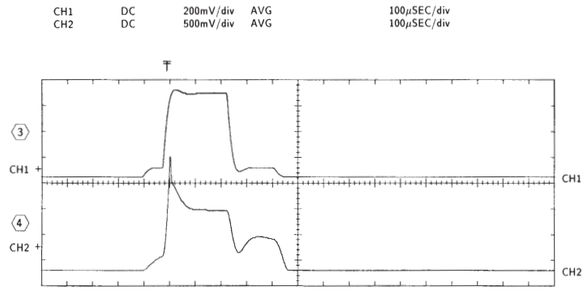
Please cut out the aria below the lines.

WAVEFORM CONDITIONS

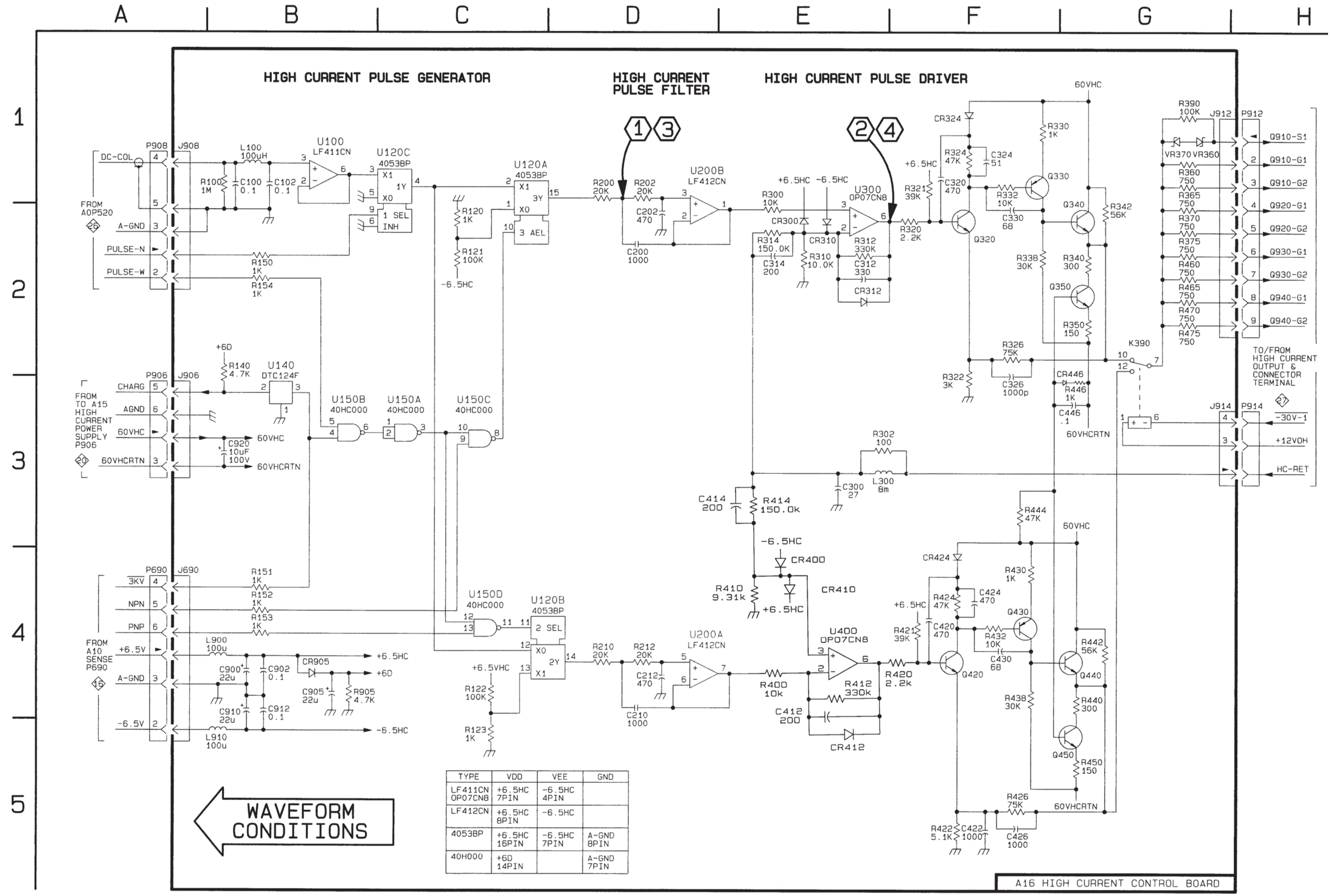
Waveform Conditions

The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY VARIABLE is set to 30%.





Please cut out the aria below the lines.



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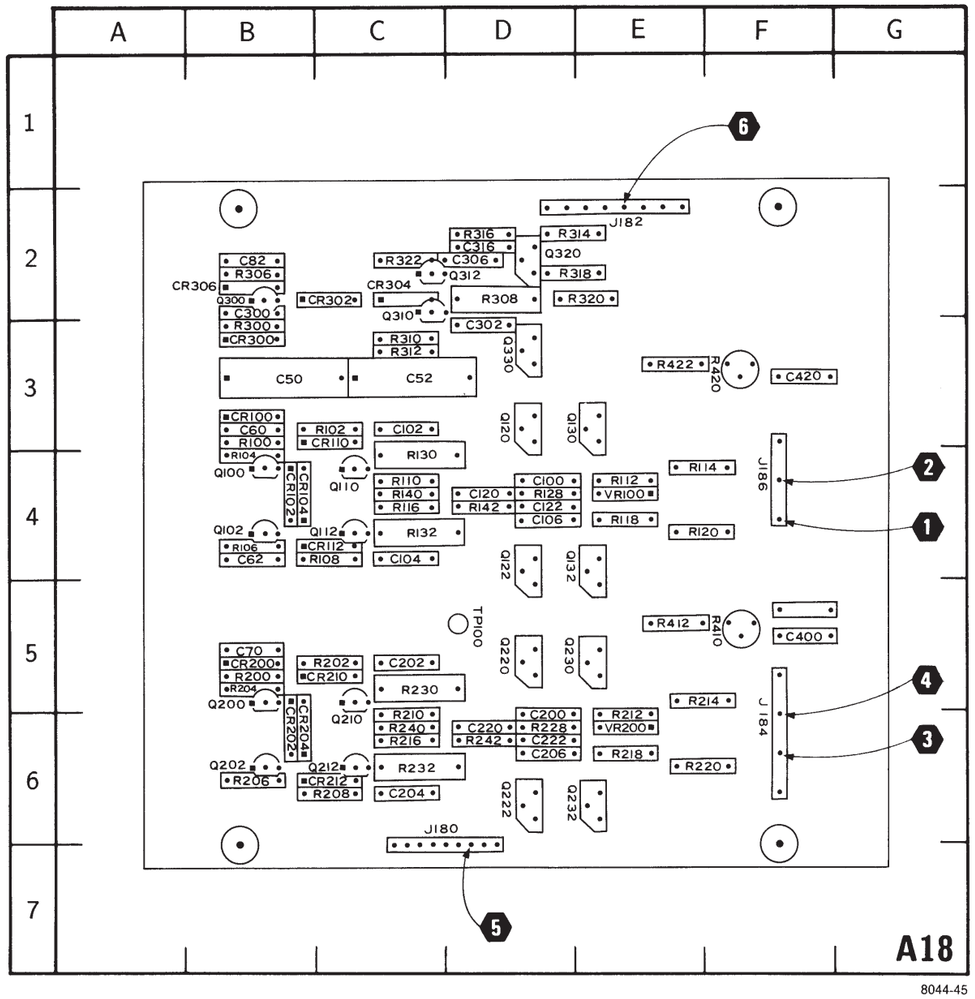


8044-45

Figure 7–17. A18—CRT Output circuit board assembly.

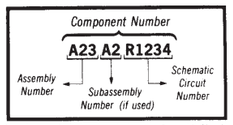
CRT OUTPUT AMPLIFIER 22

ASSEMBLY A18

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C50	F4	B3	J180	A1,D1	C6	R130	B1	C4
C52	F3	C3	J182	F3	E2	R132	B3	C4
C60	F4	B3	J184	F1	F6	R140	B2	C4
C62	F3	B4	J186	C1	F4	R142	B2	D4
C70	E4	B5				R200	D2	B5
C82	A4	B2	Q100	B1	B4	R202	E2	C5
C100	B1	D4	Q102	B3	B4	R204	E2	B5
C102	B1	C3	Q110	B1	C4	R206	E2	B6
C104	B3	C4	Q112	B3	C4	R208	E3	C6
C106	B3	D4	Q120	B1	D3	R210	E1	C6
C120	B2	D4	Q122	B3	D4	R212	E1	E6
C122	C2	D4	Q130	B1	E3	R214	E1	F5
C200	E1	D6	Q132	B3	E4	R216	E3	C6
C202	E1	C5	Q200	D1	B5	R218	E3	E6
C204	E3	C6	Q202	D3	B6	R220	E3	F6
C206	E3	D6	Q210	E1	C5	R228	E2	D6
C220	E2	D6	Q212	E3	C6	R230	E1	C5
C222	E2	D6	Q220	E1	D5	R232	E3	C6
C300	C4	B2	Q222	E3	D6	R240	E2	C6
C302	D4	D3	Q230	E1	E5	R242	E2	D6
C304	D3	D2	Q232	E3	E6	R300	C4	B3
D306	D3	D2	Q300	C4	B2	R306	C4	B2
C400	F2	F5	Q310	D4	C2	R308	D4	D2
C420	C2	F3	Q312	D3	D2	R310	D4	C3
			Q320	D3	D2	R312	D4	C3
CR100	A2	B3	Q330	D4	D3	R314	D3	D2
CR102	B2	B4				R316	D3	D2
CR104	B2	B4	R100	A2	B3	R318	D3	D2
CR110	B1	C3	R102	B2	C3	R320	D4	E2
CR112	B3	C4	R104	B2	B4	R322	D3	C2
CR200	D2	B5	R106	B2	B4	R410	E2	F5
CR202	E2	B6	R108	B3	C4	R412	E1	E5
CR204	D2	B6	R110	B1	C4	R420	C2	F3
CR210	D1	C5	R112	B1	E4	R422	C1	E3
CR212	D3	C6	R114	C1	F4			
CR300	C4	B3	R116	B3	C4	TP100	A4	D5
CR302	C4	C2	R118	B3	E4			
CR304	D4	C2	R120	C3	F4	VR100	C2	E4
CR306	C4	B2	R128	C2	D4	VR200	E2	E6

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Please cut out the aria below the lines.

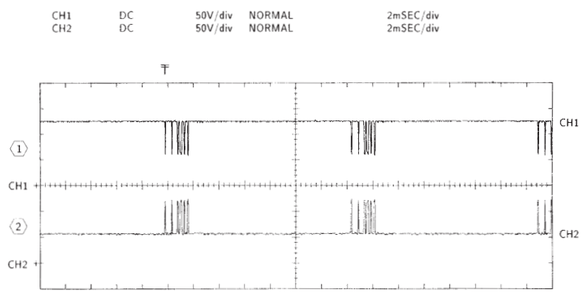
VOLTAGE AND WAVEFORM CONDITIONS

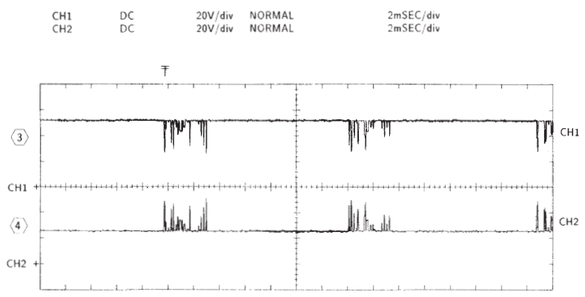
Voltage Conditions

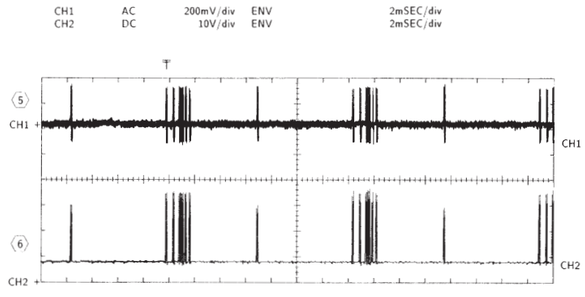
The voltages shown on the diagram were obtained using a digital multimeter with 10 MΩ input impedance. These voltages are not affected by the 371A settings.

Waveform Conditions

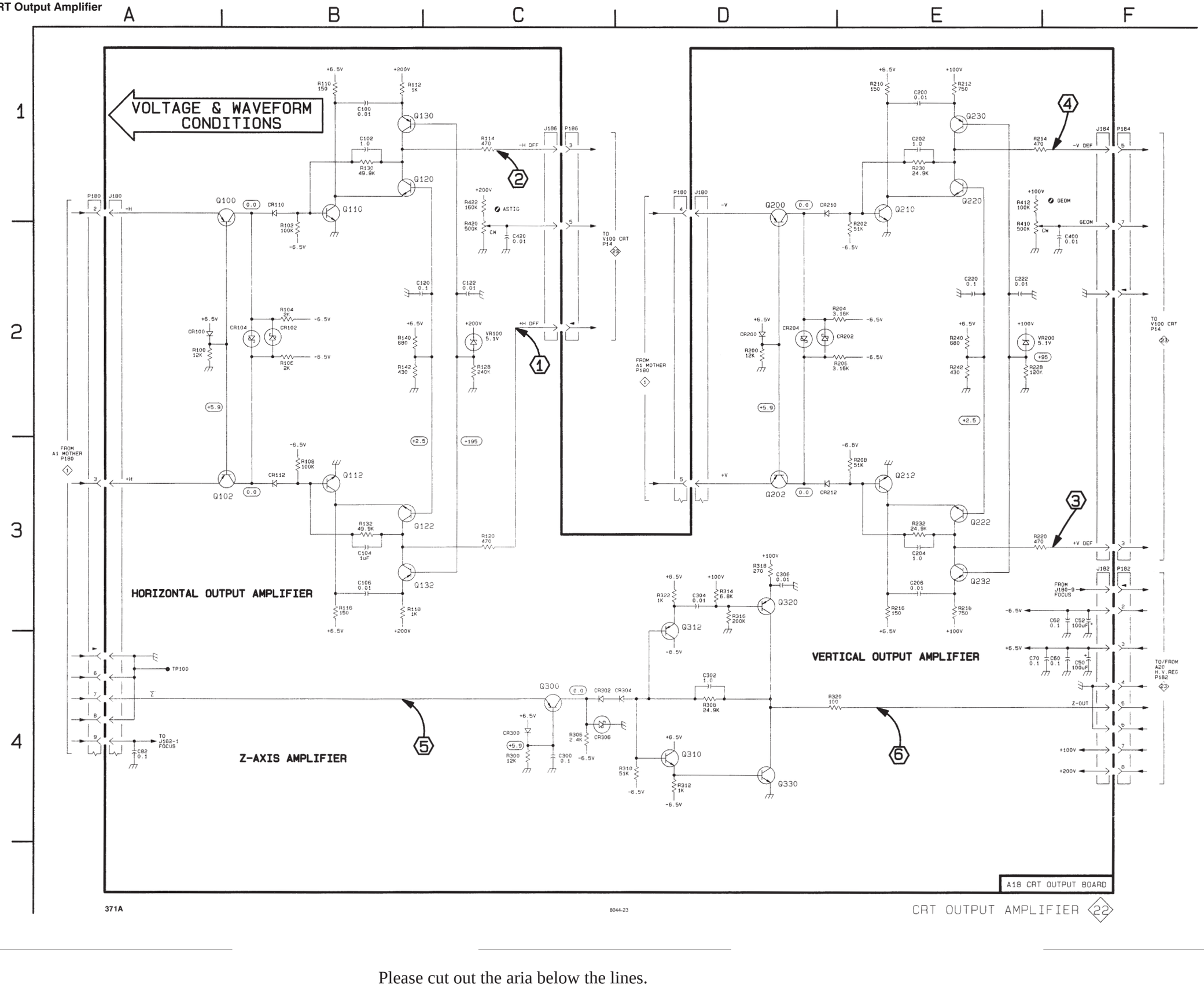
The waveforms shown below were obtained using a test oscilloscope with a 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A set to the power-up default (initial) settings.







Please cut out the aria below the lines.



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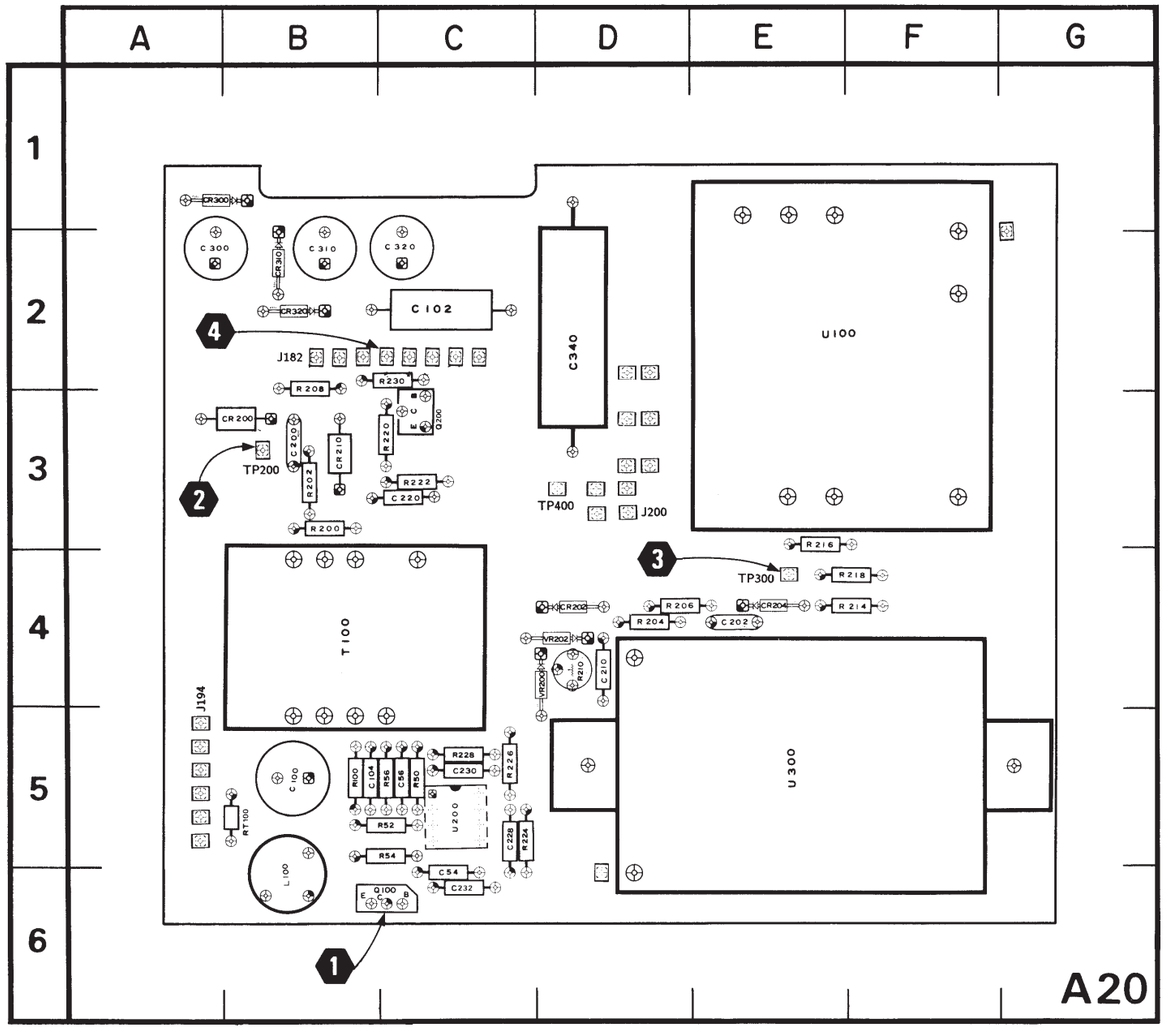
Please cut out the aria below the lines.



8044-46

Figure 7–18. A20—High Voltage Regulator circuit board assembly.

CRT HV POWER SUPPLY <23>

ASSEMBLY A20

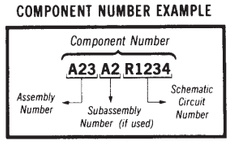
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C54	C4	C6	J182	E2	B2	R222	C1	C3
C56	C4	C5	JI94	A3	A4	R224	B2	C5
C100	A1	B5	J200	E1	D3	R226	B2	C5
C102	B3	C2				R228	C2	C5
C104	B4	B5	L100	A1	B6	R230	C2	C2
C200	C2	B3						
C202	C2	E4	Q100	A2	C6	RT100	B1	B5
C210	C3	D4	Q200	C2	C3			
C220	C1	C3				T100	B1	B4
C228	C1	C5	R50	C4	C5			
C230	C3	C5	R52	C3	C5	TP200	C2	B3
C232	C2	C6	R54	C3	C5	TP300	C2	E4
C300	D3	A2	R56	B4	C5	TP400	E1	D3
C310	D3	B2	R100	A2	B5			
C320	D3	C2	R200	B2	B3	U100	D1	E2
C340	D2	D2	R202	C2	B3	U200A	C4	C5
			R204	B2	D4	U200B	B2	C5
CR200	C2	B3	R206	C2	D4	U300	D4	E5
CR202	C2	D4	R208	C2	B2			
CR204	C2	E4	R210	C3	D4	VR200	C3	D4
CR210	C2	B3	R214	C2	F4	VR202	C3	D4
CR300	D3	A1	R216	C2	E3			
CR310	D3	B2	R218	C2	F4			
CR320	D3	B2	R220	C1	C3			

CHASSIS MOUNTED PARTS

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
L100	F3		P14	F1		V100	F4	
L120	F2							

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Please cut out the aria below the lines.

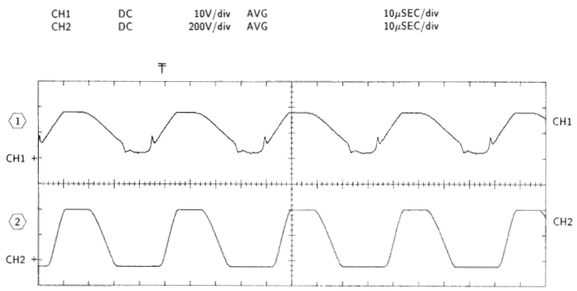
WAVEFORM CONDITIONS

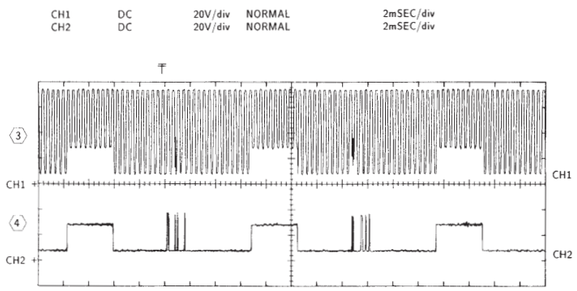
Waveform Conditions

The waveforms shown below were obtained using a test oscilloscope with 1 MΩ input impedance (Tektronix 2430A with plotter) with the 371A under the following conditions:

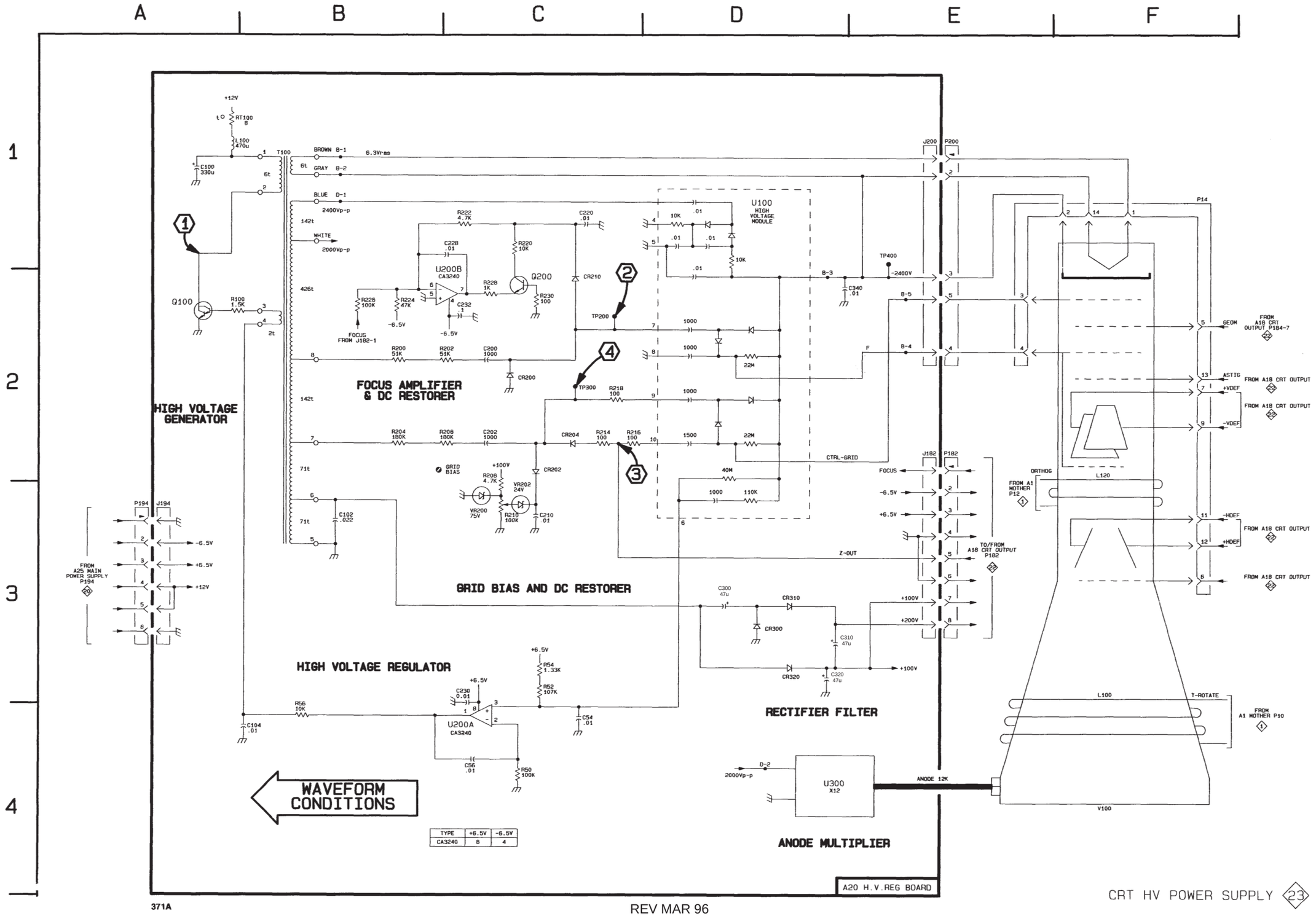
Waveform 1 and 2: These waveforms were obtained with the 371A set to the power-up default (initial) settings.

Waveform 3 and 4: These waveforms were obtained with the 371A set to the power-up default (initial) settings, except that the COLLECTOR SUPPLY PEAK POWER WATTS is set to 30 W, and NON STORE/STORE/VIEW Intensity knob and READOUT/CURSOR Intensity knob are turned fully clockwise.





Please cut out the aria below the lines.



CRT HV POWER SUPPLY 23

REV MAR 96

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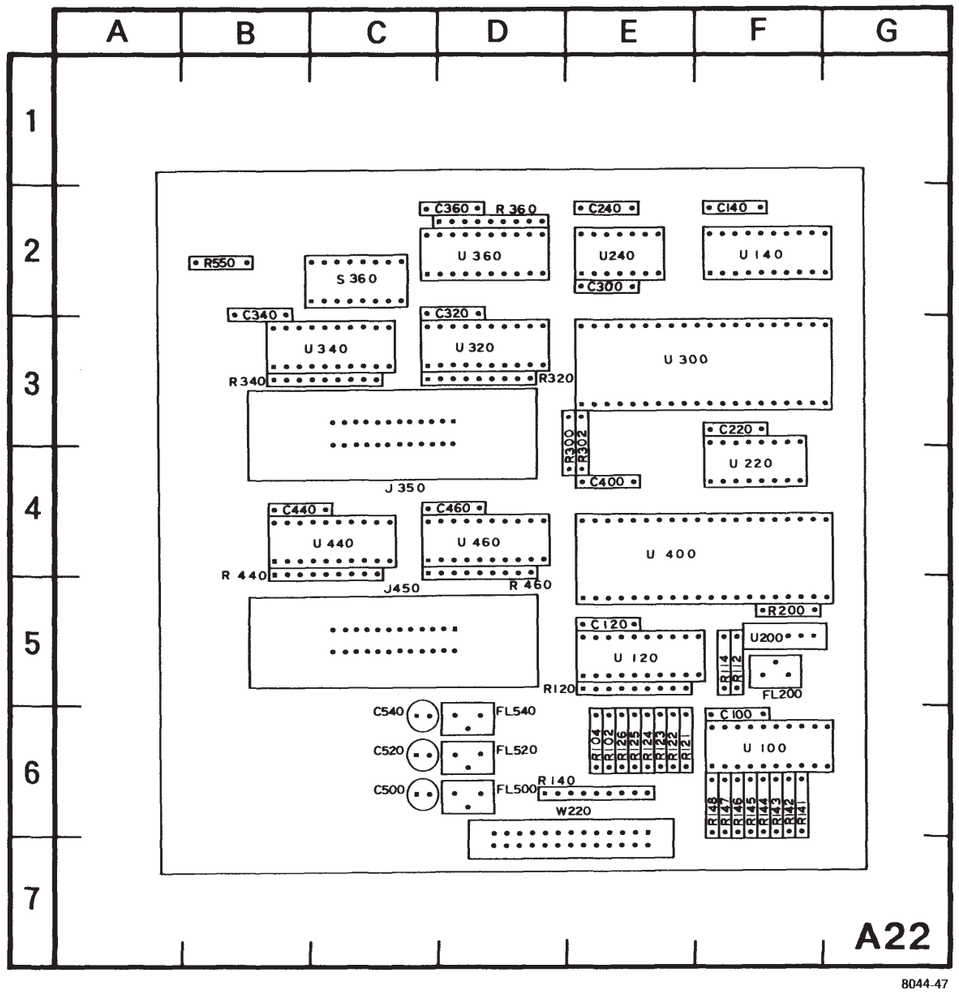


8044-47

Figure 7–19. A22—Interface circuit board assembly.

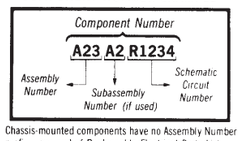
GPIB & PLOTTER INTERFACE 24

ASSEMBLY A22

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C100	C1	F6	R112	C2	F5	S360	D4	C2
C120	C1	E5	R114	C2	F5			
C140	C1	F2	R120	A2	D5	U100A	E4	F6
C220	C1	F3	R121	B3	E6	U100B	B2	F6
C240	C1	E2	R122	B3	E6	U120	B3	E5
C300	C1	E2	R123	B3	E6	U140	B4	F2
C320	C1	D2	R124	B3	E6	U200	D2	F5
C340	C1	B2	R125	B3	E6	U220A	C2	F4
C360	C1	D2	R126	B3	E6	U220B	C2	F4
C400	C1	E4	R140	A4	D6	U240A	C3	E2
C440	C1	B4	R141	B4	F6	U240B	C3	E2
C460	C1	D4	R142	B4	F6	U240C	D2	E2
C500	C1	C6	R143	B4	F6	U240D	D3	E2
C520	C1	C6	R144	B4	F6	U300	E1	E3
C540	C1	C6	R145	B4	F6	U320	F2	D3
			R146	B4	F6	U340	F1	C3
FL200	D2	F5	R147	B5	F6	U360	C4	D2
FL500	B1	D6	R148	B5	F6	U400	E3	E4
FL520	B1	D6	R200	D2	F5	U440	F3	C4
FL540	B1	D6	R300	C2	E3	U460	F4	D4
			R302	C2	E3			
			R320	F2	D3	W220	A1	E6
J350	F2	C4	R340	F2	B3			
J450	F4	C5	R360	C4	D2			
			R440	F3	B4			
R102	B2	E6	R460	F4	D5			
R104	B2	E6	R550	A2	B2			

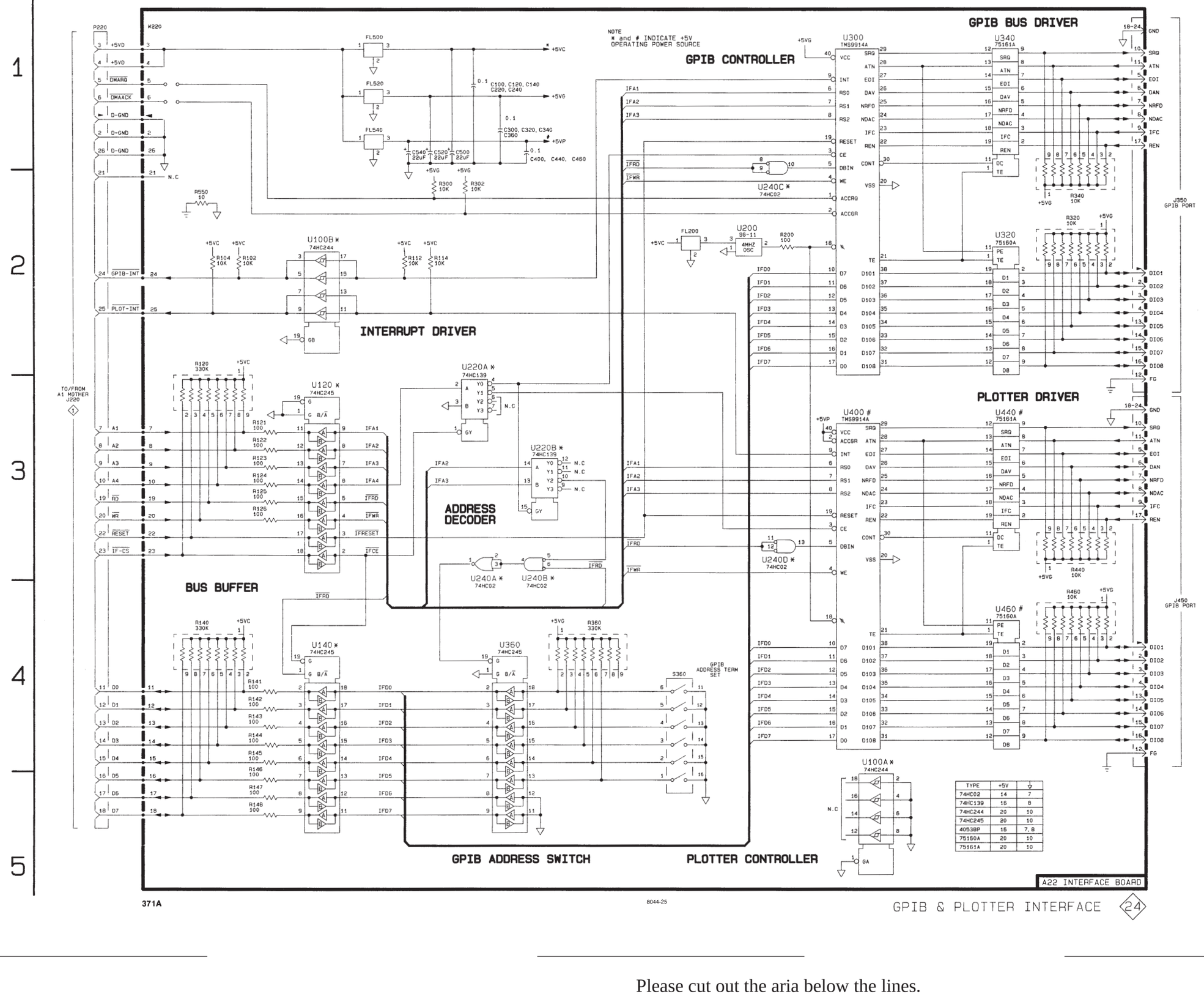
Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List

Please cut out the aria below the lines.



TYPE	+5V	⏚
74HC02	14	7
74HC139	16	8
74HC244	20	10
74HC245	20	10
40538P	16	7, 8
75160A	20	10
75161A	20	10

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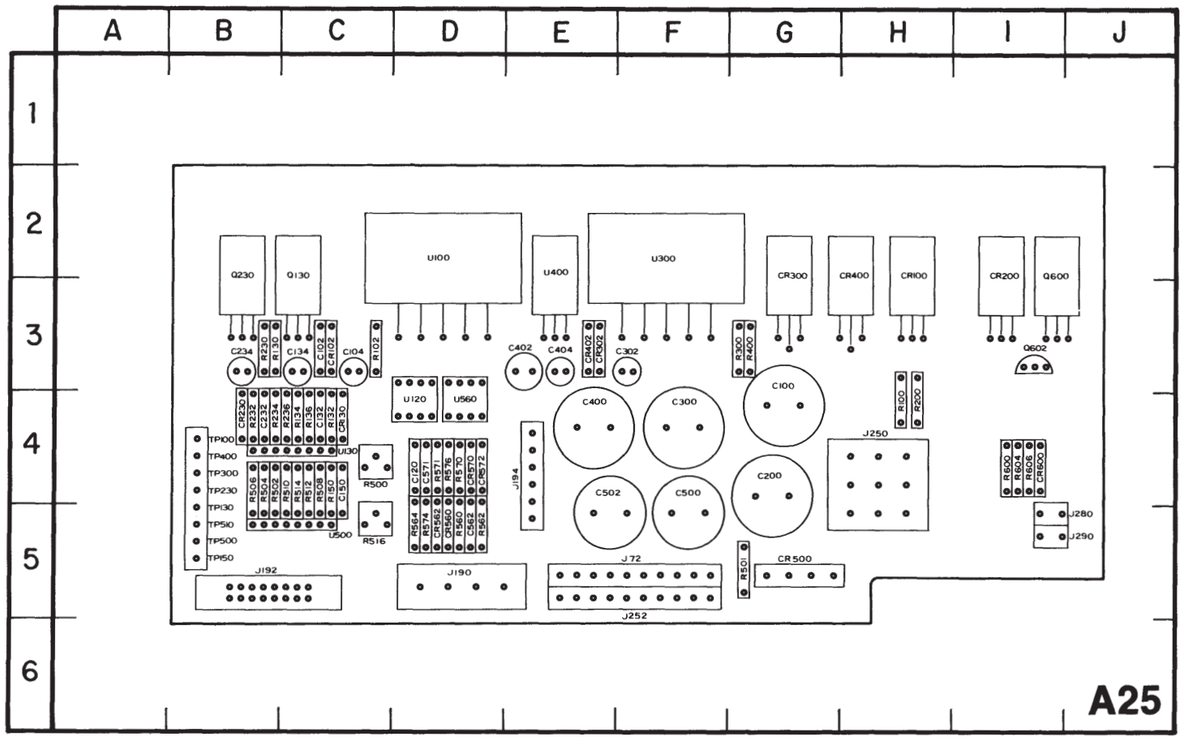


Figure 7–20. A25—Main Power Supply circuit board assembly.

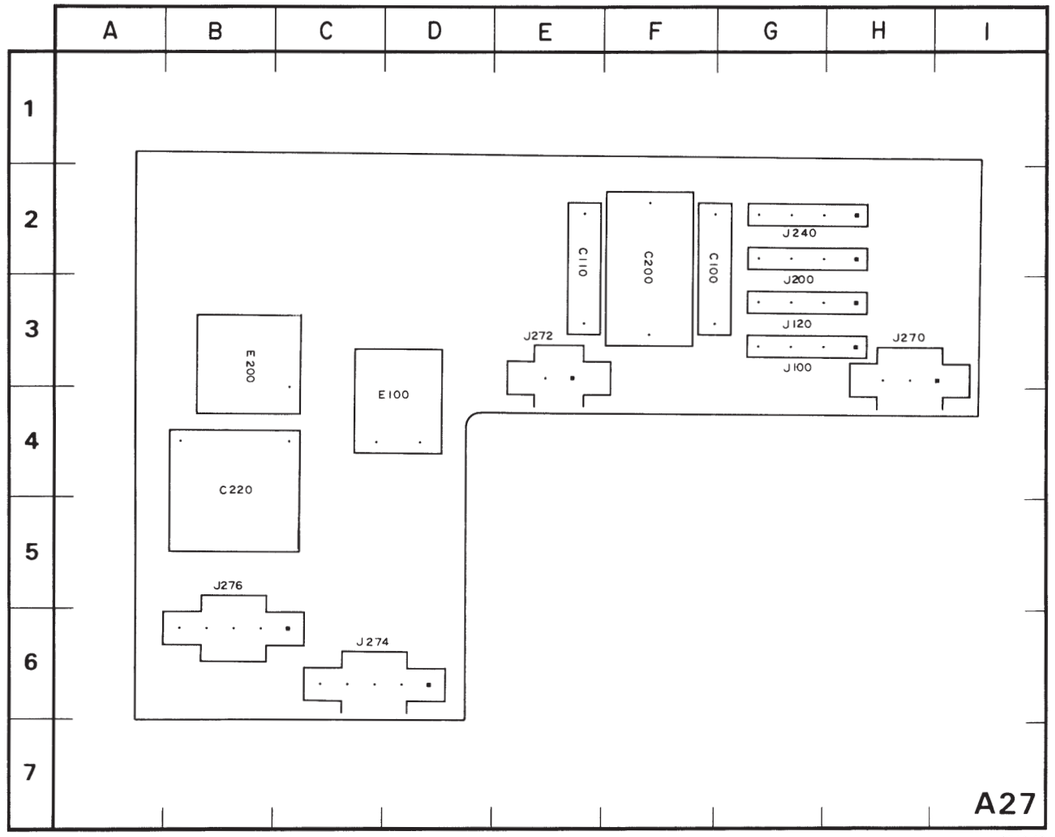
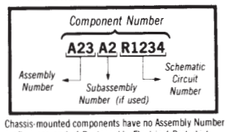


Figure 7–21. A27—Primary circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

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POWER SUPPLY 25

ASSEMBLY A25

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C100	E4	G3	J72	G3	F5	R512	B5	C4
C102	E4	C3	J190	G1	D5	R514	B5	C4
C104	F4	C3	J192	G1	B5	R516	B5	C5
C120	E2	D4	J194	G2	E4	R560	E3	D5
C132	E4	C4	J250	D2	H4	R562	E3	D5
C134	F4	C3	J252	G4	F5	R564	F2	D5
C150	D5	C4	J280	G4	J5	R570	D4	D4
C200	E5	G4	J290	G5	J5	R571	D4	D4
C232	E5	B4				R574	E4	D5
C234	E5	B3	Q130	E4	C2	R576	E4	D4
C300	E2	F4	Q230	E5	B2	R600	F5	I4
C302	F2	F3	Q600	E5	I2	R604	F5	I4
C400	E3	E4	Q602	F5	I3	R606	F5	I4
C402	E3	E3						
C404	F3	E3	R100	E4	H4	TP100	F3	B4
C500	E1	F4	R102	F4	C3	TP130	F4	B5
C502	E1	E4	R130	E4	B3	TP150	D5	B5
C562	E3	D5	R132	E4	C4	TP230	F5	B4
C571	D4	D4	R134	F4	C4	TP300	F2	B4
			R136	F4	C4	TP400	F3	B4
CR100	D3	H2	R150	D5	C4	TP500	C4	B5
CR101	F3	C3	R200	E5	H4	TP510	C5	B5
CR130	D4	C4	R230	E5	B3			
CR200	D5	I2	R232	E5	B4	U100	F3	D2
CR230	D5	B4	R234	F5	B4	U120	E2	D4
CR300	E2	G2	R236	F5	C4	U130A	E4	C4
CR302	F1	E3	R300	E2	G3	U130B	E4	C4
CR400	E3	H2	R400	E3	G3	U300	F2	F2
CR402	F3	E3	R500	B4	C4	U400	F3	E2
CR500	D1	G5	R501	D1	G5	U500A	C4	C5
CR560	D2	D5	R502	B4	B4	U500B	C5	C5
CR562	D3	D5	R504	B5	B4	U560A	D4	D4
CR570	D4	D4	R506	C4	B4	U560B	F2	D4
CR572	D4	D4	R508	C5	B4			
CR600	F5	I4	R510	B5	C4			

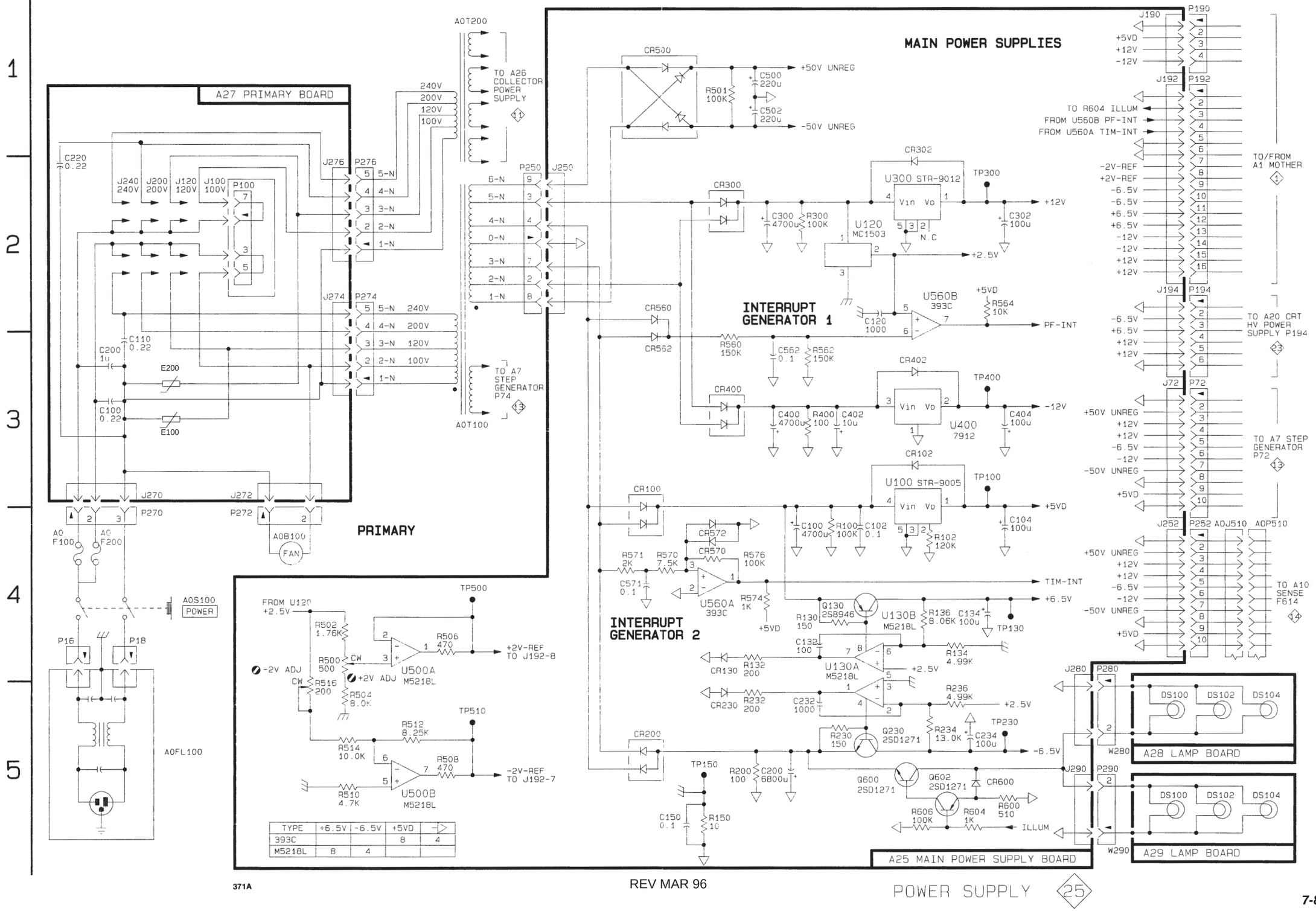
CHASSIS MOUNTED PARTS

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
B100	B4		J510	G4		P276	B2	
						P510	G4	
F100	A4		P16	A4				
F200	A4		P18	A4		S100	A4	
			P270	A4				
FL100	A5		P272	B4		T100	C3	
			P274	B2		T200	C1	

ASSEMBLY A27 (PRIMARY BOARD)

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C100	A3	F2	E200	A3	B3	J270	A3	H3
C110	A3	E2				J272	B3	E3
C200	A3	F2	J100	B2	G3	J274	B2	C6
C220	A2	B4	J120	A2	G3	J276	B2	B5
			J200	A2	G3			
E100	A3	D4	J240	A2	G2			

Please cut out the aria below the lines.



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POWER SUPPLY 25

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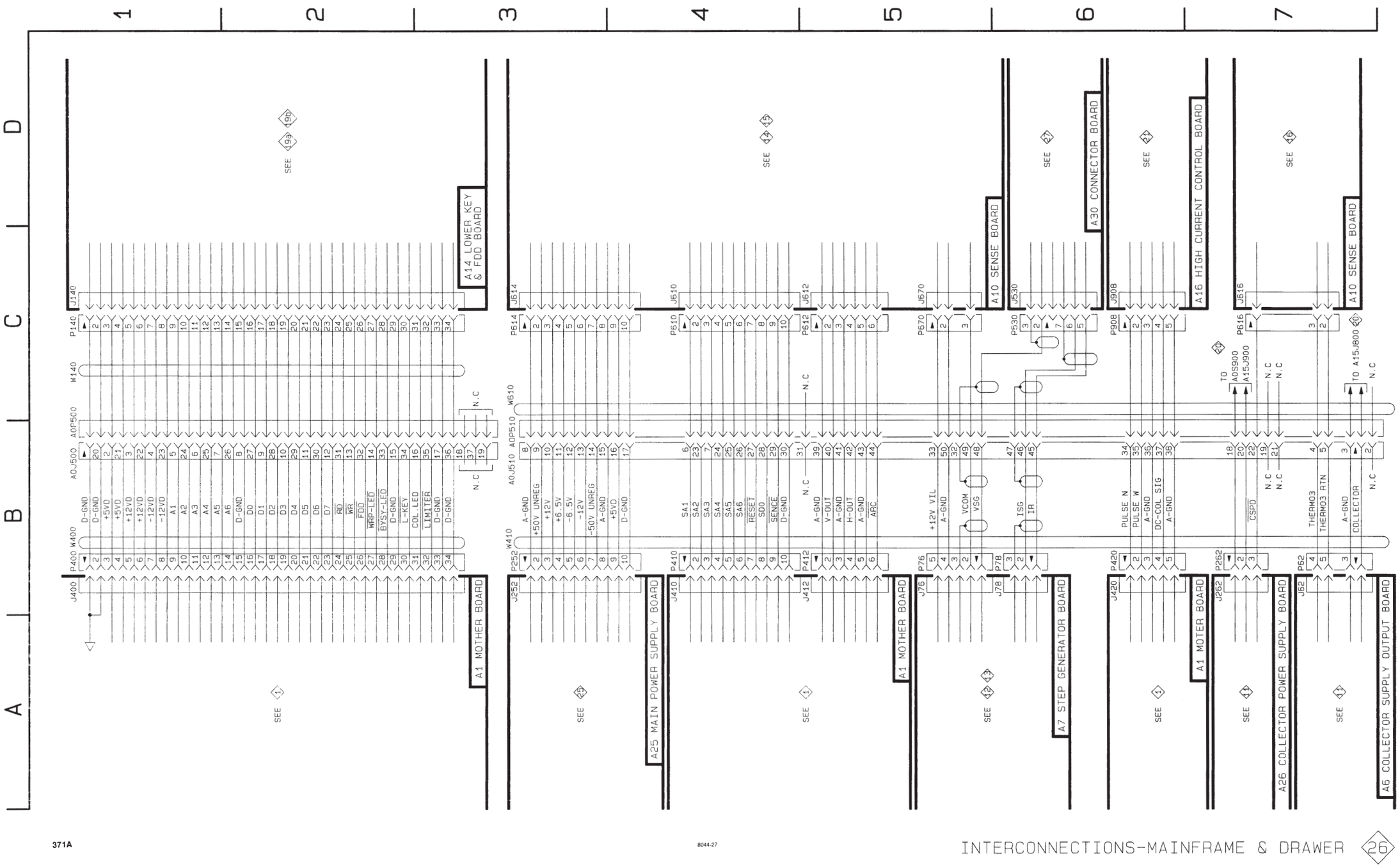
Please cut out the aria below the lines.

INTERCONNECTIONS - MAINFRAME & DRAWER 26

INTER-BOARD CONNECTORS

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J62	B7		J410	B4		J610	C4	
J76	B5		J412	B5		J612	C5	
J78	B6		J420	B6		J614	C3	
J140	C1		J500	B1		J616	C7	
J252	B3		J510	B3		J670	C5	
J262	B7		J530	C6		J908	C6	
J400	B1							

Please cut out the aria below the lines.



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INTERCONNECTIONS-MAINFRAME & DRAWER 26

Please cut out the aria below the lines.

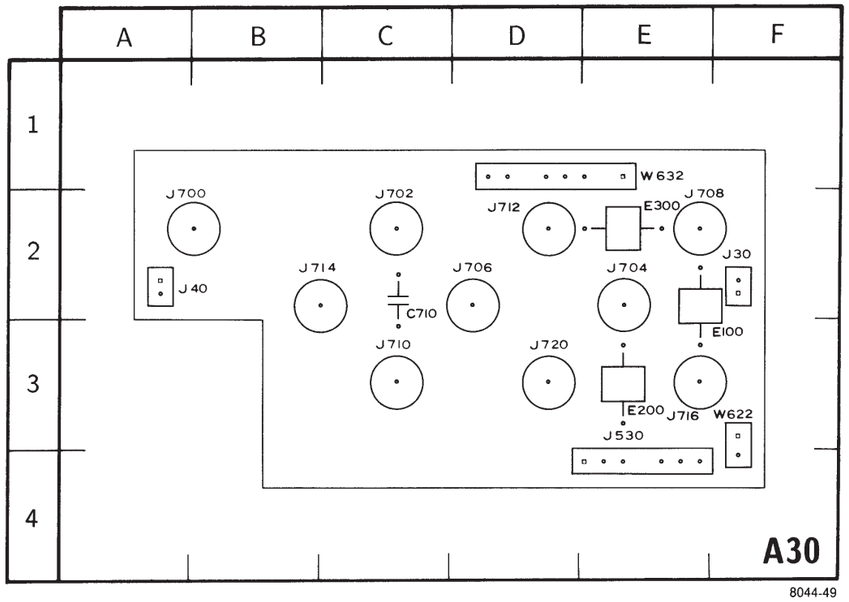


Figure 7-22. A30—Connector circuit board assembly.

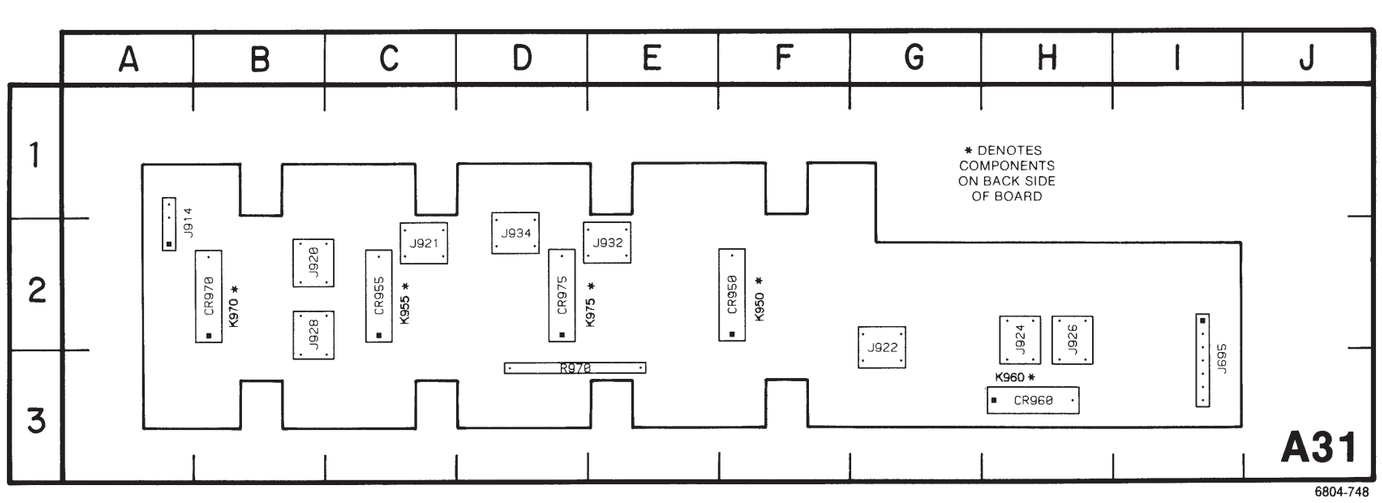
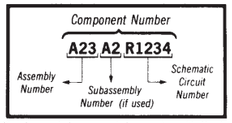


Figure 7-23. A31—Relay circuit board assembly.

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

HIGH CURRENT & CONNECTOR TERMINAL <27>

ASSEMBLY A30

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C710	F4	C2	J40	F3	A2	J710	F3	C3
			J530	E2	E3	J712	F3	D2
E100	F4	F3	J700	F5	B2	J714	F4	C2
E200	F4	E3	J702	F4	C2	J716	F4	E3
E300	F3	E2	J704	F4	E2	J720	F3	D3
			J706	F5	D2			
J30	F2	F2	J708	F3	E2	W622	F2	F3
						W632	E3	E1

ASSEMBLY A31

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
CR950	C3	F2	J920	C3	B2	K950	B3	F2
CR955	C5	C2	J921	C3	C2	K955	C5	C2
CR960	B4	H3	J922	B3	G2	K960	B4	H3
CR970	C3	B2	J924	B4	H2	K970	C3	B2
CR975	C5	D2	J926	D4	H2	K975	B5	E2
			J928	D4	B2			
J695	C3	I3	J932	D5	E2	R970	C4	D3
J914	B3	A2	J934	D3	D2			

TEST FIXTURE ENCLOSURE

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J1002	H4		J1012	H3		S1000	H3	
JIOO4	H4		J1014	H4		S1002	H3	
JI008	H3		J1016	H4		S1004	H2	
J1010	H3		J1018	H5				

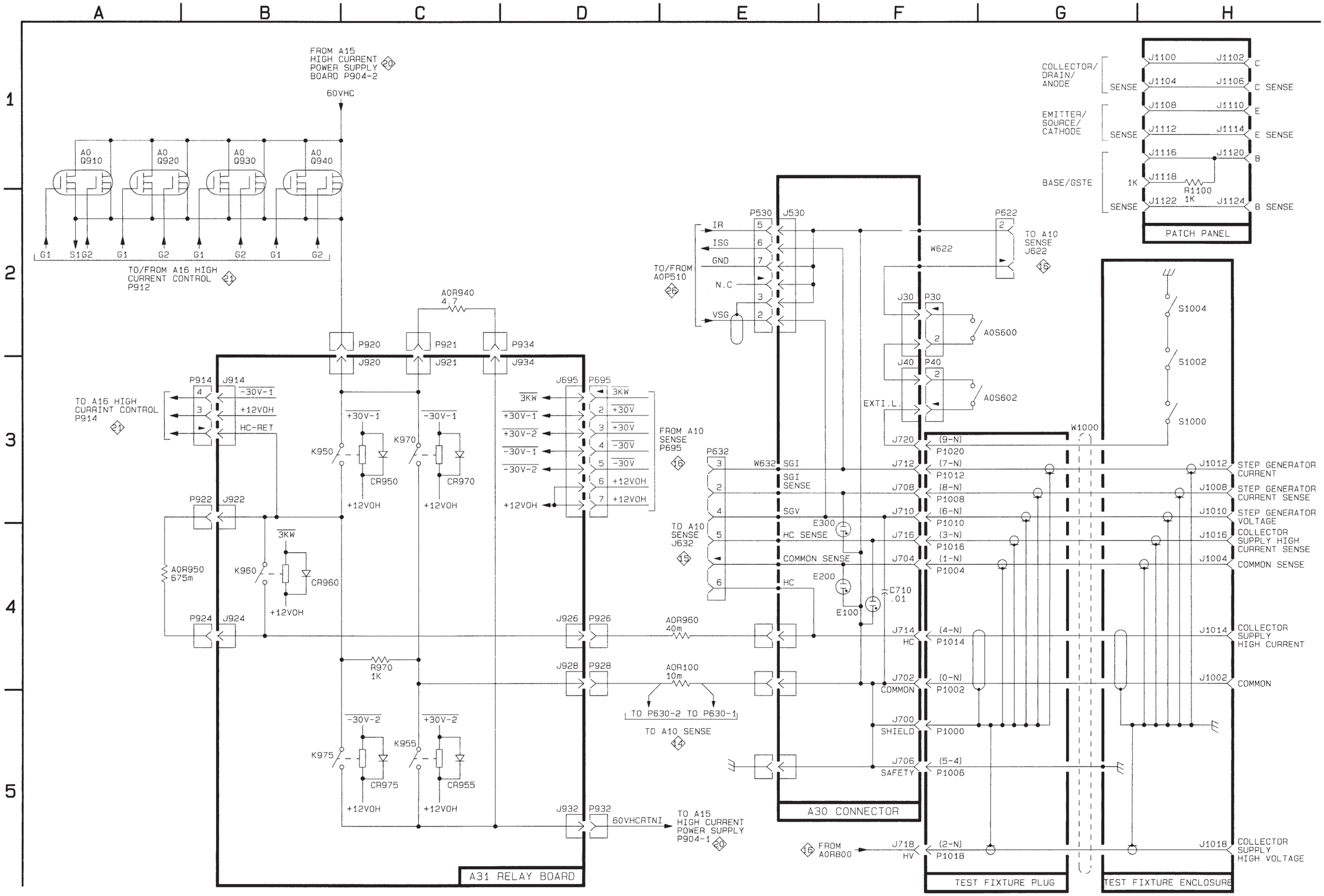
PATCH PANEL

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J1100	H1		J1110	H1		J1120	H1	
J1102	H1		J1112	H1		J1122	H2	
J1104	H1		J1114	H1		J1124	H2	
J1106	H1		J1116	H1				
J1108	H1		J1118	H1		R1100	H1	

CHASSIS MOUNTED PARTS

CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J718	F5		R100	E4		S600	G2	
			R940	C2		S602	G3	
Q910	A1		R950	A4				
Q920	A1		R960	E4		W706	E5	
Q930	B1							
Q940	B1							

Please cut out the aria below the lines.

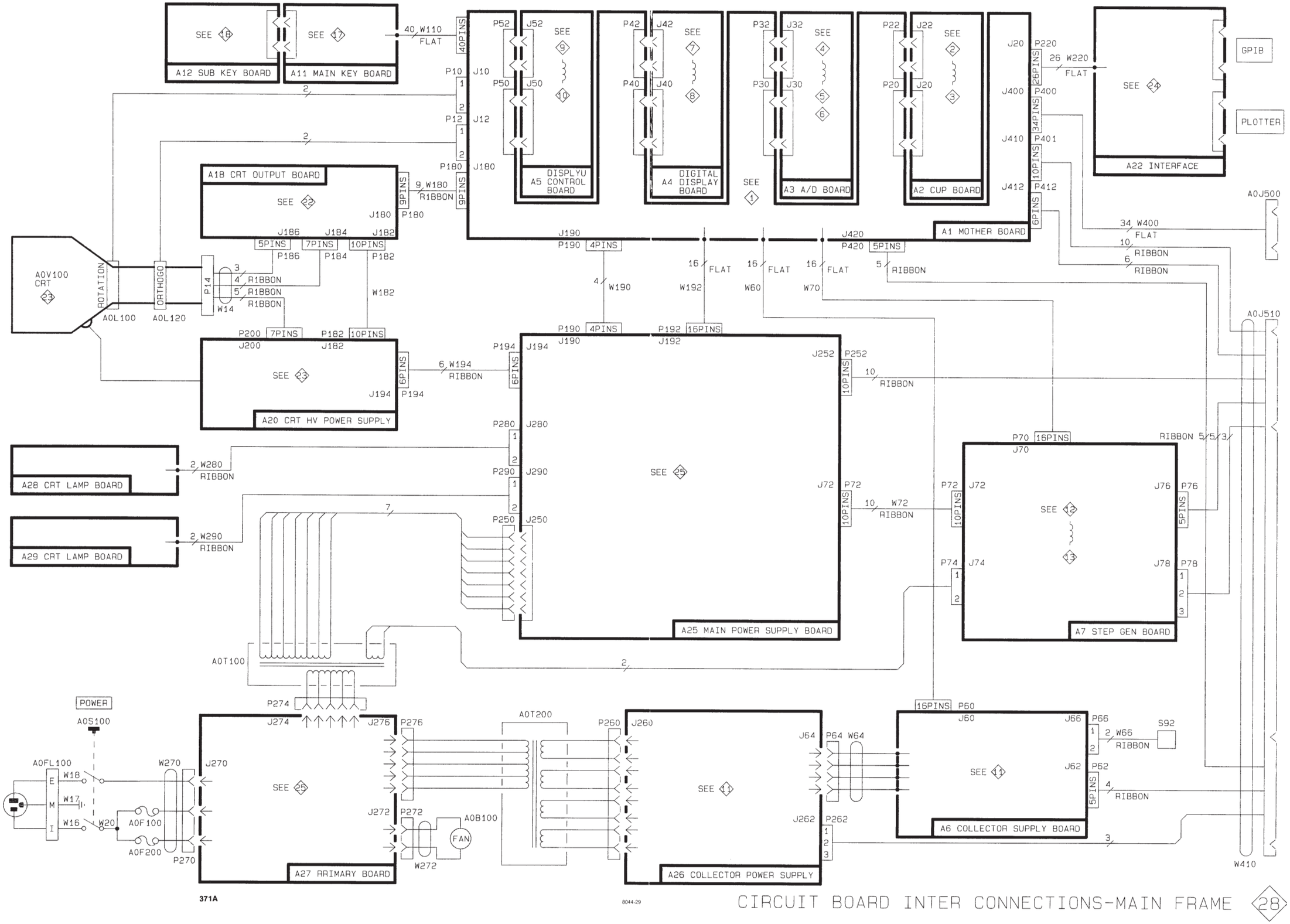


371A

8044-28

HIGH CURRENT OUTPUT & CONNECTOR TERMINAL 27

Please cut out the aria below the lines.



CIRCUIT BOARD INTER CONNECTIONS-MAIN FRAME 28

371A

8044-29

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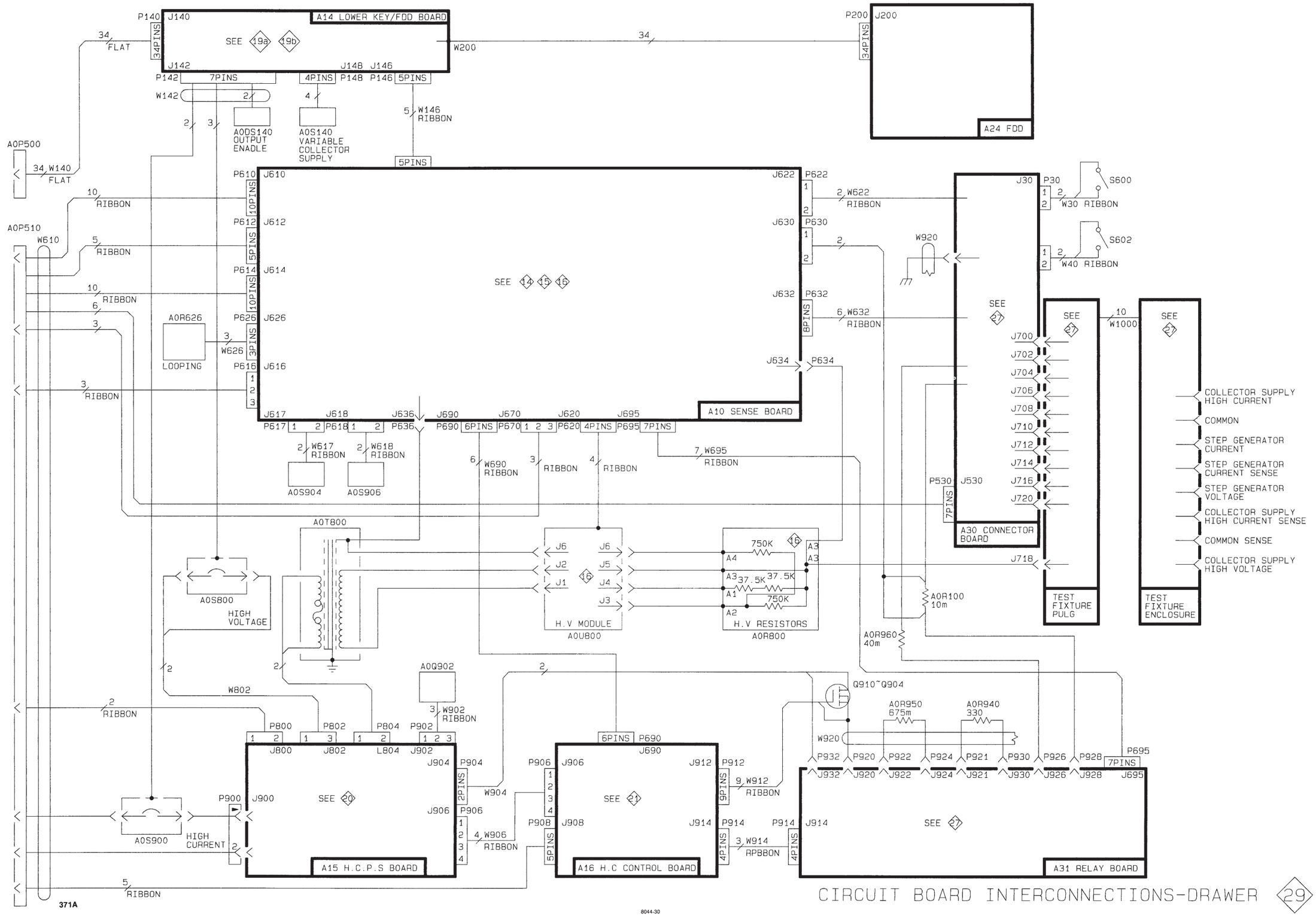

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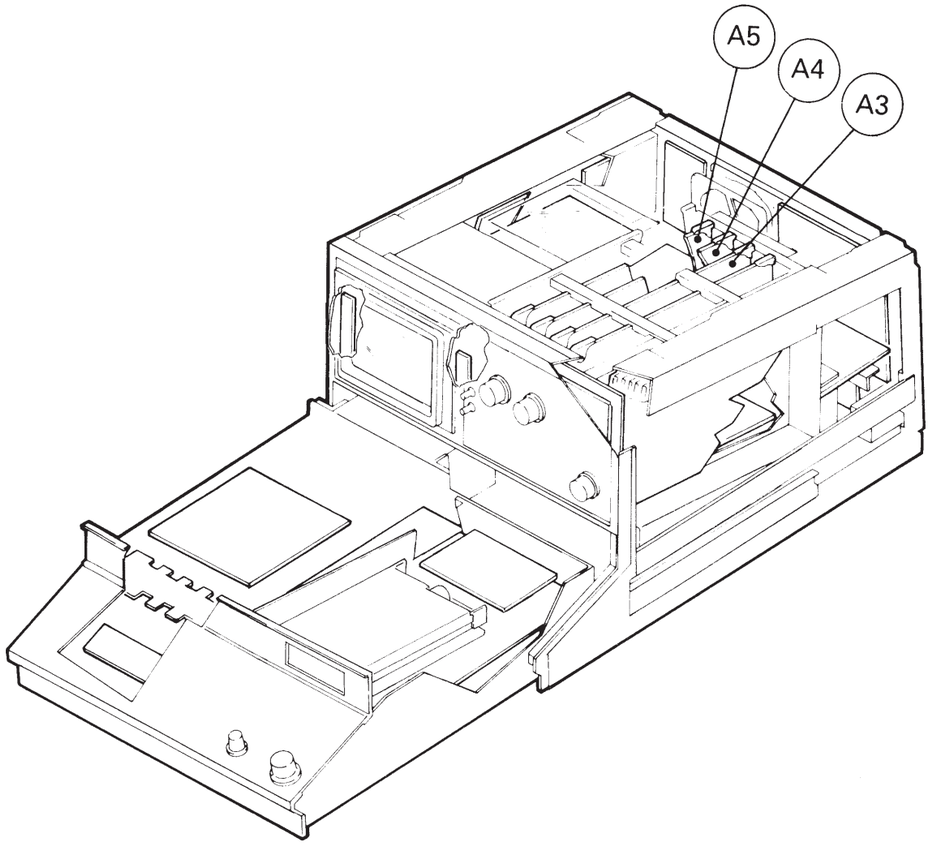
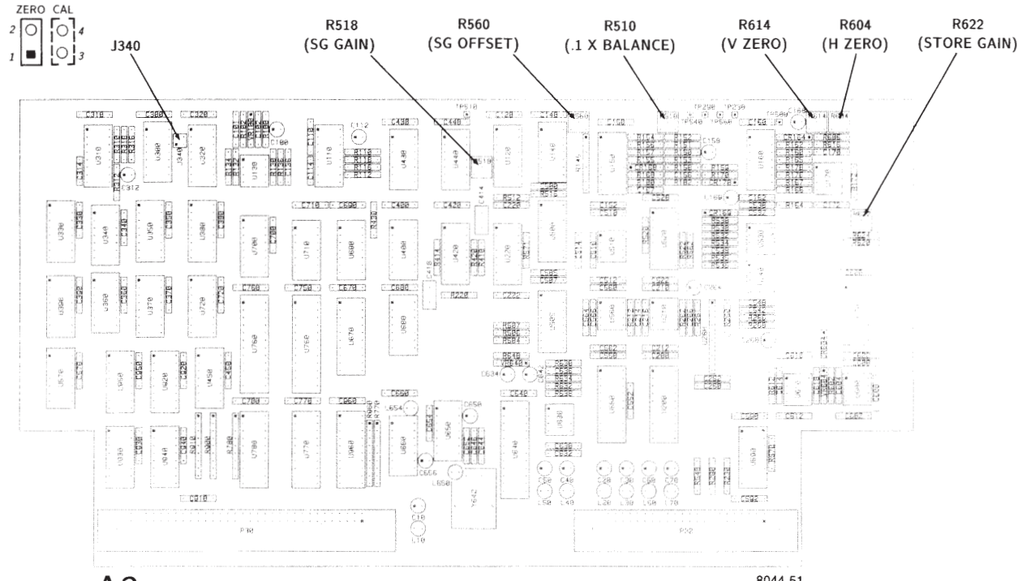


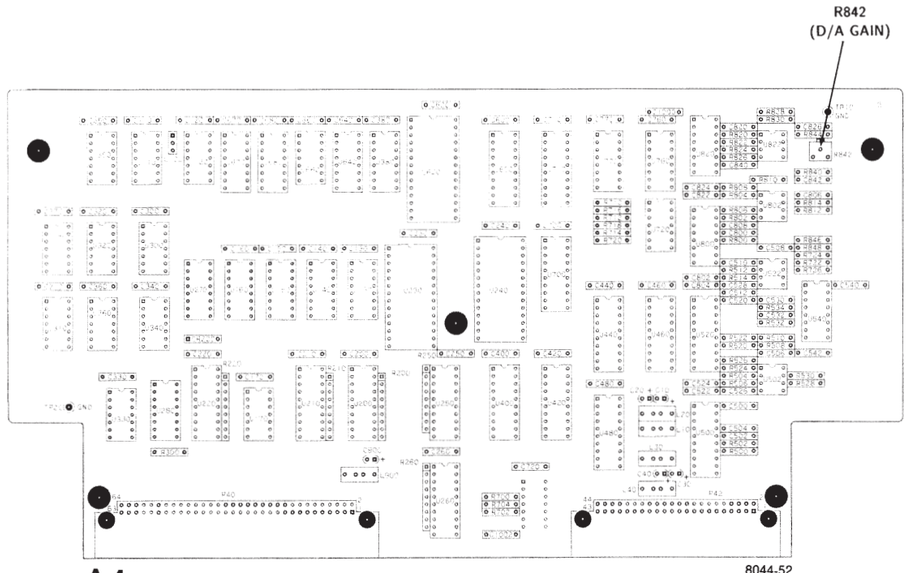
8044-50

Please cut out the aria below the lines.



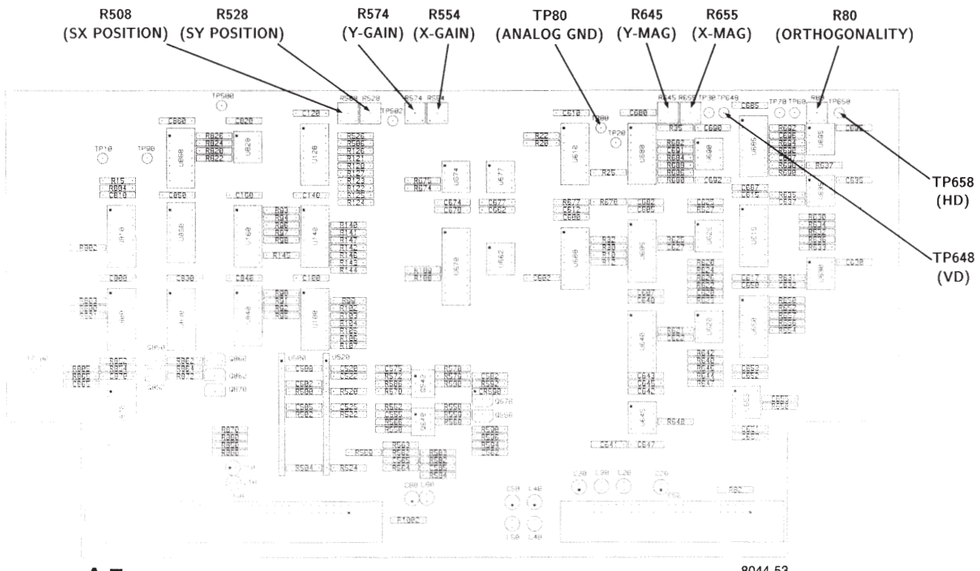
A3 A/D

8044-51



A4 DIGITAL DISPLAY

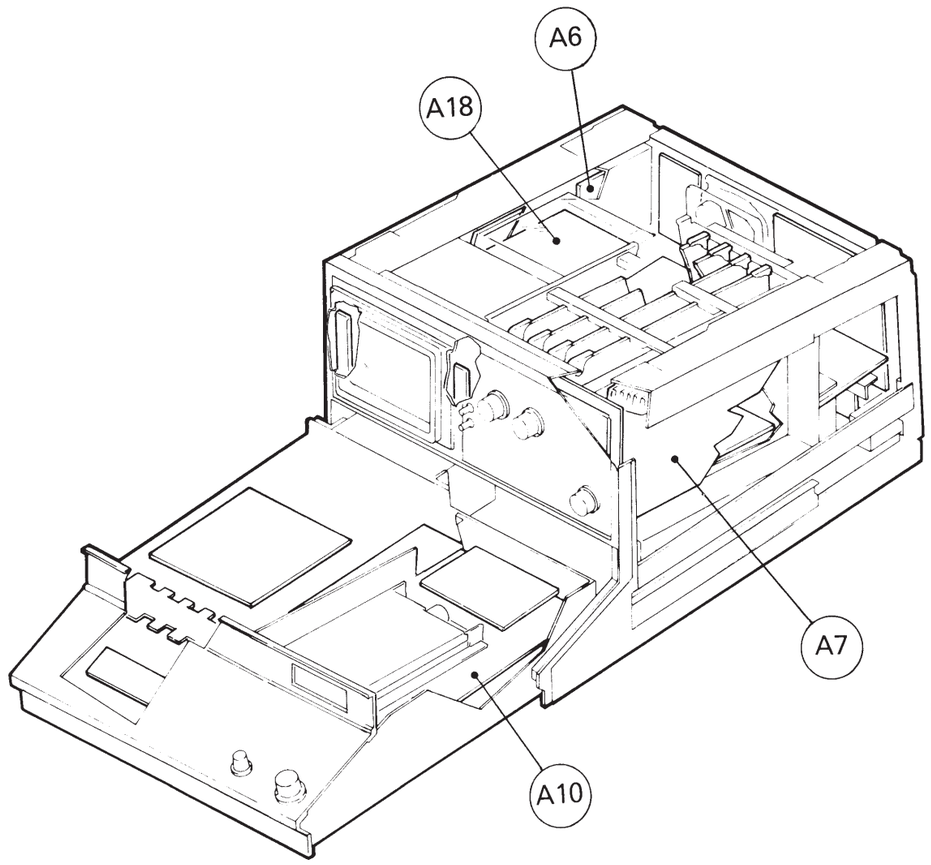
8044-52



A5 DISPLAY CONTROL

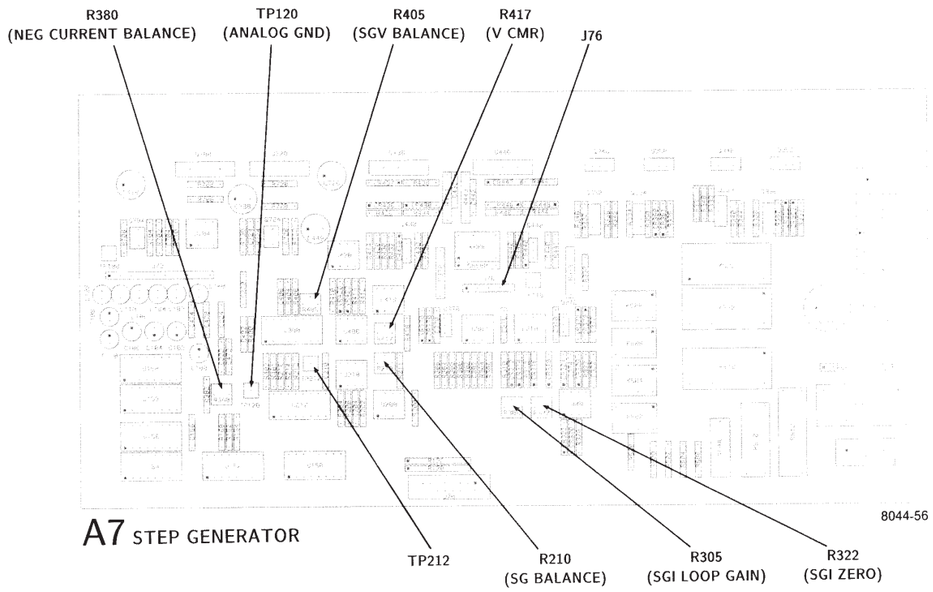
8044-53

Please cut out the aria below the lines.

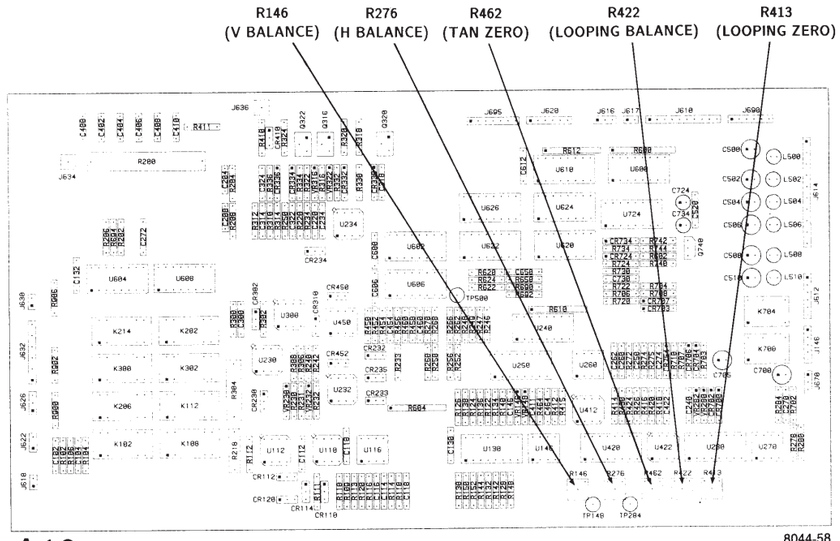


8044-54

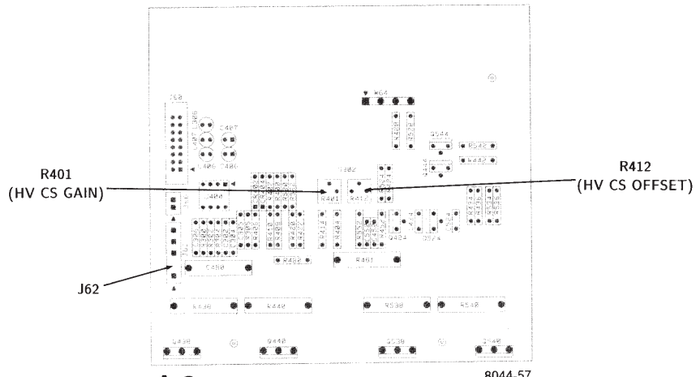
Please cut out the aria below the lines.



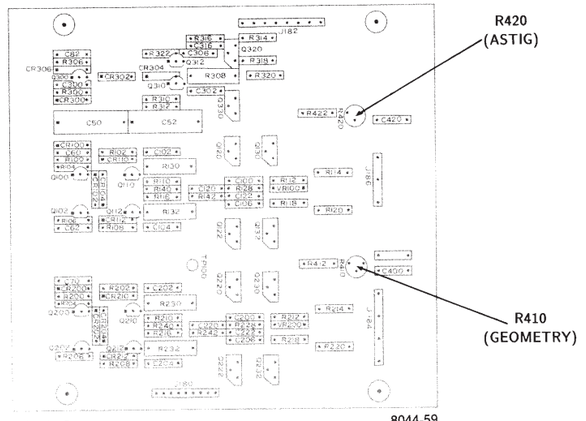
A7 STEP GENERATOR



A10 SENSE

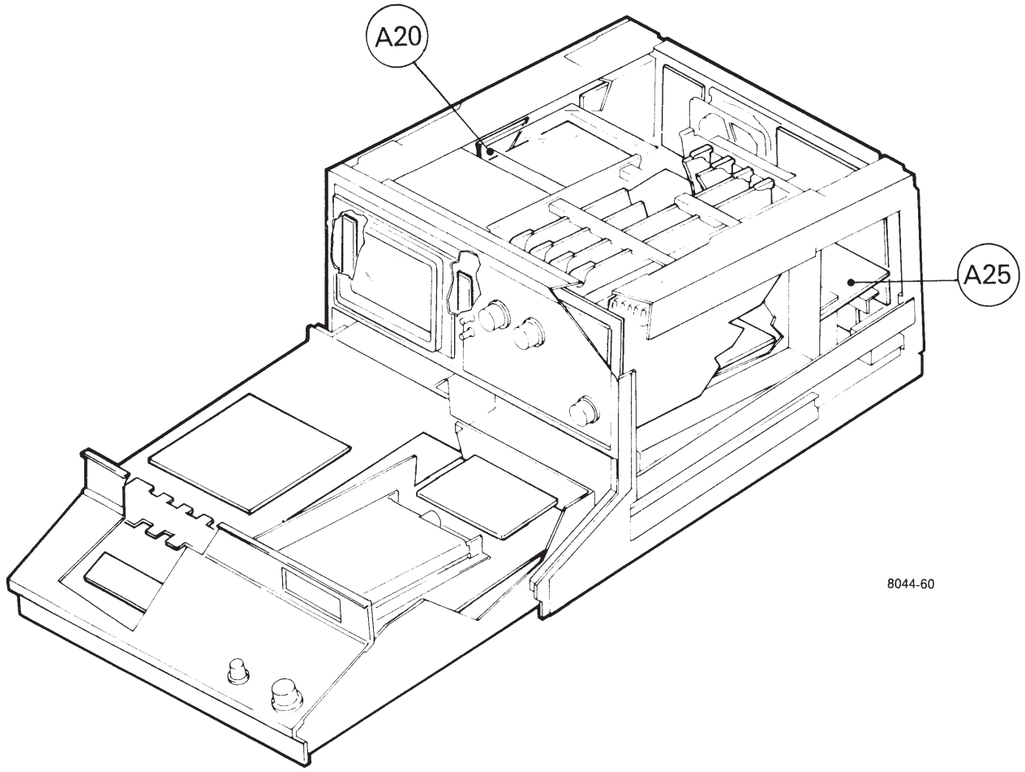


A6 COLLECTOR SUPPLY

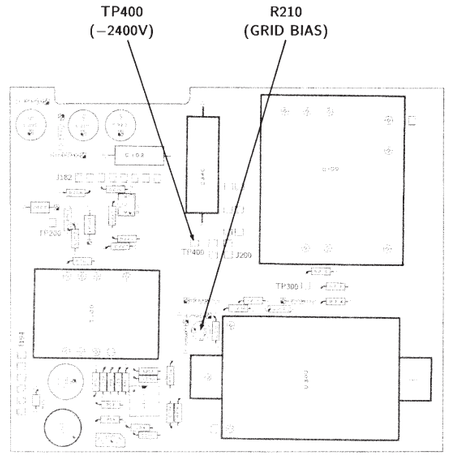


A18 CRT OUTPUT

Please cut out the aria below the lines.

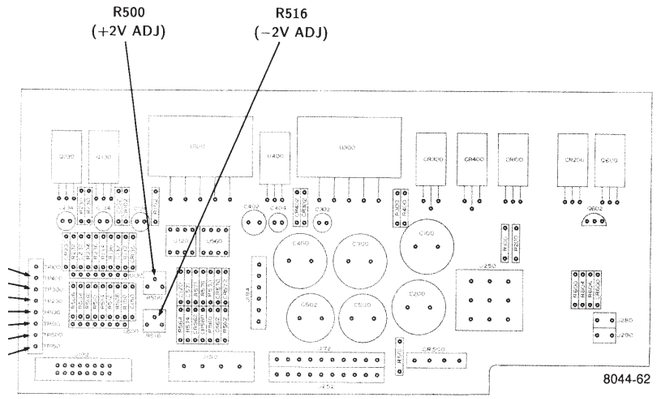


8044-60



8044-61

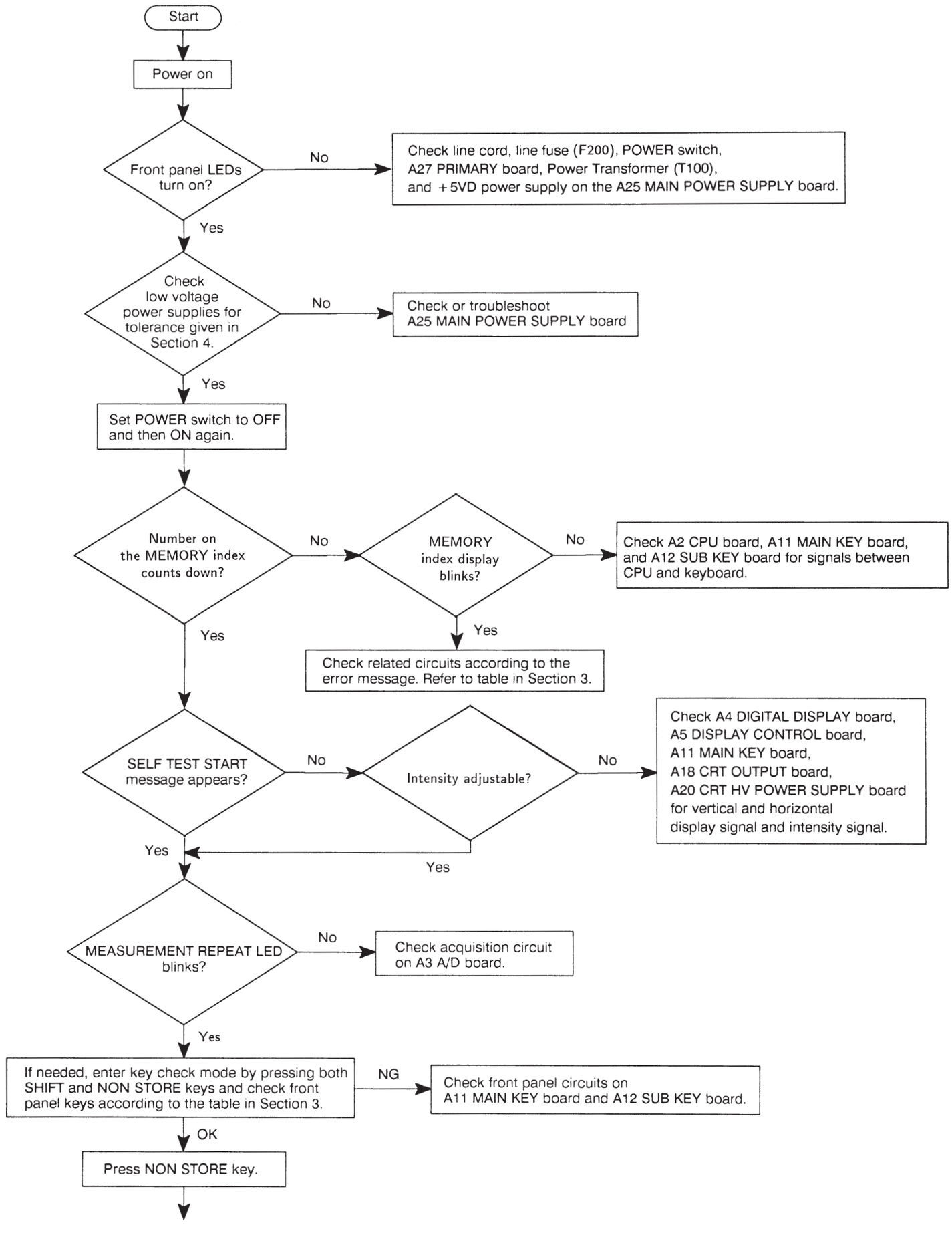
A20 H.V. REGULATOR



8044-62

A25 MAIN POWER SUPPLY

Please cut out the aria below the lines.



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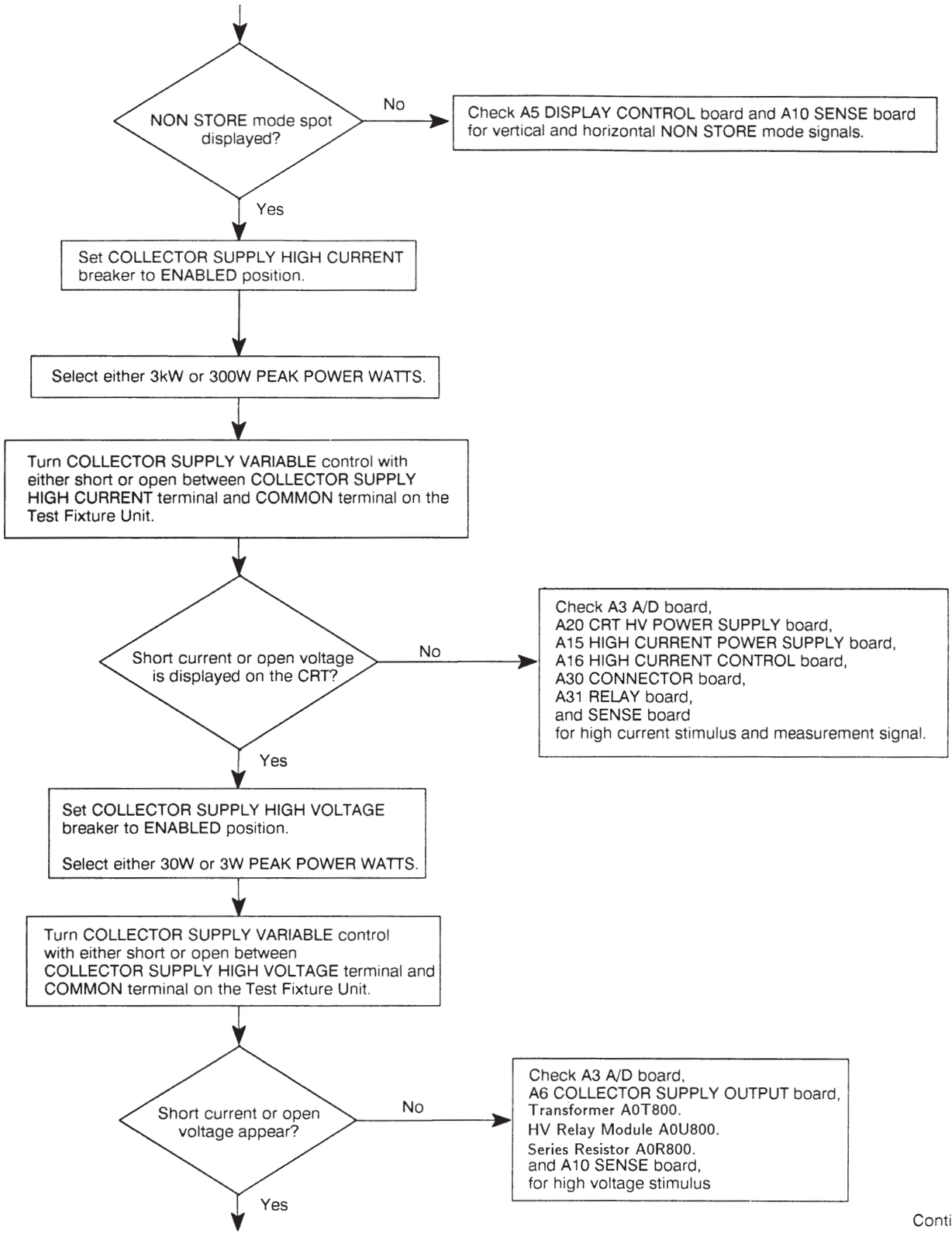

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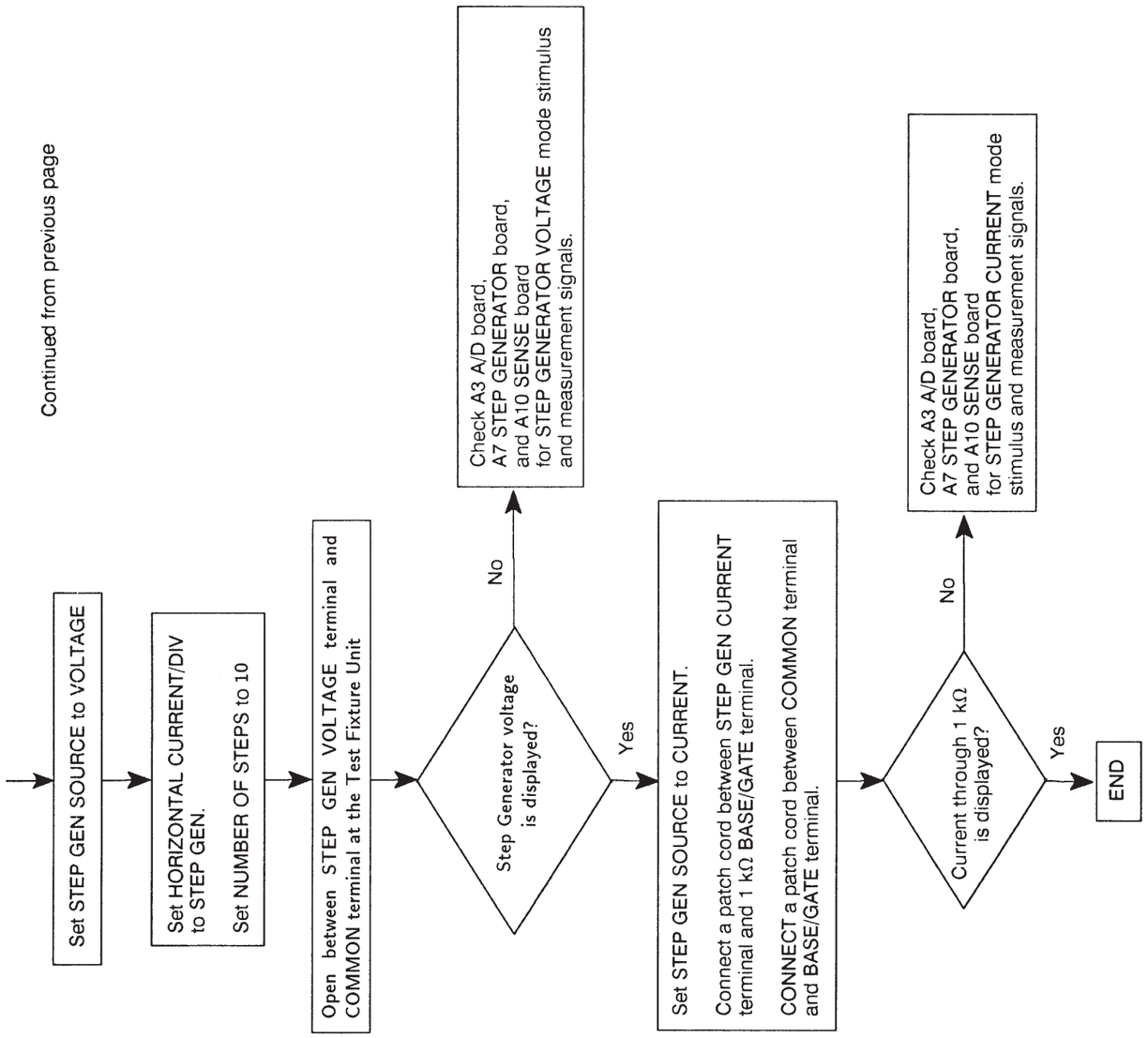

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Replaceable Mechanical Parts

Replaceable Mechanical Parts

This section contains a list of the replaceable mechanical components for the 371A. Use this list to identify and order replacement parts.

Parts Ordering Information

Replacement parts are available through your local Tektronix field office or representative.

Changes to Tektronix products are sometimes made to accommodate improved components as they become available and to give you the benefit of the latest improvements. Therefore, when ordering parts, it is important to include the following information in your order.

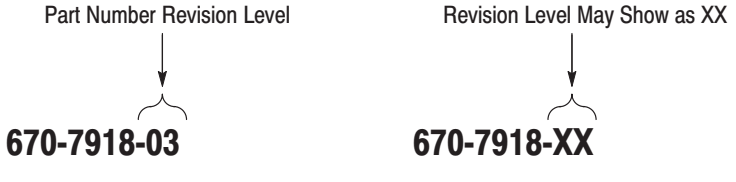
- Part number (see Part Number Revision Level below)
- Instrument type or model number
- Instrument serial number
- Instrument modification number, if applicable

If you order a part that has been replaced with a different or improved part, your local Tektronix field office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

Part Number Revision Level

Tektronix part numbers contain two digits that show the revision level of the part. For most parts in this manual, you will find the letters XX in place of the revision level number.



When you order parts, Tektronix will provide you with the most current part for your product type, serial number, and modification (if applicable). At the time of your order, Tektronix will determine the part number revision level needed for your product, based on the information you provide.

Using the Replaceable Mechanical Parts List

The tabular information in the Replaceable Mechanical Parts List is arranged for quick retrieval. Understanding the structure and features of the list will help you find all of the information you need for ordering replacement parts. The following table describes the content of each column in the parts list.

Parts List Column Descriptions

Column	Column Name	Description
1	Figure & Index Number	Items in this section are referenced by figure and index numbers to the exploded view illustrations that follow.
2	Tektronix Part Number	Use this part number when ordering replacement parts from Tektronix.
3 and 4	Serial Number	Column three indicates the serial number at which the part was first effective. Column four indicates the serial number at which the part was discontinued. No entries indicates the part is good for all serial numbers.
5	Qty	This indicates the quantity of parts used.
6	Name & Description	An item name is separated from the description by a colon (:). Because of space limitations, an item name may sometimes appear as incomplete. Use the U.S. Federal Catalog handbook H6-1 for further item name identification.
7	Mfr. Code	This indicates the code of the actual manufacturer of the part.
8	Mfr. Part Number	This indicates the actual manufacturer's or vendor's part number.

Abbreviations

Abbreviations conform to American National Standard ANSI Y1.1–1972.

Chassis Parts

Chassis-mounted parts and cable assemblies are located at the end of the Replaceable Electrical Parts List.

Mfr. Code to Manufacturer Cross Index

The table titled Manufacturers Cross Index shows codes, names, and addresses of manufacturers or vendors of components listed in the parts list.

CROSS INDEX – MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
S3109	FELLER	72 VERONICA AVE UNIT 4	SUMMERSET NJ 08873
S4238	STANLEY ELECTRIC CO LTD	2–9–13 NAKA–MEGURO MEGURA–KU	TOKYO 153 JAPAN
TK0AL	ONODERA MFG CO LTD	3–1–2 KAMIYOHGA SETAGAYA–KU	TOKYO JAPAN
TK0AP	SUGANUMA MFG CO LTD	5–8–22 KITA–SHINAGAWA SHINAGAWA–KU	TOKYO JAPAN
TK0AR	KITAGAWA IND CO LTD	2–4–26 MUROMACHI NIHONBASHI CHUO–KU	TOKYO JAPAN
TK0AU	CHIYODA DENSHI CO LTD	2–5–12 MITA MEGURO–KU	TOKYO JAPAN
TK0BD	TAISHO ELECTRIC IND CO LTD	5–28–16 OKUSAWA SETAGAYA–KU	TOKYO JAPAN
TK0BI	ACOUS IND CO LTD	2–6 TA–CO KANDA CHIYODA–KU	TOKYO JAPAN
TK0BJ	SONE SHOTEN CO LTD	2–1–10 TSUKIZE CHUO–KU	TOKYO JAPAN
TK0BK	SHOWA KOSAN CO LTD	2–947 IKEBUKURO TOSHIMA–KU	TOKYO JAPAN
TK0BV	KYODO LIGHT METAL CO LTD	2–5–3 NIHONBASHI CHUO–KU	TOKYO JAPAN
TK0BW	MULTI CONTACT	2–7–2 SHINYOKOHAMA KITA–KU YOKOHAMA–CITY	KANAGAWA JAPAN
TK0CA	SUZUKI ELEC MFG CO LTD	105 OHKUMA–CHO MIDORI–KU YOKOHAMA–CITY	KANAGAWA JAPAN
TK0CB	T K Y MFG CO LTD	2–18–8 MASUGATA TAMA–KU KAWASAKI–CITY	KANAGAWA JAPAN
TK0CF	YASUDA MFG CO LTD	81–1 OKESHITA NISHIMAKADO NUMAZU–CITY	SHIZUOKA JAPAN
TK0CM	SUMISHO NON–FERROUS METALS TRADING CO	2–6–1 NISHI–SHINJUKU SHINJUKU–KU	TOKYO JAPAN
TK0CP	NISSHO DENZAI CO LTD	15–26 ICHIBAN–CHO MISHIMA–CITY	SHIZUOKA JAPAN
TK0CX	SANRIN PRINTING CO LTD	5–7–3 KITA–SHINAGAWA SHINAGAWA–KU	TOKYO JAPAN
TK0DJ	KOKKO ELEC CO LTD	5–8–20 KITA–SHINAGAWA SHINAGAWA–KU	TOKYO JAPAN
TK0DK	KYORITSU PLASTIC IND CO LTD	2739 FURUIKE OHHIRA NUMAZU–CITY	SHIZUOKA JAPAN
TK0DW	MIZUNO MFG CO LTD	592–1 TSUMADA ATSUGI–CITY	KANAGAWA JAPAN
TK0EV	MORI HATSUJO CO LTD	1–1–17 BUNDA SUMIDA–KU	TOKYO JAPAN
TK0FE	NAKANO PERMALLOY CO LTD	5–22–14 HIGASHINAKANO NAKANO–KU	TOKYO JAPAN
TK00Z	H Y ASSOCIATES CO LTD	1–2–2 MOMOI SIGINAMI–KU	TOKYO JAPAN

CROSS INDEX – MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
TK0191	SONY/TEKTRONIX	5–9–31 KITASHINAGAWA, SHINAGAWA–KU, TOKYO	TOKYO JAPAN 141–0001
TK0392	NORTHWEST FASTENER SALES INC	8058 SW NIMBUS AVENUE	BEAVERTON OR 97008
TK0413	ADAMS SUPPLY COMPANY	1850 W 205TH ST P O BOX 2938	TORRANCE CA 90509
TK0435	LEWIS SCREW CO	4300 S RACINE AVE	CHICAGO IL 60609–3320
TK0588	UNIVERSAL PRECISION PRODUCTS	1775 NW 216TH	HILLSBORO OR 97123
TK0914	WESTERN SINTERING CO INC	2620 STEVENS DRIVE	RICHLAND WA 99352
TK1499	AMLAN INC	97 THORNWOOD RD	STAMFORD CT 06903–2617
TK1943	NEILSEN MANUFACTURING INC	3501 PORTLAND ROAD NE	SALEM OR 97303
TK2541	AMERICOR ELECTRONICS LTD	2682 W COYLE AVENUE	ELK GROVE VILLAGE IL 60007
TK2548	XEROX BUSINESS SERVICES DIV OF XEROX CORPORATION	14181 SW MILLIKAN WAY	BEAVERTON OR 97077
0JR05	TRIQUEST CORP	3000 LEWIS AND CLARK HWY	VANCOUVER WA 98661–2999
0KB01	STAUFFER SUPPLY	810 SE SHERMAN	PORTLAND OR 97214
07416	NELSON NAME PLATE CO	3191 CASITAS	LOS ANGELES CA 90039–2410
11897	PLASTIGLIDE MFG CORP	2701 W EL SEGUNDO BLVD	HAWTHORNE CA 90250–3318
12136	P H C INDUSTRIES INC	1643 HADDON AVE PO BOX 1448	CAMDEN NJ 08103–3109
12327	FREEWAY CORP	9301 ALLEN DR	CLEVELAND OH 44125–4632
13103	THERMALLOY CO INC	2021 W VALLEY VIEW LN PO BOX 810839	DALLAS TX 75381
2X013	MCGUIRE BEARING CO	947 SE MARKET ST	PORTLAND OR 97214–3556
28389	MICROMANIPULATOR	2801 ARROWHEAD DR	CARSON CITY, NV 89706
6D224	HARBOR TRI–TEC A BERG ELECTRONICS COMPANY	14500 SOUTH BROADWAY	GARDENA, CA 90248
61935	SCHURTER INC	1016 CLEGG COURT	PETALUMA CA 94952–1152
73743	FISCHER SPECIAL MFG CO	111 INDUSTRIAL RD	COLD SPRING KY 41076–9749
78189	ILLINOIS TOOL WORKS INC SHAKEPROOF DIV	ST CHARLES ROAD	ELGIN IL 60120
8X345	NORTHWEST SPRING & MFG CO	5858 SW WILLOW LANE	LAKE OSWEGO OR 97035
80009	TEKTRONIX INC	14150 SW KARL BRAUN DR PO BOX 500	BEAVERTON OR 97077–0001
83486	ELCO INDUSTRIES INC	1101 SAMUELSON RD	ROCKFORD IL 61101
86928	SEASTROM MFG CO INC	701 SONORA AVE	GL ENDALE CA 91201–2431
93907	TEXTRON INC CAMCAR DIV	600 18TH AVE	ROCKFORD IL 61108–5181
99742	PERMACEL TAPE DIV AN AVERY CO	U S HIGHWAY 1 P O BOX 671	NEW BRUNSWICK NJ 08903

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
1–1	390–0984–XX			1	CABINET SIDE:LEFT (ATTACHING PARTS)	80009	39009840XX
–2	211–0507–XX			1	SCREW,MACHINE:6–32 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–3	367–0116–XX			2	HANDLE,CARRYING:16.54 L,BLUE VINYL (ATTACHING PARTS)	12136	ORDER BY DESC
–4	212–0628–XX			8	SCREW,SHOULDER:10–32 X 0.4 L,RDH,STL	93907	ORDER BY DESC
–5	386–1624–XX			4	PLATE,HDL RTNG:STAINLESS STEEL (END ATTACHING PARTS)	TK1943	ORDER BY DESC
–6	386–1283–XX			4	PLATE,HDL MTG:FRONT	0JR05	ORDER BY DESC
–7	200–0728–XX			4	COVER,HDL END:1.91 X 0.91 X 0.36 BLUEACETAL	0JR05	200–0728–XX
–8	426–2371–XX			1	FRAME,SECTION:TOP LEFT,TEK TAN,AL (ATTACHING PARTS)	80009	4262371XX
–9	211–0507–XX			2	SCREW,MACHINE:6–32 X 0.312,PNH,STL	TK0435	ORDER BY DESC
–10	211–0510–XX			2	SCREW,MACHINE:6–32 X 0.375,PNH,STL	TK0435	ORDER BY DESC
–11	211–0538–XX			4	SCREW,MACHINE:6–32 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–12	124–0446–XX			1	STRIP,TRIM:TOP RIGHT	80009	1240446XX
–13	426–2372–XX			1	FRAME,SECTION:TOP RIGHT,TEK TAN,AL (ATTACHING PARTS)	80009	4262372XX
–14	211–0507–XX			2	SCREW,MACHINE:6–32 X 0.312,PNH,STL	TK0435	ORDER BY DESC
–15	211–0510–XX			2	SCREW,MACHINE:6–32 X 0.375,PNH,STL	TK0435	ORDER BY DESC
–16	211–0504–XX			5	SCREW,MACHINE:6–32 X 0.250,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–17	124–0447–XX			1	STRIP,TRIM:TOP RIGHT	80009	1240447XX
–18	426–2141–XX			1	FRAME SECT,CAB.:LEFT (ATTACHING PARTS)	80009	4262141XX
–19	211–0559–XX			1	SCREW,MACHINE:6–32 X 0.375,FLH,STL	TK0435	1593–300
–20	211–0504–XX			4	SCREW,MACHINE:6–32 X 0.250,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–21	426–2142–XX			1	FRAME SECT,CAB.:RIGHT (ATTACHING PARTS)	80009	4262142XX
–22	211–0559–XX			1	SCREW,MACHINE:6–32 X 0.375,FLH,STL	TK0435	1593–300
–23	211–0504–XX			3	SCREW,MACHINE:6–32 X 0.250,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–24	407–3890–XX			1	BRACKET,SUPPORT:ALUMINUM (ATTACHING PARTS)	80009	4073890XX
–25	212–0002–XX			4	SCREW,MACHINE:8–32 X 0.25,FLH,STL	0KB01	ORDER BY DESC
–26	212–0004–XX			4	SCREW,MACHINE:8–32 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–27	407–3890–XX			1	BRACKET,SUPPORT:ALUMINUM (ATTACHING PARTS)	80009	4073890XX
–28	212–0002–XX			4	SCREW,MACHINE:8–32 X 0.25,FLH,STL	0KB01	ORDER BY DESC
–29	212–0004–XX			4	SCREW,MACHINE:8–32 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–30	334–7068–XX			1	MARKER,IDENT:MKD R146	TK0CX	30–0102
–31	426–2211–XX			1	FRAME SECTION:BOTTOM,LEFT (ATTACHING PARTS)	TK0BV	ORDER BY DESC

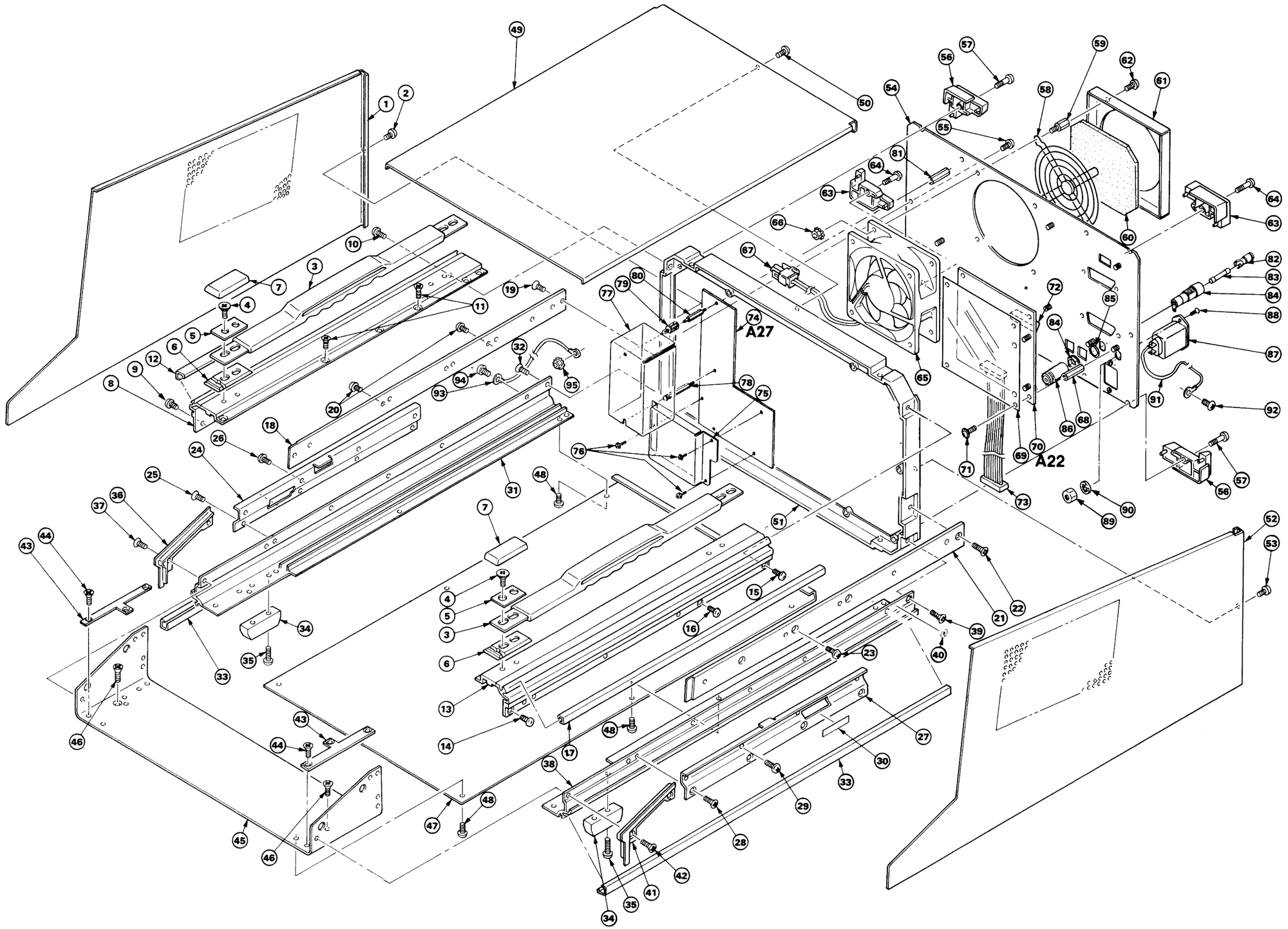
Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
1–32	211–0559–XX			2	SCREW,MACHINE:6–32 X 0.375,FLH,STL (END ATTACHING PARTS)	TK0435	1593–300
–33	124–0448–XX			2	STRIP,TRIM:BOTTOM	80009	1240448XX
–34	348–0128–XX			4	FOOT,CABINET:BLACK POLYURETHANE (ATTACHING PARTS)	80009	3480128XX
–35	211–0513–XX			8	SCREW,MACHINE:6–32 X 0.625,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–36	426–2134–XX			1	FRAME SECTION:FRONT,LEFT (ATTACHING PARTS)	TK0CB	ORDER BY DESC
–37	211–0538–XX			2	SCREW,MACHINE:6–32 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–38	426–2138–XX			1	FRAME SECTION:BOTTOM,RIGHT (ATTACHING PARTS)	TK0BV	ORDER BY DESC
–39	211–0559–XX			2	SCREW,MACHINE:6–32 X 0.375,FLH,STL (END ATTACHING PARTS)	TK0435	1593–300
–40	334–3379–XX			1	MARKER,IDENT:MARKED GROUND SYMBOL	07416	ORDER BY DESC
–41	426–2135–XX			1	FRAME SECTION:FRONT,RIGHT (ATTACHING PARTS)	TK0CB	ORDER BY DESC
–42	211–0538–XX			2	SCREW,MACHINE:6–32 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–43	351–0770–XX			2	GUIDE,TEST FXTR:BOTTOM (ATTACHING PARTS)	80009	3510770XX
–44	211–0038–XX			6	SCREW,MACHINE:4–40 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–45	441–1739–XX			1	CHAS,CRV TRACER:BOTTOM (ATTACHING PARTS)	80009	4411739XX
–46	211–0541–XX			2	SCREW,MACHINE:6–32 X 0.25,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–47	390–0987–XX			1	CABINET BOTTOM: (ATTACHING PARTS)	80009	3900987XX
–48	211–0007–XX			6	SCREW,MACHINE:4–40 X 0.188,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–49	390–1088–XX			1	CABINET,TOP:ALUMINUM (ATTACHING PARTS)	80009	3901088XX
–50	211–0507–XX			1	SCREW,MACHINE:6–32 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–51	426–2136–XX			1	FRAME SECT,CAB.:REAR,AL	80009	4262136XX
–52	390–0985–XX			1	CABINET SIDE:RIGHT (ATTACHING PARTS)	80009	3900985XX
–53	211–0507–XX			1	SCREW,MACHINE:6–32 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
	334–6495–XX	J300352		1	MARKER,IDENT:MKD ,	80009	3346495XX
–54	333–3886–XX			1	PANEL,REAR:371A,ALUMINUM (ATTACHING PARTS)	80009	3333886XX
–55	211–0507–XX			6	SCREW,MACHINE:6–32 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–56	343–1272–XX			2	RTNR,CAB.COVER:BLUE,PLASTIC (ATTACHING PARTS)	80009	3431272XX
–57	213–0782–XX			2	SCREW,TPG,TF:8–32 X 0.625,FILH,STL (END ATTACHING PARTS)	83486	ORDER BY DESC

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
1−58	200−3300−XX			1	GUARD,FAN: (ATTACHING PARTS)	80009	2003300XX
−59	129−1126−XX			4	SPACER,POST:21.5MM L,4−40,6−32 THD,BRS (END ATTACHING PARTS)	80009	1291126XX
−60	378−0278−XX			1	FILTER,AIR:125MM X 5MM THK	TK0BI	ORDER BY DESC
−61	200−3277−XX			1	COVER,FAN:ALUMINUM (ATTACHING PARTS)	80009	2003277XX
−62	211−0088−XX			4	SCREW,MACHINE:2−56 X 0.281,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−63	343−1271−XX			2	RTNR,CAB.COVER:BLUE,PLASTIC (ATTACHING PARTS)	80009	3431271XX
−64	213−0782−XX			2	SCREW,TPG,TF:8−32 X 0.625,FILH,STL (END ATTACHING PARTS)	83486	ORDER BY DESC
−65	−−−−−−−−			1	FAN,TUBEAXIAL:(SEE B100 REPL) (ATTACHING PARTS)		
−66	210−0457−XX			4	NUT,PL,ASSEM WA:6−32 X 0.312,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−67	−−−−−−−−			1	CA ASSY,PWR:(SEE W272 REPL)		
−68	129−0992−XX			4	SPACER,POST:0.41 L,4−40 INT,BRS,0.19 HEX	80009	1290992XX
−69	342−0894−XX			1	INSULATOR,PLATE:CIRCUIT BOARD,PC	80009	3420894XX
−70	−−−−−−−−			1	CKT BOARD ASSY:INTERFACE(SEE A22 REPL) (ATTACHING PARTS)		
−71	211−0661−XX			4	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC
−72	−−−−−−−−			2	CONN,RCPT,ELEC:(SEE A22J350,J450 REPL)		
−73	−−−−−−−−			1	CA ASSY,SP,ELEC:(SEE A22W220 REPL)		
−74	−−−−−−−−				CKT BOARD ASSY:PRIMARY(SEE A27 REPL)		
−75	342−0827−XX			1	INSULATOR,PLATE:CKT BD,POLYCARBONATE (ATTACHING PARTS)	80009	3420827XX
−76	211−0661−XX			3	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−77	342−0828−XX			1	INSULATOR,PLATE:CKT BD,POLYCARBONATE	80009	3420828XX
−78	129−1187−XX			1	SPACER,POST:43MM L,W/4−40 EXT THD,BRS	80009	1291187XX
−79	343−1346−XX			1	RETAINER,INSUL:15.9MM L,NYLON	80009	3431346XX
−80	129−1188−XX			1	SPACER,POST:23.7MM L,4−40 EXT THD,BRS	80009	1291188XX
−81	129−0992−XX			5	SPACER,POST:0.41 L,4−40 INT,BRS,0.19 HEX	80009	1290992XX
−82	200−2264−XX			2	CAP,FUSEHOLDER:3AG FUSES	61935	FEK 031 1666
−83				2	FUSE,CARTRIDGE:(SEE F100,F200 REPL)		
−84	204−0833−XX			2	BODY,FUSEHOLDER:3AG & 5 X 20MM FUSES	61935	031 1653
−85	210−1039−XX			2	WASHER,LOCK:0.521 ID,INT,0.025 THK,SST	0KB01	1224−02−00−0541
−86	200−1388−XX			2	COVER,FUSE LEAD:POLYURETHANE	0JR05	ORDER BY DESC
−87	−−−−−−−−			1	FILTER:(SEE FL100 REPL) (ATTACHING PARTS)		
−88	211−0537−XX			2	SCREW,MACHINE:6−32 X 0.375,TRH,STL	TK0435	ORDER BY DESC
−89	210−0407−XX			2	NUT,PLAIN,HEX:6−32 X 0.25,BRS CD PL	73743	3038−402

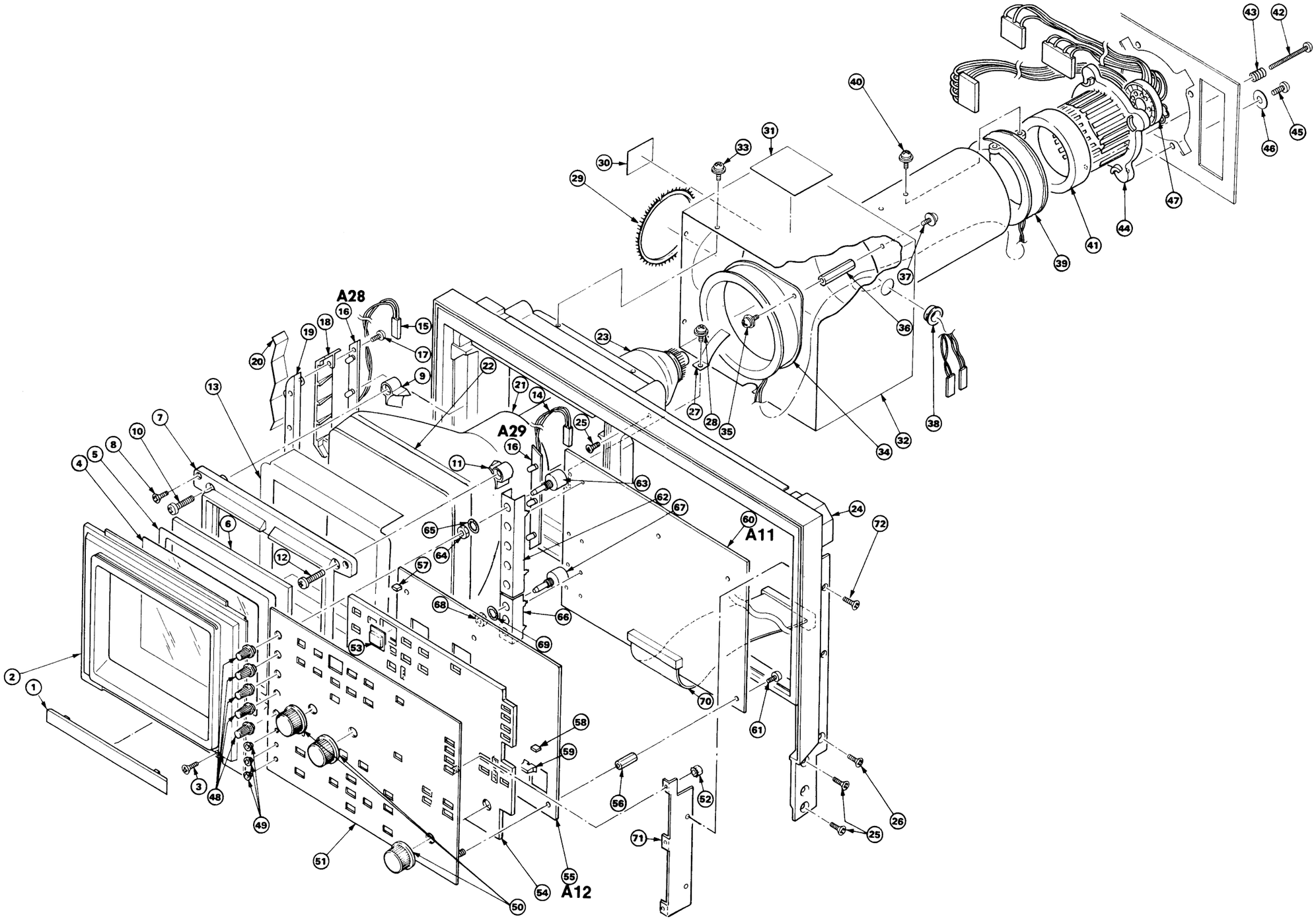
Replaceable Mechanical Parts

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
1−90	210−0006−XX			2	WASHER,LOCK:#6 INTL,0.018 THK,STL (END ATTACHING PARTS)	78189	1206−00−00−0541
−91	−−−−−−−−			1	LEAD,ELECTRICAL:(SEE W17 REPL) (ATTACHING PARTS)		
−92	211−0565−XX			1	SCREW,MACHINE:6−32 X 0.250,TRH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−93	196−3098−XX			1	LEAD,ELECTRICAL:18 AWG,7.0 L,5−4 (ATTACHING PARTS)	80009	1963098XX
−94	211−0565−XX			1	SCREW,MACHINE:6−32 X 0.250,TRH,STL	TK0435	ORDER BY DESC
−95	210−0407−XX			1	NUT,PLAIN,HEX:6−32 X 0.25,BRS (END ATTACHING PARTS)	73743	3038−402

Figure 1 Cabinet Rear



Please cut out the aria below the lines.



Please cut out the aria below the lines.

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
2–1	200–3281–XX			1	COVER,BEZEL:POLYCARBONATE,TEK TAN	80009	2003281XX
–2	200–3276–XX			1	BEZEL,CRT:PC,TEK TAN (ATTACHING PARTS)	80009	2003276XX
–3	211–0538–XX			2	SCREW,MACHINE:6–32 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–4	378–0276–XX			1	FILTER,LT,CRT:BLUE,108.4MM X 134.4MM X 1MM	80009	3780276XX
–5	361–1381–XX			1	SPACER,RING:CRT,0.4MM	80009	3611381XX
–6	337–3328–XX			1	SHIELD,CRT:CLEAR	80009	3373328XX
–7	426–2133–XX			1	FRAME,CRT:370 (ATTACHING PARTS)	80009	4262133XX
–8	211–0512–XX			4	SCREW,MACHINE:6–32 X 0.5,FLH,100 DEG,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–9	343–1269–XX			2	RETAINER,CRT:FRONT,(A) (ATTACHING PARTS)	80009	3431269XX
–10	212–0022–XX			2	SCREW,MACHINE:8–32 X 1.5,PNH,STL (END ATTACHING PARTS)	TK0435	2011–300
–11	343–1270–XX			2	RETAINER,CRT:FRONT,(B) (ATTACHING PARTS)	80009	3431270XX
–12	212–0022–XX			2	SCREW,MACHINE:8–32 X 1.5,PNH,STL (END ATTACHING PARTS)	TK0435	2011–300
–13	331–0491–XX			1	MASK,CRT:370	80009	3310491XX
–14	––––––––			1	CA ASSY,SP,ELEC:(SEE A29W290 REPL)		
–15	––––––––			1	CA ASSY,SP,ELEC:(SEE A28W280 REPL)		
–16	––––––––			2	CKT BOARD ASSY:GRAT LAMPS(SEE A28,A29) (ATTACHING PARTS)		
–17	211–0062–XX			4	SCREW,MACHINE:2–56 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–18	343–1268–XX			2	RETAINER,LIGHT:REFLECTOR	80009	3431268XX
–19	378–0614–XX			2	REFLECTOR,LIGHT:INT SCALE ILLUMINATION	0JR05	ORDER BY DESC
–20	214–3886–XX			2	SPRING,RTNR:SCALE LAMP	80009	2143886XX
–21				1	ELECTRON TUBE:CRT(SEE V100 REPL)		
–22	253–0267–XX			1	TAPE,PRESS SENS:0.08 X 20 X 20000MM,AL FOIL	80009	2530267XX
–23	253–0137–XX			1	TAPE,SILICONE:RED RBR,1.25 X 0.02	99742	2650
–24	426–2421–XX			1	FRAME,FRONT:371A,ALUMINUM (ATTACHING PARTS)	80009	4262421XX
–25	211–0538–XX			8	SCREW,MACHINE:6–32 X 0.312,FLH,STL	TK0435	ORDER BY DESC
–26	211–0541–XX			2	SCREW,MACHINE:6–32 X 0.25,FLH,100 DEG,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–27	214–3880–XX			1	CONTACT,SPRING:GROUNDING CRT (ATTACHING PARTS)	80009	2143880XX
–28	211–0661–XX			1	SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–29	255–1106–XX			1	PLASTIC CHANNEL:250 X 3.3 X 4.0MM,NYLON	80009	2551106XX
–30	334–6691–XX			1	MARKER,IDENT:MKD DANGER	80009	3346691XX
–31	334–6805–XX			1	MARKER,IDENT:MKD WARNING	80009	3346805XX
–32	337–3325–XX			1	SHIELD,CRT: (ATTACHING PARTS)	80009	3373325XX

Replaceable Mechanical Parts

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
2–33	211–0661–XX			4	SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–34	––––––––			1	COIL,TUBE DEFL:(SEE L100 REPL) (ATTACHING PARTS)		
–35	211–0661–XX			2	SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–36	129–1123–XX			2	SPACER,POST:33MM L,4–40 THD,BRASS,0.188 (ATTACHING PARTS)	80009	1291123XX
–37	211–0661–XX			2	SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–38	348–0948–XX			1	GROMMET,PLASTIC:BLACK,RING,9.5MM ID	80009	3480948XX
–39	––––––––			1	COIL,TUBE DEFL(SEE L120 REPL) (ATTACHING PARTS)		
–40	211–0661–XX			2	SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–41	354–0347–XX			1	RING,CRT CLAMP:2.127 ID X 2.595 OD X 0.563 (ATTACHING PARTS)	0JR05	ORDER BY DESC
–42	211–0170–XX			2	SCREW,MACHINE:4–40 X 2.25,PNH,SST	TK0435	ORDER BY DESC
–43	214–1333–XX			2	SPRING,HLCPS:0.213 OD X 0.375,CLE,CU–BE (END ATTACHING PARTS)	8X345	ORDER BY DESC
–44	343–0205–XX			1	RTNR,ELCTRN TU:3.0 DIA X 1.5 L,DELRIN, (ATTACHING PARTS)	80009	3430205XX
–45	211–0578–XX			4	SCREW,MACHINE:6–32 X 0.438,PNH,STL	TK0435	ORDER BY DESC
–46	210–0949–XX			4	WASHER,FLAT:0.141 ID X 0.5 OD X 0.062,BRS (END ATTACHING PARTS)	12327	ORDER BY DESC
–47	––––––––			1	LEAD,ELEC:(SEE W14 REPL)		
–48	366–0625–XX			5	KNOB:SILVER GRAY,9.5MM OD	80009	3660625XX
–49	358–0378–XX			3	BUSHING,SLEEVE:0.131 ID X 0.18 OD X 0.125L	80009	3580378XX
–50	366–0620–XX			3	KNOB:SILVER GRAY,25MM OD	80009	3660620XX
–51	333–3882–XX			1	PANEL,FRONT:371A,ALUMINUM (ATTACHING PARTS)	80009	3333882XX
–52	210–0586–XX			3	NUT,PL,ASSEM WA:4–40 X 0.25,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–53	378–0349–XX			1	FILTER,LED DSPL:GRAY,10.8 & 18.3M,PC	80009	3780349XX
–54	351–0887–XX			1	GUIDE,PUSH BTN:MAIN KEY BD,POLYCARBONATE	80009	3510887XX
–55	––––––––			1	CKT BOARD ASSY:SUB KEY(SEE A12 REPL) (ATTACHING PARTS)		
–56	129–1131–XX			6	SPACER,POST:12.7MM L,4–40 THD,BRASS (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	80009	1291131XX
–57	129–1128–XX			32	.SPACER,POST:5.1MM,L,POLYCARBONATE	80009	1291128XX
–58	129–1372–XX			8	.SPACER,POST:4.6MM L,POLYCARBONATE	80009	1291372XX
–59	366–0617–XX			36	PUSH BUTTON:SILVER GRAY,9.6 X 4.2 X 8.5MM	80009	3660617XX
–60	––––––––			1	CKT BOARD ASSY:MAIN KEY(SEE A11 REPL) (ATTACHING PARTS)		
–61	211–0661–XX			6	SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
2−62	407−3474−XX			1	.BRACKET,ANGLE:VAR RES MTG	80009	4073474XX
−63	−−−−−−−−			5	RES,VAR,NONWW: (SEE A11R302,R312,R322,R330,R340 REPL) (ATTACHING PARTS)		
−64	210−0583−XX			5	.NUT,PLAIN,HEX:0.25−32 X 0.312,BRS	73743	2X−20319−402
−65	210−0046−XX			5	.WASHER,LOCK:0.261 ID,INTL,0.018 THK,STL (END ATTACHING PARTS)	78189	1214−05−00−0541
−66	407−3475−XX			1	.BRACKET,ANGLE:VAR RES MTG	80009	4073475XX
−67	−−−−−−−−			3	RES,VAR,NONWW:(SEE A11R350,R360,R370) (ATTACHING PARTS)		
−68	210−0583−XX			3	.NUT,PLAIN,HEX:0.25−32 X 0.312,BRS	73743	2X−20319−402
−69	210−0046−XX			3	.WASHER,LOCK:0.261 ID,INTL,0.018 THK,STL (END ATTACHING PARTS)	78189	1214−05−00−0541
−70	−−−−−−−−			1	CA ASSY,SP,ELEC:(SEE A11W110 REPL)		
−71	407−3665−XX			1	BRACKET,ANGLE:FRONT PNL MTG,ALUMINUM (ATTACHING PARTS)	TK0CA	30−0071
−72	211−0106−XX			2	SCREW,MACHINE:4−40 X 0.625,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC

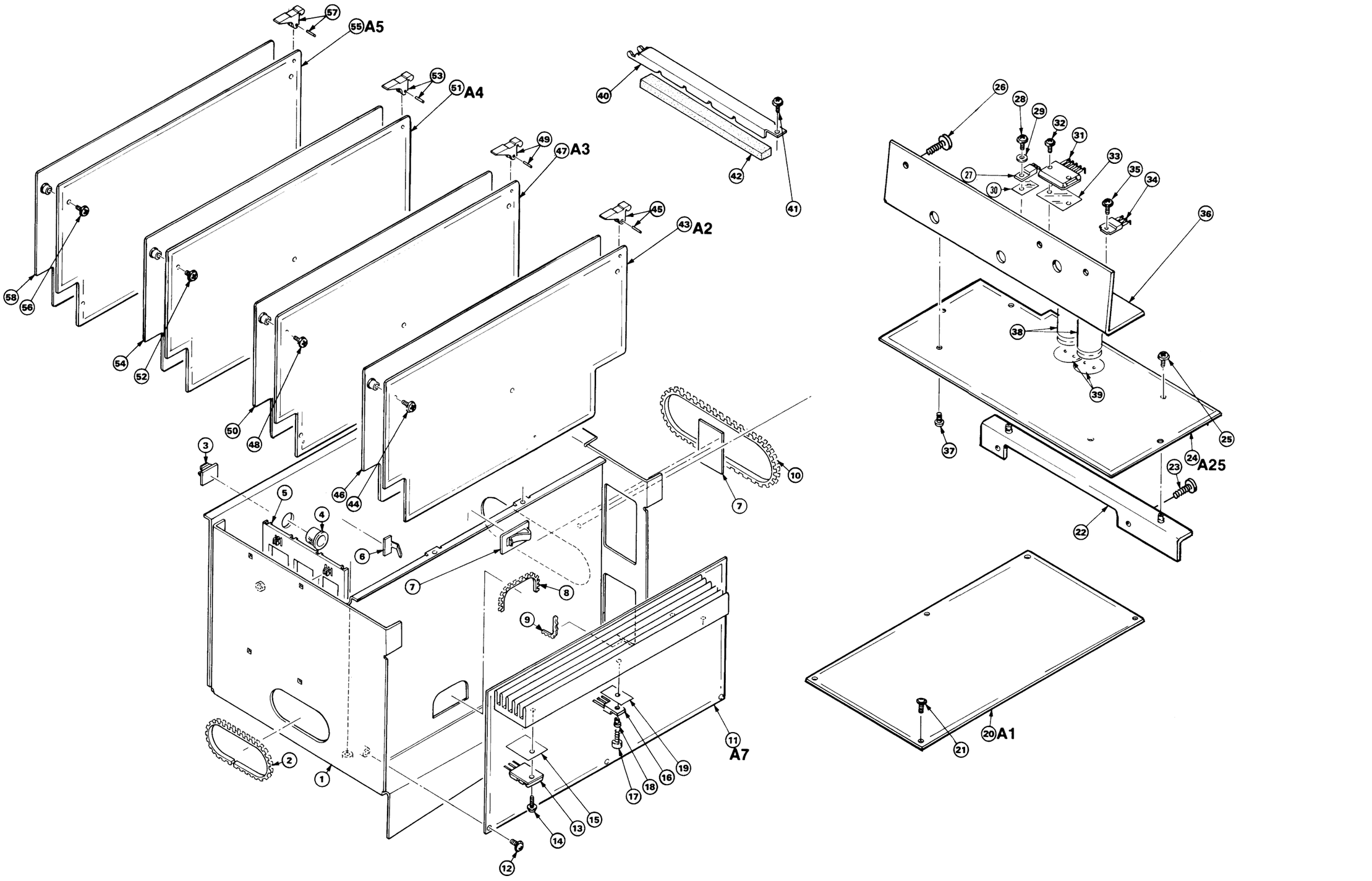
Replaceable Mechanical Parts

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
3–1	441–1740–XX			1	CHASSIS,CKT BD:370,ALUMINUM	TK0CF	ORDER BY DESC
–2	255–0334–XX			1	PLASTIC CHANNEL:12.75 X 0.175 X 0.155,NYLON	11897	122–NN–2500–060
–3	343–0778–XX			2	CLAMP,CABLE:5MM ID,NYLON	80009	3430778XX
–4	348–0948–XX			1	GROMMET,PLASTIC:BLACK,RING,9.5MM ID	80009	3480948XX
–5	351–0769–XX			2	GUIDE,CKT BD:370	80009	3510769XX
–6	343–1289–XX			1	CLAMP,CABLE:STEEL	80009	3431289XX
–7	343–1084–XX			5	CLAMP,CABLE:NYLON	80009	3431084XX
–8	255–1107–XX			1	PLASTIC CHANNEL:500 X 3.7 X 4.0MM,NYLON	80009	2551107XX
–9	255–0334–XX			1	PLASTIC CHANNEL:12.75 X 0.175 X 0.155,NYLON	11897	122–NN–2500–060
–10	255–0334–XX			1	PLASTIC CHANNEL:12.75 X 0.175 X 0.155,NYLON	11897	122–NN–2500–060
–11	––––––––			1	CKT BOARD ASSY:STEP GEN(SEE A7 REPL) (ATTACHING PARTS)		
–12	211–0661–XX			3	SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC
–13	––––––––			4	XSTR:(SEE A7Q346,Q348,Q350,Q352 REPL) (ATTACHING PARTS)		
–14	211–0315–XX			4	.SCR,ASSEM WSHR:4–40 X 0.437,PHN,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–15	342–0787–XX			4	.INSULATOR,PLATE:TRANSISTOR,TO–3P	80009	3420787XX
–16	––––––––			4	XSTR:(SEE A7Q436,Q446,Q700,Q720 REPL) (ATTACHING PARTS)		
–17	211–0244–XX			4	.SCR,ASSEM WSHR:4–40 X 0.312,PNH,STL	TK0435	7772–312
–18	210–1178–XX			4	.WASHER,SHLDR:U/W TO–220 TRANSISTOR (END ATTACHING PARTS)	13103	7721–7PPS
–19	342–0163–XX			4	.INSULATOR,PLATE:XSTR,SILICON RUBBER	80009	3420163XX
–20	––––––––			1	CKT BOARD ASSY:MOTHER(SEE A1 REPL) (ATTACHING PARTS)		
–21	211–0661–XX			8	SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
	343–1084–XX			1	CLAMP,CABLE:NYLON	80009	3431084XX
–22	407–3633–XX			1	BRACKET,CKT BD:ALUMINUM (ATTACHING PARTS)	TK0CA	30–0006
–23	211–0507–XX			2	SCREW,MACHINE:6–32 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–24	––––––––			1	CKT BD ASSY:MAIN PWR SUPPLY(SEE A25 REPL) (ATTACHING PARTS)		
–25	211–0246–XX			2	SCR,ASSEM WSHR:4–40 X 0.625,PNH,STL	TK0435	ORDER BY DESC
–26	211–0507–XX			3	SCREW,MACHINE:6–32 X 0.312,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC
–27	––––––––			5	XSTR:(SEE A25U400,CR100,CR200,CR300,CR400) (ATTACHING PARTS)		
–28	211–0244–XX			5	.SCR,ASSEM WSHR:4–40 X 0.312,PNH,STL	TK0435	7772–312
–29	210–1178–XX			5	.WASHER,SHLDR:U/W TO–220 TRANSISTOR (END ATTACHING PARTS)	13103	7721–7PPS
–30	342–0163–XX			5	.INSULATOR,PLATE:XSTR,SILICON RUBBER	80009	3420163XX

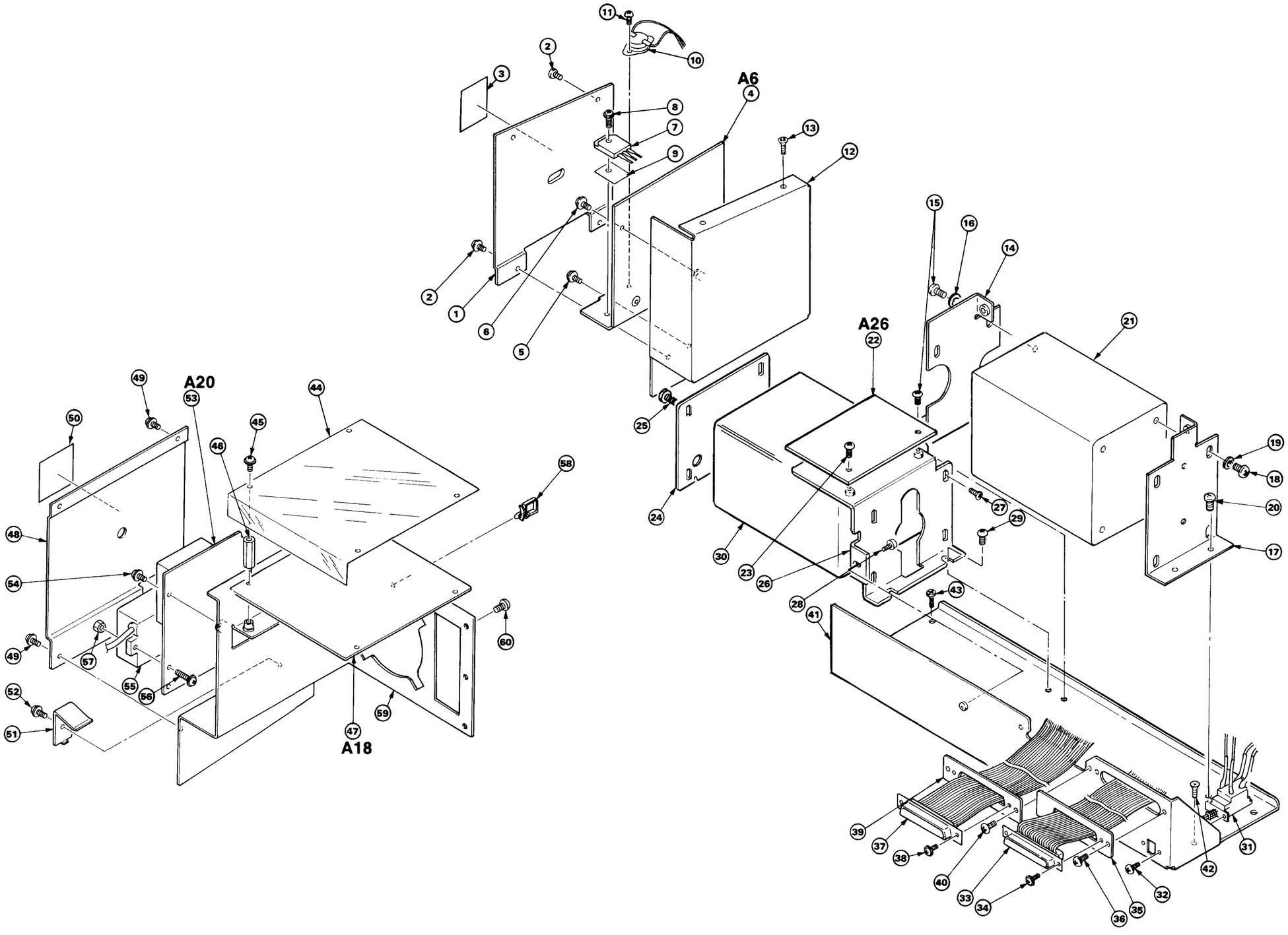
Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
3−31	−−−−−−−−−			2	MICROCKT,LINEAR:(SEE A25U100,U300 REPL) (ATTACHING PARTS)		
−32	211−0315−XX			4	.SCR,ASSEM WSHR:4−40 X 0.437,PHN,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−33	342−0790−XX			2	.INSULATOR,FILM:MICA,0.07MA	80009	3420790XX
−34	−−−−−−−−−			3	TRANSISTOR:(SEE A25Q130,Q230,Q600 REPL) (ATTACHING PARTS)		
−35	211−0244−XX			3	.SCR,ASSEM WSHR:4−40 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	7772−312
−36	214−4032−XX			1	.HEAT SINK,ELEC:ALUMINUM,MAIN PWR SPLY (ATTACHING PARTS)	80009	2144032XX
−37	211−0661−XX			2	.SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−38	−−−−−−−−−			2	CAPACITOR:(SEE A25C300,C400 REPL)		
−39	342−0842−XX			2	.INSULATOR,FILM:CAPACITOR,POLYMIDE	TK0CP	30−0072
−40	343−1273−XX			2	RETAINER,CKT BD:BRASS (ATTACHING PARTS)	80009	3431273XX
−41	211−0504−XX			2	SCREW,MACHINE:6−32 X 0.250,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−42	348−1048−XX			2	PAD,CUSHIONING:150MM X 12MM X 13MM	TK0AU	ORDER BY DESC
−43	−−−−−−−−−			1	CKT BOARD ASSY:CPU(SEE A2 REPL) (ATTACHING PARTS)		
−44	211−0661−XX	J300000	J300585	5	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC
−45	105−0899−XX 105−0978−XX	J300000 J300385	J300384	2 2	.EJECTOR,CKT BD:NYLON,SONY/TEK .EJECTOR,CKT BD:NYLON	80009 TK00Z	1050899XX 21−0608
−46	337−3326−XX	J300000	J300585	1	.SHIELD,ELEC:CPU BD	80009	3373326XX
−47	−−−−−−−−−			1	CKT BOARD ASSY:A/D(SEE A3 REPL) (ATTACHING PARTS)		
−48	211−0661−XX	J300000	J300585	5	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC
−49	105−0899−XX 105−0978−XX	J300000 J300385	J300384	2 2	.EJECTOR,CKT BD:NYLON,SONY/TEK .EJECTOR,CKT BD:NYLON	80009 TK00Z	1050899XX 21−0608
−50	337−3326−XX	J300000	J300585	1	.SHIELD,ELEC:CPU BD	80009	3373326XX
−51	−−−−−−−−−			11	CKT BOARD ASSY:DIGITAL DSPLY(SEE A4 REPL) (ATTACHING PARTS)		
−52	211−0661−XX			5	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC
−53	105−0899−XX 105−0978−XX	J300000 J300385	J300384	2 2	.EJECTOR,CKT BD:NYLON,SONY/TEK .EJECTOR,CKT BD:NYLON	80009 TK00Z	1050899XX 21−0608
−54	337−3326−XX			1	.SHIELD,ELEC:CPU BD	80009	3373326XX
−55	−−−−−−−−−			1	CKT BOARD ASSY:DISPLAY CONT(SEE A5 REPL) (ATTACHING PARTS)		
−56	211−0661−XX	J300000	J300585	5	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
3−57	105−0899−XX	J300000	J300384	2	.EJECTOR,CKT BD:NYLON,SONY/TEK	80009	1050899XX
	105−0978−XX	J300385		2	.EJECTOR,CKT BD:NYLON	TK00Z	21−0608
−58	337−3326−XX	J300000	J300585	1	.SHIELD,ELEC:CPU BD	80009	3373326XX

Figure 3 Chassis, Circuit Boards



Please cut out the aria below the lines.



Please cut out the aria below the lines.

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
4−1	337−3330−XX	J300000	J300585	1	SHIELD,ELEC:COLLECTOR SUPPLY (ATTACHING PARTS)	80009	3373330XX
−2	211−0008−XX	J300000	J300585	4	SCREW,MACHINE:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−3	334−6695−XX	J300000	J300585	1	MARKER,IDENT:MKD DANGER & POT	80009	3346695XX
−4	−−−−−−−−			1	CKT BOARD ASSY:COLLECTOR SUPPLY OUTPUT (SEE A6 REPL) (ATTACHING PARTS)		
−5	211−0507−XX			4	SCREW,MACHINE:6−32 X 0.312,PNH,STL	TK0435	ORDER BY DESC
−6	211−0661−XX			2	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC
−7	−−−−−−−−			4	XSTR:(SEE A6Q438,Q440,Q538,Q540 REPL) (ATTACHING PARTS)		
−8	211−0315−XX			4	.SCR,ASSEM WSHR:4−40 X 0.437,PHN,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−9	342−0787−XX			4	.INSULATOR,PLATE:TRANSISTOR,TO−3P	80009	3420787XX
−10	−−−−−−−−			1	SWITCH,THRMSTC(SEE A6S92 REPL) (ATTACHING PARTS)		
−11	211−0007−XX			2	.SCREW,MACHINE:4−40 X 0.188,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−12	407−3470−XX			1	BRACKET,CKT BD:COLLECTOR SUPPLY OUTPUT (ATTACHING PARTS)	80009	4073470XX
−13	211−0538−XX			2	SCREW,MACHINE:6−32 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−14	407−3478−XX			1	BRACKET,XFMR:LEFT,ALUMINUM (ATTACHING PARTS)	80009	4073478XX
−15	212−0507−XX			6	SCREW,MACHINE:10−32 X 0.375,PNH,STL	TK0435	MACHINE SCREW
−16	210−1003−XX			4	WASHER,FLAT:0.2 ID X 0.438 OD X 0.036 BRS (END ATTACHING PARTS)	12327	ORDER BY DESC
−17	407−3907−XX			1	BRACKET,XFMR:RIGHT,ALUMINUM (ATTACHING PARTS)	80009	4073907XX
−18	212−0507−XX			4	SCREW,MACHINE:10−32 X 0.375,PNH,STL	TK0435	MACHINE SCREW
−19	210−1003−XX			4	WASHER,FLAT:0.2 ID X 0.438 OD X 0.036 BRS	12327	ORDER BY DESC
−20	212−0507−XX			2	SCREW,MACHINE:10−32 X 0.375,PNH,STL (END ATTACHING PARTS)	TK0435	MACHINE SCREW
−21	−−−−−−−−			1	XFMR,PWR,STPDN:(SEE T100 REPL)		
−22	−−−−−−−−			1	CKT BOARD ASSY:COLLECTOR POWER SUPPLY (SEE A26 REPL) (ATTACHING PARTS)		
−23	211−0661−XX			3	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−24	407−3632−XX			1	BRACKET,XFMR:ALUMINUM (ATTACHING PARTS)	TK0CF	30−0003
−25	212−0507−XX			4	SCREW,MACHINE:10−32 X 0.375,PNH,STL (END ATTACHING PARTS)	TK0435	MACHINE SCREW
−26	407−3631−XX			1	BRACKET,XFMR:ALUMINUM (ATTACHING PARTS)	TK0CF	30−0002
−27	212−0507−XX			4	SCREW,MACHINE:10−32 X 0.375,PNH,STL	TK0435	MACHINE SCREW

Replaceable Mechanical Parts

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
4−28	211−0507−XX			1	SCREW,MACHINE:6−32 X 0.312,PNH,STL	TK0435	ORDER BY DESC
−29	212−0507−XX			2	SCREW,MACHINE:10−32 X 0.375,PNH,STL (END ATTACHING PARTS)	TK0435	MACHINE SCREW
−30	−−−−−−−−			1	XFMR,PWR,STU(SEE T200 REPL)		
−31	−−−−−−−−			1	SWITCH,PUSH:(SEE S100 REPL) (ATTACHING PARTS)		
−32	211−0751−XX			2	SCR,ASSEM WSHR:M3 X 8 (END ATTACHING PARTS)	80009	2110751XX
−33	−−−−−−−−			1	CA ASSY,SP,ELEC:(SEE W400 REPL) (ATTACHING PARTS)		
−34	211−0661−XX			2	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−35	386−5485−XX			1	PLATE,CONN MTG:FEMALE,STEEL (ATTACHING PARTS)	80009	3865485XX
−36	211−0507−XX			2	SCREW,MACHINE:6−32 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−37	−−−−−−−−			1	WIRE ASSY:(SEE W410 REPL) (ATTACHING PARTS)		
−38	211−0661−XX			2	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−39	386−5909−XX			1	PLATE,CONN MTG:FEMALE,STEEL (ATTACHING PARTS)	80009	3865909XX
−40	211−0507−XX			2	SCREW,MACHINE:6−32 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−41	441−1977−XX			1	CHASSIS,XFMR:REAR ASSY,ALUMINUM (ATTACHING PARTS)	80009	4411977XX
−42	211−0507−XX			2	SCREW,MACHINE:6−32 X 0.312,PNH,STL	TK0435	ORDER BY DESC
−43	211−0538−XX			2	SCREW,MACHINE:6−32 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−44	342−0785−XX			1	INSULATOR,PLATE:CRT OUTPUT (ATTACHING PARTS)	80009	3420785XX
−45	211−0661−XX			4	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−46	129−1139−XX			4	SPACER,POST:25MM L,W4−40 THD,BRASS	80009	1291139XX
−47	−−−−−−−−			1	CKT BOARD ASSY:CRT OUTPUT(SEE A18 REPL)		
−48	337−3329−XX	J300000	J300585	1	SHIELD,ELEC:HV REG (ATTACHING PARTS)	80009	3373329XX
−49	211−0008−XX	J300000	J300585	4	SCREW,MACHINE:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−50	334−6694−XX	J300000	J300585	1	MARKER,IDENT:MKD DANGER & POT	80009	3346694XX
−51	343−1275−XX			1	RETAINER,XSTR:HV,SST (ATTACHING PARTS)	80009	3431275XX
−52	211−0661−XX			1	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−53	−−−−−−−−			1	CKT BOARD ASSY:HV REG(SEE A20 REPL) (ATTACHING PARTS)		
−54	211−0661−XX			4	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC

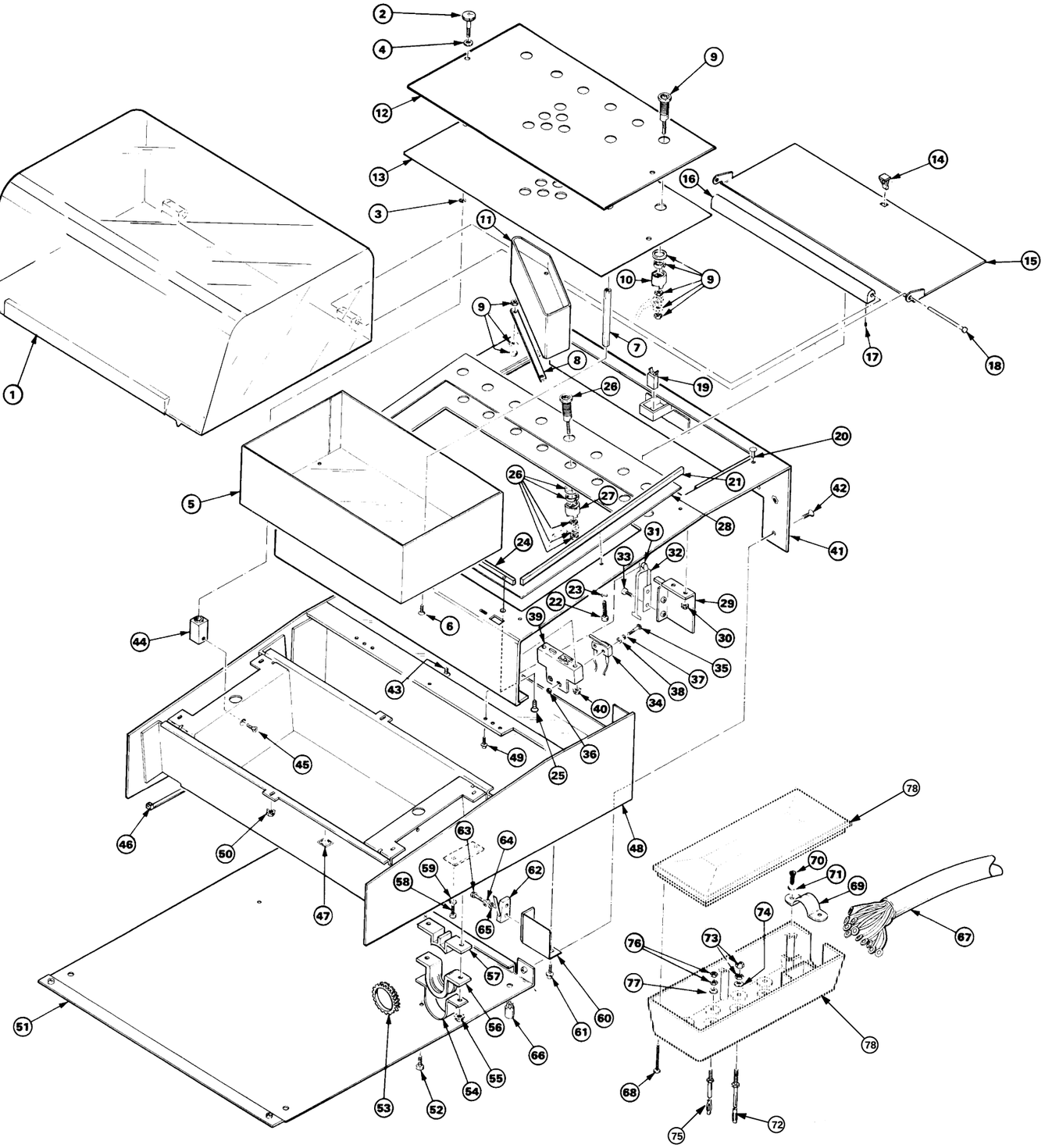
Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
4–55	–––––––––			1	HV,MODULER:(SEE A20U300 REPL) (ATTACHING PARTS)		
–56	211–0012–XX			2	.SCREW,MACHINE:4–40 X 0.375,PNH,STL	TK0435	ORDER BY DESC
–57	210–0586–XX			2	.NUT,PL,ASSEM WA:4–40 X 0.25,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–58	343–1288–XX			1	CLAMP,CABLE:PLASTIC	80009	3431288XX
–59	441–1743–XX			1	CHASSIS,CRT:LEFT (ATTACHING PARTS)	80009	4411743XX
–60	211–0504–XX			3	SCREW,MACHINE:6–32 X 0.250,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
5−1	337−3473−XX			1	SHIELD,ELEC:TEST LID,POLYCARBONATE	TK0BV	30−0220
−2	213−1013−XX			2	THUMBSCREW:6−32 X 15.6MM,12MM OD (ATTACHING PARTS)	TK0CM	30−0223
−3	354−0165−XX			2	RING,RETAINING:TYPE E EXT,U/O 0.156 OD SFT	2X013	ORDER BY DESC
−4	210−1318−XX			2	WASHER,FLAT:0.169 ID X 0.315 OD X 0.02,STL (END ATTACHING PARTS)	80009	2101318XX
−5	200−3560−XX			1	COVER,ELEC CONN:ALUMINUM,TEST FIXTURE (ATTACHING PARTS)	TK0CM	30−0212
−6	211−0101−XX			4	SCREW,MACHINE:4−40 X 0.25,FLH,100 DEG,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−7	129−1242−XX			4	SPACER,POST:56.8MM L,4−40 INT THD	TK0AL	30−0243
−8	131−4322−XX			1	BUS,CONDUCTOR:83 L X 8 W X 0.8MMH,BRS	TK0CM	30−0240
−9	136−0933−XX			9	SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
	136−0934−XX			4	SOCKET,PIN TERM:0.16 DIA,RED	TK0BW	SLB4−F6.3−1
−10	342−0852−XX			13	INSULATOR,BSHG:15MM OD X 11.3MM L,PC	TK0DK	ORDER BY DESC
−11	342−0851−XX			1	INSULATOR,CONN:TEST FIXTURE,PC	TK0DK	ORDER BY DESC
−12	334−7137−XX			1	MARKER,IDENT:MARKED TEST ADAPTER INFO	TK0AU	30−0219
−13	386−5698−XX			1	PLATE,CONN MTG:TEST FIXTURE,ALUMINUM	80009	3865698XX
−14	214−4097−XX			1	LATCH,DOOR:POLYACETAL	TK0BK	2Y24
−15	200−3561−XX			1	DOOR,ACCESS:STRAGE,TEST FIXTURE,AL	TK0CM	30−0214
−16	214−4096−XX			1	HINGE HALF:ALUMINUM (ATTACHING PARTS)	TK0CM	30−0229
−17	213−0153−XX			4	SETSCREW:5−40 X 0.125,STL	TK0392	ORDER BY DESC
−18	214−4095−XX			2	PIN,HINGE:4MM DIA,45MM L,6MM DIA HD,STL (END ATTACHING PARTS)	TK0CM	30−0230
−19	105−1005−XX			1	CATCH,LATCH:PLASTIC	TK0BK	2A16
−20	348−1039−XX			2	BUMPER,PLASTIC:7.5MM OD X 1.5MM L,NYLON	TK0BK	74−01
−21	426−2270−XX			2	FRAME,SHIELD:181.6MM,BRASS (ATTACHING PARTS)	TK0CM	ORDER BY DESC
−22	211−0008−XX			10	SCREW,MACHINE:4−40 X 0.25,PNH,STL	TK0435	ORDER BY DESC
−23	210−0004−XX			10	WASHER,LOCK:#4 INTL,0.015 THK,STL (END ATTACHING PARTS)	78189	1204−00−00−0541
−24	426−2269−XX			2	FRAME,SHIELD:267.0MM,BRASS (ATTACHING PARTS)	TK0CM	ORDER BY DESC
−25	211−0105−XX			2	SCREW,MACHINE:4−40 X 0.188,FLH,STL (END ATTACHING PARTS)	TK0435	MACHINE SCREW
−26	136−0933−XX			7	SOCKET,PIN TERM:0.16 DIA,GRAY	TK0BW	SLB4−F6.3−8
	136−0934−XX			1	SOCKET,PIN TERM:0.16 DIA,RED	TK0BW	SLB4−F6.3−1
−27	342−0852−XX			8	INSULATOR,BSHG:15MM OD X 11.3MM L,PC	TK0DK	ORDER BY DESC
−28	334−7136−XX			1	MARKER,IDENT:MARKED I/O SIGNALS	TK0AU	30−0218
−29	407−3693−XX			1	BRACKET,ANGLE:I.L SW ACTR SPRING,AL (ATTACHING PARTS)	TK0CM	30−0217
−30	210−0586−XX			2	NUT,PL,ASSEM WA:4−40 X 0.25,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−31	214−4098−XX			1	ROLLER,ACTR:5MM DIA X 3.5MM L,BRASS	TK0CM	30−0216
−32	214−4099−XX			1	SPRING,FLAT:0.3MM THK (ATTACHING PARTS)	TK0EV	30−0215

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
5−33	211−0008−XX			2	SCREW,MACHINE:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−34	−−−−−−−−			1	SW,SENSITIVE:(SEE S1000,S1002 REPL) (ATTACHING PARTS)		
−35	213−0986−XX			4	SCREW,MACHINE:2−26 X 12MM,HEX,BRS	80009	2130986XX
−36	210−0405−XX			4	NUT,PLAIN,HEX:2−56 X 0.188,BRS	73743	12157−50
−37	210−0054−XX			4	WASHER,LOCK:#4 SPLIT,0.025 THK STL	86928	ORDER BY DESC
−38	210−0938−XX			4	WASHER,FLAT:0.109 ID X 0.25 OD X 0.032,STL (END ATTACHING PARTS)	TK0413	ORDER BY DESC
−39	351−0823−XX			2	GUIDE,SW ACT AD:INTERLOCK (ATTACHING PARTS)	TK0DW	ORDER BY DESC
−40	210−0586−XX			4	NUT,PL,ASSEM WA:4−40 X 0.25,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−41	333−3576−XX			1	PANEL,FRONT:371A TEST FXTR,ALUMINUM (ATTACHING PARTS)	80009	3333576XX
−42	211−0101−XX			6	SCREW,MACHINE:4−40 X 0.25,FLH,100 DEG,STL	TK0435	ORDER BY DESC
−43	211−0101−XX			2	SCREW,MACHINE:4−40 X 0.25,FLH,100 DEG,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−44	220−0096−XX			2	NUT BLOCK:12MM SQ X 22.5MM L,6−32 THRU (ATTACHING PARTS)	TK0CM	30−0224
−45	211−0559−XX			2	SCREW,MACHINE:6−32 X 0.375,FLH,STL (END ATTACHING PARTS)	TK0435	1593−300
−46	343−0549−XX			5	STRAP,TIEDOWN,E:0.098 W X 4.0 L,ZYTEL	TK1499	HW−047
−47	334−3379−XX			1	MARKER,IDENT:MARKED GROUND SYMBOL	07416	ORDER BY DESC
−48	441−1833−XX			1	CHASSIS ASSY:TEST FIXTURE,ALUMINUM (ATTACHING PARTS)	TK0CM	30−0209
−49	211−0244−XX			3	SCR,ASSEM WSHR:4−40 X 0.312,PNH,STL	TK0435	7772−312
−50	210−0586−XX			6	NUT,PL,ASSEM WA:4−40 X 0.25,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−51	390−1034−XX			1	CABINET,TEST FI:BOTTOM,ALUMINUM (ATTACHING PARTS)	TK0CM	30−0213
−52	211−0008−XX			2	SCREW,MACHINE:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−53	348−1041−XX			1	GROMMET:CHANNEL,3.2MM X 70MM L,NYLON	TK0AR	CSG−032
−54	343−1381−XX			1	CLAMP,LOOP:25MM ID,ALUMINUM (ATTACHING PARTS)	TK0CB	30−0227
−55	210−0458−XX			2	NUT,PL,ASSEM WA:8−32 X 0.344,STL (END ATTACHING PARTS)	0KB01	210−0458−XX
−56	343−1380−XX			1	CLAMP,CABLE:TOP	TK0DK	30−0226
−57	343−1379−XX			1	CLAMP,CABLE:BOTTOM	TK0DK	30−0225
−58	211−0507−XX			2	SCREW,MACHINE:6−32 X 0.312,PNH,STL	TK0435	ORDER BY DESC
−59	210−0006−XX			2	WASHER,LOCK:#6 INTL,0.018 THK,STL (ATTACHING PARTS)	78189	1206−00−00−0541
−60	407−3694−XX			1	BRACKET,ANGLE:INTERLOCK SW MTG,AL	TK0CM	30−0222
−61	211−0244−XX			2	SCR,ASSEM WSHR:4−40 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	7772−312
−62	−−−−−−−−			1	SW,SENSITIVE:(SEE S1004 REPL) (ATTACHING PARTS)		

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
5−63	213−0986−XX			2	SCREW,MACHINE:2−26 X 12MM,HEX,BRS	80009	2130986XX
−64	210−0054−XX			2	WASHER,LOCK:#4 SPLIT,0.025 THK STL	86928	ORDER BY DESC
−65	210−0938−XX			2	WASHER,FLAT:0.109 ID X 0.25 OD X 0.032,STL (END ATTACHING PARTS)	TK0413	ORDER BY DESC
−66	348−1040−XX			4	FOOT,CABINET:BLACK,PLASTIC	TK0BK	5475
−67	198−5627−XX			1	WIRE SET,ELEC:WITH CONNECTING BOX	TK0BD	ORDER BY DESC
−68	211−0459−XX			4	.SCREW,MACHINE:M3 X 25MM,PNH,STL	TK0191	ORDER BY DESC
−69	343−1401−XX			1	.CLAMP,LOOP:18MM ID,STEEL (ATTACHING PARTS)	TK0BD	ORDER BY DESC
−70	211−0458−XX			2	.SCREW,MACHINE:M4 X 10MM PNH,STL	TK0191	ORDER BY DESC
−71	210−0092−XX			2	.WASHER,LOCK:M4 SPLIT,1MM THK,STL (END ATTACHING PARTS)	TK0191	ORDER BY DESC
−72	134−0198−XX			1	.PLUG,TIP:MULTI CONTACT,4MM DIA,38.5MM L (ATTACHING PARTS)	TK0BW	SA479
−73	220−0083−XX			2	.NUT,PLAIN,HEX:M5 X 8MM,STL	TK0BJ	30−0616
−74	210−1460−XX			1	.WASHER,PLAIN:5.3MM ID X 1MM THK,STL (END ATTACHING PARTS)	TK0191	ORDER BY DESC
−75	134−0199−XX			10	.PLUG,TIP:MULTI CONTACT,4MM DIA,30.5MM L (ATTACHING PARTS)	TK0BW	SA405
−76	220−0085−XX			20	.NUT,PLAIN,HEX:M3 X 5.5MM,STL	TK0BJ	30−0614
−77	210−1459−XX			10	.WASHER,PLAIN:3.2MM ID X 0.5MM THK,STL (END ATTACHING PARTS)	TK0191	ORDER BY DESC
−78	202−0343−XX			1	COVER AND BASE FOR CONNECTING BOX	80009	2020343XX
	614−0919−XX			1	ADAPTER PANEL ASSEMBLY (CONTAINS FIGURE 5−2 THROUGH FIGURE 5-13)	80009	6140919XX

Figure 5 Test Fixture



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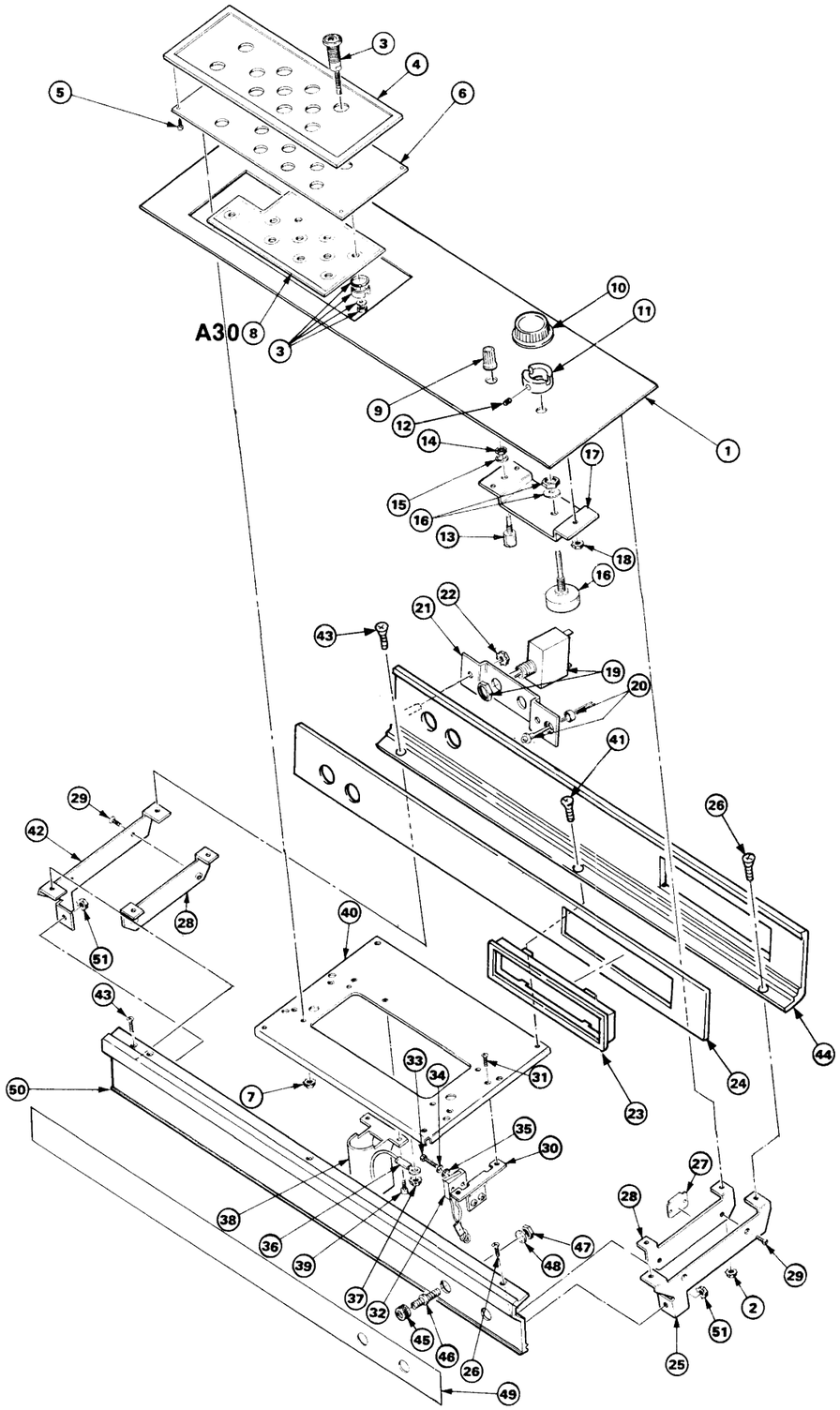

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Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
6–1	333–3512–XX			1	PANEL,FRONT:371,LOWER (ATTACHING PARTS)	80009	3333512XX
–2	210–0586–XX			4	NUT,PL,ASSEM WA:4–40 X 0.25,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–3	––––––––			11	SOCKET,PIN TERM:(SEE J700,J702,J704,J706, J708,J710,J712,J714,J716,J718,J720 REPL)		
–4	386–5607–XX			1	PLATE,CONN MTG:W/SPRING,PC (ATTACHING PARTS)	80009	3865607XX
–5	213–0816–XX			4	SCREW,TPG,TC:2–56 X 0.188L,TYPE T,PNH,STL (END ATTACHING PARTS)	0KB01	ORDER BY DESC
–6	386–5609–XX			1	PLATE,CONN SHLD:ALUMINUM (ATTACHING PARTS)	80009	3865609XX
–7	210–0586–XX			6	NUT,PL,ASSEM WA:4–40 X 0.25,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–8	––––––––			1	CKT BOARD ASSY:CONNECTOR(SEE A30 REPL)		
–9	366–0626–XX			1	KNOB:SILVER GRAY,12MM OD	80009	3660626XX
–10	366–0621–XX			1	SHELL,KNOB:TEKTAN,30MM OD X 15MM H,ABS	80009	3660621XX
–11	377–0609–XX			1	INSERT,KNOB:8.6MM ID X 16MM OD X 8MM H,AL (ATTACHING PARTS)	80009	3770609XX
–12	213–0022–XX			1	SETSCREW:4–40 X 0.188,STL (END ATTACHING PARTS)	0KB01	ORDER BY DESC
–13	––––––––			1	RES,VAR,NONWW:(SEE R626 REPL) (ATTACHING PARTS)		
–14	210–0583–XX			1	NUT,PLAIN,HEX:0.25–32 X 0.312,BRS	73743	2X–20319–402
–15	210–0046–XX			1	WASHER,LOCK:0.261 ID,INTL,0.018 THK,STL (END ATTACHING PARTS)	78189	1214–05–00–0541
–16	––––––––			1	ROTARY ENCODER:(SEE S140 REPL)		
–17	407–4014–XX			1	BRACKET,SW MTG:ALUMINUM (ATTACHING PARTS)	80009	4074014XX
–18	210–0586–XX			3	NUT,PL,ASSEM WA:4–40 X 0.25,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–19	––––––––			1	CKT BREAKER:(SEE S800 REPL)		
–20	352–0858–XX			1	HOLDER,LED:PLASTIC	S4238	30–0603
–21	407–3637–XX			1	BRACKET,ELEC SW:ALUMINUM (ATTACHING PARTS)	TK0AP	30–0022
–22	210–0457–XX			2	NUT,PL,ASSEM WA:6–32 X 0.312,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–23	426–2331–XX			1	FRAME:POLYCARBONATE	80009	4262331XX
–24	333–3887–XX			1	PANEL,FRONT:FDD,POLYCARBONATE	80009	3333887XX
–25	122–0184–XX			1	ANGLE,RAIL:SUBPANEL MTG,RIGHT (ATTACHING PARTS)	80009	1220184XX
–26	211–0038–XX			2	SCREW,MACHINE:4–40 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
–27	344–0396–XX			3	CLIP,CABLE:PVC	80009	3440396XX
–28	407–3472–XX			2	BRACKET,ANGLE:LOWER,PANEL (ATTACHING PARTS)	80009	4073472XX
–29	211–0038–XX			4	SCREW,MACHINE:4–40 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC

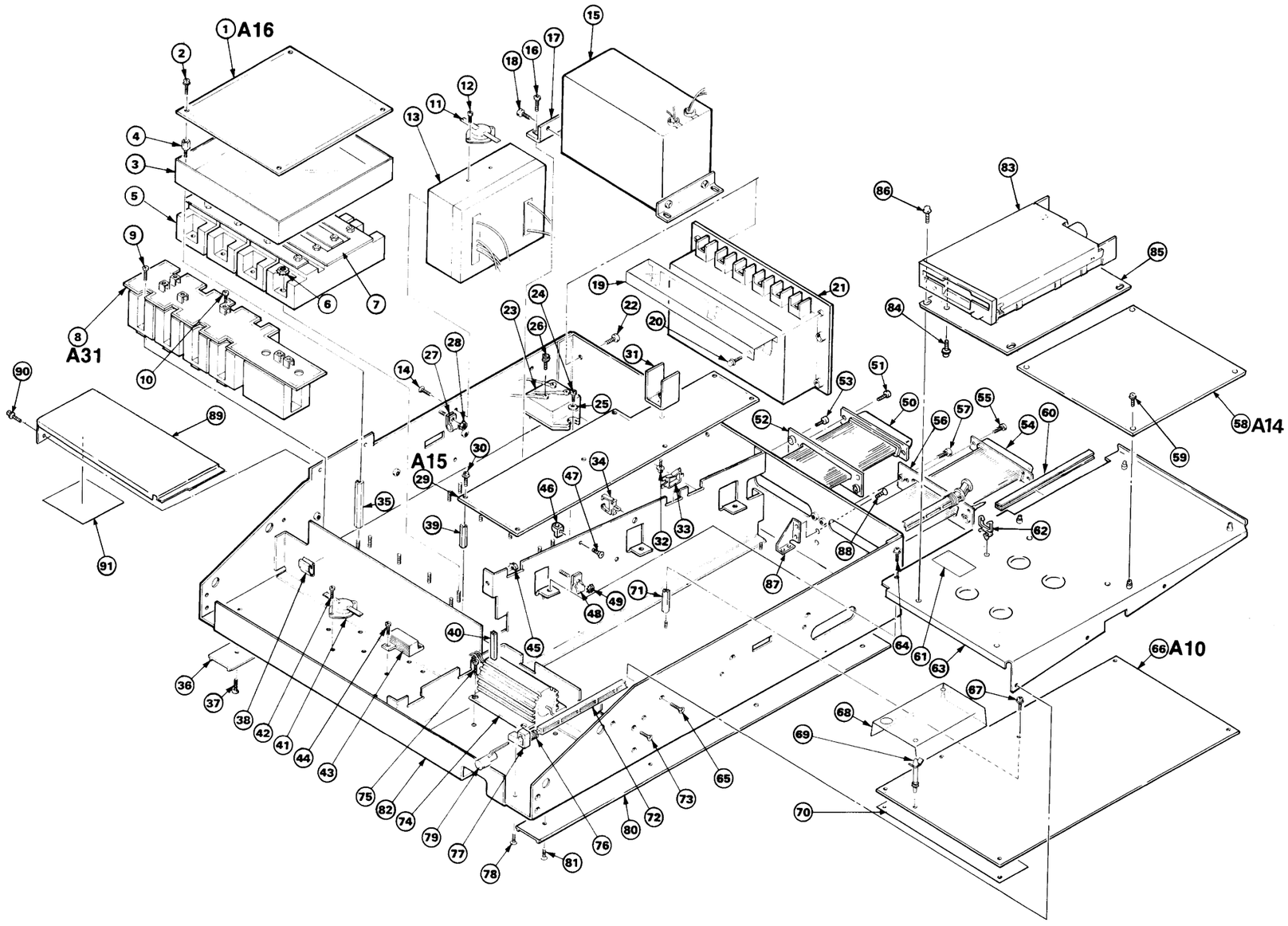
Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
6−30	407−3484−XX			2	BRACKET,SW MTG:ALUMINUM (ATTACHING PARTS)	80009	4073484XX
−31	211−0038−XX			4	SCREW,MACHINE:4−40 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−32	−−−−−−−−			2	SW,SENSITIVE:(SEE S600,S602 REPL) (ATTACHING PARTS)		
−33	213−0986−XX			4	SCREW,MACHINE:2−26 X 12MM,HEX,BRS	80009	2130986XX
−34	210−0054−XX			4	WASHER,LOCK:#4 SPLIT,0.025 THK STL	86928	ORDER BY DESC
−35	210−0938−XX			4	WASHER,FLAT:0.109 ID X 0.25 OD X 0.032,STL (END ATTACHING PARTS)	TK0413	ORDER BY DESC
−36	−−−−−−−−			1	WIRE SET,ELEC:(SEE W920 REPL) (ATTACHING PARTS)		
−37	210−0457−XX			1	NUT,PL,ASSEM WA:6−32 X 0.312,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−38	342−0841−XX			1	INSULATOR,CONN:H.V.,NYLON (ATTACHING PARTS)	TK0DK	30−0073
−39	211−0007−XX			2	SCREW,MACHINE:4−40 X 0.188,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−40	407−3635−XX			1	BRACKET,CMPNT:ALUMINUM (ATTACHING PARTS)	TK0CA	30−0018
−41	211−0038−XX			2	SCREW,MACHINE:4−40 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−42	122−0183−XX			1	ANGLE,RAIL:SUBPANEL MTG,LEFT (ATTACHING PARTS)	80009	1220183XX
−43	211−0038−XX			2	SCREW,MACHINE:4−40 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−44	426−2422−XX			1	SUBPANEL,TEST F:FDD,ALUMINUM	80009	4262422XX
−45	200−0103−XX			1	NUT,PLAIN,KNURL:0.25−28 X 0.375 OD,BRASS	TK0588	ORDER BY DESC
−46	355−0507−XX			1	STUD,SHOULDERED:BINDING POST,BRS (ATTACHING PARTS)	TK0588	ORDER BY DESC
−47	210−0455−XX			1	NUT,PLAIN,HEX:0.25−28 X 0.375,BRS	73743	3089−402
−48	210−0046−XX			1	WASHER,LOCK:0.261 ID,INTL,0.018 THK,STL (END ATTACHING PARTS)	78189	1214−05−00−0541
−49	333−3514−XX			1	PANEL,FRONT:371,PWR SW	80009	3333514XX
−50	426−2213−XX			1	SUBPANEL,FRONT:PWR SW (ATTACHING PARTS)	TK0BV	ORDER BY DESC
−51	210−0586−XX			2	NUT,PL,ASSEM WA:4−40 X 0.25,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
7−1	−−−−−−−−			1	CKT BOARD ASSY:HIGH CURRENT CONTROL (SEE A16 REPL) (ATTACHING PARTS)		
−2	211−0661−XX			4	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−3	337−3427−XX			1	SHIELD,ELEC:H.C.C. BD	80009	3373427XX
−4	129−1216−XX			4	SPACER,POST:8MM L,6−32 EXT/4−40 INT THD	TK0AL	30−0074
−5	−−−−−−−−			4	TRANSISTOR:(SEE Q910,Q920,Q930,Q940 REPL) (ATTACHING PARTS)		
−6	210−0457−XX			8	NUT,PL,ASSEM WA:6−32 X 0.312,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−7	131−4116−XX		J310150	2	BUS,COND:140MM L X 50MM W X 0.8MM H	TK0AP	30−0033
−7	131−6888−00	J310151		2	BUS,COND:135MM X 50MM,BRS,NI PL YASUDA MFG. CO., L/YASUDA MFG. CO., L 131−6888−00 TKY−1616	TK0CF	1316888XX
−8	−−−−−−−−			1	CKT BOARD ASSY:RELAY(SEE A31 REPL) (ATTACHING PARTS)		
−9	211−0507−XX			10	SCREW,MACHINE:6−32 X 0.312,PNH,STL	TK0435	ORDER BY DESC
−10	211−0751−XX			7	SCR,ASSEM WSHR:M3 X 8	80009	2110751XX
−11	−−−−−−−−			1	SWITCH,THRMSTC:(SEE S904 REPL) (ATTACHING PARTS)		
−12	211−0007−XX			2	SCREW,MACHINE:4−40 X 0.188,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−13	−−−−−−−−			1	RES,FXD,FILM:(SEE R800 REPL) (ATTACHING PARTS)		
−14	211−0541−XX			4	SCREW,MACHINE:6−32 X 0.25,FLH,100 DEG,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−15	−−−−−−−−			1	XFMR,COLLECTOR SUPPLY:(SEE T200 REPL) (ATTACHING PARTS)		
−16	212−0001−XX			4	SCREW,MACHINE:8−32 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−17	407−3638−XX			2	BRACKET,XFMR:ALUMINUM (ATTACHING PARTS)	TK0AP	30−0024
−18	212−0023−XX			4	SCREW,MACHINE:8−32 X 0.375,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−19	342−0843−XX			1	INSULATOR,PLATE:H.V.MODULE,POLYCARB (ATTACHING PARTS)	TK0DJ	30−0034
−20	211−0007−XX			2	SCREW,MACHINE:4−40 X 0.188,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−21	−−−−−−−−			1	HV MODULE:(SEE U800 REPL) (ATTACHING PARTS)		
−22	211−0507−XX			4	SCREW,MACHINE:6−32 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−23	−−−−−−−−			1	TRANSISTOR:(SEE Q902 REPL) (ATTACHING PARTS)		
−24	211−0507−XX			2	SCREW,MACHINE:6−32 X 0.312,PNH,STL	TK0435	ORDER BY DESC
−25	210−0803−XX	J300000	J300401	2	WASHER,FLAT:0.15 ID X 0.375 OD X 0.032,STL	12327	ORDER BY DESC
−26	211−0446−XX			3	SCR,ASSEM WSHR:M4 X 6MM,PHN,STL (END ATTACHING PARTS)	TK0BJ	30−0617

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
−27	343−1286−XX			3	CLAMP,CABLE:6.8 ID,NYLON (ATTACHING PARTS)	80009	3431286XX
7−28	210−0407−XX			3	NUT,PLAIN,HEX:6−32 X 0.25,BRS (END ATTACHING PARTS)	73743	3038−402
−29	−−−−−−−−			1	CKT BOARD ASSY:HIGH CURRENT PWR SUPPLY (SEE A15 REPL) (ATTACHING PARTS)		
−30	211−0661−XX			11	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC
−31	214−4031−XX			5	.HEAT SINK,DIODE:ALUMINUM (ATTACHING PARTS)	80009	2144031XX
−32	211−0246−XX			1	.SCR,ASSEM WSHR:4−40 X 0.625,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−33	344−0395−XX			11	CLIP,CABLE:NYLON	80009	3440395XX
−34	344−0409−XX			7	CLIP,RETAINING:WIRE MOUNTING,NYLON	80009	3440409XX
−35	129−1185−XX			4	SPACER,POST:45MM L,W/4−40 INT THD,BRS	80009	1291185XX
−36	122−0181−XX			1	ANGLE,RAIL:LEFT (ATTACHING PARTS)	80009	1220181XX
−37	211−0502−XX			4	SCREW,MACHINE:6−32 X 0.188,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−38	344−0396−XX			4	CLIP,CABLE:PVC	80009	3440396XX
−39	129−1234−XX			11	SPACER,POST:4−40 INT THD BOTH END,21MML	TK0AL	30−0078
−40	255−1108−XX			1	PLASTIC CHANNEL:1000 X 4.4 X 5.0MM,NYLON	80009	2551108XX
−41	−−−−−−−−			1	SWITCH,THRMSTC:(SEE S906 REPL) (ATTACHING PARTS)		
−42	211−0007−XX			2	SCREW,MACHINE:4−40 X 0.188,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−43	−−−−−−−−			2	RESISTOR,FXD,WW:(SEE R940,R950 REPL) (ATTACHING PARTS)		
−44	211−0008−XX			4	SCREW,MACHINE:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−45	210−0457−XX			1	NUT,PL,ASSEM WA:6−32 X 0.312,STL (ATTACHING PART FOR FRONT SUBPANEL)	TK0435	ORDER BY DESC
−46	220−0547−XX			2	NUT BLOCK:4−40 X 0.282,NI SIL (ATTACHING PARTS)	TK0914	ORDER BY DESC
−47	211−0105−XX			2	SCREW,MACHINE:4−40 X 0.188,FLH,STL (END ATTACHING PARTS)	TK0435	MACHINE SCREW
−48	343−1287−XX			1	CLAMP,CABLE:8.4MM ID,NYLON (ATTACHING PARTS)	80009	3431287XX
−49	210−0407−XX			1	NUT,PLAIN,HEX:6−32 X 0.25,BRS (END ATTACHING PARTS)	73743	3038−402
−50	−−−−−−−−			1	WIRE SET,ELEC:(SEE W610 REPL) (ATTACHING PARTS)		
−51	211−0661−XX			2	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−52	386−5917−XX			1	PLATE,CONN MTG:STEEL (ATTACHING PARTS)	80009	3865917XX
−53	211−0510−XX			2	SCREW,MACHINE:6−32 X 0.375,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
−54	−−−−−−−−			1	CA ASSY,SP,ELEC:(SEE W140 REPL) (ATTACHING PARTS)		
7−55	211−0661−XX			2	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−56	386−5484−XX			1	PLATE,CONN MTG:MALE,STEEL (ATTACHING PARTS)	80009	3865484XX
−57	211−0510−XX			2	SCREW,MACHINE:6−32 X 0.375,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−58	−−−−−−−−			1	CKT BOARD ASSY:LOWER KEY/FDD (SEE A14 REPL) (ATTACHING PARTS)		
−59	211−0661−XX			4	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−60	348−1046−XX			1	GROMMET:CHANNEL,2.4MM X 98MM L,NYLON	TK0AR	30−0602
−61	334−7069−XX			1	MARKER,IDENT:MARKED DANGER	TK0CX	30−0101
−62	344−0409−XX			2	CLIP,RETAINING:WIRE MOUNTING,NYLON	80009	3440409XX
−63	407−4013−XX			1	BRACKET,MTG:FDD,ALUMINUM (ATTACHING PARTS)	80009	4074013XX
−64	211−0507−XX			3	SCREW,MACHINE:6−32 X 0.312,PNH,STL	TK0435	ORDER BY DESC
−65	211−0538−XX			3	SCREW,MACHINE:6−32 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−66	−−−−−−−−			1	CKT BOARD ASSY:SENSE(SEE A10 REPL) (ATTACHING PARTS)		
−67	211−0661−XX			6	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS) CKT BOARD ASSY INCLUDES:	TK0435	ORDER BY DESC
−68	342−0826−XX			1	.INSULATOR,PLATE:CKT BD,POLYCARBONATE	80009	3420826XX
−69	343−1345−XX			2	.RETAINER,CKT BD:19.1MM L,NYLON	80009	3431345XX
−70	342−0847−XX			1	INSULATOR,PLATE:SENSE BD LOWER,PC	TK0CP	30−0080
−71	129−1234−XX			6	SPACER,POST:4−40 INT THD BOTH END,21MML	TK0AL	30−0078
−72	384−1703−XX			1	EXTENSION SHAFT:PWR SW	80009	3841703XX
−73	211−0038−XX			6	SCREW,MACHINE:4−40 X 0.312,FLH,STL (ATTACHING PARTS FOR FRONT PORCH ASSY)	TK0435	ORDER BY DESC
−74	−−−−−−−−			2	RES,FXD WW:(SEE R100,R960 REPL) (ATTACHING PARTS)		
−75	211−0507−XX			8	SCREW,MACHINE:6−32 X 0.312,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−76	214−3420−XX			1	SPRING,HLCPS:10.0MM OD X 9.5MM L,CLE,SST	80009	2143420XX
−77	351−0774−XX			3	GUIDE,SLIDE:PWR SW,POLYCARBONATE (ATTACHING PARTS)	80009	3510774XX
−78	211−0038−XX			3	SCREW,MACHINE:4−40 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−79	366−1767−XX			1	PUSH BUTTON:BLACK,GREEN INDICATOR	80009	3661767XX
−80	122−0182−XX			1	ANGLE,RAIL:RIGHT (ATTACHING PARTS)	80009	1220182XX
−81	211−0502−XX			4	SCREW,MACHINE:6−32 X 0.188,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−82	441−1976−XX			1	CHASSIS,DRAWER:MAIN ASSY,AL	80009	4411976XX

Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Serial No. Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
7−83	−−−−−−−−			1	FLOPPY DISC DRIVE:(SEE A24 REPL) (ATTACHING PARTS)		
7−84	211−0751−XX			4	SCR,ASSEM WSHR:M3 X 8 (END ATTACHING PARTS)	80009	2110751XX
−85	337−3588−XX			1	SHIELD,ELEC:ALUMINUM (ATTACHING PARTS)	80009	3373588XX
−86	211−0658−XX			4	SCR,ASSEM WSHR:6−32 X 0.312,PNH,STL,POZ (END ATTACHING PARTS)	TK0435	17691−300
−87	407−3854−XX			1	BRACKET,ANGLE:ALUMINUM,SUPPORT (ATTACHING PARTS)	80009	4073854XX
−88	211−0538−XX			4	SCREW,MACHINE:6−32 X 0.312,FLH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−89	337−3479−XX			1	SHIELD,CRT:LOWER (ATTACHING PARTS)	TK0FE	30−0004
−90	211−0661−XX			4	SCR,ASSEM WSHR:4−40 X 0.25,PNH,STL (END ATTACHING PARTS)	TK0435	ORDER BY DESC
−91	342−0846−XX			1	INSULATOR,PLATE:CIRCUIT BREAKER,PC	TK0CP	30−0079



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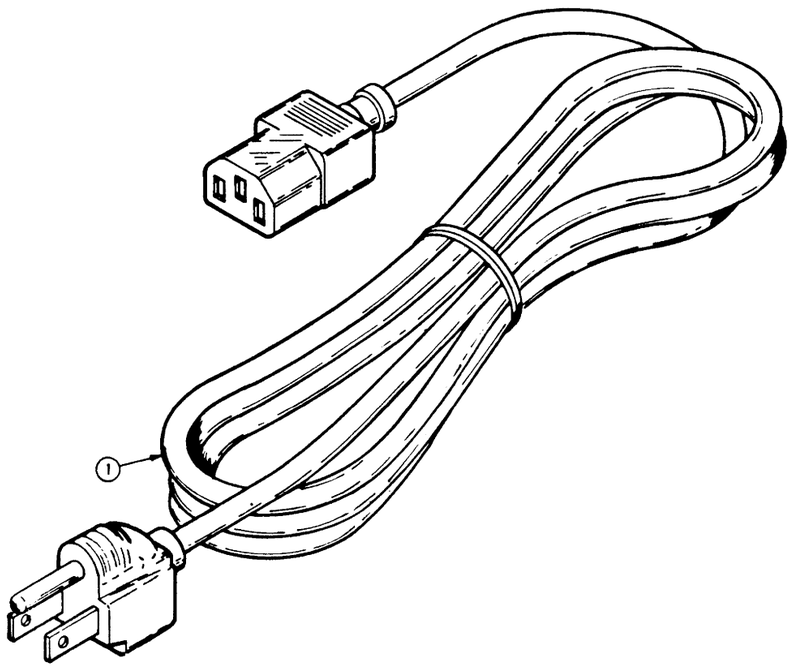

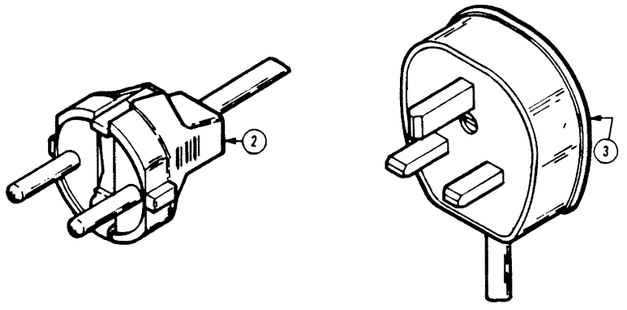

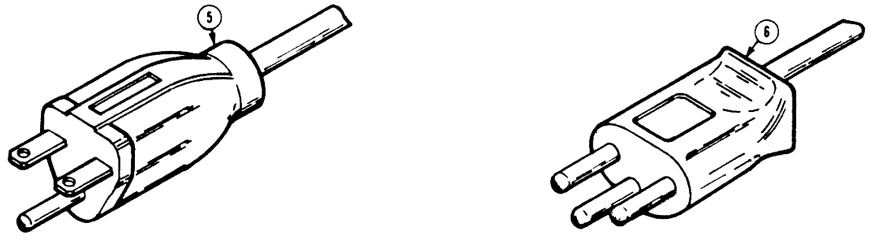

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Fig. & Index No.	Tektronix Part No.	Serial No. Effective	Dscont	Qty	12345 Name & Description	Mfr. Code	Mfr. Part No.
					STANDARD ACCESSORIES		
8–1	161–0066–00			1	CA ASSY,PWR:3,18 AWG,250V/10A,98 INCH (STANDARD ONLY)	S3109	161–0066–00
–2	161–0066–09			1	CA ASSY,PWR:3,0.75MM SQ,250V/10A,99 INCH (OPTION A1 ONLY)	S3109	86511000
–3	161–0066–10			1	CA ASSY,PWR:3,0.1MM SQ,250V/10A,2.5 METER (OPTION A2 ONLY)	S3109	BS/13–H05VVF3G0
–4	161–0066–11			1	CA ASSY,PWR:3,1.0MM SQ,250V/10A,2.5 METER (OPTION A3 ONLY)	S3109	198–000
–5	161–0066–12			1	CA ASSY,PWR:3,18 AWG,250V/10A,98 INCH (OPTION A4 ONLY)	TK2541	13E68,25–1E–250
–6	161–0154–00			1	CA ASSY,PWR:3,1.0MM SQ,250V/10A,2.5 METER (OPTION A5 ONLY)	S3109	12–H05VVF3G
	016–0908–XX			1	BOX,TEST FXTR:371A	80009	0160908XX
	119–3446–XX			1	FLOPPY DISKETTE:2DD,3.5 INCH	80009	1193446XX
	012–1371–XX			1	LEAD SET,ELEC:6 EA,CORE & ALLIGATOR CLIP	80009	0121371XX
	070–8043–XX			1	MANUAL,TECH:OPERATORS,371A	TK2548	PER TEK P/N
	159–0022–XX			1	FUSE,CARTRIDGE:3AG,1A,250V,FAST BLOW	80009	1590022XX
	159–0238–XX			1	FUSE,CARTRIDGE:3AG,2A,250V,SLOW	80009	1590238XX
	159–0291–XX			1	FUSE,CARTRIDGE:4A,250V,SLOW BLOW	80009	1590291XX
	––––––––			1	A1002–TO–220 ADAPTER:KELVIN SENSING		
	––––––––			1	A1003–TO3/TO66 ADAPTER:KELVIN SENSING		
					OPTIONAL ACCESSORIES		
	016–0249–XX			1	ADAPTER,CAMERA:C50	80009	0160249XX
	012–0991–XX			1	CABLE,INTCON:SHLD CMPST,GPIB	6D224	81190–020
	016–0357–XX			1	ADAPTER,HOOD:C5B & OPT 01	80009	0160357XX
	067–1345–XX			1	FIXTURE,CAL:371A	80009	0671345XX
	070–8044–XX			1	MANUAL,TECH:SERVICE,371A	80009	0708044XX
	174–0351–XX			1	CA ASSY,SP,ELEC:37,28 AWG,28.0 L,RIBBON	80009	1740351XX
	174–1999–XX			1	CA ASSY,SP,ELEC:50,28 AWG,70.O L,W/CONN	80009	1741999XX
	198–5628–XX			1	WIRE SET,ELEC:371A	TK0BD	ORDER BY DESC
	––––––––			1	A1001–BLANK ADAPTER:KELVIN SENSING		
	––––––––			1	A1004–OFFSET LEADS:KELVIN SENSING		
	––––––––			1	A1005–DIODE AXIAL LD:KELVIN SENSING		