Instruction Manual

Tektronix

TSG-271
PAL Television Generator

070-6304-02

Please check for change information
at the rear of this manual.

For product related information, phone: 800-TEKWIDE (800-835-9433), ext. TV.

For further information, contact: Tektronix, Inc., Corporate Offices, P.O. Box 1000, Wilsonville, OR 97070–1000, U.S.A. Phone: (503) 627–7111; TLX: 192825; TWX: (910) 467–8708; Cable: TEKWSGT.

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General Safety Summary

Review the following safety precautions to avoid injury and prevent damage to this product or any products connected to it. To avoid potential hazards, use this product only as specified.

Only qualified personnel should perform service procedures.

To Avoid Fire or Personal Injury

Use Proper Power Cord. Use only the power cord specified for this product and certified for the country of use.

Ground the Product. This product is grounded through the grounding conductor of the power cord. To avoid electric shock, the grounding conductor must be connected to earth ground. Before making connections to the input or output terminals of the product, ensure that the product is properly grounded.

Observe All Terminal Ratings. To avoid fire or shock hazard, observe all ratings and markings on the product. Consult the product manual for further ratings information before making connections to the product.

Do not apply a potential to any terminal, including the common terminal, that exceeds the maximum rating of that terminal.

Do Not Operate Without Covers. Do not operate this product with covers or panels removed.

Use Proper Fuse. Use only the fuse type and rating specified for this product.

Avoid Exposed Circuitry. Do not touch exposed connections and components when power is present.

Wear Eye Protection. Wear eye protection if exposure to high-intensity rays or laser radiation exists.

Do Not Operate With Suspected Failures. If you suspect there is damage to this product, have it inspected by qualified service personnel.

Do Not Operate in Wet/Damp Conditions.

Do Not Operate in an Explosive Atmosphere.

Keep Product Surfaces Clean and Dry.

Provide Proper Ventilation. Refer to the manual's installation instructions for details on installing the product so it has proper ventilation.

Symbols and Terms

Terms in this Manual. These terms may appear in this manual:

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

CAUTION. *Caution statements identify conditions or practices that could result in damage to this product or other property.*

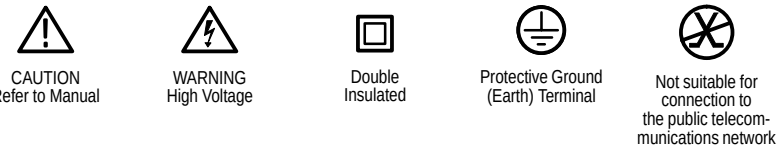
Terms on the Product. These terms may appear on the product:

DANGER indicates an injury hazard immediately accessible as you read the marking.

WARNING indicates an injury hazard not immediately accessible as you read the marking.

CAUTION indicates a hazard to property including the product.

Symbols on the Product. The following symbols may appear on the product:



Service Safety Summary

Only qualified personnel should perform service procedures. Read this *Service Safety Summary* and the *General Safety Summary* before performing any service procedures.

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

Disconnect Power. To avoid electric shock, switch off the instrument power, then disconnect the power cord from the mains power.

Use Care When Servicing With Power On. Dangerous voltages or currents may exist in this product. Disconnect power, remove battery (if applicable), and disconnect test leads before removing protective panels, soldering, or replacing components.

To avoid electric shock, do not touch exposed connections.

Introduction

SECTION 1
INTRODUCTION

TSG-271 PAL Television Generator

The TSG-271 generates PAL test and sync pulse signals at unmatched price for performance. Featuring a unique digital architecture and innovative technology, the TSG-271 offers:

- Precise 12-bit digitally derived test signals.
- SCH phase accuracy, guaranteed by use of a single DAC.
- Stable internal reference, ideal for master sync operation.
- Reliable slave operation through use of digital genlock.
- Separate front panel genlock and sync timing controls.

Test Signals

The TSG-271 uses digital signal generation and a precision 12-bit DAC to ensure test signal accuracy and long-term stability. Digital generation of the composite PAL signal, without analogue modulators, allows use of a single DAC to inherently match chrominance and luminance timing. This ensures accurate SCH phasing. With the TSG-271's simple front panel controls you can select the following test signals:

- Colour Bars
- Pluge
- Convergence
- Pulse & Bar with Window
- Field Square Wave
- Multiburst
- Multipulse
- Staircase
- Modulated Staircase
- Ramp
- Modulated Ramp
- Full Field ITS
- Flat Fields
- SinX/X
- Line Sweep
- APL and Bounce

Colour bars can be set to either 75% or 100% amplitude. Narrow blanking on colour bars helps verify proper blanking throughout your system.

Composite video outputs. both test signal and black burst, include a white pulse inserted on line 7 of field 1 for colour-frame identification

Sync Generator with Digital Genlock

The TSG-271 Sync Generator's stable colour standard and unique digital genlock make it ideal for either master generator or slave operation. All outputs are correctly SCH phased, even if the TSG-271 is locked to an improperly SCH phased reference input. The digital genlock calculates sync timing and subcarrier phase to properly identify colour framing of the reference signal. The TSG-271 automatically senses composite video reference input and, in the absence of a reference input signal, automatically switches to its own internal reference. With its constant temperature oven, this high stability crystal oscillator ensures long-term frequency stability.

Flexible Timing Controls

Front panel controls allow phasing of all outputs relative to the genlock source. In addition, a separate set of timing controls move the pulse outputs relative to the black burst and test signal outputs. This simplifies system timing and eliminates delay lines. All timing settings are stored in non-volatile memory to prevent loss in the event of a power failure. A front panel lockout feature prevents inadvertent changes to the front panel timing controls.

Remote Control

Remote operation of test signal selection and genlock timing presets is available by simple ground closure control through a rear panel connector.

Packaging

The TSG-271's rugged 1-3/4 inch package makes it ideal for outside broadcast vans, or anywhere space is at a premium.

Operating Instructions

SECTION 2
OPERATING INSTRUCTIONS

This section explains how to operate the TSG-271. It also describes each of the tests signals and the rear-panel connector outputs.

FRONT-PANEL CONTROLS

Eleven click-dome switches control the TSG-271 (see Fig. 2-1). The MODE SELECT switch on the right selects four modes of operation: SELECT TEST SIGNAL, SET IDENTIFICATION, SET GENLOCK TIMING, and SET SYNC TIMING.

The primary function of the ten remaining switches is to select test signals; however, they also double as controls for selecting genlock timing, sync timing, and identification (ID).

The four leftmost test signal switches control ID in SET IDENTIFICATION mode. The four right test signal switches control genlock timing in SET GENLOCK TIMING mode. These same four switches control sync timing in SET SYNC TIMING mode.

In this manual, the multi-function switches have multiple names, one for each function they control. Fig. 2-2 shows these names for each operating mode. Operation of the front panel in each of the four modes is described in more detail below.

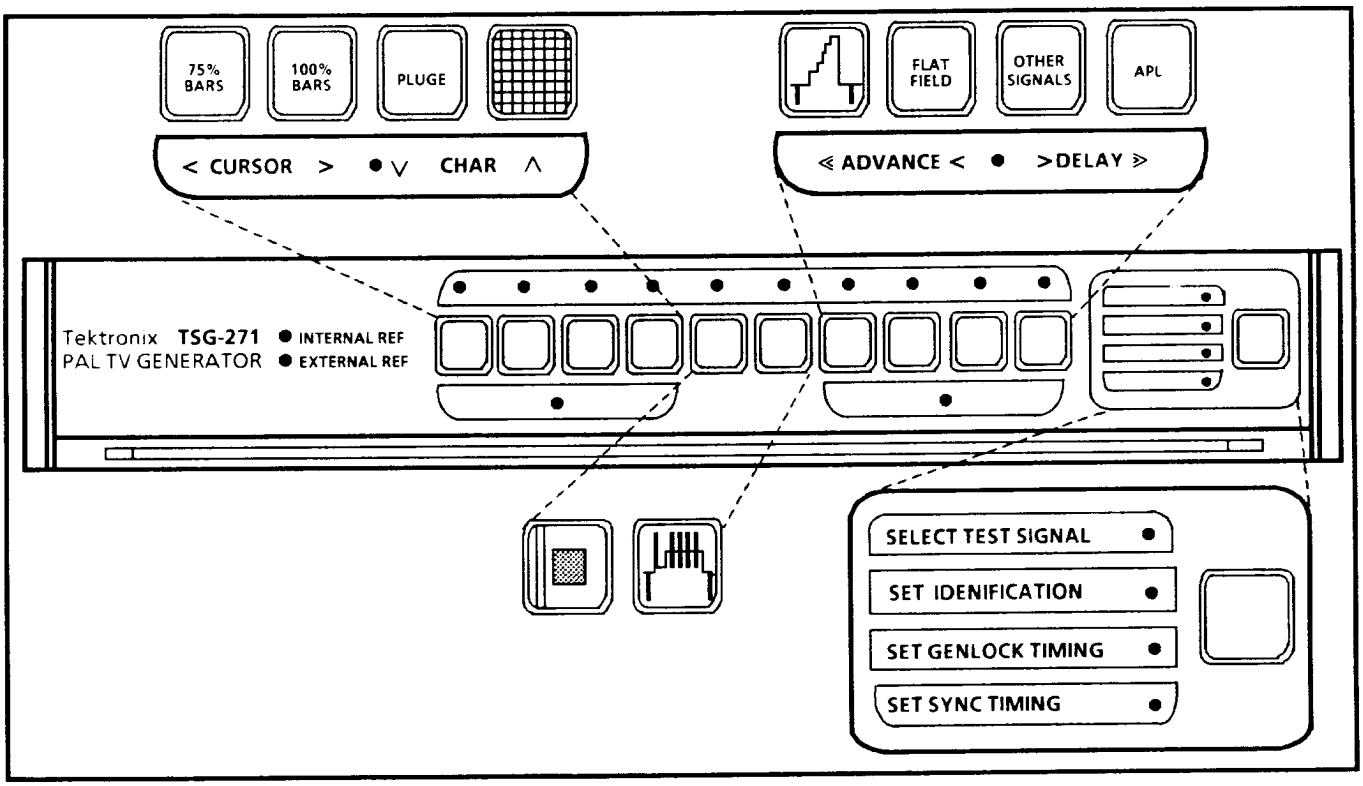
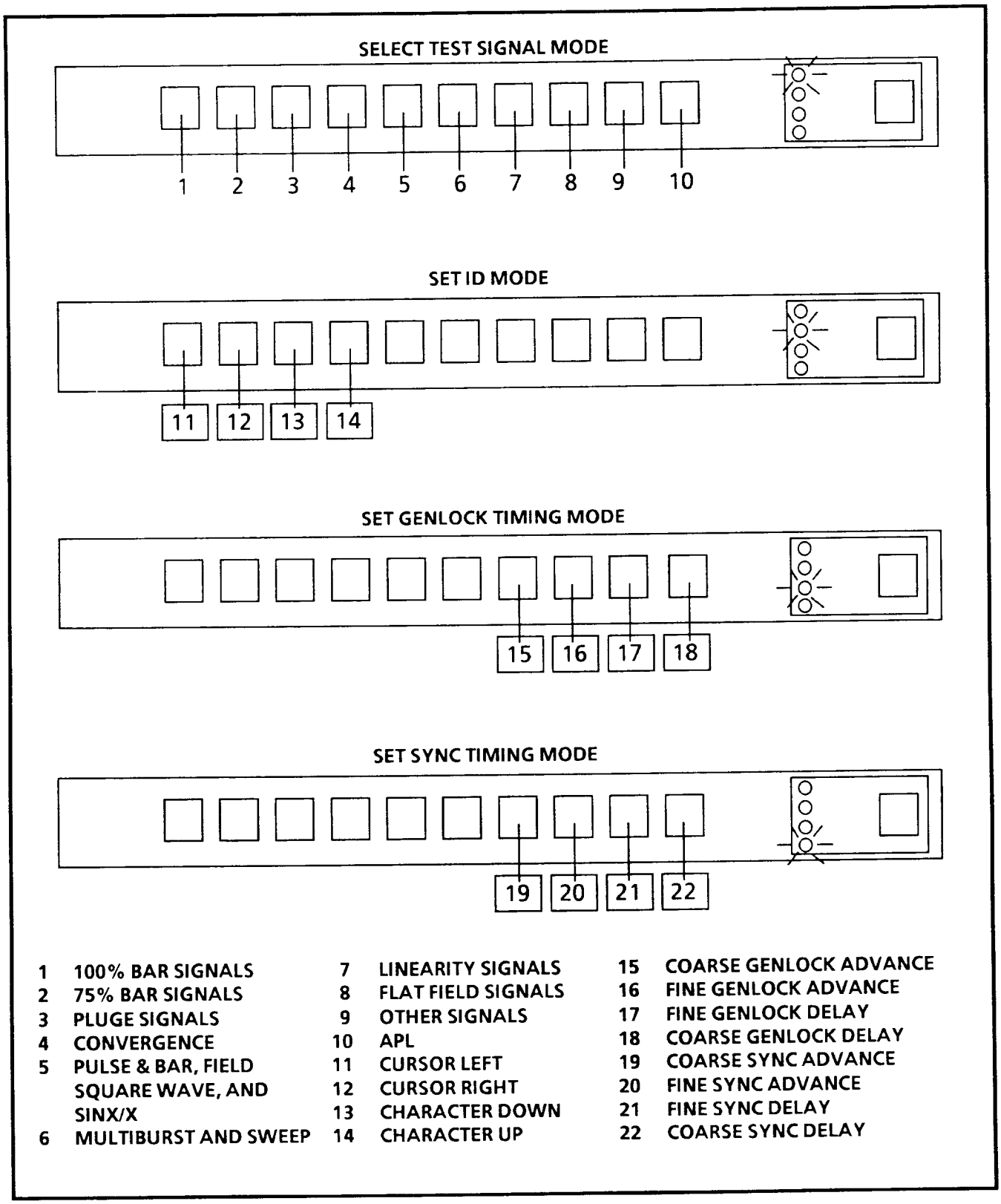


Fig. 2-1. TSG-271 front panel.



1	100% BAR SIGNALS	7	LINEARITY SIGNALS	15	COARSE GENLOCK ADVANCE
2	75% BAR SIGNALS	8	FLAT FIELD SIGNALS	16	FINE GENLOCK ADVANCE
3	PLUGE SIGNALS	9	OTHER SIGNALS	17	FINE GENLOCK DELAY
4	CONVERGENCE	10	APL	18	COARSE GENLOCK DELAY
5	PULSE & BAR, FIELD SQUARE WAVE, AND SINX/X	11	CURSOR LEFT	19	COARSE SYNC ADVANCE
		12	CURSOR RIGHT	20	FINE SYNC ADVANCE
		13	CHARACTER DOWN	21	FINE SYNC DELAY
6	MULTIBURST AND SWEEP	14	CHARACTER UP	22	COARSE SYNC DELAY

Fig. 2-2. TSG–271 front-panel switch names in the four front-panel modes.

SELECT TEST SIGNAL Mode

In this mode, all ten switches select test signals (see Table 2-1). The instrument is powered up in the SELECT TEST SIGNAL mode. If the instrument is not in this mode, press the MODE SELECT switch on the right of the front panel until the SELECT TEST SIGNAL LED is lighted.

Most of the switches select several signals of the same type. To select a signal, just press the appropriate test signal switch until it selects the desired signal.

When you return to this switch after making other front panel selections, the signal last selected at this switch will be at the top of its signal list. Table 2-1 shows the signals selectable with each switch.

SET GENLOCK TIMING Mode

In SET GENLOCK TIMING mode, the four right switches shift the timing of the test and sync pulse signals together with respect to the Genlock Input.

While the front panel is in this mode, the four right switches take on the following names (from left to right): COARSE GENLOCK ADVANCE, FINE GENLOCK ADVANCE, FINE GENLOCK DELAY, and COARSE GENLOCK DELAY.

FINE GENLOCK ADVANCE and FINE GENLOCK DELAY provide adjustment of genlocked test signals and sync timing over a total range of about ±55° in 0.2° steps. COARSE GENLOCK ADVANCE and COARSE GENLOCK DELAY provide coarse adjustment over a total range of approximately ±7 μs in 28 ns (45°) steps. Arrows below the switches indicate the direction (advance or delay) and amount of timing offset.

Setting Genlock Timing

To adjust genlock timing, first press the MODE SELECT switch until the SET GENLOCK TIMING LED is lighted. Note the red LED under the right four switches indicates that these switches now control genlock timing instead of selecting test signals.

To advance genlock timing, press the FINE GENLOCK ADVANCE switch for fine increments of advance (steps of 0.2°) or press the COARSE GENLOCK ADVANCE switch for coarse increments (steps of 45°). To delay genlock timing, press and hold down the FINE GENLOCK DELAY switch for fine increments of delay or press the COARSE GENLOCK DELAY switch for coarse increments of delay.

If you don't make a timing selection within 30 seconds after entering the SET GENLOCK TIMING mode, the front panel automatically reverts to the SELECT TEST SIGNAL mode.

If you reach the end of the fine advance range and want more adjustment, push the COARSE GENLOCK ADVANCE switch to advance the phase by a whole coarse step. If this introduces more advance than you need, press the FINE GENLOCK DELAY switch to reduce the amount of advance.

Note that when the genlock timing switches are held down, they shift genlock timing at a rate of three steps per second for the first three seconds and then speed up to 25 steps per second.

Storing Genlock Setting

The front panel automatically stores your selection by returning to SELECT TEST SIGNAL mode 30 seconds after your selection.

If you want to store the signal faster, just manually return the MODE SELECT switch to SELECT TEST SIGNAL mode after selecting the settings.

SET SYNC TIMING Mode

In SET SYNC TIMING mode, the four right switches advance or delay the generator's sync pulse outputs relative to the test signal outputs. (Fig. 2-3 shows this timing relationship.) While the front panel is in SET SYNC TIMING mode, these switches take on the following names (from left to right): COARSE SYNC ADVANCE, FINE SYNC ADVANCE, FINE SYNC DELAY, and COARSE SYNC DELAY.

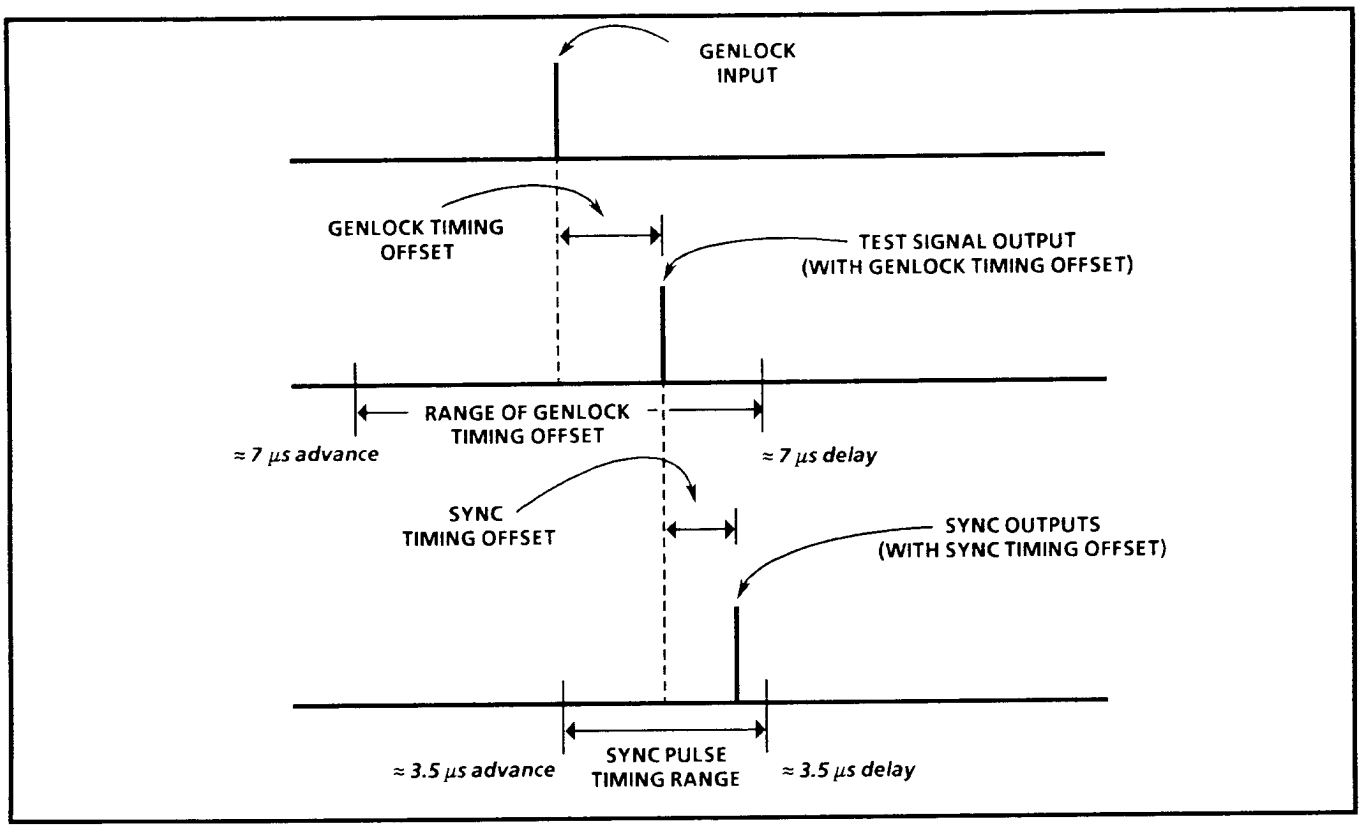


Fig. 2-3. Relative timing of Genlock Input signal, Test signals, and Sync Pulse signals.

FINE SYNC ADVANCE and FINE SYNC DELAY provide fine adjustment of sync timing over a range of about ±50° in approximately 0.2° steps. COARSE SYNC ADVANCE and COARSE SYNC DELAY provide coarse adjustment over a range of approximately ±3.5 μs in 28 ns (45°) steps. Arrows below the switches indicate the direction and amount of timing shift.

Setting Sync Timing

To adjust the timing offset of the sync pulse signals with respect to the test signals, press the MODE SELECT switch until the SET SYNC TIMING LED is lighted. Note that the red LED under the four right switches is lighted to indicate that these switches control sync pulse timing.

Press and hold down the FINE SYNC ADVANCE switch to select small increments (≈0.2°) of advance, or press the COARSE SYNC ADVANCE switch to select coarse increments (45°). Press the FINE SYNC DELAY and COARSE SYNC DELAY switches to add fine and coarse amounts of delay, respectively.

If you don't make a timing selection within 30 seconds after entering the SET SYNC TIMING mode, the front panel automatically reverts to the SELECT TEST SIGNAL mode.

If you reach the end of the fine advance range and want more adjustment, push the COARSE SYNC ADVANCE switch to advance the phase by a whole coarse step. If this introduces more advance than you need, press the FINE SYNC DELAY switch to reduce the amount of advance.

When you hold down these advance/delay switches, they shift sync timing at a rate of three steps per second for the first three seconds and then speed up to 25 steps per second.

Storing Sync Setting

Follow the instructions for storing genlock timing settings.

SET IDENTIFICATION Mode (Option 1)

In the SET IDENTIFICATION mode, the four leftmost switches write up to 12 characters of text for display on the upper two-thirds of the selected test signal. While the front panel is in this mode, these switches take on the following names (from left to right): CURSOR LEFT, CURSOR RIGHT, CHARACTER DOWN, and CHARACTER UP.

As Fig. 2-4 shows, the cursor can be moved horizontally (with the CURSOR LEFT and CURSOR RIGHT switches) into 12 positions or vertically (with the CHARACTER UP and CHARACTER DOWN

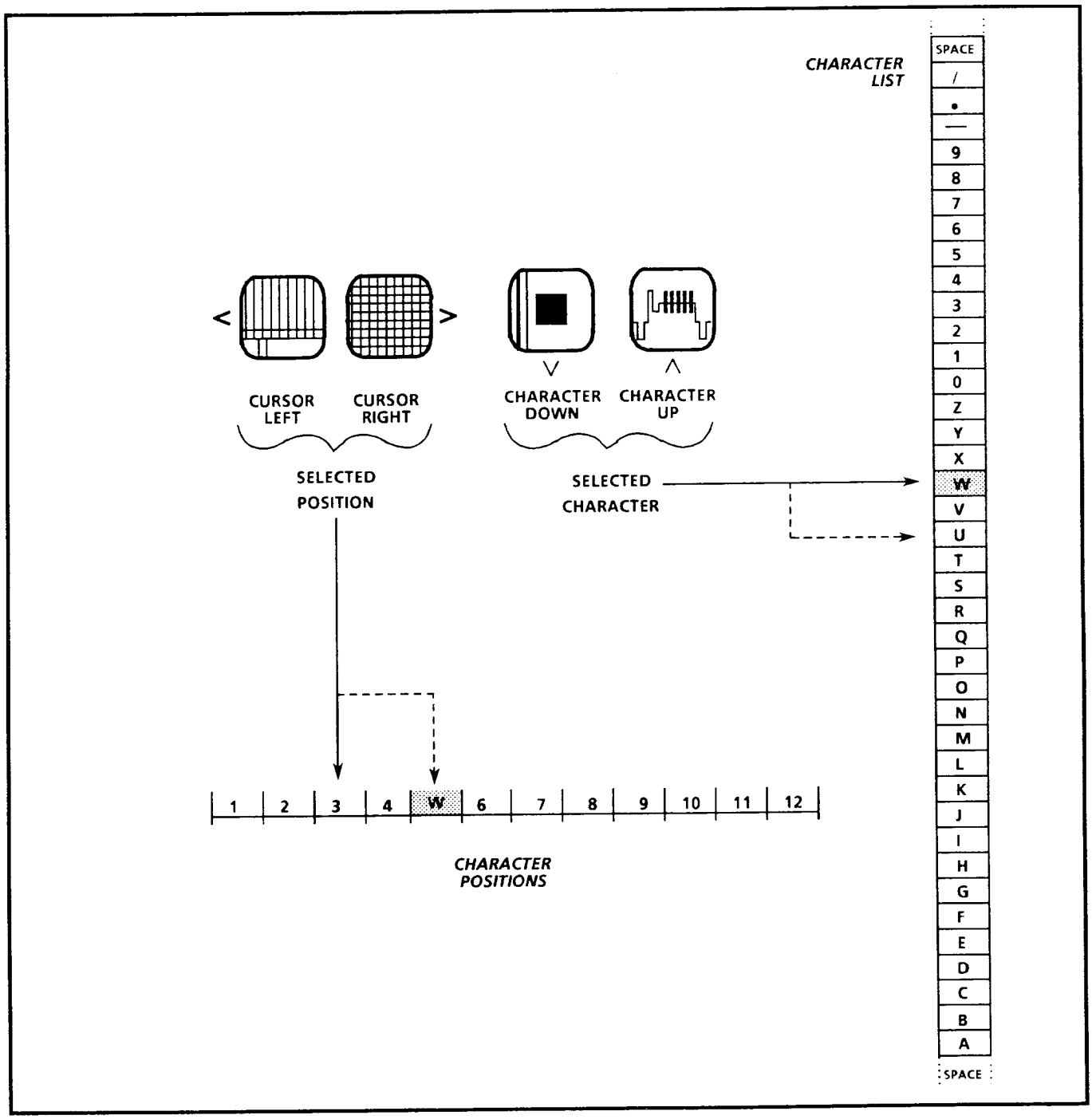


Fig. 2-4. Selecting Option 1 characters from the front panel.

switches) to select one of the characters in the character list. The CHARACTER UP and CHARACTER DOWN switches select the characters. Characters available are A through Z, 0 through 9, a space, and three punctuation marks: slash, hyphen, and period.

Selecting the ID

To select an ID character, press the MODE SELECT switch until the SET IDENTIFICATION LED is lighted. The LED below the four leftmost switches is lighted to indicate these switches control ID selection. Looking at the 12 character positions on a video monitor, you can see a gray box is superimposed over one of the characters to indicate the cursor position.

Assume a W is in the fifth character position and the cursor is in the third position (as in Fig. 2-4). To change the W to a U, press the CURSOR RIGHT switch until the gray square is on the W. Then press the CHARACTER DOWN switch repeatedly until the U is displayed. To reselect the W, press the CHARACTER UP switch until the W is displayed. When these switches are held down, they automatically scroll left/right or up/down.

To move the cursor from position 5 to 12, press the CURSOR RIGHT switch until the cursor is in the desired position. Alternatively press the CURSOR LEFT switch until the cursor loops around to position 12.

Storing the Selection

Follow the instructions for storing the genlock timing settings.

Switching Off the Characters

To switch off the Character Generator and the black background window, delete all the characters by selecting a blank in all 12 character positions.

REAR-PANEL CONNECTORS

The rear panel has 12 BNC video connectors, one 9-pin Remote Control connector, one audio XLR connector, and one power socket. Fig. 2-5 shows the rear panel.

REAR-PANEL CONTROLS

POWER ON/OFF push-push switch.

REMOTE OPERATION

The TSG-271 can be remotely controlled through the 9-pin remote control connector located on the rear panel. By TTL-compatible ground closure, these pins control four different functions (described below).

Typically, the pins would be grounded through user-supplied switches, using pin 9 as ground. The instrument can be locked into a fixed operating mode by wiring directly at the remote connector. To do this, attach a male 9-pin DIN plug to the remote connector and solder the appropriate pins to ground. Fig. 2-6 shows the connector pinout.

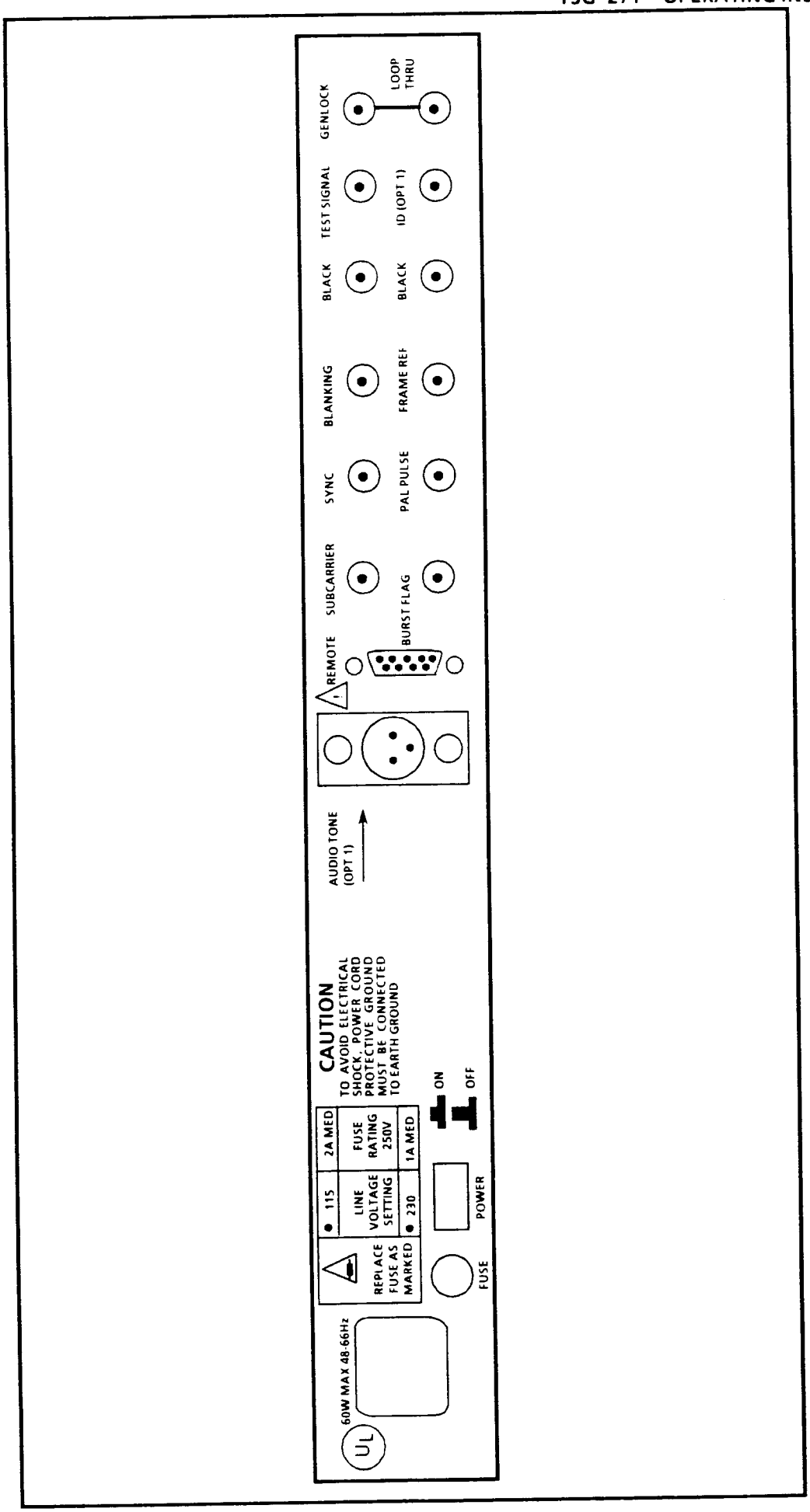


Fig. 2-5. TSG-271 rear panel.

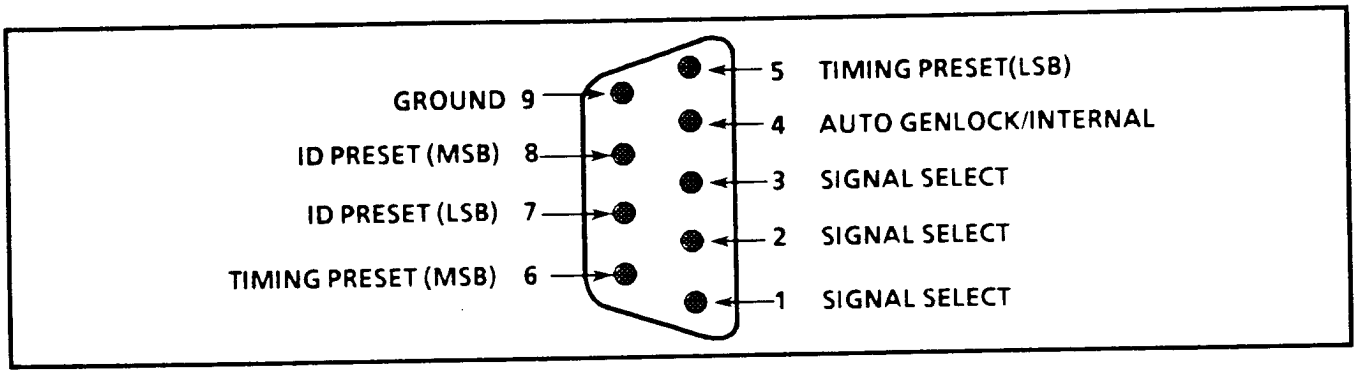


Fig. 2-6. Remote Connector (female) pinout.

Explanation of Pins

Pin 1-3

Three binary-coded control lines programmed to select a set of eight test signals. These pins can be reprogrammed to select a different set.

For example, if you want multiburst to be selected by pin setting 101 (1 = open, 0 = ground): First, turn power OFF, set jumper J209 to the program position (2-3), and turn power ON. Set remote pins 1-3 to 101. Then select multiburst at the front panel. Multiburst is now programmed to be selected when pins 1-3 are in position 101.

If you want to program more switch positions, set the remote switch to the positions you want and then select the desired signal.

NOTE

When you have finished programming pins 1-3, be sure to turn the power OFF, return J209 to the nonprogram position, and turn the power ON.

Remote pin setting 111 selects the signal last selected at the front panel.

Pin 4

Selects Internal Sync Generator Reference mode when grounded. Otherwise, automatically switches to Genlock mode when a Genlock Input signal is present.

Pins 5 & 6

Two binary-coded control lines programmed to select one of four sets of genlock and sync timing presets.

You can reprogram a timing preset to select a different genlock and sync timing setting. To do this, ground the appropriate pins, set both the genlock and sync timing at the front panel, then cycle the front-panel MODE SELECT switch back to SELECT TEST SIGNAL mode.

Pins 7 & 8 (Option 1)

Two binary-coded control lines programmed to select three different character ID presets and Tape Leader countdown.

To reprogram an ID preset, ground the appropriate pins, select the ID at the front panel, then cycle the front-panel MODE SELECT switch back to SELECT TEST SIGNAL mode.

To select the Tape Leader countdown out of the Option 1 rear-panel connector, set pins 7 & 8 to 00. (To generate a tape leader, record Bars, ID, and Audio Tone. Then ground pins 7 & 8 to select Tape Leader Countdown.*) Tape Leader goes through the following sequence:

1. Switches off Audio Tone.
2. Selects a character ID countdown from 10 to 2 against a black background.
3. Selects black background until pin 1 is ungrounded.

*While in Tape Leader mode, you cannot enter SET IDENTIFICATION. Conversely, in SET IDENTIFICATION mode, the Tape Leader won't start until you exit this mode.

Pin 9

Ground.

Table 2-1
TSG-271 Test Signals

SIGNAL	DESCRIPTION
75% BARS	Colour Bars Colour Bars over red Colour Bars over red with narrow blanking Monitor setup matrix
100% BARS	Colour Bars Colour Bars over red Colour Bars over red with narrow blanking Monitor setup matrix
PLUGE	EBU Pluge (BBC2) German Pluge (BBC1) White Grey
CONVERGENCE	Convergence
PULSE & BAR	Pulse & Bar with Window Field Square Wave Multipulse SINX/X
MULTIBURST	Multiburst Line Sweep
LINEARITY (5-Step)	5-Step Ramp Modulated 5-Step Modulated Ramp
FLAT FIELD	100% Luminance 50% Luminance 0% Luminance 75% Red
OTHER SIGNALS	CCIR 17 CCIR18 CCIR330 CCIR331 UK1 UK2 ITS Matrix
DIAGNOSTICS	DAC Test 25 Hz Offset Test Nonburst Colour Bars

Table 2-2
Rear-Panel Connector Outputs

CONNECTOR	STANDARD SIGNAL	OPTIONAL SIGNAL*
GENLOCK LOOP-THROUGH	Genlock Input.	—
TEST SIGNAL	Test Signal Output.	—
OPT. 1	Selected test signal with character ID.	—
BLACK	Black Burst.	—
BLANKING	Composite Blanking.	—
FRAME REF	Field Reference Pulse/Colour Frame Square Wave.	Sync
SYNC	Composite Sync.	—
PAL PULSE	H/2 Square Wave.	—
SUBCARRIER	4.433 MHz Colour Subcarrier.	—
BURST FLAG	Burst Flag.	
REMOTE	Remote Control Input.	—
AUDIO TONE (OPT. 1)	500/1000 Hz.	Jumper-selectable ID click. Click rate variable between 0.2 and 4 Hz.

***See operating mode jumper table for access to optional signals.**

Table of Specifications

SECTION 3

TABLE OF SPECIFICATIONS

The performance requirements are valid within the environmental limits if the TSG-271 is adjusted at 25°C, ±5°C, and a minimum warm-up of 20 minutes is allowed.

Table 3-1
Test Signal Generator — General Test Signal and Black Burst Characteristics

Characteristics	Performance Requirements	Supplemental Information
Luminance Amplitude Accuracy	±1%.	Measured at 700 mV.
DC Output Level	Test Signal: 0 Vdc ±50 mV. Black Burst: 0 Vdc ±5 mV.	Measured at blanking.
Chrominance-to-Luminance Gain	±1%.	Measured at 980 mV p-p, at 500 kHz, and 4.43 MHz referenced to 500 kHz.
Frequency Response	±1% to 5 MHz.	
Chrominance-to-Luminance Delay	≤5 ns.	
Group Delay	≤5 ns to 5 MHz.	10 mV p-p = 9 ns delay on a 10T pulse.
SCH Phase Accuracy		±2.5 ns typical.
Luminance Rise Time	250 ns ±25 ns.	Except colour bars, 2T bar, and convergence.
Chrominance Rise Time	350 ns ±35 ns.	
Burst Amplitude	300 mV ±6 mV p-p.	
Burst Rise Time	350 ns ±35 ns.	Slower than BBC spec to avoid ringing.
Sync Amplitude	300 mV ±3 mV.	
Sync Rise Time	250 ns ±25 ns.	
Horizontal Timing	See Figs.3-1 through 3-24 (to be inserted).	
Front Porch Duration	1.55 μs minimim, except narrow blanking test signal.	1.65 μs typical; narrow blanking front porch is 1.425 μs.
Line Blanking Interval Nominal Blanking	12.05 μs nominal for all test signals except narrow blanking signal.	Beginning at 50% point of active video.
Narrow Blanking	11.60 μs ±0.1 μs for narrow blanking signal.	For blanking width measurement.
Breezeway Duration	900 ns ±50 ns.	
Horizontal Sync Duration	4.7 μs ±50 ns.	50% amplitude point.
Vertical Serration Duration	4.7 μs ±50 ns.	50% amplitude point.
Equalizing Pulse Duration	2.35 μs ±50 ns.	50% amplitude point.

Table 3-1 (cont.)
Test Signal Generator — General Test Signal and Black Burst Characteristics

Characteristics	Performance Requirements	Supplemental Information
Burst		
Delay from Sync	5.6 μs ±50 ns.	From 50% point of sync.
Burst Duration	2.255 μs ±0.1 μs.	10 cycles of subcarrier.
Output Impedance	75Ω.	
Return Loss	36 dB to 5 MHz.	
Crosstalk	≥60 dB down.	
Residual Subcarrier	≥60 dB down.	
Glitches	≤2 mV.	

Table 3-2
Test Signal Generator — Test Signals

Characteristics	Performance Requirements			Supplemental Information
75% Colour Bars				
Luminance Rise Times	150 ns ±25 ns.			
	Lum Ampl. (mV)	**Subc. Ampl. (mV p-p)**	**Subc. Phase (deg)**	
White	700.0	0.0	0.0	
Yellow	465.1	470.5	167.1	
Cyan	368.0	663.8	283.5	
Green	308.2	620.1	240.7	
Magenta	216.8	620.1	60.7	
Red	157.0	663.8	103.5	
Blue	59.9	470.5	347.1	
75% Colour Bars Over Red				
Luminance Rise Times	150 ns ±25 ns.			
Field Timing				
Colour Bars	Lines 23 – 166.			
Red	Lines 167 – 310.			
75% Colour Bars Over Red With Narrow Blanking				
Luminance Rise Times	150 ns ±25 ns.			
Field Timing				Narrow blanking is a 700 mV bar with 150 ns luminance rise times and 11.6 μs blanking.
Colour Bars	Lines 23 – 156.			
Narrow Blanking	Lines 157 – 176.			
Red	Lines 177 – 310.			

Table 3-2 (cont.)
Test Signal Generator — Test Signals

Characteristics	Performance Requirements	Supplemental Information
75% Monitor Setup Matrix Field Timing Convergence Pluge with 5-step Convergence Colour Bars Reverse Blue Convergence	 Lines 23 – 62. Lines 63 – 145. Lines 146 – 187. Lines 188 – 244. Lines 245 – 270. Lines 271 – 310.	Convergence, pluge with 5-step staircase, conv, colour bars, rev. blue, conv. This colour bars has 75% white (lum = 525 mV).
100% Colour Bars Luminance Rise Times White Yellow Cyan Green Magenta Red Blue	150 ns ±25 ns. **Lum Ampl. (mV)** / **Subc. Ampl. (mV p-p)** / **Subc. Phase (deg)** 700.0 / 0.0 / 0.0 620.2 / 627.3 / 167.1 490.7 / 885.1 / 283.5 410.9 / 826.8 / 240.7 289.1 / 826.8 / 60.7 209.3 / 885.1 / 103.5 79.8 / 627.3 / 347.1	
100% Colour Bars Over Red Luminance Rise Times Field Timing Colour Bars Red	150 ns ±25 ns. Lines 23 – 166. Lines 167 – 310.	
100% Colour Bars Over Red With Narrow Blanking Luminance Rise Times Field Timing Colour Bars Narrow Blanking Red	150 ns ±25 ns. Lines 23 – 156. Lines 157 – 176. Lines 177 – 310.	Narrow blanking is a 700 mV bar with 150 μs luminance rise times and 11.6 μs blanking.
100% Monitor Setup Matrix Field Timing Convergence Pluge with 5-step Convergence Colour Bars Reverse Blue Convergence	 Lines 23 – 62. Lines 63 – 145. Lines 146 – 187. Lines 188 – 244. Lines 245 – 270. Lines 271 – 310.	Convergence, pluge with 5-step staircase, conv, colour bars, rev. blue, conv.

Table 3-2 (cont.)
Test Signal Generator — Test Signals

Characteristics	Performance Requirements	Supplemental Information
Pluge (BBC Version 2)		
Pluge Levels	−14 mV and 14 mV.	
Lum. Ref. Levels	700 mV, 450 mV, 200 mV, and 110 mV.	
Field Timing		
700 mV	Lines 63 – 114.	
450 mV	Lines 115 – 166.	
200 mV	Lines 167 – 218.	
110 mV	Lines 219 – 270.	
Pluge (BBC Version 1)		
Pluge Levels	−14 mV and 14 mV.	
Lum. Ref. Levels	700 mV (100%) and 105 mV (15%).	
Field Timing		
700 mV	Lines 83 – 166.	
105 mV	Lines 167 – 250.	
White Test Signal	22.5 μs, 700 mV luminance bar on lines 83 – 250.	
Grey Test Signal	22.5 μs, 105 mV luminance bar on lines 83 – 250.	
Convergence		
Amplitude	525.0 mV.	
Pattern		Crosshatch – 14 horizontal lines and 19 vertical lines per field.
Luminance Rise Times	115 ns ±25 ns.	Horizontal line spaced every 40 lines starting at line 35.
Pulse HAD	225 ns ±25 ns.	
Pulse & Bar With Window		
20T Modulated Pulse		
HAD	2000 ns ±20 ns.	
Chroma Phase	60.7°.	
Amplitude	700 mV.	
2T Pulse		
HAD		
Standard	200 ns ±20 ns.	
Option 5	166.7 ns ±20 ns.	
Amplitude	700 mV.	

Table 3-2 (cont.)
Test Signal Generator — Test Signals

Characteristics	Performance Requirements	Supplemental Information
2T Bar		
Width	26 μs.	50% amplitude point.
Rise Time		
Standard	192.9 ns ±20 ns.	
Option 5	160.7 ns ±20 ns.	
White Bar Amplitude	700.0 mV.	
Field Tilt	≤0.5%.	
Line Tilt	≤0.5%.	
Window Field Timing	Lines 89 – 244.	
Pulse-to-Bar Ratio	1:1 ±0.5%.	
Ringing	≤1% peak.	
Field Square Wave Field Timing	Lines 89 – 244.	
Multipulse		
Amplitude	700.0 mV.	Prior to S/N B031877 Multipulse Frequencies were:
Frequencies	S/N B031877 & UP: 1.0 MHz, 2.0 MHz, 3.0 MHz, 4.0 MHz, 5.8 MHz.	1.0 MHz, 2.0 MHz, 4.0 MHz, 4.8 MHz, 5.8 MHz.
SinX/X		
Bandwidth	6 MHz.	
Pedestal	124.9 mV.	
Peak	575.1 mV.	Peak amplitude from pedestal.
Multiburst		
White Reference Bar Amplitude	560.0 mV.	
Packet Amplitudes	420.0 mV p-p.	Equal width packets.
Pedestal	350.0 mV.	
Burst Frequencies	500 kHz, 1.0 MHz, 2.0 MHz, 4.0 MHz, 4.8 MHz, 5.8 MHz.	
Packet Rise Time	350 ns typical	Sine squared shaped packets.
Line Sweep		
Amplitude	700.0 mV p-p.	Markers at 1, 2, 3, 4, 5, and 6 MHz.
Sweep Range	250 kHz to 6.1 MHz.	
Field Timing		
Markers	Lines 26-62.	
Sweep	Lines 63-270.	
Markers	Lines 271-310.	

Table 3-2 (cont.)
Test Signal Generator — Test Signals

Characteristics	Performance Requirements	Supplemental Information
5-Step Staircase		
Amplitude	700.0 mV.	
Linearity Error	≤1%.	Relative step matching.
Luminance Ramp		
Luminance Ramp	0 to 700.0 mV.	
Linearity Error	≤1%.	
Modulated 5-Step Staircase		
Chroma Amplitude	280.0 mV p-p.	
Phase	60.7°.	
Modulated Ramp		
Luminance Amplitude and Linearity	Same as Luminance Ramp.	
Chrominance Amplitude	280.0 mV p-p.	
Phase Angle	60.65°.	
Diff Gain	0.6% maximum.	
Diff Phase	0.3° maximum.	
Flat Fields		
Amplitudes	0 mV, 350 mV, 700 mV.	
Red Field		
Luminance Rise Times	150 ns.	
Luminance Pedestal	157.0 mV.	
Chrominance Amplitude	663.8 mV.	
Phase	103.5°.	
ITS		
CCIR Line 17		
Standard	2T bar (width = 10 μs, rise time = 192.9 ns ±20 ns), 2T pulse (HAD = 200 ns ±20 ns), 20T modulated pulse (60.7°), 5-step.	
Option 5	2T bar (width = 10 μs, rise time = 166.7 ns ±20 ns), 2T pulse (HAD = 160.7 ns ±20 ns), 20T modulated pulse (60.7°), 5-step.	

Table 3-2 (cont.)
Test Signal Generator — Test Signals

Characteristics	Performance Requirements	Supplemental Information
CCIR Line 18	Same as Multiburst.	
CCIR Line 330		
Standard	2T bar (width = 10 μs, rise time = 192.9 ns ±20 ns), 2T pulse (HAD = 200 ns ±20 ns), 5-step with 280 mV p-p modulation (60.7°).	
Option 5	2T bar (width = 10 μs, rise time = 166.7 ns ±20 ns), 2T pulse (HAD = 160.7 ns ±20 ns), 5-step with 280 mV p-p modulation (60.7°).	
CCIR Line 331	350 mV luminance pedestal with three level (140 mV p-p, 420 mV p-p, 700 mV p-p), chroma bar (60.7°) followed by 420 mV p-p chroma bar (60.7°).	
Luminance Pedestal Rise Time		
Standard	192.9 ns ±20 ns.	
Option 5	160.7 ns ±20 ns.	
UK ITS 1 (Lines19 & 332)		
Standard	2T bar (width = 10 μs, rise time = 192.9 ns ±20 ns), 2T pulse (HAD = 200 ns ±20 ns), 10T modulated pulse (60.7°), 5-step with 140 mV p-p modulation (60.7°).	
Option 5	2T bar (width = 10 μs, rise time = 166.7 ns ±20 ns), 2T pulse (HAD = 160.7 ns ±20 ns), 10T modulated pulse (60.7°), 5-step with 140 mV p-p modulation (60.7°).	
UK ITS 2 (Lines 20 & 333)	700 mV p-p 60.7° chroma bar on a 350 mV luminance pedestal. 280 mV p-p 60.7° chroma bar (no pedestal).	
Luminance Pedestal Rise Time		
Standard	192.9 ns ±20 ns.	
Option 5	160.7 ns ±20 ns.	

Table 3-2 (cont.)
Test Signal Generator — Test Signals

Characteristics	Performance Requirements	Supplemental Information
ITS MATRIX		
Field Timing		
CCIR17	Lines 23 – 62.	
CCIR18 (multiburst)	Lines 63 – 104.	
CCIR330	Lines 105 – 145.	
CCIR331	Lines 146 – 187.	
UK ITS 1	Lines 188 – 228.	
UK ITS 2	Lines 229 – 270.	
Modulated Ramp	Lines 271 – 310.	
APL	1 line full-field signal and 3 lines 0 or 700 mV flat field. Selected test signal on 6 of 18 lines repeated: starting at line $22\frac{1}{2}$.	
AC Bounce		
Bounce Rate	1 second high. 1 second low.	

Table 3-3
Test Signal Generator — Diagnostic Signals

Characteristics	Performance Requirements	Supplemental Information
DAC Test 1	Split field: 500 kHz followed by 4.43 MHz (980 mV p-p).	Non-composite signal.
25 Hz Offset Test	25 Hz sine wave, 980 mV p-p.	Non-composite signal.
Nonburst Colour Bars		75% bars with no burst.

Table 3-4
Test Signal Generator — Black Burst Output

Characteristics	Performance Requirements	Supplemental Information
Black (or Blanking) Level	0 V ±5.0 mV.	
Blanking Width	< 11.2 μs.	
Glitch Amplitude	< 20 mV.	
Phasing	< 2°.	Compared to test signal output.
Return Loss	≥ 36 dB to 5 MHz.	

Table 3-5
Sync Generator — General Pulse Output Characteristics

Characteristics	Performance Requirements	Supplemental Information
Amplitude	−2.0 ±0.2 V.	Jumper selectable to −4 V.
Impedance	75Ω.	
Return Loss	≥30 dB to 5 MHz.	
Rise and Fall Times	250 ns ±50 ns.	

Table 3-6
Sync Generator – Pulse Output Signals

Characteristics	Performance Requirements	Supplemental Information
Composite Sync		
Horizontal Sync Duration	4.70 μs ±0.1 μs.	
Vertical Serrations	4.70 μs ±0.1 μs.	
Equalizing Pulse Duration	2.35 μs ±0.1 μs.	
Blanking		
Horizontal Blanking Duration	12.01 μs ±0.1 μs.	Factory set to 12.01; Jumper selectable for 11.79 or 12.24 μs.
Vertical Blanking Duration	25 lines.	Jumper selectable for 24 or 25 lines. Factory set to 25.
Burst Flag		
Delay from Horizontal Sync	5.6 μs ±0.1 μs.	Measured from sync pulse output to burst flag output.
Duration	2.255 μs ±0.1 μs.	10 cycles of subcarrier.
PAL Pulse	(H/2 Square Wave.)	Selectable polarity. Factory set to high for 135° burst.
Frame		
Field Reference Pulse	Low for active portion of line 7, field 1.	
Colour Frame Square Wave Position	Low for fields 1-4, high for fields 5-8.	Selectable for −2 V, −4 V, or TTL compatible output.

Table 3-7
Sync Generator — Subcarrier Output

Characteristics	Performance Requirements	Supplemental Information
Amplitude	2 V p-p ±0.2 V.	
Free-Running Frequency	4.43361875 MHz ±1 Hz.	After 20-minute warm up.
Long-Term Stability		Typical: 1 Hz per year after initial aging.
Sidebands and Harmonics	≥40 dB down.	Typically ≥50 dB down.
DC Level	0 V ±100 mV.	
Return Loss	≥30 dB to 4.43 MHz.	

Table 3-8
Genlock Function

Characteristics	Performance Requirements	Supplemental Information
Burst Lock		
Genlock Phase Change with Input Amplitude	≤1° burst phase change for input sync or burst amplitude range of 300 mV +3 to −3 dB. ≤2° burst phase change for amplitude range of 300 mV +6 to −6 dB.	For either composite video or burst amplitude errors.
Genlock Phase Change with Input Signal APL	≤1° burst phase change over 10% to 90% APL.	
Phase Dependence on Input Burst Frequency	≤1° burst phase change for ±10 Hz change in incoming subcarrier.	Factory tested to ≤1° burst phase change for ±20 Hz change in incoming subcarrier.
Lock Range	4.43361875 MHz ±10 Hz.	Factory tested to 4.43361875 MHz ±20 Hz.
Genlock Phase Jitter		Typically ≤0.3° peak for input sync or burst amplitude range of 300 mV +3 to −3 dB. No noise on input signal. Typically ≤0.4° peak for input amplitude range of 300 mV +6 to −6 dB. No noise on input signal.

Table 3-8 (cont.)
Genlock Function

Characteristics	Performance Requirements	Supplemental Information
Horizontal Timing Range Genlock Timing Sync Timing		≈7 μs advance and delay relative to Genlock Input. 55° of fine sync in 0.175° steps. (Front-panel control.) ≈3.5 μs advance and delay relative to Genlock Input. At least 50° of fine sync in ≈0.2° steps. (Front-panel control.)
Colour Framing Decisions	Will be correct for input SCH of 0° ±40°.	
Sync Lock Jitter	<10 ns for input sync amplitude range of 300 mV +3 to –3 dB.	No noise on input signal.
Noise Performance		Remains locked at 29 dB S/NR.
Genlock Stability with Gross Input Amplitude Variations	≤40° for input sync or burst amplitude range of 300 mV +7 to –12 dB.	
Vertical Timing Range	0, 1, or 2 lines advance. 1 line delay.	
Input Configuration	75Ω loop-through.	
Return Loss (Genlock Input)	≥40 dB to 5 MHz.	

Table 3-9
Option 1 (Audio Tone, and ID Over Selected Test Signal)

Characteristics	Performance Requirements	Supplemental Information
Option 1		Adds Audio tone and additional test signal output with or without ID over Black Field or selected test signal.
Phasing	<2°.	Compared to test signal output.
Identification	12 characters, 7 x 9 matrix.	
Character Amplitudes	660 mV ±20 mV.	
Black Level Matching	±5.0 mV.	Referenced to test signal black level on Option 1 output.
Audio Tone		
Amplitude	0 to +8 dBu* adjustable.	50Ω output balanced XLR impedance to drive 150Ω, 600Ω, or high impedance load.
Frequency	500 Hz or 1 kHz.	Locked to horizontal. Jumper selectable. Factory set to 1 kHz.
Distortion (THD)	≤0.01%.	1 kHz into 600Ω.
Audio ID "click" Frequency Range	4 Hz to 0.2 Hz.	

* dBu is the voltage equivalent to 1 mV into 600Ω, regardless of whether the actual load is 600Ω.

Table 3-10
Power Supply

Characteristics	Performance Requirements	Supplemental Information
Supply Accuracy		
+12 V		12 V ±300 mV.
+5 V		5 V ±100 mV.
-5.2 V		-5.2 V ±300 mV.
-12 V		-12 V ±300 mV.
Current Limit		
+12 V		Total power limited to 75W.
+5 V		
-5.2 V		
-12 V		
Hum		**Typical**
+12 V		10 mV.
+5 V		10 mV.
-5.1 V		20 mV.
-12 V		10 mV.
Noise		
+12 V		≤50 mV (5 MHz bandwidth).
-12 V		≤50 mV (5 MHz bandwidth).
+5 V		≤50 mV (5 MHz bandwidth).
-5.1 V		≤50 mV (5 MHz bandwidth).
Line Voltage Range		
110 Vac	90 - 132 Vac.	
220 Vac	180 - 250 Vac.	
Crest Factor		≥1.35.
Fuse Data		
115 V Setting		2A Med-Blow.
230 V Setting		1A Med-Blow.
Power Consumption		
Typical		40 W.
Maximum		60 W.
Line Frequency		48 Hz to 62 Hz.

Table 3-11
Physical Characteristics

Characteristics	Information
Dimensions	
Rackmount	
Height	1.734 inches (4.4 cm).
Width	19.0 inches (48.3 cm).
Length	22.1 inches (56.1 cm).
Net Weight	6.14 kg (13.5 lbs).
Shipping Weight	10.4 kg (22 lbs, 14 oz).

Table 3-12
Environmental Characteristics

Characteristics	Information
Temperature	
Non-Operating	–40°C to +65°C.
Operating	0°C to +40°C.
Altitude	
Non-Operating	To 50,000 feet.
Operating	To 15,000 feet.
Vibration (Operating)	15 minutes each axis at 0.025 inch, frequency varied from 10-55-10 c/s in 4-minute cycles with instrument secured to vibration platform. Ten minutes each axis at any resonant point or at 55 c/s.
Shock	50 g's, 1/2 sine, 11 ms duration, 3 guillotine-type shocks per side.
Transportation	Qualified under NTSC Test Procedure 1A, Category II (24-inch drop).

Table 3–13: Certifications and compliances

Category	Standards or description
EC Declaration of Conformity – EMC[1]	Meets 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 Union: EN 50081-1 Emissions: EN 55022 Class B Radiated and Conducted 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
FCC Compliance	Emissions comply with FCC Code of Federal Regulations 47, Part 15, Subpart B, Class A Limits.

1 **High quality shielded cables must be used to ensure compliance to the listed specifications.**

Table 3–13: Certifications and compliances (cont.)

Category	Standards or description	
Installation (Overvoltage) Category	Terminals on this product may have different installation (overvoltage) category designations. The installation categories are:	
	CAT III	Distribution-level mains (usually permanently connected). Equipment at this level is typically in a fixed industrial location.
	CAT II	Local-level mains (wall sockets). Equipment at this level includes appliances, portable tools, and similar products. Equipment is usually cord-connected.
	CAT I	Secondary (signal level) or battery operated circuits of electronic equipment.
Pollution Degree	A measure of the contaminates that could occur in the environment around and within a product. Typically the internal environment inside a product is considered to be the same as the external. Products should be used only in the environment for which they are rated.	
	Pollution Degree 2	Normally only dry, nonconductive pollution occurs. Occasionally a temporary conductivity that is caused by condensation must be expected. This location is a typical office/home environment. Temporary condensation occurs only when the product is out of service.
Safety Standards		
U.S. Nationally Recognized Testing Laboratory Listing	UL1244	Standard for electrical and electronic measuring and test equipment.
Canadian Certification	CAN/CSA C22.2 No. 231	CSA safety requirements for electrical and electronic measuring and test equipment.
European Union Compliance	Low Voltage Directive 73/23/EEC, amended by 93/69/EEC	
	EN 61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use.
Additional Compliance	IEC61010-1	Safety requirements for electrical equipment for measurement, control, and laboratory use.
Safety Certification Compliance		
Temperature, operating	+5 to +40° C	
Altitude (maximum operating)	2000 meters	
Equipment Type	Test and measuring	
Safety Class	Class 1 (as defined in IEC 1010-1, Annex H) – grounded product	
Overvoltage Category	Overvoltage Category II (as defined in IEC 1010-1, Annex J)	
Pollution Degree	Pollution Degree 2 (as defined in IEC 1010-1). Note: Rated for indoor use only.	

WARNING

The following servicing instructions are for use only by qualified personnel. To avoid injury, do not perform any servicing other than that stated in the operating instructions unless you are qualified to do so. Refer to all Safety Summaries before performing any service.

Installation

SECTION 4
INSTALLATION

PACKAGING

At installation time, save the shipping carton and packaging materials for repackaging in case reshipment becomes necessary. See Fig. 4-1.

ELECTRICAL INSTALLATION

Power Supply Frequency and Voltage Ranges

The power supply in this instrument operates over a line frequency range of 48 to 62 Hz and is set by jumper J810. The power cord option you ordered determines which rating of fuse and which power supply voltage your generator is set for. Table 4-1 describes these options.

Plug in power cable, then mount to extreme left of the line filter using one of the screws (on the instrument), loop clamp, and washer. See Fig. 4-2.

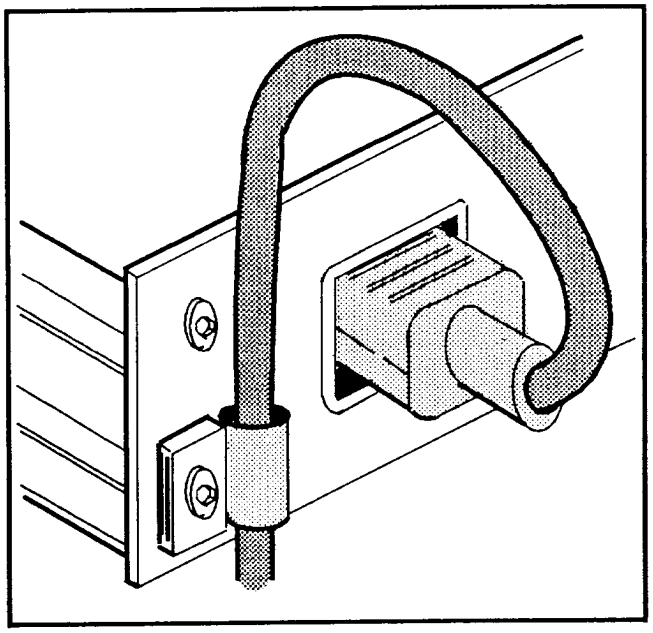


Fig. 4-2. Mounting the power cord.

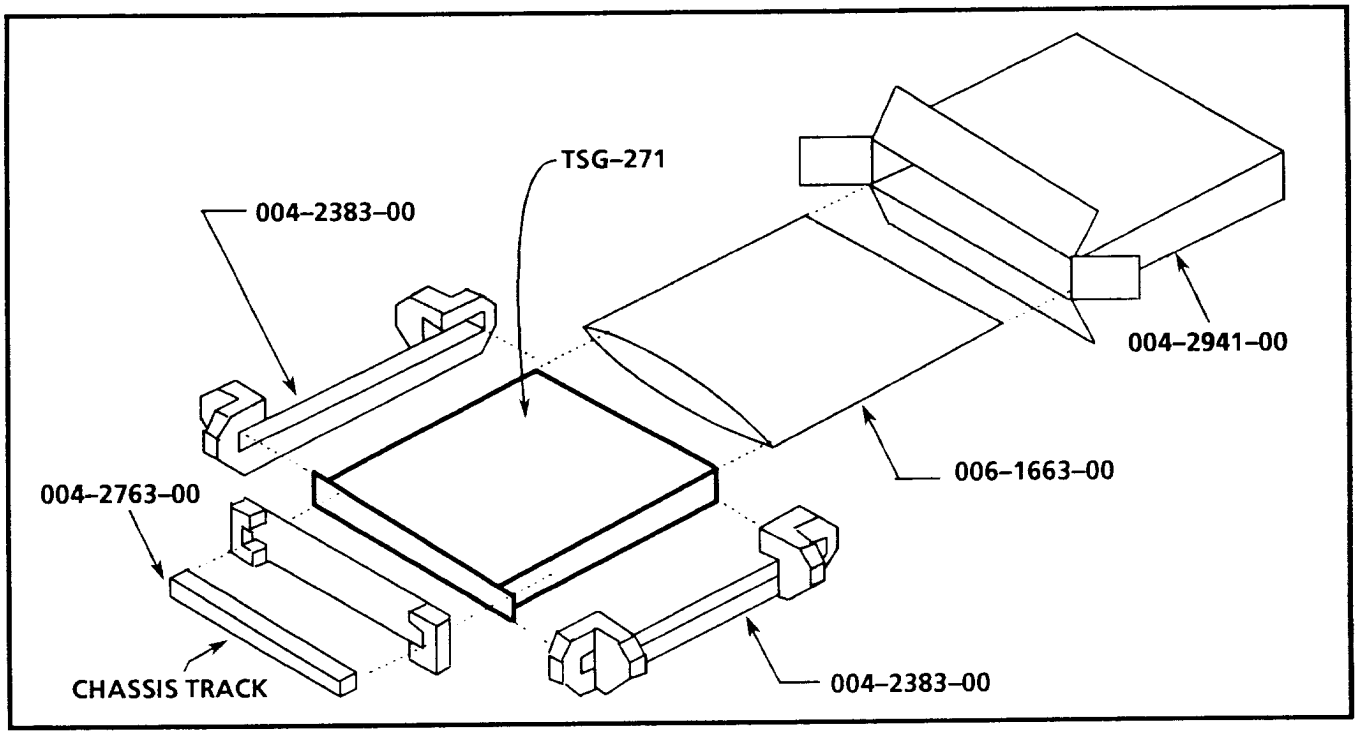


Fig. 4-1. Repackaging Instructions.

Table 4-1
Jumper Settings for Power Cord Options

POWER CORD OPTION	FUSE RATING	J810, POWER SUPPLY (115/230V SELECT)
Standard North American	2 Amp Medium Blow	Pin 1 aligned with 115 V.
Option A1 (Universal Euro), Option A2 (UK), Option A3 (Australia)	1 Amp Medium Blow	Pin 1 aligned with 230 V.

MECHANICAL INSTALLATION

Rack Mounting

The TSG-271 is shipped with hardware for rack-mounting. The instrument fits in a standard 19-inch rack. Spacing between the front rails of the rack must be at least 17-3/4 inches to allow clearance for the slide-out tracks.

Rack slides conveniently mount in any rack that has a front-to-rear rail spacing between 15-1/2 and 28 inches. Six inches of clearance between the instrument's rear panel and any rear cabinet panel is required for connector space and to provide adequate air circulation.

Mounting the Slide Tracks

Locate the proper rack holes as shown in Fig. 4-3. Notice that the hole spacing varies with the type of rack. When installing the slides in EIA-type racks, make certain that the slides are attached to the 1/2-inch-spaced holes.

Mount the rails using enclosed hardware as shown in Fig. 4-4. Fig. 4-5 shows the rail mounting details for both deep and shallow racks. Make sure the stationary sections are horizontally aligned and are level and parallel.

Installing the Instrument

Install the instrument in the rack, as shown in Fig. 4-5. Table 4-2 lists the signals available at the rear-panel connectors.

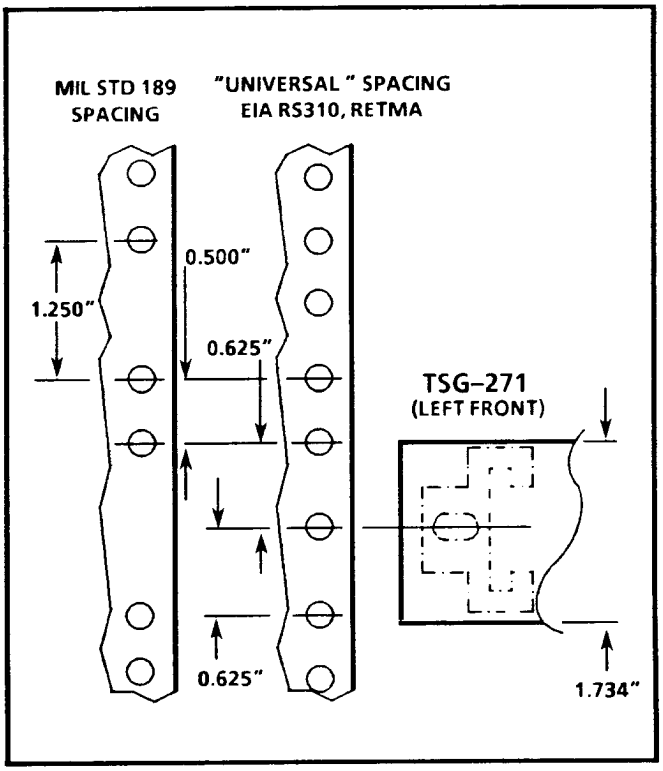
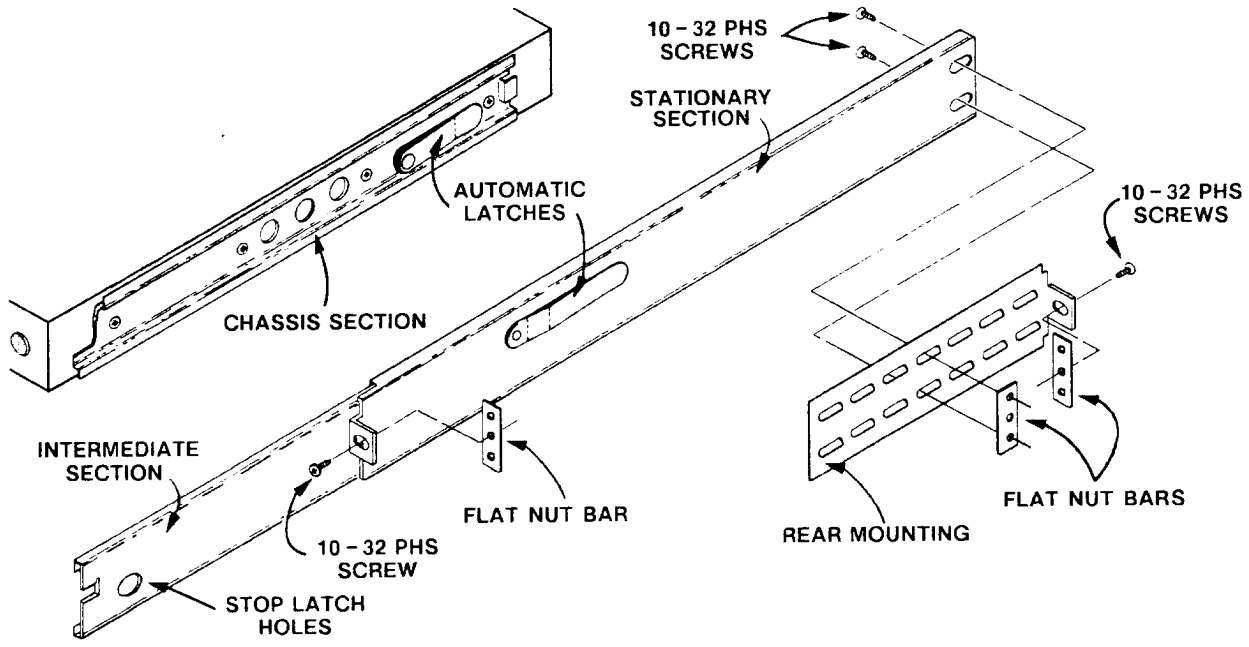


Fig. 4-3. Rail detail for mounting slide tracks.

Rack Adjustments

After installation, the slide tracks may bind if they are not properly adjusted. To adjust the tracks, slide the instrument out about 10 inches, slightly loosen the screws holding the tracks to the front rails, and allow the tracks to seek an unbound position. Retighten the screws and check the tracks for smooth operation by sliding the instrument in and out of the rack several times.



NOTE:

Right hand and left hand stationary section is designated by the RH and the LH marked on the rails. Stop latch holes should be towards the bottom when slides are in place. (The right hand rail is shown above.)

Fig. 4-4. Assembly of rack mounting hardware.

Once the instrument is in place within the rack, tighten the knurled retaining screw to fasten it securely into the rack.

Rack Slide Maintenance

The slide-out tracks do not require lubrication. The dark gray finish on the tracks is a permanent, lubricated coating.

Removing the Instrument

First, loosen the front-panel knurled retaining screw. See Fig. 4-6. Grasp the front handles and pull the instrument out until all three slide sections latch. The instrument is firmly held in this position.

To completely remove the instrument, press both release-latch buttons (visible in the stop-latch holes) and carefully slide the instrument free from the tracks. Be sure that all cabling is disconnected before removing the instrument.

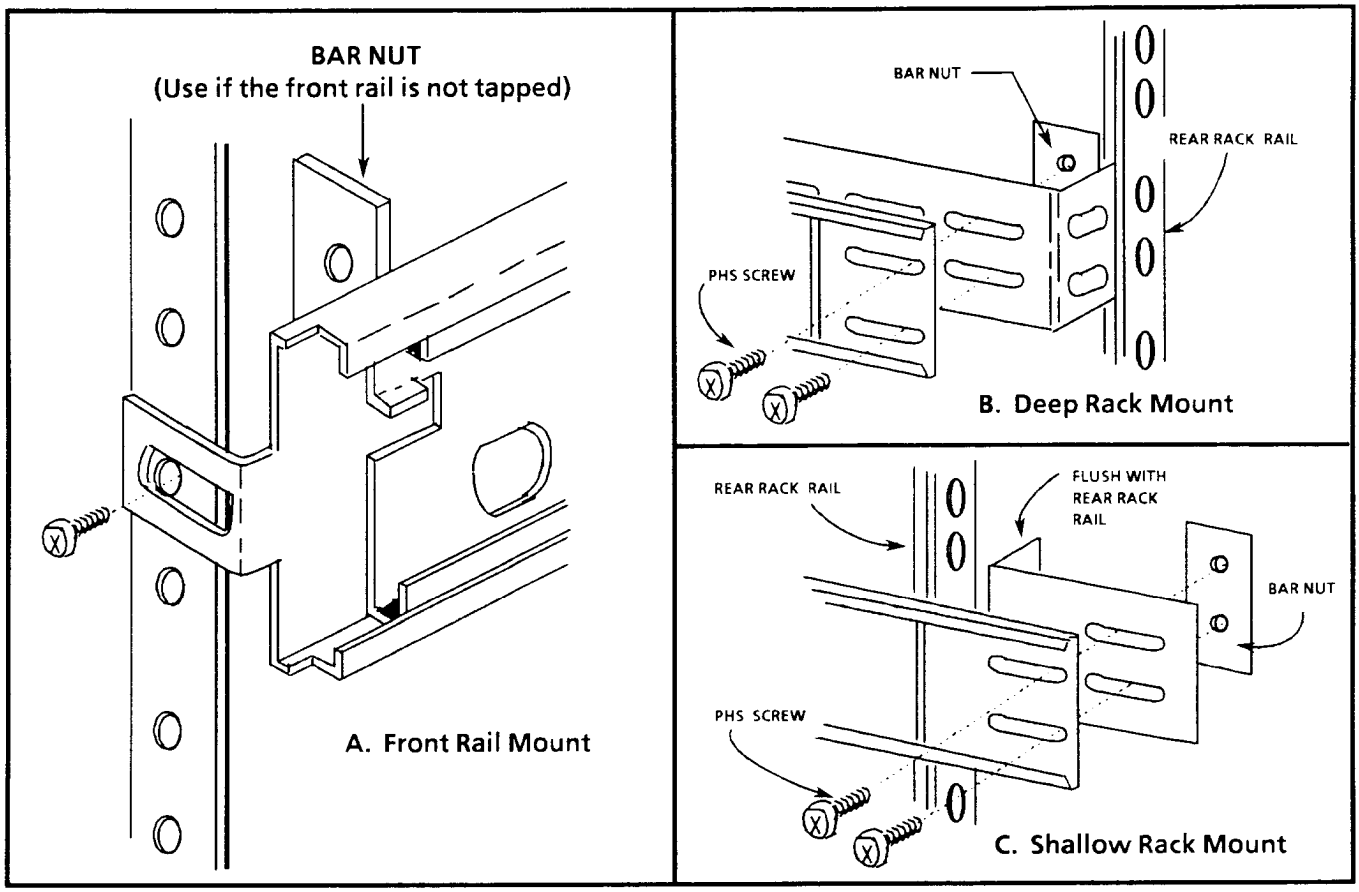


Fig. 4-5. Mounting stationary track sections.

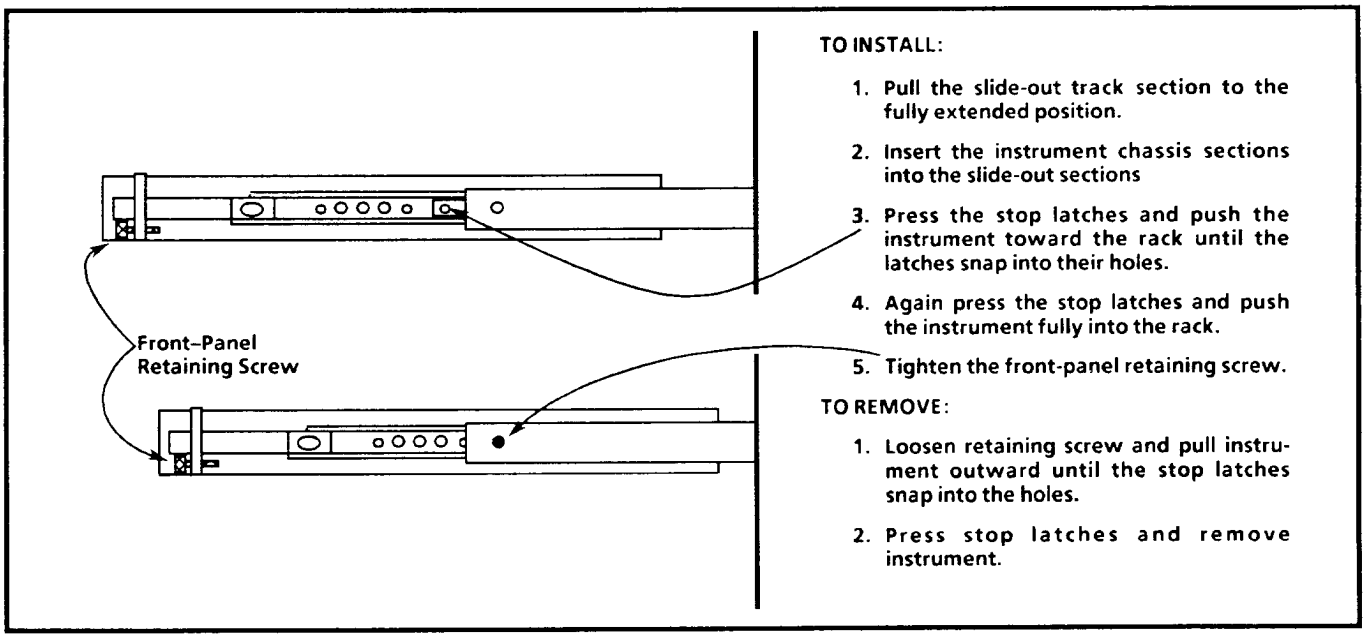


Fig. 4-6. Racking and unracking the TSG–271.

Jumper Tables

This section gives jumper tables for the entire instrument. In all cases, the ▼ symbol on the circuit boards identifies pin 1. Green jumpers are for selecting operating modes Red jumpers are for testing the instrument. The red jumpers should be used only by qualified service personnel. The < > symbol represents schematic numbers.

Table 4-2
Analogue Board (A3) Operating Mode Selection Jumpers

FUNCTION	JUMPER #	DESCRIPTION	FACTORY SET
Blanking Output Level	J678 <8>	Pins 1–2: Selects –2 V output level. Pins 2–3: Selects –4 V output level.	Pins 1–2
Field Reference/Colour Frame/Comp Sync Select	J375 <8>	Pins 1–2: Enables Field Reference signal at FRAME REF connector. Pins 2–3: Enables Colour Frame signal at FRAME REF connector. Pins 2–4: Enables Composite Sync signal at FRAME REF connector.	Pins 1–2
Colour Frame Output Level	J460 J660 <8>	Pins 1–2: Enables –4 V output level (terminated in 75Ω).* Pins 2–3: Enables TTL output level (+ 5 V unterminated or + 3 V terminated in 75Ω).* *Move J460 and J660 together. *J668 must be in the 2–3 position.	Pins 1–2
Field Reference/Colour Frame/Comp Sync Output Level	J668 <8>	Pins 1–2: Selects –2 V output level.* Pins 2–3: Selects –4 V output level.* *J440 and J660 must be in the 1–2 position.	Pins 1–2
Comp Sync	J780 <8>	Pins 1–2: Selects –2 V output level. Pins 2–3: Selects –4 V output level.	Pins 1–2
PAL Pulse	J965 <8>	Pins 1–2: Selects –2 V level. Pins 2–3: Selects –4 V level.	Pins 1–2
Burst Flag	J978 <8>	Pins 1–2: Selects –2 V level. Pins 2–3: Selects –4 V level.	Pins 1–2

Table 4-2 (cont.)
Analogue Board (A3) Operating Mode Selection Jumpers

FUNCTION	JUMPER #	DESCRIPTION	FACTORY SET
For Future Use	J115 <8>	Pins 1–2: Standard position. Pins 2–3: Not Used.	Pins 1–2
	J807	Pins 1–2: Standard position. Pins 2–3: Not Used.	Pins 1–2
	J815	Pins 1–2: Standard position. Pins 2–3: Not Used.	Pins 1–2

Table 4-3
Digital Board (A2–1) Operating Mode Selection Jumpers

FUNCTION	JUMPER #	DESCRIPTION	FACTORY SET
Front Panel Mode Select	J111 <1>	Pins 1–2: Allows all front panel modes to be selected. Pins 2–3: Allows selection of test signals only.	Pins 1–2
Programming or Remote Control	J208 <1>	Pins 1–2: Enables program mode of remote control. Pins 2–3: Disables program mode of remote control.	Pins 1–2
Genlock and Sync Timing Modes Select	J308 <1>	Pins 1–2: Enables SET GENLOCK TIMING and SET SYNC TIMING modes at front panel. Pins 2–3: Disables SET GENLOCK TIMING and SET SYNC TIMING modes at front panel.	Pins 1–2

Table 4-3 (cont.)
Digital Board (A1) Operating Mode Selection Jumpers

FUNCTION	JUMPER #	DESCRIPTION	FACTORY SET
For Future Use	J136, J164 <1>	Pins 1–2, 1–2: Standard position. Pins 1–2, 2–3: Not used. Pins 2–3, 1–2: Not used. Pins 2–3, 2–3: Not used.	Pins 1–2, 1–2
For Future Use	J712 <2>	Pins 1–2: Standard position. Pins 2–3:	Pins 1–2
Genlock Vertical Offset (lines of delay/advance)	J885, J985 <5>	Pins 1–2, 1–2: No delay/advance. Pins 1–2, 2–3: One line advance. Pins 2–3, 1–2: Two lines delay. Pins 2–3, 2–3: One line delay.	Pins 1–2, 1–2
ITS Select	J894, J897 <5>	Pins 1–2, 1–2: Selects NO ITS. Pins 1–2, 2–3: Selects UK ITS. Pins 2–3, 1–2: Selects EBU ITS. Pins 2–3, 2–3: Selects CCIR ITS.	Pins 2–3, 2–3
Horizontal Blanking Width	J690 <5>	Pins 1–2: 12.0 μs. Pins 2–3: 12.2 μs. Pins 3–4: 11.8 μs.	Pins 1–2
PAL Pulse Polarity	J145 <5>	Pins 1–2: Positive for Field 1, Line 7. Pins 2–3: Negative for Field 1, Line 7.	Pins 1–2
Vertical Blanking Window	J883 <5>	Pins 1–2: 25 lines. Pins 2–3: 24 lines.	Pins 1–2

Table 4-4
Power Supply Board (A4) Operating Mode Selection Jumper

FUNCTION	JUMPER #	DESCRIPTION	FACTORY SET
115 V/230 V Line Voltage Select	J810	Pin 1 aligned with 115 V: Power Supply accepts 115 V line voltage. Fuse rating must be 2 A, medium blow. Pin 1 aligned with 230 V: Power Supply accepts 230 V line voltage. Fuse rating must be 1 A, medium blow.	Determined by power cord option. See Table 4-1.

Table 4-5
Digital Board (A2-1) Test Jumpers

FUNCTION	JUMPER #	DESCRIPTION	FACTORY SET
Manual Reset	J229 <2>	Pins 1–2: No reset. Pins 2–3: Resets μP.* *J273 must be in 1–2 position.	Pins 1–2
Hard Reset	J223 <2>	Pins 1–2: Allows hard reset of μP. Pins 2–3: Forced reset of μP. Pins 3–4: Disables hard reset of μP.	Pins 1–2
Soft Reset	J423 <2>	Pins 1–2: Allows soft reset of μP. Pins 2–3: Disables soft reset of μP.	Pins 1–2
VCO Test	J180 <4>	Pins 1–3: Sets VCO control voltage to midrange (ground) so VCO can be tuned to 4Fsc with C387. Pins 2–3: μP controls genlock loop response. Pins 4–3: Fixed test voltage (–10 V) decreases VCO frequency. Pins 5–3: Fixed test voltage (+ 10 V) increases VCO frequency.	Pins 2–3

Table 4-5 (cont.)
Digital Board (A2-1) Test Jumpers

FUNCTION	JUMPER #	DESCRIPTION	FACTORY SET
Crystal Oscillator Frequency	J391 <4>	For coarse adjustment of free-running crystal frequency. Setting should only be changed when calibrating the subcarrier oscillator frequency.	See Performance Checks and Calibration Procedures.
Crystal Oven Heater	J497 <4>	Pins 1-2: Enabled. Pins 2-3: Disabled.	Pins 1-2
Field Reference Disable	J570	Pins 1-2: Enables FLD REF signal to provide a genlocked field reference (field 1, line 7) pulse to the timing circuits. Pins 2-3: Disables FLD REF signal.	Pins 1-2
Luminance Disable	J551	Pins 1-2: Normal luminance. Pins 2-3: Forces luminance to a constant DC Level.	Pins 1-2
Chrominance Disable	J470	Pins 1-2: Normal chrominance. Pins 2-3: No chrominance.	Pins 1-2
Offset Test	J939 <7>	Pins 1-2: Enables Subcarrier Generator to produce normal subcarrier. Pins 2-3: Enables Subcarrier Generator to produce 25 Hz offset only.* *Allows inspection of digitally generated offset, immediately following the output DAC. This sine wave is not viewable at the reconstruction filter output.	Pins 1-2
Offset Disable	J523 <7>	Pins 1-2: Enable 25 Hz offset of the Subcarrier Output. Pins 2-3: Disable 25 Hz offset of the Subcarrier Output.	Pins 1-2

Table 4-6
Analogue Board (A3) Test Jumpers

FUNCTION	JUMPER #	DESCRIPTION	FACTORY SET
Input Clamp Disable	J511	Pins 1-2: Enables clamp timing circuit. Pins 2-3: Disables clamp timing circuit.	Pins 1-2
Test Signal Disable	J440	Pins 1-2: Enables test signal at TEST SIGNAL connector. Pins 2-3: Disables test signal at TEST SIGNAL connector to allow for testing of return loss.	Pins 1-2

Table 4-7
Power Supply Board (A4) Test Jumpers

FUNCTION	JUMPER #	DESCRIPTION	FACTORY SET
Overvolts Sensor Test (-5 V)	J120	Jacks 1 and 2 unshorted: Normal operation (voltage at pin 9 of U220B should be about +0.3 V). Jacks 1 and 2 shorted: Shuts down Power Supply.	Unshorted
Overvolts Sensor Test (+5 V)	J242	Jacks 1 and 2 unshorted: Normal operation (voltage at pin 10 of U335B should be about +2.1 V). Jacks 1 and 2 shorted: Shuts down Power Supply.	Unshorted

TSG-271 OPTIONS

Option 1 Identification

Option 1 adds the A5 IDENTIFICATION circuit board. This option provides the ability to display up to 12 characters along with the selected test signal. It also provides a Tape Leader Countdown function, and an audio tone of 500 or 1000 Hz (jumper selectable) with a variable rate click for identifying different sources. Option 1 is fully documented in this manual.

Option 5 PAL-D
(Formerly Mod PC)

Option 5 modifies some of the characteristics of the the TSG-271 test signals for testing 6 MHz PAL-D systems, while the standard instrument test signals are for testing 5 and 5.5 MHz PAL systems. Option 5 requires a different signal memory set to accomplish this, so make sure to check the parts list to see which set is in your generator when ordering replacement PROMs. Option 5 is fully documented in this manual.

Performance Check and Calibration Procedures

SECTION 5

PERFORMANCE CHECK AND CALIBRATION PROCEDURES

This section gives procedures for checking and calibrating your TSG-271. They are split into short and long form. Short form procedures provide a quick reference for experienced technicians. The long form procedures give more detailed steps.

Table 5-1 lists the equipment you will need. If you use alternate equipment, make sure it meets the specifications given in this table.

These procedures are designed to be done in sequence. If you do not need to do a full procedure, start at the nearest convenient step that has a setup drawing.

NOTE

After completing each step, immediately return jumpers to their original position.

Table 5-1
Recommended Test Equipment (Including Accessories)

Test Equipment	Minimum Specifications	Equipment Examples
Test Oscilloscope Mainframe	At least 50 MHz bandwidth with dual-trace plug-in and 10X probe.	TEKTRONIX 7603.
Test Oscilloscope Differential Comparator Plug-In	Minimum deflection factor 10 mV/div with 10X probe.	TEKTRONIX 7A13; plugs into 7603 mainframe.
Test Oscilloscope Dual-Trace Amplifier Plug-In	Minimum deflection factor 50 mV/div with 10X probe.	TEKTRONIX 7A26; plugs into 7603 mainframe.
Test Oscilloscope Dual Time Base Plug-In	Sweep rate 5 ns/div to 5 μs/div.	TEKTRONIX 7B53A; plugs into 7603 mainframe.
Spectrum Analyzer with 012-0113-00 cable	Capable of measuring to at least 5 MHz.	TEKTRONIX 2710.
PAL Waveform Monitor	For displaying and measuring field-rate and line-rate waveforms.	TEKTRONIX 1485R Mod W5F.
PAL Vectorscope	For measuring differential phase and gain.	TEKTRONIX 521A or 1781R.
PAL Test Signal Generator	Provides the following test signals: black burst, flat field, staircase, pulse & bar, manual and continuous sweep, V drive, and sub-carrier output. Provides variable subcarrier and sync amplitudes.	TEKTRONIX 1411/SPG12 (Opt AA)/TSP11/TSG11/TSG13/ TSG15/TSG16.
Step Attenuator	1 dB steps, DC coupled with 75Ω impedance; Flat response to at least 5 MHz.	Wavetek 7580.

Table 5-1 (cont.)
Recommended Test Equipment (Including Accessories)

Test Equipment	Minimum Specifications	Equipment Examples
Video Amplitude Calibration Fixture (VAC)	Provides a chopped voltage reference accurate to ±0.05% from 0 to 1 V in 0.1 mV increments. (Used with the TEKTRONIX 1485R MOD W5F Waveform Monitor.)	Tektronix Part No. 067-0916-00. Plugs into a TEKTRONIX TM 503 Power Mainframe.
Leveled Sine Wave Generator	250 kHz to 5 MHz.	TEKTRONIX SG 503A; plugs into TM 503 Power Mainframe.
Frequency Counter	For measuring subcarrier frequency. Accurate to within 2-1/2 Hz out of 5 MHz.	TEKTRONIX DC 501, Opt. 01; plugs into TM 503 Power Mainframe.
Peak-to-Peak Detector Amplifier with Detector Head	Facilitates differential frequency-response measurements. Provides a high-impedance load and bias for the 015-0413-00 Detector Head.	Tektronix Part No. 015-0408-00. (Includes one Detector Head, Tektronix Part No. 015-0413-00.) Detector Amplifier plugs into the TM 503 mainframe.
Return Loss Bridge	At least 54 dB, dc to 10 MHz; 75Ω inputs.	Tektronix Part No. 015-0149-00.
Low Loss Coaxial Cable (Qty 4)	Belden 8281 video cable. Impedance, 75Ω; length, 6 feet[a]. Equipped with bnc connectors.	Tektronix Part No. 012-0159-01.
RG59/U Coaxial Cables (Qty 2)	Impedance, 75Ω; length, 42 inches. Equipped with bnc connectors.	Tektronix Part No. 012-0074-00.
End-Line Termination (Qty 3)	Impedance, 75Ω. Equipped with bnc connectors.	Tektronix Part No. 011-0102-00.
Feed-Through Termination (Qty 2)	Impedance, 75Ω. Equipped with bnc connectors.	Tektronix Part No. 011-0103-02.
50Ω to 75Ω Minimum Loss Attenuator	Equipped with bnc connectors.	Tektronix Part No. 011-0057-00.
DC Block	None.	Tektronix Part No. 015-0221-00.
BNC Female-to-BNC Female Adapter	None.	Tektronix Part No. 103-0028-00.
50Ω Coaxial Cable	Length, 36 inches. Equipped with bnc connectors. For use with the SG 503.	Tektronix Part No. 012-0482-00.
Distortion Analyzer	Must test to at least 0.01% THD and test power output over range of 0 to 8 dBm.	TEKTRONIX AA501.
Audio Connector-to-Triple Banana Cable	None.	ITT Pamona Electronics, Model 4953-J-36. Must be reconfigured to match the TSG–170A audio output. Pin 1: Shield, pin 2: +, pin 3: —.

[a]Six-foot length was used to interconnect the test equipment. If 42-inch length is preferred, the Tektronix Part No. is 012-0159-00.

SHORT FORM PERFORMANCE CHECK PROCEDURE

SYNC LOCK

1. **Jitter**

   < 10 ns (16°) for input sync amplitude range of 300 mV +3 to -3 dB.

BURST LOCK

2. **Jitter and Phase Change with Change in Incoming Burst Amplitude**

   ≤ 0.3° of typical peak jitter and ≤ 1° burst phase change for input sync or burst amplitude range of 300 mV +3 to -3 dB

   ≤ 0.4° of typical peak jitter and ≤ 2° burst phase change for input sync or burst amplitude range of 300 mV +6 to -6 dB.

3. **Burst Lock Range and Burst Phase Change with Change in Incoming Burst Frequency**

   ≤ 1° burst phase change for ± 10 Hz change in incoming subcarrier (factory tested to ± 20 Hz).

4. **Phase Shift with Change in Incoming APL**

   ≤ 1° burst phase change over 10% to 90% APL.

GENLOCK TIMING AND SYNC TIMING

5. **Genlock and Sync Timing Range**

   Genlock timing: ≈ 7 μs advance and delay with 55° of fine sync.

   Sync timing: ≈ 3.5 μs advance and delay relative to Genlock Input with at least 50° offline sync.

TEST SIGNAL, I.D. (OPT. 1), BLACK, AND SUBCARRIER OUTPUTS

6. **Blanking Levels**

   TEST SIGNAL Output: 0 V ± 50 mV.

   I.D. (OPT. 1) Output: Within ± 5 mV of Test Signal output.

   BLACK Outputs: Blanking level (horizontal blanking interval) of 0 V ± 50 mV, active video black level within ± 5 mV from blanking, and glitch amplitudes of < 20 mV.

   SUBCARRIER Output: 0 V ± 100 mV.

7. **Luminance Amplitudes and Character Amplitude (OPT. 1)**

   TEST SIGNAL Output Luminance Amplitude: 700.0 mV ± 7.0 mV (1%).

   I.D. (OPT. 1) Output Luminance Amplitude: 700.0 mV ± 7.0 mV (1%).

   I.D. (OPT. 1) Output Character Amplitude: 660.0 mV ± 20.0 mV.

8. **Pulse-to-Bar Ratios**

   TEST SIGNAL Output: 100% ± 3.5 mV (0.5%).

   I.D. (OPT. 1) Output: 100% ± 3.5 mV (0.5%).

9. **Ringing**

   TEST SIGNAL Output: ≤ 7.0 mV (1%).

   I.D. (OPT. 1) Output: ≤ 7.0 mV (1%).

10. Line Tilt

TEST SIGNAL Output: ≤3.5 mV (0.5%).

I.D. (OPT. 1) Output: ≤3.5 mV (0.5%).

11. Field Tilt

TEST SIGNAL Output: ≤3.5 mV (0.5%).

I.D. (OPT. 1) Output: ≤3.5 mV (0.5%).

12. Frequency Response

TEST SIGNAL Output: (Line Sweep signal) amplitude of 700.0 mV ±7.0 mV (1%) out to 5 MHz.

I.D. (OPT. 1) Output: (Line Sweep signal) amplitude of 700.0 mV ±7.0 mV (1%) out to 5 MHz.

13. 5-Step Staircase Linearity Error

TEST SIGNAL Output: ±7.0 mV (1% of total amplitude).

I.D. (OPT. 1) Output: ±7.0 mV (1% of total amplitude).

14. Group Delay

TEST SIGNAL Output: Envelope amplitude ≤2.8 mV p-to-p (5 ns) for the 20T pulse and ≤5.5 mV p-to-p (5 ns) for the first three 10T pulses.

I.D. (OPT. 1) Output: Envelope amplitude ≤2.8 mV p-to-p (5 ns) for the 20T pulse and ≤5.5 mV p-to-p (5 ns) for the first three 10T pulses.

15. Chrominance-to-Luminance Delay

TEST SIGNAL Output: (UK ITS 1 signal) envelope amplitude ≤5.5 mV p-to-p (5 ns) for the 10T pulse.

I.D. (OPT. 1) Output: (UK ITS 1 signal) envelope amplitude ≤5.5 mV p-to-p (5 ns) for the 10T pulse.

16. Differential Phase and Gain

TEST SIGNAL Output: Diff Phase of ≤0.3°; Gain of ≤0.6%.

I.D. (OPT.1) Output: Diff Phase of ≤0.3°; Gain of ≤0.6%.

17. Phase Matching

BLACK Outputs: <2° shift from TEST SIGNAL output.

I.D. (OPT. 1) Output: <2° shift from TEST SIGNAL output.

18. Chrominance-to-Luminance Gain

TEST SIGNAL Output: (DAC Test signal) ≤ ±9.8 mV (±1%). Typically will be ≤ ±4.9 mV.

I.D. (OPT. 1) Output: (DAC Test signal) ≤ ±9.8 mV (±1%). Typically will be ≤ ±4.9 mV.

BLACK BURST AMPLITUDES

19. Sync and Burst Amplitudes for Both Outputs

Sync: 300.0 mV ±3.0 mV (1%).

Burst: 300.0 mV ±6.0 mV p-to-p (2%).

SUBCARRIER FREQUENCY AND AMPLITUDE

20. Free-Running Frequency

4.43361875 MHz ±1 Hz.

21. Amplitude and Distortion

2 V p-to-p ±0.2 V.

PULSE OUTPUTS (Amplitude and Rise Times)

22. Sync Amplitude for all Pulse Outputs

−2 V ± 200 mV.

23. Sync Rise and Fall Times for all Pulse Outputs

250 ns ± 50 ns.

RETURN LOSS

24. GENLOCK LOOP-THROUGH

≥ 40 dB, to 5 MHz.

25. TEST SIGNAL Output

≥ 36 dB, to 5 MHz.

26. BLACK BURST Outputs

≥ 36 dB, to 5 MHz.

27. All Pulse Outputs

≥ 30 dB, to 5 MHz.

28. SUBCARRIER Output

≥ 30 dB, to 4.43 MHz.

29. SUBCARRIER Harmonics

≥ 40 dB, from the subcarrier frequency.

AUDIO TONE (OPT 1) OUTPUT

30. Total Harmonic Distortion

≤ 0.01%.

31. Audio Tone Amplitude

0 to + 8 dBu adjustable.

32. Audio I.D. "Click" Frequency

Frequency adjustable.

LONG FORM CHECKOUT PROCEDURE

SYNC LOCK

1. Jitter

a. Connect test equipment as in Fig. 5-1.

b. On the 1411 Colour Bars module (TSG11), remove burst from the Colour Bars signal and select Red Field from the TSG-271.

NOTE

To get the step attenuator to provide the range needed for the following tests, remove the signal termination from the waveform monitor, causing the signal to be increased by 6 dB above nominal levels. Setting the step attenuator to read 6, therefore, results in a normal signal level. To attenuate the signal –6 dB, set the step attenuator to read 12. To attenuate the signal +6 dB, set the step attenuator to read 0, etc.

c. Set the step attenuator to read 3 (+ 3 dB).

d. CHECK — with the vectorscope in Vector mode for ≤ 16° of jitter (10 ns).

e. Set the step attenuator to read 9 (–3 dB).

f. CHECK — for ≤ 16° of jitter (10 ns).

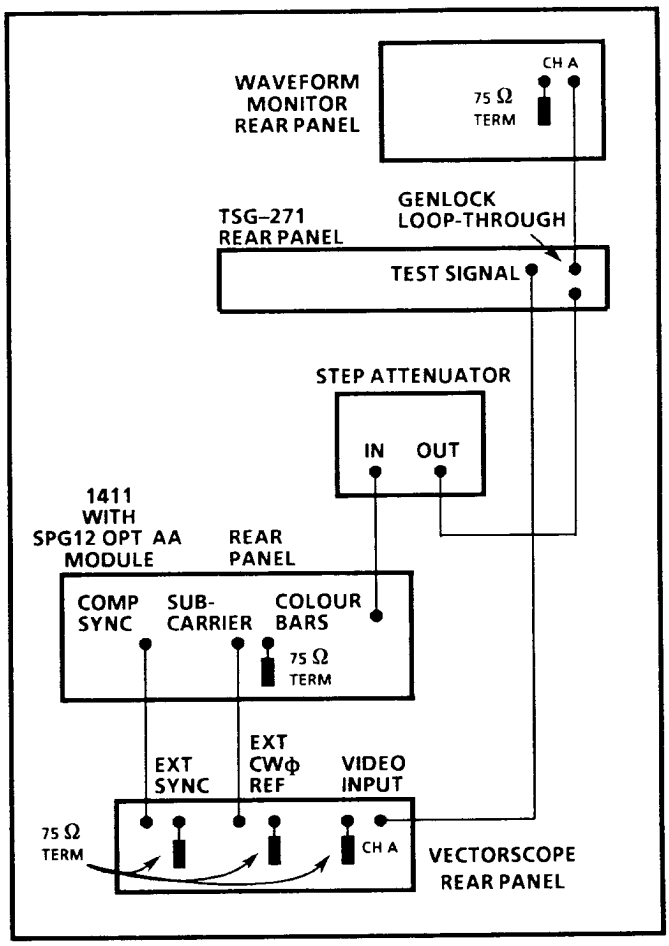


Fig. 5-1. Setup to check Sync Lock and Burst Lock.

BURST LOCK

2. Jitter and Phase Change with Change in Incoming Amplitude

a. On the 1411 Colour Bars module (TSG11), add burst to the signal, and set the vectorscope for differential phase measurements.

b. Set the step attenuator to read 0 (+ 6 dB).

c. CHECK — for typical jitter of ≤ 0.4° and for ≤ 2° Burst Phase change.

d. Set the step attenuator to read 3 (+ 3 dB).

e. CHECK — for typical jitter of ≤ 0.3° and for ≤ 1° Burst Phase change.

f. Set the step attenuator to read 9 (–3 dB).

g. CHECK — for typical jitter of ≤ 0.3° and for ≤ 1° Burst Phase change.

h. Set the step attenuator to read 12 (–6 dB).

i. CHECK — for typical jitter of ≤0.4° and for ≤2° Burst Phase change.

3. Burst Lock Range and Burst Phase Change with Change in Incoming Burst Frequency

NOTE

Burst Lock range and Burst phase change with incoming subcarrier frequency change are factory tested to ± 20 Hz.

a. Replace the Colour Bars signal to the TSG-271 Genlock Input with the 1411 Black Burst signal (SPG12). Bypass the step attenuator and replace the termination on the waveform monitor, or set the step attenuator to read 6 (0 dB).

b. Select +10 Hz offset from the SPG12 Opt AA.

c. CHECK — that the TSG-271 re-acquires lock, and that burst phase has shifted ≤1°.

d. Select a -10 Hz offset from the SPG12 Opt AA.

e. CHECK — that the TSG-271 re-acquires lock, and that burst phase has shifted ≤1°.

f. Remove the 10 Hz offset and switch the vectorscope to Vector mode.

4. Phase Shift with Change in Incoming APL

a. Replace the Black Burst Genlock Input with a variable amplitude Flat Field signal (TSG13).

b. Vary the Flat Field signal between 10 and 90% Peak White.

c. CHECK — with the vectorscope in Diff Phase mode for a burst phase change of ≤1°.

GENLOCK TIMING AND SYNC TIMING

5. Genlock Timing and Sync Timing Range

a. Connect test equipment as in Fig. 5-2.

b. Set the oscilloscope to display both signals at a horizontal rate. (Use Channel 1 as the trigger source.)

c. At the TSG-271 front panel, advance and delay the TEST SIGNAL output as far as it will go (with the coarse genlock timing buttons) in either direction.

d. CHECK — that the test signal advances and delays ≈7 μs relative to the Genlock Input (Black Burst) signal.

e. Connect the TSG-271 SYNC output to the 7A26 in place of the TEST SIGNAL output.

f. At the TSG-271 front panel, advance and delay the SYNC output as far as it will go in either direction.

g. CHECK — that the sync pulse advances and delays ≈3.5 μs relative to the Test Signal output.

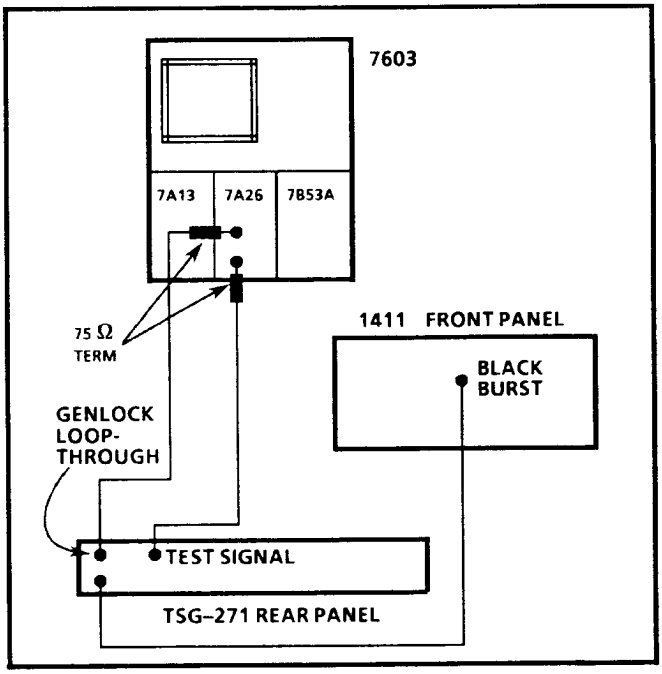


Fig. 5-2. Setup to check Genlock and Sync timing range.

TEST SIGNAL I.D. (OPT. 1), BLACK, AND SUBCARRIER OUTPUTS

6. Blanking Level

a. Connect the TSG-271 TEST SIGNAL output to the 7A26 in place of the SYNC output. (As in Fig. 5-2).

b. Set the oscilloscope to display only the TEST SIGNAL output at a horizontal rate. (Use Channel 2 as the trigger source.)

c. CHECK — that the blanking level is 0 V ±50 mV.

d. CHECK — I.D. output for blanking level within ±5 mV of the TEST SIGNAL output if the instrument has OPT. 1.

e. Connect the BLACK output to the 7A26.

f. CHECK — for a blanking level (horizontal blanking interval) of 0V ±50 mV and that the active video black level is ±5 mV from blanking.

g. CHECK — for glitch amplitudes of <20 mV.

h. Repeat steps (f) and (g) for the other BLACK output.

i. Connect the TSG-271 SUBCARRIER output to the 7A26.

j. CHECK -- that the DC level is 0 V ±100 mV.

7. Luminance Amplitude and Character Amplitude (OPT. 1)

a. Connect test equipment as in Fig. 5-3.

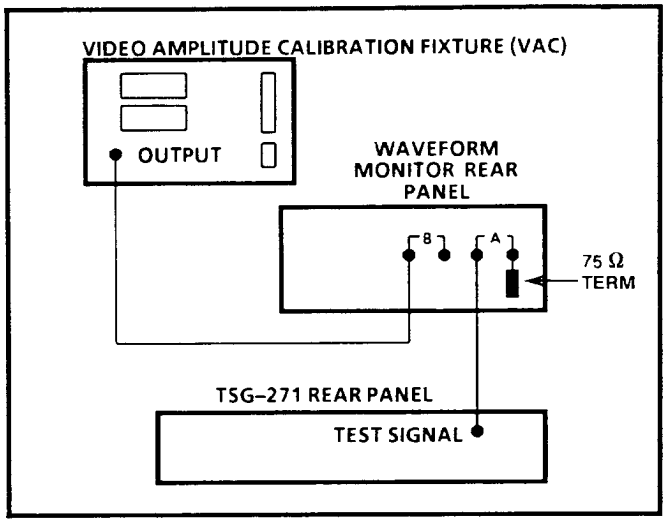


Fig. 5-3. Setup to check TEST SIGNAL output luminance amplitude.

b. Select Luminance Ramp from the TSG-271.

c. Set the waveform monitor to view the Luminance Ramp at a horizontal rate in A-B mode.

d. With the VAC, match the top of the ramp luminance level of the lower waveform with the blanking level of the upper waveform.

e. CHECK — that the ramp amplitude is 700.0 mV ± 7.0 mV (1%).

f. CHECK -- I.D. output to the same specification if the instrument has OPT. 1.

g. CHECK — that the character amplitude is 660.0 mV ± 20.0 mV if the instrument has OPT. 1.

8. Pulse-to-Bar Ratio

a. Select Mod Pulse & Bar from the TSG-271.

b. CHECK — that the inverted pulse is within ±3.5 mV (0.5%) of the bar amplitude.

c. CHECK — I.D. output to the same specification if the instrument has OPT. 1.

9. Ringing

a. Set the waveform monitor to display the 2T pulse at a horizontal rate.

b. CHECK — for ≤7.0 mV (1%) of ringing.

c. CHECK -- I.D. output to the same specification if the instrument has OPT. 1

10. Line Tilt

a. CHECK — that the bar does not tilt more than ±3.5 mV (0.5 %).

b. CHECK -- I.D. output to the same specification if the instrument has OPT. 1.

11. Field Tilt

a. Set the waveform monitor for a two-field display.

b. CHECK — that the field tilt is no more than ±3.5 mV (0.5 %).

c. CHECK -- I.D. output to the same specification if the instrument has OPT. 1.

12. Frequency Response

a. Select Line Sweep from the TSG-271. (To select Line Sweep, close switches 3, 4, and 6 on S156 (Digital board), power down and up, then cycle through the 75% Colour Bars button until Line Sweep is displayed).

b. CHECK — that the Line Sweep amplitude is 700.0 mV ± 7.0 mV (1%) out to 5 MHz.

c. CHECK -- I.D. output to the same specification if the instrument has OPT. 1.

d. Exit Diagnostics mode (open switches 3, 4, and 6 of S156, then power down and up).

13. 5-Step Staircase Linearity Error

a. Select the 5-Step Staircase signal from the TSG-271.

b. Set the waveform monitor to view the 5-Step in differentiated form through the Channel A input at full scale.

c. CHECK — that the difference in relative amplitude of each differentiated step riser (spike) is ≤7 mV (1%).

d. CHECK -- I.D. output to the same specification if the instrument has OPT. 1.

14. Group Delay

a. Select Multipulse from the TSG-271.

b. Set the waveform monitor to view the bottom of the pulses.

c. CHECK — that the sine-wave-like envelope at the base of the pulses is ≤2.8 mV p-to-p (5 ns) for the 20T pulse and ≤5.5 mV p-to-p (5 ns) for the first three 10T pulses.

d. CHECK -- I.D. output to the same specification if the instrument has OPT. 1.

15. Chrominance-to Luminance Delay

a. Select UK ITS 1 from the TSG-271.

b. Set the waveform monitor to view the bottom of the 10T pulse.

c. CHECK — that the sine-wave-like envelope at the base of the 10T pulse is ≤5.5 mV p-to-p (5 ns).

d. CHECK -- I.D. output to the same specification if the instrument has OPT. 1.

16. Diff Phase and Gain

a. Connect test equipment as in Fig. 5-4.

b. Select Mod Ramp from the TSG-271.

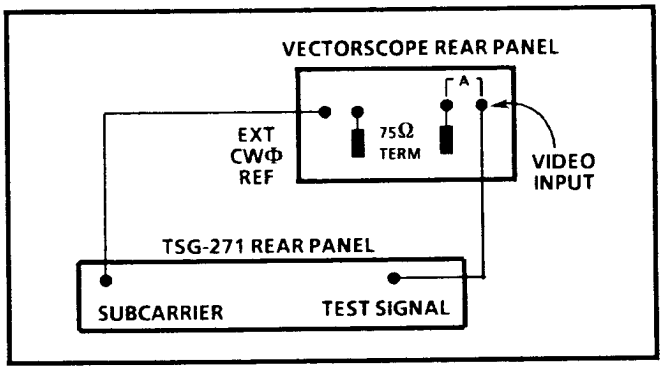


Fig. 5-4. Setup to check TEST SIGNAL output differential gain and phase.

c. Set the vectorscope to measure differential phase of the channel A input.

d. CHECK — for ≤0.3° differential phase.

e. Set the vectorscope to measure differential gain.

f. CHECK — that the Diff Gain of the Mod Ramp is ≤0.6%.

g. CHECK — I.D. output to the same specifications if the instrument has OPT. 1.

17. Phase Matching

a. On the vectorscope, set the TEST SIGNAL burst vector to 180°.

b. Connect the TSG-271 BLACK output to the 521A.

c. CHECK — for a burst vector phase shift of < 2°.

d. Repeat step (c) for the other BLACK output.

e. Connect the I.D. output to the vectorscope if the instrument has OPT. 1.

f. CHECK — for < 2° of phase shift compared to the TEST SIGNAL output.

18. Chrominance-to-Luminance Gain

a. Connect test equipment as in Fig. 5-5.

b. Select the DAC Test signal from the TSG-271. (To select DAC Test signal, close switches 3, 4, and 6 on S156 (Dig. Bd.), power down and up, then cycle through the 75% Colour Bars button until DAC Test is displayed.)

c. Set the 7A13 to view a vertical rate signal at 2 mV/Div, then balance the peak-to-peak detector.

d. CHECK — on the oscilloscope that the chrominance-to-luminance gain (displayed as a square wave on the scope) is

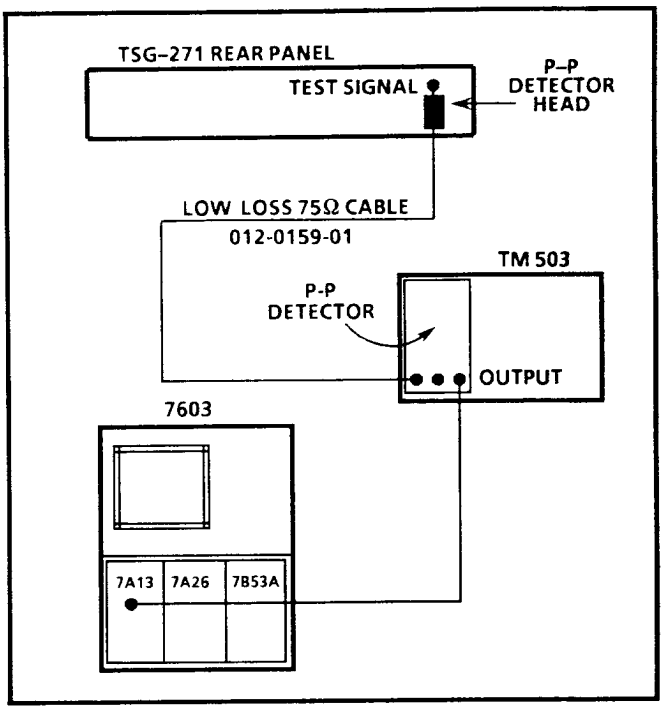


Fig. 5-5. **Setup to check TEST SIGNAL output chrominance-to-luminance gain.**

≤ ±9.8 mV (± 1%). Typical chrominance-to-luminance gain is ±4.9 mV (±0.5%).

e. CHECK — I.D. output to the same specification if the instrument has OPT. 1.

f. Exit Diagnostics mode (open switches 3. 4, and 6 of S156, then power down and up).

BLACK BURST AMPLITUDES

19. Sync and Burst Amplitudes

a. Connect test equipment as in Fig. 5-6. and set the waveform monitor to A-B mode.

b. CHECK — for a sync amplitude of 300.0 mV ±3.0 mV (1%).

c. CHECK — for a burst amplitude of 300.0 mV ±6.0 mV p-p (±2%).

d. Repeat steps (b) and (c) for the other TSG-271 BLACK output.

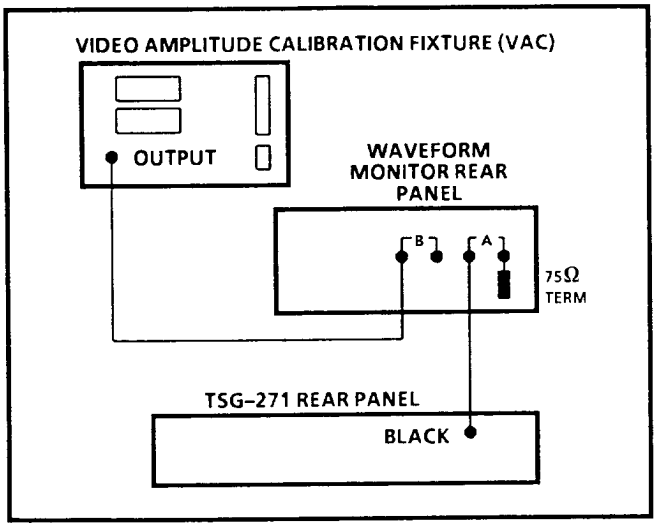


Fig. 5-6. Setup to check BLACK (Black Burst) output.

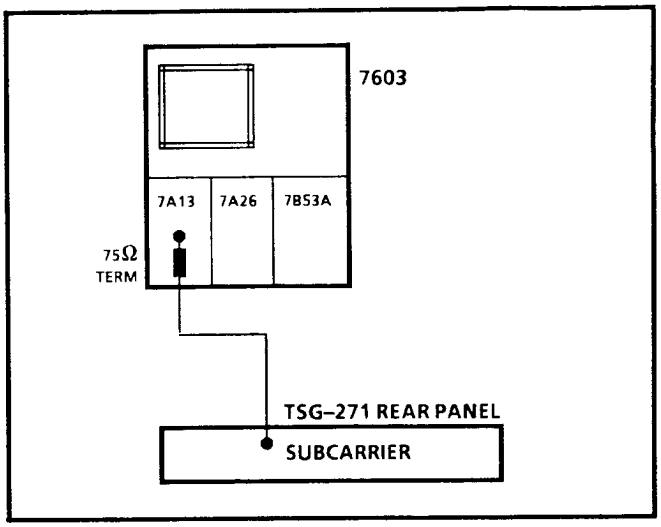


Fig. 5-7. Setup to check Subcarrier output.

SUBCARRIER FREQUENCY AND AMPLITUDE

20. Free-Running Frequency

NOTE

After initial shipment or long storage, allow a two-hour warm up to re-age the crystal. Thereafter, 10 to 20 minutes warm up is sufficient.

a. Connect the TSG-271 SUBCARRIER output to channel A of a DC503 counter. Connect a clock reference, such as WWV, to the DC503 channel B input.

b. Set the DC503 to count a subcarrier rate frequency referenced to channel B.

c. CHECK — that the TSG-271 subcarrier frequency is within ±1 Hz of 4.43361875 MHz.

21. Amplitude and Distortion

a. Connect test equipment as in Fig. 5-7.

b. Set the oscilloscope to display the subcarrier at full bandwidth.

c. CHECK — for 2 volts (±0.2 V) peak-to-peak amplitude and check, by visual inspection, that the sine wave is undistorted.

PULSE OUTPUTS (AMPLITUDE AND RISE TIMES)

22. Sync Amplitude

a. Connect the TSG-271 SYNC output to the 7A13.

b. Set the oscilloscope to display the SYNC output at a line rate.

c. CHECK — that the amplitude of the SYNC output is -2 V ±200 mV.

d. Repeat this step for the other pulse outputs. Use the jumper table in the **Installation** section as a guide for output jumper selection.

23. Rise and Fall Times

a. Set the oscilloscope to display sync transitions.

b. CHECK — that the rise and fall times between 10% and 90% are 250 ns ±50 ns.

c. Repeat this step for the other pulse outputs. Use the jumper table in the **Installation** section as a guide for output jumper selection.

RETURN LOSS

24. GENLOCK LOOP-THROUGH

a. Connect test equipment as in Fig. 5-8.

b. Set the following controls:

7A13:

+ Input	DC
–Input DC	
BW	Full
Volts/Div	50 mV

7603:

Vert Mode	Left
Trig Source	Left

SG503:

Amplitude	500 mV
Frequency	5 MHz

2710:

Starting Freq	0 MHz
Ref Level	–10 dB
Display Mode	10 dB/Div.
Freq Span/Div	1 MHz
Resolution	300 kHz
Video Filter	On

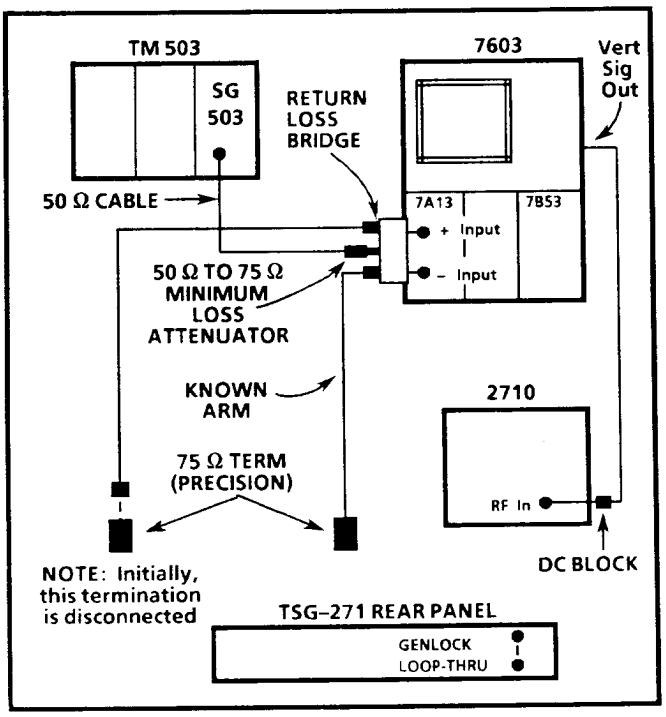


Fig. 5-8. Setup to check Return Loss.

c. With both precision terminators connected, adjust the Return Loss Bridge to null the 5 MHz response displayed on the spectrum analyzer

d. Remove the precision 75Ω terminator from the UNKNOWN cable and connect the terminator to one of the TSG-271 GENLOCK LOOP-THROUGH connectors.

e. Note the height of the 5 MHz peak.

NOTE

All return loss checks will be measured in dB below this 5 MHz reference level.

f. Connect the UNKNOWN cable to the other TSG-271 GENLOCK LOOP-THROUGH connector.

g. CHECK — that the return loss is ≥40 dB (4 major divisions) as you vary the SG503 frequency between 5 MHz and 500 KHz.

h. Switch off the TSG-271 power and repeat step (g).

25. TEST SIGNAL Output

a. Switch off the TSG-271 and disable its output by moving jumper J440 (Analogue board) to Pins 2-3.

b. Connect the UNKNOWN cable to the TEST SIGNAL output and switch on the TSG-271.

c. CHECK — that the return loss is ≥36 dB as you vary the SG503 frequency between 5 MHz and 500 KHz.

d. CHECK — I.D. output to the same specification if the instrument has OPT. 1.

26. BLACK BURST Output

a. Connect the UNKNOWN cable to the top BLACK output.

b. CHECK — that the return loss is ≥36 dB as you vary the SG503 frequency between 5 MHz and 500 kHz.

c. Repeat step (b) for the other BLACK output.

d. Return J440 (Analogue board) to Pins 1–2.

27. PULSE Outputs

Connect the UNKNOWN cable to each of the pulse outputs. For each output, check that the return loss is ≥30 dB as you vary the SG503 between 5 MHz and 500 kHz.

a. Connect the UNKNOWN cable to the SYNC output.

b. CHECK — that the return loss is ≥30 dB as you vary the SG503 frequency between 5 MHz and 500 kHz.

c. Repeat this step for the other pulse outputs. Use the jumper table in the **Installation** section as a guide for output jumper selection.

28. SUBCARRIER Output

a. Move J939 (Digital board) to Pins 2–3.

b. Connect the UNKNOWN cable to the SUBCARRIER output.

c. CHECK — that the return loss is ≥30 dB as you vary the SG503 frequency between 4.43 MHz and 500 kHz.

d. Return J939 to Pins 1–2.

29. SUBCARRIER Harmonics

a. Connect the equipment as in Fig. 5-9.

b. CHECK — that the harmonics are ≥40 dB down from the subcarrier frequency.

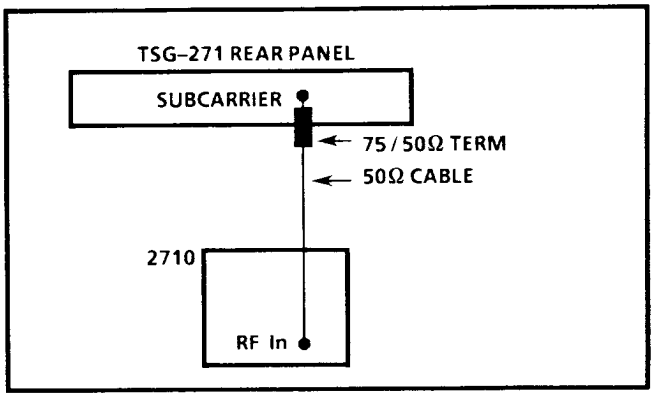


Fig. 5-9. Setup to check Subcarrier harmonics.

AUDIO TONE (OPT. 1) OUTPUT

30. Total Harmonic Distortion (THD)

a. Connect the equipment as in Fig. 5-10, and place a 150Ω or 600Ω resistor (to represent the impedance of your system) across the analyzer + and – terminals.

b. Set the distortion analyzer to measure THD (Total Harmonic Distortion).

c. CHECK — that the THD is no more than 0.01%.

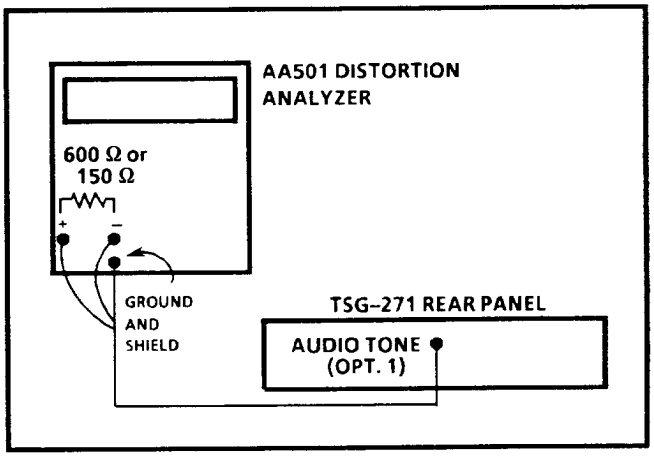


Fig. 5-10. Setup to check amplitude and THD of Audio Tone (OPT. 1) output.

31. Audio Tone Amplitude

a. CHECK — by adjusting R507 (Option board), that the audio tone amplitude can be varied from 0 to +8 dBu.

32. Audio I.D. "Click" Frequency

a. Move J643 (Option board) to Pins 2–3 (Enables click).

b. CHECK — by adjusting R740 (Option board), that the bar gauge on the AA501 will change (indicating the "click" circuitry is working).

c. Return J643 (Option board) to Pins 1–2 (Disables click).

SHORT FORM CALIBRATION PROCEDURES

POWER SUPPLY (S/N B030525 AND UP)

1. +5 V and Current Limiting Circuit

NOTE

Adjustment of the Power Supply should be done only if the supply is out of tolerance. This is not a part of normal maintenance.

Adjust R510 for +5 V ±100 mV.

Adjust R415 for no current limiting at 90 V line input level.

SUBCARRIER OUTPUT

2. SUBCARRIER Output DC Level and Gain

Adjust R394 (Analogue board, may be silkscreened R393) for a DC level of 0 V ±100 mV.

Adjust R288 (Analogue board) for signal amplitude of 2 V ±0.2 V p-to-p.

3. SUBCARRIER Output Frequency

S/N B031176 and Up

Adjust C19 (Crystal Oven board) for 4.43361875 MHz ±1 Hz.

S/N B010100-B031175

Adjust C387 (Digital board) for 4.43361875 MHz ±1 Hz.

4. SUBCARRIER Output Frequency Adjustment After Crystal Replacement (S/N B010100-B031175)

Move J391 for coarse adjustment and adjust C387 (Digital board) for 4.43361875 MHz ±1 Hz.

TEST SIGNAL BLACK, AND I.D. (OPT. 1) VIDEO OUTPUTS

5. BLACK Output DC Level

S/N B030731 and Up

Adjust R726 (Analogue board) to match sync and burst blanking within ±5 mV of inserted blanking.

S/N B010100-B030730

Adjust R322 (Analogue board) to match sync and burst blanking within ±5 mV of inserted blanking.

6. TEST SIGNAL Output DC Level

NOTE

The following adjustments (Steps 6, 7, 8, and 9) should be done as a set. Repeat the adjustments in sequence until the best overall response is obtained.

Adjust R832 (Analogue board) for a blanking level of 0 V ±50 mV.

7. I.D. (OPT. 1) Output DC Level

Adjust R578 (Option board) to match the blanking levels of the inserted character I.D. and the Option board Test Signal output.

8. TEST SIGNAL Output Luminance Gain

Adjust R952 (Analogue board) for 700.0 mV ±7.0 mV (1%) of Luminance Ramp from blanking.

9. BLACK Output Sync Amplitude

Adjust R625 (Analogue board) for 300.0 mV ±3.0 mV (1%) of sync amplitude.

Repeat steps 6-9 as necessary to meet all specs.

10. I.D. (OPT. 1) Output Luminance Gain

Adjust R935 (Option board) for 700.0 mV ±7.0 mV (1%) of Luminance Ramp from blanking.

11. TEST SIGNAL Output Coarse SinX/X

(Serial Numbers B010100-B030836) Adjust C942 (Analogue board) for maximum counterclockwise movement of the burst vector.

Adjust C838 (Analogue board) for 300.0 mV ±3.0 mV (1%) of burst amplitude.

12. TEST SIGNAL Output Frequency Response

NOTE

The following adjustments (Steps 12, 13, and 14) should be done as a set. Repeat the adjustments in sequence until the best overall response is obtained.

Adjust L450, L550, L551, L650, and L750 (Analogue board, Line Sweep signal) for flat response and amplitude of 700.0 mV ±7.0 mV (1%) out to 5 MHz.

13. TEST SIGNAL Output Group Delay

Adjust L450 and L550 (Analogue board, Multipulse signal) for flat response and distortions of <2.8 mV (5 ns) on the1 MHz, 2 MHz, 4 MHz, and 4.8 MHz 10T pulses.

14. TEST SIGNAL Output Chrominance-Luminance Gain

Adjust C838 (Analogue board, DAC Test signal) to match DC levels of the 500 KHz and 4.43 MHz signals to within 5 mV of each other.

Repeat steps 12-14 as necessary to meet all specs.

15. I.D. (OPT. 1) Output Chrominance-Luminance Gain

NOTE

The following adjustments (Steps 15, 16, 17, and 18) should be done as a set. Repeat the adjustments in sequence until the best overall response is obtained.

Adjust C840 (Option board, DAC Test signal) to match DC levels of the 500 KHz and 4.43 MHz signals to within 5 mV of each other.

16. I.D. (OPT. 1) Output Phase Matching

Adjust C945 (Option board, Multipulse signal) to match phasing of the I.D. (OPT. 1) output with the TEST SIGNAL output.

17. I.D. (OPT. 1) Output Group Delay

Adjust C840 (Option board) for distortions <2.8 mV (5 ns) on the bottom of the 20T pulse and <5.5 mV (5 ns) on the 1 MHz, 2 MHz, 4 MHz, and 4.8 MHz 10T pulses.

NOTE

If adjusting C840 does not bring the I.D. group delay into spec, recheck the TEST SIGNAL output response for correctness.

18. I.D. (OPT. 1) Output Frequency Response

Adjust C840 (Option board, Line Sweep signal) for signal amplitude of 700.0 mV ±7.0 mV (1%) out to 5 MHz.

NOTE

If adjusting C840 does not bring the I.D. group delay into spec, recheck the TEST SIGNAL output response for correctness.

Repeat steps 15-18 as necessary to meet all specs.

19. BLACK Output Phasing and Burst Amplitude

Adjust C633 (Analogue board) to match phasing of the BLACK output with the TEST SIGNAL output.

Adjust C630 (Analogue board) for burst amplitude of 300.0 mV ±3.0 mV (1%).

Repeat both adjustments as necessary to meet each spec.

20. Sync Timing Range (Fine)

Adjust R469 (Digital board) for 1.25 V at the junction of R470 and R471.

Check as the Sync Timing Fine Advance and Delay buttons are pushed, that the total range in either direction is greater than 50°, but less than 70°.

I.D. AND AUDIO TONE (OPT. 1) OUTPUTS

21. Character Shaping

Adjust L788 (Option board) so that the leading and trailing edges of the character pulse are at approximately the same amplitude.

22. AUDIO TONE (OPT. 1) Output Level

Adjust R505 (Option board) to obtain the desired output level. (Factory setting is +8 dBu.)

23. AUDIO TONE (OPT. 1) Output Click Frequency

Adjust R740 (Option Board) for the desired click frequency.

LONG FORM CALIBRATION PROCEDURES

POWER SUPPLY (S/N B030525 AND UP)

1. +5 V and Current Limiting Circuit

NOTE

Adjustment of the Power Supply should be done only if the supply is out of tolerance. This is not a part of normal maintenance.

a. Set the Variac to apply 90 V as the input voltage. Set R415 (current limit) 1/4 turn from its counterclockwise limit.

b. CHECK — the +5 V test point on the Power Supply board for +5 V ±100 mV.

c. ADJUST — R510 if necessary for +5 V ±100 mV.

d. Set R415 (current limit) to its clockwise limit.

e. CHECK — to see if the LED (DS670) is flashing or not. If the LED is flashing, then the supply is current limiting. If the LED is not flashing, go to part g.

f. ADJUST — R415 slowly counterclockwise until the supply stops current limiting (the LED will stop flashing).

g. ADJUST — R415 counterclockwise 1/4 turn from the point where the LED stops flashing, or 1/4 turn counterclockwise from the clockwise stop if the LED was not flashing in part e.

h. CHECK — that the +5 V test point is still at +5 V ±100 mV.

SUBCARRIER OUTPUT

NOTE

Before adjusting the oscillator frequency, allow 20 minutes for instrument warm up. Then do the following oven checkout: (1) Check that the Cold Oven LED (next to oven) is off. (2) With J180 (Digital board) in the 2-3 (operating) position, check that the voltage between J180 and ground is no more than 10 mV.

2. SUBCARRIER Output DC Level and Gain

a. Connect test equipment as in Fig. 5-11.

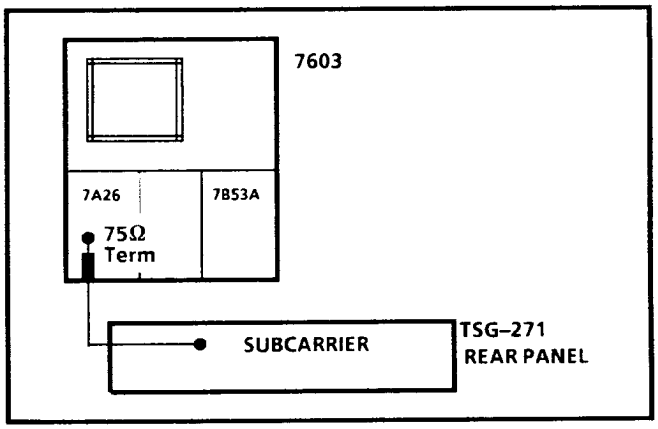


Fig. 5-11. Setup to adjust SUBCARRIER DC level and gain.

b. Move J939 and J523 (Digital board) to pins 2-3.

c. ADJUST — R394 (Analogue board, may be silkscreened R393) for a DC level of 0 V ±100 mV.

d. Move J939 and J523 back to pins 1-2.

e. ADJUST — R288 (Analogue board) for 2 V ±0.2 V p-to-p of sine wave amplitude.

3. **SUBCARRIER Output Frequency**

S/N B031176 and Up

a. Disconnect all cables and terminations from the TSG-271.

b. Connect test equipment as in Fig. 5-12.

c. Set the DC503 to count a subcarrier rate frequency referenced to channel B.

d. ADJUST — C19 (Crystal Oven board) for a subcarrier frequency of 4.43361875 MHz ±1 Hz.

S/N B010100-B031175

a. Disconnect all cables and terminations from the TSG-271.

b. Connect test equipment as in Fig. 5-12.

c. Set the DC503 to count a subcarrier rate frequency referenced to channel B.

d. ADJUST — C387 (Digital board) for a subcarrier frequency of 4.43361875 MHz ±1 Hz.

4. **SUBCARRIER Output Frequency Adjustment After Crystal Replacement (S/N B010100-B031175)**

NOTE

Only do this procedure if the crystal has been replaced or if C387 has insufficient adjustment range to bring the crystal frequency within spec.

a. Disconnect all cables and terminations from the TSG-271.

b. Connect test equipment as in Fig. 5-12.

c. Using the visual aid in the jumper table (or in Schematic 4), move J391 to each of the four possible positions to obtain the Subcarrier output closest to 4.43361875 MHz.

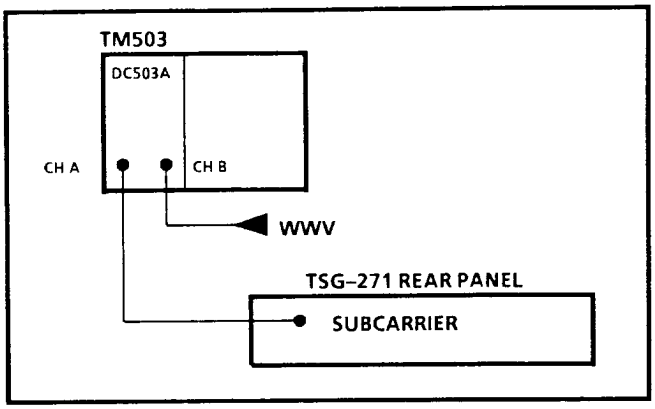


Fig. 5-12. Setup to adjust SUBCARRIER output frequency.

d. ADJUST — C387 (Digital board) for a subcarrier frequency of 4.43361875 MHz ±1 Hz.

TEST SIGNAL, BLACK, & I.D. (OPT. 1) VIDEO OUTPUTS

5. **BLACK Output DC Level**

S/N B030731 and Up

a. Connect test equipment as in Fig. 5-13.

b. ADJUST — R726 (Analogue board) to match sync and burst blanking within ±5 mV of inserted blanking.

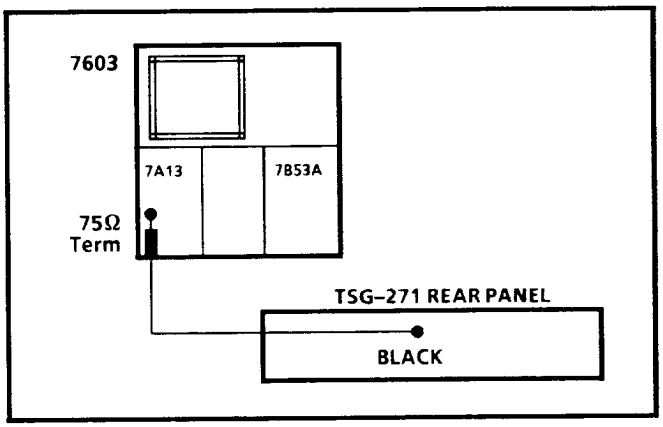


Fig. 5-13. Setup to adjust BLACK output blanking level.

S/N B010100-B030730

a. Connect test equipment as in Fig. 5-13.

b. ADJUST — R322 (Analogue board) to match sync and burst blanking within ±5 mV of inserted blanking.

6. TEST SIGNAL Output DC Level

NOTE

The following four adjustments (Steps 6, 7, 8, and 9) should be done as a set. Repeat the adjustments in sequence until the best overall response is obtained.

a. Connect the TSG-271 TEST SIGNAL output to the + input of the 7A13.

b. ADJUST — R832 (Analogue board) for a blanking level of 0 V ±50 mV.

7. I.D. (OPT. 1) Output DC Level

a. Connect the TSG-271 I.D. (OPT. 1) output to the + input of the 7A13.

b. Select 0 V Flat Field from the TSG-271.

c. ADJUST — R578 (Option board) to match the blanking levels of the inserted character I.D. and the Option board Test Signal output.

8. TEST SIGNAL Output Luminance Gain

a. Connect test equipment as in Fig. 5-14.

b. Select Luminance Ramp from the TSG-271 and set the waveform monitor for A-B measurements.

c. ADJUST — R952 (Analogue board) for 700 mV ±7.0 mV (1%) of Luminance Ramp from blanking level.

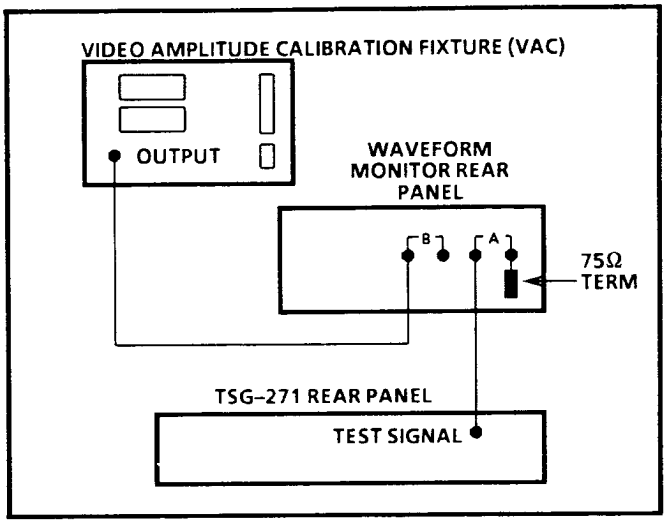


Fig. 5-14. Setup to adjust TEST SIGNAL output luminance amplitude.

9. BLACK Output Sync Amplitude

a. Connect one of the TSG-271 BLACK outputs to the waveform monitor channel A input.

b. ADJUST — R625 (Analogue board) for 300 mV ±3.0 mV (1%) of sync amplitude.

c. Repeat steps 6-9 as necessary to meet all specs.

10. I.D. (OPT. 1) Output Luminance Gain

a. Connect the TSG-271 I.D. (OPT. 1) output to the waveform monitor channel A input.

b. ADJUST — R935 (Option board) for 700 mV ±7.0 mV (1%) of Luminance Ramp from blanking level.

11. TEST SIGNAL Output Coarse SinX/X

a. Connect test equipment as in Fig. 5-15.

b. ADJUST — (Serial Numbers B010100-B030836) C942 (Analogue board) for maximum counterclockwise movement of the burst vector on the vectorscope.

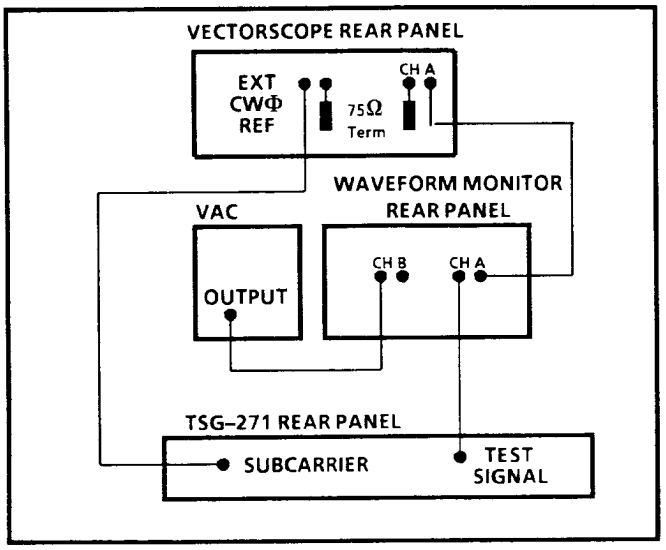


Fig. 5-15. Setup to adjust TEST SIGNAL output coarse SinX/X.

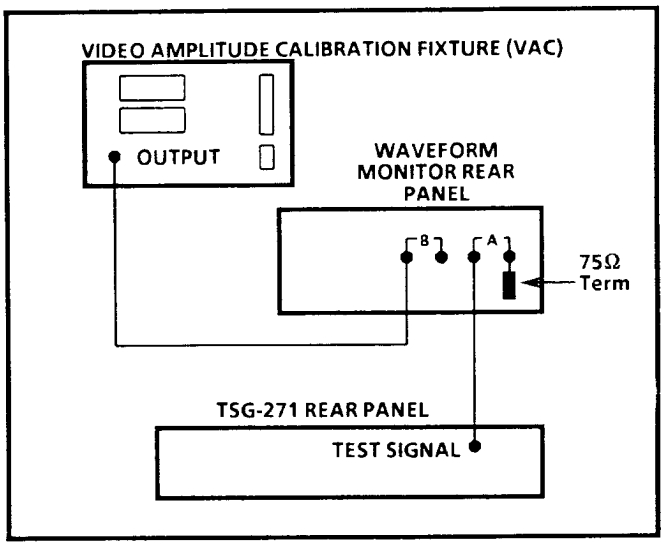


Fig. 5-16. Setup to adjust TEST SIGNAL output frequency response.

c. ADJUST — C838 (Analogue board) for 300 mV ±3.0 mV (1%) of burst amplitude with the waveform monitor in A–B mode.

12. TEST SIGNAL Output Frequency Response

NOTE

The following adjustments (Steps 12, 13, and 14) should be done as a set. Repeat the adjustments in sequence until the best overall response is obtained.

a. Connect test equipment as in Fig. 5-16.

b. Select Line Sweep from the TSG–271. (To select Line Sweep, close switches 3, 4, and 6 on S156 (Digital board), power down and up, then cycle through the 75% Colour Bars button until Line Sweep is displayed.)

c. ADJUST — L450, L550, L551, L650, and L750 (Analogue board) for as flat as possible response and amplitude of 700 mV ±7.0 mV (1%) out to 5 MHz.

13. TEST SIGNAL Output Group Delay

a. Select Multipulse from the TSG–271 75% Colour Bars switch, and set the VAC to read 000.0 mV.

b. ADJUST — L450 and L550 (Analogue board) for as flat as possible response and distortions of <2.8 mV (5 ns) on the 20T pulse and <5.5 mV (5 ns) on the 1 MHz, 2 MHz, 4 MHz, and 4.8 MHz 10T pulses.

14. TEST SIGNAL Output Chrominance-Luminance Gain

a. Connect test equipment as in Fig. 5-17.

b. Select the DAC Test signal from the TSG–271 75% Colour Bars switch and move J651 (Digital board) to pins 2–3.

c. ADJUST — C838 (Analogue board) to match the DC levels of the 500 kHz and 4.43 MHz signals to within 5 mV of each other.

d. Repeat steps 12–14 as necessary to meet all specs.

e. Exit Diagnostics mode (open switches 3, 4, and 6 of S156, then power down and up).

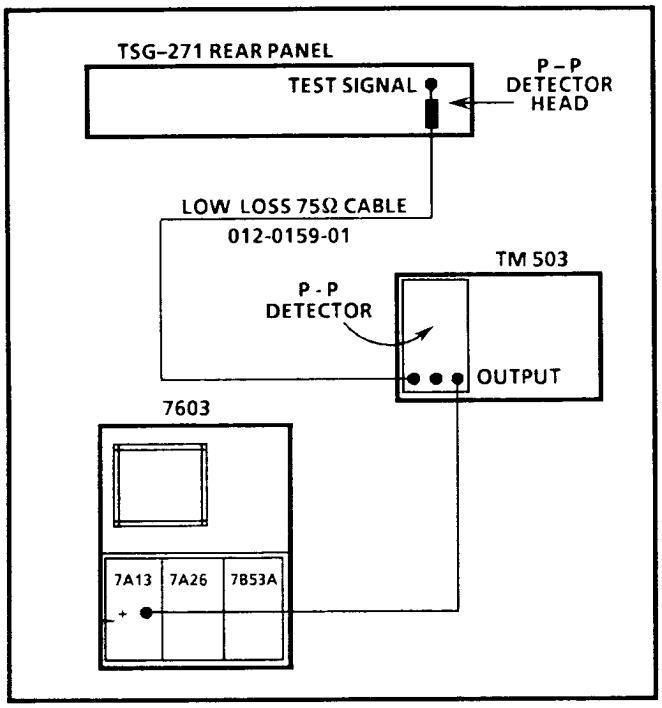


Fig. 5-17. Setup to adjust TEST SIGNAL output chrominance-luminance gain.

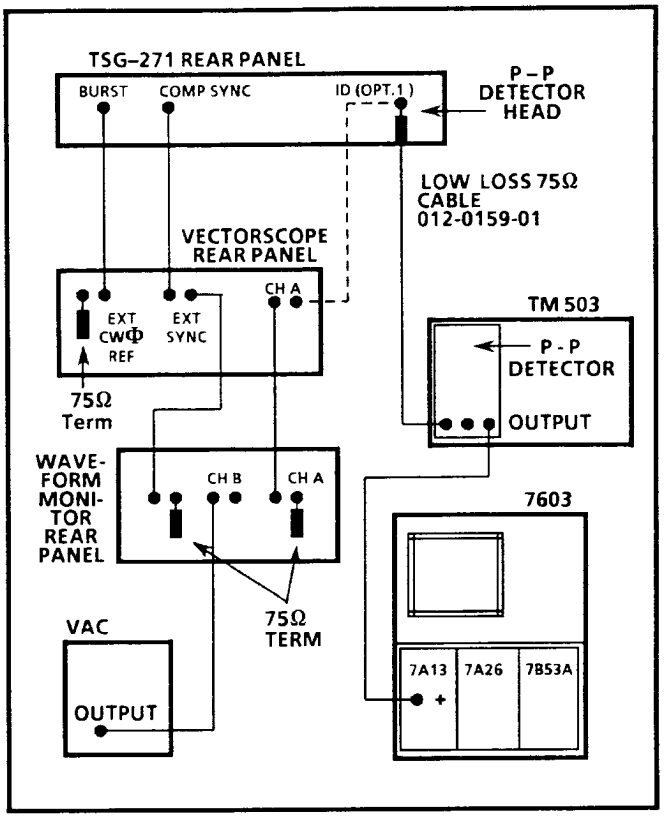


Fig. 5-18. Setup to adjust I.D. (OPT. 1) output chrominance-luminance gain.

15. I.D. (OPT. 1) Output Chrominance-Luminance Gain

NOTE

The following adjustments (Steps 15, 16, 17, and 18) should be done as a set. Repeat the adjustments in sequence until the best overall response is obtained.

a. Connect test equipment as in Fig. 5-18.

b. Select the DAC Test signal from the TSG–271. (To select DAC Test, close switches 3, 4, and 6 on S156 (Digital board), power down and up, then cycle through the 75% Colour Bars button until DAC Test is displayed.)

c. ADJUST — C840 (Option board) to match the DC levels of the 500 kHz and 4.43 MHz signals within 5 mV of each other.

16. I.D. (OPT. 1) Output Phase Matching

a. Disconnect the P-P Detector head, and connect the TSG–271 TEST SIGNAL output to channel A of the vectorscope.

b. Select Multipulse from the TSG–271 75% Colour Bars switch, and set the burst vector to 180°.

c. Connect the TSG–271 I.D. (OPT. 1) output to channel A of the vectorscope.

d. ADJUST — C945 (Option board) so that the burst vector is at 180°.

17. I.D. (OPT. 1) Output Group Delay

a. Set the VAC to 000.0 mV (VAC output connected to channel B of the waveform monitor).

b. ADJUST — C840 (Option board), if necessary, for distortions of <2.8 mV (5 ns) on the bottom of the 20T pulse and <5.5 mV (5 ns) on the 1 MHz, 2 MHz, 4 MHz, and 4.8 MHz 10T pulses.

NOTE

If adjusting C840 does not bring the I.D. group delay into spec, recheck the TEST SIGNAL output response for correctness.

18. I.D. (OPT. 1) Output Frequency Response

a. Select Line Sweep from the TSG-271 75% Colour Bars switch and set the VAC to 700.0 mV. (Ensure that the vectorscope Burst Φ Ref is Ext.)

b. ADJUST — C840 (Option board), if necessary, for 700 mV amplitude ±7.0 mV (1%) out to 5 MHz.

NOTE

If adjusting C840 does not bring the I.D. group delay into spec, recheck the TEST SIGNAL output response for correctness.

c. Repeat steps 15–18 as necessary to meet all specs.

d. Exit Diagnostics mode (open switches 3, 4, and 6 of S156, then power down and up).

19. BLACK Output Phasing and Amplitude

a. Connect the equipment as shown in Fig. 5-19.

b. At the vectorscope, set the burst vector of the TEST SIGNAL output to 180°.

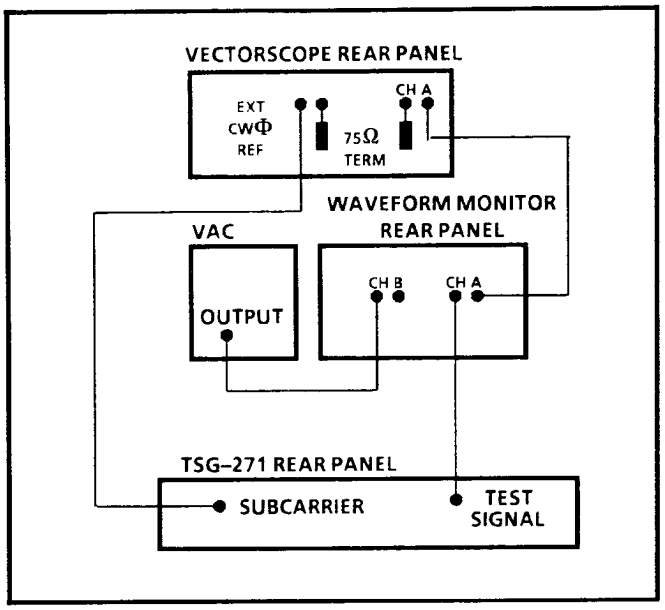


Fig. 5-19. Setup to adjust BLACK output phasing and amplitude.

c. Connect the top BLACK output to the vectorscope channel A input.

d. ADJUST — C633 (Analogue board) to match the burst vector to 180°.

e. ADJUST — C630 (Analogue board) for 300 mV of burst amplitude ±3.0 mV (1%) on the 1485.

f. Repeat both adjustments as necessary to meet each spec.

20. Sync Timing Range (Fine)

a. Connect the DM501A to the point where R470 and R471 (Digital board) join.

b. ADJUST — R469 (Digital board) for 1.25 V at the junction of the two resistors.

c. CHECK -- as the Sync Timing Fine Advance and Delay buttons are pushed, that the total range in either direction is greater than 50°, but less than 70°.

I.D. AND AUDIO TONE (OPT. 1) OUTPUTS

21. Character Shaping

a. Connect the TSG-271 I.D. (OPT. 1) output to the waveform monitor channel A input.

b. ADJUST — L788 (Option board) so that the leading and trailing edges of the Character pulse are at approximately the same amplitude.

22. AUDIO TONE (OPT. 1) Output Level

a. Connect the equipment as in Fig. 5-20.

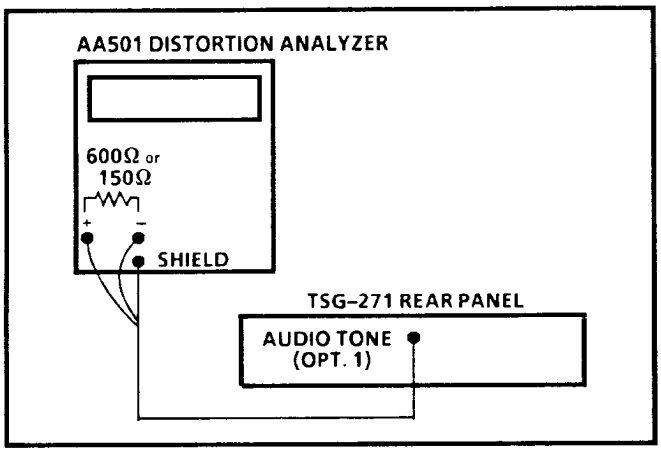


Fig. 5-20. Setup to adjust AUDIO TONE (OPT. 1) output level.

b. Set the following controls:

AA501

Input Level Range	Auto range
dBm Switch	In
Level Switch	In
All Filter Switches	Out

c. Attach a load resistor (either 150Ω or 600Ω, to represent the load of your system) across the AA501 Audio Input pins.

d. Adjust — R505 (Option Board) to obtain the desired dB output. (Factory setting is +8 dBu.)

23. AUDIO TONE (OPT. 1) Output Click Frequency

a. Move J643 (Option board) to pins 2-3.

b. Adjust — R740 (Option Board) for the desired click frequency.

c. Return J643 (Option board) to pins 1-2.

Maintenance

SECTION 6
MAINTENANCE

DIAGNOSTICS

Overview

The TSG–271 diagnostics are split into two levels, the Power-up diagnostics and the User diagnostics. The Power-up diagnostics are executed each time the instrument is powered up. If the tests are successfully passed then the software continues on to normal instrument operation (i.e., front-panel service routines and genlocking). If the tests are failed then the software turns on all front-panel LEDs and continues running the diagnostic routines.

Power-up Diagnostics

The Power-up diagnostics is a set of routines that the processor runs to verify that the μP kernel is functional. It verifies that the microprocessor RAM (U340, Schematic 2), the microprocessor EPROM (U333, Schematic 2), the NVRAM (U345, Schematic 2, RAM portion only), the Genlock Sample RAM (U503), and Arctangent EPROM (U122) are functional.

User Diagnostics

To enter the User diagnostics mode, set switch 6 of S156 (Schematic 1) to zero position (ground), then reset the μP by switching power off and on. If switch 6 is not set to zero before resetting the μP, the μP will proceed directly with initialization and power up diagnostics and then start normal instrument operation.

When the User diagnostics mode is selected (switch 6 is set to zero) switches 1 through 5 can be used to select the desired diagnostic (see Tables 6-1 and 6-2).

The User diagnostics can be classified into two types: pass/fail and interactive. The pass/fail test requires the User to simply set the diagnostic switch, in some cases press front-panel buttons, and watch the front-panel LEDs for an indication of pass or fail. The pass/fail tests are the PROM checksum test, μP RAM test, NVRAM test, Sample RAM test, and the NVROM test. A complete explanation of these tests will be given a little later.

The interactive tests exercise the TSG–271's hardware to allow the User to verify and troubleshoot specific features of the instrument. Both interactive and pass/fail tests are explained in detail in Tables 6-1 and 6-2.

Table 6-1
Power-Up Diagnostics

SWITCH SETTING 654321	TEST	TEST FUNCTION	PASS/FAIL INDICATION
N/A	System PROM Checksum Test (U333, Schematic 1)	Computes the checksum of the System PROM and compares the value with one that has been written in the PROM. During power up diagnostics this test is run one time.	Lights the 75% BARS LED on error.
N/A	μP RAM Read/Write Test (U340, Schematic 2)	Writes to and then reads from all μP RAM locations and checks for a match between data written to and read from μP RAM. During power up diagnostics this same test is run one time.	Lights the 100% BARS LED on error.
N/A	NVRAM Read/Write Test (U345, Schematic 2)	Writes to and then reads from all NVRAM locations and checks for a match between data written to and read from NVRAM. During power up diagnostics this test is run one time.	Lights the PLUGE LED on error.
N/A	Sample RAM Read/Write Test (U503, Schematic 3)	Writes to and then reads from all Sample RAM locations and checks for a match between data written to and read from Sample RAM. During power up diagnostics this test is run one time.	Lights the CONVERGENCE LED on error.
N/A	Arctan PROM Checksum Test (U122, Schematic 2)	Computes the checksum of the Arctangent PROM and compares the value with one that has been written in the PROM. During power up diagnostics this test is run one time.	Lights the PULSE AND BARS LED on error.

Table 6-2
User Diagnostics

SWITCH SETTING 654321	TEST	TEST FUNCTION	PASS/FAIL INDICATION
011111	System PROM Checksum Test (U333, Schematic 2)	Computes the checksum of the System PROM and compares the value with one that has been written in the PROM. This test is run continuously.	Lights the 75% BARS LED on error.
011110	μP RAM (U340, Schematic 2)	Writes to and then reads from all μP RAM locations and checks for a match between data written to and read from μP RAM. This test is run continuously.	Lights the 100% BARS LED on error.
011101	NVRAM (U345, Schematic 2)	Writes to and then reads from all NVRAM locations and checks for a match between data written to and read from NVRAM. This test is run continuously.	Lights the PLUGE LED on error.
011100	Sample RAM (U503, Schematic 3)	Writes to and then reads from all Sample RAM locations and checks for a match between data written to and read from Sample RAM. This test is run continuously.	Lights the CONVERGENCE LED on error.
011011	Port Test	Counts from 0–255 on the I/O ports of the microprocessor system. This is the ED0-ED7 bus.	For checking the data and load paths connected to the I/O ports.
011010	VCO DAC Test (U176, Schematic 4)	Generates a field rate ramp at the VCO DAC. place probe at U270, pin 1.	For checking the VCO DAC and integrator.
011001	Sampler Test 1 (U370, Schematic 4)	Acquires a sample of sync and burst via the genlock input and then reconstructs the sampled sync and burst at equivalent time through the Sync Fine Timing DAC. Place probe at U270, pin 1.	For checking Genlock Acquisition circuitry.
011000	Sampler Test 2	Sets up the Genlock Acquisition system to sample incoming video continuously for checking acquisition timing.	For checking Genlock Acquisition circuitry.
010111	Front-panel LED Test	Turns on all the front-panel LEDs.	For checking brightness consistency.
010110	Software Reset Test (U240, U245, Schematic 2)	Sets up the CTCs (Counter Timer Chips) allowing them to pull the NMI line on the μP low. This causes the μP to start executing genlock code. The test procedure is to have the genlock input connected to the instrument, select the Software Reset Test while in diagnostics and see that the instrument locks to the genlock source.	Tests the software reset function.

Table 6-2 (cont.)
User Diagnostics

SWITCH SETTING 654321	TEST	TEST FUNCTION	PASS/FAIL INDICATION
010101	Hardware Reset Test	First set J223 (Schematic 2) to the 1–2 position and then select the hardware reset test. Check J223 pin 1 with a scope and verify that there is a 1500 ms square wave.	Tests the hardware reset circuitry.
010100	Option Board Test	When this test is running all locations of the I.D. RAM (U330, Schematic 12) are sequentially written to.	This test exercises the circuitry that writes to the character I.D. board.
010011	DAC Test Signal Select	When this test is selected, pressing the 75% BARS switch cycles among three DAC test signals: the Y–C signal (1/2 field of sine waves followed by a 1/2 field of subcarrier rate sine waves), the multiburst signal, and the line sweep signal, and the line sweep signal at the 100% BARS test signal output. In addition, the 100% BARS switch cycles the test signal output between the Colour Bars without Burst and the 25 Hz sine wave signal. All other front-panel switches are ignored.	For testing output DAC and calibrating output filter and output amplifier.
010010	NVROM Test (U345, Schematic 2)	Tests the ROM portions of the Non-volatile RAM. Since writing to the ROM portion of the NVRAM is destructive, a key sequence is required to run the test. First set the diag-port switch to the NVROM test and switch power on and off. Now press the 75% BARS switch until the 75% BARS LED lights. Next press the APL switch until the APL LED lights. The last step is to press the 75% BARS switch until the 75% BARS LED lights.	The Select Test Signal LED will light if the NVROM has passed the test and the Set Sync Timing LED will light on a failure.
010001	Timing Initialization	Since this initialization writes to the NVROM portion of the NVRAM, the same key sequence as the NVROM test is used to run the timing initialization.	Initializes the NVRAM, setting the Genlock timings to mid-range.

Table 6-2 (cont.)
User Diagnostics

SWITCH SETTING 654321	TEST	TEST FUNCTION	PASS/FAIL INDICATION
010000	CTC Test	This test sets up the Counter Timer Chips CTCs) U240 and U245 as timers and checks to see that they can generate interrupts. Each of the CTC's four sections are set up to interrupt after 4096 processor clock cycles. If any of the CTC's sections have not interrupted within the allocated time, then an error is logged and the test continues. An error in U240 is indicated by lighting the MULTIBURST LED, and in U245, the 5-STEP STAIRCASE LED is lighted.	An error in U240 is indicated by lighting the MULTIBURST LED, and in U245, the 5-STEP STAIRCASE LED is lighted.
001111	ARCTAN PROM Test (U122, Schematic 2)	Computes the checksum of the Arctangent PROM and compares the value with one that has been written in the PROM. This test is run continuously.	Lights the PULSE AND BAR LED on error.
000000	Cycle Test	Continuously cycles through the EPROM, μPRAM, NVRAM, Sample RAM tests and then turns on all the LEDs. On failure the error is logged by turning on the appropriate front-panel LED.	

Replaceable Electrical Parts

Section 7
Replaceable Electrical Parts

This section contains a list of the components that are replaceable for the TSG-271. Use this list to identify and order replacement parts. There is a separate Replaceable Electrical Parts list for each instrument.

Parts Ordering Information

Replacement parts are available from or through your local Tektronix, Inc., Field Office or representative.

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available and to give you the benefit of the latest circuit improvements. Therefore, when ordering parts, it is important to include the following information in your order.

- Part number
- Instrument type or model number
- Instrument serial number
- Instrument modification number, if applicable

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc., 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.

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 replaceable parts.

Cross Index–Mfr. Code Number to Manufacturer

The Mfg. Code Number to Manufacturer Cross Index for the electrical parts list is located immediately after this page. The cross index provides codes, names, and addresses of manufacturers of components listed in the electrical parts list.

Abbreviations

Abbreviations conform to American National Standards Institute (ANSI) standard Y1.1.

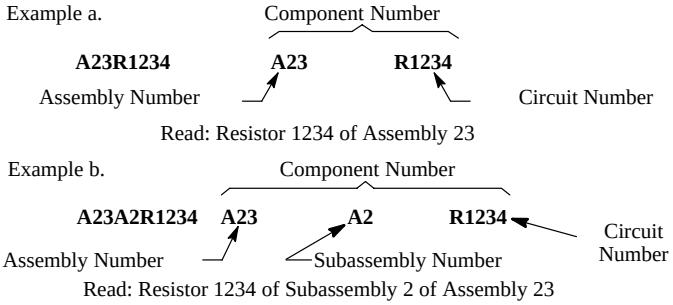
List of Assemblies

A list of assemblies can be found at the beginning of the electrical parts list. The assemblies are listed in numerical order. When the complete component number of a part is known, this list will identify the assembly in which the part is located.

Column Descriptions

Component No. (Column 1)

The component circuit number appears on the diagrams and circuit board illustrations, located in the diagrams section. Assembly numbers are also marked on each diagram and circuit board illustration, in the Diagram section and on the mechanical exploded views, in the mechanical parts list. The component number is obtained by adding the assembly number prefix to the circuit number.



The electrical parts list is arranged by assemblies in numerical sequence (A1, with its subassemblies and parts, precedes A2, with its subassemblies and parts).

Mechanical subparts to the circuit boards are listed in the electrical parts list. These mechanical subparts are listed with their associated electrical part (for example, fuse holder follows fuse).

Chassis-mounted parts and cable assemblies have no assembly number prefix and are located at the end of the electrical parts list.

Tektronix Part No. (Column 2)

Indicates part number to be used when ordering replacement part from Tektronix.

Serial/Assembly No. (Column 3 and 4)

Column three (3) indicates the serial or assembly number at which the part was first used. Column four (4) indicates the serial or assembly number at which the part was removed. No serial or assembly number entered indicates part is good for all serial numbers.

Name and Description (Column 5)

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.

The mechanical subparts are shown as *ATTACHED PARTS* / *END ATTACHED PARTS* or *MOUNTING PARTS* / *END MOUNTING PARTS* in column five (5).

Mfr. Code (Column 6)

Indicates the code number of the actual manufacturer of the part. (Code to name and address cross reference can be found immediately after this page.)

Mfr. Part No. (Column 7)

Indicates actual manufacturer's part number.

CROSS INDEX – MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code.	Manufacturer	Address	City, State, Zip Code
TK0213	TOPTRON CORP		TOKYO JAPAN
TK0435	LEWIS SCREW CO	4300 S RACINE AVE	CHICAGO IL 60609–3320
TK0515	EVOX–RIFA INC	100 TRI–STATE INTERNATIONAL SUITE 290	LINCOLNSHIRE IL 60015
TK0679	DILECTRON INC	2669 S MRYTLE AVE	MONROVIA CA 91016
TK0891	MICONICS	1 FAIRCHILD AVE	PLAINVIEW NY 11803
TK1064	CONNECT–AIR INTERNATIONAL INC	50 37TH STREET NE	AUBURN WA 98002–1502
TK1075	FUJI SEMICONDUCTOR NEW YURAKUCHO BLDG	12–1 YURAKUCHO 1–CHOME CHIYODAKU	TOKYO 100 JAPAN
TK1416	SHARP CORP	22–22 NAGAIKE–CHO ABENO–KU	OSAKA JAPAN
TK1547	MOORE ELECTRONICS INC (DIST)	19500 SW 90TH COURT PO BOX 1030	TUALATIN OR 97062
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
TK1828	LITE SPECIALTY METAL WORKS	20460 SW AVERY CT	TUALATIN OR 97062
TK1913	WIMA THE INTER–TECHNICAL GROUP IND	2269 SAW MILL RIVER ROAD PO BOX 127	ELMSFORD NY 10523
TK1960	U S TOYO FAN CORP	4915 WALNUT GROVE AVE DRAWER G	SAN GABRIEL CA 91776
TK1989	GASKET SPECIALTIES	4968 NE 122ND AVE	PORTLAND OR 97220
TK2027	PROCO MANUFACTURING CO	10950 SW 5TH ST SUITE 280	BEAVERTON OR 97005
TK2073	TOKYO AMERICA INC	565 W GULF ROAD	ARLINGTON HEIGHTS IL 60005
TK2096	KELVIN ASSOCIATES	14724 VENTURA BLVD SUITE 1003	SHERMAN OAKS CA 91403–3501
TK2319	COLLMER	14368 PROTON RD	DALLAS TX 75244
TK2540	SONY CORPORATION OF AMERICA COMPONENT PRODUCTS DIVISION SEMICONDUCTOR DIVISION	10833 VALLEY VIEW STREET	CYPRESS CA 90630–0016
0B0A9	DALLAS SEMICONDUCTOR CORP	4350 BELTWOOD PKWY SOUTH	DALLAS TX 75244
0GV52	SCHAFFNER EMC INC	9–B FADEM ROAD	SPRINGFIELD, NJ 07081
0H1N5	MARCON AMERICA CORP	998 FIRST EDGE DRIVE	VERNON HILLS IL 60061
0JR03	ZMAN MAGNETICS INC	7633 S 180th	KENT WA 98032
0JR04	TOSHIBA AMERICA INC ELECTRONICS COMPONENTS DIV	9775 TOLEDO WAY	IRVINE CA 92718
0JR05	TRIQUEST CORP	3000 LEWIS AND CLARK HWY	VANCOUVER WA 98661–2999
0J260	COMTEK MANUFACTURING OF OREGON (METALS)	PO BOX 4200	BEAVERTON OR 97076–4200
0KB01	STAUFFER SUPPLY	810 SE SHERMAN	PORTLAND OR 97214
0MS63	QUALITY TECHNOLOGIES CORP	610 N MARY AVENUE	SUNNYVALE CA 94086
00779	AMP INC	2800 FULLING MILL PO BOX 3608	HARRISBURG PA 17105
01295	TEXAS INSTRUMENTS INC SEMICONDUCTOR GROUP	13500 N CENTRAL EXPY PO BOX 655303	DALLAS TX 75262–5303
01884	DEARBORN ELECTRONICS INC	1221 NORTH HIGHWAY 17/92	LONGWOOD FL 32750
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
05276	ITT POMONA ELECTRONICS DIV	1500 E 9TH ST PO BOX 2767	POMONA CA 91766–3835
05292	ITT COMPONENTS DIV		CLIFTON NJ
05828	GENERAL INSTRUMENT CORP GOVERNMENT SYSTEMS DIV	600 W JOHN ST	HICKSVILLE NY 11802

Mfr. Code.	Manufacturer	Address	City, State, Zip Code
07716	TRW INC TRW IRC FIXED RESISTORS/BURLINGTON	2850 MT PLEASANT AVE	BURLINGTON IA 52601
07933	RAYTHEON CO SEMICONDUCTOR DIV HQ	350 ELLIS ST	MOUNTAIN VIEW CA 94042
08530	RELIANCE MICA CORP	341–39TH ST	BROOKLYN NY 11212–2903
09922	BURNDY CORP	RICHARDS AVE	NORWALK CT 06852
1CH66	PHILIPS SEMICONDUCTORS	811 E ARQUES AVENUE PO BOX 3409	SUNNYVALE CA 94088–3409
1W344	UNITED CHEMI–CON INC		
11236	CTS CORPORATION RESISTOR NETWORKS DIVISION	406 PARR ROAD	BERNE IN 46711–9506
11502	INTERNATIONAL RESISTIVE CO INC	GREENWAY RD PO BOX 1860	BOONE NC 28607–1860
13103	THERMALLOY CO INC	2021 W VALLEY VIEW LN PO BOX 810839	DALLAS TX 75381
13409	SENSITRON SEMICONDUCTOR DIV OF RSM ELECTRON POWER INC	221 W INDUSTRY COURT	DEER PARK NY 11729–4605
14433	ITT SEMICONDUCTOR	2510 WEST 237TH ST SUITE 208	TORRANCE CA 90505
14552	MICROSEMI CORP	2830 S FAIRVIEW ST	SANTA ANA CA 92704–5948
14752	ELECTRO CUBE INC	1710 S DEL MAR AVE	SAN GABRIEL CA 91776–3825
14936	GENERAL INSTRUMENT CORP POWER SEMICONDUCTOR DIV	600 W JOHN ST	HICKSVILLE NY 11802–0709
15454	KETEMA RODAN DIVISION	2900 BLUE STAR STREET	ANAHEIM CA 92806–2591
17856	SILICONIX INC	2201 LAURELWOOD RD	SANTA CLARA CA 95054–1516
18518	MSI ELECTRONICS INC	34–32 57TH ST	WOODSIDE NY 11377–2124
18565	CHOMERICS INC	77 DRAGON COURT	WOBURN MA 01801–1039
18796	MURATA ELECTRONICS NORTH AMERICA INC. STATE COLLEGE OPERATIONS	1900 W COLLEGE AVE	STATE COLLEGE PA 16801–2723
19701	PHILIPS COMPONENTS DISCRETE PRODUCTS DIV RESISTIVE PRODUCTS FACILITY AIRPORT ROAD	PO BOX 760	MINERAL WELLS TX 76067–0760
2K262	BOYD CORP	6136 NE 87th AVE PO BOX 20038	PORTLAND OR 97220
20462	PREM MAGNETICS INC	3519 N CHAPEL HILL	MCHENRY IL 60050–2504
22526	BERG ELECTRONICS INC (DUPONT)	857 OLD TRAIL RD	ETTERS PA 17319
24355	ANALOG DEVICES INC	1 TECHNOLOGY DRIVE	NORWOOD MA 02062
24546	DALE ELECTRONICS A VISHAY INTERTECHNOLOGY INC CO	550 HIGH ST	BRADFORD PA 16701–3737
24931	SPECIALTY CONNECTOR CO INC	2100 EARLYWOOD DR PO BOX 547	FRANKLIN IN 46131
25403	PHILIPS CIRCUIT ASSEMBLIES		SMITHFIELD RI 02917
26364	COMPONENTS CORP	6 KINSEY PLACE	DENVILLE NJ 07834–2611
27014	NATIONAL SEMICONDUCTOR CORP	2900 SEMICONDUCTOR DR	SANTA CLARA CA 95051–0606
27264	MOLEX INC	2222 WELLINGTON COURT	LISLE IL 60532–1613
31918	ITT SCHADOW INC	8081 WALLACE RD	EDEN PRAIRIE MN 55344–2224
32997	BOURNS INC TRIMPOT DIV	1200 COLUMBIA AVE	RIVERSIDE CA 92507–2114
33096	COLORADO CRYSTAL CORP	2303 W 8TH ST	LOVELAND CO 80537–5268
34333	LINFINITY MICROELECTRONICS (FORMERLY: SILICON GENERAL)	11861 WESTERN AVE	GARDEN GROVE CA 92641
34371	HARRIS CORP HARRIS SEMICONDUCTOR PRODUCTS GROUP	200 PALM BAY BLVD PO BOX 883	MELBOURNE FL 32919
48726	UNITRODE INTEGRATED CIRCUITS CORP (UICC)	7 CONTINENTAL BLVD PO BOX 399	MERRIMACK NH 03054–0399
5Y400	TRIAX METAL PRODUCTS INC DIV OF BEAVERTON PARTS MFG CO	1800 NW 216TH AVE	HILLSBORO OR 97124–6629
50139	ALLEN–BRADLEY CO ELECTRONIC COMPONENTS	1414 ALLEN BRADLEY DR	EL PASO TX 79936

Mfr. Code.	Manufacturer	Address	City, State, Zip Code
50434	HEWLETT–PACKARD CO OPTOELECTRONICS DIV	370 W TRIMBLE RD	SAN JOSE CA 95131–1008
54583	TDK ELECTRONICS CORP	12 HARBOR PARK DR	PORT WASHINGTON NY 11550
54937	DEYOUNG MANUFACTURING INC	12920 NE 125TH WAY	KIRKLAND WA 98034–7716
55566	R A F ELECTRONIC HARDWARE INC	95 SILVERMINE RD	SEYMOUR CT 06483–3915
55680	NICHICON /AMERICA/ CORP	927 E STATE PKY	SCHAUMBURG IL 60195–4526
56708	ZILOG INC	1315 DELL AVE	CAMPBELL CA 95008–6609
56845	DALE ELECTRONICS INC	2300 RIVERSIDE BLVD PO BOX 74	NORFOLK NE 68701–2242
57668	ROHM CORPORATION	15375 BARRANCA PARKWAY SUITE B207	IRVINE CA 92718
58050	TEKA PRODUCTS INC	45 SALEM ST	PROVIDENCE RI 02907
59660	TUSONIX INC	7741 N BUSINESS PARK DR PO BOX 37144	TUCSON AZ 85740–7144
6L334	DIODES INC	8900 WINNETKA AVE	NORTHRIDGE, CA 91324–3234
60395	XICOR INC	851 BUCKEYE CT	MILPITAS CA 95035–7408
61935	SCHURTER INC	1016 CLEGG COURT	PETALUMA CA 94952–1152
65786	CYPRESS SEMICONDUCTOR CORP	3901 N 1ST ST	SAN JOSE CA 95134–1506
65896	LOGIC DEVICES INC	628 E EVELYN AVE	SUNNYVALE CA 94086–6489
71400	BUSSMANN DIV OF COOPER INDUSTRIES INC	114 OLD STATE RD PO BOX 14460	ST LOUIS MO 63178
73138	BECKMAN INDUSTRIAL CORP BECKMAN ELECTRONIC TECHNOLOGIES SUB OF EMERSON ELECTRIC	4141 PALM ST	FULLERTON CA 92635
73743	FISCHER SPECIAL MFG CO	111 INDUSTRIAL RD	COLD SPRING KY 41076–9749
74970	JOHNSON E F CO	299 10TH AVE S W	WASECA MN 56093–2539
75042	IRC ELECTRONIC COMPONENTS PHILADELPHIA DIV TRW FIXED RESISTORS	401 N BROAD ST	PHILADELPHIA PA 19108–1001
75498	MULTICOMP INC	3005 SW 154TH TERRACE #3	BEAVERTON OR 97006
76493	BELL INDUSTRIES INC JW MILLER DIV	19070 REYES AVE PO BOX 5825	COMPTON CA 90224–5825
78189	ILLINOIS TOOL WORKS INC SHAKEPROOF DIV	ST CHARLES ROAD	ELGIN IL 60120
79963	ZIERICK MFG CO	RADIO CIRCLE	MT KISCO NY 10549
80009	TEKTRONIX INC	14150 SW KARL BRAUN DR PO BOX 500	BEAVERTON OR 97077–0001
81073	GRAYHILL INC	561 HILLGROVE AVE PO BOX 10373	LA GRANGE IL 60525–5914
82389	SWITCHCRAFT INC SUB OF RAYTHEON CO	5555 N ELSTRON AVE	CHICAGO IL 60630–1314
84411	AMERICAN SHIZUKI CORP OGALLALA OPERATIONS	301 WEST O ST	OGALLALA NE 69153–1844
86928	SEASTROM MFG CO INC	701 SONORA AVE	GLENDALE CA 91201–2431
9M860	ELECTRONIC SUB ASSEMBLY MFG CORP (ESAM)	930 SE M STREET PO BOX 376	GRANTS PASS OR 97526–3248
91293	JOHANSON MFG CO	400 ROCKWAY VALLEY RD	BOONTON NJ 07005
91637	DALE ELECTRONICS INC	2064 12TH AVE PO BOX 609	COLUMBUS NE 68601–3632

Replaceable Electrical Parts

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A1	333–3438–00			PANEL,FRONT:TSG271 (STANDARD,OPTION 01 & 05 ONLY)	27264	TO BE ASSIGNED
A1	333–3921–00	B031658		PANEL,FRONT:TSG271 OPT 03 (OPTION 03 ONLY)	27264	333–3921–00
A1–2	671–2003–00	B031658		CIRCUIT BD ASSY:DISPLAY (OPTION 03 ONLY)	80009	671200300
A2–1	670–9905–02	B010114	B020143	CIRCUIT BD ASSY:DIGITAL	80009	670990502
A2–1	670–9905–04	B020144	B020269	CIRCUIT BD ASSY:DIGITAL	80009	670990504
A2–1	670–9905–05	B020270	B020392	CIRCUIT BD ASSY:DIGITAL	80009	670990505
A2–1	670–9905–07	B020393	B031175	CIRCUIT BD ASSY:DIGITAL	80009	670990507
A2–1	670–9905–09	B031176	B031876	CIRCUIT BD ASSY:DIGITAL	80009	670990509
A2–1	670–9905–12	B031877	B032485	CIRCUIT BD ASSY:DIGITAL	80009	670990512
A2–1	670–9905–15	B032486		CIRCUIT BD ASSY:DIGITAL (STANDARD ONLY)	80009	670990515
A2–1	670–9905–00	B010100	B010113	CIRCUIT BD ASSY:DIGITAL	80009	670990500
A2–1	670–9905–01	B010114	B020143	CIRCUIT BD ASSY:DIGITAL	80009	670990501
A2–1	670–9905–03	B020144	B020269	CIRCUIT BD ASSY:DIGITAL	80009	670990503
A2–1	670–9905–06	B020270	B020392	CIRCUIT BD ASSY:DIGITAL	80009	670990506
A2–1	670–9905–08	B020393	B031175	CIRCUIT BD ASSY:DIGITAL	80009	670990508
A2–1	670–9905–10	B031176	B032485	CIRCUIT BD ASSY:DIGITAL	80009	670990510
A2–1	670–9905–14	B032486		CIRCUIT BD ASSY:DIGITAL (OPTION 05 ONLY)	80009	670990514
A2–1	670–9905–11	B031658	B031876	CIRCUIT BD ASSY:DIGITAL	80009	670990511
A2–1	670–9905–13	B031877	B032485	CIRCUIT BD ASSY:DIGITAL	80009	670990513
A2–1	670–9905–16	B032486		CIRCUIT BD ASSY:DIGITAL (OPTION 03 ONLY)	80009	670990516
A2–2	119–2501–00	B010100	B020143	OVEN ASSEMBLY:TSG271	80009	119250100
A2–2	119–2501–01	B020144	B020256	OVEN ASSEMBLY:TSG271	80009	119250101
A2–2	119–2501–02	B020257	B031175	OVEN ASSEMBLY:TSG271	80009	119250102
A2–2	119–2501–03	B031176	B031474	OVEN ASSEMBLY:TPG625	80009	119250103
A2–2	119–2501–04	B031475	B031610	OVEN ASSEMBLY:TPG625	80009	119250104
A2–2	119–2501–05	B031611		OVEN ASSEMBLY:TPG625	80009	119250105
A2–3	671–1918–00	B031658		CIRCUIT BD ASSY:LATCH (OPTION 03 ONLY)	80009	671191800
A3	670–9906–00	B010100	B020115	CIRCUIT BD ASSY:ANALOG	80009	670990600
A3	670–9906–01	B020116	B030730	CIRCUIT BD ASSY:ANALOG	80009	670990601
A3	670–9906–02	B030731	B030836	CIRCUIT BD ASSY:ANALOG	80009	670990602
A3	670–9906–03	B030837	B031561	CIRCUIT BD ASSY:ANALOG	80009	670990603
A3	670–9906–04	B031562	B032711	CIRCUIT BD ASSY:ANALOG	80009	670990604
A3	670–9906–05	B032712	B033174	CIRCUIT BD ASSY:ANALOG	80009	670990605
A3	670–9906–06	B033175		CKT BD SUBASSY:ANALOG	80009	670990606
A4	670–9113–02	B010100	B020115	CIRCUIT BD ASSY:PWR SPLY	80009	670911302
A4	670–9113–03	B020116	B020176	CIRCUIT BD ASSY:PWR SPLY	80009	670911303
A4	670–9113–04	B020177	B020256	CIRCUIT BD ASSY:PWR SPLY	80009	670911304
A4	670–9113–05	B020257	B020386	CIRCUIT BD ASSY:PWR SPLY	80009	670911305
A4	670–9113–06	B020387	B029999	CIRCUIT BD ASSY:PWR SPLY	80009	670911306
A4	671–0572–00	B030000	B031006	CIRCUIT BD ASSY:PWR SPLY	80009	671057200
A4	671–0572–01	B031007	B031723	CIRCUIT BD ASSY:PWR SPLY	80009	671057201
A4	671–0572–02	B031724	B031978	CIRCUIT BD ASSY:PWR SPLY;	80009	671057202
A4	671–0572–03	B031979	B032585	CIRCUIT BD ASSY:PWR SPLY	80009	671057203
A4	671–0572–04	B032586	B032728	CIRCUIT BD ASSY:PWR SPLY	80009	671057204
A4	671–0572–05	B032729		CIRCUIT BD ASSY:PWR SPLY	80009	671057205
A5	671–0219–00	B010100	B020115	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021900
A5	671–0219–01	B020116	B020473	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021901
A5	671–0219–02	B020474	B030583	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021902
A5	671–0219–04	B030584	B030845	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021904
A5	671–0219–05	B030846	B032290	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021905
A5	671–0219–06	B032291		CIRCUIT BD ASSY:IDENTIFICATION (OPTION 01 ONLY)	80009	671021906

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A6	670–9368–00			CIRCUIT BD ASSY:BNC	80009	670936800
A1	333–3438–00			PANEL,FRONT:TSG271 (STANDARD,OPTION 01 & 05 ONLY)	27264	TO BE ASSIGNED
A1	333–3921–00	B031658		PANEL,FRONT:TSG271 OPT 03 (OPTION 03 ONLY)	27264	333–3921–00
A1S535				(PART OF A1)		
A1S539				(PART OF A1)		
A1S544				(PART OF A1)		
A1S548				(PART OF A1)		
A1S552				(PART OF A1)		
A1S556				(PART OF A1)		
A1S561				(PART OF A1)		
A1S565				(PART OF A1)		
A1S570				(PART OF A1)		
A1S574				(PART OF A1)		
A1S594				(PART OF A1)		
A1DS142	150–5004–00			DIODE,OPTO:LED;HI EFFIC RED,635NM,1.0 MCDAT 10MA,YOKE LEAD BEND	50434	HLMP–6300–021
A1DS168	150–5004–00			DIODE,OPTO:LED;HI EFFIC RED,635NM,1.0 MCDAT 10MA,YOKE LEAD BEND	50434	HLMP–6300–021
A1DS292	150–5004–00			DIODE,OPTO:LED;HI EFFIC RED,635NM,1.0 MCDAT 10MA,YOKE LEAD BEND	50434	HLMP–6300–021
A1DS426	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS492	150–5004–00			DIODE,OPTO:LED;HI EFFIC RED,635NM,1.0 MCDAT 10MA,YOKE LEAD BEND	50434	HLMP–6300–021
A1DS626	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS692	150–5004–00			DIODE,OPTO:LED;HI EFFIC RED,635NM,1.0 MCDAT 10MA,YOKE LEAD BEND	50434	HLMP–6300–021
A1DS835	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS839	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS844	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS848	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS852	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS856	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS861	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS865	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS870	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS874	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1DS892	150–5003–00			DIODE,OPTO:LED;GRN,569NM,1MCD AT 10MA,90 DEG VIEW ANGL,YOKE LEADBEND	50434	HLMP–6500–021
A1–2	671–2003–00	B031658		CIRCUIT BD ASSY:DISPLAY (OPTION 03 ONLY)	80009	671200300
				MOUNTING PARTS		
	210–0551–00	B031658		NUT,PLAIN,HEX:4–40 X 0.25,ST CD PL (QUANTITY 2)	TK0435	ORDER BY DESC

Replaceable Electrical Parts

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
	361–1594–00	B031658	B031923	SPACER,STANDOFF:0.125 L X 0.188 HEX,4–40 INT THD,ALUM (QUANTITY 2)	55566	2051–440–A
	210–1133–00	B031924		WASHER,FLAT:0.142 ID X 0.25 OD X0.058,FBR (QUANTITY 4)	86928	ORDER BY DESC
				END MOUNTING PARTS		
A1–2C31	281–0775–01			CAP,FXD,CERAMIC:MCL;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A1–2J31	131–3241–00			CONN,HDR::PCB,;MALE,RTANG,1 X 10,0.1CTR,0.3 18 MLG X 0.110 TAIL,30 GOLD,0.138 H	00779	1–87232–0
A1–2R31	322–3177–00			RES,FXD:METAL FILM;681 OHM,1%,0.2W,TC=100 PPM	91637	CCF50–2G681R0F
A1–2R33	322–3177–00			RES,FXD:METAL FILM;681 OHM,1%,0.2W,TC=100 PPM	91637	CCF50–2G681R0F
A1–2R35	322–3177–00			RES,FXD:METAL FILM;681 OHM,1%,0.2W,TC=100 PPM	91637	CCF50–2G681R0F
A1–2R37	322–3177–00			RES,FXD:METAL FILM;681 OHM,1%,0.2W,TC=100 PPM	91637	CCF50–2G681R0F
A1–2DS31	150–1013–00			OPTO,DISPLAY:LED;DOT MATRIX,RED,HEXADECIMAL ,INTEGRAL LATCH,DECODER,& DRIVER	01295	TIL 311
A1–2DS33	150–1013–00			OPTO,DISPLAY:LED;DOT MATRIX,RED,HEXADECIMAL ,INTEGRAL LATCH,DECODER,& DRIVER	01295	TIL 311
A2–1	670–9905–02	B010114	B020143	CIRCUIT BD ASSY:DIGITAL	80009	670990502
A2–1	670–9905–04	B020144	B020269	CIRCUIT BD ASSY:DIGITAL	80009	670990504
A2–1	670–9905–05	B020270	B020392	CIRCUIT BD ASSY:DIGITAL	80009	670990505
A2–1	670–9905–07	B020393	B031175	CIRCUIT BD ASSY:DIGITAL	80009	670990507
A2–1	670–9905–09	B031176	B031876	CIRCUIT BD ASSY:DIGITAL	80009	670990509
A2–1	670–9905–12	B031877	B032485	CIRCUIT BD ASSY:DIGITAL	80009	670990512
A2–1	670–9905–15	B032486		CIRCUIT BD ASSY:DIGITAL (STANDARD ONLY)	80009	670990515
A2–1	670–9905–00	B010100	B010113	CIRCUIT BD ASSY:DIGITAL	80009	670990500
A2–1	670–9905–01	B010114	B020143	CIRCUIT BD ASSY:DIGITAL	80009	670990501
A2–1	670–9905–03	B020144	B020269	CIRCUIT BD ASSY:DIGITAL	80009	670990503
A2–1	670–9905–06	B020270	B020392	CIRCUIT BD ASSY:DIGITAL	80009	670990506
A2–1	670–9905–08	B020393	B031175	CIRCUIT BD ASSY:DIGITAL	80009	670990508
A2–1	670–9905–10	B031176	B032485	CIRCUIT BD ASSY:DIGITAL	80009	670990510
A2–1	670–9905–14	B032486		CIRCUIT BD ASSY:DIGITAL (OPTION 05 ONLY)	80009	670990514
A2–1	670–9905–11	B031658	B031876	CIRCUIT BD ASSY:DIGITAL	80009	670990511
A2–1	670–9905–13	B031877	B032485	CIRCUIT BD ASSY:DIGITAL	80009	670990513
A2–1	670–9905–16	B032486		CIRCUIT BD ASSY:DIGITAL (OPTION 03 ONLY)	80009	670990516
A2–1C104	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C170	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C173	290–0990–00			CAP,FXD,ALUM:;10UF,20%,50V,8X11.5	1W344	511D295
A2–1C180	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C205	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C221	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C228	283–0629–00			CAP,FXD,MICA DI:62PF,1%,500V	TK0891	RDM10ED620F03
A2–1C249	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C261	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C262	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C264	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C267	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C270	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C275	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C276	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C280	283–0421–00	670–9905–00	670–9905–08	CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C305	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C306	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C309	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C312	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C315	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1C349	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C352	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C361	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C367	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C370	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C372	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C373	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C374	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C376	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C378	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C380	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C381	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C383	283–0421–00	670–9905–04		CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE (STANDARD ONLY)	04222	MD015C104MAB
A2–1C383	283–0421–00	670–9905–03		CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE (OPTION 05 ONLY)	04222	MD015C104MAB
A2–1C387	281–0284–00	670–9905–00	670–9905–08	CAP,VAR,CER DI:2.2–34PF,250V	74970	193–0010–005
A2–1C390	283–0633–00	670–9905–00	670–9905–08	CAP,FXD,MICA DI:77PF,1%,100V	TK0891	RDM15ED770F03
A2–1C391	283–0635–00	670–9905–00	670–9905–08	CAP,FXD,MICA DI:51PF,1%,500V	TK0891	RDM15ED510F03
A2–1C392	283–0779–00	670–9905–00	670–9905–08	CAP,FXD,MICA DI:27 PF,2%,500V	TK0891	RDM15ED270G03
A2–1C393	283–0631–00	670–9905–00	670–9905–08	CAP,FXD,MICA DI:95PF,1%,500V	TK0891	RDM15FD950F03
A2–1C409	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C412	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C415	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C421	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C441	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C447	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C449	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C464	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C470	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C473	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C474	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C477	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C478	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C479	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C482	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C483	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C484	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C485	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C486	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C487	283–0706–00	670–9905–00	670–9905–08	CAP,FXD,MICA DI:91PF,1%,500V	TK0891	RDM15FD910F03
A2–1C488	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C489	283–0785–00			CAP,FXD,MICA DI:250PF,1%,500V	TK0891	RDM15FD251F03
A2–1C490	283–0421–00	670–9905–02	670–9905–02	CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE (STANDARD ONLY)	04222	MD015C104MAB
A2–1C490	283–0421–00	670–9905–00	670–9905–01	CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE (OPTION 05 ONLY)	04222	MD015C104MAB
A2–1C492	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C495	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C496	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C498	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C509	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C529	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C532	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C539	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C542	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C545	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C547	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101

Replaceable Electrical Parts

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1C554	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C557	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C561	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C564	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C593	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C596	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C597	283–0666–00			CAP,FXD,MICA DI:890PF,2%,100V	TK0891	RDM15FA891G03
A2–1C598	283–0666–00			CAP,FXD,MICA DI:890PF,2%,100V	TK0891	RDM15FA891G03
A2–1C619	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C623	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C626	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C629	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C632	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C634	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C636	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C639	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C642	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C645	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C648	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C649	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C657	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C661	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C664	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C667	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C670	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C673	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C680	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C683	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C704	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C705	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C706	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C709	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C712	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C715	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C719	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C721	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C724	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C727	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C730	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C733	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C736	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C739	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C742	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C745	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C749	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C761	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C764	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C767	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C770	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C805	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C807	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C808	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C809	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C811	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C813	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C816	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C840	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C841	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1C842	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C843	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C844	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C845	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C846	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C847	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C852	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C870	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C873	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C880	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C891	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A2–1C905	283–0647–00			CAP,FXD,MICA DI:70PF,1%,100V	TK0891	RDM15ED700F03
A2–1C906	283–0772–00			CAP,FXD,MICA DI:497 PF,1%,500V	TK0891	RDM15FD4970F03
A2–1C907	283–0625–00			CAP,FXD,MICA DI:220PF,1%,500V	TK0891	RDM10FD221F03
A2–1C928	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C930	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C933	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C938	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C970	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C972	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C975	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1C978	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A2–1J109	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J111	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J145	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J156	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J164	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J180	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J208	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J223	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J229	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J286	131–0787–00			TERMINAL,PIN:PCB/PRESSFIT,;MALE,STR,0.025 SQ,0.448 MLG X 0.137 TAIL,0.600 L,PHOS BRZ,50 GOLD	22526	47359–001
A2–1J308	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J391	131–0608–00	670–9905–00	670–9905–08	CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J423	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J470	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J497	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J523	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J551	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J570	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J690	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018

Replaceable Electrical Parts

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1J712	131–0608–00	670–9905–00	670–9905–08	CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J883	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J885	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J894	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J897	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J914	131–3692–00			CONN,DIN:PCB,;MALE,RTANG,3 X 32,0.1CTR,0.10 4 TAIL,BD RETENTION	00779	536416–5
				MOUNTING PARTS		
	210–0001–00			WASHER,LOCK:#2 INTL,0.013 THK,STL (QUANTITY 2)	78189	1202–00–00–0541
	210–0405–00			NUT,PLAIN,HEX:2–56 X 0.188,BRS CD PL (QUANTITY 2)	73743	12157–50
	211–0185–00			SCREW,MACHINE:2–56 X 0.438,PNH,STL (QUANTITY 2)	0KB01	ORDER BY DESC
				END MOUNTING PARTS		
A2–1J939	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J942	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J955	131–3440–00			CONN,DIN:PCB,;MALE,RTANG,3 X 16,0.1CTR,0.209 MLG X 0,114 TAIL,30 GOLD,BD RETENTION	00779	650916–5
				MOUNTING PARTS		
	210–0001–00			WASHER,LOCK:#2 INTL,0.013 THK,STL (QUANTITY 2)	78189	1202–00–00–0541
	210–0405–00			NUT,PLAIN,HEX:2–56 X 0.188,BRS CD PL (QUANTITY 2)	73743	12157–50
	211–0185–00			SCREW,MACHINE:2–56 X 0.438,PNH,STL (QUANTITY 2)	0KB01	ORDER BY DESC
				END MOUNTING PARTS		
A2–1J985	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1J988	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025SQ, 0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A2–1L375	108–0683–00			COIL,RF:FIXED,900NH	0JR03	108–0683–00
A2–1L381	108–0683–00			COIL,RF:FIXED,900NH	0JR03	108–0683–00
A2–1L902	108–0103–01			COIL,RF:FIXED,2.5UH,2%	0JR03	108–0103–01
A2–1P156	131–0993–02	670–9905–04		BUS,CONDUCTOR:SHUNT ASSEMBLY,RED (STANDARD ONLY)	00779	1–850100–O
A2–1P156	131–0993–02	670–9905–03		BUS,CONDUCTOR:SHUNT ASSEMBLY,RED (OPTION 05 ONLY)	00779	1–850100–O
A2–1P164	131–0993–02	670–9905–04		BUS,CONDUCTOR:SHUNT ASSEMBLY,RED (STANDARD ONLY)	00779	1–850100–O
A2–1P164	131–0993–02	670–9905–03		BUS,CONDUCTOR:SHUNT ASSEMBLY,RED (OPTION 05 ONLY)	00779	1–850100–O
A2–1P180	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A2–1P308	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A2–1P391	131–0993–02	670–9905–00	670–9905–08	BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A2–1P423	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A2–1P497	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A2–1P690	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A2–1P883	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A2–1P885	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A2–1P985	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A2–1Q134	151–0199–00			XSTR,SIG:BIPOLAR,PNP;12V,80MA,SWITCHING	04713	MPS3640

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1Q293	151–0656–00			XSTR,PWR:BIPOLAR,NPN;80V,8.0A,4.0MHZ,DARLING-TON,AMPL	04713	2N6044
				MOUNTING PARTS		
	210–0586–00			NUT,PL,ASSEM WA:4–40 X 0.25,STL CD PL	TK0435	ORDER BY DESC
	211–0021–00			SCREW,MACHINE:4–40 X 1.25,PNH,STL	TK0435	ORDER BY DESC
				END MOUNTING PARTS		
A2–1Q491	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ ,AMPLIFIER	04713	2N3904
A2–1Q541	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ ,AMPLIFIER	27014	S036228.22
A2–1R112	315–0621–00			RES,FXD,FILM:620 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R113	315–0621–00			RES,FXD,FILM:620 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R114	315–0621–00			RES,FXD,FILM:620 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R115	315–0621–00			RES,FXD,FILM:620 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R116	315–0621–00			RES,FXD,FILM:620 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R117	307–0636–00			RES NTWK,FXD,FI:8,330 OHM,2%,0.125 W	11236	761–3–R330OHM
A2–1R158	307–0650–00			RES NTWK,FXD,FI:9,2.7K OHM,5%,0.150W	11236	750–101–R2.7K
A2–1R172	315–0472–00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R173	315–0222–00			RES,FXD,FILM:2.2K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R174	315–0393–00	670–9905–02	670–9905–05	RES,FXD,FILM:39K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R174	315–0203–00	670–9905–07		RES,FXD,FILM:20K OHM,5%,0.25W (STANDARD ONLY)	TK1727	SFR25 2322–181–
A2–1R174	315–0393–00	670–9905–00	670–9905–06	RES,FXD,FILM:39K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R174	315–0203–00	670–9905–08		RES,FXD,FILM:20K OHM,5%,0.25W (OPTION O5 ONLY)	TK1727	SFR25 2322–181–
A2–1R178	315–0202–00			RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R179	315–0202–00			RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R202	307–0636–00			RES NTWK,FXD,FI:8,330 OHM,2%,0.125 W	11236	761–3–R330OHM
A2–1R225	315–0272–00			RES,FXD,FILM:2.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R226	315–0272–00			RES,FXD,FILM:2.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R227	315–0621–00			RES,FXD,FILM:620 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R228	315–0822–00			RES,FXD,FILM:8.2K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R234	315–0100–00			RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322–182–
A2–1R272	322–3289–00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A2–1R273	321–1643–07			RES,FXD,FILM:11.03K OHM,0.1%,0.125W,TC=T9	19701	5033RE11K03B
A2–1R274	321–1264–07			RES,FXD,FILM:5.56K OHM,0.1%,0.125W,TC=T9	19701	5033RE5K560BB29
A2–1R275	315–0362–00			RES,FXD,FILM:3.6K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R277	315–0242–00			RES,FXD,FILM:2.4K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R278	321–0264–07			RES,FXD,FILM:5.49K OHM,0.1%,0.125W,TC=T9	19701	5033RE5K490B
A2–1R279	321–0264–07			RES,FXD,FILM:5.49K OHM,0.1%,0.125W,TC=T9	19701	5033RE5K490B
A2–1R298	308–0677–00			RES,FXD,WW:1 OHM,5%,2W	75042	SPH 1 OHM 5 PER
A2–1R317	307–0650–00			RES NTWK,FXD,FI:9,2.7K OHM,5%,0.150W	11236	750–101–R2.7K
A2–1R373	315–0271–00			RES,FXD,FILM:270 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R374	315–0270–00			RES,FXD,FILM:27 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R378	315–0270–00			RES,FXD,FILM:27 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R379	315–0331–00	670–9905–00	670–9905–08	RES,FXD,FILM:330 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R379	315–0271–00	670–9905–09		RES,FXD,FILM:270 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R389	321–0454–00	670–9905–00	670–9905–08	RES,FXD,FILM:523K OHM,1%,0.125W,TC=T0MI	07716	CEA523KOHM 1PER
A2–1R389	322–3318–00	670–9905–09		RES,FXD:METAL FILM;20K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20001F
A2–1R390	322–3437–00	670–9905–00	670–9905–08	RES,FXD,FILM:348K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF501G34802F
A2–1R390	321–0441–00	670–9905–09		RES,FXD,FILM:383K OHM,1%,0.125W,TC=T0MI	TK1727	2322–151–383K
A2–1R395	322–3318–00			RES,FXD:METAL FILM;20K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20001F
A2–1R396	321–0413–00			RES,FXD,FILM:196K OHM,1%,0.125W,TC=T0MI	19701	5043ED196KOF
A2–1R397	321–0353–00			RES,FXD,FILM:46.4K OHM,1%,0.125W,TC=T0MI	19701	5043ED46K40F
A2–1R398	321–0353–00			RES,FXD,FILM:46.4K OHM,1%,0.125W,TC=T0MI	19701	5043ED46K40F
A2–1R399	321–0413–00			RES,FXD,FILM:196K OHM,1%,0.125W,TC=T0MI	19701	5043ED196KOF
A2–1R437	315–0103–00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R439	315–0100–00			RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322–182–

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1R440	315–0106–00			RES,FXD,FILM:10M OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R442	315–0271–00			RES,FXD,FILM:270 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R443	315–0112–00			RES,FXD,FILM:1.1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R444	315–0472–00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R445	315–0102–00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R446	308–0433–00			RES,FXD,WW:1 OHM,10%,0.25W	75498	308–0433–00
A2–1R469	311–2234–00			RES,VAR,TRMR:CERMET;5K OHM,20%,0.5W,0.197 SQ,TOP ADJUST	TK2073	GF06UT2 502 M L
A2–1R470	315–0113–00			RES,FXD,FILM:11K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R471	321–0816–00			RES,FXD,FILM:5K OHM,1%,0.125W,TC=T0	19701	5033RD5K000F
A2–1R472	321–0932–00			RES,FXD,FILM:2.5K OHM,1%,0.125W,TC=T0MI	19701	5033RD2K500F
A2–1R473	322–3204–00			RES,FXD,FILM:1.3K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF501G13000F
A2–1R474	315–0103–00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R475	322–3236–00	670–9905–00	670–9905–08	RES,FXD,FILM:2.8K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF501G28000F
A2–1R475	322–3252–00	670–9905–09		RES,FXD,FILM:4.12K OHM,1%,0.2W,TC=T0TAPED &	91637	CCF501G41200F
A2–1R476	321–0816–00			RES,FXD,FILM:5K OHM,1%,0.125W,TC=T0	19701	5033RD5K000F
A2–1R478	322–3204–00			RES,FXD,FILM:1.3K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF501G13000F
A2–1R479	322–3204–00			RES,FXD,FILM:1.3K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF501G13000F
A2–1R480	315–0103–00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R481	322–3236–00	670–9905–00	670–9905–08	RES,FXD,FILM:2.8K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF501G28000F
A2–1R481	322–3252–00	670–9905–09		RES,FXD,FILM:4.12K OHM,1%,0.2W,TC=T0TAPED &	91637	CCF501G41200F
A2–1R482	321–0816–00			RES,FXD,FILM:5K OHM,1%,0.125W,TC=T0	19701	5033RD5K000F
A2–1R483	322–3210–00	670–9905–00	670–9905–08	RES,FXD:METAL FILM;1.5K OHM,1%,0.2W,TC=100PPM	91637	CCF501G15000F
A2–1R483	322–3204–00	670–9905–09		RES,FXD,FILM:1.3K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF501G13000F
A2–1R485	315–0511–00			RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R486	315–0751–00			RES,FXD,FILM:750 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R487	315–0102–00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R488	322–3233–00	670–9905–00	670–9905–08	RES,FXD,FILM:2.61K OHM,1%,0.2W,TC=T0MI,SM BODY	91637	CCF50–2–G2611FT
A2–1R489	322–3098–00	670–9905–00	670–9905–08	RES,FXD,FILM:102 OHM,1%,0.2W,TC=T0MI,SMALLBODY	91637	CCF501G102ROF
A2–1R489	315–0471–00	670–9905–09		RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R490	315–0242–00			RES,FXD,FILM:2.4K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R491	321–0387–00			RES,FXD,FILM:105K OHM,1%,0.125W,TC=T0MI	19701	5043ED105K0F
A2–1R492	322–3318–00			RES,FXD:METAL FILM;20K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20001F
A2–1R493	322–3385–00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100PPM	91637	CCF501G10002F
A2–1R497	315–0102–00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R506	307–0650–00			RES NTWK,FXD,FI:9,2.7K OHM,5%,0.150W	11236	750–101–R2.7K
A2–1R523	315–0272–00			RES,FXD,FILM:2.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R568	315–0272–00			RES,FXD,FILM:2.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R572	307–0650–00			RES NTWK,FXD,FI:9,2.7K OHM,5%,0.150W	11236	750–101–R2.7K
A2–1R576	307–0539–00			RES NTWK,FXD,FI:(7)510 OHM,10%,1W	11236	750–81–R510 OHM
A2–1R580	307–0539–00			RES NTWK,FXD,FI:(7)510 OHM,10%,1W	11236	750–81–R510 OHM
A2–1R590	307–0539–00			RES NTWK,FXD,FI:(7)510 OHM,10%,1W	11236	750–81–R510 OHM
A2–1R593	315–0394–00			RES,FXD,FILM:390K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R595	315–0682–00			RES,FXD,FILM:6.8K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R596	315–0302–00			RES,FXD,FILM:3K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R597	315–0392–00			RES,FXD,FILM:3.9K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R651	315–0272–00			RES,FXD,FILM:2.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R695	307–0650–00			RES NTWK,FXD,FI:9,2.7K OHM,5%,0.150W	11236	750–101–R2.7K
A2–1R706	321–0929–07			RES,FXD,FILM:2.5K OHM,0.1%,0.125W,TC=T9	TK1727	2322–141–2K5
A2–1R707	322–3179–00			RES,FXD,FILM:715 OHM,1%,0.2W,TC=T0MI,SM BODY	91637	CCF501G715R0F
A2–1R717	307–0526–00			RES,NTWK:THICK FILM;(5)510 OHM,10%,0.125W EACH,TC=100 PPM	11236	750–61–R510 OHM
A2–1R747	315–0511–00			RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R748	315–0511–00			RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R805	315–0270–00			RES,FXD,FILM:27 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R806	322–3193–07			RES,FXD,FILM:1K OHM,0.1%,0.2W,TC=T9	91637	CCF501C10000B
A2–1R844	307–0650–00			RES NTWK,FXD,FI:9,2.7K OHM,5%,0.150W	11236	750–101–R2.7K
A2–1R906	321–0793–07			RES,FXD,FILM:37.5 OHM 0.1%,0.125W TC=T9 MI	07716	CEA 37.5 OHM 0.

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1R912	307–0539–00			RES NTWK,FXD,FI:(7)510 OHM,10%,1W	11236	750–81–R510 OHM
A2–1R913	307–0539–00			RES NTWK,FXD,FI:(7)510 OHM,10%,1W	11236	750–81–R510 OHM
A2–1R918	315–0102–00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R919	315–0102–00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R921	307–0503–00			RES NTWK,FXD,FI:(9) 510 OHM,20%,0.125WTC=50 PPM/DEG C	11236	750–101–R510 OR
A2–1R939	315–0272–00			RES,FXD,FILM:2.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R948	315–0511–00			RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1R949	315–0511–00			RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A2–1S156	260–1589–00			SWITCH,ROCKER:(6)SPST,125MA,30VDC	81073	76SB06S
A2–1U122	160–4906–00			MICROCKT,LINEAR:OP AMP,OP–14 TYPE,DIE FORMH3501	80009	160490600
A2–1U126	160–4954–00	670–9905–00	670–9905–16	IC,DIGITAL:STTL,PLD;PAL,20L10,50NS,165MA	80009	160495400
A2–1U126	160–4954–01	670–9905–14		IC,DIGITAL:CMOS,PLD;EEPLD,22V10,25NS,33.3MH Z,90MA,22V10–25,DIP24.3,TUBE	80009	160495401
A2–1U129	160–4409–00	670–9905–00	670–9905–08	MICROCKT,DGTL:QUAD 16 INP RGTR AND/OR,PRGM	80009	160440900
A2–1U129	160–4409–01	670–9905–09		IC,DIGITAL:STTL,PLD;PAL,16R4,37MHZ,180MA	80009	160440901
A2–1U132	156–2338–00			IC,DIGITAL:ASTTL,FLIP FLOP;DUAL D–TYPE	01295	SN74AS74N
A2–1U149	156–2338–00			IC,DIGITAL:ASTTL,FLIP FLOP;DUAL D–TYPE	01295	SN74AS74N
A2–1U153	156–0865–02	670–9905–02		IC,DIGITAL:LSTTL,FLIP FLOP (STANDARD ONLY)	01295	SN74LS273N
A2–1U153	156–0865–02	670–9905–00		IC,DIGITAL:LSTTL,FLIP FLOP (OPTION 05 ONLY)	01295	SN74LS273N
A2–1U161	156–0956–02			IC,DIGITAL:LSTTL,BUFFER/DRIVER;DUPLICATE OF	01295	SN74LS244N
A2–1U170	156–1367–00			IC,CONVERTER:CMOS,D/A;8 BIT,400NS,CURRENT O UT,MPU COMPATIBLE,MULTIPLYING	24355	AD7524JN
A2–1U176	156–1850–00			IC,MISC:CMOS,ANALOG SWITCH;QUAD *MOUNTING PART*	17856	DG211CJ
	210–1178–00			WASHER,SHLDR:U/W TO–220 XSTR	13103	7721–7PPS
	211–0661–00			SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL,CD PL,POZ,MACH *END MOUNTING PART*	TK0435	ORDER BY DESC
A2–1U205	156–1215–01			IC,DIGITAL:CMOS,MUX/ENCODER;DUPLICATEOF 156 –1215–00	27014	MM74C923N
A2–1U208	156–0956–02			IC,DIGITAL:LSTTL,BUFFER/DRIVER	01295	SN74LS244N
A2–1U211	156–0865–02			IC,DIGITAL:LSTTL,FLIP FLOP	01295	SN74LS273N
A2–1U214	156–0865–02			IC,DIGITAL:LSTTL,FLIP FLOP	01295	SN74LS273N
A2–1U217	156–0865–02			IC,DIGITAL:LSTTL,FLIP FLOP	01295	SN74LS273N
A2–1U232	156–2626–00			IC,DIGITAL:ALSTTL,GATE;QUAD 2–INPUT NAND, OC	01295	SN74ALS03BN
A2–1U236	160–4908–00			IC,DIGITAL:CMOS,PLD;EEPLD,16V8,25NS,90MA	80009	160490800
A2–1U240	156–2628–00			IC,PROCESSOR:NMOS,PERIPHERAL;COUNTER TIMER	56708	Z0843006PSC
A2–1U245	156–2628–00			IC,PROCESSOR:NMOS,PERIPHERAL;COUNTER TIMER	56708	Z0843006PSC
A2–1U249	156–0480–02			IC,DIGITAL:LSTTL,GATES	01295	SN74LS08N
A2–1U264	156–1973–00			IC,DIGITAL:FTTL,FLIP FLOP;QUAD D–TYPE, WITH	01295	SN74F175N
A2–1U267	156–0784–02	670–9905–02	670–9905–07	IC,DIGITAL:LSTTL,COUNTER	01295	SN74LS163AN
A2–1U267	156–2520–00	670–9905–09		IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY (STANDARD ONLY)	01295	SN74AS163N
A2–1U267	156–0784–02	670–9905–00	670–9905–08	IC,DIGITAL:LSTTL,COUNTER	01295	SN74LS163AN
A2–1U267	156–2520–00	670–9905–10		IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY (OPTION 05 ONLY)	01295	SN74AS163N
A2–1U270	156–0158–07			IC,LINEAR:BIPOLAR,OP–AMP	01295	MC1458P
A2–1U276	156–1437–00			IC,LINEAR:BIPOLAR,V REF;POS,5V,1.0%,25PPM,SERIES	04713	MC1404AU5
A2–1U302	156–0865–02			IC,DIGITAL:LSTTL,FLIP FLOP	01295	SN74LS273N
A2–1U320	156–1026–02			IC,DIGITAL:LSTTL,DEMUX	27014	DM74LS154N
A2–1U321	156–3050–00			IC,MISC:CMOS,PWR SUPPLY SUPERVISOR;MPU RESE T GENERATOR,5V SUPPLY SENSING,MPU WATCHDOG TIMER	0B0A9	DS1232
A2–1U333	160–4338–00	670–9905–02	670–9905–02	MICROCKT,DGTL:256K UV ERASEABLE PROM,PRGM	80009	160433800
A2–1U333	160–4338–01	670–9905–02	670–9905–04	MICROCKT,DGTL:256K UV ERASEABLE PROM,PRGM	80009	160433801
A2–1U333	160–4338–02	670–9905–05	670–9905–08	MICROCKT,DGTL:256K UV ERASEABLE PROM,PRGM	80009	160433802

Replaceable Electrical Parts

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1U333	160–4338–03	670–9905–09	670–9905–12	MICROCKT,DGTL:256K UV ERASEABLE PROM,PRGM27 256,DIP28	80009	160433803
A2–1U333	160–4338–04	670–9905–15		MICROCKT,DGTL:256K UV ERASEABLE PROM,PRGM,2 7256,DIP28 (STANDARD ONLY)	80009	160433804
A2–1U333	160–4338–00	670–9905–00	670–9905–01	MICROCKT,DGTL:256K UV ERASEABLE PROM,PRGM	80009	160433800
A2–1U333	160–4338–01	670–9905–01	670–9905–03	MICROCKT,DGTL:256K UV ERASEABLE PROM,PRGM	80009	160433801
A2–1U333	160–4338–02	670–9905–06	670–9905–10	MICROCKT,DGTL:256K UV ERASEABLE PROM,PRGM	80009	160433802
A2–1U333	160–4338–04	670–9905–14		MICROCKT,DGTL:256K UV ERASEABLE PROM,PRGM,2 7256,DIP28 (OPTION 05 ONLY)	80009	160433804
A2–1U333	160–8057–00	670–9905–11	670–9905–13	IC,MEM:CMOS,32768 X 8 EPROM,27C256,200NS,DIP28.6	80009	160805700
A2–1U333	160–8057–01	670–9905–16		MICROCKT,DGTL:NMOS,EPROM;32K X 8,250NS,2725 6–25,DIP28.6 (OPTION 03 ONLY)	80009	160805701
A2–1U340	156–1632–00			IC,MEMORY:CMOS,SRAM;2K X 8,250NS	TK1416	LH5116–10
A2–1U345	156–2491–00			IC,MEMORY:NMOS,EEPROM;128 X 8,200NS	60395	X2001 P OR D
A2–1U346	156–0865–02			IC,DIGITAL:LSTTL,FLIP FLOP	01295	SN74LS273N
A2–1U349	156–1723–00			IC,DIGITAL:FTTL,GATE;QUAD 2–INPUT AND	01295	SN74F08N
A2–1U352	156–0865–02			IC,DIGITAL:LSTTL,FLIP FLOP	01295	SN74LS273N
A2–1U356	160–4340–00	670–9905–02		MICROCKT,DGTL:16384 X 8,PROM,PRGM (STANDARD ONLY)	80009	160434000
A2–1U356	160–4340–00	670–9905–00		MICROCKT,DGTL:16384 X 8,PROM,PRGM (OPTION 05 ONLY)	80009	160434000
A2–1U356	160–8079–00	670–9905–11		IC,MEM:CMOS,32768 X 8 EPROM,27C256,200NS,DIP28.6 (OPTION 03 ONLY)	80009	160807900
A2–1U361	156–1722–00			IC,DIGITAL:FTTL,GATE;HEX INV	04713	MC74F04N
A2–1U367	156–0784–02	670–9905–02	670–9905–07	IC,DIGITAL:LSTTL,COUNTER	01295	SN74LS163AN
A2–1U367	156–2520–00	670–9905–09		IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY (STANDARD ONLY)	01295	SN74AS163N
A2–1U367	156–0784–02	670–9905–00	670–9905–08	IC,DIGITAL:LSTTL,COUNTER	01295	SN74LS163AN
A2–1U367	156–2520–00	670–9905–10		IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY (OPTION 05 ONLY)	01295	SN74AS163N
A2–1U370	156–1367–00			IC,CONVERTER:CMOS,D/A;8 BIT,400NS,CURRENT O UT,MPU COMPATIBLE,MULTIPLYING	24355	AD7524JN
A2–1U376	156–0158–07			IC,LINEAR:BIPOLAR,OP–AMP	01295	MC1458P
A2–1U402	156–1111–02			IC,DIGITAL:LSTTL,TRANSCEIVER	01295	SN74LS245N
A2–1U405	156–1111–02			IC,DIGITAL:LSTTL,TRANSCEIVER	01295	SN74LS245N
A2–1U409	156–0865–02			IC,DIGITAL:LSTTL,FLIP FLOP	01295	SN74LS273N
A2–1U412	156–1754–01			IC,DIGITAL:ALSTTL,BFR/DRIVER;OCTALNONINV, 3–STATE	01295	SN74ALS244BN
A2–1U415	156–0956–02			IC,DIGITAL:LSTTL,BUFFER/DRIVER;DUPLICATE OF	01295	SN74LS244N
A2–1U427	156–0983–03			IC,PROCESSOR:NMOS,MICROPROCESSOR;8–BIT	56708	Z0840006PSC
A2–1U450	156–2634–00			IC,DIGITAL:FTTL,FLIP FLOP;OCTAL D–TYPE, CLEAR	1CH66	N74F273N
A2–1U454	160–5065–00	670–9905–02	670–9905–09	MICROCKT,DGTL:NMOS,16384 X 8 OPT EPROM,PRGM	80009	160506500
A2–1U454	160–5065–01	670–9905–12		IC,MEMORY:NMOS,EPROM;16384 X 8,PRGM,27128,DIP28 (STANDARD ONLY)	80009	160506501
A2–1U454	160–4341–00	670–9905–00		MICROCKT,DGTL:16384 X 8 PROM,PRGM27128,DIP28 (OPTION 05 ONLY)	80009	160434100
A2–1U454	160–8324–00	670–9905–11	670–9905–11	IC,MEMORY:NMOS,16384 X 8 OTP EPROM;17128A–3,DIP28	80009	160832400
A2–1U454	160–8324–01	670–9905–13		IC,MEM:NMOS,EPROM;16384 X 8,PRGM,17128A–3,DIP28 (OPTION 03 ONLY)	80009	160832401
A2–1U460	160–5066–00			MICROCKT,DGTL:NMOS,16384 X 8 OPT EPROM,PRGM (STANDARD ONLY)	80009	160506600
A2–1U460	160–4342–00			MICROCKT,DGTL:16384 X 8 PROM,PRGM27256–25,DIP28 (OPTION 05 ONLY)	80009	160434200
A2–1U464	156–2634–00			IC,DIGITAL:FTTL,FLIP FLOP;OCTAL D–TYPE, CLEAR	1CH66	N74F273N
A2–1U467	156–1909–00			IC,DIGITAL:FTTL,MUX;QUAD 2–TO–1 DATA SELECTOR	01295	SN74F157AN
A2–1U495	156–0158–07			IC,LINEAR:BIPOLAR,OP–AMP	01295	MC1458P
A2–1U503	156–2992–00			IC,MEMORY:CMOS,SRAM;2K X 8,35NS,OE	65786	CY7C128A–35PC
A2–1U509	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1U512	156–2331–00			IC,DIGITAL:LSTTL,COUNTER;8–BIT, WITH STORAG E REGISTER, 3–STATE	01295	SN74LS590N
A2–1U515	156–2065–00			IC,DIGITAL:ASTTL,LATCH;OCTAL D–TYPE TRANS, 3–STATE	01295	SN74AS373N
A2–1U519	156–2338–00	670–9905–09		IC,DIGITAL:ASTTL,FLIP FLOP;DUAL D–TYPE	01295	SN74AS74N
A2–1U526	156–2389–00			IC,DGTL:ASTTL,CNTR;SYNCH 8–BIT UP/DWN, ASYNCH CLR	01295	SN74AS867NT
A2–1U570	156–2338–00			IC,DIGITAL:ASTTL,FLIP FLOP;DUAL D–TYPE	01295	SN74AS74N
A2–1U574	156–0316–04			IC,DIGITAL:ECL,TRANSLATOR;QUAD ECL TOTTL	04713	MC10125P
A2–1U578	156–0860–02			IC,DIGITAL:ECL,RECEIVER	04713	MC10116P
A2–1U582	156–0860–02			IC,DIGITAL:ECL,RECEIVER	04713	MC10116P
A2–1U585	156–0295–02			IC,DIGITAL:ECL,GATE	04713	MC10107P
A2–1U588	156–0860–02			IC,DIGITAL:ECL,RECEIVER	04713	MC10116P
A2–1U592	156–0860–02			IC,DIGITAL:ECL,RECEIVER	04713	MC10116P
A2–1U602	160–4351–00	670–9905–00	670–9905–08	MICROCKT,DGTL:STTL,OCTAL 16 INP RGTR PRGM	80009	160435100
A2–1U602	156–2065–00	670–9905–09		IC,DIGITAL:ASTTL,LATCH;OCTAL D–TYPE TRANS, 3–STATE	01295	SN74AS373N
A2–1U602	136–0752–00	670–9905–00	670–9905–08	SKT,PL–IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P–108
A2–1U605	156–1173–00			IC,LINEAR:BIPOLAR,V REF;POS,2.5V,1.0%,40PPM,SERIES	04713	MC1403U
A2–1U609	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U612	160–4496–00			IC,DIGITAL:CMOS,PLD;OTP,20G10,25NS,55MA	80009	160449600
A2–1U615	160–4422–00			IC,DIGITAL:CMOS,PLD;EEPLD,16V8,25NS,90MA	80009	160442200
A2–1U629	160–4429–00			MICROCKT,DGTL:32 X 8 PROM,TRI STATE OUTPUT, BIPOLAR,PRGM	80009	160442900
A2–1U632	156–0784–02	670–9905–02	670–9905–07	IC,DIGITAL:LSTTL,COUNTER	01295	SN74LS163AN
A2–1U632	156–2520–00	670–9905–09	670–9905–12	IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U632	156–2251–00	670–9905–12		IC,DIGITAL:FTTL,COUNTER;SYNCH 4–BIT BINARY (STANDARD ONLY)	04713	MC74F161AN
A2–1U632	156–0784–02	670–9905–00	670–9905–08	IC,DIGITAL:LSTTL,COUNTER	01295	SN74LS163AN
A2–1U632	156–2251–00	670–9905–10		IC,DIGITAL:FTTL,COUNTER;SYNCH 4–BIT BINARY	04713	MC74F161AN
A2–1U632	156–2520–00	670–9905–10	670–9905–10	IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY (OPTION 05 ONLY)	01295	SN74AS163N
A2–1U632	156–2520–00	670–9905–11	670–9905–13	IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U632	156–2251–00	670–9905–13		IC,DIGITAL:FTTL,COUNTER;SYNCH 4–BIT BINARY (OPTION 03 ONLY)	04713	MC74F161AN
A2–1U636	156–1756–00	670–9905–02		IC,DIGITAL:ALSTTL,FLIP FLOP;DUAL D–TYPE W/CLEAR (STANDARD ONLY)	01295	SN74ALS74AN
A2–1U636	156–1756–00	670–9905–01		IC,DIGITAL:ALSTTL,FLIP FLOP;DUAL D–TYPE W/CLEAR (OPTION 05 ONLY)	01295	SN74ALS74AN
A2–1U639	160–5067–00	670–9905–02	670–9905–09	MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM	80009	160506700
A2–1U639	160–5067–01	670–9905–12		IC,MEMORY:CMOS,PROM;2048 X 8,PRGM,7C245–35,DIP24 (STANDARD ONLY)	80009	160506701
A2–1U639	160–4335–00	670–9905–00		MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM (OPTION 05 ONLY)	80009	160433500
A2–1U639	160–5067–00	670–9905–11	670–9905–11	MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM	80009	160506700
A2–1U639	160–5067–01	670–9905–13		IC,MEMORY:CMOS,PROM;2048 X 8,PRGM,7C245–35,DIP24 (OPTION 03 ONLY)	80009	160506701
A2–1U642	160–5068–00	670–9905–02	670–9905–09	MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM	80009	160506800
A2–1U642	160–5068–01	670–9905–12		IC,MEMORY:CMOS,PROM;2048 X 8,PRGM,7C245–35,DIP24 (STANDARD ONLY)	80009	160506801
A2–1U642	160–4343–00	670–9905–00		MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM (OPTION 05 ONLY)	80009	160434300
A2–1U642	160–8326–00	670–9905–11	670–9905–11	IC,MEMORY:CMOS,2048 X 8 REGISTERED,PROM;7C2 45–35,DIP24	80009	160832600
A2–1U642	160–8326–01	670–9905–13		IC,MEMORY:CMOS,PROM;2048 X 8,PRGM,7C245–35,DIP24 (OPTION 03 ONLY)	80009	160832601
A2–1U645	160–5070–00	670–9905–02	670–9905–09	MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM	80009	160507000
A2–1U645	160–5070–01	670–9905–12		IC,MEMORY:CMOS,PROM;2048 X 8,PRGM,7C245–35,DIP24 (STANDARD ONLY)	80009	160507001
A2–1U645	160–4336–00	670–9905–00		MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM (OPTION 05 ONLY)	80009	160433600

Replaceable Electrical Parts

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1U645	160–8325–00	670–9905–11	670–9905–11	IC,MEMORY:CMOS,2048 X 8 REGISTERED,PROM;7C2 45–35,DIP24	80009	160832500
A2–1U645	160–8325–01	670–9905–13		IC,MEMORY:CMOS,PROM;2048 X 8,PRGM,7C245–35,DIP24 (OPTION 03 ONLY)	80009	160832501
A2–1U648	156–1909–00			IC,DIGITAL:FTTL,MUX;QUAD 2–TO–1 DATA SELECTOR	01295	SN74F157AN
A2–1U654	160–5069–00			MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM (STANDARD ONLY)	80009	160506900
A2–1U654	160–4344–00			MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM (OPTION 05 ONLY)	80009	160434400
A2–1U657	160–5071–00			MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM (STANDARD ONLY)	80009	160507100
A2–1U657	160–4345–00			MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM (OPTION 05 ONLY)	80009	160434500
A2–1U661	160–5072–00			MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM (STANDARD ONLY)	80009	160507200
A2–1U661	160–4346–00			MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM (OPTION 05 ONLY)	80009	160434600
A2–1U664	160–5073–00	670–9905–02	670–9905–09	MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM	80009	160507300
A2–1U664	160–5073–01	670–9905–12		IC,MEMORY:CMOS,PROM;2048 X 8,PRGM,7C245–35,DIP24 (STANDARD ONLY)	80009	160507301
A2–1U664	160–4347–00	670–9905–00		MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM (OPTIION 05 ONLY)	80009	160434700
A2–1U664	160–5073–00	670–9905–11	670–9905–11	MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM	80009	160507300
A2–1U664	160–5073–01	670–9905–13		IC,MEMORY:CMOS,PROM;2048 X 8,PRGM,7C245–35,DIP24 (OPTION 03 ONLY)	80009	160507301
A2–1U667	160–5074–00	670–9905–02	670–9905–09	MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM	80009	160507400
A2–1U667	160–5074–01	670–9905–12		IC,MEMORY:CMOS,PROM;2048 X 8,PRGM,7C245–35,DIP24 (STANDARD ONLY)	80009	160507401
A2–1U667	160–4348–00	670–9905–00		MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM (OPTION 05 ONLY)	80009	160434800
A2–1U667	160–5074–00	670–9905–11	670–9905–11	MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM	80009	160507400
A2–1U667	160–5074–01	670–9905–13		IC,MEMORY:CMOS,PROM;2048 X 8,PRGM,7C245–35,DIP24 (OPTION 03 ONLY)	80009	160507401
A2–1U670	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U673	156–1911–00			IC,DIGITAL:FTTL,FLIP FLOP;HEX D–TYPE,WITH /MR	04713	MC74F174N
A2–1U676	156–1973–00			IC,DIGITAL:FTTL,FLIP FLOP;QUAD D–TYPE, WITH	01295	SN74F175N
A2–1U679	156–2928–00			IC,DIGITAL:ASTTL,FLIP FLOP;HEX D–TYPE, CLEAR	01295	SN74AS174N
A2–1U682	156–2928–00			IC,DIGITAL:ASTTL,FLIP FLOP;HEX D–TYPE, CLEAR	01295	SN74AS174N
A2–1U685	156–2928–00			IC,DIGITAL:ASTTL,FLIP FLOP;HEX D–TYPE, CLEAR	01295	SN74AS174N
A2–1U687	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U690	156–1724–00			IC,DIGITAL:FTTL,GATE;QUAD 2–INPUT OR	01295	SN74F32N
A2–1U693	156–2120–00			IC,DIGITAL:FTTL,SHIFT REGISTER;8–BIT SIPO,WITH /MR	1CH66	N74F164N
A2–1U697	156–0798–02			IC,DIGITAL:LSTTL,MUX/ENCODER	01295	SN74LS153N
A2–1U709	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U719	156–0316–04			IC,DIGITAL:ECL,TRANSLATOR;QUAD ECL TOTTL	04713	MC10125P
A2–1U723	156–0956–02			IC,DIGITAL:LSTTL,BUFFER/DRIVER	01295	SN74LS244N
A2–1U726	156–2338–00			IC,DIGITAL:ASTTL,FLIP FLOP;DUAL D–TYPE	01295	SN74AS74N
A2–1U732	156–1704–01			IC,DIGITAL:FTTL,FLIP FLOP;OCTAL D, 3–STATE	1CH66	N74F374N
A2–1U736	156–1973–00			IC,DIGITAL:FTTL,FLIP FLOP;QUAD D–TYPE, WITH	01295	SN74F175N
A2–1U739	156–1705–00			IC,DIGITAL:FTTL,ARITH FUNC;4–BIT BINARY FUL L ADDER, W/FAST CARRY	04713	MC74F283N
A2–1U742	156–1705–00			IC,DIGITAL:FTTL,ARITH FUNC;4–BIT BINARY FUL L ADDER, W/FAST CARRY	04713	MC74F283N
A2–1U745	156–1705–00			IC,DIGITAL:FTTL,ARITH FUNC;4–BIT BINARY FUL L ADDER, W/FAST CARRY	04713	MC74F283N
A2–1U749	156–0316–04			IC,DIGITAL:ECL,TRANSLATOR;QUAD ECL TOTTL	04713	MC10125P
A2–1U752	160–4423–00			IC,DIGITAL:STTL,PLD;PAL,16R8,25MHZ,180MA	80009	160442300
A2–1U761	156–1705–00			IC,DIGITAL:FTTL,ARITH FUNC;4–BIT BINARY FUL L ADDER, W/FAST CARRY	04713	MC74F283N

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1U764	156–1705–00			IC,DIGITAL:FTTL,ARITH FUNC;4–BIT BINARY FUL L ADDER, W/FAST CARRY	04713	MC74F283N
A2–1U767	156–1705–00			IC,DIGITAL:FTTL,ARITH FUNC;4–BIT BINARY FUL L ADDER, W/FAST CARRY	04713	MC74F283N
A2–1U770	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U773	160–4349–00			MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM	80009	160434900
A2–1U777	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U780	160–4350–00	670–9905–02	670–9905–02	MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM	80009	160435000
A2–1U780	160–4350–01	670–9905–02	670–9905–05	MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM	80009	160435001
A2–1U780	160–4350–02	670–9905–05		MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM (STANDARD ONLY)	80009	160435002
A2–1U780	160–4350–00	670–9905–00	670–9905–01	MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM	80009	160435000
A2–1U780	160–4350–01	670–9905–01	670–9905–06	MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM	80009	160435001
A2–1U780	160–4350–02	670–9905–06		MICROCKT,DGTL:CMOS,2048 X 8 REG PROM,PRGM (OPTION 05 ONLY)	80009	160435002
A2–1U783	156–0865–02			IC,DIGITAL:LSTTL,FLIP FLOP	01295	SN74LS273N
A2–1U786	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U791	160–4408–00	670–9905–02		MICROCKT,DGTL:256K UV ERASEABLE PROM,PRGM (STANDARD ONLY)	80009	160440800
A2–1U791	160–4408–00	670–9905–00		MICROCKT,DGTL:256K UV ERASEABLE PROM,PRGM (OPTION 05 ONLY)	80009	160440800
A2–1U791	160–8080–00	670–9905–11	670–9905–11	IC,MEM:CMOS,32768 X 8 EPROM,27C256,200NS,DIP28.6	80009	160808000
A2–1U791	160–8080–01	670–9905–11		IC,MEM:CMOS,32768 X 8 EPROM,27C256,200NS,DIP28.6 (OPTION 03 ONLY)	80009	160808001
A2–1U796	160–4337–00	670–9905–02	670–9905–02	MICROCKT,DGTL:NMOS,8192 X 8 EPROM,PRGMW/3 S TATE OUT,2764A,DIP28	80009	160433700
A2–1U796	160–4337–01	670–9905–02		MICROCKT,DGTL:NMOS,8192 X 8 EPROM,PRGMW/3 S TATE OUT,2764A–25,DIP28 (STANDARD ONLY)	80009	160433701
A2–1U796	160–4337–00	670–9905–00	670–9905–01	MICROCKT,DGTL:NMOS,8192 X 8 EPROM,PRGMW/3 S TATE OUT,2764A,DIP28	80009	160433700
A2–1U796	160–4337–01	670–9905–01		MICROCKT,DGTL:NMOS,8192 X 8 EPROM,PRGMW/3 S TATE OUT,2764A–25,DIP28 (OPTION 05 ONLY)	80009	160433701
A2–1U802	156–2487–00			IC,CONVERTER:BIPOLAR,A/D;6–BIT,25MSPS FLASH	07933	TDC1046J8C
A2–1U808	156–0067–00			IC,LINEAR:BIPOLAR,OP–AMP;	01295	UA741CP
A2–1U811	156–0368–03			IC,DIGITAL:ECL,TRANSLATOR;QUAD TTL–TO–ECL	04713	MC10124P
A2–1U813	156–0368–03			IC,DIGITAL:ECL,TRANSLATOR;QUAD TTL–TO–ECL	04713	MC10124P
A2–1U816	156–0368–03			IC,DIGITAL:ECL,TRANSLATOR;QUAD TTL–TO–ECL	04713	MC10124P
A2–1U819	156–0368–03			IC,DIGITAL:ECL,TRANSLATOR;QUAD TTL–TO–ECL	04713	MC10124P
A2–1U821	156–0368–03			IC,DIGITAL:ECL,TRANSLATOR;QUAD TTL–TO–ECL	04713	MC10124P
A2–1U824	156–0368–03			IC,DIGITAL:ECL,TRANSLATOR;QUAD TTL–TO–ECL	04713	MC10124P
A2–1U827	160–4405–00			MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM	80009	160440500
A2–1U830	160–4406–00			MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM ,PRGM	80009	160440600
A2–1U833	156–1704–01			IC,DIGITAL:FTTL,FLIP FLOP;OCTAL D, 3–STATE	1CH66	N74F374N
A2–1U836	156–2389–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 8–BIT UP/DOW N, ASYNCH CLEAR	01295	SN74AS867NT
A2–1U839	160–4424–00	670–9905–00	670–9905–08	IC,DIGITAL:CMOS,PLD;EEPLD,16V8,25NS,90MA	80009	160442400
A2–1U839	160–4424–01	670–9905–09		IC,DIGITAL:CMOS,PLD;EEPLD,16V8,25NS,90MA	80009	160442401
A2–1U846	156–0956–02			IC,DIGITAL:LSTTL,BUFFER/DRIVER;DUPLICATE OF	01295	SN74LS244N
A2–1U849	156–0956–02			IC,DIGITAL:LSTTL,BUFFER/DRIVER;DUPLICATE OF	01295	SN74LS244N
A2–1U852	160–4425–00			IC,DIGITAL:STTL,PLD;PAL,16R8,25MHZ,180MA	80009	160442500
A2–1U856	156–2979–00			IC,DIGITAL:ACMOS,ARITH FUNC;8X8 MULTIPLIER	65896	LMU8UPC50
A2–1U861	160–4407–00			MICROCKT,DGTL:CMOS,2048 X 8 REGISTERED PROM	80009	160440700
A2–1U864	156–2232–00			IC,DIGITAL:ASTTL,FLIP FLOP;DUAL 4–BITD POS EDGE TRIG	01295	SN74AS874NT
A2–1U867	156–1973–00			IC,DIGITAL:FTTL,FLIP FLOP;QUAD D–TYPE, WITH	01295	SN74F175N
A2–1U870	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U873	160–4421–00	670–9905–02	670–9905–12	IC,DIGITAL:CMOS,PLD;EEPLD,16V8,PRGM	80009	160442100

Replaceable Electrical Parts

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1U873	160–4421–01	670–9905–12		IC,DIGITAL:CMOS,PLD;EEPLD,16V8,10NS,115MA (STANDARD ONLY)	80009	160442101
A2–1U873	160–4421–00	670–9905–00	670–9905–10	IC,DIGITAL:CMOS,PLD;EEPLD,16V8,PRGM	80009	160442100
A2–1U873	160–4421–01	670–9905–10		IC,DIGITAL:CMOS,PLD;EEPLD,16V8,10NS,115MA (OPTION 05 ONLY)	80009	160442101
A2–1U873	160–4421–00	670–9905–11	670–9905–13	IC,DIGITAL:CMOS,PLD;EEPLD,16V8,PRGM	80009	160442100
A2–1U873	160–4421–01	670–9905–13		IC,DIGITAL:CMOS,PLD;EEPLD,16V8,10NS,115MA (OPTION 03 ONLY)	80009	160442101
A2–1U877	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U880	156–0865–02			IC,DIGITAL:LSTTL,FLIP FLOP	01295	SN74LS273N
A2–1U883	156–0914–02			IC,DIGITAL:LSTTL,BUFFER/DRIVER	01295	SN74LS240N
A2–1U886	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U977	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U988	156–2520–00			IC,DIGITAL:ASTTL,COUNTER;SYNCH 4–BIT BINARY	01295	SN74AS163N
A2–1U991	156–0480–02			IC,DIGITAL:LSTTL,GATES	01295	SN74LS08N
A2–1U994	156–1707–00			IC,DIGITAL:FTTL,GATE;QUAD 2–INPUT NAND	04713	MC74F00N
A2–1U997	156–0465–02			IC,DIGITAL:LSTTL,GATES	01295	SN74LS30N
A2–1CR179	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A2–1CR394	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A2–1CR395	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A2–1CR437	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A2–1CR438	152–0322–00			DIODE,SIG:SCHTKY,;15V,410MVF AT 1MA,1.2PF	50434	5082–2672–T25
A2–1CR439	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A2–1CR445	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A2–1CR474	152–0269–00			SEMICOND DVC,DI:VVC,SI,35V,33PF AT 4V,DO–7 1N5450 FAMILY	04713	SMV1263RL
A2–1CR475	152–0270–00			SEMICOND DVC,DI:VVC,SI,40V,62.6PF,DO–7V56E FAMILY	18518	MSI0270
A2–1CR480	152–0269–00			SEMICOND DVC,DI:VVC,SI,35V,33PF AT 4V,DO–7 1N5450 FAMILY	04713	SMV1263RL
A2–1CR481	152–0270–00			SEMICOND DVC,DI:VVC,SI,40V,62.6PF,DO–7V56E FAMILY	18518	MSI0270
A2–1CR488	152–0141–02	670–9905–02	670–9905–02	DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF (STANDARD ONLY)	27014	FDH9427
A2–1CR488	152–0141–02	670–9905–00	670–9905–01	DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF (OPTION 05 ONLY)	27014	FDH9427
A2–1CR489	152–0141–02	670–9905–02	670–9905–02	DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF (STANDARD ONLY)	27014	FDH9427
A2–1CR489	152–0141–02	670–9905–00	670–9905–01	DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF (OPTION 05 ONLY)	27014	FDH9427
A2–1CR905	152–0322–00			DIODE,SIG:SCHTKY,;15V,410MVF AT 1MA,1.2PF	50434	5082–2672–T25
A2–1DS494	150–1014–00			DIODE,OPTO:LED;RED,66ONM,1 MCD AT 10MA	0MS63	Q6444/MV5054–1
A2–1TP101	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP101	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A2–1TP136	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP136	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A2–1TP164	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP164	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A2–1TP401	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP401	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A2–1TP469	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP469	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–1TP499	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP499	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A2–1TP538	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP538	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A2–1TP903	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP903	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A2–1TP907	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP907	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A2–1TP942	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP942	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A2–1TP965	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP965	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A2–1TP996	214–0579–00	670–9905–00	670–9905–08	TERM,TEST POINT:PCB,TEST POINT;EYELET 0.055 /0.045 TIPCHAMFER	0J260	ORDER BY DESC
A2–1TP996	214–4085–00	670–9905–09		TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A2–2	119–2501–00	B010100	B020143	OVEN ASSEMBLY:TSG271	80009	119250100
A2–2	119–2501–01	B020144	B020256	OVEN ASSEMBLY:TSG271	80009	119250101
A2–2	119–2501–02	B020257	B031175	OVEN ASSEMBLY:TSG271	80009	119250102
A2–2	119–2501–03	B031176	B031474	OVEN ASSEMBLY:TPG625	80009	119250103
A2–2	119–2501–04	B031475	B031610	OVEN ASSEMBLY:TPG625	80009	119250104
A2–2	119–2501–05	B031611		OVEN ASSEMBLY:TPG625	80009	119250105
				MOUNTING PARTS		
	200–3264–00			COVER,TOP:ALUMINUM	5Y400	ORDER BY DESC
	211–0513–00			SCREW,MACHINE:6–32 X 0.625,PNH,STL (QUANTITY 2)	TK0435	ORDER BY DESC
	211–0661–00			SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL,CD PL,POZ,MACH (QUANTITY 2)	TK0435	ORDER BY DESC
				END MOUNTING PARTS		
A2–2A4	348–0935–00			GASKET:2.0 X 1.7,NEOPRENE	TK1989	ORDER BY DESC
A2–2A4	432–0154–00			BASE,HEAT SINK:PLASTIC	80009	432015400
A2–2A4	200–3266–00	119–2501–00	119–2501–02	CAP,HEAT SINK:PLASTIC	80009	200326600
A2–2A4	200–3266–01	119–2501–03		CAP,HEAT SINK:PLASTIC	0JR05	200–3266–01
A2–2A4	214–3863–00	119–2501–00	119–2501–02	HEAT SINK,ELEC:ALUMINUM	TK1828	ORDER BY DESC
A2–2A4	214–3863–01	119–2501–03		HEAT SINK,ELEC:ALUMINUM	TK1828	ORDER BY DESC
A2–2C2	283–0630–00	119–2501–00	119–2501–00	CAP,FXD,MICA DI:110PF,1%,100V	TK0891	RDM15FD111F03
A2–2C2	283–0632–00	119–2501–01	119–2501–02	CAP,FXD,MICA DI:87PF,1%,500V	TK0891	RDM15ED870F03
A2–2C3	283–0637–00	119–2501–00	119–2501–00	CAP,FXD,MICA DI:20PF,2.5%,500V	TK0891	RDM15ED200D03
A2–2C3	283–0779–00	119–2501–01	119–2501–02	CAP,FXD,MICA DI:27 PF,2%,500V	TK0891	RDM15ED270G03
A2–2C4	281–0773–00	119–2501–00	119–2501–02	CAP,FXD,CERAMIC:MLC;0.01UF,10%,100V,,	TK1743	CGB103KEX
A2–2C6	283–5025–00	119–2501–03	119–2501–04	CAP,FXD,CERAMIC:MLC;220PF,5%,50V,NPO,1206	04222	12065A221JAT1A
A2–2C6	283–5238–00	119–2501–05		CAP,FXD,CERAMIC:MLC;150PF,5%,100V,NPO,1206	04222	12061A151JAT1A
A2–2C8	283–5025–00	119–2501–03		CAP,FXD,CERAMIC:MLC;220PF,5%,50V,NPO,1206	04222	12065A221JAT1A
A2–2C15	283–5000–00	119–2501–03		CAP,FXD,CERAMIC:MLC;10PF,5%,50V,NPO,1206	04222	12065A100JATMA
A2–2C16	283–5206–00	119–2501–03		CAP,FXD,CER DI:56PF,5%,100V	04222	0805A560JAT050R
A2–2C17	283–5004–00	119–2501–03		CAP,FXD,CERAMIC:MLC;0.1UF,10%,25V,X7R,1206	04222	12063C104KAT3A

Replaceable Electrical Parts

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A2–2C19	281–0165–00	119–2501–03		CAP,VAR,AIR DI:0.8–10PF,250V	91293	5201/3469
A2–2J286	131–2002–00	119–2501–00	119–2501–02	CONN,BOX::PCB,;FEMALE,RTANG,1 X 5,0.1 CTR,0.14 X 0.115 TAIL,2 X5 PCB,0.31 X 0.1 CTR PTH,40 GOLD,SIDE ENTRY,DAP	22526	65001–110
A2–2Q1	151–1124–00	119–2501–00	119–2501–02	XSTR,SIG:JFET,N–CH;4.5V,30MA,6MS,110 OHM,5.5MS @450MHZ	17856	J–2400
A2–2Q10	151–5001–00	119–2501–03	119–2501–03	XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	MMBT3904LT1
A2–2Q10	151–5035–00	119–2501–04		XSTR,SIG:BIPOLAR,NPN;25V,30MA,650MHZ,AMPLIFIER	04713	MMBTH10LT1
A2–2R1	321–5043–00	119–2501–03		RES,FXD:THICK FILM;47.5 OHM,1%,0.125W,TC=100 PPM	57668	MCR18FWEA47E5
A2–2R3	307–1161–00	119–2501–03		RES,FXD,FILM:1M OHM,5%,0.062W,0805,8MMTAPED	50139	ACD1004JT
A2–2R4	321–5078–00	119–2501–03		RES,FXD,FILM:20K OHM,1%,125MW,0805 PKG	91637	CRCW 0805 2002F
A2–2R5	317–0105–00	119–2501–00	119–2501–02	RES,FXD,CMPSN:1M OHM,5%,0.125W	50139	BB1055
A2–2R5	321–5078–00	119–2501–03		RES,FXD,FILM:20K OHM,1%,125MW,0805 PKG	91637	CRCW 0805 2002F
A2–2R9	317–0105–00	119–2501–00	119–2501–02	RES,FXD,CMPSN:1M OHM,5%,0.125W	50139	BB1055
A2–2R9	321–5012–00	119–2501–03		RES,FXD:THICK FILM;332 OHM,1%,0.125W,TC=100	50139	BCK3320FT
A2–2R10	317–0470–00	119–2501–00	119–2501–02	RES,FXD,CMPSN:47 OHM,5%,0.125W	TK1727	SFR16 2322–180–
A2–2Y11	————————			XTAL UNIT,QTZ:17.734380 MHZ,32 PF,HC43/U (REPLACEABLE AT A2–2 ONLY)		
A2–2CR7	152–0719–00	119–2501–00	119–2501–02	DIODE,SIG:VVC;30V,100PF,5%	04713	1N5456B
A2–2CR14	152–0269–01	119–2501–03		DIODE,SIG:VVC;C4=33PF,5%,C4/C20=2	04713	SMV1263–1
A2–2CR488	152–0141–02	119–2501–01	119–2501–02	DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A2–2CR489	152–0141–02	119–2501–01	119–2501–02	DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A2–2RT6	307–0181–01	119–2501–00	119–2501–02	RES,THERMAL:20K OHM,5%,AT 60 DEG C	91637	C771
A2–2RT11	307–0181–01	119–2501–03		RES,THERMAL:20K OHM,5%,AT 60 DEG C	91637	C771
A2–3	671–1918–00	B031658		CIRCUIT BD ASSY:LATCH (OPTION 03 ONLY)	80009	671191800
A2–3C253	281–0775–01			CAP,FXD,CERAMIC:MCL;0.1UF,20%,50V,Z5U,0.170	04222	SA105E104MAA
A2–3J150	131–3241–00			CONN,HDR::PCB,;MALE,RTANG,1 X 10,0.1CTR,0.3 18 MLG X 0.110 TAIL,30 GOLD,0.138 H	00779	1–87232–0
A2–3U150	156–2323–00			IC,DIGITAL:ASTTL,GATE;HEX INVERTER	01295	SN74AS04N
A2–3U153	156–0865–02			IC,DIGITAL:LSTTL,FLIP FLOP	01295	SN74LS273N
				MOUNTING PARTS		
	136–0675–00			SOCKET,DIP:WIREWRAP,;20 POS,2 X 10,0.1 X 0. 3 CTR,0.28 H X 0.665 L 0.25 SQ 50 GOLD,TAIL ,ACCOM 0.014/0.008 X 0.021/0.015	01295	C91–20–00
				END MOUNTING PARTS		
A3	670–9906–00	B010100	B020115	CIRCUIT BD ASSY:ANALOG	80009	670990600
A3	670–9906–01	B020116	B030730	CIRCUIT BD ASSY:ANALOG	80009	670990601
A3	670–9906–02	B030731	B030836	CIRCUIT BD ASSY:ANALOG	80009	670990602
A3	670–9906–03	B030837	B031561	CIRCUIT BD ASSY:ANALOG	80009	670990603
A3	670–9906–04	B031562	B032711	CIRCUIT BD ASSY:ANALOG	80009	670990604
A3	670–9906–05	B032712	B033174	CIRCUIT BD ASSY:ANALOG	80009	670990605
A3	670–9906–06	B033175		CKT BD SUBASSY:ANALOG	80009	670990606
A3C108	290–0804–00			CAP,FXD,ELCTLT:10UF,+50–20%,25V	0H1N5	CEUSM1E100
A3C122	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C127	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C189	283–0693–00			CAP,FXD,MICA DI:1730PF,1%,500V	TK0891	RDM19FD1731F03
A3C207	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C212	283–0594–00			CAP,FXD,MICA DI:0.001UF,1%,100V	TK0891	RDM15FA102F03
A3C215	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C222	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C225	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C230	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C235	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C240	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C245	290–0804–00			CAP,FXD,ELCTLT:10UF,+50–20%,25V	0H1N5	CEUSM1E100
A3C247	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A3C248	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C275	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C281	283–0648–00			CAP,FXD,MICA DI:10PF,+/–0.5PF,500V	TK0891	RDM15CD100D03
A3C290	283–0594–00			CAP,FXD,MICA DI:0.001UF,1%,100V	TK0891	RDM15FA102F03
A3C291	283–0672–00			CAP,FXD,MICA DI:200PF,1%,500V	TK0891	RDM15FD201F03
A3C295	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C306	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C313	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C327	283–0198–00			CAP,FXD,CERAMIC:MLC;0.22UF,20%,50V,X7R,0.30	04222	SR305C224MAA
A3C330	283–0644–00			CAP,FXD,MICA DI:150PF,1%,500V	TK0891	RDM15FD151F03
A3C336	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C345	290–0804–00			CAP,FXD,ELCTLT:10UF,+50–20%,25V	0H1N5	CEUSM1E100
A3C347	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C348	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C370	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C375	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C376	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C388	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C390	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C411	283–0672–00			CAP,FXD,MICA DI:200PF,1%,500V	TK0891	RDM15FD201F03
A3C413	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C421	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C427	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C430	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C431	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C435	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C440	283–0623–00			CAP,FXD,MICA DI:1200PF,1%,100V	TK0891	RDM19FD122F03
A3C442	283–0630–00			CAP,FXD,MICA DI:110PF,1%,100V	TK0891	RDM15FD111F03
A3C450	290–0804–00			CAP,FXD,ELCTLT:10UF,+50–20%,25V	0H1N5	CEUSM1E100
A3C466	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C483	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C489	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C490	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C495	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C505	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C513	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C517	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C530	283–0707–00			CAP,FXD,MICA DI:385PF,1%,500V	TK0891	RDM15FD3850F03
A3C540	283–0730–00			CAP,FXD,MICA DI:274PF,1%,500V	TK0891	RDM15FD2740F03
A3C541	283–0629–00			CAP,FXD,MICA DI:62PF,1%,500V	TK0891	RDM10ED620F03
A3C542	283–0781–00			CAP,FXD,MICA DI:27PF,5%,500V	TK0891	RDM15ED270J03
A3C543	283–0640–00			CAP,FXD,MICA DI:160PF,1%,500V	TK0891	RDM15FD161F03
A3C550	290–0804–00			CAP,FXD,ELCTLT:10UF,+50–20%,25V	0H1N5	CEUSM1E100
A3C564	283–0692–00			CAP,FXD,MICA DI:670PF,1%,300V	TK0891	RDM15FC671F03
A3C606	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C611	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C615	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C617	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C622	283–0648–00	670–9906–01	670–9906–05	CAP,FXD,MICA DI:10PF,+/–0.5PF,500V	TK0891	RDM15CD100D03
A3C622	281–0893–00	670–9906–06		CAP,FXD,CERAMIC:MLC;4.7PF,+/–0.5PF,100V,0.100 X 0.170	04222	SA102A4R7DAA
A3C630	281–0153–00			CAP,VAR,AIR DI:1.7–10PF,250V	74970	187–0106–055
A3C633	281–0122–00			CAP,VAR,CER DI:2.5–9PF,100V	59660	518–000A2.5–9
A3C640	283–0622–00			CAP,FXD,MICA DI:450PF,1%,300V	TK0891	RDM15FD451F03
A3C641	283–0768–00			CAP,FXD,MICA DI:132 PF,1%,500V	TK0891	RDM15FD132OFO3
A3C642	283–0673–00			CAP,FXD,MICA DI:455PF,1%,500V	TK0891	RDM15FD4550F03
A3C643	283–0639–00			CAP,FXD,MICA DI:56PF,1%,500V	TK0891	RDM15ED560F03
A3C676	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C689	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB

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A3C690	283–0692–00			CAP,FXD,MICA DI:670PF,1%,300V	TK0891	RDM15FC671F03
A3C705	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C710	283–0636–00			CAP,FXD,MICA DI:36PF,2%,500V,0.370 X 0.460;RADIAL	TK0891	RDM15ED360G03
A3C713	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C720	283–0051–00			CAP,FXD,CER DI:0.0033UF,5%,100V	04222	SR211A332JAA
A3C722	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C723	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C724	283–0648–00			CAP,FXD,MICA DI:10PF,+/–0.5PF,500V	TK0891	RDM15CD100D03
A3C749	283–0692–00			CAP,FXD,MICA DI:670PF,1%,300V	TK0891	RDM15FC671F03
A3C755	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C756	283–0692–00			CAP,FXD,MICA DI:670PF,1%,300V	TK0891	RDM15FC671F03
A3C793	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C805	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C806	283–0051–00			CAP,FXD,CER DI:0.0033UF,5%,100V	04222	SR211A332JAA
A3C821	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C823	283–0645–00			CAP,FXD,MICA DI:790PF,1%,300V	TK0891	RDM15FC791F03
A3C824	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C829	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C833	283–0175–00	670–9906–03		CAP,FXD,CER DI:10PF,5%,200V	18796	RPE110NPO100D20
A3C835	283–0648–00	670–9906–01	670–9906–05	CAP,FXD,MICA DI:10PF,+/–0.5PF,500V	TK0891	RDM15CD100D03
A3C835	281–0893–00	670–9906–06		CAP,FXD,CERAMIC:MLC;4.7PF,+/–0.5PF,100V,0.100 X 0.170	04222	SA102A4R7DAA
A3C838	281–0153–00			CAP,VAR,AIR DI:1.7–10PF,250V	74970	187–0106–055
A3C842	283–0648–00			CAP,FXD,MICA DI:10PF,+/–0.5PF,500V	TK0891	RDM15CD100D03
A3C853	283–0175–00	670–9906–03		CAP,FXD,CER DI:10PF,5%,200V	18796	RPE110NPO100D20
A3C855	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C863	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C877	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C888	283–0692–00			CAP,FXD,MICA DI:670PF,1%,300V	TK0891	RDM15FC671F03
A3C905	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C912	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C913	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C920	283–0223–00			CAP,FXD,CER DI:3PF,+/–5PF,50V	TK0679	TC501–NPO–309D
A3C923	290–0990–00			CAP,FXD,ALUM:;10UF,20%,50V,8X11.5	1W344	511D295
A3C925	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C930	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C931	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C933	283–0648–00			CAP,FXD,MICA DI:10PF,+/–0.5PF,500V	TK0891	RDM15CD100D03
A3C934	283–0648–00	670–9906–00	670–9906–00	CAP,FXD,MICA DI:10PF,+/–0.5PF,500V	TK0891	RDM15CD100D03
A3C940	283–0648–00	670–9906–00	670–9906–00	CAP,FXD,MICA DI:10PF,+/–0.5PF,500V	TK0891	RDM15CD100D03
A3C942	281–0122–00	670–9906–00	670–9906–02	CAP,VAR,CER DI:2.5–9PF,100V	59660	518–000A2.5–9
A3C942	283–0260–00	670–9906–03		CAP,FXD,CER DI:5.6PF,+/–0.25PF,200V	04222	SR152A5R6CAA
A3C949	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C952	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3C953	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A3C960	283–0663–00	670–9906–00	670–9906–00	CAP,FXD,MICA DI:16.8PF,+/0.5PF,500V	TK0891	RDM15CD16R8D03
A3C960	283–0779–00	670–9906–01		CAP,FXD,MICA DI:27 PF,2%,500V	TK0891	RDM15ED270G03
A3C963	283–0175–00	670–9906–03		CAP,FXD,CER DI:10PF,5%,200V	18796	RPE110NPO100D20
A3C987	283–0692–00			CAP,FXD,MICA DI:670PF,1%,300V	TK0891	RDM15FC671F03
A3C990	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A3J115	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J375	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J440	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J460	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018

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A3J511	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J518	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J660	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J668	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J678	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J751	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J780	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J807	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J815	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J940	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J965	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3J978	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A3L295	108–0146–00			COIL,RF:INDUCTOR;FXD,5.4UH,10%,WOUND ON 30 7–0005–01,15M OHM,20%,0.5W RES,57 TURNS,AWG	0JR03	108–0146–00
A3L327	108–1212–00			COIL,RF:FIXED,9UH,2%	0JR03	108–1212–00
A3L450	114–0423–00			COIL,RF:VARIABLE,POT CORE,2.0UH–2.30UH	54937	500–4207
A3L550	114–0422–00			COIL,RF:VARIABLE,POT CORE,645NH–770NH	54937	500–4206
A3L551	120–1768–00			TRANSFORMER,RF:VARIABLE,POT CORE,1.95UH–2.20UH	54937	500–4205
A3L650	114–0366–00			COIL,RF:VARIABLE,2.40–2.70UH,Q MIN190 @ 2.6	54937	114–0366–00
A3L750	114–0344–00			COIL,RF:VARIABLE,1.8–2.13UHPOT CORE	54937	500–3883
A3P115	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A3P140	131–3693–00			CONN,DIN:PCB,;FEMALE,RTANG,3 X 32,0.1 CTR,0 .504 MLG X 0.104 TAIL,W/BD RETENTION	00779	650895–4
				MOUNTING PARTS		
	210–0001–00			WASHER,LOCK:#2 INTL,0.013 THK,STL (QUANTITY 2)	78189	1202–00–00–0541
	210–0405–00			NUT,PLAIN,HEX:2–56 X 0.188,BRS CD PL (QUANTITY 2)	73743	12157–50
	211–0185–00			SCREW,MACHINE:2–56 X 0.438,PNH,STL (QUANTITY 2)	0KB01	ORDER BY DESC
				END MOUNTING PARTS		
A3P375	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A3P440	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A3P460	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A3P511	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A3P511	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A3P518	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A3P660	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A3P668	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A3P678	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A3P780	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A3P807	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A3P815	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A3P965	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A3P978	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A3Q222	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q223	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q284	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A3Q290	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q309	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q380	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q388	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q463	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q468	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q470	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q475	151–0216–00			XSTR,SIG:BIPOLAR,PNP;25V,100MA,170MHZ,AMPLIFIER	04713	MPS6523
A3Q490	151–0103–02			XSTR,SIG:BIPOLAR,NPN	04713	2N2219A
A3Q567	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q585	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q589	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q660	151–0192–00			XSTR,SIG:BIPOLAR,NPN;25V,100MA,200MHZ,AMPLIFIER	04713	SPS8801
A3Q667	151–0192–00			XSTR,SIG:BIPOLAR,NPN;25V,100MA,200MHZ,AMPLIFIER	04713	SPS8801
A3Q672	151–0192–00			XSTR,SIG:BIPOLAR,NPN;25V,100MA,200MHZ,AMPLIFIER	04713	SPS8801
A3Q683	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q686	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q693	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q735	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q740	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q745	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q748	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q760	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q767	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q785	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q786	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q790	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q793	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q817	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q830	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q831	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q833	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q834	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q840	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q844	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q848	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q849	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q850	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q852	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q861	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q863	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q867	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q872	151–0192–00			XSTR,SIG:BIPOLAR,NPN;25V,100MA,200MHZ,AMPLIFIER	04713	SPS8801
A3Q878	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q880	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q893	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q920	151–0367–00			XSTR,SIG:BIPOLAR,NPN;25V,30MA,1.0GHZ	04713	SPS8811
A3Q921	151–0367–00			XSTR,SIG:BIPOLAR,NPN;25V,30MA,1.0GHZ	04713	SPS8811
A3Q923	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q924	151–0367–00			XSTR,SIG:BIPOLAR,NPN;25V,30MA,1.0GHZ	04713	SPS8811
A3Q942	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q949	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A3Q950	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q960	151–0192–00			XSTR,SIG:BIPOLAR,NPN;25V,100MA,200MHZ,AMPLIFIER	04713	SPS8801
A3Q965	151–0192–00			XSTR,SIG:BIPOLAR,NPN;25V,100MA,200MHZ,AMPLIFIER	04713	SPS8801
A3Q972	151–0192–00			XSTR,SIG:BIPOLAR,NPN;25V,100MA,200MHZ,AMPLIFIER	04713	SPS8801
A3Q978	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3Q983	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A3Q988	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A3R110	322–3385–00			RES,FXD:METAL FILM;100K OHM,1%,0.2W,TC=100PPM	91637	CCF501G10002F
A3R145	315–0202–00	670–9906–01	670–9906–05	RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R145	322–3222–00	670–9906–06		RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R160	315–0271–00	670–9906–01	670–9906–05	RES,FXD,FILM:270 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R160	322–3138–00	670–9906–06		RES,FXD,FILM:267 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G267R0F
A3R161	315–0511–00	670–9906–01	670–9906–05	RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R161	322–3165–00	670–9906–06		RES,FXD,FILM:511 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G511R0F
A3R162	315–0271–00	670–9906–01	670–9906–05	RES,FXD,FILM:270 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R162	322–3138–00	670–9906–06		RES,FXD,FILM:267 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G267R0F
A3R163	315–0511–00	670–9906–01	670–9906–05	RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R163	322–3165–00	670–9906–06		RES,FXD,FILM:511 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G511R0F
A3R175	315–0511–00	670–9906–01	670–9906–05	RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R175	322–3165–00	670–9906–06		RES,FXD,FILM:511 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G511R0F
A3R188	315–0511–00	670–9906–01	670–9906–05	RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R188	322–3165–00	670–9906–06		RES,FXD,FILM:511 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G511R0F
A3R210	321–0926–07			RES,FXD,FILM:4K OHM,0.1%,0.125W,TC=T9MI	TK1727	MPR24–2322–141–
A3R211	321–0793–07			RES,FXD,FILM:37.5 OHM 0.1%,0.125W TC=T9 MI	07716	CEA 37.5 OHM 0.
A3R212	315–0107–00			RES,FXD,FILM:100M OHM,5%,0.25W	50139	CB1075
A3R213	315–0103–00	670–9906–01	670–9906–05	RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R213	322–3289–00	670–9906–06		RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R226	315–0103–00	670–9906–01	670–9906–05	RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R226	322–3289–00	670–9906–06		RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R227	315–0103–00	670–9906–01	670–9906–05	RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R227	322–3289–00	670–9906–06		RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R228	315–0154–00	670–9906–01	670–9906–05	RES,FXD,FILM:150K OHM,5%,0.25W,,MI	TK1727	SFR25 2322–181–
A3R228	322–3402–00	670–9906–06		RES,FXD:METAL FILM;150K OHM,1%,0.2W,TC=100PPM	91637	CCF50G15002F
A3R240	322–3222–07			RES,FXD,FILM:2K OHM,0.1%,0.2W TC=T9,SMALL BODY	91637	CCF501C20000B
A3R241	321–0830–03			RES,FXD,FILM:2.41K OHM,0.25%,0.125W,TC=T2	19701	5033RC2K410C
A3R242	322–3392–00			RES,FXD,FILM:118K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF501G11802F
A3R243	322–3086–00			RES,FXD,FILM:76.8 OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF50–2G76R80F
A3R244	322–3086–00			RES,FXD,FILM:76.8 OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF50–2G76R80F
A3R245	322–3085–00			RES,FXD:METAL FILM;75 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G75R00F
A3R246	315–0820–00	670–9906–01	670–9906–05	RES,FXD,FILM:82 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R246	322–3089–00	670–9906–06		RES,FXD:METAL FILM;82.5 OHM,1%.0.2W,TC=100PPM	57668	CRB20 FXE 82E5
A3R255	307–0540–00			RES NTWK,FXD,FI:(5)1K OHM,2%,0.7W	11236	770–61–R1K OR 7
A3R260	315–0271–00	670–9906–01	670–9906–05	RES,FXD,FILM:270 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R260	322–3138–00	670–9906–06		RES,FXD,FILM:267 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G267R0F
A3R261	315–0511–00	670–9906–01	670–9906–05	RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R261	322–3165–00	670–9906–06		RES,FXD,FILM:511 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G511R0F
A3R262	315–0511–00	670–9906–01	670–9906–05	RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R262	322–3165–00	670–9906–06		RES,FXD,FILM:511 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G511R0F
A3R263	315–0271–00	670–9906–01	670–9906–05	RES,FXD,FILM:270 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R263	322–3138–00	670–9906–06		RES,FXD,FILM:267 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G267R0F
A3R276	322–3234–00			RES,FXD,FILM:2.67K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2F26700F
A3R288	311–0643–00	670–9906–01	670–9906–05	RES,VAR,NONWW:TRMR,50 OHM,0.5W	32997	3329H–L58–500
A3R288	311–2226–00	670–9906–06		RES,VAR,TRMR:CERMET;50 OHM,20%,0.5W,0.197 SQ,TOP ADJUST	TK2073	GF06UT2 500 M L
A3R289	322–3254–00			RES,FXD,FILM:4.32K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF502G4321FT
A3R290	322–3254–00			RES,FXD,FILM:4.32K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF502G4321FT
A3R291	322–3231–00			RES,FXD,FILM:2.49K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–1G24900F
A3R292	322–3193–07			RES,FXD,FILM:1K OHM,0.1%,0.2W,TC=T9	91637	CCF501C10000B
A3R311	315–0302–00	670–9906–01	670–9906–05	RES,FXD,FILM:3K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R311	322–3239–00	670–9906–06		RES,FXD,FILM:3.01K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G30100F
A3R312	315–0202–00	670–9906–01	670–9906–05	RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R312	322–3222–00	670–9906–06		RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R313	315–0203–00	670–9906–01	670–9906–05	RES,FXD,FILM:20K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R313	322–3318–00	670–9906–06		RES,FXD:METAL FILM;20K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20001F

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A3R322	311–1035–00	670–9906–00	670–9906–01	RES,VAR,NONWW:TRMR,50K OHM,0.5W	73138	82PR50K–40C
A3R327	315–0511–00	670–9906–01	670–9906–05	RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R327	322–3165–00	670–9906–06		RES,FXD,FILM:511 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G511R0F
A3R328	315–0104–00	670–9906–00	670–9906–01	RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R328	315–0124–00	670–9906–02	670–9906–05	RES,FXD,FILM:120K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R328	322–3393–00	670–9906–06		RES,FXD:METAL FILM;121K OHM,1%,0.2W,TC=100PPM	91637	CCF501G12102F
A3R340	315–0202–00	670–9906–01	670–9906–05	RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R340	322–3222–00	670–9906–06		RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R341	321–0793–07			RES,FXD,FILM:37.5 OHM 0.1%,0.125W TC=T9 MI	07716	CEA 37.5 OHM 0.
A3R342	321–0830–03			RES,FXD,FILM:2.41K OHM,0.25%,0.125W,TC=T2	19701	5033RC2K410C
A3R343	321–0793–07			RES,FXD,FILM:37.5 OHM 0.1%,0.125W TC=T9 MI	07716	CEA 37.5 OHM 0.
A3R344	322–3001–00			RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R350	322–3222–07			RES,FXD,FILM:2K OHM,0.1%,0.2W TC=T9,SMALL BODY	91637	CCF501C20000B
A3R355	307–0540–00			RES NTWK,FXD,FI:(5)1K OHM,2%,0.7W	11236	770–61–R1K OR 7
A3R362	315–0511–00	670–9906–01	670–9906–05	RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R362	322–3165–00	670–9906–06		RES,FXD,FILM:511 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G511R0F
A3R363	315–0511–00	670–9906–01	670–9906–05	RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R363	322–3165–00	670–9906–06		RES,FXD,FILM:511 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G511R0F
A3R375	322–3204–00			RES,FXD,FILM:1.3K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF501G13000F
A3R376	322–3185–00			RES,FXD:METAL FILM;825 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G825ROF
A3R377	322–3147–00			RES,FXD:METAL FILM;332 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G332R0F
A3R380	315–0472–00	670–9906–01	670–9906–05	RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R380	322–3258–00	670–9906–06		RES,FXD:METAL FILM;4.75K OHM,1%,0.2W,TC=100	56845	CCF50–2–G4751FT
A3R387	308–0076–00			RES,FXD,WW:300 OHM,5%,3W	TK2096	KM300 300 OHM 5
A3R390	315–0150–00	670–9906–01	670–9906–05	RES,FXD,FILM:15 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R390	322–3018–00	670–9906–06		RES,FXD:METAL FILM;15 OHM,1%,0.2W,TC=100 PPM	57668	CRB20FXE15E0
A3R392	321–0176–00	670–9906–00	670–9906–00	RES,FXD,FILM:665 OHM,1%,0.125W,TC=T0	TK1727	MR25 2322–151–6
A3R392	322–3183–00	670–9906–01		RES,FXD,FILM:787 OHM,1%,0.2W,TC–T0MI,SMALL BODY	91637	CCF501G787ROF
A3R393	321–0220–00	670–9906–00	670–9906–00	RES,FXD,FILM:1.91K OHM,1%,0.125W,TC=T0MI	19701	5033ED1K91F
A3R393	321–0247–00	670–9906–01	670–9906–03	RES,FXD,FILM:3.65K OHM,1%,0.125W,TC=T0MI	TK1727	MR25–2322–151–3
A3R393	322–3248–00	670–9906–04	670–9906–04	RES,FXD,FILM:3.74K OHM,1%,0.2W,TC=T0	91637	CCF50G37400F
A3R393	322–3242–00	670–9906–05		RES,FXD,FILM:3.24K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G32400F
A3R394	311–0634–00	670–9906–00	670–9906–04	RES,VAR,NONWW:TRMR,500 OHM,0.5W	32997	3329H–L58–501
A3R394	311–0635–00	670–9906–05	670–9906–05	RES,VAR,NONWW:TRMR,1K OHM,0.5W	32997	3329H–L58–102
A3R394	311–2231–00	670–9906–06		RES,VAR,TRMR:CERMET;1K OHM,20%,0.5W,0.197 S Q,TOP ADJUST	TK2073	GF06UT2 102 M L
A3R413	315–0163–00	670–9906–01	670–9906–05	RES,FXD,FILM:16K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R413	322–3308–00	670–9906–06		RES,FXD,FILM:15.8K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G15801F
A3R414	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R414	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R427	315–0270–00	670–9906–01	670–9906–05	RES,FXD,FILM:27 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R427	322–3044–00	670–9906–06		RES,FXD:METAL FILM;28 OHM,1%,0.2W,TC=100 PPM	57668	CRB20FXE28E0
A3R428	315–0513–00	670–9906–01	670–9906–05	RES,FXD,FILM:51K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R428	322–3357–00	670–9906–06		RES,FXD,FILM:51.1K OHM,1%,0.2W,TC=T0	91637	CCF501G51101F
A3R456	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R456	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R457	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R457	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R460	323–0099–00	670–9906–06		RES,FXD,FILM:105 OHM,1%,0.5W,TC=T0	91637	CMF65116G105R0F
A3R463	322–3073–00			RES,FXD:METAL FILM;56.2 OHM,1%,0.2W,TC=100PPM	91637	CCF501G56R20F
A3R464	321–0025–00	670–9906–01	670–9906–05	RES,FXD,FILM:17.8 OHM,1%,0.125W,TC=T0MI	TK1727	MR25 2322–151–9
A3R464	322–3025–00	670–9906–06		RES,FXD:METAL FILM;17.8 OHM,1%,0.2W,TC=100PPM	57668	CRB20FXE17E8
A3R465	321–0113–00	670–9906–01	670–9906–05	RES,FXD,FILM:147 OHM,1%,0.125W,TC=T0	TK1727	MR25 2322–151–1
A3R465	322–3113–00	670–9906–06		RES,FXD,FILM:147 OHM,1%,0.2W,TC=T0MI,SMALL BODY	57668	CRB20 FXE 147E
A3R466	322–3171–00			RES,FXD,FILM:590 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G590R0F
A3R474	321–0103–00	670–9906–01	670–9906–05	RES,FXD,FILM:115 OHM,1%,0.125W,TC=T0	19701	5043ED115R0F
A3R474	322–3102–00	670–9906–06		RES,FXD,FILM:113 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2F113R0F
A3R475	322–3222–00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A3R475	322–3222–00	670–9906–06		RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R476	322–3114–00			RES,FXD:METAL FILM;150 OHM,1%,0.2W,TC=100 PPM	91637	CCF50–2–G1500F
A3R480	322–0180–00			RES,FXD,FILM:732 OHM,1%,0.25W,TC=T0	91637	CMF6042G732R0F
A3R490	315–0150–00	670–9906–01	670–9906–05	RES,FXD,FILM:15 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R490	322–3018–00	670–9906–06		RES,FXD:METAL FILM;15 OHM,1%,0.2W,TC=100 PPM	57668	CRB20FXE15E0
A3R513	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R513	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R530	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R530	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R531	315–0362–00	670–9906–01	670–9906–05	RES,FXD,FILM:3.6K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R531	322–3246–00	670–9906–06		RES,FXD,FILM:3.57K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G35700F
A3R532	321–0247–00	670–9906–01	670–9906–05	RES,FXD,FILM:3.65K OHM,1%,0.125W,TC=T0MI	TK1727	MR25–2322–151–3
A3R532	322–3247–00	670–9906–06		RES,FXD,FILM:3.65K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF502G3651FT
A3R533	322–3260–00			RES,FXD,FILM:4.99K OHM,1%,0.2W,TC=T0	91637	CCF501G49900F
A3R534	322–3222–00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R534	322–3222–00	670–9906–06		RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R560	323–0049–00	670–9906–06		RES,FXD,FILM:31.6 OHM,1%,0.5W,TC=T0	91637	CMF65116G31R60F
A3R563	323–0085–00	670–9906–06		RES,FXD,FILM:75.0 OHM,1%,0.5W,TC=T0	91637	CMF65116G75R00F
A3R564	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R564	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R570	323–0085–00	670–9906–06		RES,FXD,FILM:75.0 OHM,1%,0.5W,TC=T0	91637	CMF65116G75R00F
A3R573	321–0180–00			RES,FXD,FILM:732 OHM,1%,0.125W,TC=T0	TK1727	MR25 2322–151–7
A3R575	322–3222–00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R575	322–3222–00	670–9906–06		RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R581	322–3114–00			RES,FXD:METAL FILM;150 OHM,1%,0.2W,TC=100 PPM	91637	CCF50–2–G1500F
A3R582	322–3073–00			RES,FXD:METAL FILM;56.2 OHM,1%,0.2W,TC=100PPM	91637	CCF501G56R20F
A3R584	321–0103–00	670–9906–01	670–9906–05	RES,FXD,FILM:115 OHM,1%,0.125W,TC=T0	19701	5043ED115R0F
A3R584	322–3102–00	670–9906–06		RES,FXD,FILM:113 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2F113R0F
A3R588	321–0025–00	670–9906–01	670–9906–05	RES,FXD,FILM:17.8 OHM,1%,0.125W,TC=T0MI	TK1727	MR25 2322–151–9
A3R588	322–3025–00	670–9906–06		RES,FXD:METAL FILM;17.8 OHM,1%,0.2W,TC=100PPM	57668	CRB20FXE17E8
A3R589	321–0113–00	670–9906–01	670–9906–05	RES,FXD,FILM:147 OHM,1%,0.125W,TC=T0	TK1727	MR25 2322–151–1
A3R589	322–3113–00	670–9906–06		RES,FXD,FILM:147 OHM,1%,0.2W,TC=T0MI,SMALL BODY	57668	CRB20 FXE 147E
A3R610	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R610	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R611	315–0270–00	670–9906–01	670–9906–05	RES,FXD,FILM:27 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R611	322–3044–00	670–9906–06		RES,FXD:METAL FILM;28 OHM,1%,0.2W,TC=100 PPM	57668	CRB20FXE28E0
A3R612	315–0471–00	670–9906–01	670–9906–05	RES,FXD,FILM:470 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R612	322–3162–00	670–9906–06		RES,FXD:METAL FILM;475 OHM,1%,0.2W,TC=100 PPM	91637	CCF50G475R0F
A3R613	322–3193–00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R618	322–3126–00			RES,FXD,FILM:200 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G200ROF
A3R619	322–3289–00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R625	311–0634–00	670–9906–01	670–9906–05	RES,VAR,NONWW:TRMR,500 OHM,0.5W	32997	3329H–L58–501
A3R625	311–2230–00	670–9906–06		RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ,TOP ADJUST	TK2073	GF06UT2 501 M L
A3R630	322–3175–00			RES,FXD,FILM:649 OHM,1%,0.2W,TC=T0,SMALL BODY	91637	CCF50G649R0F
A3R631	322–3164–00			RES,FXD,FILM:499 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G499ROF
A3R632	322–3178–00			RES,FXD,FILM:698 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2G698ROF
A3R633	322–3210–00			RES,FXD:METAL FILM;1.5K OHM,1%,0.2W,TC=100PPM	91637	CCF501G15000F
A3R667	322–0073–00			RES,FXD,FILM:56.2 OHM,1%,0.25W,TC=T0	91637	CMF6042G56R20F
A3R669	322–0073–00			RES,FXD,FILM:56.2 OHM,1%,0.25W,TC=T0	91637	CMF6042G56R20F
A3R674	322–3114–00			RES,FXD:METAL FILM;150 OHM,1%,0.2W,TC=100 PPM	91637	CCF50–2–G1500F
A3R675	322–3222–00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R675	322–3222–00	670–9906–06		RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R678	322–0073–00			RES,FXD,FILM:56.2 OHM,1%,0.25W,TC=T0	91637	CMF6042G56R20F
A3R679	322–0073–00			RES,FXD,FILM:56.2 OHM,1%,0.25W,TC=T0	91637	CMF6042G56R20F
A3R689	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R689	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R690	322–3171–00			RES,FXD,FILM:590 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G590R0F

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A3R709	315–0472–00	670–9906–01	670–9906–05	RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R709	322–3258–00	670–9906–06		RES,FXD:METAL FILM;4.75K OHM,1%,0.2W,TC=100	56845	CCF50–2–G4751FT
A3R710	322–3289–00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R711	321–0343–00	670–9906–01	670–9906–05	RES,FXD,FILM:36.5K OHM,1%,0.125W,TC=T0MI	19701	5043ED36K50F
A3R711	322–3343–00	670–9906–06		RES,FXD,FILM:36.5K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G36501FT
A3R712	322–3193–00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R713	322–3250–00			RES,FXD:METAL FILM;3.92K OHM,1%,0.2W,TC=100	91637	CCF50–2F39200F
A3R719	322–3126–00			RES,FXD,FILM:200 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G200ROF
A3R720	322–3184–00			RES,FXD,FILM:806 OHM,1%,0.2W,TC=T0,SMALL BODY	91637	CCF501G806FOR
A3R721	321–0926–07			RES,FXD,FILM:4K OHM,0.1%,0.125W,TC=T9MI	TK1727	MPR24–2322–141–
A3R722	322–3193–07			RES,FXD,FILM:1K OHM,0.1%,0.2W,TC=T9	91637	CCF501C10000B
A3R724	315–0823–00	670–9906–02	670–9906–03	RES,FXD,FILM:82K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R724	315–0563–00	670–9906–04		RES,FXD,FILM:56K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R724	322–3361–00	670–9906–06		RES,FXD:METAL FILM;56.2K OHM,1%,0.2W,TC=100	91637	CCF50–2F56201F
A3R725	315–0563–00	670–9906–02	670–9906–03	RES,FXD,FILM:56K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R725	315–0473–00	670–9906–04	670–9906–05	RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R725	322–3354–00	670–9906–06		RES,FXD:METAL FILM;47.5K OHM,1%,0.2W,TC=100	91637	CCF501G47501F
A3R726	311–1035–00	670–9906–02	670–9906–03	RES,VAR,NONWW:TRMR,50K OHM,0.5W	73138	82PR50K–40C
A3R726	311–1613–00	670–9906–04	670–9906–05	RES,VAR,NONWW:20K OHM,20%,0.5W	80009	311161300
A3R726	311–2239–00	670–9906–06		RES,VAR,TRMR:CERMET;100K OHM,20%,0.5W,0.197	TK2073	GF06UT2 104 M L
A3R736	322–3156–00			RES,FXD,FILM:412 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G412ROF
A3R737	322–3161–00			RES,FXD,FILM:464 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2G464R0F
A3R738	322–3176–00			RES,FXD,FILM:665 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2–G6650FT
A3R739	315–0101–00	670–9906–02	670–9906–05	RES,FXD,FILM:100 OHM,5%,0.25W,,MI	TK1727	SFR25 2322–181–
A3R739	322–3097–00	670–9906–06		RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R740	322–3232–00			RES,FXD,FILM:2.55K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G25500F
A3R741	322–3198–00			RES,FXD,FILM:1.13K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G11300F
A3R756	322–0180–00			RES,FXD,FILM:732 OHM,1%,0.25W,TC=T0	91637	CMF6042G732R0F
A3R762	322–3114–00			RES,FXD:METAL FILM;150 OHM,1%,0.2W,TC=100 PPM	91637	CCF50–2–G1500F
A3R763	322–3222–00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R763	322–3222–00	670–9906–06		RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R764	322–3073–00			RES,FXD:METAL FILM;56.2 OHM,1%,0.2W,TC=100PPM	91637	CCF501G56R20F
A3R765	321–0103–00	670–9906–01	670–9906–05	RES,FXD,FILM:115 OHM,1%,0.125W,TC=T0	19701	5043ED115R0F
A3R765	322–3102–00	670–9906–06		RES,FXD,FILM:113 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2F113R0F
A3R766	321–0025–00	670–9906–01	670–9906–05	RES,FXD,FILM:17.8 OHM,1%,0.125W,TC=T0MI	TK1727	MR25 2322–151–9
A3R766	322–3025–00	670–9906–06		RES,FXD:METAL FILM;17.8 OHM,1%,0.2W,TC=100PPM	57668	CRB20FXE17E8
A3R770	323–0085–00	670–9906–06		RES,FXD,FILM:75.0 OHM,1%,0.5W,TC=T0	91637	CMF65116G75R00F
A3R775	322–3073–00			RES,FXD:METAL FILM;56.2 OHM,1%,0.2W,TC=100PPM	91637	CCF501G56R20F
A3R778	322–0073–00			RES,FXD,FILM:56.2 OHM,1%,0.25W,TC=T0	91637	CMF6042G56R20F
A3R780	322–0073–00			RES,FXD,FILM:56.2 OHM,1%,0.25W,TC=T0	91637	CMF6042G56R20F
A3R790	321–0103–00	670–9906–01	670–9906–05	RES,FXD,FILM:115 OHM,1%,0.125W,TC=T0	19701	5043ED115R0F
A3R790	322–3102–00	670–9906–06		RES,FXD,FILM:113 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2F113R0F
A3R791	321–0025–00	670–9906–01	670–9906–05	RES,FXD,FILM:17.8 OHM,1%,0.125W,TC=T0MI	TK1727	MR25 2322–151–9
A3R791	322–3025–00	670–9906–06		RES,FXD:METAL FILM;17.8 OHM,1%,0.2W,TC=100PPM	57668	CRB20FXE17E8
A3R792	321–0113–00	670–9906–01	670–9906–05	RES,FXD,FILM:147 OHM,1%,0.125W,TC=T0	TK1727	MR25 2322–151–1
A3R792	322–3113–00	670–9906–06		RES,FXD,FILM:147 OHM,1%,0.2W,TC=T0MI,SMALL BODY	57668	CRB20 FXE 147E
A3R793	322–3171–00			RES,FXD,FILM:590 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G590R0F
A3R812	322–3289–00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A3R813	321–0332–00			RES,FXD,FILM:28.0K OHM,1%,0.125W,TC=T0MI	19701	5043ED28K00F
A3R814	321–0372–00			RES,FXD,FILM:73.2K OHM,1%,0.125W,TC=T0MI	19701	5043ED73K20F
A3R815	322–3241–00			RES,FXD,FILM:3.16K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF502G3161FT
A3R820	315–0270–00	670–9906–01	670–9906–05	RES,FXD,FILM:27 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R820	322–3044–00	670–9906–06		RES,FXD:METAL FILM;28 OHM,1%,0.2W,TC=100 PPM	57668	CRB20FXE28E0
A3R821	315–0330–00	670–9906–01	670–9906–05	RES,FXD,FILM:33 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R821	322–3051–00	670–9906–06		RES,FXD:METAL FILM;33.2 OHM,1%,0.2W,TC=100PPM	57668	CRB20FXE33E2
A3R822	315–0752–00	670–9906–01	670–9906–05	RES,FXD,FILM:7.5K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R822	322–3277–00	670–9906–06		RES,FXD,FILM:7.5K OHM,1%,0.2W,TC=T0,SMALL BODY	91637	CCF501G75000F

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A3R823	322–3334–00			RES,FXD,FILM:29.4K OHM,1%,0.2W,TC=T0MI,SMALL BODY	57668	CRB20 FXE 29K4
A3R824	322–3254–00			RES,FXD,FILM:4.32K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF502G4321FT
A3R830	321–0059–00	670–9906–01	670–9906–05	RES,FXD,FILM:40.2 OHM,0.5%,0.125W,TC=T0 MI	TK1727	MR25 2322–151–9
A3R830	322–3058–00	670–9906–06		RES,FXD:METAL FILM;39.2 OHM,1%,0.2W,TC=100PPM	91637	CCF50–1G39R20F
A3R831	322–3030–00			RES,FXD:METAL FILM;20 OHM,1%,0.2W,TC=100 PPM	91637	CCF50G20R00F
A3R832	311–0644–00	670–9906–01	670–9906–05	RES,VAR,NONWW:TRMR,20K OHM,0.5W	32997	3329H–L58–203
A3R832	311–2236–00	670–9906–06		RES,VAR,TRMR:CERMET,20K OHM,20%,0.5W,0.197 SQ,SIDE ADJUST	TK2073	GF06UT2 203 M L
A3R840	322–3156–00			RES,FXD,FILM:412 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G412ROF
A3R841	322–3156–00			RES,FXD,FILM:412 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G412ROF
A3R842	322–3176–00			RES,FXD,FILM:665 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2–G6650FT
A3R843	322–3232–00			RES,FXD,FILM:2.55K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G25500F
A3R844	307–0108–00	670–9906–00	670–9906–00	RES,FXD,CMPSN:6.8 OHM,5%,0.25W	50139	CB68G5
A3R844	315–0150–00	670–9906–01	670–9906–05	RES,FXD,FILM:15 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R844	322–3018–00	670–9906–06		RES,FXD:METAL FILM;15 OHM,1%,0.2W,TC=100 PPM	57668	CRB20FXE15E0
A3R849	322–3227–00			RES,FXD,FILM:2.26K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF502G2261FT
A3R850	322–3097–00			RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R851	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R851	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R862	321–0113–00	670–9906–01	670–9906–05	RES,FXD,FILM:147 OHM,1%,0.125W,TC=T0	TK1727	MR25 2322–151–1
A3R862	322–3113–00	670–9906–06		RES,FXD,FILM:147 OHM,1%,0.2W,TC=T0MI,SMALL BODY	57668	CRB20 FXE 147E
A3R863	322–3171–00			RES,FXD,FILM:590 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G590R0F
A3R864	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R864	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R865	322–0073–00			RES,FXD,FILM:56.2 OHM,1%,0.25W,TC=T0	91637	CMF6042G56R20F
A3R867	322–0073–00			RES,FXD,FILM:56.2 OHM,1%,0.25W,TC=T0	91637	CMF6042G56R20F
A3R874	322–3114–00			RES,FXD:METAL FILM;150 OHM,1%,0.2W,TC=100 PPM	91637	CCF50–2–G1500F
A3R875	322–3222–00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R875	322–3222–00	670–9906–06		RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R876	322–3073–00			RES,FXD:METAL FILM;56.2 OHM,1%,0.2W,TC=100PPM	91637	CCF501G56R20F
A3R887	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R887	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R888	321–0103–00	670–9906–01	670–9906–05	RES,FXD,FILM:115 OHM,1%,0.125W,TC=T0	19701	5043ED115R0F
A3R888	322–3102–00	670–9906–06		RES,FXD,FILM:113 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2F113R0F
A3R890	321–0025–00	670–9906–01	670–9906–05	RES,FXD,FILM:17.8 OHM,1%,0.125W,TC=T0MI	TK1727	MR25 2322–151–9
A3R890	322–3025–00	670–9906–06		RES,FXD:METAL FILM;17.8 OHM,1%,0.2W,TC=100PPM	57668	CRB20FXE17E8
A3R910	315–0101–00	670–9906–01	670–9906–05	RES,FXD,FILM:100 OHM,5%,0.25W,,MI	TK1727	SFR25 2322–181–
A3R910	322–3097–00	670–9906–06		RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R911	315–0201–00	670–9906–01	670–9906–05	RES,FXD,FILM:200 OHM,5%,0.25W,,MI	TK1727	SFR25 2322–181–
A3R911	322–3126–00	670–9906–06		RES,FXD,FILM:200 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G200ROF
A3R912	315–0100–00	670–9906–01	670–9906–05	RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322–182–
A3R912	322–3001–00	670–9906–06		RES,FXD:METAL FILM;10 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10R00F
A3R913	322–3222–00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R913	322–3222–00	670–9906–06		RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R914	315–0101–00	670–9906–01	670–9906–05	RES,FXD,FILM:100 OHM,5%,0.25W,,MI	TK1727	SFR25 2322–181–
A3R914	322–3097–00	670–9906–06		RES,FXD:METAL FILM;100 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G100R0F
A3R915	322–3301–00			RES,FXD,FILM:13.3K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G13301F
A3R916	321–0447–00	670–9906–01	670–9906–05	RES,FXD,FILM:442K OHM,1%,0.125W,TC=T0MI	19701	5043ED442K0F
A3R916	322–3447–00	670–9906–06		RES,FXD,FILM:442K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CC501G44202F
A3R917	322–3306–00			RES,FXD:METAL FILM;15K OHM,1%,0.2W,TC=100 PPM	91637	CCF50–2–G1502F
A3R918	322–3222–00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R918	322–3222–00	670–9906–06		RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A3R923	322–3207–00			RES,FXD,FILM:1.4K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF501G14000F
A3R924	322–3286–00			RES,FXD,FILM:9.31K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G93100F
A3R931	322–3327–00			RES,FXD,FILM:24.9K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2–G24901F
A3R932	322–3210–00			RES,FXD:METAL FILM;1.5K OHM,1%,0.2W,TC=100PPM	91637	CCF501G15000F
A3R933	322–3085–00			RES,FXD:METAL FILM;75 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G75R00F
A3R934	322–3085–00			RES,FXD:METAL FILM;75 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G75R00F

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A3R940	322–3164–00			RES,FXD,FILM:499 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G499ROF
A3R941	322–3178–00			RES,FXD,FILM:698 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2G698ROF
A3R942	322–3085–00			RES,FXD:METAL FILM;75 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G75R00F
A3R949	321–0059–00	670–9906–01	670–9906–05	RES,FXD,FILM:40.2 OHM,0.5%,0.125W,TC=T0 MI	TK1727	MR25 2322–151–9
A3R949	322–3058–00	670–9906–06		RES,FXD:METAL FILM;39.2 OHM,1%,0.2W,TC=100PPM	91637	CCF50–1G39R20F
A3R950	322–3030–00			RES,FXD:METAL FILM;20 OHM,1%,0.2W,TC=100 PPM	91637	CCF50G20R00F
A3R951	322–3210–00			RES,FXD:METAL FILM;1.5K OHM,1%,0.2W,TC=100PPM	91637	CCF501G15000F
A3R952	311–0634–00	670–9906–01	670–9906–05	RES,VAR,NONWW:TRMR,500 OHM,0.5W	32997	3329H–L58–501
A3R952	311–2230–00	670–9906–06		RES,VAR,TRMR:CERMET;500 OHM,20%,0.5W,0.197 SQ,TOP ADJUST	TK2073	GF06UT2 501 M L
A3R960	322–0180–00			RES,FXD,FILM:732 OHM,1%,0.25W,TC=T0	91637	CMF6042G732R0F
A3R962	322–3085–00			RES,FXD:METAL FILM;75 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G75R00F
A3R963	323–0085–00	670–9906–06		RES,FXD,FILM:75.0 OHM,1%,0.5W,TC=T0	91637	CMF65116G75R00F
A3R970	323–0085–00	670–9906–06		RES,FXD,FILM:75.0 OHM,1%,0.5W,TC=T0	91637	CMF65116G75R00F
A3R975	322–0180–00			RES,FXD,FILM:732 OHM,1%,0.25W,TC=T0	91637	CMF6042G732R0F
A3R978	322–0073–00			RES,FXD,FILM:56.2 OHM,1%,0.25W,TC=T0	91637	CMF6042G56R20F
A3R980	322–0073–00			RES,FXD,FILM:56.2 OHM,1%,0.25W,TC=T0	91637	CMF6042G56R20F
A3R984	315–0102–00	670–9906–01	670–9906–05	RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A3R984	322–3193–00	670–9906–06		RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A3R990	321–0113–00	670–9906–01	670–9906–05	RES,FXD,FILM:147 OHM,1%,0.125W,TC=T0	TK1727	MR25 2322–151–1
A3R990	322–3113–00	670–9906–06		RES,FXD,FILM:147 OHM,1%,0.2W,TC=T0MI,SMALL BODY	57668	CRB20 FXE 147E
A3R991	322–3171–00			RES,FXD,FILM:590 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G590R0F
A3U127	156–1173–00			IC,LINEAR:BIPOLAR,V REF;POS,2.5V,1.0%,40PPM,SERIES	04713	MC1403U
A3U211	156–1149–00			IC,LINEAR:BIFET,OP–AMP	27014	LF351N
A3U227	156–0936–00			IC,LINEAR:BIPOLAR,OP–AMP;TRANSCONDUCTANCE	34371	CA3080AS/5
A3U250	155–0282–00			MICROCKT,DGTL:DIGITAL TO ANALOG CONVERTER M219B	80009	155028200
A3U250	136–0752–00			SKT,PL–IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P–108
A3U263	156–0860–02			IC,DIGITAL:ECL,RECEIVER	04713	MC10116P
A3U275	156–2984–00			IC,CONV:BIPOLAR,D/A;10 BIT,30MHZ,CUR OUT,ECL INP	TK2540	CX20051A
				MOUNTING PARTS		
	136–0755–00			SOCKET,DIP:PCB,;FEMALE,STR,2 X 14,28 POS,0. 1 X 0.6 CTR,0.175 H X0.130 TAIL,BECU,TIN,AC COM 0.008–0.0015 X 0.014–0.022	09922	DILB28P–108
				END MOUNTING PARTS		
A3U313	156–0936–00			IC,LINEAR:BIPOLAR,OP–AMP;TRANSCONDUCTANCE	34371	CA3080AS/5
A3U350	155–0282–00			MICROCKT,DGTL:DIGITAL TO ANALOG CONVERTER M 219B	80009	155028200
				MOUNTING PARTS		
	136–0752–00			SKT,PL–IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P–108
				END MOUNTING PARTS		
A3U411	156–1335–00			IC,DIGITAL:LSTTL,MULTIVIBRATOR;DUAL RETRIGMO-NOSTABLE	27014	DM96LS02N
A3U427	156–0067–00			IC,LINEAR:BIPOLAR,OP–AMP	01295	UA741CP
A3U511	156–1324–00			IC,LINEAR:BIPOLAR,COMPARATOR;TTL,20NS,COMPL EMENTARY OUTPUT,W/STROBES	27014	LM361N
A3U710	156–1272–00			IC,LIN:BIPOLAR,OP–AMP;DUAL,HI OUT DRV,LOW NOISE	01295	NE5532P
A3U720	156–0158–07			IC,LINEAR:BIPOLAR,OP–AMP	01295	MC1458P
A3U730	156–0534–01			IC,LINEAR:DUAL DIFF AMPL,BURN–INCA3102,MI	34371	93910
A3W326	131–0566–00	670–9906–01	670–9906–05	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A3W345	131–0566–00	670–9906–01	670–9906–05	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A3W730	131–0566–00	670–9906–01	670–9906–05	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A3W739	131–0566–00	670–9906–00	670–9906–01	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A3W750	131–0566–00	670–9906–01	670–9906–05	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A3CR226	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR250	152–0141–02	670–9906–00	670–9906–00	DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR250	152–0322–00	670–9906–01		DIODE,SIG:SCHTKY;15V,410MVF AT 1MA,1.2PF	50434	5082–2672–T25
A3CR313	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR350	152–0141–02	670–9906–00	670–9906–00	DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A3CR350	152–0322–00	670–9906–01		DIODE,SIG:SCHTKY;15V,410MVF AT 1MA,1.2PF	50434	5082–2672–T25
A3CR465	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR466	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR564	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR575	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR689	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR709	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR710	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR741	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR762	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR763	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR775	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR830	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR831	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR841	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR850	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR851	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR876	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3CR887	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A3VR823	152–0688–00			DIODE,ZENER::;2.4V,5%,0.4W	04713	1N4370A
A4	670–9113–02	B010100	B020115	CIRCUIT BD ASSY:PWR SPLY	80009	670911302
A4	670–9113–03	B020116	B020176	CIRCUIT BD ASSY:PWR SPLY	80009	670911303
A4	670–9113–04	B020177	B020256	CIRCUIT BD ASSY:PWR SPLY	80009	670911304
A4	670–9113–05	B020257	B020386	CIRCUIT BD ASSY:PWR SPLY	80009	670911305
A4	670–9113–06	B020387	B029999	CIRCUIT BD ASSY:PWR SPLY	80009	670911306
A4	671–0572–00	B030000	B031006	CIRCUIT BD ASSY:PWR SPLY	80009	671057200
A4	671–0572–01	B031007	B031723	CIRCUIT BD ASSY:PWR SPLY	80009	671057201
A4	671–0572–02	B031724	B031978	CIRCUIT BD ASSY:PWR SPLY	80009	671057202
A4	671–0572–03	B031979	B032585	CIRCUIT BD ASSY:PWR SPLY	80009	671057203
A4	671–0572–04	B032586	B032728	CIRCUIT BD ASSY:PWR SPLY	80009	671057204
A4	671–0572–05	B032729		CIRCUIT BD ASSY:PWR SPLY	80009	671057205
				ATTACHED PARTS		
	131–0157–00			TERMINAL,PIN:0.25 L X 0.04 OD,BRS,SLDR PL	05276	013–100–1000–47
	200–2269–01			COVER,XSTR:7612D,	0JR05	ORDER BY DESC
	210–0273–00			TERMINAL,LUG:0.196 ID,PLAIN,BRS TINNED	79963	ORDER BY DESC
	211–0513–00			SCREW,MACHINE:6–32 X 0.625,PNH,STL (QUANTITY 2)	TK0435	ORDER BY DESC
	342–0449–01			INSULATOR,PLATE:XSTR,ALUMINA	80009	342044901
	342–0458–00			INSULATOR,PLATE:XSTR,MICA	08530	1339X1–2MC
	214–3797–00			HEAT SINK:ALUMINUM	TK2027	ORDER BY DESC
	211–0661–00			SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL,CD PL,POZ,MACH (QUANTITY 2)	TK0435	ORDER BY DESC
				END ATTACHED PARTS		
A4C130	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A4C133	283–0212–00			CAP,FXD,CER DI:2UF,20%,50V	04222	SR405E205MAA
A4C155	290–1069–00			CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C156	290–0798–00			CAP,FXD,ELCTLT:180UF,+100–10%,40V	1W344	672D708A
A4C160	283–0059–00			CAP,FXD,CER DI:1UF,+80–20%,50V	04222	SR305C105MAA
A4C175	283–0423–00			CAP,FXD,CER DI:0.22UF,+80–20%,50VDIP STYLE	04222	MD015E224ZAA
A4C176	283–0423–00			CAP,FXD,CER DI:0.22UF,+80–20%,50VDIP STYLE	04222	MD015E224ZAA
A4C210	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A4C212	290–0804–00			CAP,FXD,ELCTLT:10UF,+50–20%,25V	0H1N5	CEUSM1E100
A4C213	290–0804–00			CAP,FXD,ELCTLT:10UF,+50–20%,25V	0H1N5	CEUSM1E100
A4C220	290–0804–00			CAP,FXD,ELCTLT:10UF,+50–20%,25V	0H1N5	CEUSM1E100
A4C221	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A4C224	283–0811–00			CAP,FXD,CER DI:0.01UF,20%,100V	04222	MDO11C103MAB
A4C230	283–0114–00			CAP,FXD,CER DI:1500PF,5%,200V	59660	805–534–Y5D0–15

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A4C235	290–1069–00			CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C250	290–1069–00			CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C254	283–0211–00			CAP,FXD,CER DI:0.1UF,10%,200V	04222	SR302C104KAA
A4C256	290–0798–00			CAP,FXD,ELCTLT:180UF,+100–10%,40V	1W344	672D708A
A4C317	283–0328–00			CAP,FXD,CER DI:0.03UF,+80–20%,200V	18796	RPE122166Z5U303
A4C320	283–0605–00			CAP,FXD,MICA DI:678PF,1%,300V	TK0891	RDM15FC6780F03
A4C322	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A4C323	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A4C335	283–0059–00			CAP,FXD,CER DI:1UF,+80–20%,50V	04222	SR305C105MAA
A4C345	290–1069–00			CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C346	290–1069–00			CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C350	290–1069–00			CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C351	290–1069–00			CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C410	290–0919–00			CAP,FXD,ALUM::;470UF,+50–20%,35V	1W344	KME35VB471M10X2
A4C412	290–0919–00			CAP,FXD,ALUM;470UF,+50–20%,35V	1W344	KME35VB471M10X2
A4C420	283–0594–00			CAP,FXD,MICA DI:0.001UF,1%,100V	TK0891	RDM15FA102F03
A4C422	283–0330–00			CAP,FXD,CER DI:100PF,5%,50V	18796	RPE121151C0G101
A4C429	283–0169–00			CAP,FXD,CER DI:0.022UF,10%,200V	04222	SR302C223KAA
A4C430	283–0220–00			CAP,FXD,CERAMIC:MLC;0.01UF,20%,50V,X7R,0.20	04222	SR155C103MAA
A4C433	290–0776–00			CAP,FXD,ALUM:22UF,20%,10V,ESR=15.07 OHM (120HZ,20C)	0H1N5	CEUSM1A220
A4C434	283–0330–00			CAP,FXD,CER DI:100PF,5%,50V	18796	RPE121151C0G101
A4C460	283–0079–00	670–9113–06		CAP,FXD,CER DI:0.01UF,20%,250V	04222	SR50VC103MAA
A4C520	283–0220–00			CAP,FXD,CERAMIC:MLC;0.01UF,20%,50V,X7R,0.20	04222	SR155C103MAA
A4C532	283–0203–00			CAP,FXD,CER DI:0.47UF,20%,50V	04222	SR305C474MAA
A4C550	283–0786–00			CAP,FXD,MICA DI:745PF,1%,500V	TK0891	RDM19FD7450F03
A4C750	283–0625–00			CAP,FXD,MICA DI:220PF,1%,500V	TK0891	RDM10FD221F03
A4C766	285–1278–00			CAP,FXD,PLASTIC:2.2UF,10%,250V	84411	X661 2.2 10 250
A4C768	285–1278–00			CAP,FXD,PLASTIC:2.2UF,10%,250V	84411	X661 2.2 10 250
A4C810	283–0211–00			CAP,FXD,CER DI:0.1UF,10%,200V	04222	SR302C104KAA
A4C822	285–1222–00			CAP,FXD,PLASTIC:0.068UF,20%,250V,	TK0515	PME 271 M 568
A4C845	290–1106–01			CAP,FXD,ELCTLT:470UF,20%,200VDC	0H1N5	CEAWF2D471M30
A4C854	285–1246–00			CAP,FXD,PPR DI:0.022UF,20%,250VAC,	TK0515	PME 289 MB 5220
A4C865	290–1106–01			CAP,FXD,ELCTLT:470UF,20%,200VDC	0H1N5	CEAWF2D471M30
A4C910	285–1222–00			CAP,FXD,PLASTIC:0.068UF,20%,250V,	TK0515	PME 271 M 568
A4C911	285–1222–00			CAP,FXD,PLASTIC:0.068UF,20%,250V,	TK0515	PME 271 M 568
A4C919	285–1222–00			CAP,FXD,PLASTIC:0.068UF,20%,250V,	TK0515	PME 271 M 568
A4C970	285–1246–00			CAP,FXD,PPR DI:0.022UF,20%,250VAC,	TK0515	PME 289 MB 5220
A4F940	159–0023–00			FUSE,CARTRIDGE:3AG,2A,250V,SLOW BLOW (STANDARD ONLY)	71400	MDX2
A4F940	159–0019–00			FUSE,CARTRIDGE:3AG,1A,250V,SLOW BLOW (OPTION A1,A2,A3 ONLY)	71400	MDL 1
				MOUNTING PARTS		
	200–2264–00			CAP,FUSEHOLDER:3AG FUSES,	61935	FEK 031 1666
	200–2735–00			COVER,POWER SW:BLACK,POLYCARBONATE	0JR05	ORDER BY DESC
	204–0906–00			BODY,FUSEHOLDER:3AG & 5 X 20MM FUSES	61935	TYPE FAU 031.35
				MOUNTING PARTS		
A4J120	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A4J160	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A4J242	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A4J310	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A4J810	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A4J950	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A4L435	120–1668–00			TRANSFORMER,RF:TOROIDAL,265UH,1.5 AMPS	0JR03	120–1668–00

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A4L451	120–1669–00			TRANSFORMER,RF:TOROIDAL,65UH,10 AMPS	0JR03	TO BE ASSIGNED
A4L950	108–0959–00			COIL,RF:FIXED,150UH	0JR03	108–0959–00
A4P810	198–5529–00			WIRE SET,ELEC:TSG170A	TK1064	ORDER BY DESC
A4P950	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A4Q160	151–0736–00			XSTR,SIG:BIPOLAR,NPN;40V,600MA,250MHZ,AMPLIFIER	0JR04	2N4401
A4Q230	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A4Q331	151–0482–00			XSTR,PWR:BIPOLAR,PNP;100V,3.0A,3.0MHZ,AMPLIFIER	04713	TIP32C
A4Q340	151–0435–00			XSTR:DARLINGTON,PNP,SI,TO–92MPSA65	04713	MPSA64
A4Q660	151–1141–01			XSTR,PWR:MOS,N–CH	04713	MTP5N40E
A4Q661	151–1141–01			XSTR,PWR:MOS,N–CH	04713	MTP5N40E
A4R112	321–0206–02			RES,FXD,FILM:1.37K OHM,0.5%,0.125W,TC=T2	19701	5033RC1K370D
A4R114	315–0821–00			RES,FXD,FILM:820 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R118	315–0561–00			RES,FXD,FILM:560 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R119	321–0932–00			RES,FXD,FILM:2.5K OHM,1%,0.125W,TC=T0MI	19701	5033RD2K500F
A4R120	321–1696–07			RES,FXD,FILM:6K OHM,0.1%,0.125W,TC=T9MI	19701	5033RE6K00B
A4R121	321–0001–01			RES,FXD,FILM:10.0 OHM,0.5%,0.125W,TC=T0 MI	19701	5033RD10R00D
A4R122	322–3194–00			RES,FXD,FILM:1.02K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2G10200F
A4R160	308–0297–00			RES,FXD,WW:24.7 OHM,1%,3W	TK2096	KM300 24.7 OHM
A4R161	315–0102–00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R162	315–0361–00			RES,FXD,FILM:360 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R215	321–1133–02			RES,FXD,FILM:240 OHM,0.5%,0.125W,TC=T2MI	19701	5033RC240R0D
A4R218	315–0224–00			RES,FXD,FILM:220K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R219	315–0472–00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R220	315–0272–00			RES,FXD,FILM:2.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R222	322–3289–00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A4R223	321–0253–00			RES,FXD,FILM:4.22K OHM,1%,0.125W,TC=T0MI	19701	5033ED 4K 220F
A4R224	321–0452–00			RES,FXD,FILM:499K OHM,1%,0.125W,TC=T0MI	TK1727	2322–151–499K
A4R225	315–0202–00			RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R226	322–3289–00			RES,FXD:METAL FILM;10K OHM,1%,0.2W,TC=100 PPM	91637	CCF50G10001F
A4R227	315–0561–00			RES,FXD,FILM:560 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R228	321–0932–00			RES,FXD,FILM:2.5K OHM,1%,0.125W,TC=T0MI	19701	5033RD2K500F
A4R230	322–3193–00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A4R233	321–0245–00			RES,FXD,FILM:3.48K OHM,1%,0.125W,TC=T0MI	19701	5033ED3K48F
A4R234	321–0168–00			RES,FXD,FILM:549 OHM,1%,0.125W,TC=T0	TK1727	MR25 2322–151–5
A4R235	321–0001–01			RES,FXD,FILM:10.0 OHM,0.5%,0.125W,TC=T0 MI	19701	5033RD10R00D
A4R245	308–0802–00			RES,FXD,WW:0.01 OHM,5%,5W	91637	SPR 100S–R01J
A4R246	308–0802–00			RES,FXD,WW:0.01 OHM,5%,5W	91637	SPR 100S–R01J
A4R314	321–1133–02			RES,FXD,FILM:240 OHM,0.5%,0.125W,TC=T2MI	19701	5033RC240R0D
A4R315	321–0206–02			RES,FXD,FILM:1.37K OHM,0.5%,0.125W,TC=T2	19701	5033RC1K370D
A4R316	321–0612–07			RES,FXD,FILM:500 OHM,0.1%,0.125W,TC=T9MI	TK1727	MPR24–2322–141–
A4R317	321–0612–07			RES,FXD,FILM:500 OHM,0.1%,0.125W,TC=T9MI	TK1727	MPR24–2322–141–
A4R318	315–0752–00			RES,FXD,FILM:7.5K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R319	315–0752–00			RES,FXD,FILM:7.5K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R320	321–0452–00			RES,FXD,FILM:499K OHM,1%,0.125W,TC=T0MI	TK1727	2322–151–499K
A4R321	322–3383–00			RES,FXD,FILM:95.3K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G95301F
A4R322	315–0223–00			RES,FXD,FILM:22K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R340	315–0472–00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R410	315–0102–00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R411	321–0312–00			RES,FXD,FILM:17.4K OHM,1%,0.125W,TC=T0MI	19701	5033ED17K40F
A4R413	315–0100–02			RES,FXD,CMPSN:10 OHM,5%,0.25W	50139	CB1005
A4R420	315–0473–00			RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R434	315–0270–00			RES,FXD,FILM:27 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R460	315–0100–00	670–9113–06		RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322–182–
A4R522	315–0101–00			RES,FXD,FILM:100 OHM,5%,0.25W,,MI	TK1727	SFR25 2322–181–
A4R523	315–0101–00			RES,FXD,FILM:100 OHM,5%,0.25W,,MI	TK1727	SFR25 2322–181–
A4R536	303–0360–00			RES,FXD,CMPSN:36 OHM,5%,1W	24546	FP32 OR FP1 36
A4R735	315–0511–00			RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R736	315–0511–00			RES,FXD,FILM:510 OHM,5%,0.25W	TK1727	SFR25 2322–181–

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A4R750	308–0874–00			RES,FXD,WW:10 OHM,5%,1W,	11502	SP–20F 10 OHM 5
A4R751	308–0874–00			RES,FXD,WW:10 OHM,5%,1W,	11502	SP–20F 10 OHM 5
A4R810	315–0221–00			RES,FXD,FILM:220 OHM,5%,0.25W,,MI	TK1727	SFR25 2322–181–
A4R811	315–0106–00			RES,FXD,FILM:10M OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R820	301–0154–00			RES,FXD,FILM:150K OHM,5%,0.5W	19701	5053CX150K0J
A4R821	301–0154–00			RES,FXD,FILM:150K OHM,5%,0.5W	19701	5053CX150K0J
A4R850	301–0101–00			RES,FXD,FILM:100 OHM,5%,0.5W	TK1727	SFR30 2322–182–
A4R852	315–0220–00			RES,FXD,FILM:22 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R910	301–0105–00			RES,FXD,FILM:1M OHM,5%,0.50W	19701	5053CX1M000J
A4R950	315–0226–00			RES,FXD,FILM:22M OHM,5%,0.25W	50139	CB2265
A4S930	260–1849–07			SWITCH,PUSH:DPST,4A,250VAC	31918	601955
				ATTACHED PARTS		
	210–0001–00			WASHER,LOCK:#2 INTL,0.013 THK,STL (QUANTITY 2)	78189	1202–00–00–0541
	210–0405–00			NUT,PLAIN,HEX:2–56 X 0.188,BRS CD PL (QUANTITY 2)	73743	12157–50
	211–0022–00			SCREW,MACHINE:2–56 X 0.188,PNH,STL (QUANTITY 2)	TK0435	ORDER BY DESC
	366–1160–00			PUSH BUTTON:CHARCOAL,0.523 X 0.253 X 0.43	80009	366116000
				END ATTACHED PARTS		
A4T610	120–1667–00			XFMR,PWR,STPDN:60HZ	20462	SPW053
A4T650	120–1666–00			XFMR,PWR,STPDN:50KHZ	75498	120–1666–00
A4T735	120–1472–00			XFMR,PWR,STPDN:GATE DRIVE HF	75498	120–1472–00
A4U133	156–1408–01			IC,MISC:CMOS,TIMER	01295	TLC555CP3 OR TL
A4U210	156–1173–00			IC,LINEAR:BIPOLAR,V REF;POS,2.5V,1.0%,40PPM,SERIES	04713	MC1403U
A4U212	156–1451–00			IC,LINEAR:BIPOLAR,VR;NEG,ADJUST,1.5A,4%	01295	LM337KC
A4U220	156–1226–01			IC,LINEAR:BIPOLAR,COMPARATOR	1CH66	LM319N
A4U260	156–2559–00			IC,LINEAR:BIPOLAR,VR;NEGATIVE,–12V,1.5A,2%	48726	UC7912ACT
				ATTACHED PARTS		
	210–1178–00			WASHER,SHLDR:U/W TO–220 XSTR	13103	7721–7PPS
	211–0661–00			SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL,CD PL,PO Z,MACHINE	TK0435	ORDER BY DESC
	342–0563–00			INSULATOR,PLATE:XSTR,FIBERGLASS REINFORCED SILICON RUBBER	18565	69–11–8805–1674
				END ATTACHED PARTS		
A4U310	156–1161–00			IC,LINEAR:BIPOLAR,VR;POSITIVE,ADJUSTABLE,1.5A,4%	04713	LM317T
A4U325	156–1226–01			IC,LINEAR:BIPOLAR,COMPARATOR	1CH66	LM319N
A4U331	156–0853–02			IC,LINEAR:BIPOLAR,OP–AMP	01295	LM358P
A4U335	156–1226–01			IC,LINEAR:BIPOLAR,COMPARATOR	1CH66	LM319N
A4U360	156–2558–00			IC,LINEAR:BIPOLAR,VR;POSITIVE,12V,1.5A,2%	01295	TL780–12CKC
				ATTACHED PARTS		
	210–1178–00			WASHER,SHLDR:U/W TO–220 XSTR	13103	7721–7PPS
	211–0661–00			SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL,CD PL,POZ,MACH	TK0435	ORDER BY DESC
	342–0563–00			INSULATOR,PLATE:XSTR,FIBERGLASS REINF ORCED SILICON RUBBER	18565	69–11–8805–1674
				END ATTACHED PARTS		
A4U435	156–1585–02			IC,LINEAR:BIPOLAR,SW–REGULATOR;	34333	SG2526BJ/11589
A4U435	136–0756–00			SOCKET,DIP:PCB,;FEMALE,STR,2 X 9,18 POS,0.1	09922	DILB18P–108
A4U525	156–0328–00			IC,DIGITAL:MOS,DRIVER;DUAL CLOCK DRIVER	27014	DS0026CN
A4U525	136–0727–00			SKT,PL–IN ELEK:MICROCKT,8 CONTACT	09922	DILB8P–108
A4CR119	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A4CR121	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A4CR140	152–0198–02			SEMICOND DVC,DI:RECT,SI,200V,3A,A249G	13409	SEN–R–235
A4CR145	152–0198–02			SEMICOND DVC,DI:RECT,SI,200V,3A,A249G	13409	SEN–R–235
A4CR160	152–0198–02			SEMICOND DVC,DI:RECT,SI,200V,3A,A249G	13409	SEN–R–235
A4CR161	152–0066–03			DIODE,RECT:400V,1A,1.1VF AT 1A,30A IFSM,2US	14433	LG4017
A4CR162	152–0066–03			DIODE,RECT:400V,1A,1.1VF AT 1A,30A IFSM,2US	14433	LG4017
A4CR175	152–0066–03			DIODE,RECT:400V,1A,1.1VF AT 1A,30A IFSM,2US	14433	LG4017
A4CR224	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427

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A4CR225	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A4CR226	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A4CR228	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A4CR345	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A4CR360	152–0867–00	670–9113–02	670–9113–03	SEMICOND DVC,DI:DUAL RECT,SCHOTTKY,SI,30V,8 A,TO–220	6L334	SR1603A
A4CR360	152–0905–00	670–9113–04	670–9113–04	SEMICOND DVC,DI:DUAL RECT,SCHOTTKY,40V,8ATO –220,SR1604A	6L334	SR1604A
A4CR360	152–0914–00	670–9113–05		SEMICOND DVC,DI:DUAL RECT,SCHOTTKY,SI,60V,8 A,TO–220	14936	SBN1660T–4
				ATTACHED PARTS		
	210–1178–00			WASHER,SHLDR:U/W TO–220 XSTR	13103	7721–7PPS
	211–0661–00			SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL,CD PL,POZ,MACH	TK0435	ORDER BY DESC
	342–0563–00			INSULATOR,PLATE:XSTR,FIBERGLASS REINF ORCED SILICON RUBBER	18565	69–11–8805–1674
				END ATTACHED PARTS		
A4CR409	152–0066–03			DIODE,RECT:;400V,1A,1.1VF AT 1A,30A IFSM,2US	14433	LG4017
A4CR410	152–0066–03			DIODE,RECT:;400V,1A,1.1VF AT 1A,30A IFSM,2US	14433	LG4017
A4CR420	152–0066–03			DIODE,RECT:;400V,1A,1.1VF AT 1A,30A IFSM,2US	14433	LG4017
A4CR421	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A4CR422	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A4CR460	152–0793–00			SEMICOND DVC,DI:DUAL RECT,SI,40V,25AESAD83–004	TK1075	ESAD83–004K
				ATTACHED PARTS		
	211–0012–00			SCREW,MACHINE:4–40 X 0.375,PNH,STL	TK0435	ORDER BY DESC
	342–0354–00			INSULATOR,PLATE:XSTR,SILICONE RUBBER	2K262	342–0354–00
				END ATTACHED PARTS		
A4CR510	152–0585–00			DIODE,RECT:BRIDGE,200V,1A,50A IFSM,1.0VFAT 1A	14936	W02G–1
A4CR533	152–0864–00			DIO,RECT:ULTRA FAST;150V,2A,25NS,IFSM=50A,SOFT REC	25403	BYV27–150
A4CR534	152–0864–00			DIO,RECT:ULTRA FAST;150V,2A,25NS,IFSM=50A,SOFT REC	25403	BYV27–150
A4CR535	152–0864–00			DIO,RECT:ULTRA FAST;150V,2A,25NS,IFSM=50A,SOFT REC	25403	BYV27–150
A4CR536	152–0864–00			DIO,RECT:ULTRA FAST;150V,2A,25NS,IFSM=50A,SOFT REC	25403	BYV27–150
A4CR810	152–0602–00			DIODE,RECT:;BRIDGE,600V,6A,IFSM=100A	TK2319	RKBPC806
A4DS112	150–1049–00			DIODE,OPTO:LED;RED/GREEN,BI–COLOR	57668	SPR54MVW
A4DS810	150–0035–00			LAMP,GLOW:NEON;90V,0.3MA,AID–T,WIRE LD	TK0213	JH005/3011JA
A4LF950	119–1946–00			FILTER,RFI:1A,250V,400HZ W/PC TERMINAL	0GV52	FN326–1/02–K–D–
A4RV852	307–0638–00			RES,V SENSITIVE:18V,20%,0.5 W,	34371	V18ZA1
A4RV915	307–0449–00			RES,V SENSITIVE:1900PF,100A,130V,METAL OXDSAF CONT	34371	V130LA20A
A4RV917	307–0449–00			RES,V SENSITIVE:1900PF,100A,130V,METAL OXDSAF CONT	34371	V130LA20A
A4TP212	214–0579–00			TERM,TEST PT:PCB,TEST PT;EYELET 0.055/0.045 TIPCHAM	0J260	ORDER BY DESC
A4TP234	214–0579–00			TERM,TEST PT:PCB,TEST PT;EYELET 0.055/0.045 TIPCHAM	0J260	ORDER BY DESC
A4TP510	214–0579–00			TERM,TEST PT:PCB,TEST PT;EYELET 0.055/0.045 TIPCHAM	0J260	ORDER BY DESC
A4TP534	214–0579–00			TERM,TEST PT:PCB,TEST PT;EYELET 0.055/0.045 TIPCHAM	0J260	ORDER BY DESC
A4TP535	214–0579–00			TERM,TEST PT:PCB,TEST PT;EYELET 0.055/0.045 TIPCHAM	0J260	ORDER BY DESC
A4VR120	152–0175–00			DIODE,ZENER:;5.6V,5%,0.4W	04713	SZG35008 (1N752
A4VR130	152–0662–00			DIODE,ZENER:;5V,1%,0.4W	04713	SZG195RL
A4VR233	152–0175–00			DIODE,ZENER:;5.6V,5%,0.4W	04713	SZG35008 (1N752
A4	671–0572–00	B030000	B031006	CIRCUIT BD ASSY:PWR SPLY	80009	671057200
A4	671–0572–01	B031007	B031723	CIRCUIT BD ASSY:PWR SPLY	80009	671057201
A4	671–0572–02	B031724	B031978	CIRCUIT BD ASSY:PWR SPLY	80009	671057202
A4	671–0572–03	B031979	B032585	CIRCUIT BD ASSY:PWR SPLY	80009	671057203
A4	671–0572–04	B032586	B032728	CIRCUIT BD ASSY:PWR SPLY	80009	671057204
A4	671–0572–05	B032729	B032792	CIRCUIT BD ASSY:PWR SPLY	80009	671057205
A4	671–0572–06	B032793		CIRCUIT BD ASSY:PWR SPLY	80009	671057206
A4C142	290–1069–00	671–0572–00	671–0572–03	CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C142	290–1301–00	671–0572–04		CAP,FXD,ALUM:2700UF,20%,10V,12.5 X 30MM(0.492 X 1.180)	0H1N5	CEEFM1A272M7
A4C161	290–0804–00	671–0572–00	671–0572–03	CAP,FXD,ELCTLT:10UF,+50–20%,25V	0H1N5	CEUSM1E100

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A4C161	290–0943–00	671–0572–04		CAP,FXD,ALUM:47UF,+50–20%,25V,6 X 11MM	0H1N5	CEUSM1E470–Q
A4C169	283–0423–00			CAP,FXD,CER DI:0.22UF,+80–20%,50VDIP STYLE	04222	MD015E224ZAA
A4C225	290–1069–00	671–0572–00	671–0572–03	CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C225	290–1301–00	671–0572–04		CAP,FXD,ALUM:2700UF,20%,10V,12.5 X 30MM(0 .492 X 1.180)	0H1N5	CEEFM1A272M7
A4C241	290–1034–00	671–0572–00	671–0572–03	CAP,FXD,ALUM:330UF,20%,25V,13 X 25MM	0H1N5	CEUFM1E331
A4C241	290–1302–00	671–0572–04		CAP,FXD,ALUM:1000UF,20%,35V,12.5 X 30MM(0 .492 X 1.180)	0H1N5	CEEFM1V102M7
A4C250	290–1034–00	671–0572–00	671–0572–03	CAP,FXD,ALUM:330UF,20%,25V,13 X 25MM	0H1N5	CEUFM1E331
A4C250	290–1302–00	671–0572–04		CAP,FXD,ALUM:1000UF,20%,35V,12.5 X 30MM(0 .492 X 1.180)	0H1N5	CEEFM1V102M7
A4C258	290–1069–00	671–0572–00	671–0572–03	CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C258	290–1301–00	671–0572–04		CAP,FXD,ALUM:2700UF,20%,10V,12.5 X 30MM(0 .492 X 1.180)	0H1N5	CEEFM1A272M7
A4C269	283–0423–00			CAP,FXD,CER DI:0.22UF,+80–20%,50VDIP STYLE	04222	MD015E224ZAA
A4C270	283–0423–00			CAP,FXD,CER DI:0.22UF,+80–20%,50VDIP STYLE	04222	MD015E224ZAA
A4C320	283–0423–00			CAP,FXD,CER DI:0.22UF,+80–20%,50VDIP STYLE	04222	MD015E224ZAA
A4C321	283–0005–00	671–0572–01		CAP,FXD,CER DI:0.01UF,+100–0%,250V	04222	SR30VE103ZAA
A4C325	290–1069–00	671–0572–00	671–0572–03	CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C325	290–1301–00	671–0572–04		CAP,FXD,ALUM:2700UF,20%,10V,12.5 X 30MM(0 .492 X 1.180)	0H1N5	CEEFM1A272M7
A4C358	290–1069–00	671–0572–00	671–0572–03	CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C358	290–1301–00	671–0572–04		CAP,FXD,ALUM:2700UF,20%,10V,12.5 X 30MM(0 .492 X 1.180)	0H1N5	CEEFM1A272M7
A4C360	290–1069–00	671–0572–00	671–0572–03	CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C360	290–1301–00	671–0572–04		CAP,FXD,ALUM:2700UF,20%,10V,12.5 X 30MM(0 .492 X 1.180)	0H1N5	CEEFM1A272M7
A4C361	290–0804–00	671–0572–00	671–0572–03	CAP,FXD,ELCTLT:10UF,+50–20%,25V	0H1N5	CEUSM1E100
A4C361	290–0943–00	671–0572–04		CAP,FXD,ALUM:47UF,+50–20%,25V,6 X 11MM	0H1N5	CEUSM1E470–Q
A4C370	290–1069–00	671–0572–00	671–0572–03	CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C370	290–1301–00	671–0572–04		CAP,FXD,ALUM:2700UF,20%,10V,12.5 X 30MM(0 .492 X 1.180)	0H1N5	CEEFM1A272M7
A4C371	283–0423–00			CAP,FXD,CER DI:0.22UF,+80–20%,50VDIP STYLE	04222	MD015E224ZAA
A4C415	283–0268–00			CAP,FXD,CER DI:0.015UF,20%,50V	04222	SR215C153KAA
A4C464	290–1069–00	671–0572–00	671–0572–03	CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C464	290–1301–00	671–0572–04		CAP,FXD,ALUM:2700UF,20%,10V,12.5 X 30MM(0 .492 X 1.180)	0H1N5	CEEFM1A272M7
A4C475	290–1069–00	671–0572–00	671–0572–03	CAP,FXD,ELCTLT:1000UF,20%,6.3V	0H1N5	CEUFM0J102–E
A4C475	290–1301–00	671–0572–04		CAP,FXD,ALUM:2700UF,20%,10V,12.5 X 30MM(0 .492 X 1.180)	0H1N5	CEEFM1A272M7
A4C521	283–0672–00			CAP,FXD,MICA DI:200PF,1%,500V	TK0891	RDM15FD201F03
A4C525	285–1196–00			CAP,FXD,PPR DI:0.01UF,20%,250V,	TK0515	PME 290 MB 5100
A4C540	285–1329–00			CAP,FXD,PLASTIC:METALIZED FILM;680PF,10%,1600V,POLYPROPYLENE,.70X.43	TK1913	FKP1 680/1600/1
A4C548	285–1331–00			CAP,FXD,MTLZD:0.47UF,5%,400V,	TK1913	MKS4 .47/400/5
A4C575	283–0005–00	671–0572–01		CAP,FXD,CER DI:0.01UF,+100–0%,250V	04222	SR30VE103ZAA
A4C621	283–0051–00			CAP,FXD,CER DI:0.0033UF,5%,100V	04222	SR211A332JAA
A4C648	285–1187–00			CAP,FXD,MTLZD:0.47 UF,10%,100 V	05292	PMT 3R .47K 100
A4C656	290–0844–00			CAP,FXD,ELCTLT:100UF,+75–20%,35WVDC	0H1N5	CEUSM1V101
A4C717	290–0804–00			CAP,FXD,ELCTLT:10UF,+50–20%,25V	0H1N5	CEUSM1E100
A4C718	283–0211–00			CAP,FXD,CER DI:0.1UF,10%,200V	04222	SR302C104KAA
A4C722	283–0032–00			CAP,FXD,CER DI:470PF,5%,500V	59660	831 621 Z5E0 47
A4C727	283–0423–00			CAP,FXD,CER DI:0.22UF,+80–20%,50VDIP STYLE	04222	MD015E224ZAA
A4C730	285–1196–00			CAP,FXD,PPR DI:0.01UF,20%,250V,	TK0515	PME 290 MB 5100
A4C830	285–1196–00			CAP,FXD,PPR DI:0.01UF,20%,250V,	TK0515	PME 290 MB 5100
A4C845	290–1070–00	671–0572–00	671–0572–04	CAP,FXD,ELCTLT:220UF,20%,200V,	0H1N5	CEAWF2D221M10
A4C845	290–1293–00	671–0572–05		CAP,FXD,ALUM:390UF,20%,200V,25 X 30MM;SNAP IN,105 DEG,BULK	0H1N5	CEAUF2D391M20
A4C865	290–1070–00	671–0572–00	671–0572–04	CAP,FXD,ELCTLT:220UF,20%,200V,	0H1N5	CEAWF2D221M10

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A4C865	290–1293–00	671–0572–05		CAP,FXD,ALUM:390UF,20%,200V,25 X 30MM;SNAP IN,105 DEG,BULK	0H1N5	CEAUF2D391M20
A4C920	285–1323–00			CAP,FXD,PAPER:METALIZED PAPER;0.22UF,20%,25 0 VAC,LS=0.8 INCH	TK0515	PME271M622
A4F940	159–0023–00			FUSE,CARTRIDGE:3AG,2A,250V,SLOW BLOW (FOR 90–132VAC OPERATION)	71400	MDX2
A4F940	159–0019–00			FUSE,CARTRIDGE:3AG,1A,250V,SLOW BLOW (FOR 180–250VAC OPERATION)	71400	MDL 1
A4F940	200–2264–00			CAP,FUSEHOLDER:3AG FUSES,	61935	FEK 031 1666
A4F940	200–2735–00			COVER,POWER SW:BLACK,POLYCARBONATE	0JR05	ORDER BY DESC
A4F940	204–0906–00			BODY,FUSEHOLDER:3AG & 5 X 20MM FUSES	61935	TYPE FAU 031.35
A4J160	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE (QUANTITY 34)	22526	48283–018
A4J310	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE (QUANTITY 2)	22526	48283–018
A4J556	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W /FERRULE (QUANTITY 2)	22526	48283–018
A4J660	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE (QUANTITY 2)	22526	48283–018
A4J720	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE (QUANTITY 2)	22526	48283–018
A4J810	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE (QUANTITY 3)	22526	48283–018
A4L230	108–0554–00			INDUCTOR,FXD:POWER;5UH,20%,I<10A,DCR<0.01 O HM,17.5 TURNS/2LAYERS ONCORE 276–0147–00	0JR03	108–0554–00
A4L261	108–1262–00			INDUCTOR,FXD:POWER;100UH,10%,I<0.75A,RDC<0. 23 OHM,Q>15,SRF>5.4MHZ	54583	TSL0807–101KR75
A4L358	108–0554–00			INDUCTOR,FXD:POWER;5UH,20%,I<10A,DCR<0.01 O HM,17.5 TURNS/2LAYERS ONCORE 276–0147–00	0JR03	108–0554–00
A4L361	108–1262–00			INDUCTOR,FXD:POWER;100UH,10%,I<0.75A,RDC<0. 23 OHM,Q>15,SRF>5.4MHZ	54583	TSL0807–101KR75
A4L520	108–1448–00			COIL,RF:TOROID,1MH,+/–30%,AWG #20,PKG 0.65DIA X 0.6	0JR03	108–1448–00
A4L770	108–0205–00			COIL,RF:INDUCTOR;FXD,1MH,+–5%, DCR 2.12 OH MS, FERRITE CORE	76493	8209
A4P556	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A4P660	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A4P720	131–0993–02			BUS,CONDUCTOR:SHUNT ASSEMBLY,RED	00779	1–850100–O
A4Q127	151–0528–00			THYRISTOR,PWR:BIPOLAR,SCR;50V,16A RMS,PHASE	04713	2N6400
A4Q215	151–0435–00			XSTR:DARLINGTON,PNP,SI,TO–92MPSA65	04713	MPSA64
A4Q638	151–0908–00			XSTR,PWR:BIPOLAR,NPN;500V VCEO,1000V VCEV,5A,SWITCHING	04713	MJH16002A
				ATTACHED PARTS		
	210–0586–00			NUT,PL,ASSEM WA:4–40 X 0.25,STL CD PL	TK0435	ORDER BY DESC
	210–1178–00			WASHER,SHLDR:U/W TO–220 XSTR	13103	7721–7PPS
	211–0097–00			SCREW,MACHINE:4–40 X 0.312,PNH,STL	TK0435	ORDER BY DESC
	214–2953–00			HEAT SINK,SEMIC:XSTR,TO–220;VERTICALMOUNT,SLOT HOLE,(3)SOLDERABLE TABS,COPPER,BLACK PAINT	13103	6030B–TT
	342–0354–00			INSULATOR,PLATE:XSTR,SILICONE RUBBER	2K262	342–0354–00
				ATTACHED PARTS		
A4Q648	151–0323–00			XSTR,PWR:BIPOLAR,NPN;80V,4.0A,2.0MHZ,AMPLIFIER	04713	2N5192
A4Q660	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A4Q667	151–0750–00			XSTR,SIG:BIPOLAR,NPN;400V,300MA,20MHZ,AMPLIFIER	04713	MPSA44
A4Q717	151–0188–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,250MHZ,AMPLIFIER	04713	2N3906
A4Q727	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904

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A4Q741	151–0324–00			XSTR,PWR:BIPOLAR,PNP;80V,4.0A,2.0MHZ,AMPLIFIER	04713	2N5195
A4Q750	151–0323–00			XSTR,PWR:BIPOLAR,NPN;80V,4.0A,2.0MHZ,AMPLIFIER	04713	2N5192
A4Q755	151–0188–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,250MHZ,AMPLIFIER	04713	2N3906
A4R120	315–0101–00			RES,FXD,FILM:100 OHM,5%,0.25W,MI	TK1727	SFR25 2322–181–
A4R215	315–0272–00			RES,FXD,FILM:2.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R216	315–0472–00			RES,FXD,FILM:4.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R225	301–0680–00			RES,FXD,FILM:68 OHM,5%,0.5W	19701	5053CX68R00J
A4R314	315–0202–00			RES,FXD,FILM:2K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R315	315–0152–00			RES,FXD,FILM:1.5K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R316	315–0163–00	671–0572–00	671–0572–01	RES,FXD,FILM:16K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R316	322–3254–00	671–0572–02		RES,FXD,FILM:4.32K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF502G4321FT
A4R321	315–0100–00	671–0572–01		RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322–182–
A4R415	311–1225–00			RES,VAR,NONWW:TRMR,1K OHM,0.5W	32997	3386F–1–102
A4R416	315–0102–00			RES,FXD,FILM:1K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R510	311–0978–00			RES,VAR,NONWW:TRMR,250 OHM,0.5W	32997	3329H–K28–251
A4R560	301–0204–00	671–0572–00	671–0572–05	RES,FXD,FILM:200K OHM,5%,0.5W	19701	5053CX200K0J
A4R560	303–0204–00	671–0572–06		RES,FXD,CMPSN:200K OHM,5%,1W,	50139	GB2045
A4R575	315–0100–00	671–0572–01		RES,FXD,FILM:10 OHM,5%,0.25W,	TK1727	SFR25 2322–182–
A4R614	315–0152–00			RES,FXD,FILM:1.5K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R615	322–3181–00	671–0572–00	671–0572–02	RES,FXD,FILM:750 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G750ROF
A4R615	322–3175–00	671–0572–03		RES,FXD,FILM:649 OHM,1%,0.2W,TC=T0,SMALL BODY	91637	CCF50G649R0F
A4R616	322–3258–00			RES,FXD:METAL FILM;4.75K OHM,1%,0.2W,TC=100	56845	CCF50–2–G4751FT
A4R617	315–0182–00			RES,FXD,FILM:1.8K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R619	315–0103–00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R620	315–0432–00	671–0572–00	671–0572–01	RES,FXD,FILM:4.3K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R620	322–3254–00	671–0572–02		RES,FXD,FILM:4.32K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF502G4321FT
A4R621	315–0103–00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R622	322–3275–00	671–0572–00	671–0572–03	RES,FXD,FILM:7.15K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G71500F
A4R622	322–3248–00	671–0572–04		RES,FXD,FILM:3.74K OHM,1%,0.2W,TC=T0	91637	CCF50G37400F
A4R625	322–3181–00	671–0572–00	671–0572–02	RES,FXD,FILM:750 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G750ROF
A4R625	322–3199–00	671–0572–03		RES,FXD,FILM:1.15K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G11500F
A4R630	308–0755–00			RES,FXD,WW:0.75 OHM,5%,2W	91637	CPF–2–0R75JT
A4R647	301–0274–00			RES,FXD,FILM:270K OHM,5%,0.5W	19701	5053CX270K0J
A4R665	315–0332–00			RES,FXD,FILM:3.3K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R666	315–0473–00			RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R667	301–0105–00	671–0572–00	671–0572–05	RES,FXD,FILM:1M OHM,5%,0.50W	19701	5053CX1M000J
A4R667	303–0105–00	671–0572–06		RES,FXD,CMPSN:1M OHM,5%,1W	24546	FP32 OR FP1 1 M
A4R717	315–0183–00			RES,FXD,FILM:18K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R718	315–0221–00			RES,FXD,FILM:220 OHM,5%,0.25W,,MI	TK1727	SFR25 2322–181–
A4R722	315–0103–00			RES,FXD,FILM:10K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R723	307–0863–00			RES,THERMAL:10 OHM,10%,NTC	15454	SG13–S
A4R731	315–0473–00			RES,FXD,FILM:47K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R746	303–0750–00			RES,FXD,CMPSN:75 OHM,5%,1W	24546	FP32 OR FP1 75
A4R747	303–0750–00			RES,FXD,CMPSN:75 OHM,5%,1W	24546	FP32 OR FP1 75
A4R765	301–0105–00			RES,FXD,FILM:1M OHM,5%,0.50W	19701	5053CX1M000J
A4R766	322–3439–00			RES,FXD,FILM:365K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF50–2F36502FT
A4R767	322–3439–00			RES,FXD,FILM:365K OHM,1%,0.2W,TC=T0MI,SMALL	91637	CCF50–2F36502FT
A4R768	322–3374–00	671–0572–00	671–0572–03	RES,FXD,FILM:76.8K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G76801F
A4R768	315–0104–00	671–0572–04		RES,FXD,FILM:100K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R818	315–0106–00			RES,FXD,FILM:10M OHM,5%,0.25W	TK1727	SFR25 2322–181–
A4R822	301–0105–00			RES,FXD,FILM:1M OHM,5%,0.50W	19701	5053CX1M000J
A4S930	260–1849–07			SWITCH,PUSH:DPST,4A,250VAC, *ATTACHED PARTS*	31918	601955
	210–0001–00			WASHER,LOCK:#2 INTL,0.013 THK,STL (QUANTITY 2)	78189	1202–00–00–0541
	210–0405–00			NUT,PLAIN,HEX:2–56 X 0.188,BRS CD PL (QUANTITY 2)	73743	12157–50

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	211–0022–00			SCREW,MACHINE:2–56 X 0.188,PNH,STL (QUANTITY 2)	TK0435	ORDER BY DESC
	366–1160–00			PUSH BUTTON:CHARCOAL,0.523 X 0.253 X 0.43	80009	366116000
				END ATTACHED PARTS		
A4T440	120–1782–00			TRANSFORMER,RF:FLYBACK,70KHZ,PRI 230V,SEC5V 2.0, ,	75498	128–7044–00
A4U176	156–3633–00			IC,LINEAR:BIPOLAR,VOLTAGE REGULATOR;POSITIV E,12V,1A,3%,LOW DROPOUT	27014	LM2940CT–12
				ATTACHED PARTS		
	210–0586–00			NUT,PL,ASSEM WA:4–40 X 0.25,STL CD PL	TK0435	ORDER BY DESC
	210–1178–00			WASHER,SHLDR:U/W TO–220 XSTR	13103	7721–7PPS
	211–0097–00			SCREW,MACHINE:4–40 X 0.312,PNH,STL	TK0435	ORDER BY DESC
	214–2953–00			HEAT SINK,SEMIC:XSTR,TO–220;VERTICALM OUNT,SLOT HOLE,(3)SOLDERABLE TABS,COPPER,BL ACK PAINT	13103	6030B–TT
	342–0563–00			INSULATOR,PLATE:XSTR,FIBERGLASS REINF ORCED SILICON RUBBER	18565	69–11–8805–1674
				END ATTACHED PARTS		
A4U215	156–3217–00			IC,MISC:CMOS,PWR SUPPLY SUPERVISOR;MPU RESE T GENERATOR,5V SUPPLY SENSING,NMI OUTPUT	0B0A9	DS1231–50
A4U276	156–2559–00			IC,LINEAR:BIPOLAR,VOLTAGE REGULATOR;NEGATIV E,–12V,1.5A,2%	48726	UC7912ACT
				ATTACHED PARTS		
	210–0586–00			NUT,PL,ASSEM WA:4–40 X 0.25,STL CD PL	TK0435	ORDER BY DESC
	210–1178–00			WASHER,SHLDR:U/W TO–220 XSTR	13103	7721–7PPS
	211–0097–00			SCREW,MACHINE:4–40 X 0.312,PNH,STL	TK0435	ORDER BY DESC
	214–2953–00			HEAT SINK,SEMIC:XSTR,TO–220;VERTICALMOUNT,SLOT HOLE,(3)SOLDERABLE TABS,COPPER,BLACK PAINT	13103	6030B–TT
	342–0563–00			INSULATOR,PLATE:XSTR,FIBERGLASS REINF ORCED SILICON RUBBER	18565	69–11–8805–1674
				END ATTACHED PARTS		
A4U410	156–1631–00			IC,LINEAR:BIPOLAR,VR;SHUNT,ADJUSTABLE,100MA	01295	TL431CLP
A4U520	156–0885–00			CPLR,OPTOELECTR:LED,5KV ISOLATION	0MS63	H11AX861
A4U615	156–1225–01			IC,LINEAR:BIPOLAR,COMPARATOR	01295	LM393P
A4U722	156–2524–00	671–0572–00	671–0572–03	IC,LINEAR:BIPOLAR,SW–REGULATOR CONTROLLER;P WM,CURRENT MODE,SINGLE TOTEM POLE OUTPUT	48726	UC3842N
A4U722	156–4236–00	671–0572–04		IC,LINEAR:BIPOLAR,SW–REGULATOR CONTROLLER;P WM,CURRENT MODE,SINGLE TOTEM POLE OUTPUT	04713	UC3845BN
A4W810	198–5653–00			WIRE SET,ELEC:TSG170A	9M860	ORDER BY DESC
A4CR169	152–0198–00			DIODE,RECT:200V,3A,125A IFSM,1VF AT3A,SAF CONT	05828	1N5624
A4CR170	152–0066–00			DIODE,RECT:400V,1A,IFSM=30A,1.2VF,2US	05828	GP10G–020
A4CR215	152–0066–00			DIODE,RECT:400V,1A,IFSM=30A,1.2VF,2US	05828	GP10G–020
A4CR269	152–0198–00			DIODE,RECT:200V,3A,125A IFSM,1VF AT3A,SAF CONT	05828	1N5624
A4CR320	152–0884–00			DIODE,RECT:SCHTKY;35V,16A,150A IFSM,630MVF	04713	MBR1635
				ATTACHED PARTS		
	210–0586–00			NUT,PL,ASSEM WA:4–40 X 0.25,STL CD PL	TK0435	ORDER BY DESC
	210–1178–00			WASHER,SHLDR:U/W TO–220 XSTR	13103	7721–7PPS
	211–0097–00			SCREW,MACHINE:4–40 X 0.312,PNH,STL	TK0435	ORDER BY DESC
	214–2953–00			HEAT SINK,SEMIC:XSTR,TO–220;VERTICALMOUNT,SLOT HOLE,(3)SOLDERABLE TABS,COPPER,BLACK PAINT	13103	6030B–TT
	342–0563–00			INSULATOR,PLATE:XSTR,FIBERGLASS REINF ORCED SILICON RUBBER	18565	69–11–8805–1674
				END ATTACHED PARTS		
A4CR340	152–0601–01			DIODE,RECT:ULTRA FAST;150V,25NS,35A IFSM	04713	MUR115RL
A4CR348	152–0601–01			DIODE,RECT:ULTRA FAST;150V,25NS,35A IFSM	04713	MUR115RL
A4CR369	152–0066–00			DIODE,RECT:;400V,1A,IFSM=30A,1.2VF,2US	05828	GP10G–020
A4CR545	152–0897–00			DIODE,RECT:FAST RCVRY;1000V,1.5A,300NS,SOFT RCVRY	25403	BYV96E
A4CR556	152–0400–00			DIODE,RECT:FAST RCVRY;400V,1A,200NS	14552	MB2501
A4CR575	152–0884–00			DIODE,RECT:SCHTKY;35V,16A,150A IFSM,630MVF	04713	MBR1635

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				ATTACHED PARTS		
	210–1178–00			WASHER,SHLDR:U/W TO–220 XSTR	13103	7721–7PPS
	211–0097–00			SCREW,MACHINE:4–40 X 0.312,PNH,STL	TK0435	ORDER BY DESC
	214–2953–00			HEAT SINK,SEMIC:XSTR,TO–220;VERTICALMOUNT,SLOT HOLE,(3)SOLDERABLE TABS,COPPER,BLACK PAINT	13103	6030B–TT
	214–4115–00			HEAT SINK:COPPER	5Y400	ORDER BY DESC
	342–0563–00			INSULATOR,PLATE:XSTR,FIBERGLASS REINF ORCED SILICON RUBBER	18565	69–11–8805–1674
				END ATTACHED PARTS		
A4CR640	152–0841–00			DIODE,RECT:ULTRA FAST;1KV,8A,100NS	04713	MUR8100E
A4CR648	152–0864–00			DIO,RECT:ULTRA FAST;150V,2A,25NS,IFSM=50A,SOFT REC	25403	BYV27–150
A4CR649	152–0864–00			DIO,RECT:ULTRA FAST;150V,2A,25NS,IFSM=50A,SOFT REC	25403	BYV27–150
A4CR651	152–0581–04			DIODE,RECT:SCHTKY;20V,1A,.450VF,25A IFSM	04713	1N5817RL (TAPE
A4CR820	152–0750–00			DIO,RECT:FAST RCVRY;BRDG,600V,3A,IFSM=125A,250NS	TK2319	RKBPC606
A4DS670	150–1017–00			LT EMITTING DIO:GREEN,550NM,55MA MAX	50434	HLMP3910
A4DS720	150–0035–00			LAMP,GLOW:NEON;90V,0.3MA,AID–T,WIRE LD	TK0213	JH005/3011JA
A4LF950	119–1946–00			FILTER,RFI:1A,250V,400HZ W/PC TERMINAL	0GV52	FN326–1/02–K–D–
A4RV820	307–0449–00			RES,V SENSITIVE:1900PF,100A,130V,METAL OXDSAF CONT	34371	V130LA20A
A4RV920	307–0449–00			RES,V SENSITIVE:1900PF,100A,130V,METAL OXDSAF CONT	34371	V130LA20A
A4TP133	214–4085–00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A4TP137	214–4085–00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A4TP140	214–4085–00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A4TP173	214–4085–00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A4TP341	214–4085–00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A4TP350	214–4085–00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A4TP667	214–4085–00			TERM,TEST POINT:0.070 ID,0.220 H,0.063 DIAP CB,0.015 X 0.032 BRASS,W/RED NYLON COLLAR	26364	104–01–02
A4VR120	152–0662–00			DIODE,ZENER:5V,1%,0.4W	04713	SZG195RL
A4VR650	152–0395–00			DIODE,ZENER:4.3V,5%,0.4W	04713	1N749ARL
A4VR765	152–0304–00			DIODE,ZENER:20V,5%,0.4W	04713	1N968BRL
A5	671–0219–00	B010100	B020115	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021900
A5	671–0219–01	B020116	B020307	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021901
A5	671–0219–02	B020308	B020473	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021902
A5	671–0219–03	B020474	B030583	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021903
A5	671–0219–04	B030584	B030845	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021904
A5	671–0219–05	B030846	B032290	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021905
A5	671–0219–06	B032291	B032916	CIRCUIT BD ASSY:IDENTIFICATION	80009	671021906
A5	671–0219–07	B032917		CIRCUIT BD ASSY:IDENTIFICATION (OPTION 01)	80009	671021907
A5C130	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C150	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C180	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C208	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C220	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C230	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C243	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C295	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C304	283–0421–00	671–0219–02		CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C305	283–0421–00	671–0219–00	671–0219–01	CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C305	283–0421–00	671–0219–02		CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C310	285–0889–00	671–0219–00	671–0219–01	CAP,FXD,PLASTIC:0.0027UF,5%,100V	84411	TEK180–27251
A5C318	290–0973–00	671–0219–00	671–0219–01	CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101

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A5C355	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C370	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C395	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C405	285–1389–00	671–0219–02		CAP,FXD,MTLZD:0.015UF,1%,250V	84411	X428 .015 1 250
A5C415	285–1221–00	671–0219–00	671–0219–01	CAP,FXD,MTLZD:0.1UF,2%,100V	01884	LP68A1B104G
A5C421	290–0973–00	671–0219–00	671–0219–01	CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C430	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C443	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C455	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C460	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C477	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C478	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C519	290–0973–00	671–0219–00	671–0219–01	CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C547	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C577	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C583	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C604	283–0421–00	671–0219–00	671–0219–01	CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C605	283–0421–00	671–0219–00	671–0219–01	CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C608	283–0421–00	671–0219–02		CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C620	283–0421–00	671–0219–02		CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C630	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C647	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C665	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C695	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C705	285–1188–00	671–0219–00	671–0219–01	CAP,FXD,MTLZD:0.082 UF,5%,100 V	05292	PMT 3R ADVISE
A5C705	283–0421–00	671–0219–02		CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C710	283–0421–00	671–0219–02		CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C725	285–1130–00	671–0219–02		CAP,FXD,PLASTIC:0.22UF,1%,100V	84411	TEK153 .22 1 10
A5C730	290–0973–00	671–0219–02		CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C735	290–0974–00			CAP,FXD,ALUM:10UF,20%,50V,ESR=16.58 OHM (120HZ,20C)	55680	UVX1H100MAA
A5C748	290–0973–00			CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C755	283–0631–00	671–0219–00	671–0219–00	CAP,FXD,MICA DI:95PF,1%,500V	TK0891	RDM15FD950F03
A5C755	283–0707–00	671–0219–01		CAP,FXD,MICA DI:385PF,1%,500V	TK0891	RDM15FD3850F03
A5C760	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C765	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C770	283–0752–00	671–0219–00	671–0219–01	CAP,FXD,MICA DI:345PF,1%,500V	TK0891	RDM15FD3450F03
A5C779	283–0617–00			CAP,FXD,MICA DI:4700PF,10%,300V	TK0891	RDM19FD472K03
A5C780	283–0637–00	671–0219–00	671–0219–01	CAP,FXD,MICA DI:20PF,2.5%,500V	TK0891	RDM15ED200D03
A5C785	283–0631–00	671–0219–02		CAP,FXD,MICA DI:95PF,1%,500V	TK0891	RDM15FD950F03
A5C789	283–0766–00	671–0219–00	671–0219–01	CAP,FXD,MICA DI:47 PF,1%,500V	TK0891	RDM15ED470D03
A5C805	290–0973–00	671–0219–02		CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C816	285–1307–00	671–0219–02		CAP,FXD,PLASTIC:0.02UF,1%,50V	14752	650D1A203F
A5C817	285–1307–00	671–0219–02		CAP,FXD,PLASTIC:0.02UF,1%,50V	14752	650D1A203F
A5C820	283–0421–00	671–0219–00	671–0219–01	CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C825	290–0973–00	671–0219–00	671–0219–01	CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C830	283–0421–00	671–0219–00	671–0219–01	CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C830	290–0973–00	671–0219–02		CAP,FXD,ELCTLT:100UF,20%,25VDC	0H1N5	CEUSM1E101
A5C835	283–0648–00			CAP,FXD,MICA DI:10PF,+/–0.5PF,500V	TK0891	RDM15CD100D03
A5C840	281–0153–00			CAP,VAR,AIR DI:1.7–10PF,250V	74970	187–0106–055
A5C849	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C850	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C860	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C870	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C880				(SELECTED)		
A5C881				(SELECTED)		
A5C885	283–0779–00	671–0219–02		CAP,FXD,MICA DI:27 PF,2%,500V	TK0891	RDM15ED270G03
A5C886	283–0598–00	671–0219–02		CAP,FXD,MICA DI:253PF,5%,500V	TK0891	RDM15FD2530J03
A5C920	283–0648–00			CAP,FXD,MICA DI:10PF,+/–0.5PF,500V	TK0891	RDM15CD100D03

Replaceable Electrical Parts

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A5C945	281–0122–00			CAP,VAR,CER DI:2.5–9PF,100V	59660	518–000A2.5–9
A5C960	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5C963	283–0175–00	671–0219–05		CAP,FXD,CER DI:10PF,5%,200V	18796	RPE110NPO100D20
A5C975	283–0421–00			CAP,FXD,CER DI:0.1UF,+80–20%,50VDIP STYLE	04222	MD015C104MAB
A5J155	131–3439–00			CONN,DIN:PCB,;FEMALE,RTANG,3 X 16,0.1 CTR,0 .209 MLG X 0.114 TAIL,30 GOLD	00779	650893–4
A5J520	131–0608–00	671–0219–00	671–0219–01	CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A5J520	131–0608–00	671–0219–02		CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE (QUANTITY 3)	22526	48283–018
A5J555	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A5J635	131–0608–00	671–0219–00	671–0219–01	CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE (QUANTITY 3)	22526	48283–018
A5J643	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A5J825	131–0608–00	671–0219–02		CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE (QUANTITY 3)	22526	48283–018
A5J910	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A5J920	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A5J940	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A5L785	108–0368–00	671–0219–02		COIL,RF:FIXED,9.7UH	0JR03	108–0368–00
A5L786	108–0443–00	671–0219–02		COIL,RF:FIXED,23.5UH	0JR03	108–0443–00
A5L788	114–0345–00	671–0219–00	671–0219–01	COIL,RF:VARIABLE,4.13–4.83UHPOT CORE	80009	114034500
A5L789				(SELECTED)		
A5P635	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A5P643	131–0993–05			BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A5P825	131–0993–05	671–0219–02		BUS,CONDUCTOR:SHUNT ASSEMBLY,GREEN	00779	850100–5
A5Q863	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A5Q870	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A5Q963	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A5Q964	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A5Q970	151–0220–00			XSTR,SIG:BIPOLAR,PNP;40V,200MA,400MHZ,AMPLIFIER	27014	S036228.22
A5Q971	151–0190–00			XSTR,SIG:BIPOLAR,NPN;40V,200MA,300MHZ,AMPLIFIER	04713	2N3904
A5R405	321–0287–00	671–0219–00	671–0219–01	RES,FXD,FILM:9.53K OHM,1%,0.125W,TC=T0MI	19701	5033ED9K530F
A5R406	321–0287–00	671–0219–00	671–0219–01	RES,FXD,FILM:9.53K OHM,1%,0.125W,TC=T0MI	19701	5033ED9K530F
A5R407	321–0614–00	671–0219–00	671–0219–01	RES,FXD,FILM:10.1K OHM,1%,0.125W,TC=T0MI	91637	CMF55116G10101F
A5R408	321–0614–00	671–0219–00	671–0219–01	RES,FXD,FILM:10.1K OHM,1%,0.125W,TC=T0MI	91637	CMF55116G10101F
A5R408	321–0771–01	671–0219–00	671–0219–01	RES,FXD,FILM:50 OHM,0.5%,0.125W,TC=T0MI	57668	RB14DXE 50E
A5R408	321–0771–01	671–0219–02		RES,FXD,FILM:50 OHM,0.5%,0.125W,TC=T0MI	57668	RB14DXE 50E
A5R409	321–0318–00	671–0219–00	671–0219–01	RES,FXD,FILM:20.0K OHM,1%,0.125W,TC=T0MI	19701	5033ED20K00F
A5R410	322–3039–00	671–0219–00	671–0219–01	RES,FXD,FILM:24.9 OHM,1%,0.2W,TC=T0,SMALL BODY	91637	CCF50–2–G24R90F
A5R506	322–3039–00	671–0219–00	671–0219–01	RES,FXD,FILM:24.9 OHM,1%,0.2W,TC=T0,SMALL BODY	91637	CCF50–2–G24R90F
A5R507	311–0614–00			RES,VAR,NONWW:TRMR,30K OHM,0.5W	32997	3329H–L58–303
A5R509	321–0771–01			RES,FXD,FILM:50 OHM,0.5%,0.125W,TC=T0MI	57668	RB14DXE 50E
A5R558	315–0272–00	671–0219–02		RES,FXD,FILM:2.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A5R559	315–0272–00	671–0219–02		RES,FXD,FILM:2.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A5R560	307–0650–00	671–0219–00	671–0219–01	RES NTWK,FXD,FI:9,2.7K OHM,5%,0.150W	11236	750–101–R2.7K
A5R570	315–0272–00	671–0219–02		RES,FXD,FILM:2.7K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A5R578	311–0635–00			RES,VAR,NONWW:TRMR,1K OHM,0.5W	32997	3329H–L58–102
A5R589	315–0622–00	671–0219–00	671–0219–05	RES,FXD,FILM:6.2K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A5R589	322–3269–00	671–0219–06		RES,FXD,FILM:6.19K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G61900F
A5R590	315–0332–00	671–0219–00	671–0219–05	RES,FXD,FILM:3.3K OHM,5%,0.25W	TK1727	SFR25 2322–181–

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A5R590	322–3241–00	671–0219–06		RES,FXD,FILM:3.16K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF502G3161FT
A5R687	315–0270–00			RES,FXD,FILM:27 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A5R688	315–0513–00			RES,FXD,FILM:51K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A5R689	322–3132–00			RES,FXD,FILM:232 OHM,1%,0.2W,TC=T0MI,SMALLBODY	91637	CCF50–2–G232ROF
A5R690	322–3132–00			RES,FXD,FILM:232 OHM,1%,0.2W,TC=T0MI,SMALLBODY	91637	CCF50–2–G232ROF
A5R691	322–3179–00			RES,FXD,FILM:715 OHM,1%,0.2W,TC=T0MI,SMALLBODY	91637	CCF501G715R0F
A5R692	322–3132–00			RES,FXD,FILM:232 OHM,1%,0.2W,TC=T0MI,SMALLBODY	91637	CCF50–2–G232ROF
A5R707	322–3292–00	671–0219–02		RES,FXD,FILM:10.7K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G10701F
A5R708	321–0229–00	671–0219–02		RES,FXD,FILM:2.37K OHM,1%,0.125W,TC=T0MI	TK1727	2322–151–2K37
A5R720	321–0229–00	671–0219–02		RES,FXD,FILM:2.37K OHM,1%,0.125W,TC=T0MI	TK1727	2322–151–2K37
A5R721	321–0614–00	671–0219–02		RES,FXD,FILM:10.1K OHM,1%,0.125W,TC=T0MI	91637	CMF55116G10101F
A5R722	321–0614–00	671–0219–02		RES,FXD,FILM:10.1K OHM,1%,0.125W,TC=T0MI	91637	CMF55116G10101F
A5R740	311–0698–00			RES,VAR,NONWW:TRMR,1MEG OHM,0.5W	32997	3329H–L58–105
A5R741	315–0222–00			RES,FXD,FILM:2.2K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A5R742	315–0243–00			RES,FXD,FILM:24K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A5R755	322–3193–00			RES,FXD:METAL FILM;1K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G10000F
A5R756	315–0362–00			RES,FXD,FILM:3.6K OHM,5%,0.25W	TK1727	SFR25 2322–181–
A5R765	322–3132–00	671–0219–00	671–0219–01	RES,FXD,FILM:232 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2–G232ROF
A5R766	322–3156–00			RES,FXD,FILM:412 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G412ROF
A5R767	321–0156–00	671–0219–00	671–0219–00	RES,FXD,FILM:412 OHM,1%,0.125W,TC=T0	TK1727	MR25 2322–151–4
A5R767	322–3161–00	671–0219–01		RES,FXD,FILM:464 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2G464R0F
A5R768	322–3176–00			RES,FXD,FILM:665 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2–G6650FT
A5R770	322–3179–00			RES,FXD,FILM:715 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G715R0F
A5R815	322–3039–00	671–0219–02		RES,FXD,FILM:24.9 OHM,1%,0.2W,TC=T0TAPED & REELED,SMALL BODY	91637	CCF50–2–G24R90F
A5R840	322–3164–00			RES,FXD,FILM:499 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G499ROF
A5R841	322–3178–00			RES,FXD,FILM:698 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2G698ROF
A5R842	322–3210–00			RES,FXD:METAL FILM;1.5K OHM,1%,0.2W,TC=100PPM	91637	CCF501G15000F
A5R855	322–3260–00			RES,FXD,FILM:4.99K OHM,1%,0.2W,TC=T0	91637	CCF501G49900F
A5R856	321–0247–00			RES,FXD,FILM:3.65K OHM,1%,0.125W,TC=T0MI	TK1727	MR25–2322–151–3
A5R868	322–3232–00			RES,FXD,FILM:2.55K OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF501G25500F
A5R869	322–3030–00			RES,FXD:METAL FILM;20 OHM,1%,0.2W,TC=100 PPM	91637	CCF50G20R00F
A5R870	315–0150–00	671–0219–03		RES,FXD,FILM:15 OHM,5%,0.25W	TK1727	SFR25 2322–181–
A5R885	322–3132–00	671–0219–02		RES,FXD,FILM:232 OHM,1%,0.2W,TC=T0MI,SMALL BODY	91637	CCF50–2–G232ROF
A5R915	322–3039–00	671–0219–02		RES,FXD,FILM:24.9 OHM,1%,0.2W,TC=T0,SMALL BODY	91637	CCF50–2–G24R90F
A5R930	322–3085–00			RES,FXD:METAL FILM;75 OHM,1%,0.2W,TC=100 PPM	91637	CCF501G75R00F
A5R935	311–0634–00			RES,VAR,NONWW:TRMR,500 OHM,0.5W	32997	3329H–L58–501
A5R956	322–3175–00			RES,FXD,FILM:649 OHM,1%,0.2W,TC=T0	91637	CCF50G649R0F
A5R957	322–3222–00			RES,FXD:METAL FILM;2K OHM,1%,0.2W,TC=100 PPM	91637	CCF501G20000F
A5R980	321–0059–00			RES,FXD,FILM:40.2 OHM,0.5%,0.125W,TC=T0 MI	TK1727	MR25 2322–151–9
A5U108	156–0479–02			IC,DIGITAL:LSTTL,GATE	01295	SN74LS32N
A5U220	156–0784–02			IC,DIGITAL:LSTTL,COUNTER	01295	SN74LS163AN
A5U230	156–0530–02	671–0219–00	671–0219–03	IC,DIGITAL:LSTTL,MUX/ENCODER	01295	SN74LS157N
A5U230	156–2159–00	671–0219–04		IC,DGTL:ASTTL,MUX;QUAD 2–TO–1 DATASELECTOR, NONINV	01295	SN74AS157N
A5U243	156–1754–01			IC,DIGITAL:ALSTTL,BFR/DRIVER;OCTALNONINV, 3–STATE	01295	SN74ALS244BN
A5U260	160–4848–00	671–0219–00	671–219–06	MICROCKT,DGTL:NMOS,8192 X 8 EPROM,PRGMW/3 S TATE OUT,2764A,DIP28	80009	160484800
A5U260	160–4848–01	671–0219–07		IC,DIGITAL:CMOS,EPROM;8K X 8 W/3 STATE OUT	80009	160484801
				MOUNTING PARTS		
	136–0755–00			SOCKET,DIP:PCB;FEMALE,STR,2 X 14,28 POS,0.1 X 0.6 CTR,0.175 H X0.130 TAIL,BECU,TIN,ACCOM 0.008–0.0015 X 0.014–0.022	09922	DILB28P–108
				END MOUNTING PARTS		
A5U285	160–4850–00			MICROCKT,DGTL:CMOS,2K X 8 REG PROM,PRGMW/3 STATE OUT,CY7C245,DIP24	80009	160485000
				MOUNTING PARTS		

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
	136–0925–00			SOCKET,DIP:PCB;24 POS,2 X 12,0.1 X 0.3 CT R,0.196 H X 0.130 TAIL,BECU,TIN,ACCOM 0.008 –0.015THRU 0.014 X 0.022 LEADS	00779	2–641932–3
				END MOUNTING PARTS		
A5U309	156–1272–00	671–0219–00	671–0219–01	IC,LIN:BIPOLAR,OP–AMP;DUAL,HI OUT DRV,LOW NOISE	01295	NE5532P
A5U310	156–2359–00	671–0219–02		IC,DIGITAL:QUAD D–TYPE FF	80009	156235900
				MOUNTING PARTS		
	136–0755–00	671–0219–02		SOCKET,DIP:PCB;FEMALE,STR,2 X 14,28 POS,0. 1 X 0.6 CTR,0.175 H X0.130 TAIL,BECU,TIN,AC COM 0.008–0.0015 X 0.014–0.022	09922	DILB28P–108
				END MOUNTING PARTS		
A5U330	156–1632–00			IC,MEMORY:CMOS,SRAM;2K X 8,250NS	TK1416	LH5116–10
				MOUNTING PARTS		
	136–0751–00			SOCKET,DIP:PCB;STR,2 X 12,24 POS,0.1X 0.6 CTR,0.175 H X 0.130 TAIL,BECU,TIN,ACCOM 0.0 08–0.015 X 0.014–0.022 LEADS	09922	DILB24P108
				END MOUNTING PARTS		
A5U343	156–1664–00			IC,DGTL:ALSTTL,FLIP FLOP;OCTAL NONINV D–TYPE, 3–STATE	01295	SN74ALS574BN
A5U455	156–2331–00			IC,DIGITAL:LSTTL,COUNTER;8–BIT, WITH STORAG E REGISTER, 3–STATE	01295	SN74LS590N
				MOUNTING PARTS		
	136–0729–00	671–0219–00	671–0219–01	SOCKET,DIP:PCB;FEMALE,STR,2 X 8,16 POS,0.1	09922	DILB16P–108T
				END MOUNTING PARTS		
A5U470	156–2382–00			IC,DIGITAL:ASTTL,FLIP FLOP;OCTAL D–TYPE, 3–STATE	01295	SN74AS374N
				MOUNTING PARTS		
	136–0752–00	671–0219–00	671–0219–01	SKT,PL–IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P–108
				END MOUNTING PARTS		
A5U485	156–0316–04			IC,DIGITAL:ECL,TRANSLATOR;QUAD ECL TOTTL	04713	MC10125P
A5U490	156–1173–00			IC,LINEAR:BIPOLAR,V REF;POS,2.5V,1.0%,40PPM,SERIES	04713	MC1403U
A5U530	160–4849–00			MICROCKT,DGTL:CMOS,1024 X 8 PROM,PRGM7C281– 45,DIP24	80009	160484900
				MOUNTING PARTS		
	136–0925–00			SOCKET,DIP:PCB;24 POS,2 X 12,0.1 X 0.3 CT R,0.196 H X 0.130 TAIL,BECU,TIN,ACCOM 0.008 –0.015THRU 0.014 X 0.022 LEADS	00779	2–641932–3
				END MOUNTING PARTS		
A5U543	156–2517–00			IC,MEMORY:STTL,ROM;7 X 9 UPPERCASE CHARACTE R GENERATOR	80009	156251700
A5U608	160–3289–00	671–0219–02		MICROCKT,DGTL:4096 X 8 PROM,PRGM	80009	160328900
A5U620	160–4851–01	671–0219–02		IC,DIGITAL:CMOS,PLD;EEPLD,16V8,25NS,90MA	80009	160485101
A5U643	156–0402–00			IC,MISC:BIPOLAR,TIMER	27014	LM555CN
A5U655	160–4866–00			IC,DIGITAL:CMOS,PLD;EEPLD,16V8,25NS,90MA	80009	160486600
				MOUNTING PARTS		
	136–0752–00			SKT,PL–IN ELEK:MICROCIRCUIT,20 DIP	09922	DILB20P–108
				END MOUNTING PARTS		
A5U670	156–1255–00			IC,CONVERTER:BIPOLAR,D/A;8 BIT,85NS,CURRENT	24355	DAC08HP
A5U690	156–0158–07			IC,LINEAR:BIPOLAR,OP–AMP	01295	MC1458P
A5U708	156–1272–00	671–0219–02		IC,LIN:BIPOLAR,OP–AMP;DUAL,HI OUT DRV,LOW NOISE	01295	NE5532P
A5U710	156–2359–00	671–0219–00	671–0219–01	IC,DIGITAL:QUAD D–TYPE FF	80009	156235900
				MOUNTING PARTS		
	136–0755–00	671–0219–00	671–0219–01	SOCKET,DIP:PCB;FEMALE,STR,2 X 14,28 POS,0. 1 X 0.6 CTR,0.175 H X0.130 TAIL,BECU,TIN,AC COM 0.008–0.0015 X 0.014–0.022	09922	DILB28P–108
				END MOUNTING PARTS		
A5U730	160–4851–00	671–0219–00	671–0219–01	IC,DIGITAL:CMOS,PLD;EEPLD,16V8,25NS,90MA	80009	160485100
A5U815	160–3289–00	671–0219–00	671–0219–01	MICROCKT,DGTL:4096 X 8 PROM,PRGM	80009	160328900
A5U955	156–0534–01			IC,LINEAR:DUAL DIFF AMPL,BURN–INCA3102,MI	34371	93910
A5W209	131–0566–00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A5W209	131–0566–00	671–0219–00	671–0219–01	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207

Component Number	Tektronix Part Number	Serial / Assembly Number Effective	Discontinued	Name & Description	Mfr. Code	Mfr. Part Number
A5W210	131–0566–00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A5W210	131–0566–00	671–0219–00	671–0219–01	BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A5W591	131–0566–00			BUS,CONDUCTOR:DUMMY RES,0.094 OD X 0.225L	24546	OMA0207
A5CR868	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A5CR965	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A5CR966	152–0141–02			DIODE,SIG:ULTRA FAST;40V,150MA,4NS,2PF	27014	FDH9427
A5TP105	214–0579–00			TERM,TEST PT:PCB,TEST PT;EYELET 0.055/0.045 TIPCHAM	0J260	ORDER BY DESC
A5TP195	214–0579–00			TERM,TEST PT:PCB,TEST PT;EYELET 0.055/0.045 TIPCHAM	0J260	ORDER BY DESC
A5TP510	214–0579–00			TERM,TEST PT:PCB,TEST PT;EYELET 0.055/0.045 TIPCHAM	0J260	ORDER BY DESC
A5TP795	214–0579–00			TERM,TEST PT:PCB,TEST PT;EYELET 0.055/0.045 TIPCHAM	0J260	ORDER BY DESC
A5TP908	214–0579–00			TERM,TEST PT:PCB,TEST PT;EYELET 0.055/0.045 TIPCHAM	0J260	ORDER BY DESC
A6	670–9368–00			CIRCUIT BD ASSY:BNC	80009	670936800
A6J307	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE	22526	48283–018
A6J420	131–0608–00			CONN,TERMINAL:PRESSFIT/PCB,;MALE,STR,0.025 SQ,0.248 MLG X 0.137 TAIL,50 GOLD,PHZ BRZ,W/FERRULE (QUANTITY 34)	22526	48283–018
A6L118	108–0655–00			COIL,RF:FIXED,63NH	0JR03	108–0655–00
A6L124	108–0655–00			COIL,RF:FIXED,63NH	0JR03	108–0655–00
B100	119–2068–00	B010100	B031378	FAN,TUBEAXIAL:24VDC,20CFM,60 X 60 MM 4800RPM	TK1960	TFDD6024RXA
B100	119–2068–01	B031379		FAN,DC:TUBEAXIAL;24V,4650 RPM,3.84W,18CFM,3 DBA,BALL BEARING,60MM X 20MM,9" SLEEVED LEAD W/CONN	TK1960	USTF602024HW–11
J107	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
J134	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
J207	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
J234	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
J407	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
J434	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
J607	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
J634	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
J707	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
J734	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
J907	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
J910	131–3207–00			CONN,RCPT,ELEC:MALE,3 CONTACT (OPTION 01)	82389	D3M
J934	131–0955–03			CONN,RF JACK:BNC;FEMALE,STR,SLDR CUP/FRONT HD,D/1 FLAT,SILVER/NICKEL	24931	28JR200–1
W31	174–2406–00	B031658		CA ASSY,SP,ELE:10,26 AWG,15.0 L,RIBBON (OPTION 03 ONLY)	TK1547	174–2406–00

Schematics and Circuit Board Illustrations

Diagrams/Circuit Board Illustrations

Symbols

Graphic symbols and class designation letters are based on ANSI Standard Y32.2–1975.

Logic symbology is based on ANSI Y32.14–1973 in terms of positive logic. Logic symbols depict the logic function performed and may differ from the manufacturer's data.

Overline, parenthesis, or leading slash indicate a low asserting state.

Example: $\overline{\text{ID CONTROL}}$, (ID CONTROL), or /ID CONTROL.

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:

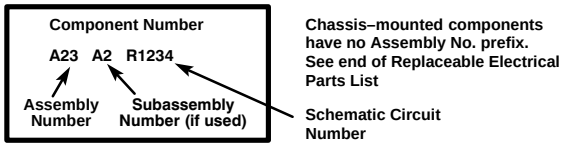
Capacitors: Values one or greater are in picofarads (pF).
Values less than one are in microfarads (μF).
Resistors = Ohms (Ω).

The following information and special symbols may appear in this manual.

Assembly Numbers

Each assembly in the instrument is assigned an assembly number (e.g., A20). The assembly number appears on the diagram (in circuit board outline), circuit board illustration title, and lookup table for the schematic diagram.

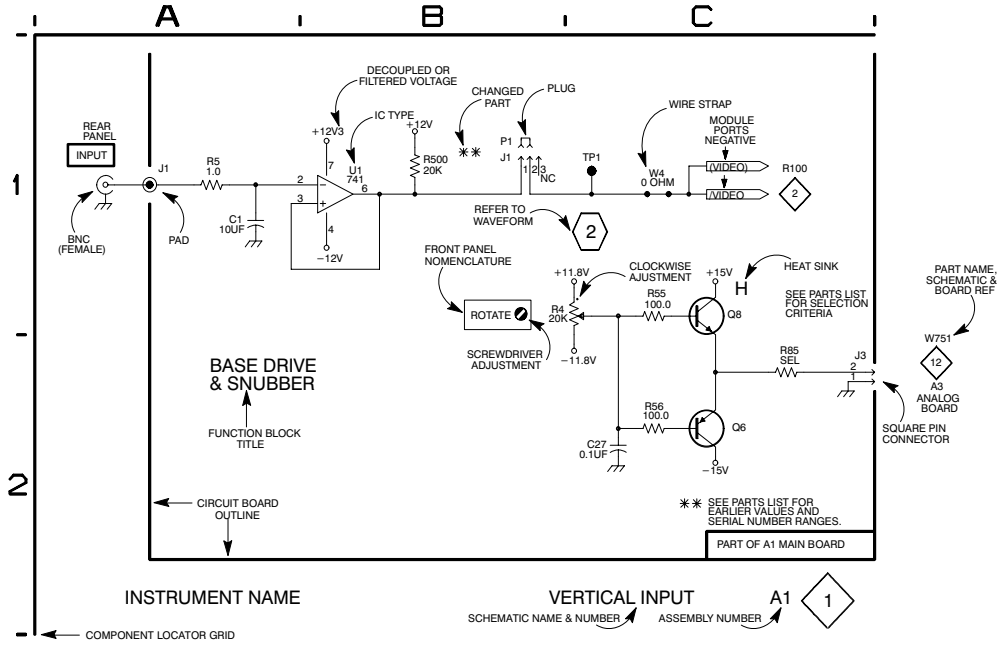
The Replaceable Electrical Parts List is arranged by assembly number in numerical sequence; the components are listed by component number. Example:

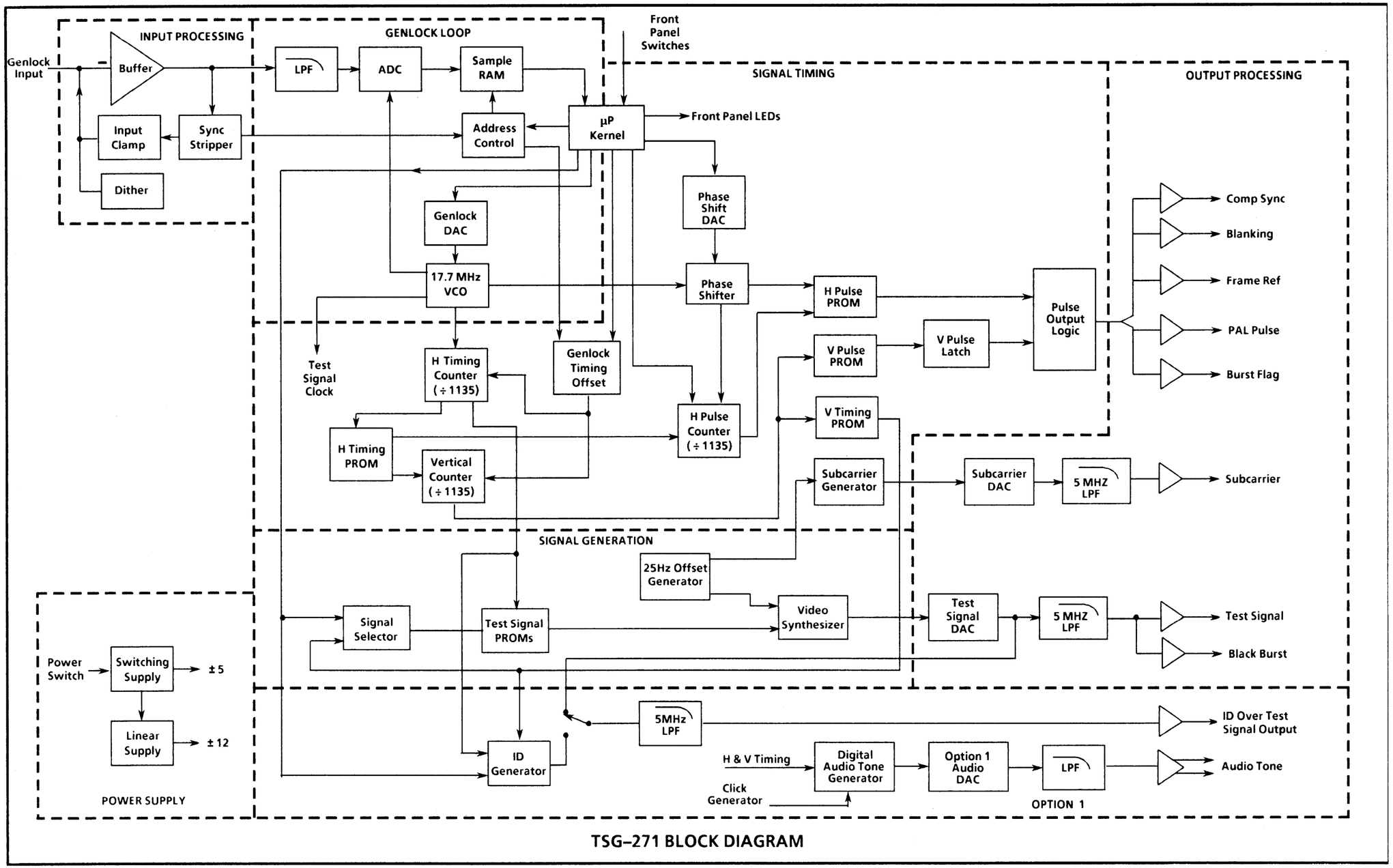


Grid Coordinates

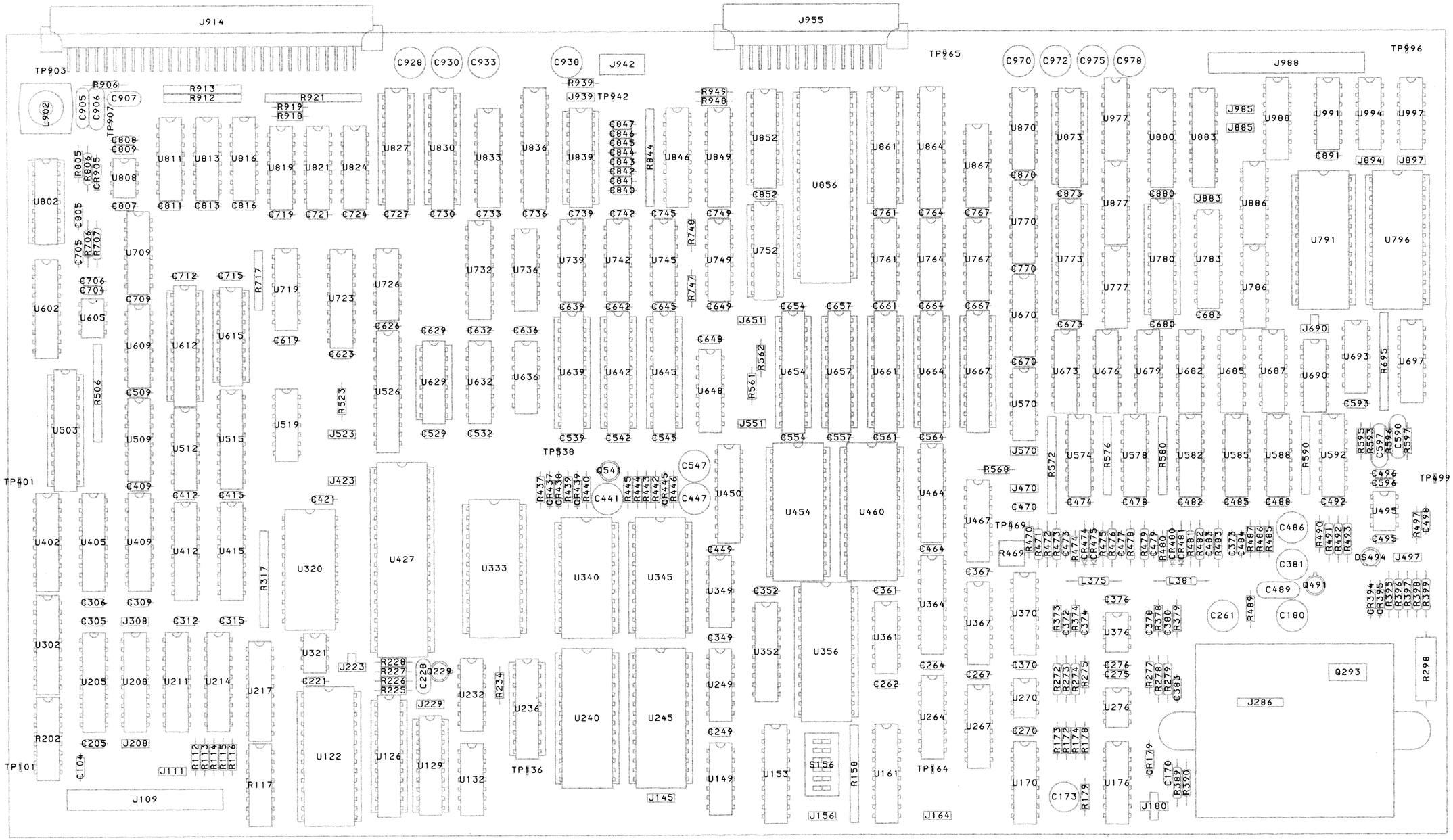
The schematic diagram and circuit board component location illustration have grids. A lookup table with the grid coordinates is provided for ease of locating the component. Only the components illustrated on the facing diagram are listed in the lookup table.

When more than one schematic diagram is used to illustrate the circuitry on a circuit board, the circuit board illustration will only appear opposite the first diagram; the lookup table will list the diagram number of other diagrams that the other circuitry appears on.

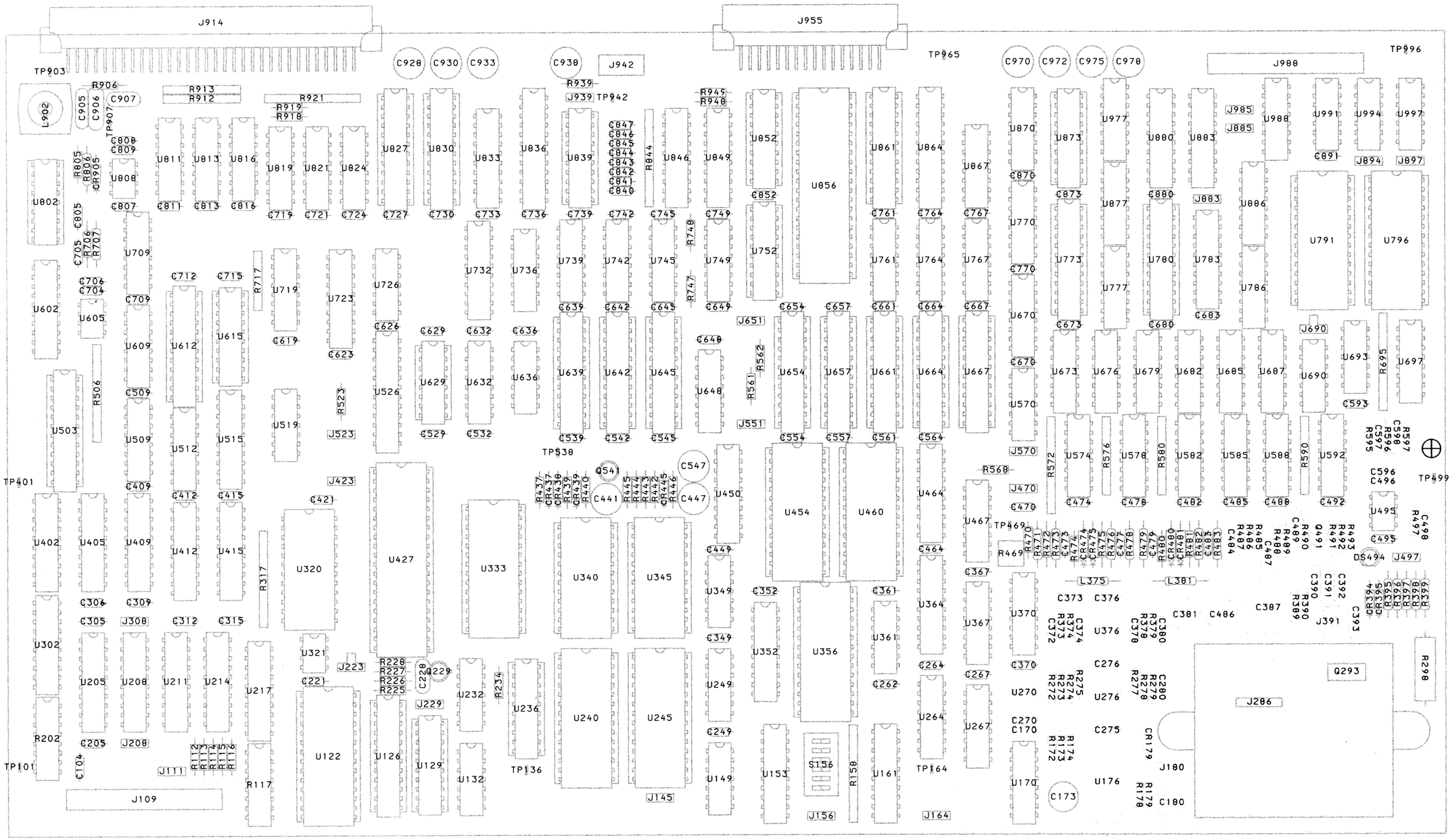




TSG–271 BLOCK DIAGRAM



A2-1 DIGITAL BOARD (SN B031176 & ABOVE)



A2-1 DIGITAL BOARD (SN B031175 & BELOW)

DIAGRAM 1

SCHEMATIC DIAGRAM LOOK-UP CHART

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

Circuit Number	Schematic Diagram Location
A2-1 Digital Board	
C205	C2
C305	C3
C840	B5
C841	B5
C842	B5
C843	B5
C844	B5
C845	B4
C846	B4
C847	B4
J109	C1
J109	C2
J109	F1
J111	C2
J156	B3
J156	D4
J164	B3
J164	C4
J208	D2
J210	C1
J308	D1
J942	B4
J955	C1
J955	F4
P109	B1
P109	F1
P942	B4
R112	F3
R113	F3
R114	F3
R115	F2
R116	F2
R117A	F3
R117B	F2
R158	C3
R202	F1
R844	B4
U161	D3
U205	C2
U208	D1
U211	F2
U214	F3
U302	F1
U364	F5
U846	C4
U849	D4
U880	G5
A1 Front Panel Board	
DS246	H2
DS266	H2
DS385	H1
DS389	H1
DS412	H1
DS484	H1
DS488	H1
DS582	H2
DS586	H2
DS618	H3
DS681	H3
DS685	H3
DS780	H3
DS784	H3
DS922	H4
DS942	H4
DS962	H4
DS982	H4
J515	B1
J515	B2
J515	F1
P515	B1
P515	F1
P515	G1
S355	A1
S359	A1
S444	A1
S448	A1
S552	A1
S556	A1
S651	A2
S655	A2
S750	A2
S754	A2
S954	A3

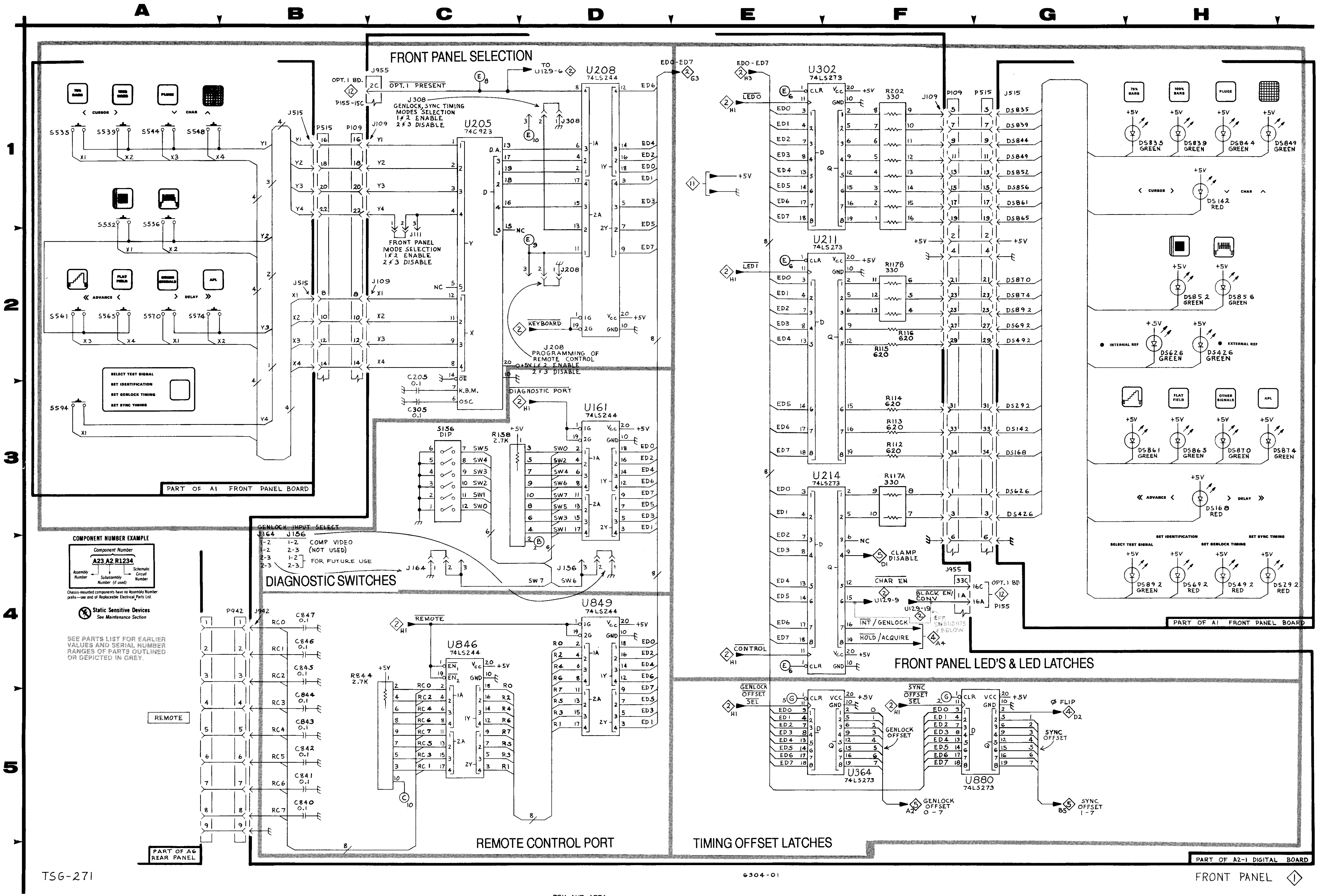

FRONT PANEL SELECTION
DIAGNOSTIC SWITCHES
REMOTE CONTROL PORT
TIMING OFFSET LATCHES
FRONT PANEL LED'S & LED LATCHES
PART OF A1 FRONT PANEL BOARD
PART OF A6 REAR PANEL
PART OF A2-1 DIGITAL BOARD
COMPONENT NUMBER EXAMPLE
Static Sensitive Devices
See Maintenance Section
SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.
REMOTE
DIAGNOSTIC PORT
GENLOCK INPUT SELECT
TSG-271
6304-01
REV AUG 1991
FRONT PANEL

DIAGRAM 2

SCHEMATIC DIAGRAM LOOK-UP CHART

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

Circuit Number	Schematic Diagram Location
A2-1 Digital Board	
C228	B3
C441	F1
C447	F1
C547	F1
CR437	F1
CR438	F1
CR439	F1
CR445	F1
J223	B2
J229	A2
J712	A5
J914	A5
J955	H4
Q229	B3
Q541	F1
R225	A2
R226	B2
R227	B3
R228	B3
R234	B3
R317	B5
R437	F1
R439	F1
R440	F1
R442	F1
R443	F1
R444	F1
R445	F1
R446	F1
U122	H2
U126	D1
U129	A3
U132A	A3
U132B	B1
U217	G3
U232A	E5
U232B	B3
U232C	B3
U232D	F1
U236	E1
U240	D4
U245	E4
U320	G1
U321	A2
U333	D2
U340	E2
U345	F2
U402	G5
U405	G4
U415	F2
U427	C2
U519 *	B5
U723	F2

***See Parts List for earlier serial number ranges.**

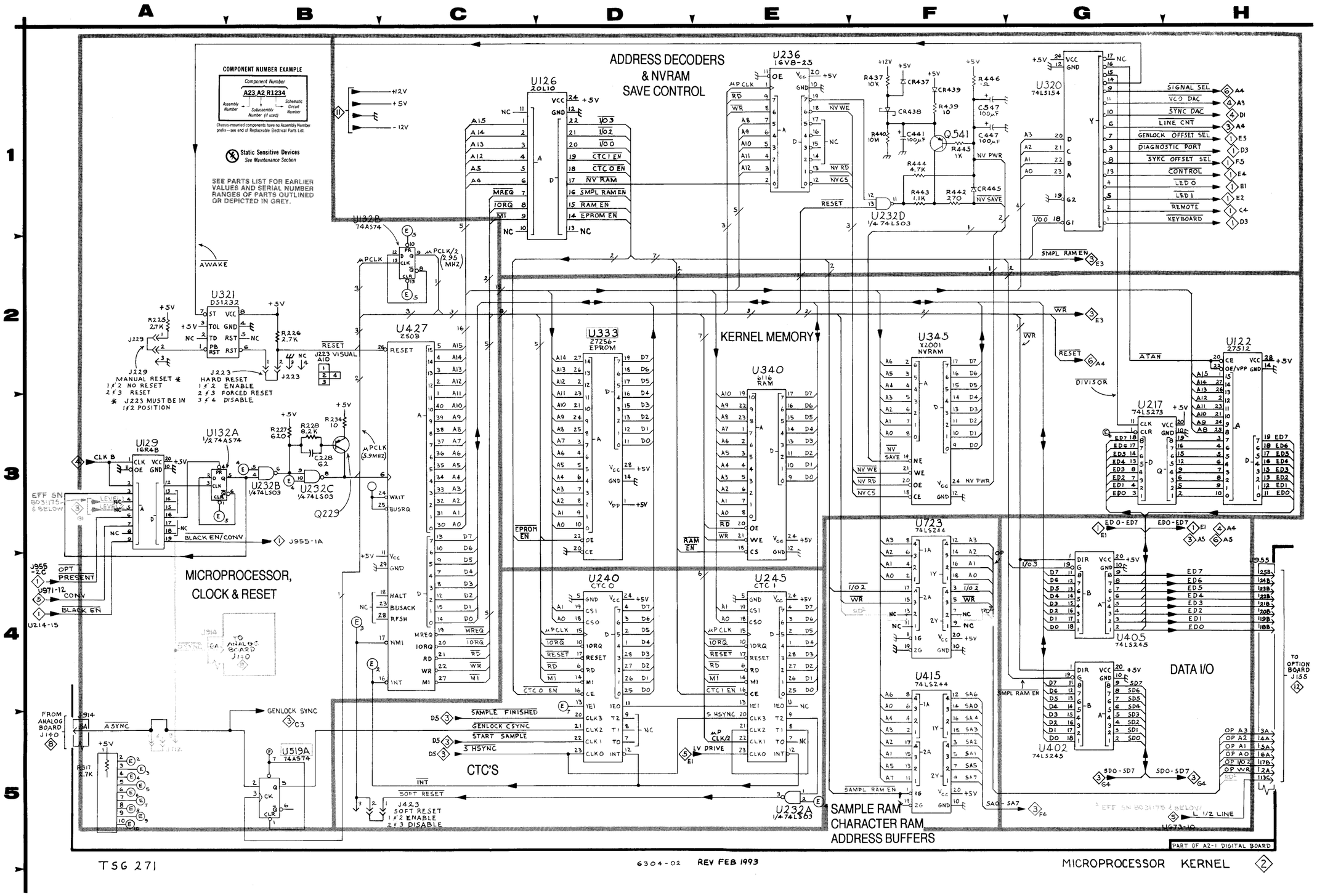
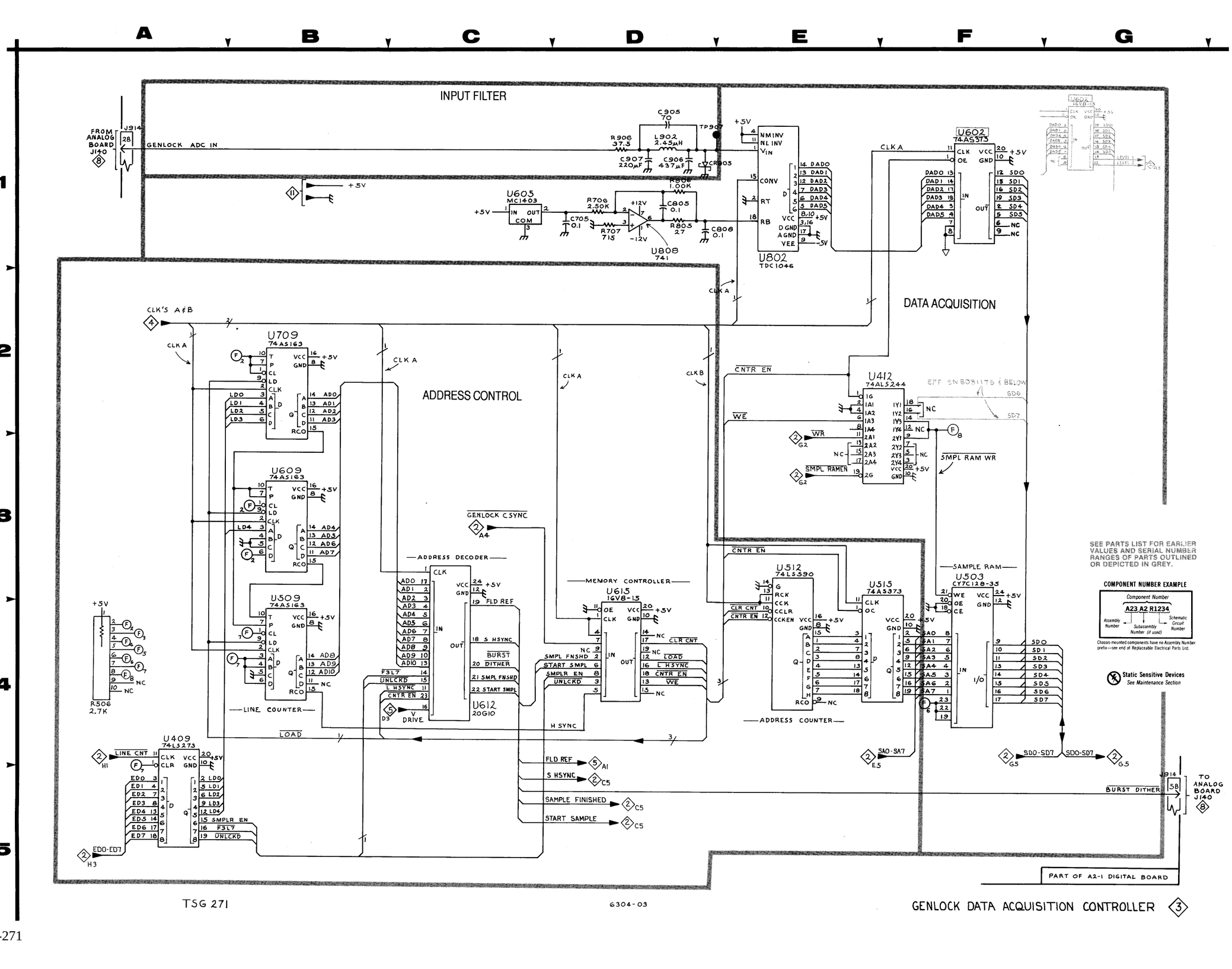

ADDRESS DECODERS & NVRAM SAVE CONTROL
KERNEL MEMORY
MICROPROCESSOR, CLOCK & RESET
CTC'S
SAMPLE RAM CHARACTER RAM ADDRESS BUFFERS
DATA I/O
COMPONENT NUMBER EXAMPLE
Component Number
A23 A2 R1234
Assembly Number
Subassembly Number (if used)
Schematic Circuit Number
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.
Static Sensitive Devices
See Maintenance Section
SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.
U126 20L10
U236 16V8B-25
U320 74LS154
U232B 74A574
U232C 1/4 74LS03
U232D 1/4 74LS03
U232A 1/4 74LS03
U321 DS1232
U427 Z80B
U333 27256-EPROM
U340 6116 RAM
U345 X2001 NVRAM
U122 27512
U217 74LS273
U723 74LS244
U415 74LS244
U405 74LS245
U402 74LS245
U129 16R4B
U132A 1/2 74A574
U232B 1/4 74LS03
U232C 1/4 74LS03
U519A 74AS74
Q229
Q541
AWAKE
RESET
MPCLK (5.9MHz)
MPCLK/2 (2.95 MHz)
WAIT
BUSRQ
HALT
BUSACK
RFSH
NMI
INT
SOFT RESET
J229 MANUAL RESET * 1↕2 NO RESET 2↕3 RESET * J223 MUST BE IN 1↕2 POSITION
J223 HARD RESET 1↕2 ENABLE 2↕3 FORCED RESET 3↕4 DISABLE
J223 SOFT RESET 1↕2 ENABLE 2↕3 DISABLE
J223 VISUAL AID
SIGNAL SEL
VCO DAC
SYNC DAC
LINE CNT
GENLOCK OFFSET SEL
DIAGNOSTIC PORT
SYNC OFFSET SEL
CONTROL
LED 0
LED 1
REMOTE
KEYBOARD
SMPL RAM EN
NV PWR
NV SAVE
NV WE
NV RD
NV CS
WR
RESET
ATAN
DIVISOR
ED 0 - ED7
EDO - ED7
SDO - SD7
OP A3
OP A2
OP A1
OP A0
OP WR
SAMPLE FINISHED
GENLOCK CSYNC
START SAMPLE
S HSYNC
LV DRIVE
FROM ANALOG BOARD J140
A SYNC
GENLOCK SYNC
TO ANALOG BOARD J150
TO OPTION BOARD J155
EFF SN B031175 & BELOW
PART OF A2-1 DIGITAL BOARD

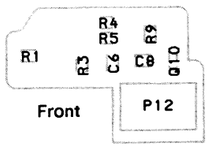
DIAGRAM 3

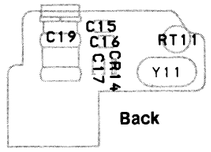
SCHEMATIC DIAGRAM LOOK-UP CHART

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

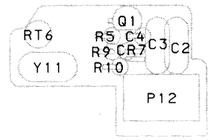
Circuit Number	Schematic Diagram Location	Circuit Number	Schematic Diagram Location
A2-1 Digital Board		R806	D1
		R906	D1
C705	D1		
C805	D1	TP907	D1
C808	E1		
C905	D1	U409	A4
C906	D1	U412	F2
C907	D1	U503	F3
		U509	B4
CR905	E1	U512	E3
		U515	F3
J914	A1	U602	F1
J914	G5	U605	C1
		U609	B3
L902	D1	U612	C3
		U615	D4
R506	A4	U709	B2
R706	D1	U802	E1
R707	D1	U808	D1
R805	D1		


INPUT FILTER
FROM ANALOG BOARD J140
J914
28
8
GENLOCK ADC IN
C905 70
TP907
L902 2.45µH
R906 37.5
C907 220µF
C906 437µF
CR905
+5V
U605 MC1403
IN OUT COM
C705 0.1
R706 2.50K
R707 715
+12V
-12V
U808 741
R808 1.00K
C805 0.1
R805 27
C808 0.1
U802 TDC1046
NM INV
NL INV
VIN
CONV
RT
RB
D
VCC
D GND
A GND
VEE
8,10 +5V
3,16
17
9 -5V
CLK A
DATA ACQUISITION
U602 74AS373
CLK
OE
VCC
GND
DAD0 13
DAD1 14
DAD2 17
DAD3 18
DAD4 5
DAD5 4
IN
OUT
SD0 12
SD1 15
SD2 16
SD3 19
SD4 2
SD5 5
NC 6
NC 9
U604 16V8-15
LEVEL 1
LEVEL 0
CLK'S A&B
4
ADDRESS CONTROL
U709 74AS163
T
P
CL
LD
CLK
LD0 3
LD1 4
LD2 5
LD3 6
A
B
C
D
Q
RCO
AD0 14
AD1 13
AD2 12
AD3 11
U609 74AS163
LD4 3
AD4 14
AD5 13
AD6 12
AD7 11
U509 74AS163
AD8 14
AD9 13
AD10 12
NC 11
R506 2.7K
LINE COUNTER
LOAD
U409 74LS273
LINE CNT 11
H1
ED0 3
ED1 4
ED2 7
ED3 8
ED4 13
ED5 14
ED6 17
ED7 18
ED0-ED7
H3
2 LD0
5 LD1
6 LD2
9 LD3
12 LD4
15 SMPLR EN
16 F3L7
19 UNLCKD
GENLOCK CSYNC
A4
ADDRESS DECODER
ADO 17
AD1 2
AD2 3
AD3 4
AD4 5
AD5 6
AD6 7
AD7 8
AD8 9
AD9 10
AD10 13
F3L7 14
UNLCKD 15
L HSYNC 11
CNTR EN 23
D3
V DRIVE
19 FLD REF
18 S HSYNC
BURST
20 DITHER
21 SMPL FNSHD
22 START SMPL
U612 20G10
MEMORY CONTROLLER
U615 16V8-15
OE
CLK
SMPL FNSHD 2
START SMPL 6
SMPLR EN 8
UNLCKD 3
CLR CNT
LOAD
L HSYNC
CNTR EN
WE
H SYNC
FLD REF
A1
S HSYNC
C5
SAMPLE FINISHED
START SAMPLE
CNTR EN
U512 74LS590
RCK
CCK
CCLR
CCKEN
RCO
ADDRESS COUNTER
U515 74AS373
OC
SA0 8
SA1 7
SA2 6
SA3 5
SA4 4
SA5 3
SA6 2
SA7 1
SAO-SA7
E5
SAMPLE RAM
U503 CY7C128-35
WE
OE
CE
I/O
SD0 9
SD1 10
SD2 11
SD3 13
SD4 14
SD5 15
SD6 16
SD7 17
SDO-SD7
G5
U412 74ALS244
CNTR EN
WE
WR
G2
SMPL RAMEN
1G
2G
1A1
1A2
1A3
1A4
2A1
2A2
2A3
2A4
1Y1
1Y2
1Y3
1Y4
2Y1
2Y2
2Y3
2Y4
NC
EFF SN B031175 & BELOW
SD6
SD7
SMPL RAM WR
BURST DITHER
J914
58
TO ANALOG BOARD J140
8
SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.
COMPONENT NUMBER EXAMPLE
Component Number
A23 A2 R1234
Assembly Number
Subassembly Number (if used)
Schematic Circuit Number
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.
Static Sensitive Devices
See Maintenance Section
PART OF A2-1 DIGITAL BOARD
TSG 271
6304-03
GENLOCK DATA ACQUISITION CONTROLLER
3





A2-2 OVEN BOARD (SN B031176 & UP)



Circuit Numbering Sequence

A2-2 OVEN BOARD (SN B031175 & Below)

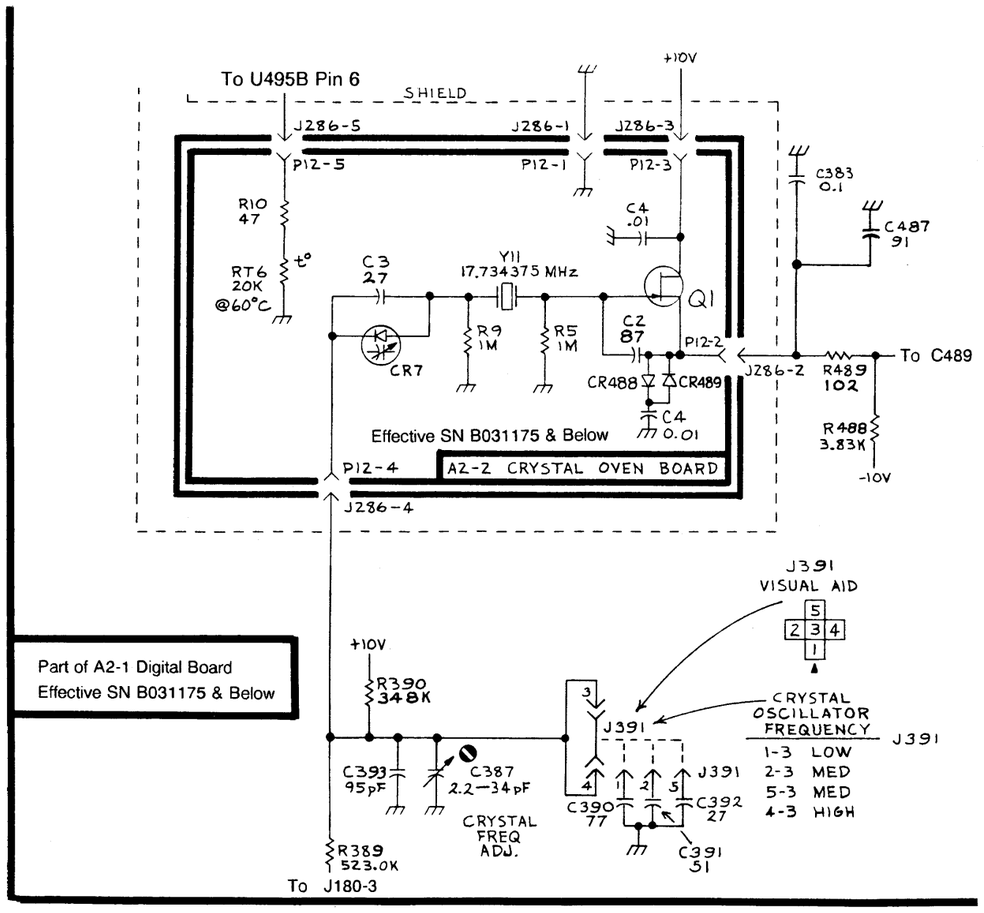


DIAGRAM 4

SCHEMATIC DIAGRAM LOOK-UP CHART

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

Circuit Number	Schematic Diagram Location
A2-1 Digital Board	
C170	C1
C173	B4
C275	A1
C280	B1
C372	C1
C373	F1
C374	C1
C378	B1
C380	B1
C383*	D3
C387*	C4
C390	C4
C391	C4
C392	C4
C393	C4
C473	G2
C477	G2
C479	E2
C483	E2
C484	F2
C487	D3
C489	D3
C490*	D3
C498	A2
C596	E4
C597	E3
C598	E3
CR179	B5
CR394	B2
CR395	B2
CR474	G2
CR475	G2
CR481	F2
CR480	E2
CR488	D3
CR489	D3
DS494	B2
J180	C5
J286	B2
J286	C2
J286	C3
J286	D3
J391	C4
J391	D4
J497	A2
J914	H5
J955	H5
L375	G2
L381	E2
Q293	B2
Q491	D3
R172	A3
R173	B4
R174	B4
R178	B4
R179	B5
R272	E1
R273	C1
R274	C1
R275	C1
R277	A1
R278	B1
R279	B1
R298	B2
R373	C1
R374	C1
R378	B1
R379	B1
R389	C4
R390	C4
R395	A2
R396	A2
R397	A2
R398	B2
R399	B2
R469	E2
R470	E2
R471	F2
R472	E1
R473	G2
R474	G2
R475	G1
R476	G1
R478	G2
R479	E2
R480	F2
R481	F1
R482	F1
R483	E2
R485	D2
R486	D2
R487	D2
R488*	C3
R489*	C3
R490	D3
R491	D3
R492	D3
R493	E4
R497	A2
R576	E5
R580	E5
R590	D5
R595	E3
R596	E3
R597	E4
R717	D5
R747	E5
R748	D5
R918	E5
R919	E5
R948	E5
R949	E5
U170	A3
U176	B4
U270A	B3
U270B	E1
U276	A1
U361D	C2
U370	E1
U376A	C1
U376B	B1
U495A	E4
U495B	A2
U574A	H3
U574B	H2
U578A	E2
U578B	F2
U578C	G2
U582A	F4
U582B	F4
U582C	F3
U585A	E2
U585B	D2
U585C	D2
U588A	F5
U588B	F3
U588C	F5
U592A	E3
U592B	F4
U592C	G3
U636A	D1
U636B	C2
U719A	G4
U719B	H2
U749	G3
A2-2 Oven Board (SN B031176 & UP)	
See back of diagram 3 for earlier Oven board*	
C6	C3
C8	C3
C15	C3
C16	C3
C17	C3
C19	C3
CR14	C3
Q10	C3
R1	B3
R3	C3
R4	C3
R5	C3
R9	C3
RT11	B3
Y11	C3

*See Parts List for earlier serial number ranges.

Ø FLIP & FINE SYNC PHASE SHIFTER

COMPONENT NUMBER EXAMPLE
Component Number: A23 A2 R1234
Assembly Number | Subassembly Number (if used) | Schematic Circuit Number
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.
Static Sensitive Devices — See Maintenance Section

U276 MC1404AU5 — +12V, GND, NC, REF +5V, C275 0.1, C280 0.1, C380 0.1, PINS 1,7,8 – NC
U376B ½1458 — R277 2.4K, R278 5.49K, R378 2.7, R279 5.49K, C378 0.1, R379 330, +10V
U376A ½1458 — R275 3.6K, R274 5.56K, C372 0.1, C374 0.1, R374 27, R373 11.03K, C170 0.1, R373 270, -10V
U370 AD7524 — SYNC DAC, ED7–ED0, +5V REF, R272 10.0K, R472 2.50K, C373 0.1
U270B ½1458
U636A 74ALS74
R482 5.0K, R481 4.12K, R476 5.0K, R475 4.12K
SUBC CLK, SUBC CLK, J914 31B, 31A, TO ANALOG BOARD 140
U574B ¼10125 — 1 3Ø 1, 2 3Ø 2
U719B ¼10125 — 5 2Ø, 4 1Ø, 13 CLK H
U574A ¾10125
U592C 1/3 10116
U578B, U578C, U578A, U582B, U585C, U585A, U585B — ØFLIP, ØCLR V, ØSHIFT CENTER, R469 5K, R470 12.0K, R471 5.0K, C484 0.1
R485 510, R486 750, R487 1K
L381 900nH, L375 900nH, CR480, CR481, CR474, CR475, C479 0.1, C473 0.1, R480 10K, R474 10K
R478 1.30K, R473 1.30K, R483 1.30K, R479 1.30K, C483 0.1, C477 0.1

VCO & OVEN HEATER

R393 20.0K, R397 46.4K, R396 196K, C498 0.1, R497 1K, U495B ½1458, J497 CYRSTAL OVEN HEATER 1&2 OPERATE 2&3 DISABLE, Q293, R399 196K, R398 46.4, R298 1Ω, CR394 DS494 CR395
SHIELD, J286-5, J286-3, P12-5, P12-3, A2-2 CRYSTAL OVEN BD
R1 47.5, RT11 20K @60°C, CR14, C17 0.1, R5 20K, Q10, C16 56, C19 0.8-10, C15 8, R14 20K, C8 220, C6 150, R3 1M, R9 332, P12-4, Y11 17.734375 MHz, P12-2, J286-4, J286-1, J286-2, R489 470
EFF SN B031126 SUP SEE BACK OF DIAG FOR EARLIER VERSION OF OVEN BD.

U170 AD7524 — VCO DAC, ED7–ED0, R172 4.7K, U270A ½1458, R174 20K
R173 2.2K, C173 10µF, U176 DG211, HOLD/ACQUIRE, INT/GENLOCK
R390 383K, R389 20K, R178 2K, R179 2K, J180, CR179, VCO TEST J180 2-3 OPERATE 4-3 LOW FREQ 1-3 MID FREQ 5-3 HIGH FREQ, J180 VISUAL AID
+12V, +5V, -5V, -12V
SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.

I.C. POWER SUPPLY PIN-OUTS

CIRCUIT #	+12V	+5V	GND	-5V	-12V
U719, 574, 749	——	PIN-9	PIN-16	PIN-8	——
U270, 376, 495	PIN-8	——	——	——	PIN-4
U578, 582, 585, U588, 592	——	——	PINS-16	PIN-8	——

DAC, INTEGRATOR, & SWITCHER

CLOCK SHAPER & DRIVERS

R492 20.0K, C489 2.50pF, R491 105.0K, Q491, U592A, R490 2.4K, R493 100.0K, U495A ½1458, C596 0.1
R595 6.8K, R596 3K, C597 890pF, C598 890pF, R593 390K, R597 3.9K
U588B, U582C, U749 1012.5 — CLK F, CLK G, CLK E, CLK D
U582A, U719A ¾10125 — CLK C, CLK B, CLK A
U592B, U588C — ECL CLK 1A, ECL CLK 1A
U588A — ECL CLK 1, ECL CLK 1
R748 510, R747 510, R949 510, R948 510, R918 1K, R919 1K
R590 510, R717 510, R576 510, R580 510
J955 TO OPTION BOARD J155
J914 TO ANALOG BOARD J140

PART OF AZ-1 DIGITAL BOARD

TSG-271 REV MAR 1991 CLOCK CIRCUIT 4

DIAGRAM 5

SCHEMATIC DIAGRAM LOOK-UP CHART

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

Circuit Number	Schematic Diagram Location	Circuit Number	Schematic Diagram Location
A2-1 Digital Board		U682	A4
		U685	A3
J145	F4	U687	F3
J145	F5	U690A	B4
J570	A1	U690B	A3
J690	E4	U690D	E4
J690	F3	U693	D4
J883	F5	U697	E4
J885	F1	U770	C1
J885	F2	U773	C1
J894	G2	U777	B4
J897	G2	U780	C5
J914	G4	U783	E4
J914	H1	U786	F2
J955	H2	U791	G1
J985	F1	U796	C4
J985	F2	U870	C1
		U873	E1
R695	H3	U877	B4
		U883	F4
U149A	F4	U886	F1
U267	B2	U977	C3
U361E	E5	U988	G1
U367	B1	U991A	E4
U570A	B1	U991B	E4
U570B	B2	U994A	B1
U670	C2	U994B	E2
U673	D1	U994C	E2
U676	A5	U994D	E2
U679	A4	U997	E2

GENLOCK TIMING OFFSET
HORIZ TIMING COUNTER
HORIZ TIMING DECODER
VERTICAL COUNTER
V TIMING PROM
PULSE OUTPUT LOGIC
HORIZ PULSE COUNTER
FINE SYNC PULSE TIMING OFFSET
V PULSE PROM
T PULSE PROM
H PULSE PROM
BURST GATE
TO ANALOG BOARD J140
TO OPTION BOARD J155
TO ANALOG BOARD
COMPONENT NUMBER EXAMPLE
Component Number
A23,A2,R1234
Assembly Number
Subassembly Number (if used)
Schematic Circuit Number
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List
Static Sensitive Devices
See Maintenance Section
SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.
PART OF A2-1 DIGITAL BOARD
TSG 271
6304-05
H & V TIMING 5

DIAGRAM 6

SCHEMATIC DIAGRAM LOOK-UP CHART

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

Circuit Number	Schematic Diagram Location	Circuit Number	Schematic Diagram Location
A2-1 Digital Board		U352	B5
		U356	A5
J470	F4	U361B	D2
J551	D4	U361C	A3
		U361F	D1
R568	F4	U450	D5
R572	F4	U454	C5
R651	D4	U460	E5
		U464	F5
U149B	C3	U467	G3
U153	A4	U639	E1
U249A	E4	U642	E2
U249B	A3	U645	E4
U249C	E5	U648	E3
U249D	E5	U654	H1
U264	B3	U657	H2
U349B	E5	U661	G1
U349C	E4	U664	G2
U349D	A5	U667	G4

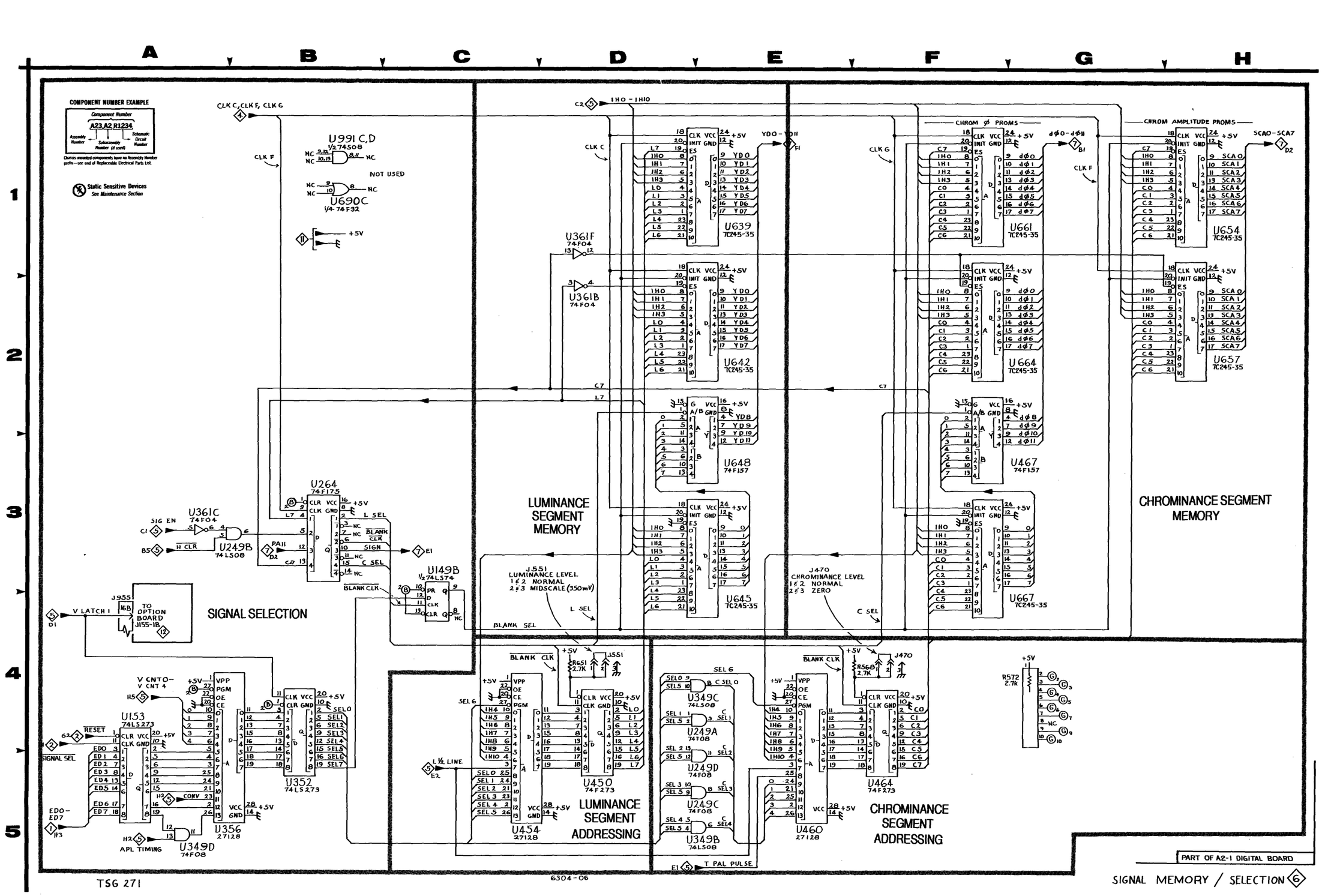
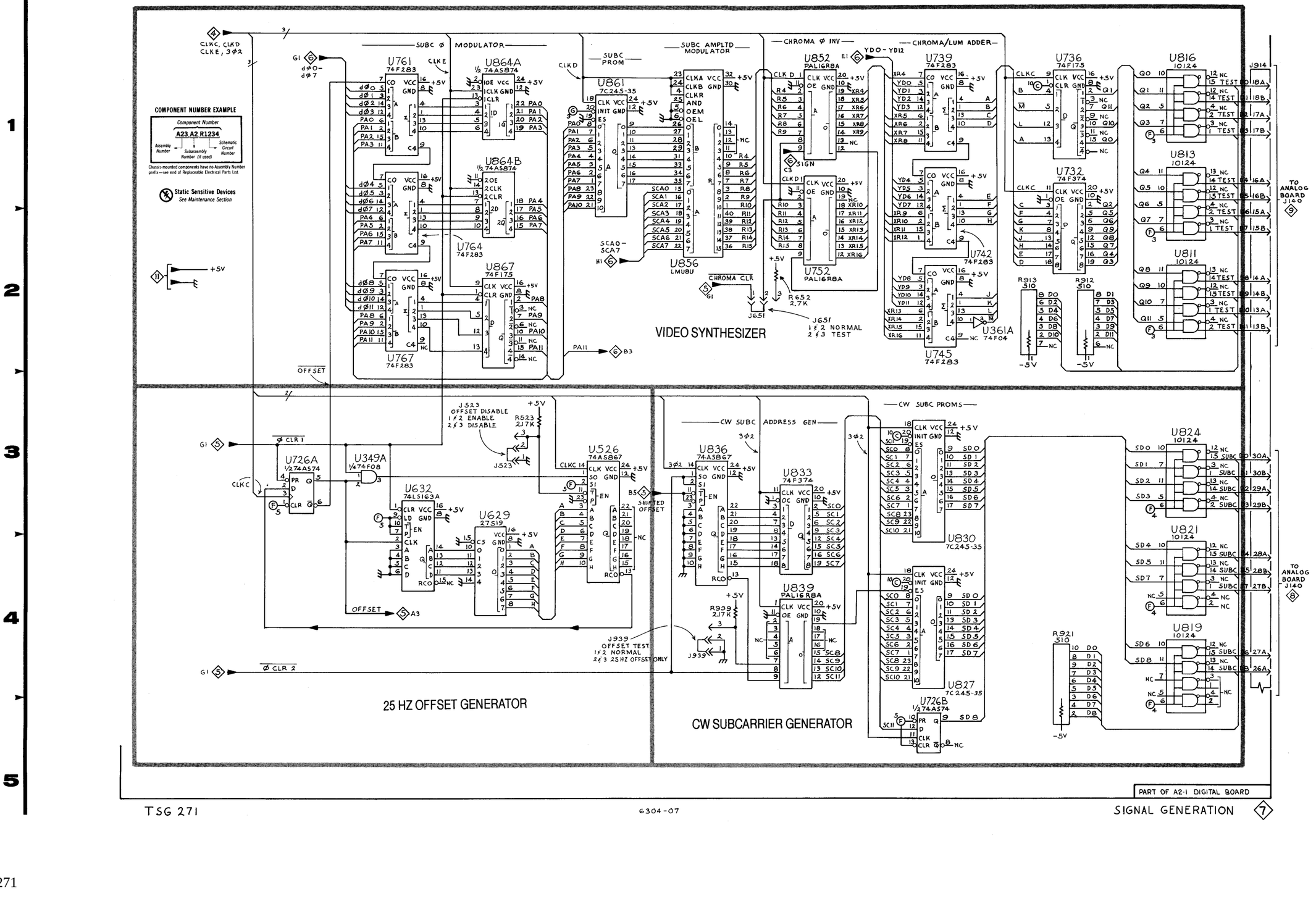

COMPONENT NUMBER EXAMPLE
Component Number
A23 A2 R1234
Assembly Number
Subassembly Number (if used)
Schematic Circuit Number
Chassis mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.
Static Sensitive Devices
See Maintenance Section
CLK C, CLK F, CLK G
CLK F
U991 C,D
1/2 74S08
NOT USED
U690C
1/4 74F32
+5V
U361F
74F04
U361B
74F04
C2
1H0 - 1H10
CLK C
CLK G
YD0 - YD11
dØ0 - dØ11
SCA0 - SCA7
CHROM Ø PROMS
CHROM AMPLITUDE PROMS
U639
7C245-35
U642
7C245-35
U648
74F157
U645
7C245-35
U661
7C245-35
U664
7C245-35
U467
74F157
U667
7C245-35
U654
7C245-35
U657
7C245-35
LUMINANCE SEGMENT MEMORY
CHROMINANCE SEGMENT MEMORY
J551 LUMINANCE LEVEL 1&2 NORMAL 2&3 MIDSCALE (350mV)
J470 CHROMINANCE LEVEL 1&2 NORMAL 2&3 ZERO
L SEL
C SEL
BLANK SEL
C7
L7
U264
74F175
U361C
74F04
SIG EN
H CLR
U249B
74LS08
PA11
L SEL
BLANK CLR
SIGN
C SEL
U149B
1/2 74LS74
J955
TO OPTION BOARD J155-1B
V LATCH 1
SIGNAL SELECTION
V CNT0-V CNT 4
U153
74LS273
RESET
SIGNAL SEL
EDO-ED7
APL TIMING
U349D
74F08
U356
27128
U352
74LS273
SEL0
SEL1
SEL2
SEL3
SEL4
SEL5
SEL6
SEL7
BLANK CLK
R651 2.7K
J551
L½ LINE
U454
27128
LUMINANCE SEGMENT ADDRESSING
SEL 6
U349C
74LS08
U249A
74F08
U249D
74F08
U249C
74F08
U349B
74LS08
T PAL PULSE
R568 2.7K
J470
U460
27128
U464
74F273
CHROMINANCE SEGMENT ADDRESSING
R572 2.7K
PART OF A2-1 DIGITAL BOARD
SIGNAL MEMORY / SELECTION 6
TSG 271
6304-06

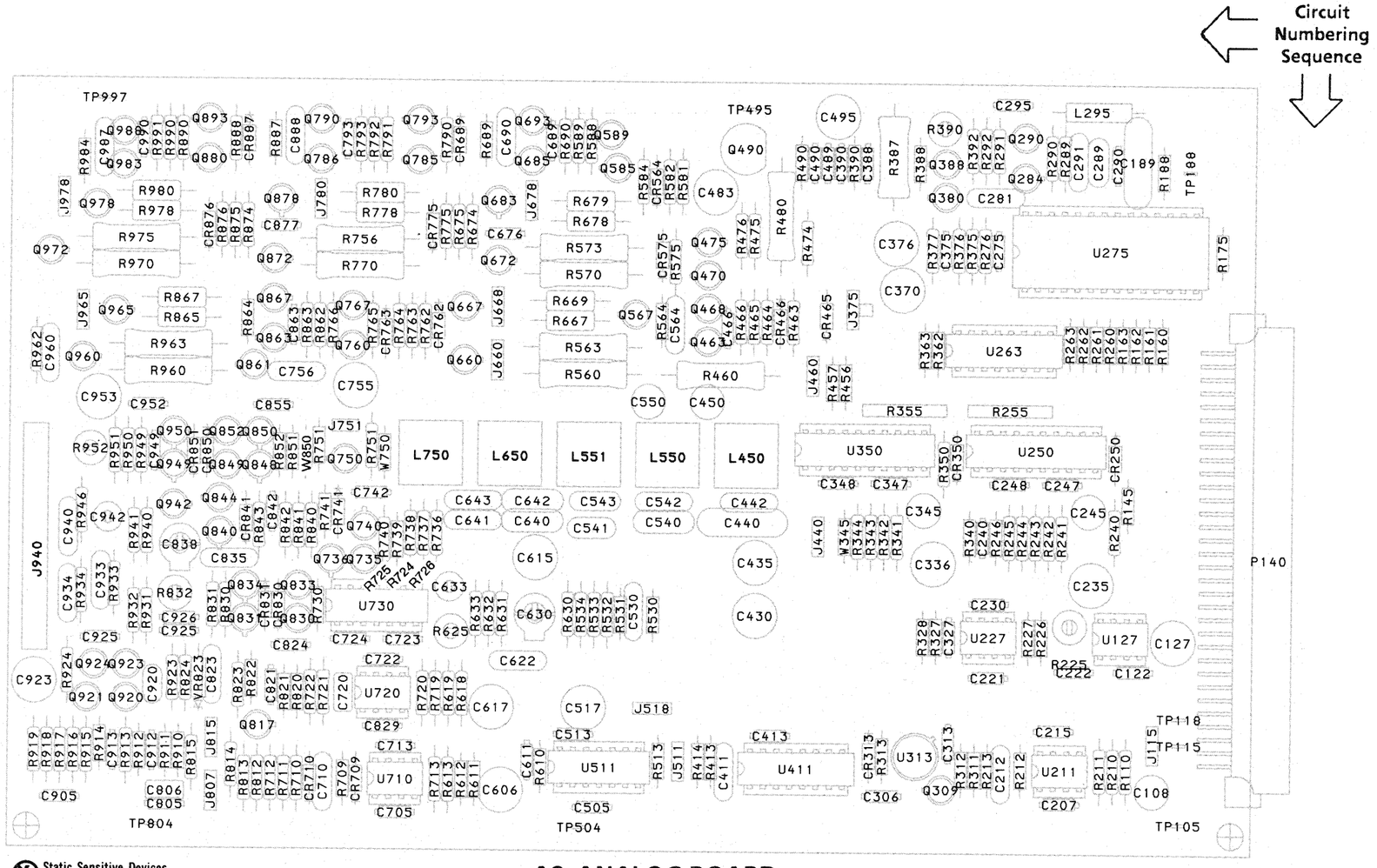
DIAGRAM 7

SCHEMATIC DIAGRAM LOOK-UP CHART

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

Circuit Number	Schematic Diagram Location	Circuit Number	Schematic Diagram Location
A2-1 Digital Board		U742	F2
		U745	F2
J523	C3	U752	E2
J651	E2	U761	C1
J914	H1	U764	C2
J939	D4	U767	C2
		U811	G2
R523	C3	U813	G1
R652	E2	U816	G1
R912	G2	U819	G4
R913	F2	U821	G4
R921	G4	U824	G3
R939	E4	U827	F4
		U830	F4
U349A	B3	U833	E3
U361A	F2	U836	D3
U526	D3	U839	E4
U629	C3	U852	E1
U632	C3	U856	D2
U726A	B3	U861	D1
U726B	F5	U864A	C1
U732	G1	U864B	C1
U736	G1	U867	C2
U739	F1		


COMPONENT NUMBER EXAMPLE
Component Number
A23 A2 R1234
Assembly Number
Subassembly Number (if used)
Schematic Circuit Number
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.
Static Sensitive Devices
See Maintenance Section
+5V
CLKC, CLKD CLKE, 3Φ2
SUBC Φ MODULATOR
U761 74F283
U764 74F283
U767 74F283
U864A 1/2 74AS874
U864B 1/2 74AS874
U867 74F175
CLKE
dØ0-dØ7
PA0 PA1 PA2 PA3 PA4 PA5 PA6 PA7 PA8 PA9 PA10 PA11
SUBC PROM
U861 7C245-35
CLKD
SCA0-SCA7
U856 LMUBU
SUBC AMPLTD MODULATOR
CLKA CLKB CLKR AND OEM OEL
CHROMA Φ INV
U852 PAL16R8A
SIGN
CHROMA CLR
R652 2.7K
J651
J651 1&2 NORMAL 2&3 TEST
CHROMA/LUM ADDER
YD0-YD12
U739 74F283
U742 74F283
U745 74F283
U361A 74F04
U736 74F175
U732 74F374
R913 510
R912 510
-5V
U816 10124
U813 10124
U811 10124
J914
TO ANALOG BOARD J140
VIDEO SYNTHESIZER
OFFSET
J523 OFFSET DISABLE 1&2 ENABLE 2&3 DISABLE
R523 2.17K
U726A 1/2 74AS74
U349A 1/4 74F08
U632 74LS163A
U629 27S19
U526 74ASB67
SHIFTED OFFSET
J939 OFFSET TEST 1&2 NORMAL 2&3 25HZ OFFSET ONLY
R939 2.17K
25 HZ OFFSET GENERATOR
CW SUBC ADDRESS GEN
U836 74-ASB67
U833 74F374
U839 PAL16R8A
CW SUBC PROMS
U830 7C245-35
U827 7C245-35
U726B 1/2 74AS74
U824 10124
U821 10124
U819 10124
CW SUBCARRIER GENERATOR
PART OF A2-1 DIGITAL BOARD
TSG 271
6304-07
SIGNAL GENERATION



A3 ANALOG BOARD

DIAGRAM 8

SCHEMATIC DIAGRAM LOOK-UP CHART

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

Circuit Number	Schematic Diagram Location
A3 Analog Board	
C108	D2
C189	C5
C212	C3
C281	D5
C290	C5
C291	C5
C375	C5
C388	D5
C390	E5
C411	D3
C466	F2
C489	D4
C490	D4
C564	F2
C606	D1
C689	F1
C690	F1
C705	C2
C710	C1
C713	C1
C756	F3
C793	F2
C805	B1
C806	C2
C823	A1
C863	F3
C888	F3
C905	B1
C912	B1
C913	B1
C920	B1
C923	A1
C925	B1
C960	E5
C984	F4
C990	F4
CR313	D3
CR465	F1
CR466	E2
CR564	E1
CR575	F1
CR689	F2
CR709	C1
CR710	C1
CR762	F3
CR763	E4
CR775	E3
CR876	E4
CR887	F4
J115	D2
J375	E1
J460	G1
J511	D2
J518	E3
J660	G2
J668	G2
J768	G1
J780	G3
J807	B3
J815	B3
J940	A1
J940	G1
J965	G3
J978	G4
L295	C5
P140	A1
P140	A2
P140	G1
Q284	D5
Q290	C5
Q309	D3
Q380	D5
Q388	D4
Q463	F2
Q468	F2
Q470	F2
Q475	F1
Q490	D5
Q567	F2
Q585	F1
Q589	F1
Q660	G2
Q667	G2
Q672	G1
Q683	F1
Q685	F1
Q693	F1
Q686	F1
Q760	F3
Q767	F3
Q785	F2
Q786	F3
Q790	F3
Q793	F2
Q817	A1
Q861	G3
Q863	F3
Q867	F3
Q872	G3
Q878	F2
Q880	F4
Q893	F4
Q920	B1
Q921	A1
Q923	B1
Q924	B1
Q960	G3
Q965	G3
Q972	G4
Q978	F4
Q983	F4
Q988	F4
R110	D2
R160	A4
R161	A4
R162	A4
R163	A4
R175	B4
R188	B4
R210	D2
R211	C2
R212	C3
R213	D3
R276	B5
R288	C5
R289	C5
R290	C5
R291	D4
R292	D5
R311	D3
R312	D3
R313	D3
R375	C5
R376	C5
R377	D5
R380	D5
R387	D5
R390	D5
R392	D5
R393	D5
R394	D5
R413	D2
R414	D3
R460	G2
R463	E2
R464	E2
R465	E2
R466	E2
R474	F2
R475	F1
R476	F2
R480	F1
R490	D4
R513	D2
R560	G2
R563	G2
R564	F2
R570	G1
R573	F1
R575	F1
R581	F1
R582	E1
R584	F1
R588	E1
R589	E1
R610	D1
R611	D2
R612	C1
R613	C1
R618	C2
R619	C2
R667	G2
R669	G2
R674	F2
R675	F2
R678	G1
R679	G1
R689	F1
R690	E1
R709	C2
R710	C1
R711	C1
R712	C1
R713	C1
R719	C3
R756	F2
R762	F3
R763	F3
R764	E4
R765	F4
R766	E3
R770	G2
R775	E3
R778	G3
R780	G3
R790	F3
R791	E3
R792	E2
R793	E2
R812	C1
R813	B2
R814	A1
R815	B2
R822	A1
R823	A1
R824	B1
R862	E3
R863	E3
R864	F3
R865	G4
R867	G4
R874	F4
R875	F4
R876	E4
R887	F3
R888	F4
R890	E4
R910	C1
R911	B1
R912	B1
R913	B1
R914	B1
R915	B2
R917	B2
R918	B3
R919	A1
R923	B1
R924	B1
R932	B1
R960	F3
R962	D5
R963	G3
R970	G4
R975	F4
R978	G4
R980	G4
R984	F4
R987	F4
R990	E4
R991	E4
TP115	D1
TP118	D1
U263	B4
U275	B4
U313	C2
U411A	D3
U411B	B2
U511	D1
U710A	C2
U710B	C1
U720A	C2
VR823	A1

SYNC STRIPPER
BURST DITHER
GENLOCK INPUT BUFFER
PULSE OUTPUTS
INPUT CLAMP
SUBCARRIER OUTPUT
GENLOCK LOOP THROUGH
PART OF REAR PANEL
PART OF A6 BNC BOARD
A SYNC
GENLOCK ADC IN
TO DIGITAL BD J914
TEST SIGNAL
BLACK
BLANKING
FRAME REF
SYNC
PAL PULSE
BURST FLAG
SUBCARRIER
COMP BLANK
COMP SYNC
PAL PULSE
BURST FLAG
FLD REF
COLOR FR SQ WAVE
GENLOCK INPUT SELECT
CLAMP TIMING 1&2 ENABLE 2&3 FOR FUTURE USE
J511 COUPLING 1&2 DC FOR COMP VIDEO 2&3 FOR FUTURE USE
J807 BUFFER GAIN 1&2 COMP VIDEO
J815 INPUT CLAMP 1&2 ENBL
2&3 FOR FUTURE USE
J518 FOR FUTURE USE
J375 VISUAL AID
J375 1&2 ENABLES FLD REF
2&3 ENABLES COLOR FRAME
3&4 ENABLES COMP SYNC
J678 OUTPUT LEVEL 1&2 -2V 2&3 -4V
J460 1&2 -2V/-3V TERMINATED IN 75Ω 2&3 LEVEL DEPENDS ON LOAD TTL: 5V 75Ω: 3V NOTE J668 MUST BE IN 2&3
J660 OUTPUT LEVEL 1&2 -2V 2&3 -4V NOTE J440/J660 MUST BE 1&2
J780 OUTPUT LEVEL 1&2 -2V 2&3 -4V
J965 OUTPUT LEVEL 1&2 -2V 2&3 -4V
J978 OUTPUT LEVEL 1&2 -2V 2&3 -4V
FROM J914 DIGITAL BD
SUBC CLK
SUBC
SUBC AMPLITUDE
SUBC DC LEVEL
COMPONENT NUMBER EXAMPLE
Component Number
A23 A2 R1234
Subassembly Number (if used)
Schematic Circuit Number
Assembly Number
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.
Static Sensitive Devices
See Maintenance Section
SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.
PART OF A3 ANALOG BOARD
PART OF A6 BNC BOARD
PART OF REAR PANEL
TSG 271
REV FEB 1993
INPUT PROCESSING & PULSE OUTPUTS
8

DIAGRAM 9

SCHEMATIC DIAGRAM LOOK-UP CHART

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

Circuit Number	Schematic Diagram Location
A3 Analog Board	
C122	D4
C222	A4
C230	A4
C240	B5
C245	B3
C247	B2
C327	B5
C330	A5
C336	C5
C345	B4
C347	B4
C421	C4
C427	B4
C431	C4
C435	D4
C440	C2
C442	C1
C530	E4
C540	C2
C541	D1
C542	D1
C543	D2
C617	D4
C622	G4
C630	G4
C633	G4
C640	D2
C641	D2
C642	D2
C643	D1
C720	C4
C749	E1
C821	D4
C833 *	G4
C835	G2
C838	G2
C842	F2
C853 *	F1
C930	G3
C931	G3
C933	H4
C934 *	H3
C940 *	G1
C942	F1
C949	G1
C952	G1
CR226	A4
CR250	B2
CR350	B3
CR741	F5
CR830	G3
CR831	G4
CR841	F2
CR850	F1
CR851	F1
J440	C1
J751	G3
L327	A5
L450	C2
L550	C2
L551	D2
L650	D2
L750	D2
P140	A1
P140	A4
Q222	A4
Q735	G5
Q740	F4
Q745	E1
Q748	E2
Q830	F3
Q831	G3
Q833	F3
Q834	G4
Q840	F2
Q844	F2
Q848	E1
Q849	E1
Q850	E1
Q852	F1
Q942	F1
Q949	F1
Q950	F1
R145	B2
R226	A4
R227	A4
R228	B4
R240	B2
R241	C2
R242	B2
R243	C2
R244	C2
R245	B2
R246	C4
R255	A1
R260	A2
R261	A3
R262	A3
R263	A2
R322 *	B5
R327	A5
R328	B5
R335	A2
R340	B4
R341	C3
R342	C2
R343	C3
R344	C3
R350	B3
R362	B3
R363	A3
R427	B4
R428	B4
R456	B1
R457	B2
R530	E4
R531	E4
R532	E4
R533	E4
R534	F4
R625	G4
R630	F4
R631	G4
R632	G4
R633	G4
R720	C4
R721	C4
R722	C4
R722 *	F3
R725 *	F3
R726 *	F3
R736	G5
R737	F5
R738	F5
R739 *	F4
R740	F4
R741	E2
R751	E2
R820	D4
R821	D4
R830	F3
R831	G3
R832	F1
R840	F2
R841	F2
R842	F2
R843	F2
R844	F2
R849	E1
R850 *	F3
R851	E2
R931	F1
R933	G4
R934	G3
R940	G2
R941	G2
R942	G1
R949	E1
R950	F1
R951	G1
R952	G1
U127	C4
U227	A5
U250	B1
U263A	A4
U263B	A2
U350	B4
U427	B4
U720B	D4
U730	E4
W326	A4
W345	C2
W730	E4
W739 *	F4
W750	D1

*See Parts List for arlier serial numbers

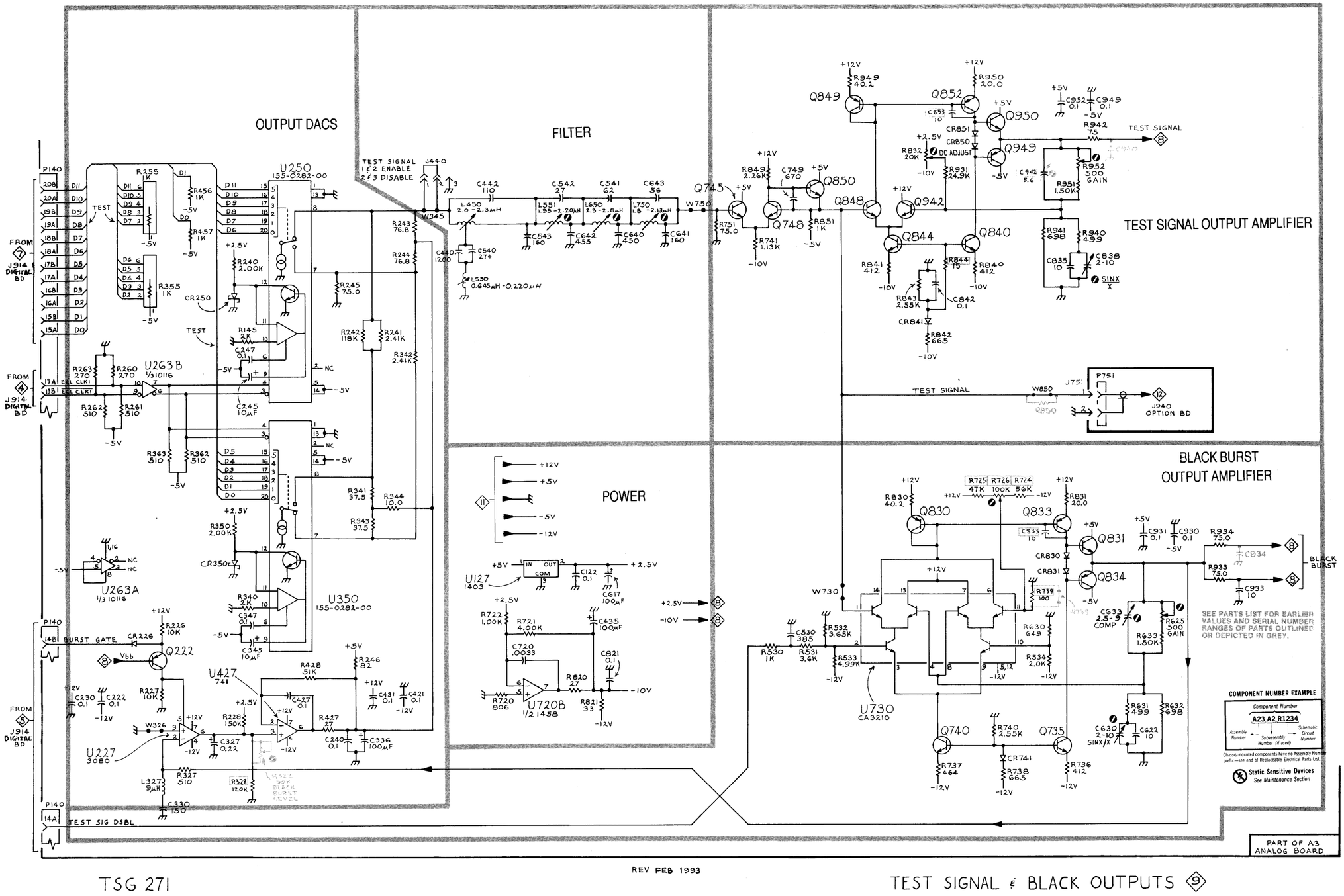
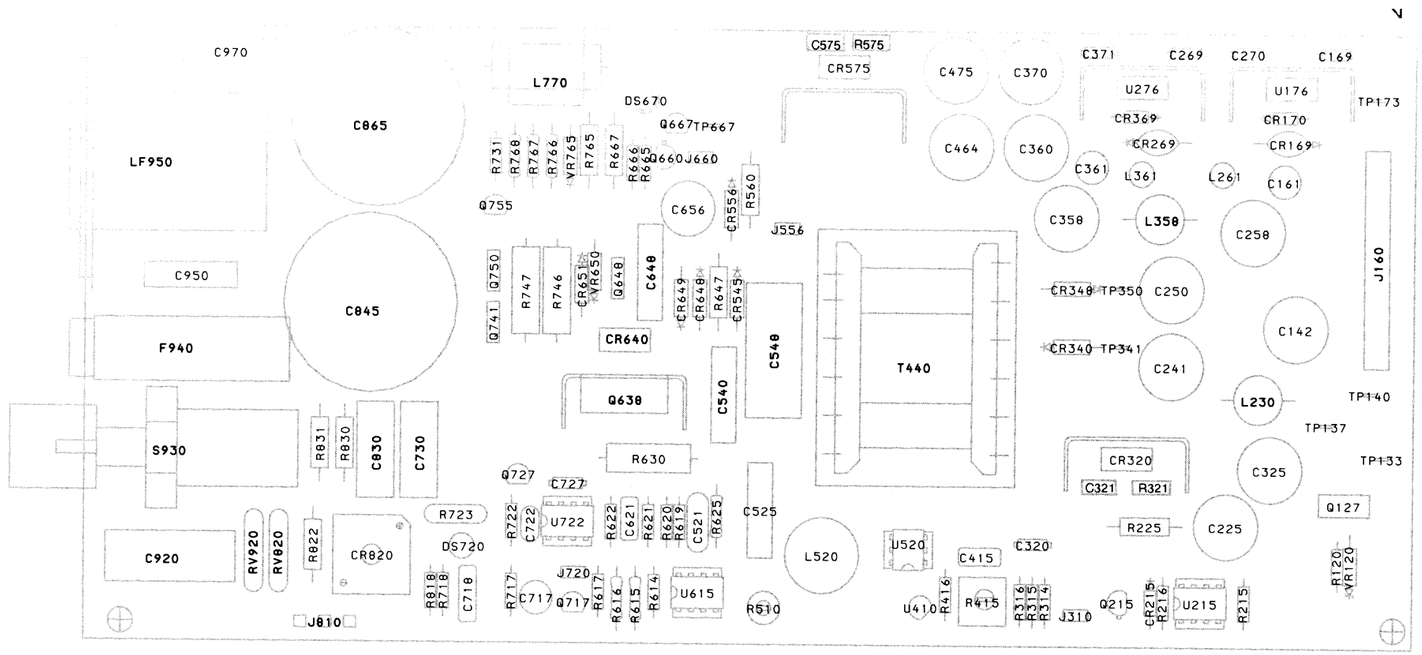

OUTPUT DACS
FILTER
TEST SIGNAL OUTPUT AMPLIFIER
POWER
BLACK BURST OUTPUT AMPLIFIER
TEST SIGNAL & BLACK OUTPUTS
TSG 271
REV FEB 1993
PART OF A3 ANALOG BOARD
SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.
COMPONENT NUMBER EXAMPLE
Component Number
A23 A2 R1234
Static Sensitive Devices
See Maintenance Section
FROM J914 DIGITAL BD
TO J940 OPTION BD
TEST SIGNAL
BLACK BURST
U250 155-0282-00
U263A 1/3 10116
U263B 1/3 10116
U350 155-0282-00
U427 741
U227 3080
U730 CA3210
U720B 1/2 1458
U127 1403
TEST SIG DSBL
14B BURST GATE

DIAGRAM 10

SCHEMATIC DIAGRAM LOOK-UP CHART
(SN B030000 & UP)

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

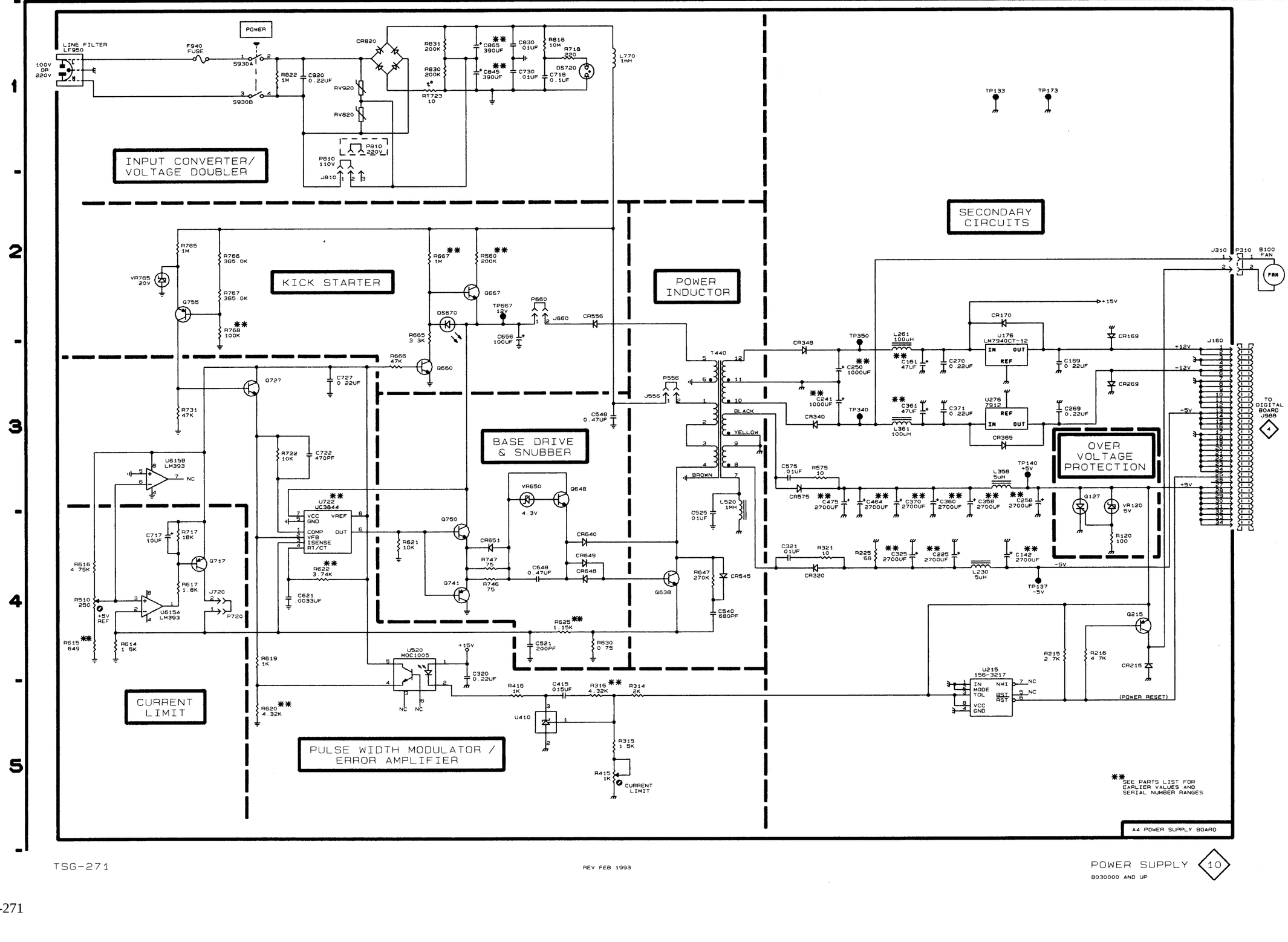


A4 Power Supply Board (SN B030000 & UP)

Static Sensitive Devices
See Maintenance Section

Circuit Number	Schematic Diagram Location
ASSEMBLY A4	
B100	H2
C142	F4
C161	F3
C169	G3
C225	F4
C241	F3
C250	F3
C253	G4
C269	G3
C270	F3
C320	C4
C321 *	F4
C325	F4
C358	G4
C360	F4
C361	F3
C370	F3
C370	F4
C415	D5
C469	F4
C475	F4
C521	D4
C525	E4
C540	E4
C548	D3
C575 *	F3
C621	B4
C648	D4
C656	D2
C717	A4
C718	D1
C722	B3
C727	B3
C730	D1
C830	D1
C845	C1
C865	C1
C920	B1
CR169	G3
CR170	G2
CR215	G4
CR269	G3
CR320	E4
CR340	F3
CR348	E3
CR369	G3
CR545	E4
CR556	D2
CR575	E4
CR640	D4
CR648	D4
CR649	D4
CR651	C4
CR820	C1
DS670	C2
DS720	D1
F940	B1
J160	H3
J310	H2
J556	D3
J660	D2
J720	B4
J810	B1
L230	F4
L258	G3
L261	F3
L361	F3
L520	E3
L770	D1
LF950	A1
P310	H2
P556	D3
P720	B4
P810	B1
P810	C1
Q127	G4
Q215	G4
Q638	E4
Q648	D3
Q660	C3
Q667	C2
Q717	B4
Q727	B3
Q741	C4
Q750	C4
Q755	A2
R120	G4
R215	G4
R216	G4
R225	F4
R314	D5
R315	D5
R316	D5
R321 *	F4
R415	D5
R416	D5
R510	A4
R575 *	F3
R560	C2
R614	A4
R615	A4
R616	A4
R617	A4
R619	B4
R620	B5
R621	C4
R622	B4
R625	D4
R630	D4
R647	E4
R665	C2
R666	C3
R667	C2
R717	A4
R718	D1
R722	B3
R731	A3
R746	C4
R747	C4
R765	A2
R766	B2
R767	B2
R768	B2
R818	D1
R822	B1
R830	C1
R831	C1
RT723	C1
RV820	C1
RV920	C1
S930A	B1
S930B	B1
T440	E3
TP133	G1
TP137	F4
TP140	G3
TP173	G1
TP340	F3
TP350	F3
TP667	D2
U176	G3
U215	G5
U276	G3
U410	D5
U520	C4
U615A	A4
U615B	A3
U722	B4
VR120	G4
VR650	D3
VR765	A2

***See Parts List for earlier serial ranges.**



TSG-271

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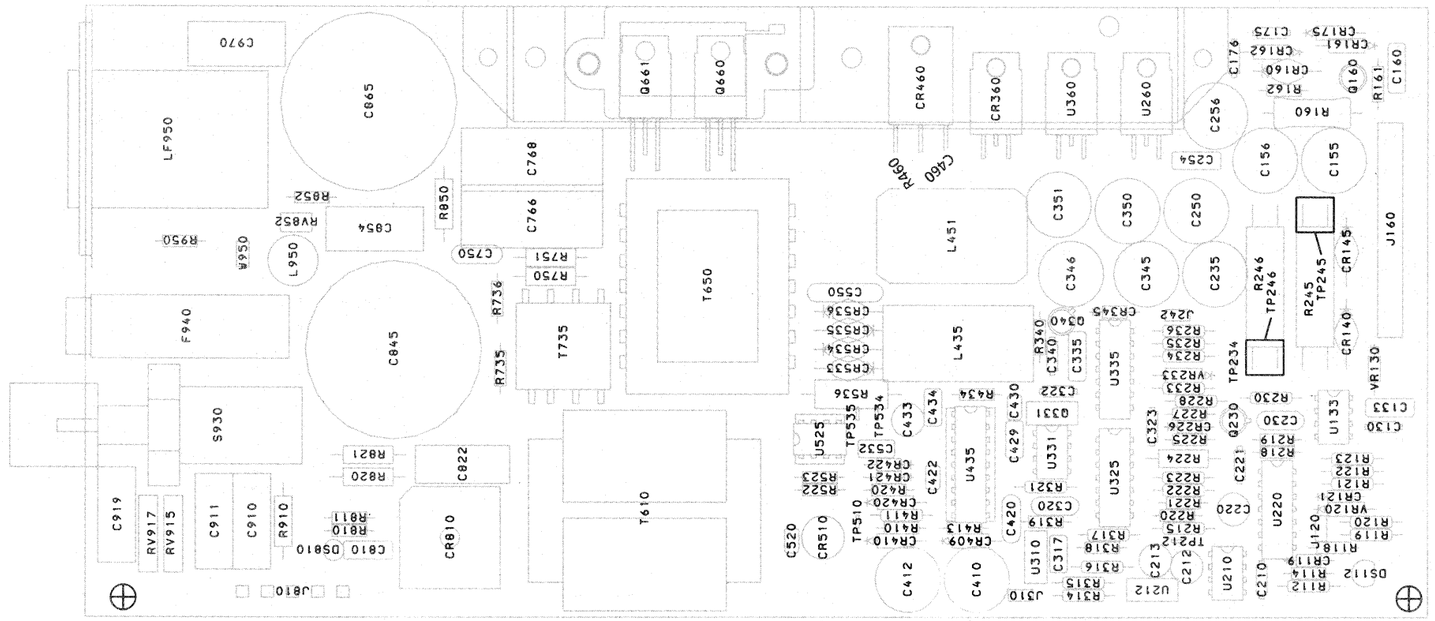
POWER SUPPLY 10

8030000 AND UP



A4 POWER SUPPLY BOARD (SN B029999 & BELOW)

Static Sensitive Devices
See Maintenance Section

DIAGRAM 10

SCHEMATIC DIAGRAM LOOK-UP CHART (SN B029999 & Below)

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

Circuit Number	Schematic Diagram Location
A4 Power Supply Board	
B100	H1
C130	B1
C133	C1
C155	H2
C156	G1
C160	G1
C175	G1
C176	G1
C210	G4
C212	G4
C213	G5
C220	C1
C224	D1
C230	B1
C235	F2
C250	F2
C254	G1
C256	G1
C317	B1
C320	B1
C322	F5
C323	G4
C335	C1
C345	F2
C346	F2
C350	F2
C351	F2
C410	E5
C412	E4
C420	B3
C422	D3
C429	B2
C430	C1
C433	D1
C434	C2
C460 *	"F2
C520	E5
C532	D2
C550	F1
C750	E2
C766	E2
C768	E1
C822	D2
C845	D4
C854	E2
C865	D4
C910	B4
C911	B4
C919	B4
C970	D4
CR121	A2
CR140	F2
CR145	F2
CR160	H1
CR162	F2
CR175	G1
CR224	D1
CR225	D1
CR226	A1
CR345	A1
CR360	F3
CR409	H1
CR410	F5
CR420	F4
CR421	D2
CR422	C2
CR460	F2
CR510	E4
CR533	F1
CR534	F1
CR535	F1
CR536	F1
CR810	C4
DS112	F1
DS810	C4
F940	A4
J120	A3
J160	H1
J160	H3
J242	A1
J310	H1
J810	B5
L435	G1
L451	F2
L950	D1
LF950	A4
P160	H1
P160	H3
P310	H1
P810	A5
Q160	G3
Q230	C1
Q331	C1
Q340	H1
Q660	E2
Q661	E2
R114	A2
R118	F1
R119	A3
R120	A3
R121	A2
R122	A3
R160	G3
R161	G3
R162	F1
R215	F5
R218	C1
R219	A1
R221	E1
R222	D1
R223	D1
R224	D1
R225	B1
R226	D1
R227	A2
R228	A1
R230	C1
R233	A1
R234	A2
R235	A2
R246	F2
R314	F4
R315	F4
R316	A2
R317	A2
R318	B2
R319	B2
R320	D1
R321	B2
R322	D1
R340	G1
R410	C2
R411	C2
R413	C2
R420	C3
R434	C1
R460 *	F2
R522	D2
R523	D2
R536	F1
R735	E2
R736	E2
R750	E2
R751	E2
R810	C4
R811	C4
R820	C4
R821	C4
R850	E2
R852	D1
R910	A4
RV852	D2
RV915	B4
RV917	B4
S930	A4
T610	D4
T650	F1
T735	D2
TP212	G4
TP234	G4
TP246	H2
TP510	G4
TP534	D2
TP535	D2
U133	B1
U210	G4
U212	F5
U220A	A2
U220B	A3
U260	G1
U310	F4
U325A	B1
U325B	E1
U331A	D1
U331B	B2
U335A	A1
U335B	A1
U360	G1
U435	C1
U525	D2
VR120	A2
VR130	F1
VR233	A2
W950	E1

*** See Parts List for earlier serial number ranges.**

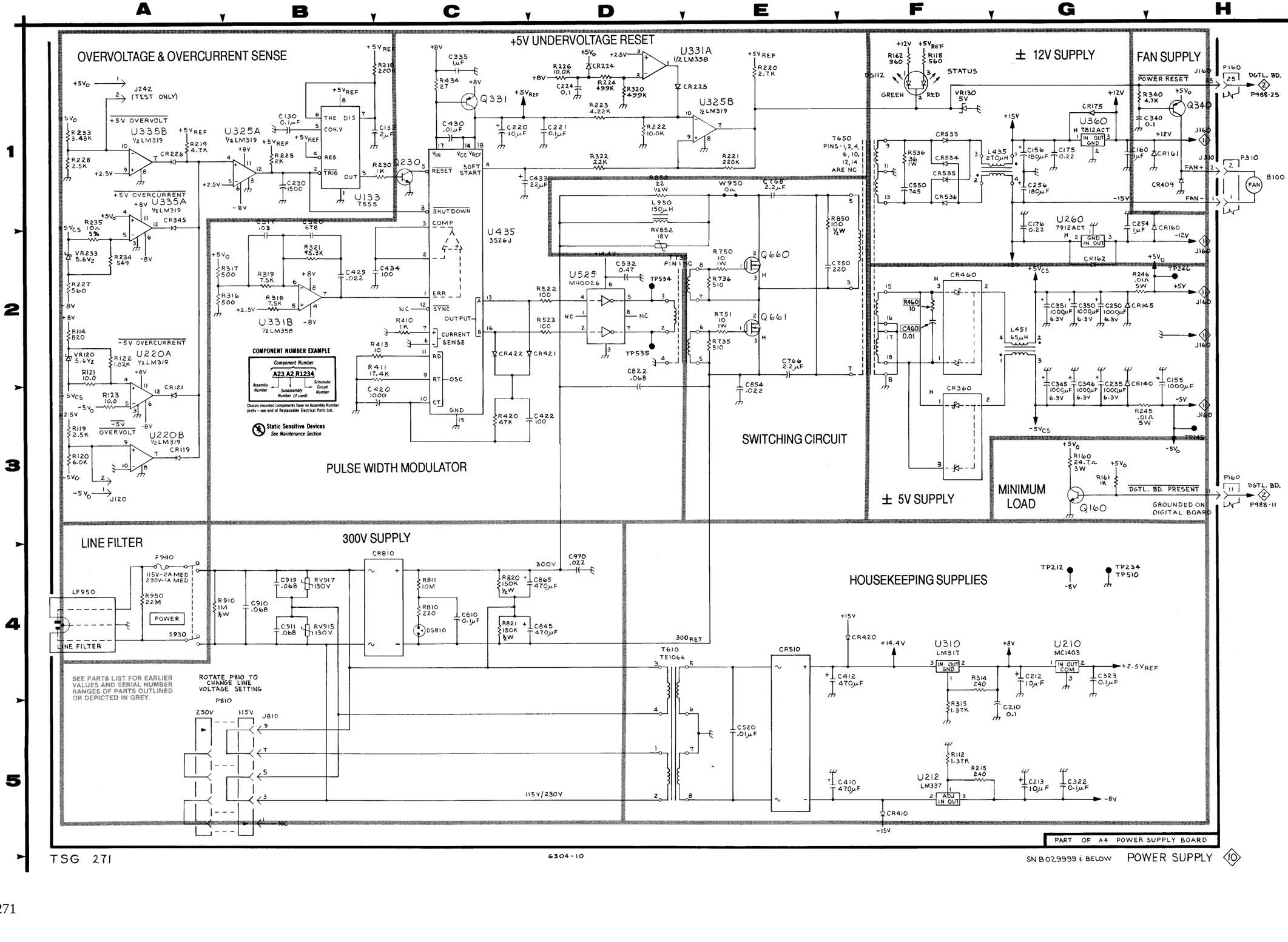

OVERVOLTAGE & OVERCURRENT SENSE
+5V UNDERVOLTAGE RESET
± 12V SUPPLY
FAN SUPPLY
PULSE WIDTH MODULATOR
SWITCHING CIRCUIT
± 5V SUPPLY
MINIMUM LOAD
LINE FILTER
300V SUPPLY
HOUSEKEEPING SUPPLIES
COMPONENT NUMBER EXAMPLE
Component Number
A23 A2 R1234
Assembly Number
Subassembly Number (if used)
Schematic Circuit Number
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.
Static Sensitive Devices
See Maintenance Section
SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.
ROTATE P810 TO CHANGE LINE VOLTAGE SETTING
115V/230V
PART OF A4 POWER SUPPLY BOARD
SN B029999 & BELOW
POWER SUPPLY
10
6304-10
TSG 271

DIAGRAM 11

SCHEMATIC DIAGRAM LOOK-UP CHART

The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

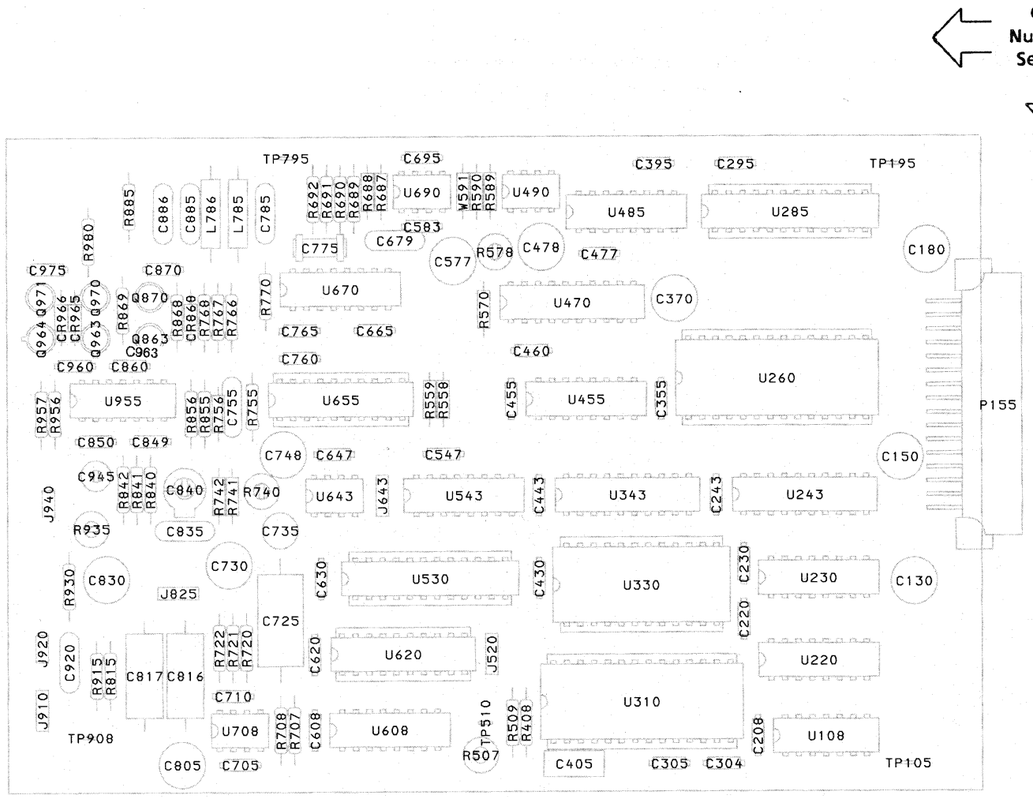
Circuit Number	Schematic Diagram Location
A4 Power Supply Board	
J160	B1
P160	B1
A2-1 Digital Board	
C103	D3
C180	D1
C221	D3
C249	D3
C261	D1
C262	D3
C264	D3
C267	D3
C270	E2
C276	E2
C306	D3
C309	D3
C312	D3
C315	D3
C349	D3
C352	D3
C361	D3
C367	D3
C370	D2
C376	D2
C381	E1
C409	D3
C412	D3
C415	D3
C421	D3
C449	D3
C464	D3
C470	D3
C474	D2
C478	D2
C482	D2
C485	D2
C486	D1
C488	D2
C492	D2
C495	E2
C496	D2
C509	D3
C529	D3
C532	D3
C539	D3
C542	D3
C545	D3
C554	D3
C557	D3
C561	D3
C564	D3
C593	D3
C619	D2
C623	D3
C626	D3
C629	D3
C632	D3
C636	D3
C639	D3
C642	D3
C645	D3
C648	D3
C649	D2
C654	D3
C657	D3
C661	D3
C664	D3
C667	D3
C670	D3
C673	D3
C680	D3
C683	D3
C704	D3
C706	D2
C709	D3
C712	D3
C715	D3
C719	D2
C721	D2
C724	D2
C727	D3
C730	D3
C733	D3
C736	D3
C739	D3
C742	D3
C745	D3
C749	D3
C761	D3
C764	D3
C764	D3
C767	D3
C770	D3
C809	D2
C811	D2
C813	D2
C816	D2
C852	D3
C870	D3
C870	E2
C873	D3
C880	D3
C891	D3
C928	E1
C930	D1
C933	D1
C938	D1
C970	E1
C972	D1
C975	D1
C978	D1
J914	F1
J955	E4
J988	C1
P988	C1
TP101	D4
TP136	D4
TP164	D4
TP401	D4
TP469	D4
TP499	D4
TP538	D4
TP903	D4
TP942	D4
TP965	D4
TP996	D4
A3 Analog Board	
C127	H1
C207	G2
C215	G1
C225	G1
C235	G2
C248	G2
C275	G2
C295	G1
C306	G2
C313	G1
C348	G2
C370	G2
C376	G1
C413	G1
C430	H1
C483	G2
C495	G2
C505	G2
C513	G1
C517	G2
C611	G1
C615	G1
C676	G1
C722	G1
C723	G1
C724	G2
C755	G2
C824	G2
C829	G2
C855	G2
C877	G1
C953	G1
P165	F1
TP105	G3
TP188	G3
TP495	G3
TP504	G3
TP804	G3
TP997	G3
A5 Option Board	
C130	G5
C150	H5
C180	G4
C208	G4
C220	G4
C230	G4
C243	G4
C295	G4
C305	G5
C318*	H5
C355	G4
C370	H4
C395	G4
C421	G4
C430	G4
C443	G4
C455	G4
C460	G4
C519	G5
C547	G4
C604	G5
C605	G5
C630	G4
C647	G4
C665	G4
C695	G5
C748	G5
C760	G4
C765	H4
C820	G4
C825	H5
C830	G4
C849	G5
C850	G5
C860	G5
C960	H4
C975	G4
TP105	G5
TP195	G5
TP510	G5
TP795	G5
TP908	G5

*See Parts List for earlier serial number ranges.

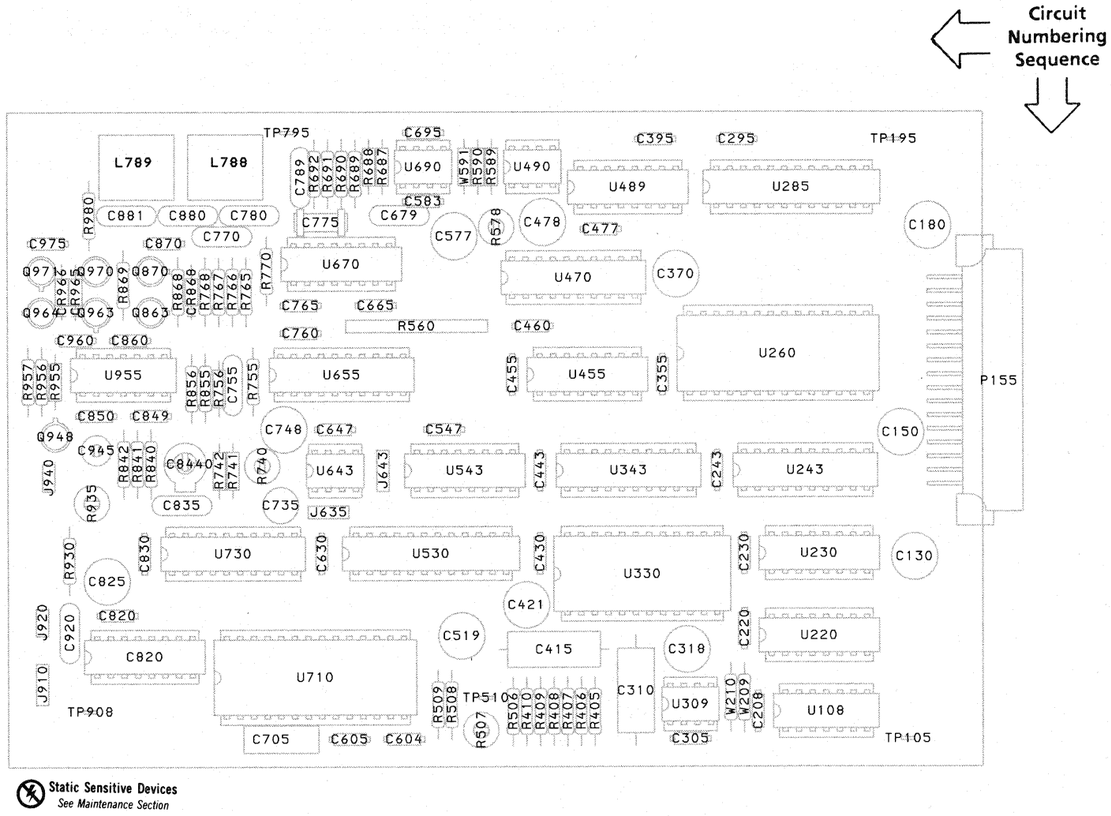
TSG 271

6304-11

POWER SUPPLY DISTRIBUTION ⟨11⟩



A5 OPTION 01 BOARD SN B010308 & UP



A5 OPTION 01 BOARD SN B010307 & BELOW

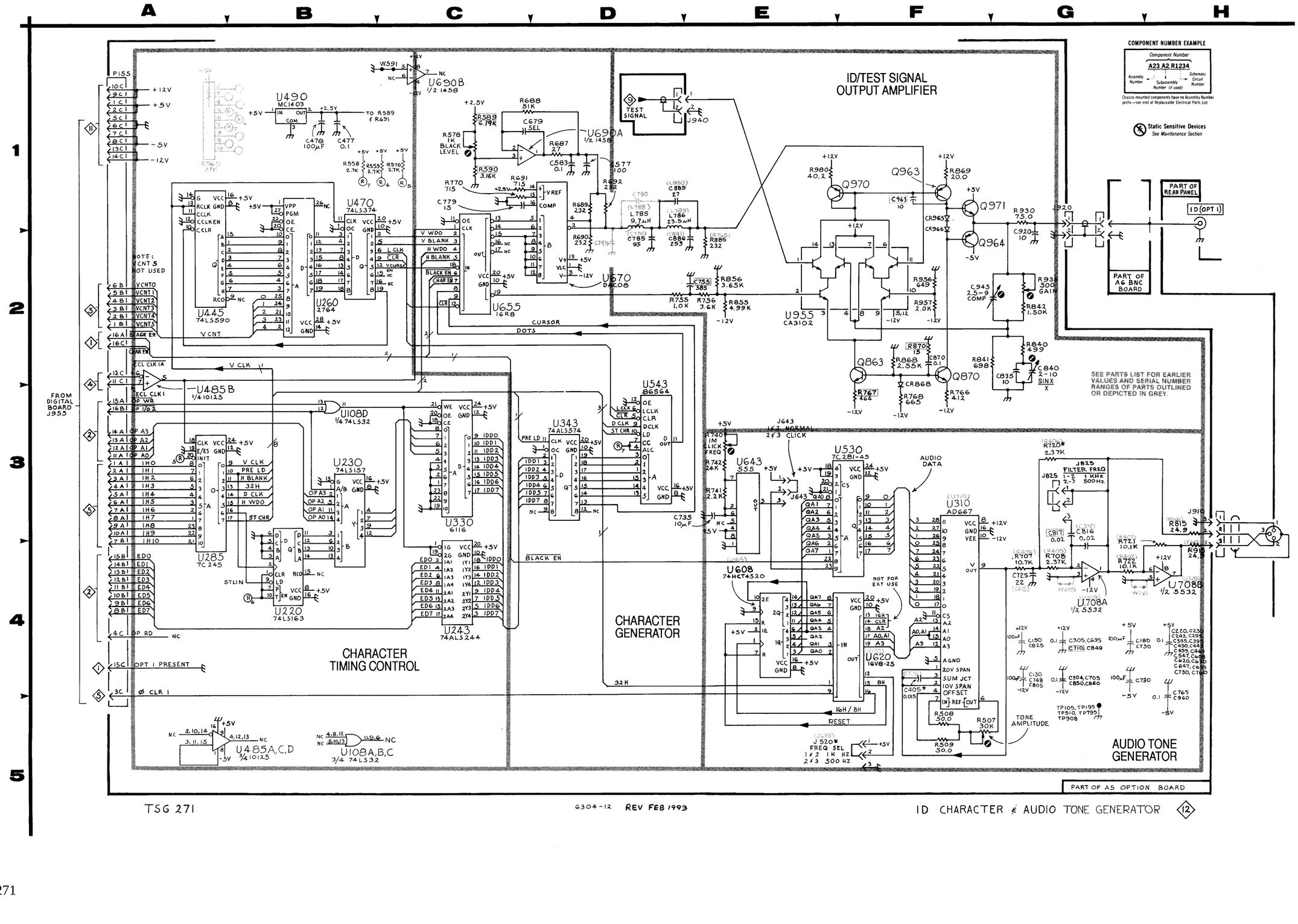
DIAGRAM 12

SCHEMATIC DIAGRAM LOOK-UP CHART

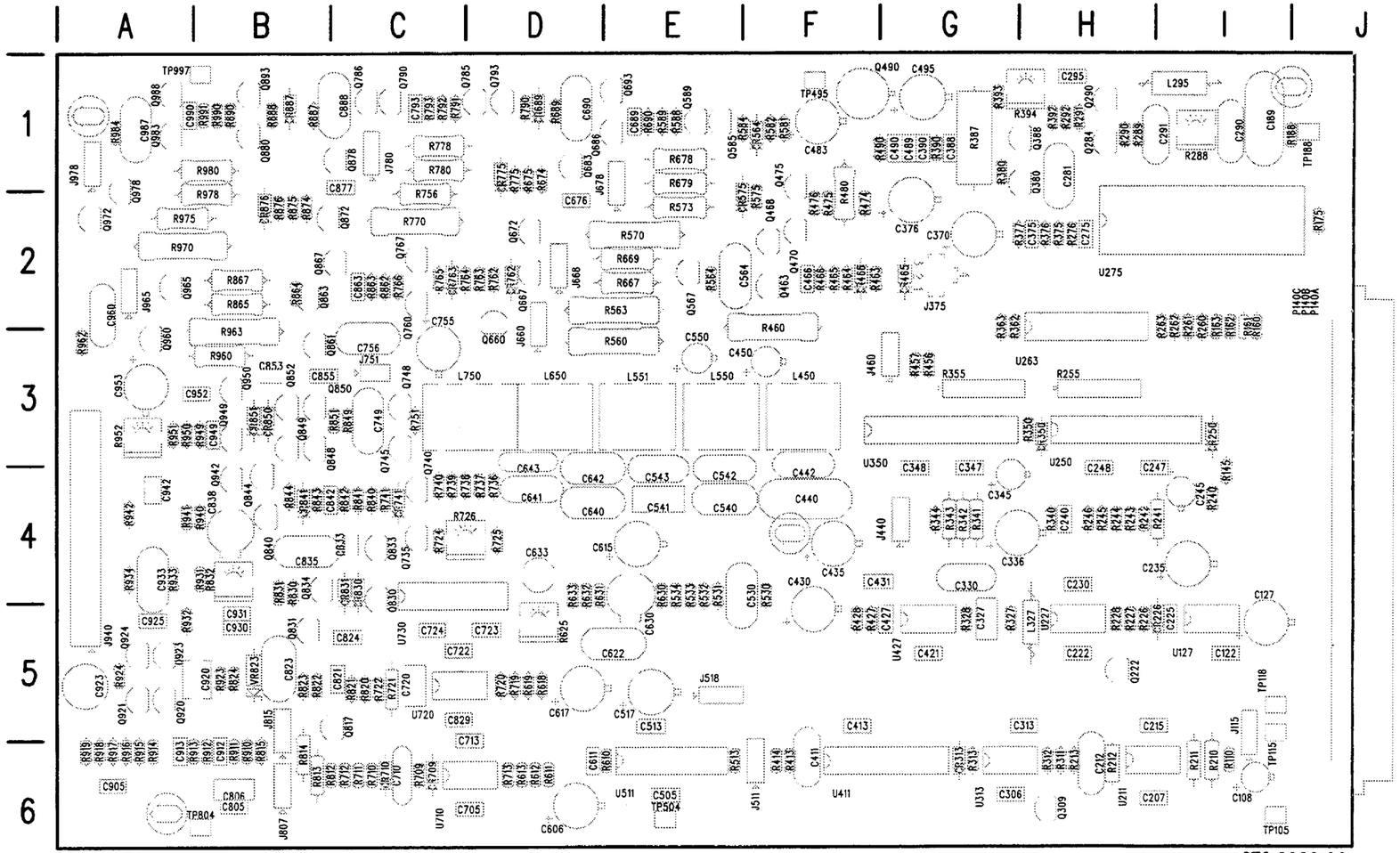
The schematic diagram has an alpha-numeric grid to assist in locating parts within that diagram. The etched circuit boards follow a numbering sequence starting with the lowest number at the upper left corner, as pictured in this manual.

Circuit Number	Schematic Diagram Location
A5 Option Board	
C310	G4
C405	F4
C415	G4
C477	B1
C478	B1
C577	D1
C583	D1
C679	C1
C705	F4
C725	G4
C735	E3
C755 *	E2
C770	D2
C779	C1
C780 *	D1
C789 *	D2
C816	G4
C835	G2
C840	G2
C870	F2
C880	D1
C881	D2
C885	D2
C920	G2
C945	F2
C963 *	F2
CR868	F3
CR965	F1
CR966	F2
J520	F5
J635	E5
J643	E3
J910	H3
J920	G1
L769	D1
L783	D1
L785	D2
L786	D2
P155	A1
Q863	F2
Q870	F2
Q963	F1
Q964	F2
Q970	F1
Q971	F1
R405	G4
R406	G3
R407	G4
R408	G4
R409	G4
R410	H4
R506	H3
R507	F5
R508	F5
R509	F5
R560 *	A1
R587	C1
R589	C1
R590	C1
R687	D1
R688	C1
R689	D1
R690	D2
R691	C1
R692	D1
R707	G4
R708	G4
R720	G4
R721	G4
R722	G4
R740	E3
R741	E3
R742	E3
R755	D2
R756	E2
R765	E2
R766	F3
R767 *	F3
R768	F3
R770	C1
R815	H4
R840	G2
R841	F3
R842	G2
R855	E2
R915	H4
R856	E2
R868	F2
R869	F1
R870 *	F2
R885	E2
R930	G1
R935	G2
R956	F2
R957	F2
R980	E1
R999	E1
U108A	B5
U108B	B5
U108C	B5
U108D	B3
U220	B4
U230	B3
U243	C4
U260	B2
U285	A4
U309A	G4
U309B	H4
U310	F4
U330	C3
U343	D3
U445	A2
U470	B1
U485A	B5
U485B	A3
U485C	B5
U490	B1
U530	F3
U543	D3
U608	E4
U620	F4
U643	E3
U655	C2
U670	D2
U690A	D1
U690B	C1
U708A	G4
U708B	H4
U710	F3
U730	F4
U815	E4
U955	E2
W209 *	G4
W210 *	G4
W591	C1

***See Parts List for earlier Serial number ranges.**



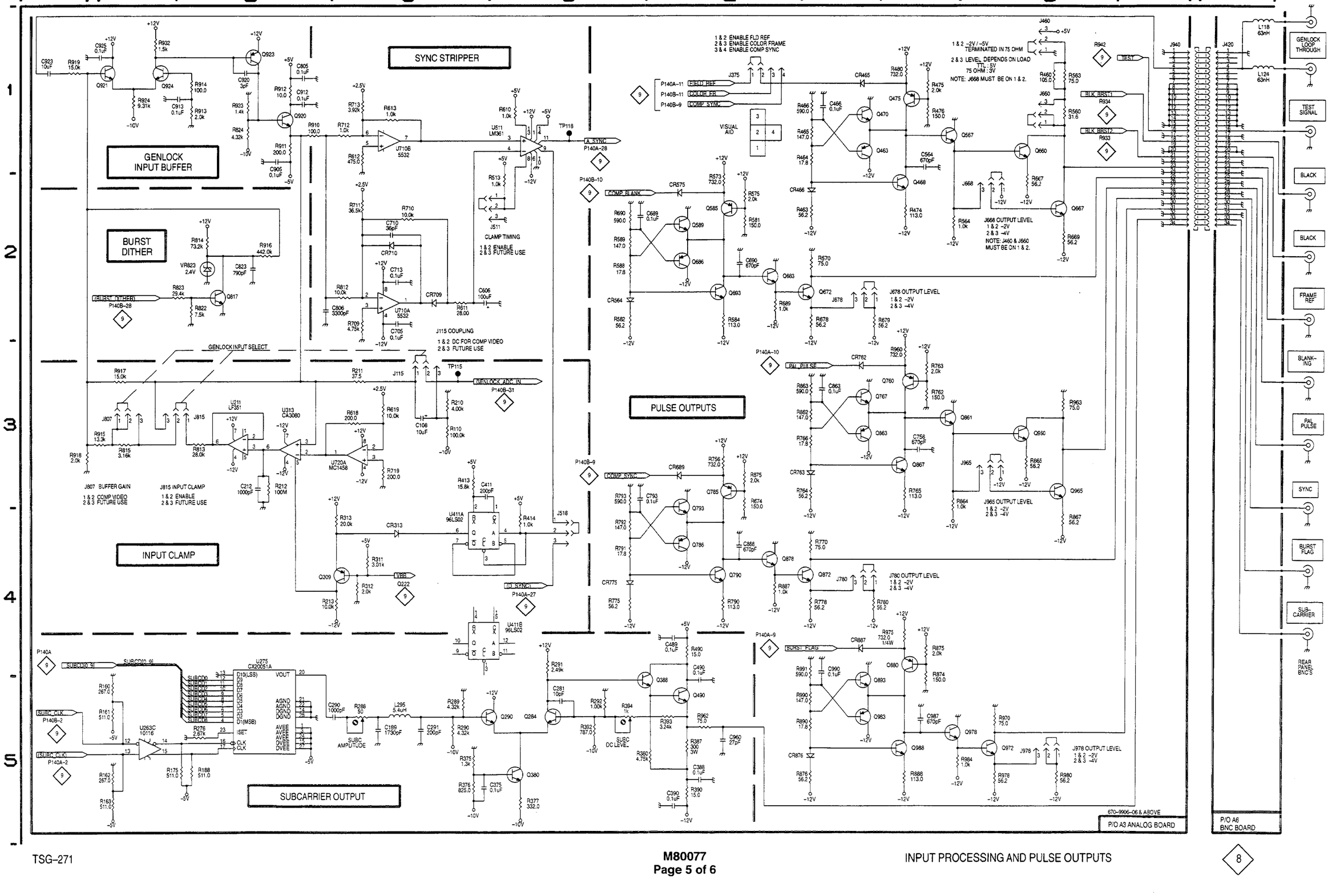
TSG 271 G304-12 REV FEB 1993 ID CHARACTER & AUDIO TONE GENERATOR 12

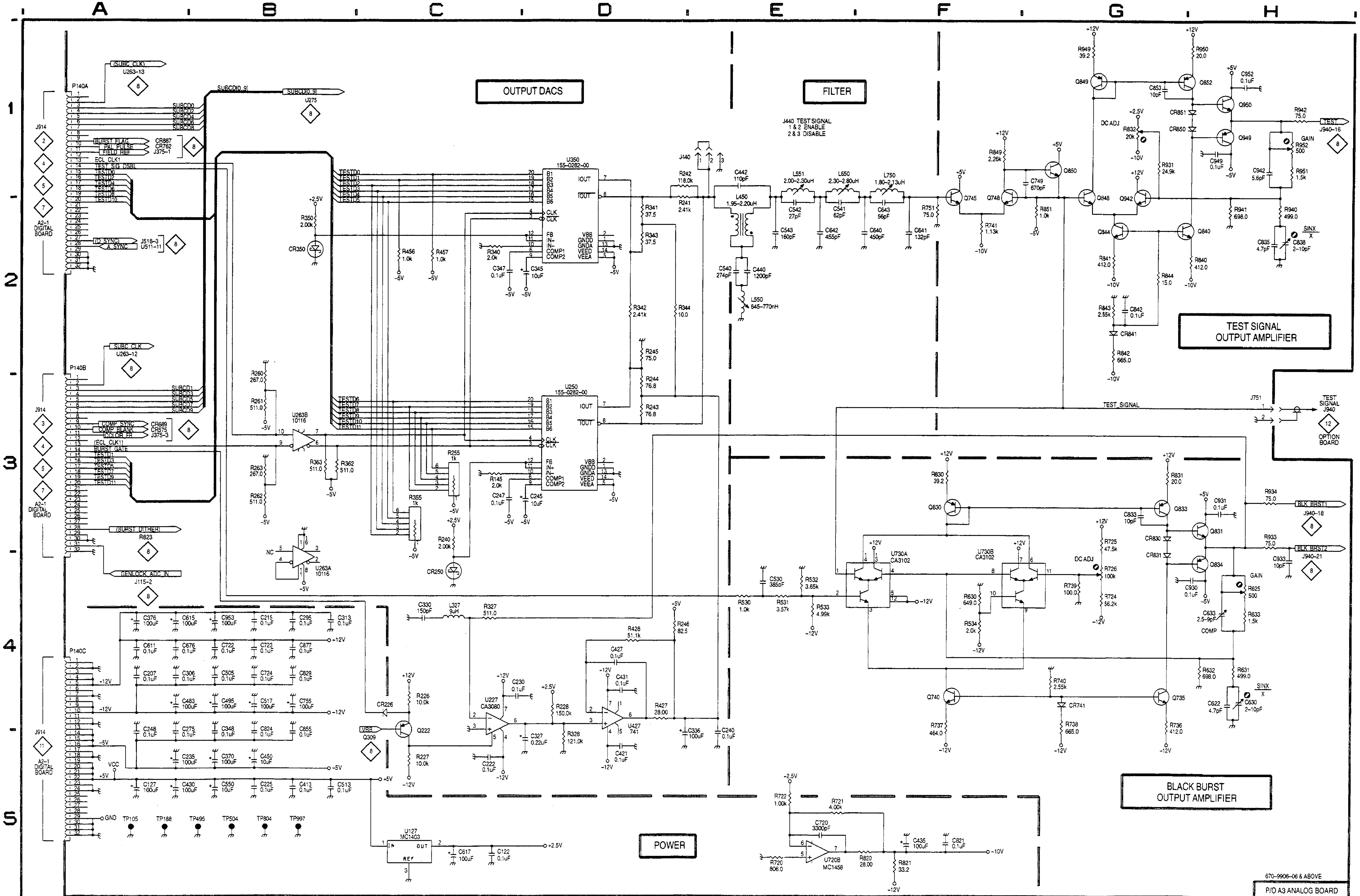


TSG–271

A3 Analog Board

670-9906-06


SYNC STRIPPER
GENLOCK INPUT BUFFER
BURST DITHER
GENLOCK INPUT SELECT
INPUT CLAMP
SUBCARRIER OUTPUT
PULSE OUTPUTS
J807 BUFFER GAIN
1 & 2 COMP VIDEO
2 & 3 FUTURE USE
J815 INPUT CLAMP
1 & 2 ENABLE
2 & 3 FUTURE USE
J115 COUPLING
1 & 2 DC FOR COMP VIDEO
2 & 3 FUTURE USE
CLAMP TIMING
1 & 2 ENABLE
2 & 3 FUTURE USE
1 & 2 ENABLE FLD REF
2 & 3 ENABLE COLOR FRAME
3 & 4 ENABLE COMP SYNC
VISUAL AID
1 & 2 –2V / –5V
TERMINATED IN 75 OHM
2 & 3 LEVEL DEPENDS ON LOAD
TTL: 5V
75 OHM: 3V
NOTE: J668 MUST BE ON 1 & 2.
J668 OUTPUT LEVEL
1 & 2 –2V
2 & 3 –4V
NOTE: J460 & J660 MUST BE ON 1 & 2.
J678 OUTPUT LEVEL
1 & 2 –2V
2 & 3 –4V
J965 OUTPUT LEVEL
1 & 2 –2V
2 & 3 –4V
J780 OUTPUT LEVEL
1 & 2 –2V
2 & 3 –4V
J978 OUTPUT LEVEL
1 & 2 –2V
2 & 3 –4V
SUBC AMPLITUDE
SUBC DC LEVEL
670–9906–06 & ABOVE
P/O A3 ANALOG BOARD
P/O A6 BNC BOARD
GENLOCK LOOP THROUGH
TEST SIGNAL
BLACK
BLACK
FRAME REF
BLANK-ING
PAL PULSE
SYNC
BURST FLAG
SUB-CARRIER
REAR PANEL BNCS


OUTPUT DACS
FILTER
TEST SIGNAL OUTPUT AMPLIFIER
BLACK BURST OUTPUT AMPLIFIER
POWER
J440 TEST SIGNAL
1 & 2 ENABLE
2 & 3 DISABLE
TEST_SIGNAL
670-9906-06 & ABOVE
P/O A3 ANALOG BOARD

Replaceable Mechanical Parts

Section 9
Replaceable Mechanical Parts

This section contains a list of the components that are replaceable for the TSG-271. Use this list to identify and order replacement parts. There is a separate Replaceable Mechanical Parts list for each instrument.

Parts Ordering Information

Replacement parts are available from or through your local Tektronix, Inc., Field Office or representative.

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available and to give you the benefit of the latest circuit improvements. Therefore, when ordering parts, it is important to include the following information in your order.

- Part number
- Instrument type or model number
- Instrument serial number
- Instrument modification number, if applicable

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc., 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.

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 replaceable parts.

Cross Index–Mfr. Code Number to Manufacturer

The Mfg. Code Number to Manufacturer Cross Index for the mechanical parts list is located immediately after this page. The cross index provides codes, names, and addresses of manufacturers of components listed in the mechanical parts list.

Abbreviations

Abbreviations conform to American National Standards Institute (ANSI) standard Y1.1.

Chassis Parts

Chassis-mounted parts and cable assemblies are located at the end of the Replaceable Electrical Parts list.

Column Descriptions

Figure & Index No. (Column 1)

Items in this section are referenced by figure and index numbers to the illustrations.

Tektronix Part No. (Column 2)

Indicates part number to be used when ordering replacement part from Tektronix.

Serial No. (Column 3 and 4)

Column three (3) indicates the serial number at which the part was first used. Column four (4) indicates the serial number at which the part was removed. No serial number entered indicates part is good for all serial numbers.

Qty (Column 5)

This indicates the quantity of mechanical parts used.

Name and Description (Column 6)

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.

Following is an example of the indentation system used to indicate relationship.

1 2 3 4 5 Name & Description
Assembly and/or Component
Mounting parts for Assembly and/or Component
MOUNTING PARTS/*END MOUNTING PARTS*
    Detail Part of Assembly and/or Component
    Mounting parts for Detail Part
    MOUNTING PARTS/*END MOUNTING PARTS*
        Parts of Detail Part
        Mounting parts for Parts of Detail Part
        MOUNTING PARTS/*END MOUNTING PARTS*

Mounting Parts always appear in the same indentation as the Item it mounts, while the detail parts are indented to the right. Indented items are part of and included with, the next higher indentation. **Mounting parts must be purchased separately, unless otherwise specified.**

Mfr. Code (Column 7)

Indicates the code number of the actual manufacturer of the part. (Code to name and address cross reference can be found immediately after this page.)

Mfr. Part Number (Column 8)

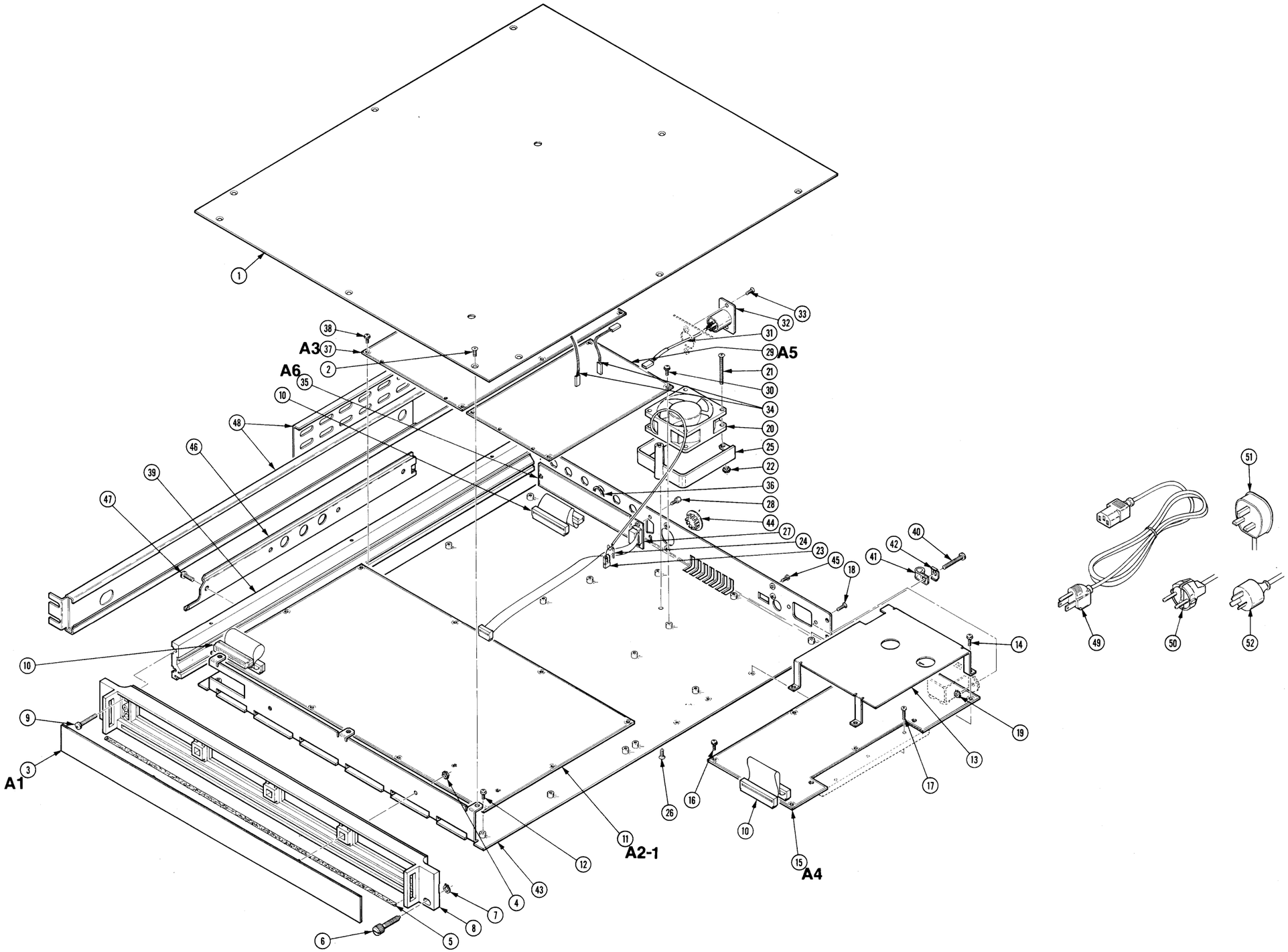
Indicates actual manufacturer's part number.

CROSS INDEX – MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code.	Manufacturer	Address	City, State, Zip Code
01536	TEXTRON INC CAMCAR DIV SEMS PRODUCTS UNIT	1818 CHRISTINA ST	ROCKFORD IL 61108
06666	GENERAL DEVICES CO INC	1410 S POST RD PO BOX 39100	INDIANAPOLIS IN 46239–9632
06915	RICHCO PLASTIC CO	5825 N TRIPP AVE	CHICAGO IL 60646–6013
12327	FREEWAY CORP	9301 ALLEN DR	CLEVELAND OH 44125–4632
71468	ITT CANNON DIV OF ITT CORP	666 E DYER RD	SANTA ANA CA 92702
72228	AMCA INTERNATIONAL CORP CONTINENTAL SCREW CO DIV	459 MT PLEASANT	NEW BEDFORD MA 02742
78189	ILLINOIS TOOL WORKS INC SHAKEPROOF DIV	ST CHARLES ROAD	ELGIN IL 60120
79136	WALDES KOHINOOR INC	47–16 AUSTEL PLACE	LONG ISLAND CITY NY 11101–4402
80009	TEKTRONIX INC	14150 SW KARL BRAUN DR PO BOX 500	BEAVERTON OR 97077–0001
82389	SWITCHCRAFT INC SUB OF RAYTHEON CO	5555 N ELSTRON AVE	CHICAGO IL 60630–1314
83385	MICRODOT MFG INC GREER–CENTRAL DIV	3221 W BIG BEAVER RD	TROY MI 48098
83486	ELCO INDUSTRIES INC	1101 SAMUELSON RD	ROCKFORD IL 61101
93907	TEXTRON INC CAMCAR DIV	600 18TH AVE	ROCKFORD IL 61108–5181
95987	BRADY/WECKESSER MFG CO	4444 WEST IRVING PARK RD	CHICAGO IL 60641
TK0409	HUMKE KEN R	2211 NW NICOLAI PO BOX 5128	PORTLAND OR 97208
TK0435	LEWIS SCREW CO	4300 S RACINE AVE	CHICAGO IL 60609–3320
TK0858	STAUFFER SUPPLY CO (DIST)		
TK1373	PATELEC–CEM (ITALY)	10156 TORINO	VAICENTALLO 62/45S ITALY
TK1960	U S TOYO FAN CORP	4915 WALNUT GROVE AVE DRAWER G	SAN GABRIEL CA 91776

Fig. & Index No.	Tektronix Part No.	Serial Number Effective	Serial Number Dscont	Qty	12345	Name & Description	Mfr. Code	Mfr. Part No.
1–1	200–3552–00	B010100	B031175	1		COVER,TOP:	80009	200–3552–00
	200–3552–01	B031176		1		COVER,TOP:	80009	200–3552–01
						MOUNTING PARTS		
–2	211–0559–00			10		SCREW,MACHINE:6–32 X 0.375,FLH,100 DEG,STL	TK0435	1593–300
						END MOUNTING PARTS		
–3	——— ———			1		PANEL,FRONT:		
						(SEE A1 REPL)		
						MOUNTING PARTS		
–4	210–0457–00			2		NUT,PL,ASSEM WA:6–32 X 0.312,STL CD PL	78189	511–061800–00
						END MOUNTING PARTS		
–5	378–0269–00			1		FILTER,AIR:	80009	378–0269–00
–6	213–0216–00			1		THUMBSCREW:10–32 X 0.85,0.375 OD HD,SST	80009	213–0216–00
						MOUNTING PARTS		
–7	354–0025–00			1		RING,RETAINING:EXTERNAL,U/O 0.187 DIA SFT	79136	5555–18
						END MOUNTING PARTS		
–8	426–2116–01			1		FRAME,FRONT:	80009	426–2116–01
						MOUNTING PARTS		
–9	213–0760–00			4		SCREW,TPG,TF:8–32 X 0.875,SPCL TAPTITE,FILH,STL	72228	ORDER BY DESCR
						END MOUNTING PARTS		
–10	174–0034–00			3		CA ASSY,SP,ELEC:28 AWG,3.0 L,RIBBONSAFETY CONTROLLED	80009	174–0034–00
–11	——— ———			1		CIRCUIT BD ASSY:DIGITAL		
						(SEE A2–1 REPL)		
						MOUNTING PARTS		
–12	211–0661–00			10		SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL,CD PL,POZ,MACHINE	01536	821–01655–024
						END MOUNTING PARTS		
–13	337–3286–00	B010100	B029999	1		SHIELD:LV PWR SUPPLY	80009	337–3286–00
	337–3286–01	B030000		1		SHIELD,PWR SPLY:LOW VOLTAGE	80009	337–3286–01
						MOUNTING PARTS		
–14	211–0244–00			4		SCR,ASSEM WSHR:4–40 X 0.312,PNH STL	TK0858	211–0244–00
						END MOUNTING PARTS		
–15	——— ———			1		CIRCUIT BD ASSY:PWR SPLY		
						(SEE A4 REPL)		
						MOUNTING PARTS		
–16	211–0661–00			2		SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL,CD PL,POZ,MACHINE	01536	821–01655–024
–17	211–0578–00	B010100	B029999	3		SCREW,MACHINE:6–32 X 0.438,PNH,STL	93907	ORDER BY DESCR
–18	211–0025–00			2		SCREW,MACHINE:4–40 X 0.375,FLH,100 DEG,STL	TK0435	ORDER BY DESCR
–19	210–0586–00			2		NUT,PL,ASSEM WA:4–40 X 0.25,STL CD PL	78189	211–041800–00
						END MOUNTING PARTS		
–20	——— ———			1		FAN,TUBEAXIAL:24VDC,20CFM,60 X 60 MM 4800RPM, SAFETY CONTROLLED		
						(SEE B100 REPL)		
						MOUNTING PARTS		
–21	212–0012–00			2		SCREW,MACHINE:8–32 X 1.25,FLH,100 DEG,STL	83385	ORDER BY DESCR
–22	210–0458–00			2		NUT,PL,ASSEM WA:8–32 X 0.344,STL CD PL	78189	511–081800–00
						END MOUNTING PARTS		
–23	352–0169–00	B010100	B031378	1		HLDR,TERM CONN:2 WIRE,BLACK	80009	352–0169–00
–24	131–0707–00	B010100	B031378	2		CONTACT,ELEC:22–26 AWG,BRS,CU BE GLD PL	80009	131–0707–00
–25	407–3379–01			1		BRKT,FAN MTG:ALUMINUM	80009	407–3379–01
						MOUNTING PARTS		
–26	211–0559–00			1		SCREW,MACHINE:6–32 X 0.375,FLH,100 DEG,STL	TK0435	1593–300
						END MOUNTING PARTS		
–27	175–9877–00			1		CA ASSY,SP,ELEC:10,28 AWG,12.5 L,RIBBON	80009	175–9877–00
						MOUNTING PARTS		
–28	131–0890–00			2		SCREW LOCK:	71468	D 20418–2
						END MOUNTING PARTS		

Fig. & Index No.	Tektronix Part No.	Serial Number Effective	Serial Number Dscont	Qty	12345	Name & Description	Mfr. Code	Mfr. Part No.
–29	——— ———			1		CIRCUIT BD ASSY:IDENTIFICATION		
						(SEE A5 REPL, OPTION 01 ONLY)		
						MOUNTING PARTS		
–30	211–0661–00			4		SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL,CD PL,POZ,MACHINE	01536	821–01655–024
						(OPTION 01 ONLY)		
						END MOUNTING PARTS		
–31	175–9542–00			1		CA ASSY,SP,ELEC:3,26 AWG,4.75 L,MULTI COND	80009	175–9542–00
						(OPTION 01 ONLY)		
–32	——— ———			1		CONN,RCPT,ELEC:MALE,3 CONTACT		
						(SEE J910 REPL, OPTION 01 ONLY)		
						MOUNTING PARTS		
–33	211–0025–00			2		SCREW,MACHINE:4–40 X 0.375,FLH,100 DEG,STL	TK0435	ORDER BY DESCR
						(OPTION 01 ONLY)		
						END MOUNTING PARTS		
–34	174–0080–01			2		CABLE ASSY,RF:75 OHM COAX,9.0 L	80009	174–0080–01
						(OPTION 01 ONLY)		
–35	——— ———			1		CIRCUIT BD ASSY:BNC		
						(SEE A6 REPL)		
–36	210–0255–00			2		TERMINAL,LUG:0.391 ID,LOCKING,BRS CD PL	12327	ORDER BY DESCR
–37	——— ———			1		CIRCUIT BD ASSY:ANALOG		
						(SEE A3 REPL)		
						MOUNTING PARTS		
–38	211–0661–00			6		SCR,ASSEM WSHR:4–40 X 0.25,PNH,STL,CD PL,POZ,MACHINE	01536	821–01655–024
						END MOUNTING PARTS		
–39	426–2115–00			2		FRAME SECTION:SIDE	80009	426–2115–00
						MOUNTING PARTS		
–40	213–0760–00			4		SCREW,TPG,TF:8–32 X 0.875,SPCL TAPTITE,FILH,STL	72228	ORDER BY DESCR
						END MOUNTING PARTS		
–41	343–0003–00			1		CLAMP,LOOP:0.25 ID,PLASTIC	06915	E4 CLEAR ROUND
–42	210–0863–00			1		WSHR,LOOP CLAMP:0.091 ID U/W 0.5 W CLP,STLCD PL	95987	C191
–43	200–3392–00			1		COVER,BOTTOM:	80009	200–3392–00
–44	134–0187–00			1		PLUG,BUTTON:	TK0409	SS51334
–45	211–0177–00			1		SCREW,MACHINE:4–40 X 0.312,PNH,STL	TK0435	ORDER BY DESCR
–46	351–0104–03			1		SL SECT,DWR EXT:12.625 L,W/O HARDWARE	06666	C–720–3
						MOUNTING PARTS		
–47	212–0158–00			8		SCREW,MACHINE:8–32 X 0.375,PNH,STL	83486	ORDER BY DESCR
						END MOUNTING PARTS		
						STANDARD ACCESSORIES		
–48	351–0751–00	B010100	B031070	1		TRK,SL OUT SECT:STATIONARY & INTERMEDIATE	80009	351–0751–00
	351–0751–01	B031071		1		TRK,SL OUT SECT:STATIONARY &INTERMEDIATE	80009	351–0751–01
	070–6304–00			1		MANUAL,TECH:INSTR,TSG271	80009	070–6304–00
–49	161–0066–00			1		CA ASSY,PWR:3,18AWG,98 L,SVT,GREY/BLK,60 DEG C,IEC BME X STR,IEC RCPT,10A/125V	80009	161–0066–00
						(STANDARD ONLY)		
						OPTIONAL ACCESSORIES		
–50	161–0066–09			1		CA ASSY,PWR:3,0.75MM SQ,220V,99.0 L	80009	161–0066–09
						(EUROPEAN OPTION A1 ONLY)		
–51	161–0066–10			1		CA ASSY,PWR:	TK1373	24230
						(UNITED KINGDOM OPTION A2 ONLY)		
–52	161–0066–11			1		CA ASSY,PWR:3,0.75MM,240V,96.0 L	80009	161–0066–11
						(AUSTRALIAN OPTION A3 ONLY)		


1
38
A3
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A6
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47
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3
A1
6
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8
7
4
43
12
11
A2-1
26
16
10
15
A4
17
13
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14
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23
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A5
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Appendix A

APPENDIX A
OPTION 03

The TSG-271 uses ten front-panel push buttons to select 34 test signals. In order to accomplish this, each of the buttons (except CONVERGENCE) has a list of test signals which it will select. Each time a button is pressed, the next signal on its list is selected. An LED above the button lights to indicate which button is active, but you must look at a monitor of some type to determine which signal has actually been selected. If you select a different button and then the first button again, you do not return to the top of the first button's signal list, but to the signal last selected by it.

This is no problem as long as there is a monitor with which to view the selected signal, but that is not always the case. When there is no monitor at the site it is very easy to lose track of which signal is being output by the TSG-271.

Selected Signal Display

To accommodate this situation, we have created an optional front panel for the TSG-271 which adds two seven-segment LEDs (see Fig. A-1). The LEDs display a unique hexadecimal number for each of the test signals, so you can easily determine which signal has been selected (See Table A-1 for a listing of the hex codes for each signal). This new front panel is available as Option 03 for the TSG-271.

In addition to the selected signal display, Option 03 also adds one test signal, adds some specialized test signal sequences requested by Australian Telecom, and changes some of the REMOTE connector functions.

New Test Signal

Option 03 adds a new test signal to the TSG-271, called the Peak White Clipper. This signal is intended for use in setting up a transmitters white clip level. It consists of a tri-level pedestal with one level at 700 mV, one at 737.5 mV, and one at 775 mV (see Fig. A-2). This signal is available under the OTHER SIGNALS button, following the ITS Matrix.

APL

With Option 03, APL can be controlled through pins five and six of the REMOTE connector, and the display provides information about APL status. Both of the LEDs have a leading and a trailing decimal point, which are used as APL indicators. The decimals for the left digit show whether APL is on (lit) or off (unlit), while the right decimal pair show if APL is high (lit) or low (unlit). When APL Bounce is selected, the right digit decimals flash on and off at about a one second rate, and the Selected Signal display alternates between hex 15 (100% Flat Field) and 17 (0% Flat Field).

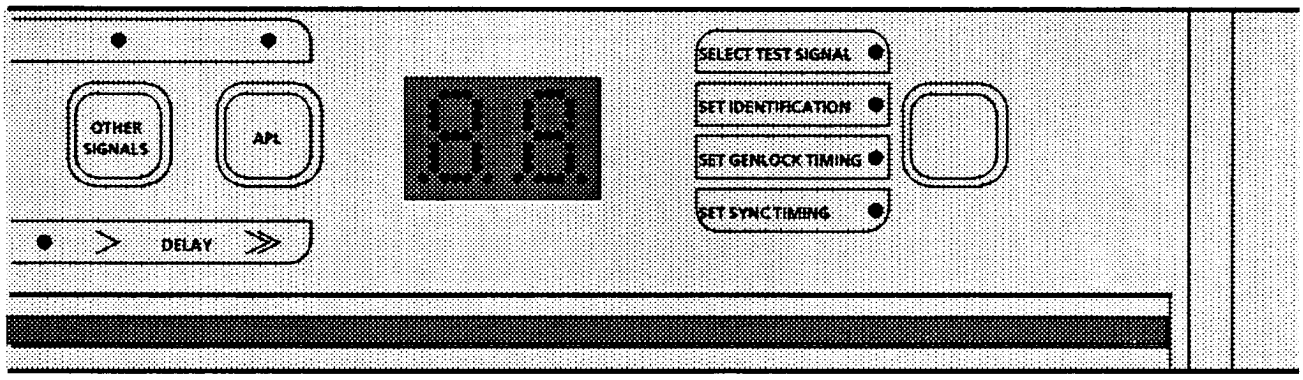


Fig. A-1. TSG-271 Option 03 hex display panel.

Table A-1. TSG271 Option 03 Hex Display codes.

Button Name	Signal Name	Hex Display
75% BARS	Colour Bars	00
	Colour Bars over red	01
	Colour Bars over red with narrow blanking	02
	Monitor setup matrix	03
100% Bars	Colour Bars	04
	Colour Bars over red	05
	Colour Bars over red with narrow blanking	06
	Monitor setup matrix	07
Pluge	EBU Pluge (BBC2)	08
	German Pluge (BBC1)	09
	White	1F
	Grey	20
Convergence	Convergence	0A
Pulse & Bar	Pulse & Bar with Window	0B
	Field Square Wave	0C
	Multipulse	0D
	$\sin x / x$	0E

Button Name	Signal Name	Hex Display
Multiburst	Multiburst	0F
	Line Sweep	10
Linearity (5-Step)	5-Step	11
	Ramp	12
	Modulated 5-Step	13
	Modulated Ramp	14
Flat Field	100% Luminance	15
	50% Luminance	16
	0% Luminance	17
	75% Red	18
Other Signals	CCIR 17	19
	CCIR 18	0F
	CCIR 330	1A
	CCIR 331	1B
	UK1	1C
	UK2	1D
	ITS Matrix	1E
	Peak White Clipper	24

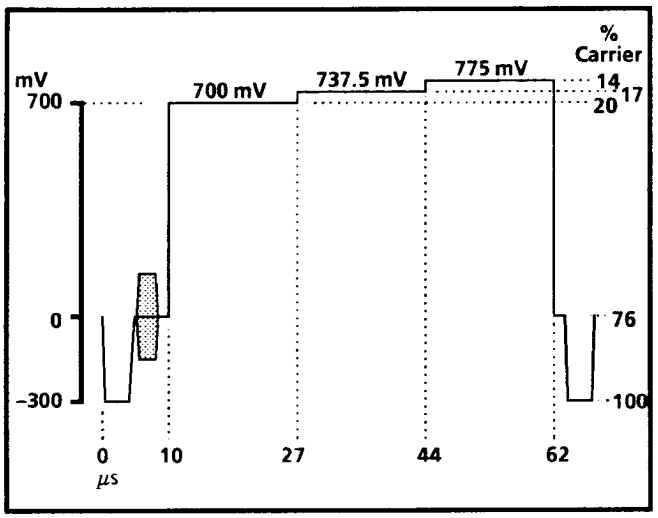


Fig. A-2. Peak White Clipper.

The front-panel APL button cycles through APL ON - HIGH, APL ON - LOW, APL BOUNCE, and back to APL OFF. The same states may now be selected through the REMOTE connector.

In most cases, when APL is ON the TSG-271 produces two lines of the selected test signal followed by six lines of APL at the selected level, and repeats this throughout the field. APL BOUNCE switches between 100% luminance and 0% luminance at about a one second rate, and ignores the selected test signal.

With Option 03 this sequence differs if APL is ON while CCIR 17 or CCIR 18 are selected:

When CCIR 17 (hex 19) is selected with APL on, the sequence changes to one line of CCIR 17, one line of CCIR 330, and six lines of APL (at 100% or 0%, as selected), repeated throughout the field.

When CCIR 18 (hex 0F) is selected with APL on, the sequence changes to one line of CCIR 18, one line of CCIR 331, and six lines of APL (at 100% or 0%), repeated throughout the field.

Remote Control

The TSG-271 Option 03 REMOTE CONTROL connector operates in the same manner as the standard TSG-271, through TTL-compatible ground closure, but provides APL control through pins 5 and 6 in place of Timing Preset selection (see Fig. A-3).

APL selections are made as follows:
APL ON – HI: pin 5 grounded
APL ON – LO: pin 6 grounded
APL BOUNCE: both pins grounded

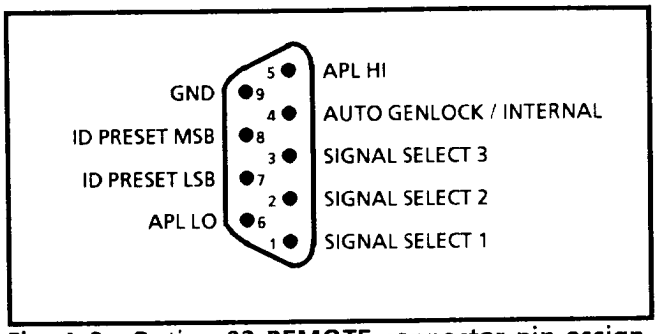


Fig. A-3. Option 03 REMOTE connector pin assignments.

The TSG-271 test signals available through the REMOTE connector SIGNAL SELECT function have been factory programmed as shown in Table A-2.

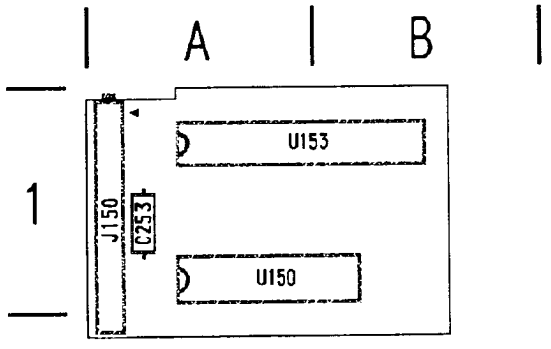
Physical Changes

There are some wiring changes and two new boards associated with this Option, all of which are shown on the following pages. U153 (shown on Schematic 6) is removed, and the Option 03 Latch board is wired directly into its place. These changes are all shown in the following partial schematics.

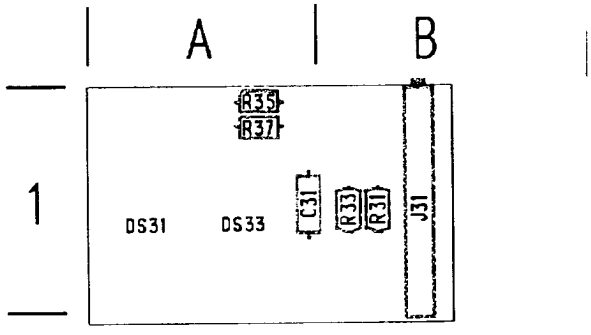
Table A-2. Remote Signal Selection

Selected Signal	APL pins		Signal Select pins		
	6	5	3	2	1
Local Control	1	1	1	1	1
CCIR 17*	1	1	1	1	0
CCIR 18*	1	1	1	0	1
CCIR 330*	1	1	1	0	0
CCIR 331*	1	1	0	1	1
Field Square Wave*	1	1	0	1	0
Flat Field 100%*	1	1	0	0	1
Flat Field 0%*	1	1	0	0	0
CCIR 17, CCIR 330 & six lines APL HI	1	0	1	1	0
CCIR 17, CCIR 330 & six lines APL LO	0	1	1	1	0
CCIR 18, CCIR 331 & six lines APL HI	1	0	1	0	1
CCIR 18, CCIR 331 & six lines APL LO	0	1	1	0	1
APL BOUNCE	0	0	X	X	X

*On all lines



A2–3 Latch board (Option 03)



A1–2 Display board (Option 03)

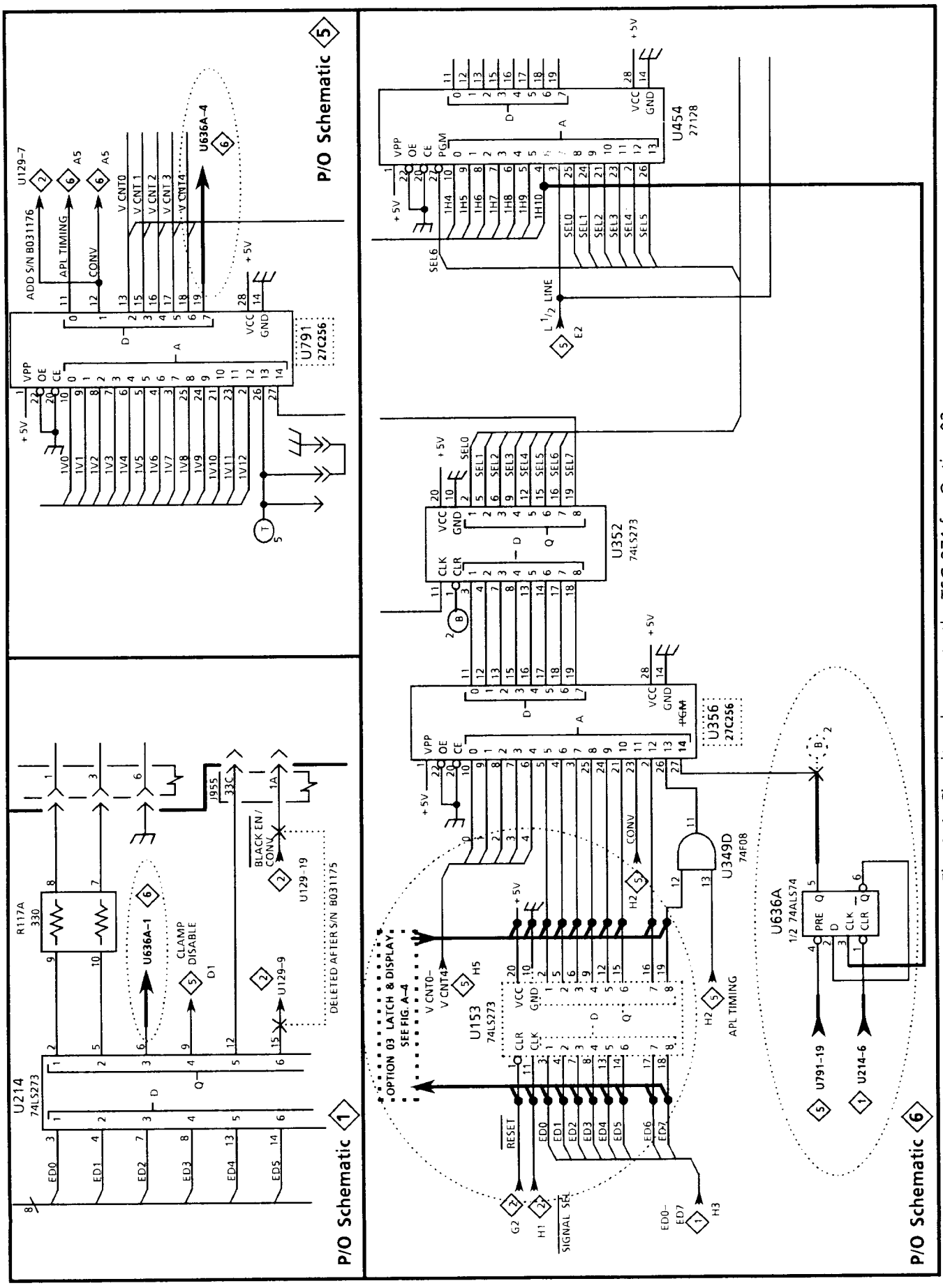


Fig. A-4. Circuitry changes to the TSG-271 for Option 03.

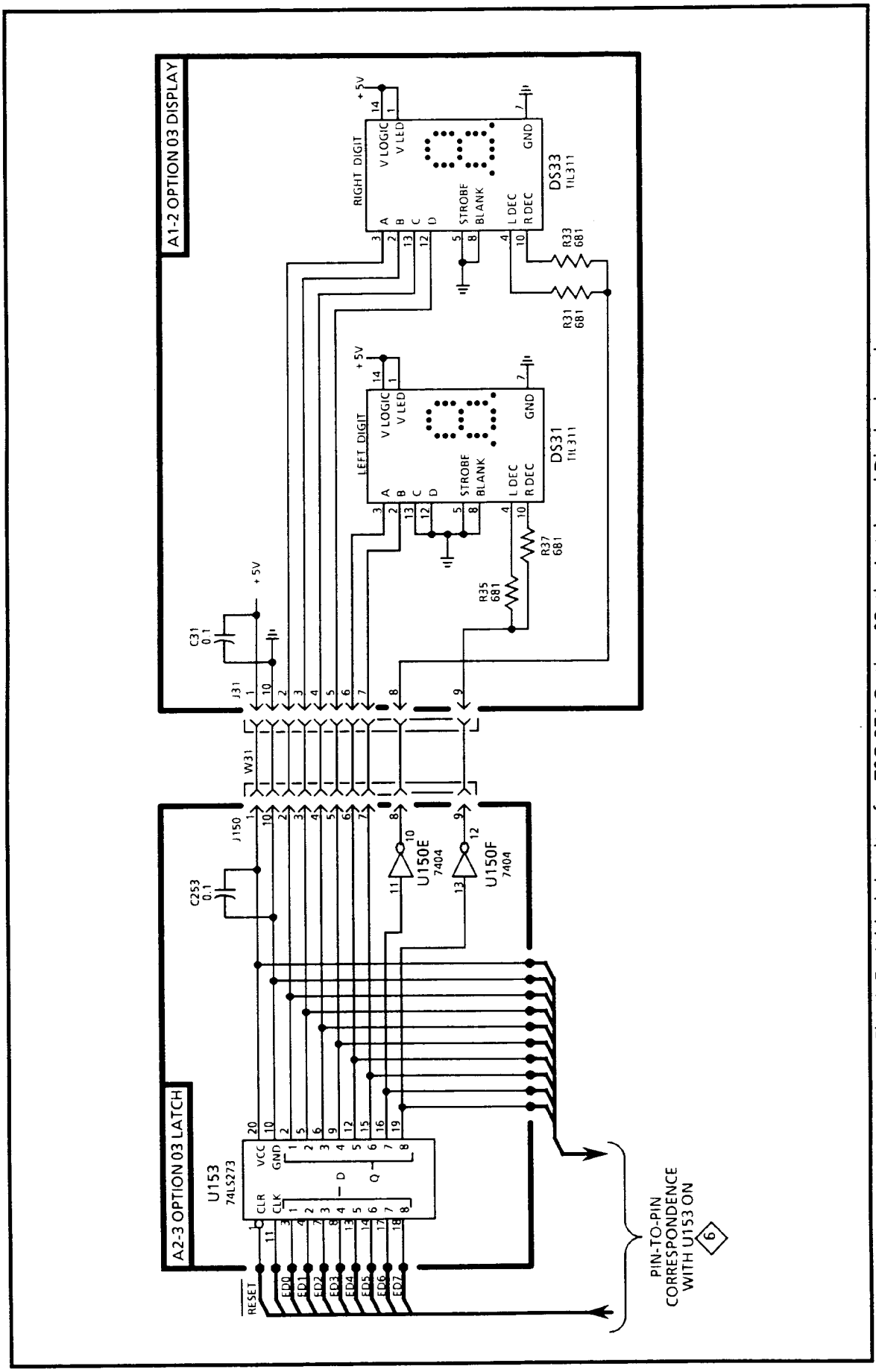


Fig. A-5. Added circuitry for TSG-271 Option 03, the Latch and Display boards.

Manual Change Information

Tektronix products are constantly under development for increased performance or lower cost to the customer. Often, changes are incorporated into a product as soon as they are shown to meet the highest quality standards.

This aggressive policy of product improvement can result in changes that are not reflected in the appropriate sections of the manual. Information regarding such changes will appear on the following pages. If no change notices are inserted after this page, the manual is correct as printed.

Please review any included change information and note the changes that will affect your use of the product. A single change may apply to several sections of the manual. Because change information sheets are inserted until all the changes are incorporated into every applicable section of the manual, some duplication may result.

Tektronix

MANUAL CHANGE INFORMATION

Date: 1/10/94 **Change Reference:** M79236

Product: All Television Products **Manual Part Number:** NA

Tektronix Television Division will no longer use electrolytic capacitors with 85° ratings. They are being replaced with 105° rated capacitors, for better long term reliability. All other ratings on the new capacitors are the same or better. If you need to order any of these caps, be sure to use the new part number.

ELECTRICAL PARTS LIST CHANGES

REPLACE		WITH	
100 UF	290–1100–00	290–1309–00	CAP,FXD,AL:100UF,20%,63V,RADIAL,105 DEG
10 UF	290–0974–03	290–1311–00	CAP,FXD,AL:10UF,20%,50V,5 X 11MM,105 DEG
10 UF	290–0990–01	290–1313–00	CAP,FXD,AL:10UF,20%,50V,8 X 11MM,105 DEG
2.2 UF	290–0758–00	290–1312–00	CAP,FXD,AL:2.2UF,20%,315V;10 X 125MM,105 DEG

Tektronix

MANUAL CHANGE INFORMATION

Date: 6/6/94

Change Reference: M81265

Product:	Manual P/N:	Product	Manual P/N:
067–1011–00	070–3679–00	TSG 1125	061–3629–00
118AS/118RC	070–5114–00	TSG 1250	061–3719–00
1450–1	070–5568–00	TSG–170A	070–5680–00
1450–2	070–2998–00	TSG–170D	070–6943–00
1450–3A	070–3660–01	TSG200	070–8351–00
1910	070–4523–00	TSG–271	070–6304–00
728D	070–7629–00	TSG–273	070–7956–00
728E	070–7630–02	TSG–300	070–5722–00
728M	070–8045–00	TSG–370	070–7446–00
751	070–7631–00	TSG–371	070–7707–00
ASG100	070–8546–00	TSG–422	070–7022–00
ASG140	070–8867–01	VITS100	061–3939–00
DAC422	070–8595–00	VITS200	061–3923–00
ECO–170A	070–6113–00	VITS200 AA	061–3984–00
PE1000	070–8474–00	VITS201	070–7385–00
SPG1000	070–8074–00	VM700 Vol 1	070–8197–00
SPG–170A	070–5965–00	VM700 Vol 2	070–8275–00
SPG–271	070–6814–00	VM700A	070–8165–00
TPG–625	070–7248–00	VS210	070–8754–00
TSG 1001	070–8625–00	VS211	070–8164–00
TSG 1050	061–3718–00	VS211A	070–8827–00

Mechanical Parts List Changes

In the 1910

CHANGE all occurances of 131–0890–00 **TO READ:**

214–3903–01	1	SCREW,JACK:4–40 X 0.312 EXT THD,4–40 INT THD,0.188 HEX, STEEL,CAD PLATE
		ATTACHED PARTS
210–0004–00	2	WASHER,LOCK:#4 INTL,0.015 THK,STL CD PL
210–0406–00	2	NUT,PLAIN,HEX: 4–40 X 0.188,BRS CD PL
		END ATTACHED PARTS

In all other instruments

CHANGE all occurances of 131–0890–00 **TO READ:**

214–3903–01	1	SCREW,JACK:4–40 X 0.312 EXT THD,4–40 INT THD,0.188 HEX, STEEL,CAD PLATE

Tektronix

MANUAL CHANGE INFORMATION

Date: 2/15/94 **Change Reference:** M80077

Product(s): TSG–271 **Manual Part No:** 070–6304–00

DESCRIPTION

EFF S/N: B033175

ELECTRICAL PARTS LIST AND SCHEMATIC CHANGES

CHANGE TO READ:

A3	670–9906–06	CIRCUIT BD ASSY: ANALOG BOARD
A3C622	281–0893–00	CAP,FXD,CERAMIC:MLC;4.7PF,+/–0.5PF,100V
A3C835	281–0893–00	CAP,FXD,CERAMIC:MLC;4.7PF,+/–0.5PF,100V
A3R145	322–3222–00	RES,FXD, FILM:2K OHM,1%,0.2W
A3R160	322–3138–00	RES,FXD, FILM:267 OHM,1%,0.2W
A3R161	322–3165–00	RES,FXD,FILM:511 OHM,1%,0.2W
A3R162	322–3138–00	RES,FXD, FILM:267 OHM,1%,0.2W
A3R163	322–3165–00	RES,FXD,FILM:511 OHM,1%,0.2W
A3R175	322–3165–00	RES,FXD,FILM:511 OHM,1%,0.2W
A3R188	322–3165–00	RES,FXD,FILM:511 OHM,1%,0.2W
A3R213	322–3289–00	RES,FXD,FILM:10K OHM,1%,0.2W
A3R226	322–3289–00	RES,FXD,FILM:10K OHM,1%,0.2W
A3R227	322–3289–00	RES,FXD,FILM:10K OHM,1%,0.2W
A3R228	322–3402–00	RES,FXD,FILM:150K OHM,1%,0.2W
A3R246	322–3089–00	RES,FXD,FILM:82.5 OHM,1%,0.2W
A3R260	322–3138–00	RES,FXD, FILM:267 OHM,1%,0.2W
A3R261	322–3165–00	RES,FXD,FILM:511 OHM,1%,0.2W
A3R262	322–3165–00	RES,FXD,FILM:511 OHM,1%,0.2W
A3R263	322–3138–00	RES,FXD, FILM:267 OHM,1%,0.2W
A3R288	311–2226–00	RES,VAR,NONWW:TRMR,50 OHM,20%,0.5W LINEAR
A3R311	322–3239–00	RES,FXD, FILM:3.01K OHM,1%,0.2W
A3R312	322–3222–00	RES,FXD, FILM:2K OHM,1%,0.2W
A3R313	322–3318–00	RES,FXD, FILM::20K OHM,1%,0.2W
A3R327	322–3165–00	RES,FXD,FILM:511 OHM,1%,0.2W
A3R328	322–3393–00	RES,FXD,FILM:121K OHM,1%,0.2W
A3R340	322–3222–00	RES,FXD, FILM:2K OHM,1%,0.2W
A3R362	322–3165–00	RES,FXD,FILM:511 OHM,1%,0.2W
A3R363	322–3165–00	RES,FXD,FILM:511 OHM,1%,0.2W
A3R380	322–3258–00	RES,FXD,FILM:4.75K OHM,1%,0.2W
A3R390	322–3018–00	RES,FXD,FILM:15 OHM,1%,0.2W
A3R394	311–2231–00	RES,VAR,TRMR:CERMET,1K OHM,20%,0.5W
A3R413	322–3308–00	RES,FXD,FILM:15.8K OHM,1%,0.2W

Date: 2/15/94	Change Reference: M80077
Product(s): TSG-271	Manual Part No: 070-6304-00

A3R414	322-3193-00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R427	322-3044-00	RES,FXD,FILM:28 OHM,1%,0.2W
A3R428	322-3357-00	RES,FXD,FILM:51.1K OHM,1%,0.2W
A3R456	322-3193-00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R457	322-3193-00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R460	323-0099-00	RES,FXD,FILM: 105 OHM,1%,0.5W
A3R464	322-3025-00	RES,FXD,FILM:17.8 OHM,1%,0.2W
A3R465	322-3113-00	RES,FXD,FILM: 147 OHM,1%,0.2W
A3R474	322-3102-00	RES,FXD,FILM:113 OHM,1%,0.2W
A3R490	322-3018-00	RES,FXD,FILM:15 OHM,1%,0.2W
A3R513	322-3193-00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R530	322-3193-00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R531	322-3246-00	RES,FXD,FILM:3.57K OHM,1%,0.2W
A3R532	322-3247-00	RES,FXD,FILM:3.65K OHM,1%,0.2W
A3R560	323-0049-00	RES,FXD,FILM:31.6 OHM,1%,0.5W
A3R563	323-0085-00	RES,FXD,FILM:75.0 OHM,1%,0.5W
A3R564	322-3193-00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R570	323-0085-00	RES,FXD,FILM:75.0 OHM,1%,0.5W
A3R584	322-3102-00	RES,FXD,FILM:113 OHM,1%,0.2W
A3R588	322-3025-00	RES,FXD,FILM:17.8 OHM,1%,0.2W
A3R589	322-3113-00	RES,FXD,FILM: 147 OHM,1%,0.2W
A3R610	322-3193-00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R611	322-3044-00	RES,FXD,FILM:28 OHM,1%,0.2W
A3R612	322-3162-00	RES,FXD,FILM:475 OHM,1%,0.2W
A3R625	311-2230-00	RES,VAR,TRMR:CERMET,500 OHM,20%,0.5W
A3R689	322-3193-00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R709	322-3258-00	RES,FXD,FILM:4.75K OHM,1%,0.2W
A3R711	322-3343-00	RES,FXD,FILM:36.5K OHM,1%,0.2W
A3R725	322-3354-00	RES,FXD,FILM:47.5K OHM,1%,0.2W
A3R726	311-2239-00	RES,VAR,TRMR:CERMET;100K OHM,20%,0.5W
A3R739	322-3097-00	RES,FXD,FILM:100 OHM,1%,0.2W
A3R765	322-3102-00	RES,FXD,FILM:113 OHM,1%,0.2W
A3R766	322-3025-00	RES,FXD,FILM:17.8 OHM,1%,0.2W
A3R770	323-0085-00	RES,FXD,FILM:75.0 OHM,1%,0.5W
A3R790	322-3102-00	RES,FXD,FILM:113 OHM,1%,0.2W
A3R791	322-3025-00	RES,FXD,FILM:17.8 OHM,1%,0.2W
A3R792	322-3113-00	RES,FXD,FILM: 147 OHM,1%,0.2W
A3R820	322-3044-00	RES,FXD,FILM:28 OHM,1%,0.2W
A3R821	322-3051-00	RES,FXD,FILM:33.2 OHM,1%,0.2W
A3R822	322-3277-00	RES,FXD,FILM:7.5K OHM,1%,0.2W
A3R830	322-3058-00	RES,FXD,FILM:39.2 OHM,1%,0.2W
A3R832	311-2236-00	RES,VAR,TRMR:CERMET;20K OHM,20%,0.5W
A3R844	322-3018-00	RES,FXD,FILM:15 OHM,1%,0.2W
A3R851	322-3193-00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R862	322-3113-00	RES,FXD,FILM: 147 OHM,1%,0.2W

Date: 2/15/94	Change Reference: M80077
Product(s): TSG–271	Manual Part No: 070–6304–00

A3R864	322–3193–00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R887	322–3193–00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R888	322–3102–00	RES,FXD,FILM:113 OHM,1%,0.2W
A3R890	322–3025–00	RES,FXD,FILM:17.8 OHM,1%,0.2W
A3R910	322–3097–00	RES,FXD,FILM:100 OHM,1%,0.2W
A3R911	322–3126–00	RES,FXD,FILM:200 OHM,1%,0.2W
A3R912	322–3001–00	RES,FXD,FILM:10 OHM,1%,0.2W
A3R914	322–3097–00	RES,FXD,FILM:100 OHM,1%,0.2W
A3R916	322–3447–00	RES,FXD,FILM:442K OHM,1%,0.2W
A3R949	322–3058–00	RES,FXD,FILM:39.2 OHM,1%,0.2W
A3R952	311–2230–00	RES,VAR,TRMR:CERMET,500 OHM,20%,0.5W
A3R963	323–0085–00	RES,FXD,FILM:75.0 OHM,1%,0.5W
A3R970	323–0085–00	RES,FXD,FILM:75.0 OHM,1%,0.5W
A3R984	322–3193–00	RES,FXD,FILM:1K OHM,1%,0.2W
A3R990	322–3113–00	RES,FXD,FILM: 147 OHM,1%,0.2W

ADD:

A3R475	322–3222–00	RES,FXD, FILM:2K OHM,1%,0.2W
A3R534	322–3222–00	RES,FXD, FILM:2K OHM,1%,0.2W
A3R575	322–3222–00	RES,FXD, FILM:2K OHM,1%,0.2W
A3R675	322–3222–00	RES,FXD, FILM:2K OHM,1%,0.2W
A3R724	322–3361–00	RES,FXD, FILM:56.2K OHM,1%,0.2W
A3R763	322–3222–00	RES,FXD, FILM:2K OHM,1%,0.2W
A3R875	322–3222–00	RES,FXD, FILM:2K OHM,1%,0.2W
A3R913	322–3222–00	RES,FXD, FILM:2K OHM,1%,0.2W
A3R918	322–3222–00	RES,FXD, FILM:2K OHM,1%,0.2W

DELETE:

A3W326
A3W345
A3W730
A3W739
A3W750

New circuit board illustration and schematics are shown on the following pages.

Tektronix

MANUAL CHANGE INFORMATION

Date: 6/27/94 **Change Reference:** C2/694

Effective S/N:	Manual P/N:	Product:
N/A	070–6304–00	TSG–271

Text Changes

SECTION 3 SPECIFICATIONS

Page 3–2, Table 3–1 General Test Signal and Black Burst Characteristics

CHANGE DC Output Level entry **TO READ:**

DC Output Level	Test Signal: Black Burst:	0 Vdc ±50 mV 0 Vdc ±50 mV	Measured at Blanking Black level= Blanking level ±5 mV

SECTION 5 PERFORMANCE CHECK

Page 5–8, Performance Check Step 8

CHANGE part b of step 8 **TO READ:**

b. CHECK – that the 2T pulse ampliude is within ±3.5 mV (0.5%) of the bar amplitude.

Tektronix

MANUAL CHANGE INFORMATION

Date: 7/25/94 **Change Reference:** M81904

Product:	Manual P/N:	Effective S/N:
728M	070–8045–00	B020189
728E	070–7630–02	B020282
ECO 170A	070–6113–00	B021464
SPG 170A	070–5965–00	B022083
SPG 271	070–6814–00	B022464
TPG 625	070–7248–00	B010372
TSG–170A	070–5680–00	B044102
TSG 170D	070–6943–00	B010857
TSG 271	070–6304–00	B033388
TSG 300	070–5722–00	B032112
TSG 370	070–7446–00	N/A
TSG 371	070–7707–00	B011124

Replaceable Electrical Parts Changes

In the 728M and 728E

Change to Read:

A4	671–1836–06	CKT BD ASSY:POWER SUPPLY
A4R510	311–0634–00	RES,VAR,NONWW:TRMR,500 OHM,0.5W CERMET

In the ECO 170A,SPG 170A, SPG 271, TPG 625, TSG 170A, TSG 170D, TSG 271, TSG 300, TSG 370, TSG 371

Change to Read:

A4	671–0572–07	CKT BD ASSY:POWER SUPPLY
A4R510	311–0634–00	RES,VAR,NONWW:TRMR,500 OHM,0.5W CERMET

Tektronix

MANUAL CHANGE INFORMATION

Date: 5/30/95

Change Reference: M82523 Rev 1

Product:	Manual P/N:	Effective S/N:
SPG170A	070–5965–00	B022188
SPG271	070–6814–00	B022574
TSG170A	070–5680–00	B044296
TSG170D	070–6943–00	B010895
TSG271	070–6304–00	B033558
TSG273	070–7956–00	B010301
TSG371	070–7707–00	B011162
TSG422	070–7022–00	B031482
TPG625	070–7248–00	B010378
TSG300	070–5722–00	B032150
TSG300E	070–8374–00	B032150

Replaceable Electrical Parts Changes

Replaceable Electrical Parts

In the TSG170A. TSG170D, and TSG370, **CHANGE TO READ:**

A2–1	670–9111–14	CKT BD ASSY:DIGITAL;WIRED (TSG170A ONLY)
A2–1	670–9111–15	CKT BD ASSY:DIGITAL;WIRED (TSG170A OPT 2J ONLY)
A2–1	670–9111–16	CKT BD ASSY:DIGITAL;WIRED (TSG170A OPT 1V ONLY)
A2–1	670–9111–59	CKT BD ASSY:DIGITAL;WIRED (TSG170D ONLY)
A2–1	670–9111–60	CKT BD ASSY:DIGITAL;WIRED (TSG170D OPT 1J ONLY)
A2–1	670–9111–61	CKT BD ASSY:DIGITAL;WIRED (TSG170D OPT 1V ONLY)
A2–1	670–9111–71	CKT BD ASSY:DIGITAL;WIRED (TSG370 ONLY)
A2–1R258	308–0677–00	RES,FXD,WW:1 OHM,5%,2W AXIAL LEAD

In the TSG300, TSG300E, and TSG370, **CHANGE TO READ:**

A2–1	670–9130–16	CKT BD ASSY:DIGITAL;WIRED (TSG300 OPT 01 ONLY)
A2–1	670–9130–17	CKT BD ASSY:DIGITAL;WIRED (TSG300 ONLY)
A2–1	670–9130–18	CKT BD ASSY:DIGITAL;WIRED (TSG300E ONLY)
A2–1R997	308–0677–00	RES,FXD,WW:1 OHM,5%,2W AXIAL LEAD

In the SPG170A **CHANGE TO READ:**

A2–1	670–9523–08	CKT BD ASSY:DIGITAL;WIRED (SPG170 ONLY)
A2–1	670–9523–09	CKT BD ASSY:DIGITAL;WIRED (SPG170 OPT 2J ONLY)
A2–1R338	308–0677–00	RES,FXD,WW:1 OHM,5%,2W AXIAL LEAD

Date: 5/30/95	Change Reference: M82523 Rev 1

In the SPG271, TSG271, TSG273, and TSG371 **CHANGE TO READ:**

A2–1	670–9905–18	CKT BD ASSY:DIGITAL;WIRED (TSG271 ONLY)
A2–1	670–9905–19	CKT BD ASSY:DIGITAL;WIRED (TSG271 OPT 03 ONLY)
A2–1	670–9905–33	CKT BD ASSY:DIGITAL;WIRED (TSG371 ONLY)
A2–1	670–9905–56	CKT BD ASSY:DIGITAL;WIRED (SPG271 ONLY)
A2–1	670–9905–57	CKT BD ASSY:DIGITAL;WIRED (SPG271 OPT 02 ONLY)
A2–1	670–9905–94	CKT BD ASSY:DIGITAL;WIRED (TSG273 ONLY)
A2–1R446	308–0677–00	RES,FXD,WW:1 OHM,5%,2W AXIAL LEAD

In the TSG422 **CHANGE TO READ:**

A2–1	671–0764–12	CKT BD ASSY:DIGITAL;WIRED (TSG422 ONLY)
A2–1R996	308–0677–00	RES,FXD,WW:1 OHM,5%,2W AXIAL LEAD

In the TPG625 **CHANGE TO READ:**

A2–1	671–0958–01	CKT BD ASSY:DIGITAL;WIRED (TPG625 ONLY)
A2–1R359	308–0677–00	RES,FXD,WW:1 OHM,5%,2W AXIAL LEAD