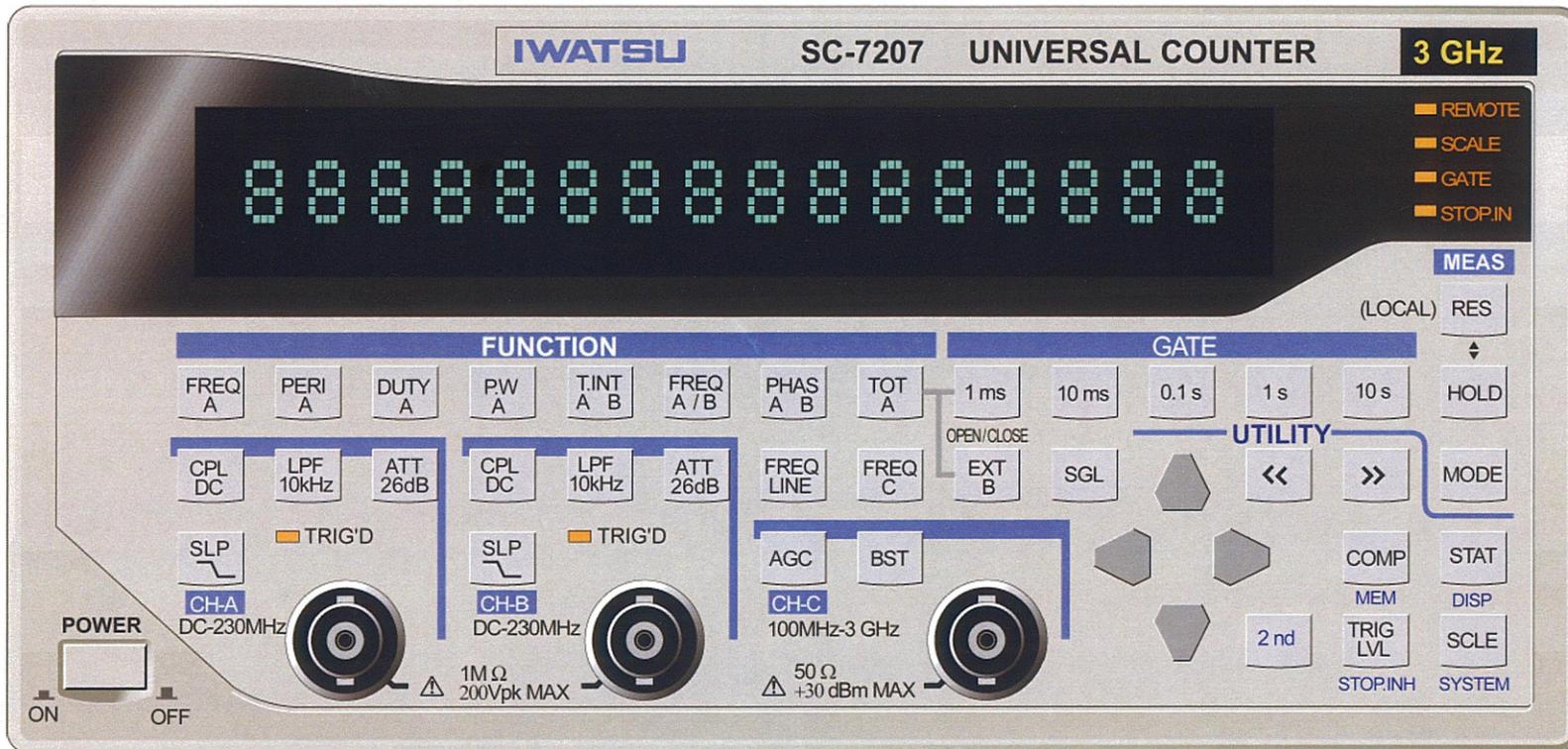

Service Manual

Universal Counter

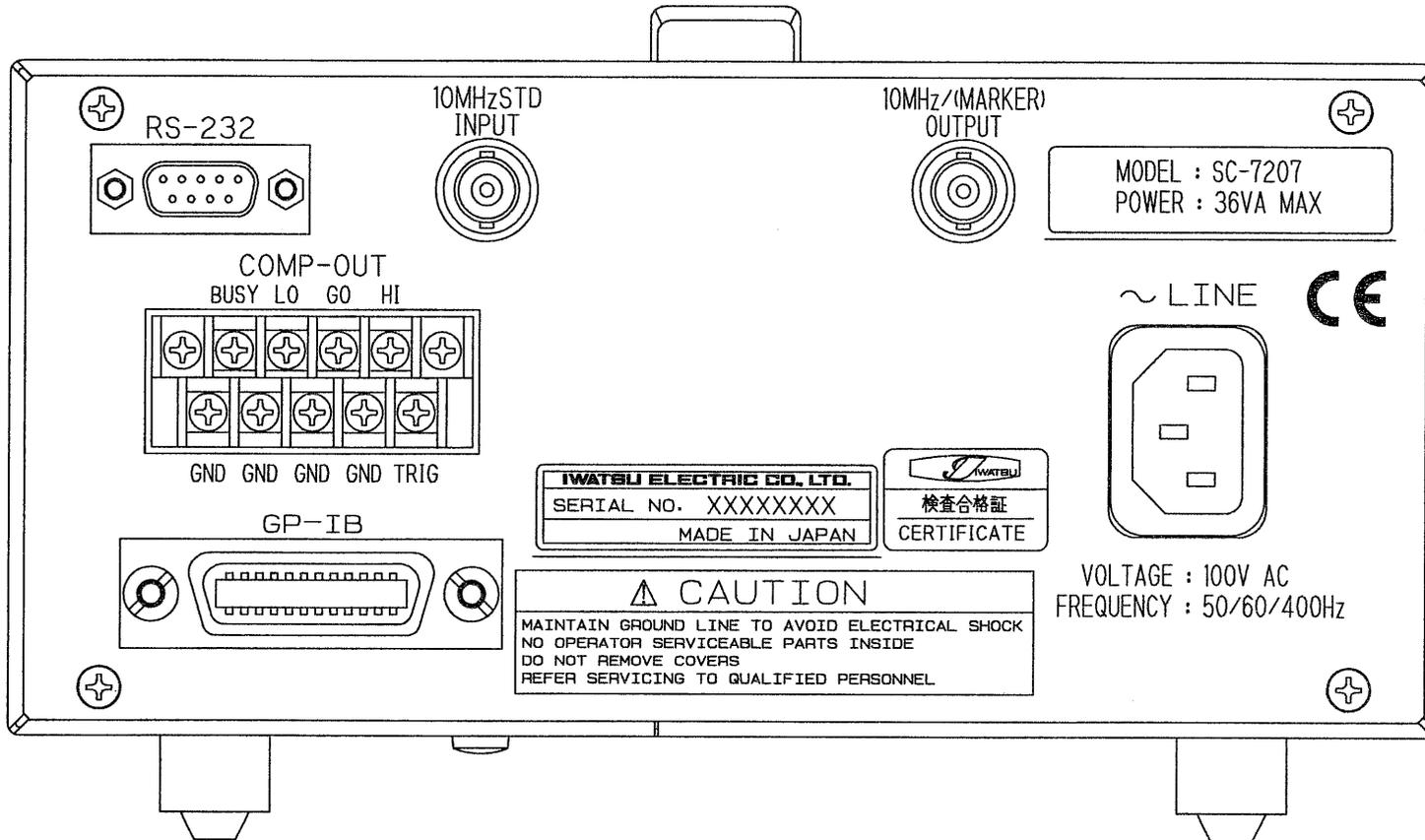
SC-7207/06/05

IWATSU

Front Panel



Rear Panel



Note

- Parts of the contents of this manual may be modified without notice for improvements in performance and functions.
- Reproduction or reprinting of the contents of this manual without prior permission from IWATSU is prohibited.
- For questions about this instrument, contact IWATSU at the address listed at the end of this manual or our sales agent.

Revision history

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1. Read this First

1.1 Repair and Return of Repaired Product

In the event of malfunction, contact our service representative. The product under warranty will be repaired free of charge.

When returning the product to repair, please describe the model name, serial number, details of defect, name of person in charge, department and telephone number, etc.

1.2 Return

In order to avoid accidents during transportation, return the product packed in the original package or equivalent cushioned material. If an appropriate packing box is not available, consult with our service representative.

Note: *Wherever possible, please use the original shipping carton. If a substitute carton is used, it should be rigid and packed so that that the product is surrounded by a minimum of four inches or 10 cm of shock-absorbent material.*

minimum of four inches or 10 cm of shock-absorbent material.

1.3 Storage and Transportation

· Storage

Do not store this instrument in the following places:

- Under direct sunlight
- In dusty environment
- In corrosive gas atmosphere

The conditions for storage of this instrument should be as follows:

Temperature: -20°C to +70°C

Humidity: 80% RH or less (0°C to + 70°C)

· Transportation

When transporting this instrument, use original package or equivalent cushion & packaging.

1.4 Parts

A. Order Information

Replacement parts may be ordered through an IWATSU representative or directly from the factory. For receiving the proper parts, the following information should be included.

- a. Model Number and serial number of the instrument.
- b. Circuit reference number and subassembly name, if applicable, for which the part is intended.
If the part does not have a circuit reference, the description from the parts list should be used.
- c. Iwatsu part number.

For asking the repair, contact the IWATSU agent and inform the followings.

- a. Model number and serial number of the instrument.
- b. Details of the malfunction.

* When you order the parts, please use a copy of the "INQUIRY (for REPAIR PARTS)" from on the following page.

B. How to use this Parts List

The parts list is divided into subsections corresponding to the schematic diagrams. Component locations can be determined from the schematic diagrams, each component is listed only one part in the parts list.

At the beginning of each subsection is listed part number of any complete subassemblies in that category that are available replacement parts. These subassemblies may include individually listed components; care should be taken to pinpoint malfunction to the exact replacement parts actually needed and thus avoid the time and cost involved in "over-repair".

2. Installation for Safe

2.1 Installation for Safe

Safety Symbols

Where the following symbols or indications appear on the instrument's front or rear panels, or elsewhere in this manual, they alert the user to an aspect of safety.

 **CAUTION:** Refer to accompanying documents (for Safety-related information). *See elsewhere in this manual wherever the symbol is present.*

 **CAUTION:** Risk of electric shock

 **On (Supply)**

 **OFF (Supply)**

 **Alternating Current Only**

WARNING Denotes a hazard. If a **WARNING** is indicated on the instrument do not proceed until its conditions are understood and met.



WARNING

Any use of this instrument in a manner not specified by the manufacturer may impair the instrument's safety protection.

The Counter has *not* been designed to make direct measurements on the human body. Users who connect a Iwatsu Counter directly to a person do so at their own risk. Use only indoors.

Power Requirements

The Counter operates at 100V, 110V to 120V, 220V to 240V and AC power source having line frequency ranging from 50Hz to 1400Hz.

Fuses

The power supply of Counter is protected against short-circuit and overload by means of two "T"-rated fuses, located on the AC POWER BOARD.

Disconnect the power cord before inspecting or replacing a fuse. Open the fuse box For continued fire protection at all line voltages, replace only with fuses of the specified type and rating after repairing AC POWER BOARD.

Ground

The Counter has been designed to operate from a single-phase power source, with one of the current-carrying conductors (neutral conductor) at ground (earth) potential. Maintain the ground line to avoid an electric shock.

None of the current-carrying conductors may exceed 250V rms with respect to ground potential. The Counter is provided with a three-wire electrical cord containing a three-terminal polarized plug for mains voltage and safety ground connection. The plug's ground terminal is connected directly to the frame of the unit. For adequate protection against electrical hazard, this plug must be inserted into a mating outlet containing a safety ground contact.

Cleaning

Cleaning should be limited to the exterior of the instrument only, using a damp, soft cloth. Do not use chemicals or abrasive elements. Under no circumstances should moisture be allowed to penetrate the disk drive analyzer. To avoid electric shocks, disconnect the instrument from the power supply before cleaning.

This manual are intended for use by qualified, service trained personnel only.



CAUTION

Risk of electrical shock: No user-serviceable parts inside. Leave repair to qualified personnel.

Power On

Connect the power outlet and switch it on using the power On/Standby button, located near the left-hand corner of the instrument below the screen. After the instrument is switched on.

Battery

Use only the specified battery when replacing the battery.

Failure to replace the battery with the same or equivalent type could result in an explosion.

Dispose of the used batteries according to the manufacturer's instructions.

Be sure to disconnect the instrument from the circuit under test and testing leads before replacing the batteries.

- Make sure the polarities of the new batteries are exactly as shown on the Main Board.
- Be not short-circuited between electrodes of the plus and the minus.

3. Specifications

1. Channel input

1.1 CH-A/CH-B input terminal (CH-B is not available for SC-7206)

Maximum input voltage 200V (DC + AC peak)

Input RC Approximately 1 MΩ// 20pF or less

Input coupling DC and AC

Low-pass filter None, 10kHz

Attenuator None, 26 dB (1/20)

1.1.1 Trigger level

Setting range ATT: OFF -2.50V - +2.50V (Resolution: 10mV)

ATT: ON -50.0V - +50.0V (Resolution: 100mV)

Accuracy (0 - +40°C) ATT: OFF 10% of set value ± 30 mV (±3% in a range of +2 - -2V)

ATT: ON 10% of set value ± 300mV (±3% in a range of +40 - -40V)

1.1.2 Operating input voltage range

ATT off ±2.5V Peak

ATT on ±50V Peak

1.1.3 Trigger sensitivity

Manual ATT: off 30mVrms (DC - 230MHz)

ATT: on 0.6Vrms (DC - 230MHz)

Auto ATT: off 200mVrms (10kHz - 230MHz sine wave)

ATT: on 4Vrms (10kHz - 230MHz sine wave)

1.1.4 Trigger error

Trigger error = $\frac{\sqrt{X^2 + En^2}}{Y[V/s]}$ X = Internal noise (mVrms)

En = Noise within input signal band (mVrms)

Y [V/s] = Input signal slew rate at trigger level

Internal noise = 1mVrms

1.2 CH-C input terminal (Only for SC-7207,7206)

Maximum input voltage	+30dBm (Approximately 7Vrms based on "1 mW/50Ω = 0dBm".)
Input RC	50Ω
Input coupling	AC
VSWR	2.0 or less (SC-7207: 100MHz - 3GHz, SC-7206: 100MHz - 2GHz)

1.2.1 Trigger sensitivity (Sine waveform: Up to 2GHz for SC-7206)

AGC off/on	-20dBm: 100MHz ≤ Input frequency ≤ 300MHz
	-25dBm: 300MHz < Input frequency ≤ 1.5GHz
	-20dBm: 1.5GHz < Input frequency ≤ 3GHz

1.2.2 Burst detection

Caution: AGC must be turned OFF.

Detection frequency range:	SC-7207	100MHz - 3GHz
	SC-7206	100MHz - 2GHz

Detection sensitivity (sine waveform)

AGC off	-20dBm: 100MHz ≤ Input frequency ≤ 1.2GHz
	-10dBm: 1.2GHz < Input frequency ≤ 3GHz

Detection delay time	500μs
-----------------------------	-------

Note) If the equation "Burst period ≥ Set gate + Detection delay time" is satisfied, the burst error occurs. The measured value, which is beyond the guarantee, is shown on the display with the error mark "!" put.

1.2.3 Trigger error

$$\text{Trigger error} = \frac{\sqrt{X^2 + E_n^2}}{Y[\text{V/s}]}$$

X = Internal noise
E_n = Noise within input signal band
Y [V/s] = Input signal slew rate at trigger level
Internal noise = 1mVrms

2. Frequency measurement (FREQ-A)

2.1 Measurement range

Input coupling	SC-7207	SC-7206/7205
DC	10mHz - 230MHz	1mHz - 230MHz
AC	10Hz - 230MHz	

2.2 Resolution

Reference frequency	SC-7207 100MHz (10ns)		SC-7206/7205 10MHz (100ns)	
	Less than 100 MHz Reciprocal calculation	100MHz or more Direct counting	Less than 10 MHz Reciprocal calculation	10MHz or more Direct counting
Counting method				
1ms gate	5 digits	1kHz	4 digits	1kHz
10ms gate	6 digits	100Hz	5 digits	100Hz
0.1s gate	7 digits	10Hz	6 digits	10Hz
1s gate	8 digits	1Hz	7 digits	1Hz
10s gate	9 digits	0.1Hz	8 digits	0.1Hz
EXT-B gate	The reciprocal calculation method is used and the number of display digits depends on the EXT-B gate time.			
SGL gate	The reciprocal calculation method is used and the number of display digits depends on the measured signal.			

- ① If the measured signal exceeds the reference frequency, the direct counting method is used. In this case, the measurement resolution depends on the gate time and the number of display digits depends on the measured signal.
Example) If the signal is 230MHz with the 10 sec. gate used, the number of display digits becomes 10 and "230.000,000,0MHz" is shown.
- ② If the measured signal is less than the reference frequency, the reciprocal calculation is used and the number of display digits depends on the gate time and reference frequency. If the period of the measured signal is longer than the gate time, the number of display digits depends on this period in order to measure at least one period.

2.3 Measurement error

1) Direct counting

$$\left[\text{Accuracy of reference oscillator} + \left[\frac{\pm \sqrt{2} \times \text{trigger error [s]}}{\text{Gate time [s]}} \right] \right] \times \text{measured frequency [Hz]} \pm 1 \text{ [count]}$$

2) Reciprocal calculation

$$\left[\text{Accuracy of reference oscillator} + \left[\frac{\pm \sqrt{2} \times \text{trigger error [s]} \pm 1 \text{ reference time [s]}}{\text{Gate time [s]}} \right] \right] \times \text{Measured frequency [Hz]}$$

When using the SGL gate, the gate time used in the above error calculation equation becomes "1/ measured frequency".

3. AC line Frequency measurement (FREQ-LINE) (only for SC-7207 and SC-7205)

3.1 Measurement range

Model	SC-7207	SC-7205
Reference frequency	100MHz (10ns)	10MHz (100ns)
Measurement range	45Hz - 440Hz	

3.2 Measurement resolution

Gate time	SC-7207	SC-7205
0.1s	7 digits or more	6 digits or more
1s	8 digits or more	7 digits or more
10s	9 digits or more	8 digits or more

3.3 Measurement error

$$\left[\text{Accuracy of reference oscillator} + \left[\frac{\pm\sqrt{2} \times \text{trigger error [s]} \pm 1 \text{ reference time [s]}}{\text{Gate time [s]}} \right] \right] \times \text{Measured frequency [Hz]}$$

4. Frequency measurement (FREQ-C) (only for SC-7207 and SC-7206)

4.1 Measurement range

Reference frequency	SC-7207 100MHz (10ns)	SC-7206 Reference frequency 10MHz (100ns)
AC coupling only	100MHz - 3GHz 1/16 pre-scaler	100MHz - 2GHz 1/16 pre-scaler

4.2 Resolution

Item	SC-7207		SC-7206	
	Less than 1.6GHz	1.6GHz or more	Less than 160MHz	160MHz or more
Frequency of signal to be measured	Less than 1.6GHz	1.6GHz or more	Less than 160MHz	160MHz or more
Measurement method	Reciprocal calculation	Direct counting	Reciprocal calculation	Direct counting
1ms gate	5 digits or more	10kHz	4 digits or more	10kHz
10ms gate	6 digits or more	1kHz	5 digits or more	1kHz
0.1s gate	7 digits or more	100Hz	6 digits or more	100Hz
1s gate	8 digits or more	10Hz	7 digits or more	10Hz
10s gate	9 digits or more	1Hz	8 digits or more	1Hz
EXT-B gate	Reciprocal calculation counting method is used and the number of digits depends on the EXT-B gate time.			

- ① If the frequency of measured signal is “reference frequency × 16” or more, the direct counting method is used. The measurement resolution depends on the gate time and the number of display digits depends on the measured signal.
Example) If the signal is 2GHz with the 10 sec. gate used, the number of display digits becomes 10 and “2.000,000,000GHz” is shown.
- ② If the frequency of measured signal is less than “reference frequency × 16”, the reciprocal calculation counting method is used. The number of display digits depends on the gate time and reference oscillation frequency. If the period of the measured signal is longer than the gate time, the number of display digits depends on this period in order to measure at least one period.

4.3 Measurement error

1) Direct counting

$$\left[\text{Accuracy of reference oscillator} + \left[\frac{\pm\sqrt{2} \times \text{trigger error [s]}}{\text{Gate time [s]}} \right] \right] \times \text{measured frequency [Hz]} \pm 1 \text{ [count]}$$

2) Reciprocal calculation

$$\left[\text{Accuracy of reference oscillator} + \left[\frac{\pm\sqrt{2} \times \text{trigger error [s]} \pm 1 \text{ reference time [s]}}{\text{Gate time [s]}} \right] \right] \times \text{Measured frequency [Hz]}$$

5. Period measurement (PERI-A)

5.1 Measurement range

	SC-7207	SC-7206, 7205
Reference time	10ns	100ns
Input coupling: DC	5ns - 100s	5ns - 1,000s
Input coupling: AC	5ns - 0.1s	

5.2 Resolution SC-7206 is not available EXT-B

Gate time	SC-7207	SC-7206, 7205
1ms	5 digits or more	4 digits or more
10ms	6 digits or more	5 digits or more
0.1s	7 digits or more	6 digits or more
1s	8 digits or more	7 digits or more
10s	9 digits or more	8 digits or more
EXT-B	The number of display digits depends on the EXT-B gate time.	
Single	The number of display digits depends on the measured signal (1ms or more).	

- ① The number of display digits depends on the gate time and reference oscillation frequency.
Example) When SC-7207 is used to measure 200 MHz with 1 sec. gate, the number of display digits becomes 8 and "5.000,000,0ns" is shown.
- ② If the period of the measured signal is longer than the gate time, the number of display digits depends on this period in order to measure at least one period.

CAUTION

- ① If the period of the measured signal exceeds 100s (SC-7207) or 1,000s (SC-7206 or 7205), the measurement resolution becomes "reference time × 10".
- ② If the period of the measured signal exceeds 110s (SC-7207) or 1,100s (SC-7206 or 7205), the message, "!_Over-Flow____", is shown.

5.3 Measurement error

$$\left[\text{Accuracy of reference oscillator} + \left[\frac{\pm\sqrt{2} \times \text{trigger error [s]} \pm 1 \text{ reference time [s]}}{\text{Gate time [s]}} \right] \right] \times \text{Measured period value [S]}$$

When using the SGL gate, the gate time used in the above error calculation equation becomes the measured period.

6. Duty ratio measurement (DUTY-A)

6.1 Input signal frequency range Same as FREQ-A.

Input coupling	SC-7207	SC-7206/7205
DC	10mHz - 230MHz	1mHz - 230MHz
AC	10Hz - 230MHz	

6.2 Measurement range

Gate time	SC-7207	SC-7206, 7205
SGL gate	0.01μ - 99.999,999,99 [%]	
Internal gate	0.2μ - 99.999,999,8 [%]	2μ - 99.999,998 [%]

6.3 Resolution

Measurement mode	SC-7207	SC-7206, 7205
SGL gate	10ns / Input period × 100 [%]	100ns / Input period × 100 [%]
1m - 10s Internal gate		
Number of average cycles		
1 - 24	10ns / Average input period × 100 [%]	100ns / Average input period × 100 [%]
25 - 2,499	1ns / Average input period × 100 [%]	10ns / Average input period × 100 [%]
2,500 - 249,999	100ps / Average input period × 100 [%]	1ns / Average input period × 100 [%]
250,000 - 24,999,999	10ps / Average input period × 100 [%]	100ps / Average input period × 100 [%]
25,000,000 or more	1ps / Average input period × 100 [%]	10ps / Average input period × 100 [%]

6.4 Measurement error

$$\pm \frac{\text{Input pulse width} + |\text{Pulse width measurement error}|}{\text{Input period} - |\text{Period measurement error}|} \times 100 - \text{Measured duty value} [\%]$$

7. Pulse width measurement (P.W-A)

7.1 Minimum pulse width 6ns

7.2 Maximum repetition frequency 80MHz

7.3 Measurement range

Gate time	SC-7207	SC-7206, 7205
Reference time	10ns	100ns
SGL gate	10ns - 100s	100ns - 1,000s
*1) 1ms - 10s gate	10ns - Approximately 1/2 gate time	10ns - Approximately 1/2 gate time

*1) To perform the average measurement, the period of the signal to be measured must be 1/2 or less of 1m - 10s gate.

7.4 Resolution

Item	SC-7207	SC-7206, 7205
SGL gate	10ns - 100ns	100ns - 1ms
1ms - 10s gate Number of average cycles		
1 - 24	10ns	100ns
25 - 2,499	1ns	10ns
2,500 - 249,999	100ps	1ns
250,000 - 24,999,999	10ps	100ps
25,000,000 or more	1ps	10ps

When using the SGL gate, the number of resolution digits may be missing due to limitations on maximum 10 display digits.

7.5 Measurement error

Accuracy of reference oscillator × measured time width value [s]

± Trigger error [s] at start slope ± Trigger error [s] at stop slope

± Trigger level timing error *¹ ± 2 [ns] *² ± 1 reference time [s] *³

*1 Trigger level timing error

$$\left[\frac{20\text{mV}}{\text{Slew rate at start trigger point}} - \frac{20\text{mV}}{\text{Slew rate at stop trigger point}} \right] \pm$$

$$\frac{\text{Trigger level setting accuracy}}{\text{Slew rate at start trigger point}} \pm \frac{\text{Trigger level setting accuracy}}{\text{Slew rate at stop trigger point}}$$

*2 Internal skew

*3 If the relationship between the signal to be measured and reference period is not synchronized, this value is reduced to $\frac{1}{\text{the number of average cycles}}$.

8. Time interval measurement (T.INT A→B)

- 8.1 Minimum time interval** 6ns
- 8.2 Maximum repetition frequency** 80MHz
- 8.3 Input signal frequency range** Both CH-A and CH-B are the same as
FREQ-A.
- 8.4 Measurement range**

Measurement mode	SC-7207	SC-7206, 7205
SGL gate	10ns - 100s	100ns - 1,000s
*1) 1ms - 10s gate	10ns - Approximately 1/2 gate time	10ns - Approximately 1/2 gate time

*1) To perform the average measurement, the period of the signal to be measured must be 1/2 or less of 1m - 10s gate.

8.5 Resolution

Measurement mode	SC-7207	SC-7206, 7205
SGL gate	10ns - 100ns	100ns - 1ms
1ms - 10s gate Number of average cycles		
1 - 24	10ns	100ns
25 - 2,499	1ns	10ns
2,500 - 249,999	100ps	1ns
250,000 - 24,999,999	10ps	100ps
25,000,000 or more	1ps	10ps

When using the SGL gate, the number of resolution digits may be missing due to limitations on maximum 10 display digits.

8.6 Measurement error

Accuracy of reference oscillator × measured time width value [s]

± Trigger error [s] at start slope ± Trigger error [s] at stop slope

± Trigger level timing error *¹ ± 1 [ns] *² ± 1 reference time [s] *³

*1 Trigger level timing error

$$\left[\frac{20\text{mV}}{\text{Slew rate at start trigger point}} - \frac{20\text{mV}}{\text{Slew rate at stop trigger point}} \right] \pm$$
$$\frac{\text{Trigger level setting accuracy}}{\text{Slew rate at start trigger point}} \pm \frac{\text{Trigger level setting accuracy}}{\text{Slew rate at stop trigger point}}$$

*2 Internal skew

*3 If the relationship between the signal to be measured and reference period is not synchronized, this value is reduced to $\frac{1}{\text{the number of average cycles}}$.

9. Frequency ratio measurement (FREQ A/B)

9.1 Input signal frequency range Both CH-A and CH-B are the same as FREQ-A.

Input coupling	SC-7207	SC-7205
DC	10mHz - 230MHz	1mHz - 230MHz
AC	10Hz - 230MHz	

For stable measurement, the period of the signal to be measured must be a gate time of 1ms - 10s or less.

9.2 Measurement range

Internal gate (1ms - 10s) 1E-9 - 1E+9

9.3 Resolution

Internal gate (1ms - 10s) 1 + LOG (CH-A input frequency × gate time) digits

9.4 Measurement error

$$\frac{\sqrt{2} \times \text{CH-B trigger error [s]}}{\text{Number of CH-B measurement periods [unlabeled number]} \times \text{gate time [s]}} \pm 1 \text{ [count]}$$

10. Phase measurement (PHAS A→B)

10.1 Minimum time interval 6ns

10.2 Maximum repetition frequency 80MHz

10.3 Input signal frequency range Both CH-A and CH-B are the same as FREQ-A.

10.4 Measurement range

Measurement mode	SC-7207	SC-7205
*1) SGL gate	0.1μ - 359.999,999,9 [°]	
*2) 1m - 10s gate	1μ - 359.999,999 [°]	10μ - 359.999,99 [°]

*1) Since the SGL gate is used to measure only one period of the signal to be measured, it becomes valid at a slow frequency.

*2) To perform the average measurement, the period of the signal to be measured must be 1/2 or less of 1m - 10s gate

10.5 Resolution

Measurement mode	SC-7207	SC-7205
SGL gate	10ns/Input period × 100 [%]	100ns/Input period × 100 [%]
1m - 10s gate		
Number of average cycles		
1 - 24	10ns/Average input period × 360[°]	100ns/Average input period × 360[°]
25 - 2,499	1ns/Average input period × 360[°]	10ns/Average input period × 360[°]
2,500 - 249,999	100ps/Average input period × 360[°]	1ns/Average input period × 360[°]
250,000 - 24,999,999	10ps/Average input period × 360[°]	100ps/Average input period × 360[°]
25,000,000 or more	1ps/Average input period × 360[°]	10ps/Average input period × 360[°]

*3) The value at the most significant digit of the calculation value is rounded up.

Example: $10\text{ns}/50\text{ms} \times 360 = 0.072 \text{ m } [^\circ] \Rightarrow$ The calculation value is rounded up and the resolution becomes 0.1m [°].

10.6 Measurement error

$$\pm \frac{\text{Input time interval} + |\text{time interval measurement error}|}{\text{Input period} - |\text{Period measurement error}|} \times 360 - \text{Measured phase value } [^\circ]$$

11. Totalize measurement (TOT-A)

11.1 Minimum pulse width 2.5ns

11.2 Input signal frequency range Same as FREQ-A.

Input coupling	SC-7207	SC-7205
DC	10mHz - 230MHz	1mHz - 230MHz
AC	10Hz - 230MHz	

11.3 Measurement range 0 - 4,294,967,295 counts when the scaling calculation is set at "off".

11.4 Measurement error ± 1 count (only when the gate is opened and closed.)

12. 10MHz STD IN

This BNC terminal is for to input more stable reference frequency from an external device.

Input frequency 10MHz \pm 50Hz (± 5 ppm)

Input amplitude 1Vrms - 5Vrms Threshold value = 0V

Input resistance Approximately 6.4 k Ω

Input coupling AC

The external reference frequency is measured whether within the specified range. If the external frequency is beyond the specified range, the error message is displayed for 1 sec. and the reference frequency is forcibly changed to the internal reference frequency.

13. 10MHz STD OUT/(MARKER OUT)

This BNC terminal is for to output the internal reference frequency or marker signal.

Output	CMOS level
Reference frequency output	10MHz, The stability is the same as the internal reference oscillator.
Market output	Band: 5MHz, "L" is output during actual measurement.

The marker signal output is "L" between starting of the CH-A measurement and starting of the CH-B measurement when the function is set at the time interval (T.INT A \rightarrow B) or phase (PHAS A \rightarrow B). This signal is used to modulate the luminance of the oscilloscope (Z-axis). The output is fixed at "H" in other functions. (This function is provided only on SC-7207 and SC-7205. The marker cannot be selected in SC-7206.)

14. RS232C interface

A full-remote function is provided. For details, see the remote function.

Baud rate	300,600,1200,2400, 4800, 9600, 19200, 38400
Data bits	7 bits or 8 bits
Parity	None, Odd, Even
Delimiter	LF or CR/LF

15. GP-IB interface

A full-remote function in conformity with IEEE488-1 is provided. For details, see the remote function.

(This function is optional for SC-7205.)

16. Voltage measurement

Frequency range	150Hz - 50MHz
Response time	2 sec. or less
Measurement voltage range	± 2.50V (ATT off, 10mV resolution)
	±50.0V (ATT on, 100mV resolution)
Measurement error	ATT off: 10% of display value ± 50mV

17. Reference oscillator

This reference oscillator is built into SC-7207, SC-7206, and SC-7205 as a standard accessory.

The signal can be output to the 10MHz OUT BNC terminal on the rear panel of the instrument.

Oscillation frequency	10MHz
Temperature characteristics	±2.5 ppm/0°C - +40°C
Aging rate	±1.0 ppm/year

18. Power supply

Power supply other than 100V is a factory option.

Power voltage Rating: AC100/110 - 120/220 - 240

Power frequency Rating: 50 / 60 / 400 Hz

Power consumption When the power supply is AC 100V and optional units SC-701, 702, 703, or 704 is installed:

Maximum SC-7205 31VA

Maximum SC-7206 33VA

Maximum SC-7207 36VA

19. Mechanical specifications

Dimensions See the separate outside view drawing.

Weight 4.0kg or less (optional units, SC-701, 702, 703 or 704 is installed.)

20. Environmental conditions (indoor use only)

Warm up time 60 min. or longer

Operating temperature and humidity 0°C - +40°C /85%R.H or less
(No condensation is allowed.)

Storage temperature and humidity -20°C - +60°C /90%R.H or less
(No condensation is allowed.)

Operating altitude 2,000m, Air pressure: Approximately 79 kPa

21. Forecast deterioration

Brightness of the display tube will be reduced by half in 30,000 hours.

22. Certification

EC Declaration of Conformity

The Oscilloscope meets requirements of the EMC Directive, 89/336/EEC, 92/31/EEC, 93/68/EEC Low Voltage Directive, 73/23/EEC, 93/68/EEC for Product Safety.

Low Voltage Directive

EN61010-1:93+A2:95, Safety Requirements for electrical equipment for measurement, control and laboratory use.

Do not operate in environments where conductive pollutants may be present. Installation Category CAT II . Local-level mains, appliances, portable equipment.

Pollution Degree 2.

23. Factory options

23.1 GP-IB interface (This function is built-into SC-7207/7206 as a standard accessory.)

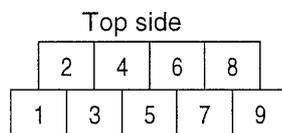
A full-remote function in conformity with IEEE488-1 is provided.

23.2 Comparator output (SC-702 DIO board)

The measurement start timing is controlled and the comparator calculation results are output.

However, both the input and output become invalid in the Vp measurement mode. (The output is a high-impedance.)

Terminal pin assignments (when viewed from the front of the terminal)



Numeric values show the terminal numbers.

Bottom side

Terminal No.	Signal name	Type	Terminal No.	Signal name	Type
1	GND	Power supply ground (To be grounded inside the counter.)	2	/BUSY	Open collector output
3	GND		4	/LO	Open collector output
5	GND		6	/GO	Open collector output
7	GND		8	/HI	Open collector output
9	/TRIG	C-MOS input			

Maximum ratings of output terminal

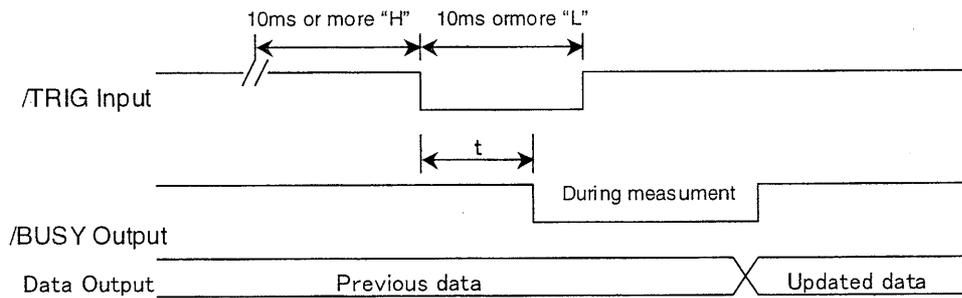
Withstanding voltage	DC 50V
Withstanding current	DC 150mA
Frequency response	DC - 1kHz

Maximum ratings of input terminal

Withstanding voltage	DC 5V
Frequency response	DC - 1kHz

Control signal

/TRIG C-MOS input	The measurement is started by the L-pulse having a period of 10ms or more after /TRIG signal is H remaining a period of 10ms or more in HOLD. Start the re-measurement when the trigger signal which meets the above-mentioned requirement is input.
	/TRIG C-MOS input is invalid in the measurement, remote mode or utility mode.
/BUSY Open collector output	This signal is L (output transistor on) during measurement and Z (output transistor off) in other cases.



$$0\text{ms} < t < 20\text{ms}$$

Data output Open collector output (L: Output transistor on, Z: Output transistor off)

Conditions			Output specifications			
			/HI	/GO	/LO	/BUSY
Calculation = Comparator calculation						
After measurement	Calculation is on and data exists.	HI limit-out	L	Z	Z	Z
	Calculation is on and data exists.	GO	Z	L	Z	Z
	Calculation is on and data exists.	LO limit-out	Z	Z	L	Z
	Vp mode regardless of calculation on/off		Z	Z	Z	Z
	Error occurrence regardless of calculation on/off		Z	Z	Z	Z
	No data regardless of calculation on/off		Z	Z	Z	Z
	Calculation is off and data exists.		Z	Z	Z	Z
Measurement is in progress.			Previous status is retained.			L
Mode is the utility mode.			Z	Z	Z	Z

23.3 Power voltage change

Power voltage Rating: AC110 - 120/220 - 240

Power frequency Rating: 50 / 60 / 400Hz

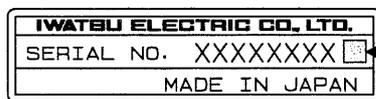
23.4 High stability oscillator

This oscillator can be installed in SC-7207, SC-7206, and SC-7205.

The signal can be output to the 10MHz OUT BNC terminal on the rear panel of the instrument.

	SC-703 with moderate stability	SC-704 with high stability
Oscillation frequency	10MHz	
Temperature characteristics	±0.05 ppm Range of 0 - +40°C based on +25°C	
Signal rise characteristics	±0.05 ppm After 10 min. based on the frequency obtained 1 hr. after the power has been turned ON.	
Aging rate (/Day)	±0.02ppm	±0.002ppm
Aging rate (/Year)	±0.1ppm	±0.05ppm

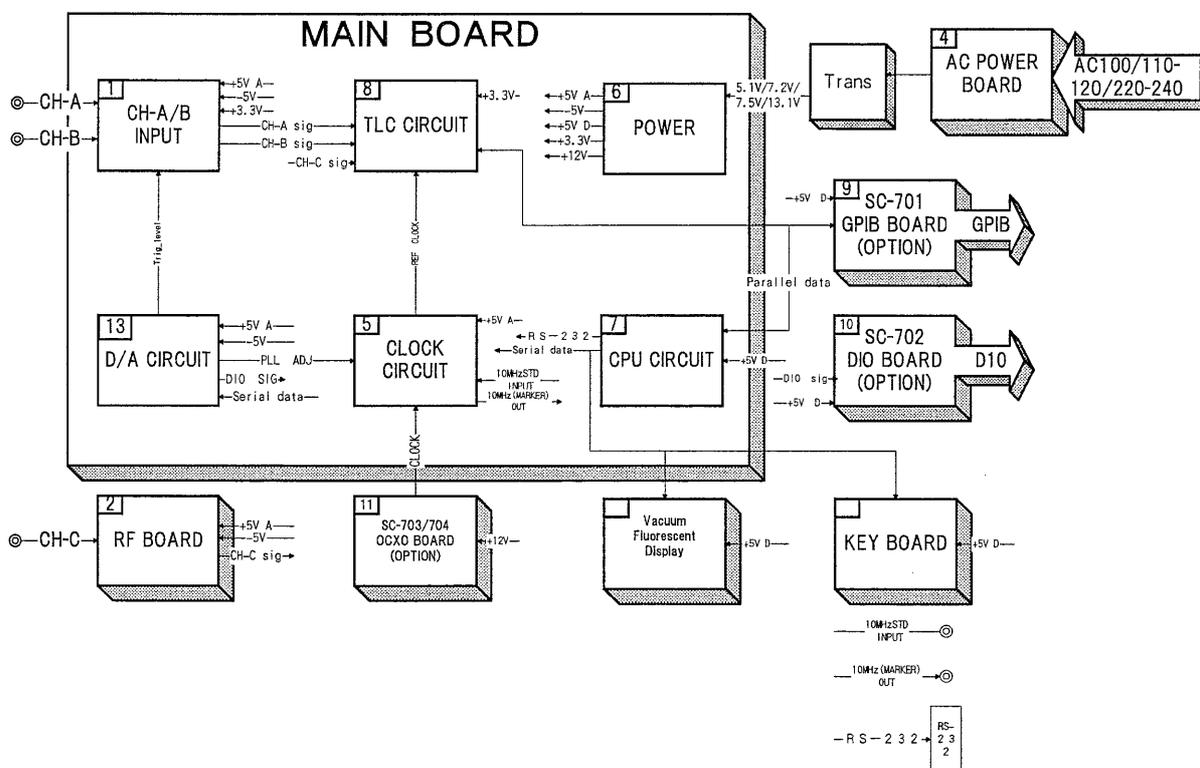
A or C is described at the end of the serial number in the back when SC-703 or SC-704 is installed.



SC-703 : A
 SC-704 : C

4. Circuit Explanation of Universal Counter

SC-7207/06/05 Block Diagram



The above illustration shows the block diagram of the universal counter. In this block diagram, a shaded box shows an individual unit such as the AC Power Board. A plain box shows an individual functional circuit block included in such unit.

[1] CH-A/B INPUT (Since the configuration of CH-A is the completely same as that of CH-B, only CH-A is described in this section.)

This functional circuit block consist of an input/output coupling circuit, a high impedance attenuator, 10kHz low-pass filter, buffer, comparator, level converter, and trigger level switch.

Note that the CH-B INPUT circuit is not mounted on SC-7206.

《Input coupling circuit》

RL1 switches the AC/DC coupling. When the input is AC-coupled, the input signal is input to the high impedance attenuator through 1C5.

《High impedance attenuator》

As the signal route is switched by RL2, the attenuation ratio is set to 1:1 or 20:1.

《10-kHz low-pass filter》

1R13 is used to turn ON or OFF this 10-kHz low-pass filter.

When the 10-kHz low-pass filter is turned ON, the low-pass filter consists of 1R140, 1C8, 1C9, and other parts limits a frequency band of 10kHz.

On the contrary, when the low-pass filter is turned OFF, the frequency band is not limited since 1R140 is bypassed through 1C8 and 1C9.

《Buffer》

This buffer is an impedance conversion circuit with a gain of approximately x1 located between the high impedance attenuator and comparator. In this instrument, the buffer consists of the video amplifier 1C3.

《Comparator》

1C2 compares the output of 1C3 with the trigger level signal (DC) given by the emitter 1Q9 to output the differential digital signal at the ECL level.

《Level converter》

The output level of the comparator (ECL level) is converted by IC1A/B, 1Q1, and 1Q7 into the input level of TLC (8IC1) (PECL level), which is described in a later part.

《Trigger level switch》

Auto trigger or manual trigger is set by 1C5. When the manual trigger is selected, the A_TRGLVL signal given by the D/A CIRCUIT (13) is used as the trigger level signal for IC2. When the auto trigger is selected, the positive and negative (+/-) peaks of the input signal are held by 1D4, 1D5, 1D6, 1D7, 1C26, and 1C33. After that, the center level of the positive and negative (+/-) peaks is taken out by 1R40 and 1R46. The center level signal is added some offset of the A_TRGLVL signal, is used as the trigger level signal for IC2.

【8】 TLC CIRCUIT

The input signal from the CH-A/B/C block and the reference clock from the CLOCK CIRCUIT are input to the TLC (8IC1) in this circuit block. When the measurement function select command, measurement gate select command, and measurement start command are sent from the CPU to this IC, the measurement is then started. After the measurement has been completed, the TLC sends the interrupt signal to the CPU and requests the CPU to read out the count results in the TLC.

【13】 D/A CIRCUIT

Depends on the serial data output from the CPU, 13IC2 generates the trigger level for CH-A/B, and 13IC4 generates the control signal for 100MHz oscillation frequency and the signal for the SC-701 DIO board.

[5] CLOCK CIRCUIT

This circuit block is composed of a 10-MHz clock circuit, 100-MHz oscillating circuit, REF input switch circuit, and marker/10-MHz REF clock output switch circuit.

Note: The circuit block diagram of 100MHz reference clock (SC-7207) is different from 10MHz reference clock (SC-7206/05). (For further information, see the circuit diagram.)

《10MHz clock circuit》

The signal output from the temperature compensated X-tal oscillator (5X1) is amplified by 5Q5 and 5Q6, and then it is output to 5IC3 through 5JP2.

When an optional oven controlled type highly stability X-tal oscillator (OCXO) SC-703/4 is mounted, the OCXO signal is output to 5IC3 by switching 5JP2.

《REF input switch circuit》

5IC3 select either the 10MHz clock output from the 10MHz reference clock circuit described above or input signal from the BNC connector 5J1 on the rear panel as the reference clock for this instrument.

《100MHz oscillator circuit》

This oscillator circuit is a PLL circuit consists of a 100MHz VCO includes around 5Q1, and the PLL (Phase Locked Loop) IC (5IC2).

In this circuit, 5IC2 compares the phase of the 100MHz VCO output with 10MHz reference clock output from 5IC3 described above to construct a loop that compensates the oscillating 100MHz VCO frequency again. As a result, this circuit generates the same accuracy 100MHz reference clock.

SC-7207(100MHz reference clock) uses the 100MHz clock generated by this circuit as its reference clock.

SC-7206/05(10MHz reference clock) is not equipped with this circuit and uses the 10MHz clock selected by 5IC3 as its reference clock.

《Marker/10MHz clock output switch circuit》

5IC3 switches output signal to 5J2 either the marker or 10MHz REF clock.

[7] CPU CIRCUIT

This circuit block controls the entire function of the universal counter.

The CPU 7IC7 controls the serial data to be sent to each circuit, keyboard, RS-232, TLC, GPIB, and VFD. Additionally the CPU receives the count results from TLC and calculates the measurement results corresponding to each function.

The firmware and adjustment data are saved in the flash ROM 7IC5. The panel setting just before the power turned OFF is saved in the RAM area of the CPU. Therefore, after the power is turned OFF, the data is backed up by 7BT1.

[2] RF BOARD

This circuit is a CH-C input amplifier with 100MHz to 3GHz bandwidth. A fixed ratio attenuator, an input limiter, AGC, a 20-dB RF amplifier, and 1/16 frequency divider are located from the input terminal sequentially.

In addition a burst detector circuit and an AGC control circuit are included.

《Fixed attenuator》

This attenuator is a 50Ω and -3dB T type fixed ratio attenuator that consist of 2R18, 2R19, 2R22, 2R23, 2R26, and 2R27.

《Input limiter》

This circuit clamps large input signal by 2D3, 2D4, 2D7 and 2D8 to protect the following amplifier.

《AGC》

This AGC circuit controls the bias currents of the PIN diodes, 2D1, 2D2, 2D5, and 2D6 to vary the attenuation ratio.

《20-dB RF amplifier》

This circuit is 3GHz 10dB/stage amplitude RF amplifier consist of GaAs FET 2B1 and 2B2. The total amplitude is approximately 20dB (2 stages).

《1/16 frequency divider circuit》

Two 1/4 frequency dividers with the differential ECL output (2IC2 and 2IC3) divide 3-GHz input signal into 187.5 MHz to input the TLC.

《Burst detection circuit》

This circuit rectifies and smoothes input signal by 2D10 and 2C20 to obtain the amplitude value of the input signal. The comparator 2IC4 compares this signal with the reference signal made by 2R38 and 2R42 to make the burst detection signal. This burst detection signal is then sent to the TLC and used for burst measurement of CH-C.

《Burst frequency measurement》

As the measuring gate open timing and input burst signal as Fig a is not synchronized in conventional measuring function, the measurement is not performed properly.

Then getting the start edge of burst signal as Fig b, c makes synchronize the gate open timing and the input burst signal timing for measuring the burst frequency.

《AGC (Auto Gain Control) circuit》

The signal rectified and smoothened in the burst detection circuit is amplified by 2IC1A to make the AGC control signal.

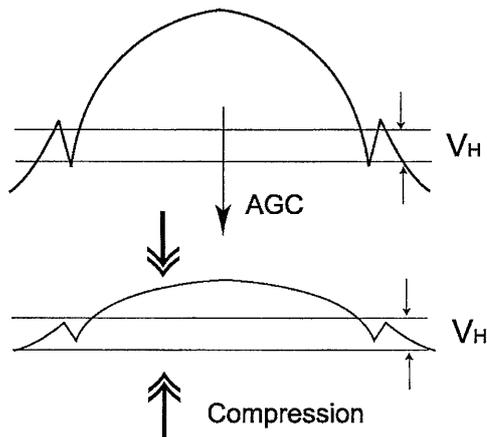
《Purpose AGC》

Automatically controls the amplifiers gain for reducing noise affect when applied large input signal.

Hysteresis voltage (V_H) is no sensitive voltage range for reducing wrong count of noise.

In case of Fig a, the noise is counted. Then AGC control the amplifier gain to reduce amplitude.

Fig b shows the noise is smaller than V_H , and wrong count of noise is eliminated.



[4] AC POWER BOARD

This circuit supplies the line voltage to the power transformer through the inlet, fuse, power switch, and noise filter.

The four tap 4J1 selects the 100V, 110-120V and 220-240V.

4Z1 is a lightning surge protection device. Two fuses are mounted on both of the live and neutral lines. The power switch directly turns ON or OFF the AC power line.

[6] POWER

This circuit regulates the secondary output of the AC power transformer.

The outputs of the transformer are rectified by 6D1-3, and then smoothed by electrolytic capacitors 6C1, 6C5, 6C9, and 6C13 to output the DC voltage through the regulator IC.

KEYBOARD

KEY_S0 to 2 signals from the CPU are decoded by 3IC1 on the keyboard to output the key matrix signals. These signals are input to the key matrix circuit. The CPU reads KEY_R0 to 6 signals which output varies due to key operation, to identifies which key is pressed. A_TRG'D, B_TRG'D, and GATE of LEDs 3D4 to 3D42 are controlled by the TLC. Other LEDs are controlled by converting the serial data from the CPU into the parallel data by the serial-parallel converter ICs (IC2, 3, 4).

- **Optional Circuit Boards**

[SC-701 DIO (Digital Input Output) BOARD]

This board is equipped with an CMOS input terminal (10IC2C) to control the measurement start, and open collector outputs (10Q1, 2, 3, 4) operate after receiving the comparison results of the main unit.

This circuit is supplied +5V voltage from the main unit.

[SC-702 GPIB BOARD]

This board is equipped with a GPIB controller IC (9IC4).

This circuit is supplied +5V voltage from the main unit.

9IC3, 9IC6, and 9IC8 are buffers for the interface, and 9IC1 is a PLD(Programmable Logic Device) to adjust the timing between 9IC4 and CPU of the main unit.

[SC-703/704 OCXO BOARD]

This board is equipped a 10MHz oven controlled high stability X-tal oscillator (11X1). The power for 11X1 is supplied with rectified, smoothened and regulated AC power from POWER (6) by 11D1, 11C1, and 11IC1 on this board

5. Maintenance

Knowledge Required before Beginning Adjustment

This section is used to verify the proper specification and as a preliminary troubleshooting aid.

Check and Adjustment Intervals

To measure signals accurately, it is necessary to periodically check and adjust the measuring instrument.

Recommended check and adjustment intervals for this instrument are approx. 1 year.

Check and Adjustment Items

1. Rating Accuracy for adjustment.
2. Setting Set mode and function of the test equipment and SC-7207/06/05.
3. Connection Connect SC-7207/06/05 and the test equipment like the Figure.
4. Procedures Steps for check and adjustment on SC-7207/06/05.
5. Adjustment Location Refer to section6 for the removal and section7 for the Parts Location.

Assembly Board

Board Number	Description
21610-5128	7207 Main Board
21610-5127	7206 Main Board
21610-5126	7205 Main Board
21610-5131	7207 Key Board
21610-5130	7206 Key Board
21610-5129	7205 Key Board
21610-5132	7207/06 RF Board

Test Equipment Required

When checking or adjusting this instrument, the measuring instruments listed in Table are required.

The performance of the measuring instruments should be equivalent or better than that described below.

The signal input connector for this instrument is a BNC type. When the terminator or signal output terminal used for the measuring instrument is not a BNC type, prepare a proper adaptor.

Equipment/Needed Specification	Purpose	Recommended Model
Oscilloscope Deflection factor: 10mV or more Bandwidth: DC to 200MHz or more	Check and adjust the Power supply & VSWR of CH-C attenuator.	IWATSU SS-7840
Digital multimeter 4 digits or more Accuracy: 0.1%+1dgt	Adjust trigger level	IWATSU VOAC86A
Probe Bandwidth: DC to 6MHz or more Attenuation ratio: 1:1	Adjust the attenuator. Check ripple voltage.	IWATSU SS-0110
Probe II Bandwidth: DC to 200MHz or more Attenuation ratio: 10:1	Adjust the AGC	IWATSU SS-101R
Pulse Generation Output wave: Square Rise time: 0.1us or less Flatness: 1 % or less Amplitude: 1.6Vpp or more	Adjust compensation of the attenuator.	Tektronix: PG506
DC voltage standard Output voltage range: +/- 40V Output voltage accuracy: +/- 0.1% or more	Adjust and check trigger level.	Yokogawa: 9100
Use DC voltage standard through a filter if noise level is not good.		
Signal Generator Frequency accuracy TCXO adjustment: +/- 0.02ppm or more SC-702 adjustment: +/- 0.0005ppm or more SC-703 adjustment: +/- 0.00025ppm or more Note: Use a harmonics signal of which level is -55dBc or less up to 249MHz.	Check minimum trigger sensitivity. Adjust the Reference generator.	Agilent: HP8648C Input REFERENCE FREQUENCY STANDARD
Sweeper Output frequency range: 100MHz to 3GHz or more	Check CH-C VSWR	Agilent: HP83752A.
SWR AUTOTESTER Measurement frequency range: 3GHz or more	Check CH-C VSWR.	Will Tron: 63NF50
50 Ω termination (2 pieces) Impedance: 50Ω Connector: BNC	Signal termination	IWATSU BB-50M1
BNC coaxial cable (4 pieces) Impedance: 50Ω Length: 50cm(1), 1.2m(3)	Signal termination	IWATSU BB-120C
Dividers (2 pieces) Impedance: 50Ω	Frequency Accuracy VSWR	IWATSU B-50D3
Adapter (2 pieces) BNC male-to-N male Impedance: 50Ω	Check CH-C VSWR	
Screw driver (Low capacitance)	Adjust variable resistors, capacitors, TCXO and OCXO.	

CAUTION: Before you begin

Always operate this instrument at the specified power voltage.

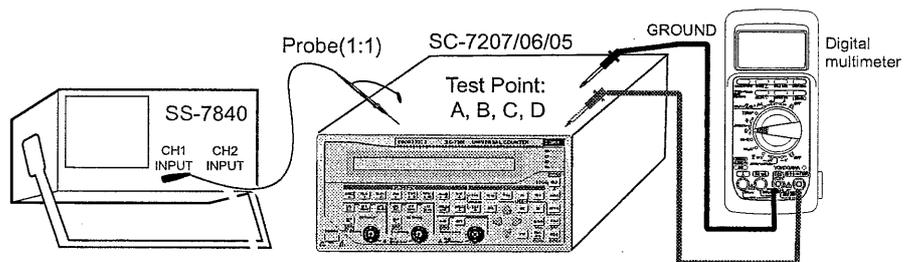
Always use a 3-prong type power cable applicable to the power voltage.

1. Power Supply

Rating and Test point:

DC Voltage	Accuracy	Ripple voltage	Test point
+5VD	+5V \pm 3% (+4.85V to +5.15V)	10mVp-p or less	A
+5V	+5V \pm 3% (+4.85V to +5.15V)	10mVp-p or less	B
-5V	-5V \pm 3% (-4.85V to -5.15V)	10mVp-p or less	C
+3.3V	+3.3V \pm 3% (+3.2V to +3.4V)	10mVp-p or less	D

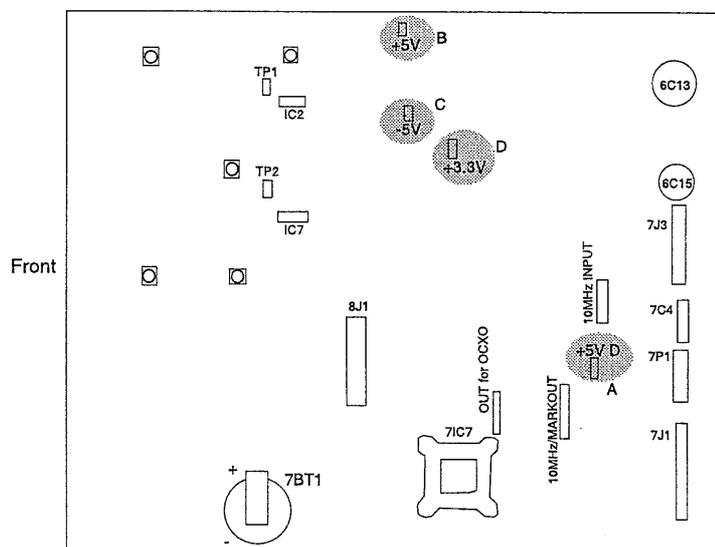
Connection:



Procedures:

1. Check voltage between the test point and ground with a digital multimeter when the AC power voltage is changed \pm 10%.
2. Check ripple between the test point and ground with an oscilloscope when the AC power voltage is changed \pm 10%, use the oscilloscope at 5mV/div with a 1:1 probe.

Location:



2. Adjusting CH-A/B 20:1 Attenuator Compensation (07/06/05)

Rating:

Undershoot: -0%, Overshoot: +5% or less

Setting:

PG-506

Input signal: 10kHz 1.6Vp-p square wave

SC-7207/06/05

ATT

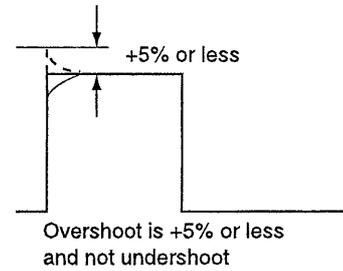
CH-A/B = ON

Coupling

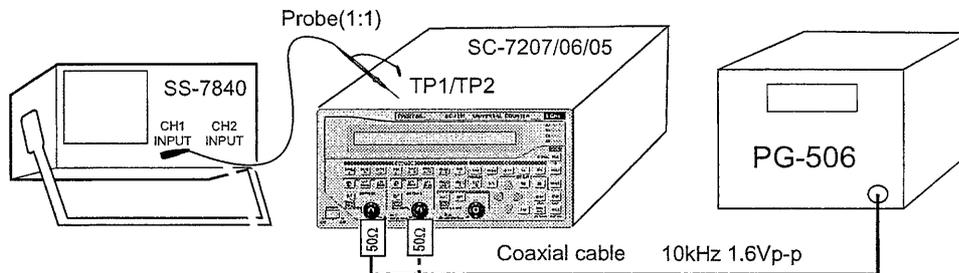
CH-A/B = DC Coupling

FILT

CH-A/B = OFF



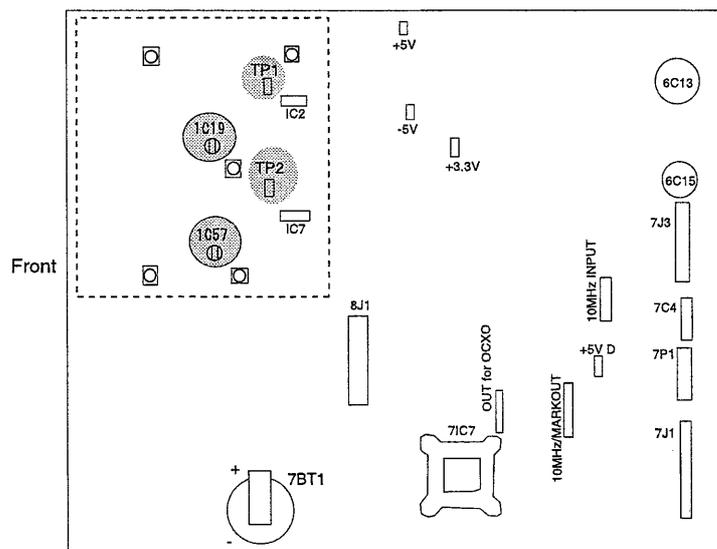
Connection:



Procedures:

1. Set Volts/div of the oscilloscope to 10mV and using the 1:1 probe.
2. Measure a voltage (approx. 40mVp-p) at TP1(CH-A) and TP2(CH-B).
3. Adjust flatness of the waveform with 1C19 at TP1 and 1C57 at TP2.

Adjustment Location:



3. CH-C AGC Adjustment (06/07)

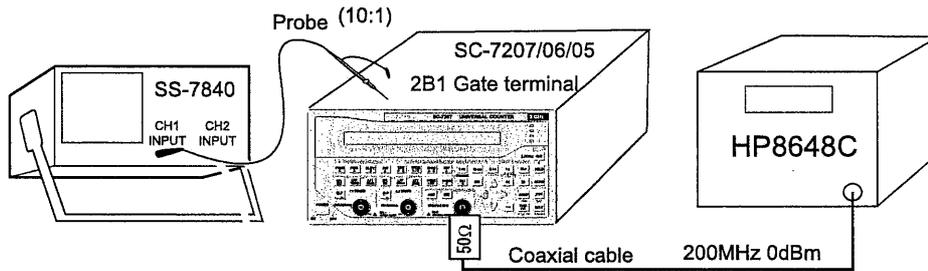
Rating: 50%±10%

Set Up:
HP8648C
Input signal: 200MHz 0dBm(224mVrms)
SC-7207/06
Function FREQ-C

Procedures:

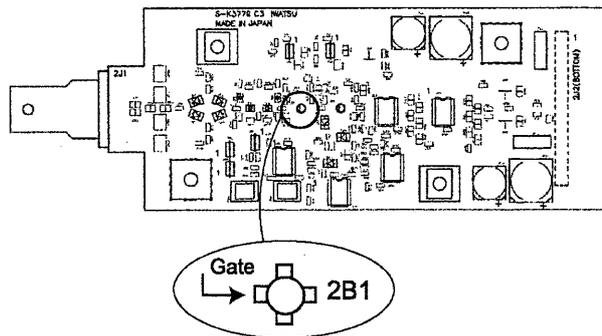
1. Set AGC to OFF and measure a amplitude (approx. 100mVrms(280mVp-p)) using the oscilloscope with 10:1 probe at the gate of the 2B1.
2. Set AGC to ON and measure a amplitude.
3. Adjust a amplitude to become half (approx. 50mVrms(140mVp-p)) at the gate of the 2B1.

Connection:



Adjustment Location:

Refer to section6 for the removal figure.



4. TCXO Adjustment (05/06/07)

Preheat both the counter and signal generator about 60 minutes for worm-up.

Rating: 200MHz \pm 40Hz(0.2ppm)

Set Up:

HP8648C

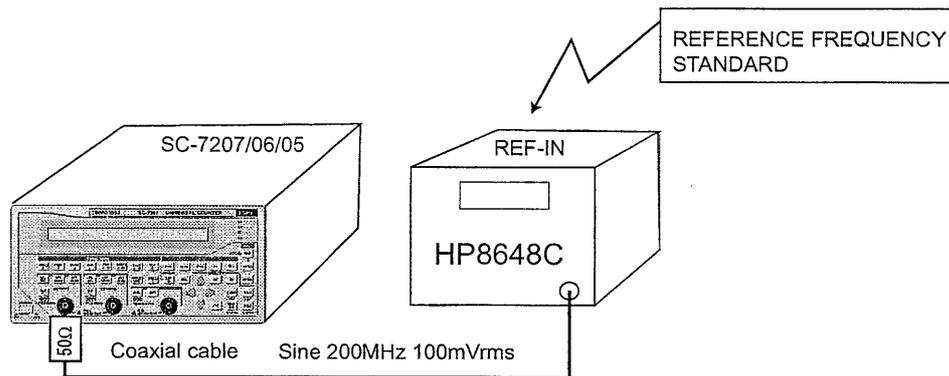
Output signal 200MHz 100mVrms sine wave

REF-IN Input REFERENCE FREQUENCY STANDARD.

SC-7207/06/05

Function	FREQ-A
Gate	1s
FILT	CH-A = OFF
ATT	OFF

Connection:

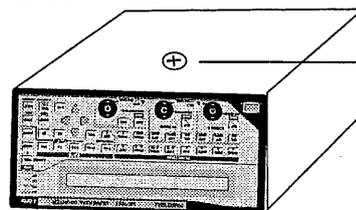


Procedures:

1. Adjust the TCXO(5X1) within the rating range (199.999,960MHz to 200.000,040).

Adjustment Location:

Bottom View



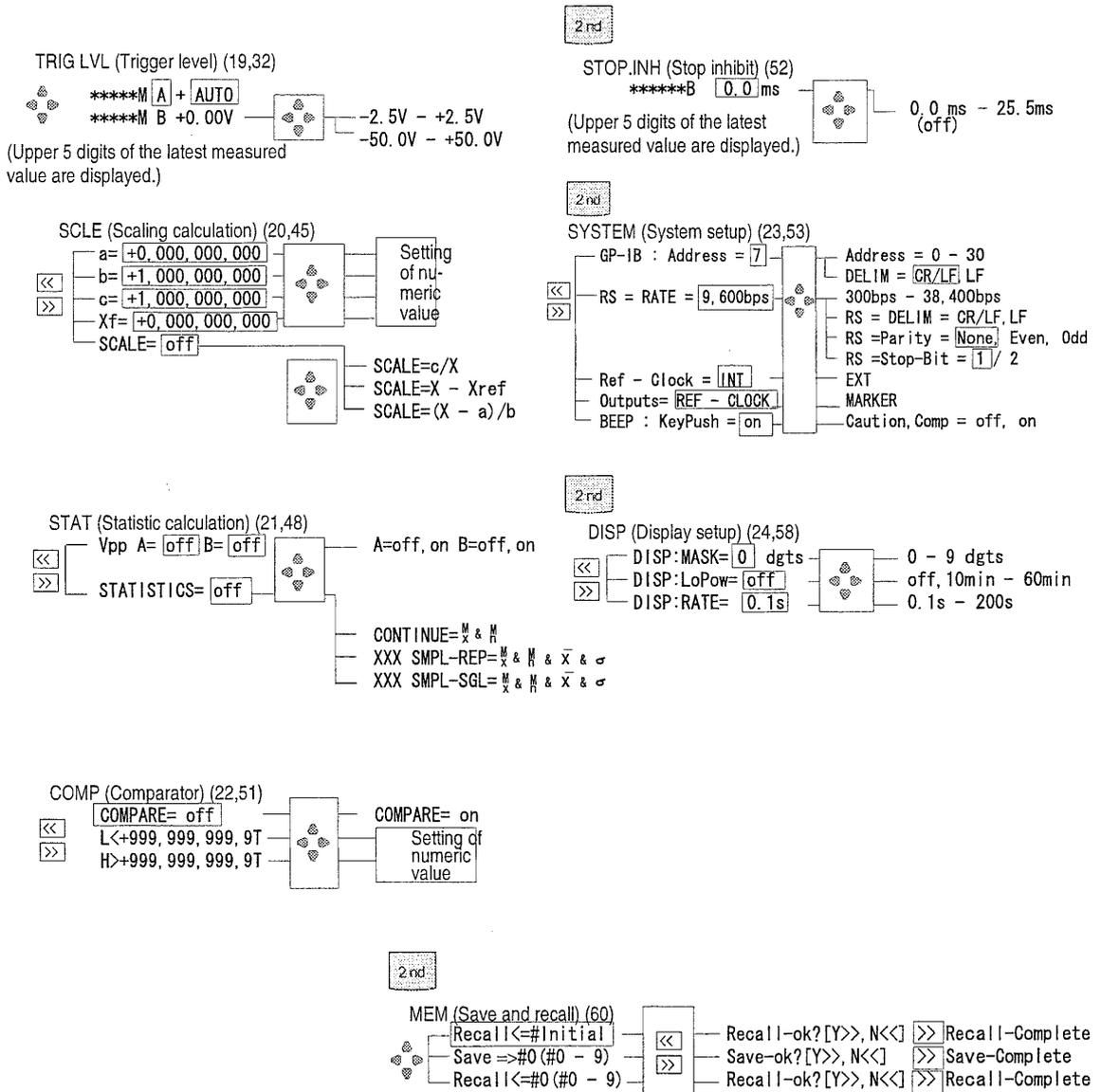
SC-7207/06/05

Adjust 5X1 after removing a screw.
Note: Do not forget attaching the screw after adjustment.

5. Utility Menus and Display Examples

List of menus

Note) A value in () shows a reference page of the Operation Manual and that in shows an initial value.



- These show the keys used for menu operation.
- Flashing menu name shows that the setting is already set.

Trigger menu

TRIG LVL and STOP INH can be set while referring to the measured values.

For details of STOP INH menu, see Chapter 3.

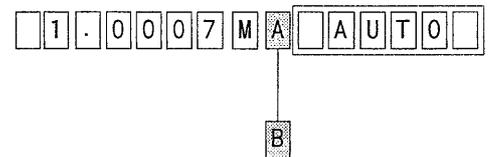
TRIG LVL

The shown display may vary depending on the settings at power OFF.

1. Press . The measured value (example, 1.0007 MHz) and setting menu are displayed. shows the flashing digit.

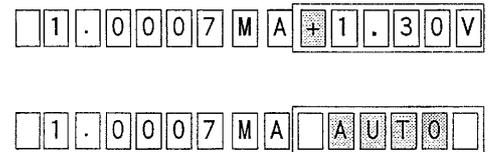
Selection of channel CH-A or CH-B

2. Press or to make **A** or **B** flashing.
3. Press or to select CH-A or CH-B.



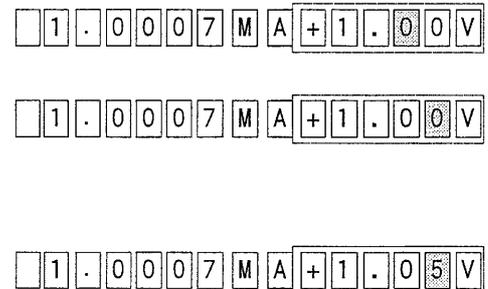
Setting of level to AUTO

4. Press or to move the digit so that “+” or “-” flashes.
5. Press to select AUTO.



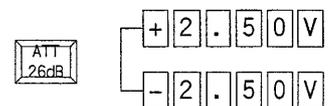
Setting of level to MANUAL

6. When AUTO is flashing, press .
7. Press or to move the digit so that a desired setting digit flashes.
8. Press or to set a trigger level value.

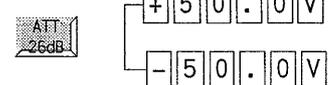


ATT 26 dB (1/20 magnification)

:OFF (Off) setting range



:ON (Lit) setting range



6. System Menu

Entering the adjustment menu

- 1 Turn OFF the power
- 2 Turn ON the power with the "RES" key kept pressed.
- 3 Keep the "RES" key pressed until the display appears.
- 4 Press the "2nd" key to make the key LED lit, and then presses the arrow keys   at the same time.

- 5 The **HOLD** lamp lights.
- 6 Display one menu of the following menu.

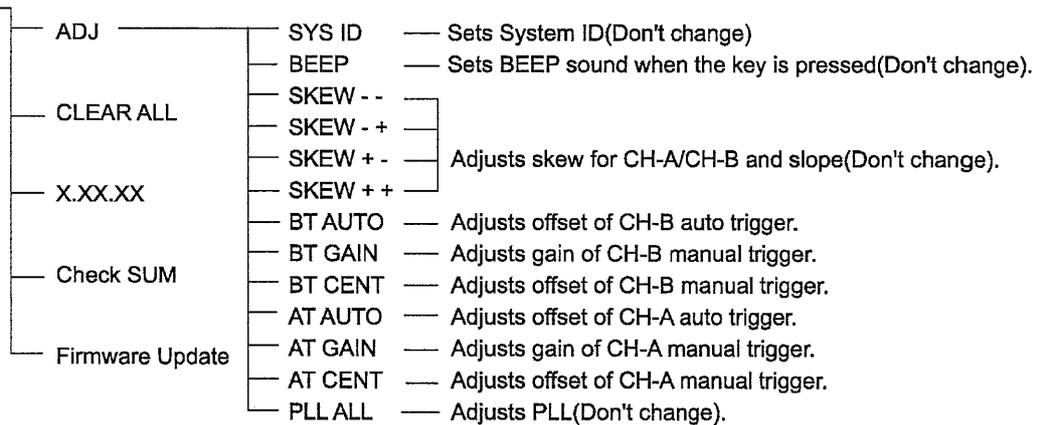
"ADJ":SYS ID:+***	Adjustment menu
"Firmware Update?"	Update the firmware
Check SUM:-**---*	Check SUM of the firmware
X.XX.XX YY/YY/YY	Version information on the firmware
"CLEAR ALL" OK?	Clear memory for the panel setup

Note

When the value of the adjustment menu is changed, it is necessary to push the save  key.

If the power is turned off without push the save  key, the adjusted value returns to former value.

System Menu



7 Adjusting the CH-A/B Manual Trigger Level (05/06/07)

The offset and gain of the manual trigger are adjusted.

Rating:

Within $\pm 2\%$ $\pm 20\text{mV}$ at $\pm 2.0\text{V}$

(At $+2.0\text{V}$ $+1.94\text{V}$ to $+2.06\text{V}$)

(At -2.0V -2.06V to -1.94V)

$\pm 20\text{mV}$ or less at 0V

Set Up:

VOAC86A

DC Voltage

SC-7207/06/05

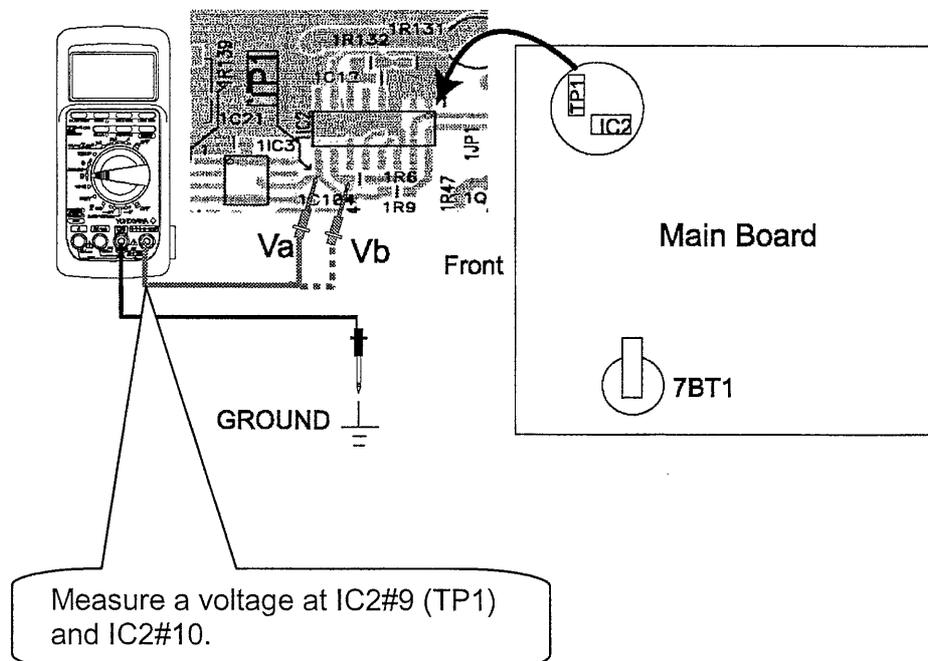
Function Function other than **T.INT A→B** and **PHAS A→B**

Coupling CH-A/B = DC

ATT CH-A/B = OFF

FILT CH-A/B = OFF

Connection:



Procedures:

Adjustment menu: ATCENT ···· Offset adjustment of operational amplifier

- 1 Set TRIG LEVEL to zero value.
“See to the Operation Manual: 3.4.3 Setting of TRIG level”
- 2 Short the CH-A Input connector to GND.
- 3 Measure a voltage between IC2#9 and the ground. (Va)
- 4 Measure a voltage between IC2#10 and the ground. (Vb)
- 5 Adjust the ATCENT value of the adjustment menu so that the Va equal to Vb.
- 6 Press the button. The set value is saved and a confirmation beep sounds.

Adjustment menu: ATGAIN ···· Gain adjustment of operational amplifier

- 1 Set TRIG LEVEL to 2V.
- 2 Input 2V to the CH-A connector.
- 3 Measure a voltage between IC2#9 and the ground. (Va)
- 4 Measure a voltage between IC2#10 and the ground. (Vb)
- 5 Adjust the ATGAIN value of the adjustment menu so that the Va equal to Vb.
- 6 Press the button. The set value is saved and a confirmation beep sounds.
- 7 In the same way as described above, check the gain of the operational amplifier with TRIG LEVEL set at -2V.
- 8 Adjust CH-B in the same way as step1 to 7.

8 Adjusting the CH-A/B Auto Trigger Level (05/06/07)

The offset of the auto trigger are adjusted.

Rating:

±20mV or less at 0V

Set Up:

VOAC86A

DC Voltage

SC-7207/06/05

Function	Function other than <input type="text" value="T.INT A→B"/> and <input type="text" value="PHAS A→B"/>
Coupling	CH-A/B = DC
ATT	CH-A/B = OFF
FILT	CH-A/B = OFF

Connection:

Connection is same as item 7 Adjusting the CH-A/B manual trigger level (05/06/07).

Procedures:

Adjustment menu:

ATAUTO, BTAUTO Offset adjustment of operational amplifier

- 1 Set TRIG LEVEL to zero volute.
"See to the Operation Manual: 3.4.3 Setting of TRIG level"
- 2 Short the CHA Input connector to GND.
- 3 Measure a voltage between IC2#9 and the ground. (Va)
- 4 Measure a voltage between IC2#10 and the ground. (Vb)
- 5 Adjust the ATAUTO value on the adjustment menu so that the Va equal to Vb.
- 6 Press the button. The set value is saved and a confirmation beep sounds.
- 7 Adjust CH-B in the same way as step1 to 6.

9 Check Trigger Level

Rating:

ATT OFF	ATT ON
Within $\pm 2\%$ $\pm 20\text{mV}$ at $\pm 2.0\text{V}$	Within $\pm 2\%$ $\pm 0.4\text{V}$
At $+2.0\text{V}$; $+1.94\text{V}$ to $+2.06\text{V}$ /At -2.0V ; -2.06V to -1.94V	At $+40\text{V}$; $+38.8\text{V}$ to $+41.2\text{V}$ /At -4.0V ; -41.2V to -38.8V
$\pm 20\text{mV}$ or less at 0V	
Within $\pm 10\%$ $\pm 30\text{mV}$ (at $+2.4\text{V}$; $+2.13$ to 2.5V /at	

ATT OFF

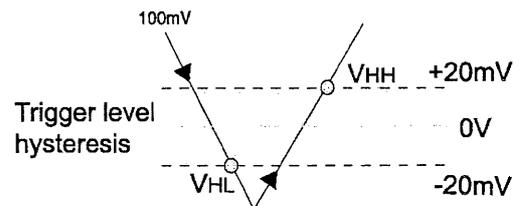
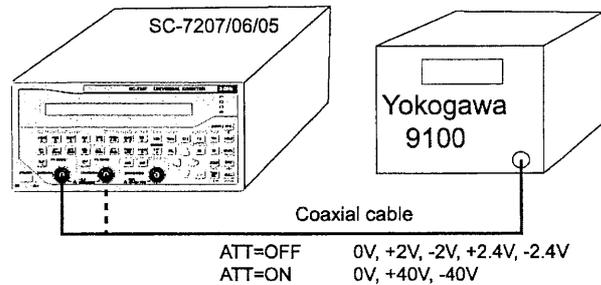
Setting:

Yokogawa 9100 (See Yokogawa operation manual)
Sets 0V , $+2\text{V}$, -2V , $+2.4\text{V}$ and -2.4V with each points.
SC-7207/06/05
Function: FREQ-A
Coupling: CHA/B=DC
Filter: ON

Connection: ATT: CHA/B =OFF

Procedure: e.g. at 0V

- 1 Input 0V to CH-A.
- 2 Set the slope to "+".
- 3 Set the trigger level to 0V .
- 4 Pushing the [\uparrow] key to increase the trigger level up to 100mV (it exceeds the trigger level hysteresis).
- 5 Pushing the [\downarrow] key to decrease the trigger level with 10mV steps, the voltage that the trigger lamp lights is V_{HL} .
- 6 Set the slope to "-".
- 7 Next, Pushing the [\uparrow] key to increase the trigger level with 10mV steps, this voltage that the trigger lamp lights is V_{HH} .
- 8 The trigger level is obtained from the next expression.
Trigger level = $(V_{HH} - V_{HL}) / 2 + V_{HL}$
- 9 Check other each voltage.



ATT ON

Setting:

Yokogawa 9100 (See Yokogawa operation manual)
Sets $+40\text{V}$, -40V with each points.
SC-7207/06/05
Function: FREQ-A
Coupling: CHA/B=DC
Filter: ON

Procedure: ATT: CHA/B =ON

Procedure is the same as the ATT OFF.
However, increase/decrease steps are 100mV .

10. Channel A/B Sensitivity

Reference clock rate error: \bar{x} - Setting Value

\bar{x} is average value of 20 times measurements in [STAT].

Trigger error: MAX – MIN (at each Setting frequency)

MAX and MIN are maximum and minimum values in 20 times measurements in [STAT].

See “Operation Manual 3.5.2 statistic calculation [STAT] setup”.

Rating:

FREQ-A : SC-7207

Setting frequency	Display value measured	Error count	
		Reference clock	Trigger
10.1kHz	10.100,000kHz	±25	±8
101kHz	101.000,00kHz	±25	±1
1.01MHz	1.010,000,0MHz	±25	±1
10.1MHz	10.100,000MHz	±25	±1
101MHz	101.000,00MHz	±252	±1
200MHz	200.000,000MHz	±500	±1
230MHz	230.000,000MHz	±575	±1

FREQ-A : SC-7205/06

Setting frequency	Display value measured	Error count	
		Reference clock	Trigger
10.1kHz	10.100,000kHz	±2	±1
101kHz	101.000,00kHz	±2	±1
1.01MHz	1.010,000,0MHz	±2	±1
10.1MHz	10.100,000MHz	±25	±1
101MHz	101.000,00MHz	±252	±1
200MHz	200.000,000MHz	±500	±1
230MHz	230.000,000MHz	±575	±1

Set Up:

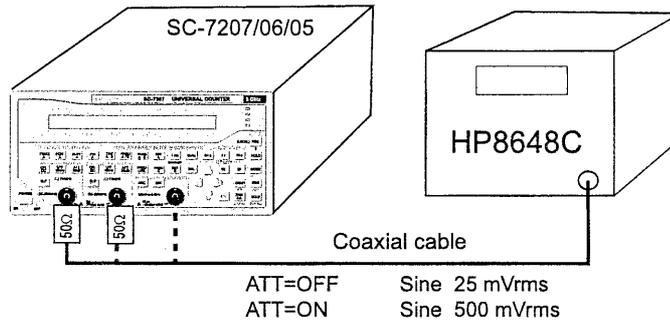
(1) ATT=OFF FREQ-A
HP8648C

Output Frequency	Level
10.1kHz	25 mV rms
101kHz	25 mV rms
1.01MHz	25 mV rms
10.1MHz	25 mV rms
101MHz	25 mV rms
200MHz	25 mV rms
230MHz	25 mV rms

SC-7207/06/05

Item	Condition
Function	FREQ-A or FREQ-A/B
ATT	CH-A/B = OFF
Coupling	CH-A/B = DC
FILT	CH-A/B = OFF
Trigger Level	CH-A/B = 0 V

Connection:



Procedures:

1. Connect an HP8648C output with a 50-ohm termination to the SC-7207/06/05 Channel A Input in FREQ-A.
2. Set the HP8648C at 10.1kHz, 101kHz, 10.1MHz, 101MHz, 200MHz, and the 230MHz of 25mVrms.
3. Check the SC-7207/06/05 displays the correct frequencies.

(2) ATT=ON FREQ-A

HP8648C

Output Frequency	Level
10.1kHz	500 mV rms
101kHz	500 mV rms
1.01MHz	500 mV rms
10.1MHz	500 mV rms
101MHz	500 mV rms
200MHz	500 mV rms
230MHz	500 mV rms

SC-7207/06/05

Item	Condition
Function	FREQ-A and FREQ-A/B
ATT	CH-A/B = ON
Coupling	CH-A/B = DC
FILT	CH-A/B = OFF
Trigger Level	CH-A/B = 0 V

Procedures:

1. Set Attenuator to ON.
2. Check error count with same way in ATT=OFF.

(3) ATT OFF FREQ-A/B

Rating

SC-7205/07(FREQ-A/B)

Setting frequency	Measured value	Error count
10.1kHz	1.000,0	±1
101kHz	1.000,00	±1
1.01MHz	1.000,000	±1
10.1MHz	1.000,000,0	±1
101MHz	1.000,000,00	±1
200MHz	1.000,000,00	±1
230MHz	1.000,000,00	±1

Set Up:

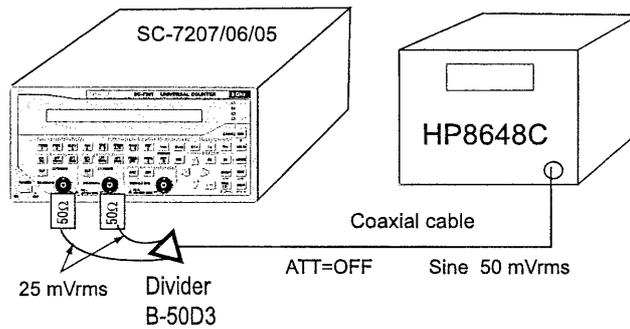
HP8648C

Output Frequency	Level	Set the output amplitude to twice of Level because 6dB divider is inserted to both inputs in FREQ A/B function.
10.1kHz	50 mV rms	
101kHz	50 mV rms	
1.01MHz	50 mV rms	
10.1MHz	50 mV rms	
101MHz	50 mV rms	
200MHz	50 mV rms	
230MHz	50 mV rms	

SC-7207/06/05

Item	Condition
Function	FREQ-A and FREQ-A/B
ATT	CH-A/B = OFF
Coupling	CH-A/B = DC
FILT	CH-A/B = OFF
Trigger Level	CH-A/B = 0 V

Connection:



Procedures:

1. Measure FREQ-A/B and check the display value within the error count.

(4) ATT ON FREQ-A/B

Set Up:

HP8648C

Output Frequency	Level	Set the output amplitude to twice of Level because 6dB divider is inserted to both inputs in FREQ A/B function.
10.1kHz	500 mV rms	
101kHz	500 mV rms	
1.01MHz	500 mV rms	
10.1MHz	500 mV rms	
101MHz	500 mV rms	
200MHz	500 mV rms	
230MHz	500 mV rms	

SC-7207/06/05

Item	Condition
Function	FREQ-A and FREQ-A/B
ATT	CH-A/B = ON
Coupling	CH-A/B = DC
FILT	CH-A/B = OFF
Trigger Level	CH-A/B = 0 V

Procedures:

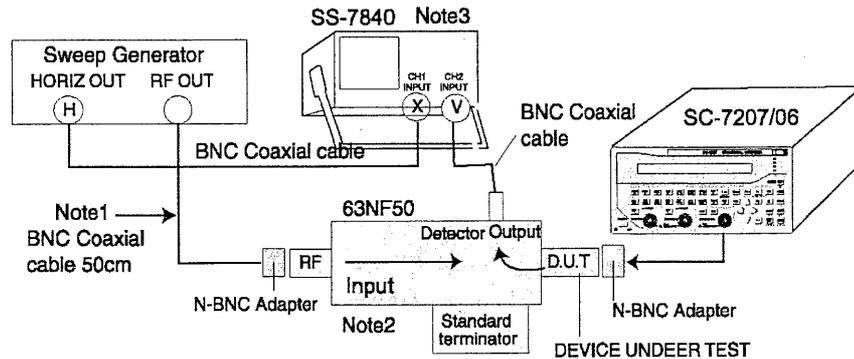
- 1 Measure FREQ-A/B and check the display value within the error count.

11. VSWR Measurement

Rating: 2.0 or less (SC-7207: 100MHz-3GHz, SC-7206: 100MHz-2GHz)

Setting: See Sweep Generator, Oscilloscope and Auto test Operation Manual.

Connection:



Note 1 Use a 50 ohm cable. Make the length of the coaxial cable as short as possible (the maximum length is 1 m and the preferable length is 30 cm).

Note 2 The RF input level of the VSWR bridge is limited if detector is built in the bridge. Usually the maximum input level is +7dB. Exceed input may cause the wave detector diode to break.

Note 3 Set the oscilloscope to the X-Y mode.

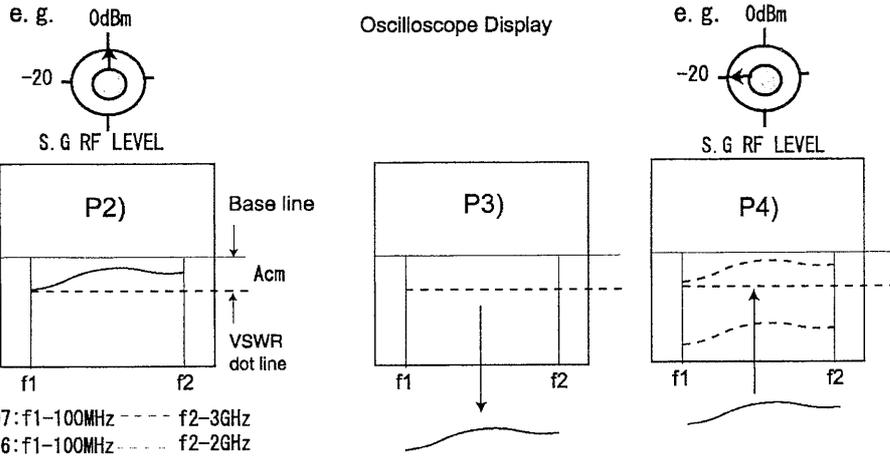
Procedures:

1. Set the output level of the Sweep Generator to 0dB
2. The minimum value of the return loss (Maximum of VSWR) is at the maximum distance from the base line of the oscilloscope as A cm in below figure. Record the A value.
3. With the connections shown in the Figure, If the D.U.T terminal of the VSWR bridge opened, the waveform displayed on the oscilloscope may exceed the display area.
4. Next, turn the RF POWER LEVEL of Sweep Generator in a direction that the attenuation is increased, and then stop turning the attenuator when the distance between the VSWR dot line and base line becomes A cm.

e.g. : VSWR=1.22 from Table 1 Return loss(20.078)

The attenuation of the attenuator obtained at this time is determined to -C dB.

The return loss to be obtained becomes (0-C) dB. To convert the return loss into the VSWR value, use Table 1 or Graph 1.



Graph 1:

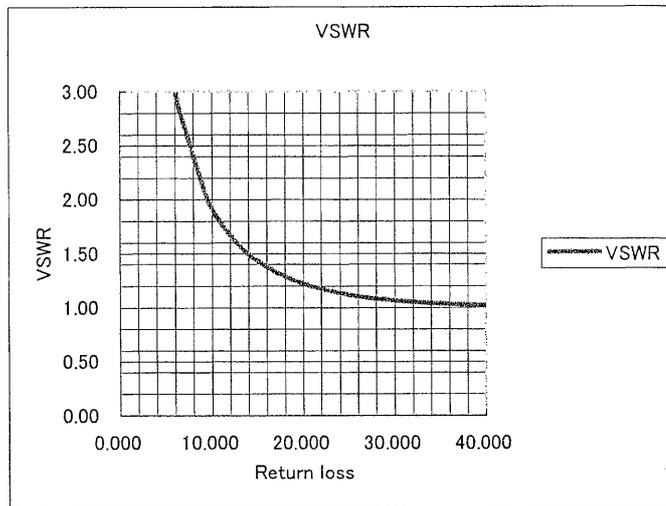


Table 1:

VSWR	Return loss(dB)	VSWR	Return loss(dB)
1.01	46.064	1.30	17.692
1.02	40.088	1.35	16.560
1.03	36.608	1.40	15.563
1.04	34.155	1.45	14.739
1.05	32.256	1.50	13.979
1.06	30.714	1.55	13.324
1.07	29.418	1.60	12.764
1.08	28.300	1.70	11.725
1.09	27.218	1.80	10.881
1.10	26.444	1.90	10.163
1.12	24.943	2.00	9.543
1.14	23.686	3.00	6.021
1.16	22.607	4.00	4.437
1.18	21.664	5.00	3.522
1.20	20.828	6.00	2.923
1.22	20.079	8.00	2.183
1.24	19.401	10.00	1.743
1.26	18.783	20.00	0.869
1.28	18.215	30.00	0.599

Return Loss

This return loss shows how many loss occurs when the incident power is reflected. This concept aims at the measurement of the reflection waveform. If all of incident power are returned, the return loss becomes 0 dB, that is, no loss. If all of incident power are absorbed by the load, the return loss becomes infinite.

Remember the phrase “as the loss becomes larger, the transmission system becomes better”, which has been used at work site from the past.

12. SC-703/704 Optional Unit

Overview

This section shows adjustment and inspection of the high stable quartz oscillator option SC-703/704.

Adjustment rating:

- During adjustment
(Record the adjustment frequency. It is used for the inspection.)

SC-703 200MHz \pm 1Hz or less

SC-704 200MHz \pm 0.5Hz or less

Inspection rating:

(Check under the same environmental temperature as in adjustment.)

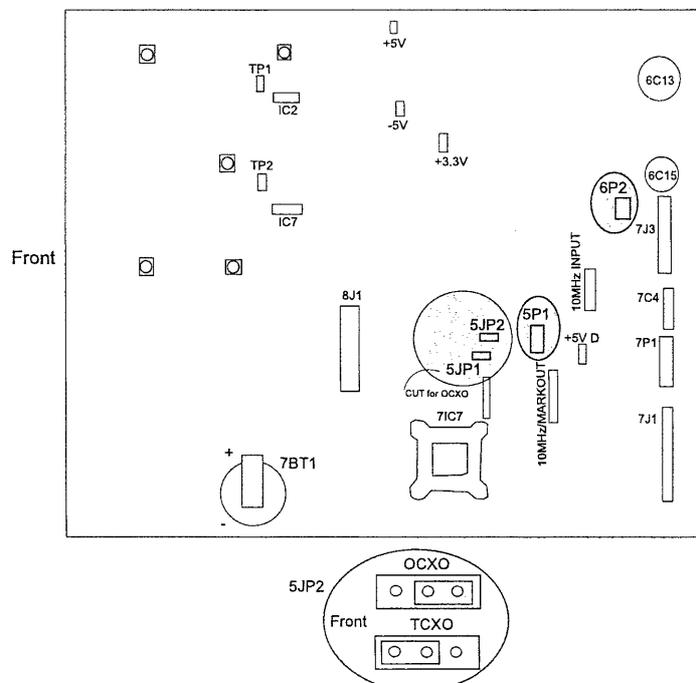
- 30 hrs. after adjustment

SC-703 \pm 5Hz or less from adjusted frequency

SC-704 \pm 0.5Hz or less from adjusted frequency

Attach OCXO board

- P1) Remove the cover.
- P2) 5JP1 on the main board is cut.
- P3) Change the jumper 5JP2 on the main board to the OCXO position.
- P4) Attach 703/704 with four screws on the main frame.



CAUTION

- Use the instrument with the 10-MHz clock of the REFERENCE FREQUENCY STANDARD input to HP8648C.
- The ambient temperature must be $+23^{\circ}\text{C} \pm 5^{\circ}\text{C}$ and the humidity must be 85%RH or less.

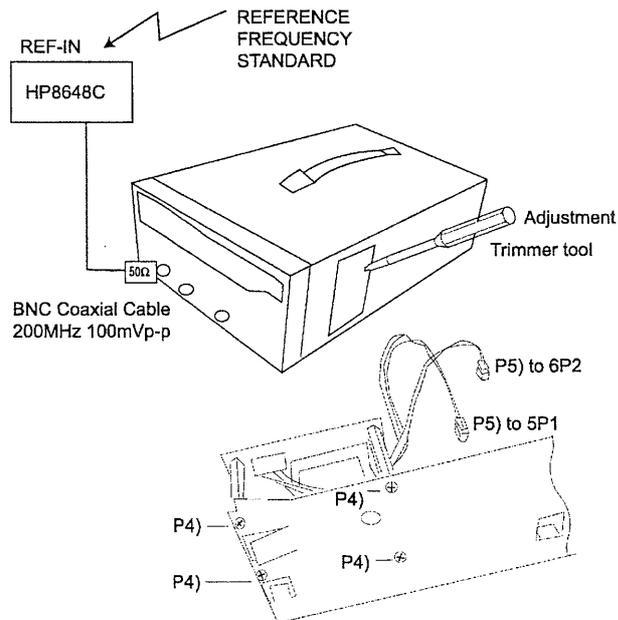
To avoid the effects of the gravity, set the Universal Counter correctly level.

- Function FREQ-A
- Coupling CH-A = DC
- SLP CH-A = Any
- ATT CH-A = OFF
- FILT CH-A = OFF
- Gate SC-703 1s
 SC-704 10s
- SCALE OFF
- STAT OFF
- Input signal CH-A = 200MHz 100mVp-p (HP8648C must be used.)

Adjustment

After 60 min. pre-heat, adjust the oscillation frequency of 11X1 (highly stable quartz oscillator) through ventilation hole as below figure.

Check again the pre-heated oscillation frequency after 30H of the adjustment.



REFERENCE

The frequency accuracy must be maintained as below within one year when the environmental temperature is same as adjusted temperature.

SC-703 200MHz \pm 21Hz or less

SC-704 200MHz \pm 10.5Hz or less

{ If the temperature is different from adjusted temperature, the accuracy is follows. }

SC-703	200MHz \pm 31Hz or less
SC-704	200MHz \pm 21Hz or less

Others

- a) Do not add any vibration or mechanical shock to the unit or reference oscillator after the adjustment.
- b) When mounting the OCXO board, pay special attention so that the grounding part, such as the OCXO case does not short the backup battery on the main board.

6. Mechanical Parts & Removal

(1) Removal of the Cover Assembly

※ Remove the power supply code before attempting disassembly.

Parts

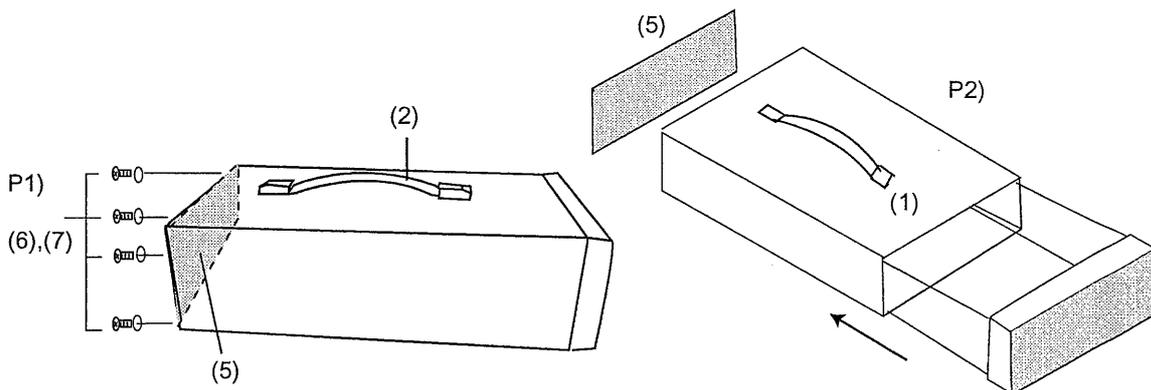
Cover

No. ()	Parts Number	Qty	Description
1	KBA791421	1.0	SC OUTER COVER
2	KAS102511	1.0	Handle THA246NO.2
3	MGA000731	2.0	Stand foot TM-174
4	MGA000741	2.0	Foot TM-175
5	KPA219941	1.0	SC REAR PANEL
6	MKB130082	4.0	Screw KB(+) 3×8 S(NIP)
7	MPW930000	4.0	W-3 Nylon wisher

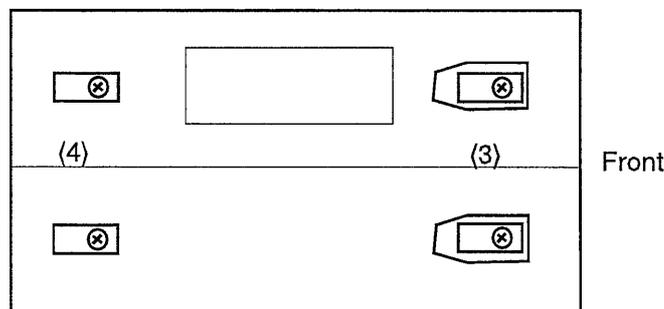
Procedure

P1) Remove the 4 screws KB(+) 3×8 S on the Rear Cover.

P2) Slide the outer cover to the direction of the arrow.



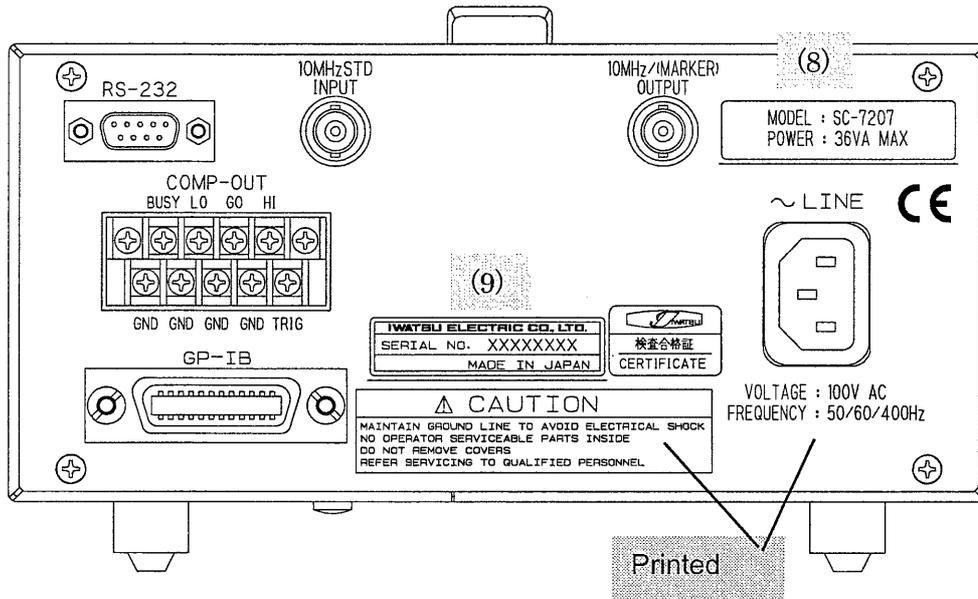
Bottom View



REAR PANEL

No. ()	Parts Number	Qty	Description
5	KPA219941	1.0	SC REAR PANEL
8	KRA236011	1.0	SC-7207 POWER LABEL
9	KRA226811	1.0	Serial label

Figure



(2) Removal of the Main Board

Parts

No. ()	Parts Number	Qty	Description
1	KBA790911	1.0	SC FRONT FRAME
2	KBA791031	1.0	SC MAIN FRAME
3	MKB130082	5.0	Screw KB (+)3X8S
4	MKD130081	2.0	Screw KD (+)3X8S

Assembly Board

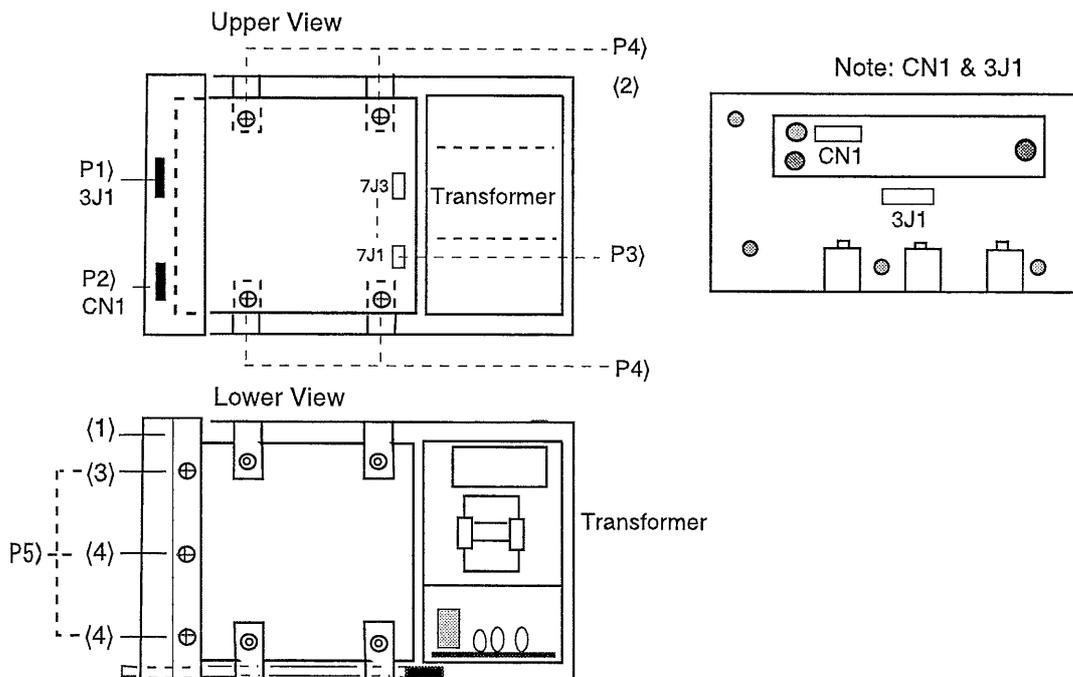
Board Number	Description
21610-5128	7207 Main Board
21610-5127	7206 Main Board
21610-5126	7205 Main Board

Procedure

- P1) Remove the connector 3J1 on the Key Board.
- P2) Remove the connector CN1 on the VFD.
- P3) Remove the connectors 7J1 or 7J3 for a option on the Main Board.
- P4) Remove the 4 screws KB(+)3X8S on the Main Board.
- P5) Remove the 2 screws KD(+)3X8S and a KB(+)3X8S on the SC FRONT FRAME.

Note: After assembling the main board, you must connect the CN1 and 3J1.

Figure



(3) Removal of the RF Board

Parts

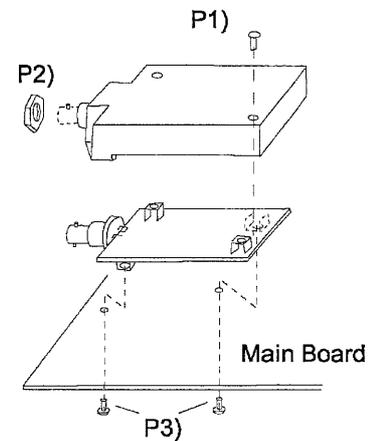
No. ()	Parts Number	Qty	Description
1	DTA020721	2	Screw Terminal NT08
2	DTA021031	2	Screw Terminal NT97
3	KBA791331	1	SC BNC HOLDER B
4	MKB130062	3	Screw KB(+) 3×6 S
5	TPL126011	1	EDGING CE-012-035
6	KBA791211	2	SC BNC HOLDER A

Assembly Board

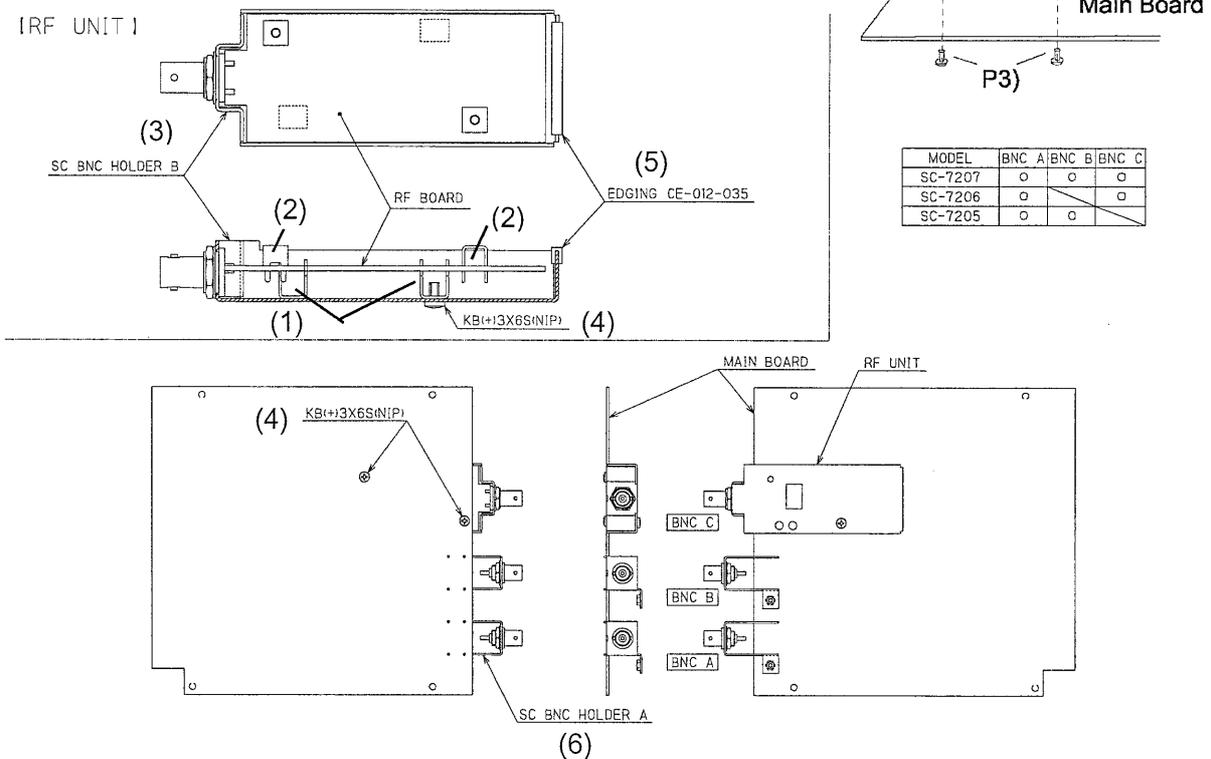
21610-5132	7207/06 RF Board
------------	------------------

Procedure

- P1) Remove the 2 screws (KB3 \times 8S) on the side frame.
- P2) Remove the nut on the side frame.
- P3) Remove the 2 screws on the Main Board.



Figure



(4) Removal of the Power Transformer

Parts

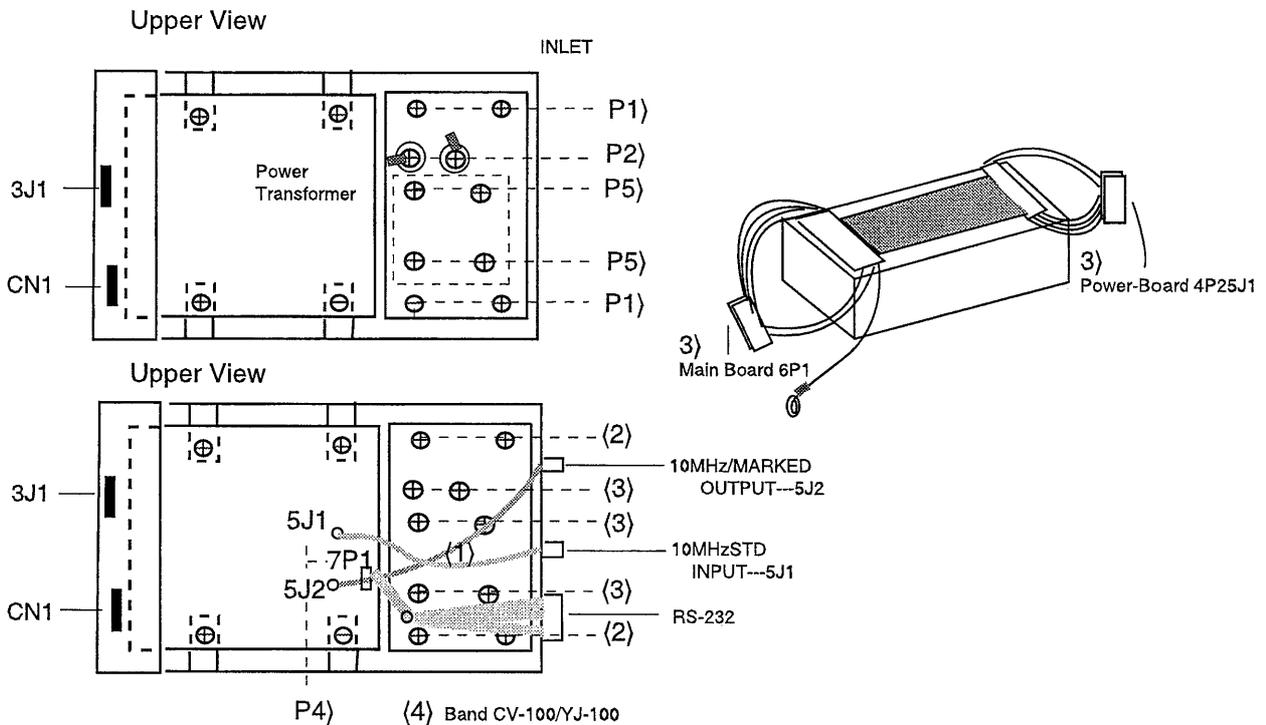
TRANSFORMER

No. ()	Parts Number	Qty	Description
1	KBA791111	1.0	SC TRANS FRAME
2	MKB130082	4.0	Screw KB(+) 3×8 S
3	MSM440081	6.0	Screw SM4-4X8
4	MHK000461	1.0	Band CV-100/YJ-100

Procedure

- P1) Remove the 4 screws KB(+) 3×8 S on the TRANS FRAME.
- P2) Remove the 2 screws SM4-4x8 on the TRANS FRAME.
- P3) Remove the connectors 4P2 on the Power Board and 6P1 on the Main Board.
- P4) Remove the Band CV-100 and the connectors 5J1, 5J2 and 7P1 on the Main Board.
- P5) Remove the 4 screws SM4-4x8 on the TRANS FRAME.

Figure



(5) Removal of the PANEL and KEY Board

Over All

FRONT

No. ()	Parts Number	Qty	Description
1	KCM144311	1.0	SC FRONT PANEL
2	KCM144621	1.0	FILTER SC-HL
3	KPA220221	1.0	PANEL SHEET SC-H
4	KGM028511	1.0	KEY RUBBER SC-H
5	KBA790911	1.0	SC FRONT FRAME
6	MZT903621	4.0	BOARD SPACER RSPS-5LU
7	MKB130082	2.0	Screw KB(+)3X8S
8	MSQ901661	3.0	Screw TT2(+)3X8S
9	MSQ901781	4.0	Screw TAP tight bind 2X6S(P)

Assembly Board

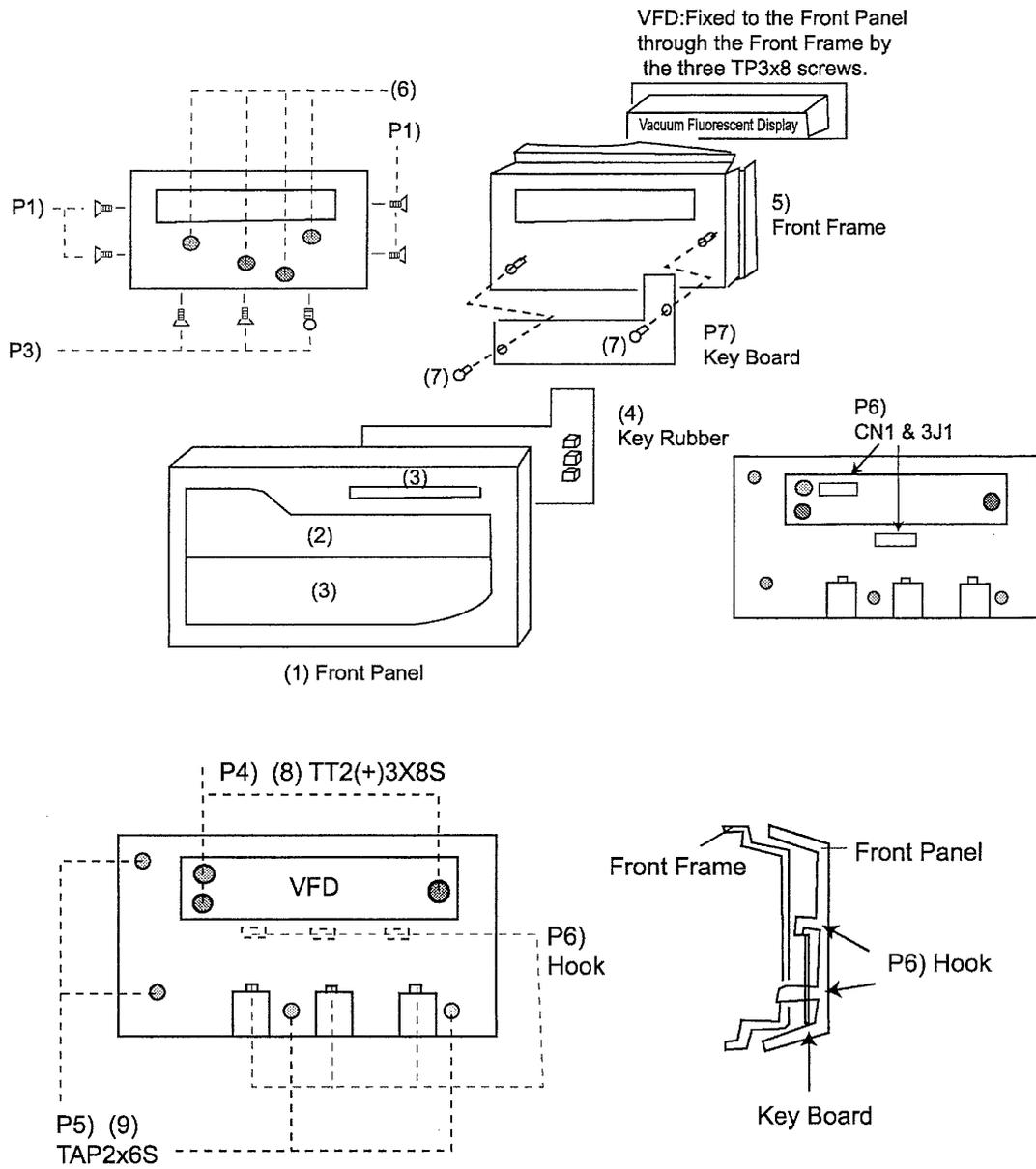
Board Number	Description
21610-5131	7207 Key Board
21610-5130	7206 Key Board
21610-5129	7205 Key Board

Procedure

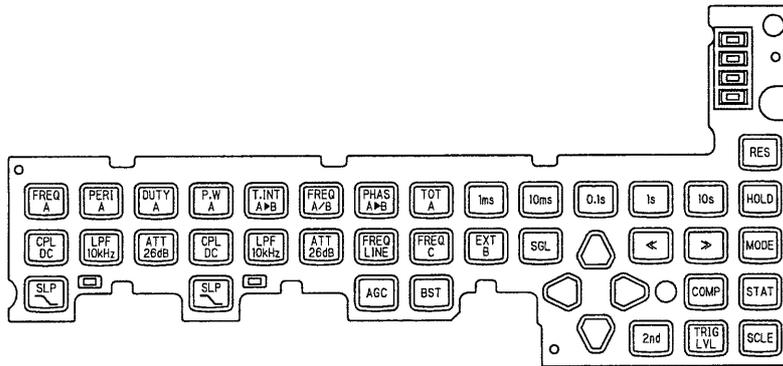
- P1) Remove the 4 screws KD(+)3X8S on the Front Frame.
- P2) Remove the 3 screws KD(+)3X8S and KB(+)3X8S on the Front Frame.
- P3) Remove the connector CN1 on the VFD and the fat cable on the Key Board.
- P4) Remove the 3 screws TT(+)3X8S on the VFD.
- P5) Remove the 4 screws TAP2X6S on the Front Frame.
- P6) While separating the Front Frame from the Front Panel, unhook the 6 Hooks as shown below figure.
- P7) Remove the 2 screws KB(+)3X8S on the Key Board.

Note: After assembling the PANEL ASSY, you must connect the CN1 and 3J1.

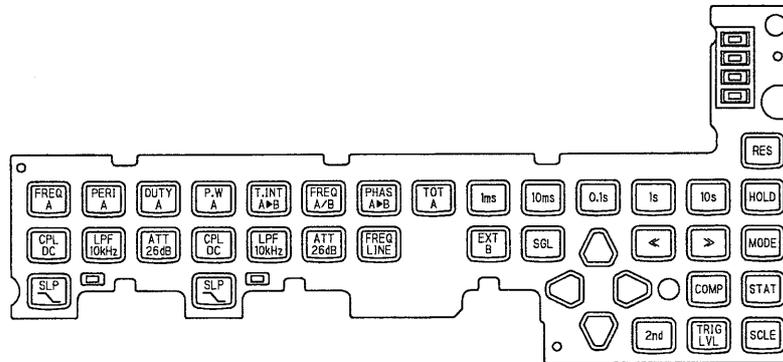
Figure



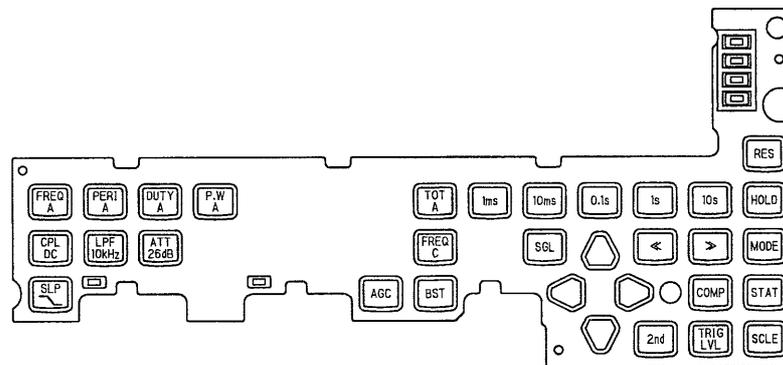
KEY RUBBER
SC-7207



SC-7206



SC-7205



(6) Removal of the POWER Board

Parts

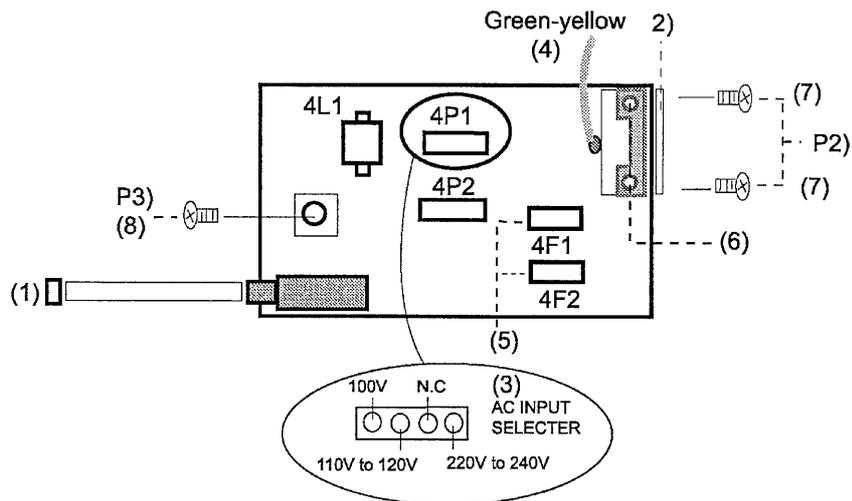
POWER BOARD

No.()	Parts Number	Qty	Description
1	KCM145621	1.0	POW SW Extended Knob
2	KBA774411	1.0	Inlet plate
3	KHB181821	1.0	AC INPUT SELECTER-FS44298-21 UL-I
4	KHB185411	1.0	Protection earth line L95 UL-I
5	DFU025911	2.0	Fuse 218.630 UL-L Note: 100V to 120V T0.6A/250V 220 to 240V T0.3A/250V
6	MSM430101	2.0	Screw SM4-3X10
7	MKD130081	2.0	Screw KD(+)3X8S
8	MKB130082	1.0	Screw KB(+)3X8S

Procedure

- P1) Remove the Main Board.
- P2) Remove the 2 screws on the SC MAIN FRAME.
- P3) Remove the screw on the Power Board.

Figure



7. Schematics, Layouts, Parts List

This chapter contains the schematics, layouts and parts list.

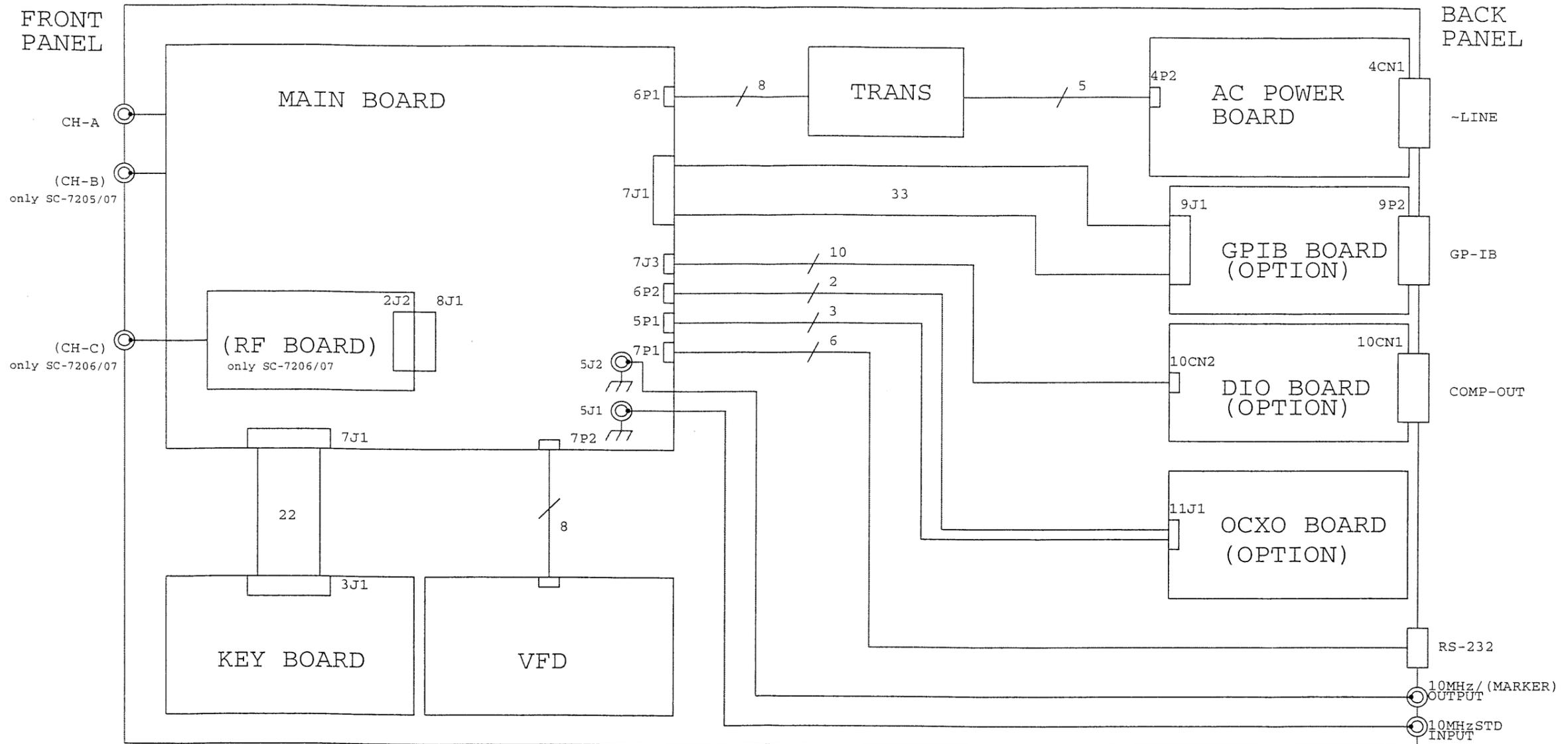
7.1 Schematics, Layouts

BOARD/LAYOUTS	(No)	Description	Page
OVER ALL			7-3
MAIN BOARD			
MAIN BOARD	1	CH-A, CH-B INPUT	7-5
	5	CLOCK CIR	7-7
	6	POWER	7-9
	7	CPU CIR	7-11
	8	TLC CIR	7-13
	13	D/A CIRCUIT	7-15
LAYOUTS		MAIN BOARD	7-17
RF BOARD	2		7-19
LAYOUTS			7-21
KEY BOARD	3		7-23
LAYOUTS			7-25
AC POWER BOARD			
	4	POWER	7-27
LAYOUTS		POWER BOARD	7-29
VFD		Vacuum Fluorescent display	
GPIB BOARD	9	SC-701 OPTION	7-31
LAYOUTS			7-33
DIO BOARD	10	SC-702 OPTION	7-35
LAYOUTS			7-37
OCXO BOARD		SC-703, SC704 OPTION	7-39
LAYOUTS			7-41

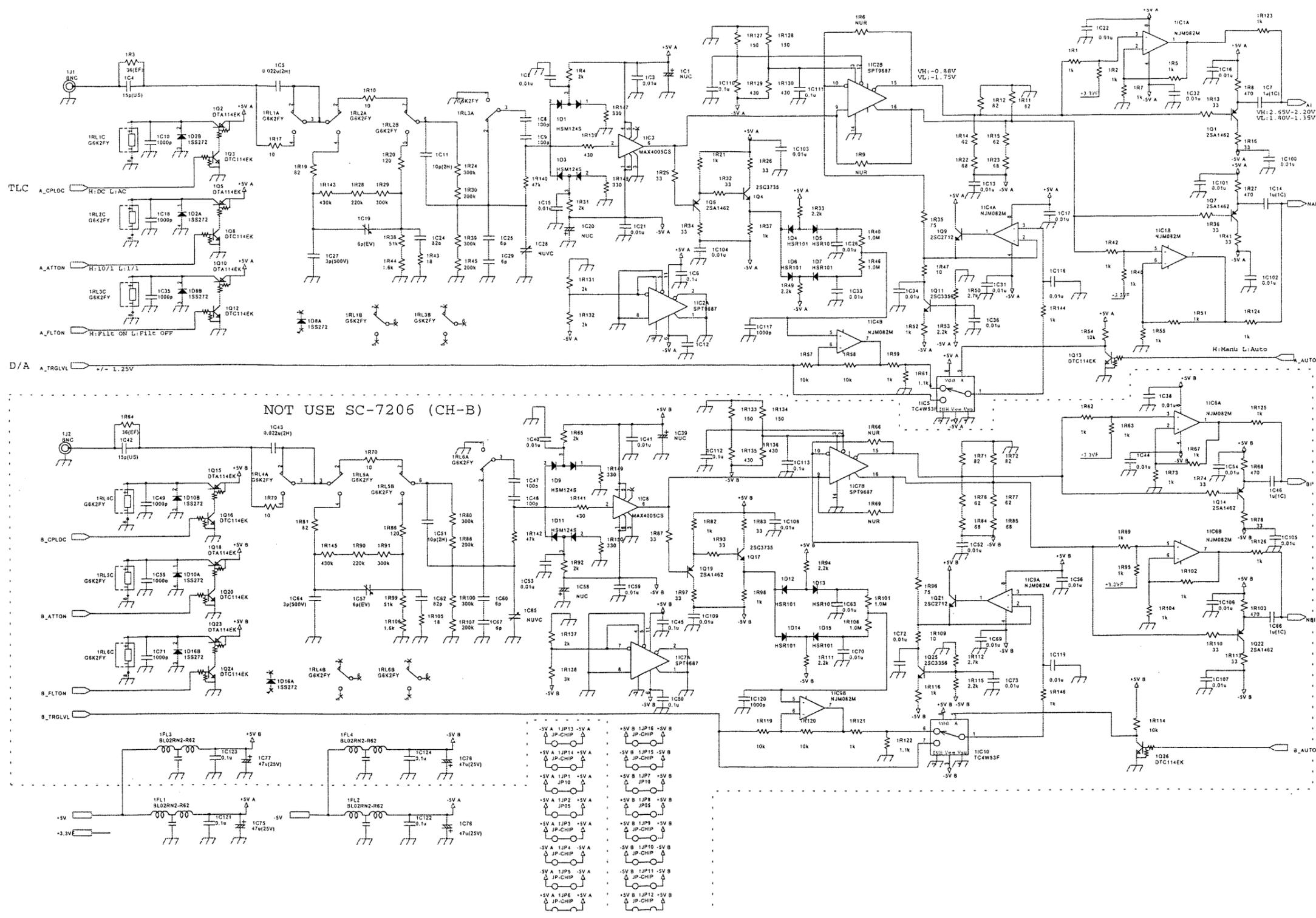
Assembly Board

Board Number	Description
21610-5128	7207 Main Board
21610-5127	7206 Main Board
21610-5126	7205 Main Board
21610-5131	7207 Key Board
21610-5130	7206 Key Board
21610-5129	7205 Key Board
21610-5132	7207/06 RF Board

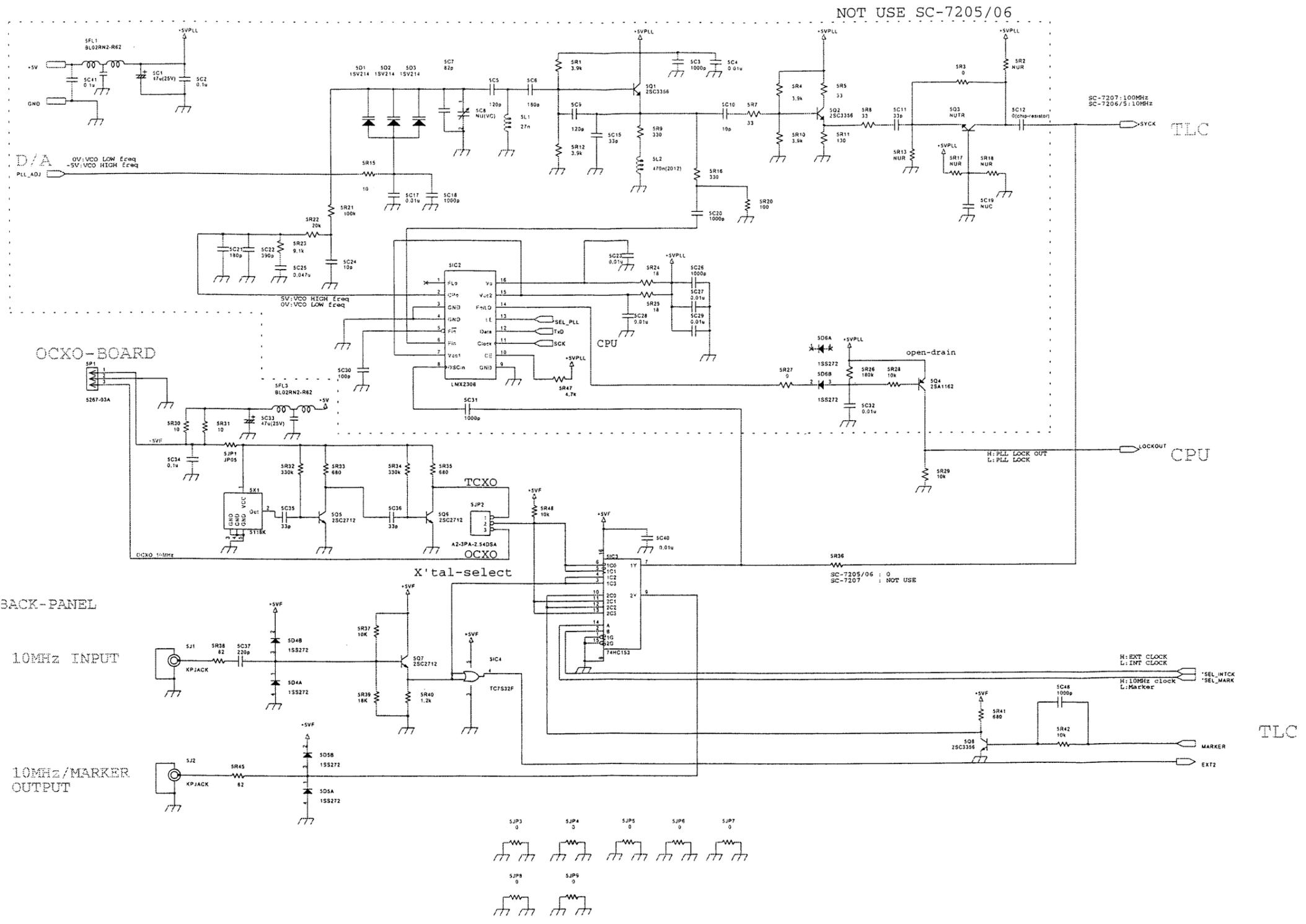
SC-7205/06/07



OVER ALL



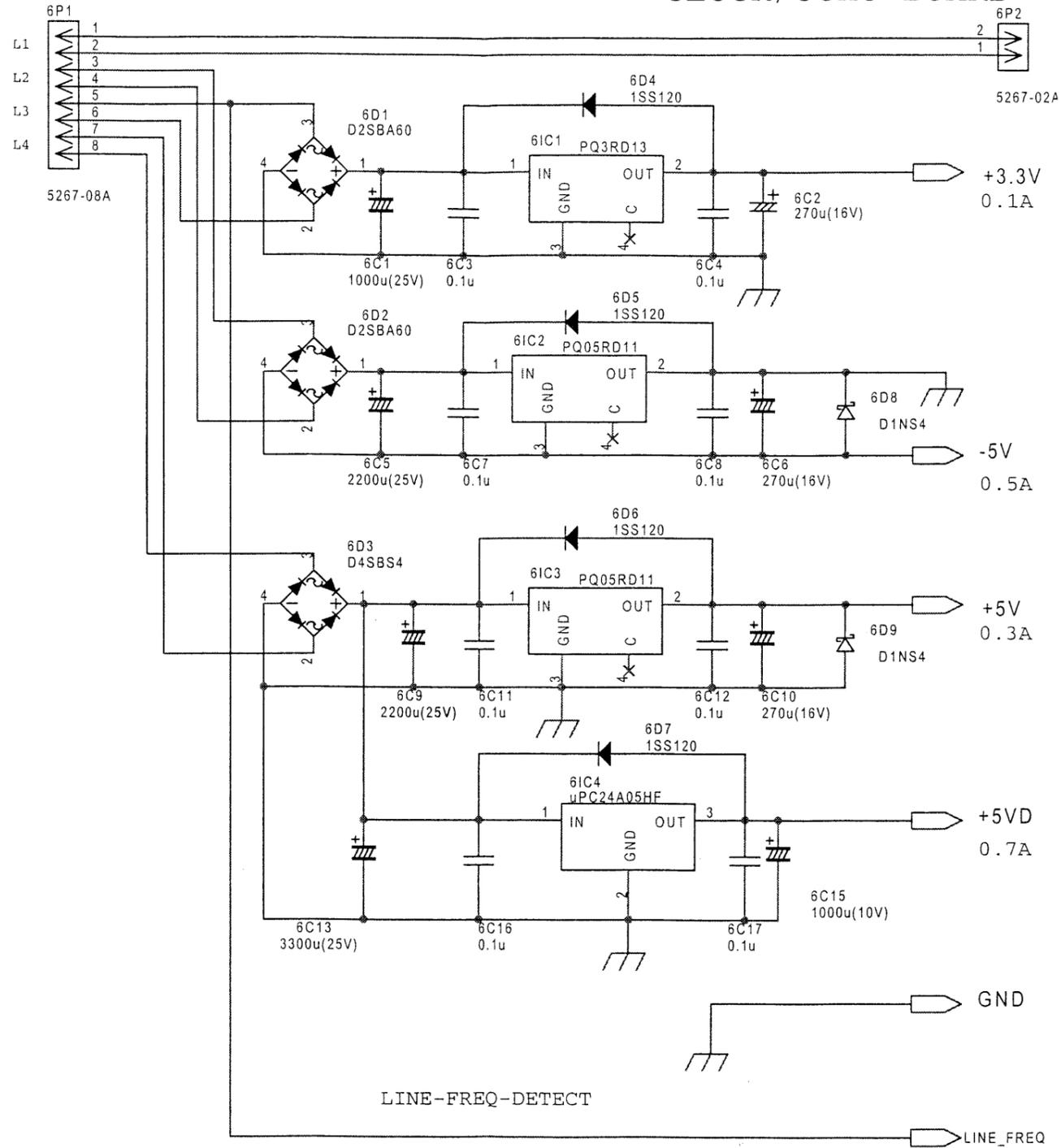
CHA/B INPUT(1)



CLOCK CIRCUIT(5)

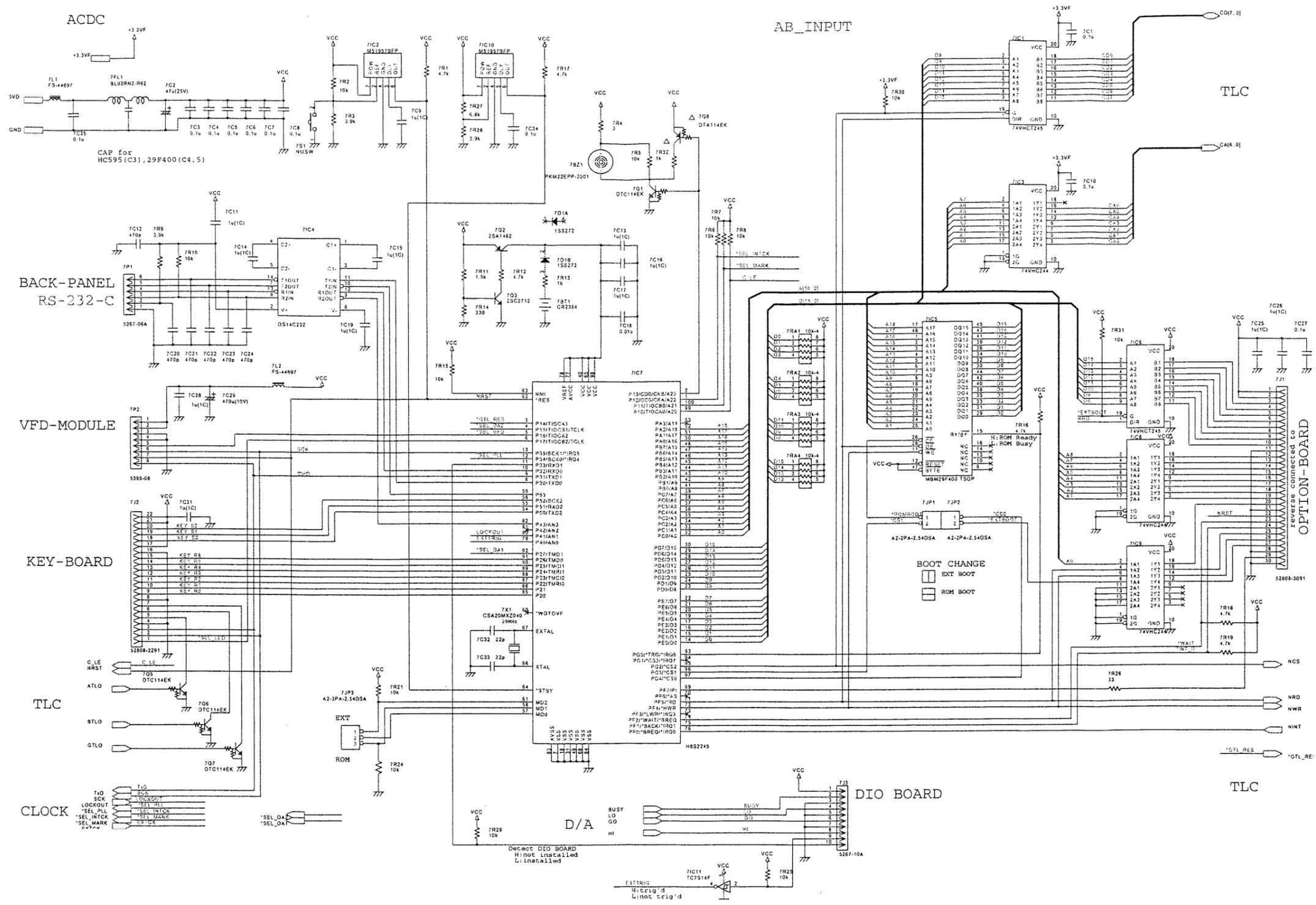
AC-DROPPER-TRANS

CLOCK/OCXO-BOARD

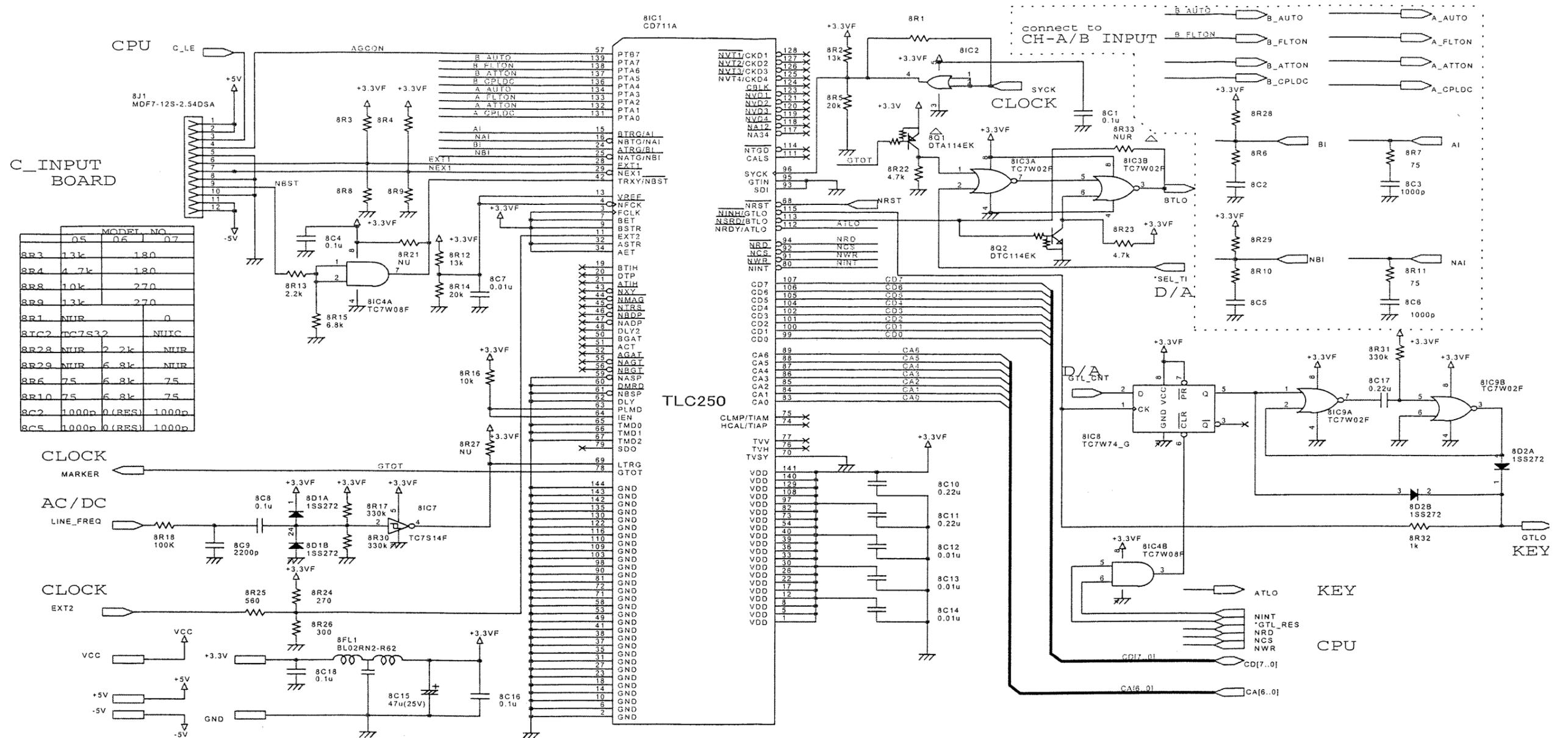


TLC

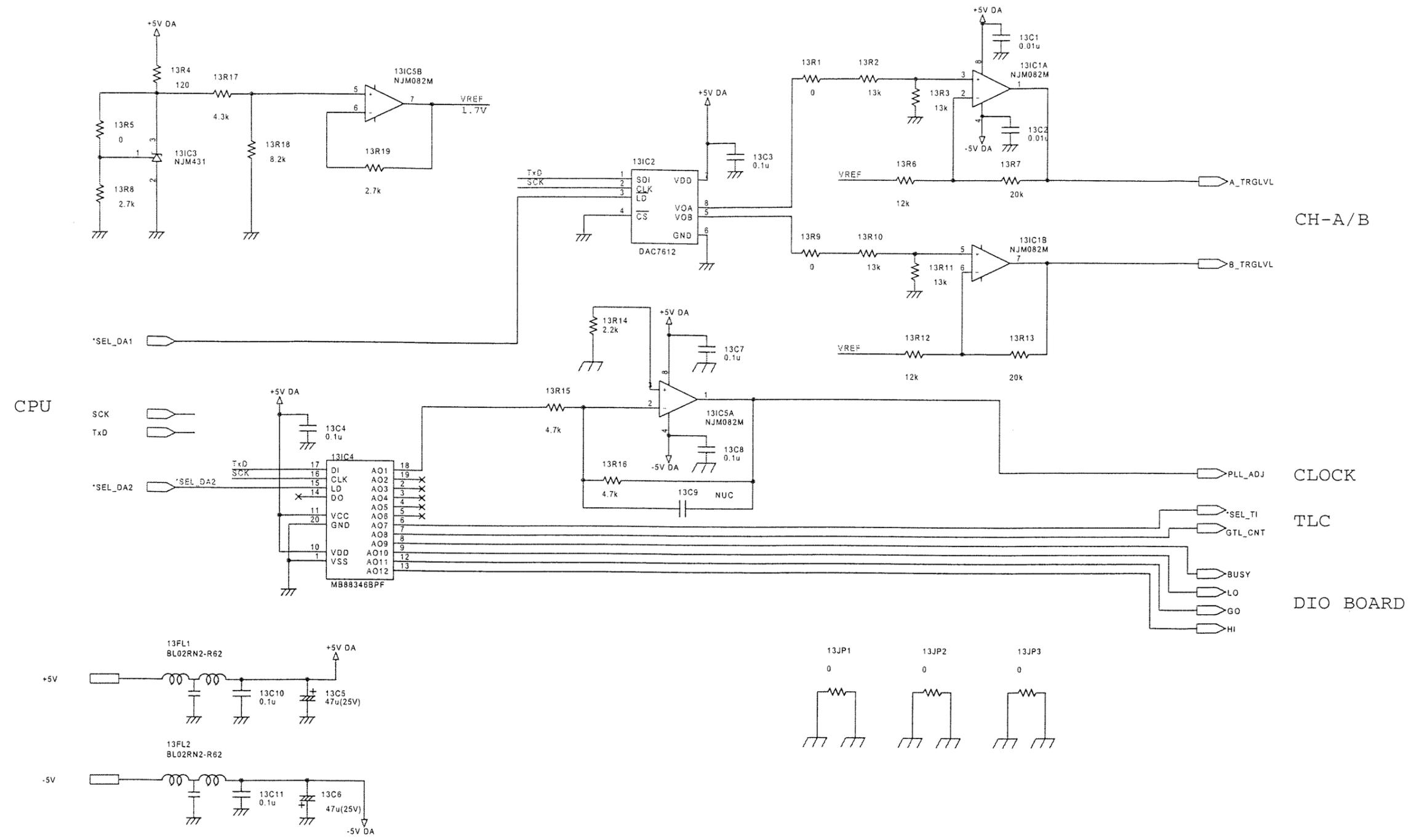
POWER(6)



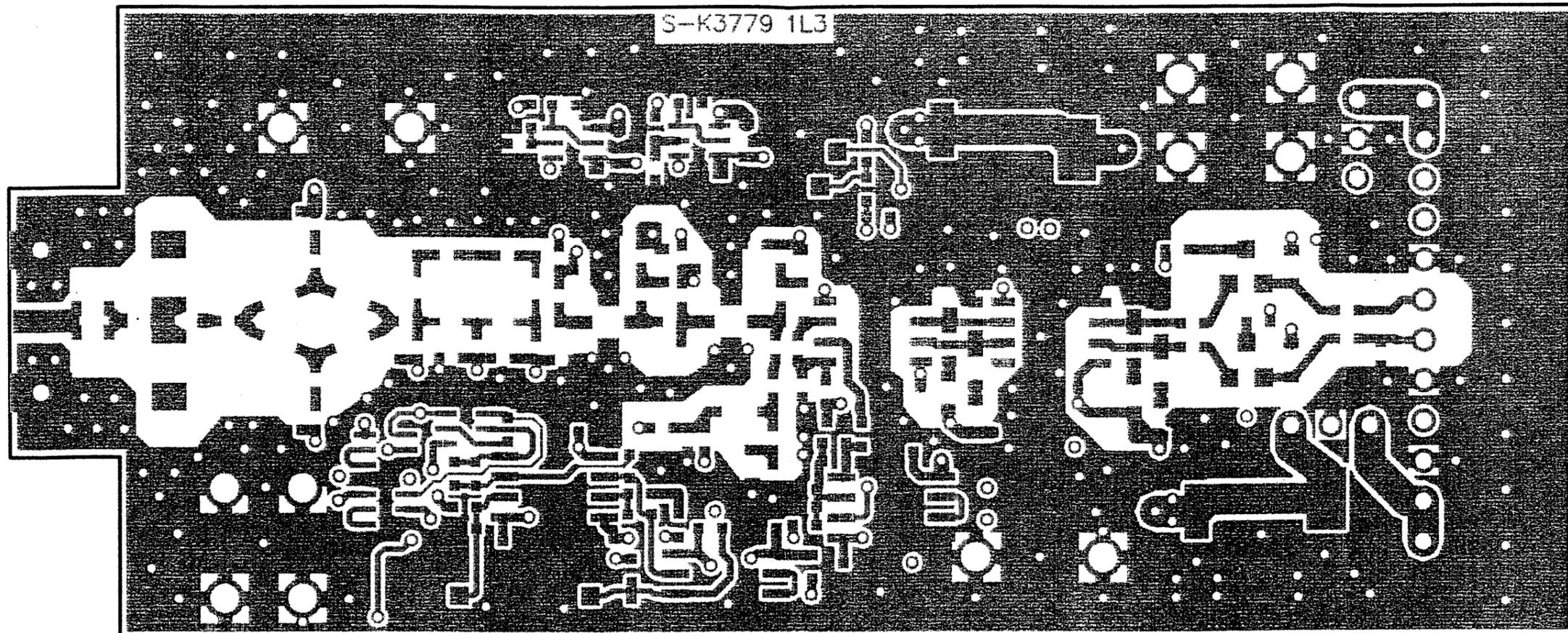
CPU CIRCUIT(7)



TLC CIRCUIT(8)

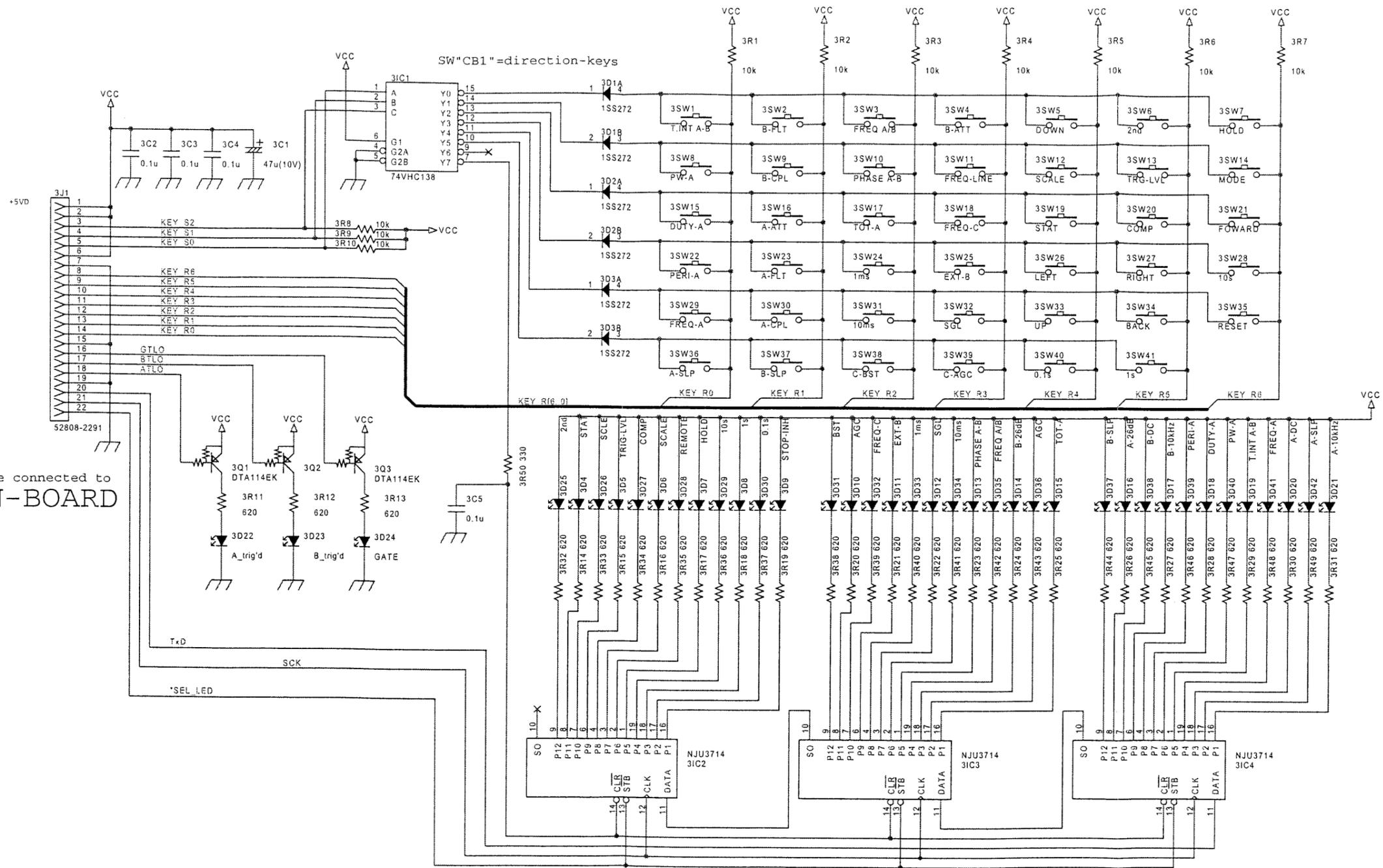


D/A CIRCUIT(13)

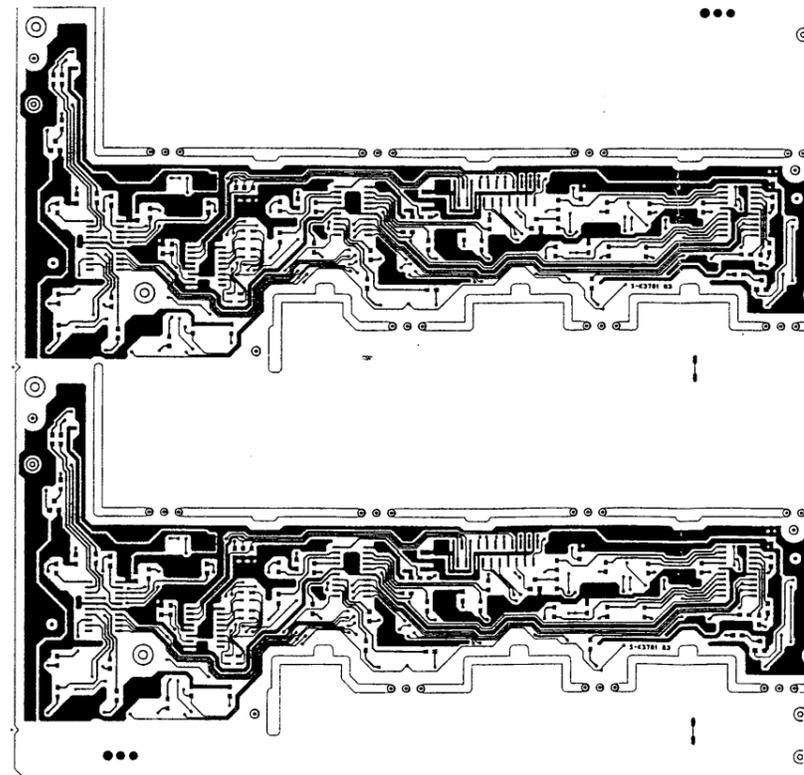
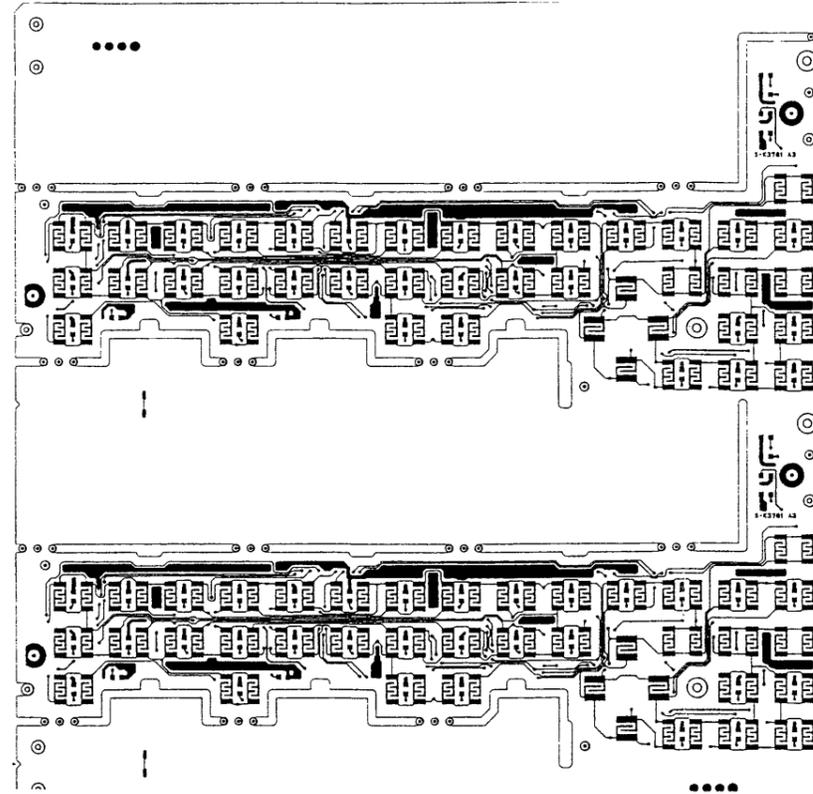
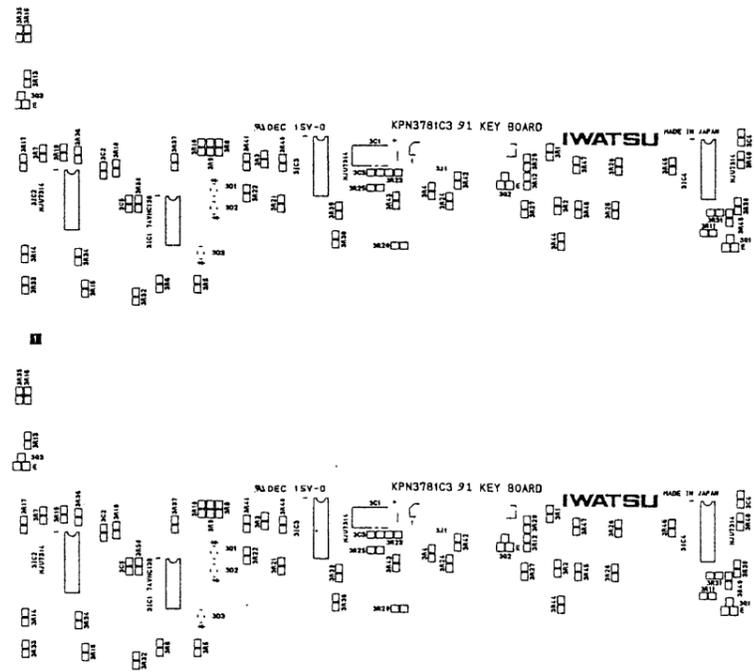
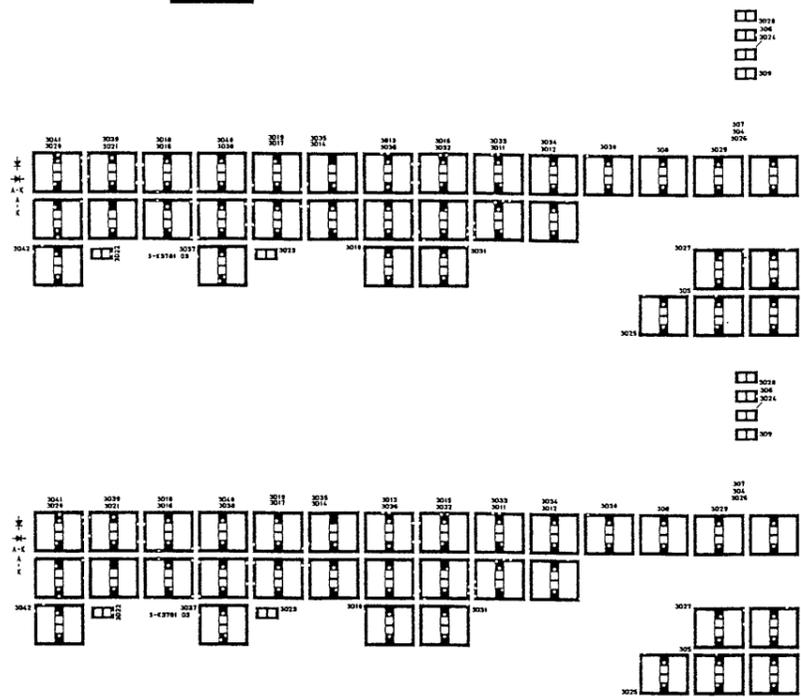


RF BOARD

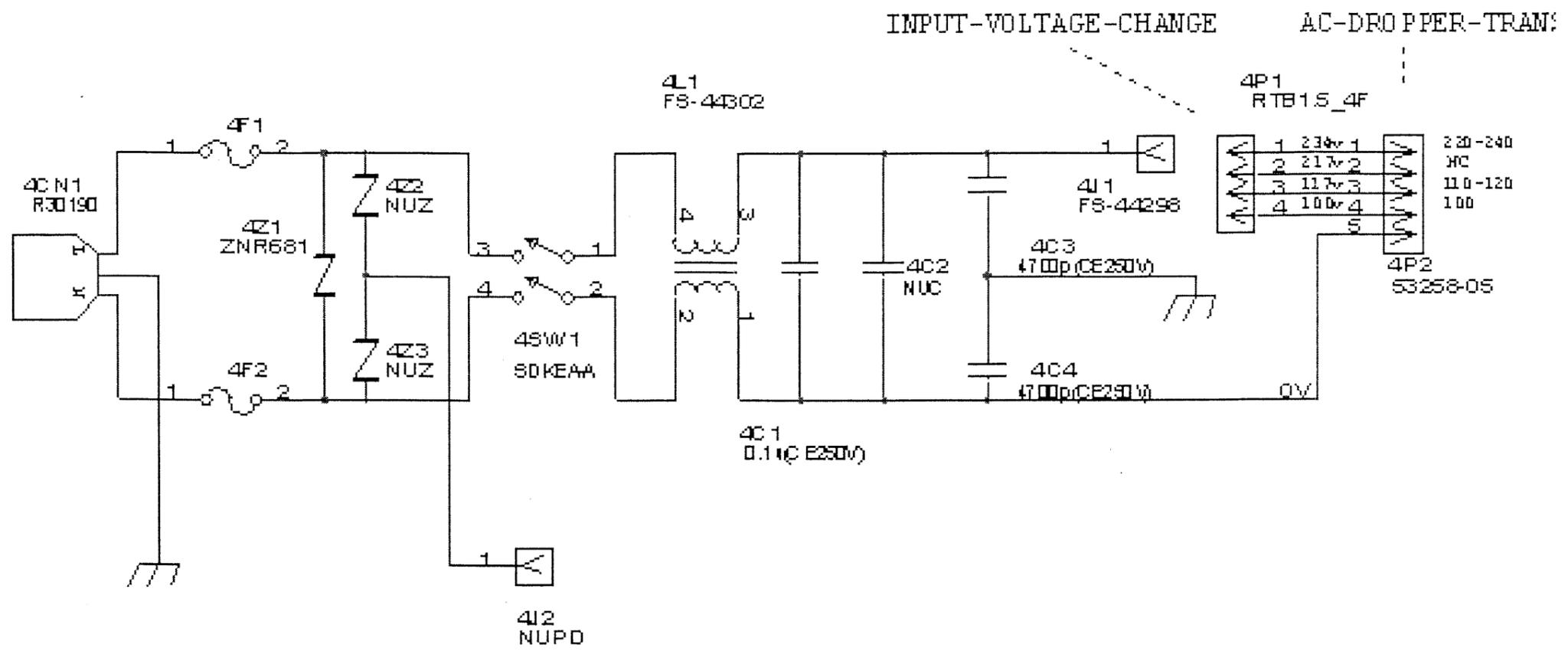
reverse connected to
MAIN-BOARD



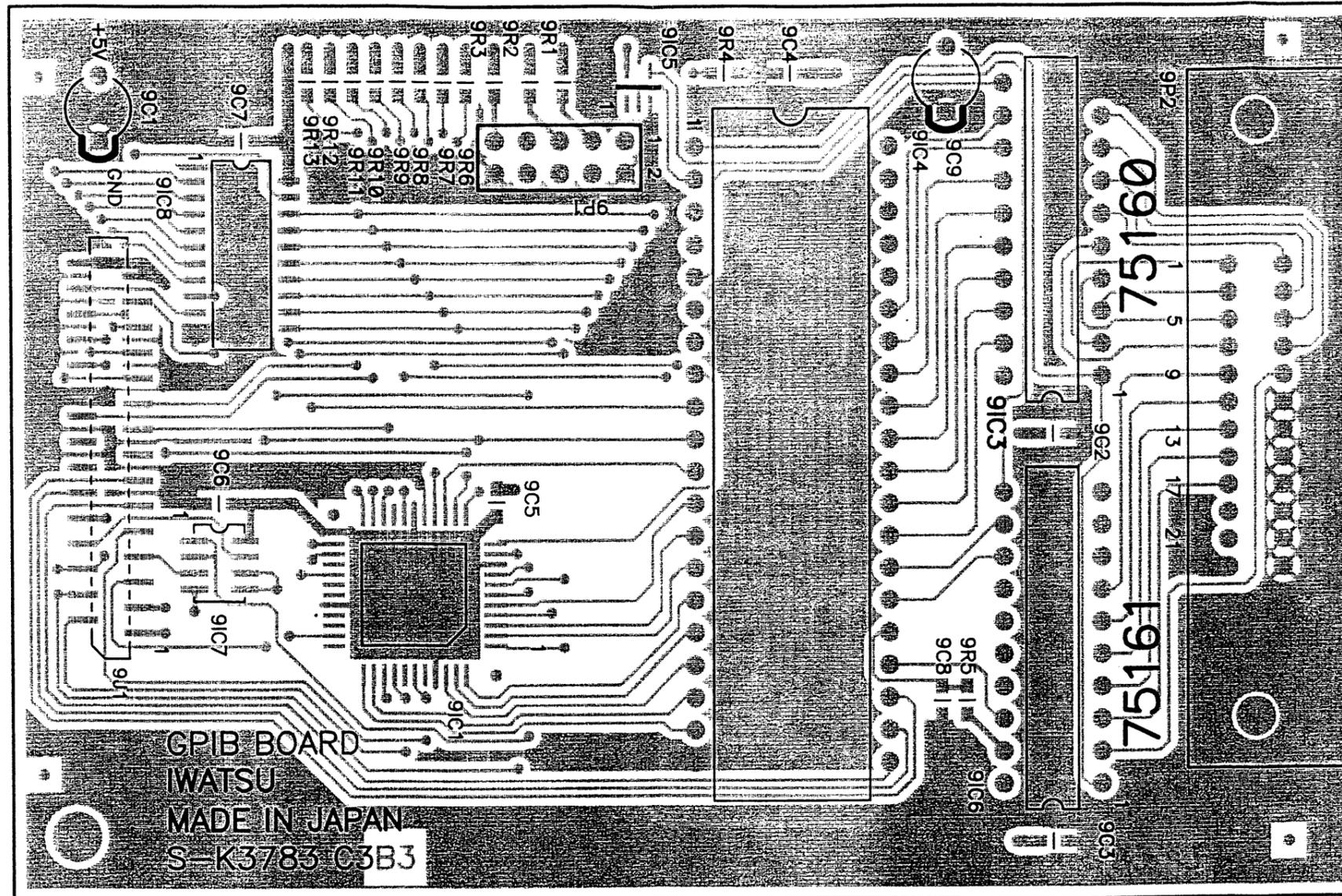
KEY BOARD(3)



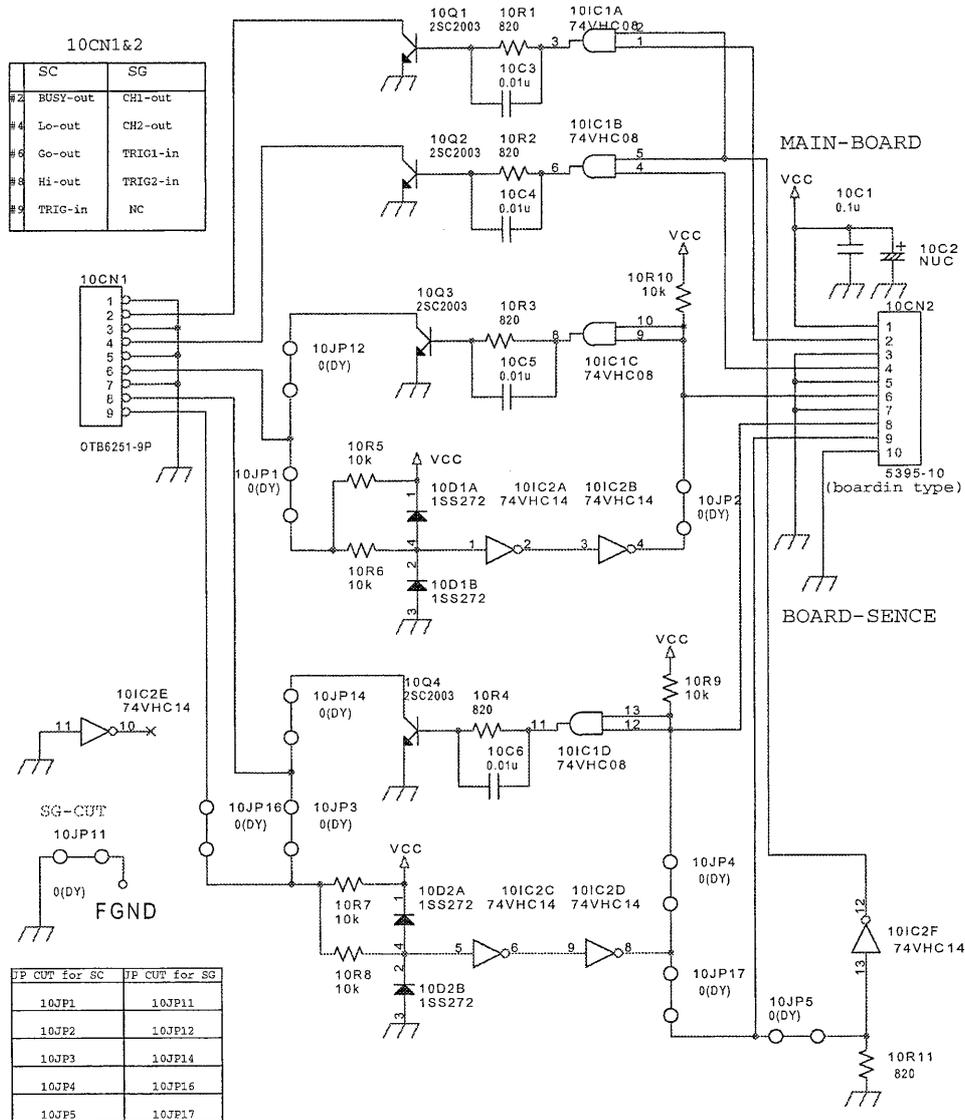
KEY BOARD



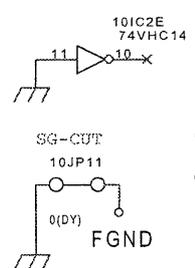
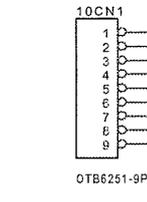
4F1 & 4F2 100-120V: FUSE 218.630
 220-240V: FUSE 218.315



GPIB BOARD

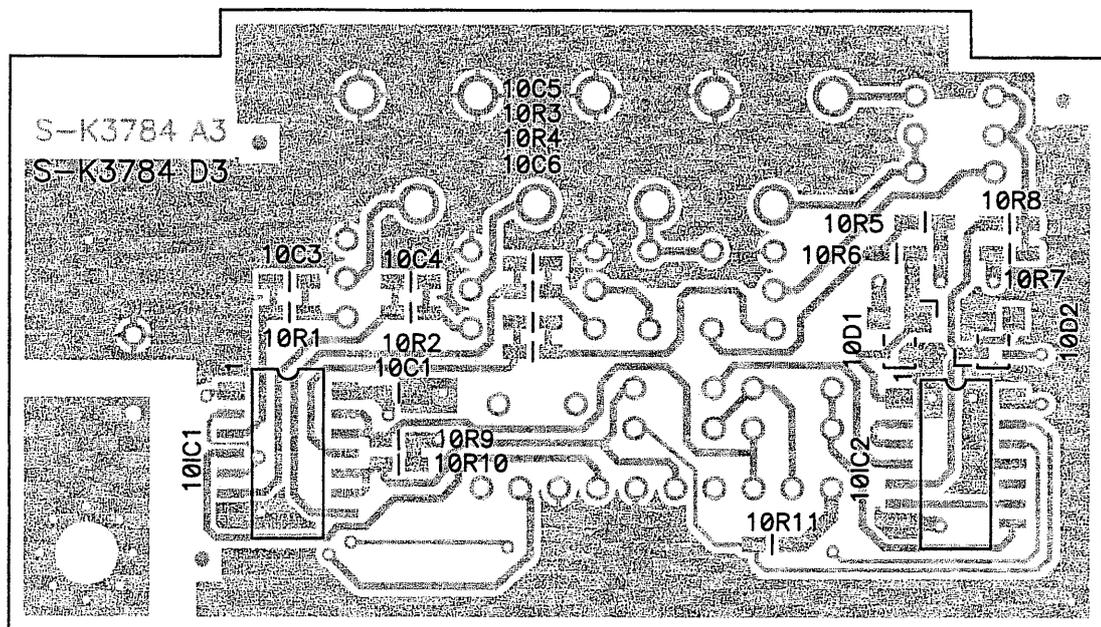
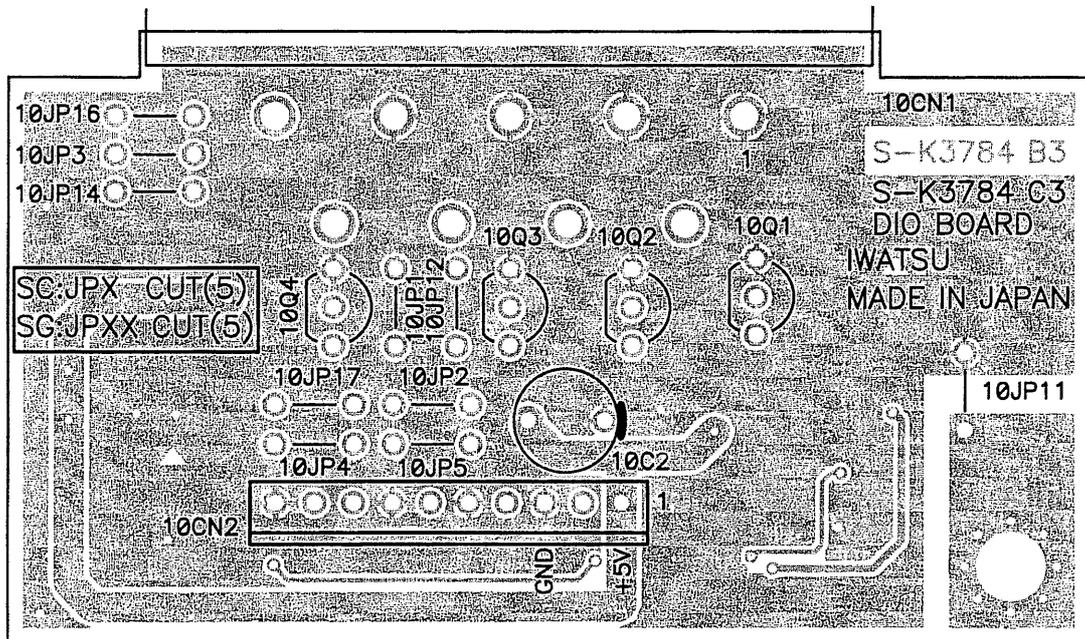


10CN1&2	
SC	SG
#2 BUSY-out	CH1-out
#4 Lo-out	CH2-out
#6 Go-out	TRIG1-in
#8 Hi-out	TRIG2-in
#9 TRIG-in	NC



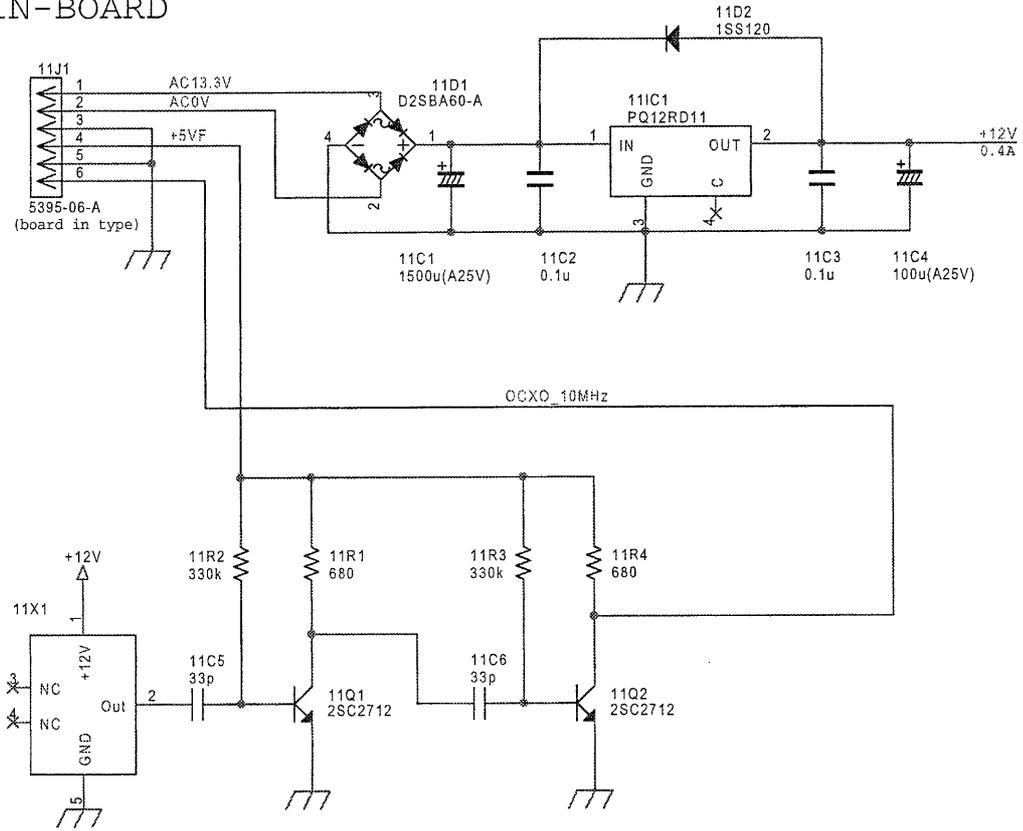
JP CUT for SC	JP CUT for SG
10JP1	10JP11
10JP2	10JP12
10JP3	10JP14
10JP4	10JP16
10JP5	10JP17

DIO BOARD(10)



DIO BOARD

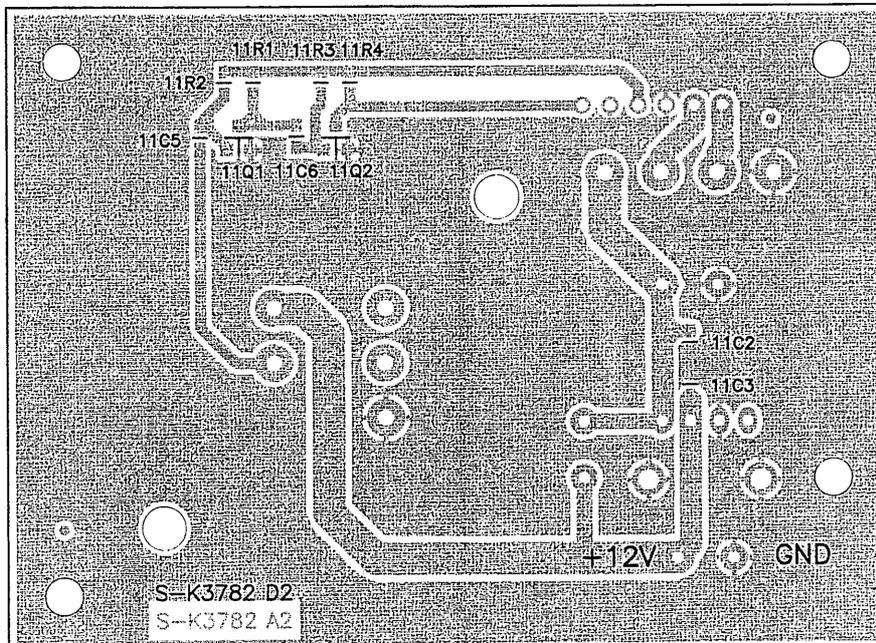
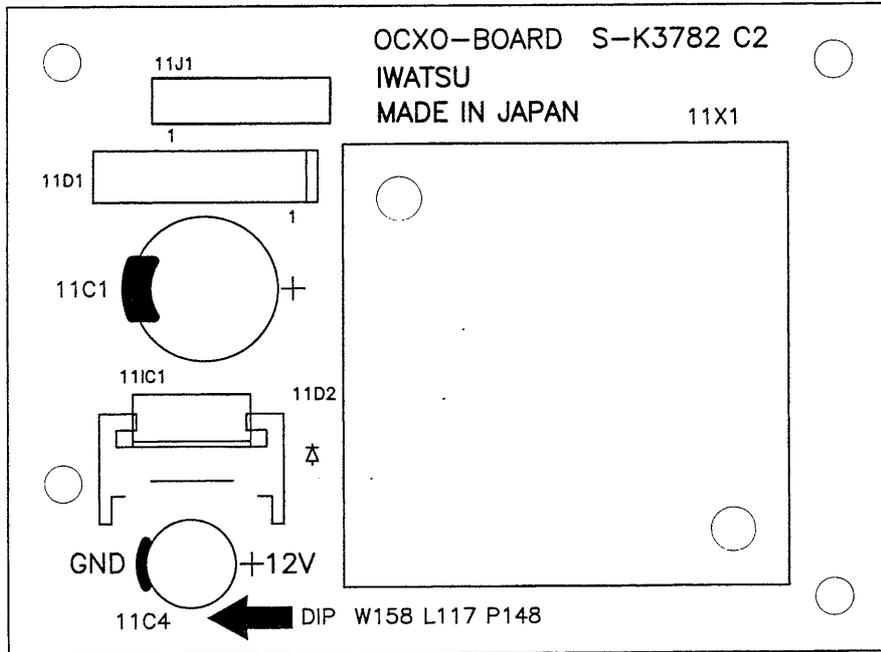
MAIN-BOARD



SC-703 : 2492 (A)

SC-704 : 2492 (C)

OCXO BOARD(11)



OCXO BOARD

Schematics name	Page	Schematics name	Page	Schematics name	Page
CH-A/B INPUT(1)	7-43	POWER(6)	7-52	D/A CIRCUIT(13)	7-57
RF BOARD(2)	7-48	CPU CIRCUIT(7)	7-53	MECHANICAL PARTS	7-58
POWER(4)	7-50	TLC CIRCUIT(8)	7-55		
CLOCK CIRCUIT(5)	7-51	SC-701 GPIB BOARD(9)	7-56		

CH-A/B INPUT(1) 1/5

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1C2, 1C3	DCC810511	C2012F 1H 103Z A TD84N
1C4	DCC239691	USD04CH 150J TC04N
1C5	DCC850041	GHM1535B 223K630 TE0804N
1C6	DCC810571	C2012F 1H 104Z A TD0804N
1C7	DCC820021	C2012F 1C 105Z A TE0804N
1C8, 1C9	DCC816601	C2012CH 1H 101J A TD84N
1C10	DCC816801	C2012CH 1H 102J A TD84N
1C11	DCC850131	GRM42-6CH 100D500PT TE0804N
1C12	DCC810571	C2012F 1H 104Z A TD0804N
1C13	DCC810511	C2012F 1H 103Z A TD84N
1C14	DCC820021	C2012F 1C 105Z A TE0804N
1C15 to 1C17	DCC810511	C2012F 1H 103Z A TD84N
1C18	DCC816801	C2012CH 1H 102J A TD84N
1C19	DCV019612	ECV-1ZW 06X53T
1C21, 1C22	DCC810511	C2012F 1H 103Z A TD84N
1C24	DCC816591	C2012CH 1H 820J A TD84N
1C25	DCC816451	C2012CH 1H 060D A TD84N
1C26	DCC810511	C2012F 1H 103Z A TD84N
1C27	DCC259151	CC45SL 2H 030C TC04N
1C29	DCC816451	C2012CH 1H 060D A TD84N
1C31 to 1C34	DCC810511	C2012F 1H 103Z A TD84N
1C35	DCC816801	C2012CH 1H 102J A TD84N
1C36, 1C38, 1C40, 1C41	DCC810511	C2012F 1H 103Z A TD84N
1C42	DCC239691	USD04CH 150J TC04N
1C43	DCC850041	GHM1535B 223K630 TE0804N
1C44	DCC810511	C2012F 1H 103Z A TD84N
1C45	DCC810571	C2012F 1H 104Z A TD0804N
1C46	DCC820021	C2012F 1C 105Z A TE0804N
1C47, 1C48	DCC816601	C2012CH 1H 101J A TD84N
1C49	DCC816801	C2012CH 1H 102J A TD84N
1C50	DCC810571	C2012F 1H 104Z A TD0804N
1C51	DCC850131	GRM42-6CH 100D500PT TE0804N
1C52 to 1C54	DCC810511	C2012F 1H 103Z A TD84N
1C55	DCC816801	C2012CH 1H 102J A TD84N
1C56	DCC810511	C2012F 1H 103Z A TD84N
1C57	DCV019612	ECV-1ZW 06X53T
1C59	DCC810511	C2012F 1H 103Z A TD84N
1C60	DCC816451	C2012CH 1H 060D A TD84N
1C62	DCC816591	C2012CH 1H 820J A TD84N
1C63	DCC810511	C2012F 1H 103Z A TD84N
1C64	DCC259151	CC45SL 2H 030C TC04N

CH-A/B INPUT(1) 2/5

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1C66	DCC820021	C2012F 1C 105Z A TE0804N
1C67	DCC816451	C2012CH 1H 060D A TD84N
1C69, 1C70	DCC810511	C2012F 1H 103Z A TD84N
1C71	DCC816801	C2012CH 1H 102J A TD84N
1C72, 1C73	DCC810511	C2012F 1H 103Z A TD84N
1C75 to 1C78	DCE229201	SME-CE04W 1E 470M TC04R
1C100 to 1C109	DCC810511	C2012F 1H 103Z A TD84N
1C110 to 1C113	DCC810571	C2012F 1H 104Z A TD0804N
1C116	DCC810511	C2012F 1H 103Z A TD84N
1C117	DCC816801	C2012CH 1H 102J A TD84N
1C119	DCC810511	C2012F 1H 103Z A TD84N
1C120	DCC816801	C2012CH 1H 102J A TD84N
1C121 to 1C124	DCC810571	C2012F 1H 104Z A TD0804N
1D1	DDD810461	HSM 124S-JTL TE0804L
1D2	DDD810241	1SS 272 TE0804R
1D3	DDD810461	HSM 124S-JTL TE0804L
1D4 to 1D7	DDD820361	HSR101-01 TRE TE0804R
1D8	DDD810241	1SS 272 TE0804R
1D9	DDD810461	HSM 124S-JTL TE0804L
1D10	DDD810241	1SS 272 TE0804R
1D11	DDD810461	HSM 124S-JTL TE0804L
1D12 to 1D15	DDD820361	HSR101-01 TRE TE0804R
1D16	DDD810241	1SS 272 TE0804R
1FL1 to 1FL4	DCL119361	BL02RN2-R62 TD04N
1IC1	DIC619191	NJM 082M(TE3) TE1208L
1IC2	DIC631251	SPT 9687SIS
1IC3	DIC623591	MAX 4005CSA (MAXIM)
1IC4	DIC619191	NJM 082M(TE3) TE1208L
1IC5	DIC889161	TC 4W53F(TE12L) TE1208R
1IC6	DIC619191	NJM 082M(TE3) TE1208L
1IC7	DIC631251	SPT 9687SIS
1IC8	DIC623591	MAX 4005CSA (MAXIM)
1IC9	DIC619191	NJM 082M(TE3) TE1208L
1IC10	DIC889161	TC 4W53F(TE12L) TE1208R
1J1, 1J2	DCN040111	CONNECTOR BNC-RB2-NI
1JP1, 1JP2	DZB999011	JPW 01 TA21N
1JP3 to 1JP6	DRZ831501	MCR10 000E TD0804N
1JP7, 1JP8	DZB999011	JPW 01 TA21N
1JP9 to 1JP16	DRZ831501	MCR10 000E TD0804N
1Q1	DTR810221	2SA 1462-T1B Y34
1Q2	DTR890431	DTA114EK/RN2402 TE0804L
1Q3	DTR890551	DTC114EK/RN1402 TE0804L
1Q4	DTR830371	2SC 3735B34/B35-T1B
1Q5	DTR890431	DTA114EK/RN2402 TE0804L
1Q6, 1Q7	DTR810221	2SA 1462-T1B Y34
1Q8	DTR890551	DTC114EK/RN1402 TE0804L
1Q9	DTR838661	2SC 2712LG TE85L
1Q10	DTR890431	DTA114EK/RN2402 TE0804L
1Q11	DTR830071	2SC 3356-T1B
1Q12, 1Q13	DTR890551	DTC114EK/RN1402 TE0804L

CH-A/B INPUT(1) 3/5

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1Q14	DTR810221	2SA 1462-T1B Y34
1Q15	DTR890431	DTA114EK/RN2402 TE0804L
1Q16	DTR890551	DTC114EK/RN1402 TE0804L
1Q17	DTR830371	2SC 3735B34/B35-T1B
1Q18	DTR890431	DTA114EK/RN2402 TE0804L
1Q19	DTR810221	2SA 1462-T1B Y34
1Q20	DTR890551	DTC114EK/RN1402 TE0804L
1Q21	DTR838661	2SC 2712LG TE85L
1Q22	DTR810221	2SA 1462-T1B Y34
1Q23	DTR890431	DTA114EK/RN2402 TE0804L
1Q24	DTR890551	DTC114EK/RN1402 TE0804L
1Q25	DTR830071	2SC 3356-T1B
1Q26	DTR890551	DTC114EK/RN1402 TE0804L
1R1, 1R2	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R3	DRE137531	EF1/4S 36ΩF TA21N
1R4	DRZ832321	RK73H 2A 2.0KΩF TD0804N
1R5, 1R7	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R8	DRZ832171	RK73H 2A 470ΩF TD0804N
1R10	DRZ833441	RK73H 2A 10ΩF TD0804N
1R11, 1R12	DRZ833071	RK73H 2A 82ΩF TD0804N
1R13	DRZ833551	RK73H 2A 33ΩF TD0804N
1R14, 1R15	DRZ833041	RK73H 2A 62ΩF TD0804N
1R16	DRZ833551	RK73H 2A 33ΩF TD0804N
1R17	DRZ833441	RK73H 2A 10ΩF TD0804N
1R19	DRZ833071	RK73H 2A 82ΩF TD0804N
1R20	DRZ832031	RK73H 2A 120ΩF TD0804N
1R21	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R22, 1R23	DRZ833051	RK73H 2A 68ΩF TD0804N
1R24	DRZ832841	RK73H 2A 300KΩF TD0804N
1R25, 1R26	DRZ833551	RK73H 2A 33ΩF TD0804N
1R27	DRZ832171	RK73H 2A 470ΩF TD0804N
1R28	DRZ832811	RK73H 2A 220KΩF TD0804N
1R29	DRZ832841	RK73H 2A 300KΩF TD0804N
1R30	DRZ834511	RK73H 2A 200KΩF TD0804N
1R31	DRZ832321	RK73H 2A 2.0KΩF TD0804N
1R32	DRZ833551	RK73H 2A 33ΩF TD0804N
1R33	DRZ832331	RK73H 2A 2.2KΩF TD0804N
1R34	DRZ833551	RK73H 2A 33ΩF TD0804N
1R35	DRZ833061	RK73H 2A 75ΩF TD0804N
1R36	DRZ833551	RK73H 2A 33ΩF TD0804N
1R37	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R38	DRZ832661	RK73H 2A 51KΩF TD0804N
1R39	DRZ832841	RK73H 2A 300KΩF TD0804N
1R40	DRZ832971	RK73H 2A 1.0MΩF TD0804N
1R41	DRZ833551	RK73H 2A 33ΩF TD0804N
1R42	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R43	DRZ833491	RK73H 2A 18ΩF TD0804N
1R44	DRZ832301	RK73H 2A 1.6KΩF TD0804N
1R45	DRZ834511	RK73H 2A 200KΩF TD0804N
1R46	DRZ832971	RK73H 2A 1.0MΩF TD0804N

CH-A/B INPUT(1) 4/5

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1R47	DRZ833441	RK73H 2A 10ΩF TD0804N
1R48	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R49	DRZ832331	RK73H 2A 2.2KΩF TD0804N
1R50	DRZ832351	RK73H 2A 2.7KΩF TD0804N
1R51, 1R52	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R53	DRZ832331	RK73H 2A 2.2KΩF TD0804N
1R54	DRZ832491	RK73H 2A 10KΩF TD0804N
1R55	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R57, 1R58	DRZ832491	RK73H 2A 10KΩF TD0804N
1R59	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R61	DRZ832261	RK73H 2A 1.1KΩF TD0804N
1R62, 1R63	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R64	DRE137531	EF1/4S 36ΩF TA21N
1R65	DRZ832321	RK73H 2A 2.0KΩF TD0804N
1R67	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R68	DRZ832171	RK73H 2A 470ΩF TD0804N
1R70	DRZ833441	RK73H 2A 10ΩF TD0804N
1R71, 1R72	DRZ833071	RK73H 2A 82ΩF TD0804N
1R73	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R74	DRZ833551	RK73H 2A 33ΩF TD0804N
1R76, 1R77	DRZ833041	RK73H 2A 62ΩF TD0804N
1R78	DRZ833551	RK73H 2A 33ΩF TD0804N
1R79	DRZ833441	RK73H 2A 10ΩF TD0804N
1R80	DRZ832841	RK73H 2A 300KΩF TD0804N
1R81	DRZ833071	RK73H 2A 82ΩF TD0804N
1R82	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R83	DRZ833551	RK73H 2A 33ΩF TD0804N
1R84, 1R85	DRZ833051	RK73H 2A 68ΩF TD0804N
1R86	DRZ832031	RK73H 2A 120ΩF TD0804N
1R87	DRZ833551	RK73H 2A 33ΩF TD0804N
1R88	DRZ834511	RK73H 2A 200KΩF TD0804N
1R89	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R90	DRZ832811	RK73H 2A 220KΩF TD0804N
1R91	DRZ832841	RK73H 2A 300KΩF TD0804N
1R92	DRZ832321	RK73H 2A 2.0KΩF TD0804N
1R93	DRZ833551	RK73H 2A 33ΩF TD0804N
1R94	DRZ832331	RK73H 2A 2.2KΩF TD0804N
1R95	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R96	DRZ833061	RK73H 2A 75ΩF TD0804N
1R97	DRZ833551	RK73H 2A 33ΩF TD0804N
1R98	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R99	DRZ832661	RK73H 2A 51KΩF TD0804N
1R100	DRZ832841	RK73H 2A 300KΩF TD0804N
1R101	DRZ832971	RK73H 2A 1.0MΩF TD0804N
1R102	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R103	DRZ832171	RK73H 2A 470ΩF TD0804N
1R104	DRZ832251	RK73H 2A 1.0KΩF TD0804N
1R105	DRZ833491	RK73H 2A 18ΩF TD0804N
1R106	DRZ832301	RK73H 2A 1.6KΩF TD0804N
1R107	DRZ834511	RK73H 2A 200KΩF TD0804N

CH-A/B INPUT(1) 5/5

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1R108	DRZ832971	RK73H 2A 1.0M Ω F TD0804N
1R109	DRZ833441	RK73H 2A 10 Ω F TD0804N
1R110	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R111	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
1R112	DRZ832351	RK73H 2A 2.7K Ω F TD0804N
1R113	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R114	DRZ832491	RK73H 2A 10K Ω F TD0804N
1R115	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
1R116	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R119, 1R120	DRZ832491	RK73H 2A 10K Ω F TD0804N
1R121	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R122	DRZ832261	RK73H 2A 1.1K Ω F TD0804N
1R123 to 1R126	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R127, 1R128	DRZ832051	RK73H 2A 150 Ω F TD0804N
1R129, 1R130	DRZ832161	RK73H 2A 430 Ω F TD0804N
1R131	DRZ832321	RK73H 2A 2.0K Ω F TD0804N
1R132	DRZ832361	RK73H 2A 3.0K Ω F TD0804N
1R133, 1R134	DRZ832051	RK73H 2A 150 Ω F TD0804N
1R135, 1R136	DRZ832161	RK73H 2A 430 Ω F TD0804N
1R137	DRZ832321	RK73H 2A 2.0K Ω F TD0804N
1R138	DRZ832361	RK73H 2A 3.0K Ω F TD0804N
1R139	DRZ832161	RK73H 2A 430 Ω F TD0804N
1R140	DRZ832651	RK73H 2A 47K Ω F TD0804N
1R141	DRZ832161	RK73H 2A 430 Ω F TD0804N
1R142	DRZ832651	RK73H 2A 47K Ω F TD0804N
1R143	DRZ850611	RGC1/10C 430K Ω D TD0804N
1R144	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R145	DRZ850611	RGC1/10C 430K Ω D TD0804N
1R146	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R147 to 1R150	DRZ832131	RK73H 2A 330 Ω F TD0804N
1RL1 to 1RL6	DKD028561	RELAY G6K-2F-Y TE1612B

RF BOARD(2) 1/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
2B1, 2B2	DTR860221	FHX 35LPT TE1208F
2C1 to 2C7	DCC811731	C1608B 1H 102K A TD0804N
2C8	DCC816601	C2012CH 1H 101J A TD84N
2C9 to 2C12	DCC811851	C1608B 1H 103K A TD0804N
2C13	DCC816601	C2012CH 1H 101J A TD84N
2C14 to 2C16	DCC811731	C1608B 1H 102K A TD0804N
2C17	DCC811851	C1608B 1H 103K A TD0804N
2C18 to 2C20	DCC811731	C1608B 1H 102K A TD0804N
2C21, 2C22	DCC811851	C1608B 1H 103K A TD0804N
2C23	DCC811731	C1608B 1H 102K A TD0804N
2C24	DCC811851	C1608B 1H 103K A TD0804N
2C26	DCE815101	MVK10VC 100(M) TE1612R
2C25	DCE820141	MV 16VC 47M TE1612R
2C27 to 2C33	DCC811851	C1608B 1H 103K A TD0804N
2C34	DCE815101	MVK10VC 100(M) TE1612R
2C35	DCE820141	MV 16VC 47M TE1612R
2C36 to 2C41	DCC811851	C1608B 1H 103K A TD0804N
2C42, 2C43	DCC830171	C2012B 1A 105K A TE0804N
2C44	DCC811851	C1608B 1H 103K A TD0804N
2D1, 2D2	DDD810491	1SV 271 (TPH3) TE0804R
2D3, 2D4	DDD820361	HSR101-01 TRE TE0804R
2D5, 2D6	DDD810491	1SV 271 (TPH3) TE0804R
2D7, 2D8, 2D10, 2D11	DDD820361	HSR101-01 TRE TE0804R
2FL1, 2FL2	DCL119361	BL02RN2-R62 TD04N
2IC1	DIC619191	NJM 082M(TE3) TE1208L
2IC2, 2IC3	DIC322861	MC 10EL33D (MOTOROLA)
2IC4	DIC639031	NJM 2903M(TE3) TE1208L
2IC5	DIC619191	NJM 082M(TE3) TE1208L
2J1	DCN045681	CONNECTOR BNC-BR-PC-1
2J2	DCN118441	MDF7B-12P-2.54DSA
2L1, 2L2	DCL811401	HK2125 R22J-T TE0804N
2L3 to 2L5	DCL811411	HK1608 39NJ-T TD0804N
2L6	DCL811401	HK2125 R22J-T TE0804N
2Q1, 2Q2	DTR890861	IMZ1 TE0804R
2Q3	DTR890791	IMD3 TE0804R
2Q4	DTR890861	IMZ1 TE0804R
2Q5	DTR890791	IMD3 TE0804R
2Q6, 2Q7	DTR810221	2SA 1462-T1B Y34
2Q8	DTR890551	DTC114EK/RN1402 TE0804L
2R1	DRZ828411	RK73H 1J 3.3K Ω F TD0804N
2R2	DRZ832061	RK73H 2A 160 Ω F TD0804N
2R3	DRZ828411	RK73H 1J 3.3K Ω F TD0804N
2R4	DRZ832071	RK73H 2A 180 Ω F TD0804N
2R5, 2R6	DRZ828681	RK73H 2AS 1.8K Ω F TD0804N
2R7	DRZ822501	RK73H 2AS 2.2K Ω F TD0804N
2R8, 2R9	DRZ828121	RK73H 2AS 1.0K Ω F TD0804N
2R10	DRZ822721	RK73H 2AS 390 Ω F TD0804N
2R11, 2R12	DRZ822501	RK73H 2AS 2.2K Ω F TD0804N
2R13, 2R14	DRZ828121	RK73H 2AS 1.0K Ω F TD0804N
2R15	DRZ822721	RK73H 2AS 390 Ω F TD0804N

RF BOARD(2) 2/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
2R16, 2R17	DRZ822611	RK73H 2AS 100Ω F TD0804N
2R18, 2R19	DRZ833441	RK73H 2A 10Ω F TD0804N
2R20, 2R21	DRZ822501	RK73H 2AS 2.2KΩ F TD0804N
2R22, 2R23	DRZ850781	RK73H 2E 130Ω F TD0804N
2R24	DRZ822711	RK73H 2AS 330Ω F TD0804N
2R25	DRZ822721	RK73H 2AS 390Ω F TD0804N
2R26, 2R27	DRZ850781	RK73H 2E 130Ω F TD0804N
2R28	DRZ822721	RK73H 2AS 390Ω F TD0804N
2R29	DRZ822311	RK73H 2AS 100KΩ F TD0804N
2R30	DRZ828441	RK73H 2AS 75Ω F TD0804N
2R31	DRZ822311	RK73H 2AS 100KΩ F TD0804N
2R32	DRZ828121	RK73H 2AS 1.0KΩ F TD0804N
2R33	DRZ828321	RK73H 2AS 51KΩ F TD0804N
2R34	DRZ828411	RK73H 1J 3.3KΩ F TD0804N
2R35	DRV810471	TMC3KJ B 220Ω TE0804N
2R36, 2R37	DRZ822311	RK73H 2AS 100KΩ F TD0804N
2R38	DRZ822251	RK73H 2AS 15KΩ F TD0804N
2R39, 2R40	DRZ828121	RK73H 2AS 1.0KΩ F TD0804N
2R41	DRZ828321	RK73H 2AS 51KΩ F TD0804N
2R42	DRZ833021	RK73H 2A 51Ω F TD0804N
2R43	DRZ822501	RK73H 2AS 2.2KΩ F TD0804N
2R44	DRZ822231	RK73H 2AS 2.0KΩ F TD0804N
2R45	DRZ828191	RK73H 2AS 3.0KΩ F TD0804N
2R46 to 2R49	DRZ833071	RK73H 2A 82Ω F TD0804N
2R50	DRZ822611	RK73H 2AS 100Ω F TD0804N
2R51, 2R52	DRZ828231	RK73H 2AS 5.1KΩ F TD0804N
2R53 to 2R56	DRZ833041	RK73H 2A 62Ω F TD0804N
2R57 to 2R60	DRZ833051	RK73H 2A 68Ω F TD0804N
2R61	DRZ828371	RK73H 2AS 750KΩ F TD0804N
2R62, 2R63	DRZ828231	RK73H 2AS 5.1KΩ F TD0804N
2R65	DRZ822481	RK73H 2AS 33Ω F TD0804N
2R66	DRZ832251	RK73H 2A 1.0KΩ F TD0804N
2R68	DRZ822481	RK73H 2AS 33Ω F TD0804N
2R69	DRZ832251	RK73H 2A 1.0KΩ F TD0804N
2R71, 2R72	DRZ822481	RK73H 2AS 33Ω F TD0804N
2R73 to 2R75	DRZ822491	RK73H 2AS 220Ω F TD0804N
2R76	DRZ822321	RK73H 2AS 10KΩ F TD0804N
2R77	DRZ822391	RK73H 2AS 4.7KΩ F TD0804N
2R78	DRZ822571	RK73H 2AS 10Ω F TD0804N
2R79	DRZ822311	RK73H 2AS 100KΩ F TD0804N
2R80	DRZ822241	RK73H 2AS 6.8KΩ F TD0804N
2R81	DRZ822771	RK73H 2AS 680Ω F TD0804N

POWER(4)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
4C1	DCF161751	ECQ-U2A104ML
4C3, 4C4	DCC140221	DE1307-1 E 472M-KH
4CN1	DCN015961	INLET NC-187-10N
4F1, 4F2	DSK060211	Fuse holder PFC5000-0301
4J1	KHB181821	AC INPUT SELECTER-FS44298-21 UL-I
4L1	DCL170203	LINE FILTER FS-44302-31 UL-I
4P1	DCN997121	POST RTB-1.5-4F
4P2	DCN126011	CONNECTOR 53258-0510
4SW1	DSW019301	Power supply switch SDKEA30100
4Z1	DDD068051	ERZV14D681 UL-M

CLOCK CIRCUIT(5)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
5C33	DCE229201	SME-CE04W 1E 470M TC04R
5C34	DCC810511	C2012F 1H 103Z A TD84N
5C35, 5C36	DCC816541	C2012CH 1H 330J A TD84N
5C37	DCC816641	C2012CH 1H 221J A TD84N
5C40	DCC810511	C2012F 1H 103Z A TD84N
5C41	DCC810571	C2012F 1H 104Z A TD0804N
5C48	DCC816801	C2012CH 1H 102J A TD84N
5D4, 5D5	DDD810241	1SS 272 TE0804R
5FL3	DCL119361	BL02RN2-R62 TD04N
5IC3	DIC448531	MC 74HC153F/AF
5IC4	DIC499831	TC7S32F/SC7S32F TE0804L
5J1, 5J2	KHB095411	MINI PIN JACK
5JP1	DZB999011	JPW 01 TA21N
5JP2	DCN113981	CONNECTOR A2-3PA-2.54DSA
5JP3 to 5JP9	DRZ831501	MCR10 000E TD0804N
5P1	DCN990881	CONNECTOR 5267-03A
5Q5 to 5Q7	DTR838661	2SC 2712LG TE85L
5Q8	DTR830071	2SC 3356-T1B
5R29	DRZ832491	RK73H 2A 10K Ω F TD0804N
5R30, 5R31	DRZ833011	RK73H 2A 47 Ω F TD0804N
5R32	DRZ832851	RK73H 2A 330K Ω F TD0804N
5R33	DRZ832211	RK73H 2A 680 Ω F TD0804N
5R34	DRZ832851	RK73H 2A 330K Ω F TD0804N
5R35	DRZ832211	RK73H 2A 680 Ω F TD0804N
5R36	DRZ831501	MCR10 000E TD0804N
5R37	DRZ832491	RK73H 2A 10K Ω F TD0804N
5R38	DRZ833071	RK73H 2A 82 Ω F TD0804N
5R39	DRZ832551	RK73H 2A 18K Ω F TD0804N
5R40	DRZ832271	RK73H 2A 1.2K Ω F TD0804N
5R41	DRZ832211	RK73H 2A 680 Ω F TD0804N
5R42	DRZ832491	RK73H 2A 10K Ω F TD0804N
5R45	DRZ833071	RK73H 2A 82 Ω F TD0804N
5R48	DRZ832491	RK73H 2A 10K Ω F TD0804N
5X1	DHF060301	5118K-ANL50 10MHZ

POWER(6)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
6C1	DCE926391	LXV 25VB-1000M K25MC
6C2	DCE929981	LXV 16VB-270M J12 TD04R
6C3, 6C4	DCC810571	C2012F 1H 104Z A TD0804N
6C5	DCE926401	LXV 25VB-2200M K40MC
6C6	DCE929981	LXV 16VB-270M J12 TD04R
6C7, 6C8	DCC810571	C2012F 1H 104Z A TD0804N
6C9	DCE926401	LXV 25VB-2200M K40MC
6C10	DCE929981	LXV 16VB-270M J12 TD04R
6C11, 6C12	DCC810571	C2012F 1H 104Z A TD0804N
6C13	DCE926321	LXV 25VB-3300M M30 MC
6C15	DCE916011	LXV 10VB-1000M J20MC
6C16, 6C17	DCC810571	C2012F 1H 104Z A TD0804N
6D1, 6D2	DDD021531	D2SBA60
6D3	DDD024141	D4SBS4
6D4 to 6D7	DDD019071	1SS 120 TA21R
6D8, 6D9	DDD029411	D1NS4 TA21R
6IC1	DIC654131	PQ3RD13
6IC2, 6IC3	DIC654121	PQ05RD11
6IC4	DIC653791	uPC 24A05HF (NEC)
6P1	DCN990921	CONNECTOR 5267-08A
6P2	DCN990871	CONNECTOR 5267-02A

CPU CIRCUIT(7) 1/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
7BT1	DES011201	CR2354-1HF
7BZ1	DSB040951	PKM22EPT-2001
7C1	DCC810571	C2012F 1H 104Z A TD0804N
7C2	DCE229201	SME-CE04W 1E 470M TC04R
7C3 to 7C8	DCC810571	C2012F 1H 104Z A TD0804N
7C9	DCC820021	C2012F 1C 105Z A TE0804N
7C10	DCC810571	C2012F 1H 104Z A TD0804N
7C11	DCC820021	C2012F 1C 105Z A TE0804N
7C12	DCC816761	C2012CH 1H 471J A TD84N
7C13 to 7C17	DCC820021	C2012F 1C 105Z A TE0804N
7C18	DCC810511	C2012F 1H 103Z A TD84N
7C19	DCC820021	C2012F 1C 105Z A TE0804N
7C20 to 7C24	DCC816761	C2012CH 1H 471J A TD84N
7C25, 7C26	DCC820021	C2012F 1C 105Z A TE0804N
7C27	DCC810571	C2012F 1H 104Z A TD0804N
7C28	DCC820021	C2012F 1C 105Z A TE0804N
7C29	DCE219151	SME-CE04W 1A 471M TC04R
7C31	DCC820021	C2012F 1C 105Z A TE0804N
7C32, 7C33	DCC816521	C2012CH 1H 220J A TD84N
7C34, 7C35	DCC810571	C2012F 1H 104Z A TD0804N
7D1	DDD810241	1SS 272 TE0804R
7FL1	DCL119361	BL02RN2-R62 TD04N
7IC1	DIC484621	74VHC245F EL TE2412B
7IC2	DIC699231	M51957BFP TE1208F
7IC3	DIC484611	74VHC244F EL TE2412B
7IC4	DIC484981	DS 14C232CM TE1608B
7IC5	DIC528391	FLASH 512KX8/256KX16(M90)FT
7IC6	DIC484621	74VHC245F EL TE2412B
7IC7	DIC560541	HD 6412240FA20
7IC8, 7IC9	DIC484611	74VHC244F EL TE2412B
7IC10	DIC699231	M51957BFP TE1208F
7IC11	DIC889181	TC 7S14F TE0804L
7J1	DCN129501	52808-3091 TE5612B
7J2	DCN129391	52808-2291 TE4412B
7J3	DCN994771	CONNECTOR 5267-10A
7JP1, 7JP2	DCN113971	CONNECTOR A2-2PA-2.54DSA
7JP3	DCN113981	CONNECTOR A2-3PA-2.54DSA
7L1, 7L2	DCL113731	CHOKE FS44697
7P1	DCN990901	CONNECTOR 5267-06A
7P2	KHB192411	VFD CABLE
7Q1	DTR890551	DTC114EK/RN1402 TE0804L
7Q2	DTR810221	2SA 1462-T1B Y34
7Q3	DTR838661	2SC 2712LG TE85L
7Q5 to 7Q7	DTR890551	DTC114EK/RN1402 TE0804L
7Q8	DTR890431	DTA114EK/RN2402 TE0804L
7R1	DRZ832411	RK73H 2A 4.7KΩ F TD0804N
7R2	DRZ832491	RK73H 2A 10KΩ F TD0804N
7R3	DRZ832391	RK73H 2A 3.9KΩ F TD0804N
7R4	DRZ831501	MCR10 000E TD0804N
7R6 to 7R8	DRZ832491	RK73H 2A 10KΩ F TD0804N

CPU CIRCUIT(7) 2/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
7R9	DRZ832391	RK73H 2A 3.9KΩ F TD0804N
7R10	DRZ832491	RK73H 2A 10KΩ F TD0804N
7R11	DRZ832291	RK73H 2A 1.5KΩ F TD0804N
7R12	DRZ832411	RK73H 2A 4.7KΩ F TD0804N
7R13	DRZ832251	RK73H 2A 1.0KΩ F TD0804N
7R14	DRZ832131	RK73H 2A 330Ω F TD0804N
7R15	DRZ832491	RK73H 2A 10KΩ F TD0804N
7R16 to 7R19	DRZ832411	RK73H 2A 4.7KΩ F TD0804N
7R21, 7R24, 7R25	DRZ832491	RK73H 2A 10KΩ F TD0804N
7R26	DRZ833551	RK73H 2A 33Ω F TD0804N
7R27	DRZ832451	RK73H 2A 6.8KΩ F TD0804N
7R28	DRZ832391	RK73H 2A 3.9KΩ F TD0804N
7R29 to 7R31	DRZ832491	RK73H 2A 10KΩ F TD0804N
7R32	DRZ832251	RK73H 2A 1.0KΩ F TD0804N
7RA1 to 7RA4	DFB810051	RAC16 4D 103J A TD0804M
7X1	DHF999131	CSA 20.00MXZ040 TD04N

TLC CIRCUIT(8)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
8C1	DCC810571	C2012F 1H 104Z A TD0804N
8C2, 8C3	DCC816801	C2012CH 1H 102J A TD84N
8C4	DCC810571	C2012F 1H 104Z A TD0804N
8C5, 8C6	DCC816801	C2012CH 1H 102J A TD84N
8C7	DCC810511	C2012F 1H 103Z A TD84N
8C8	DCC810571	C2012F 1H 104Z A TD0804N
8C9	DCC816931	C2012CH 1H 222J A TE0804N
8C10, 8C11	DCC820031	C2012F 1C 224Z A TD84N
8C12 to 8C14	DCC810511	C2012F 1H 103Z A TD84N
8C15	DCE929991	LXV 16VB-120M TC04R
8C16	DCC810571	C2012F 1H 104Z A TD0804N
8C17	DCC820031	C2012F 1C 224Z A TD84N
8C18	DCC810571	C2012F 1H 104Z A TD0804N
8D1, 8D2	DDD810241	1SS 272 TE0804R
8FL1	DCL119361	BL02RN2-R62 TD04N
8IC1	DIC472301	CD711APF
8IC2	DIC499831	TC7S32F/SC7S32F TE0804L
8IC3	DIC889141	TC 7W02F(TE12L) TE1208R
8IC4	DIC889121	TC 7W08F(TE12L) TE1208R
8IC7	DIC889181	TC 7S14F TE0804L
8IC8	DIC889191	TC 7W74F(TE12L) TE1208R
8IC9	DIC889141	TC 7W02F(TE12L) TE1208R
8Q1	DTR890431	DTA114EK/RN2402 TE0804L
8Q2	DTR890551	DTC114EK/RN1402 TE0804L
8R3	DRZ832521	RK73H 2A 13KΩF TD0804N
8R4	DRZ832411	RK73H 2A 4.7KΩF TD0804N
8R6, 8R7	DRZ833061	RK73H 2A 75ΩF TD0804N
8R8	DRZ832491	RK73H 2A 10KΩF TD0804N
8R9	DRZ832521	RK73H 2A 13KΩF TD0804N
8R10, 8R11	DRZ833061	RK73H 2A 75ΩF TD0804N
8R12	DRZ832521	RK73H 2A 13KΩF TD0804N
8R13	DRZ832331	RK73H 2A 2.2KΩF TD0804N
8R14	DRZ832561	RK73H 2A 20KΩF TD0804N
8R15	DRZ832451	RK73H 2A 6.8KΩF TD0804N
8R16	DRZ832491	RK73H 2A 10KΩF TD0804N
8R17	DRZ832851	RK73H 2A 330KΩF TD0804N
8R18	DRZ832731	RK73H 2A 100KΩF TD0804N
8R22, 8R23	DRZ832411	RK73H 2A 4.7KΩF TD0804N
8R24	DRZ832111	RK73H 2A 270ΩF TD0804N
8R25	DRZ832191	RK73H 2A 560ΩF TD0804N
8R26	DRZ832121	RK73H 2A 300ΩF TD0804N
8R30, 8R31	DRZ832851	RK73H 2A 330KΩF TD0804N
8R32	DRZ832251	RK73H 2A 1.0KΩF TD0804N

SC-701 GPIB BOARD(9)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
9C1	DCE219051	SME-CE04W 1A 101M TC04R
9C2 to 9C7	DCC810571	C2012F 1H 104Z A TD0804N
9C8	DCC816601	C2012CH 1H 101J A TD84N
9IC1	DIC472401	EPM7032STC44-10(K0338GPB)
9IC3	DIC196181	SN 75160AN/BN (Texas)
9IC4	DIC557841	NAT 7210BPD
9IC5	DIC499821	TC7S04F/SC7S04F TE0804L
9IC6	DIC196191	SN 75161AN/BN (Texas)
9IC7	DIC889131	TC 7W32F(TE12L) TE1208R
9IC8	DIC484621	74VHC245F EL TE2412B
9J1	DCN129501	52808-3091 TE5612B
9P1	DCN125971	CONNECTOR A1-10PA-2.54DSA
9P2	DCN026611	CONNECTOR 57LE-20240-7700D35-19
9R1 to 9R4	DRZ832491	RK73H 2A 10K Ω F TD0804N
9R5	DRZ832011	RK73H 2A 100 Ω F TD0804N
9R6 to 9R13	DRZ832491	RK73H 2A 10K Ω F TD0804N

D/A CIRCUIT(13)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
13C1, 13C2	DCC810511	C2012F 1H 103Z A TD84N
13C3, 13C4	DCC810571	C2012F 1H 104Z A TD0804N
13C5, 13C6	DCE229201	SME-CE04W 1E 470M TC04R
13C7, 13C8, 13C10, 13C11	DCC810571	C2012F 1H 104Z A TD0804N
13FL1, 13FL2	DCL119361	BL02RN2-R62 TD04N
13IC1	DIC619191	NJM 082M(TE3) TE1208L
13IC2	DIC642381	DAC 7612U
13IC3	DIC659371	NJM 431U-TE1 (JRC)
13IC4	DIC642201	MB88346BPF-G-BND-EF TE2412F
13IC5	DIC619191	NJM 082M(TE3) TE1208L
13JP1 to 13JP3	DRZ831501	MCR10 000E TD0804N
13R1	DRZ831501	MCR10 000E TD0804N
13R2, 13R3	DRZ832521	RK73H 2A 13KΩ F TD0804N
13R4	DRZ832031	RK73H 2A 120Ω F TD0804N
13R5	DRZ831501	MCR10 000E TD0804N
13R6	DRZ832511	RK73H 2A 12KΩ F TD0804N
13R7	DRZ832561	RK73H 2A 20KΩ F TD0804N
13R8	DRZ832351	RK73H 2A 2.7KΩ F TD0804N
13R9	DRZ831501	MCR10 000E TD0804N
13R10, 13R11	DRZ832521	RK73H 2A 13KΩ F TD0804N
13R12	DRZ832511	RK73H 2A 12KΩ F TD0804N
13R13	DRZ832561	RK73H 2A 20KΩ F TD0804N
13R14	DRZ832331	RK73H 2A 2.2KΩ F TD0804N
13R15, 13R16	DRZ832411	RK73H 2A 4.7KΩ F TD0804N
13R17	DRZ832401	RK73H 2A 4.3KΩ F TD0804N
13R18	DRZ832471	RK73H 2A 8.2KΩ F TD0804N
13R19	DRZ832351	RK73H 2A 2.7KΩ F TD0804N

Over All

FRONT ASSY

PART NO.	QTY	DESCRIPTION
KCM144311	1.0	SC FRONT PANEL
KCM144621	1.0	FILTER SC-HL
KPA220221	1.0	PANEL SHEET SC-H
KGM028511	1.0	KEY RUBBER SC-H
KBA790911	1.0	SC FRONT FRAME
MZT903621	4.0	BOARD SPACER RSPS-5LU
MKB130082	2.0	KB(+) 3X8S(NIP)
MSQ901661	3.0	TT2(+) 3X8S
MSQ901781	4.0	TAP tight bind 2X6S(P)

FRAME

PART NO.	QTY	DESCRIPTION
KBA791031	1.0	SC MAIN FRAME
MKD130081	4.0	KD(+) 3X8S
KBA791111	1.0	SC TRANS FRAME
MKB130082	4.0	KB(+) 3X8S(NIP)
MSM440081	6.0	SM4-4X8
MHK000461	1.0	Band CV-100/YJ-100
KCM145621	1.0	POW SW Extended Knob
MKD130081	4.0	KD(+) 3X8S
MKB130082	2.0	KB(+) 3X8S(NIP)

OUTER

PART NO.	QTY	DESCRIPTION
KBA791421	1.0	SC OUTER COVER
KAS102511	1.0	THA246NO.2
MGA000731	2.0	Stand foot TM-174
MGA000741	2.0	Foot TM-175
MKB130082	4.0	KB(+) 3X8S(NIP)
KPA219941	1.0	SC REAR PANEL
MKB130082	4.0	KB(+) 3X8S(NIP)
MPW930000	4.0	W-3 Nylon wisher
MKB240062	1.0	KB(+) 4X6B NIP
MPW940000	1.0	W-4 Nylon wisher
KRA236011	(1)	SC-7207 POWER LABEL
KRA226811	(1)	Serial label

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CH-A/B INPUT(1) 1/3

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1C2, 1C3	DCC810511	C2012F 1H 103Z A TD84N
1C5	DCC850041	GHM1535B 223K630 TE0804N
1C6	DCC810571	C2012F 1H 104Z A TD0804N
1C7	DCC820021	C2012F 1C 105Z A TE0804N
1C8, 1C9	DCC816601	C2012CH 1H 101J A TD84N
1C10	DCC816801	C2012CH 1H 102J A TD84N
1C11	DCC850131	GRM42-6CH 100D500PT TE0804N
1C12	DCC810571	C2012F 1H 104Z A TD0804N
1C13	DCC810511	C2012F 1H 103Z A TD84N
1C14	DCC820021	C2012F 1C 105Z A TE0804N
1C15 to 1C17	DCC810511	C2012F 1H 103Z A TD84N
1C18	DCC816801	C2012CH 1H 102J A TD84N
1C19	DCV019612	ECV-1ZW 06X53T
1C21, 1C22	DCC810511	C2012F 1H 103Z A TD84N
1C24	DCC816591	C2012CH 1H 820J A TD84N
1C25	DCC816451	C2012CH 1H 060D A TD84N
1C26	DCC810511	C2012F 1H 103Z A TD84N
1C27	DCC259151	CC45SL 2H 030C TC04N
1C29	DCC816451	C2012CH 1H 060D A TD84N
1C31 to 1C34	DCC810511	C2012F 1H 103Z A TD84N
1C35	DCC816801	C2012CH 1H 102J A TD84N
1C36	DCC810511	C2012F 1H 103Z A TD84N
1C75, 1C76	DCE229201	SME-CE04W 1E 470M TC04R
1C100 to 1C104	DCC810511	C2012F 1H 103Z A TD84N
1C110, 1C111	DCC810571	C2012F 1H 104Z A TD0804N
1C116	DCC810511	C2012F 1H 103Z A TD84N
1C117	DCC816801	C2012CH 1H 102J A TD84N
1C121, 122	DCC810571	C2012F 1H 104Z A TD0804N
1D1	DDD810461	HSM 124S-JTL TE0804L
1D2	DDD810241	1SS 272 TE0804R
1D3	DDD810461	HSM 124S-JTL TE0804L
1D4 to 1D7	DDD820361	HSR101-01 TRE TE0804R
1D8	DDD810241	1SS 272 TE0804R
1FL1, 1FL2	DCL119361	BL02RN2-R62 TD04N
1IC1	DIC619191	NJM 082M(TE3) TE1208L
1IC2	DIC631251	SPT 9687SIS
1IC3	DIC623591	MAX 4005CSA (MAXIM)
1IC4	DIC619191	NJM 082M(TE3) TE1208L
1IC5	DIC889161	TC 4W53F(TE12L) TE1208R
1J1	DCN040111	CONNECTOR BNC-RB2-NI
1JP1, 1JP2	DZB999011	JPW 01 TA21N
1JP3 to 1JP6, 1JP13, 1JP14	DRZ831501	MCR10 000E TD0804N
1Q1	DTR810221	2SA 1462-T1B Y34
1Q2	DTR890431	DTA114EK/RN2402 TE0804L

CH-A/B INPUT(1) 2/3

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1Q3	DTR890551	DTC114EK/RN1402 TE0804L
1Q4	DTR830371	2SC 3735B34/B35-T1B
1Q5	DTR890431	DTA114EK/RN2402 TE0804L
1Q6, 1Q7	DTR810221	2SA 1462-T1B Y34
1Q8	DTR890551	DTC114EK/RN1402 TE0804L
1Q9	DTR838661	2SC 2712LG TE85L
1Q10	DTR890431	DTA114EK/RN2402 TE0804L
1Q11	DTR830071	2SC 3356-T1B
1Q12, 1Q13	DTR890551	DTC114EK/RN1402 TE0804L
1R1, 1R2	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R3	DRE137531	EF1/4S 36 Ω F TA21N
1R4	DRZ832321	RK73H 2A 2.0K Ω F TD0804N
1R5, 1R7	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R8	DRZ832171	RK73H 2A 470 Ω F TD0804N
1R10	DRZ833441	RK73H 2A 10 Ω F TD0804N
1R11, 1R12	DRZ833071	RK73H 2A 82 Ω F TD0804N
1R13	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R14, 1R15	DRZ833041	RK73H 2A 62 Ω F TD0804N
1R16	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R17	DRZ833441	RK73H 2A 10 Ω F TD0804N
1R19	DRZ833071	RK73H 2A 82 Ω F TD0804N
1R20	DRZ832031	RK73H 2A 120 Ω F TD0804N
1R21	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R22, 1R23	DRZ833051	RK73H 2A 68 Ω F TD0804N
1R24	DRZ832841	RK73H 2A 300K Ω F TD0804N
1R25, 1R26	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R27	DRZ832171	RK73H 2A 470 Ω F TD0804N
1R28	DRZ832811	RK73H 2A 220K Ω F TD0804N
1R29	DRZ832841	RK73H 2A 300K Ω F TD0804N
1R30	DRZ834511	RK73H 2A 200K Ω F TD0804N
1R31	DRZ832321	RK73H 2A 2.0K Ω F TD0804N
1R32	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R33	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
1R34	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R35	DRZ833061	RK73H 2A 75 Ω F TD0804N
1R36	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R37	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R38	DRZ832661	RK73H 2A 51K Ω F TD0804N
1R39	DRZ832841	RK73H 2A 300K Ω F TD0804N
1R40	DRZ832971	RK73H 2A 1.0M Ω F TD0804N
1R41	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R42	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R43	DRZ833491	RK73H 2A 18 Ω F TD0804N
1R44	DRZ832301	RK73H 2A 1.6K Ω F TD0804N
1R45	DRZ834511	RK73H 2A 200K Ω F TD0804N
1R46	DRZ832971	RK73H 2A 1.0M Ω F TD0804N
1R47	DRZ833441	RK73H 2A 10 Ω F TD0804N
1R48	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R49	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
1R50	DRZ832351	RK73H 2A 2.7K Ω F TD0804N

CH-A/B INPUT(1) 3/3

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1R51, 1R52	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R53	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
1R54	DRZ832491	RK73H 2A 10K Ω F TD0804N
1R55	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R57, 1R58	DRZ832491	RK73H 2A 10K Ω F TD0804N
1R59	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R61	DRZ832261	RK73H 2A 1.1K Ω F TD0804N
1R123, 1R124	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R127, 1R128	DRZ832051	RK73H 2A 150 Ω F TD0804N
1R129, 1R130	DRZ832161	RK73H 2A 430 Ω F TD0804N
1R131	DRZ832321	RK73H 2A 2.0K Ω F TD0804N
1R132	DRZ832361	RK73H 2A 3.0K Ω F TD0804N
1R139	DRZ832161	RK73H 2A 430 Ω F TD0804N
1R140	DRZ832651	RK73H 2A 47K Ω F TD0804N
1R143	DRZ850611	RGC1/10C 430K Ω D TD0804N
1R144	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R147, 1R148	DRZ832131	RK73H 2A 330 Ω F TD0804N
1RL1 to 1RL3	DKD028561	RELAY G6K-2F-Y TE1612B

RF BOARD(2) 1/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
2B1, 2B2	DTR860221	FHX 35LPT TE1208F
2C1 to 2C7	DCC811731	C1608B 1H 102K A TD0804N
2C8	DCC816601	C2012CH 1H 101J A TD84N
2C9 to 2C12	DCC811851	C1608B 1H 103K A TD0804N
2C13	DCC816601	C2012CH 1H 101J A TD84N
2C14 to 2C16	DCC811731	C1608B 1H 102K A TD0804N
2C17	DCC811851	C1608B 1H 103K A TD0804N
2C18 to 2C20	DCC811731	C1608B 1H 102K A TD0804N
2C21, 2C22	DCC811851	C1608B 1H 103K A TD0804N
2C23	DCC811731	C1608B 1H 102K A TD0804N
2C24	DCC811851	C1608B 1H 103K A TD0804N
2C25	DCE820141	MV 16VC 47M TE1612R
2C26	DCE815101	MVK10VC 100(M) TE1612R
2C27 to 2C33	DCC811851	C1608B 1H 103K A TD0804N
2C34	DCE815101	MVK10VC 100(M) TE1612R
2C35	DCE820141	MV 16VC 47M TE1612R
2C36 to 2C41	DCC811851	C1608B 1H 103K A TD0804N
2C42, 2C43	DCC830171	C2012B 1A 105K A TE0804N
2C44	DCC811851	C1608B 1H 103K A TD0804N
2D1, 2D2	DDD810491	1SV 271 (TPH3) TE0804R
2D3, 2D4	DDD820361	HSR101-01 TRE TE0804R
2D5, 2D6	DDD810491	1SV 271 (TPH3) TE0804R
2D7, 2D8, 2D10, 2D11	DDD820361	HSR101-01 TRE TE0804R
2FL1, 2FL2	DCL119361	BL02RN2-R62 TD04N
2IC1	DIC619191	NJM 082M(TE3) TE1208L
2IC2, 2IC3	DIC322861	MC 10EL33D (MOTOROLA)
2IC4	DIC639031	NJM 2903M(TE3) TE1208L
2IC5	DIC619191	NJM 082M(TE3) TE1208L
2J1	DCN045681	CONNECTOR BNC-BR-PC-1
2J2	DCN118441	MDF7B-12P-2.54DSA
2L1, 2L2	DCL811401	HK2125 R22J-T TE0804N
2L3 to 2L5	DCL811411	HK1608 39NJ-T TD0804N
2L6	DCL811401	HK2125 R22J-T TE0804N
2Q1, 2Q2	DTR890861	IMZ1 TE0804R
2Q3	DTR890791	IMD3 TE0804R
2Q4	DTR890861	IMZ1 TE0804R
2Q5	DTR890791	IMD3 TE0804R
2Q6, 2Q7	DTR810221	2SA 1462-T1B Y34
2Q8	DTR890551	DTC114EK/RN1402 TE0804L
2R1	DRZ828411	RK73H 1J 3.3K Ω F TD0804N
2R2	DRZ832061	RK73H 2A 160 Ω F TD0804N
2R3	DRZ828411	RK73H 1J 3.3K Ω F TD0804N
2R4	DRZ832071	RK73H 2A 180 Ω F TD0804N
2R5, 2R6	DRZ828681	RK73H 2AS 1.8K Ω F TD0804N
2R7	DRZ822501	RK73H 2AS 2.2K Ω F TD0804N
2R8, 2R9	DRZ828121	RK73H 2AS 1.0K Ω F TD0804N
2R10	DRZ822721	RK73H 2AS 390 Ω F TD0804N
2R11, 2R12	DRZ822501	RK73H 2AS 2.2K Ω F TD0804N
2R13, 2R14	DRZ828121	RK73H 2AS 1.0K Ω F TD0804N
2R15	DRZ822721	RK73H 2AS 390 Ω F TD0804N

RF BOARD(2) 2/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
2R16, 2R17	DRZ822611	RK73H 2AS 100 Ω F TD0804N
2R18, 2R19	DRZ833441	RK73H 2A 10 Ω F TD0804N
2R20, 2R21	DRZ822501	RK73H 2AS 2.2K Ω F TD0804N
2R22, 2R23	DRZ850781	RK73H 2E 130 Ω F TD0804N
2R24	DRZ822711	RK73H 2AS 330 Ω F TD0804N
2R25	DRZ822721	RK73H 2AS 390 Ω F TD0804N
2R26, 2R27	DRZ850781	RK73H 2E 130 Ω F TD0804N
2R28	DRZ822721	RK73H 2AS 390 Ω F TD0804N
2R29	DRZ822311	RK73H 2AS 100K Ω F TD0804N
2R30	DRZ828441	RK73H 2AS 75 Ω F TD0804N
2R31	DRZ822311	RK73H 2AS 100K Ω F TD0804N
2R32	DRZ828121	RK73H 2AS 1.0K Ω F TD0804N
2R33	DRZ828321	RK73H 2AS 51K Ω F TD0804N
2R34	DRZ828411	RK73H 1J 3.3K Ω F TD0804N
2R35	DRV810471	TMC3KJ B 220 Ω TE0804N
2R36, 2R37	DRZ822311	RK73H 2AS 100K Ω F TD0804N
2R38	DRZ822251	RK73H 2AS 15K Ω F TD0804N
2R39, 2R40	DRZ828121	RK73H 2AS 1.0K Ω F TD0804N
2R41	DRZ828321	RK73H 2AS 51K Ω F TD0804N
2R42	DRZ833021	RK73H 2A 51 Ω F TD0804N
2R43	DRZ822501	RK73H 2AS 2.2K Ω F TD0804N
2R44	DRZ822231	RK73H 2AS 2.0K Ω F TD0804N
2R45	DRZ828191	RK73H 2AS 3.0K Ω F TD0804N
2R46 to 2R49	DRZ833071	RK73H 2A 82 Ω F TD0804N
2R50	DRZ822611	RK73H 2AS 100 Ω F TD0804N
2R51, 2R52	DRZ828231	RK73H 2AS 5.1K Ω F TD0804N
2R53 to 2R56	DRZ833041	RK73H 2A 62 Ω F TD0804N
2R57 to 2R60	DRZ833051	RK73H 2A 68 Ω F TD0804N
2R61	DRZ828371	RK73H 2AS 750K Ω F TD0804N
2R62, 2R63	DRZ828231	RK73H 2AS 5.1K Ω F TD0804N
2R65	DRZ822481	RK73H 2AS 33 Ω F TD0804N
2R66	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
2R68	DRZ822481	RK73H 2AS 33 Ω F TD0804N
2R69	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
2R71, 2R72	DRZ822481	RK73H 2AS 33 Ω F TD0804N
2R73 to 2R75	DRZ822491	RK73H 2AS 220 Ω F TD0804N
2R76	DRZ822321	RK73H 2AS 10K Ω F TD0804N
2R77	DRZ822391	RK73H 2AS 4.7K Ω F TD0804N
2R78	DRZ822571	RK73H 2AS 10 Ω F TD0804N
2R79	DRZ822311	RK73H 2AS 100K Ω F TD0804N
2R80	DRZ822241	RK73H 2AS 6.8K Ω F TD0804N
2R81	DRZ822771	RK73H 2AS 680 Ω F TD0804N

POWER(4)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
4C1	DCF161751	ECQ-U2A104ML
4C3, 4C4	DCC140221	DE1307-1 E 472M-KH
4CN1	DCN015961	INLET NC-187-10N
4F1, 4F2	DSK060211	Fuse holder PFC5000-0301
4J1	KHB181821	AC INPUT SELECTER-FS44298-21 UL-I
4L1	DCL170203	LINE FILTER FS-44302-31 UL-I
4P1	DCN997121	POST RTB-1.5-4F
4P2	DCN126011	CONNECTOR 53258-0510
4SW1	DSW019301	Power supply switch SDKEA30100
4Z1	DDD068051	ERZV14D681 UL-M

CLOCK CIRCUIT(5)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
5C33	DCE229201	SME-CE04W 1E 470M TC04R
5C34	DCC810511	C2012F 1H 103Z A TD84N
5C35, 5C36	DCC816541	C2012CH 1H 330J A TD84N
5C37	DCC816641	C2012CH 1H 221J A TD84N
5C40	DCC810511	C2012F 1H 103Z A TD84N
5C41	DCC810571	C2012F 1H 104Z A TD0804N
5C48	DCC816801	C2012CH 1H 102J A TD84N
5D4, 5D5	DDD810241	1SS 272 TE0804R
5FL3	DCL119361	BL02RN2-R62 TD04N
5IC3	DIC448531	MC 74HC153F/AF
5IC4	DIC499831	TC7S32F/SC7S32F TE0804L
5J1, 5J2	KHB095411	MINI PIN JACK
5JP1	DZB999011	JPW 01 TA21N
5JP2	DCN113981	CONNECTOR A2-3PA-2.54DSA
5JP3 to 5JP9, 5R36	DRZ831501	MCR10 000E TD0804N
5P1	DCN990881	CONNECTOR 5267-03A
5Q5 to 5Q7	DTR838661	2SC 2712LG TE85L
5Q8	DTR830071	2SC 3356-T1B
5R29	DRZ832491	RK73H 2A 10KΩF TD0804N
5R30, 5R31	DRZ833011	RK73H 2A 47ΩF TD0804N
5R32	DRZ832851	RK73H 2A 330KΩF TD0804N
5R33	DRZ832211	RK73H 2A 680ΩF TD0804N
5R34	DRZ832851	RK73H 2A 330KΩF TD0804N
5R35	DRZ832211	RK73H 2A 680ΩF TD0804N
5R37	DRZ832491	RK73H 2A 10KΩF TD0804N
5R38	DRZ833071	RK73H 2A 82ΩF TD0804N
5R39	DRZ832551	RK73H 2A 18KΩF TD0804N
5R40	DRZ832271	RK73H 2A 1.2KΩF TD0804N
5R41	DRZ832211	RK73H 2A 680ΩF TD0804N
5R42	DRZ832491	RK73H 2A 10KΩF TD0804N
5R45	DRZ833071	RK73H 2A 82ΩF TD0804N
5R48	DRZ832491	RK73H 2A 10KΩF TD0804N
5X1	DHF060301	5118K-ANL50 10MHZ

POWER(6)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
6C1	DCE926391	LXV 25VB-1000M K25MC
6C2	DCE929981	LXV 16VB-270M J12 TD04R
6C3, 6C4	DCC810571	C2012F 1H 104Z A TD0804N
6C5	DCE926401	LXV 25VB-2200M K40MC
6C6	DCE929981	LXV 16VB-270M J12 TD04R
6C7, 6C8	DCC810571	C2012F 1H 104Z A TD0804N
6C9	DCE926401	LXV 25VB-2200M K40MC
6C10	DCE929981	LXV 16VB-270M J12 TD04R
6C11, 6C12	DCC810571	C2012F 1H 104Z A TD0804N
6C13	DCE926321	LXV 25VB-3300M M30 MC
6C15	DCE916011	LXV 10VB-1000M J20MC
6C16, 6C17	DCC810571	C2012F 1H 104Z A TD0804N
6D1, 6D2	DDD021531	D2SBA60
6D3	DDD024141	D4SBS4
6D4 to 6D7	DDD019071	1SS 120 TA21R
6D8, 6D9	DDD029411	D1NS4 TA21R
6IC1	DIC654131	PQ3RD13
6IC2, 6IC3	DIC654121	PQ05RD11
6IC4	DIC653791	uPC 24A05HF (NEC)
6P1	DCN990921	CONNECTOR 5267-08A
6P2	DCN990871	CONNECTOR 5267-02A

CPU CIRCUIT(7) 1/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
7BT1	DES011201	CR2354-1HF
7BZ1	DSB040951	PKM22EPT-2001
7C1	DCC810571	C2012F 1H 104Z A TD0804N
7C2	DCE229201	SME-CE04W 1E 470M TC04R
7C3 to 7C8	DCC810571	C2012F 1H 104Z A TD0804N
7C9	DCC820021	C2012F 1C 105Z A TE0804N
7C10	DCC810571	C2012F 1H 104Z A TD0804N
7C11	DCC820021	C2012F 1C 105Z A TE0804N
7C12	DCC816761	C2012CH 1H 471J A TD84N
7C13 to 7C17	DCC820021	C2012F 1C 105Z A TE0804N
7C18	DCC810511	C2012F 1H 103Z A TD84N
7C19	DCC820021	C2012F 1C 105Z A TE0804N
7C20 to 7C24	DCC816761	C2012CH 1H 471J A TD84N
7C25, 7C26	DCC820021	C2012F 1C 105Z A TE0804N
7C27	DCC810571	C2012F 1H 104Z A TD0804N
7C28	DCC820021	C2012F 1C 105Z A TE0804N
7C29	DCE219151	SME-CE04W 1A 471M TC04R
7C31	DCC820021	C2012F 1C 105Z A TE0804N
7C32, 7C33	DCC816521	C2012CH 1H 220J A TD84N
7C34, 7C35	DCC810571	C2012F 1H 104Z A TD0804N
7D1	DDD810241	1SS 272 TE0804R
7FL1	DCL119361	BL02RN2-R62 TD04N
7IC1	DIC484621	74VHC245F EL TE2412B
7IC2	DIC699231	M51957BFP TE1208F
7IC3	DIC484611	74VHC244F EL TE2412B
7IC4	DIC484981	DS 14C232CM TE1608B
7IC5	DIC528391	FLASH 512KX8/256KX16(M90)FT
7IC6	DIC484621	74VHC245F EL TE2412B
7IC7	DIC560541	HD 6412240FA20
7IC8, 7IC9	DIC484611	74VHC244F EL TE2412B
7IC10	DIC699231	M51957BFP TE1208F
7IC11	DIC889181	TC 7S14F TE0804L
7J1	DCN129501	52808-3091 TE5612B
7J2	DCN129391	52808-2291 TE4412B
7J3	DCN994771	CONNECTOR 5267-10A
7JP1, 7JP2	DCN113971	CONNECTOR A2-2PA-2.54DSA
7JP3	DCN113981	CONNECTOR A2-3PA-2.54DSA
7L1, 7L2	DCL113731	CHOKE FS44697
7P1	DCN990901	CONNECTOR 5267-06A
7P2	KHB192411	VFD CABLE
7Q1	DTR890551	DTC114EK/RN1402 TE0804L
7Q2	DTR810221	2SA 1462-T1B Y34
7Q3	DTR838661	2SC 2712LG TE85L
7Q5 to 7Q7	DTR890551	DTC114EK/RN1402 TE0804L
7Q8	DTR890431	DTA114EK/RN2402 TE0804L
7R1	DRZ832411	RK73H 2A 4.7K Ω F TD0804N
7R2	DRZ832491	RK73H 2A 10K Ω F TD0804N
7R3	DRZ832391	RK73H 2A 3.9K Ω F TD0804N
7R4	DRZ831501	MCR10 000E TD0804N
7R6 to 7R8	DRZ832491	RK73H 2A 10K Ω F TD0804N

CPU CIRCUIT(7) 2/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
7R9	DRZ832391	RK73H 2A 3.9K Ω F TD0804N
7R10	DRZ832491	RK73H 2A 10K Ω F TD0804N
7R11	DRZ832291	RK73H 2A 1.5K Ω F TD0804N
7R12	DRZ832411	RK73H 2A 4.7K Ω F TD0804N
7R13	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
7R14	DRZ832131	RK73H 2A 330 Ω F TD0804N
7R15	DRZ832491	RK73H 2A 10K Ω F TD0804N
7R16 to 7R19	DRZ832411	RK73H 2A 4.7K Ω F TD0804N
7R21, 7R24, 7R25	DRZ832491	RK73H 2A 10K Ω F TD0804N
7R26	DRZ833551	RK73H 2A 33 Ω F TD0804N
7R27	DRZ832451	RK73H 2A 6.8K Ω F TD0804N
7R28	DRZ832391	RK73H 2A 3.9K Ω F TD0804N
7R29 to 7R31	DRZ832491	RK73H 2A 10K Ω F TD0804N
7R32	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
7RA1 to 7RA4	DFB810051	RAC16 4D 103J A TD0804M
7X1	DHF999131	CSA 20.00MXZ040 TD04N

TLC CIRCUIT(8)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
8C1	DCC810571	C2012F 1H 104Z A TD0804N
8C2	DRZ831501	MCR10 000E TD0804N
8C3	DCC816801	C2012CH 1H 102J A TD84N
8C4	DCC810571	C2012F 1H 104Z A TD0804N
8C5	DRZ831501	MCR10 000E TD0804N
8C6	DCC816801	C2012CH 1H 102J A TD84N
8C7	DCC810511	C2012F 1H 103Z A TD84N
8C8	DCC810571	C2012F 1H 104Z A TD0804N
8C9	DCC816931	C2012CH 1H 222J A TE0804N
8C10, 8C11	DCC820031	C2012F 1C 224Z A TD84N
8C12 to 8C14	DCC810511	C2012F 1H 103Z A TD84N
8C15	DCE929991	LXV 16VB-120M TC04R
8C16	DCC810571	C2012F 1H 104Z A TD0804N
8C17	DCC820031	C2012F 1C 224Z A TD84N
8C18	DCC810571	C2012F 1H 104Z A TD0804N
8D1, 8D2	DDD810241	1SS 272 TE0804R
8FL1	DCL119361	BL02RN2-R62 TD04N
8IC1	DIC472301	CD711APF
8IC2	DIC499831	TC7S32F/SC7S32F TE0804L
8IC4	DIC889121	TC 7W08F(TE12L) TE1208R
8IC7	DIC889181	TC 7S14F TE0804L
8IC8	DIC889191	TC 7W74F(TE12L) TE1208R
8IC9	DIC889141	TC 7W02F(TE12L) TE1208R
8J1	DCN118421	MDF7-12S-2.54DSA
8R3, 8R4	DRZ832071	RK73H 2A 180ΩF TD0804N
8R6	DRZ832451	RK73H 2A 6.8KΩF TD0804N
8R7	DRZ833061	RK73H 2A 75ΩF TD0804N
8R8, 8R9	DRZ832111	RK73H 2A 270ΩF TD0804N
8R10	DRZ832451	RK73H 2A 6.8KΩF TD0804N
8R11	DRZ833061	RK73H 2A 75ΩF TD0804N
8R12	DRZ832521	RK73H 2A 13KΩF TD0804N
8R13	DRZ832331	RK73H 2A 2.2KΩF TD0804N
8R14	DRZ832561	RK73H 2A 20KΩF TD0804N
8R15	DRZ832451	RK73H 2A 6.8KΩF TD0804N
8R16	DRZ832491	RK73H 2A 10KΩF TD0804N
8R17	DRZ832851	RK73H 2A 330KΩF TD0804N
8R18	DRZ832731	RK73H 2A 100KΩF TD0804N
8R24	DRZ832111	RK73H 2A 270ΩF TD0804N
8R25	DRZ832191	RK73H 2A 560ΩF TD0804N
8R26	DRZ832121	RK73H 2A 300ΩF TD0804N
8R28	DRZ832331	RK73H 2A 2.2KΩF TD0804N
8R29	DRZ832451	RK73H 2A 6.8KΩF TD0804N
8R30, 8R31	DRZ832851	RK73H 2A 330KΩF TD0804N
8R32	DRZ832251	RK73H 2A 1.0KΩF TD0804N

SC-701 GPIB BOARD(9)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
9C1	DCE219051	SME-CE04W 1A 101M TC04R
9C2 to 9C7	DCC810571	C2012F 1H 104Z A TD0804N
9C8	DCC816601	C2012CH 1H 101J A TD84N
9IC1	DIC472401	EPM7032STC44-10(K0338GPB)
9IC3	DIC196181	SN 75160AN/BN (Texas)
9IC4	DIC557841	NAT 7210BPD
9IC5	DIC499821	TC7S04F/SC7S04F TE0804L
9IC6	DIC196191	SN 75161AN/BN (Texas)
9IC7	DIC889131	TC 7W32F(TE12L) TE1208R
9IC8	DIC484621	74VHC245F EL TE2412B
9J1	DCN129501	52808-3091 TE5612B
9P1	DCN125971	CONNECTOR A1-10PA-2.54DSA
9P2	DCN026611	CONNECTOR 57LE-20240-7700D35-19
9R1 to 9R4	DRZ832491	RK73H 2A 10K Ω F TD0804N
9R5	DRZ832011	RK73H 2A 100 Ω F TD0804N
9R6 to 9R13	DRZ832491	RK73H 2A 10K Ω F TD0804N

D/A CIRCUIT(13)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
13C1, 13C2	DCC810511	C2012F 1H 103Z A TD84N
13C3, 13C4	DCC810571	C2012F 1H 104Z A TD0804N
13C5, 13C6	DCE229201	SME-CE04W 1E 470M TC04R
13C7, 13C8, 13C10, 13C11	DCC810571	C2012F 1H 104Z A TD0804N
13FL1, 13FL2	DCL119361	BL02RN2-R62 TD04N
13IC1	DIC619191	NJM 082M(TE3) TE1208L
13IC2	DIC642381	DAC 7612U
13IC3	DIC659371	NJM 431U-TE1 (JRC)
13IC4	DIC642201	MB88346BPF-G-BND-EF TE2412F
13IC5	DIC619191	NJM 082M(TE3) TE1208L
13JP1 to 13JP3	DRZ831501	MCR10 000E TD0804N
13R1	DRZ831501	MCR10 000E TD0804N
13R2, 13R3	DRZ832521	RK73H 2A 13KΩ F TD0804N
13R4	DRZ832031	RK73H 2A 120Ω F TD0804N
13R5	DRZ831501	MCR10 000E TD0804N
13R6	DRZ832511	RK73H 2A 12KΩ F TD0804N
13R7	DRZ832561	RK73H 2A 20KΩ F TD0804N
13R8	DRZ832351	RK73H 2A 2.7KΩ F TD0804N
13R9	DRZ831501	MCR10 000E TD0804N
13R10, 13R11	DRZ832521	RK73H 2A 13KΩ F TD0804N
13R12	DRZ832511	RK73H 2A 12KΩ F TD0804N
13R13	DRZ832561	RK73H 2A 20KΩ F TD0804N
13R14	DRZ832331	RK73H 2A 2.2KΩ F TD0804N
13R15, 13R16	DRZ832411	RK73H 2A 4.7KΩ F TD0804N
13R17	DRZ832401	RK73H 2A 4.3KΩ F TD0804N
13R18	DRZ832471	RK73H 2A 8.2KΩ F TD0804N
13R19	DRZ832351	RK73H 2A 2.7KΩ F TD0804N

Over All
FRONT

PART NO.	QTY	DESCRIPTION
KCM144311	1.0	SC FRONT PANEL
KCM144621	1.0	FILTER SC-HL
KPA220221	1.0	PANEL SHEET SC-H
KGM028511	1.0	KEY RUBBER SC-H
KBA790911	1.0	SC FRONT FRAME
MZT903621	4.0	BOARD SPACER RSPS-5LU
MKB130082	2.0	KB(+) 3X8S(NIP)
MSQ901661	3.0	TT2(+) 3X8S
MSQ901781	4.0	TAP tight bind 2X6S(P)

FRAME

PART NO.	QTY	DESCRIPTION
KBA791031	1.0	SC MAIN FRAME
MKD130081	4.0	KD(+) 3X8S
KBA791111	1.0	SC TRANS FRAME
MKB130082	4.0	KB(+) 3X8S(NIP)
MSM440081	6.0	SM4-4X8
MHK000461	1.0	Band CV-100/YJ-100
KCM145621	1.0	POW SW Extended Knob
MKD130081	4.0	KD(+) 3X8S
MKB130082	2.0	KB(+) 3X8S(NIP)

OUTER

PART NO.	QTY	DESCRIPTION
KBA791421	1.0	SC OUTER COVER
KAS102511	1.0	THA246NO.2
MGA000731	2.0	Stand foot TM-174
MGA000741	2.0	Foot TM-175
MKB130082	4.0	KB(+) 3X8S(NIP)
KPA219941	1.0	SC REAR PANEL
MKB130082	4.0	KB(+) 3X8S(NIP)
MPW930000	4.0	W-3 Nylon wisher
MKB240062	1.0	KB(+) 4X6B NIP
MPW940000	1.0	W-4 Nylon wisher
KRA236011	(1)	SC-7207 POWER LABEL
KRA226811	(1)	Serial label

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CH-A/B INPUT(1) 1/5

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1C2, 1C3	DCC810511	C2012F 1H 103Z A TD84N
1C4	DCC239691	USD04CH 150J TC04N
1C5	DCC850041	GHM1535B 223K630 TE0804N
1C6	DCC810571	C2012F 1H 104Z A TD0804N
1C7	DCC820021	C2012F 1C 105Z A TE0804N
1C8, 1C9	DCC816601	C2012CH 1H 101J A TD84N
1C10	DCC816801	C2012CH 1H 102J A TD84N
1C11	DCC850131	GRM42-6CH 100D500PT TE0804N
1C12	DCC810571	C2012F 1H 104Z A TD0804N
1C13	DCC810511	C2012F 1H 103Z A TD84N
1C14	DCC820021	C2012F 1C 105Z A TE0804N
1C15 to 1C17	DCC810511	C2012F 1H 103Z A TD84N
1C18	DCC816801	C2012CH 1H 102J A TD84N
1C19	DCV019612	ECV-1ZW 06X53T
1C21, 1C22	DCC810511	C2012F 1H 103Z A TD84N
1C24	DCC816591	C2012CH 1H 820J A TD84N
1C25	DCC816451	C2012CH 1H 060D A TD84N
1C26	DCC810511	C2012F 1H 103Z A TD84N
1C27	DCC259151	CC45SL 2H 030C TC04N
1C29	DCC816451	C2012CH 1H 060D A TD84N
1C31 to 1C34	DCC810511	C2012F 1H 103Z A TD84N
1C35	DCC816801	C2012CH 1H 102J A TD84N
1C36, 1C38, 1C40, 1C41	DCC810511	C2012F 1H 103Z A TD84N
1C42	DCC239691	USD04CH 150J TC04N
1C43	DCC850041	GHM1535B 223K630 TE0804N
1C44	DCC810511	C2012F 1H 103Z A TD84N
1C45	DCC810571	C2012F 1H 104Z A TD0804N
1C46	DCC820021	C2012F 1C 105Z A TE0804N
1C47, 1C48	DCC816601	C2012CH 1H 101J A TD84N
1C49	DCC816801	C2012CH 1H 102J A TD84N
1C50	DCC810571	C2012F 1H 104Z A TD0804N
1C51	DCC850131	GRM42-6CH 100D500PT TE0804N
1C52 to 1C54	DCC810511	C2012F 1H 103Z A TD84N
1C55	DCC816801	C2012CH 1H 102J A TD84N
1C56	DCC810511	C2012F 1H 103Z A TD84N
1C57	DCV019612	ECV-1ZW 06X53T
1C59	DCC810511	C2012F 1H 103Z A TD84N
1C60	DCC816451	C2012CH 1H 060D A TD84N
1C62	DCC816591	C2012CH 1H 820J A TD84N
1C63	DCC810511	C2012F 1H 103Z A TD84N
1C64	DCC259151	CC45SL 2H 030C TC04N
1C66	DCC820021	C2012F 1C 105Z A TE0804N
1C67	DCC816451	C2012CH 1H 060D A TD84N
1C69, 1C70	DCC810511	C2012F 1H 103Z A TD84N

CH-A/B INPUT(1) 2/5

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1C71	DCC816801	C2012CH 1H 102J A TD84N
1C72, 1C73	DCC810511	C2012F 1H 103Z A TD84N
1C75 to 1C78	DCE229201	SME-CE04W 1E 470M TC04R
1C100 to 1C109	DCC810511	C2012F 1H 103Z A TD84N
1C110 to 1C113	DCC810571	C2012F 1H 104Z A TD0804N
1C116	DCC810511	C2012F 1H 103Z A TD84N
1C117	DCC816801	C2012CH 1H 102J A TD84N
1C119	DCC810511	C2012F 1H 103Z A TD84N
1C120	DCC816801	C2012CH 1H 102J A TD84N
1C121 to 1C124	DCC810571	C2012F 1H 104Z A TD0804N
1D1	DDD810461	HSM 124S-JTL TE0804L
1D2	DDD810241	1SS 272 TE0804R
1D3	DDD810461	HSM 124S-JTL TE0804L
1D4 to 1D7	DDD820361	HSR101-01 TRE TE0804R
1D8	DDD810241	1SS 272 TE0804R
1D9	DDD810461	HSM 124S-JTL TE0804L
1D10	DDD810241	1SS 272 TE0804R
1D11	DDD810461	HSM 124S-JTL TE0804L
1D12 to 1D15	DDD820361	HSR101-01 TRE TE0804R
1D16	DDD810241	1SS 272 TE0804R
1FL1 to 1FL4	DCL119361	BL02RN2-R62 TD04N
1IC1	DIC619191	NJM 082M(TE3) TE1208L
1IC2	DIC631251	SPT 9687SIS
1IC3	DIC623591	MAX 4005CSA (MAXIM)
1IC4	DIC619191	NJM 082M(TE3) TE1208L
1IC5	DIC889161	TC 4W53F(TE12L) TE1208R
1IC6	DIC619191	NJM 082M(TE3) TE1208L
1IC7	DIC631251	SPT 9687SIS
1IC8	DIC623591	MAX 4005CSA (MAXIM)
1IC9	DIC619191	NJM 082M(TE3) TE1208L
1IC10	DIC889161	TC 4W53F(TE12L) TE1208R
1J1, 1J2	DCN040111	CONNECTOR BNC-RB2-NI
1JP1, 1JP2	DZB999011	JPW 01 TA21N
1JP3 to 1JP6	DRZ831501	MCR10 000E TD0804N
1JP7, 1JP8	DZB999011	JPW 01 TA21N
1JP9 to 1JP16	DRZ831501	MCR10 000E TD0804N
1Q1	DTR810221	2SA 1462-T1B Y34
1Q2	DTR890431	DTA114EK/RN2402 TE0804L
1Q3	DTR890551	DTC114EK/RN1402 TE0804L
1Q4	DTR830371	2SC 3735B34/B35-T1B
1Q5	DTR890431	DTA114EK/RN2402 TE0804L
1Q6, 1Q7	DTR810221	2SA 1462-T1B Y34
1Q8	DTR890551	DTC114EK/RN1402 TE0804L
1Q9	DTR838661	2SC 2712LG TE85L
1Q10	DTR890431	DTA114EK/RN2402 TE0804L
1Q11	DTR830071	2SC 3356-T1B
1Q12, 1Q13	DTR890551	DTC114EK/RN1402 TE0804L
1Q14	DTR810221	2SA 1462-T1B Y34
1Q15	DTR890431	DTA114EK/RN2402 TE0804L
1Q16	DTR890551	DTC114EK/RN1402 TE0804L

CH-A/B INPUT(1) 3/5

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1Q17	DTR830371	2SC 3735B34/B35-T1B
1Q18	DTR890431	DTA114EK/RN2402 TE0804L
1Q19	DTR810221	2SA 1462-T1B Y34
1Q20	DTR890551	DTC114EK/RN1402 TE0804L
1Q21	DTR838661	2SC 2712LG TE85L
1Q22	DTR810221	2SA 1462-T1B Y34
1Q23	DTR890431	DTA114EK/RN2402 TE0804L
1Q24	DTR890551	DTC114EK/RN1402 TE0804L
1Q25	DTR830071	2SC 3356-T1B
1Q26	DTR890551	DTC114EK/RN1402 TE0804L
1R1, 1R2	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R3	DRE137531	EF1/4S 36 Ω F TA21N
1R4	DRZ832321	RK73H 2A 2.0K Ω F TD0804N
1R5, 1R7	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R8	DRZ832171	RK73H 2A 470 Ω F TD0804N
1R10	DRZ833441	RK73H 2A 10 Ω F TD0804N
1R11, 1R12	DRZ833071	RK73H 2A 82 Ω F TD0804N
1R13	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R14, 1R15	DRZ833041	RK73H 2A 62 Ω F TD0804N
1R16	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R17	DRZ833441	RK73H 2A 10 Ω F TD0804N
1R19	DRZ833071	RK73H 2A 82 Ω F TD0804N
1R20	DRZ832031	RK73H 2A 120 Ω F TD0804N
1R21	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R22, 1R23	DRZ833051	RK73H 2A 68 Ω F TD0804N
1R24	DRZ832841	RK73H 2A 300K Ω F TD0804N
1R25, 1R26	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R27	DRZ832171	RK73H 2A 470 Ω F TD0804N
1R28	DRZ832811	RK73H 2A 220K Ω F TD0804N
1R29	DRZ832841	RK73H 2A 300K Ω F TD0804N
1R30	DRZ834511	RK73H 2A 200K Ω F TD0804N
1R31	DRZ832321	RK73H 2A 2.0K Ω F TD0804N
1R32	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R33	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
1R34	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R35	DRZ833061	RK73H 2A 75 Ω F TD0804N
1R36	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R37	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R38	DRZ832661	RK73H 2A 51K Ω F TD0804N
1R39	DRZ832841	RK73H 2A 300K Ω F TD0804N
1R40	DRZ832971	RK73H 2A 1.0M Ω F TD0804N
1R41	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R42	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R43	DRZ833491	RK73H 2A 18 Ω F TD0804N
1R44	DRZ832301	RK73H 2A 1.6K Ω F TD0804N
1R45	DRZ834511	RK73H 2A 200K Ω F TD0804N
1R46	DRZ832971	RK73H 2A 1.0M Ω F TD0804N
1R47	DRZ833441	RK73H 2A 10 Ω F TD0804N
1R48	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R49	DRZ832331	RK73H 2A 2.2K Ω F TD0804N

CH-A/B INPUT(1) 4/5

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1R50	DRZ832351	RK73H 2A 2.7K Ω F TD0804N
1R51, 1R52	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R53	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
1R54	DRZ832491	RK73H 2A 10K Ω F TD0804N
1R55	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R57, 1R58	DRZ832491	RK73H 2A 10K Ω F TD0804N
1R59	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R61	DRZ832261	RK73H 2A 1.1K Ω F TD0804N
1R62, 1R63	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R64	DRE137531	EF1/4S 36 Ω F TA21N
1R65	DRZ832321	RK73H 2A 2.0K Ω F TD0804N
1R67	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R68	DRZ832171	RK73H 2A 470 Ω F TD0804N
1R70	DRZ833441	RK73H 2A 10 Ω F TD0804N
1R71, 1R72	DRZ833071	RK73H 2A 82 Ω F TD0804N
1R73	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R74	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R76, 1R77	DRZ833041	RK73H 2A 62 Ω F TD0804N
1R78	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R79	DRZ833441	RK73H 2A 10 Ω F TD0804N
1R80	DRZ832841	RK73H 2A 300K Ω F TD0804N
1R81	DRZ833071	RK73H 2A 82 Ω F TD0804N
1R82	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R83	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R84, 1R85	DRZ833051	RK73H 2A 68 Ω F TD0804N
1R86	DRZ832031	RK73H 2A 120 Ω F TD0804N
1R87	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R88	DRZ834511	RK73H 2A 200K Ω F TD0804N
1R89	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R90	DRZ832811	RK73H 2A 220K Ω F TD0804N
1R91	DRZ832841	RK73H 2A 300K Ω F TD0804N
1R92	DRZ832321	RK73H 2A 2.0K Ω F TD0804N
1R93	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R94	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
1R95	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R96	DRZ833061	RK73H 2A 75 Ω F TD0804N
1R97	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R98	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R99	DRZ832661	RK73H 2A 51K Ω F TD0804N
1R100	DRZ832841	RK73H 2A 300K Ω F TD0804N
1R101	DRZ832971	RK73H 2A 1.0M Ω F TD0804N
1R102	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R103	DRZ832171	RK73H 2A 470 Ω F TD0804N
1R104	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R105	DRZ833491	RK73H 2A 18 Ω F TD0804N
1R106	DRZ832301	RK73H 2A 1.6K Ω F TD0804N
1R107	DRZ834511	RK73H 2A 200K Ω F TD0804N
1R108	DRZ832971	RK73H 2A 1.0M Ω F TD0804N
1R109	DRZ833441	RK73H 2A 10 Ω F TD0804N
1R110	DRZ833551	RK73H 2A 33 Ω F TD0804N

CH-A/B INPUT(1) 5/5

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
1R111	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
1R112	DRZ832351	RK73H 2A 2.7K Ω F TD0804N
1R113	DRZ833551	RK73H 2A 33 Ω F TD0804N
1R114	DRZ832491	RK73H 2A 10K Ω F TD0804N
1R115	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
1R116	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R119, 1R120	DRZ832491	RK73H 2A 10K Ω F TD0804N
1R121	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R122	DRZ832261	RK73H 2A 1.1K Ω F TD0804N
1R123 to 1R126	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R127, 1R128	DRZ832051	RK73H 2A 150 Ω F TD0804N
1R129, 1R130	DRZ832161	RK73H 2A 430 Ω F TD0804N
1R131	DRZ832321	RK73H 2A 2.0K Ω F TD0804N
1R132	DRZ832361	RK73H 2A 3.0K Ω F TD0804N
1R133, 1R134	DRZ832051	RK73H 2A 150 Ω F TD0804N
1R135, 1R136	DRZ832161	RK73H 2A 430 Ω F TD0804N
1R137	DRZ832321	RK73H 2A 2.0K Ω F TD0804N
1R138	DRZ832361	RK73H 2A 3.0K Ω F TD0804N
1R139	DRZ832161	RK73H 2A 430 Ω F TD0804N
1R140	DRZ832651	RK73H 2A 47K Ω F TD0804N
1R141	DRZ832161	RK73H 2A 430 Ω F TD0804N
1R142	DRZ832651	RK73H 2A 47K Ω F TD0804N
1R143	DRZ850611	RGC1/10C 430K Ω D TD0804N
1R144	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R145	DRZ850611	RGC1/10C 430K Ω D TD0804N
1R146	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
1R147 to 1R150	DRZ832131	RK73H 2A 330 Ω F TD0804N
1RL1 to 1RL6	DKD028561	RELAY G6K-2F-Y TE1612B

RF BOARD(2) 1/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
2B1, 2B2	DTR860221	FHX 35LPT TE1208F
2C1 to 2C7	DCC811731	C1608B 1H 102K A TD0804N
2C8	DCC816601	C2012CH 1H 101J A TD84N
2C9 to 2C12	DCC811851	C1608B 1H 103K A TD0804N
2C13	DCC816601	C2012CH 1H 101J A TD84N
2C14 to 2C16	DCC811731	C1608B 1H 102K A TD0804N
2C17	DCC811851	C1608B 1H 103K A TD0804N
2C18 to 2C20	DCC811731	C1608B 1H 102K A TD0804N
2C21, 2C22	DCC811851	C1608B 1H 103K A TD0804N
2C23	DCC811731	C1608B 1H 102K A TD0804N
2C24	DCC811851	C1608B 1H 103K A TD0804N
2C25	DCE820141	MV 16VC 47M TE1612R
2C26	DCE815101	MVK10VC 100(M) TE1612R
2C27 to 2C33	DCC811851	C1608B 1H 103K A TD0804N
2C34	DCE815101	MVK10VC 100(M) TE1612R
2C35	DCE820141	MV 16VC 47M TE1612R
2C36 to 2C41	DCC811851	C1608B 1H 103K A TD0804N
2C42, 2C43	DCC830171	C2012B 1A 105K A TE0804N
2C44	DCC811851	C1608B 1H 103K A TD0804N
2D1, 2D2	DDD810491	1SV 271 (TPH3) TE0804R
2D3, 2D4	DDD820361	HSR101-01 TRE TE0804R
2D5, 2D6	DDD810491	1SV 271 (TPH3) TE0804R
2D7, 2D8, 2D10, 2D11	DDD820361	HSR101-01 TRE TE0804R
2FL1, 2FL2	DCL119361	BL02RN2-R62 TD04N
2IC1	DIC619191	NJM 082M(TE3) TE1208L
2IC2, 2IC3	DIC322861	MC 10EL33D (MOTOROLA)
2IC4	DIC639031	NJM 2903M(TE3) TE1208L
2IC5	DIC619191	NJM 082M(TE3) TE1208L
2J1	DCN045681	CONNECTOR BNC-BR-PC-1
2J2	DCN118441	MDF7B-12P-2.54DSA
2L1, 2L2	DCL811401	HK2125 R22J-T TE0804N
2L3 to 2L5	DCL811411	HK1608 39NJ-T TD0804N
2L6	DCL811401	HK2125 R22J-T TE0804N
2Q1, 2Q2	DTR890861	IMZ1 TE0804R
2Q3	DTR890791	IMD3 TE0804R
2Q4	DTR890861	IMZ1 TE0804R
2Q5	DTR890791	IMD3 TE0804R
2Q6, 2Q7	DTR810221	2SA 1462-T1B Y34
2Q8	DTR890551	DTC114EK/RN1402 TE0804L
2R1	DRZ828411	RK73H 1J 3.3K Ω F TD0804N
2R2	DRZ832061	RK73H 2A 160 Ω F TD0804N
2R3	DRZ828411	RK73H 1J 3.3K Ω F TD0804N
2R4	DRZ832071	RK73H 2A 180 Ω F TD0804N
2R5, 2R6	DRZ828681	RK73H 2AS 1.8K Ω F TD0804N
2R7	DRZ822501	RK73H 2AS 2.2K Ω F TD0804N
2R8, 2R9	DRZ828121	RK73H 2AS 1.0K Ω F TD0804N
2R10	DRZ822721	RK73H 2AS 390 Ω F TD0804N
2R11, 2R12	DRZ822501	RK73H 2AS 2.2K Ω F TD0804N
2R13, 2R14	DRZ828121	RK73H 2AS 1.0K Ω F TD0804N
2R15	DRZ822721	RK73H 2AS 390 Ω F TD0804N

RF BOARD(2) 2/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
2R16, 2R17	DRZ822611	RK73H 2AS 100Ω F TD0804N
2R18, 2R19	DRZ833441	RK73H 2A 10Ω F TD0804N
2R20, 2R21	DRZ822501	RK73H 2AS 2.2KΩ F TD0804N
2R22, 2R23	DRZ850781	RK73H 2E 130Ω F TD0804N
2R24	DRZ822711	RK73H 2AS 330Ω F TD0804N
2R25	DRZ822721	RK73H 2AS 390Ω F TD0804N
2R26, 2R27	DRZ850781	RK73H 2E 130Ω F TD0804N
2R28	DRZ822721	RK73H 2AS 390Ω F TD0804N
2R29	DRZ822311	RK73H 2AS 100KΩ F TD0804N
2R30	DRZ828441	RK73H 2AS 75Ω F TD0804N
2R31	DRZ822311	RK73H 2AS 100KΩ F TD0804N
2R32	DRZ828121	RK73H 2AS 1.0KΩ F TD0804N
2R33	DRZ828321	RK73H 2AS 51KΩ F TD0804N
2R34	DRZ828411	RK73H 1J 3.3KΩ F TD0804N
2R35	DRV810471	TMC3KJ B 220Ω ohm TE0804N
2R36, 2R37	DRZ822311	RK73H 2AS 100KΩ F TD0804N
2R38	DRZ822251	RK73H 2AS 15KΩ F TD0804N
2R39, 2R40	DRZ828121	RK73H 2AS 1.0KΩ F TD0804N
2R41	DRZ828321	RK73H 2AS 51KΩ F TD0804N
2R42	DRZ833021	RK73H 2A 51Ω F TD0804N
2R43	DRZ822501	RK73H 2AS 2.2KΩ F TD0804N
2R44	DRZ822231	RK73H 2AS 2.0KΩ F TD0804N
2R45	DRZ828191	RK73H 2AS 3.0KΩ F TD0804N
2R46 to 2R49	DRZ833071	RK73H 2A 82Ω F TD0804N
2R50	DRZ822611	RK73H 2AS 100Ω F TD0804N
2R51, 2R52	DRZ828231	RK73H 2AS 5.1KΩ F TD0804N
2R53 to 2R56	DRZ833041	RK73H 2A 62Ω F TD0804N
2R57 to 2R60	DRZ833051	RK73H 2A 68Ω F TD0804N
2R61	DRZ828371	RK73H 2AS 750KΩ F TD0804N
2R62, 2R63	DRZ828231	RK73H 2AS 5.1KΩ F TD0804N
2R65	DRZ822481	RK73H 2AS 33Ω F TD0804N
2R66	DRZ832251	RK73H 2A 1.0KΩ F TD0804N
2R68	DRZ822481	RK73H 2AS 33Ω F TD0804N
2R69	DRZ832251	RK73H 2A 1.0KΩ F TD0804N
2R71, 2R72	DRZ822481	RK73H 2AS 33Ω F TD0804N
2R73 to 2R75	DRZ822491	RK73H 2AS 220Ω F TD0804N
2R76	DRZ822321	RK73H 2AS 10KΩ F TD0804N
2R77	DRZ822391	RK73H 2AS 4.7KΩ F TD0804N
2R78	DRZ822571	RK73H 2AS 10Ω F TD0804N
2R79	DRZ822311	RK73H 2AS 100KΩ F TD0804N
2R80	DRZ822241	RK73H 2AS 6.8KΩ F TD0804N
2R81	DRZ822771	RK73H 2AS 680Ω F TD0804N

POWER(4)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
4C1	DCF161751	ECQ-U2A104ML
4C3, 4C4	DCC140221	DE1307-1 E 472M-KH
4CN1	DCN015961	INLET NC-187-10N
4F1, 4F2	DSK060211	Fuse holder PFC5000-0301
4J1	KHB181821	AC INPUT SELECTER-FS44298-21 UL-I
4L1	DCL170203	LINE FILTER FS-44302-31 UL-I
4P1	DCN997121	POST RTB-1.5-4F
4P2	DCN126011	CONNECTOR 53258-0510
4SW1	DSW019301	Power supply switch SDKEA30100
4Z1	DDD068051	ERZV14D681 UL-M

CLOCK CIRCUIT(5) 1/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
5C1	DCE229201	SME-CE04W 1E 470M TC04R
5C2	DCC810571	C2012F 1H 104Z A TD0804N
5C3	DCC816801	C2012CH 1H 102J A TD84N
5C4	DCC810511	C2012F 1H 103Z A TD84N
5C5	DCC816611	C2012CH 1H 121J A TD84N
5C6	DCC816631	C2012CH 1H 181J A TD84N
5C7	DCC816571	C2012CH 1H 560J A TD84N
5C9	DCC816611	C2012CH 1H 121J A TD84N
5C10	DCC816541	C2012CH 1H 330J A TD84N
5C11	DCC816661	C2012CH 1H 391J A TD84N
5C12	DRZ831501	MCR10 000E TD0804N
5C15	DCC816541	C2012CH 1H 330J A TD84N
5C17	DCC810511	C2012F 1H 103Z A TD84N
5C18, 5C20	DCC816801	C2012CH 1H 102J A TD84N
5C21	DCC816631	C2012CH 1H 181J A TD84N
5C22	DCC816661	C2012CH 1H 391J A TD84N
5C23	DCC810511	C2012F 1H 103Z A TD84N
5C24	DCC816491	C2012CH 1H 100D A TD84N
5C25	DCC810551	C2012F 1H 473Z A TD84N
5C26	DCC816801	C2012CH 1H 102J A TD84N
5C27 to 5C29	DCC810511	C2012F 1H 103Z A TD84N
5C30	DCC816601	C2012CH 1H 101J A TD84N
5C31	DCC816801	C2012CH 1H 102J A TD84N
5C32	DCC810511	C2012F 1H 103Z A TD84N
5C33	DCE229201	SME-CE04W 1E 470M TC04R
5C34	DCC810511	C2012F 1H 103Z A TD84N
5C35, 5C36	DCC816541	C2012CH 1H 330J A TD84N
5C37	DCC816641	C2012CH 1H 221J A TD84N
5C40	DCC810511	C2012F 1H 103Z A TD84N
5C41	DCC810571	C2012F 1H 104Z A TD0804N
5C48	DCC816801	C2012CH 1H 102J A TD84N
5D1 to 5D3	DDD810441	1SV 214(TPH4) TE0804R
5D4 to 5D6	DDD810241	1SS 272 TE0804R
5FL1, 5FL3	DCL119361	BL02RN2-R62 TD04N
5IC2	DIC472291	LMX 2306TM
5IC3	DIC448531	MC 74HC153F/AF
5IC4	DIC499831	TC7S32F/SC7S32F TE0804L
5J1, 5J2	KHB095411	MINI PIN JACK
5JP1	DZB999011	JPW 01 TA21N
5JP2	DCN113981	CONNECTOR A2-3PA-2.54DSA
5JP3 to 5JP9	DRZ831501	MCR10 000E TD0804N
5L1	DCL811341	HK1608 27NJ-T TD0804N
5L2	DCL811351	HK2125 R47J-T TE0804N
5P1	DCN990881	CONNECTOR 5267-03A
5Q1, 5Q2	DTR830071	2SC 3356-T1B
5Q4	DTR810041	2SA 1162Y TE85L
5Q5 to 5Q7	DTR838661	2SC 2712LG TE85L
5Q8	DTR830071	2SC 3356-T1B
5R1	DRZ832391	RK73H 2A 3.9KΩ F TD0804N
5R3	DRZ831501	MCR10 000E TD0804N

CLOCK CIRCUIT(5) 2/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
5R4	DRZ832391	RK73H 2A 3.9K Ω F TD0804N
5R5, 5R7	DRZ833551	RK73H 2A 33 Ω F TD0804N
5R8	DRZ833441	RK73H 2A 10 Ω F TD0804N
5R9	DRZ832131	RK73H 2A 330 Ω F TD0804N
5R10	DRZ832391	RK73H 2A 3.9K Ω F TD0804N
5R11	DRZ832041	RK73H 2A 130 Ω F TD0804N
5R12	DRZ832391	RK73H 2A 3.9K Ω F TD0804N
5R15	DRZ833441	RK73H 2A 10 Ω F TD0804N
5R16	DRZ832131	RK73H 2A 330 Ω F TD0804N
5R20	DRZ832011	RK73H 2A 100 Ω F TD0804N
5R21	DRZ832731	RK73H 2A 100K Ω F TD0804N
5R22	DRZ832561	RK73H 2A 20K Ω F TD0804N
5R23	DRZ832481	RK73H 2A 9.1K Ω F TD0804N
5R24, 5R25	DRZ833491	RK73H 2A 18 Ω F TD0804N
5R26	DRZ832791	RK73H 2A 180K Ω F TD0804N
5R27	DRZ831501	MCR10 000E TD0804N
5R28, 5R29	DRZ832491	RK73H 2A 10K Ω F TD0804N
5R30, 5R31	DRZ833011	RK73H 2A 47 Ω F TD0804N
5R32	DRZ832851	RK73H 2A 330K Ω F TD0804N
5R33	DRZ832211	RK73H 2A 680 Ω F TD0804N
5R34	DRZ832851	RK73H 2A 330K Ω F TD0804N
5R35	DRZ832211	RK73H 2A 680 Ω F TD0804N
5R37	DRZ832491	RK73H 2A 10K Ω F TD0804N
5R38	DRZ833071	RK73H 2A 82 Ω F TD0804N
5R39	DRZ832551	RK73H 2A 18K Ω F TD0804N
5R40	DRZ832271	RK73H 2A 1.2K Ω F TD0804N
5R41	DRZ832211	RK73H 2A 680 Ω F TD0804N
5R42	DRZ832491	RK73H 2A 10K Ω F TD0804N
5R45	DRZ833071	RK73H 2A 82 Ω F TD0804N
5R47	DRZ832411	RK73H 2A 4.7K Ω F TD0804N
5R48	DRZ832491	RK73H 2A 10K Ω F TD0804N
5X1	DHF060301	5118K-ANL50 10MHZ

POWER(6)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
6C1	DCE926391	LXV 25VB-1000M K25MC
6C2	DCE929981	LXV 16VB-270M J12 TD04R
6C3, 6C4	DCC810571	C2012F 1H 104Z A TD0804N
6C5	DCE926401	LXV 25VB-2200M K40MC
6C6	DCE929981	LXV 16VB-270M J12 TD04R
6C7, 6C8	DCC810571	C2012F 1H 104Z A TD0804N
6C9	DCE926401	LXV 25VB-2200M K40MC
6C10	DCE929981	LXV 16VB-270M J12 TD04R
6C11, 6C12	DCC810571	C2012F 1H 104Z A TD0804N
6C13	DCE926321	LXV 25VB-3300M M30 MC
6C15	DCE916011	LXV 10VB-1000M J20MC
6C16, 6C17	DCC810571	C2012F 1H 104Z A TD0804N
6D1, 6D2	DDD021531	D2SBA60
6D3	DDD024141	D4SBS4
6D4 to 6D7	DDD019071	1SS 120 TA21R
6D8, 6D9	DDD029411	D1NS4 TA21R
6IC1	DIC654131	PQ3RD13
6IC2, 6IC3	DIC654121	PQ05RD11
6IC4	DIC653791	uPC 24A05HF (NEC)
6P1	DCN990921	CONNECTOR 5267-08A
6P2	DCN990871	CONNECTOR 5267-02A

CPU CIRCUIT(7) 1/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
7BT1	DES011201	CR2354-1HF
7BZ1	DSB040951	PKM22EPT-2001
7C1	DCC810571	C2012F 1H 104Z A TD0804N
7C2	DCE229201	SME-CE04W 1E 470M TC04R
7C3 to 7C8	DCC810571	C2012F 1H 104Z A TD0804N
7C9	DCC820021	C2012F 1C 105Z A TE0804N
7C10	DCC810571	C2012F 1H 104Z A TD0804N
7C11	DCC820021	C2012F 1C 105Z A TE0804N
7C12	DCC816761	C2012CH 1H 471J A TD84N
7C13 to 7C17	DCC820021	C2012F 1C 105Z A TE0804N
7C18	DCC810511	C2012F 1H 103Z A TD84N
7C19	DCC820021	C2012F 1C 105Z A TE0804N
7C20 to 7C24	DCC816761	C2012CH 1H 471J A TD84N
7C25, 7C26	DCC820021	C2012F 1C 105Z A TE0804N
7C27	DCC810571	C2012F 1H 104Z A TD0804N
7C28	DCC820021	C2012F 1C 105Z A TE0804N
7C29	DCE219151	SME-CE04W 1A 471M TC04R
7C31	DCC820021	C2012F 1C 105Z A TE0804N
7C32, 7C33	DCC816521	C2012CH 1H 220J A TD84N
7C34, 7C35	DCC810571	C2012F 1H 104Z A TD0804N
7D1	DDD810241	1SS 272 TE0804R
7FL1	DCL119361	BL02RN2-R62 TD04N
7IC1	DIC484621	74VHC245F EL TE2412B
7IC2	DIC699231	M51957BFP TE1208F
7IC3	DIC484611	74VHC244F EL TE2412B
7IC4	DIC484981	DS 14C232CM TE1608B
7IC5	DIC528391	FLASH 512KX8/256KX16(M90)FT
7IC6	DIC484621	74VHC245F EL TE2412B
7IC7	DIC560541	HD 6412240FA20
7IC8, 7IC9	DIC484611	74VHC244F EL TE2412B
7IC10	DIC699231	M51957BFP TE1208F
7IC11	DIC889181	TC 7S14F TE0804L
7J1	DCN129501	52808-3091 TE5612B
7J2	DCN129391	52808-2291 TE4412B
7J3	DCN994771	CONNECTOR 5267-10A
7JP1, 7JP2	DCN113971	CONNECTOR A2-2PA-2.54DSA
7JP3	DCN113981	CONNECTOR A2-3PA-2.54DSA
7L1, 7L2	DCL113731	CHOKE FS44697
7P1	DCN990901	CONNECTOR 5267-06A
7P2	KHB192411	VFD CABLE
7Q1	DTR890551	DTC114EK/RN1402 TE0804L
7Q2	DTR810221	2SA 1462-T1B Y34
7Q3	DTR838661	2SC 2712LG TE85L
7Q5 to 7Q7	DTR890551	DTC114EK/RN1402 TE0804L
7Q8	DTR890431	DTA114EK/RN2402 TE0804L
7R1	DRZ832411	RK73H 2A 4.7K Ω F TD0804N
7R2	DRZ832491	RK73H 2A 10K Ω F TD0804N
7R3	DRZ832391	RK73H 2A 3.9K Ω F TD0804N
7R4	DRZ831501	MCR10 000E TD0804N
7R6 to 7R8	DRZ832491	RK73H 2A 10K Ω F TD0804N

CPU CIRCUIT(7) 2/2

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
7R9	DRZ832391	RK73H 2A 3.9K Ω F TD0804N
7R10	DRZ832491	RK73H 2A 10K Ω F TD0804N
7R11	DRZ832291	RK73H 2A 1.5K Ω F TD0804N
7R12	DRZ832411	RK73H 2A 4.7K Ω F TD0804N
7R13	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
7R14	DRZ832131	RK73H 2A 330 Ω F TD0804N
7R15	DRZ832491	RK73H 2A 10K Ω F TD0804N
7R16 to 7R19	DRZ832411	RK73H 2A 4.7K Ω F TD0804N
7R21, 7R24, 7R25	DRZ832491	RK73H 2A 10K Ω F TD0804N
7R26	DRZ833551	RK73H 2A 33 Ω F TD0804N
7R27	DRZ832451	RK73H 2A 6.8K Ω F TD0804N
7R28	DRZ832391	RK73H 2A 3.9K Ω F TD0804N
7R29 to 7R31	DRZ832491	RK73H 2A 10K Ω F TD0804N
7R32	DRZ832251	RK73H 2A 1.0K Ω F TD0804N
7RA1 to 7RA4	DFB810051	RAC16 4D 103J A TD0804M
7X1	DHF999131	CSA 20.00MXZ040 TD04N

TLC CIRCUIT(8)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
8C1	DCC810571	C2012F 1H 104Z A TD0804N
8C2, 8C3	DCC816801	C2012CH 1H 102J A TD84N
8C4	DCC810571	C2012F 1H 104Z A TD0804N
8C5, 8C6	DCC816801	C2012CH 1H 102J A TD84N
8C7	DCC810511	C2012F 1H 103Z A TD84N
8C8	DCC810571	C2012F 1H 104Z A TD0804N
8C9	DCC816931	C2012CH 1H 222J A TE0804N
8C10, 8C11	DCC820031	C2012F 1C 224Z A TD84N
8C12 to 8C14	DCC810511	C2012F 1H 103Z A TD84N
8C15	DCE929991	LXV 16VB-120M TC04R
8C16	DCC810571	C2012F 1H 104Z A TD0804N
8C17	DCC820031	C2012F 1C 224Z A TD84N
8C18	DCC810571	C2012F 1H 104Z A TD0804N
8D1, 8D2	DDD810241	1SS 272 TE0804R
8FL1	DCL119361	BL02RN2-R62 TD04N
8IC1	DIC472301	CD711APF
8IC3	DIC889141	TC 7W02F(TE12L) TE1208R
8IC4	DIC889121	TC 7W08F(TE12L) TE1208R
8IC7	DIC889181	TC 7S14F TE0804L
8IC8	DIC889191	TC 7W74F(TE12L) TE1208R
8IC9	DIC889141	TC 7W02F(TE12L) TE1208R
8J1	DCN118421	MDF7-12S-2.54DSA
8Q1	DTR890431	DTA114EK/RN2402 TE0804L
8Q2	DTR890551	DTC114EK/RN1402 TE0804L
8R1	DRZ831501	MCR10 000E TD0804N
8R2	DRZ832521	RK73H 2A 13K Ω F TD0804N
8R3, 8R4	DRZ832071	RK73H 2A 180 Ω F TD0804N
8R5	DRZ832521	RK73H 2A 13K Ω F TD0804N
8R6, 8R7	DRZ833061	RK73H 2A 75 Ω F TD0804N
8R8, 8R9	DRZ832111	RK73H 2A 270 Ω F TD0804N
8R10, 8R11	DRZ833061	RK73H 2A 75 Ω F TD0804N
8R12	DRZ832521	RK73H 2A 13K Ω F TD0804N
8R13	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
8R14	DRZ832561	RK73H 2A 20K Ω F TD0804N
8R15	DRZ832451	RK73H 2A 6.8K Ω F TD0804N
8R16	DRZ832491	RK73H 2A 10K Ω F TD0804N
8R17	DRZ832851	RK73H 2A 330K Ω F TD0804N
8R18	DRZ832731	RK73H 2A 100K Ω F TD0804N
8R22, 8R23	DRZ832411	RK73H 2A 4.7K Ω F TD0804N
8R24	DRZ832111	RK73H 2A 270 Ω F TD0804N
8R25	DRZ832191	RK73H 2A 560 Ω F TD0804N
8R26	DRZ832121	RK73H 2A 300 Ω F TD0804N
8R30, 8R31	DRZ832851	RK73H 2A 330K Ω F TD0804N
8R32	DRZ832251	RK73H 2A 1.0K Ω F TD0804N

SC-701 GPIB BOARD(9)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
9C1	DCE219051	SME-CE04W 1A 101M TC04R
9C2 to 9C7	DCC810571	C2012F 1H 104Z A TD0804N
9C8	DCC816601	C2012CH 1H 101J A TD84N
9IC1	DIC472401	EPM7032STC44-10(K0338GPB)
9IC3	DIC196181	SN 75160AN/BN (Texas)
9IC4	DIC557841	NAT 7210BPD
9IC5	DIC499821	TC7S04F/SC7S04F TE0804L
9IC6	DIC196191	SN 75161AN/BN (Texas)
9IC7	DIC889131	TC 7W32F(TE12L) TE1208R
9IC8	DIC484621	74VHC245F EL TE2412B
9J1	DCN129501	52808-3091 TE5612B
9P1	DCN125971	CONNECTOR A1-10PA-2.54DSA
9P2	DCN026611	CONNECTOR 57LE-20240-7700D35-19
9R1 to 9R4	DRZ832491	RK73H 2A 10K Ω F TD0804N
9R5	DRZ832011	RK73H 2A 100 Ω F TD0804N
9R6 to 9R13	DRZ832491	RK73H 2A 10K Ω F TD0804N

D/A CIRCUIT(13)

CIRCUIT REFERENCE	PART NO.	DESCRIPTION
13C1, 13C2	DCC810511	C2012F 1H 103Z A TD84N
13C3, 13C4	DCC810571	C2012F 1H 104Z A TD0804N
13C5, 13C6	DCE229201	SME-CE04W 1E 470M TC04R
13C7, 13C8, 13C10, 13C11	DCC810571	C2012F 1H 104Z A TD0804N
13FL1, 13FL2	DCL119361	BL02RN2-R62 TD04N
13IC1	DIC619191	NJM 082M(TE3) TE1208L
13IC2	DIC642381	DAC 7612U
13IC3	DIC659371	NJM 431U-TE1 (JRC)
13IC4	DIC642201	MB88346BPF-G-BND-EF TE2412F
13IC5	DIC619191	NJM 082M(TE3) TE1208L
13JP1 to 13JP3	DRZ831501	MCR10 000E TD0804N
13R1	DRZ831501	MCR10 000E TD0804N
13R2, 13R3	DRZ832521	RK73H 2A 13K Ω F TD0804N
13R4	DRZ832031	RK73H 2A 120 Ω F TD0804N
13R5	DRZ831501	MCR10 000E TD0804N
13R6	DRZ832511	RK73H 2A 12K Ω F TD0804N
13R7	DRZ832561	RK73H 2A 20K Ω F TD0804N
13R8	DRZ832351	RK73H 2A 2.7K Ω F TD0804N
13R9	DRZ831501	MCR10 000E TD0804N
13R10, 13R11	DRZ832521	RK73H 2A 13K Ω F TD0804N
13R12	DRZ832511	RK73H 2A 12K Ω F TD0804N
13R13	DRZ832561	RK73H 2A 20K Ω F TD0804N
13R14	DRZ832331	RK73H 2A 2.2K Ω F TD0804N
13R15, 13R16	DRZ832411	RK73H 2A 4.7K Ω F TD0804N
13R17	DRZ832401	RK73H 2A 4.3K Ω F TD0804N
13R18	DRZ832471	RK73H 2A 8.2K Ω F TD0804N
13R19	DRZ832351	RK73H 2A 2.7K Ω F TD0804N

Over All
FRONT

PART NO.	QTY	DESCRIPTION
KCM144311	1.0	SC FRONT PANEL
KCM144621	1.0	FILTER SC-HL
KPA220221	1.0	PANEL SHEET SC-H
KGM028511	1.0	KEY RUBBER SC-H
KBA790911	1.0	SC FRONT FRAME
MZT903621	4.0	BOARD SPACER RSPS-5LU
MKB130082	2.0	KB(+) 3X8S(NIP)
MSQ901661	3.0	TT2(+) 3X8S
MSQ901781	4.0	TAP tight bind 2X6S(P)

FRAME

PART NO.	QTY	DESCRIPTION
KBA791031	1.0	SC MAIN FRAME
MKD130081	4.0	KD(+) 3X8S
KBA791111	1.0	SC TRANS FRAME
MKB130082	4.0	KB(+) 3X8S(NIP)
MSM440081	6.0	SM4-4X8
MHK000461	1.0	Band CV-100/YJ-100
KCM145621	1.0	POW SW Extended Knob
MKD130081	4.0	KD(+) 3X8S
MKB130082	2.0	KB(+) 3X8S(NIP)

OUTER

PART NO.	QTY	DESCRIPTION
KBA791421	1.0	SC OUTER COVER
KAS102511	1.0	Handle THA246NO.2
MGA000731	2.0	Stand foot TM-174
MGA000741	2.0	Foot TM-175
MKB130082	4.0	KB(+) 3X8S(NIP)
KPA219941	1.0	SC REAR PANEL
MKB130082	4.0	KB(+) 3X8S(NIP)
MPW930000	4.0	W-3 Nylon wisher
MKB240062	1.0	KB(+) 4X6B NIP
MPW940000	1.0	W-4 Nylon wisher
KRA236011	(1)	SC-7207 POWER LABEL
KRA226811	(1)	Serial label

Memo

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