



WARNING

THE FOLLOWING SERVICING INSTRUCTIONS ARE FOR USE BY QUALIFIED PERSONNEL ONLY. TO AVOID PERSONAL INJURY, DO NOT PERFORM ANY SERVICING OTHER THAN THAT CONTAINED IN OPERATING INSTRUCTIONS UNLESS YOU ARE QUALIFIED TO DO SO.

PLEASE CHECK FOR CHANGE INFORMATION AT THE REAR OF THIS MANUAL.

CG 551AP/CG 5001 PROGRAMMABLE CALIBRATION GENERATOR

**VOL 2
With Options**

INSTRUCTION MANUAL


**Tektronix, Inc.
P.O. Box 500
Beaverton, Oregon 97077
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NOTE

The following tables appear in the Diagrams and Illustrations foldout section.

OPERATORS SAFETY SUMMARY

The general safety information in this part of the summary is for both operating and servicing personnel. Specific warnings and cautions will be found throughout the manual where they apply, but may not appear in this summary.

TERMS

In This Manual

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

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

As Marked on Equipment

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

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

SYMBOLS

In This Manual



This symbol indicates where applicable cautionary or other information is to be found.

As Marked on Equipment



DANGER — High voltage.



Protective ground (earth) terminal.



ATTENTION — refer to manual.

Power Source

This product is intended to operate in a power module connected to a power source that will not apply more than

250 volts rms between the supply conductors or between either supply conductor and ground. A protective ground connection by way of the grounding conductor in the power module power cord is essential for safe operation.

Grounding the Product

This product is grounded through the grounding conductor of the power module power cord. To avoid electrical shock, plug the power cord into a properly wired receptacle before connecting to the product input or output terminals. A protective ground connection by way of the grounding conductor in the power module power cord is essential for safe operation.

Danger Arising From Loss of Ground

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

Use the Proper Fuse

To avoid fire hazard, use only the fuse of correct type, voltage rating and current rating as specified in the parts list for your product.

Refer fuse replacement to qualified service personnel.

Do Not Operate in Explosive Atmospheres

To avoid explosion, do not operate this product in an explosive atmosphere unless it has been specifically certified for such operation.

Do Not Operate Without Covers

To avoid personal injury, do not operate this product without covers or panels installed. Do not apply power to the plug-in via a plug-in extender.

SERVICE SAFETY SUMMARY

FOR QUALIFIED SERVICE PERSONNEL ONLY

Refer also to the preceding Operators Safety Summary.

Do Not Service Alone

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

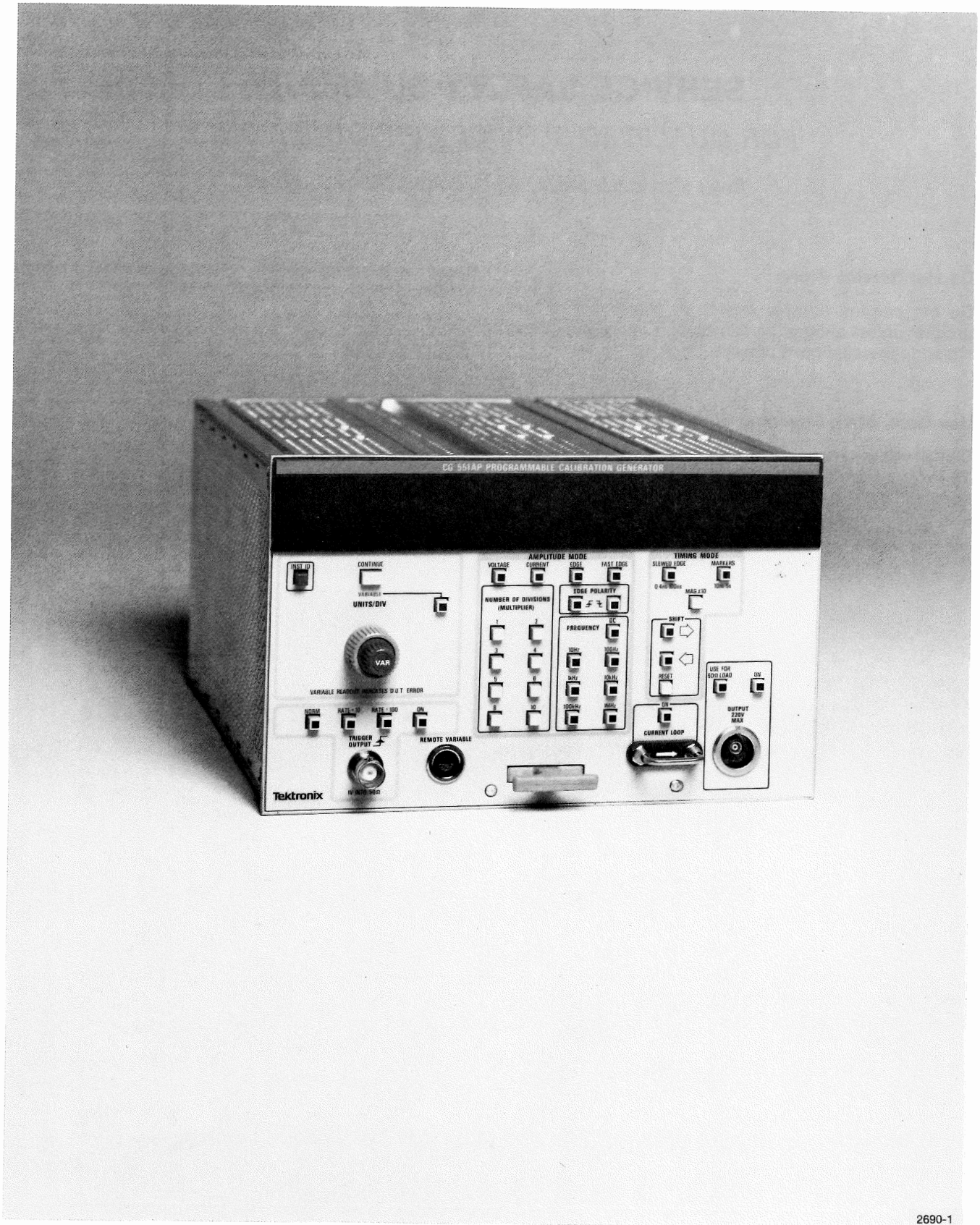
Use Care When Servicing With Power On

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

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

Power Source

This product is intended to operate in a power module connected to a power source that will not apply more than 250 volts rms between the supply conductors or between either supply conductor and ground. A protective ground connection by way of the grounding conductor in the power module power cord is essential for safe operation.



2690-1

CG 551AP Programmable Calibration Generator

CALIBRATION

Introduction

This section of the manual is in two parts: Performance Check and Adjustment Procedure. Each subsection has a different purpose and important information regarding their use is included at the beginning of both subsections. These procedures also may be useful as preliminary troubleshooting aids.

equipment used must meet or exceed the listed specifications. Detailed operating instructions for the test equipment are not given in this procedure. Refer to the appropriate instruction manual if more test equipment operating information is required.

Test Equipment Required

The test equipment listed in Table 5-1, or equivalent equipment, is required to complete the Performance Check and Adjustment Procedure. In Table 5-1, the specifications given for the equipment are the minimum necessary to provide accurate results. Therefore, the

Calibration Interval

To ensure correct instrument operation, check the internal adjustments and performance of the CG 551AP every 1000 hours of operation or every six months if used infrequently. Before performing the Adjustment Procedure, perform preventive maintenance as outlined in the Maintenance section.

Table 5-1
LIST OF TEST EQUIPMENT REQUIREMENTS

Item No.	Description	Minimum Specifications	Application		Example
			Performance Check	Adjustment Procedure	
1	Oscilloscope System	Minimum vertical deflection factor, 10 μ V/div. Fastest calibrated sweep rate, .5 ns/div.	X See footnote ^a	X See footnote ^b	TEKTRONIX 7904/7A22/7A26/7A19/7B92A (7B80)
2	Sampling System		X See footnote ^c	X	TEKTRONIX 7904/7T11/7S11/S-6/S-3A with 100X Attenuator Head
3	Digital Voltmeter	5 1/2 digits, .005% dc voltage accuracy	X	X	Fluke Model 8500A/8502A
4	Dc current meter, with test leads.	Measure dc current to 250 mA.	X		TEKTRONIX DM 501A Requires TM 500-Series Power Module.
5	Function Generator	100 kHz trigger source, \geq 1 V output	X		TEKTRONIX FG 503. Requires TM 500-Series Power Module
6	Calibration Fixture	Tunnel Diode Pulser 250 mV output, risetime \leq 125 ps	X		Tektronix Part No. 067-0681-01

Table 5-1 (cont)

Item No.	Description	Minimum Specifications	Application		Example
			Performance Check	Adjustment Procedure	
7	Frequency Counter	10 Hz to 100 MHz, 1 Hz resolution	X	X	TEKTRONIX DC 508A, Option 01. Requires TM 500-Series Power Module
8	Universal Counter	Ratio A/B, Period Averaging	X See footnote ^d		TEKTRONIX DC 503. Requires TM 500-Series Power Module
9	Probe	10X, 1 M Ω , DC to 1 MHz	X	X	TEKTRONIX P6105
10	Probe	100X, 50 Ω	X		TEKTRONIX P6057
11	Output Cable Assembly	Supplied with CG 551AP	X	X	Tektronix Part No. 012-0884-00
12	Coaxial Cable	50 Ω , bnc connectors	X	X	Tektronix Part No. 012-0076-00 (18") or 012-0057-01 (42")
13	Termination	50 Ω , precision feedthrough	X	X	Tektronix Part No. 011-0129-00
14	Termination	50 Ω , female (SMA)	X	X	Tektronix Part No. 015-1004-00
15	2X Attenuator	50 Ω (6 dB)	X	X	Tektronix Part No. 011-0069-02
16	2.5X Attenuator	50 Ω (8 dB)	X	X	Tektronix Part No. 011-0076-02
17	5X Attenuator	50 Ω (14 dB)	X		Tektronix Part No. 011-0060-02
18	10X Attenuator	50 Ω (20 dB)	X		Tektronix Part No. 011-0059-02
19	Load resistor	1 k Ω , 2W, 5%	X		Tektronix Part No. 305-0102-00
20	Load resistor	10 k Ω , 2W, 5%	X		Tektronix Part No. 305-0103-00
21	Load resistor	20 k Ω , 2W, 5%		X	Tektronix Part No. 305-0203-00
22	Adapter	bnc female to dual banana	X	X	Tektronix Part No. 103-0090-00
23	Adapter	bnc male to dual binding post	X	X	Tektronix Part No. 103-0035-00
24	Adapter	bnc to probe tip	X	X	Tektronix Part No. 013-0084-01
25	Adapter	bnc female to bnc female	X	X	Tektronix Part No. 103-0028-00

Table 5-1 (cont)

Item No.	Description	Minimum Specifications	Application		Example
			Performance Check	Adjustment Procedure	
26	Adapter (2 required)	SMA male to bnc female	X	X	Tektronix Part No. 015-1018-00
27	Marking pencil	For glazed surfaces	X		Dixon Phano
28	Flexible Plug-in Extender (3 required)	Compatible with TM 500-Series power modules.		X	Tektronix Part No. 067-0645-02
29	Power Module	GPIB compatibility	X	X	TEKTRONIX TM 515 (Mod UB) or TM 506 (Mod JB)
30	Controller	GPIB compatibility	X		TEKTRONIX 4050-Series; for example, 4051
31	GPIB cable	Standard GPIB Interconnect, 2 meters	X		Tektronix Part No. 012-0630-01

^a The TEKTRONIX 7B80 Time Base may be substituted in all Performance Check steps, except for the SLEWED EDGE MODE which requires the 7B92A/7A19/7A26 combination.

^b The TEKTRONIX 7B80 Time Base may be substituted for the 7B92A Time Base when performing all of the Adjustments. The 7A22 and 7A19 are not used for Adjustments.

^c The S-3A Sampling Head with 100X Attenuator Head is required only for the Performance Check. The S-6 Sampling Head is used for both the Performance Check and Adjustments.

^d The TEKTRONIX DC 503 Universal Counter is used only for the Performance Check of the SLEWED EDGE MODE.

PERFORMANCE CHECK

Purpose

The following Performance Check procedures are intended to be used for incoming inspection to determine the acceptability of newly purchased or recently purchased instruments.

The procedures do not check every facet of instrument calibration; rather they are concerned primarily with those portions of the instrument that are essential to measurement accuracy and correct operation.

This procedure is written such that it can be independently performed for the operating mode desired. The numerically numbered steps within an operating mode check must be performed in the sequence presented.

Removing the CG 551AP from the power module is not necessary to perform the Performance Check procedures. All checks can be made from the front panel and via the GPIB.

NOTE

Performance Check procedures for the Pulse Head (FAST EDGE MODE), Comparator, and Remote Variable accessories are found in their respective instruction manuals.

Limits and Tolerances

All limits and tolerances given in this procedure are performance guides and should not be interpreted as instrument specifications unless they are listed as such in the Specification section.

Equipment Required

Equipment required to perform a complete Performance Check is described in Table 5-1. At the beginning of the instructions for each operating mode check is a list of test equipment required to accomplish the steps in that block of instruction.

When equipment other than that recommended is used, control settings or test setups may need to be altered. If the item of equipment given as an example in Table 5-1 is not available, check the Minimum Specification column and the footnotes following Table 5-1 carefully to determine whether any other equipment might suffice. Then, check the list of equipment required under the performance checks for the individual operating modes. If the

item is used for a performance check that is of little or no importance to your measurement requirements, the item and corresponding steps can be deleted.

Preparation

Before installing the CG 551AP in the power module for a first time Performance Check, set the GPIB address switches for an address of 01 (decimal) and the end of message terminator switch to the EOI only position. Instructions for setting these switches are found in Section 3, Vol. 1 (Fig. 3-1).

List of Performance Checks

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GPIB INTERFACE TEST	5-22

Preliminary Instructions

Apply power to the CG 551AP and perform the following steps:

1. Press the INST ID button and check for the GPIB address displayed in the readout window; address should be decimal 01.
2. Observe the displayed power on default values and that the CG 551AP OUTPUT is off.
3. Press and hold the CG 551AP RESET button for about 1 second; all LED segments in the display window should be illuminated.
4. The CG 551AP does not have to be connected to the GPIB controller until you are ready for the GPIB Interface Test.
5. Allow approximately 15—20 minutes warmup time.
6. Proceed with the following Performance Checks.

VOLTAGE AMPLITUDE MODE

Table 5-2

VOLTAGE RANGE AND DC ACCURACY

Equipment Required (see footnotes following Table 5-1)

Oscilloscope System—TEKTRONIX 7904/7A22/7A26/7B80.
 Sampling System—TEKTRONIX 7904/7S11/7T11/S-6/S-3A/100X Attenuator Head.
 Digital Voltmeter—Fluke Model 8800A.
 Dc Current Meter—TEKTRONIX DM 501A.
 Function Generator—TEKTRONIX FG 503.
 Probe, 10X, 1 M Ω ,—TEKTRONIX P6105.
 Output Cable Assembly (supplied with CG 551AP).
 Coaxial Cable, 50 Ω , bnc connectors.
 Adapter, bnc to dual binding post.
 Adapter, bnc to probe tip.
 Adapter, bnc female to dual banana.
 Adapter, SMA male to bnc female (2 required).
 Termination, 50 Ω , female (SMA).
 Termination, 50 Ω , precision feedthrough.
 10X Attenuator, 50 Ω .
 Load resistor, 10 k Ω , 2W, 5%.

UNITS/DIV (V/D)	NUMBER OF DIVISIONS (MULTIPLIER)	Voltmeter Reading Limits (Vdc)
20	10	200.50 to 199.50
10	10	100.25 to 99.75
10	2	20.05 to 19.95
10	1	10.025 to 9.975
1	8	8.020 to 7.980
1	6	6.015 to 5.985
1	5	5.0125 to 4.9875
1	4	4.010 to 3.990
1	3	3.0075 to 2.9925
.5	5	2.5062 to 2.4938
.5	3	1.5037 to 1.4963
.1	1	0.1002 to 0.0998

1. Check Voltage Range and Dc Accuracy

- a. Set the CG 551AP controls as follows:

AMPLITUDE MODE	VOLTAGE
OUTPUT	ON
FREQUENCY	DC
USE FOR 50 Ω LOAD	Off
VARIABLE	Off

- b. Connect the CG 551AP OUTPUT connector through the output cable assembly to the digital voltmeter input terminals.

- c. Set the UNITS/DIV control and NUMBER OF DIVISIONS (MULTIPLIER) pushbuttons as listed in Table 5-2.

- d. CHECK—that the voltmeter reads within the limits shown in Table 5-2.

- e. Leave the control settings and proceed to the next step.

2. Check Voltage Variable Range Accuracy

- a. Set the digital voltmeter to the 20 Vdc scale.

- b. Change the CG 551AP controls as follows:

UNITS/DIV	10 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
VARIABLE	ON

- c. Turn the CG 551AP VARIABLE control so that the readout in the display window indicates the percent values shown in Table 5-3.

- d. CHECK—that the voltmeter reads within the voltmeter reading limits listed in Table 5-3.

Table 5-3

VOLTAGE VARIABLE RANGE ACCURACY

CG 551AP Display	Voltmeter Reading Limits (Vdc)
5.0% LOW	10.5000 to 10.5526
9.9% LOW	11.0711 to 11.1265
5.0% HIGH	9.5000 to 9.5476
9.9% HIGH	9.0764 to 9.1219

e. Leave the control settings and connections and continue to the next step.

3. Check Voltage Mode Current Limit

a. Change the CG 551AP controls as follows:

UNITS/DIV	5 V/D
VARIABLE	Off

b. Remove the output cable assembly connection to the voltmeter and connect the precision 50 Ω load between the cable and the voltmeter.

c. Set the CG 551AP USE FOR 50 Ω LOAD pushbutton to ON.

d. Set the CG 551AP UNITS/DIV control and NUMBER OF DIVISIONS (MULTIPLIER) pushbuttons to the values shown in Table 5-4.

e. CHECK—that the voltmeter reads between the limits listed in Table 5-4.

Table 5-4

VOLTAGE MODE CURRENT LIMITS

UNITS/DIV (V/D)	NUMBER OF DIVISIONS (MULTIPLIER)	Voltmeter Reading Limits (Vdc)
5	1	4.9875 to 5.0125
1	1	0.9975 to 1.0025
.1	1	0.09975 to 0.10025

f. Set the USE FOR 50 Ω LOAD to off and the OUTPUT to off.

g. Remove the precision 50 Ω termination.

h. Using appropriate adapters and test leads, connect the output cable to the voltmeter with a 10 kΩ, 2 W resistor in parallel with the voltmeter input terminals.

WARNING

Do not touch the output terminals during this test; 100 V is present on these terminals.

i. Set the CG 551AP UNITS/DIV control to 10 V/D and the NUMBER OF DIVISIONS (MULTIPLIER) to 10.

j. Set the digital voltmeter to the 200 Vdc scale and the CG 551AP OUTPUT to ON.

k. CHECK—that the voltmeter reads between 99.75 and 100.25 Vdc.

l. Set the CG 551AP NUMBER OF DIVISIONS (MULTIPLIER) to 1 and the OUTPUT to off. Remove the 10 kΩ load resistor and the connections to the voltmeter. Proceed to the next step.

4. Check Voltage Mode Short Circuit Current

a. Set the CG 551AP UNITS/DIV control for 10 V/D and NUMBER OF DIVISIONS (MULTIPLIER) to 1.

b. Connect the CG 551AP OUTPUT through the output cable assembly to the dc current meter with appropriate adapters.

c. Set the dc current meter to measure 200 mA. Set the CG 551AP OUTPUT to ON.

d. CHECK—that UNCAL is shown in the CG 551AP display and that the dc current meter reads less than 200 mA.

e. Set the CG 551AP UNITS/DIV control to 20 V/D.

f. CHECK—that UNCAL is shown on the CG 551AP display and that the dc current meter reads less than 30 mA.

g. Remove all connections to the dc current meter and proceed to the next step.

5. Check Square-wave Voltage Accuracy

NOTE

NOTE

Perform all of the following measurements as quickly as possible; otherwise, drift of the Sampling Units (in time) may cause measurement errors.

a. Set the CG 551AP controls as follows:

UNITS/DIV	0.5 V/D
VARIABLE	Off
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	100 kHz
USE FOR 50 Ω LOAD	ON
TRIGGER OUTPUT	ON

b. Using the output cable assembly and an SMA male to bnc female adapter, connect the CG 551AP OUTPUT to the S-6 Sampling Head installed in the 7S11 Sampling Unit. Terminate the S-6 with the 50 Ω, female (SMA) terminator.

c. Connect the CG 551AP TRIGGER OUTPUT through a 50 Ω coaxial cable and SMA male to bnc female adapter to the 7T11 Trigger Input connector.

d. Set the 7S11 and 7T11 to the settings in Table 5-5. See NOTE following Table 5-5.

e. Change the 7T11 Time/Div to 2 μs/div.

Table 5-5 is also used (referenced) for certain steps in the CURRENT AMPLITUDE MODE and LOW EDGE AMPLITUDE MODE checks. Adjust the Sampling System TRIG LEVEL and STABILITY controls for a stable display. Adjust the SCAN control for good squarewave response.

f. Adjust the 7S11 Variable control for 4 divisions of vertical deflection on the crt display.

g. Change 7S11 vertical deflection to 2 mV/div and align the top of the square wave exactly on the center horizontal graticule line.

h. Disconnect the cable from the CG 551AP TRIGGER OUTPUT and connect the cable to the FG 503 TRIG OUT connector. Set FG 503 controls for a trigger output of approximately 100 kHz.

i. Set the CG 551AP FREQUENCY to DC.

j. CHECK—that the sweep trace (dc level on the crt) is within ±1 major division of the center horizontal graticule line.

k. Disconnect the output cable from the S-6 Sampling Head and connect a 10X attenuator to the cable. Reconnect the attenuator and cable to the S-6 Sampling Head.

l. Change the CG 551AP controls as follows:

UNITS/DIV	5 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	100 kHz

m. Repeat steps 5d through 5j.

n. Replace the S-6 Sampling Head with an S-3A Sampling Head and 100X attenuator head. Remove the 10X attenuator from the output cable assembly and reconnect the cable via a bnc to probe tip adapter to the 100X attenuator head on the S-3A.

o. Set the 7S11 vertical deflection to 200 mV/div and set the 7T11 Sampling Sweep Unit to 5 μsec/div.

p. Connect the CG 551AP TRIGGER OUTPUT to the 7T11 Trigger Input.

Table 5-5

INITIAL SETTINGS FOR SAMPLING SYSTEM

Unit	Control	Setting
7S11 (with S6)	mVolts/DIV	200
	VAR	on (out)
	Polarity	+ up
	DC Offset	centered
7T11	Dot Response	Smooth
	Slope	+
	Sampling	Sequential
	TRIG AMP	X 1
	TRIG SEL	EXT
		50 Ω, 2V max
	SCAN	Rep
Time Pos Rng	50 μs	
Time/Div	.5 μs	

Calibration—CG 551AP, Vol. 2
Performance Check

q. Change the CG 551AP controls as follows:

FREQUENCY	10 kHz
USE FOR 50 Ω LOAD	Off
UNITS/DIV	50 V/D
NUMBER OF DIVISIONS	4
(MULTIPLIER)	

r. Adjust the 7S11 Variable for 5 divisions of vertical deflection on the crt display.

s. Set the 7S11 vertical deflection to 2 mV/div. Set the S-3A Offset to X2 position. Align the top of the square wave exactly on the center horizontal graticule line.

t. Disconnect the cable from the CG 551AP TRIGGER OUTPUT and connect the cable to the FG 503 TRIG OUT connector. Set FG 503 for a trigger output of approximately 100 kHz. Set the CG 551AP FREQUENCY to DC.

u. CHECK—that the sweep trace is within ± 1.25 major divisions of the center horizontal graticule line.

v. Set the CG 551AP OUTPUT to off. Remove all connections to the Sampling System.

w. Replace the sampling plug-in units with a 7A22 Differential Amplifier and 7B80 Time Base. Set the CG 551AP controls as follows:

FREQUENCY	1 kHz
VARIABLE	Off
UNITS/DIV	20 mV/D
USE FOR 50 Ω LOAD	ON
NUMBER OF DIVISIONS	4
(MULTIPLIER)	
OUTPUT	ON

x. Connect the CG 551AP OUTPUT connector through the output cable and precision 50 Ω terminator to the 7A22 + INPUT connector, DC Coupled. Connect the CG 551AP TRIGGER OUTPUT through a 50 Ω coaxial cable to the 7B80 EXT TRIG IN connector.

NOTE

The trigger signal must NOT be terminated in 50 Ω when operating at low amplitudes. Circulating ground currents can cause output amplitude errors.

y. Set the 7A22 VOLTS/DIV controls to match the CG 551AP UNITS/DIV setting. Set the 7A22 HF -3 dB point to 1 MHz and the LF -3 dB point to DC. Set 7B80 Time Base controls for a stable, displayed signal.

z. CHECK—that the displayed waveform is approximately 4 divisions high.

aa. Change the CG 551AP UNITS/DIV control to .2 mV/D.

bb. Repeat steps 5y and 5z.

cc. Change the CG 551AP UNITS/DIV control to 10 μV/D.

dd. Repeat steps 5y and 5z.

ee. Record the peak-to-peak amplitude of the noise level on top or bottom of the displayed waveform.

ff. Ground the 7A22 input using the input coupling controls.

gg. Observe that the noise level is the same (i.e., that it does not become smaller in peak-to-peak amplitude).

hh. Remove the connections to the 7A22 Differential Amplifier.

6. Check Voltage Aberrations

a. Replace the 7A22 Differential Amplifier with a 7A26 Amplifier plug-in unit.

b. Set the CG 551AP controls as follows:

UNITS/DIV	20 mV/D
VARIABLE	Off
NUMBER OF DIVISIONS	5
(MULTIPLIER)	
FREQUENCY	100 kHz
TRIGGER OUTPUT	ON
OUTPUT	ON
USE FOR 50 Ω LOAD	Off

c. Connect the CG 551AP through the output cable assembly to the 7A26 Amplifier. Connect the TRIGGER OUTPUT through a coaxial cable to the 7B80 EXT TRIG IN

CURRENT AMPLITUDE MODE

connector. Set 7A26 for 10 mV/div and adjust 7B80 controls and 7A26 Variable control for a stable 8 division display.

d. CHECK—that the preshoot and overshoot are less than ± 2.0 major divisions ($\pm 15\% \pm 10$ mV) in amplitude and less than 0.5 μ s in duration.

e. Insert a 10X probe (compensated) and bnc to probe tip adapter between the output cable and the input to the 7A26. Set 7A26 for 5 VOLTS/DIV.

f. Change the CG 551AP controls as follows:

FREQUENCY	10 kHz
UNITS/DIV	20 V/D
NUMBER OF DIVISIONS	10
(MULTIPLIER)	

g. Adjust 7A26 Variable control and 7B80 controls for a stable 4 division display.

h. CHECK—that the preshoot and overshoot amplitude are less than ± 3 minor divisions (± 3 V) and less than 5 μ s in duration.

i. Set the CG 551AP UNITS/DIV control to 1 V/D and remove all connections to the CG 551AP.

Equipment Required (see footnotes following Table 5-1)

Sampling System—TEKTRONIX 7904/7S11/7T11/S-6.
Digital Voltmeter—Fluke Model 8800A.
Function Generator—TEKTRONIX FG 503.
Output Cable Assembly (supplied with CG 551AP).
5X Attenuator, 50 Ω .
Coaxial Cable, 50 Ω , bnc connectors.
Termination, 50 Ω , precision feedthrough.
Termination, 50 Ω female (SMA).
Adapter, SMA male to bnc female (2 required).
Adapter, bnc female to dual banana.

7. Check Dc Current Accuracy and Range

a. Set the CG 551AP controls as follows:

AMPLITUDE MODE	CURRENT
FREQUENCY	DC
VARIABLE	ON
OUTPUT	ON

b. Connect the CG 551AP OUTPUT through the output cable assembly, precision 50 Ω termination, and appropriate adapter to the dc voltmeter.

c. Set the CG 551AP UNITS/DIV, NUMBER OF DIVISIONS (MULTIPLIER), and VARIABLE controls as listed in Table 5-6.

d. CHECK—that the voltmeter reads within the limits listed in Table 5-6.

Table 5-6

DC CURRENT ACCURACY AND RANGE

UNITS/DIV	NUMBER OF DIVISIONS (MULTIPLIER)	VARIABLE (percent)	Voltmeter Reading	
			Lower Limit	Upper Limit
10 mA	10	0.0%	4.9875 V <i>4.9697</i>	5.0125 V
10 mA	10	9.9% LOW	5.5356 V	5.5633 V
10 mA	10	9.9% HIGH	4.5382 V <i>4.5262</i>	4.5610 V
1 mA	10	0.0%	0.4987 V	0.5013 V
1 mA	1	0.0%	49.77 mV	50.23 mV

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e. Disconnect the output cable assembly from the dc voltmeter and remove the precision 50 Ω termination.

8. Check Square-wave Current Accuracy

NOTE

Perform this check as quickly as possible; Sampling System drift (in time) may cause errors in the measurements.

a. Change the CG 551AP controls as follows:

UNITS/DIV	1 mA/D
NUMBER OF DIVISIONS (MULTIPLIER)	5
VARIABLE	Off
FREQUENCY	100 kHz
TRIGGER OUTPUT	ON

b. Connect the CG 551AP OUTPUT through the output cable assembly to the S-6 Sampling Head installed in the 7S11 Sampling Unit. Terminate the S-6 with 50 Ω female (SMA) termination. Connect the CG 551AP TRIGGER OUTPUT through a coaxial cable to the 7T11 Trigger Input connector.

c. Set the 7S11 and 7T11 to the settings listed in Table 5-5. Change the 7T11 Time Pos Rng to 5 μ s.; set Time/Div to .5 μ s.

d. Adjust the 7S11 Variable control for a displayed waveform amplitude of 2 major divisions.

e. Change the 7S11 vertical deflection to 2 mV/div. Align the top of the waveform exactly on the center horizontal graticule line.

f. Set the CG 551AP FREQUENCY to DC. Disconnect the cable connected to the CG 551AP TRIGGER OUTPUT and connect the cable to the FG 503 TRIG OUT connector. Set the FG 503 controls for a trigger output of approximately 100 kHz.

g. CHECK—that the sweep trace (dc level on the crt) is within 2.5 minor divisions of the center horizontal graticule line.

h. Insert a 5X attenuator between the output cable assembly and the S-6 Sampling Head.

i. Set the CG 551AP controls as follows:

UNITS/DIV	20 mA/D
NUMBER OF DIVISIONS (MULTIPLIER)	5
FREQUENCY	100 kHz
TRIGGER OUTPUT	ON
OUTPUT	ON

j. Connect CG 551AP TRIGGER OUTPUT to 7T11 Trigger input.

k. Set the 7S11 vertical deflection to 200 mV/div. Adjust the 7S11 Variable control for a displayed waveform amplitude of 4 major divisions.

l. Set 7S11 vertical deflection to 2 mV/DIV. Align the top of the waveform exactly on the center horizontal graticule line.

m. Change the CG 551AP FREQUENCY to DC. Remove the coaxial cable from the CG 551AP TRIGGER OUTPUT and connect it to the FG 503 TRIG OUT connector. Set the FG 503 controls for a trigger output of approximately 100 kHz.

n. CHECK—that the sweep trace (dc level on the crt) is within one major division of the center horizontal graticule line.

o. Remove the 5X attenuator. Proceed to the next step.

9. Check Current Droop or Tilt

a. Set the CG 551AP controls as follows:

UNITS/DIV	20 mA/D
FREQUENCY	100 kHz
NUMBER OF DIVISIONS (MULTIPLIER)	1

b. Connect the CG 551AP OUTPUT through the output cable assembly to the S-6 Sampling Head installed in the 7S11 Sampling Unit. Connect the CG 551AP TRIGGER OUTPUT through a coaxial cable to the 7T11 Trigger Input connector.

c. Set the 7S11 vertical deflection to 200 mV/div. Adjust the 7S11 Variable control for a displayed waveform amplitude of 5 major divisions.

d. Set the 7S11 vertical deflection to 20 mV/div. Be sure to slow the SCAN rate down to a low rate or use

normal dot response. You may have to use random sampling.

e. CHECK—that after the first 500 ns, the waveform top is within one major division of its final value.

10. Check Current Aberrations

a. Set the CG 551AP controls as follows:

UNITS/DIV	2 mA/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	100 kHz

b. Set the 7S11 vertical deflection to 20 mV/div, 7T11 Time Pos Rng to 50 μ s and Time/Div to 2 μ s. Adjust the 7S11 Variable control for a displayed waveform amplitude of 5 major divisions.

c. Change the 7S11 vertical deflection to 5 mV/div.

d. Change the 7T11 Time/Div to 500 ns/div.

e. CHECK—that the duration of the aberrations are less than 1 major horizontal division and that their amplitude is less than 4 major vertical divisions.

f. Remove all connections from the Sampling System.

11. Check Current Mode Voltage Limit and Open Circuit Voltage

a. Set the CG 551AP controls as follows:

UNITS/DIV	10 mA/D
VARIABLE	9.9% LOW
FREQUENCY	DC
NUMBER OF DIVISIONS (MULTIPLIER)	10

b. Connect the CG 551AP OUTPUT through the output cable assembly and precision 50 Ω feedthrough termination to the digital voltmeter input connector.

c. CHECK—that the voltmeter reads between 5.535 V and 5.563 V and that UNCAL is not displayed on the CG 551AP.

d. Remove the 50 Ω termination and reconnect the output cable assembly to the voltmeter.

e. CHECK—that the voltmeter reads less than 10 V and that UNCAL is displayed on the CG 551AP.

f. Remove all connections to the voltmeter.

LOW AMPLITUDE EDGE MODE

Equipment Required (see footnotes following Table 5-1)

- Oscilloscope System—TEKTRONIX 7904/7A26/7B80.
- Sampling System—TEKTRONIX 7904/7T11/7S11/S-6.
- Calibration Fixture—TEKTRONIX Tunnel Diode Puls-er.
- Dc Current Meter—TEKTRONIX DM 501A.
- Output Cable Assembly (supplied with CG 551AP).
- Coaxial Cable, 50 Ω , bnc connectors.
- Termination, 50 Ω , precision feedthrough.
- Termination, 50 Ω female (SMA).
- Adapter, bnc female to dual banana.
- Adapter, SMA male to bnc female (2 required).
- 2.5X Attenuator, 50 Ω .
- 5X Attenuator, 50 Ω .
- Marking pencil (for glazed surfaces).

12. Check Low Amplitude Accuracy

a. Set the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	0.2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	5
FREQUENCY	100 kHz
EDGE POLARITY	\overline{Y} (Negative)
USE FOR 50 Ω LOAD	ON
OUTPUT	ON
VARIABLE	Off

b. Connect the CG 551AP OUTPUT through the output cable assembly and precision 50 Ω termination to the 7A26 channel 1 or 2 input connector. Set the Oscilloscope System controls for an untriggered display (free-running sweep).

c. Set the 7A26 to 200 mV/div. Adjust the 7A26 Variable control for a displayed amplitude of exactly 4 major divisions. Do not change the position of the 7A26 Variable control.

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d. Set the CG 551AP controls as follows:

AMPLITUDE MODE	VOLTAGE
UNITS/DIV	1 V/D
NUMBER OF DIVISIONS	1
(MULTIPLIER)	
VARIABLE	ON
USE FOR 50 Ω LOAD	ON
OUTPUT	ON
FREQUENCY	100 kHz


e. Adjust the CG 551AP VARIABLE control for a displayed amplitude of exactly 4 major divisions.

f. CHECK—that the percent error displayed on the CG 551AP is between 2.7% LOW and 2.7% HIGH.

NOTE

Steps 12a through 12f also check the current limit of 20 mA (minimum); 1 V across a 50 Ω load.


g. Change the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	0.2 V/D
EDGE POLARITY	 (Positive)
NUMBER OF DIVISIONS	5
(MULTIPLIER)	
OUTPUT	ON
FREQUENCY	100 kHz
VARIABLE	Off
USE FOR 50 Ω LOAD	ON

h. Repeat steps 12c through 12f.

i. Use a coaxial cable to connect the CG 551AP TRIGGER OUTPUT to the EXT TRIG IN connector on the 7B80 Time Base. Set the 7A26 Variable control to the calibrated position (CAL IN).

j. Set the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	1 V/D
VARIABLE	Off
NUMBER OF DIVISIONS	1
(MULTIPLIER)	
FREQUENCY	1 kHz
TRIGGER OUTPUT	ON
OUTPUT	ON
USE FOR 50 Ω LOAD	ON
EDGE POLARITY	 (Positive)

k. Set the 7A26 vertical deflection to .2 VOLT/DIV and use the 7B80 Time Base controls for a stable, 1 kHz signal on the crt graticule.

l. Use the test system settings listed in Table 5-7 to check for the presence of a displayed square wave of the correct amplitudes on the low amplitude edge range. For all settings listed in Table 5-7, check amplitudes for both polarities (positive-going and negative-going).

Table 5-7


LOW AMPLITUDE EDGE SIGNAL CHECK

CG 551AP UNITS/DIV	7A26 VOLTS/DIV	Amplitude (Vertical Divisions)
1 V/D	.2	5
.5 V/D	.1	5
.2 V/D	50 mV	4
.1 V/D	20 mV	5
50 mV/D	10 mV	5
20 mV/D	5 mV	4

m. Remove the precision 50 Ω termination and all connections to the Oscilloscope System.

13. Check Low Edge Aberrations

a. Set the CG 551AP controls as follows:

OUTPUT	Off
AMPLITUDE MODE	EDGE
EDGE POLARITY	 (Positive)
UNITS/DIV	10 V/D
NUMBER OF DIVISIONS	6
(MULTIPLIER)	
FREQUENCY	100 kHz

b. Connect the CG 551AP OUTPUT through the output cable assembly directly to the input of the Tunnel Diode Pulser.

c. Connect the CG 551AP TRIGGER OUTPUT through a 50 Ω coaxial cable to the Trig Input connector on 7T11 via a 2.5X (8 dB), 50 Ω attenuator and SMA male to bnc female adapter.

d. Connect the output of the Tunnel Diode Pulser, via a SMA male to bnc female adapter, to the input of S-6 Sampling Head installed in the 7S11 Sampling Unit.

e. Set 7T11 and 7S11 controls as listed in Table 5-5. See the NOTE following Table 5-5.

f. Set the 7T11 controls as follows:

Time Pos Rng	5 μ s
Time/Div	500 ns

g. Set the 7S11 controls as follows:

mVolts/DIV	50
Variable	OUT

h. Set the CG 551AP OUTPUT to ON and rotate the TD Triggered Level on the TD Pulser fully counterclockwise.

i. Rotate TD Triggered Level control on the TD Pulser slowly clockwise just to the point of obtaining a stable triggered display on the crt. The display should be a positive-going pulse approximately 5 divisions in amplitude.

NOTE

It may be necessary to readjust the Time Position and Triggering controls on the 7T11 to locate the leading edge of a positive-going pulse. When a stable, triggered display is obtained, do not readjust the Trig Level or Stability controls on the 7T11.

j. Set the 7T11 Time/Div control to 5 ns.

k. Use the Time Position control on the 7T11 to align the 50% level of the positive-going pulse with the first-division reference line. Use the 7S11 Variable deflection and DC Offset controls to expand and display an exact 5-division (vertical) signal on the crt.

NOTE

If stable triggering is lost after this time position reference point has been established, repeat steps 13h through 13k.

l. Without changing the Variable deflection control on the 7S11, switch to 5 mV/div. Use the DC Offset controls to return the top of the waveform to center screen.

NOTE

Set the SCAN control on the 7T11 for the slowest convenient scanning rate just above an eye-flicker rate (about 15 Hz); faster scanning rates tend to smooth out the front-corner aberrations.

A display similar to Fig. 5-1 should be obtained. Each major vertical division now represents 2% of the original 5-division signal. This display is the total sampling system response to a signal from the TD Pulser and is used as a reference for comparison purposes.

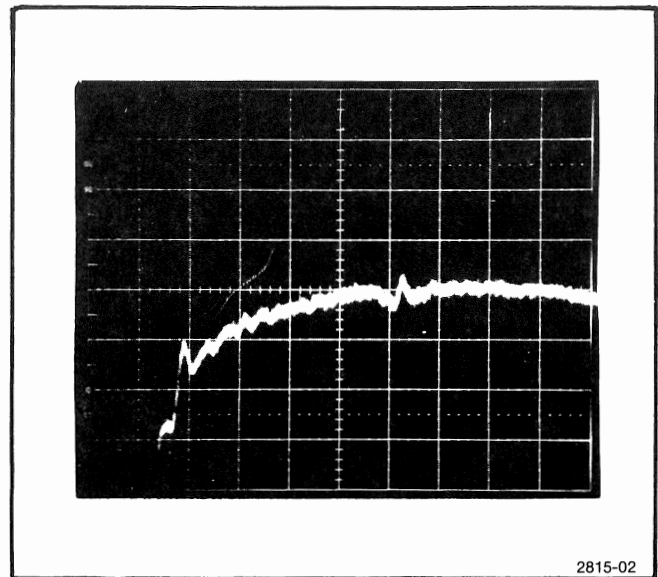


Fig. 5-1. Typical response curve of sampling system with the TD Pulser. Reference curve for the Low Edge Aberration Check (steps 13l and 13m).

m. Use the marking pencil (for glazed surfaces) to carefully reproduce the displayed signal (average values) on the crt graticule. Ignore aberrations during first 200 ps. Not all sampling systems will display exactly as illustrated in Fig. 5-1. Once this reference graph has been drawn on the crt, do not erase it until all aberration checks and risetime measurements have been completed.

NOTE

If stable triggering or the Trig Level (Stability) control on the 7T11 have been readjusted before the graph has been drawn, repeat steps 13h through 13m.

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n. Change the CG 551AP controls as follows:

VOLTS/DIV	50 mV/D
NUMBER OF DIVISIONS (MULTIPLIER)	5
FREQUENCY	1 MHz
VARIABLE	ON

o. Remove the TD Pulser from the system. Connect the CG 551AP OUTPUT to the S-6. Set the 7S11 for a calibrated 50 mV/div (Cal In). Reset the 7T11 Trigger controls if necessary, to obtain a stable display.

p. Use the CG 551AP VARIABLE control and the 7S11 DC Offset controls to establish a 5-division display.


q. Use the 7T11 Time Position controls to set the 50% level of the positive-going pulse on the first-division reference line.

r. Switch the deflection factor of the 7S11 to a calibrated 5 mV/div (Cal In). Use the 7S11 DC Offset controls to return the top of the waveform to center screen and align the displayed signal vertically with the reference graph in the area of the last horizontal division. See Fig. 5-2.

NOTE

Do not use the Time Position or Triggering controls on the 7T11 in an attempt to align the leading edges of the displayed signal with the leading edge of the reference graph. The signal from the TD Pulser has a faster risetime than the CG 551AP. Do not expect to obtain the same aberration amplitudes as the reference graph.

s. CHECK—that the displayed signal aberrations do not deviate from the reference graph by more than 1 vertical division.

t. Change CG 551AP EDGE POLARITY to  (Negative).

u. Reset the 7S11 for a calibrated, 50 mV/div deflection factor and push the INVERT button.

v. Use the CG 551AP VARIABLE control and 7S11 DC Offset controls to establish a 5-division display.

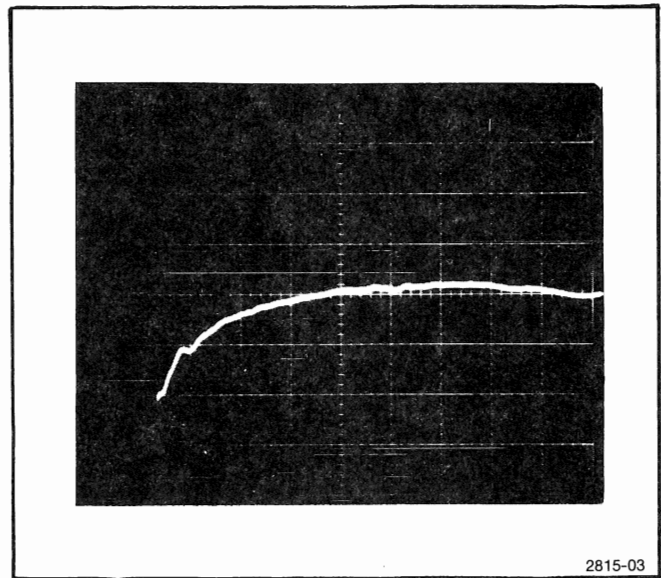


Fig. 5-2. Typical sampling system response curve without the TD Pulser (Low Edge Aberration Check, steps 13r and 13x).

w. Use the Time Position controls on the 7T11 to position the 50% level of the pulse on the first-division reference line.

x. Switch the vertical deflection factor control on the 7S11 for a calibrated 5 mV/div. Use the 7S11 DC Offset controls to return the top of the waveform to center screen and vertically align the displayed signal with the reference graph in the area of the last horizontal division. See Fig. 5-2.

NOTE


Do not readjust Triggering controls or Time Position controls on the 7T11. Do not expect to obtain the same aberration amplitudes as the reference graph.

y. CHECK—that displayed signal aberrations do not deviate from the reference graph by more than 1 vertical division.

z. Proceed to the next step.

14. Check Risetime and Falltime (Low Amplitude Edge)

- a. Set the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
NUMBER OF DIVISIONS	1
(MULTIPLIER)	
UNITS/DIV	.5 V/D
EDGE POLARITY	 (Positive)
TRIGGER OUTPUT	ON
OUTPUT	ON

- b. Insert a 5X, 50 Ω attenuator between the output cable assembly and the S-6 Sampling Head.

- c. Set Sampling System controls as follows:

	mV/DIV	20
7S11	Variable	OUT
	Polarity	+ UP
	Time Pos Rng	50 ns
	Time/Div	.5 ns
7T11	Dot Response	Normal
	Sampling	Random

- d. Use the Sampling System DC Offset, Time Position, Trig Level, and Stability controls to display a 500 mV, positive-going edge on the crt.

- e. Adjust the 7S11 Variable control to set the waveform amplitude limits on the 0% and 100% risetime points on the crt.

- f. CHECK—that the waveform risetime is equal to or less than 1.3 ns (between the 10% and 90% risetime points).

- g. Change the CG 551AP EDGE POLARITY to  (Negative).


- h. Adjust the 7S11 Variable control to set the waveform amplitude limits on the 0% and 100% risetime points on the crt.

- i. CHECK—that the waveform falltime is equal to or less than 1.3 ns (10% and 90% points).

- j. Remove all connections to the Sampling System.

15. Check Short Circuit Current (Low Amplitude Edge)

- a. Set the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	1 V/D
NUMBER OF DIVISIONS	1
(MULTIPLIER)	
FREQUENCY	1 kHz
EDGE POLARITY	 (Positive)
OUTPUT	ON

- b. Connect the CG 551AP OUTPUT to the dc current meter.

- c. CHECK—that the dc current magnitude (value) is equal to or less than 40 mA.

- d. Change the CG 551AP EDGE POLARITY to  (Negative).

- e. CHECK—that the dc current magnitude (value) is equal to or less than 40 mA.

- f. Disconnect all cables.

HIGH AMPLITUDE EDGE MODE

Equipment Required (see footnotes following Table 5-1)

Oscilloscope System—TEKTRONIX 7904/7A26/7B80.
Sampling System—TEKTRONIX 7904/7T11/7S11/S-6.
Digital Voltmeter—TEKTRONIX DM 501A.
Probe, 10X—TEKTRONIX P6105.
Probe, 100X, 50 Ω —TEKTRONIX P6057.
Output Cable Assembly (supplied with CG 551AP).
Coaxial Cable, 50 Ω , bnc connectors.
Load Resistor, 1 k Ω , 2 W.
Load Resistor, 10 k Ω , 2 W.
2.5X Attenuator, 50 Ω .
Termination, 50 Ω , precision feedthrough.
Termination, 50 Ω , female (SMA).
Adapter, bnc to probe tip.
Adapter, bnc female to dual banana.
Adapter, bnc female to bnc female.
Adapter, bnc male to dual binding post.
Adapter, SMA male to bnc female (2 required).

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16. Check Amplitude Range and Accuracy

a. Set the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
EDGE POLARITY	↑ (Positive)
FREQUENCY	10 kHz
UNITS/DIV	0.2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	6
VARIABLE	Off
OUTPUT	ON

b. Connect the CG 551AP OUTPUT through the output cable assembly to the 7A26 input connector (CH1 or CH2). Connect the CG 551AP TRIGGER OUTPUT through a coaxial cable to the 7B80 EXT TRIG IN connector. Set the oscilloscope system controls for a free-running sweep (nontriggered).

c. Set the 7A26 vertical deflection to .2 V/div.

d. Adjust the 7A26 Variable control for a displayed amplitude of exactly 5 major divisions.

e. Change the CG 551AP controls as follows:

AMPLITUDE MODE	VOLTAGE
UNITS/DIV	.2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	6
VARIABLE	ON
FREQUENCY	10 kHz
OUTPUT	ON
USE FOR 50 Ω LOAD	Off

f. Adjust the CG 551AP VARIABLE control for a displayed amplitude of exactly 5 major divisions.

g. CHECK—that the percent error displayed on the CG 551AP is between 2.7% HIGH and 2.7% LOW.

h. Change the CG 551AP controls to the EDGE mode, UNITS/DIV to 2 V/D, NUMBER OF DIVISIONS (MULTIPLIER) to 8 and OUTPUT to ON. Set the 7A26 to 2 V/div.

i. Repeat steps 16d through 16g, except in step 16e, change the CG 551AP VOLTAGE mode controls as follows:

UNITS/DIV	2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	8

j. Remove the output cable assembly from the 7A26 and reconnect the output cable assembly through a compensated 10X probe and bnc to probe tip adapter to the 7A26 input.

k. Set the CG 551AP controls to the EDGE mode, UNITS/DIV to 2 V/D, NUMBER OF DIVISIONS (MULTIPLIER) to 10, and OUTPUT to ON. Set the 7A26 to .2 V/div (waveform will be off screen).

l. Repeat steps 16d through 16g, except in step 16e, change the CG 551AP VOLTAGE mode controls as follows:

UNITS/DIV	2 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	10

m. Set the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	10 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	10
OUTPUT	ON

n. Set the 7A26 to 2 V/div.

o. Repeat steps 16d through 16g, except in step 16e, change the CG 551AP VOLTAGE mode controls as follows:

UNITS/DIV	10 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	10

p. Set the CG 551AP OUTPUT to off and proceed to the next step.

17. Check Current Limit and Short Circuit Current

a. Set the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	10 V/D
VARIABLE	Off
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	1 kHz
OUTPUT	ON

b. Connect a 10X, compensated probe to the 7A26 input (CH1 or CH2).

c. Connect the CG 551AP OUTPUT through the output cable assembly and appropriate adapters, such that a 1 k Ω load resistor is connected in parallel with the CG 551AP OUTPUT, to the input of the 10X probe. Connect the CG 551AP TRIGGER OUTPUT through a coaxial cable to the 7B80 EXT TRIG IN connector.

d. Set the 7A26 vertical deflection to .2 V/DIV and Variable control to the calibrated position (CAL IN).

e. Use the oscilloscope controls to display a stable, 1 kHz signal.

f. CHECK—that the waveform amplitude is at least 4.75 divisions and that the CG 551AP UNCAL indicator is off.

g. Replace the 1 k Ω resistor with a 10 k Ω load resistor.

h. Set the 7A26 to 2 V/DIV.

WARNING

Do not touch any exposed leads; 100 V is present on the output terminals during this step.

i. Change the CG 551AP UNITS/DIV to 20 V/D and NUMBER OF DIVISIONS (MULTIPLIER) to 5.

j. CHECK—that the waveform amplitude is at least 4.975 divisions and that the CG 551AP UNCAL indicator is off.

k. Change the CG 551AP UNITS/DIV to 10 V/D, NUMBER OF DIVISIONS (MULTIPLIER) to 1, and OUTPUT to off.

l. Disconnect all probes, adapters, and load resistors from the CG 551AP output cable assembly.

m. Use the precision 50 Ω terminator and appropriate adapter to connect the output cable assembly to the input of the digital voltmeter.

n. Set the CG 551AP OUTPUT to ON.

o. CHECK—that the magnitude of the voltmeter reading is less than 1.5 V and that the CG 551AP UNCAL indicator is on.

p. Set the CG 551AP NUMBER OF DIVISIONS (MULTIPLIER) to 10.

q. CHECK—that the magnitude of the voltmeter reading is less than 1.5 V and that the CG 551AP UNCAL indicator is on.

r. Set the CG 551AP UNITS/DIV to 1 V/D.

s. Remove the 50 Ω terminator and all connections to the digital voltmeter.

18. Check High Amplitude Edge Risetime and Aberrations

a. Set the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
FREQUENCY	100 kHz
UNITS/DIV	10 V/D
VARIABLE	Off
NUMBER OF DIVISIONS (MULTIPLIER)	5

b. Connect the CG 551AP OUTPUT through the output cable assembly and bnc to probe tip adapter to the 100X, 50 Ω probe (P6057) connected to the 50 Ω terminated S-6, installed in the 7S11 Sampling Unit.

c. Connect the CG 551AP TRIGGER OUTPUT through a coaxial cable to the 7T11 Trigger Input via a 2.5X, 50 Ω attenuator.

d. Set the CG 551AP OUTPUT to ON.

e. Refer to Table 5-8. The following steps are performed three times. Set the CG 551AP UNITS/DIV and NUMBER OF DIVISIONS (MULTIPLIER) controls to the first, (second), (third) values listed in lines 1, (2), (3) of Table 5-8.

f. Set the 7S11 vertical deflection to first value, listed in lines 1, (2), and (3) of Table 5-8.

g. Set the 7T11 Sampling Sweep Unit Time Pos Rng to 50 μ s, and Time/Div to 5 μ s.

h. Adjust the 7S11 Variable control to set the waveform amplitude limits on the 0% and 100% graticule lines.

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- i. Set the 7T11 Sampling Sweep Unit to 20 ns/div.
- j. CHECK—that the risetime is less than 100 ns between the 10% and 90% levels.
- k. Set the 7T11 Time/Div to 200 ns/div.
- l. Set the 7S11 to the second value listed on line 1, (2), (3) in Table 5-8 and position the top of the waveform at center screen.
- m. CHECK—that aberrations on the top leading edge are less than ± 1 division (2% of waveform amplitude).
- n. Repeat steps 17e through 17m for line 2 of Table 5-8.
- o. Repeat steps 17e through 17m for line 3 of Table 5-8.
- p. Remove all connections to the Sampling System.

MARKERS MODE

Equipment Required (see footnotes following Table 5-1)

- Oscilloscope System—TEKTRONIX 7904/7A19/7A26/7B80.
- Digital Counter—TEKTRONIX DC 508, Option 01.
- Output Cable Assembly (supplied with the CG 551AP).
- Coaxial Cable, 50 Ω , bnc connectors.
- Termination, 50 Ω , precision feedthrough.

19. Check the 1 MHz Reference Frequency

- a. Set the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	1 V/D
VARIABLE	Off
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	1 MHz
TRIGGER OUTPUT	NORM, ON

- b. Connect the CG 551AP TRIGGER OUTPUT through a 50 Ω coaxial cable to the DC 508 DIRECT INPUT connector.

- c. Set the DC 508 for 1 Hz resolution.

- d. CHECK—that the DC 508 reads between 999.900 kHz and 1000.100 kHz.

- e. Proceed to the next step.

20. Check Markers and Trigger Amplitude and Range

- a. Change the CG 551AP controls as follows:

TIMING MODE	MARKERS
UNITS/DIV	1 ms/D
OUTPUT	ON

- b. Connect the CG 551AP OUTPUT through the output cable assembly to the 7A19 vertical input. Set the 7B80 for 1 ms/div sweep rate.

- c. Connect the CG 551AP TRIGGER OUTPUT through a 50 Ω coaxial cable and precision 50 Ω termination to the 7A26 input (CH1 or CH2).

Table 5-8

SETTINGS FOR RISETIME AND ABERRATIONS CHECK

Line	UNITS/DIV	CG 551AP NUMBER OF DIVISIONS (MULTIPLIER)	7S11 (first value)	7S11 (second value)
1.	5 V/D	10	100 mV/div	10 mV/div
2.	2 V/D	10	50 mV/div	5 mV/div
3.	2 V/D	8	50 mV/div	5 mV/div

d. Set both of the 7A19 and 7A26 vertical deflection controls to 0.5 V/div. Set the 7B80 for dc triggering, automatic mode. Trigger the oscilloscope from the 7A26 input signal. Display and observe both signals (trigger and markers) on the crt.

e. Change the CG 551AP UNITS/DIV control and the 7B80 sweep rate to 10 ns/div.

f. CHECK—that the markers and trigger amplitudes are equal to or greater than 1 V and that the markers and triggers fall approximately on the vertical graticule lines.

g. Advance the CG 551AP UNITS/DIV control and the oscilloscope horizontal sweep rate simultaneously in a 1-2-5 sequence from 10 ns/div to 5 sec/div. Repeat step 20f for each setting. Observe that the trigger rate remains at 100 ns for the 50 ns through 10 ns scales.

h. Continue to the next step.

21. Check X10 Magnifier

a. Set the CG 551AP UNITS/DIV and oscilloscope horizontal sweep rate to 1 μ s/div.

b. CHECK—that, when the CG 551AP MAG X10 pushbutton is pressed, that the marker rate increases by a factor of ten and that every tenth marker is of higher amplitude. Also check that the trigger rate remains unchanged (trigger pulse width will decrease by a factor of ten).

c. Set the CG 551AP to the MAG X1 mode and continue to the next step.

22. Check Trigger Divider (Rate \div 10 and Rate \div 100)

a. Set the CG 551AP UNITS/DIV control and oscilloscope horizontal sweep rate to 1 μ s/div; MAG X1 (MAG X10 off).

b. Press the CG 551AP RATE \div 10 pushbutton.

c. CHECK—that the trigger rate decreases by a factor of ten from 1 μ s (10 μ s triggers).

d. Press the CG 551AP RATE \div 100 pushbutton.

e. CHECK—that the trigger rate decreases by a factor of 100 from 1 μ s (100 μ s triggers).

23. Check Marker and Trigger Period Accuracy (Standard Time Base)

NOTE

Do not perform this step if you are checking the CG 551AP, Option 01. Go to step 24.

a. Set the CG 551AP UNITS/DIV to 10 ns/D and TRIGGER OUTPUT to NORM.

b. Change the CG 551AP TRIGGER OUTPUT connection from the 7A26 input to the DC 508 DIRECT INPUT connector. Do not remove time marks input to 7A19.

c. Set the DC 508 resolution to 1 Hz.

d. CHECK—that the DC 508 reads between 9999.000 and 10001.000 kHz.

e. Proceed to step 25a if the CG 551AP does not have Option 01 installed (high accuracy time base).

24. Check Marker and Trigger Period Accuracy (Option 01 Time Base)

NOTE

Perform steps 24a through 24e only if you are checking the CG 551AP Option 01.

a. Set the CG 551AP UNITS/DIV control to 10 ns/D and TRIGGER OUTPUT to NORM, ON.

b. Change the CG 551AP TRIGGER OUTPUT connection from the 7A26 input to the DC 508 DIRECT INPUT connector. Do not remove time marks input to 7A19.

NOTE

The DC 508 must have Option 01 (high stability time base) installed and must be calibrated to be accurate within 1 part in 10⁷.

c. Set the counter resolution to 1 Hz.

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d. CHECK—that the DC 508 reads between 9999.971 and 10000.029 kHz.

e. Proceed to the next step.

25. Check Variable Timing Range and Accuracy

a. Press the CG 551AP VARIABLE pushbutton.

b. Turn the CG 551AP VARIABLE control until the CG 551AP display reads 9.9% SLOW.

c. CHECK—that the counter reads between 9009.1 and 9010.9 kHz.

d. Turn the CG 551AP VARIABLE control until the CG 551AP display reads 9.9% FAST.

e. CHECK—that the counter reads between 10988.9 and 10991.1 kHz.

f. Change the CG 551AP TRIGGER OUTPUT from the counter input connection to the 7B80 EXT TRIG IN connector. Set the oscilloscope sweep rate to 10 ns/div and obtain a stable, externally triggered, display on the crt (time marks are still applied to the 7A19 vertical input).

g. Slowly turn the CG 551AP VARIABLE control from 9.9% FAST to 9.9% SLOW.

h. CHECK—that the 10 ns marker period varies smoothly and monotonically across the range. Time marks should move only in one direction (closer together) in step, with the CG 551AP VARIABLE control.

i. Continue to the next step.

SLEWED EDGE MODE

Equipment Required (see footnotes following Table 5-1)

Oscilloscope System—TEKTRONIX 7904/7A19/7B92A.

Universal Counter—TEKTRONIX DC 503.

Output Cable Assembly (supplied with CG 551AP).

Coaxial Cable, 50 Ω , bnc connectors.

25. Check Slew Edge and Trigger Amplitude and Range

a. Set the CG 551AP controls as follows:

TIMING MODE	SLEWED EDGE
UNITS/DIV	0.1 μ s/D
OUTPUT	ON
VARIABLE	Off

b. Connect the CG 551AP OUTPUT through the output cable assembly to the 7A19 50 Ω vertical input. Set the 7A19 vertical deflection to a calibrated .5 V/div.

c. Connect the CG 551AP TRIGGER OUTPUT to the 7B92A MAIN TRIG IN connector via a 50 Ω coaxial cable.

d. Set the 7B92 sweep rate to .1 μ s/div. Use the oscilloscope controls to trigger the sweep externally and display a stable, slewed edge pattern centered on the crt screen.

e. CHECK—that the amplitude of the slewed edges are equal to or greater than 1 V and that the pattern contains the correct number of edges (at least 10).

f. Remove the trigger cable from the 7B92A and the output cable assembly from the 7A19. Reconnect the trigger cable to the 50 Ω vertical input on the 7A19. Set the oscilloscope controls to trigger the sweep internally and display the CG 551AP TRIGGER OUTPUT signal on the crt.

g. CHECK—that the amplitude of the trigger signal is equal to or greater than 1 V.

h. Remove the trigger cable connection to the 7A19 and reconnect to the 7B92A MAIN TRIG IN connector. Connect the output cable assembly to the 50 Ω vertical input on the 7A19. Set the oscilloscope controls to trigger the sweep externally and display the same slewed edge pattern as observed in step 25d.

i. Set the 7A19 vertical deflection to .2 V/div.

j. Advance the CG 551AP UNITS/DIV control and the 7B92A sweep rate simultaneously, in step, through the slewed edge range from .1 μ s/div through .4 ns/div.

NOTE

The 7B92A calibrated sweep rate limits at .5 ns/div. As you approach the fastest sweep rates, the complete slewed edge pattern may shift horizontally on the screen. If necessary, use the CG 551AP SHIFT pushbuttons to recenter the edges on the crt; do not use the oscilloscope horizontal position controls.

k. CHECK—that for each CG 551AP UNITS/DIV setting that the amplitude of the slewed edge pattern is equal to or greater than 1 V and that the pattern contains the correct number of edges (at least 10).

l. Reset the CG 551AP UNITS/DIV control for 0.5 ns/D and the oscilloscope sweep rate to 2 ns/div.

m. Press the CG 551AP RESET button and without using the SHIFT pushbuttons, align the first edge in the pattern on a vertical graticule line.

n. CHECK—that the first edge in the pattern does not move more than 1/2 division (1 ns) as the CG 551AP UNITS/DIV control is turned from 0.5 ns/D to .1 μ s/D.

NOTE

The complete pattern will shift left about 3 ns when the .4 ns/D scale is selected.

26. Check Variable Range

NOTE

This step checks the operation of the phase-lock-loop in the Main Timing Generator circuit.

a. Set the CG 551AP UNITS/DIV control to 1 ns/D and VARIABLE to ON.

b. Turn the CG 551AP VARIABLE control slowly through its full range.

c. CHECK—that the pattern of edges remains consistently clear across the tuning range. The pattern may blur somewhat during the knob rotation, but should rapidly settle.

NOTE

Use the SHIFT function, if necessary, to keep the pattern on screen.

d. Turn the CG 551AP VARIABLE off.

27. Check Shift Function

a. Note the horizontal position of the slewed edges on the oscilloscope display.

b. Press the SHIFT→ (right) pushbutton.

c. CHECK—that the slewed edges move one division to the right on the display each time the button is pressed.

d. Press the RESET pushbutton.

e. CHECK—that the slewed edges have moved back to their original position.

f. Press the SHIFT ← (left) pushbutton.

g. CHECK—that the slewed edges move one division to the left on the display each time the button is pressed.

h. Press the RESET pushbutton and remove all connections to the CG 551AP.

28. Check Slew Edge Accuracy (Average)

Method 1

a. Set the DC 503 Universal Counter controls to measure the period averaged over 10,000 cycles.

b. Connect the CG 551AP OUTPUT to the DC 503 channel B input connector via the output cable assembly.

c. Put the CG 551AP in continuous slewing mode by pressing and **holding** the SLEWED EDGE pushbutton for about one second. The Shift → and Shift ← pushbuttons should both be illuminated.

d. Set the CG 551AP UNITS/DIV to the values listed in Table 5-9.

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e. CHECK—that the counter reads the OUTPUT value listed in Table 5-9 for each UNITS/DIV setting listed. Allow for CG 551AP time base error (standard time base is .01%; Option 01 time base is .0003%) plus one count error.

NOTE

Tabulate and record the OUTPUT readings for step 28e and the TRIGGER OUTPUT readings for step 28g. The difference between the readings must equal the CG 551AP UNITS/DIV setting.

Table 5-9

**COUNTER DISPLAY FOR
SLEWED EDGE ACCURACY**

UNITS/DIV	OUTPUT	TRIGGER OUTPUT
0.1 μ s	5.7400 μ s	5.6400 μ s
50 ns	5.3300 μ s	5.2800 μ s
20 ns	4.1000 μ s	4.0800 μ s
10 ns	4.5100 μ s	4.5000 μ s
5 ns	4.3050 μ s	4.3000 μ s
2 ns	4.1820 μ s	4.1800 μ s
1 ns	4.1410 μ s	4.1400 μ s
0.5 ns	4.1205 μ s	4.1200 μ s
0.4 ns	4.1004 μ s	4.1000 μ s

f. Remove the output cable assembly and connect the CG 551AP TRIGGER OUTPUT to the digital counter input connector.

g. Repeat steps 27c through 27e using the values listed under TRIGGER OUTPUT in Table 5-9.

Method 2

NOTE

Do not use Method 2 unless you are a qualified service technician.

a. Connect the 1 MHz Internal Reference Output of the CG 551AP (located on pin 25A of the A4 Time Mark board rear interface connector; pin 26A is GROUND) to the counter A input connector.

b. Connect the CG 551AP OUTPUT through the output cable assembly to the counter B input connector.

c. Set the counter to the RATIO A/B mode.

d. Set the CG 551AP UNITS/DIV to the values listed in Table 5-9.

e. CHECK—that the counter reads the OUTPUT value listed in Table 5-9 for each UNITS/DIV value shown. Allow one count error.

f. Remove the output cable assembly and connect the CG 551AP TRIGGER OUTPUT through a coaxial cable to the counter B input.

g. Repeat steps 28d and 28e using the values in Table 5-9 under TRIGGER OUTPUT.

h. Remove all connections to the CG 551AP.

GPIB INTERFACE TEST

Equipment Required

- Controller—TEKTRONIX 4051.
- GPIB Interconnect Cable.

29. Check GPIB Operation

a. Turn off the power to the CG 551AP. Be sure the GPIB address switch is set to decimal 1.

b. Connect the TEKTRONIX 4051 to the CG 551AP power module via the GPIB interconnect cable. The GPIB connector is located on the rear of the power module. Power up the controller only.

c. Enter the following program into the 4051 memory.

```

1 ON SRQ THEN 500
2 GO TO 100
100 DIM B$(120)
110 INPUT A$
120 PRINT @1:A$
130 P=POS(A$, "?", 1)
140 IF P < > 0 THEN 160
150 GO TO 110
160 INPUT @1:B$
170 PRINT B$
    
```

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180 GO TO 110
500 POLL X,Y;1
510 PRINT "CG 551AP SRQ NOTED AND SER-
VICED"
520 RETURN

d. Turn on the power to the CG 551AP. Check that the message below appears on the 4051 display:

**NO SRQ ON UNIT—IN IMMEDIATE LINE—MESSAGE
NUMBER 43**

e. Execute the 4051 program by typing RUN<CR>. Type another <CR> on the 4051.

f. CHECK—that the 4051 displays the message:

CG 551AP SRQ NOTED AND SERVICED

g. The 4051 will then display a faint question mark indicating that it is awaiting input.

Press the following controls on the CG 551AP:

MODE	MARKERS
OUTPUT	ON
VARIABLE	ON
VARIABLE Control	1.0% FAST
UNITS/DIV	1 μ S/D
TRIGGER	RATE \div 10

h. Type SET? on the 4051.

i. CHECK—that the 4051 will display the following response:

**MODE MKRS; U/D 1.0E-6; VAR; PCT 1.0; OUT ON;
MAG X1; TRIG X.1;**

j. Type INIT <CR> on the 4051.

k. CHECK—that the CG 551AP goes to:

MODE	VOLTAGE
UNITS/DIV	1 V/D
FREQUENCY	1 kHz
NUMBER OF DIVISIONS	1
(MULTIPLIER)	
OUTPUT	Off
TRIGGER	NORM, Off

l. Type MODE MARKERS <CR> on the 4051.

m. CHECK—that the CG 551AP goes to:

MODE	MARKERS
OUTPUT	Off
TRIGGER	NORM, ON
VARIABLE	Off
UNITS/DIV	1 mS/D

n. This completes the CG 551AP Performance Check.

ADJUSTMENT PROCEDURE

Purpose

The Adjustment Procedure provides a calibration sequence for adjustments and is not to be considered as a troubleshooting guide.

Limits and Tolerances

All limits and tolerances given in this procedure are calibration guides and should not be interpreted as instrument specifications unless they are also found in the Specification section (Vol. 1) of this manual.

Tolerances given are for the instrument under test and do not include test equipment error.

Internal Adjustments

Do not preset the internal controls.

Adjustment Interval

To ensure correct instrument operation, adjustments should be checked every 1000 hours of operation or every six months if used infrequently. Before performing the Adjustment Procedure perform preventive maintenance as outlined in the Maintenance section.

Equipment Alternatives and Partial Procedures

When other than recommended test equipment is substituted, control settings or calibration setups might need to be altered. If the exact equipment listed is not available, check the Minimum Specification column in Table 5-1 to see if any other equipment will suffice.

Equipment Required (see Table 5-1 for part numbers)

Digital Voltmeter—Fluke Model 8800A.
Oscilloscope System—TEKTRONIX 7904/7A26/7B80.
Sampling System—TEKTRONIX 7904/7S11/S-6/7T11.
Frequency Counter—TEKTRONIX DC 508, Option 01.
Output Cable Assembly (supplied with CG 551AP).
Coaxial Cable, 50 Ω , bnc to bnc connectors.
Load Resistor, 20 k Ω , 2 W, 5%.
Probe, X10, 1 M Ω , TEKTRONIX P6105.
Adapter, bnc female to bnc female.
Adapter, bnc to dual binding post.

Adapter, probe tip to bnc.
Adapter, bnc female to dual banana.
Adapter, SMA male to bnc female (2 required).
Termination, 50 Ω , precision feedthrough.
Termination, 50 Ω , female (SMA).
Attenuator, 50 Ω , 2X (6 dB).
Attenuator, 50 Ω , 2.5X (8 dB).
Flexible Plug-in Extender (3 required).
Power Module, TEKTRONIX TM 515 (Mod UB) or TM 506 (Mod JB).

Preliminary Procedure

WARNING

Dangerous potentials exist at several points throughout this instrument. When the instrument is operated with the covers removed, do not touch exposed connections or components. Disconnect the power before removing or replacing components.

Remove the top cover and both side covers from the CG 551AP and connect the instrument to the power module interface via the three flexible plug-in extenders. Instructions for removing the covers is found in the Maintenance section. Apply power and allow at least 20 minutes warmup time for all equipment.

NOTE

Refer to the foldout page labeled ADJUSTMENTS & TEST POINT LOCATIONS before proceeding with the Adjustment Procedure. Make adjustments at an ambient temperature between +20° C (+68° F) and +30° C (+86° F), unless otherwise noted.

ADJUSTMENT STEPS

1. Adjust the +5 V Supply

a. Press the SLEWED EDGE pushbutton on the CG 551AP.

b. Connect the positive lead of the voltmeter to A4TP1410 and the negative lead to A4TP1400.

c. CHECK—that the voltmeter indication is between +5.10 V dc and +5.20 V dc.

d. ADJUST—A5R1004, +5 V Adjust, for a voltmeter indication of +5.15 V dc.

e. Disconnect the voltmeter leads from both test points.

2. Adjust the High Voltage Supply

a. Set the CG 551AP front panel controls as follows:

AMPLITUDE MODE	VOLTAGE
UNITS/DIV	20 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	10
FREQUENCY	DC
OUTPUT	Off

WARNING

Dangerous potentials exist between A5TP1702 and A5TP1103. Use extreme caution in handling the voltmeter leads for this step. +239 V dc exists at A5TP1702.

b. Use the output cable assembly (supplied with the CG 551AP), the bnc to dual binding post adapter, and the bnc female to bnc female adapter to connect the 20 k Ω , 2 W load resistor to the CG 551AP OUTPUT connector.

c. Connect the positive lead of the voltmeter to A5TP1702 and the negative lead to A5TP1103.

d. Press the CG 551AP OUTPUT ON button (turns output on).

e. CHECK—that the voltmeter indication is between +235 V dc and +239 V dc.

f. ADJUST—A5R1106, HV Adjust, for a voltmeter indication of +237 V dc.

g. Press the CG 551AP OUTPUT ON button (turns output off).

h. Disconnect the voltmeter leads from both test points and remove the 20 k Ω load resistor and adapters from the end of the output cable assembly.

3. Adjust the Low Voltage Supply

a. Change the CG 551AP front panel controls as follows:

UNITS/DIV	1 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1

b. Attach the positive lead of the voltmeter to A5TP1102 and the negative lead to A5TP1103.

c. CHECK—that the voltmeter indication is between +14.98 V dc and +15.02 V dc.

d. ADJUST—A5R1104, LV Adjust, for a voltmeter indication of +15.00 V dc.

e. Disconnect the voltmeter leads from the two test points.

4. Adjust the DAC Offset

a. Set the internal CAL/NORMAL switch, A9S1731, located on the CPU (A9) assembly, to the CAL position (up). The CG 551AP display window should read: DAC 0.

b. Connect the positive lead of the voltmeter to A6TP1304 and the negative lead to A6TP1400.

c. CHECK—that the voltmeter indicates between -3.9806 V dc and -3.9812 V dc.

d. ADJUST—A6R1325, DAC Offset, for a voltmeter indication of -3.9809 V dc.

e. Leave the voltmeter connected for the next step.

5. Adjust DAC Gain

a. Press the CONTINUE button on the CG 551AP. The display window should read: DAC 1.

b. CHECK—that the voltmeter indication is between -6.7104 V dc and -6.7124 V dc.

c. ADJUST—A6R1324, DAC Gain, for a voltmeter indication of -6.7114 V dc.

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d. Disconnect the voltmeter leads from the two test points. DO NOT press the CONTINUE button. Proceed to the next step.

6. Adjust the Pulse Head Drive

a. Connect the positive lead of the voltmeter to A7TP1200 and the negative lead to A7TP1302.

b. CHECK—that the voltmeter indicates between -5.20 V dc and -5.30 V dc.

c. ADJUST—A7R1202, Head Drive (–), for a voltmeter indication of -5.25 V dc.

d. Press the CG 551AP CONTINUE button. The display should be: HEAD.

e. CHECK—that the voltmeter indicates between $+5.20$ V dc and $+5.30$ V dc.

f. ADJUST—A7R1300, Head Drive (+), for a voltmeter indication of $+5.25$ V dc.

g. Disconnect the voltmeter leads from the two test points.

7. Adjust the Pulse Drive Delay

a. Press the CG 551AP CONTINUE button. The display should read: DELY.

b. Use a $50\ \Omega$ coaxial cable to connect the CG 551AP TRIGGER OUTPUT to the channel 1 vertical input of the oscilloscope's dual trace amplifier.

c. Use the oscilloscope's X10 probe to connect test point A7TP1200 to channel 2 vertical input of the oscilloscope's dual trace amplifier. Trigger the sweep on channel 1. Use positive slope trigger.

d. CHECK—the time delay between the two waveforms displayed on the crt graticule. At the 50% amplitude points, the delay should be between 110 ns and 130 ns.

e. ADJUST—A7R1200, Head Drive Delay, for a delay of 120 ns at the 50% amplitude points between the trigger positive edge and pulse drive negative edge waveforms.

f. Disconnect the X10 probe and $50\ \Omega$ cable from the CG 551AP.

8. Zero the Calibration Constants

a. Press the CG 551AP CONTINUE button. The display should read the same as shown in line 1 of Table 5-10.

b. CHECK—that the value displayed for the % error is 0.0%.

c. ADJUST—the CG 551AP VARIABLE knob for a display of 0.0%.

d. Repeat steps 8a through 8c for the remaining lines in Table 5-10. Each time you press CONTINUE, the display should agree with the corresponding line.

For line 6 in Table 5-10, connect the precision $50\ \Omega$ termination to the output cable assembly and connect the cable to the CG 551AP OUTPUT connector. Remove the cable assembly and $50\ \Omega$ termination before you press CONTINUE for line 7.

e. When line 11 of Table 5-10 is reached and the display reads CAL DONE, set the internal CAL/NORMAL switch, A9S1731, to the NORMAL position (down).

**Table 5-10
CALIBRATION DISPLAYS FOR STEP 8**

Line	CG 551AP Display Reading
1	5 V * 1 X 1
2	50 mV * 2 X 1
3	50 mV * 3 X 1
4	1 V * 4 X 1
5	1 V * 5 X 1
6	(connect $50\ \Omega$ load) 10 mA * 6 X 10
7	(remove $50\ \Omega$ load) 50 mV * 7 X 1
8	50 mV * 8 X 1
9	10 V * 9 X 1
10	10 V * 10 X 10
11	CAL DONE

9. Adjust the Translator Offset

a. Change the CG 551AP front panel controls as follows:

AMPLITUDE MODE	VOLTAGE
UNITS/DIV	10 V/D
NUMBER OF DIVISIONS	1
(MULTIPLIER)	
FREQUENCY	DC

b. Connect the positive lead of the voltmeter to A6TP1200 and the negative lead to A6TP1202.

c. CHECK—that the voltmeter indicates between +9.9990 V dc and +10.0010 V dc.

d. ADJUST—A6R1532, Translator Offset, for a voltmeter indication of +10.0000 V dc.

e. Disconnect the voltmeter leads from the two test points.

10. Adjust the Low SAC Offset

a. Change the CG 551AP front panel controls as follows:

UNITS/DIV	.1 V/D
OUTPUT	ON
USE FOR 50 Ω LOAD	Off

b. Use the bnc to male banana adapter and the output cable assembly to connect the CG 551AP OUTPUT to the digital voltmeter.

c. CHECK—that the voltmeter indication is between +0.099990 V dc and +0.100010 V dc.

d. ADJUST—A6R1203, Low SAC Offset, for a voltmeter indication of +0.100000 V dc.

e. Leave the voltmeter connections for the next step.

11. Adjust the High SAC Offset

a. Change the CG 551AP front panel controls as follows:

UNITS/DIV	20 V/D
-----------	--------

b. CHECK—that the voltmeter indication is between +19.950 V dc and +20.050 V dc.

c. ADJUST—A6R1411, High SAC Offset, for a voltmeter indication of +20.000 V dc.

d. Press the CG 551AP OUTPUT ON button (turns output off).

e. Proceed to the next step.

12. Adjust the Current Offset

a. Insert the precision 50 Ω termination between the output cable assembly and the bnc female to dual banana adapter on the voltmeter.

b. Change the CG 551AP front panel controls as follows:

AMPLITUDE MODE	CURRENT
UNITS/DIV	10 mA/D
NUMBER OF DIVISIONS	10
(MULTIPLIER)	
FREQUENCY	DC
VARIABLE	ON
OUTPUT	ON

c. ADJUST—the CG 551AP VARIABLE knob for a voltmeter indication between +4.995 V dc and +5.005 V dc. Do not change the VARIABLE knob for the remainder of this step.

d. Change the CG 551AP UNITS/DIV control for 1 mA/D and press the MULTIPLIER button 1.

e. CHECK—that the voltmeter indication is between +49.975 mV dc and +50.025 mV dc.

f. ADJUST—A6R1601, Current Offset, for a voltmeter indication of +50.000 mV dc.

g. Disconnect the voltmeter, cable assembly, and 50 Ω termination from the CG 551AP.

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13. Adjust the Low SAC Compensation

a. Set the CG 551AP front panel controls as follows:

AMPLITUDE MODE	VOLTAGE
UNITS/DIV	10 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	100 kHz
VARIABLE	Off
OUTPUT	ON
USE FOR 50 Ω LOAD	Off
TRIGGER OUTPUT	ON

b. Connect the CG 551AP OUTPUT through the output cable assembly to the vertical input of the oscilloscope.

c. Set the oscilloscope vertical deflection for 2 volts/div and the horizontal sweep for 0.5 μs/div.

d. Use a 50 Ω coaxial cable to connect the CG 551AP TRIGGER OUTPUT to the oscilloscope external trigger input. Adjust the oscilloscope trigger level for a stable display with the rising edge of the signal at the first vertical graticule line.

e. CHECK—the positive pulse for squarest leading edge corner and flat top.

f. ADJUST—A6C1201, Low SAC Comp, so that the positive pulse has the best leading edge corner and flat top.

g. Press the CG 551AP OUTPUT ON button (turns output off).

h. Proceed to the next step.

14. Adjust the High SAC Compensation

a. Disconnect the output cable assembly from the oscilloscope vertical input.

b. Connect the X10 probe (compensated) to the output cable assembly with a probe tip to bnc adapter and connect the probe to the oscilloscope vertical input.

c. Set the oscilloscope vertical deflection for 50 volts/div and the horizontal sweep rate for 10 μs/div.

d. Change the CG 551AP front panel controls as follows:

FREQUENCY	10 kHz
UNITS/DIV	20 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	10
OUTPUT	ON

e. Adjust the oscilloscope controls for a stable display with the rising edge of the signal at the first vertical graticule line.

f. CHECK—the positive pulse, leading edge corner, for no overshoot.

g. ADJUST—A6C1401, High SAC Comp, so that the positive pulse has the best leading edge corner with no overshoot.

h. Press the CG 551AP OUTPUT ON button (turns output off).

i. Remove all connections to the CG 551AP.

15. Adjust Power On Reference

a. Connect the positive lead of the voltmeter to A8TP1202 and the negative lead to A8TP1200.

b. CHECK—for a voltmeter indication between +2.70 V dc and +2.76 V dc.

c. ADJUST—A8R1300, Power On Ref, for a voltmeter indication of +2.73 V dc.

d. Proceed to the next step.

16. Adjust the Head Offset

a. Connect the positive lead of the voltmeter to A8TP1300.

b. CHECK—for a voltmeter indication between -3.000 mV dc and +3.000 mV dc.

c. ADJUST—A8R1301, Head Offset, for a voltmeter indication of 0.0 mV dc.

d. Disconnect the voltmeter leads from the two test points.

17. Adjust Low Edge Risetime and Aberrations

a. Use the output cable assembly, a 2X 50 Ω attenuator, and the SMA male to bnc female adapter to connect the CG 551AP OUTPUT connector to the input of the S-6 Sampling Head (installed in the 7S11 Sampling Unit). Terminate the S-6 with the SMA female (50 Ω) termination.

b. Connect the CG 551AP TRIGGER OUTPUT connector to the 7T11 Sampling Sweep Unit Trig Input connector, using a 50 Ω coaxial cable, 2.5X 50 Ω attenuator, and SMA male to bnc female adapter.

c. Set the 7S11 controls as follows:

mV/Div	100
Polarity	+Up
Delay	centered
Dot Response	Normal
Variable	Off (CAL IN)

d. Set the 7T11 controls as follows:

Time Pos Rng	50 ns
Time/Div	1 ns
Slope	+
Ext Trig	50 Ω, 2 V Max
Scan	Rep
Sampling	Random

e. Set the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	1 V/D
NUMBER OF DIVISIONS	1
(MULTIPLIER)	
FREQUENCY	1 MHz
EDGE POLARITY	↑ (Positive)
VARIABLE	Off (fixed)
TRIGGER OUTPUT	ON
OUTPUT	ON

f. Use the DC Offset, Time Position, Trig Level, Scan, and other controls on the Sampling System to display a 500 mV, 1 ns, positive going edge on the crt.

g. CHECK—that the risetime of the displayed edge is less than 1.3 ns, with minimum aberrations (see Fig. 5-3).

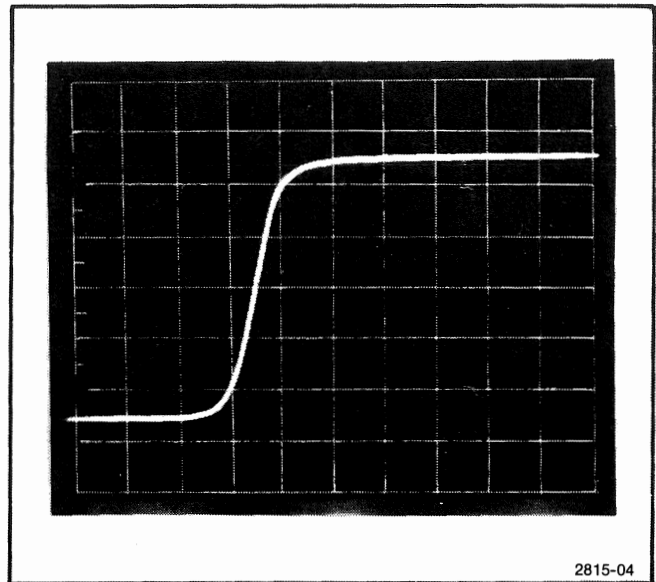



Fig. 5-3. Typical waveform for positive and negative low edge aberration checks.

h. ADJUST—A7C1621, Low Edge Comp (+), to obtain a risetime less than 1.3 ns and minimum aberrations (similar to Fig. 5-3).

i. Change the CG 551AP EDGE POLARITY to  (negative) and the 7S11 from +Up to Invert.

j. Readjust the Sampling System controls to display a 500 mV, 1 ns, negative going edge.

k. CHECK—that the risetime of the displayed edge is less than 1.3 ns, with minimum aberrations.

l. ADJUST—A7C1721, Low Edge Comp (-), to obtain a risetime less than 1.3 ns and minimum aberrations (similar to Fig. 5-3).

m. Remove all connections to the CG 551AP.

18. Adjust Mid Edge Offset and Mid Edge Comp

a. Use the output cable assembly to connect the CG 551AP OUTPUT to the channel 1 vertical input on the oscilloscope. Set the oscilloscope vertical deflection for 2 volts/div, ac coupled, and untriggered in the automatic mode.

Calibration—CG 551AP, Vol. 2
Adjustment Procedure

b. Set the CG 551AP front panel controls in the order listed below:

AMPLITUDE MODE	EDGE
EDGE POLARITY	↑ (Positive)
FREQUENCY	1 kHz
UNITS/DIV	2 V/D
NUMBER OF DIVISIONS	8
(MULTIPLIER)	
VARIABLE	Off (fixed)
OUTPUT	ON

c. Adjust the oscilloscope channel 1 variable control for exactly six vertical divisions of trace separation.

d. Change the CG 551AP front panel controls as follows:

AMPLITUDE	VOLTS
UNITS/DIV	2 V/D
NUMBER OF DIVISIONS	8
(MULTIPLIER)	
FREQUENCY	1 kHz
VARIABLE	ON
OUTPUT	ON

e. Adjust the CG 551AP VARIABLE control for exactly six vertical divisions of trace separation on the oscilloscope. Do not change the CG 551AP or the oscilloscope's VARIABLE controls.

f. Change the CG 551AP front panel controls as follows:

UNITS/DIV	.2 V/D
NUMBER OF DIVISIONS	6
(MULTIPLIER)	

g. Change the oscilloscope vertical deflection to .2 volts/division.

h. Adjust the oscilloscope channel 1 variable control for exactly five vertical divisions of trace separation.

i. Change the CG 551AP front panel controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	.2 V/D
NUMBER OF DIVISIONS	6
(MULTIPLIER)	
OUTPUT	ON

j. CHECK—for exactly five vertical divisions of trace separation.

k. ADJUST—A7R1408, Mid Edge Offset, for exactly five vertical divisions of trace separation.

l. Change the CG 551AP controls as follows:

AMPLITUDE MODE	EDGE
EDGE POLARITY	↑ (Positive)
UNITS/DIV	2 V/D
NUMBER OF DIVISIONS	6
(MULTIPLIER)	
FREQUENCY	100 kHz
OUTPUT	ON

m. Set the 7A26 for 2 volts/div and use the 7B80 controls to display the first leading edge of the 100 kHz signal.

n. CHECK—that the risetime is equal to or less than 40 ns.

o. ADJUST—A7R1527, Mid Edge Comp, for a displayed risetime of 40 ns.

p. Press the CG 551AP OUTPUT ON button (turns output off) and proceed to the next step.

19. Adjust High Edge Offset

a. Connect the CG 551AP output cable assembly to the channel 1 vertical input of the oscilloscope via the X10 probe (compensated) and bnc to probe tip adapter.

b. Set the oscilloscope vertical deflection for 20 volts/division, ac coupled, and untriggered in the automatic mode.

c. Set the CG 551AP front panel controls in the order listed:

AMPLITUDE MODE	EDGE
NUMBER OF DIVISIONS	5
(MULTIPLIER)	
UNITS/DIV	20 V/D
FREQUENCY	1 kHz
VARIABLE	Off (fixed)
OUTPUT	ON

d. Adjust the oscilloscope channel 1 variable control for exactly four vertical divisions of trace separation.

e. Change the CG 551AP front panel controls as follows:

AMPLITUDE MODE	VOLTS
UNITS/DIV	20 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	5
FREQUENCY	1 kHz
VARIABLE	ON
OUTPUT	ON

f. Adjust the CG 551AP VARIABLE control for exactly four vertical divisions of trace separation on the oscilloscope. Do not change the CG 551AP or the oscilloscope's VARIABLE controls.

g. Change the CG 551AP front panel controls as follows:

UNITS/DIV	5 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	4

h. Change the oscilloscope vertical deflection to 2 volts/division.

i. Adjust the oscilloscope channel 1 variable control for exactly six vertical divisions of trace separation.

j. Change the CG 551AP front panel controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	5 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	4
OUTPUT	ON

k. CHECK—for exactly six vertical divisions of trace separation.

l. ADJUST—A8R1401, High Edge Offset, for exactly six vertical divisions of trace separation on the oscilloscope.

m. Press the CG 551AP OUTPUT ON button (turns output off) and disconnect all probes and cables from the CG 551AP.

20. Adjust the Time Mark Power Supply (+12 V)

a. Press the CG 551AP MARKERS pushbutton.

b. Connect the positive lead of the digital voltmeter to A4TP1501 and the negative lead to A4TP1400.

c. CHECK—that the voltmeter indicates between +11.9 V dc and +12.1 V dc.

d. ADJUST—A4R1400, 12 V Adjust, for a voltmeter indication of +12.0 V dc.

e. Remove the voltmeter leads from the two test points.

21. Adjust the Fast Marker Shaper

a. Use the output cable assembly, a 2X 50 Ω attenuator, and the SMA male to bnc female adapter to connect the CG 551AP OUTPUT connector to the input of the S-6 Sampling Head. Terminate the S-6 with the 50 Ω female SMA terminator.

b. Use a 50 Ω coaxial cable, 2.5X 50 Ω attenuator, and SMA male to bnc female adapter to connect the CG 551AP TRIGGER OUTPUT connector to the Trig Input on the 7T11.

c. Set 7T11 Time/Div for 2 ns, Time Position Rng for 50 ns.

d. Set 7S11 for 100 mV/Div, +Up, and Normal Dot Response.

e. Set the CG 551AP front panel controls as follows:

TIMING MODE	MARKERS
UNITS/DIV	20 ns/D
VARIABLE	Off (fixed)
MAG X10	Off
TRIGGER OUTPUT	NORM—ON
OUTPUT	ON

f. Adjust the Sampling System controls for a display of two time marks.

g. CHECK—that the displayed marker amplitude is greater than 1.25 V (peak) and that the markers have a triangular shape.

h. ADJUST—A4C1011, Fast Marker Shaper, for a triangular shaped marker amplitude greater than 1.25 V (peak).

**Calibration—CG 551AP, Vol. 2
Adjustment Procedure**

- i. Proceed to the next step.

22. Adjust the 1 MHz Reference Frequency

NOTE

Do not perform this step if the instrument being adjusted is the CG 551AP, Option 01; go to step 23.

a. Remove the trigger input connection to the 7T11 Sampling Sweep unit and connect the coaxial cable to the direct input terminal on the counter. Set the counter for a resolution of 1 Hz or a gate time of 1 second.

b. Change the CG 551AP front panel controls as follows:

AMPLITUDE MODE	EDGE
UNITS/DIV	1 V/D
NUMBER OF DIVISIONS (MULTIPLIER)	1
FREQUENCY	1 MHz
TRIGGER OUTPUT	NORM—ON

c. CHECK—that the counter display indicates between 999.990 kHz and 1000.010 kHz.

d. ADJUST—A3A8R1220, 1 MHz Adjust, for a counter display of 1000.000 kHz. A3A8R1220 is accessible through a hole in the circuit board shield (from the rear of the instrument).

NOTE

Proceed to step 24 if the CG 551AP does not have Option 01 installed.

23. Adjust the Option 01, 5 MHz TCXO

NOTE

Allow at least 30 minutes warmup time for the CG 551AP and the DC 508 counter. The DC 508 must have the Option 01 time base installed.

a. Set the CG 551AP front panel controls as follows:

TIMING MODE	MARKERS
UNITS/DIV	.2 μ S/D
VARIABLE	Off (fixed)
TRIGGER OUTPUT	ON—NORMAL

b. Use a 50 Ω coaxial cable to connect the CG 551AP TRIGGER OUTPUT to the direct input terminal of the counter. Set the counter for a resolution of 1 Hz or a gate time of 1 second.

c. CHECK—that the counter display is between 4999.990 kHz and 5000.010 kHz.

NOTE

Do not adjust the 5 MHz frequency unless it is outside the limits stated in step 23c. The frequency is factory adjusted to assure that it will remain within tolerance over the specified temperature range (+15°C to +50°C). The frequency at normal room temperature may not be exactly 5000.000 kHz.

d. Remove the screw covering the adjustment hole in the side of the TCXO case. Note the marking on the TCXO case, "Set to XXXX.XXXX kHz at 27°C".

e. ADJUST—the TCXO frequency trimmer for a counter display reading equal to the frequency marked on the TCXO case.

f. Replace the screw covering the adjustment hole.

g. Disconnect all cables.

h. Proceed to the next step.

24. Adjust the Calibration Factors

a. Use the output cable assembly, precision 50 Ω termination, and the bnc to dual banana plug adapter to connect the CG 551AP OUTPUT connector to the digital voltmeter input. Insert termination between cable and adapter.

b. Set the internal CAL/NORMAL switch, A9S1731, to the CAL (up) position.

c. Press the CG 551AP CONTINUE button four times, skipping the first four CG 551AP display readings shown in Table 5-11.

d. CHECK—that the CG 551AP display is that shown in line 5 of Table 5-11 and that the voltmeter indication is between the voltage limits shown for line 5.

e. ADJUST—the CG 551AP VARIABLE control so that the voltmeter display is within the indicated voltage limits and as close to the nominal value as possible.

f. Press the CG 551AP CONTINUE button and proceed to the next line in Table 5-11 (line 6).

g. Repeat steps 24d through 24f for line 6 and the remaining lines in Table 5-11. Check and adjust the CG 551AP VARIABLE control for the voltage limits as

indicated for each line. For lines 11 through 15, remove the 50 Ω termination and connect the output cable assembly directly to the voltmeter input.

h. When CAL DONE is displayed for line 15, set the internal CAL/NORMAL switch, A9S1731, to the NORMAL (down) position.

i. This completes the Adjustment Procedure for the CG 551AP.

Table 5-11
CALIBRATION FACTOR VOLTAGE LIMITS

Line	CG 551AP Display	Nominal Value	Termination	Voltage Limits
1.	DAC 0			
2.	DAC 1			
3.	HEAD			
4.	DELY			
5.	5 V * 1 X 1	5.0000 V	50 Ω	4.9963 V to 5.0038 V
6.	50 mV * 2 X 1	50.000 mV	50 Ω	49.963 mV to 50.038 mV
7.	50 mV * 3 X 1	50.000 mV	50 Ω	49.963 mV to 50.038 mV
8.	1 V * 4 X 1	1.00000 V	50 Ω	.99925 V to 1.00075 V
9.	1 V * 5 X 1	1.00000 V	50 Ω	.99925 V to 1.00075 V
10.	10 mA * 6 X 10	5.0000 V	50 Ω	4.9963 V to 5.0038 V
11.	50 mV * 7 X 1	50.000 mV	Open	49.963 mV to 50.038 mV
12.	50 mV * 8 X 1	50.000 mV	Open	49.963 mV to 50.038 mV
13.	10 V * 9 X 1	10.000 V	Open	9.9925 V to 10.075 V
14.	10 V * 10 X 10	100.000 V	Open	99.925 V to 100.075 V
15.	CAL DONE			

MAINTENANCE

This section of the manual contains information for performing preventive maintenance, instrument disassembly, circuit board maintenance, troubleshooting, and corrective maintenance for the CG 551AP. In addition, specific diagnostic procedures using the signature analysis method of troubleshooting is found in the latter part of this section.

PREVENTIVE MAINTENANCE

INTRODUCTION

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

STATIC-SENSITIVE COMPONENTS

Precautions



Static discharge can damage any semiconductor component in this instrument.

This instrument contains electrical components that are susceptible to damage from static discharge. See Table 6-1 for relative susceptibility of various classes of semiconductors. Static voltages of 1 kV to 30 kV are common in unprotected environments.

Observe the following precautions to avoid damage:

1. Minimize handling of static-sensitive components.
2. Transport and store static-sensitive components or assemblies in their original containers, on a metal rail, or on conductive foam. Label any package that contains static-sensitive assemblies or components.
3. Discharge the static voltage from your body by wearing a wrist strap while handling these com-

ponents. Servicing static-sensitive assemblies or components should be performed only at a static-free work station by qualified service personnel.

4. Nothing capable of generating or holding a static charge should be allowed on the work station surface.
5. Keep the component leads shorted together whenever possible.
6. Pick up components by the body, never by the leads.
7. Do not slide the components over any surface.
8. Avoid handling components in areas that have a floor or work surface covering capable of generating a static charge.
9. Use a soldering iron that is connected to earth ground.
10. Use only special antistatic suction type or wick type desoldering tools.

Test Equipment

Before using any test equipment to make measurements on static-sensitive components or assemblies, be certain that any voltage or current supplied by the test equipment does not exceed the limits of the component to be tested.

Table 6-1

RELATIVE SUSCEPTIBILITY TO STATIC DISCHARGE DAMAGE

Semiconductor Classes	Relative Susceptibility Levels ^a
MOS or CMOS microcircuits or discretes, or linear microcircuits with MOS inputs. (Most Sensitive)	1
ECL	2
Schottky signal diodes	3
Schottky TTL	4
High-frequency bipolar transistors	5
JFETs	6
Linear microcircuits	7
Low-power Schottky TTL	8
TTL (Least Sensitive)	9

^a Voltage equivalent for levels:

- 1 = 100 to 500 V 4 = 500 V 7 = 400 to 1000 V (est.)
- 2 = 200 to 500 V 5 = 400 to 600 V 8 = 900 V
- 3 = 250 V 6 = 600 to 800 V 9 = 1200 V

(Voltage discharged from a 100 pF capacitor through a resistance of 100 ohms.)

CLEANING

Introduction

The CG 551AP should be cleaned as often as operating conditions require. Accumulation of dirt in the instrument can cause overheating and component breakdown. Dirt on components acts as an insulating blanket and prevents efficient heat dissipation. It also provides an electrical conduction path which may result in instrument failure. The side panels reduce the amount of dust reaching the interior of the instrument. Operation without the panels in place necessitates more frequent cleaning.



Use a nonresidue type of cleaner, preferably isopropyl alcohol, or totally denatured ethyl alcohol. Do not use alcohol or petroleum based cleansing agents on the front panel. Do not use air or any solvent to clean the Front Panel circuit board. Before using any other type of cleaner, consult your Tektronix Service Center or representative.

Exterior

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

Interior

Cleaning the interior of the instrument should only be necessary occasionally. The best way to clean the interior is to blow off the accumulated dust with dry, low-velocity air (approximately 5 lb/in²). Remove any dirt which remains with a soft brush or a cloth dampened with a mild detergent and water solution. A cotton-tipped applicator is useful for cleaning in narrow spaces, or for cleaning more delicate circuit components.

To properly hand clean a circuit board with edge connectors, hold the board so the cleaning residue runs away from the connectors. Do not scrape or use an eraser to clean the edge connector contacts. Abrasive cleaning can remove the gold plating resulting in possible destruction of electrical continuity.



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

VISUAL INSPECTION

The CG 551AP should be inspected occasionally for such defects as broken connections, improperly seated semiconductors, damaged or improperly installed circuit boards, and heat-damaged parts. The corrective procedure for most visible defects is obvious; however, particular care must be taken if heat-damaged parts are found. Overheating usually indicates other trouble in the instrument; therefore, correcting the cause of overheating is important to prevent recurrence of the damage.

SEMICONDUCTOR CHECKS

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

PERIODIC ELECTRICAL ADJUSTMENT

To ensure accurate measurements, check the electrical adjustment of this instrument after each 1000 hours of operation, or every six months if used infrequently. In addition, replacement of components may necessitate adjustment of the affected circuits. Complete adjustment instructions are given in the Calibration section. This procedure can be helpful in localizing certain troubles in the instrument, and in some cases, may correct them.

GENERAL TROUBLESHOOTING

The following general information is provided to facilitate troubleshooting of the CG 551AP. Information contained in other sections of this manual should be used in conjunction with the following data to aid in locating a defective component. An understanding of the circuit operation is helpful in locating troubles; refer to the Theory of Operation section in Vol. 1 for this information.

TROUBLESHOOTING AIDS

Diagrams

Complete schematic diagrams are given on the pullout pages located in the rear of this manual. The component number and electrical value of each component in this instrument are shown on these diagrams. (See the first page of the Diagrams and Circuit Board Illustrations section for definitions of the reference designators and symbols used to identify components in this instrument.)

Circuit Board Illustrations

To aid in locating components, a circuit board illustration(s) appears on the back of the pullout page facing the associated schematic diagram. Each circuit board illustration is arranged in a grid locator with a component reference chart to facilitate rapid location of components contained in the schematic diagrams and on the circuit board.

Troubleshooting Charts

Troubleshooting charts and diagnostic procedures for the Central Processing circuits are located in the latter part of this section.

Troubleshooting charts for the Amplitude and Timing circuits are located in the foldout pages. The troubleshooting charts locate the malfunctions to a circuit block level. The circuits listed are discussed in detail in the Theory of Operation section.

Component Color Coding

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

The values of common disc capacitors and small electrolytics are marked on the side of the component body. The epoxy coated tantalum capacitors used in the instrument are color coded using a modified EIA code (see Fig. 6-1).

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

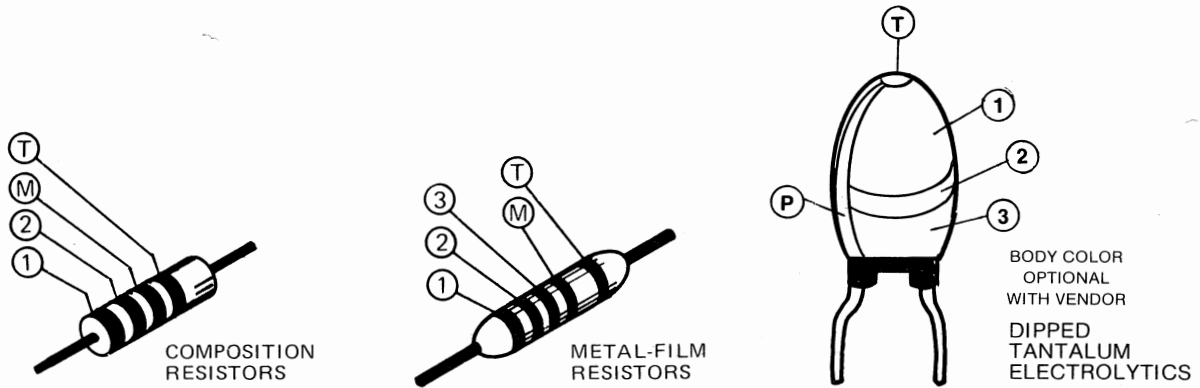
Semiconductor Lead Configurations

Lead configurations for semiconductor devices and some integrated circuits used in the CG 551AP are shown in Fig. 6-2.

Multipin Connectors

Pin 1 on multipin connectors is designated with a triangle. A triangle, dot, or square printed on circuit boards denotes pin 1. When a connection is made to a circuit board, the orientation of the triangle on the multipin holder is determined by the index (triangle, dot or square) printed on the circuit board (see Fig. 6-3). Some multipin connectors are keyed with a plastic pin that protrudes through a hole on the circuit board. Proper mating with the multipin connector and the pin(s) on the circuit board cannot be accomplished unless this pin is aligned with the hole on the circuit board.

Some multipin connectors are equipped with a locking mechanism to more readily secure the connector to the circuit board. To remove these connectors, grasp the connector body and pull perpendicular to the circuit board. They should not be removed by pulling on the wire leads; this causes the locking mechanism to clamp onto the circuit board pins.



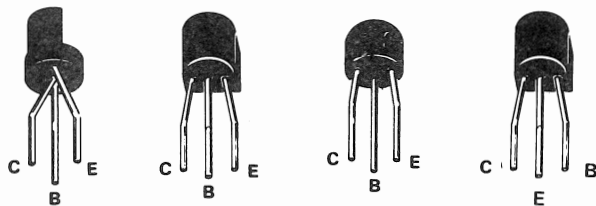
① ② and ③ - 1ST, 2ND, AND 3RD SIGNIFICANT FIGS. ① AND/OR ③ COLOR CODE MAY NOT BE PRESENT ON SOME CAPACITORS;
 ① - MULTIPLIER ① - TOLERANCE;
 ③ - TEMPERATURE COEFFICIENT. ② - POLARITY AND VOLTAGE RATING

COLOR	SIGNIFICANT FIGURES	RESISTORS		CAPACITORS		
		MULTIPLIER (OHMS)	TOLERANCE	MULTIPLIER (pF)	TOLERANCE	VOLTAGE RATING
BLACK	0	1	---			4VDC
BROWN	1	10	±1%			6VDC
RED	2	10 ² or 100	±2%			10VDC
ORANGE	3	10 ³ or 1 K	±3%			15VDC
YELLOW	4	10 ⁴ or 10K	±4%	10 ⁴ or 10,000		20VDC
GREEN	5	10 ⁵ or 100 K	±1/2%	10 ⁵ or 100,000		25VDC
BLUE	6	10 ⁶ or 1 M	±1/4%	10 ⁶ or 1,000,000		35VDC
VIOLET	7	---	±1/10%	10 ⁷ or 10,000,000		50VDC
GRAY	8	---	---			---
WHITE	9	---	---			
GOLD	---	10 ⁻¹ or 0.1	±5%	---	±5%	---
SILVER	---	10 ⁻² or 0.01	±10%	---	±10%	---
NONE	---	---	±20%	---	-20%	---

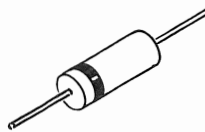
2815-05 (C1862-74)

Fig. 6-1. Color code for resistors and capacitors.

NOTE
LEAD CONFIGURATIONS AND CASE STYLES ARE TYPICAL, BUT MAY VARY DUE TO VENDOR CHANGES OR INSTRUMENT MODIFICATIONS.



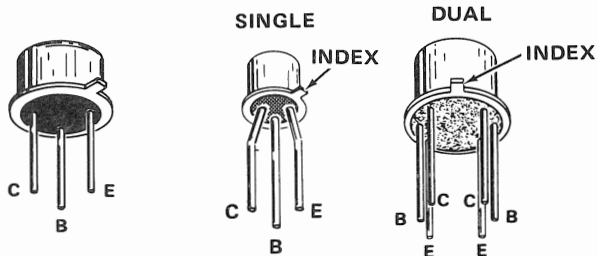
PLASTIC-CASED TRANSISTORS



SIGNAL DIODE



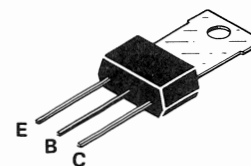
LIGHT EMITTING DIODE (L.E.D.)



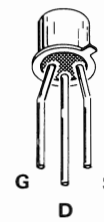
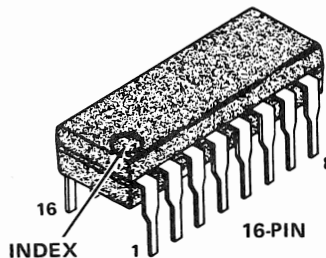
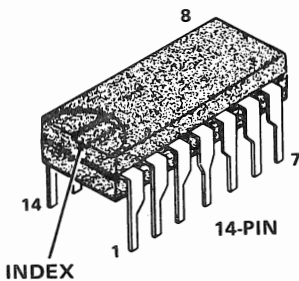
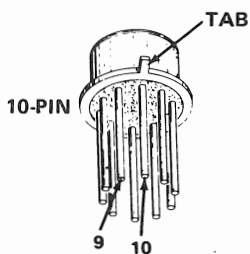
METAL-CASED TRANSISTORS



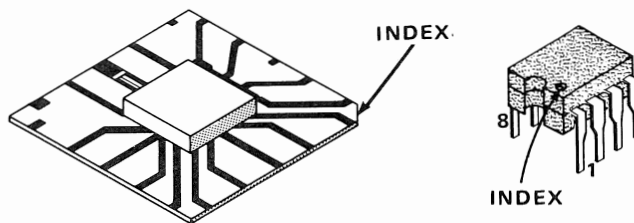
PLASTIC-POWER TRANSISTORS



DARLINGTON TRANSISTOR



FET



INTEGRATED CIRCUITS

(1988-26)2815-06A

Fig. 6-2. Semiconductor lead configurations.

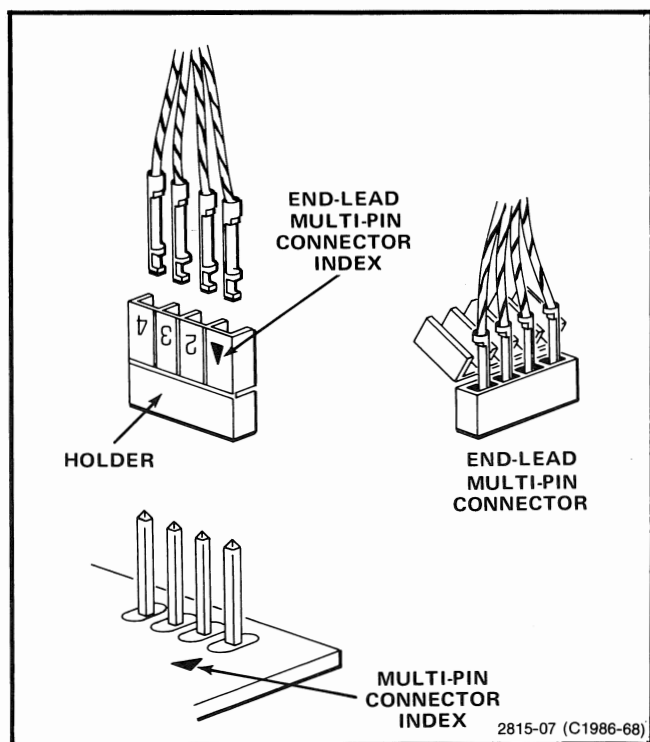


Fig. 6-3. Orientation of multi-pin connectors.

TROUBLESHOOTING EQUIPMENT

See the equipment list in the Calibration section of this manual for equipment suggestions for maintaining the CG 551AP.

Extender Cables and Board Extenders

Several extenders are available to improve accessibility to the CG 551AP for servicing. The entire instrument can be operated outside of the power module using three Flexible Extender Cables (Tektronix Part Number 067-0645-02).

Individual boards may be extended at right angles outside the top of the instrument using a Rigid Circuit Board Extender (Tektronix Part Number 067-0975-00). To use this extender remove the desired board, replace the board with the extender, with the word Top at the top of the instrument, and plug the board into the socket on the rigid extender. Make certain the board is correctly plugged into the rigid extender (top of board toward front of instrument). If the board chosen has connectors on both ends, use the Flexible Extender Cable (Tektronix Part Number 067-0645-02) to connect the board to the power module.

For further flexibility, another Flexible Circuit Board Extender, (Tektronix Part Number 067-0974-00) can be plugged into the Main Interconnect board or the rigid

extender and the chosen board plugged into the flexible extender. In either case, if the board has a power module connector it must be connected to the power module as previously described. Make certain all connectors are properly oriented.

GENERAL TROUBLESHOOTING TECHNIQUES

This troubleshooting procedure is arranged to check the simple trouble possibilities before proceeding with extensive troubleshooting. The first few checks ensure proper connection, operation, and adjustment. If the trouble is not located by these checks, the remaining steps aid in locating the defective component. When the defective component is located, replace it following the procedures given under Corrective Maintenance.

1. Check Control Settings

Incorrect control settings can appear to be an equipment problem. If there is any question about the correct function or operation of any control on the CG 551AP, refer to the Operating Instructions (Vol. 1).

2. Check Associated Equipment

Before proceeding with troubleshooting, check that the equipment used with this instrument is operating correctly. Also, check that the interconnecting cables are not defective.

3. Visual Check

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

4. Check Instrument Adjustment

Check the electrical adjustment of this instrument, or of the affected circuit if the trouble appears in one circuit. The apparent trouble may only be a result of misadjustment. Complete adjustment instructions are given in the Calibration section.

5. Isolate Trouble to a Circuit

To isolate trouble to a particular circuit, note the trouble symptom. The symptom often identifies the circuit in which the trouble is located. When trouble symptoms appear in more than one circuit, check the affected circuits by taking voltage and waveform measurements. Also check for the correct output signals at the front and rear-panel input/output connectors with a test os-

cilloscope. If the signal is correct, the circuit is working correctly up to that point.

The CG 551AP Troubleshooting Charts in the Diagrams and Illustrations (foldout) section provides a guide for locating defective circuits to the circuit block level. Start at the top of the chart and perform the checks until a step is found that does not produce the indicated results.

After the defective circuit has been located, proceed with step 6 to locate the defective component(s).

6. Check Individual Components

The following procedures describe methods of checking individual components in the CG 551AP. Components which are soldered in place are best checked by first disconnecting one end. This isolates the measurements from the effects of surrounding circuitry.

FUSES. Check for open fuses by checking continuity with an ohmmeter.

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

INTEGRATED CIRCUITS. Integrated circuits can be checked with a voltmeter, test oscilloscope, or by direct substitution. A good understanding of the circuit operation is essential to troubleshooting circuits using integrated circuits. In addition, operating waveforms, logic levels, and other operating information for the integrated circuits are given in the Theory of Operation section and

troubleshooting charts. Use care when checking voltages and waveforms around the integrated circuits so that adjacent leads are not shorted together. A convenient means of clipping a test probe to the in-line, multipin integrated circuits is with an integrated circuit test clip. This device also doubles as an integrated circuit extraction tool.

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



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

RESISTORS. Check the resistors with an ohmmeter. Resistor tolerances are given in the Replaceable Electrical Parts list. Normally, resistors do not need to be replaced unless the measured value varies widely from the specified value.

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

7. Repair and Adjust the Circuit

If any defective parts are located, follow the replacement procedures given under Component Replacement in this section. Check the performance of any circuit that has been repaired or that has had any electrical components replaced. Adjustment of that circuit may be necessary.

INSTRUMENT DISASSEMBLY AND BOARD MAINTENANCE

Circuit Board Removal

See Fig. 6-4 for an exploded view of CG 551AP circuit board locations.

Before removing the circuit boards, other than the Front Panel and Main Interconnect boards, remove the screw shown in Fig. 6-5.

To remove top and bottom covers see Fig. 6-6 and Fig. 6-7.



When replacing a circuit board, or connecting a board to an extender cable, be certain that the boards are in their proper slot and aligned with the proper power module interface connection.

Front Panel Removal

To remove the front panel and gain access to the Main Interconnect board, remove the nine screws attaching the front panel. These screws are shown in Figs. 6-6 and 6-7. Separate the front panel from the chassis and remove the ribbon cable connector attached to the Main Interconnect board. Also, note the routing of the coaxial cables through the Main Interconnect board to the Output and Time Mark boards.

Display LED Removal

To gain access to the LEDs, remove the transparent, red front cover by depressing the three tabs that attach the cover to the top of the front panel. The LEDs may then be unsoldered from the Front Panel circuit board and removed without removing the Front Panel circuit board.

Front Panel Circuit Board (A1)

To remove the Front Panel circuit board, disconnect the wires attaching the REMOTE VARIABLE connector to the Front Panel circuit board. Also remove the wires connected to the OUTPUT, TRIGGER OUTPUT, and the CURRENT LOOP. Remove the two knobs attached to the UNITS/DIV control and remove the five screws attaching the circuit board to the front panel. To remove the pushbutton switches, push them out of the circuit board from the rear.

The UNITS/DIV switch, if defective, must be replaced as a unit. To remove this switch, unsolder the four wires attached to the switch and remove the three screws.

Do not clean the Front Panel circuit board with water, air, or any solvent unless the pushbutton switches are removed first. Any dirt forced or carried under the switch contacts can cause intermittent operation.

Main Interconnect Board (A2)

This board is removed from the instrument after the front panel is removed. The Main Interconnect board is attached by two screws in angle brackets attached to the bottom of the instrument. See Fig. 6-7. Also, remove the four screws attaching the shields to this board. No special maintenance procedures are required when servicing this board.

Time Interface Board (A3/A3A1—A3A8)

To remove the A3 board see Fig. 6-8. To gain access to the small circuit boards mounted in the shields attached to the Time Interface board, remove the two aluminum covers attached to the shields. The rubber pads attached to the cover improve heat transfer characteristics from components mounted on the circuit boards. These pads are attached to the shields with self-sticking adhesive. The inside of the aluminum covers are silk screened to show the pad outlines. Make certain, when replacing the covers, that they are replaced with the pads next to the components and that all screws are installed.

To remove the small circuit boards (A3A1—A3A8) from the shields and to remove the shields from the Time Interface board, refer to the instructions in Fig. 6-9.

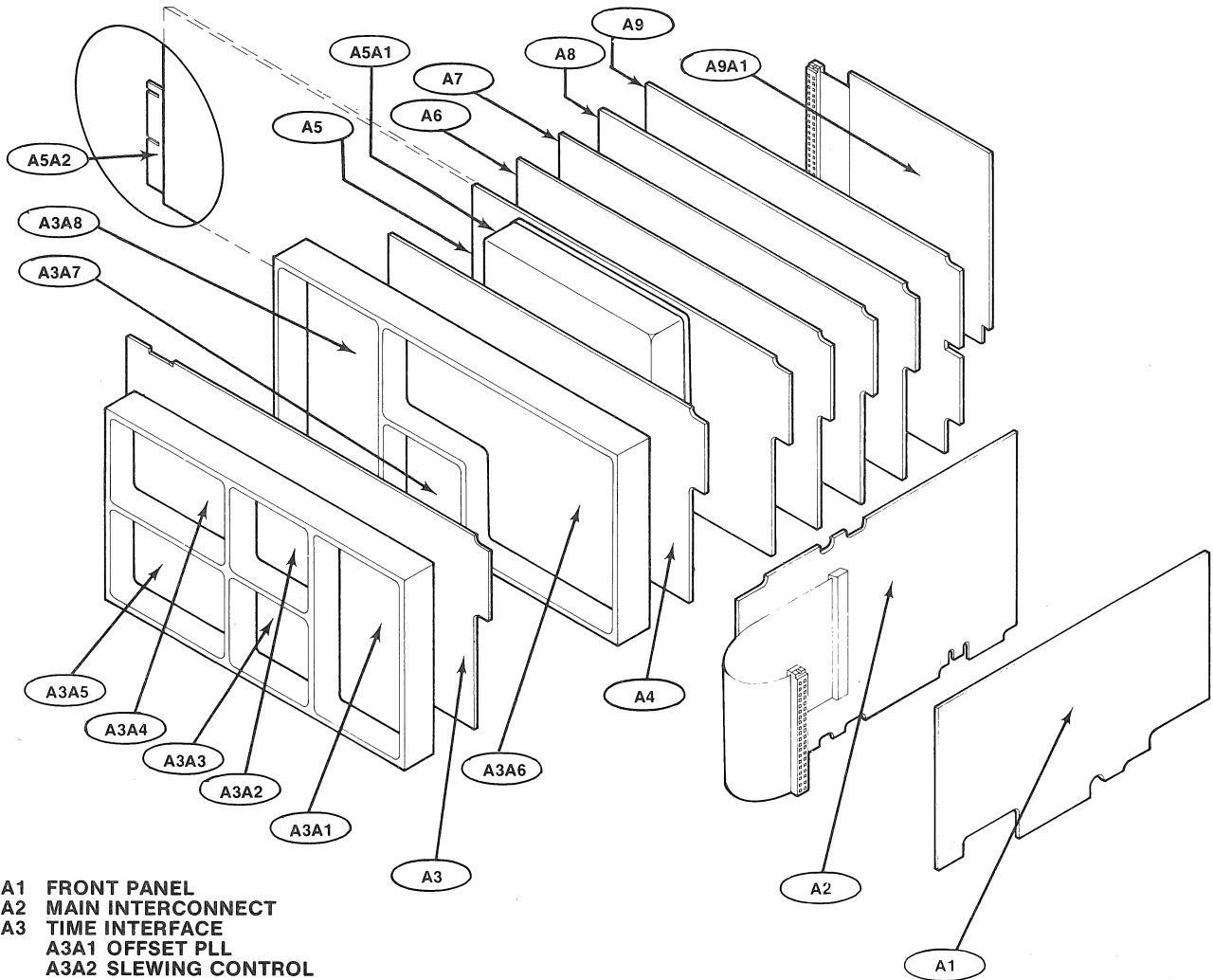
Time Mark Board (A4)

No special board maintenance procedures are required for this board. Make certain the two fuses are replaced with the correct values.

Power Supply Boards (A5/A5A1)

To remove the Power Supply Isolator board from the Power Supply Main board, remove the four screws attaching the Isolator to the main board.

To remove the Isolator board from the shield, unsolder the wires from the board to the shield feed-throughs at the feed-through connections. Then remove the four hex posts and remove the board.



- A1 FRONT PANEL
- A2 MAIN INTERCONNECT
- A3 TIME INTERFACE
 - A3A1 OFFSET PLL
 - A3A2 SLEWING CONTROL
 - A3A3 OFFSET VCO
 - A3A4 COUNTER (TRIGGER)
 - A3A5 COUNTER (SLEWING)
 - A3A6 STEERING
 - A3A7 MAIN VCO
 - A3A8 MAIN PLL
- A4 TIME MARK
- A5 PS MAIN
 - A5A1 PS ISOLATOR
 - A5A2 PS INTERFACE
- A6 REFERENCE
- A7 OUTPUT
- A8 HIGH EDGE
- A9 CPU
 - A9A1 GPIB

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Fig. 6-4. CG 551AP circuit board locations. Power is lost to all boards if the A3 board is removed.

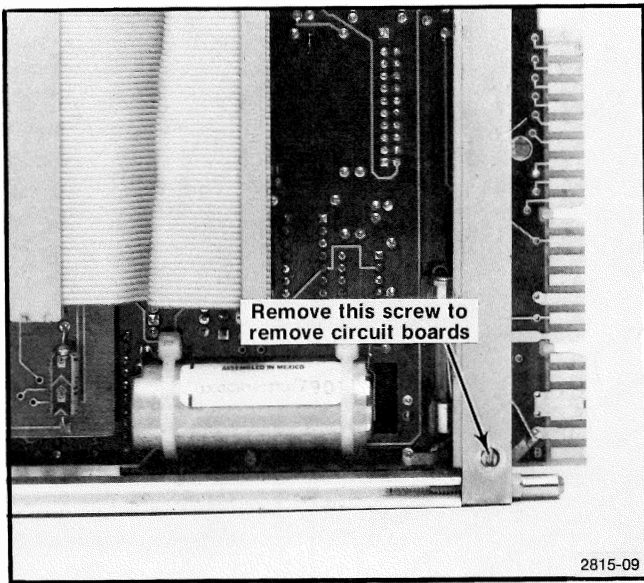


Fig. 6-5. Circuit board holding screw.

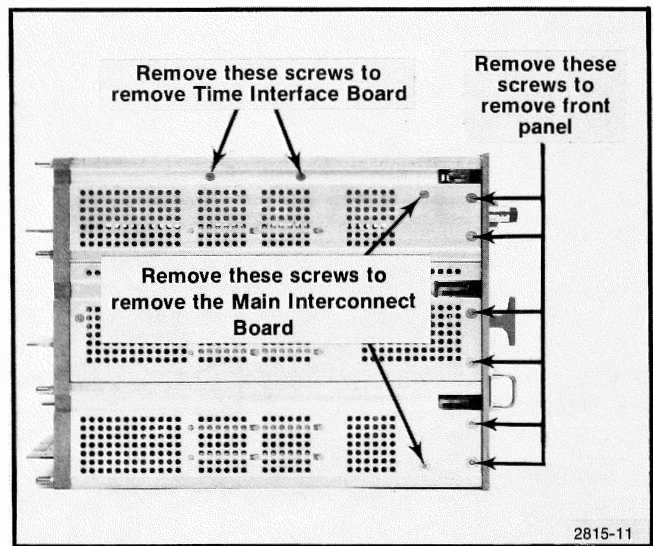


Fig. 6-7. Bottom view of CG 551AP.

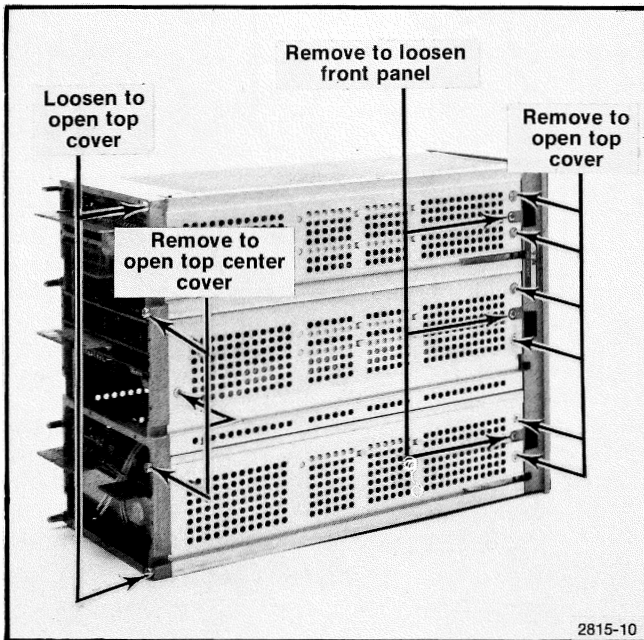


Fig. 6-6. Top view of CG 551AP.

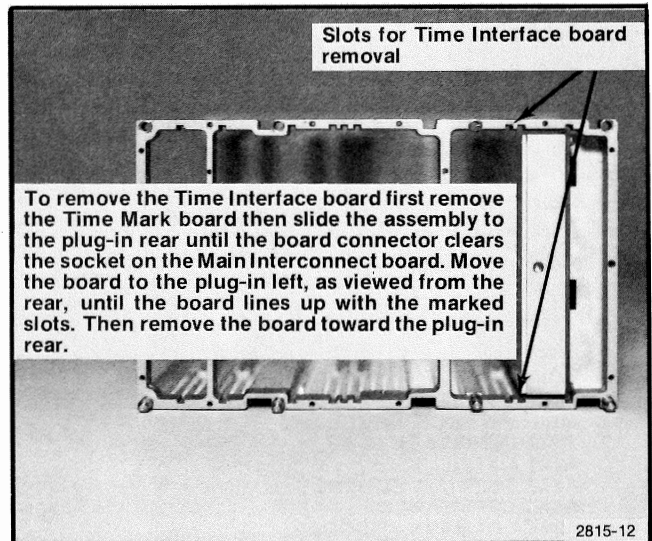


Fig. 6-8. Rear view of CG 551AP.

Power Supply Interface Board (A5A2)

No special maintenance procedures are required for servicing this board.

Reference Board (A6)

No special maintenance procedures are required on this board.

Output Board (A7)

To remove the attenuator chips press down on both ends of the clips holding the ceramic attenuators to the circuit board. Slide the clips in the proper direction and remove. Refer to Fig. 6-10.

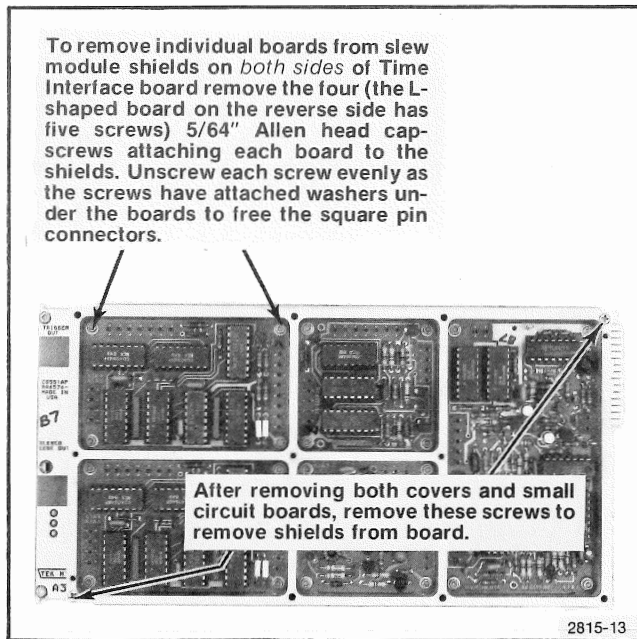


Fig. 6-9. Outside of Time Interface board. Although only one side is shown, small board removal instructions are identical for both sides.

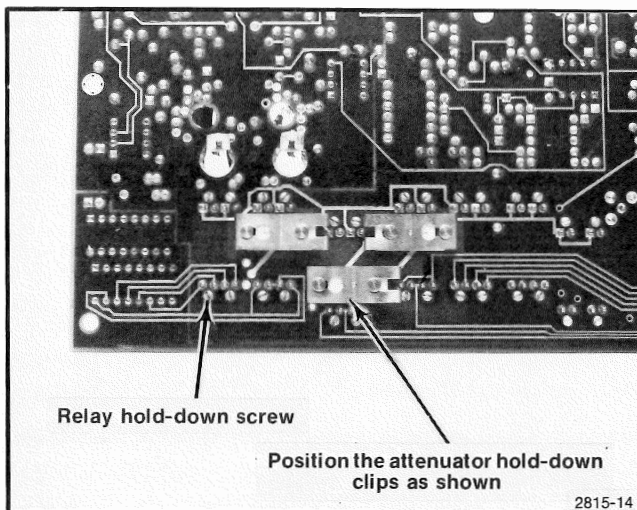


Fig. 6-10. Output board.

Make certain the ceramic chips are replaced so that the contact points contact the runs on the circuit board. Also make certain the clips are replaced facing the proper direction.

When replacing the Output board in the instrument, connect the coaxial cable from the CURRENT LOOP to the front-most connector. Connect the coaxial cable from the OUTPUT connector to the socket toward the rear of the board.

MAGNETIC LATCHING RELAYS. To prevent damage to these relays, do not remove them from the Output circuit board unless absolutely necessary. If the relay contacts become noisy or the relay fails to operate, remove the relay from the circuit board. Remove the two screws, attaching each relay, from the back of the board.

Clean the circuit board contacts with a small brush and isopropyl alcohol. Do not use any solvent that may attack polycarbonates such as hydrocarbon chlorides, ketones, esters, etc. Do not use a cotton swab as small cotton filaments may remain on the contact area.

Clean the contact fingers on the relay armature by lightly brushing the contacts with a brush dipped in isopropyl alcohol.

To remove the relay armature from the relay, obtain a wire or tool with a diameter less than 0.040", such as a paperclip. Before removing the armature, mark the orientation of the armature to the housing. Orientation is important for proper operation. Place the tool in the slot on the side of the housing and gently lift the relay armature. See Fig. 6-11.

Clean the interior of the relay, around the pole pieces, with isopropyl alcohol. The interior of the relay must be completely dry before reinstalling the armature. Use air to dry excess alcohol from the housing.

NOTE

Do not spray contact cleaner on the relays or anywhere on the board when they are installed on the board. Any foreign material between the pole pieces and the armature can cause faulty operation.

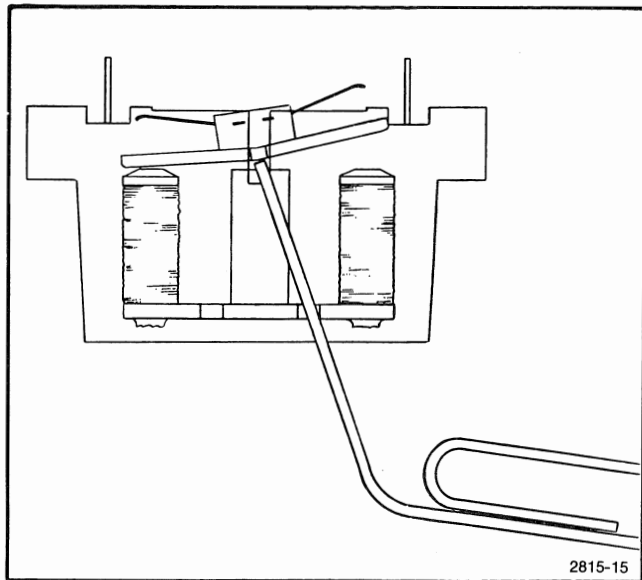


Fig. 6-11. Method of removing magnetic latch relay armature.

High Edge Board (A8)

No special maintenance procedures are required for this board.

CPU and GPIB Boards (A9 and A9A1)

To remove the CPU board (A9) from the instrument, first remove the GPIB board (A9A1). This is done by disconnecting the ribbon cable at the CPU board. Remove the three screws attaching the GPIB board to the CPU board and remove the GPIB board. Do not short the battery terminals during board removal.

BATTERY. A battery to maintain calibration data in the CMOS RAM's during power off times is located on the

CPU board (A9). The battery is automatically recharged when the instrument is operating.

Never use an ammeter to measure the short-circuit current supplied by the battery as the cell may be damaged.

Be careful to not short the battery terminals. If the battery terminals are shorted without power applied to the instrument, all calibration data in the RAM's will be lost.

When the board is out of the instrument, lay the board on an insulating surface, such as sponge rubber.

To remove the battery from the board for replacement, unsolder the tabs at the ends of the battery. The battery is attached with cable tiedown straps. Cut the straps and replace them with new straps when installing a new battery.

If the calibration constants are lost due to low battery voltage, an ERROR 17 message will appear on the display. To determine if the battery is defective, measure the voltage across the end terminals with a high impedance voltmeter. The voltage should be ≥ 3.6 V. The life of the battery in the circuit is nearly the same as shelf life due to the extremely low current drain.

WARNING

Do not dispose of the battery in a fire or open flame as the battery may explode.

CORRECTIVE MAINTENANCE

INTRODUCTION

Corrective maintenance consists of component replacement and instrument repair. Special techniques required to replace components in the CG 551AP are given here.

Obtaining Replacement Parts

Electrical and mechanical parts can be obtained through your local Tektronix Field Office or representative. However, it may be possible to obtain many of the standard electronic components from a local commercial source. Before purchasing or ordering a part from a source other than Tektronix, Inc., check the Replaceable Electrical Parts list for the proper value, rating, tolerance, and description.

NOTE

When selecting replacement parts, remember that the physical size and shape of a component may affect its performance in the instrument.

Some parts are manufactured or selected by Tektronix, Inc. to satisfy particular requirements, or are manufactured for Tektronix, Inc. to our specifications. Most of the mechanical parts used in this instrument have been manufactured by Tektronix, Inc. To determine manufacturer of parts, refer to the Replaceable Parts list and the Cross Reference Index, Mfr. Code Number to Manufacturer.

When ordering replacement parts from Tektronix, Inc., include the following information:

1. Instrument type and Option number.
2. Instrument serial number.
3. A description of the part (if electrical, include complete circuit number).
4. Tektronix part number.

SOLDERING TECHNIQUES

WARNING

To avoid electric-shock hazard, disconnect the instrument from the power source before soldering.

The reliability and accuracy of this instrument can be maintained only if proper soldering techniques are used when repairing or replacing parts. General soldering techniques which apply to maintenance of any precision electronic equipment should be used when working on this instrument. Use only 60/40 rosin-core, electronic grade solder. The choice of soldering iron is determined by the repair to be made.

CAUTION

Several of the circuit boards in the CG 551AP are multilayer type boards with a conductive path laminated between the top and bottom board layers. All soldering on these boards should be done with extreme care to prevent breaking the connections to this center conductor. Only experienced maintenance personnel should attempt repair of the following boards:

A1-Front Panel, A2-Main Interconnect, A3-Time Interface, A3A4-Counter (Trigger), A3A5-Counter (Slewing), A4-Time Mark, A6-Reference, A7-Output.

Do not allow solder or solder flux to flow under printed circuit board switches. The printed circuit board is part of the switch contacts; intermittent switch operation can occur if the contacts are contaminated.

When soldering on circuit boards or small wiring, use only a 15 watt, pencil type soldering iron. A higher wattage soldering iron can cause the etched circuit wiring to separate from the board base material and melt the insulation from small wiring. Always keep the soldering iron tip properly tinned to ensure the best heat transfer to the solder joint. Apply only enough heat to remove the component or to make a good solder joint. To protect heat sensitive components, hold the component lead with a pair of long-nose pliers between the component body and the solder joint. Use a solder removing wick to remove excess solder from connections or to clean circuit board pads.

The following techniques should be used to replace a component on any of the circuit boards not mentioned in the preceding Caution note.

1. Touch the soldering iron to the lead at the solder connection. Never place the iron directly on the board as this may damage the board.

2. Melt a small amount of solder onto the component lead connection. This replaces the flux, which may have been removed during instrument cleaning, and facilitates removal of the component.

3. Grip the component lead with a pair of long-nose pliers. When the solder begins to flow, gently pull the component lead from the board. If unable to separate the lead from the board, try removing the other end of the component.

NOTE

Some components are difficult to remove from the circuit boards due to a bend placed in each lead during machine insertion of the component. The purpose of the bent leads is to hold the component in position during a flow-solder manufacturing process which solders all components at once. To make removal of machine inserted components easier, straighten the leads of the component on the back of the circuit board, using a small screwdriver or pliers, while heating the soldered connection.

4. Bend the leads of the replacement component to fit the holes in the circuit board. If the component is replaced while the board is mounted in the instrument, cut the leads so they will just protrude through the board. Insert the leads into the holes in the board so that the component is firmly seated against the board, or as originally positioned.

5. Touch the iron to the connection and apply enough solder to make a firm solder joint.

6. Cut off any excess lead protruding through the board (if not clipped in step 4).

7. Clean the area around the solder connection with a flux removing solvent. Be careful not to remove information printed on the circuit board.

COMPONENT REMOVAL AND REPLACEMENT

WARNING

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

The exploded view drawings associated with the Replaceable Mechanical Parts list (located at the rear of this manual) may be helpful in the removal or disassembly of individual components or subassemblies.

Semiconductors

Semiconductors should not be replaced unless actually defective. If removed from their sockets during routine maintenance, return them to their original sockets. Unnecessary replacement of semiconductors may affect the adjustment of the instrument. When semiconductors are replaced, check the operation of circuits which may be affected.

Replacement semiconductors should be of the original type or a direct replacement. Lead configurations of the semiconductors used in this instrument are shown in Fig. 6-2. Some plastic case transistors have lead configurations which do not agree with those shown. If a replacement transistor is made by a different manufacturer than the original, check the manufacturer's basing diagram for correct basing. When removing soldered-on transistors, use a solder-removing wick to remove the solder from the circuit board pads. When replacing transistors requiring silicone grease for heat transfer, replace the silicone grease as necessary.

WARNING

Handle silicone grease with care. Avoid getting the silicone grease in your eyes. Wash hands thoroughly after use.

An extracting tool should be used to remove the in-line integrated circuits to prevent damaging the pins. This tool is available from Tektronix, Inc.; order Tektronix Part Number 003-0619-00. If an extracting tool is not available, use care to avoid damaging the pins. Pull slowly and evenly on both ends of the integrated circuit. Try to avoid disengaging one end from the socket before the other end.

Interconnecting Pins

Several methods of interconnection, including ribbon cable connectors, are used to electrically connect the circuit boards with other boards and components. When the interconnection is made with a coaxial cable, a special end-lead connector plugs into a socket on the board. Other interconnections are made with a pin soldered into the board.

Two types of mating connectors are used for these interconnecting pins. If the mating connector is mounted on a plug-on circuit board, a special socket is soldered into the board. If the mating connector is on the end of a

lead, an end-lead pin connector is used which mates with the interconnecting pin. The following information provides the removal and replacement procedure for the various types of interconnecting methods.

COAXIAL-TYPE, END-LEAD CONNECTORS.

Replacement of the coaxial type end lead connectors requires special tools and techniques; only experienced maintenance personnel should attempt to remove or replace these connectors. Damaged cable or wiring harness should be replaced as a unit. For cable or wiring harness part numbers, see the Replaceable Mechanical Parts list.

An alternative solution is to refer the replacement of the defective connector to your local Tektronix Field Office or representative. Figure 6-12 gives an exploded view of a coaxial end lead connector assembly.

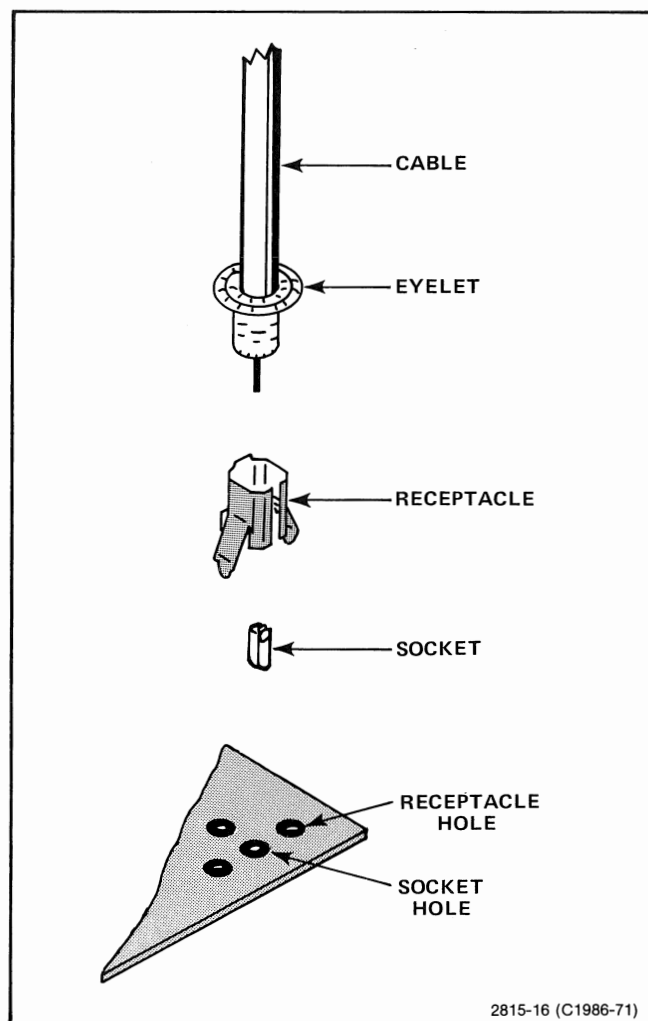


Fig. 6-12. Coaxial end lead connector assembly.

CIRCUIT BOARD PINS. A circuit board pin replacement kit (including necessary tools, instructions, and replacement pins with attached ferrules) is available from Tektronix, Inc.; order Tektronix Part Number 040-0542-00. Replacing circuit board pins on multilayer boards is not recommended. (The multilayer boards in this instrument are listed under Soldering Techniques in this section.)

To replace a damaged pin, first disconnect any pin connectors. Then unsolder the damaged pin and pull it from the board with a pair of pliers, leaving the ferrule (see Fig. 6-13) in the circuit board, if possible. If the ferrule remains in the circuit board, remove the spare ferrule from the replacement pin and press the new pin into the hole in the circuit board. If the ferrule is removed with the damaged pin, clean out the hole using a solder-removing wick and a scribe. Then press the replacement pin, with attached spare ferrule, into the circuit board.

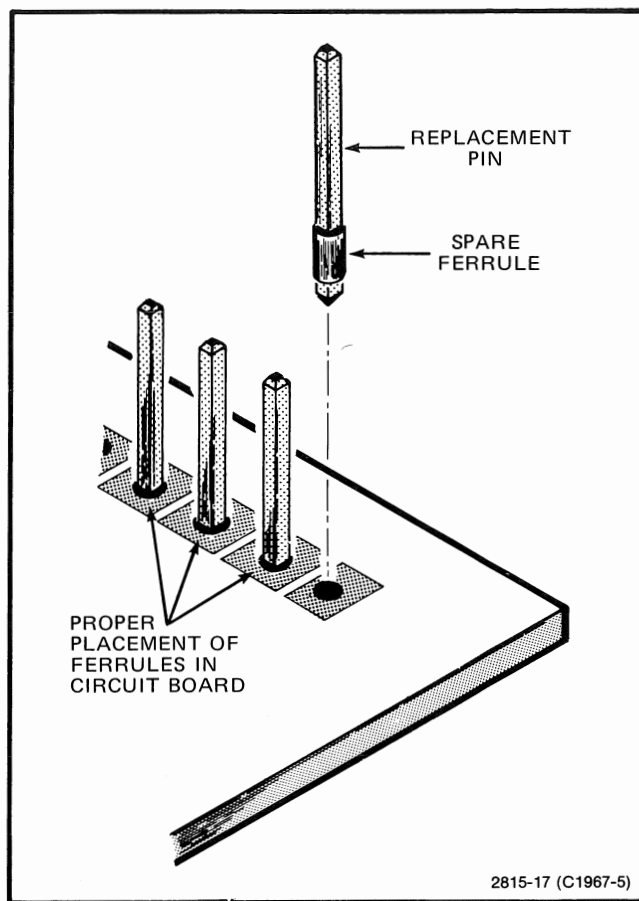


Fig. 6-13. Exploded view of circuit board pin and ferrule.

Position the replacement pin in the same manner as the original. Solder the pin to the circuit board on each side of the board. If the original pin was bent at an angle to mate with a connector, carefully bend the new pin to the same angle. Replace the pin connector.

CIRCUIT BOARD PIN SOCKETS. The pin sockets on the circuit boards are soldered to the back of the board. To remove or replace one of these sockets, first unsolder the pin (use a vacuum-type desoldering tool to remove excess solder). Then straighten the tabs on the socket and remove the socket from the board.

Place the new socket in the circuit board hole and press the tabs down against the board. Solder the tabs of the socket to the circuit board; be careful not to get solder inside the socket.

NOTE

The spring tension of the pin sockets ensures a good connection between the circuit board and the pin. This spring tension can be destroyed by using the pin sockets as a connecting point for spring loaded probe tips, alligator clips, etc.

MULTIPIN CONNECTORS. The pin connectors used to connect the wires to the interconnecting pins are clamped to the ends of the associated leads. To remove or replace damaged multipin connectors, remove the old pin connector from the end of the lead and clamp the replacement connector to the lead.

NOTE

Some multipin connectors are equipped with a special locking mechanism. These connectors cannot be removed by pulling on the wire(s). To remove the connectors from the pin(s) grasp the plastic holder and pull.

To remove an individual wire from the holder insert a scribe in the hole on the side of the holder and slide the extended portion under the holder. This will allow the wire to be removed from the holder.

Some of the pin connectors are grouped together and mounted in a plastic holder; the overall result is that these connectors are removed and installed as a multipin connector (see Troubleshooting Aids). If the individual end lead pin connectors are removed from the plastic holder, note the order of the individual wires for correct replacement in the holder.

ADJUSTMENT AFTER REPAIR

After any electrical component has been replaced, the adjustment of that particular circuit should be checked, as well as the adjustment of any closely related circuits. Since the low voltage supplies affect all circuits, adjustment of the entire instrument should be checked if component replacements have been made in these supplies or if a power transformer has been replaced. See the Calibration section for a complete adjustment procedure.

CG 551AP DIAGNOSTIC PROCEDURES

INTRODUCTION

This part of the manual, along with the troubleshooting flow charts in the foldout pages, contain specific information for troubleshooting the CG 551AP.

This section contains six troubleshooting flow charts and four signature analysis tables related to the Central Processing section of the CG 551AP (Block Diagram A).

Two troubleshooting flow charts located in the foldout pages, Amplitude Mode Check (Troubleshooting Tree 1) or the Timing Mode Check (Troubleshooting Tree 22), are the lead-in charts that must be followed before proceeding with the specific analog circuit checks related to the amplitude and timing modes of the CG 551AP (Block Diagrams B, C, and D). The service technician is directed toward either of these two charts when a certain point is reached in the Power On Sequence Test located in this section.

Equipment Required

This part of the manual contains signature analysis tables and other data that the technician may use to verify proper operation, or detect malfunctions in the Central Processing section of the CG 551AP. The diagnostic tests require the following equipment:

- Data Analyzer, TEKTRONIX 308, or equivalent (for signature analysis).
- Digital Counter, TEKTRONIX DC 508, or equivalent (for frequency checks).
- Digital Voltmeter, TEKTRONIX DC 501A, or equivalent (for checking power supplies).

Refer to Table 5-1 in the Calibration section for suggestions on oscilloscope systems, probes, adapters, terminations, and other items that may be useful for maintenance purposes.

Adjustment and Test Point Locations

To aid in locating test points and adjustable components called out in various portions of the Calibration section and troubleshooting flow charts, refer to the illustrations for the Adjustment and Test Point Locations and associated circuit board in the foldout pages. For convenience, a complete list of all test points in the CG 551AP is given below.

NOTE

Refer to the associated circuit board illustration in the foldout pages to locate the following test points.

A1	TP1730	◇1	Control Pin
A2	TP1630	◇2	ST3 Start/Stop
A2	TP1636	◇2	CLK2
A2	TP1632	◇2	ST4 Start/Stop
A2	TP1638	◇2	Ground
A3A1	TP1210	◇6	Mixer Clock Signal to Offset Loop Phase Detector
A3A1	TP1220	◇6	Offset Loop Phase Detector Clock
A3A1	TP1140	◇6	Tune Output to Offset VCO
A3A1	TP1100	◇6	+5 V SW2 Ground
A3A6	TP1301	◇10	100 MHz Buffer Ground
A3A6	TP1302	◇10	100 MHz Buffer Output to Programmable Divider
A3A6	TP1101	◇10	Power Ground
A3A6	TP1310	◇11	10 kHz Clock to Coarse Steering Circuit
A3A6	TP1130	◇11	100 kHz Strobe Holdoff
A3A8	TP1040	◇12	Loop Filter Output
A3A8	TP1010	◇12	1 MHz Buffer Output

NOTE

There are no test point locations on the following circuit boards or schematics.

A3	◇4	◇5
A3A2	◇7	
A3A3	◇6	
A3A4	◇8	
A3A5	◇9	
A3A7	◇12	

NOTE

Refer to the Adjustment Locations and Test Points illustration to locate test points on or near the top edge of the circuit board.

A4	TP1020	13	Power Input Ground
A4	TP1010	13	Fast Marker Shaper Ground
A4	TP1200	16	Chop Amplifier Ground
A4	TP1400	17	±12 V Ground
A4	TP1410	17	+5 V Test Point
A4	TP1401	17	-12 V Test Point
A4	TP1501	17	+12 V Test Point
A4	TP1630	14	Slow Marker Sync (refer to A4 circuit board illustration)
A4	TP1620	14	10 MHz Drive (refer to A4 circuit board illustration)
A5	TP1802	18	Ground
A5	TP1702	19	+120 V, +240 V
A5	TP1104	18	HV Primary, +20 V
A5	TP1103	19	Ground
A5	TP1102	19	+15 V
A5	TP1101	18	+5 V
A6	TP1200	22	Low SAC Output
A6	TP1202	22	Low SAC Input
A6	TP1304	20	Reference (DAC) Output
A6	TP1400	20	Floating Ground
A6	TP1401	22	High SAC Output
A7	TP1200	24	Pulse Head Drive Output
A7	TP1302	24	Floating Ground
A8	TP1500	27	High Edge Chop Signal
A8	TP1510	27	High Edge Chop Signal
A8	TP1400	27	High Edge Generator Output
A8	TP1402	27	-120 V —Current Limit Sense
A8	TP1520	27	-120 V
A8	TP1420	27	High Edge Error Signal
A8	TP1302	26	Power On Test Circuit Input
A8	TP1300	26	Head Programmer (Comparator Input)
A8	1202	26	Power On Test Reference (+2.73 V)
A8	TP1210	26	Power On Test (Window Comparator Input)

A8	TP1200	26	Ground
A8	TP1100	26	Power On Test (A8U1110 Output)

NOTE

Refer to the associated circuit board illustration in the foldout pages to locate the following test points.

A9	TP1220	28	CLK1
A9	TP1217	28	ST2 Start/Stop
A9	TP1610	28	ST1 Start/Stop
A9	TP1215	28	Ground

SELF-TEST DESCRIPTION

Introduction

This is a short outline of the sequence of events occurring during the power-on sequence of the CG 551AP. The CG 551AP goes through a self-test sequence which verifies the RAM and ROM within the instrument and performs some checking of the analog and timing hardware. The results of these tests are in the form of error codes on the front panel and service requests with error codes to a GPIB controller. The self-test sequence can also be initiated by a TEST command sent over the GPIB by a controller.

Components

The CG 551AP is controlled by a M6800 microprocessor with eight 2kX8 ROMS, 1kX8 of NMOS RAM, 256X8 of CMOS RAM with battery keep alive, and two PIA's for communication to the hardware within the instrument and a general purpose interface adapter (GPIA) for implementation of the GPIB interface.

A serial bus extends from the CPU portion of the instrument to the analog and timing hardware and is used to program the various settings. This programming bus also has provisions to read status from the other circuit boards plugged into the Main Interconnect board (A2) and determine possible error conditions.

On the High Edge board (A8) there is a special comparator circuit (Power On Test, schematic 26) that can be switched to the output circuitry to verify ranges of output voltages. At power on, and at initiation of the TEST command, the microprocessor sequences through special setting combinations to test the operation of the circuits in the instrument.

Self-Test Sequence

This is a description of the sequence of events from initiation of power on or when the TEST command is received from the GPIB. At power on the:

1. Interrupts are masked.
2. PIA's are initialized (A9U1701 and A9U1721).
3. GPIA (A9U1124) is reset.
4. SELF-TEST message is displayed.
5. The NMOS memory (A9U1302 and A9U1303) is tested.

If there is an error detected, the processor will try to indicate ERROR 12 RAM and then loop at address \$0300.

6. The ROMs are checked by calculating the checksum and comparing the result to the first two bytes in each ROM. If there is an error, the processor tries to indicate with message ERROR 6X ROM where X indicates which of the ROMs is bad (A9U1401, A9U1501, A9U1502, or A9U1601). After indicating the bad ROM(s), the processor loops continuously:

```

LOOP LDA A $C002
      LDA A $C802
      LDA A $D002
      LDA A $D802
      LDA A $E002
      LDA A $E802
      LDA A $F002
      LDA A $F802
      LDA A $00
      BRA LOOP

```

Where LDA A means, read the contents of the specified memory location and place it into the A accumulator. This provides a repeating test pattern to verify the chip selects.

The contents of the data bus during each read should be the most significant byte of that address. For example, during read of location \$C802, the data present on the data bus should be \$C8.

7. If the ROM on assembly A9 checks out, then the CMOS memory is checked. If there is an error detected, ERROR 11 will be indicated, and a loop at the bad location will be repeated continuously.

NOTE

Refer to RAM TEST, ROM TEST, and CMOS TEST parts of troubleshooting information for more detail.

8. After the CMOS memory checks out, the ROMs on the GPIB board (A9A1) are verified in the same manner as the ROMs on A9. However, if an error is detected, ERROR 7X ROM will be indicated, and then the repeating loop (as above) will be executed.

NOTE

The above self tests act as a verification of the basic components of the central processor and the address decoding circuits.

The following self tests verify the analog and timing circuitry.

9. Initialize the shift registers on all of the circuit boards.

Register	Hex output
A6U1121	\$80
A6U1242	\$80
A6U1341	\$14
A6U1541	\$8F
A6U1841	\$FF
A8U1130	\$00
A7U1020	\$0A
A7U1130	These registers operate to close K1433, K1300, K1314, and K1432; all others open.
A7U1234	
A7U1833	
A4U1320	\$48
A4U1420	\$00
A4U1421	\$49
A4U1520	\$06
A3A6U1220	\$21
A3A6U1120	\$8D
A3A5U1000	\$2C
A3A5U1100	\$34
A3A4U1000	\$26
A3A4U1100	\$2F
A3A2U1001	\$C5

Once the shift registers are initialized, a check is made to see if SA TEST is desired by reading PA4 of A9U1721. If the bit is zero, the SA TEST is executed; otherwise, the self-test routine continues.

10. The next test performed is the test of the shift registers. The test is accomplished by shifting a 10101010 pattern through all the shift registers and reading back the pattern through error lines E1 or E4 depending on the assembly being tested (see Fig. 4-3 in the Theory of Operation section). The indicated error identifies the chain in question and then the processor cycles all of the shift registers and their strobes (TS1, TS2, VS1 and VS2) continuously. If there is no error in the shift registers (ERROR's 95, 96, 97, or 98), the self-test continues with a block called the Amplitude Test.

11. The Amplitude Test is used to verify portions of the analog circuitry used to generate signals for VOLTAGE, CURRENT, and EDGE modes. The tests are as follows:

- a. Set up for VOLTAGE mode, 1 V/D. Check for 1 V into 50 Ω load by switching output to Power On Test circuit and using the current loop as a 50 Ω load; if this test fails, it is ERROR 51.
- b. Take away the 50 Ω termination and set up for 1 V into high impedance load; if this test fails, it is ERROR 52. Tests 11a and 11b were DC tests.
- c. The next test is to verify the chopping circuitry by setting the output of the LOW SAC to 1 V, high impedance load, 1 kHz; if this test fails, it is ERROR 53. The preceding tests are used to verify the operation, not the accuracy, of the LOW SAC amplifier.
- d. Similar tests are done to verify the HIGH SAC by setting the output to VOLTAGE Mode, 20 V and high impedance load, DC and 1 kHz chopping tests are done. The DC and 1 kHz failures are ERROR 54 and 55, respectively.
- e. Next is a check of CURRENT mode by setting the output to 100 mA and terminating into 50 Ω, again using the current loop. The DC and 1 kHz chopping tests are performed. The DC and 1 kHz failures are ERROR 56 or 57, respectively.
- f. The hardware is reconfigured to check the EDGE modes. Tests for DC level and 1 kHz chopping of both the plus and minus edge generators are performed on the LOW EDGE circuitry. The failures are ERRORS 81, 82, 83, or 84, respectively.
- g. The MID EDGE circuitry is checked next by setting the output to 5 V and doing the DC and 1 kHz tests. Failures are ERROR 85 or 86.
- h. The last EDGE test verifies the HIGH EDGE generator at 20 V into a high impedance load, again with the DC and 1 kHz chop tests. Failures are ERROR 87 or 88.

NOTE

The tests of the amplitude and timing hardware allow the user to continue past each failure (press CONTINUE pushbutton) or to use the setup for troubleshooting the error condition.

12. The self-test routine continues with a verification of the timing section, called the Time test. This is

accomplished by setting up the Markers and Slewed Edge sections to gate a 10 kHz pulse train, derived from the crystal reference on the Time Mark board (A4) with a 1, .5, or .2 Hz square wave signal derived from the output of the Countdown circuit (schematic 14).

- a. The processor sets up the hardware, looks at the resulting output waveform, and counts the number of pulses in a burst. For the 1 Hz gate, 5000 pulses should be accumulated; if not, ERROR 91 is indicated. For the .5 and .2 Hz gates, the corresponding errors are 92 and 93.
- b. Before the pulses are generated, an Offset Loop Out-of-Lock condition is looked for, as the error status signal is shared on the same line as this pulse burst output. This out-of-lock condition makes it impossible to run the timing verification test, and ERROR 94 is indicated.

13. Once the time tests are completed, the processor proceeds by verifying the calibration constants in CMOS memory by checking a saved checksum of those constants. If there is any discrepancy, ERROR 17 is indicated and a flag is set to indicate to the user that the amplitude outputs that have a cal constant associated with it may be in error by as much as $\pm 10\%$.

14. The last test done in this power on self-test is a possible verification of saved settings. Normally, the instrument powers up to a predefined state—VOLTAGE mode, 1 V/D, etc. However, the user may select the option of powering up to the settings that were in use when power was last removed from the instrument. If this is the case, the validity of those saved settings must be verified before allowing the hardware to go to those settings; the microprocessor does not allow illegal settings.

NOTE

To select the power up default settings to those settings when the instrument was last powered down, set switch A9S1611-2 to the ON position. Refer to schematic 30 and the Parts Location Grid for the CPU board (A9).

When the self-test routine is completed, the instrument is ready for operation and is either accessible via the front panel, or it may be programmed from the GPIB if an appropriate controller is attached to the interface.

CMOS TEST

This test will automatically be executed when the microprocessor indicates ERROR 11 on the front panel

display. The microprocessor checks only the last 128 bytes of CMOS memory (A9U1201 and A9U1301) because the first 128 bytes are write protected by the hardware. The write-protected portion of CMOS memory is checked whenever the instrument executes the internal calibration routine, and when verifying the internal calibration constants.

Once ERROR 11 is indicated the following test routine executes:

Write 10101010 pattern to bad memory location (D7—D0);

→ read back pattern,
write complement,
and repeat forever.

This has the effect of a pulse pattern appearing on the data bus. By observing the address during the memory write, the bad location may be noted.

While this test is running, only memory locations in the range \$0480—\$04FF and \$F800—\$FFFF should be accessed. Addresses outside of this range indicate problems in the address decode circuitry.

If after replacing A9U1201 or A9U1301, the problem still remains, verify presence of R/W signal, the chip enable lines, and check the power supplies. Use the SA TEST to verify chip enable and R/W.

RAM TEST

This test will automatically be executed when the microprocessor indicates ERROR 12 on the front panel display. The microprocessor checks 1024 bytes of RAM in the address range \$0000-\$03FF. Once ERROR 12 is indicated, the following test routine is executed:

→ Write 10101010 pattern to location \$0300 (D7—D0),
read location,
write complement,
repeat forever.

Either A9U1302, A9U1303, or both may be bad, or the supporting circuitry (i.e., address decode) may make the RAMs appear to be faulty. The KERNEL TEST may be used to verify if the microprocessor is working correctly.

To isolate problems to the RAMs or to the supporting circuitry, verify presence of R/W signal, the chip enable lines, and check the power supplies.

ROM TEST

Typically, the error code indicated (ERROR 6X or ERROR 7X) should point out the faulty part. If, after replacing indicated part with a known good one, the error still persists, there is probably a fault in the associated peripheral circuitry (address decode).

NOTE

Refer to CG 551AP Error Messages in Vol. 1 for specific error code information.

After indicating the error code, the microprocessor executes a test routine which does the following:

Set A15 high.

Access memory locations:

\$C002	A9A1U1012
\$C802	A9A1U1014
\$D002	A9A1U1020
\$D802	A9A1U1022
\$E002	A9U1601
\$E802	A9U1502
\$F002	A9U1501
\$F802	A9U1401

Set A15 low, then high.

Repeat forever.

By observing data bus contents during the indicated memory accesses, the data bus should indicate most significant byte of address. For example, when reading location \$C802, the data bus will indicate \$C8.

By simply looking at the chip selects for the ROMs (A9U1512 and A9A1U1120), the problem can be isolated to the ROMs or to the address decode circuitry. If chip select signals are not being generated, check circuitry driving A9U1512 and A9A1U1120. Also verify presence of $\phi 2$ clock signal going to all ROMs.

SHIFT REGISTER TEST

NOTE

Refer to Fig. 4-3 in the Theory of Operation section (Vol. 1).

This test will indicate if there is any break in the string of shift registers used to set up the hardware in the amplitude

and timing circuitry. The microprocessor reads programming information from the front panel or via the GPIB for new setting parameters, calculates the proper information, and then sets up the shift registers in each string.

The microprocessor tests each shift register chain by first loading all registers with a known bit pattern.

NOTE

Only the shift register is loaded with the pattern; the output latches do not necessarily follow the same information in the shift register portion of each register.

The microprocessor then reads out the pattern by shifting in new data. As it is being read out any discrepancies are noted, and at the end of the test, the strings with errors are indicated on the front panel.

The order of errors reported (order of tests) are:

Error 95	TS1
Error 97	VS1
Error 98	VS2
Error 96	TS2

Press the CONTINUE button to step past each error. After stepping past ERROR 96, the microprocessor then cycles a pattern through all the shift registers for fault isolation. The pattern sent is an alternating 1—0 level, simulating a pulse train 28 pulses long, followed by activating the VS2, TS1, TS2, and VS1 strobes in sequence. This is repeated until power is removed and fault is corrected.

NOTE

Check the power supplies first, as this may cause failure of the SHIFT REGISTER TEST.

NOTE

Switch A9S1611-3 may be set to the ON position to cause the CG 551AP to NOT WAIT for the CONTINUE button to clear the displayed error codes during the self-test routine. Refer to schematic 30 and the Parts Location Grid for the CPU board (A9).

AMPLITUDE TEST

The Amplitude Test is performed during the self-test routine. The error codes related to this test are ERRORS 51 through 57 and 81 through 88. Refer to CG 551AP Error Messages, block diagrams, and troubleshooting flow charts to identify the faulty circuit blocks.

Look for combinations of error codes which indicate a failure in a circuit common to the circuit block(s) that failed. The troubleshooting chart for the POWER ON TEST CHECK in the foldout pages will be helpful in identifying some combinations of error codes.

TIME TEST

The Time Test is performed during the self-test routine. The error codes related to this test are ERRORS 91 through 94. Refer to the CG 551AP Error Messages, block diagrams, and troubleshooting charts to identify the faulty circuit block(s).

Look for combinations of error codes which indicate a failure common to the circuit block(s) that failed.

FRONT PANEL TEST

Reset and Display Test

NOTE

The display lamp test illuminates all display characters, lighted pushbuttons, and all annunciators in the readout window, except TLK and LSN.

Press the RESET button and hold. If in the SLEWED EDGE mode, the display will alternate between all display LED's illuminated and normal display. In other modes, the display will alternate between the ENTRY ERROR message and all LED's illuminated.

Check Pushbuttons and Controls

Press the INST ID pushbutton and check for the GPIB address in the display.

The CONTINUE button, when pressed, shows no response if there are no error codes in the display.

The UNITS/DIV and VARIABLE controls show no response if the operating mode limits are exceeded.

Each key push and control change should either change setting or indicate an ENTRY ERROR (if that key push is an invalid command). The pushbuttons are arranged in a matrix format. If there is a pattern (row or column) failure, check A1U1221, A2U1621, or A9U1701; otherwise, replace the defective key switch or other associated component.

DISPLAY TEST

The troubleshooting flow chart for the Display Test is located in Fig. 6-14. Use this chart if the display is dark, an error code is displayed, or if the display is random or missing information.

CPU POWER TEST

Perform the procedure outlined in the troubleshooting chart for Fig. 6-15 if the CG 551AP front panel display appears dark.

POWER ON SEQUENCE TEST

Perform the procedure outlined in the troubleshooting chart for Fig. 6-16 if the output(s) from the CG 551AP appear to be faulty, SELF TEST is displayed continuously, all displays are lit and flashing, or relay switching is not audible during the self-test routine.

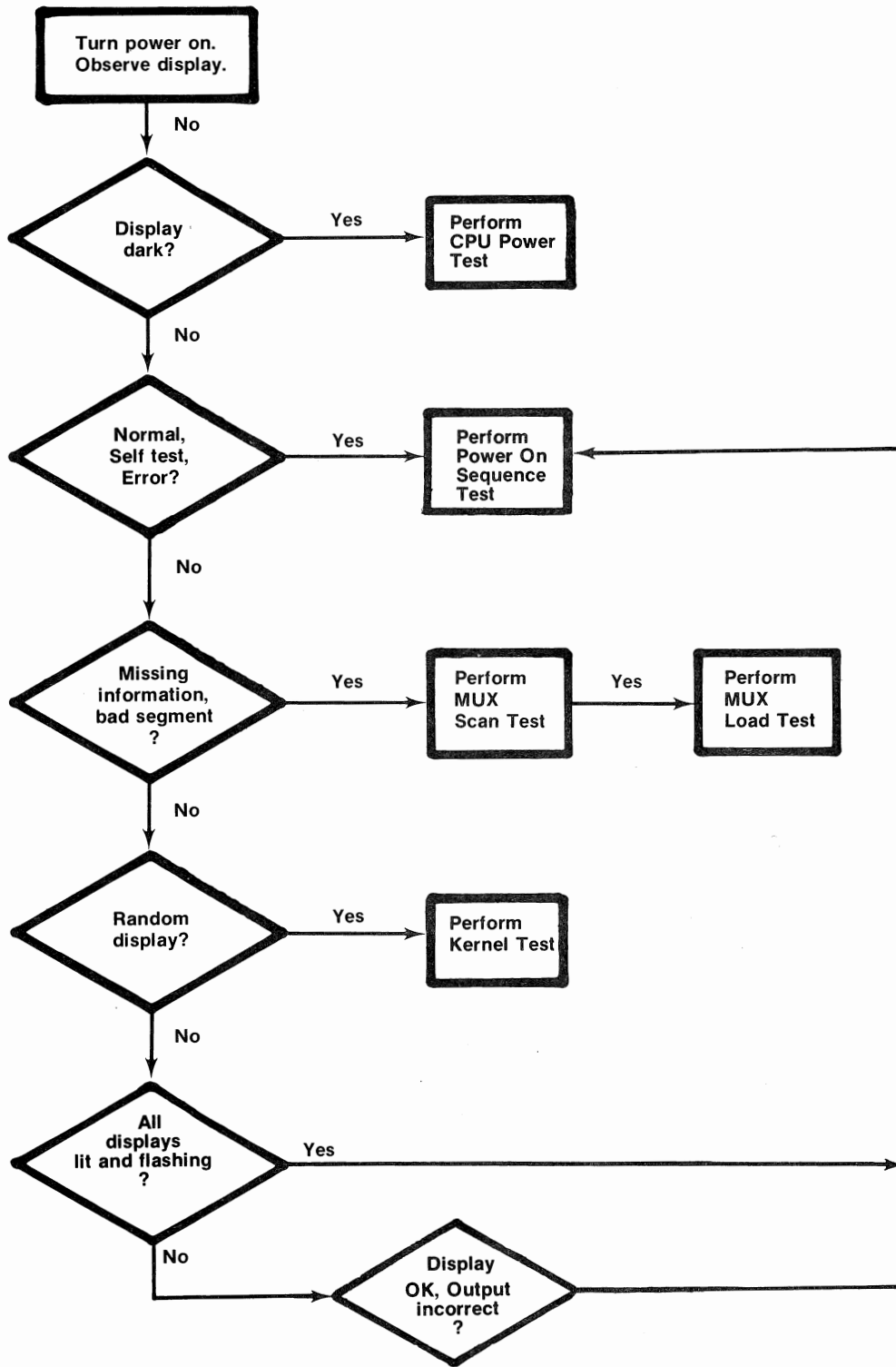
VARIABLE and UNITS/DIV TEST

Perform the procedure outlined in the troubleshooting chart for Fig. 6-17 if the VARIABLE control or the UNITS/DIV control appears faulty.

HEAD SENSE TEST

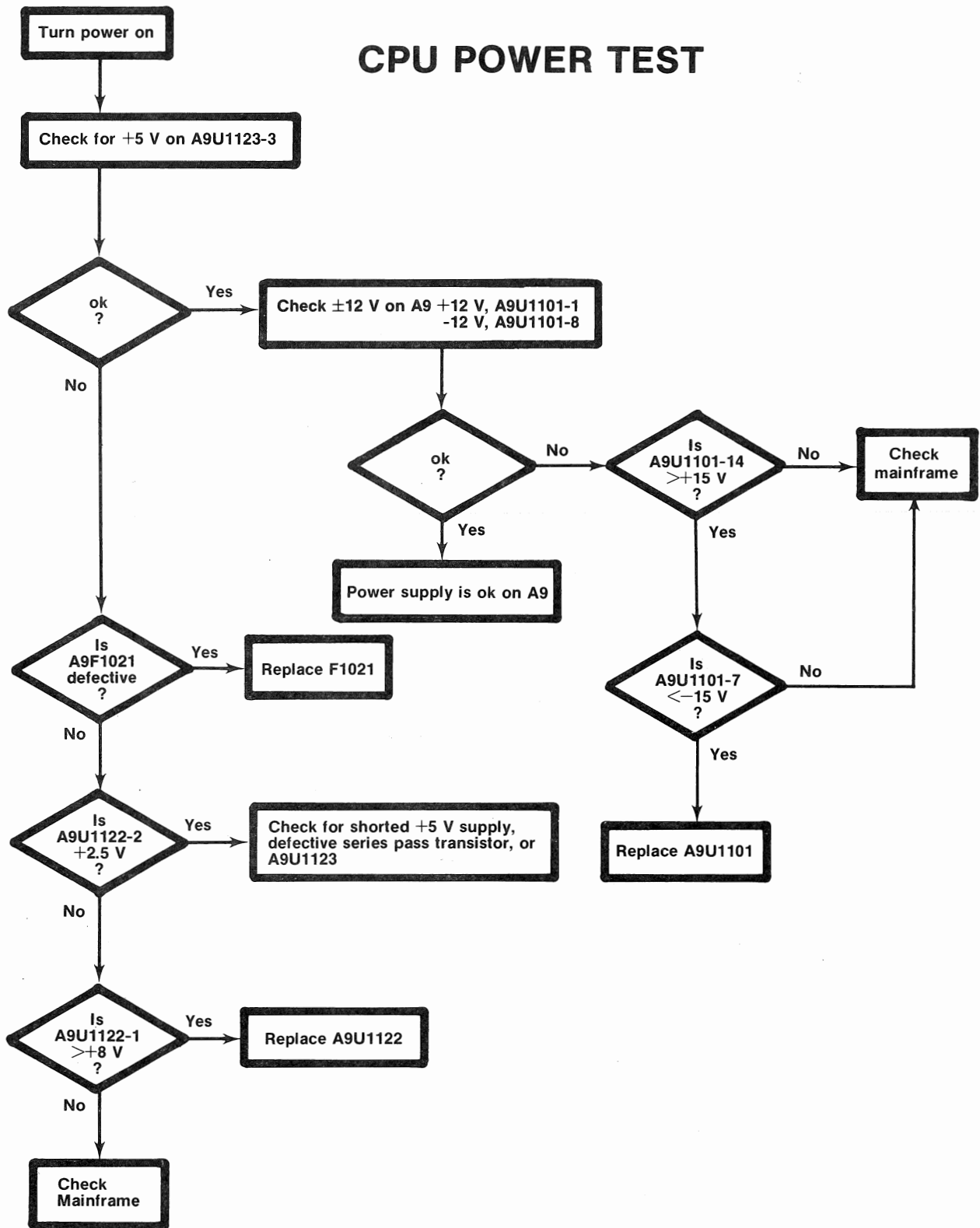
Perform the procedure outlined in the troubleshooting chart for Fig. 6-18 if the CG 551AP does not seem to respond to presence of the Pulse Head or Comparator accessory connected to the main OUTPUT connector.

DISPLAY TEST



2815-19

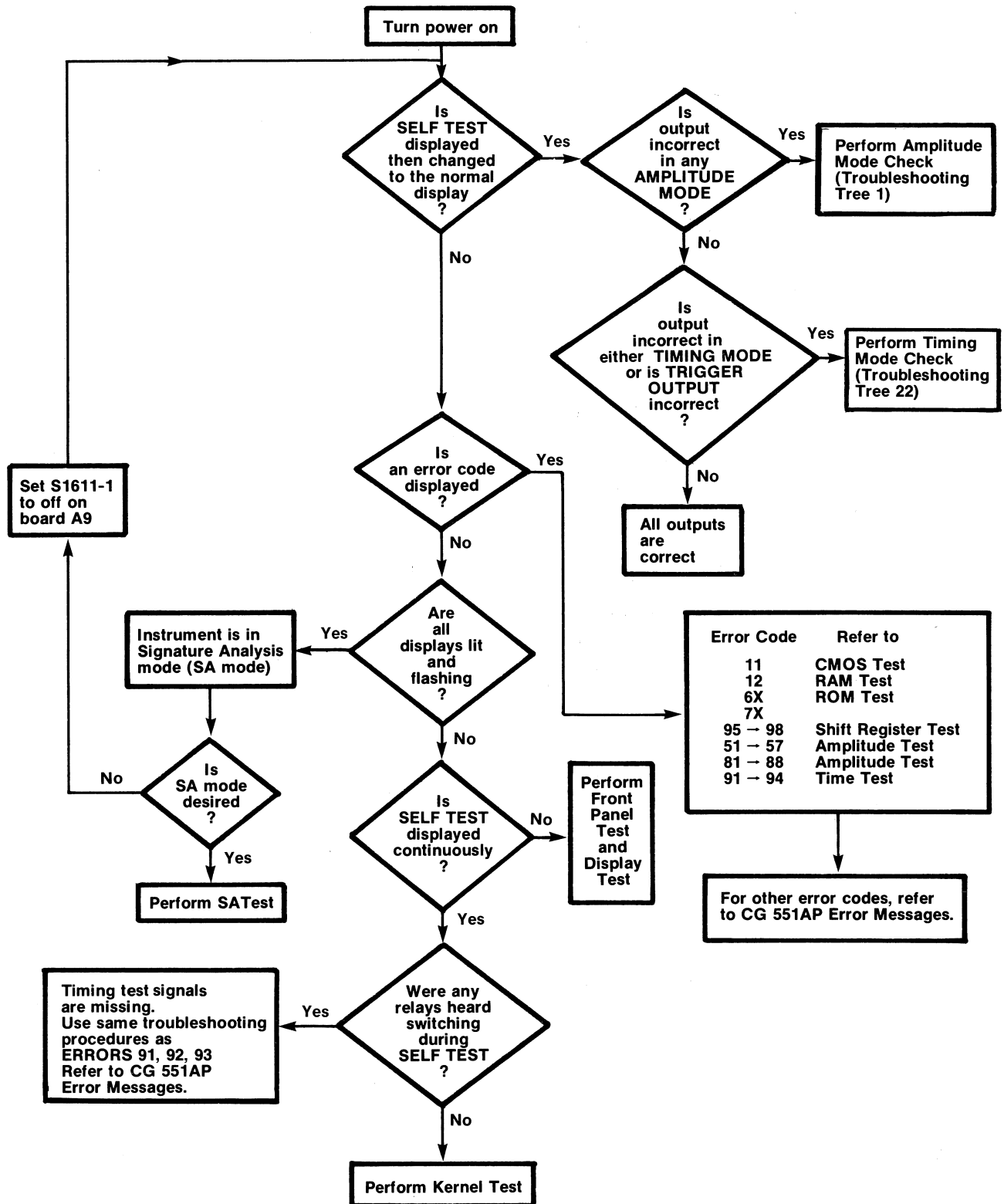
Fig. 6-14. Troubleshooting chart for the Display Test.



2815-22

Fig. 6-15. Troubleshooting chart for the CPU Power Test.

POWER ON SEQUENCE TEST

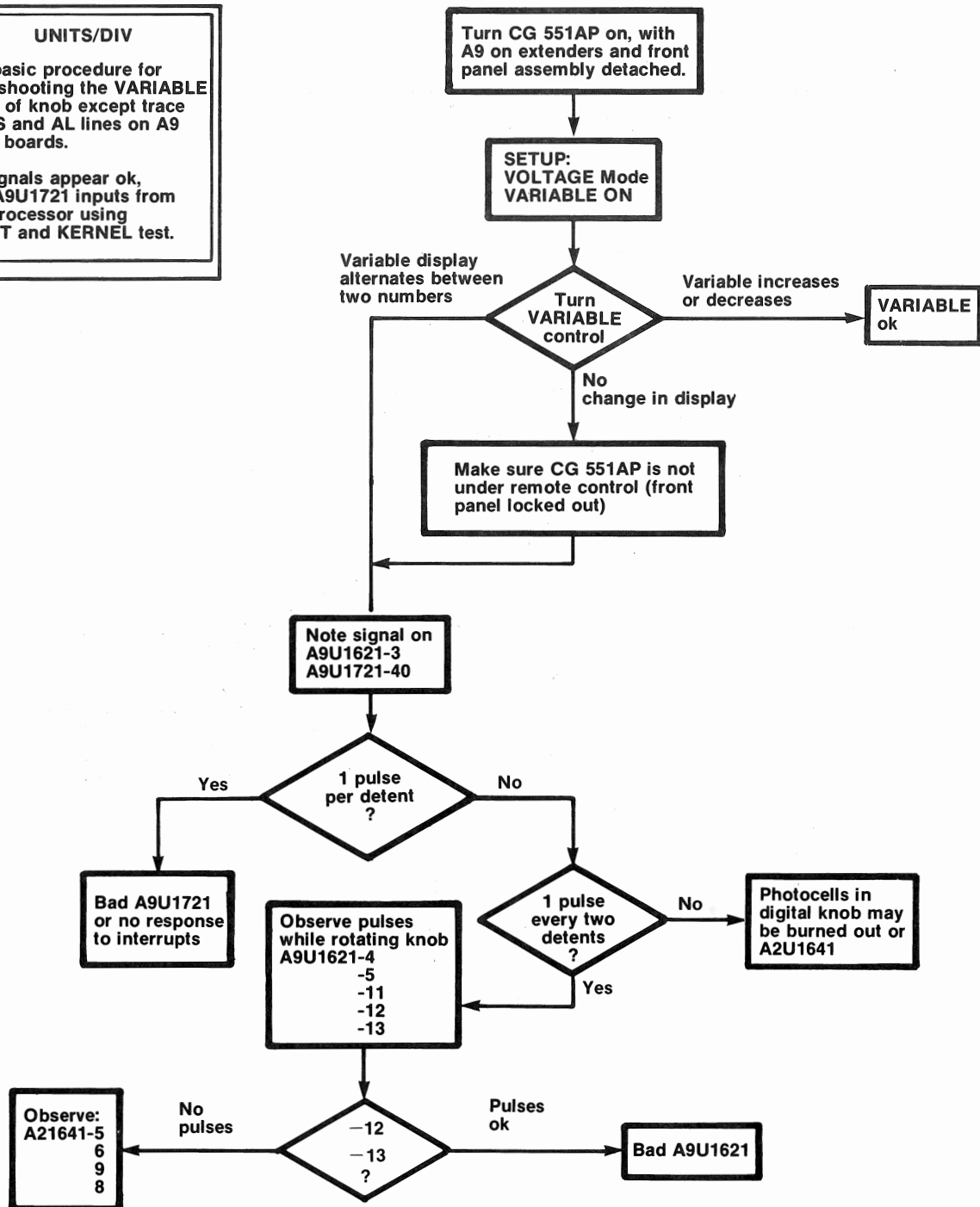


2815-18

Fig. 6-16. Troubleshooting chart for the Power On Sequence Test.

VARIABLE and UNITS/DIV TEST

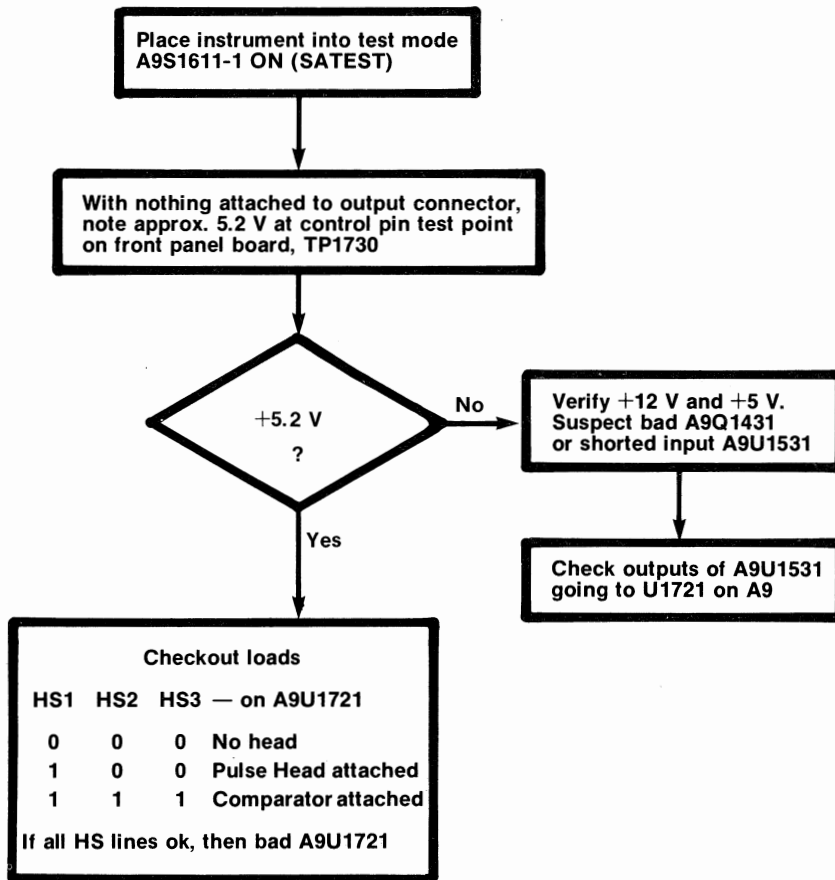
UNITS/DIV
 Same basic procedure for troubleshooting the VARIABLE portion of knob except trace the ALS and AL lines on A9 and A2 boards.
 If all signals appear ok, verify A9U1721 inputs from microprocessor using SATEST and KERNEL test.



2815-20

Fig. 6-17. Troubleshooting chart for the Variable and Units/Div Test.

HEAD SENSE TEST



2815-21

Fig. 6-18. Troubleshooting chart for the Head Sense Test.

SIGNATURE ANALYSIS

NOTICE

The signature tables listed in Table 6-3, Table 6-4, Table 6-5, and Table 6-6 are historical documents and begin with Version 1.0.

Future firmware or hardware changes to the CG 551AP may require an update to portions of the signature tables. The new version number for an updated signature table should be inserted behind the corresponding earlier versions which should remain in the manual.

Version 1.0 of the signature tables is applicable only to the ROM and circuit board numbers listed in Table 6-2. Table 6-2 should also be updated if the updated signature versions are affected by part numbers different than those listed in Table 6-2.

Table 6-2
SIGNATURE VERSION TABLE

Board Name	Circuit Board Part Numbers	Version 1.2	
		CPU ROM Part Numbers	GPIB ROM Part Numbers
CPU—A9	670-6091-00	160-0743-00	1670-0747-01
GPIB—A9A1	670-6092-00	160-0744-01	160-0748-00
X	X	160-0745-01	160-0749-00
		160-0746-02	160-0750-00

SA TEST

The purpose of this test is as follows:

1. Access all defined memory in instrument to verify address decode circuitry.
2. Illuminate all LED's on front panel.

This test should not be used to verify operation of address lines; use the KERNEL TEST for this purpose. Use the signatures listed in Table 6-3 to verify operation of address decode and display interface. For further information refer to DISPLAY TEST, MUX LOAD TEST, and MUX SCAN TEST.

This test is selected by setting A9S1611-1 to the ON position (all others off) while the instrument is powered down. Switch A9S1611 is located in the center front part of the CPU board. Place assembly A9 on extenders and apply power.

NOTE

Signature Analyzer input signal connections and CG 551AP test point locations are given in Table 6-3.

The following sequence is then executed:

1. Read locations:
 - \$9000-\$9007 GPIA (registers of A91U1124)
2. Read locations:
 - \$C000-\$C7FF ROM A9A1U1012
 - \$C800-\$CFFF ROM A9A1U1014
 - \$D000-\$D7FF ROM A9A1U1020
 - \$D800-\$DFFF ROM A9A1U1022
 - \$E000-\$E7FF ROM A9U1601
 - \$E800-\$EFFF ROM A9U1502
 - \$F000-\$F7FF ROM A9U1501
 - \$F800-\$FFFF ROM A9U1401
3. Read locations:
 - \$0000-\$03FF RAM A9U1302, A9U1303
 - \$0400-\$04FF CMOS RAM A9U1201, A9U1301
4. Write display to be all blank.
5. Delay approx 10 ms.
6. Write display to turn on all lights.
7. Generate ST1 START/STOP signal for Signature Analyzer.

Table 6-3

SA TEST SIGNATURE TABLES

Version 1.2

ASSEMBLIES: A9 and A9A1 28 29 30 32

CONFIGURATION: Turn power off. Set switch A9S1611-1 on, remaining switches off. Place A9 on extenders. Turn on power.

+5 V Sig 4285

Gnd Sig 0000

ANALYZER:	Location
START ↑	ST1-A9TP1610 (U1512-7)
STOP ↑	ST1-A9TP1610 (U1512-7)
CLOCK ↓	CLK1-A9TP1220 (U1422-7)
GROUND	GND-A9TP1215 (U1311-1, 10, 19)

1

A9U1332	Signature
1	50P5
2	1PCA
3	P081
6	0769
7	0000
11	578F
14	4285

2

A9U1411	Signature
10	45PF
11	0769

3

A9U1511	Signature
4	45PF
6	50P5

4

A9U1512	Signature
1	1260
4	P90U
5	596C
6	A205
7	4284
8	0000
9	1A9P
10	97CU
11	6PF6
12	P8U1
15	4993
16	4285

5

A9U1513	Signature
4	578F
6	4993
8	1260

6

A9U1532	Signature
1	HPAC

7

A9U1201	A9U1301	Signature
13		596C
14		952P

8

A9U1302	A9U1303	Signature
8		P90U
10		H88H

9

A9U1401	Signature
18	1A9P

10

A9U1501	Signature
18	97CU

11

A9U1502	Signature
18	6PF6

12

A9U1601	Signature
18	P8U1

13

A9U1701	A9U1721	Signature
21		H88H
22		P081

14

A9A1U1010	Signature
1	P857
15	P857

15

A9A1U1012	Signature
18	PC56

16

A9A1U1014	Signature
18	U630

17

A9A1U1020	Signature
18	166F

18

A9A1U1022	Signature
18	98HU

19

A9A1U1120	Signature
6	0769
7	98HU
9	166F
10	U630
11	PC56
13	8HFA

20

A9A1U1124	Signature
3	8HFA
4	P857
5	H88H

MUX SCAN TEST

This test is used to verify that the Display Multiplexer is scanning correctly (i.e., that each row and column of display matrix is being selected in the proper sequence). Symptoms of failure of multiplexer scan are bright digit or digits, abnormally bright pushbuttons, dark or dim digits or pushbuttons. Once the power supply (+5 V) has been verified, this test may be run.

This test uses signature analysis to do signal tracing and identify the fault. For this test, the Front Panel board must be unfastened from the front of the CG 551AP. Refer to disassembly information.

For the Mux Scan Test, verify the signatures listed in Table 6-4. In addition to the signatures, follow the signals

on the schematics to isolate the problem area. Refer to the schematics noted in Table 6-4. If all signatures are correct, suspect segment drive transistors, digit select transistors, A2U1341, bad LED's, or bad interconnecting cables.

If there is just a bad segment in one display, or an unlit pushbutton (observed while doing lamp test), suspect a bad LED.





NOTE

Signature Analyzer connections and CG 551AP test locations for the Mux Scan Test are given in Table 6-4.

Table 6-4

MUX SCAN TEST SIGNATURE TABLES

Version 1.2

ASSEMBLY: A2    

CONFIGURATION: Unfasten the CG 551AP front panel—refer to disassembly information. Set all switches on A9S1611 to the off position. Turn the power on.

+5 V Sig **UP73**
Gnd Sig **0000**

ANALYZER:	Location
START ↑	ST4-A2TP1632 (U1631-12)
STOP ↑	ST4-A2TP1632 (U1631-12)
CLOCK ↑	CLK2-A2TP1636 (U1631-8)
GROUND	GND-A2TP1638 (U1631-7)

①		③		④		⑤	
Test Point	Frequency	A2U1432	Signature	A2U1441	Signature	A2U1341	Signature
A2U1621-13	≈2.5 kHz	1	55H1	1	55H1	1	0001
A2U1631-8	≈2.5 kHz	2	334U	2	334U	2	0040
A2U1432-5	≈2.5 kHz	3	0U16	3	0U16	3	0002
		4	0000	4	0081	4	0020
		6	UP8H	5	0040	5	0004
		7	UU71	6	0020	6	0010
		8	0000	7	0010	7	0008
		9	UF76	8	0000	8	0000
		10	UA79	9	0008	9	UP73
		11	U667	10	0004		
		12	PP5A	11	0002		
		13	HP21	12	0001		
		14	CPH6	13	UP73		
		15	7U39	14	UP8H		
		16	UP73	15	0000		
				16	UP73		

Continued on next page

Table 6-4 (cont)

MUX SCAN TEST SIGNATURE TABLES

Version 1.2

Two signatures are checked for each of the following points. The signatures listed under the heading "Standard" are obtained with the CG 551AP set to its standard power up default values. These values are automatically set by the CG 551AP when power is applied. When checking these signatures, observe that the CG 551AP readout displays 1 V/D X 1, 1 kHz is on, and the VARIABLE, CURRENT LOOP, and TRIGGER OUTPUT are off. The SRQ bus line will be asserted.

To check the signatures listed under "Entry Error", press SHIFT → and hold button in. Observe that "ENTRY ERROR" is displayed. After checking an "Entry Error" signature, press SHIFT ← to return the CG 551AP to the standard power up default values.

6

A2U1521	Signature (Standard)	Signature (Entry Error)
1	55H1	55H1
2	0000	0000
3	UP73	UP73
5	HP23	HP5F
7	UPU2	PP27
8	0000	0000
9	UP31	PPHC
11	P6FU	UP77
13	UP8H	UP8H
14	0U16	0U16
15	334U	334U
16	UP73	UP73

8

A2U1531	Signature (Standard)	Signature (Entry Error)
1	55H1	55H1
2	0000	0000
3	UP73	UP73
5	UPU2	UP0H
7	UPU2	PP58
8	0000	0000
9	UPU2	PP24
11	UP73	UP0A
13	UP8H	UP8H
14	0U16	0U16
15	334U	334U
16	UP73	UP73

7

A2U1522	Signature (Standard)	Signature (Entry Error)
1	55H1	55H1
2	0000	0000
3	UP73	UP73
5	UP71	PP27
7	UPU2	UP76
8	0000	0000
9	UP73	PPHA
11	CPH6	PP22
13	UP8H	UP8H
14	0U16	0U16
15	334U	334U
16	UP73	UP73

9

A2U1532	Signature (Standard)	Signature (Entry Error)
1	55H1	55H1
2	0000	0000
3	UP73	UP73
5	A6A9	UP73
7	CP57	APUC
8	0000	0000
9	CPH6	AP87
11	UPU2	PPH9
13	UP8H	UP8H
14	0U16	0U16
15	334U	334U
16	UP73	UP73

MUX LOAD TEST

This test is used to ensure that the microprocessor is loading the Display Multiplexer correctly. Symptoms for this failure are random display or no display at all; also, there may be a partially intelligible display. Observe that E1, E2, E3, and E4 error lines are shared with data bits DS4, DS5, DS6, and DS7, respectively; failure of any of the error detection circuitry in the amplitude or timing sections may appear to cause a failure in this test. Symptoms of that particular failure would be those data lines stuck low or stuck high.

The procedure for this test is to use the signatures listed in Table 6-5 to verify correct signals.

NOTE

For this test, Front Panel assembly must be unfastened to access the Main Interconnect board (A2). Also, the CPU board (A9) should be put on extenders.

Signature Analyzer input signal connections and the related CG 551AP test point locations for the Mux Load Test are given in Table 6-5.

NOTES

Table 6-5

MUX LOAD TEST SIGNATURE TABLES

Version 1.2

ASSEMBLIES: A2 and A9



CONFIGURATION: Unfasten the front panel for access to components on A2, Main Interconnect board. Place A9 (CPU) on extender boards. Set switch A9S1611-1 on (all others off) and turn on the power.

+5 V Sig 1C98

Gnd Sig 0000

ANALYZER:	Location
START ↑	ST3-A2TP1630 (U1631-1)
STOP ↑	ST3-A2TP1630 (U1631-1)
CLOCK ↓	CLK1-A9TP1220 (U1422-7)
GROUND	GND-A2TP1638 (U1631-7)

①

A9U1332	Signature
1	P236
2	CC61
3	F006
4	1C98
5	52H2
6	52H2
8	09C7
9	1C98
10	09C7

⑤

A9U1701	Signature
11	14U9
12	U9FP
13	3907
14	5A08
15	0738
19	P543
20	1C98
21	09C7
22	F006
34	1C98

⑧

A2U1522	Signature
3	0738
4	23AP
6	23AP
8	0000
10	23AP
12	23AP
16	1C98

②

A9U1511	Signature
4	494A
6	P236
8	A264
9	A264
10	A264
11	A264

⑥

A2U1631	Signature
1	P543
3	U9FP
4	AC1H
7	0000
10	14U9
11	3907
13	1C98
14	1C98

⑨

A2U1531	Signature
3	5A08
4	F6PH
6	F6PH
8	0000
10	F6PH
12	F6PH
16	1C98

③

A9U1411	Signature
10	494A
11	52H2

④

A9U1701	Signature
1	0000
2	23AP
3	23AP
4	23AP
5	23AP
6	F6PH
7	F6PH
8	F6PH
9	F6PH
10	AC1H

⑦

A2U1521	Signature
3	5A08
4	23AP
6	23AP
8	0000
10	23AP
12	23AP
16	1C98

⑩

A2U1532	Signature
3	0738
4	F6PH
6	F6PH
8	0000
10	F6PH
12	F6PH
16	1C98

KERNEL TEST

The purpose of this test is to verify that the microprocessor can execute a known instruction, and that the address lines perform as expected. This is accomplished by disabling the memory in the instrument and forcing the data bus to a known state by switch A9S1611 on the CPU board.

NOTE

Configure the instrument according to instructions given in Table 6-6.

Switching A9S1611-6 on disables all the memory in the instrument by disabling the address decode circuitry. Therefore, you cannot verify this circuitry using KERNEL TEST. Refer to SA TEST for verification of address decode.

There is a choice of a signature analyzer or a frequency counter to verify proper operation. Table 6-6 indicates what the correct signatures or frequencies are on the address lines. Any place these signal lines are present, the corresponding signature or frequency should be present.

If no signatures or frequencies are indicated, suspect System Clock, Reset, Microprocessor, or Power Supplies.

NOTES

Table 6-6

KERNEL TEST SIGNATURE TABLES

Version 1.2

ASSEMBLIES: A9 28 29

CONFIGURATION: Turn power off. Place A9 on extenders. Set switch A9S1611-1, 2, 3, off; 4, 5, and 6 on. Turn the power on.

+5 V Sig 0001

Gnd Sig 0000

ANALYZER:

Location

START ↑	ST2-A9TP1217 (U1321-9)
STOP ↓	ST2-A9TP1217 (U1321-9)
CLOCK ↓	CLK1-A9TP1220 (U1422-7)
GROUND	GND-A9TP1215 (U1422-8)

①

Address Line	Frequency	Signature
A15	7.6 Hz	0001
A14	15.2 Hz	755U
A13	30.5 Hz	3827
A12	61.0 Hz	3C96
A11	122 Hz	HAP7
A10	244 Hz	1293
A9	488 Hz	HPP0
A8	976 Hz	2H70
A7	1.95 kHz	HC89
A6	3.90 kHz	52F8
A5	7.81 kHz	UPFH
A4	15.6 kHz	0AFA
A3	31.2 kHz	5H21
A2	62.5 kHz	7F7F
A1	125 kHz	CCCC
A0	250 kHz	5555

④

A9U1513	Signature
1	3827
2	755U
4	0000
5	0001
6	0001
7	0000
8	0001
9	0001
10	0001
13	0000

⑦

A9U1421	Signature
2	0001
8	0001
9	5555
10	CCCC
11	7F7F
12	5H21
13	0AFA
14	UPFH
15	52F8
16	HC89
17	2H70
18	HPP0
19	1293
20	HAP7
21	0000
22	3C96
23	3827
24	755U
25	0001
40	0001

Address Lines

⑤

A9U1332	Signature
1	0000
2	HAP7
3	0000
4	0000
5	0001
6	0000
7	0000
8	0001
9	0001
10	0001
11	0000
12	0000
13	0001

②

A9U1411	Signature
7	0000
14	0001

③

A9U1511	Signature
4	0001
6	0000
7	0000
8	0001
9	755U
10	3827
11	3C96
14	0001

⑧

A9U1701	Signature
23	UPFH
24	0AFA
35	CCCC
36	5555

⑥

A9U1532	Signature
1	0000
2	0001
5	HC89
6	0000
7	0000
14	0001

⑨

A9U1721	Signature
23	0AFA
24	UPFH
35	CCCC
36	5555

Continued on next page

Table 6-6 (cont)

KERNEL TEST SIGNATURE TABLES

Version 1.2

⑩		⑫		⑭		⑯	
A9U1401 A9U1501 A9U1502 A9U1601		A9U1301	Signature	A9U1303	Signature	A9A1U1012 A9A1U1014 A9A1U1020 A9A1U1022	Signature
1	HC89	1	52F8	1	52F8	1	HC89
2	52F8	2	UPFH	2	UPFH	2	52F8
3	UPFH	3	0AFA	3	0AFA	3	UPFH
4	0AFA	4	5H21	4	5H21	4	0AFA
5	5H21	5	7F7F	5	7F7F	5	5H21
6	7F7F	6	CCCC	6	CCCC	6	7F7F
7	CCCC	7	5555	7	5555	7	CCCC
8	5555	8	0000	8	0001	8	5555
12	0000	9	0001	9	0000	12	0000
19	1293	10	0000	10	0001	19	1293
21	0001	11	0001	11	0001	21	0001
22	HPP0	12	0000	12	0001	22	HPP0
23	2H70	13	0001	13	0001	23	2H70
24	0001	14	0001	14	0001	24	0001
		15	HC89	15	HPP0		
		16	0001	16	2H70		
				17	HC89		
				18	0001		

⑪		⑬		⑮		⑰	
A9U1201	Signature	A9U1302	Signature	A9U1321	Signature	A9A1U1120	Signature
1	52F8	1	52F8	1	0000	1	HAP7
2	UPFH	2	UPFH	2	HPP0	2	3C96
3	0AFA	3	0AFA	3	HPP0	3	755U
4	5H21	4	5H21	4	HAP7	4	3827
5	7F7F	5	7F7F	5	HAP7	6	0000
6	CCCC	6	CCCC	6	3827	8	0000
7	5555	7	5555	7	3827	16	0001
8	0000	8	0001	8	0001		
9	0001	9	0000	9	0001		
10	0001	10	0001	10	0000		
11	0001	11	0001	11	755U		
12	0001	12	0000	12	755U		
13	0001	13	0001	13	3C96		
14	0001	14	0000	14	3C96		
15	HC89	15	0001	15	1293		
16	0001	16	0000	16	1293		
		17	HPP0	17	2H70		
		18	2H70	18	2H70		
		19	HC89	19	0000		
		20	0001	20	0001		

⑱	
A9A1U1124	Signature
37	5555
38	CCCC
39	7F7F

DATA REGISTER FORMATS

Introduction

The CG 551AP uses 21 eight bit shift register/latches to control the amplitude and timing circuitry. The micro-processor circuitry loads these registers with data to produce the desired output setting. See Table 6-7.

The data presented is in hexadecimal format and represents the output of the registers. All calibration constants are set to 0. This means the data measured in registers R2 and R3 may differ from the values listed in Table 6-7.

If no data is shown for a register output or a register is not listed, this means no data is present because it's power supplies have been disabled.

The outputs of registers V3, V4, and V5 are set to 00 (hexadecimal), except for a brief period to change the output relays. This changing condition is not presented in the format list.

In amplitude mode the first half of M1 data may be 0 or 4, depending upon previous time mode settings.

In the SLEWED EDGE mode, measuring the outputs of T3, T4, T5, and T6 must be done when the register has pin 15 at logic 1. The measurement can best be made by triggering an oscilloscope with pin 15 output.

A data register output may be verified by selecting a setting listed below the desired mode in Table 6-7 and measuring the register's output.

EXAMPLE: If R3 data is 34 (hex)
then U1341 on board A6
has the following output:

Pin # 4 5 6 7 14 13 12 11
0 0 1 1 0 1 0 0 = 34 (hex)
0 = logic low
1 = logic high
X = independent of setting

Register Definitions

Register	Circuit Number
R1	A6U1121
R2	A6U1242
R3	A6U1341
R4	A6U1541
R5	A6U1841
V1	A8U1130
V2	A7U1020
V3	A7U1130
V4	A7U1234
V5	A7U1833
M1	A4U1320
M2	A4U1420
M3	A4U1421
M4	A4U1520
T1	A3A6U1220
T2	A3A6U1120
T3	A3A5U1000
T4	A3A5U1100
T5	A3A4U1000
T6	A3A4U1100
T7	A3A2U1001

Table 6-7
DATA REGISTER FORMAT LIST

VOLTAGE MODE SETTINGS

MODE V;U/D 1.0E+0;MULT 1;FREQ 1.0E+3;POS;FXD;PCT 0.0;OUT ON;LDZ HI;TRIG OFF;																
SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
MULT 1;	82	80	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 2;	82	80	24	8F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 3;	82	80	24	BE	FB	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 4;	82	80	24	DE	FB	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 5;	82	80	24	9E	FB	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 6;	82	80	24	EE	FB	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 8;	82	80	24	CE	FB	08	65	00	00	00	48	XX	45	4E	XX	X1
MULT 10;	82	80	24	8E	FB	08	65	00	00	00	48	XX	45	4E	XX	X1
MODE V;U/D 1.0E+0;MULT 1;FREQ 1.0E+3;POS;FXD;PCT 0.0;OUT ON;LDZ HI;TRIG OFF;																
SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
LDZ HI;	82	80	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
LDZ 50;	82	85	A4	1F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
MODE V;U/D 1.0E+0;MULT 1;FREQ 1.0E+3;POS;FXD;PCT 0.0;OUT ON;LDZ HI;TRIG OFF;																
SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
OUT ON;	82	80	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
OUT OFF;	80	80	34	9F	7B	08	6A	00	00	00	48	XX	45	4E	XX	X1
MODE V;U/D 1.0E+0;MULT 1;FREQ 1.0E+3;POS;VAR;PCT 0.0;OUT ON;LDZ HI;TRIG OFF;																
SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
PCT 0.0;	82	80	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
PCT -5.0;	82	99	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
PCT -9.9;	82	B1	A4	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
PCT 5.0;	82	67	24	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
PCT 9.9;	82	4E	A4	9F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
MODE V;U/D 2.0E+0;MULT 1;FREQ 1.0E+3;POS;FXD;PCT 0.0;OUT ON;LDZ HI;TRIG OFF;																
SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
U/D 2.0E+0;	82	80	24	8F	7B	08	65	00	00	00	48	XX	45	4E	XX	X1
U/D 2.0E+1;	01	80	24	8F	DE	08	65	00	00	00	48	XX	45	4E	XX	X1
U/D 2.0E+1; MULT 10;	01	80	26	8F	7E	08	65	00	00	00	48	XX	45	4E	XX	X1

Continued on next page

Table 6-7 (cont)

CURRENT MODE SETTINGS																
MODE CUR;U/D 1.0E-3;MULT 1;FREQ 1.0E+3;POS;FXD;PCT 0.0;OUT ON;LOOP OFF;TRIG OFF;																
SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
OUT ON;	84	7E	04	9F	CF	08	65	00	00	00	48	XX	45	4E	XX	X1
OUT OFF;	80	7E	34	9F	CF	08	6A	00	00	00	48	XX	45	4E	XX	X1
LOOP ON;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	45	4E	XX	X1
LOOP OFF;	80	7E	34	9F	CF	08	7A	00	00	00	48	XX	45	4E	XX	X1
MODE CUR;U/D 1.0E-3;MULT 1;FREQ DC;POS;FXD;PCT 0.0;OUT OFF;LOOP ON;TRIG OFF;																
SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
FREQ DC;	84	7E	14	9F	CF	08	70	00	00	00	48	XX	4B	06	XX	X1
FREQ 1.0E+1;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	49	4E	XX	X1
FREQ 1.0E+2;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	47	4E	XX	X1
FREQ 1.0E+3;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	45	4E	XX	X1
FREQ 1.0E-4;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	43	4E	XX	X1
FREQ 1.0E+5;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	41	4E	XX	X1
FREQ 1.0E+6;	84	7E	04	9F	CF	08	70	00	00	00	48	XX	41	4D	XX	X1
EDGE MODE SETTINGS																
MODE EDGE;U/D 1.0E+0;MULT 1;FREQ 1.0E+3;NEG;FXD;OUT ON;LDZ 50;TRIG NORM;																
SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
U/D 1.0E+0;NEG;	80	90	B5	8F	B7	08	60	00	00	00	4C	XX	45	4E	XX	X1
U/D 1.0E+0;POS;	80	8D	35	8F	B7	08	60	00	00	00	4C	XX	45	4E	XX	X1
U/D 2.0E+0;	80	80	31	8F	DB	08	60	00	00	00	4C	XX	45	4E	XX	X1
U/D 2.0E+1;	00	80	31	8F	DB	00	60	00	00	00	4C	XX	45	4E	XX	X1
FAST EDGE MODE SETTINGS																
MODE FASTEDGE;FREQ 1.0E+3;POS;FXD;OUT ON;LDZ 50;TRIG NORM;																
SETTING	R1	R2	R3	R4	R5	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
POS;	80	80	14	80	FB	10	40	00	00	00	4C	XX	45	4E	XX	X1
NEG;	80	80	14	80	FD	10	C0	00	00	00	4C	XX	45	4E	XX	X1

Continued on next page

Table 6-7 (cont)

MARKERS MODE SETTINGS												
MODE MKRS;U/D 5.0E+0;FXD;PCT 0.0;OUT ON;MAG X10;TRIG NORM;												
SETTING	R1	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
U/D 5.0E+0;	C0	08	6A	00	00	00	26	23	29	5E	21	85
U/D 2.0E+0;	C0	08	6A	00	00	00	16	24	29	5E	21	85
U/D 1.0E+0;	C0	08	6A	00	00	00	0E	25	29	5E	21	85
U/D 5.0E-1;	C0	08	6A	00	00	00	26	10	27	5E	21	85
U/D 2.0E-1;	C0	08	6A	00	00	00	16	11	27	5E	21	85
U/D 1.0E-1;	C0	08	6A	00	00	00	0E	12	27	5E	21	85
U/D 5.0E-2;	C0	08	6A	00	00	00	26	13	25	5E	21	85
U/D 2.0E-2;	C0	08	6A	00	00	00	16	14	25	5E	21	85
U/D 1.0E-2;	C0	08	6A	00	00	00	0E	15	25	5E	21	85
U/D 5.0E-3;	C0	08	6A	00	00	00	26	08	23	5E	21	85
U/D 2.0E-3;	C0	08	6A	00	00	00	16	09	23	5E	21	85
U/D 1.0E-3;	C0	08	6A	00	00	00	0E	0A	23	5E	21	85
U/D 5.0E-4;	C0	08	6A	00	00	00	26	0B	21	5E	21	85
U/D 2.0E-4;	C0	08	6A	00	00	00	16	0C	21	5E	21	85
U/D 1.0E-4;	C0	08	6A	00	00	00	0E	0D	21	5E	21	85
U/D 5.0E-5;	C0	08	6A	00	00	00	26	03	20	9E	21	85
U/D 2.0E-5;	C0	08	6A	00	00	00	16	04	20	9E	21	85
U/D 1.0E-5;	C0	08	6A	00	00	00	0E	05	20	9E	21	85
U/D 5.0E-6;	C0	08	6A	00	00	00	26	C0	30	AC	21	85
U/D 2.0E-6;	C0	08	6A	00	00	00	16	C0	30	AC	21	85
U/D 1.0E-6;	C0	08	6A	00	00	00	0E	C0	30	AC	21	85
U/D 5.0E-7;	C0	08	6A	00	00	00	64	80	30	8C	21	85
U/D 2.0E-7;	C0	08	6A	00	00	00	54	40	30	8C	21	85
U/D 1.0E-7;	C0	08	6A	00	00	00	4C	00	30	8C	21	85

Continued on next page

Table 6-7 (cont)

MODE MKRS;U/D 5.0E+0;FXD;PCT 0.0;OUT ON;MAG X1;TRIG NORM;												
SETTING	R1	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
U/D 5.0E+0;	C0	08	6A	00	00	00	64	20	2B	5E	21	85
U/D 2.0E+0;	C0	08	6A	00	00	00	54	21	2B	5E	21	85
U/D 1.0E+0;	C0	08	6A	00	00	00	4C	22	2B	5E	21	85
U/D 5.0E-1;	C0	08	6A	00	00	00	64	23	29	5E	21	85
U/D 2.0E-1;	C0	08	6A	00	00	00	54	24	29	5E	21	85
U/D 1.0E-1;	C0	08	6A	00	00	00	4C	25	29	5E	21	85
U/D 5.0E-2;	C0	08	6A	00	00	00	64	10	27	5E	21	85
U/D 2.0E-2;	C0	08	6A	00	00	00	54	11	27	5E	21	85
U/D 1.0E-2;	C0	08	6A	00	00	00	4C	12	27	5E	21	85
U/D 5.0E-3;	C0	08	6A	00	00	00	64	13	25	5E	21	85
U/D 2.0E-3;	C0	08	6A	00	00	00	54	14	25	5E	21	85
U/D 1.0E-3;	C0	08	6A	00	00	00	4C	15	25	5E	21	85
U/D 5.0E-4;	C0	08	6A	00	00	00	64	08	23	5E	21	85
U/D 2.0E-4;	C0	08	6A	00	00	00	54	09	23	5E	21	85
U/D 1.0E-4;	C0	08	6A	00	00	00	4C	0A	23	5E	21	85
U/D 5.0E-5;	C0	08	6A	00	00	00	64	0B	21	5E	21	85
U/D 2.0E-5;	C0	08	6A	00	00	00	54	0C	21	5E	21	85
U/D 1.0E-5;	C0	08	6A	00	00	00	4C	0D	21	5E	21	85
U/D 5.0E-6;	C0	08	6A	00	00	00	64	03	20	9E	21	85
U/D 2.0E-6;	C0	08	6A	00	00	00	54	04	20	9E	21	85
U/D 1.0E-6;	C0	08	6A	00	00	00	4C	05	20	9E	21	85
U/D 5.0E-7;	C0	08	6A	00	00	00	64	C0	30	AC	21	85
U/D 2.0E-7;	C0	08	6A	00	00	00	54	C0	30	AC	21	85
U/D 1.0E-7;	C0	08	6A	00	00	00	4C	C0	30	AC	21	85
U/D 5.0E-8;	C0	08	6A	00	00	00	64	80	30	8C	21	85
U/D 2.0E-8;	C0	08	6A	00	00	00	54	40	30	8C	21	85
U/D 1.0E-8;	C0	08	6A	00	00	00	4C	00	30	8C	21	85

Continued on next page

Table 6-7 (cont)

MODE MKRS;U/D 1.0E-3;FXD;PCT 0.0;OUT ON;MAG X1;TRIG NORM;												
SETTING	R1	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
TRIG NORM;	C0	08	6A	00	00	00	4C	15	25	5E	21	85
TRIG X1;	C0	08	6A	00	00	00	4D	15	25	5E	21	85
TRIG X.01;	C0	08	6A	00	00	00	4F	15	25	5E	21	85
TRIG OFF;	C0	08	6A	00	00	00	4B	15	25	5E	21	85

MODE MKRS;U/D 1.0E-3;VAR;PCT 0.0;OUT ON;MAG X1;TRIG NORM;												
SETTING	R1	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2
PCT 0.0;	C0	08	6A	00	00	00	4C	15	25	5E	21	85
PCT -5.0;	C0	08	6A	00	00	00	4C	15	25	5E	24	A5
PCT -9.9;	C0	08	6A	00	00	00	4C	15	25	5E	27	B5
PCT 5.0;	C0	08	6A	00	00	00	4C	15	25	5E	1E	65
PCT 9.9;	C0	08	6A	00	00	00	4C	15	25	5E	1B	55


SLEWED EDGE MODE SETTINGS

MODE SLWD;U/D 1.0E-7;FXD;PCT 0.0;OUT ON;MAG X1;SHFT 0;																	
SETTING	R1	V1	V2	V3	V4	V5	M1	M2	M3	M4	T1	T2	T3	T4	T5	T6	T7
U/D 1.0E-7;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	E8	E8	E1	E6	F4
U/D 5.0E-8;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	E8	FC	E1	F8	F4
U/D 2.0E-8;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	38	33	34	F5
U/D 1.0E-8;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	24	33	1F	F5
U/D 5.0E-9;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	2E	33	29	F5
U/D 2.0E-9;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	34	33	2F	F5
U/D 1.0E-9;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	36	33	31	F5
U/D 5.0E-10;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	37	33	32	F5
U/D 4.0E-10;	C0	08	6A	00	00	00	4C	00	80	0A	21	8D	38	37	34	33	F1

INSTRUMENT OPTIONS

Your instrument may be equipped with one or more instrument options or optional accessories. A brief description of each instrument option is given below. For further information on instrument options or accessories, see your Tektronix Catalog or contact your Tektronix Field Office. If additional options are made available for this instrument, they may be described in a Change Information insert at the back of this manual or in this section.

OPTION 01

Adds a temperature compensated, 5 MHz crystal oscillator for a higher accuracy time base. Information relative to Option 01 can be found on schematic  and Block Diagram B, in the Specification section (Vol. 1), in the Calibration section (Vol. 2), and in the Theory of Operation (Vol. 1).

OPTION 02

Deletes the standard Pulse Head accessory. The CG 551AP does not operate in the FAST EDGE mode if the Pulse Head is not attached to the OUTPUT connector.

REPLACEABLE ELECTRICAL PARTS

PARTS ORDERING INFORMATION

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

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department. It is therefore important, when ordering parts, to include the following information in your order: Part number, instrument type or number, serial number, and modification number if applicable.

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

LIST OF ASSEMBLIES

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

CROSS INDEX-MFR. CODE NUMBER TO MANUFACTURER

The Mfr. Code Number to Manufacturer index for the Electrical Parts List is located immediately after this page. The Cross Index provides codes, names and addresses of manufacturers of components listed in the Electrical Parts List.

ABBREVIATIONS

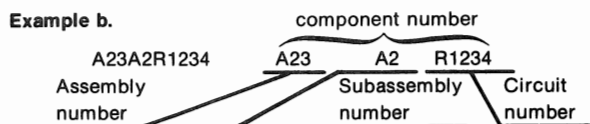
Abbreviations conform to American National Standard Y1.1.

COMPONENT NUMBER (column one of the Electrical Parts List)

A numbering method has been used to identify assemblies, subassemblies and parts. Examples of this numbering method and typical expansions are illustrated by the following:



Read: Resistor 1234 of Assembly 23



Read: Resistor 1234 of Subassembly 2 of Assembly 23

Only the circuit number will appear on the diagrams and circuit board illustrations. Each diagram and circuit board illustration is clearly marked with the assembly number. Assembly numbers are also marked on the mechanical exploded views located in the Mechanical Parts List. The component number is obtained by adding the assembly number prefix to the circuit number.

The Electrical Parts List is divided and arranged by assemblies in numerical sequence (e.g., assembly A1 with its subassemblies and parts, precedes assembly A2 with its subassemblies and parts).

Chassis-mounted parts have no assembly number prefix and are located at the end of the Electrical Parts List.

TEKTRONIX PART NO. (column two of the Electrical Parts List)

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

SERIAL/MODEL NO. (columns three and four of the Electrical Parts List)

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

NAME & DESCRIPTION (column five of the Electrical Parts List)

In the Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name identification, the U.S. Federal Cataloging Handbook H6-1 can be utilized where possible.

MFR. CODE (column six of the Electrical Parts List)

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

MFR. PART NUMBER (column seven of the Electrical Parts List)

Indicates actual manufacturers part number.

CROSS INDEX—MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip
000FH	LEMOSA INC.	465 CALIFORNIA STREET	SAN FRANCISCO, CA 94104
000GU	SUPERTEX INC.	1225 BORDEAUX DRIVE	SUNNYVALE, CA 94086
00136	MC COY ELECTRONICS COMPANY	WATTS AND CHESTNUT STR.	MT. HOLLY SPRINGS, PA 17065
00779	AMP, INC.	P O BOX 3608	HARRISBURG, PA 17105
00853	SANGAMO ELECTRIC CO., S. CAROLINA DIV.	P O BOX 128	PICKENS, SC 29671
01121	ALLEN-BRADLEY COMPANY	1201 2ND STREET SOUTH	MILWAUKEE, WI 53204
01295	TEXAS INSTRUMENTS, INC., SEMICONDUCTOR GROUP	P O BOX 5012, 13500 N CENTRAL EXPRESSWAY	DALLAS, TX 75222
02735	RCA CORPORATION, SOLID STATE DIVISION	ROUTE 202	SOMERVILLE, NY 08876
03508	GENERAL ELECTRIC COMPANY, SEMI-CONDUCTOR PRODUCTS DEPARTMENT	ELECTRONICS PARK	SYRACUSE, NY 13201
04222	AVX CERAMICS, DIVISION OF AVX CORP.	P O BOX 867, 19TH AVE. SOUTH	MYRTLE BEACH, SC 29577
04713	MOTOROLA, INC., SEMICONDUCTOR PROD. DIV.	5005 E MCDOWELL RD, PO BOX 20923	PHOENIX, AZ 85036
05397	UNION CARBIDE CORPORATION, MATERIALS SYSTEMS DIVISION	11901 MADISON AVENUE	CLEVELAND, OH 44101
05574	VIKING INDUSTRIES, INC.	21001 NORDHOFF STREET	CHATSWORTH, CA 91311
07263	FAIRCHILD SEMICONDUCTOR, A DIV. OF FAIRCHILD CAMERA AND INSTRUMENT CORP.	464 ELLIS STREET	MOUNTAIN VIEW, CA 94042
07716	TRW ELECTRONIC COMPONENTS, IRC FIXED RESISTORS, BURLINGTON DIV.	2850 MT. PLEASANT	BURLINGTON, IA 52601
09023	CORNELL-DUBILIER ELECTRONIC DIVISION	FEDERAL PACIFIC ELECTRIC CO.	2652 DALRYMPLE ST.
09823	BURGESS INC.	FOOT OF EXCHANGE STREET	SANFORD, NC 27330
10389	CHICAGO SWITCH, INC.	2035 WABANSIA AVE.	FREEMPORT, IL 61032
12633	FIFTH DIMENSION INC.	801 NEW YORK AVE.	CHICAGO, IL 60647
12954	SIEMENS CORPORATION, COMPONENTS GROUP	8700 E THOMAS RD, P O BOX 1390	TRENTON, NJ 08638
12969	UNITRODE CORPORATION	580 PLEASANT STREET	SCOTTSDALE, AZ 85252
14433	ITT SEMICONDUCTORS	3301 ELECTRONICS WAY	WATERTOWN, MA 02172
14552	MICRO SEMICONDUCTOR CORP.	P O BOX 3049	WEST PALM BEACH, FL 33402
14752	ELECTRO CUBE INC.	2830 E FAIRVIEW ST.	SANTA ANA, CA 92704
14936	GENERAL INSTRUMENT CORP., SEMICONDUCTOR PRODUCTS GROUP	1710 S. DEL MAR AVE.	SAN GABRIEL, CA 91776
17745	ANGSTROMH PRECISION, INC.	P.O. BOX 600, 600 W. JOHN ST.	HICKSVILLE, NY 11802
18324	SIGNETICS CORP.	P O BOX 1827, MAUGANS AVENUE	HAGERSTOWN, MD 21740
19701	ELECTRA-MIDLAND CORP., MEPCO ELECTRA INC.	811 E. ARQUES	SUNNYVALE, CA 94086
22526	BERG ELECTRONICS, INC.	P O BOX 760	MINERAL WELLS, TX 76067
24546	CORNING GLASS WORKS, ELECTRONIC COMPONENTS DIVISION	YOUK EXPRESSWAY	NEW CUMBERLAND, PA 17070
26769	NCI INC.	550 HIGH STREET	BRADFORD, PA 16701
27014	NATIONAL SEMICONDUCTOR CORP.	5900 AUSTRALIAN AVENUE	WEST PALM BEACH, FL 33407
32293	INTERSIL, INC.	2900 SEMICONDUCTOR DR.	SANTA CLARA, CA 95051
32997	BOURNS, INC., TRIMPOT PRODUCTS DIV.	10900 N. TANTAÜ AVE.	CUPERTINO, CA 95014
34630	TYCO FILTERS DIV., INC.	1200 COLUMBIA AVE.	RIVERSIDE, CA 92507
50088	MOSTEK CORP.	3940 W. MONTECITO	PHOENIX, AZ 85019
50434	HEWLETT-PACKARD COMPANY	1400 UPFIELD DR.	CARROLLTON, TX 75006
50522	MONSANTO CO., ELECTRONIC SPECIAL PRODUCTS	640 PAGE MILL ROAD	PALO ALTO, CA 94304
50579	LITRONIX INC.	3400 HILLVIEW AVENUE	PALO ALTO, CA 94304
51642	CENTRE ENGINEERING INC.	19000 HOMESTEAD RD.	CUPERTINO, CA 95014
52769	SPRAGUE GOODMAN ELEC., INC.	2820 E COLLEGE AVENUE	STATE COLLEGE, PA 16801
55210	GETTIG ENG. AND MFG. COMPANY	134 FULTON AVENUE	GARDEN CITY PARK, NY 11040
56289	SPRAGUE ELECTRIC CO.	PO BOX 85, OFF ROUTE 45	SPRING MILLS, PA 16875
58361	GENERAL INSTRUMENT CORP.	87 MARSHALL ST.	NORTH ADAMS, MA 01247
59660	OPTO ELECTRONICS DIV.	3400 HILLVIEW AVE	PALO ALTO, CA 94304
71279	TUSONIX INC.	2155 N FORBES BLVD	TUCSON, AZ 85705
71400	CAMBRIDGE THERMIONIC CORP.	445 CONCORD AVE.	CAMBRIDGE, MA 02138
72982	BUSSMAN MFG., DIVISION OF MCGRAW-EDISON CO.	2536 W. UNIVERSITY ST.	ST. LOUIS, MO 63107
73138	ERIE TECHNOLOGICAL PRODUCTS, INC.	644 W. 12TH ST.	ERIE, PA 16512
75042	BECKMAN INSTRUMENTS, INC., HELIPOT DIV.	2500 HARBOR BLVD.	FULLERTON, CA 92634
75378	TRW ELECTRONIC COMPONENTS, IRC FIXED RESISTORS, PHILADELPHIA DIVISION	401 N. BROAD ST.	PHILADELPHIA, PA 19108
76493	CTS KNIGHTS, INC.	400 REIMANN AVE.	SANDWICH, IL 60548
	BELL INDUSTRIES, INC., MILLER, J. W., DIV.	19070 REYES AVE., P O BOX 5825	COMPTON, CA 90224

CROSS INDEX—MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip
80009	TEKTRONIX, INC.	P O BOX 500	BEAVERTON, OR 97077
87034	ILLUMINATED PRODUCTS INC., A SUB OF OAK INDUSTRIES, INC.	2620 SUSAN ST, PO BOX 11930	SANTA ANA, CA 92711
90201	MALLORY CAPACITOR CO., DIV. OF P. R. MALLORY AND CO., INC.	3029 E. WASHINGTON STREET P. O. BOX 372	INDIANAPOLIS, IN 46206
91637	DALE ELECTRONICS, INC.	P. O. BOX 609	COLUMBUS, NE 68601
94696	MAGNECRAFT ELECTRIC COMPANY	5575 N LYNCH AVENUE	CHICAGO, IL 60630
95275	VITRAMON, INC.	P O BOX 544	BRIDGEPORT, CT 06601
95348	GORDOS CORPORATION	250 GLENWOOD AVENUE	BLOOMFIELD, NJ 07003

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
A1	670-6075-00			CKT BOARD ASSY:FRONT PANEL	80009	670-6075-00
A2	670-6076-00			CKT BOARD ASSY:MAIN INTERCONNECT	80009	670-6076-00
A3	670-6081-00			CKT BOARD ASSY:TIME INTERFACE	80009	670-6081-00
A3A1	670-6077-00			CKT BOARD ASSY:OFFSET PLL	80009	670-6077-00
A3A2	670-6078-00			CKT BOARD ASSY:SLEWING CONTROL	80009	670-6078-00
A3A3	670-6079-00			CKT BOARD ASSY:VCO,50MHZ	80009	670-6079-00
A3A4	670-6080-00			CKT BOARD ASSY:COUNTER	80009	670-6080-00
A3A5	670-6080-00			CKT BOARD ASSY:COUNTER	80009	670-6080-00
A3A6	670-6083-00			CKT BOARD ASSY:STEERING	80009	670-6083-00
A3A7	670-6179-00			CKT BOARD ASSY:VCO,100MHZ	80009	670-6179-00
A3A8	670-6082-00			CKT BOARD ASSY:MAIN PLL	80009	670-6082-00
A4	670-6084-00			CKT BOARD ASSY:TIME MARK	80009	670-6084-00
A4	670-6203-00			CKT BOARD ASSY:TIME MARK (OPTION 01 ONLY)	80009	670-6203-00
A5	670-6086-00	B010100	B010153	CKT BOARD ASSY:PS MAIN (STANDARD ONLY)	80009	670-6086-00
A5	670-6086-01	B010154		CKT BOARD ASSY:PS MAIN (STANDARD ONLY)	80009	670-6086-01
A5	670-6086-00	B010100	B020193	CKT BOARD ASSY:PS MAIN (OPTION 01 ONLY)	80009	670-6086-00
A5	670-6086-01	B020194		CKT BOARD ASSY:PS MAIN (OPTION 01 ONLY)	80009	670-6086-01
A5A1	670-6085-00	B010100	B010153	CKT BOARD ASSY:PS ISOLATOR (STANDARD ONLY)	80009	670-6085-00
A5A1	670-6085-01	B010154		CKT BOARD ASSY:PS ISOLATOR (STANDARD ONLY)	80009	670-6085-01
A5A1	670-6085-00	B010100	B020193	CKT BOARD ASSY:PS ISOLATOR (OPTION 01 ONLY)	80009	670-6085-00
A5A1	670-6085-01	B020194		CKT BOARD ASSY:PS ISOLATOR (OPTION 01 ONLY)	80009	670-6085-01
A5A2	670-6087-00			CKT BOARD ASSY:PS INTERFACE	80009	670-6087-00
A6	670-6088-00	B010100	B020236	CKT BOARD ASSY:REFERENCE	80009	670-6088-00
A6	670-6088-01	B020237		CKT BOARD ASSY:REFERENCE	80009	670-6088-01
A7	670-6089-00	B010100	B020236	CKT BOARD ASSY:OUTPUT	80009	670-6089-00
A7	670-6089-01	B020237		CKT BOARD ASSY:OUTPUT	80009	670-6089-01
A7A1	670-7509-00	XB020237		CKT BOARD ASSY:ATTENUATOR COMP	80009	670-7509-00
A8	670-6221-00			CKT BOARD ASSY:HIGH EDGE	80009	670-6221-00
A9	670-6091-00	B010100	B010153	CKT BOARD ASSY:CPU (STANDARD ONLY)	80009	670-6091-00
A9	670-6091-01	B010154		CKT BOARD ASSY:CPU (STANDARD ONLY)	80009	670-6091-01
A9	670-6091-00	B010100	B020193	CKT BOARD ASSY:CPU (OPTION 01 ONLY)	80009	670-6091-00
A9	670-6091-01	B020194		CKT BOARD ASSY:CPU (OPTION 01 ONLY)	80009	670-6091-01
A9A1	670-6092-00			CKT BOARD ASSY:GPIB	80009	670-6092-00
A1	-----			CKT BOARD ASSY:FRONT PANEL		
A1C1221	281-0775-00			CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A1C1530	281-0814-00			CAP.,FXD,CER DI:100PF,10%,100V	04222	GC70-1-A101K
A1DS1001	150-1048-00			LAMP,LED,DSPL:ORANGE,7 SEG,0.4 DIGIT	50522	MAN4640A
A1DS1002	150-1048-00			LAMP,LED,DSPL:ORANGE,7 SEG,0.4 DIGIT	50522	MAN4640A
A1DS1031	150-1043-00			LT EMITTING DIO:RED,20MA,5V	58361	MV5774C
A1DS1101	150-1047-00			LAMP,LED,DSPL:RED,16 SEGMENT,0.15 DIGIT	50579	DL416
A1DS1121	150-0093-01			LAMP,INCAND:5V,0.06A,0.05MSCP,SEL	87034	9AS15
A1DS1131	150-1043-00			LT EMITTING DIO:RED,20MA,5V	58361	MV5774C
A1DS1132	150-1043-00			LT EMITTING DIO:RED,20MA,5V	58361	MV5774C
A1DS1201	150-1070-00			LT EMITTING DIO:RED,635NM,35AMAX	50522	MV57124

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A2R1224	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1225	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1226	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1227	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1228	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1229	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1231	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1232	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1233	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1234	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1235	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1236	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1241	315-0272-00		RES., FXD, CMPSN: 2.7K OHM, 5%, 0.25W	01121	CB2725
A2R1421	307-0368-00		RES., FXD, FILM: NETWORK	32997	4116R-77A-000
A2R1422	307-0368-00		RES., FXD, FILM: NETWORK	32997	4116R-77A-000
A2R1431	307-0368-00		RES., FXD, FILM: NETWORK	32997	4116R-77A-000
A2R1541	315-0104-00		RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A2R1542	315-0104-00		RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A2R1543	315-0104-00		RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A2R1544	315-0104-00		RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A2R1719	315-0100-00		RES., FXD, CMPSN: 10 OHM, 5%, 0.25W	01121	CB1005
A2R1721	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A2R1741	315-0222-00		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
A2TP1630	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A2TP1632	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A2TP1636	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A2TP1638	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A2U1341	156-1245-00		MICROCIRCUIT, LI: 7 XSTR, HV/HIGH CUR	04713	MC1413PDS
A2U1432	156-0469-02		MICROCIRCUIT, DI: 3/8 LINE DCDR	01295	SN74LS138NP3
A2U1441	156-0874-02		MICROCIRCUIT, DI: 8 BIT ADDRESSABLE LCH	80009	156-0874-02
A2U1521	156-0599-01		MICROCIRCUIT, DI: RAM, THREE STATE, BURN-IN	80009	156-0599-01
A2U1522	156-0599-01		MICROCIRCUIT, DI: RAM, THREE STATE, BURN-IN	80009	156-0599-01
A2U1531	156-0599-01		MICROCIRCUIT, DI: RAM, THREE STATE, BURN-IN	80009	156-0599-01
A2U1532	156-0599-01		MICROCIRCUIT, DI: RAM, THREE STATE, BURN-IN	80009	156-0599-01
A2U1621	156-0720-02		MICROCIRCUIT, DI: HEX DRVR, 4 TO2 LINE	01295	SN74LS368
A2U1631	156-0629-01		MICROCIRCUIT, DI: 30 MHZ PRESETTABLE BIN	01295	SN74LS197
A2U1641	156-0876-01		MICROCIRCUIT, DI: HEX SCHMITT TRIGGER, SCRN	80009	156-0876-01

Replaceable Electrical Parts—CG 551AP, Vol. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A1R1612	315-0300-00		RES., FXD, CMPSN: 30 OHM, 5%, 0.25W	01121	CB3005
A1R1613	315-0300-00		RES., FXD, CMPSN: 30 OHM, 5%, 0.25W	01121	CB3005
A1R1614	315-0300-00		RES., FXD, CMPSN: 30 OHM, 5%, 0.25W	01121	CB3005
A1R1615	315-0300-00		RES., FXD, CMPSN: 30 OHM, 5%, 0.25W	01121	CB3005
A1R1621	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A1R1622	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A1R1623	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A1R1624	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A1R1721	315-0361-00		RES., FXD, CMPSN: 360 OHM, 5%, 0.25W	01121	CB3615
A1R1722	315-0361-00		RES., FXD, CMPSN: 360 OHM, 5%, 0.25W	01121	CB3615
A1S1011	263-0019-30		ACTR ASSY, PB: MOMENTARY	80009	263-0019-30
A1S1031	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1101	263-0019-04		ACTR ASSY, PB: MOMENTARY	80009	263-0019-04
A1S1121	263-0027-00		SWITCH, ROTARY: OPTICAL	80009	263-0027-00
A1S1131	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1132	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1211	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1231	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1311	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1312	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1321	263-0019-03		ACTR ASSY, PB: MOMENTARY	80009	263-0019-03
A1S1322	263-0019-03		ACTR ASSY, PB: MOMENTARY	80009	263-0019-03
A1S1323	263-0019-03		ACTR ASSY, PB: MOMENTARY	80009	263-0019-03
A1S1324	263-0019-03		ACTR ASSY, PB: MOMENTARY	80009	263-0019-03
A1S1325	263-0019-03		ACTR ASSY, PB: MOMENTARY	80009	263-0019-03
A1S1326	263-0019-03		ACTR ASSY, PB: MOMENTARY	80009	263-0019-03
A1S1331	263-0019-03		ACTR ASSY, PB: MOMENTARY	80009	263-0019-03
A1S1332	263-0019-03		ACTR ASSY, PB: MOMENTARY	80009	263-0019-03
A1S1411	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1412	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1413	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1414	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1421	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1422	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1423	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1424	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1425	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1431	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1432	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1511	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1521	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1522	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1523	263-0019-03		ACTR ASSY, PB: MOMENTARY	80009	263-0019-03
A1S1531	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1611	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1612	263-0019-03		ACTR ASSY, PB: MOMENTARY	80009	263-0019-03
A1S1621	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1S1721	263-0019-01		ACTR ASSY, PB: MOMENTARY	80009	263-0019-01
A1T1630	120-0459-00		XFMR, TOROID: 10 TURNS, BIFILAR	80009	120-0459-00
A1TP1730	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A1U1221	156-0736-02		MICROCIRCUIT, DCTL: BCD TO DECIMAL DCDR	80009	156-0736-02

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscnt	Name & Description	Mfr Code	Mfr Part Number
A2	-----		CKT BOARD ASSY:MAIN INTERCONNECT		
A2C1241	290-0748-00		CAP., FXD, ELCLT: 10UF, +50-10%, 20V	56289	500D149
A2C1541	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	04222	GC705E104M
A2C1612	290-0748-00		CAP., FXD, ELCLT: 10UF, +50-10%, 20V	56289	500D149
A2C1621	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	04222	GC705E104M
A2C1631	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	04222	GC705E104M
A2C1632	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	04222	GC705E104M
A2C1711	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	04222	GC705E104M
A2C1741	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	04222	GC705E104M
A2J1011	131-2063-00		CONN, RCPT, ELEC: CIRCUIT CARD, 15/30 FEMALE	05574	000-201-4986
A2J1111	131-2063-00		CONN, RCPT, ELEC: CIRCUIT CARD, 15/30 FEMALE	05574	000-201-4986
A2J1411	131-2063-00		CONN, RCPT, ELEC: CIRCUIT CARD, 15/30 FEMALE	05574	000-201-4986
A2J1412	131-2063-00		CONN, RCPT, ELEC: CIRCUIT CARD, 15/30 FEMALE	05574	000-201-4986
A2J1511	131-2063-00		CONN, RCPT, ELEC: CIRCUIT CARD, 15/30 FEMALE	05574	000-201-4986
A2J1611	131-2063-00		CONN, RCPT, ELEC: CIRCUIT CARD, 15/30 FEMALE	05574	000-201-4986
A2J1701	131-2063-00		CONN, RCPT, ELEC: CIRCUIT CARD, 15/30 FEMALE	05574	000-201-4986
A2J1721	131-2063-00		CONN, RCPT, ELEC: CIRCUIT CARD, 15/30 FEMALE	05574	000-201-4986
A2L1711	108-0329-00		COIL, RF: 2.5UH	80009	108-0329-00
A2Q1031	151-0334-00		TRANSISTOR: SILICON, NPN	80009	151-0334-00
A2Q1032	151-0334-00		TRANSISTOR: SILICON, NPN	80009	151-0334-00
A2Q1131	151-0334-00		TRANSISTOR: SILICON, NPN	80009	151-0334-00
A2Q1132	151-0334-00		TRANSISTOR: SILICON, NPN	80009	151-0334-00
A2Q1133	151-0334-00		TRANSISTOR: SILICON, NPN	80009	151-0334-00
A2Q1141	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A2Q1142	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A2Q1321	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1322	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1323	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1324	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1325	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1326	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1327	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1328	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1331	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1332	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1333	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1334	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1335	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1336	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1421	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1422	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1423	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1424	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1431	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1432	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2Q1433	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A2R1131	315-0750-00		RES., FXD, CMPSN: 75 OHM, 5%, 0.25W	01121	CB7505
A2R1132	315-0750-00		RES., FXD, CMPSN: 75 OHM, 5%, 0.25W	01121	CB7505
A2R1133	315-0750-00		RES., FXD, CMPSN: 75 OHM, 5%, 0.25W	01121	CB7505
A2R1134	315-0750-00		RES., FXD, CMPSN: 75 OHM, 5%, 0.25W	01121	CB7505
A2R1135	315-0750-00		RES., FXD, CMPSN: 75 OHM, 5%, 0.25W	01121	CB7505
A2R1141	315-0302-00		RES., FXD, CMPSN: 3K OHM, 5%, 0.25W	01121	CB3025
A2R1142	315-0752-00		RES., FXD, CMPSN: 7.5K OHM, 5%, 0.25W	01121	CB7525
A2R1211	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1221	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1222	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005
A2R1223	315-0200-00		RES., FXD, CMPSN: 20 OHM, 5%, 0.25W	01121	CB2005

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Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A2R1224	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1225	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1226	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1227	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1228	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1229	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1231	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1232	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1233	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1234	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1235	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1236	315-0200-00		RES.,FXD,CMPSN:20 OHM,5%,0.25W	01121	CB2005
A2R1241	315-0272-00		RES.,FXD,CMPSN:2.7K OHM,5%,0.25W	01121	CB2725
A2R1421	307-0368-00		RES.,FXD,FILM:NETWORK	32997	4116R-77A-000
A2R1422	307-0368-00		RES.,FXD,FILM:NETWORK	32997	4116R-77A-000
A2R1431	307-0368-00		RES.,FXD,FILM:NETWORK	32997	4116R-77A-000
A2R1541	315-0104-00		RES.,FXD,CMPSN:100K OHM,5%,0.25W	01121	CB1045
A2R1542	315-0104-00		RES.,FXD,CMPSN:100K OHM,5%,0.25W	01121	CB1045
A2R1543	315-0104-00		RES.,FXD,CMPSN:100K OHM,5%,0.25W	01121	CB1045
A2R1544	315-0104-00		RES.,FXD,CMPSN:100K OHM,5%,0.25W	01121	CB1045
A2R1719	315-0100-00		RES.,FXD,CMPSN:10 OHM,5%,0.25W	01121	CB1005
A2R1721	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A2R1741	315-0222-00		RES.,FXD,CMPSN:2.2K OHM,5%,0.25W	01121	CB2225
A2TP1630	214-0579-00		TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A2TP1632	214-0579-00		TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A2TP1636	214-0579-00		TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A2TP1638	214-0579-00		TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A2U1341	156-1245-00		MICROCIRCUIT,LI:7 XSTR,HV/HIGH CUR	04713	MC1413PDS
A2U1432	156-0469-02		MICROCIRCUIT,DI:3/8 LINE DCDR	01295	SN74LS138NP3
A2U1441	156-0874-02		MICROCIRCUIT,DI:8 BIT ADDRESSABLE LCH	80009	156-0874-02
A2U1521	156-0599-01		MICROCIRCUIT,DI:RAM,THREE STATE,BURN-IN	80009	156-0599-01
A2U1522	156-0599-01		MICROCIRCUIT,DI:RAM,THREE STATE,BURN-IN	80009	156-0599-01
A2U1531	156-0599-01		MICROCIRCUIT,DI:RAM,THREE STATE,BURN-IN	80009	156-0599-01
A2U1532	156-0599-01		MICROCIRCUIT,DI:RAM,THREE STATE,BURN-IN	80009	156-0599-01
A2U1621	156-0720-02		MICROCIRCUIT,DI:HEX DRVR,4 TO2 LINE	01295	SN74LS368
A2U1631	156-0629-01		MICROCIRCUIT,DI:30 MHZ PRESETTABLE BIN	80009	156-0629-01
A2U1641	156-0876-01		MICROCIRCUIT,DI:HEX SCHMITT TRIGGER	80009	156-0876-01

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3	-----		CKT BOARD ASSY:TIME INTERFACE		
A3J1007	131-0589-00		TERMINAL,PIN:0.46 L X 0.025 SQ (QUANTITY 4)	80009	131-0589-00
A3J1010	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 4)	22526	47359
A3J1020	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 7)	22526	47359
A3J1021	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 3)	22526	47359
A3J1027	131-0589-00		TERMINAL,PIN:0.46 L X 0.025 SQ (QUANTITY 4)	80009	131-0589-00
A3J1031	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 4)	22526	47359
A3J1100	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 7)	22526	47359
A3J1106	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 6)	22526	47359
A3J1126	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 7)	22526	47359
A3J1200	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 5)	22526	47359
A3J1204	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 3)	22526	47359
A3J1207	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 8)	22526	47359
A3J1217	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 3)	22526	47359
A3J1220	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 2)	22526	47359
A3J1222	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 2)	22526	47359
A3J1225	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 8)	22526	47359
A3J1230	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 4)	22526	47359
A3J1300	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 7)	22526	47359
A3J1310	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 5)	22526	47359
A3J1315	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 3)	22526	47359
A3J1320	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 3)	22526	47359
A3J1324	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 3)	22526	47359
A3J1403	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 4)	22526	47359
A3J1420	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 3)	22526	47359
A3J1424	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 2)	22526	47359
A3J1427	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 5)	22526	47359
A3J1434	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 4)	22526	47359
A3J1500	131-0787-00		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 2)	22526	47359

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Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3J1502	131-0787-00 -----		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 7)	22526	47359
A3J1510	131-0787-00 -----		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 5)	22526	47359
A3J1521	131-0787-00 -----		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 7)	22526	47359
A3J1533	131-0787-00 -----		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 6)	22526	47359
A3J1603	131-0787-00 -----		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 6)	22526	47359
A3J1615	131-0787-00 -----		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 2)	22526	47359
A3J1620	131-0787-00 -----		CONTACT,ELEC:0.64 INCH LONG (QUANTITY 8)	22526	47359

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A1	-----		CKT BOARD ASSY:OFFSET PLL		
A3A1C1005	283-0359-00		CAP., FXD, CER DI: 1000PF, 10%, 200V	72982	8131N203C0G0102K
A3A1C1016	283-0108-00		CAP., FXD, CER DI: 220PF, 10%, 200V	56289	272C13
A3A1C1020	283-0204-00		CAP., FXD, CER DI: 0.01UF, 20%, 50V	72982	8121N061Z5U0103M
A3A1C1030	283-0024-00		CAP., FXD, CER DI: 0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A1C1031	283-0204-00		CAP., FXD, CER DI: 0.01UF, 20%, 50V	72982	8121N061Z5U0103M
A3A1C1032	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A1C1033	283-0000-00		CAP., FXD, CER DI: 0.001UF, +100-0%, 500V	59660	831-519-25U-102P
A3A1C1034	283-0032-00		CAP., FXD, CER DI: 470PF, 5%, 500V	72982	0831085Z5E00471J
A3A1C1040	283-0204-00		CAP., FXD, CER DI: 0.01UF, 20%, 50V	72982	8121N061Z5U0103M
A3A1C1042	283-0341-00		CAP., FXD, CER DI: 0.047UF, 10%, 100V	72982	8121N153X7R0473K
A3A1C1100	283-0204-00		CAP., FXD, CER DI: 0.01UF, 20%, 50V	72982	8121N061Z5U0103M
A3A1C1102	283-0330-00		CAP., FXD, CER DI: 100PF, 5%, 50V	51642	150-050-NP0-101J
A3A1C1104	283-0330-00		CAP., FXD, CER DI: 100PF, 5%, 50V	51642	150-050-NP0-101J
A3A1C1110	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A1C1124	283-0010-00		CAP., FXD, CER DI: 0.05UF, +100-20%, 50V	56289	273C20
A3A1C1126	290-0534-00		CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
A3A1C1130	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A1C1132	283-0032-00		CAP., FXD, CER DI: 470PF, 5%, 500V	72982	0831085Z5E00471J
A3A1C1200	283-0204-00		CAP., FXD, CER DI: 0.01UF, 20%, 50V	72982	8121N061Z5U0103M
A3A1C1201	283-0204-00		CAP., FXD, CER DI: 0.01UF, 20%, 50V	72982	8121N061Z5U0103M
A3A1C1210	283-0204-00		CAP., FXD, CER DI: 0.01UF, 20%, 50V	72982	8121N061Z5U0103M
A3A1C1211	283-0204-00		CAP., FXD, CER DI: 0.01UF, 20%, 50V	72982	8121N061Z5U0103M
A3A1C1242	283-0203-00		CAP., FXD, CER DI: 0.47UF, 20%, 50V	72982	8131N075E474M
A3A1C1244	290-0523-00		CAP., FXD, ELCTLT: 2.2UF, 20%, 20V	56289	196D225X0020HA1
A3A1CR1010	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A1CR1012	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A1CR1020	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A1CR1022	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A1CR1030	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A1CR1110	152-0536-00		SEMICONV DEVICE: SILICON, HOT CARRIER, 4V	80009	152-0536-00
A3A1CR1118	152-0536-00		SEMICONV DEVICE: SILICON, HOT CARRIER, 4V	80009	152-0536-00
A3A1CR1122	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A1CR1140	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A1CR1240	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A1DS1142	150-1043-00		LT EMITTING DIO: RED, 20MA, 5V	58361	MV5774C
A3A1L1020	108-0249-00		COIL, RF: 12UH	76493	B-4992
A3A1L1210	108-0226-00		COIL, RF: 100UH	76493	DWG B4257
A3A1L1212	108-0226-00		COIL, RF: 100UH	76493	DWG B4257
A3A1P1500	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 2)	22526	75377-001
A3A1P1510	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 5)	22526	75377-001
A3A1P1521	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 7)	22526	75377-001
A3A1P1615	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 2)	22526	75377-001
A3A1Q1020	151-0254-00		TRANSISTOR: SILICON, NPN	03508	X38L3118
A3A1Q1030	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A3A1Q1110	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A3A1Q1112	151-0441-00		TRANSISTOR: SILICON, NPN	04713	SRF501
A3A1Q1114	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A3A1Q1116	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A3A1Q1118	151-0441-00		TRANSISTOR: SILICON, NPN	04713	SRF501
A3A1R1005	315-0181-00		RES., FXD, CMPSN: 180 OHM, 5%, 0.25W	01121	CB1815
A3A1R1008	315-0121-00		RES., FXD, CMPSN: 120 OHM, 5%, 0.25W	01121	CB1215
A3A1R1010	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A1R1012	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A1R1014	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A1R1016	315-0132-00		RES., FXD, CMPSN: 1.3K OHM, 5%, 0.25W	01121	CB1325
A3A1R1020	315-0361-00		RES., FXD, CMPSN: 360 OHM, 5%, 0.25W	01121	CB3615
A3A1R1030	315-0474-00		RES., FXD, CMPSN: 470K OHM, 5%, 0.25W	01121	CB4745
A3A1R1031	315-0202-00		RES., FXD, CMPSN: 2K OHM, 5%, 0.25W	01121	CB2025
A3A1R1032	315-0152-00		RES., FXD, CMPSN: 1.5K OHM, 5%, 0.25W	01121	CB1525
A3A1R1034	315-0152-00		RES., FXD, CMPSN: 1.5K OHM, 5%, 0.25W	01121	CB1525
A3A1R1040	315-0152-00		RES., FXD, CMPSN: 1.5K OHM, 5%, 0.25W	01121	CB1525
A3A1R1042	315-0271-00		RES., FXD, CMPSN: 270 OHM, 5%, 0.25W	01121	CB2715
A3A1R1100	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A1R1114	315-0331-00		RES., FXD, CMPSN: 330 OHM, 5%, 0.25W	01121	CB3315
A3A1R1116	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A3A1R1118	315-0151-00		RES., FXD, CMPSN: 150 OHM, 5%, 0.25W	01121	CB1515
A3A1R1120	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A1R1122	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A1R1124	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A1R1126	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A3A1R1130	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A1R1132	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A1R1134	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A1R1140	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A1R1142	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A1R1144	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A1R1146	315-0222-00		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
A3A1R1148	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A1R1210	315-0132-00		RES., FXD, CMPSN: 1.3K OHM, 5%, 0.25W	01121	CB1325
A3A1R1212	315-0510-00		RES., FXD, CMPSN: 51 OHM, 5%, 0.25W	01121	CB5105
A3A1R1213	315-0510-00		RES., FXD, CMPSN: 51 OHM, 5%, 0.25W	01121	CB5105
A3A1R1220	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A3A1R1240	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A1R1242	315-0222-00		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
A3A1T1200	120-0487-00		XFMR, TOROID: 5 TURNS BIFILAR	80009	120-0487-00
A3A1TP1100	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3A1TP1140	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3A1TP1210	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3A1TP1220	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3A1U1000	156-0870-01		MICROCIRCUIT, DI: BCD DECADE CNTR, SCRN	07263	SL81658
A3A1U1002	156-0870-01		MICROCIRCUIT, DI: BCD DECADE CNTR, SCRN	07263	SL81658
A3A1U1030	156-0158-07		MICROCIRCUIT, LI: DUAL OPNL AMPL, SCREENED	01295	MC1458JG4
A3A1U1100	156-0517-01		MICROCIRCUIT, DI: DOUBLY BAL MIXER, SCREENED	80009	156-0517-01
A3A1U1130	156-0382-02		MICROCIRCUIT, DI: QUAD 2-INP NAND GATE	01295	SN74LS00
A3A1U1220	156-0387-02		MICROCIRCUIT, DI: DUAL J-K FF, BURN IN	01295	SN74LS73
A3A1U1230	156-0382-02		MICROCIRCUIT, DI: QUAD 2-INP NAND GATE	01295	SN74LS00
A3A1VR1200	152-0278-00		SEMICONV DEVICE: ZENER, 0.4W, 3V, 5%	04713	SZG35009K20

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A2	-----		CKT BOARD ASSY:SLEWING CONTROL		
A3A2C1103	281-0613-00		CAP.,FXD,CER DI:10PF,+/-1PF,200V	59660	374001COG100F
A3A2C1110	283-0024-00		CAP.,FXD,CER DI:0.1UF,+80-20%,50V	72982	8121N083Z5U0104Z
A3A2C1114	283-0177-00		CAP.,FXD,CER DI:1UF,+80-20%,25V	56289	273C5
A3A2C1119	283-0154-00		CAP.,FXD,CER DI:22PF,5%,50V	72982	8111B061COG220J
A3A2CR1001	152-0322-00		SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A3A2CR1102	152-0322-00		SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A3A2CR1111	152-0322-00		SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A3A2CR1112	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A3A2CR1113	152-0322-00		SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A3A2P1300	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 7)	22526	75377-001
A3A2P1310	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 5)	22526	75377-001
A3A2P1403	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 4)	22526	75377-001
A3A2Q1103	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A3A2Q1112	151-0188-03		TRANSISTOR:SILICON,PNP,SEL	80009	151-0188-03
A3A2Q1113	151-0188-03		TRANSISTOR:SILICON,PNP,SEL	80009	151-0188-03
A3A2Q1114	151-0188-03		TRANSISTOR:SILICON,PNP,SEL	80009	151-0188-03
A3A2R1010	307-0526-00		RES NTWK,THK FI:5,510 OHM,10%,0.125W	32997	4306R-101-511J
A3A2R1101	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A3A2R1102	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A3A2R1103	315-0103-00		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
A3A2R1110	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A3A2R1111	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A3A2R1112	315-0103-00		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
A3A2R1113	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A3A2R1114	315-0103-00		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
A3A2R1115	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A3A2U1001	156-0796-01		MICROCIRCUIT,DI:8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A3A2U1011	156-0582-03		MICROCIRCUIT,DI:BINARY UP/DOWN CNTR,SCRN	04713	MC14516BCLDS
A3A2U1012	156-0688-01		MICROCIRCUIT,DI:DUAL J-K MASTER SLAVE FF	04713	SC22689L135

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A3	-----		CKT BOARD ASSY:VCO,50MHZ (OFFSET)		
A3A3C1001	283-0339-00		CAP.,FXD,CER DI:0.22UF,10%,50V	72982	8131N075W5R224K
A3A3C1002	283-0177-00		CAP.,FXD,CER DI:1UF,+80-20%,25V	56289	273C5
A3A3C1011	283-0024-00		CAP.,FXD,CER DI:0.1UF,+80-20%,50V	72982	8121N083Z5U0104Z
A3A3C1101	283-0204-00		CAP.,FXD,CER DI:0.01UF,20%,50V	72982	8121N061Z5U0103M
A3A3C1102	283-0204-00		CAP.,FXD,CER DI:0.01UF,20%,50V	72982	8121N061Z5U0103M
A3A3C1103	283-0197-00		CAP.,FXD,CER DI:470PF,5%,100V	72982	8121N075C0G0471J
A3A3C1104	283-0204-00		CAP.,FXD,CER DI:0.01UF,20%,50V	72982	8121N061Z5U0103M
A3A3C1111	283-0204-00		CAP.,FXD,CER DI:0.01UF,20%,50V	72982	8121N061Z5U0103M
A3A3C1112	290-0536-00		CAP.,FXD,ELCTLT:10UF,20%,25V	90201	TDC106M025FL
A3A3C1113	283-0204-00		CAP.,FXD,CER DI:0.01UF,20%,50V	72982	8121N061Z5U0103M
A3A3CR1011	152-0269-00		SEMICONV DEVICE:SILICON,VAR VCAP.,4V,33PF	04713	SMV1263
A3A3CR1012	152-0269-00		SEMICONV DEVICE:SILICON,VAR VCAP.,4V,33PF	04713	SMV1263
A3A3L1011	120-1307-00		XFMR,RF:TOROID 2 WINDINGS	80009	120-1307-00
A3A3L1012	108-0408-00		COIL,RF:100NH	80009	108-0408-00
A3A3L1111	120-0342-00		XFMR,TOROID:10 TURNS,SINGLE	80009	120-0342-00
A3A3L1112	120-0342-00		XFMR,TOROID:10 TURNS,SINGLE	80009	120-0342-00
A3A3P1320	136-0263-04	-----	SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 3)	22526	75377-001
A3A3P1420	136-0263-04	-----	SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 3)	22526	75377-001
A3A3P1424	136-0263-04	-----	SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 2)	22526	75377-001
A3A3P1434	136-0263-04	-----	SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 4)	22526	75377-001
A3A3Q1001	151-0441-00		TRANSISTOR:SILICON,NPN	04713	SRF501
A3A3Q1002	151-0441-00		TRANSISTOR:SILICON,NPN	04713	SRF501
A3A3Q1011	151-0367-00		TRANSISTOR:SILICON,NPN,SEL FROM 3571TP	01295	SKA6516
A3A3Q1012	151-0367-00		TRANSISTOR:SILICON,NPN,SEL FROM 3571TP	01295	SKA6516
A3A3Q1101	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A3A3R1003	315-0510-00		RES.,FXD,CMPSN:51 OHM,5%,0.25W	01121	CB5105
A3A3R1004	315-0121-00		RES.,FXD,CMPSN:120 OHM,5%,0.25W	01121	CB1215
A3A3R1005	315-0510-00		RES.,FXD,CMPSN:51 OHM,5%,0.25W	01121	CB5105
A3A3R1006	315-0510-00		RES.,FXD,CMPSN:51 OHM,5%,0.25W	01121	CB5105
A3A3R1011	315-0101-00		RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
A3A3R1103	315-0821-00		RES.,FXD,CMPSN:820 OHM,5%,0.25W	01121	CB8215
A3A3R1104	315-0152-00		RES.,FXD,CMPSN:1.5K OHM,5%,0.25W	01121	CB1525
A3A3R1111	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A3A3R1112	315-0471-00		RES.,FXD,CMPSN:470 OHM,5%,0.25W	01121	CB4715
A3A3R1113	315-0101-00		RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
A3A3R1114	315-0103-00		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
A3A3T1101	120-1105-00		XFMR,RF:TOROID,2 WINDINGS	80009	120-1105-00
A3A3W1002	131-0566-00		BUS CONDUCTOR:DUMMY RES,2.375,22 AWG	55210	L-2007-1
A3A3W1101	131-0566-00		BUS CONDUCTOR:DUMMY RES,2.375,22 AWG	55210	L-2007-1

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A4	-----		CKT BOARD ASSY: COUNTER (TRIGGER)		
A3A4C1010	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A4C1020	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A4C1100	283-0024-00		CAP., FXD, CER DI: 0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A4C1101	283-0359-00		CAP., FXD, CER DI: 1000PF, 10%, 200V	72982	8131N203C0G0102K
A3A4C1128	283-0197-00		CAP., FXD, CER DI: 470PF, 5%, 100V	72982	8121N075C0G0471J
A3A4C1218	283-0359-00		CAP., FXD, CER DI: 1000PF, 10%, 200V	72982	8131N203C0G0102K
A3A4CR1103	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A4L1015	108-0249-00		COIL, RF: 12UH	76493	B-4992
A3A4P1010	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 4)	22526	75377-001
A3A4P1100	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 7)	22526	75377-001
A3A4P1207	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 8)	22526	75377-001
A3A4R1012	307-0526-00		RES NTWK, THK FI: 5, 510 OHM, 10%, 0.125W	32997	4306R-101-511J
A3A4R1015	315-0181-00		RES., FXD, CMPSN: 180 OHM, 5%, 0.25W	01121	CB1815
A3A4R1025	315-0121-00		RES., FXD, CMPSN: 120 OHM, 5%, 0.25W	01121	CB1215
A3A4R1101	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A3A4R1112	307-0526-00		RES NTWK, THK FI: 5, 510 OHM, 10%, 0.125W	32997	4306R-101-511J
A3A4R1115	315-0301-00		RES., FXD, CMPSN: 300 OHM, 5%, 0.25W	01121	CB3015
A3A4R1200	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A4R1202	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A4R1204	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A4R1205	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A4R1210	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A4R1212	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A4U1000	156-0796-01		MICROCIRCUIT, DI: 8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A3A4U1010	156-1038-01		MICROCIRCUIT, DI: 4 BIT BINARY COUNTER	80009	156-1038-01
A3A4U1100	156-0796-01		MICROCIRCUIT, DI: 8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A3A4U1110	156-1038-01		MICROCIRCUIT, DI: 4 BIT BINARY COUNTER	80009	156-1038-01
A3A4U1112	156-0182-02		MICROCIRCUIT, DI: TRIPLE 2-3-2 INPUT GATE	80009	156-0182-02
A3A4U1200	156-0458-01		MICROCIRCUIT, DI: QUAD AND GATE2 INP, SCRN	04713	SC22689P104
A3A4U1210	156-0880-02		MICROCIRCUIT, DI: DUAL D MASTERSLAVE FF	04713	SC22689P231

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A5	-----		CKT BOARD ASSY: COUNTER(SLEWING)		
A3A5C1010	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A5C1020	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A5C1100	283-0024-00		CAP., FXD, CER DI: 0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A5C1101	283-0359-00		CAP., FXD, CER DI: 1000PF, 10%, 200V	72982	8131N203COG0102K
A3A5C1128	283-0197-00		CAP., FXD, CER DI: 470PF, 5%, 100V	72982	8121N075COG0471J
A3A5C1218	283-0359-00		CAP., FXD, CER DI: 1000PF, 10%, 200V	72982	8131N203COG0102K
A3A5CR1103	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A5L1015	108-0249-00		COIL, RF: 12UH	76493	B-4992
A3A5P1020	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 7)	22526	75377-001
A3A5P1031	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 4)	22526	75377-001
A3A5P1225	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 8)	22526	75377-001
A3A5R1012	307-0526-00		RES NTWK, THK FI: 5,510 OHM, 10%, 0.125W	32997	4306R-101-511J
A3A5R1015	315-0181-00		RES., FXD, CMPSN: 180 OHM, 5%, 0.25W	01121	CB1815
A3A5R1025	315-0121-00		RES., FXD, CMPSN: 120 OHM, 5%, 0.25W	01121	CB1215
A3A5R1101	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A3A5R1112	307-0526-00		RES NTWK, THK FI: 5,510 OHM, 10%, 0.125W	32997	4306R-101-511J
A3A5R1115	315-0301-00		RES., FXD, CMPSN: 300 OHM, 5%, 0.25W	01121	CB3015
A3A5R1200	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A5R1202	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A5R1204	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A5R1205	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A5R1210	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A5R1212	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A5U1000	156-0796-01		MICROCIRCUIT, DI: 8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A3A5U1010	156-1038-01		MICROCIRCUIT, DI: 4 BIT BINARY COUNTER	80009	156-1038-01
A3A5U1100	156-0796-01		MICROCIRCUIT, DI: 8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A3A5U1110	156-1038-01		MICROCIRCUIT, DI: 4 BIT BINARY COUNTER	80009	156-1038-01
A3A5U1112	156-0182-02		MICROCIRCUIT, DI: TRIPLE 2-3-2 INPUT GATE	80009	156-0182-02
A3A5U1200	156-0458-01		MICROCIRCUIT, DI: QUAD AND GATE2 INP, SCRN	04713	SC22689P104
A3A5U1210	156-0880-02		MICROCIRCUIT, DI: DUAL D MASTERSLAVE FF	04713	SC22689P231

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A6	-----		CKT BOARD ASSY:STEERING		
A3A6C1005	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A6C1010	290-0743-00		CAP., FXD, ELCLTLT: 100UF, +50-10%, 16V	56289	500D146
A3A6C1020	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A6C1021	283-0024-00		CAP., FXD, CER DI: 0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A6C1101	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A6C1105	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A6C1125	283-0198-00		CAP., FXD, CER DI: 0.22UF, 20%, 50V	72982	8121N083Z5U0224M
A3A6C1130	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A6C1133	283-0347-00		CAP., FXD, CER DI: 68PF, 5%, 100V	72982	8121A108P3K680J
A3A6C1201	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A6C1220	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A6C1225	283-0347-00		CAP., FXD, CER DI: 68PF, 5%, 100V	72982	8121A108P3K680J
A3A6C1228	281-0791-00		CAP., FXD, CER DI: 270PF, 10%, 100V	72982	8035D2AADX5R271K
A3A6C1301	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A6C1302	283-0024-00		CAP., FXD, CER DI: 0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A6C1401	283-0177-00		CAP., FXD, CER DI: 1UF, +80-20%, 25V	56289	273C5
A3A6C1402	283-0024-00		CAP., FXD, CER DI: 0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A6C1403	283-0024-00		CAP., FXD, CER DI: 0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A6C1404	283-0024-00		CAP., FXD, CER DI: 0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A6CR1020	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A6CR1030	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A6CR1031	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A6CR1130	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A6CR1131	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A6CR1132	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A6CR1133	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A6CR1230	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A6CR1231	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A6CR1232	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A6CR1233	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A3A6CR1310	152-0322-00		SEMICOND DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A3A6DS1130	150-1043-00		LT EMITTING DIO: RED, 20MA, 5V	58361	MV5774C
A3A6L1101	120-0342-00		XFMR, TOROID: 10 TURNS, SINGLE	80009	120-0342-00
A3A6L1301	120-0342-00		XFMR, TOROID: 10 TURNS, SINGLE	80009	120-0342-00
A3A6P1200	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 5)	22526	75377-001
A3A6P1204	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 3)	22526	75377-001
A3A6P1217	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 3)	22526	75377-001
A3A6P1315	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 3)	22526	75377-001
A3A6P1427	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 5)	22526	75377-001
A3A6P1502	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 7)	22526	75377-001
A3A6P1533	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 6)	22526	75377-001
A3A6P1603	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 6)	22526	75377-001
A3A6P1620	136-0263-04		SOCKET, PIN TERM: FOR 0.025 INCH SQUARE PIN (QUANTITY 8)	22526	75377-001
A3A6Q1001	151-0625-01		TRANSISTOR: D45H11, SCREENED	80009	151-0625-01
A3A6Q1002	151-0281-00		TRANSISTOR: SILICON, NPN	03508	X16P4039
A3A6Q1010	151-0302-01		TRANSISTOR: SILICON, NPN, SEL	80009	151-0302-01
A3A6Q1011	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A6Q1012	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A3A6Q1020	151-0302-01		TRANSISTOR: SILICON, NPN, SEL	80009	151-0302-01
A3A6Q1021	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A3A6Q1101	151-0625-01		TRANSISTOR: D45H11, SCREENED	80009	151-0625-01
A3A6Q1102	151-0281-00		TRANSISTOR: SILICON, NPN	03508	X16P4039
A3A6Q1230	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A3A6Q1231	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A3A6Q1301	151-0221-05		TRANSISTOR: SILICON, PNP, SCREENED	80009	151-0221-05
A3A6R1001	301-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.50W	01121	EB1015
A3A6R1002	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A6R1010	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A6R1011	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A6R1012	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A6R1013	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A6R1020	315-0222-00		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
A3A6R1021	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A3A6R1022	315-0222-00		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
A3A6R1023	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A6R1024	315-0222-00		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
A3A6R1030	315-0222-00		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
A3A6R1031	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A6R1035	315-0222-00		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
A3A6R1100	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A6R1101	301-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.50W	01121	EB1015
A3A6R1110	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A3A6R1111	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A3A6R1112	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A3A6R1113	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A3A6R1130	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A6R1131	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A6R1132	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A6R1133	315-0302-00		RES., FXD, CMPSN: 3K OHM, 5%, 0.25W	01121	CB3025
A3A6R1201	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A6R1220	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A6R1221	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A6R1225	315-0302-00		RES., FXD, CMPSN: 3K OHM, 5%, 0.25W	01121	CB3025
A3A6R1230	315-0512-00		RES., FXD, CMPSN: 5.1K OHM, 5%, 0.25W	01121	CB5125
A3A6R1231	315-0512-00		RES., FXD, CMPSN: 5.1K OHM, 5%, 0.25W	01121	CB5125
A3A6R1301	315-0180-00		RES., FXD, CMPSN: 18 OHM, 5%, 0.25W	01121	CB1805
A3A6R1302	315-0180-00		RES., FXD, CMPSN: 18 OHM, 5%, 0.25W	01121	CB1805
A3A6R1303	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A6R1304	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A6R1310	307-0526-00		RES NTWK, THK FI: 5, 510 OHM, 10%, 0.125W	32997	4306R-101-511J
A3A6R1410	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A3A6R1411	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A3A6R1412	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A3A6R1413	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A6R1414	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A6R1415	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A3A6R1416	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A6T1401	120-1108-00		XFMR, RF: BALUN, TD-339	80009	120-1108-00
A3A6TP1101	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3A6TP1130	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3A6TP1301	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3A6TP1302	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3A6TP1310	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3A6U1020	156-0728-02		MICROCIRCUIT, DI: QUAD 2 INPUT STATE W/OC	80009	156-0728-02

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A6U1030	156-0384-02		MICROCIRCUIT,DI:QUAD 2-INP NAND GATE	01295	SN74LS03
A3A6U1110	156-0784-02		MICROCIRCUIT,DI:SYNC 4 BIT BINARY COUNTER	27014	DM74LS163ANA+
A3A6U1120	156-0796-01		MICROCIRCUIT,DI:8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A3A6U1121	156-0366-02		MICROCIRCUIT,DI:DUAL D FLIP-FLOP,CHK	80009	156-0366-02
A3A6U1130	156-0366-02		MICROCIRCUIT,DI:DUAL D FLIP-FLOP,CHK	80009	156-0366-02
A3A6U1201	156-0382-02		MICROCIRCUIT,DI:QUAD 2-INP NAND GATE	01295	SN74LS00
A3A6U1210	156-0784-02		MICROCIRCUIT,DI:SYNC 4 BIT BINARY COUNTER	27014	DM74LS163ANA+
A3A6U1211	156-0784-02		MICROCIRCUIT,DI:SYNC 4 BIT BINARY COUNTER	27014	DM74LS163ANA+
A3A6U1220	156-0796-01		MICROCIRCUIT,DI:8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A3A6U1221	156-0349-06		MICROCIRCUIT,DI:QUAD 2 INP NOR GATE,CHK	80009	156-0349-06
A3A6U1230	156-0752-01		MICROCIRCUIT,DI:DUAL BCD UP COUNTER,SCRN	04713	MC14518BCLD
A3A6U1310	156-0642-01		MICROCIRCUIT,DI:BI QUINARY CNTR,SCRN	80009	156-0642-01
A3A6U1311	156-0282-00		MICROCIRCUIT,DI:DUAL 4-INPUT OR NOR GATE	80009	156-0282-00
A3A6U1410	156-0880-02		MICROCIRCUIT,DI:DUAL D MASTERSLAVE FF	04713	SC22689P231
A3A6W1401	131-0566-00		BUS CONDUCTOR:DUMMY RES,2.375,22 AWG	55210	L-2007-1

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A7	-----		CKT BOARD ASSY:VCO,100MHZ(MAIN)		
A3A7C1001	283-0339-00		CAP.,FXD,CER DI:0.22UF,10%,50V	72982	8131N075W5R224K
A3A7C1002	283-0177-00		CAP.,FXD,CER DI:1UF,+80-20%,25V	56289	273C5
A3A7C1011	283-0024-00		CAP.,FXD,CER DI:0.1UF,+80-20%,50V	72982	8121N083Z5U0104Z
A3A7C1101	283-0204-00		CAP.,FXD,CER DI:0.01UF,20%,50V	72982	8121N061Z5U0103M
A3A7C1102	283-0204-00		CAP.,FXD,CER DI:0.01UF,20%,50V	72982	8121N061Z5U0103M
A3A7C1103	283-0197-00		CAP.,FXD,CER DI:470PF,5%,100V	72982	8121N075C0G0471J
A3A7C1104	283-0204-00		CAP.,FXD,CER DI:0.01UF,20%,50V	72982	8121N061Z5U0103M
A3A7C1111	283-0204-00		CAP.,FXD,CER DI:0.01UF,20%,50V	72982	8121N061Z5U0103M
A3A7C1112	290-0536-00		CAP.,FXD,ELCTLT:10UF,20%,25V	90201	TDC106M025FL
A3A7C1113	283-0204-00		CAP.,FXD,CER DI:0.01UF,20%,50V	72982	8121N061Z5U0103M
A3A7CR1011	152-0269-00		SEMICOND DEVICE:SILICON,VAR VCAP.,4V,33PF	04713	SMV1263
A3A7CR1012	152-0269-00		SEMICOND DEVICE:SILICON,VAR VCAP.,4V,33PF	04713	SMV1263
A3A7L1011	120-1308-00		XFMR,RF:TOROID 2 WINDINGS	80009	120-1308-00
A3A7L1012	108-0408-00		COIL,RF:100NH	80009	108-0408-00
A3A7L1111	120-0342-00		XFMR,TOROID:10 TURNS,SINGLE	80009	120-0342-00
A3A7L1112	120-0342-00		XFMR,TOROID:10 TURNS,SINGLE	80009	120-0342-00
A3A7P1220	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 2)	22526	75377-001
A3A7P1222	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 2)	22526	75377-001
A3A7P1230	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 4)	22526	75377-001
A3A7P1324	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 3)	22526	75377-001
A3A7Q1001	151-0441-00		TRANSISTOR:SILICON,NPN	04713	SRF501
A3A7Q1002	151-0441-00		TRANSISTOR:SILICON,NPN	04713	SRF501
A3A7Q1011	151-0367-00		TRANSISTOR:SILICON,NPN,SEL FROM 3571TP	01295	SKA6516
A3A7Q1012	151-0367-00		TRANSISTOR:SILICON,NPN,SEL FROM 3571TP	01295	SKA6516
A3A7Q1101	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A3A7R1001	315-0511-00		RES.,FXD,CMPSN:510 OHM,5%,0.25W	01121	CB5115
A3A7R1002	315-0180-00		RES.,FXD,CMPSN:18 OHM,5%,0.25W	01121	CB1805
A3A7R1003	315-0510-00		RES.,FXD,CMPSN:51 OHM,5%,0.25W	01121	CB5105
A3A7R1004	315-0121-00		RES.,FXD,CMPSN:120 OHM,5%,0.25W	01121	CB1215
A3A7R1005	315-0510-00		RES.,FXD,CMPSN:51 OHM,5%,0.25W	01121	CB5105
A3A7R1006	315-0510-00		RES.,FXD,CMPSN:51 OHM,5%,0.25W	01121	CB5105
A3A7R1011	315-0471-00		RES.,FXD,CMPSN:470 OHM,5%,0.25W	01121	CB4715
A3A7R1101	315-0180-00		RES.,FXD,CMPSN:18 OHM,5%,0.25W	01121	CB1805
A3A7R1102	315-0511-00		RES.,FXD,CMPSN:510 OHM,5%,0.25W	01121	CB5115
A3A7R1103	315-0331-00		RES.,FXD,CMPSN:330 OHM,5%,0.25W	01121	CB3315
A3A7R1104	315-0152-00		RES.,FXD,CMPSN:1.5K OHM,5%,0.25W	01121	CB1525
A3A7R1111	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A3A7R1112	315-0471-00		RES.,FXD,CMPSN:470 OHM,5%,0.25W	01121	CB4715
A3A7R1113	315-0101-00		RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
A3A7R1114	315-0103-00		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
A3A7T1101	120-1105-00		XFMR,RF:TOROID,2 WINDINGS	80009	120-1105-00

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A8	-----		CKT BOARD ASSY:MAIN PLL		
A3A8C1001	283-0203-00		CAP., FXD, CER DI:0.47UF, 20%, 50V	72982	8131N075E474M
A3A8C1010	283-0024-00		CAP., FXD, CER DI:0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A8C1012	283-0177-00		CAP., FXD, CER DI:1UF, +80-20%, 25V	56289	273C5
A3A8C1014	283-0203-00		CAP., FXD, CER DI:0.47UF, 20%, 50V	72982	8131N075E474M
A3A8C1020	283-0065-01		CAP., FXD, CER DI:0.001UF, 5%, 100V	59660	0835582Z5E00102J
A3A8C1024	283-0238-00		CAP., FXD, CER DI:0.01UF, 10%, 50V	72982	8121N075X7R0103K
A3A8C1034	283-0238-00		CAP., FXD, CER DI:0.01UF, 10%, 50V	72982	8121N075X7R0103K
A3A8C1035	283-0238-00		CAP., FXD, CER DI:0.01UF, 10%, 50V	72982	8121N075X7R0103K
A3A8C1040	283-0238-00		CAP., FXD, CER DI:0.01UF, 10%, 50V	72982	8121N075X7R0103K
A3A8C1042	283-0238-00		CAP., FXD, CER DI:0.01UF, 10%, 50V	72982	8121N075X7R0103K
A3A8C1043	283-0024-00		CAP., FXD, CER DI:0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A8C1045	283-0187-00		CAP., FXD, CER DI:0.047UF, 10%, 400V	72982	8131N401X5R0473K
A3A8C1100	283-0339-00		CAP., FXD, CER DI:0.22UF.10%, 50V	72982	8131N075W5R224K
A3A8C1102	283-0339-00		CAP., FXD, CER DI:0.22UF.10%, 50V	72982	8131N075W5R224K
A3A8C1110	283-0177-00		CAP., FXD, CER DI:1UF, +80-20%, 25V	56289	273C5
A3A8C1112	283-0620-00		CAP., FXD, MICA D:470PF, 1%, 300V	00853	D153F471FO
A3A8C1120	283-0024-00		CAP., FXD, CER DI:0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A8C1122	283-0103-00		CAP., FXD, CER DI:180PF, 5%, 500V	59660	831-518-25D0181J
A3A8C1124	281-0634-00		CAP., FXD, CER DI:10PF, +/-0.25PF, 500V	59660	374 011 COG0100C
A3A8C1130	283-0024-00		CAP., FXD, CER DI:0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A8C1132	283-0203-00		CAP., FXD, CER DI:0.47UF, 20%, 50V	72982	8131N075E474M
A3A8C1134	283-0203-00		CAP., FXD, CER DI:0.47UF, 20%, 50V	72982	8131N075E474M
A3A8C1135	283-0024-00		CAP., FXD, CER DI:0.1UF, +80-20%, 50V	72982	8121N083Z5U0104Z
A3A8C1140	283-0107-00		CAP., FXD, CER DI:51PF, 5%, 200V	72982	8121B232COG0510J
A3A8C1210	283-0698-00		CAP., FXD, MICA D:390PF, 1%, 500V	09023	CD15ED391F03
A3A8C1230	283-0177-00		CAP., FXD, CER DI:1UF, +80-20%, 25V	56289	273C5
A3A8C1232	283-0177-00		CAP., FXD, CER DI:1UF, +80-20%, 25V	56289	273C5
A3A8C1240	283-0177-00		CAP., FXD, CER DI:1UF, +80-20%, 25V	56289	273C5
A3A8C1242	283-0186-00		CAP., FXD, CER DI:27PF, 5%, 50V	59660	811A058COG0270J
A3A8C1244	283-0186-00		CAP., FXD, CER DI:27PF, 5%, 50V	59660	811A058COG0270J
A3A8C1246	283-0032-00		CAP., FXD, CER DI:470PF, 5%, 500V	72982	0831085Z5E00471J
A3A8CR1012	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A3A8CR1020	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A3A8CR1030	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A3A8CR1031	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A3A8CR1040	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A3A8CR1120	152-0536-00		SEMICONV DEVICE:SILICON,HOT CARRIER,4V	80009	152-0536-00
A3A8CR1122	152-0536-00		SEMICONV DEVICE:SILICON,HOT CARRIER,4V	80009	152-0536-00
A3A8CR1130	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A3A8CR1132	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A3A8CR1133	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A3A8CR1134	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A3A8CR1212	152-0673-00		SEMICONV DEVICE:SILICON,VVC,480PF,18V	80009	152-0673-00
A3A8CR1214	152-0673-00		SEMICONV DEVICE:SILICON,VVC,480PF,18V	80009	152-0673-00
A3A8CR1230	152-0536-00		SEMICONV DEVICE:SILICON,HOT CARRIER,4V	80009	152-0536-00
A3A8CR1232	152-0536-00		SEMICONV DEVICE:SILICON,HOT CARRIER,4V	80009	152-0536-00
A3A8CR1240	152-0536-00		SEMICONV DEVICE:SILICON,HOT CARRIER,4V	80009	152-0536-00
A3A8CR1244	152-0536-00		SEMICONV DEVICE:SILICON,HOT CARRIER,4V	80009	152-0536-00
A3A8DS1131	150-1043-00		LT EMITTING DIO:RED,20MA,5V	58361	MV5774C
A3A8L1200	108-0800-00		COIL, RF:820MH	71279	550-3399-48
A3A8P1021	136-0263-04		SOCKET, PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 3)	22526	75377-001
A3A8P1106	136-0263-04		SOCKET, PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 6)	22526	75377-001
A3A8P1126	136-0263-04		SOCKET, PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 7)	22526	75377-001

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A3A8Q1042	151-0254-00		TRANSISTOR: SILICON, NPN	03508	X38L3118
A3A8Q1133	151-0435-00		TRANSISTOR: SILICON, PNP	04713	SPS8335
A3A8Q1220	151-0288-00		TRANSISTOR: SILICON, NPN	80009	151-0288-00
A3A8R1001	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A3A8R1002	315-0361-00		RES., FXD, CMPSN: 360 OHM, 5%, 0.25W	01121	CB3615
A3A8R1010	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A8R1012	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A8R1014	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A3A8R1020	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A8R1022	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A3A8R1024	315-0473-00		RES., FXD, CMPSN: 47K OHM, 5%, 0.25W	01121	CB4735
A3A8R1026	315-0185-00		RES., FXD, CMPSN: 1.8M OHM, 5%, 0.25W	01121	CB1855
A3A8R1030	315-0222-00		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
A3A8R1031	321-0222-00		RES., FXD, FILM: 2K OHM, 1%, 0.125W	91637	MFF1816G20000F
A3A8R1032	321-0222-00		RES., FXD, FILM: 2K OHM, 1%, 0.125W	91637	MFF1816G20000F
A3A8R1034	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A3A8R1040	315-0474-00		RES., FXD, CMPSN: 470K OHM, 5%, 0.25W	01121	CB4745
A3A8R1042	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A3A8R1043	315-0392-00		RES., FXD, CMPSN: 3.9K OHM, 5%, 0.25W	01121	CB3925
A3A8R1045	315-0271-00		RES., FXD, CMPSN: 270 OHM, 5%, 0.25W	01121	CB2715
A3A8R1100	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A8R1102	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A8R1104	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A8R1112	315-0182-00		RES., FXD, CMPSN: 1.8K OHM, 5%, 0.25W	01121	CB1825
A3A8R1120	315-0271-00		RES., FXD, CMPSN: 270 OHM, 5%, 0.25W	01121	CB2715
A3A8R1122	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A8R1132	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A3A8R1133	315-0104-00		RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A3A8R1134	315-0104-00		RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A3A8R1140	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A3A8R1141	315-0273-00		RES., FXD, CMPSN: 27K OHM, 5%, 0.25W	01121	CB2735
A3A8R1142	315-0105-00		RES., FXD, CMPSN: 1M OHM, 5%, 0.25W	01121	CB1055
A3A8R1144	321-0510-00		RES., FXD, FILM: 2M OHM, 1%, 0.125W	91637	HFF188G20003F
A3A8R1146	321-0510-00		RES., FXD, FILM: 2M OHM, 1%, 0.125W	91637	HFF188G20003F
A3A8R1200	321-0193-00		RES., FXD, FILM: 1K OHM, 1%, 0.125W	91637	MFF1816G10000F
A3A8R1202	315-0475-00		RES., FXD, CMPSN: 4.7M OHM, 5%, 0.25W	01121	CB4755
A3A8R1210	315-0104-00		RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A3A8R1212	315-0473-00		RES., FXD, CMPSN: 47K OHM, 5%, 0.25W	01121	CB4735
A3A8R1214	315-0104-00		RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A3A8R1220	311-1245-00		RES., VAR, NONWIR: 10K OHM, 10%, 0.50W	73138	72-28-0
A3A8R1230	315-0750-00		RES., FXD, CMPSN: 75 OHM, 5%, 0.25W	01121	CB7505
A3A8R1240	315-0510-00		RES., FXD, CMPSN: 51 OHM, 5%, 0.25W	01121	CB5105
A3A8R1242	321-0097-00		RES., FXD, FILM: 100 OHM, 1%, 0.125W	91637	MFF1816G100R0F
A3A8R1244	321-0097-00		RES., FXD, FILM: 100 OHM, 1%, 0.125W	91637	MFF1816G100R0F
A3A8T1230	120-1109-00		XFMR, RF: PULSE	80009	120-1109-00
A3A8T1232	120-1108-00		XFMR, RF: BALUN, TD-339	80009	120-1108-00
A3A8TP1010	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3A8TP1040	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A3A8U1024	156-0912-01		MICROCIRCUIT, LI: OPNL AMPL, SCREENED	02735	CA3080EX
A3A8U1100	156-0067-10		MICROCIRCUIT, LI: OPERATIONAL AMPLIFIER	80009	156-0067-10
A3A8U1110	156-1304-00		MICROCIRCUIT, INTFC: DUAL INLINE RCVR	80009	156-1304-00
A3A8U1112	156-0387-02		MICROCIRCUIT, DI: DUAL J-K FF, BURN IN	01295	SN74LS73
A3A8U1140	156-0512-02		MICROCIRCUIT, LI: OPERATIONAL AMPLIFIER, SEL	04713	LM308J-8DS
A3A8Y1200	158-0079-00		XTAL UNIT, QTZ: 1 MHZ, +/-0.001%	00136	OBD

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A4	-----		CKT BOARD ASSY:TIME MARK		
A4C1000	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1001	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1003	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1005	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1010	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1011	281-0140-00		CAP.,VAR,CER DI:5-25PF,100V	72982	518-002A5-25
A4C1020	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1021	281-0812-00		CAP.,FXD,CER DI:1000PF,10%,100V	72982	8035D9AADX7R102K
A4C1022	281-0759-00		CAP.,FXD,CER DI:22PF,10%,100V	72982	8035D9AADC1G220K
A4C1030	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1031	283-0177-00		CAP.,FXD,CER DI:1UF,+80-20%,25V	56289	273C5
A4C1100	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1101	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1110	281-0814-00		CAP.,FXD,CER DI:100PF,10%,100V	04222	GC70-1-A101K
A4C1111	281-0797-00		CAP.,FXD,CER DI:15PF,10%,100V	72982	8035D9AADCOG150K
A4C1120	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1121	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1122	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1130	281-0811-00		CAP.,FXD,CER DI:10PF,10%,100V	72982	8035D2AADC1G100K
A4C1210	281-0762-00		CAP.,FXD,CER DI:27PF,20%,100V	72982	8035D9AADCOG270M
A4C1211	290-0524-00		CAP.,FXD,ELCTLT:4.7UF,20%,10V	90201	TDC475M010EL
A4C1212	281-0762-00		CAP.,FXD,CER DI:27PF,20%,100V	72982	8035D9AADCOG270M
A4C1213	281-0788-00		CAP.,FXD,CER DI:470PF,10%,100V	72982	8005H9AADW5R471K
A4C1214	281-0813-00		CAP.,FXD,CER DI:0.047UF,20%,50V	04222	GC705-E-473M
A4C1220	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1230	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1231	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1300	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1310	283-0047-00		CAP.,FXD,CER DI:270PF,5%,500V	72982	0831522Z5D00271J
A4C1311	281-0762-00		CAP.,FXD,CER DI:27PF,20%,100V	72982	8035D9AADCOG270M
A4C1330	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1331	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1400	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1401	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1410	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1411	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1412	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1414	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1415	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1420	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1421	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1430	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1431	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1500	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1501	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1502	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1510	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	04222	GC705E104M
A4C1520	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1530	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1531	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1532	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1600	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1601	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1602	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	72982	8005H9AADW5R103K
A4C1610	290-0529-00		CAP.,FXD,ELCTLT:47UF,20%,20V	05397	T368C476M020AZ
A4C1620	281-0814-00		CAP.,FXD,CER DI:100PF,10%,100V	04222	GC70-1-A101K

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A4C1621	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A4C1622	281-0773-00		CAP., FXD, CER DI: 0.01UF, 10%, 100V	04222	GC70-1C103K
A4C1623	290-0529-00		CAP., FXD, ELCTLT: 47UF, 20%, 20V	05397	T368C476M020AZ
A4C1628	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A4C1629	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A4CR1010	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1011	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1012	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1020	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1021	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1031	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1102	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1103	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1110	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1111	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1112	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1121	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1122	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1200	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1210	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1211	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1212	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1217	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1220	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1221	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1223	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1224	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1230	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1231	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1310	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1311	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1312	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1313	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1320	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1330	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1331	152-0322-00		SEMICONV DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A4CR1410	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1411	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1610	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4CR1611	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A4DS1410	150-1043-00		LT EMITTING DIO: RED, 20MA, 5V	58361	MV5774C
A4F1630	159-0042-00		FUSE, CARTRIDGE: 3AG, 0.75A, 250V, FAST-BLOW	71400	AGC 3/4
A4F1631	159-0042-00		FUSE, CARTRIDGE: 3AG, 0.75A, 250V, FAST-BLOW	71400	AGC 3/4
A4J1220	131-1003-00		CONN, RCPT, ELEC: CKT BD MT, 3 PRONG	80009	131-1003-00
A4L1020	120-0285-00		XFMR, TOROID:	80009	120-0285-00
A4Q1010	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A4Q1011	151-0216-02		TRANSISTOR: PNP, SI PRESTRESSED & TESTED	80009	151-0216-02
A4Q1012	151-0324-00		TRANSISTOR: SILICON, PNP	04713	SJE915
A4Q1021	151-0450-01		TRANSISTOR: 2N5583 FAMILY, SCREENED	80009	151-0450-01
A4Q1023	151-0472-00		TRANSISTOR: SILICON, NPN	80009	151-0472-00
A4Q1024	151-0271-01		TRANSISTOR: SILICON, PNP, SCREENED	80009	151-0271-01
A4Q1025	151-0271-01		TRANSISTOR: SILICON, PNP, SCREENED	80009	151-0271-01
A4Q1030	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A4Q1031	151-0271-01		TRANSISTOR: SILICON, PNP, SCREENED	80009	151-0271-01
A4Q1032	151-0472-00		TRANSISTOR: SILICON, NPN	80009	151-0472-00
A4Q1035	151-0450-01		TRANSISTOR: 2N5583 FAMILY, SCREENED	80009	151-0450-01
A4Q1100	151-0271-01		TRANSISTOR: SILICON, PNP, SCREENED	80009	151-0271-01

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A4Q1110	151-0216-02		TRANSISTOR:PNP,SI PRESTRESSED & TESTED	80009	151-0216-02
A4Q1130	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A4Q1131	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A4Q1132	151-0367-00		TRANSISTOR:SILICON,NPN,SEL FROM 3571TP	01295	SKA6516
A4Q1133	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A4Q1134	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A4Q1135	151-0221-05		TRANSISTOR:SILICON,PNP,SCREENED	80009	151-0221-05
A4Q1200	151-0271-01		TRANSISTOR:SILICON,PNP,SCREENED	80009	151-0271-01
A4Q1201	151-0271-01		TRANSISTOR:SILICON,PNP,SCREENED	80009	151-0271-01
A4Q1202	151-0424-00		TRANSISTOR:SILICON,NPN	04713	SPS8246
A4Q1203	151-0424-00		TRANSISTOR:SILICON,NPN	04713	SPS8246
A4Q1204	151-0188-03		TRANSISTOR:SILICON,PNP,SEL	80009	151-0188-03
A4Q1210	151-0424-00		TRANSISTOR:SILICON,NPN	04713	SPS8246
A4Q1211	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A4Q1212	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A4Q1213	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A4Q1214	151-1042-00		SEMICON DVC SE:MATCHED PAIR FET	27014	SF50031
A4Q1215	151-1042-00		SEMICON DVC SE:MATCHED PAIR FET	27014	SF50031
A4Q1216	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A4Q1217	151-0424-00		TRANSISTOR:SILICON,NPN	04713	SPS8246
A4Q1220	151-0271-01		TRANSISTOR:SILICON,PNP,SCREENED	80009	151-0271-01
A4Q1221	151-0271-01		TRANSISTOR:SILICON,PNP,SCREENED	80009	151-0271-01
A4Q1310	151-0232-00		TRANSISTOR:SILICON,NPN,DUAL	80009	151-0232-00
A4Q1311	151-0261-00		TRANSISTOR:SILICON,PNP,DUAL	04713	SD441
A4Q1312	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A4Q1313	151-0221-05		TRANSISTOR:SILICON,PNP,SCREENED	80009	151-0221-05
A4Q1314	151-0424-00		TRANSISTOR:SILICON,NPN	04713	SPS8246
A4Q1315	151-0221-05		TRANSISTOR:SILICON,PNP,SCREENED	80009	151-0221-05
A4Q1330	151-0324-00		TRANSISTOR:SILICON,PNP	04713	SJE915
A4Q1331	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A4Q1332	151-0221-05		TRANSISTOR:SILICON,PNP,SCREENED	80009	151-0221-05
A4Q1333	151-0221-05		TRANSISTOR:SILICON,PNP,SCREENED	80009	151-0221-05
A4Q1410	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A4Q1530	151-0192-03		TRANSISTOR:SILICON,NPN	80009	151-0192-03
A4Q1600	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A4Q1601	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A4Q1620	151-0424-00		TRANSISTOR:SILICON,NPN	04713	SPS8246
A4R1002	315-0270-00		RES.,FXD,CMPSN:27 OHM,5%,0.25W	01121	CB2705
A4R1004	315-0270-00		RES.,FXD,CMPSN:27 OHM,5%,0.25W	01121	CB2705
A4R1006	307-0539-00		RES NTWK,THK FI:(7)510 OHM,10%,1W	01121	208A511
A4R1011	315-0471-00		RES.,FXD,CMPSN:470 OHM,5%,0.25W	01121	CB4715
A4R1012	315-0131-00		RES.,FXD,CMPSN:130 OHM,5%,0.25W	01121	CB1315
A4R1013	315-0240-00		RES.,FXD,CMPSN:24 OHM,5%,0.25W	01121	CB2405
A4R1014	315-0131-00		RES.,FXD,CMPSN:130 OHM,5%,0.25W	01121	CB1315
A4R1015	315-0820-00		RES.,FXD,CMPSN:82 OHM,5%,0.25W	01121	CB8205
A4R1016	315-0820-00		RES.,FXD,CMPSN:82 OHM,5%,0.25W	01121	CB8205
A4R1020	315-0180-00		RES.,FXD,CMPSN:18 OHM,5%,0.25W	01121	CB1805
A4R1021	315-0510-00		RES.,FXD,CMPSN:51 OHM,5%,0.25W	01121	CB5105
A4R1022	315-0180-00		RES.,FXD,CMPSN:18 OHM,5%,0.25W	01121	CB1805
A4R1025	315-0201-00		RES.,FXD,CMPSN:200 OHM,5%,0.25W	01121	CB2015
A4R1026	315-0201-00		RES.,FXD,CMPSN:200 OHM,5%,0.25W	01121	CB2015
A4R1030	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A4R1031	315-0330-00		RES.,FXD,CMPSN:33 OHM,5%,0.25W	01121	CB3305
A4R1032	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A4R1033	315-0330-00		RES.,FXD,CMPSN:33 OHM,5%,0.25W	01121	CB3305
A4R1034	315-0220-00		RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
A4R1035	315-0511-00		RES.,FXD,CMPSN:510 OHM,5%,0.25W	01121	CB5115

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Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A4R1036	315-0511-00		RES.,FXD,CMPSN:510 OHM,5%,0.25W	01121	CB5115
A4R1037	308-0387-00		RES.,FXD,WW:178 OHM,1%,3W	91637	RS2B-B178ROF
A4R1038	315-0331-00		RES.,FXD,CMPSN:330 OHM,5%,0.25W	01121	CB3315
A4R1039	315-0103-00		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
A4R1101	307-0526-00		RES NTWK,THK FI:5,510 OHM,10%,0.125W	32997	4306R-101-511J
A4R1110	315-0202-00		RES.,FXD,CMPSN:2K OHM,5%,0.25W	01121	CB2025
A4R1111	307-0526-00		RES NTWK,THK FI:5,510 OHM,10%,0.125W	32997	4306R-101-511J
A4R1120	315-0243-00		RES.,FXD,CMPSN:24K OHM,5%,0.25W	01121	CB2435
A4R1121	315-0243-00		RES.,FXD,CMPSN:24K OHM,5%,0.25W	01121	CB2435
A4R1122	315-0511-00		RES.,FXD,CMPSN:510 OHM,5%,0.25W	01121	CB5115
A4R1123	315-0511-00		RES.,FXD,CMPSN:510 OHM,5%,0.25W	01121	CB5115
A4R1124	315-0220-00		RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
A4R1130	315-0182-00		RES.,FXD,CMPSN:1.8K OHM,5%,0.25W	01121	CB1825
A4R1131	315-0181-00		RES.,FXD,CMPSN:180 OHM,5%,0.25W	01121	CB1815
A4R1132	315-0473-00		RES.,FXD,CMPSN:47K OHM,5%,0.25W	01121	CB4735
A4R1133	315-0223-00		RES.,FXD,CMPSN:22K OHM,5%,0.25W	01121	CB2235
A4R1134	315-0473-00		RES.,FXD,CMPSN:47K OHM,5%,0.25W	01121	CB4735
A4R1137	315-0101-00		RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
A4R1138	315-0681-00		RES.,FXD,CMPSN:680 OHM,5%,0.25W	01121	CB6815
A4R1139	315-0431-00		RES.,FXD,CMPSN:430 OHM,5%,0.25W	01121	CB4315
A4R1200	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A4R1201	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A4R1202	315-0750-00		RES.,FXD,CMPSN:75 OHM,5%,0.25W	01121	CB7505
A4R1203	315-0750-00		RES.,FXD,CMPSN:75 OHM,5%,0.25W	01121	CB7505
A4R1204	315-0561-00		RES.,FXD,CMPSN:560 OHM,5%,0.25W	01121	CB5615
A4R1205	315-0751-00		RES.,FXD,CMPSN:750 OHM,5%,0.25W	01121	CB7515
A4R1206	321-0193-00		RES.,FXD,FILM:1K OHM,1%,0.125W	91637	MFF1816G10000F
A4R1207	321-0193-00		RES.,FXD,FILM:1K OHM,1%,0.125W	91637	MFF1816G10000F
A4R1208	315-0302-00		RES.,FXD,CMPSN:3K OHM,5%,0.25W	01121	CB3025
A4R1209	315-0111-00		RES.,FXD,CMPSN:110 OHM,5%,0.25W	01121	CB1115
A4R1210	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A4R1211	315-0752-00		RES.,FXD,CMPSN:7.5K OHM,5%,0.25W	01121	CB7525
A4R1212	315-0432-00		RES.,FXD,CMPSN:4.3K OHM,5%,0.25W	01121	CB4325
A4R1213	315-0432-00		RES.,FXD,CMPSN:4.3K OHM,5%,0.25W	01121	CB4325
A4R1214	315-0473-00		RES.,FXD,CMPSN:47K OHM,5%,0.25W	01121	CB4735
A4R1215	315-0332-00		RES.,FXD,CMPSN:3.3K OHM,5%,0.25W	01121	CB3325
A4R1216	315-0332-00		RES.,FXD,CMPSN:3.3K OHM,5%,0.25W	01121	CB3325
A4R1217	315-0242-00		RES.,FXD,CMPSN:2.4K OHM,5%,0.25W	01121	CB2425
A4R1218	315-0471-00		RES.,FXD,CMPSN:470 OHM,5%,0.25W	01121	CB4715
A4R1219	315-0271-00		RES.,FXD,CMPSN:270 OHM,5%,0.25W	01121	CB2715
A4R1220	315-0430-00		RES.,FXD,CMPSN:43 OHM,5%,0.25W	01121	CB4305
A4R1221	315-0222-00		RES.,FXD,CMPSN:2.2K OHM,5%,0.25W	01121	CB2225
A4R1222	315-0222-00		RES.,FXD,CMPSN:2.2K OHM,5%,0.25W	01121	CB2225
A4R1223	315-0222-00		RES.,FXD,CMPSN:2.2K OHM,5%,0.25W	01121	CB2225
A4R1224	315-0510-00		RES.,FXD,CMPSN:51 OHM,5%,0.25W	01121	CB5105
A4R1225	315-0510-00		RES.,FXD,CMPSN:51 OHM,5%,0.25W	01121	CB5105
A4R1226	315-0511-00		RES.,FXD,CMPSN:510 OHM,5%,0.25W	01121	CB5115
A4R1227	315-0911-00		RES.,FXD,CMPSN:910 OHM,5%,0.25W	01121	CB9115
A4R1228	315-0911-00		RES.,FXD,CMPSN:910 OHM,5%,0.25W	01121	CB9115
A4R1230	315-0272-00		RES.,FXD,CMPSN:2.7K OHM,5%,0.25W	01121	CB2725
A4R1231	315-0682-00		RES.,FXD,CMPSN:6.8K OHM,5%,0.25W	01121	CB6825
A4R1232	315-0510-00		RES.,FXD,CMPSN:51 OHM,5%,0.25W	01121	CB5105
A4R1233	315-0471-00		RES.,FXD,CMPSN:470 OHM,5%,0.25W	01121	CB4715
A4R1234	315-0223-00		RES.,FXD,CMPSN:22K OHM,5%,0.25W	01121	CB2235
A4R1235	315-0473-00		RES.,FXD,CMPSN:47K OHM,5%,0.25W	01121	CB4735
A4R1236	315-0511-00		RES.,FXD,CMPSN:510 OHM,5%,0.25W	01121	CB5115
A4R1237	315-0471-00		RES.,FXD,CMPSN:470 OHM,5%,0.25W	01121	CB4715

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A4R1238	315-0302-00		RES., FXD, CMPSN: 3K OHM, 5%, 0.25W	01121	CB3025
A4R1300	315-0391-00		RES., FXD, CMPSN: 390 OHM, 5%, 0.25W	01121	CB3915
A4R1301	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A4R1302	315-0272-00		RES., FXD, CMPSN: 2.7K OHM, 5%, 0.25W	01121	CB2725
A4R1303	315-0562-00		RES., FXD, CMPSN: 5.6K OHM, 5%, 0.25W	01121	CB5625
A4R1304	315-0123-00		RES., FXD, CMPSN: 12K OHM, 5%, 0.25W	01121	CB1235
A4R1305	315-0303-00		RES., FXD, CMPSN: 30K OHM, 5%, 0.25W	01121	CB3035
A4R1306	321-0193-00		RES., FXD, FILM: 1K OHM, 1%, 0.125W	91637	MFF1816G10000F
A4R1307	321-0193-00		RES., FXD, FILM: 1K OHM, 1%, 0.125W	91637	MFF1816G10000F
A4R1308	321-0126-00		RES., FXD, FILM: 200 OHM, 1%, 0.125W	91637	MFF1816G200ROF
A4R1309	321-0126-00		RES., FXD, FILM: 200 OHM, 1%, 0.125W	91637	MFF1816G200ROF
A4R1310	315-0152-00		RES., FXD, CMPSN: 1.5K OHM, 5%, 0.25W	01121	CB1525
A4R1311	315-0332-00		RES., FXD, CMPSN: 3.3K OHM, 5%, 0.25W	01121	CB3325
A4R1312	315-0122-00		RES., FXD, CMPSN: 1.2K OHM, 5%, 0.25W	01121	CB1225
A4R1313	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A4R1320	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A4R1330	307-0111-00		RES., FXD, CMPSN: 3.6 OHM, 5%, 0.25W	01121	CB36G5
A4R1331	315-0361-00		RES., FXD, CMPSN: 360 OHM, 5%, 0.25W	01121	CB3615
A4R1332	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A4R1333	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A4R1334	321-0150-00		RES., FXD, FILM: 357 OHM, 1%, 0.125W	91637	MFF1816G357ROF
A4R1335	321-0287-00		RES., FXD, FILM: 9.53K OHM, 1%, 0.125W	91637	MFF1816G95300F
A4R1400	311-1238-00		RES., VAR, NONWIR: 5K OHM, 10%, 0.50W	73138	72-27-0
A4R1401	315-0202-00		RES., FXD, CMPSN: 2K OHM, 5%, 0.25W	01121	CB2025
A4R1402	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A4R1403	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A4R1404	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A4R1410	315-0241-00		RES., FXD, CMPSN: 240 OHM, 5%, 0.25W	01121	CB2415
A4R1411	315-0302-00		RES., FXD, CMPSN: 3K OHM, 5%, 0.25W	01121	CB3025
A4R1412	315-0183-00		RES., FXD, CMPSN: 18K OHM, 5%, 0.25W	01121	CB1835
A4R1413	315-0473-00		RES., FXD, CMPSN: 47K OHM, 5%, 0.25W	01121	CB4735
A4R1414	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A4R1415	315-0184-00		RES., FXD, CMPSN: 180K OHM, 5%, 0.25W	01121	CB1845
A4R1430	315-0202-00		RES., FXD, CMPSN: 2K OHM, 5%, 0.25W	01121	CB2025
A4R1431	315-0473-00		RES., FXD, CMPSN: 47K OHM, 5%, 0.25W	01121	CB4735
A4R1432	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A4R1510	315-0332-00		RES., FXD, CMPSN: 3.3K OHM, 5%, 0.25W	01121	CB3325
A4R1511	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A4R1530	315-0473-00		RES., FXD, CMPSN: 47K OHM, 5%, 0.25W	01121	CB4735
A4R1531	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A4R1601	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A4R1610	315-0332-00		RES., FXD, CMPSN: 3.3K OHM, 5%, 0.25W	01121	CB3325
A4R1611	315-0822-00		RES., FXD, CMPSN: 8.2K OHM, 5%, 0.25W	01121	CB8225
A4R1620	315-0331-00		RES., FXD, CMPSN: 330 OHM, 5%, 0.25W	01121	CB3315
A4R1621	315-0151-00		RES., FXD, CMPSN: 150 OHM, 5%, 0.25W	01121	CB1515
A4R1622	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A4R1623	321-0331-00		RES., FXD, FILM: 27.4K OHM, 1%, 0.125W	91637	MFF1816G27401F
A4R1624	321-0371-00		RES., FXD, FILM: 71.5K OHM, 1%, 0.125W	91637	MFF1816G71501F
A4R1625	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A4R1626	307-0659-00		RES., FXD, FILM: 2.2 OHM, 5%, 0.25W	19701	5043CX2R200J
A4R1627	307-0093-00		RES., FXD, CMPSN: 1.2 OHM, 5%, 0.50W	01121	EB12G5
A4TP1010	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A4TP1020	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A4TP1200	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A4TP1400	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A4TP1401	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A4TP1410	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A4TP1501	214-0579-00		TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4TP1620	214-0579-00		TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4TP1630	214-0579-00		TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A4U1001	156-0369-03		MICROCIRCUIT,DI:TRIPLE LINE RECEIVER,SCRN	80009	156-0369-03
A4U1010	156-0282-00		MICROCIRCUIT,DI:DUAL 4-INPUT OR NOR GATE	80009	156-0282-00
A4U1101	156-0642-01		MICROCIRCUIT,DI:BI QUINARY CNTR,SCRN	80009	156-0642-01
A4U1102	156-0870-01		MICROCIRCUIT,DI:BCD DECADE CNTR,SCRN	07263	SL81658
A4U1110	156-0205-02		MICROCIRCUIT,DI:QUAD 2-INP NOR GATE,SCRN	80009	156-0205-02
A4U1111	156-0205-02		MICROCIRCUIT,DI:QUAD 2-INP NOR GATE,SCRN	80009	156-0205-02
A4U1120	156-0480-02		MICROCIRCUIT,DI:QUAD 2 INP & GATE	01295	SN74LS08NP3
A4U1220	156-0384-02		MICROCIRCUIT,DI:QUAD 2-INP NAND GATE	01295	SN74LS03
A4U1230	156-0788-01		MICROCIRCUIT,DI:SYN 4-BIT CNTR,W/SYN CLEAR	01295	SN74LS162
A4U1231	156-0788-01		MICROCIRCUIT,DI:SYN 4-BIT CNTR,W/SYN CLEAR	01295	SN74LS162
A4U1232	156-1149-01		MICROCIRCUIT,LI:OPER AMPL,JFET,BURN-IN	27014	LF351N/A+
A4U1300	156-1149-01		MICROCIRCUIT,LI:OPER AMPL,JFET,BURN-IN	27014	LF351N/A+
A4U1320	156-0796-01		MICROCIRCUIT,DI:8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A4U1321	156-0875-02		MICROCIRCUIT,DI:DUAL 2-W/2 INP AOI GATES	01295	SN74LS51
A4U1330	156-0182-02		MICROCIRCUIT,DI:TRIPLE 2-3-2 INPUT GATE	80009	156-0182-02
A4U1400	156-0382-02		MICROCIRCUIT,DI:QUAD 2-INP NAND GATE	01295	SN74LS00
A4U1410	156-1235-00		MICROCIRCUIT,DI:BCD TO DECIMAL DECODER/DR	80009	156-1235-00
A4U1411	156-1304-00		MICROCIRCUIT,INTFC:DUAL INLINE RCVR,SCRN	80009	156-1304-00
A4U1420	156-0796-01		MICROCIRCUIT,DI:8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A4U1421	156-0796-01		MICROCIRCUIT,DI:8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A4U1422	156-0388-03		MICROCIRCUIT,DI:DUAL D FLIP-FLOP	07263	74LS74A
A4U1430	156-0452-02		MICROCIRCUIT,DI:4-WIDE,2-INP AOI,SCREENED	07263	74LS54
A4U1431	156-0382-02		MICROCIRCUIT,DI:QUAD 2-INP NAND GATE	01295	SN74LS00
A4U1510	156-1324-00		MICROCIRCUIT,LI:COMPARATOR	27014	LM361N/A+
A4U1520	156-0796-01		MICROCIRCUIT,DI:8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A4U1521	156-0410-00		MICROCIRCUIT,DI:COUNTER TIME BASE	50088	MK5009P
A4U1530	156-0656-02		MICROCIRCUIT,DI:DECADE COUNTER,BURN-IN	01295	SN74LS90
A4U1531	156-0910-02		MICROCIRCUIT,DI:DUAL DECADE COUNTER	01295	SN74LS390
A4U1610	156-1308-01		MICROCIRCUIT,LI:VOLTAGE REGULATOR DUAL TRIG	80009	156-1308-01
A4U1630	156-0382-02		MICROCIRCUIT,DI:QUAD 2-INP NAND GATE	01295	SN74LS00
A4VR1031	152-0647-00		SEMICONV DEVICE:ZENER,0.4W,6.8V,5%	80009	152-0647-00
A4VR1630	152-0733-00		SEMICONV DVC,DI:ZEN,SI,15V,5%,5W	80009	152-0733-00
A4VR1631	152-0733-00		SEMICONV DVC,DI:ZEN,SI,15V,5%,5W	80009	152-0733-00
A4W1510	175-2829-00		CA ASSY,SP,ELEC:2,26 AWG,5.5 L	80009	175-2829-00
A4W1520	-----		(PART OF A4W1510)		
A4W1601	131-0566-00		BUS CONDUCTOR:DUMMY RES,2.375,22 AWG	55210	L-2007-1
A4W1602	131-0566-00		BUS CONDUCTOR:DUMMY RES,2.375,22 AWG	55210	L-2007-1
A4W1620	131-0566-00		BUS CONDUCTOR:DUMMY RES,2.375,22 AWG	55210	L-2007-1
A4W1630	131-0566-00		BUS CONDUCTOR:DUMMY RES,2.375,22 AWG	55210	L-2007-1
A4W1632	131-0566-00		BUS CONDUCTOR:DUMMY RES,2.375,22 AWG	55210	L-2007-1
A4Y1501	119-1187-00		OSCILLATOR,RF:XTAL CONTROLLED,5MHZ	75378	970-3770-0
	-----		(OPTION 01 ONLY)		

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A5	-----		CKT BOARD ASSY:PS MAIN		
A5C1001	290-0574-00		CAP.,FXD,ELCTLT:47UF,10%,20V	90201	TDC476K020CL
A5C1002	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	04222	GC70-1C103K
A5C1003	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5C1011	290-0136-00		CAP.,FXD,ELCTLT:2.2UF,20%,20V	56289	162D225X0020CD2
A5C1021	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5C1031	281-0812-00		CAP.,FXD,CER DI:1000PF,10%,100V	72982	8035D9AADX7R102K
A5C1041	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5C1101	281-0812-00		CAP.,FXD,CER DI:1000PF,10%,100V	72982	8035D9AADX7R102K
A5C1111	283-0210-00		CAP.,FXD,CER DI:0.0056UF,20%,50V	72982	8131N145W5R562M
A5C1131	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5C1141	290-0261-00		CAP.,FXD,ELCTLT:6.8UF,10%,35V	12954	D6R8B35K1
A5C1702	290-0273-00		CAP.,FXD,ELCTLT:68UF,10%,60V	56289	109D686X9060T2
A5C1704	290-0273-00		CAP.,FXD,ELCTLT:68UF,10%,60V	56289	109D686X9060T2
A5C1740	290-0513-00		CAP.,FXD,ELCTLT:510UF,+75-10%,25V	56289	109D575
A5C1742	290-0513-00		CAP.,FXD,ELCTLT:510UF,+75-10%,25V	56289	109D575
A5C1822	283-0211-00		CAP.,FXD,CER DI:0.1UF,10%,200V	72982	8141N210X7R0104K
A5C1830	283-0211-00		CAP.,FXD,CER DI:0.1UF,10%,200V	72982	8141N210X7R0104K
A5CR1041	152-0414-00		SEMICONV DEVICE:SILICON,200V,0.75A	12969	UTR308
A5CR1102	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A5CR1722	152-0586-00		SEMICONV DEVICE:SILICON,600V,500MA	14936	RGPI0J
A5CR1730	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A5CR1734	152-0586-00		SEMICONV DEVICE:SILICON,600V,500MA	14936	RGPI0J
A5CR1812	152-0586-00		SEMICONV DEVICE:SILICON,600V,500MA	14936	RGPI0J
A5CR1814	152-0586-00		SEMICONV DEVICE:SILICON,600V,500MA	14936	RGPI0J
A5F1041	159-0015-00		FUSE,CARTRIDGE:3AG,3A,250V,FAST-BLOW	71400	AGC 3
A5F1141	159-0016-00		FUSE,CARTRIDGE:3AG,1.5A,250V,FAST-BLOW	71400	AGC 1 1/2
A5J1021	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN	22526	75377-001
A5J1031	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN	22526	75377-001
A5J1032	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN	22526	75377-001
A5J1033	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN	22526	75377-001
A5J1034	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN	22526	75377-001
A5J1035	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN	22526	75377-001
A5J1036	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN	22526	75377-001
A5J1041	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN	22526	75377-001
A5J1043	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN	22526	75377-001
A5J1101	136-0608-00		SKT,PL-IN ELEK:ELECTRON TUBE,14 CONT	80009	136-0608-00
	-----		(QUANTITY 3)		
A5J1121	131-0608-00		TERMINAL,PIN:0.365 L X 0.025 PH BRZ GOLD	22526	47357
	-----		(QUANTITY 4)		
A5J1712	131-0608-00		TERMINAL,PIN:0.365 L X 0.025 PH BRZ GOLD	22526	47357
	-----		(QUANTITY 5)		
A5J1824	131-0608-00		TERMINAL,PIN:0.365 L X 0.025 PH BRZ GOLD	22526	47357
	-----		(QUANTITY 4)		
A5Q1011	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A5Q1021	151-0311-01		TRANSISTOR:SILICON,NPN	04713	SJE908
A5Q1031	151-0311-01		TRANSISTOR:SILICON,NPN	04713	SJE908
A5Q1041	151-0521-00		TRANSISTOR:200V,8.0A	03508	C122B
A5Q1111	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A5Q1712	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A5Q1714	151-0443-00		TRANSISTOR:SILICON,PNP	80009	151-0443-00
A5Q1720	151-0444-03		TRANSISTOR:SILICON,NPN	80009	151-0444-03
A5Q1722	151-0443-00		TRANSISTOR:SILICON,PNP	80009	151-0443-00
A5Q1730	151-0444-03		TRANSISTOR:SILICON,NPN	80009	151-0444-03
A5Q1732	151-0188-03		TRANSISTOR:SILICON,PNP,SEL	80009	151-0188-03
A5Q1830	151-0444-03		TRANSISTOR:SILICON,NPN	80009	151-0444-03
A5R1001	315-0751-00		RES.,FXD,CMPSN:750 OHM,5%,0.25W	01121	CB7515

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A5R1002	315-0222-00		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
A5R1003	315-0302-00		RES., FXD, CMPSN: 3K OHM, 5%, 0.25W	01121	CB3025
A5R1004	311-1248-00		RES., VAR, NONWIR: 500 OHM, 10%, 0.50W	73138	72-23-0
A5R1005	315-0822-00		RES., FXD, CMPSN: 8.2K OHM, 5%, 0.25W	01121	CB8225
A5R1011	315-0152-00		RES., FXD, CMPSN: 1.5K OHM, 5%, 0.25W	01121	CB1525
A5R1012	315-0511-00		RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A5R1021	315-0510-00		RES., FXD, CMPSN: 51 OHM, 5%, 0.25W	01121	CB5105
A5R1022	308-0742-00		RES., FXD, WW: 0.24 OHM, 5%, 2W	75042	BWH-R2400J
A5R1031	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A5R1032	315-0512-00		RES., FXD, CMPSN: 5.1K OHM, 5%, 0.25W	01121	CB5125
A5R1041	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A5R1042	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A5R1101	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A5R1102	315-0203-00		RES., FXD, CMPSN: 20K OHM, 5%, 0.25W	01121	CB2035
A5R1103	315-0752-00		RES., FXD, CMPSN: 7.5K OHM, 5%, 0.25W	01121	CB7525
A5R1104	311-1918-00		RES., VAR, NONWIR: 2K OHM, 10%, 0.50W	73138	72-199-0
A5R1105	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A5R1106	311-1918-00		RES., VAR, NONWIR: 2K OHM, 10%, 0.50W	73138	72-199-0
A5R1107	315-0203-00		RES., FXD, CMPSN: 20K OHM, 5%, 0.25W	01121	CB2035
A5R1111	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A5R1112	315-0682-00		RES., FXD, CMPSN: 6.8K OHM, 5%, 0.25W	01121	CB6825
A5R1113	308-0703-00		RES., FXD, WW: 1.8 OHM, 5%, 2W	75042	BWH-1R800J
A5R1121	308-0677-00	B010100 B010153	RES., FXD, WW: 1 OHM, 5%, 2W (STANDARD ONLY)	75042	BWH-1R000J
A5R1121	308-0755-00	B010154	RES., FXD, WW: 0.75 OHM, 5%, 2W (STANDARD ONLY)	75042	BWH-R7500J
A5R1121	308-0677-00	B010100 B020193	RES., FXD, WW: 1 OHM, 5%, 2W (OPTION 01 ONLY)	75042	BWH-1R000J
A5R1121	308-0755-00	B020194	RES., FXD, WW: 0.75 OHM, 5%, 2W (OPTION 01 ONLY)	75042	BWH-R7500J
A5R1131	315-0123-00		RES., FXD, CMPSN: 12K OHM, 5%, 0.25W	01121	CB1235
A5R1132	315-0682-00		RES., FXD, CMPSN: 6.8K OHM, 5%, 0.25W	01121	CB6825
A5R1133	315-0682-00		RES., FXD, CMPSN: 6.8K OHM, 5%, 0.25W	01121	CB6825
A5R1134	315-0512-00		RES., FXD, CMPSN: 5.1K OHM, 5%, 0.25W	01121	CB5125
A5R1135	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A5R1136	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A5R1141	301-0152-00		RES., FXD, CMPSN: 1.5K OHM, 5%, 0.50W	01121	EB1525
A5R1712	315-0153-00		RES., FXD, CMPSN: 15K OHM, 5%, 0.25W	01121	CB1535
A5R1714	315-0432-00		RES., FXD, CMPSN: 4.3K OHM, 5%, 0.25W	01121	CB4325
A5R1716	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A5R1720	315-0124-00		RES., FXD, CMPSN: 120K OHM, 5%, 0.25W	01121	CB1245
A5R1722	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A5R1730	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A5R1830	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A5TP1101	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A5TP1102	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A5TP1103	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A5TP1104	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A5TP1702	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A5TP1802	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A5U1011	156-0071-02		MICROCIRCUIT, LI: VOLTAGE REGULATOR	04713	MC1723CLDS
A5U1111	156-0067-10		MICROCIRCUIT, LI: OPERATIONAL AMPLIFIER	80009	156-0067-10
A5U1112	156-0109-01		MICROCIRCUIT, LI: OPTOELECTRONIC ISOLATOR	80009	156-0109-01
A5U1113	156-0071-02		MICROCIRCUIT, LI: VOLTAGE REGULATOR	04713	MC1723CLDS
A5U1121	156-0071-02		MICROCIRCUIT, LI: VOLTAGE REGULATOR	04713	MC1723CLDS
A5VR1041	152-0175-00		SEMICONV DEVICE: ZENER, 0.4W, 5.6V, 5%	04713	SZG35008
A5VR1042	152-0265-00		SEMICONV DEVICE: ZENER, 0.4W, 24V, 5%	04713	SZG35009K8
A5VR1043	152-0265-00		SEMICONV DEVICE: ZENER, 0.4W, 24V, 5%	04713	SZG35009K8
A5VR1101	152-0464-00		SEMICONV DEVICE: ZENER, 0.4W, 6.4V, 5%	80009	152-0464-00
A5VR1141	152-0243-00		SEMICONV DEVICE: ZENER, 0.4W, 15V, 5%	14552	TD3810983

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A5A1	-----		KCT BOARD ASSY:PS ISOLATOR		
A5A1C1000	281-0814-00	B010100 B010153	CAP. ,FXD,CER DI:100PF,10%,100V (STANDARD ONLY)	04222	GC70-1-A101K
A5A1C1000	281-0785-00	B010154	CAP. ,FXD,CER DI:68PF,10%,100V (STANDARD ONLY)	72982	8035D2AADCOG680K
A5A1C1000	281-0814-00	B010100 B020193	CAP. ,FXD,CER DI:100PF,10%,100V (OPTION 01 ONLY)	04222	GC70-1-A101K
A5A1C1000	281-0785-00	B020194	CAP. ,FXD,CER DI:68PF,10%,100V (OPTION 01 ONLY)	72982	8035D2AADCOG680K
A5A1C1020	281-0814-00		CAP. ,FXD,CER DI:100PF,10%,100V	04222	GC70-1-A101K
A5A1C1021	281-0775-00		CAP. ,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5A1C1100	281-0775-00		CAP. ,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5A1C1101	290-0517-00		CAP. ,FXD,ELCTLT:6.8UF,20%,35V	56289	196D685X0035KA1
A5A1C1110	281-0775-00		CAP. ,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5A1C1111	290-0517-00		CAP. ,FXD,ELCTLT:6.8UF,20%,35V	56289	196D685X0035KA1
A5A1C1112	281-0763-00		CAP. ,FXD,CER DI:47PF,10%,100V	72982	8035D9AADCG470K
A5A1C1113	281-0763-00		CAP. ,FXD,CER DI:47PF,10%,100V	72982	8035D9AADCG470K
A5A1C1114	281-0814-00		CAP. ,FXD,CER DI:100PF,10%,100V	04222	GC70-1-A101K
A5A1C1120	281-0775-00		CAP. ,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5A1C1121	290-0745-00		CAP. ,FXD,ELCTLT:22UF,+50-10%,25V	56289	502D225
A5A1C1122	281-0763-00		CAP. ,FXD,CER DI:47PF,10%,100V	72982	8035D9AADCG470K
A5A1C1123	281-0763-00		CAP. ,FXD,CER DI:47PF,10%,100V	72982	8035D9AADCG470K
A5A1C1131	290-0517-00		CAP. ,FXD,ELCTLT:6.8UF,20%,35V	56289	196D685X0035KA1
A5A1C1132	281-0775-00		CAP. ,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5A1C1300	283-0211-00		CAP. ,FXD,CER DI:0.1UF,10%,200V	72982	8141N210X7R0104K
A5A1C1301	283-0211-00		CAP. ,FXD,CER DI:0.1UF,10%,200V	72982	8141N210X7R0104K
A5A1C1310	283-0211-00		CAP. ,FXD,CER DI:0.1UF,10%,200V	72982	8141N210X7R0104K
A5A1C1311	283-0211-00		CAP. ,FXD,CER DI:0.1UF,10%,200V	72982	8141N210X7R0104K
A5A1C1312	281-0775-00		CAP. ,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5A1C1313	281-0775-00		CAP. ,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5A1C1320	281-0775-00		CAP. ,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5A1C1321	281-0775-00		CAP. ,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A5A1C1330	290-0261-00		CAP. ,FXD,ELCTLT:6.8UF,10%,35V	12954	D6R8B35K1
A5A1C1331	290-0261-00		CAP. ,FXD,ELCTLT:6.8UF,10%,35V	12954	D6R8B35K1
A5A1C1332	290-0261-00		CAP. ,FXD,ELCTLT:6.8UF,10%,35V	12954	D6R8B35K1
A5A1C1333	290-0261-00		CAP. ,FXD,ELCTLT:6.8UF,10%,35V	12954	D6R8B35K1
A5A1C1420	290-0745-00		CAP. ,FXD,ELCTLT:22UF,+50-10%,25V	56289	502D225
A5A1C1421	290-0745-00		CAP. ,FXD,ELCTLT:22UF,+50-10%,25V	56289	502D225
A5A1CR1020	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A5A1CR1200	152-0398-00		SEMICONV DEVICE:SILICON,200V,1A	04713	SR3609RL
A5A1CR1201	152-0398-00		SEMICONV DEVICE:SILICON,200V,1A	04713	SR3609RL
A5A1CR1202	152-0398-00		SEMICONV DEVICE:SILICON,200V,1A	04713	SR3609RL
A5A1CR1203	152-0398-00		SEMICONV DEVICE:SILICON,200V,1A	04713	SR3609RL
A5A1CR1220	152-0574-00		SEMICONV DEVICE:SILICON,120V,0.15A	80009	152-0574-00
A5A1CR1221	152-0574-00		SEMICONV DEVICE:SILICON,120V,0.15A	80009	152-0574-00
A5A1CR1222	152-0333-00		SEMICONV DEVICE:SILICON,55V,200MA	07263	FDH-6012
A5A1CR1223	152-0333-00		SEMICONV DEVICE:SILICON,55V,200MA	07263	FDH-6012
A5A1CR1230	152-0574-00		SEMICONV DEVICE:SILICON,120V,0.15A	80009	152-0574-00
A5A1CR1231	152-0574-00		SEMICONV DEVICE:SILICON,120V,0.15A	80009	152-0574-00
A5A1CR1232	152-0333-00		SEMICONV DEVICE:SILICON,55V,200MA	07263	FDH-6012
A5A1CR1233	152-0333-00		SEMICONV DEVICE:SILICON,55V,200MA	07263	FDH-6012
A5A1CR1300	152-0398-00		SEMICONV DEVICE:SILICON,200V,1A	04713	SR3609RL
A5A1CR1301	152-0398-00		SEMICONV DEVICE:SILICON,200V,1A	04713	SR3609RL
A5A1CR1302	152-0398-00		SEMICONV DEVICE:SILICON,200V,1A	04713	SR3609RL
A5A1CR1303	152-0398-00		SEMICONV DEVICE:SILICON,200V,1A	04713	SR3609RL
A5A1L1100	108-0237-00		COIL,RF:80UH	80009	108-0237-00
A5A1L1130	108-0422-00		COIL,RF:FIXED,82UH	80009	108-0422-00
A5A1L1300	108-0226-00		COIL,RF:100UH	76493	DWG B4257
A5A1L1301	108-0226-00		COIL,RF:100UH	76493	DWG B4257

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		Eff	Dscont		Code	Mfr Part Number
A5A1L1302	108-0226-00			COIL, RF: 100UH	76493	DWG B4257
A5A1L1310	108-0226-00			COIL, RF: 100UH	76493	DWG B4257
A5A1L1311	108-0237-00			COIL, RF: 80UH	80009	108-0237-00
A5A1L1312	108-0422-00			COIL, RF: FIXED, 82UH	80009	108-0422-00
A5A1L1320	108-0422-00			COIL, RF: FIXED, 82UH	80009	108-0422-00
A5A1L1321	108-0237-00			COIL, RF: 80UH	80009	108-0237-00
A5A1Q1020	151-0190-05			TRANSISTOR: SILICON, NPN	80009	151-0190-05
A5A1Q1110	151-1119-00			TRANSISTOR: SILICON, FE, N-CHAN	32293	ITS4000
A5A1Q1120	151-1119-00			TRANSISTOR: SILICON, FE, N-CHAN	32293	ITS4000
A5A1Q1210	151-1119-00			TRANSISTOR: SILICON, FE, N-CHAN	32293	ITS4000
A5A1Q1220	151-1119-00			TRANSISTOR: SILICON, FE, N-CHAN	32293	ITS4000
A5A1R1020	315-0103-00			RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A5A1R1030	315-0511-00			RES., FXD, CMPSN: 510 OHM, 5%, 0.25W	01121	CB5115
A5A1R1100	315-0333-00			RES., FXD, CMPSN: 33K OHM, 5%, 0.25W	01121	CB3335
A5A1R1101	315-0203-00			RES., FXD, CMPSN: 20K OHM, 5%, 0.25W	01121	CB2035
A5A1R1110	315-0104-00			RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A5A1R1120	315-0510-00			RES., FXD, CMPSN: 51 OHM, 5%, 0.25W	01121	CB5105
A5A1R1121	315-0510-00			RES., FXD, CMPSN: 51 OHM, 5%, 0.25W	01121	CB5105
A5A1R1200	315-0101-00			RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A5A1R1201	315-0101-00			RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A5A1R1202	315-0101-00			RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A5A1R1203	315-0101-00			RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A5A1R1220	315-0510-00			RES., FXD, CMPSN: 51 OHM, 5%, 0.25W	01121	CB5105
A5A1R1221	315-0510-00			RES., FXD, CMPSN: 51 OHM, 5%, 0.25W	01121	CB5105
A5A1R1400	315-0104-00			RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A5A1R1410	315-0104-00			RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A5A1T1010	120-0508-00			XFMR, TOROID: 3 WINDINGS	80009	120-0508-00
A5A1T1210	120-1305-00			XFMR, PWR, STU: HF CONVERTER	80009	120-1305-00
A5A1T1230	120-1304-00			XFMR, PWR, SDN & SU: HF CONVERTER	80009	120-1304-00
A5A1T1300	120-0697-00			XFMR, TOROID: TWO 20 TURN WINDINGS	80009	120-0697-00
A5A1T1310	120-0697-00			XFMR, TOROID: TWO 20 TURN WINDINGS	80009	120-0697-00
A5A1T1420	120-1306-00			XFMR, RF: TOROID, COMMON MODE	80009	120-1306-00
A5A1U1000	156-1408-00			MICROCIRCUIT, LI: TIMER, LOW POWER	32293	ICM75551PA
A5A1U1010	156-0366-02			MICROCIRCUIT, DI: DUAL D FLIP-FLOP, CHK	80009	156-0366-02
A5A1U1011	156-0494-02			MICROCIRCUIT, DI: HEX INV/BUFF, SELECTED	80009	156-0494-02
A5A1U1020	156-0494-02			MICROCIRCUIT, DI: HEX INV/BUFF, SELECTED	80009	156-0494-02
A5A1VR1021	152-0123-00			SEMICONV DEVICE: ZENER, 0.5W, 9V, 5%	04713	SZ11530RL

Component No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
A5A2	-----			CKT BOARD ASSY:PS INTERFACE		
A5A2P1021	131-0787-00			CONTACT, ELEC:0.64 INCH LONG	22526	47359
A5A2P1031	131-0787-00			CONTACT, ELEC:0.64 INCH LONG	22526	47359
A5A2P1032	131-0787-00			CONTACT, ELEC:0.64 INCH LONG	22526	47359
A5A2P1033	131-0787-00			CONTACT, ELEC:0.64 INCH LONG	22526	47359
A5A2P1034	131-0787-00			CONTACT, ELEC:0.64 INCH LONG	22526	47359
A5A2P1035	131-0787-00			CONTACT, ELEC:0.64 INCH LONG	22526	47359
A5A2P1036	131-0787-00			CONTACT, ELEC:0.64 INCH LONG	22526	47359
A5A2P1041	131-0787-00			CONTACT, ELEC:0.64 INCH LONG	22526	47359
A5A2P1043	131-0787-00			CONTACT, ELEC:0.64 INCH LONG	22526	47359

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A6	-----		KCT BOARD ASSY:REFERENCE		
A6C1001	290-0517-00		CAP., FXD, ELCTLT: 6.8UF, 20%, 35V	56289	196D685X0035KA1
A6C1002	290-0517-00		CAP., FXD, ELCTLT: 6.8UF, 20%, 35V	56289	196D685X0035KA1
A6C1003	290-0517-00		CAP., FXD, ELCTLT: 6.8UF, 20%, 35V	56289	196D685X0035KA1
A6C1004	290-0517-00		CAP., FXD, ELCTLT: 6.8UF, 20%, 35V	56289	196D685X0035KA1
A6C1011	290-0517-00		CAP., FXD, ELCTLT: 6.8UF, 20%, 35V	56289	196D685X0035KA1
A6C1121	290-0534-00		CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
A6C1131	290-0135-00		CAP., FXD, ELCTLT: 15UF, 20%, 20V	56289	150D156X0020B2
A6C1141	281-0773-00		CAP., FXD, CER DI: 0.01UF, 10%, 100V	04222	GC70-1C103K
A6C1201	281-0226-00		CAP., VAR, PLSTC: 5.5-65PF, 100V	52769	GXD38000
A6C1211	283-0618-00		CAP., FXD, MICA D: 130PF, 2%, 400V	00853	D155E131G0
A6C1221	290-0534-00		CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
A6C1241	281-0812-00		CAP., FXD, CER DI: 1000PF, 10%, 100V	72982	8035D9AADX7R102K
A6C1242	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A6C1301	281-0813-00		CAP., FXD, CER DI: 0.047UF, 20%, 50V	04222	GC705-E-473M
A6C1311	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A6C1312	290-0534-00		CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
A6C1313	281-0768-00		CAP., FXD, CER DI: 470PF, 20%, 100V	72982	8035D9AADW5R471M
A6C1321	290-0534-00		CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
A6C1331	281-0814-00		CAP., FXD, CER DI: 100PF, 10%, 100V	04222	GC70-1-A101K
A6C1332	281-0791-00		CAP., FXD, CER DI: 270PF, 10%, 100V	72982	8035D2AADX5R271K
A6C1400	281-0815-00		CAP., FXD, CER DI: 0.027UF, 20%, 50V	72982	8005D9AABW5R273M
A6C1401	281-0097-00		CAP., VAR, CER DI: 9-35PF, 200V	72982	538-006-D9-35
A6C1402	281-0809-00		CAP., FXD, CER DI: 200PF, 5%, 100V	72982	8013T2ADDC1G201J
A6C1404	290-0276-00		CAP., FXD, ELCTLT: 0.68UF, 10%, 35V	56289	162D684X9035CD2
A6C1411	283-0189-00		CAP., FXD, CER DI: 0.1UF, 20%, 400V	72982	8151N401X5R0104M
A6C1412	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A6C1421	281-0773-00		CAP., FXD, CER DI: 0.01UF, 10%, 100V	04222	GC70-1C103K
A6C1431	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABW5R273M
A6C1531	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A6C1609	281-0792-00		CAP., FXD, CER DI: 82PF, 10%, 100V	72982	8035D2AADCOG820K
A6C1610	281-0813-00		CAP., FXD, CER DI: 0.047UF, 20%, 50V	04222	GC705-E-473M
A6C1611	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A6C1612	281-0812-00		CAP., FXD, CER DI: 1000PF, 10%, 100V	72982	8035D9AADX7R102K
A6C1613	281-0773-00		CAP., FXD, CER DI: 0.01UF, 10%, 100V	04222	GC70-1C103K
A6C1621	281-0812-00		CAP., FXD, CER DI: 1000PF, 10%, 100V	72982	8035D9AADX7R102K
A6C1622	290-0527-00		CAP., FXD, ELCTLT: 15UF, 20%, 20V	90201	TDC156M020FL
A6C1632	281-0809-00		CAP., FXD, CER DI: 200PF, 5%, 100V	72982	8013T2ADDC1G201J
A6C1641	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A6C1700	281-0814-00		CAP., FXD, CER DI: 100PF, 10%, 100V	04222	GC70-1-A101K
A6C1701	281-0809-00		CAP., FXD, CER DI: 200PF, 5%, 100V	72982	8013T2ADDC1G201J
A6C1702	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A6C1721	281-0773-00		CAP., FXD, CER DI: 0.01UF, 10%, 100V	04222	GC70-1C103K
A6C1722	281-0773-00		CAP., FXD, CER DI: 0.01UF, 10%, 100V	04222	GC70-1C103K
A6C1841	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A6CR1111	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1112	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1113	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1121	152-0066-00		SEMICOND DEVICE: SILICON, 400V, 750MA	14433	LG4016
A6CR1141	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1211	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1212	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1213	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1241	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1242	152-0141-02		SEMICOND DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1401	152-0107-00		SEMICOND DEVICE: SILICON, 400V, 400MA	01295	G727
A6CR1421	152-0246-00		SEMICOND DEVICE: SW, SI, 40V, 200MA	03508	DE140

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A6CR1422	152-0246-00		SEMICON D DEVICE: SW, SI, 40V, 200MA	03508	DE140
A6CR1510	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1521	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1522	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1523	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1524	152-0324-01		SEMICON D DEVICE: SILICON, 50V, 50PA AT 20V, GE	03508	DE103
A6CR1525	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1526	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1527	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1528	152-0324-01		SEMICON D DEVICE: SILICON, 50V, 50PA AT 20V, GE	03508	DE103
A6CR1611	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1621	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1622	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1623	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1624	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1625	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1626	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1701	152-0322-00		SEMICON D DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A6CR1702	152-0322-00		SEMICON D DEVICE: SILICON, 15V, HOT CARRIER	50434	5082-2672
A6CR1731	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1732	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1733	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1801	152-0536-00		SEMICON D DEVICE: SILICON, HOT CARRIER, 4V	80009	152-0536-00
A6CR1802	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1811	152-0536-00		SEMICON D DEVICE: SILICON, HOT CARRIER, 4V	80009	152-0536-00
A6CR1821	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1822	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1831	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6CR1832	152-0141-02		SEMICON D DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A6K1101	108-0355-00		COIL, REED SW: 6VDC SINGLE REED	80009	108-0355-00
A6K1102	148-0076-00		RELAY, REED: 1 FORM A, 5V, 0.25A, 100V	95348	F81-1447
A6K1111	148-0131-00	B010100 B020236	RELAY, REED: 100MA, 28V, COIL 95 OHMS, 5V	94696	W173 DIP-1
A6K1111	148-0142-00	B020237	RELAY, ARMATURE: 100 OHM @52V, 0.25A @5V	12633	S1P-1731-2-5
A6Q1041	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1111	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1112	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1121	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1141	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1142	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1143	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1211	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1212	151-0208-00		TRANSISTOR: SILICON, PNP	80009	151-0208-00
A6Q1221	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1241	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1311	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1312	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1321	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1322	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1411	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1412	151-0279-03		TRANSISTOR: SILICON, NPN	80009	151-0279-03
A6Q1421	151-0136-00		TRANSISTOR: SILICON, NPN	02735	35495
A6Q1431	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1510	151-0698-00		TRANSISTOR: SILICON, PNP	80009	151-0698-00
A6Q1512	151-0444-03		TRANSISTOR: SILICON, NPN	80009	151-0444-03
A6Q1514	151-0443-00		TRANSISTOR: SILICON, PNP	80009	151-0443-00
A6Q1521	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1522	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1531	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A6Q1537	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1541	151-1103-00		TRANSISTOR: SILICON, FE, N-CHANNEL	18324	SD210EE
A6Q1611	151-1097-00		TRANSISTOR: SILICON, FE	04713	SPF713
A6Q1612	151-1120-00		TRANSISTOR: FE, P CHANNEL, SI, VP-3	000GU	VP0106N3
A6Q1621	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1631	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1632	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1640	151-1103-00		TRANSISTOR: SILICON, FE, N-CHANNEL	18324	SD210EE
A6Q1641	151-1103-00		TRANSISTOR: SILICON, FE, N-CHANNEL	18324	SD210EE
A6Q1642	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1643	151-1103-00		TRANSISTOR: SILICON, FE, N-CHANNEL	18324	SD210EE
A6Q1644	151-1103-00		TRANSISTOR: SILICON, FE, N-CHANNEL	18324	SD210EE
A6Q1645	151-1097-00		TRANSISTOR: SILICON, FE	04713	SPF713
A6Q1701	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1702	151-0302-01		TRANSISTOR: SILICON, NPN, SEL	80009	151-0302-01
A6Q1711	151-0440-00		TRANSISTOR: SILICON, PNP	03508	X41E603
A6Q1731	151-1098-00		TRANSISTOR: SILICON, FE, N-CHANNEL	80009	151-1098-00
A6Q1732	151-1098-00		TRANSISTOR: SILICON, FE, N-CHANNEL	80009	151-1098-00
A6Q1733	151-1098-00		TRANSISTOR: SILICON, FE, N-CHANNEL	80009	151-1098-00
A6Q1734	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1735	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1736	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1737	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1741	151-1103-00		TRANSISTOR: SILICON, FE, N-CHANNEL	18324	SD210EE
A6Q1742	151-1103-00		TRANSISTOR: SILICON, FE, N-CHANNEL	18324	SD210EE
A6Q1743	151-1103-00		TRANSISTOR: SILICON, FE, N-CHANNEL	18324	SD210EE
A6Q1744	151-1098-00		TRANSISTOR: SILICON, FE, N-CHANNEL	80009	151-1098-00
A6Q1745	151-1103-00		TRANSISTOR: SILICON, FE, N-CHANNEL	18324	SD210EE
A6Q1811	151-0301-01		TRANSISTOR: SILICON, PNP, PRESTRESSED	80009	151-0301-01
A6Q1821	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A6Q1831	151-1098-00		TRANSISTOR: SILICON, FE, N-CHANNEL	80009	151-1098-00
A6Q1832	151-1098-00		TRANSISTOR: SILICON, FE, N-CHANNEL	80009	151-1098-00
A6Q1833	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1834	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1835	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6Q1836	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A6R1011	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A6R1012	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A6R1021	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A6R1022	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A6R1023	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A6R1024	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A6R1025	315-0302-00		RES., FXD, CMPSN: 3K OHM, 5%, 0.25W	01121	CB3025
A6R1031	315-0302-00		RES., FXD, CMPSN: 3K OHM, 5%, 0.25W	01121	CB3025
A6R1032	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A6R1033	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A6R1041	315-0302-00		RES., FXD, CMPSN: 3K OHM, 5%, 0.25W	01121	CB3025
A6R1042	315-0512-00		RES., FXD, CMPSN: 5.1K OHM, 5%, 0.25W	01121	CB5125
A6R1043	315-0391-00		RES., FXD, CMPSN: 390 OHM, 5%, 0.25W	01121	CB3915
A6R1111	308-0720-01		RES., FXD, WW: 50 OHM, 0.5%, 3W	91637	RS2B-B50R00D
A6R1113	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A6R1114	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A6R1115	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A6R1121	315-0104-00		RES., FXD, CMPSN: 100K OHM, 5%, 0.25W	01121	CB1045
A6R1131	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A6R1132	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A6R1133	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A6R1134	315-0473-00		RES., FXD, CMPSN:47K OHM, 5%, 0.25W	01121	CB4735
A6R1141	315-0103-00		RES., FXD, CMPSN:10K OHM, 5%, 0.25W	01121	CB1035
A6R1142	315-0752-00		RES., FXD, CMPSN:7.5K OHM, 5%, 0.25W	01121	CB7525
A6R1143	315-0471-00		RES., FXD, CMPSN:470 OHM, 5%, 0.25W	01121	CB4715
A6R1144	315-0471-00		RES., FXD, CMPSN:470 OHM, 5%, 0.25W	01121	CB4715
A6R1145	315-0302-00		RES., FXD, CMPSN:3K OHM, 5%, 0.25W	01121	CB3025
A6R1146	315-0103-00		RES., FXD, CMPSN:10K OHM, 5%, 0.25W	01121	CB1035
A6R1147	315-0512-00		RES., FXD, CMPSN:5.1K OHM, 5%, 0.25W	01121	CB5125
A6R1148	315-0332-00		RES., FXD, CMPSN:3.3K OHM, 5%, 0.25W	01121	CB3325
A6R1201	325-0330-00		RES SET, MATCHED:7, RATIO, 0.25%	07716	TK067
A6R1203	311-1241-00		RES., VAR, NONWIR:100K OHM, 10%, 0.5W	32997	3386X-T07-104
A6R1205	315-0103-00		RES., FXD, CMPSN:10K OHM, 5%, 0.25W	01121	CB1035
A6R1210	307-0103-00		RES., FXD, CMPSN:2.7 OHM, 5%, 0.25W	01121	CB27G5
A6R1211	315-0182-00		RES., FXD, CMPSN:1.8K OHM, 5%, 0.25W	01121	CB1825
A6R1213	307-0107-00		RES., FXD, CMPSN:5.6 OHM, 5%, 0.25W	01121	CB56G5
A6R1214	315-0153-00		RES., FXD, CMPSN:15K OHM, 5%, 0.25W	01121	CB1535
A6R1215	315-0132-00		RES., FXD, CMPSN:1.3K OHM, 5%, 0.25W	01121	CB1325
A6R1216	315-0510-00		RES., FXD, CMPSN:51 OHM, 5%, 0.25W	01121	CB5105
A6R1217	315-0301-00		RES., FXD, CMPSN:300 OHM, 5%, 0.25W	01121	CB3015
A6R1231	308-0326-00		RES., FXD, WW:9.9K OHM, 0.01%, 0.125W	91637	WWA-26-60
A6R1232	308-0738-00		RES., FXD, WW:10K OHM, 0.01%, 0.5W	91637	WWA26-H10001L
A6R1241	315-0332-00		RES., FXD, CMPSN:3.3K OHM, 5%, 0.25W	01121	CB3325
A6R1242	315-0272-00		RES., FXD, CMPSN:2.7K OHM, 5%, 0.25W	01121	CB2725
A6R1243	315-0471-00		RES., FXD, CMPSN:470 OHM, 5%, 0.25W	01121	CB4715
A6R1244	315-0512-00		RES., FXD, CMPSN:5.1K OHM, 5%, 0.25W	01121	CB5125
A6R1301	315-0100-00		RES., FXD, CMPSN:10 OHM, 5%, 0.25W	01121	CB1005
A6R1302	321-0193-00		RES., FXD, FILM:1K OHM, 1%, 0.125W	91637	MFF1816G10000F
A6R1311	315-0203-00		RES., FXD, CMPSN:20K OHM, 5%, 0.25W	01121	CB2035
A6R1312	-----		(PART OF A6R1201)		
A6R1314	315-0510-00		RES., FXD, CMPSN:51 OHM, 5%, 0.25W	01121	CB5105
A6R1315	315-0132-00		RES., FXD, CMPSN:1.3K OHM, 5%, 0.25W	01121	CB1325
A6R1321	315-0430-00		RES., FXD, CMPSN:43 OHM, 5%, 0.25W	01121	CB4305
A6R1322	315-0430-00		RES., FXD, CMPSN:43 OHM, 5%, 0.25W	01121	CB4305
A6R1323	307-0103-00		RES., FXD, CMPSN:2.7 OHM, 5%, 0.25W	01121	CB27G5
A6R1324	311-1236-00		RES., VAR, NONWIR:250 OHM, 10%, 0.50W	73138	72-22-0
A6R1325	311-1936-00		RES., VAR, NONWIR:CKT BD, 50 OHM, 20%, 0.5W	73138	MODEL 72X
A6R1326	321-0073-00		RES., FXD, FILM:56.2 OHM, 1%, 0.125W	91637	MFF1816G56R20F
A6R1327	308-0658-00		RES., FXD, WW:4K OHM, 0.01%, 0.125W	91637	WWP225-A40000L
A6R1328	307-0107-00		RES., FXD, CMPSN:5.6 OHM, 5%, 0.25W	01121	CB56G5
A6R1331	321-1133-02		RES., FXD, FILM:240 OHM, 0.5%, 0.125W	91637	MFF1816D240R0D
A6R1400	315-0470-00		RES., FXD, CMPSN:47 OHM, 5%, 0.25W	01121	CB4705
A6R1401	315-0221-00		RES., FXD, CMPSN:220 OHM, 5%, 0.25W	01121	CB2215
A6R1402	315-0510-00		RES., FXD, CMPSN:51 OHM, 5%, 0.25W	01121	CB5105
A6R1404	315-0470-00		RES., FXD, CMPSN:47 OHM, 5%, 0.25W	01121	CB4705
A6R1406	315-0201-00		RES., FXD, CMPSN:200 OHM, 5%, 0.25W	01121	CB2015
A6R1410	315-0392-00		RES., FXD, CMPSN:3.9K OHM, 5%, 0.25W	01121	CB3925
A6R1411	311-1240-00		RES., VAR, NONWIR:25K OHM, 10%, 0.50W	73138	72-30-0
A6R1412	315-0241-00		RES., FXD, CMPSN:240 OHM, 5%, 0.25W	01121	CB2415
A6R1421	315-0104-00		RES., FXD, CMPSN:100K OHM, 5%, 0.25W	01121	CB1045
A6R1422	315-0621-00		RES., FXD, CMPSN:620 OHM, 5%, 0.25W	01121	CB6215
A6R1423	315-0133-00		RES., FXD, CMPSN:13K OHM, 5%, 0.25W	01121	CB1335
A6R1424	315-0432-00		RES., FXD, CMPSN:4.3K OHM, 5%, 0.25W	01121	CB4325
A6R1425	315-0621-00		RES., FXD, CMPSN:620 OHM, 5%, 0.25W	01121	CB6215
A6R1431	315-0222-00		RES., FXD, CMPSN:2.2K OHM, 5%, 0.25W	01121	CB2225
A6R1432 } A6R1433 } A6R1434 }	325-0248-00		RES. SET, MATCHED: (8) RESISTORS, RATIO 0.01%	07716	TK059

Replaceable Electrical Parts—CG 551AP, Vol. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscnt	Name & Description	Mfr Code	Mfr Part Number
A6R1435	315-0123-00		RES., FXD, CMPSN:12K OHM, 5%, 0.25W	01121	CB1235
A6R1436	-----		(PART OF A6R1432)		
A6R1437					
A6R1438					
A6R1441					
A6R1442					
A6R1501						315-0103-00		RES., FXD, CMPSN:10K OHM, 5%, 0.25W	01121	CB1035
A6R1512	315-0243-00		RES., FXD, CMPSN:24K OHM, 5%, 0.25W	01121	CB2435
A6R1521	315-0153-00		RES., FXD, CMPSN:15K OHM, 5%, 0.25W	01121	CB1535
A6R1522	315-0161-00		RES., FXD, CMPSN:160 OHM, 5%, 0.25W	01121	CB1615
A6R1523	315-0161-00		RES., FXD, CMPSN:160 OHM, 5%, 0.25W	01121	CB1615
A6R1524	315-0153-00		RES., FXD, CMPSN:15K OHM, 5%, 0.25W	01121	CB1535
A6R1525	315-0202-00		RES., FXD, CMPSN:2K OHM, 5%, 0.25W	01121	CB2025
A6R1526	315-0102-00		RES., FXD, CMPSN:1K OHM, 5%, 0.25W	01121	CB1025
A6R1527	315-0103-00		RES., FXD, CMPSN:10K OHM, 5%, 0.25W	01121	CB1035
A6R1528	315-0163-00		RES., FXD, CMPSN:16K OHM, 5%, 0.25W	01121	CB1635
A6R1531	315-0302-00		RES., FXD, CMPSN:3K OHM, 5%, 0.25W	01121	CB3025
A6R1532	311-1240-00		RES., VAR, NONWIR:25K OHM, 10%, 0.50W	73138	72-30-0
A6R1533	315-0512-00		RES., FXD, CMPSN:5.1K OHM, 5%, 0.25W	01121	CB5125
A6R1534	315-0822-00		RES., FXD, CMPSN:8.2K OHM, 5%, 0.25W	01121	CB8225
A6R1537	315-0472-00		RES., FXD, CMPSN:4.7K OHM, 5%, 0.25W	01121	CB4725
A6R1541	325-0331-00		RES SET, MATCHED:2, 1K OHM, 1, .4K OHM, 0.1%	17745	7ES 131
A6R1601	311-1918-00		RES., VAR, NONWIR:2K OHM, 10%, 0.50W	73138	72-199-0
A6R1602	315-0103-00		RES., FXD, CMPSN:10K OHM, 5%, 0.25W	01121	CB1035
A6R1613	315-0202-00		RES., FXD, CMPSN:2K OHM, 5%, 0.25W	01121	CB2025
A6R1614	315-0221-00		RES., FXD, CMPSN:220 OHM, 5%, 0.25W	01121	CB2215
A6R1615	-----		(PART OF A6R1201)		
A6R1616	308-0644-00		RES., FXD, WW:25 OHM, 1%, 5W	91637	RS5111-25R00F
A6R1621	315-0181-00		RES., FXD, CMPSN:180 OHM, 5%, 0.25W	01121	CB1815
A6R1622	315-0512-00		RES., FXD, CMPSN:5.1K OHM, 5%, 0.25W	01121	CB5125
A6R1631	315-0682-00		RES., FXD, CMPSN:6.8K OHM, 5%, 0.25W	01121	CB6825
A6R1632	315-0512-00		RES., FXD, CMPSN:5.1K OHM, 5%, 0.25W	01121	CB5125
A6R1633	315-0563-00		RES., FXD, CMPSN:56K OHM, 5%, 0.25W	01121	CB5635
A6R1634	315-0563-00		RES., FXD, CMPSN:56K OHM, 5%, 0.25W	01121	CB5635
A6R1635	315-0563-00		RES., FXD, CMPSN:56K OHM, 5%, 0.25W	01121	CB5635
A6R1641	-----		(PART OF A6R1541)		
A6R1642	315-0103-00		RES., FXD, CMPSN:10K OHM, 5%, 0.25W	01121	CB1035
A6R1643					
A6R1644					
A6R1645					
A6R1646					
A6R1647					
A6R1701	315-0152-00		RES., FXD, CMPSN:1.5K OHM, 5%, 0.25W	01121	CB1525
A6R1702	315-0101-00		RES., FXD, CMPSN:100 OHM, 5%, 0.25W	01121	CB1015
A6R1711	315-0472-00		RES., FXD, CMPSN:4.7K OHM, 5%, 0.25W	01121	CB4725
A6R1721	315-0123-00		RES., FXD, CMPSN:12K OHM, 5%, 0.25W	01121	CB1235
A6R1722	315-0302-00		RES., FXD, CMPSN:3K OHM, 5%, 0.25W	01121	CB3025
A6R1723	315-0123-00		RES., FXD, CMPSN:12K OHM, 5%, 0.25W	01121	CB1235
A6R1724	315-0302-00		RES., FXD, CMPSN:3K OHM, 5%, 0.25W	01121	CB3025
A6R1725	315-0104-00		RES., FXD, CMPSN:100K OHM, 5%, 0.25W	01121	CB1045
A6R1726	315-0104-00		RES., FXD, CMPSN:100K OHM, 5%, 0.25W	01121	CB1045
A6R1731	307-0499-00		RES., FXD, FILM:100K OHM, 5%, 0.125W	91637	MSP10A01104J
A6R1732	307-0445-00		RES NTWK, FXD, FI:4.7K OHM, 20%, (9) RES	91637	MSP10A01-472M
A6R1811	315-0242-00		RES., FXD, CMPSN:2.4K OHM, 5%, 0.25W	01121	CB2425
A6R1812	301-0390-00		RES., FXD, CMPSN:39 OHM, 5%, 0.50W	01121	EB3905
A6R1822	315-0302-00		RES., FXD, CMPSN:3K OHM, 5%, 0.25W	01121	CB3025
A6R1823	315-0393-00		RES., FXD, CMPSN:39K OHM, 5%, 0.25W	01121	CB3935

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscnt	Name & Description	Mfr Code	Mfr Part Number
A6S1101	260-1112-00		SWITCH, REED:20-30 AMP	95348	MR-056
A6T1041	120-1104-00		XFMR, RFPULSE, TOROID 2 WINDINGS	80009	120-1104-00
A6T1042	120-1104-00		XFMR, RFPULSE, TOROID 2 WINDINGS	80009	120-1104-00
A6T1241	120-1104-00		XFMR, RFPULSE, TOROID 2 WINDINGS	80009	120-1104-00
A6TP1200	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A6TP1202	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A6TP1304	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A6TP1400	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A6TP1401	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A6U1031	156-0109-01		MICROCIRCUIT, LI: OPTOELECTRONIC ISOLATOR	80009	156-0109-01
A6U1032	156-0109-01		MICROCIRCUIT, LI: OPTOELECTRONIC ISOLATOR	80009	156-0109-01
A6U1121	156-0796-01		MICROCIRCUIT, DI: 8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A6U1122	156-0384-02		MICROCIRCUIT, DI: QUAD 2-INP NAND GATE	01295	SN74LS03
A6U1123	156-0366-02		MICROCIRCUIT, DI: DUAL D FLIP-FLOP, CHK	80009	156-0366-02
A6U1131	156-0578-02		MICROCIRCUIT, DI: DUAL ONE-SHOTMV, SEL	04713	MC14528BCLDS
A6U1211	156-1156-01		MICROCIRCUIT, LI: OPERATIONAL AMPL, SCR	27014	LF356N/1DOWN
A6U1222	156-0991-01		MICROCIRCUIT, LI: VOLTAGE REGULATOR, SCRN	80009	156-0991-01
A6U1241	156-1321-00		MICROCIRCUIT, LI: MULTIPLYING D/A CONVERTER	80009	156-1321-00
A6U1242	156-0796-01		MICROCIRCUIT, DI: 8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A6U1311	156-0685-03		MICROCIRCUIT, LI: OPERATIONAL AMPL, SCR	27014	LM725CN/ADOWN
A6U1331	156-0854-01		MICROCIRCUIT, LI: OPERATIONAL AMPL, SCRN	27014	LM308AJ-8/A+
A6U1332	156-0854-01		MICROCIRCUIT, LI: OPERATIONAL AMPL, SCRN	27014	LM308AJ-8/A+
A6U1341	156-0796-01		MICROCIRCUIT, DI: 8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A6U1411	156-1156-01		MICROCIRCUIT, LI: OPERATIONAL AMPL, SCR	27014	LF356N/ADOWN 2
A6U1432	156-1322-00		MICROCIRCUIT, LI: VOLTAGE REFERENCE	80009	156-1322-00
A6U1531	156-0513-02		MICROCIRCUIT, DI: 8-CHANNEL MUX, SEL	80009	156-0513-02
A6U1541	156-0796-01		MICROCIRCUIT, DI: 8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A6U1611	156-0918-00		MICROCIRCUIT, LI: PRECISION PREAMPLIFIER	27014	LM321AH/A+
A6U1612	156-1156-01		MICROCIRCUIT, LI: OPERATIONAL AMPL, SCR	27014	LF356N/ADOWN 2
A6U1621	156-0158-07		MICROCIRCUIT, LI: DUAL OPNL AMPL, SCREENED	01295	MC1458JG4
A6U1631	156-1156-01		MICROCIRCUIT, LI: OPERATIONAL AMPL, SCR	27014	LF356N/AL *
A6U1632	156-0512-02		MICROCIRCUIT, LI: OPERATIONAL AMPLIFIER, SEL	04713	LM308J-8DS
A6U1841	156-0796-01		MICROCIRCUIT, DI: 8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A6VR1821	152-0175-00		SEMICONV DEVICE: ZENER, 0.4W, 5.6V, 5%	04713	SZG35008
A6W1111	131-0566-00		BUS CONDUCTOR: DUMMY RES, 2.375, 22 AWG	55210	L-2007-1

Replaceable Electrical Parts—CG 551AP, Vol. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A7	-----		CKT BOARD ASSY:OUTPUT		
A7AT1630	307-1020-00		ATTENUATOR,FXD:50 OHM,2X	80009	307-1020-00
A7AT1632	307-1023-00		ATTENUATOR,FXD:50 OHM,5X	80009	307-1023-00
A7AT1634	307-1038-00		ATTENUATOR,FXD:50 OHM,20 DB	80009	307-1038-00
A7C1001	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1003	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1005	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1011	281-0811-00		CAP.,FXD,CER DI:10PF,10%,100V	72982	8035D2AADC1G100K
A7C1017	281-0762-00		CAP.,FXD,CER DI:27PF,20%,100V	72982	8035D9AADCOG270M
A7C1019	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1030	290-0183-00		CAP.,FXD,ELCTLT:1UF,10%,35V	90201	TAC105K035P02
A7C1034	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	04222	GC70-1C103K
A7C1102	281-0762-00		CAP.,FXD,CER DI:27PF,20%,100V	72982	8035D9AADCOG270M
A7C1131	290-0395-00		CAP.,FXD,ELCTLT:4.7UF,20%,50V	56289	150D475X0050B2
A7C1200	283-0629-00		CAP.,FXD,MICA D:62PF,1%,500V	00853	D105E620F0
A7C1209	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1210	281-0786-00		CAP.,FXD,CER DI:150PF,10%,100V	72982	8035D2AADX5P151K
A7C1217	283-0024-00		CAP.,FXD,CER DI:0.1UF,+80-20%,50V	72982	8121N083Z5U0104Z
A7C1304	281-0786-00		CAP.,FXD,CER DI:150PF,10%,100V	72982	8035D2AADX5P151K
A7C1308	281-0786-00		CAP.,FXD,CER DI:150PF,10%,100V	72982	8035D2AADX5P151K
A7C1334	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1401	290-0183-00		CAP.,FXD,ELCTLT:1UF,10%,35V	90201	TAC105K035P02
A7C1412	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1413	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1414	290-0135-01		CAP.,FXD,ELCTLT:15UF,20%,20V	26769	TEK1778-013501
A7C1426	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1518	290-0525-00		CAP.,FXD,ELCTLT:4.7UF,20%,50V	56289	196D475X0050KA1
A7C1520	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1524	281-0768-00		CAP.,FXD,CER DI:470PF,20%,100V	72982	8035D9AADW5R471M
A7C1603	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1605	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	04222	GC70-1C103K
A7C1608	281-0810-00		CAP.,FXD,CER DI:5.6PF,0.5%,100V	72982	1035D2ADC0G569D
A7C1616	290-0525-00		CAP.,FXD,ELCTLT:4.7UF,20%,50V	56289	196D475X0050KA1
A7C1620	283-0353-00		CAP.,FXD,CER DI:0.1UF,10%,50V	95275	VJ1210Y104K-H
A7C1621	281-0170-00		CAP.,VAR,CER DI:1.25-3PF,100V	72982	518-002-A1.2-3
A7C1701	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1705	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	04222	GC70-1C103K
A7C1709	281-0810-00		CAP.,FXD,CER DI:5.6PF,0.5%,100V	72982	1035D2ADC0G569D
A7C1713	290-0525-00		CAP.,FXD,ELCTLT:4.7UF,20%,50V	56289	196D475X0050KA1
A7C1721	281-0170-00		CAP.,VAR,CER DI:1.25-3PF,100V	72982	518-002-A1.2-3
A7C1725	283-0353-00		CAP.,FXD,CER DI:0.1UF,10%,50V	95275	VJ1210Y104K-H
A7C1802	281-0812-00		CAP.,FXD,CER DI:1000PF,10%,100V	72982	8035D9AADX7R102K
A7C1803	281-0773-00		CAP.,FXD,CER DI:0.01UF,10%,100V	04222	GC70-1C103K
A7C1813	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A7C1824	290-0525-00		CAP.,FXD,ELCTLT:4.7UF,20%,50V	56289	196D475X0050KA1
A7CR1010	152-0322-00		SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A7CR1018	152-0322-00		SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A7CR1032	152-0066-00		SEMICONV DEVICE:SILICON,400V,750MA	14433	LG4016
A7CR1106	152-0322-00		SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A7CR1108	152-0322-00		SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A7CR1109	152-0322-00		SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A7CR1113	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A7CR1114	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A7CR1116	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A7CR1205	152-0322-00		SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A7CR1207	152-0322-00		SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A7CR1210	152-0141-02		SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R

Component No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Name & Description	Mfr Code	Mfr Part Number
A7CR1413	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A7CR1421	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A7CR1423	152-0322-00			SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A7CR1424	152-0141-02			SEMICONV DEVICE:SILICON,30V,150MA	01295	1N4152R
A7CR1519	152-0322-00			SEMICONV DEVICE:SILICON,15V,HOT CARRIER	50434	5082-2672
A7CR1624	152-0536-00			SEMICONV DEVICE:SILICON,HOT CARRIER,4V	80009	152-0536-00
A7CR1724	152-0536-00			SEMICONV DEVICE:SILICON,HOT CARRIER,4V	80009	152-0536-00
A7J1121	131-1003-00			CONN,RCPT,ELEC:CKT BD MT,3 PRONG	80009	131-1003-00
A7J1332	131-1003-00			CONN,RCPT,ELEC:CKT BD MT,3 PRONG	80009	131-1003-00
A7K1225	148-0076-00			RELAY,REED:1 FORM A,5V,0.25A,100V	95348	F81-1447
A7K1300	148-0131-00	B010100	B020236	RELAY,REED:100MA,28V,COIL 95 OHMS,5V	94696	W173 DIP-1
A7K1300	148-0142-00	B020237		E		
A7K1312	148-0131-00	B010100	B020236	RELAY,REED:100MA,28V,COIL 95 OHMS,5V	94696	W173 DIP-1
A7K1312	148-0142-00	B020237		E		
A7K1314	148-0131-00	B010100	B020236	RELAY,REED:100MA,28V,COIL 95 OHMS,5V	94696	W173 DIP-1
A7K1314	148-0142-00	B020237		E		
A7K1323	148-0131-00	B010100	B020236	RELAY,REED:100MA,28V,COIL 95 OHMS,5V	94696	W173 DIP-1
A7K1323	148-0142-00	B020237		E		
A7K1431	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1432	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1433	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1434	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1532	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1534	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1535	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1537	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1632	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1634	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1636	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1638	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1737	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7K1739	148-0128-00			RELAY,ARMATURE:1 FORM X & 1 FORM Y,8VDC	80009	148-0128-00
A7L1002	108-0249-00			COIL,RF:12UH	76493	B-4992
A7L1100	108-0249-00			COIL,RF:12UH	76493	B-4992
A7L1223	108-0715-00			COIL,RF:FIXED,240NH	80009	108-0715-00
A7L1626	108-0436-00			COIL,RF:FIXED,240NH	80009	108-0436-00
A7L1627	108-0606-00			COIL,RF:37NH	80009	108-0606-00
A7L1721	108-0606-00			COIL,RF:37NH	80009	108-0606-00
A7L1724	108-0436-00			COIL,RF:FIXED,240NH	80009	108-0436-00
A7Q1010	151-0441-00			TRANSISTOR:SILICON,NPN	04713	SRF501
A7Q1012	151-0190-05			TRANSISTOR:SILICON,NPN	80009	151-0190-05
A7Q1030	151-0190-05			TRANSISTOR:SILICON,NPN	80009	151-0190-05
A7Q1032	151-0281-00			TRANSISTOR:SILICON,NPN	03508	X16P4039
A7Q1108	151-0190-05			TRANSISTOR:SILICON,NPN	80009	151-0190-05
A7Q1109	151-0190-05			TRANSISTOR:SILICON,NPN	80009	151-0190-05
A7Q1117	151-0451-00			TRANSISTOR:SILICON,NPN	04713	SRF503
A7Q1120	151-0441-00			TRANSISTOR:SILICON,NPN	04713	SRF501
A7Q1121	151-0434-01			TRANSISTOR:SILICON,PNP	80009	151-0434-01
A7Q1133	151-0625-01			TRANSISTOR:D45H11,SCREENED	80009	151-0625-01
A7Q1200	151-0188-03			TRANSISTOR:SILICON,PNP,SEL	80009	151-0188-03
A7Q1217	151-0450-01			TRANSISTOR:2N5583 FAMILY,SCREENED	80009	151-0450-01
A7Q1301	151-0190-05			TRANSISTOR:SILICON,NPN	80009	151-0190-05
A7Q1406	151-0190-05			TRANSISTOR:SILICON,NPN	80009	151-0190-05
A7Q1407	151-0190-05			TRANSISTOR:SILICON,NPN	80009	151-0190-05
A7Q1410	151-0190-05			TRANSISTOR:SILICON,NPN	80009	151-0190-05
A7Q1412	151-0190-05			TRANSISTOR:SILICON,NPN	80009	151-0190-05
A7Q1413	151-0311-01			TRANSISTOR:SILICON,NPN	04713	SJE908
A7Q1422	151-0190-05			TRANSISTOR:SILICON,NPN	80009	151-0190-05
A7Q1502	151-0188-03			TRANSISTOR:SILICON,PNP,SEL	80009	151-0188-03

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscnt	Name & Description	Mfr Code	Mfr Part Number
A7Q1504	151-0441-00		TRANSISTOR: SILICON, NPN	04713	SRF501
A7Q1505	151-0441-00		TRANSISTOR: SILICON, NPN	04713	SRF501
A7Q1507	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A7Q1513	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A7Q1516	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A7Q1517	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A7Q1527	151-1121-00		TRANSISTOR: FE, N CHANNEL, SI, VN-3	000GU	N01003N3
A7Q1528	151-1120-00		TRANSISTOR: FE, P CHANNEL, SI, VP-3	000GU	VP0106N3
A7Q1601	151-0103-00		TRANSISTOR: SILICON, NPN	80009	151-0103-00
A7Q1602	151-0271-01		TRANSISTOR: SILICON, PNP, SCREENED	80009	151-0271-01
A7Q1604	151-0271-01		TRANSISTOR: SILICON, PNP, SCREENED	80009	151-0271-01
A7Q1614	151-0447-00		TRANSISTOR: SILICON, NPN	80009	151-0447-00
A7Q1624	151-0630-00		TRANSISTOR: SILICON, NPN	80009	151-0630-00
A7Q1705	151-0434-01		TRANSISTOR: SILICON, PNP	80009	151-0434-01
A7Q1706	151-0434-01		TRANSISTOR: SILICON, PNP	80009	151-0434-01
A7Q1712	151-0441-00		TRANSISTOR: SILICON, NPN	04713	SRF501
A7Q1713	151-0441-00		TRANSISTOR: SILICON, NPN	04713	SRF501
A7Q1715	151-0271-01		TRANSISTOR: SILICON, PNP, SCREENED	80009	151-0271-01
A7Q1725	151-0271-01		TRANSISTOR: SILICON, PNP, SCREENED	80009	151-0271-01
A7Q1808	151-1097-00		TRANSISTOR: SILICON, FE	04713	SPF713
A7Q1814	151-0134-00		TRANSISTOR: SILICON, PNP	80009	151-0134-00
A7R1004	315-0243-00		RES., FXD, CMPSN: 24K OHM, 5%, 0.25W	01121	CB2435
A7R1007	315-0332-00		RES., FXD, CMPSN: 3.3K OHM, 5%, 0.25W	01121	CB3325
A7R1008	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A7R1012	321-0193-00		RES., FXD, FILM: 1K OHM, 1%, 0.125W	91637	MFF1816G10000F
A7R1014	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A7R1015	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A7R1018	321-0193-00		RES., FXD, FILM: 1K OHM, 1%, 0.125W	91637	MFF1816G10000F
A7R1030	315-0820-00		RES., FXD, CMPSN: 82 OHM, 5%, 0.25W	01121	CB8205
A7R1032	315-0121-00		RES., FXD, CMPSN: 120 OHM, 5%, 0.25W	01121	CB1215
A7R1103	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A7R1104	315-0222-00		RES., FXD, CMPSN: 2.2K OHM, 5%, 0.25W	01121	CB2225
A7R1111	315-0201-00		RES., FXD, CMPSN: 200 OHM, 5%, 0.25W	01121	CB2015
A7R1112	321-0356-00		RES., FXD, FILM: 49.9K OHM, 1%, 0.125W	91637	MFF1816G49901F
A7R1113	321-0356-00		RES., FXD, FILM: 49.9K OHM, 1%, 0.125W	91637	MFF1816G49901F
A7R1114	321-0356-00		RES., FXD, FILM: 49.9K OHM, 1%, 0.125W	91637	MFF1816G49901F
A7R1116	315-0391-00		RES., FXD, CMPSN: 390 OHM, 5%, 0.25W	01121	CB3915
A7R1117	315-0220-00		RES., FXD, CMPSN: 22 OHM, 5%, 0.25W	01121	CB2205
A7R1121	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A7R1122	315-0512-00		RES., FXD, CMPSN: 5.1K OHM, 5%, 0.25W	01121	CB5125
A7R1131	315-0123-00		RES., FXD, CMPSN: 12K OHM, 5%, 0.25W	01121	CB1235
A7R1133	301-0121-00		RES., FXD, CMPSN: 120 OHM, 5%, 0.50W	01121	EB1215
A7R1135	315-0512-00		RES., FXD, CMPSN: 5.1K OHM, 5%, 0.25W	01121	CB5125
A7R1200	311-1237-00		RES., VAR, NONWIR: 1K OHM, 10%, 0.50W	32997	3386X-T07-102
A7R1201	315-0821-00		RES., FXD, CMPSN: 820 OHM, 5%, 0.25W	01121	CB8215
A7R1202	311-1198-00		RES., VAR, NONWIR: 20K OHM, 20%, 0.5W	73138	72-29-0
A7R1203	315-0681-00		RES., FXD, CMPSN: 680 OHM, 5%, 0.25W	01121	CB6815
A7R1204	315-0471-00		RES., FXD, CMPSN: 470 OHM, 5%, 0.25W	01121	CB4715
A7R1208	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A7R1209	321-0346-00		RES., FXD, FILM: 39.2K OHM, 1%, 0.125W	91637	MFF1816G39201F
A7R1215	321-0388-00		RES., FXD, FILM: 107K OHM, 1%, 0.125W	91637	MFF1816G10702F
A7R1217	315-0220-00		RES., FXD, CMPSN: 22 OHM, 5%, 0.25W	01121	CB2205
A7R1219	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A7R1300	311-1245-00		RES., VAR, NONWIR: 10K OHM, 10%, 0.50W	73138	72-28-0
A7R1301	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A7R1305	315-0391-00		RES., FXD, CMPSN: 390 OHM, 5%, 0.25W	01121	CB3915
A7R1307	315-0391-00		RES., FXD, CMPSN: 390 OHM, 5%, 0.25W	01121	CB3915
A7R1314	321-0816-07		RES., FXD, FILM: 5K OHM, 0.1%, 0.125W	91637	MFF1816C50000B
A7R1316	321-1068-07		RES., FXD, FILM: 50.5 OHM, 0.1%, 0.125W	91637	MFF1816C50R50B

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A7R1326	321-0816-07		RES., FXD, FILM: 5K OHM, 0.1%, 0.125W	91637	MFF1816C50000B
A7R1328	321-1068-07	B010100 B020236X	RES., FXD, FILM: 50.5 OHM, 0.1%, 0.125W	91637	MFF1816C50R50B
A7R1400	307-0106-00		RES., FXD, CMPSN: 4.7 OHM, 5%, 0.25W	01121	CB47G5
A7R1401	321-0239-00		RES., FXD, FILM: 3.01K OHM, 1%, 0.125W	91637	MFF1816G30100F
A7R1402	307-0106-00		RES., FXD, CMPSN: 4.7 OHM, 5%, 0.25W	01121	CB47G5
A7R1403	321-0251-00		RES., FXD, FILM: 4.02K OHM, 1%, 0.125W	91637	MFF1816G40200F
A7R1404	315-0822-00		RES., FXD, CMPSN: 8.2K OHM, 5%, 0.25W	01121	CB8225
A7R1405	321-0164-00		RES., FXD, FILM: 499 OHM, 1%, 0.125W	91637	MFF1816G499R0F
A7R1406	315-0910-00		RES., FXD, CMPSN: 91 OHM, 5%, 0.25W	01121	CB9105
A7R1407	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A7R1408	311-1240-00		RES., VAR, NONWIR: 25K OHM, 10%, 0.50W	73138	72-30-0
A7R1410	315-0512-00		RES., FXD, CMPSN: 5.1K OHM, 5%, 0.25W	01121	CB5125
A7R1411	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A7R1414	315-0360-00		RES., FXD, CMPSN: 36 OHM, 5%, 0.25W	01121	CB3605
A7R1420	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A7R1421	321-0222-03		RES., FXD, FILM: 2K OHM, 0.25%, 0.125W	91637	MFF1816D20000C
A7R1422	321-0318-02		RES., FXD, FILM: 20K OHM, 0.5%, 0.125W	91637	MFF1816D20001D
A7R1423	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A7R1424	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A7R1425	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A7R1427	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A7R1428	315-0201-00		RES., FXD, CMPSN: 200 OHM, 5%, 0.25W	01121	CB2015
A7R1429	321-0771-01		RES., FXD, FILM: 50 OHM, 0.5%, 0.125W	91637	MFF1816G50R00D
A7R1500	315-0360-00		RES., FXD, CMPSN: 36 OHM, 5%, 0.25W	01121	CB3605
A7R1501	315-0750-00		RES., FXD, CMPSN: 75 OHM, 5%, 0.25W	01121	CB7505
A7R1502	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A7R1503	321-0164-00		RES., FXD, FILM: 499 OHM, 1%, 0.125W	91637	MFF1816G499R0F
A7R1504	315-0822-00		RES., FXD, CMPSN: 8.2K OHM, 5%, 0.25W	01121	CB8225
A7R1505	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A7R1506	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A7R1507	307-0106-00		RES., FXD, CMPSN: 4.7 OHM, 5%, 0.25W	01121	CB47G5
A7R1508	315-0201-00		RES., FXD, CMPSN: 200 OHM, 5%, 0.25W	01121	CB2015
A7R1509	307-0106-00		RES., FXD, CMPSN: 4.7 OHM, 5%, 0.25W	01121	CB47G5
A7R1510	315-0621-00		RES., FXD, CMPSN: 620 OHM, 5%, 0.25W	01121	CB6215
A7R1511	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A7R1512	315-0242-00		RES., FXD, CMPSN: 2.4K OHM, 5%, 0.25W	01121	CB2425
A7R1515	315-0242-00		RES., FXD, CMPSN: 2.4K OHM, 5%, 0.25W	01121	CB2425
A7R1516	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A7R1519	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A7R1525	315-0243-00		RES., FXD, CMPSN: 24K OHM, 5%, 0.25W	01121	CB2435
A7R1526	315-0182-00		RES., FXD, CMPSN: 1.8K OHM, 5%, 0.25W	01121	CB1825
A7R1527	311-1238-00		RES., VAR, NONWIR: 5K OHM, 10%, 0.50W	73138	72-27-0
A7R1602	315-0180-00		RES., FXD, CMPSN: 18 OHM, 5%, 0.25W	01121	CB1805
A7R1604	315-0162-00		RES., FXD, CMPSN: 1.6K OHM, 5%, 0.25W	01121	CB1625
A7R1606	315-0162-00		RES., FXD, CMPSN: 1.6K OHM, 5%, 0.25W	01121	CB1625
A7R1607	321-0069-00		RES., FXD, FILM: 51.1 OHM, 1%, 0.125W	91637	MFF1816G51R10F
A7R1608	315-0390-00		RES., FXD, CMPSN: 39 OHM, 5%, 0.25W	01121	CB3905
A7R1609	317-0220-00		RES., FXD, CMPSN: 22 OHM, 5%, 0.25W	01121	BB2205
A7R1610	315-0220-00		RES., FXD, CMPSN: 22 OHM, 5%, 0.25W	01121	CB2205
A7R1611	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A7R1612	315-0151-00		RES., FXD, CMPSN: 150 OHM, 5%, 0.25W	01121	CB1515
A7R1613	307-0106-00		RES., FXD, CMPSN: 4.7 OHM, 5%, 0.25W	01121	CB47G5
A7R1614	315-0510-00		RES., FXD, CMPSN: 51 OHM, 5%, 0.25W	01121	CB5105
A7R1615	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A7R1617	321-0033-00		RES., FXD, FILM: 21.5 OHM, 1%, 0.125W	91637	MFF1816G21R50F
A7R1618	321-0222-03		RES., FXD, FILM: 2K OHM, 0.25%, 0.125W	91637	MFF1816D20000C
A7R1619	321-0150-00		RES., FXD, FILM: 357 OHM, 1%, 0.125W	91637	MFF1816G357R0F

Replaceable Electrical Parts—CG 551AP, Vol 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A7R1620	317-0121-00		RES.,FXD,CMPSN:120 OHM,5%,0.125W	01121	BB1215
A7R1621	315-0330-00		RES.,FXD,CMPSN:33 OHM,5%,0.25W	01121	CB3305
A7R1622	317-0180-00		RES.,FXD,CMPSN:18 OHM,5%,0.125W	01121	BB1805
A7R1623	315-0431-00		RES.,FXD,CMPSN:430 OHM,5%,0.25W	01121	CB4315
A7R1624	317-0471-00		RES.,FXD,CMPSN:470 OHM,5%,0.125W	01121	BB4715
A7R1625	315-0130-00		RES.,FXD,CMPSN:13 OHM,5%,0.25W	01121	CB1305
A7R1626	317-0101-00		RES.,FXD,CMPSN:100 OHM,5%,0.125W	01121	BB1015
A7R1627	317-0750-00		RES.,FXD,CMPSN:75 OHM,5%,0.125W	01121	BB7505
A7R1629	315-0300-00		RES.,FXD,CMPSN:30 OHM,5%,0.25W	01121	CB3005
A7R1700	315-0911-00		RES.,FXD,CMPSN:910 OHM,5%,0.25W	01121	CB9115
A7R1702	315-0911-00		RES.,FXD,CMPSN:910 OHM,5%,0.25W	01121	CB9115
A7R1703	321-0069-00		RES.,FXD,FILM:51.1 OHM,1%,0.125W	91637	MFF1816G51R10F
A7R1704	315-0162-00		RES.,FXD,CMPSN:1.6K OHM,5%,0.25W	01121	CB1625
A7R1706	315-0162-00		RES.,FXD,CMPSN:1.6K OHM,5%,0.25W	01121	CB1625
A7R1708	317-0220-00		RES.,FXD,CMPSN:22 OHM,5%,0.125W	01121	BB2205
A7R1710	317-0220-00		RES.,FXD,CMPSN:22 OHM,5%,0.125W	01121	BB2205
A7R1711	315-0220-00		RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
A7R1712	315-0220-00		RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
A7R1713	315-0510-00		RES.,FXD,CMPSN:51 OHM,5%,0.25W	01121	CB5105
A7R1714	307-0106-00		RES.,FXD,CMPSN:4.7 OHM,5%,0.25W	01121	CB47G5
A7R1715	315-0151-00		RES.,FXD,CMPSN:150 OHM,5%,0.25W	01121	CB1515
A7R1716	315-0101-00		RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
A7R1717	315-0220-00		RES.,FXD,CMPSN:22 OHM,5%,0.25W	01121	CB2205
A7R1720	315-0300-00		RES.,FXD,CMPSN:30 OHM,5%,0.25W	01121	CB3005
A7R1721	317-0750-00		RES.,FXD,CMPSN:75 OHM,5%,0.125W	01121	BB7505
A7R1722	317-0180-00		RES.,FXD,CMPSN:18 OHM,5%,0.125W	01121	BB1805
A7R1724	317-0101-00		RES.,FXD,CMPSN:100 OHM,5%,0.125W	01121	BB1015
A7R1725	315-0330-00		RES.,FXD,CMPSN:33 OHM,5%,0.25W	01121	CB3305
A7R1726	303-0820-00		RES.,FXD,CMPSN:82 OHM,5%,1W	01121	GB8205
A7R1727	317-0471-00		RES.,FXD,CMPSN:470 OHM,5%,0.125W	01121	BB4715
A7R1728	303-0820-00		RES.,FXD,CMPSN:82 OHM,5%,1W	01121	GB8205
A7R1729	317-0121-00		RES.,FXD,CMPSN:120 OHM,5%,0.125W	01121	BB1215
A7R1730	315-0130-00		RES.,FXD,CMPSN:13 OHM,5%,0.25W	01121	CB1305
A7R1802	321-0891-00		RES.,FXD,FILM:800K OHM,1%,0.125W	91637	MFF1816G80002F
A7R1803	321-0193-02		RES.,FXD,FILM:1K OHM,0.5%,0.125W	24546	NC55C1001D
A7R1808	315-0512-00		RES.,FXD,CMPSN:5.1K OHM,5%,0.25W	01121	CB5125
A7R1809	321-0222-03		RES.,FXD,FILM:2K OHM,0.25%,0.125W	91637	MFF1816D20000C
A7R1812	321-0150-00		RES.,FXD,FILM:357 OHM,1%,0.125W	91637	MFF1816G357ROF
A7R1814	315-0180-00		RES.,FXD,CMPSN:18 OHM,5%,0.25W	01121	CB1805
A7R1817	321-0033-00		RES.,FXD,FILM:21.5 OHM,1%,0.125W	91637	MFF1816G21R50F
A7R1819	315-0101-00		RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
A7R1824	315-0431-00		RES.,FXD,CMPSN:430 OHM,5%,0.25W	01121	CB4315
A7T1407	120-0582-00		XFMR,TOROID:2 WINDINGS	80009	120-0582-00
A7TP1200	214-0579-00		TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A7TP1302	214-0579-00		TERM,TEST POINT:BRS CD PL	80009	214-0579-00
A7U1020	156-0796-01		MICROCIRCUIT,DI:8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A7U1022	156-1245-00		MICROCIRCUIT,LI:7 XSTR,HV/HIGH CUR	04713	MC1413PDS
A7U1130	156-0796-01		MICROCIRCUIT,DI:8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A7U1132	156-1245-00		MICROCIRCUIT,LI:7 XSTR,HV/HIGH CUR	04713	MC1413PDS
A7U1210	156-1156-01		MICROCIRCUIT,LI:OPERATIONAL AMPL,SCR	27014	LF356N/ADOWN
A7U1234	156-0796-01		MICROCIRCUIT,DI:8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A7U1236	156-1245-00		MICROCIRCUIT,LI:7 XSTR,HV/HIGH CUR	04713	MC1413PDS
A7U1412	156-1156-01		MICROCIRCUIT,LI:OPERATIONAL AMPL,SCR	27014	LF356N/ADOWN
A7U1619	156-0067-10		MICROCIRCUIT,LI:OPERATIONAL AMPLIFIER	80009	156-0067-10
A7U1802	156-0067-10		MICROCIRCUIT,LI:OPERATIONAL AMPLIFIER	80009	156-0067-10
A7U1824	156-0067-10		MICROCIRCUIT,LI:OPERATIONAL AMPLIFIER	80009	156-0067-10
A7U1833	156-0796-01		MICROCIRCUIT,DI:8 STG SHF & STORE BUS RGTR	80009	156-0796-01

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscnt	Name & Description	Mfr Code	Mfr Part Number
A7U1835	156-1245-00		MICROCIRCUIT, LI:7 XSTER, HV/HIGH CUR	04713	MC1413PDS
A7VR1032	152-0647-00		SEMICONV DEVICE: ZENER, 0.4W, 6.8V, 5%	80009	152-0647-00
A7VR1112	152-0123-00		SEMICONV DEVICE: ZENER, 0.5W, 9V, 5%	04713	SZ1153ORL
A7VR1412	152-0281-00		SEMICONV DEVICE: ZENER, 0.4W, 22V, 5%	12954	1N969B
A7VR1421	152-0195-00		SEMICONV DEVICE: ZENER, 0.4W, 5.1V, 5%	04713	SZ11755
A7VR1422	152-0195-00		SEMICONV DEVICE: ZENER, 0.4W, 5.1V, 5%	04713	SZ11755
A7VR1500	152-0195-00		SEMICONV DEVICE: ZENER, 0.4W, 5.1V, 5%	04713	SZ11755
A7VR1600	152-0195-00		SEMICONV DEVICE: ZENER, 0.4W, 5.1V, 5%	04713	SZ11755
A7VR1823	152-0217-00		SEMICONV DEVICE: ZENER, 0.4W, 8.2V, 5%	04713	SZG20
A7VR1824	152-0217-00		SEMICONV DEVICE: ZENER, 0.4W, 8.2V, 5%	04713	SZG20
A7W1311	131-0566-00		BUS CONDUCTOR: DUMMY RES, 2.375, 22 AWG	55210	L-2007-1
A7W1312	131-0566-00		BUS CONDUCTOR: DUMMY RES, 2.375, 22 AWG	55210	L-2007-1
A7W1322	131-0566-00		BUS CONDUCTOR: DUMMY RES, 2.375, 22 AWG	55210	L-2007-1
A7W1323	131-0566-00		BUS CONDUCTOR: DUMMY RES, 2.375, 22 AWG	55210	L-2007-1
A7A1	-----		CKT BOARD ASSY: ATTENUATOR COMP		
A7A1R1328	321-1068-07		RES., FXD, FILM: 50.5 OHM, 0.1%, 0.125W	91637	MFF1816C50R50B

Replaceable Electrical Parts—CG 551AP, Vol. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A8	-----		CKT BOARD ASSY:HIGH EDGE		
A8C1113	281-0814-00		CAP., FXD, CER DI:100PF, 10%, 100V	04222	GC70-1-A101K
A8C1123	281-0819-00		CAP., FXD, CER DI:33PF, 5%, 50V	72982	8035BCOG330
A8C1207	281-0775-00		CAP., FXD, CER DI:0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A8C1219	281-0775-00		CAP., FXD, CER DI:0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A8C1220	281-0775-00		CAP., FXD, CER DI:0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A8C1221	281-0775-00		CAP., FXD, CER DI:0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A8C1300	290-0261-00		CAP., FXD, ELCTLT:6.8UF, 10%, 35V	12954	D6R8B35K1
A8C1301	290-0261-00		CAP., FXD, ELCTLT:6.8UF, 10%, 35V	12954	D6R8B35K1
A8C1302	290-0177-00		CAP., FXD, ELCTLT:1UF, 20%, 50V	56289	162D105X0050CD2
A8C1315	281-0814-00		CAP., FXD, CER DI:100PF, 10%, 100V	04222	GC70-1-A101K
A8C1320	281-0814-00		CAP., FXD, CER DI:100PF, 10%, 100V	04222	GC70-1-A101K
A8C1400	281-0771-00		CAP., FXD, CER DI:0.0022UF, 20%, 200V	56289	292C Z5U222M200B
A8C1412	281-0770-00		CAP., FXD, CER DI:0.001UF, 20%, 100V	72982	8035D9AADX5R102M
A8C1424	281-0762-00		CAP., FXD, CER DI:27PF, 20%, 100V	72982	8035D9AADCOG270M
A8C1425	285-1082-00		CAP., FXD, PLSTC:0.47UF, 20%, 200V	14752	230B1C474
A8C1430	290-0426-00		CAP., FXD, ELCTLT:330UF, 20%, 6V	90201	THF337M006P1G
A8C1500	285-1049-00		CAP., FXD, PLSTC:0.01UF, 1%, 200V	14752	230B1C103F
A8C1510	281-0819-00		CAP., FXD, CER DI:33PF, 5%, 50V	72982	8035BCOG330
A8C1514	281-0768-00		CAP., FXD, CER DI:470PF, 20%, 100V	72982	8035D9AADW5R471M
A8C1517	281-0763-00		CAP., FXD, CER DI:47PF, 10%, 100V	72982	8035D9AADC1G470K
A8C1519	281-0763-00		CAP., FXD, CER DI:47PF, 10%, 100V	72982	8035D9AADC1G470K
A8C1600	281-0768-00		CAP., FXD, CER DI:470PF, 20%, 100V	72982	8035D9AADW5R471M
A8CR1124	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1125	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1219	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1222	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1223	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1224	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1320	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1321	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1322	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1323	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1330	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1400	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1405	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1501	152-0141-02		SEMICONV DEVICE:SILICON, 30V, 150MA	01295	1N4152R
A8CR1511	152-0322-00		SEMICONV DEVICE:SILICON, 15V, HOT CARRIER	50434	5082-2672
A8CR1515	152-0322-00		SEMICONV DEVICE:SILICON, 15V, HOT CARRIER	50434	5082-2672
A8K1230	148-0076-00		RELAY, REED:1 FORM A, 5V, 0.25A, 100V	95348	F81-1447
A8K1530	148-0076-00		RELAY, REED:1 FORM A, 5V, 0.25A, 100V	95348	F81-1447
A8Q1100	151-1059-00		TRANSISTOR: SILICON, FE, N-CHANNEL	80009	151-1059-00
A8Q1101	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A8Q1200	151-1059-00		TRANSISTOR: SILICON, FE, N-CHANNEL	80009	151-1059-00
A8Q1201	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A8Q1224	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A8Q1225	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A8Q1320	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A8Q1321	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A8Q1322	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A8Q1323	151-0188-03		TRANSISTOR: SILICON, PNP, SEL	80009	151-0188-03
A8Q1330	151-0331-00		TRANSISTOR: SILICON, NPN	03508	X40C115
A8Q1410	151-0612-01		TRANSISTOR: SILICON, PNP, SCREENED	80009	151-0612-01
A8Q1411	151-0279-03		TRANSISTOR: SILICON, NPN	80009	151-0279-03
A8Q1412	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A8Q1420	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05
A8Q1421	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscnt	Name & Description	Mfr Code	Mfr Part Number
A8Q1424	151-0443-00		TRANSISTOR:SILICON,PNP	80009	151-0443-00
A8Q1500	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A8Q1501	151-0347-01		TRANSISTOR:SILICON,NPN,PRESTRESSED	80009	151-0347-01
A8Q1502	151-0350-00		TRANSISTOR:SILICON,PNP	04713	SPS6700
A8Q1503	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A8Q1510	151-0350-00		TRANSISTOR:SILICON,PNP	04713	SPS6700
A8Q1511	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A8Q1515	151-0350-00		TRANSISTOR:SILICON,PNP	04713	SPS6700
A8Q1600	151-0350-00		TRANSISTOR:SILICON,PNP	04713	SPS6700
A8R1100	321-0926-07		RES.,FXD,FILM:4K OHM,0.1%,0.125W	91637	MFF1816C40000B
A8R1101	321-0466-00		RES.,FXD,FILM:698K OHM,1%,0.125W	91637	MFF1816G69802F
A8R1110	315-0183-00		RES.,FXD,CMPSN:18K OHM,5%,0.25W	01121	CB1835
A8R1111	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A8R1112	321-0648-04		RES.,FXD,FILM:500K OHM,0.1%,0.125W	91637	CMF110216D50002B
A8R1120	315-0103-00		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
A8R1121	315-0753-00		RES.,FXD,CMPSN:75K OHM,5%,0.25W	01121	CB7535
A8R1122	315-0332-00		RES.,FXD,CMPSN:3.3K OHM,5%,0.25W	01121	CB3325
A8R1124	315-0103-00		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
A8R1125	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A8R1201	321-0193-07		RES.,FXD,FILM:1K OHM,0.1%,0.125W	91637	MFF1816C10000B
A8R1202	321-0816-03		RES.,FXD,FILM:5K OHM,0.25%,0.125W	91637	MFF1816D50000C
A8R1203	321-0603-07		RES.,FXD,FILM:15K OHM,0.1%,0.125W	91637	MFF1816C15001B
A8R1204	321-0666-07		RES.,FXD,FILM:3.04K OHM,0.1%,0.125W	91637	MFF1816C30400B
A8R1205	321-0318-00		RES.,FXD,FILM:20K OHM,1%,0.125W	91637	MFF1816G20001F
A8R1206	321-0076-00		RES.,FXD,FILM:60.4 OHM,1%,0.125W	91637	MFF1816G60R40F
A8R1208	315-0751-00		RES.,FXD,CMPSN:750 OHM,5%,0.25W	01121	CB7515
A8R1210	315-0183-00		RES.,FXD,CMPSN:18K OHM,5%,0.25W	01121	CB1835
A8R1211	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A8R1212	321-0373-04		RES.,FXD,FILM:75K OHM,0.1%,0.125W	91637	MFF1816D75001B
A8R1213	321-0289-07		RES.,FXD,FILM:10K OHM,0.1%,0.125W	91637	MFF1816C10001B
A8R1214	321-0816-03		RES.,FXD,FILM:5K OHM,0.25%,0.125W	91637	MFF1816D50000C
A8R1216	321-0603-07		RES.,FXD,FILM:15K OHM,0.1%,0.125W	91637	MFF1816C15001B
A8R1217	321-0327-00		RES.,FXD,FILM:24.9K OHM,1%,0.125W	91637	MFF1816G24901F
A8R1218	321-0327-00		RES.,FXD,FILM:24.9K OHM,1%,0.125W	91637	MFF1816G24901F
A8R1222	315-0752-00		RES.,FXD,CMPSN:7.5K OHM,5%,0.25W	01121	CB7525
A8R1223	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A8R1224	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A8R1225	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A8R1226	315-0512-00		RES.,FXD,CMPSN:5.1K OHM,5%,0.25W	01121	CB5125
A8R1227	315-0104-00		RES.,FXD,CMPSN:100K OHM,5%,0.25W	01121	CB1045
A8R1230	308-0240-00		RES.,FXD,WW:2 OHM,5%,3W	91637	RS2B-D2R000J
A8R1300	311-1245-00		RES.,VAR,NONWIR:10K OHM,10%,0.50W	73138	72-28-0
A8R1301	311-1237-00		RES.,VAR,NONWIR:1K OHM,10%,0.50W	32997	3386X-T07-102
A8R1302	321-0326-00		RES.,FXD,FILM:24.3K OHM,1%,0.125W	91637	MFF1816G24301F
A8R1310	321-0327-00		RES.,FXD,FILM:24.9K OHM,1%,0.125W	91637	MFF1816G24901F
A8R1311	321-0222-00		RES.,FXD,FILM:2K OHM,1%,0.125W	91637	MFF1816G20000F
A8R1312	321-0350-00		RES.,FXD,FILM:43.2K OHM,1%,0.125W	91637	MFF1816G43201F
A8R1313	321-0222-00		RES.,FXD,FILM:2K OHM,1%,0.125W	91637	MFF1816G20000F
A8R1314	321-0348-00		RES.,FXD,FILM:41.2K OHM,1%,0.125W	91637	MFF1816G41201F
A8R1321	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A8R1322	315-0202-00		RES.,FXD,CMPSN:2K OHM,5%,0.25W	01121	CB2025
A8R1323	321-0193-07		RES.,FXD,FILM:1K OHM,0.1%,0.125W	91637	MFF1816C10000B
A8R1324	315-0302-00		RES.,FXD,CMPSN:3K OHM,5%,0.25W	01121	CB3025
A8R1330	315-0103-00		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
A8R1331	315-0202-00		RES.,FXD,CMPSN:2K OHM,5%,0.25W	01121	CB2025
A8R1400	322-0385-00		RES.,FXD,FILM:100K OHM,1%,0.25W	75042	CEBT0-1003F
A8R1401	311-1240-00		RES.,VAR,NONWIR:25K OHM,10%,0.50W	73138	72-30-0

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A8R1410	315-0153-00		RES., FXD, CMPSN: 15K OHM, 5%, 0.25W	01121	CB1535
A8R1411	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A8R1412	315-0362-00		RES., FXD, CMPSN: 3.6K OHM, 5%, 0.25W	01121	CB3625
A8R1420	315-0123-00		RES., FXD, CMPSN: 12K OHM, 5%, 0.25W	01121	CB1235
A8R1421	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A8R1422	315-0103-00		RES., FXD, CMPSN: 10K OHM, 5%, 0.25W	01121	CB1035
A8R1423	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A8R1425	315-0202-00		RES., FXD, CMPSN: 2K OHM, 5%, 0.25W	01121	CB2025
A8R1426	315-0360-00		RES., FXD, CMPSN: 36 OHM, 5%, 0.25W	01121	CB3605
A8R1430	315-0512-00		RES., FXD, CMPSN: 5.1K OHM, 5%, 0.25W	01121	CB5125
A8R1431	315-0473-00		RES., FXD, CMPSN: 47K OHM, 5%, 0.25W	01121	CB4735
A8R1433	315-0472-00		RES., FXD, CMPSN: 4.7K OHM, 5%, 0.25W	01121	CB4725
A8R1434	315-0431-00		RES., FXD, CMPSN: 430 OHM, 5%, 0.25W	01121	CB4315
A8R1501	315-0241-00		RES., FXD, CMPSN: 240 OHM, 5%, 0.25W	01121	CB2415
A8R1510	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A8R1511	315-0392-00		RES., FXD, CMPSN: 3.9K OHM, 5%, 0.25W	01121	CB3925
A8R1512	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A8R1513	315-0332-00		RES., FXD, CMPSN: 3.3K OHM, 5%, 0.25W	01121	CB3325
A8R1515	315-0101-00		RES., FXD, CMPSN: 100 OHM, 5%, 0.25W	01121	CB1015
A8R1516	315-0102-00		RES., FXD, CMPSN: 1K OHM, 5%, 0.25W	01121	CB1025
A8R1518	315-0242-00		RES., FXD, CMPSN: 2.4K OHM, 5%, 0.25W	01121	CB2425
A8R1519	315-0242-00		RES., FXD, CMPSN: 2.4K OHM, 5%, 0.25W	01121	CB2425
A8R1520	315-0153-00		RES., FXD, CMPSN: 15K OHM, 5%, 0.25W	01121	CB1535
A8R1530	321-0318-07		RES., FXD, FILM: 20K OHM, 0.1%, 0.125W	24546	NE55E2002B
A8R1600	315-0243-00		RES., FXD, CMPSN: 24K OHM, 5%, 0.25W	01121	CB2435
A8R1610	321-0771-01		RES., FXD, FILM: 50 OHM, 0.5%, 0.125W	91637	MFF1816G50R00D
A8TP1100	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8TP1200	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8TP1202	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8TP1210	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8TP1300	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8TP1302	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8TP1400	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8TP1402	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8TP1420	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8TP1500	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8TP1510	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8TP1520	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A8U1110	156-0854-01		MICROCIRCUIT, LI: OPERATIONAL AMPL, SCRN	27014	LM308AJ-8/A+
A8U1130	156-0796-01		MICROCIRCUIT, DI: 8 STG SHF & STORE BUS RGTR	80009	156-0796-01
A8U1210	156-0067-10		MICROCIRCUIT, LI: OPERATIONAL AMPLIFIER	80009	156-0067-10
A8U1211	156-0067-10		MICROCIRCUIT, LI: OPERATIONAL AMPLIFIER	80009	156-0067-10
A8U1220	156-0158-07		MICROCIRCUIT, LI: DUAL OPNL AMPL, SCREENED	01295	MC1458JG4
A8U1221	156-0158-07		MICROCIRCUIT, LI: DUAL OPNL AMPL, SCREENED	01295	MC1458JG4
A8U1230	156-0350-05		MICROCIRCUIT, DI: QUAD 2 INPUT NAND GATE, CHK	80009	156-0350-05
A8U1410	156-1156-01		MICROCIRCUIT, LI: OPERATIONAL AMPL, SCR	27014	LF356N/ADOWN
A8U1430	156-0109-01		MICROCIRCUIT, LI: OPTOELECTRONIC ISOLATOR	80009	156-0109-01
A8U1532	156-0109-01		MICROCIRCUIT, LI: OPTOELECTRONIC ISOLATOR	80009	156-0109-01
A8U1620	156-0384-02		MICROCIRCUIT, DI: QUAD 2-INP NAND GATE	01295	SN74LS03
A8VR1205	152-0461-00		SEMICONV DEVICE: ZENER, 0.4W, 6.2V, 5%	04713	1N821
A8VR1324	152-0647-00		SEMICONV DEVICE: ZENER, 0.4W, 6.8V, 5%	80009	152-0647-00
A8VR1430	152-0662-00		SEMICONV DEVICE: ZENER, 0.4W, 5V, 1%	04713	SZG195

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A9	-----		CKT BOARD ASSY:CPU		
A9BT1231	146-0035-00		BATTERY, STORAGE: 3.75VDC, 1/3 AA CELL	09823	CS-1303
A9C1101	290-0523-00		CAP., FXD, ELCTLT: 2.2UF, 20%, 20V	56289	196D225X0020HA1
A9C1102	281-0812-00	B010100 B010153	CAP., FXD, CER DI: 1000PF, 10%, 100V (STANDARD ONLY)	72982	8035D9AADX7R102K
A9C1102	281-0826-00	B010154	CAP., FXD, CER DI: 2200PF, 5%, 100V (STANDARD ONLY)	04222	CA101C222KAA
A9C1102	281-0812-00	B010100 B020193	CAP., FXD, CER DI: 1000PF, 10%, 100V (OPTION 01 ONLY)	72982	8035D9AADX7R102K
A9C1102	281-0826-00	B020194	CAP., FXD, CER DI: 2200PF, 5%, 100V (OPTION 01 ONLY)	04222	CA101C222KAA
A9C1103	281-0812-00	B010100 B010153	CAP., FXD, CER DI: 1000PF, 10%, 100V (STANDARD ONLY)	72982	8035D9AADX7R102K
A9C1103	281-0826-00	B010154	CAP., FXD, CER DI: 2200PF, 5%, 100V (STANDARD ONLY)	04222	CA101C222KAA
A9C1103	281-0812-00	B010100 B020193	CAP., FXD, CER DI: 1000PF, 10%, 100V (OPTION 01 ONLY)	72982	8035D9AADX7R102K
A9C1103	281-0826-00	B020194	CAP., FXD, CER DI: 2200PF, 5%, 100V (OPTION 01 ONLY)	04222	CA101C222KAA
A9C1104	290-0523-00		CAP., FXD, ELCTLT: 2.2UF, 20%, 20V	56289	196D225X0020HA1
A9C1122	283-0150-00		CAP., FXD, CER DI: 650PF, 5%, 200V	59660	835-515B651J
A9C1123	283-0203-00		CAP., FXD, CER DI: 0.47UF, 20%, 50V	72982	8131N075E474M
A9C1131	290-0743-00		CAP., FXD, ELCTLT: 100UF, +50-10%, 16V	56289	500D146
A9C1135	283-0203-00		CAP., FXD, CER DI: 0.47UF, 20%, 50V	72982	8131N075E474M
A9C1221	290-0748-00		CAP., FXD, ELCTLT: 10UF, +50-10%, 20V	56289	500D149
A9C1222	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A9C1223	290-0534-00		CAP., FXD, ELCTLT: 1UF, 20%, 35V	56289	196D105X0035HA1
A9C1311	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A9C1312	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A9C1421	283-0339-00		CAP., FXD, CER DI: 0.22UF, 10%, 50V	72982	8131N075W5R224K
A9C1425	283-0256-00		CAP., FXD, CER DI: 130PF, 5%, 100V	51642	200-100N1500131J
A9C1431	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A9C1501	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A9C1511	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A9C1512	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A9C1521	290-0523-00		CAP., FXD, ELCTLT: 2.2UF, 20%, 20V	56289	196D225X0020HA1
A9C1530	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A9C1531	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A9C1621	283-0197-00		CAP., FXD, CER DI: 470PF, 5%, 100V	72982	8121N075C0G0471J
A9C1636	281-0775-00		CAP., FXD, CER DI: 0.1UF, 20%, 50V	72982	8005D9AABZ5U104M
A9CR1211	152-0246-00		SEMICONV DEVICE: SW, SI, 40V, 200MA	03508	DE140
A9CR1212	152-0246-00		SEMICONV DEVICE: SW, SI, 40V, 200MA	03508	DE140
A9CR1221	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A9CR1421	152-0066-00		SEMICONV DEVICE: SILICON, 400V, 750MA	14433	LG4016
A9CR1521	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A9CR1531	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A9CR1631	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A9CR1632	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A9CR1633	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A9CR1634	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A9CR1635	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A9CR1636	152-0141-02		SEMICONV DEVICE: SILICON, 30V, 150MA	01295	1N4152R
A9F1021	159-0015-00		FUSE, CARTRIDGE: 3AG, 3A, 250V, FAST-BLOW	71400	AGC 3
A9J1111	131-1425-00		CONTACT SET, ELE: R ANGLE, 0.150" L, STR OF 36	22526	65521-136
A9J1211	131-2401-00		CONN, RCPT, ELEC: 2 X 25, MALE	22526	65610-150
A9J1731	131-1939-00		TERM. SET, PIN: 1 X 14, 0.15 SPACING	22526	65561-114
A9L1425	108-0249-00		COIL, RF: 12UH	76493	B-4992
A9Q1101	151-0301-01		TRANSISTOR: SILICON, PNP, PRESTRESSED	80009	151-0301-01
A9Q1109	151-0190-05		TRANSISTOR: SILICON, NPN	80009	151-0190-05

Replaceable Electrical Parts—CG 551AP, Vol. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A9Q1121	151-0515-01		SCR:SILICON	04713	2N4441
A9Q1431	151-0188-03		TRANSISTOR:SILICON,PNP,SEL	80009	151-0188-03
A9Q1521	151-0424-00		TRANSISTOR:SILICON,NPN	04713	SPS8246
A9Q1522	151-0302-01		TRANSISTOR:SILICON,NPN,SEL	80009	151-0302-01
A9Q1523	151-0302-01		TRANSISTOR:SILICON,NPN,SEL	80009	151-0302-01
A9Q1531	151-0302-01		TRANSISTOR:SILICON,NPN,SEL	80009	151-0302-01
A9R1000	315-0101-00		RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
A9R1001	321-0371-00		RES.,FXD,FILM:71.5K OHM,1%,0.125W	91637	MFF1816G71501F
A9R1100	315-0101-00		RES.,FXD,CMPSN:100 OHM,5%,0.25W	01121	CB1015
A9R1101	321-0335-00		RES.,FXD,FILM:30.1K OHM,1%,0.125W	91637	MFF1816G30101F
A9R1109	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A9R1121	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A9R1122	321-0250-01		RES.,FXD,FILM:3.92K OHM,0.5%,0.125W	91637	MFF1816G39200D
A9R1123	321-0258-01		RES.,FXD,FILM:4.75K OHM,0.5%,0.125W	24546	NA55D4751D
A9R1124	321-0911-02		RES.,FXD,FILM:829 OHM,0.5%,0.125W	91637	MFF1816D829R0D
A9R1125	308-0742-00		RES.,FXD,WW:0.24 OHM,5%,2W	75042	BWH-R2400J
A9R1132	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A9R1211	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A9R1215	301-0221-00		RES.,FXD,CMPSN:220 OHM,5%,0.50W	01121	EB2215
A9R1221	315-0181-00		RES.,FXD,CMPSN:180 OHM,5%,0.25W	01121	CB1815
A9R1313	315-0302-00		RES.,FXD,CMPSN:3K OHM,5%,0.25W	01121	CB3025
A9R1321	315-0302-00		RES.,FXD,CMPSN:3K OHM,5%,0.25W	01121	CB3025
A9R1330	307-0445-00		RES NTWK,FXD,FI:4.7K OHM,20%,(9) RES	91637	MSP10A01-472M
A9R1421	315-0430-00		RES.,FXD,CMPSN:43 OHM,5%,0.25W	01121	CB4305
A9R1422	315-0430-00		RES.,FXD,CMPSN:43 OHM,5%,0.25W	01121	CB4305
A9R1423	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A9R1425	315-0202-00		RES.,FXD,CMPSN:2K OHM,5%,0.25W	01121	CB2025
A9R1432	315-0751-00		RES.,FXD,CMPSN:750 OHM,5%,0.25W	01121	CB7515
A9R1433	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A9R1521	315-0511-00		RES.,FXD,CMPSN:510 OHM,5%,0.25W	01121	CB5115
A9R1522	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A9R1523	315-0511-00		RES.,FXD,CMPSN:510 OHM,5%,0.25W	01121	CB5115
A9R1524	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A9R1525	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A9R1526	321-0816-03		RES.,FXD,FILM:5K OHM,0.25%,0.125W	91637	MFF1816D50000C
A9R1527	321-0774-03		RES.,FXD,FILM:4.5K OHM,0.25%,0.125W	91637	MFF1816D45000C
A9R1528	315-0104-00		RES.,FXD,CMPSN:100K OHM,5%,0.25W	01121	CB1045
A9R1529	315-0302-00		RES.,FXD,CMPSN:3K OHM,5%,0.25W	01121	CB3025
A9R1530	315-0391-00		RES.,FXD,CMPSN:390 OHM,5%,0.25W	01121	CB3915
A9R1531	315-0100-00		RES.,FXD,CMPSN:10 OHM,5%,0.25W	01121	CB1005
A9R1532	315-0751-00		RES.,FXD,CMPSN:750 OHM,5%,0.25W	01121	CB7515
A9R1533	315-0104-00		RES.,FXD,CMPSN:100K OHM,5%,0.25W	01121	CB1045
A9R1534	315-0302-00		RES.,FXD,CMPSN:3K OHM,5%,0.25W	01121	CB3025
A9R1535	315-0122-00		RES.,FXD,CMPSN:1.2K OHM,5%,0.25W	01121	CB1225
A9R1536	315-0102-00		RES.,FXD,CMPSN:1K OHM,5%,0.25W	01121	CB1025
A9R1537	315-0332-00		RES.,FXD,CMPSN:3.3K OHM,5%,0.25W	01121	CB3325
A9R1611	315-0302-00		RES.,FXD,CMPSN:3K OHM,5%,0.25W	01121	CB3025
A9R1620	315-0472-00		RES.,FXD,CMPSN:4.7K OHM,5%,0.25W	01121	CB4725
A9R1622	315-0103-00		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
A9R1629	315-0202-00		RES.,FXD,CMPSN:2K OHM,5%,0.25W	01121	CB2025
A9R1630	315-0202-00		RES.,FXD,CMPSN:2K OHM,5%,0.25W	01121	CB2025
A9R1631	315-0273-00		RES.,FXD,CMPSN:27K OHM,5%,0.25W	01121	CB2735
A9R1632	315-0822-00		RES.,FXD,CMPSN:8.2K OHM,5%,0.25W	01121	CB8225
A9R1633	315-0273-00		RES.,FXD,CMPSN:27K OHM,5%,0.25W	01121	CB2735
A9R1634	315-0822-00		RES.,FXD,CMPSN:8.2K OHM,5%,0.25W	01121	CB8225
A9R1635	315-0273-00		RES.,FXD,CMPSN:27K OHM,5%,0.25W	01121	CB2735
A9S1611	260-1589-00		SWITCH,PUSH:(6)SPST,0.1A,5V	00779	435166-4
A9S1731	260-0960-01		SWITCH,SLIDE:0.5A,120VDC,CKT BD MT	10389	23-021-043

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A9TP1215	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A9TP1217	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A9TP1220	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A9TP1610	214-0579-00		TERM, TEST POINT: BRS CD PL	80009	214-0579-00
A9U1101	156-0496-01		MICROCIRCUIT, LI: VOLTAGE RGLTR, BURNED IN	80009	156-0496-01
A9U1122	156-1173-00		MICROCIRCUIT, LI: VOLTAGE REFERENCE	04713	MC1403UDS
A9U1123	156-0071-02		MICROCIRCUIT, LI: VOLTAGE REGULATOR	04713	MC1723CLDS
A9U1201	156-0887-01		MICROCIRCUIT, DI: 256 X 4 SRAM, SCRN	80009	156-0887-01
A9U1301	156-0887-01		MICROCIRCUIT, DI: 256 X 4 SRAM, SCRN	80009	156-0887-01
A9U1302	156-1028-01		MICROCIRCUIT, DI: 1024 X 4 STATIC RAM W/3 ST	80009	156-1028-01
A9U1303	156-1028-01		MICROCIRCUIT, DI: 1024 X 4 STATIC RAM W/3 ST	80009	156-1028-01
A9U1311	156-0916-02		MICROCIRCUIT, DI: 8-2 INP 3-STATE BFR, BURN	27014	DM81LS97
A9U1321	156-0916-02		MICROCIRCUIT, DI: 8-2 INP 3-STATE BFR, BURN	27014	DM81LS97
A9U1331	156-1111-02	B010100 B010153	MICROCIRCUIT, DI: OCTAL BUS TRANSCEIVERS (STANDARD ONLY)	80009	156-1111-02
A9U1331	156-1111-00	B010154	MICROCIRCUIT, DI: OCTAL BUS TRANSCEIVERS (STANDARD ONLY)	80009	156-1111-00
A9U1331	156-1111-02	B010100 B020193	MICROCIRCUIT, DI: OCTAL BUS TRANSCEIVERS (OPTION 01 ONLY)	80009	156-1111-02
A9U1331	156-1111-00	B020194	MICROCIRCUIT, DI: OCTAL BUS TRANSCEIVERS (OPTION 01 ONLY)	80009	156-1111-00
A9U1332	156-0480-02		MICROCIRCUIT, DI: QUAD 2 INP & GATE	01295	SN74LS08NP3
A9U1401	160-0743-00		MICROCIRCUIT, DI: 2048 X 8 ROM, PROGRAMMED	80009	160-0743-00
A9U1411	156-0385-02		MICROCIRCUIT, DI: HEX INVERTER	01295	SN74LS04
A9U1421	156-0426-05		MICROCIRCUIT, DI: MICROPROCESSOR, SCREENED	80009	156-0426-05
A9U1422	156-1086-00		MICROCIRCUIT, DI: 2 PHASE CLOCKGEN/DRIWER	04713	MC6875P
A9U1501	160-0744-00	B010100 B020193	MICROCIRCUIT, DI: 2048 X 8 ROM, PROGRAMMED (OPTION 01 ONLY)	80009	160-0744-00
A9U1501	160-0744-01	B020194	MICROCIRCUIT, DI: 2048 X 8 EPROM, PROGRAMMED (OPTION 01 ONLY)	80009	160-0744-01
A9U1501	160-0744-00	B010100 B010153	MICROCIRCUIT, DI: 2048 X 8 ROM, PROGRAMMED (STANDARD ONLY)	80009	160-0744-00
A9U1501	160-0744-01	B010154	MICROCIRCUIT, DI: 2048 X 8 EPROM, PROGRAMMED (STANDARD ONLY)	80009	160-0744-01
A9U1502	160-0745-00	B010100 B020193	MICROCIRCUIT, DI: 2048 X 8 ROM, PROGRAMMED (OPTION 01 ONLY)	80009	160-0745-00
A9U1502	160-0745-01	B020194	MICROCIRCUIT, DI: 2048 X 8 EPROM, PROGRAMMED (OPTION 01 ONLY)	80009	160-0745-01
A9U1502	160-0745-00	B010100 B010153	MICROCIRCUIT, DI: 2048 X 8 ROM, PROGRAMMED (STANDARD ONLY)	80009	160-0745-00
A9U1502	160-0745-01	B010154	MICROCIRCUIT, DI: 2048 X 8 EPROM, PROGRAMMED (STANDARD ONLY)	80009	160-0745-01
A9U1511	156-0985-01		MICROCIRCUIT, DI: DUAL 5 INPUT NOR GATE, SCRN	04713	SN74LS260
A9U1512	156-0541-02		MICROCIRCUIT, DI: DUAL 2 TO 4 LINE DCDR	01295	SN74LS139NP3
A9U1513	156-0464-02		MICROCIRCUIT, DI: DUAL 4 INP NAND GATE	01295	SN74LS20
A9U1521	156-0411-02		MICROCIRCUIT, LI: QUAD COMPARATOR, SEL	04713	MLM339LDS
A9U1531	156-0495-02		MICROCIRCUIT, LI: QUAD OPNL AMPL, SELECTED	01295	LM324J4
A9U1532	156-0383-02		MICROCIRCUIT, DI: QUAD 2-INP NOR GATE	01295	SN74LS02
A9U1601	160-0746-01	B010100 B020193	MICROCIRCUIT, DI: 2048 X 8 EPROM, PRGM (OPTION 01 ONLY)	80009	160-0746-01
A9U1601	160-0746-02	B020194	MICROCIRCUIT, DI: 2048 X 8 EPROM, PROGRAMMED (OPTION 01 ONLY)	80009	160-0746-02
A9U1601	160-0746-01	B010100 B010153	MICROCIRCUIT, DI: 2048 X 8 EPROM, PRGM (STANDARD ONLY)	80009	160-0746-01
A9U1601	160-0746-02	B010154	MICROCIRCUIT, DI: 2048 X 8 EPROM, PROGRAMMED (STANDARD ONLY)	80009	160-0746-02
A9U1621	156-0786-02		MICROCIRCUIT, DI: QUAD EXCLUSIVE OR GATE	80009	156-0786-02

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A9U1701	156-0427-04		MICROCIRCUIT,DI:PERIPHERAL INTERFACE ADPTR	80009	156-0427-04
A9U1721	156-0427-04		MICROCIRCUIT,DI:PERIPHERAL INTERFACE ADPTR	80009	156-0427-04
A9VR1001	152-0279-00		SEMICONV DEVICE:ZENER,0.4W,5.1V,5%	04713	SZG35010RL
A9VR1101	152-0279-00		SEMICONV DEVICE:ZENER,0.4W,5.1V,5%	04713	SZG35010RL
A9VR1131	152-0278-00		SEMICONV DEVICE:ZENER,0.4W,3V,5%	04713	SZG35009K20
A9VR1521	152-0278-00		SEMICONV DEVICE:ZENER,0.4W,3V,5%	04713	SZG35009K20
A9Y1431	158-0056-00		XTAL UNIT,QTZ:4MHZ,0.003%,SEERIES	34630	150-6070

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
A9A1	-----		CKT BOARD ASSY:GPIB		
A9A1C1012	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A9A1C1014	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A9A1C1020	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A9A1C1022	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A9A1C1120	281-0775-00		CAP.,FXD,CER DI:0.1UF,20%,50V	72982	8005D9AABZ5U104M
A9A1C1220	290-0748-00		CAP.,FXD,ELCTLT:10UF,+50-10%,20V	56289	500D149
A9A1J1020	136-0263-04		SOCKET,PIN TERM:FOR 0.025 INCH SQUARE PIN (QUANTITY 2)	22526	75377-001
A9A1Q1120	151-0190-05		TRANSISTOR:SILICON,NPN	80009	151-0190-05
A9A1R1012	307-0445-00		RES NTKW,FXD,FI:4.7K OHM,20%,(9) RES	91637	MSP10A01-472M
A9A1R1122	315-0103-00		RES.,FXD,CMPSN:10K OHM,5%,0.25W	01121	CB1035
A9A1S1010	260-1589-00		SWITCH,PUSH:(6)SPST,0.1A,5V	00779	435166-4
A9A1U1010	156-0720-02		MICROCIRCUIT,DI:HEX DRVR,4 TO2 LINE	01295	SN74LS368
A9A1U1012	160-0750-00		MICROCIRCUIT,DI:2048 X 8 ROM,CUSTOM MASK	80009	160-0750-00
A9A1U1014	160-0749-00		MICROCIRCUIT,DI:2048 X 8 ROM,CUSTOM MASK	80009	160-0749-00
A9A1U1020	160-0748-00		MICROCIRCUIT,DI:2048 X 8 ROM,PROGRAMMED	80009	160-0748-00
A9A1U1022	160-0747-01		MICROCIRCUIT,DI:2048 X 8 ROM,PROGRAMMED	80009	160-0747-01
A9A1U1120	156-0469-02		MICROCIRCUIT,DI:3/8 LINE DCDR	01295	SN74LS138NP3
A9A1U1122	156-0382-02		MICROCIRCUIT,DI:QUAD 2-INP NAND GATE	01295	SN74LS00
A9A1U1124	156-1246-01		MICROCIRCUIT,DI:GPIB PROTOCOL,SCRN	80009	156-1246-01
A9A1U1210	156-1133-02		MICROCIRCUIT,DI:QUAD 2 STATE XCVR,BURN-IN	80009	156-1133-02
A9A1U1220	156-1133-02		MICROCIRCUIT,DI:QUAD 2 STATE XCVR,BURN-IN	80009	156-1133-02
A9A1U1222	156-1133-02		MICROCIRCUIT,DI:QUAD 2 STATE XCVR,BURN-IN	80009	156-1133-02
A9A1U1224	156-1133-02		MICROCIRCUIT,DI:QUAD 2 STATE XCVR,BURN-IN	80009	156-1133-02

Replaceable Electrical Parts—CG 551AP, VOL. 2

Component No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Name & Description	Mfr Code	Mfr Part Number
CHASSIS PARTS					
C520	283-0187-00		CAP., FXD, CER DI: 0.047UF, 10%, 400V	72982	8131N401X5R0473K
C541	281-0697-00		CAP., FXD, CER DI: 5000PF, +100-0%, 100V	80009	281-0697-00
C542	281-0697-00		CAP., FXD, CER DI: 5000PF, +100-0%, 100V	80009	281-0697-00
C551	281-0697-00		CAP., FXD, CER DI: 5000PF, +100-0%, 100V	80009	281-0697-00
C552	281-0697-00		CAP., FXD, CER DI: 5000PF, +100-0%, 100V	80009	281-0697-00
C561	281-0824-00		CAP., FXD, CER DI: 100PF, 20%, 1K HZ	72982	2400-003-X5U-101
C562	281-0824-00		CAP., FXD, CER DI: 100PF, 20%, 1K HZ	72982	2400-003-X5U-101
C567	281-0824-00		CAP., FXD, CER DI: 100PF, 20%, 1K HZ	72982	2400-003-X5U-101
C568	281-0824-00		CAP., FXD, CER DI: 100PF, 20%, 1K HZ	72982	2400-003-X5U-101
C571	281-0824-00		CAP., FXD, CER DI: 100PF, 20%, 1K HZ	72982	2400-003-X5U-101
C572	281-0824-00		CAP., FXD, CER DI: 100PF, 20%, 1K HZ	72982	2400-003-X5U-101
C573	281-0824-00		CAP., FXD, CER DI: 100PF, 20%, 1K HZ	72982	2400-003-X5U-101
C574	281-0824-00		CAP., FXD, CER DI: 100PF, 20%, 1K HZ	72982	2400-003-X5U-101
C575	281-0824-00		CAP., FXD, CER DI: 100PF, 20%, 1K HZ	72982	2400-003-X5U-101
J525	119-0238-00		COIL, CAL:	80009	119-0238-00
J530	131-1471-00		CONN, RCPT, ELEC: RA, 3 EA MALE & FEMALE CONT	000FH	RA1306
Q501	151-0497-00		TRANSISTOR: SILICON, NPN	01295	TIP47

DIAGRAMS AND CIRCUIT BOARD ILLUSTRATIONS

Symbols

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

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

The overline on a signal name indicates that the signal performs its intended function when it is in the low state.

Abbreviations are based on ANSI Y1.1-1972.

Other ANSI standards that are used in the preparation of diagrams by Tektronix, Inc. are:

- Y14.15, 1966 Drafting Practices.
- Y14.2, 1973 Line Conventions and Lettering.
- Y10.5, 1968 Letter Symbols for Quantities Used in Electrical Science and Electrical Engineering.

American National Standard Institute
1430 Broadway
New York, New York 10018

Component Values

Electrical components shown on the diagrams are in the following units unless noted otherwise:

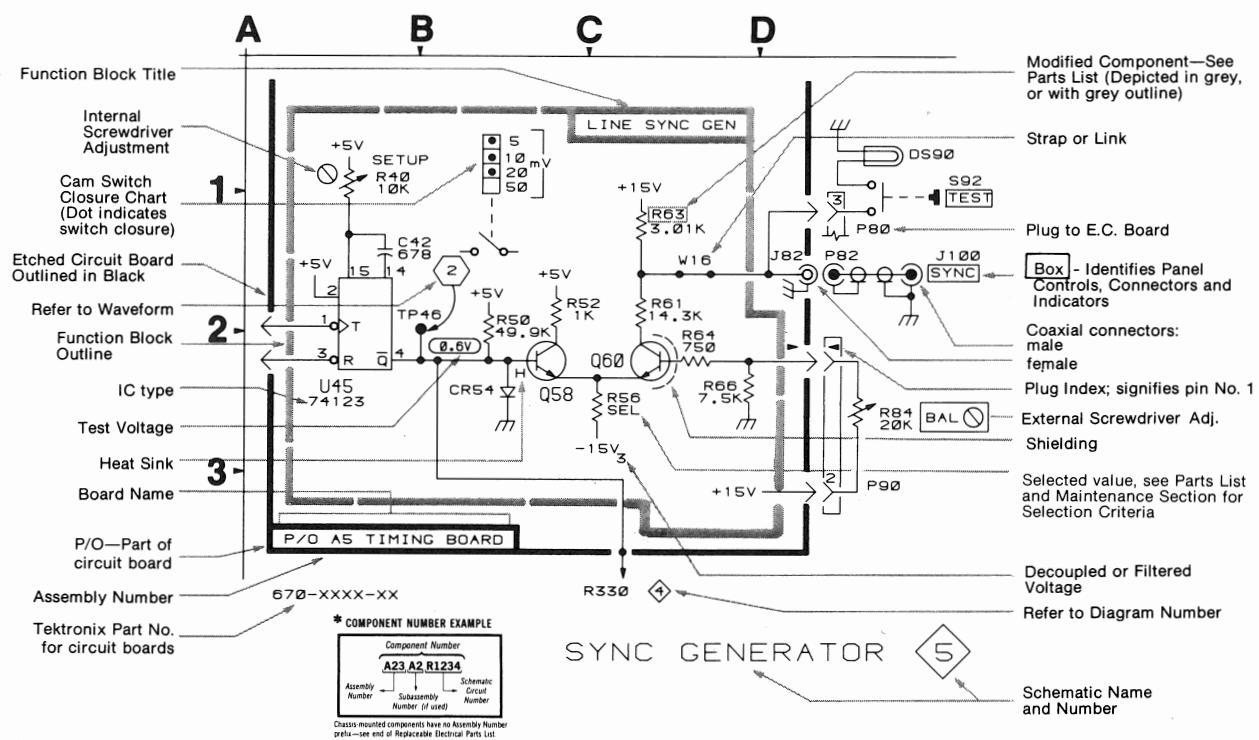
- Capacitors = Values one or greater are in picofarads (pF). Values less than one are in microfarads (μ F).
- Resistors = Ohms (Ω).

———— The information and special symbols below may appear in this manual. ————

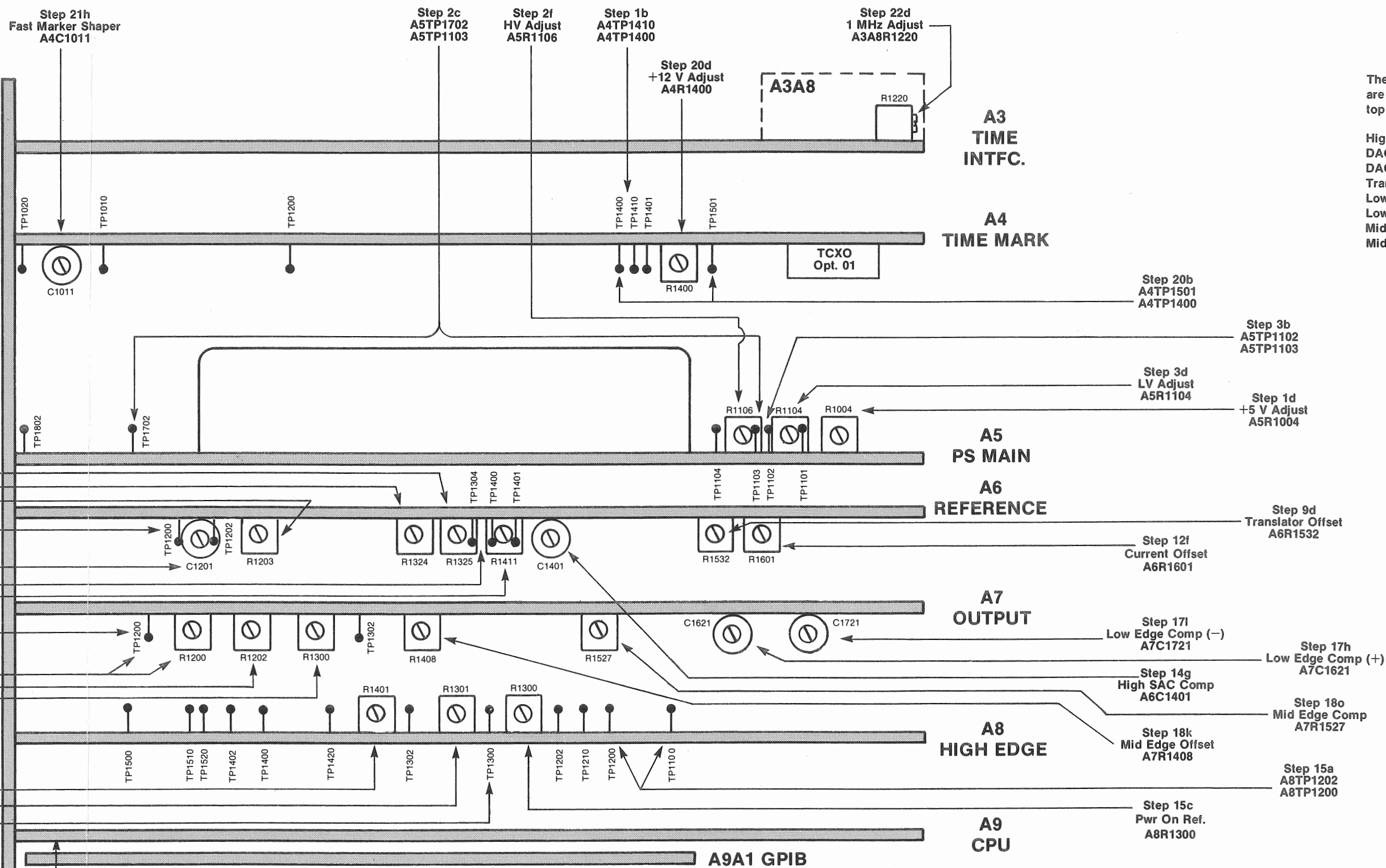
Assembly Numbers and Grid Coordinates

Each assembly in the instrument is assigned an assembly number (e.g., A20). The assembly number appears on the circuit board outline on the diagram, in the title for the circuit board component location illustration, and in the lookup table for the schematic diagram and corresponding component locator illustration. The Replaceable Electrical Parts list is arranged by assemblies in numerical sequence; the components are listed by component number *(see following illustration for constructing a component number).

The schematic diagram and circuit board component location illustration have grids. A lookup table with the grid coordinates is provided for ease of locating the component. Only the components illustrated on the facing diagram are listed in the lookup table. When more than one schematic diagram is used to illustrate the circuitry on a circuit board, the circuit board illustration may only appear opposite the first diagram on which it was illustrated; the lookup table will list the diagram number of other diagrams that the circuitry of the circuit board appears on.



ADJUSTMENT AND TEST POINT LOCATIONS



NOTE

The following adjustments are located below the top edge of the board.

- High SAC Offset
- DAC Offset
- DAC Gain
- Translator Offset
- Low Edge Comp (+)
- Low Edge Comp (-)
- Mid Edge Offset
- Mid Edge Comp

ADJUSTMENT AND TEST POINT LOCATIONS

Fig. 9-1.

ADJUSTMENT AND TEST POINT LOCATIONS

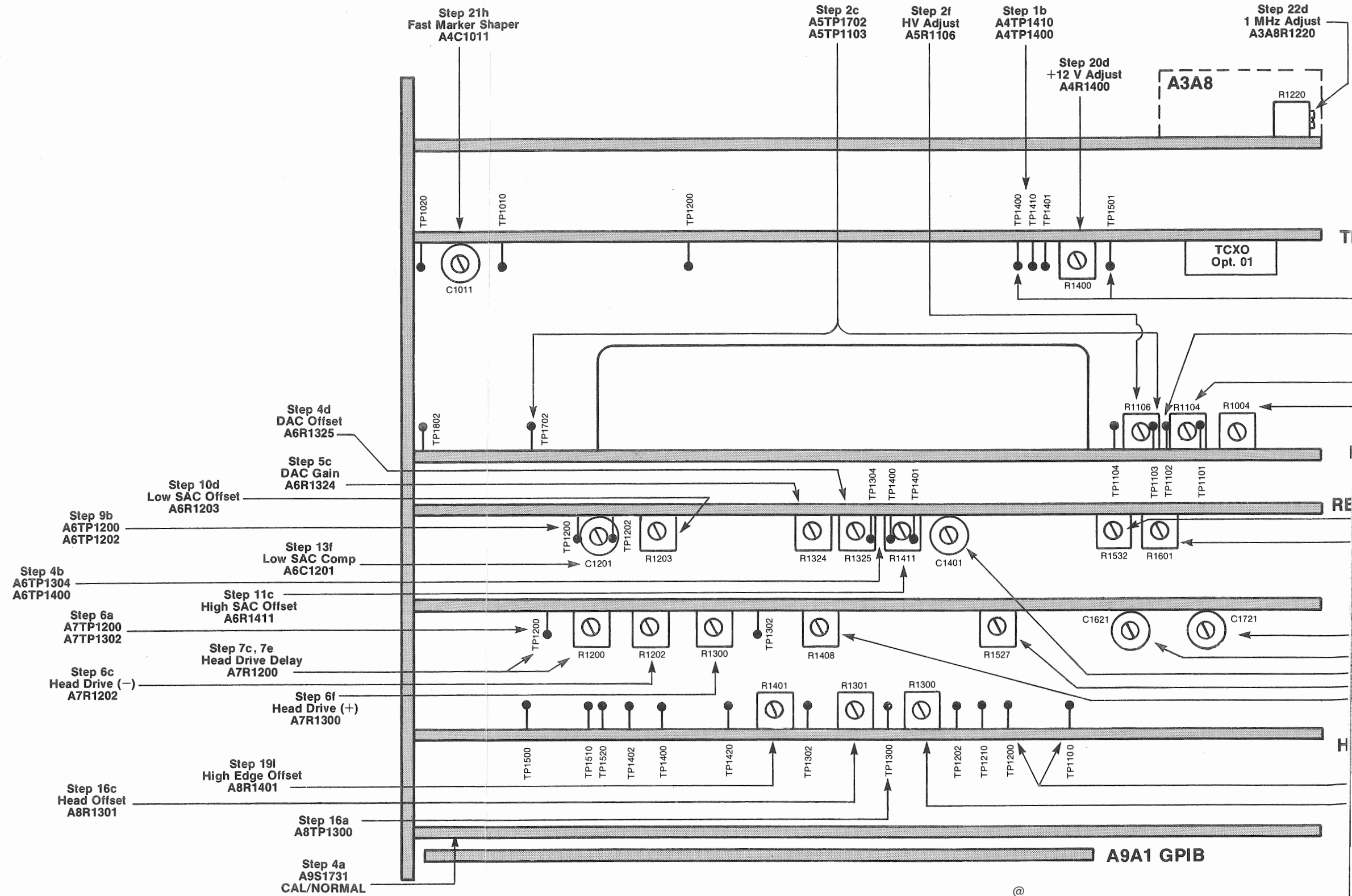


Fig. 9-1.

@

AMPLITUDE MODE CHECK

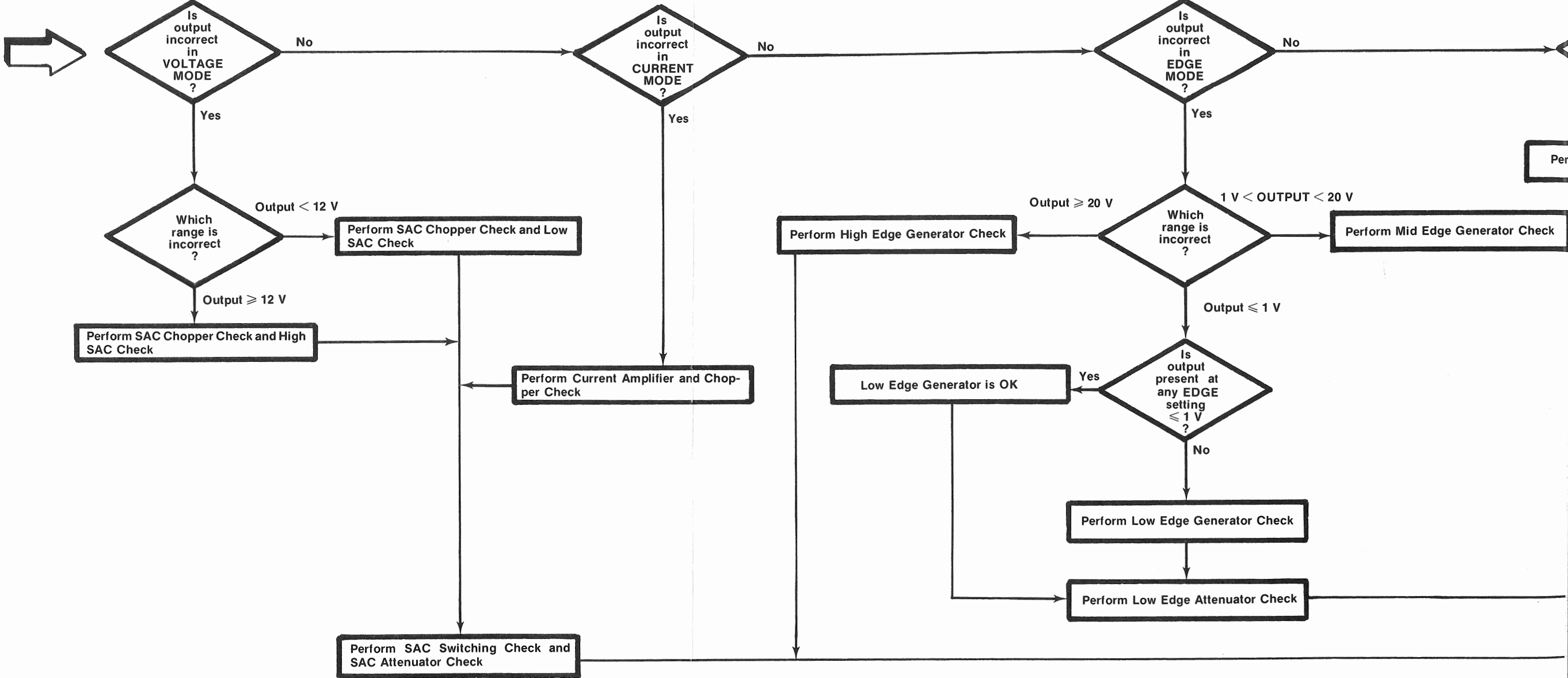


Fig. 9-3.
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AMPLITUDE MODE CHECK

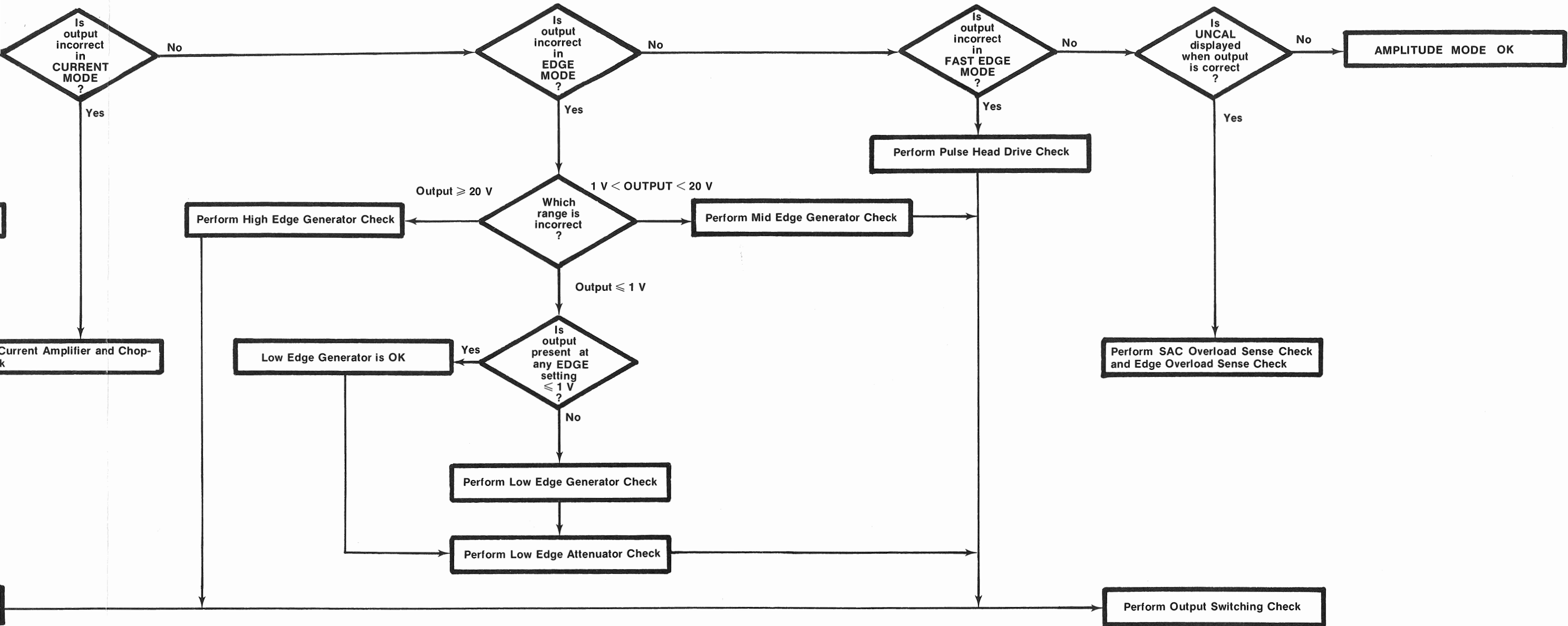
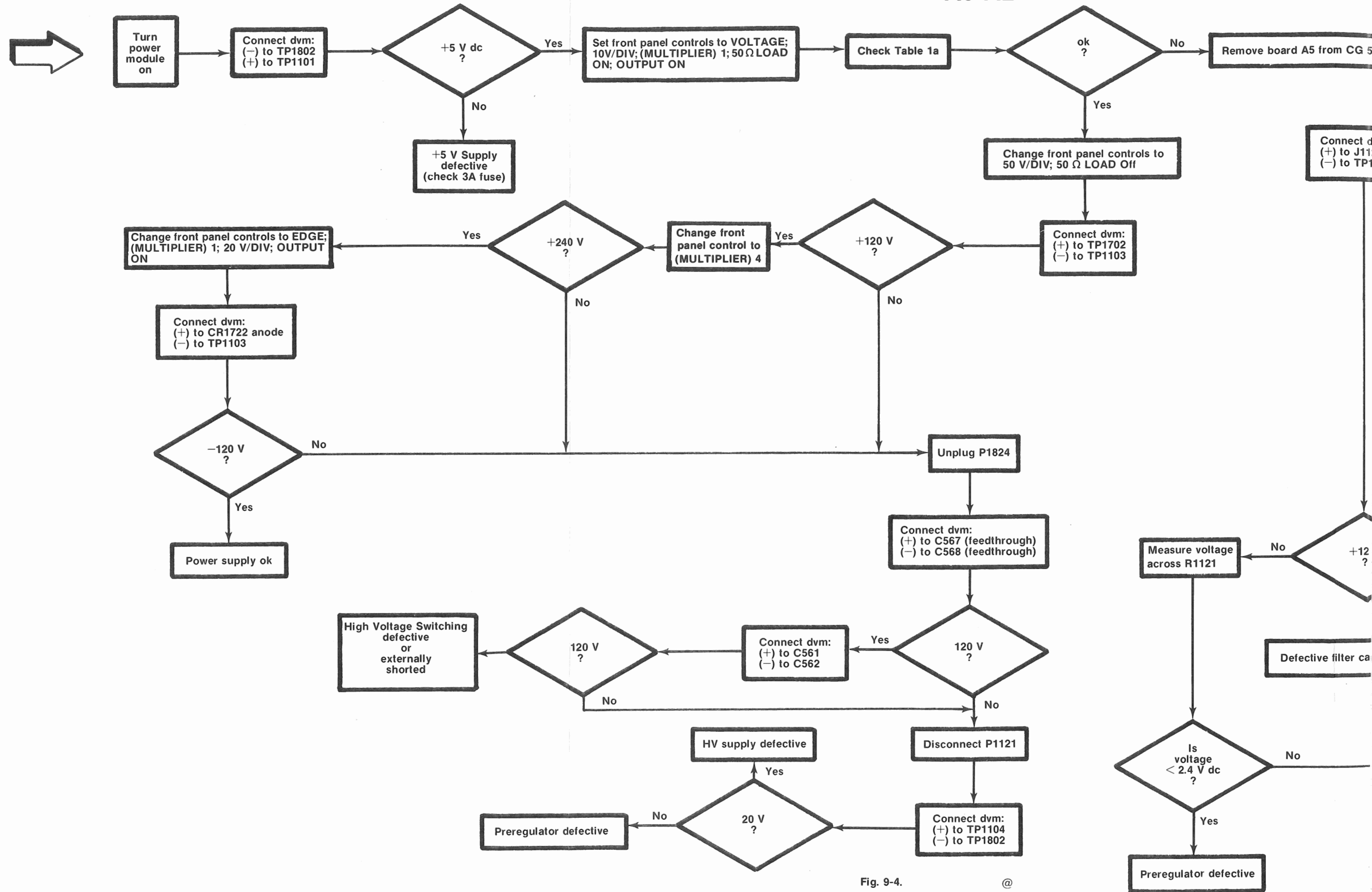


Fig. 9-3.
REV A JUL 1980

AMPLITUDE MODE CHECK
TROUBLESHOOTING TREE 1

POWER SUPPLY CHECK 18 A5 19 A5 A1 A5 A2



POWER SUPPLY CHECK
TROUBLESHOOTING TREE 2

Fig. 9-4.

@

POWER SUPPLY CHECK **18** A5 **19** A5 A1
A5 A2

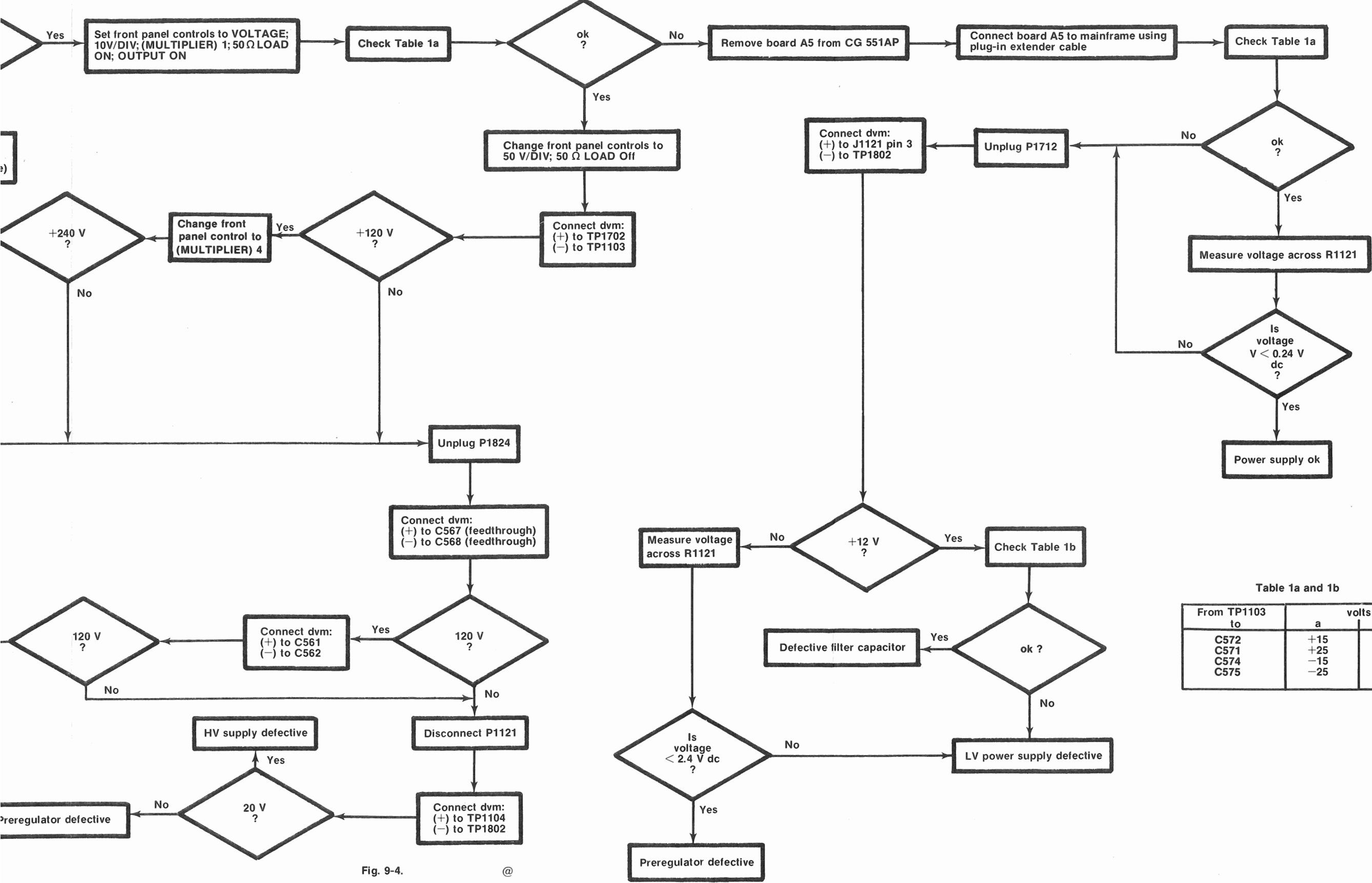


Table 1a and 1b

From TP1103 to	volts	
	a	b
C572	+15	18
C571	+25	36
C574	-15	-18
C575	-25	-36

Fig. 9-4. @

PROGRAMMABLE VOLTAGE REFERENCE CHECK 20 A6

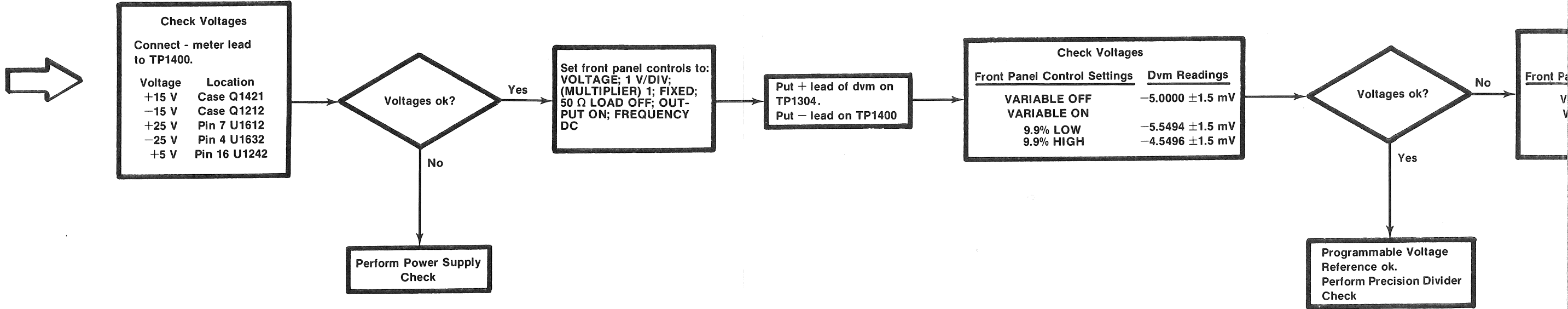


Fig. 9-5.

PROGRAMMABLE VOLTAGE REFERENCE CHECK 20 A6

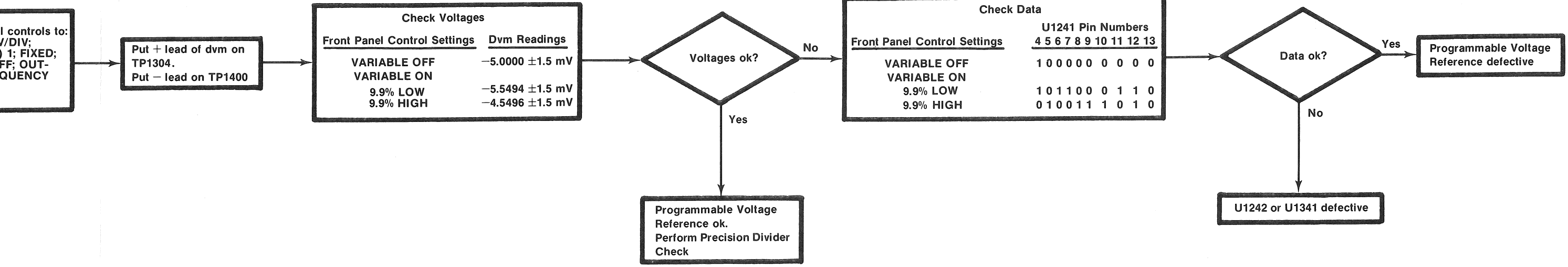


Fig. 9-5.

PRECISION DIVIDER CHECK 21 A6

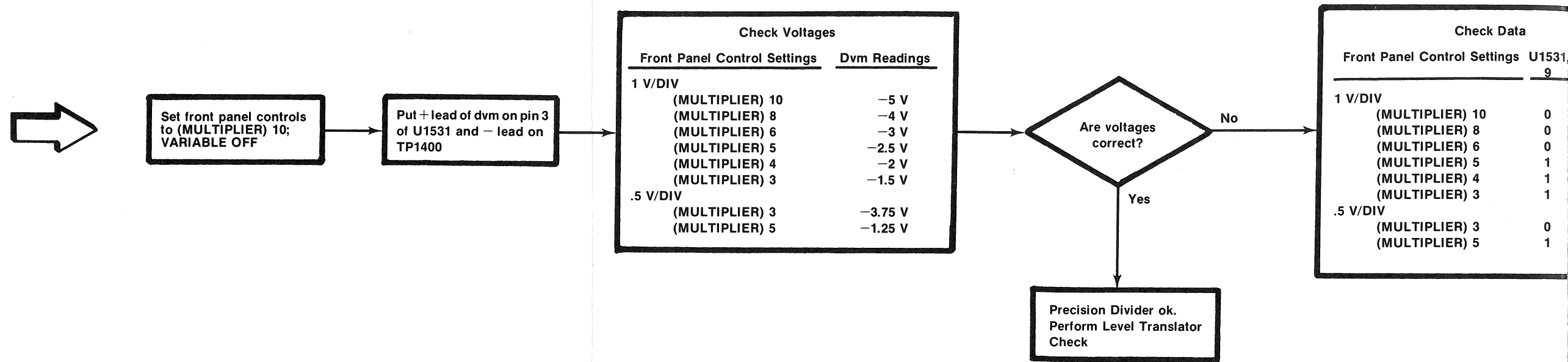


Fig. 9-6.

PRECISION DIVIDER CHECK 21 A6

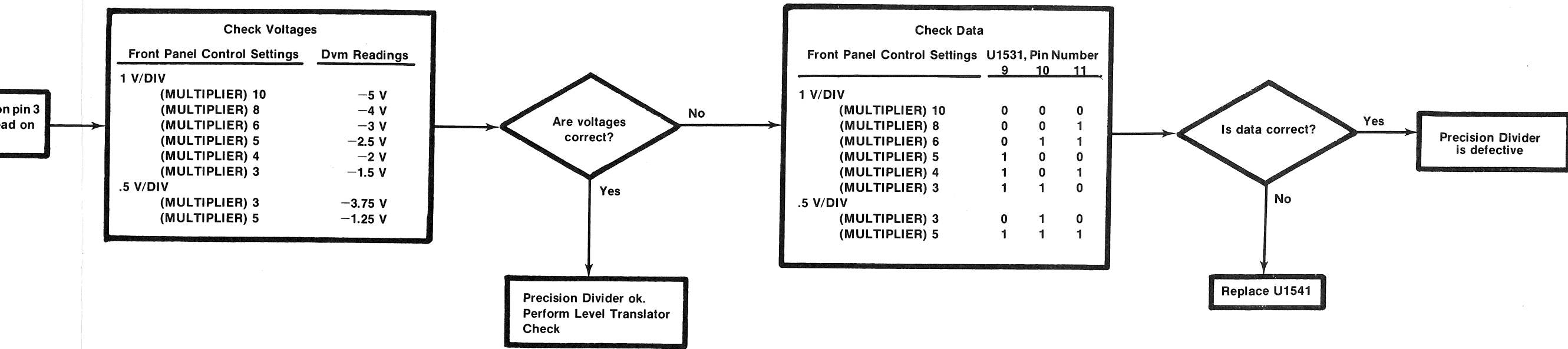


Fig. 9-6.

LEVEL TRANSLATOR CHECK 21 A6

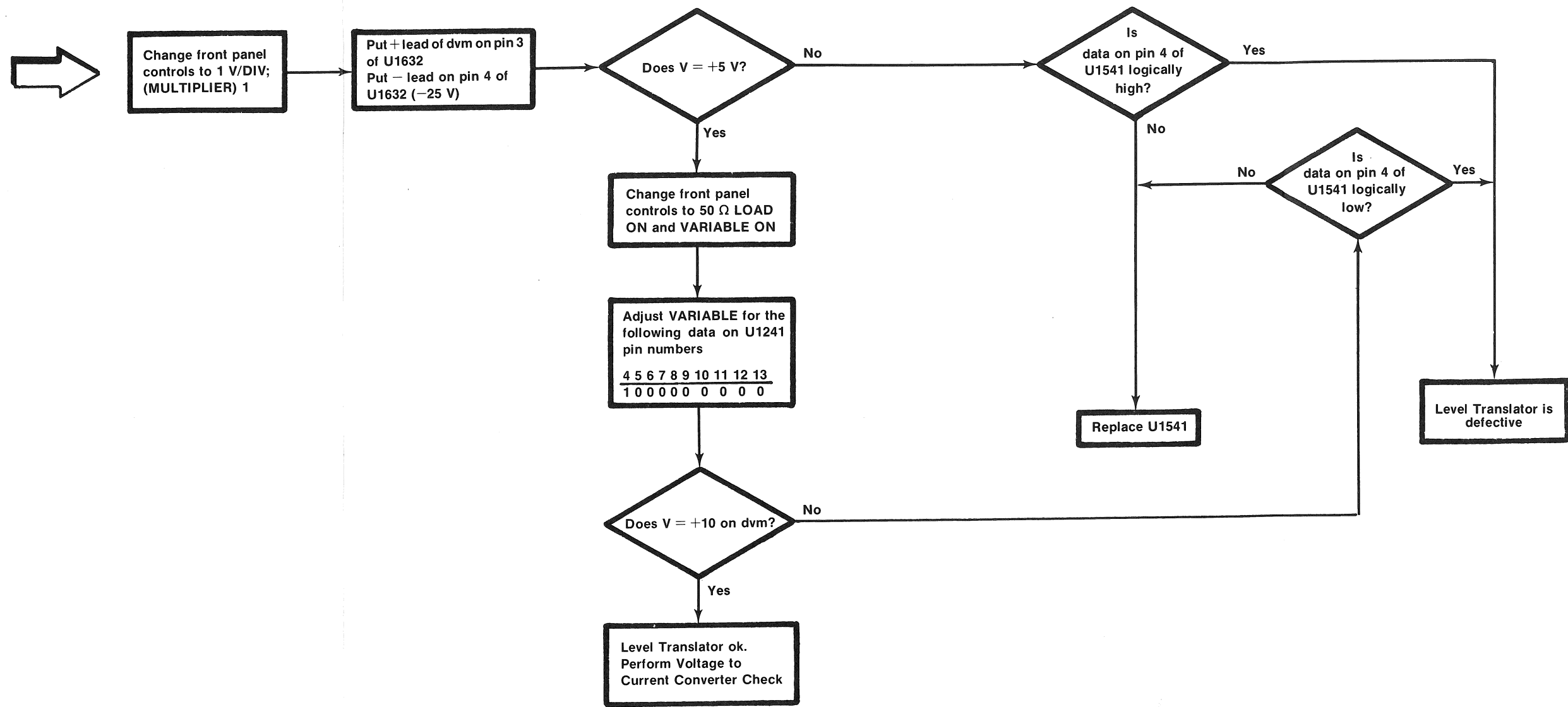
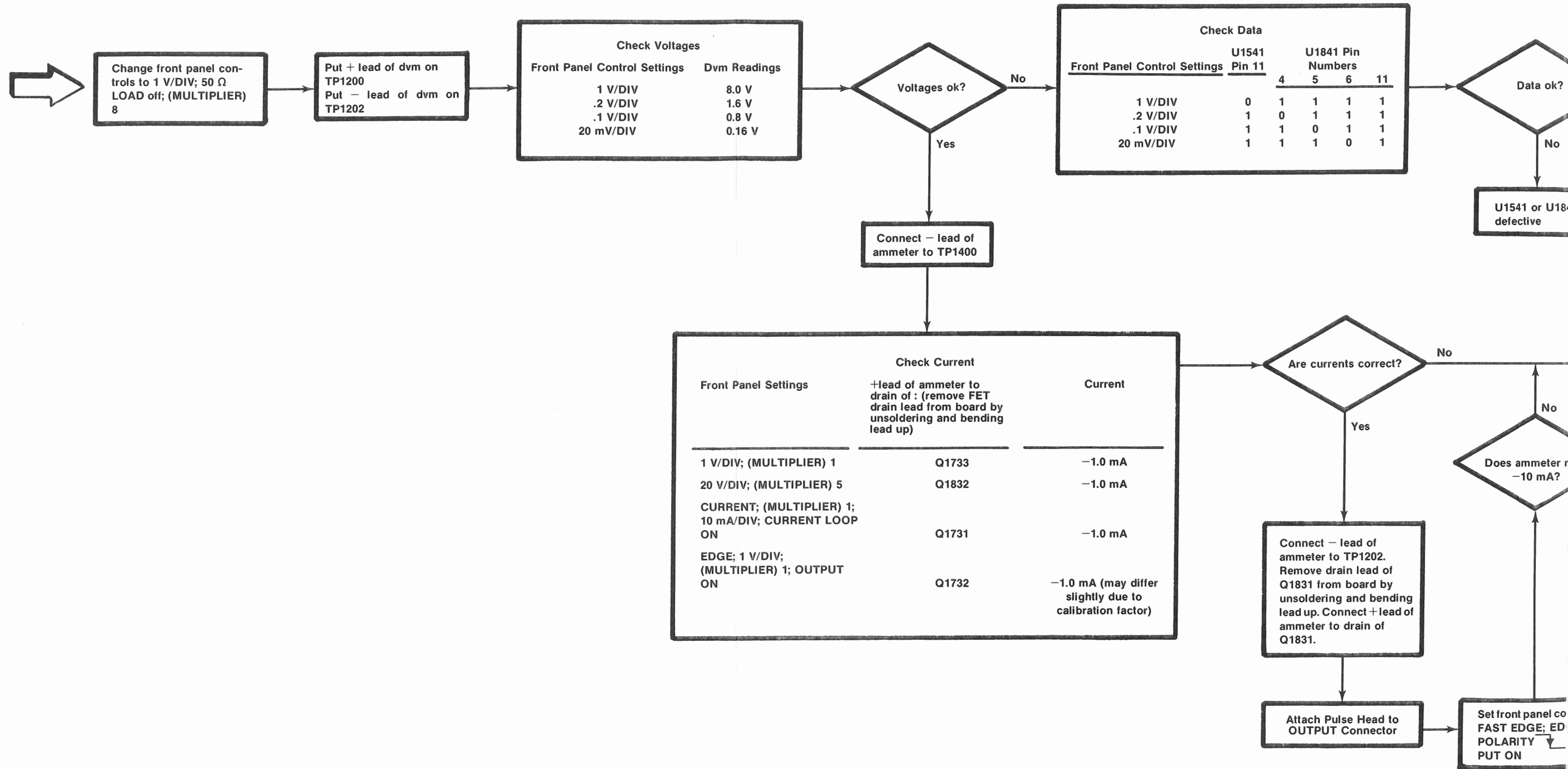


Fig. 9-7.

VOLTAGE TO CURRENT CONVERTER CHECK 21 A6



Check Voltages

Front Panel Control Settings	Dvm Readings
1 V/DIV	8.0 V
.2 V/DIV	1.6 V
.1 V/DIV	0.8 V
20 mV/DIV	0.16 V

Check Data

Front Panel Control Settings	U1541		U1841 Pin Numbers			
	Pin 11	Pin 11	4	5	6	11
1 V/DIV	0	1	1	1	1	1
.2 V/DIV	1	0	1	1	1	1
.1 V/DIV	1	1	0	1	1	1
20 mV/DIV	1	1	1	0	1	1

Check Current

Front Panel Settings	+Head of ammeter to drain of : (remove FET drain lead from board by unsoldering and bending lead up)	Current
1 V/DIV; (MULTIPLIER) 1	Q1733	-1.0 mA
20 V/DIV; (MULTIPLIER) 5	Q1832	-1.0 mA
CURRENT; (MULTIPLIER) 1; 10 mA/DIV; CURRENT LOOP ON	Q1731	-1.0 mA
EDGE; 1 V/DIV; (MULTIPLIER) 1; OUTPUT ON	Q1732	-1.0 mA (may differ slightly due to calibration factor)

Fig. 9-8.

VOLTAGE TO CURRENT CONVERTER CHECK 21 A6

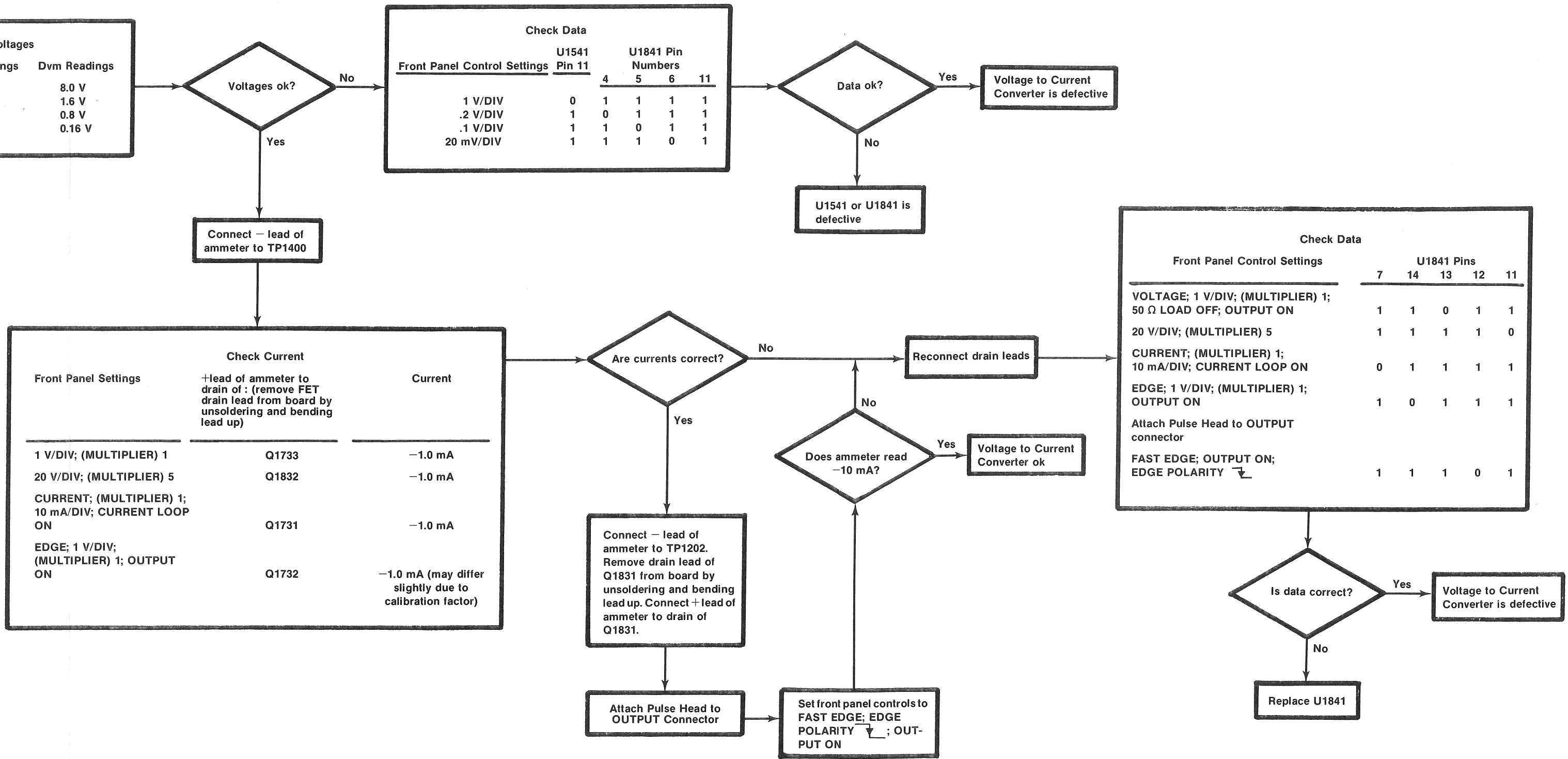


Fig. 9-8.

@

SAC CHOPPER CHECK 21 A6

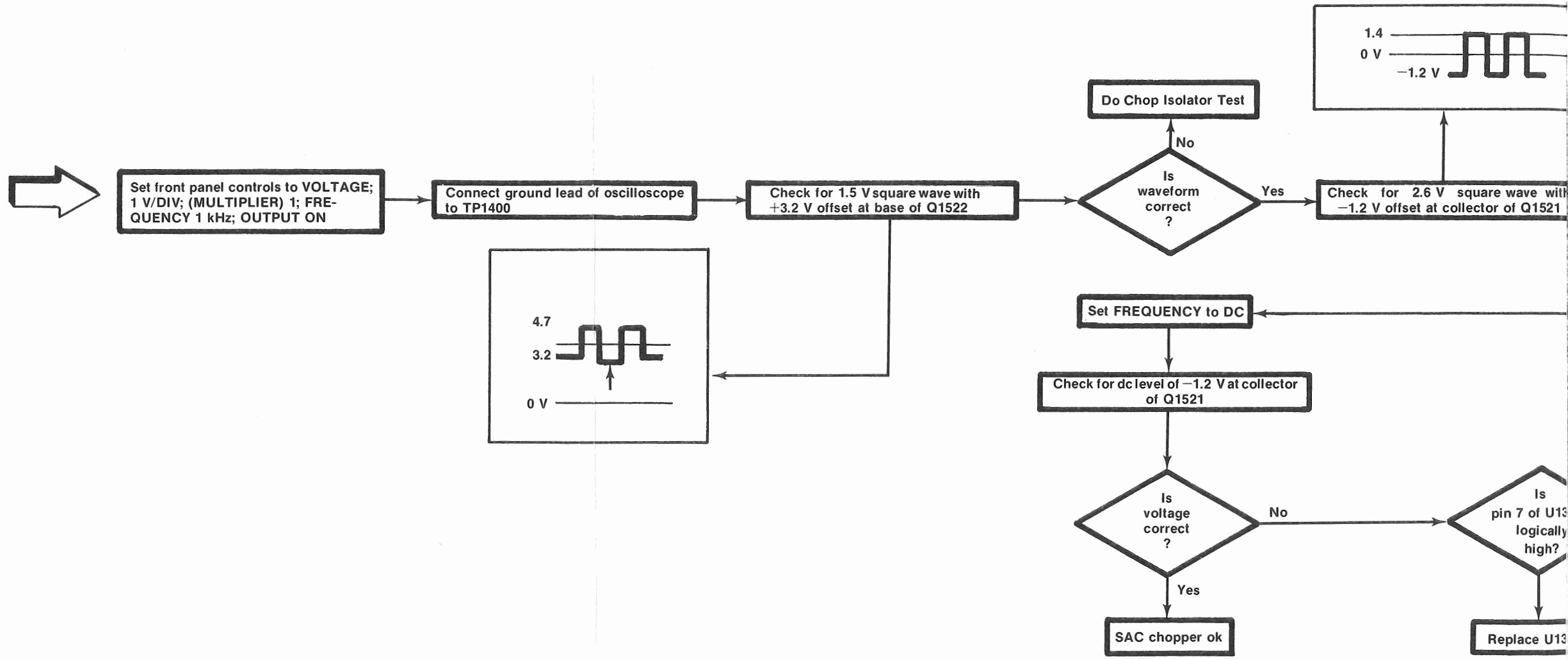


Fig. 9-9.

SAC CHOPPER CHECK 21 A6

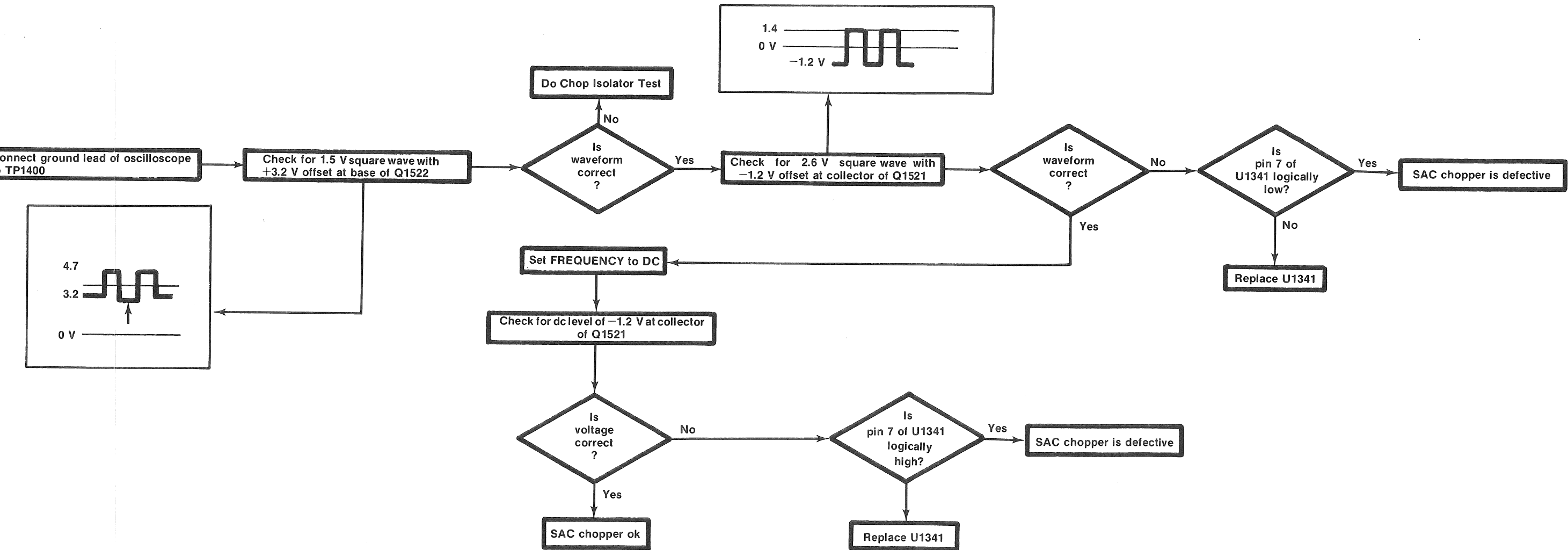


Fig. 9-9.

LOW SAC CHECK 22 A6

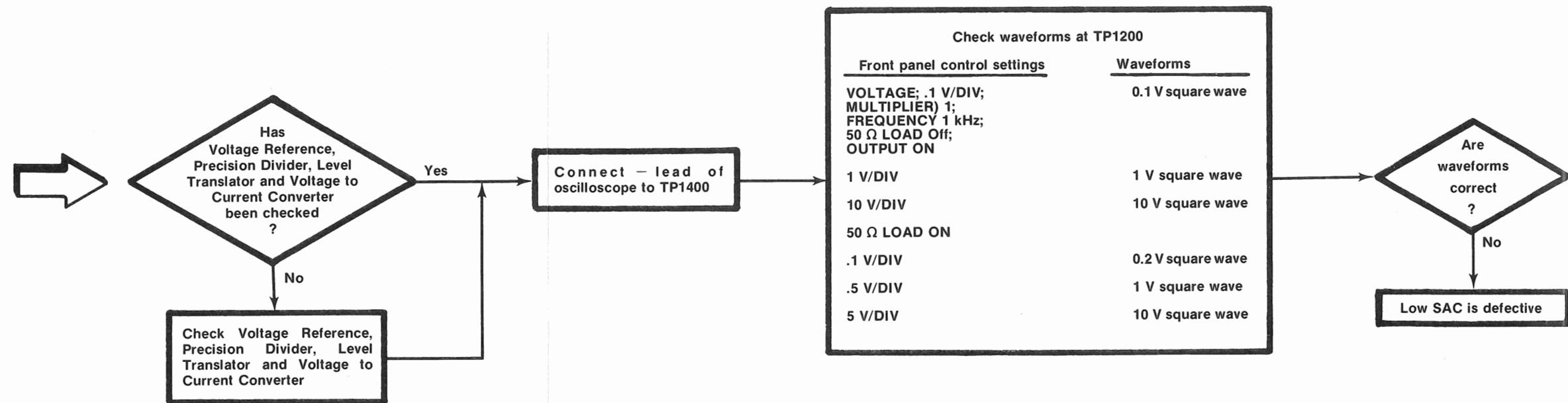


Fig. 9-10.

LOW SAC CHECK 22 A6

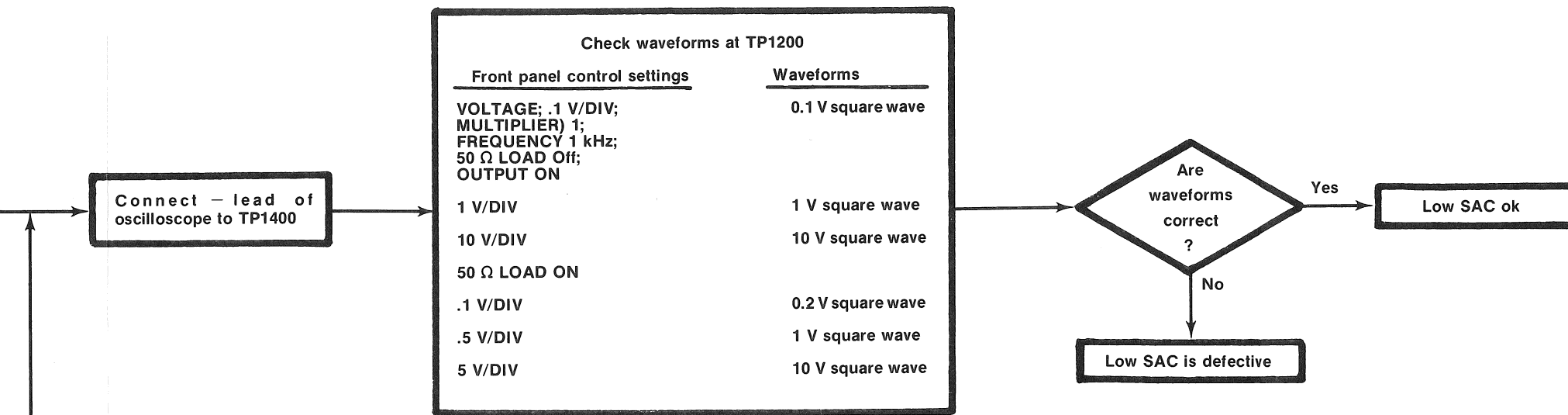


Fig. 9-10.

HIGH SAC CHECK 22 A6

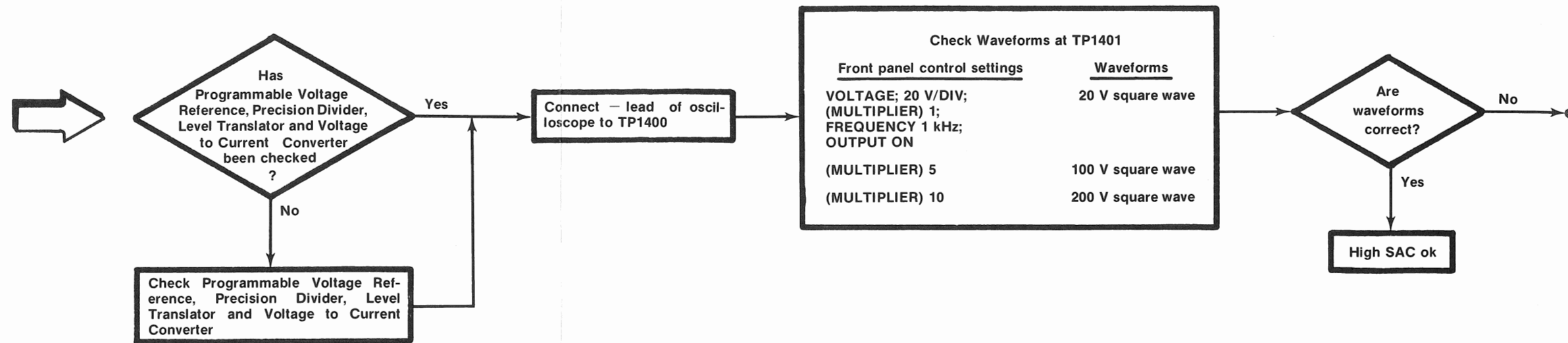


Fig. 9-11.

HIGH SAC CHECK 22 A6

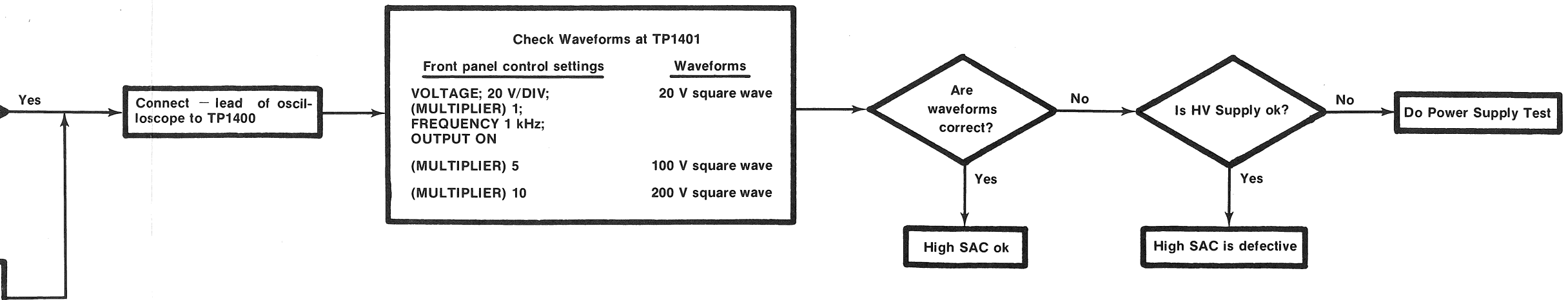
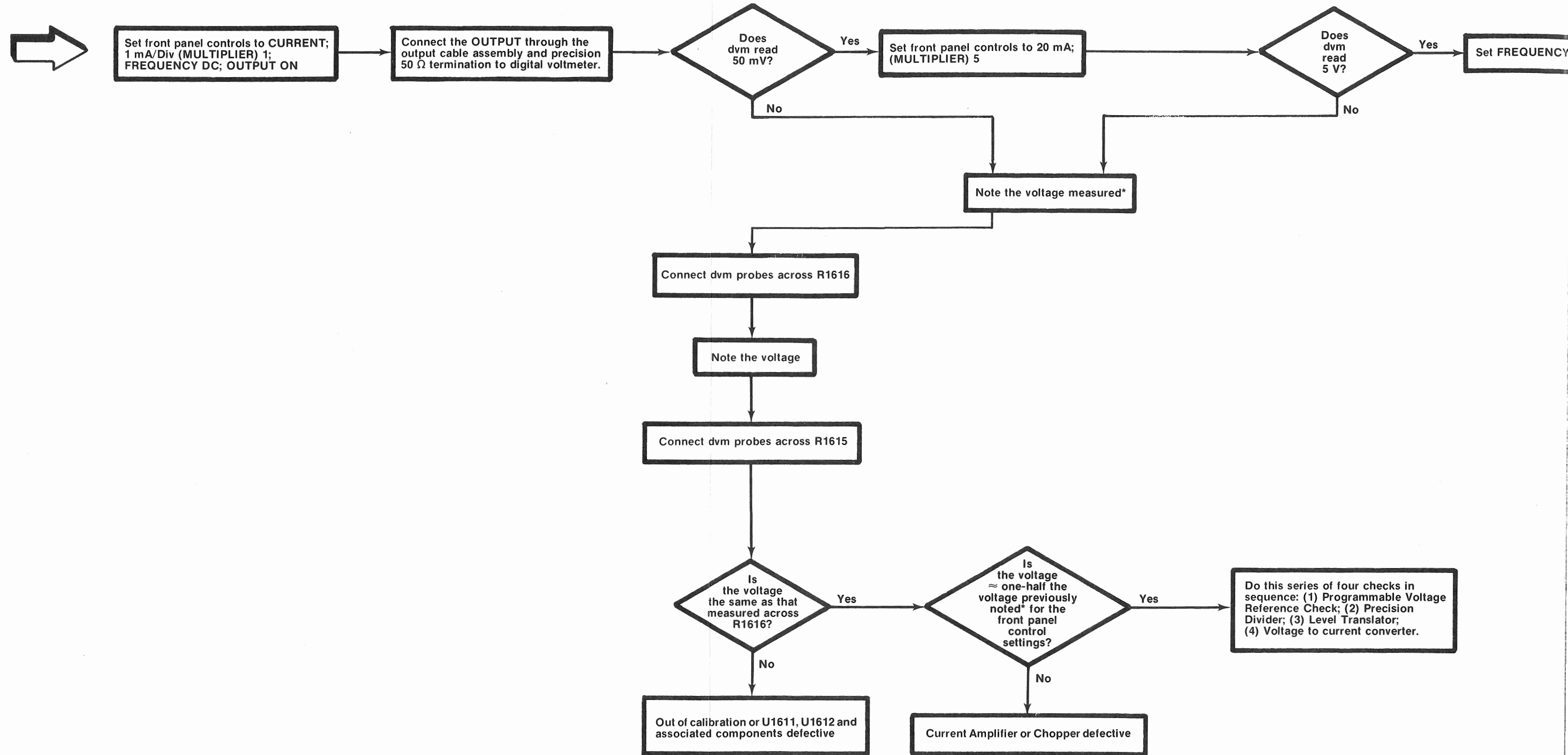


Fig. 9-11.

@

CURRENT AMPLIFIER AND CHOPPER CHECK 22 A6



CURRENT AMPL AND CHOPPER CHK TROUBLESHOOTING TREE 7

Fig. 9-12.

CURRENT AMPLIFIER AND CHOPPER CHECK 22 A6

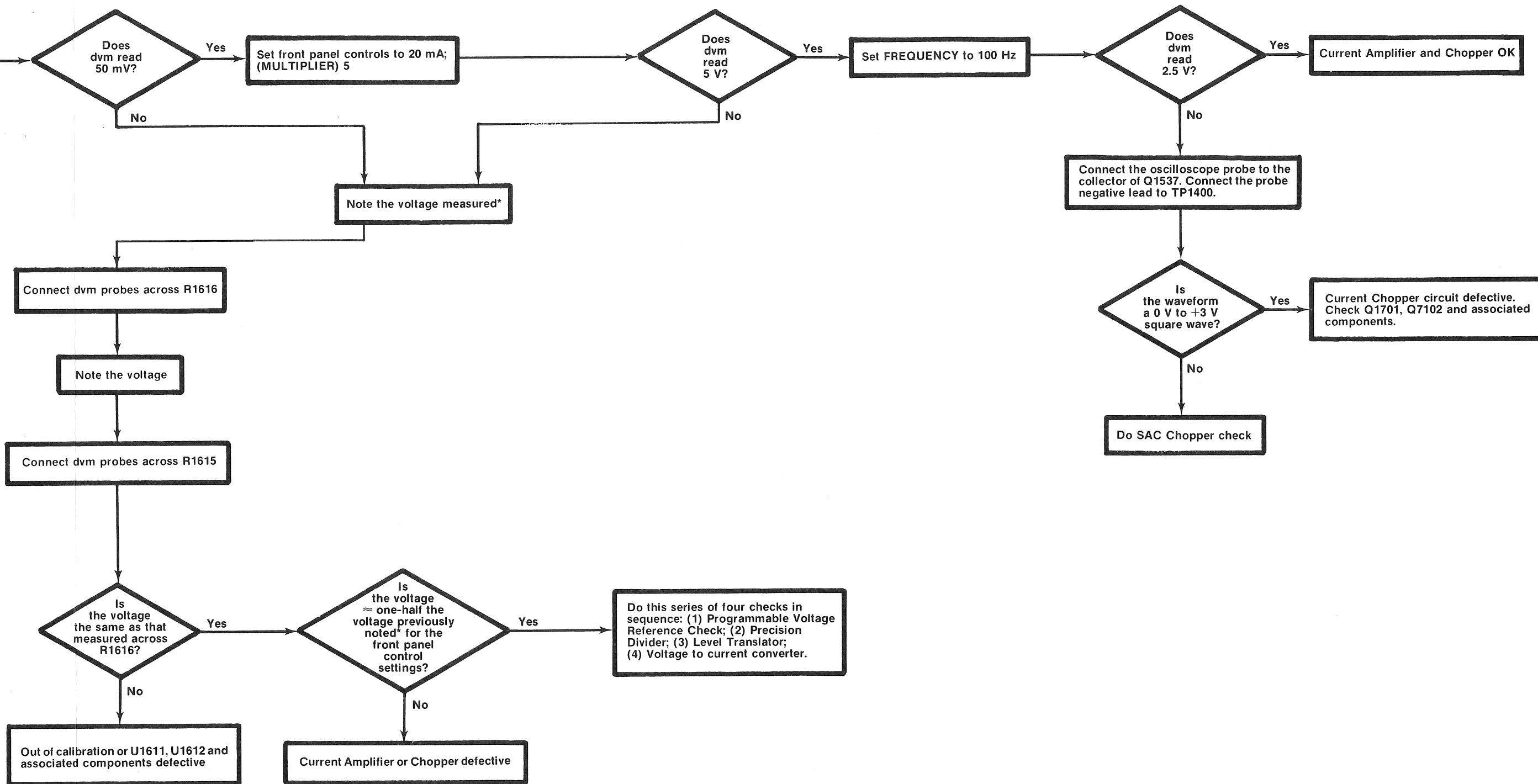


Fig. 9-12.

SAC SWITCHING CHECK

22

A6

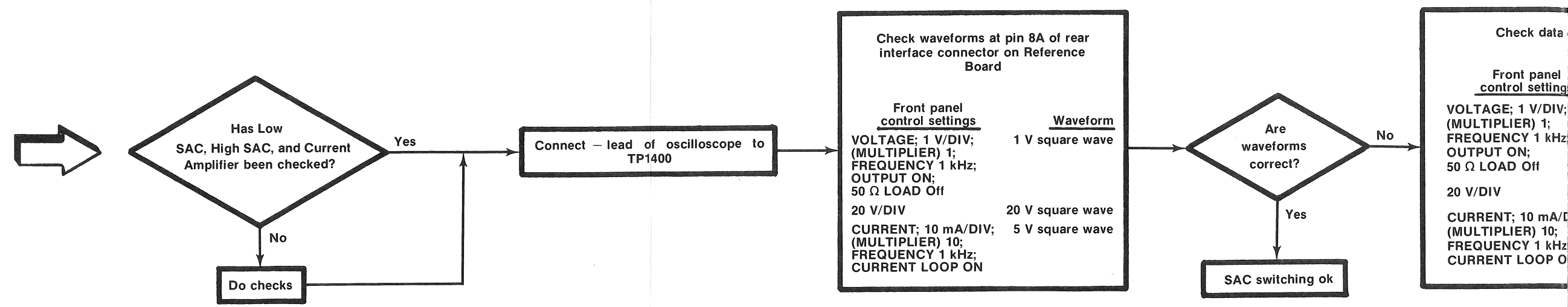


Fig. 9-13.

SAC SWITCHING CHECK

22

A6

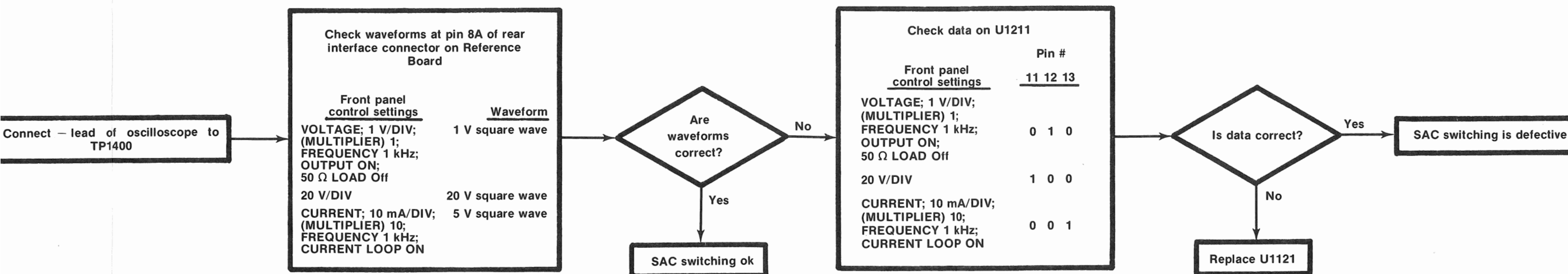


Fig. 9-13.

SAC OVERLOAD SENSE CHECK

22

A6

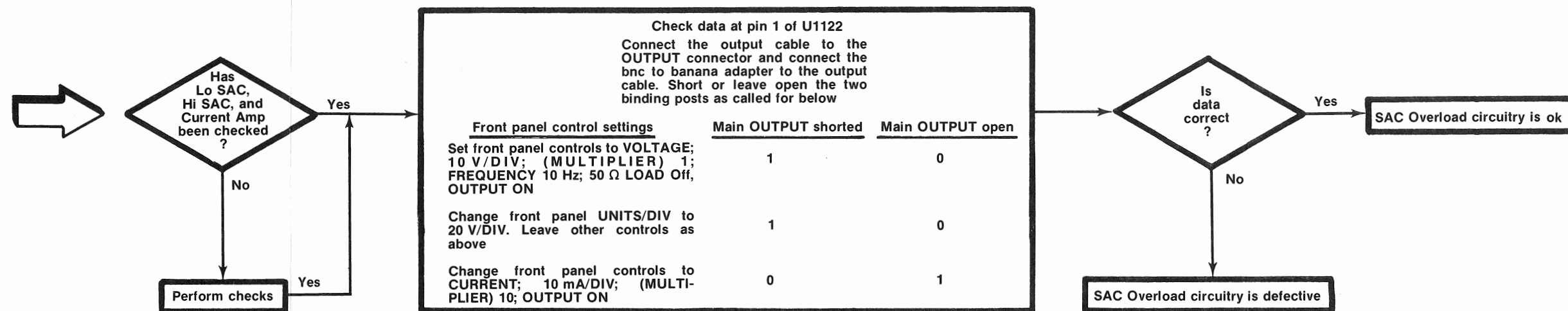


Fig. 9-14.

CHOP ISOLATOR CHECK 23 A7

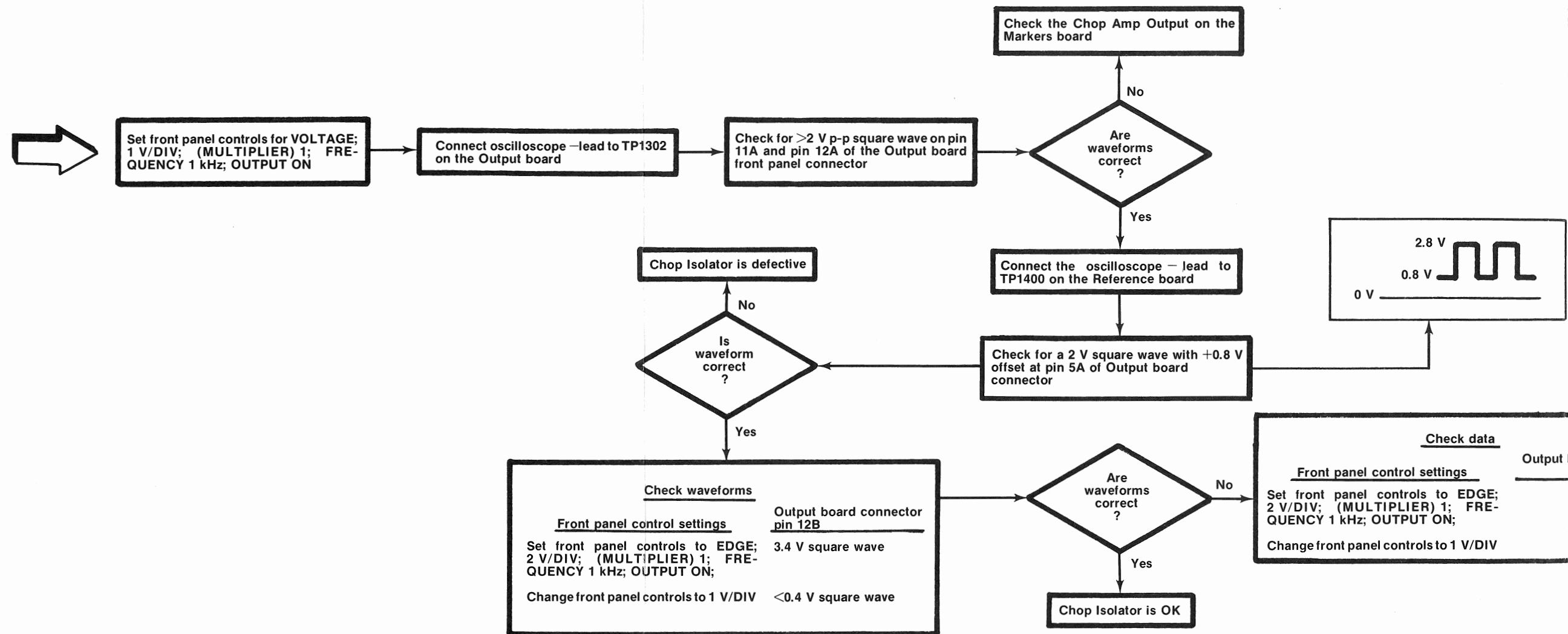


Fig. 9-15.

CHOP ISOLATOR CHECK 23 A7

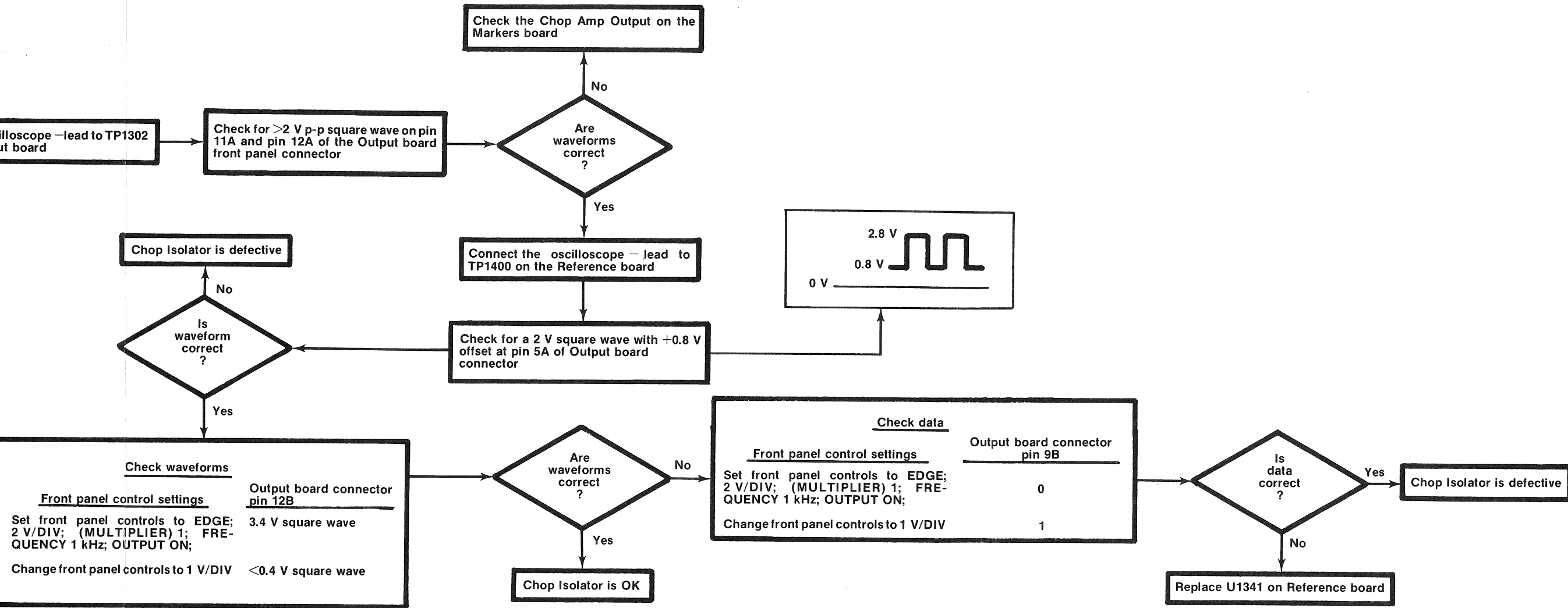


Fig. 9-15.

LOW EDGE GENERATOR CHECK 23 A7

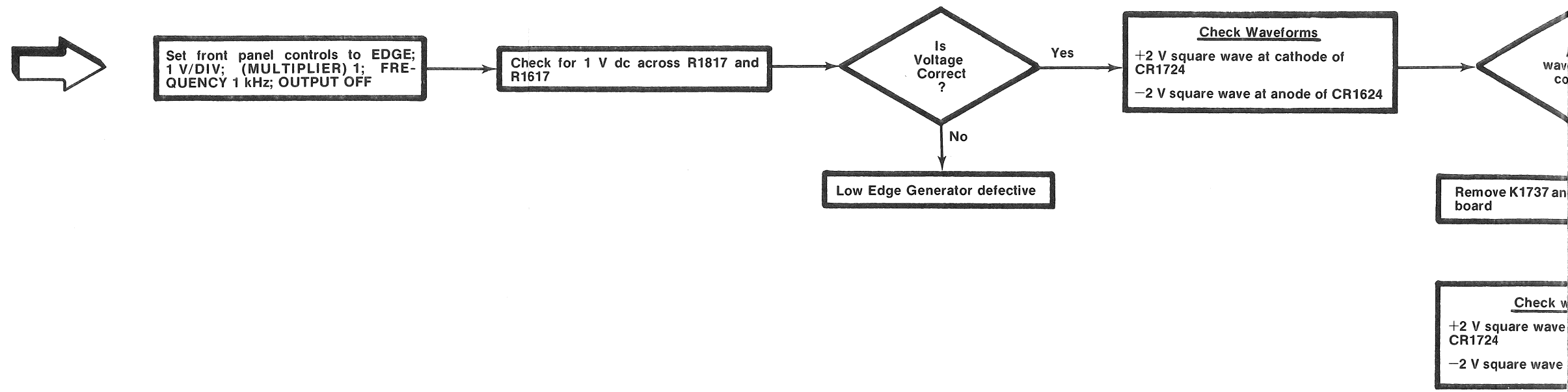


Fig. 9-16.

LOW EDGE GENERATOR CHECK 23 A7

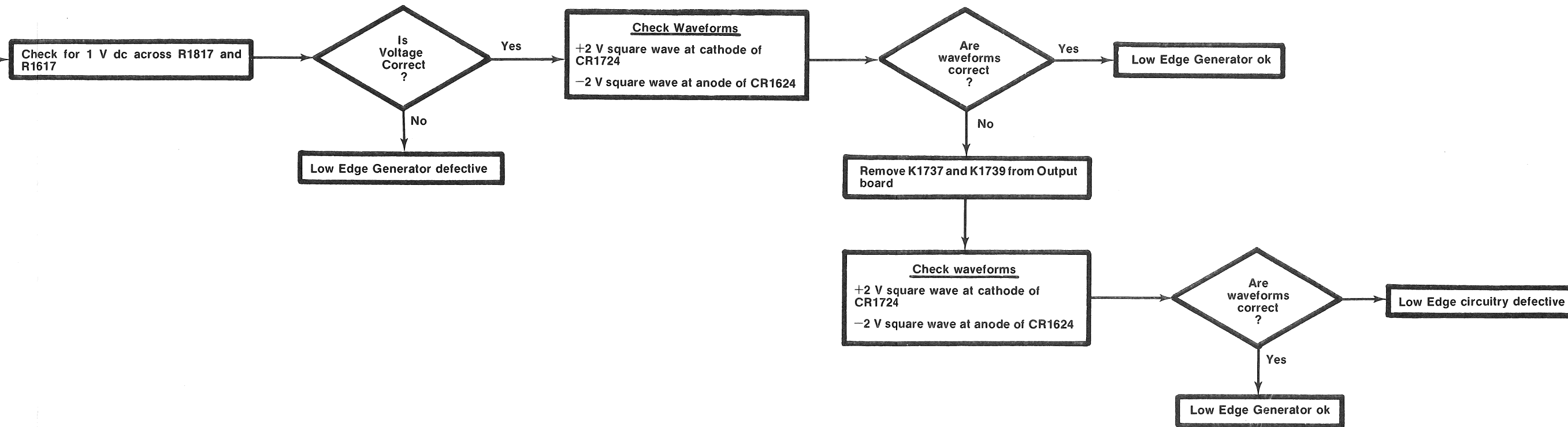


Fig. 9-16.

MID EDGE GENERATOR CHECK 24 A7

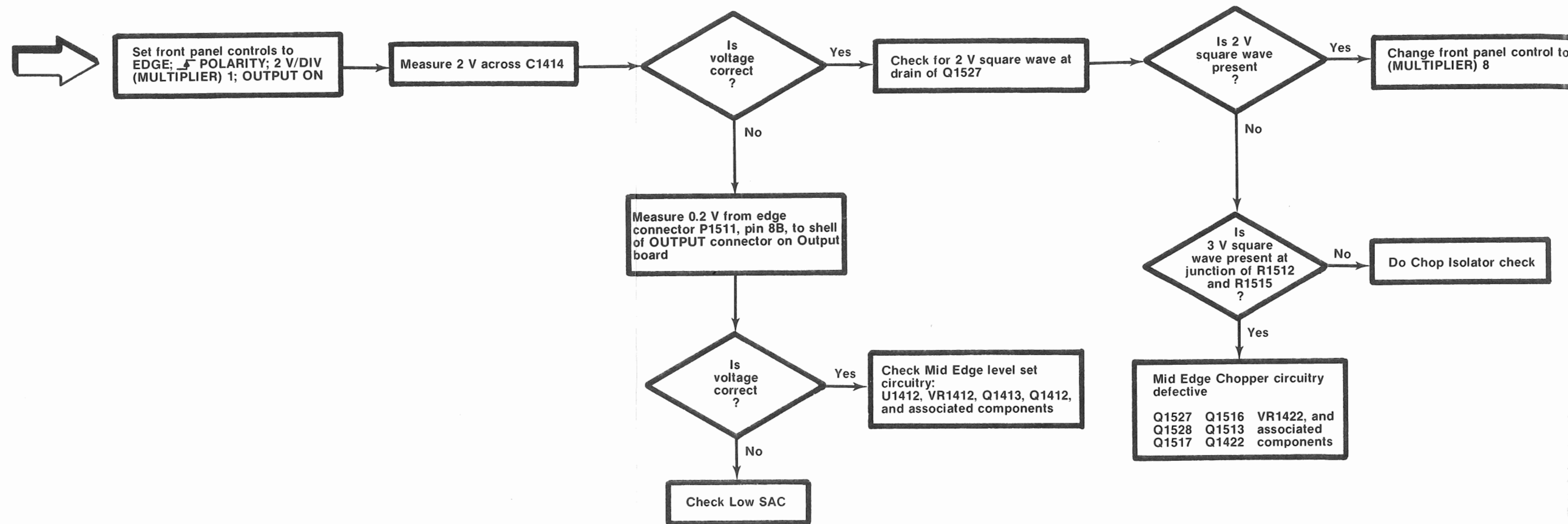


Fig. 9-17.

MID EDGE GENERATOR CHECK 24 A7

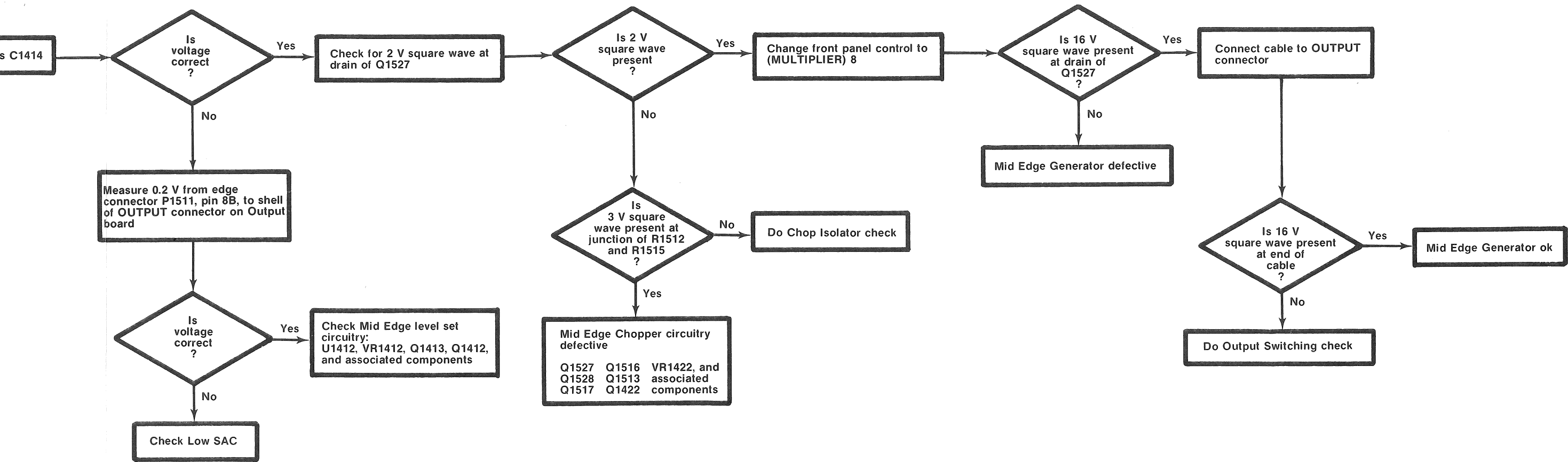


Fig. 9-17.

SAC ATTENUATOR CHECK 25 A7

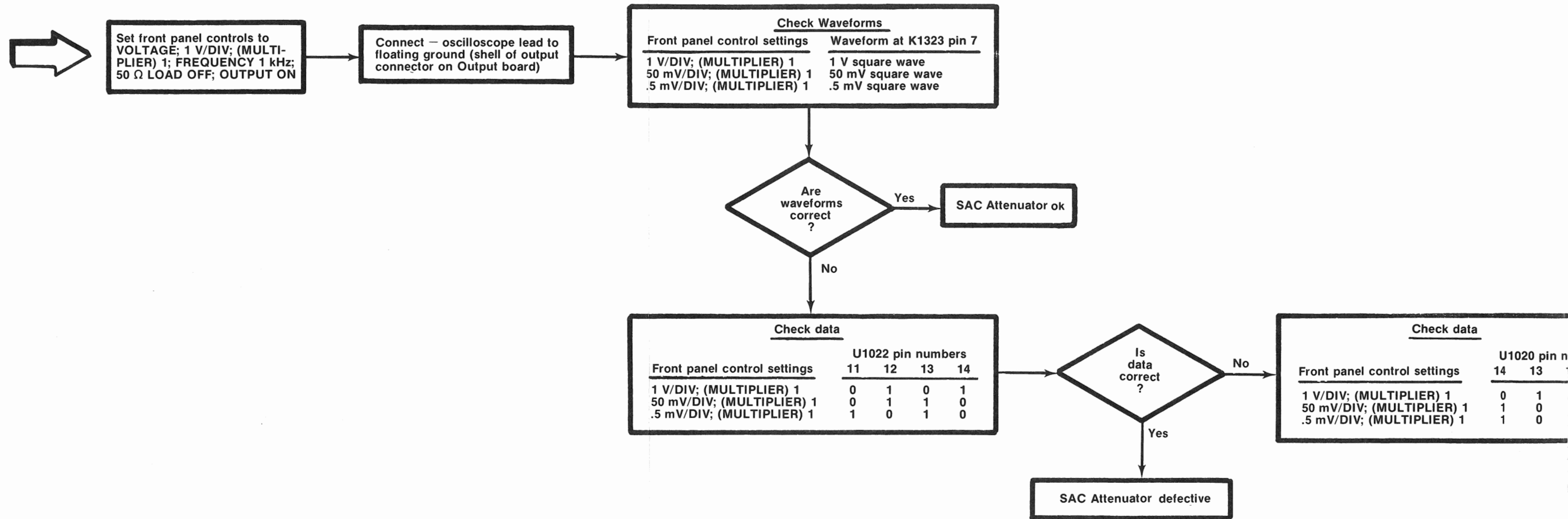


Fig. 9-18.

SAC ATTENUATOR CHECK 25 A7

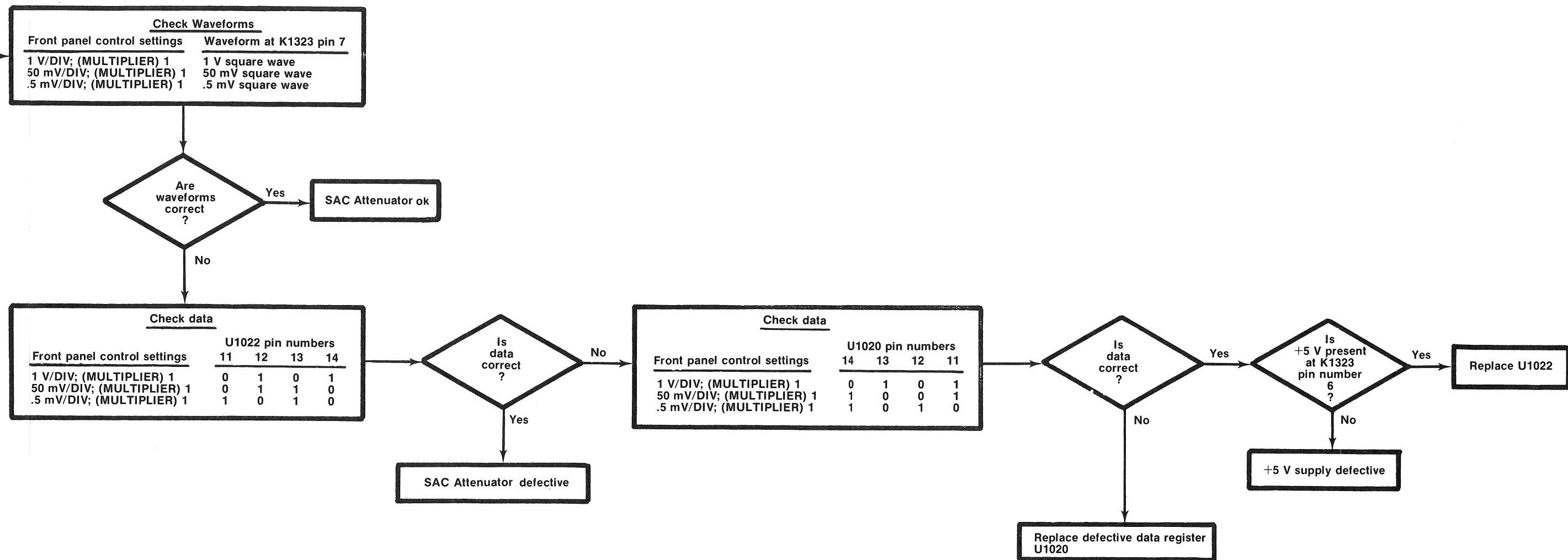


Fig. 9-18.

PULSE HEAD DRIVE CHECK 24 A7

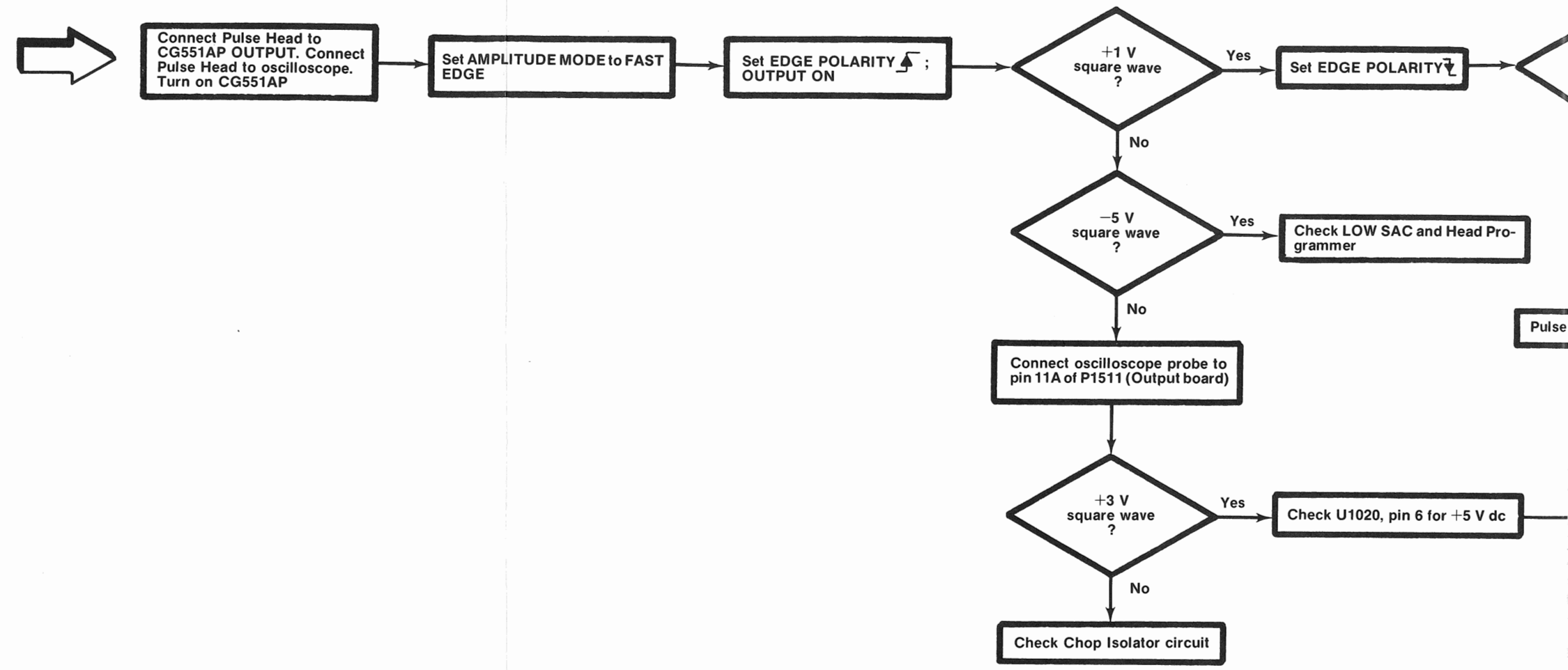


Fig. 9-19.

PULSE HEAD DRIVE CHECK 24 A7

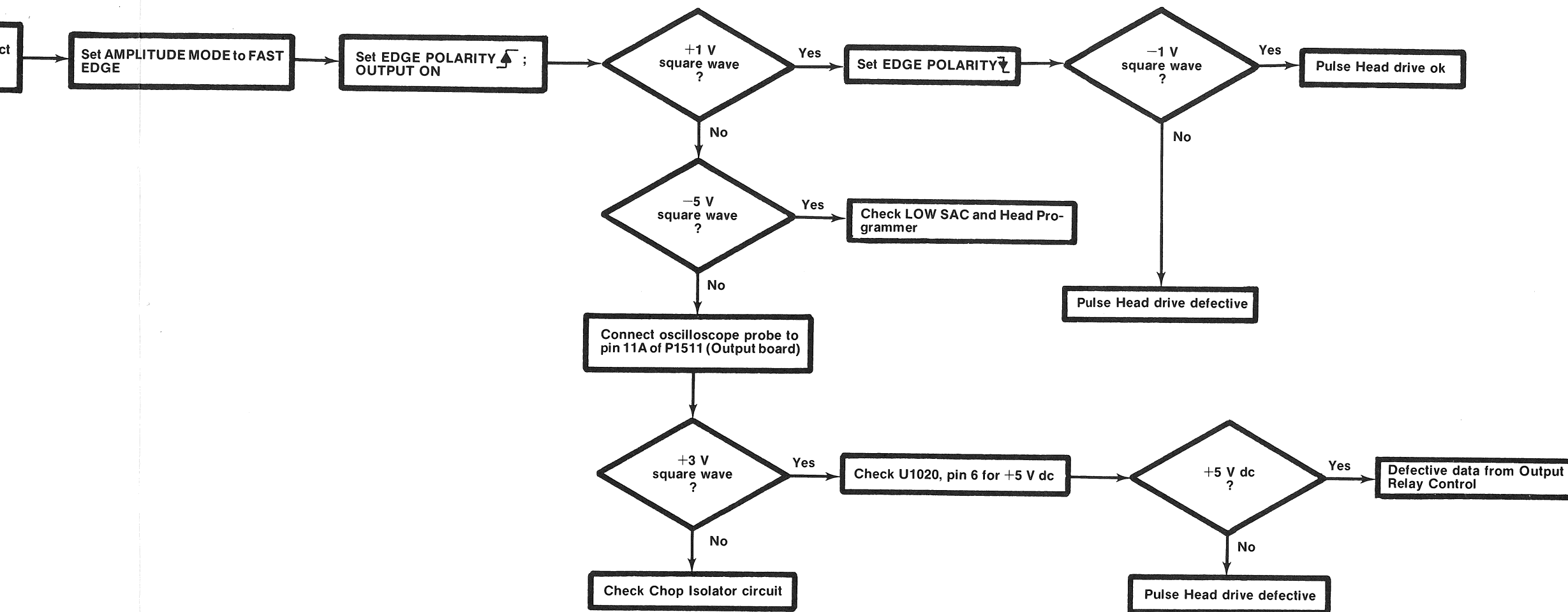
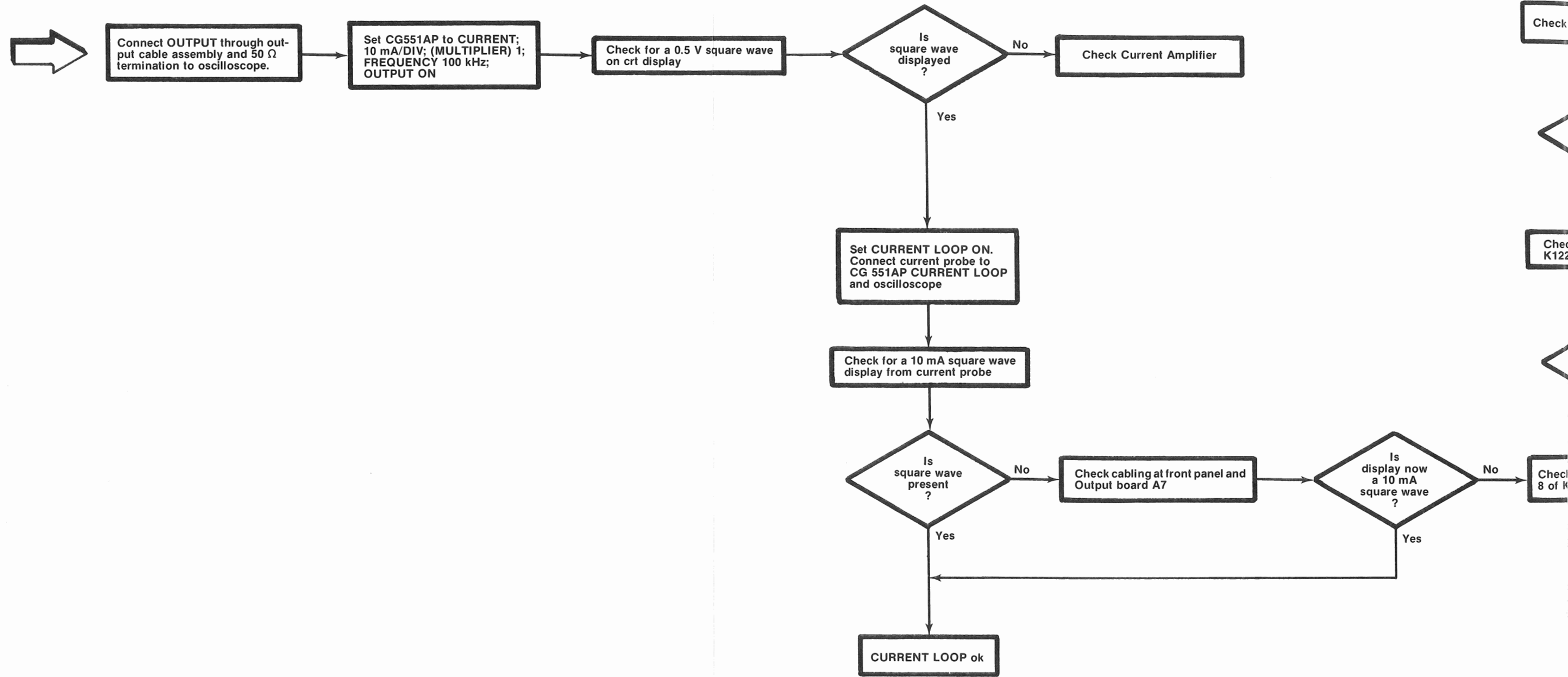


Fig. 9-19.

@

OUTPUT SWITCHING (CURRENT LOOP) CHECK 25 A7



CURRENT LOOP CHECK TROUBLESHOOTING TREE 15

Fig. 9-20.

OUTPUT SWITCHING (CURRENT LOOP) CHECK 25 A7

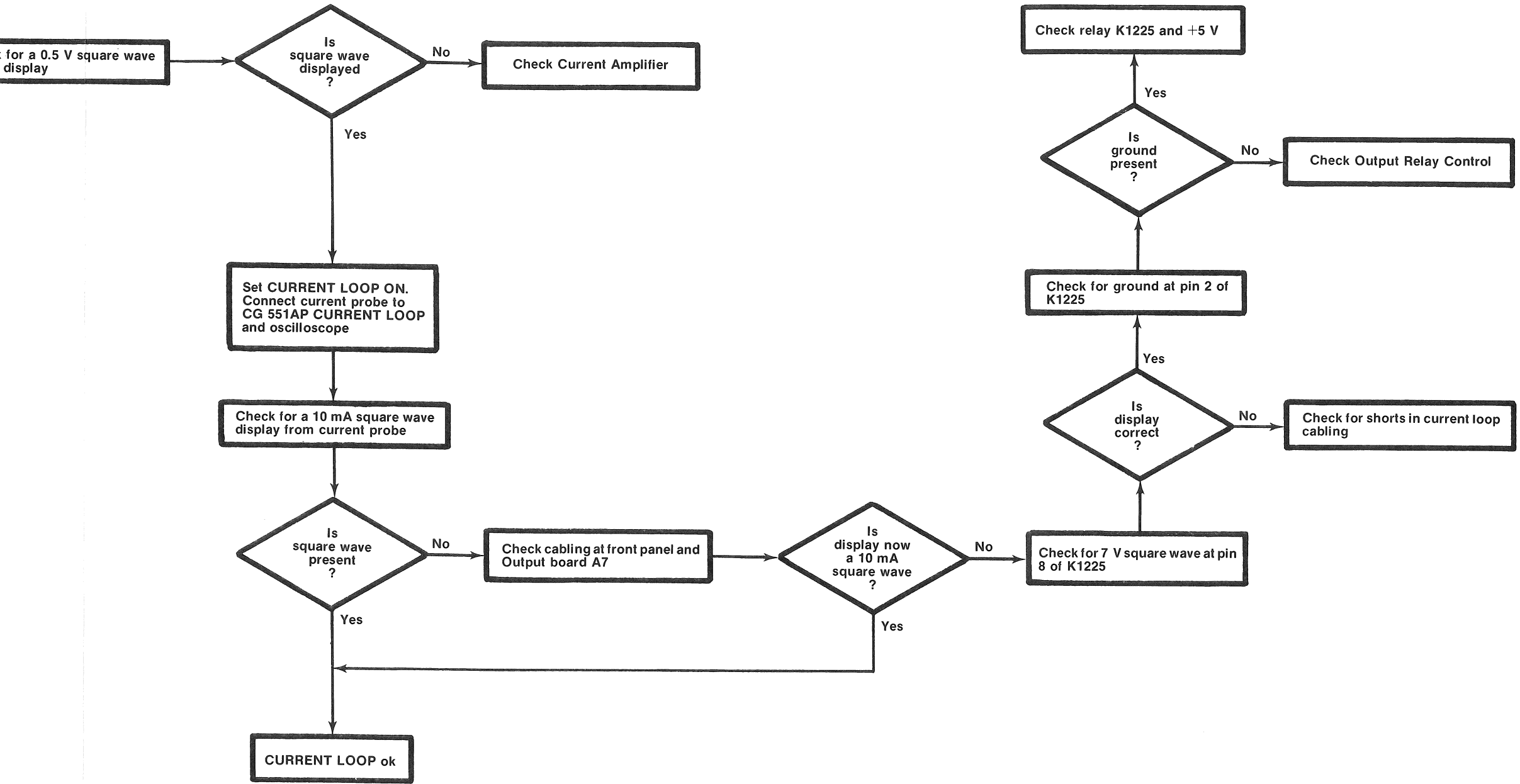


Fig. 9-20.

@

LOW EDGE ATTENUATOR CHECK 23 A7

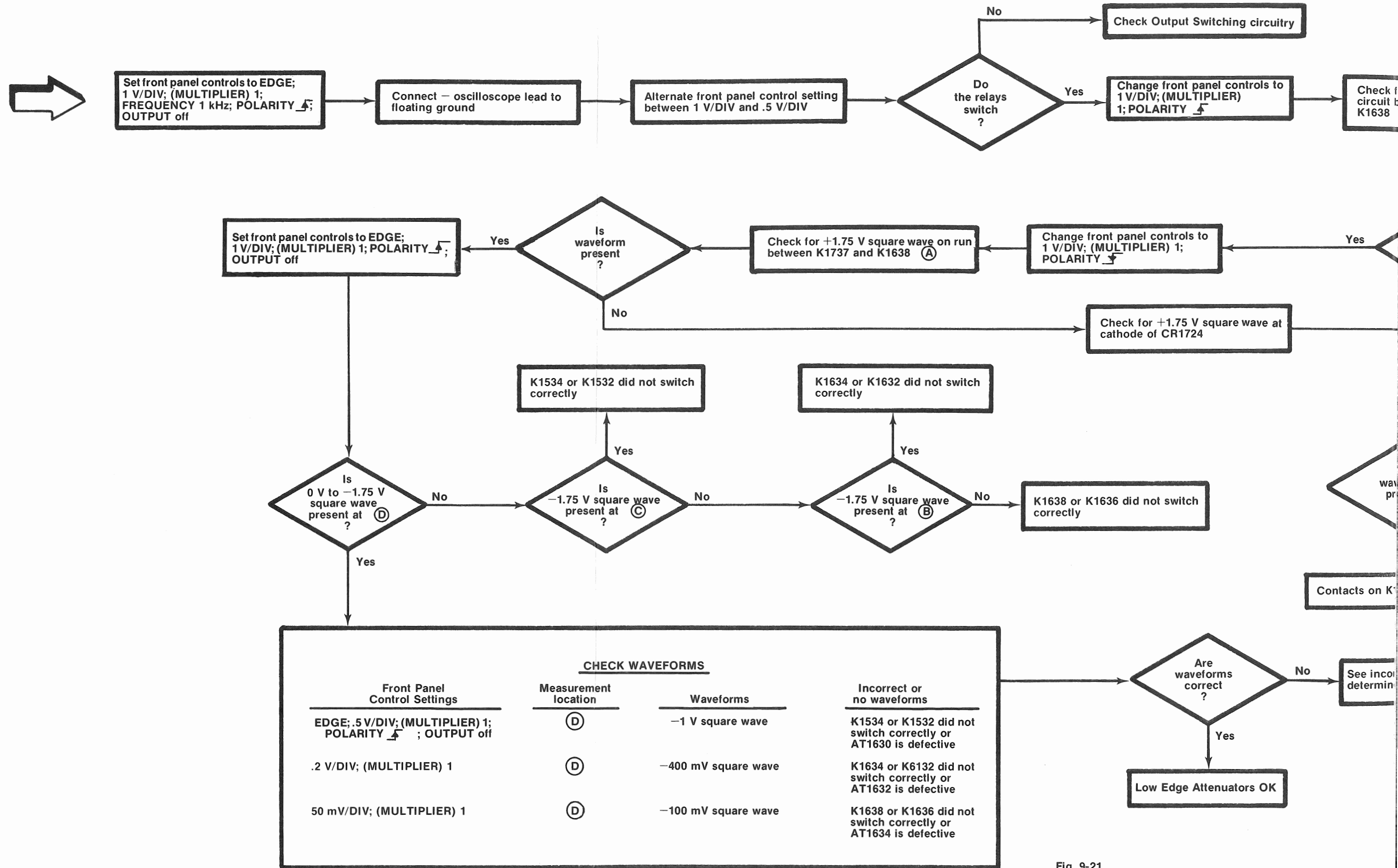
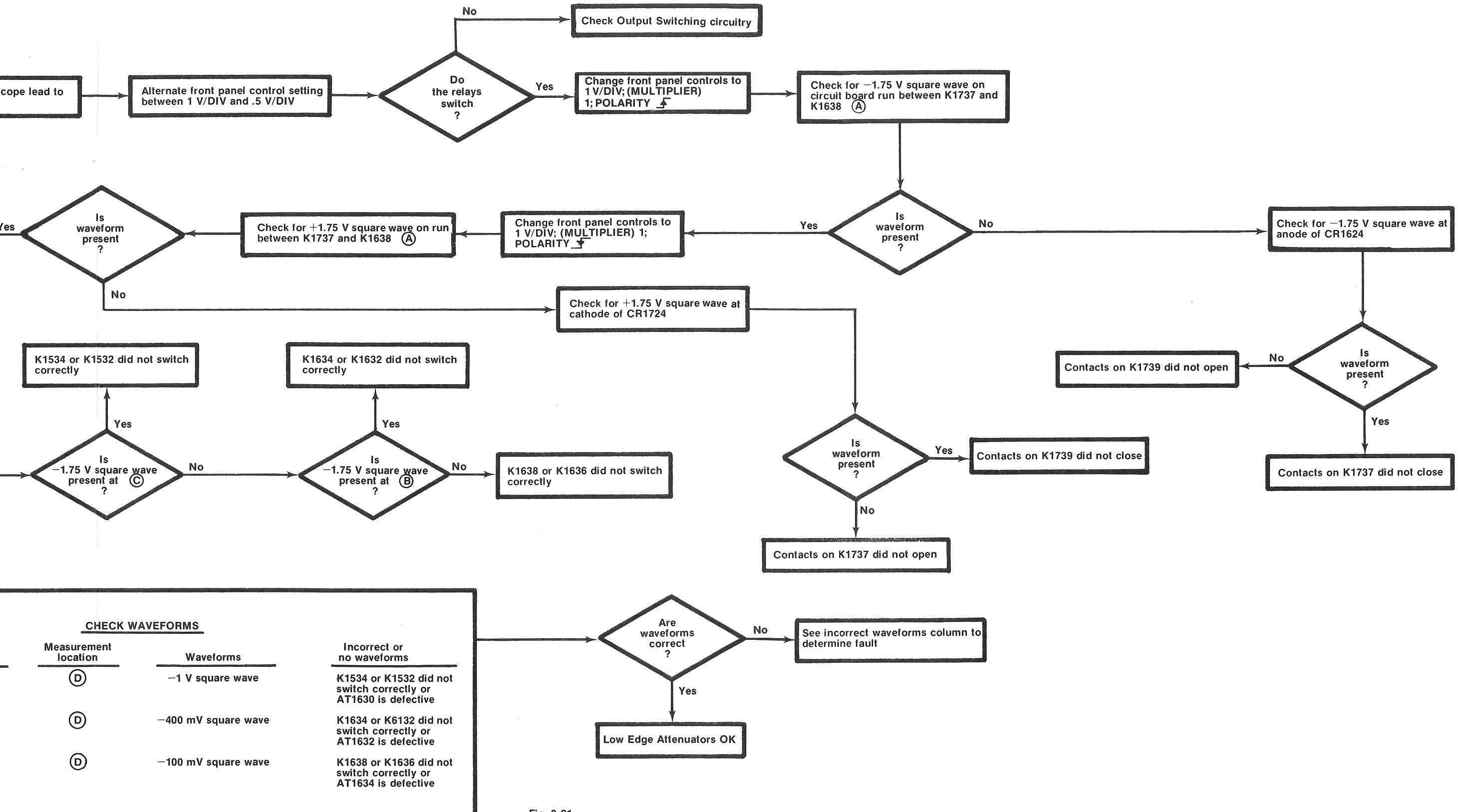


Fig. 9-21.

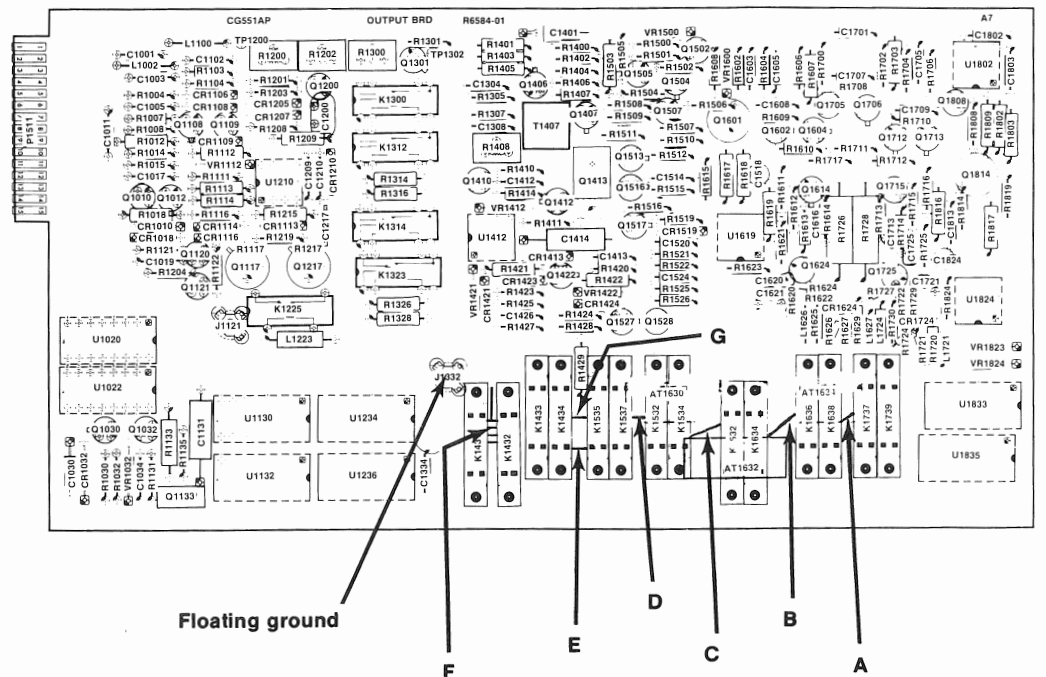
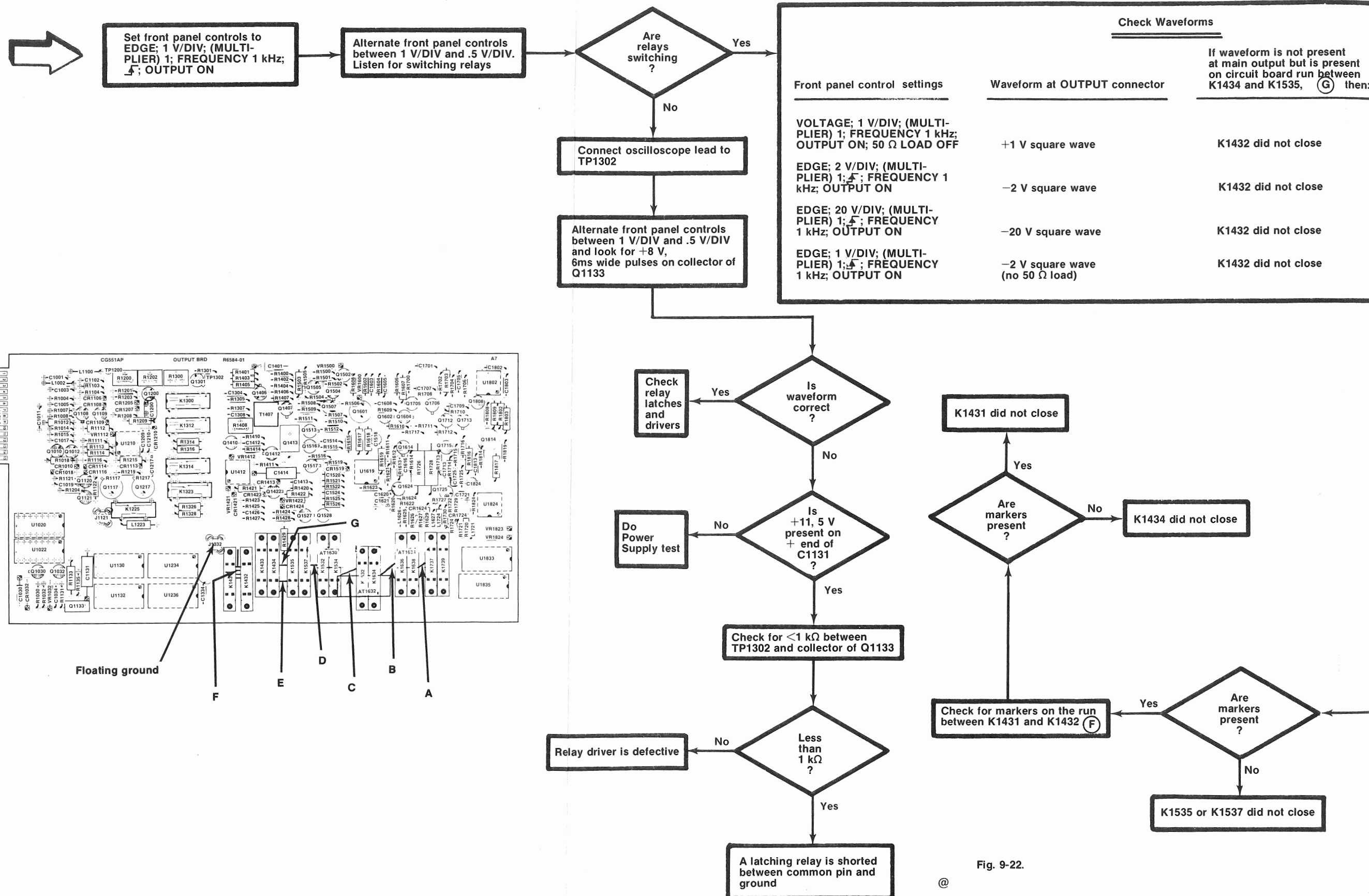
LOW EDGE ATTENUATOR CHECK 23 A7



CHECK WAVEFORMS		
Measurement location	Waveforms	Incorrect or no waveforms
Ⓓ	-1 V square wave	K1534 or K1532 did not switch correctly or AT1630 is defective
Ⓓ	-400 mV square wave	K1634 or K6132 did not switch correctly or AT1632 is defective
Ⓓ	-100 mV square wave	K1638 or K1636 did not switch correctly or AT1634 is defective

Fig. 9-21.

OUTPUT SWITCHING (VOLTAGE) CHECK 25 A7



OUTPUT SWITCHING CHECK TROUBLESHOOTING TREE 17

Fig. 9-22.

@

OUTPUT SWITCHING (VOLTAGE) CHECK 25 A7

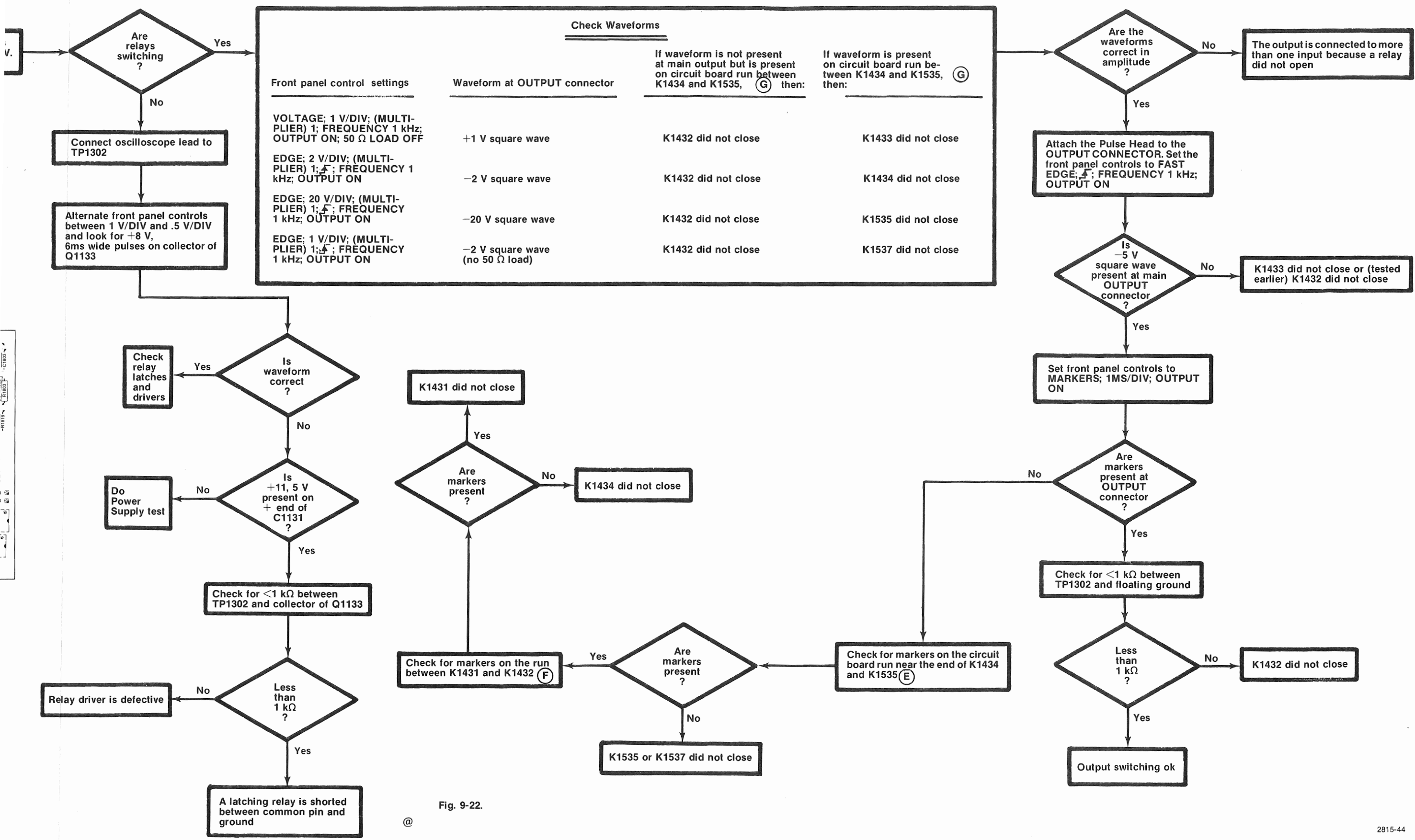


Fig. 9-22.

HIGH EDGE GENERATOR CHECK 27 A8

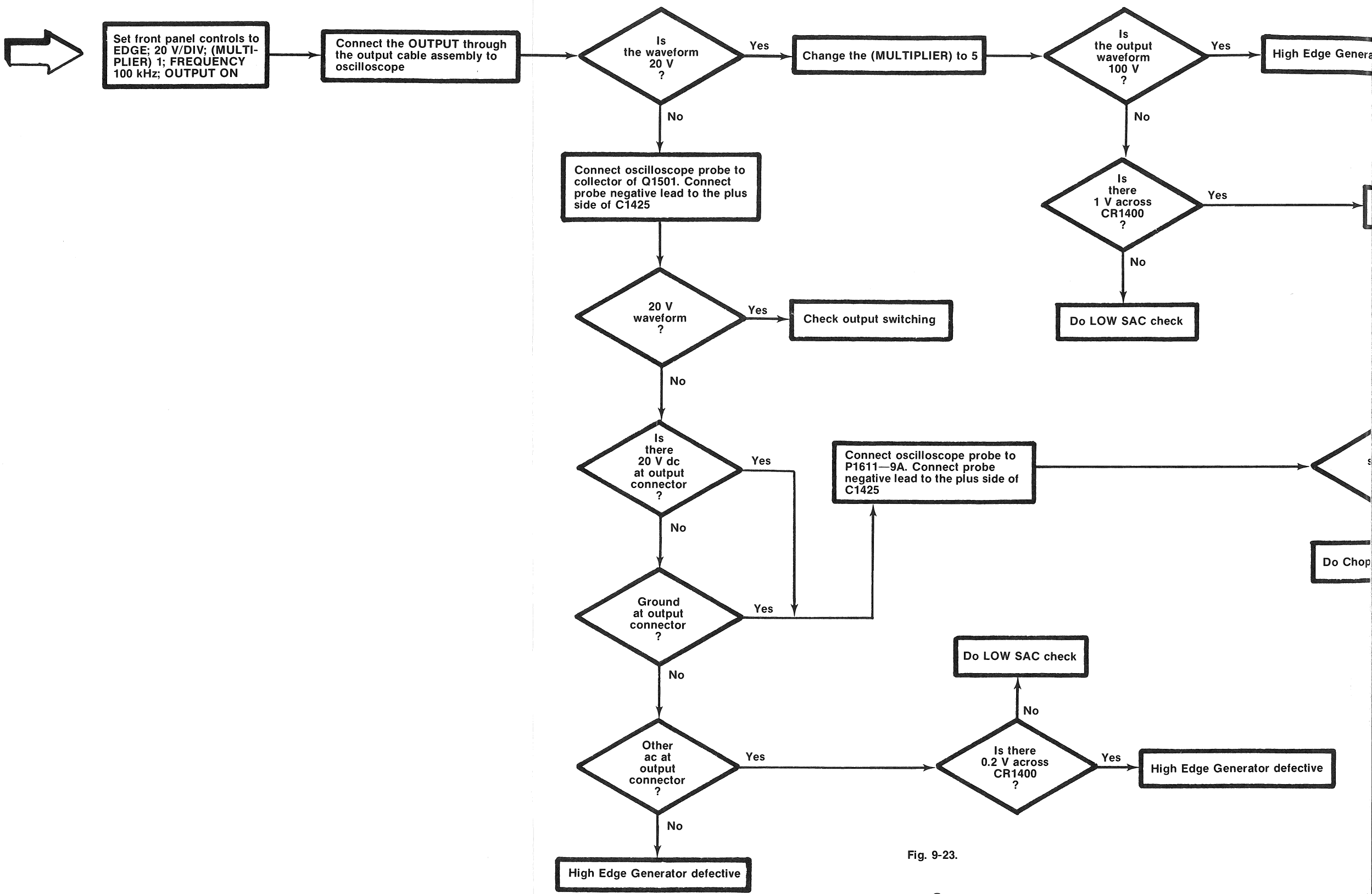


Fig. 9-23.

HIGH EDGE GENERATOR CHECK 27 A8

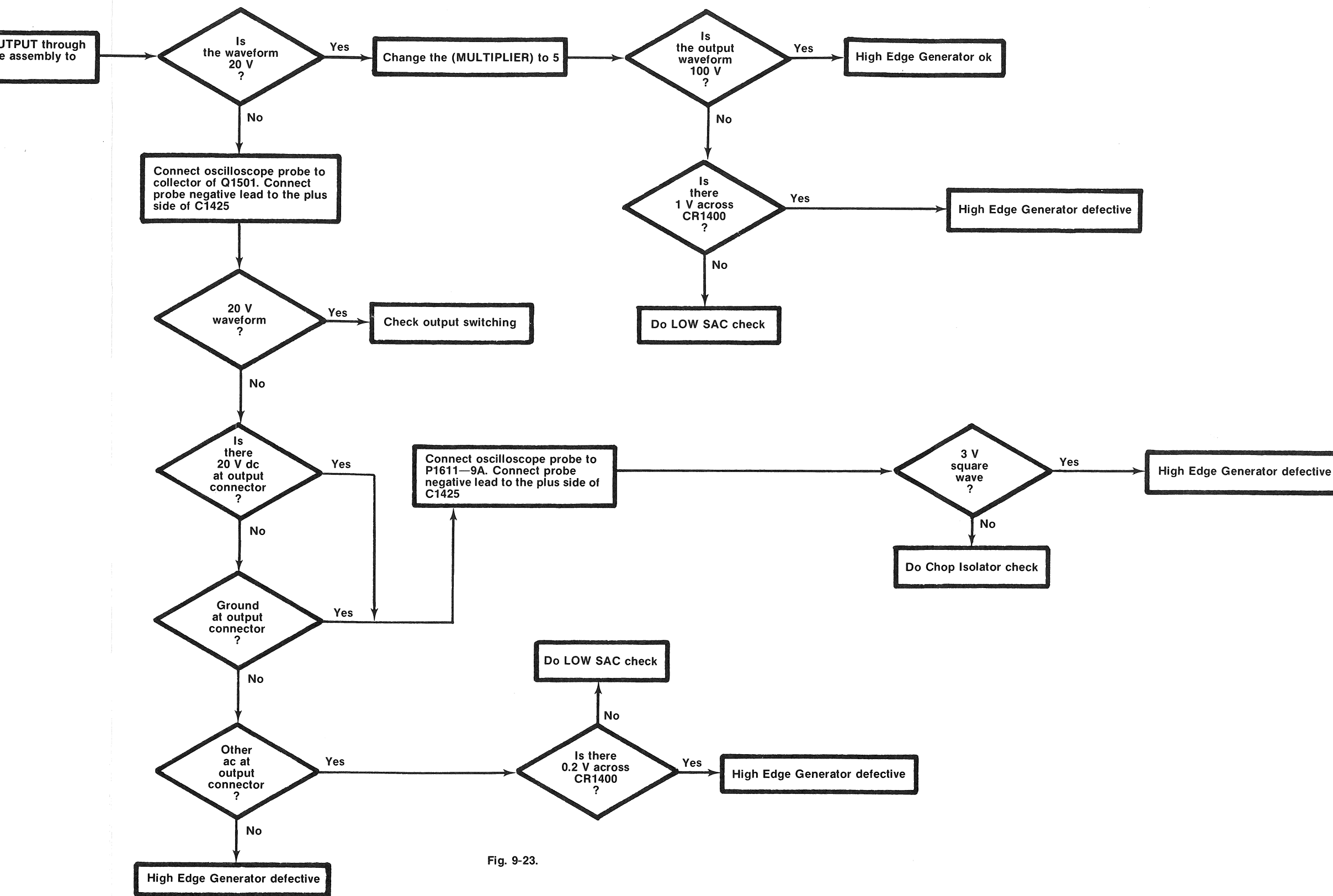


Fig. 9-23.

@

EDGE OVERLOAD SENSE CHECK 27 A8

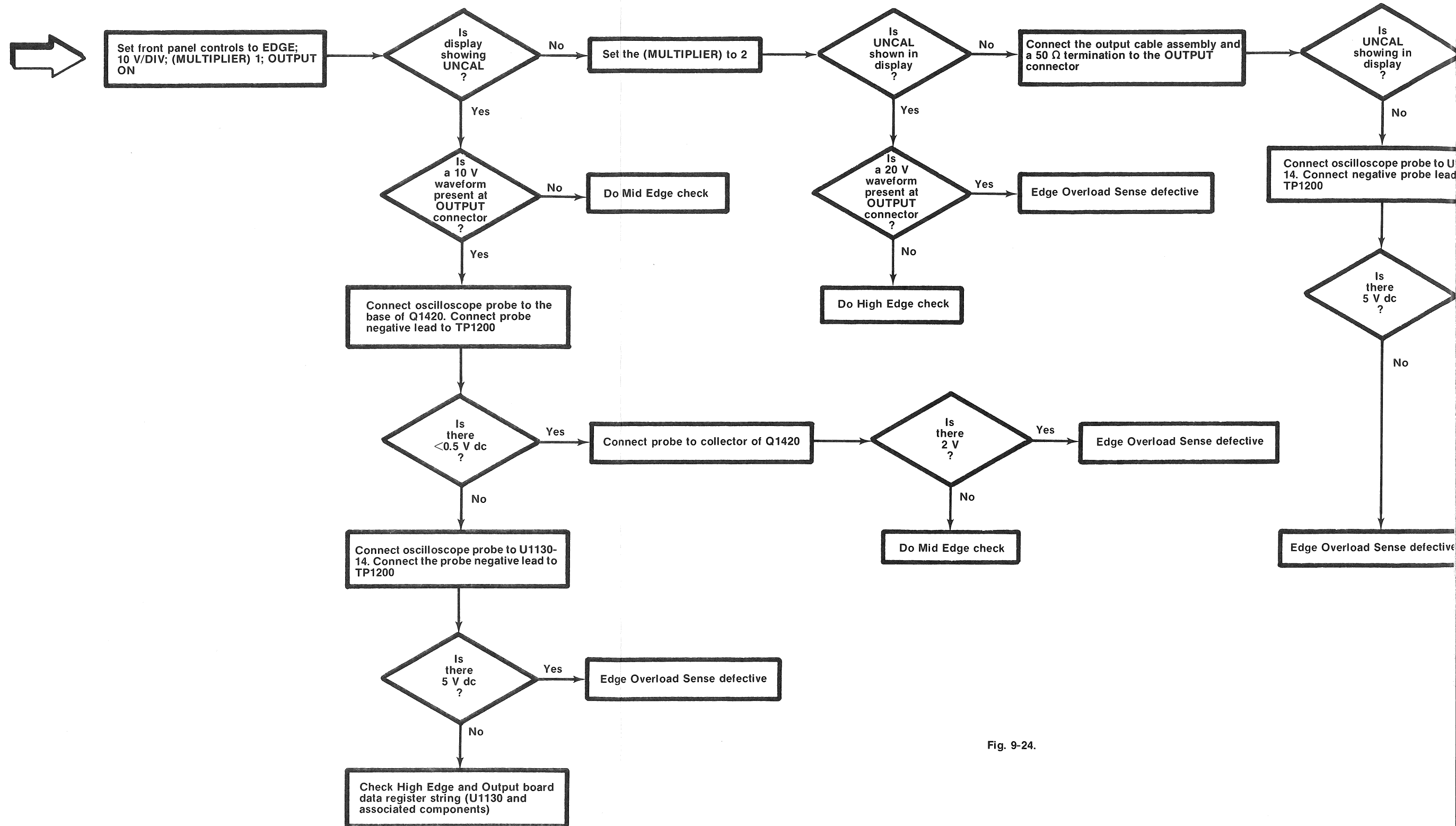


Fig. 9-24.

EDGE OVERLOAD SENSE CHECK 27 A8

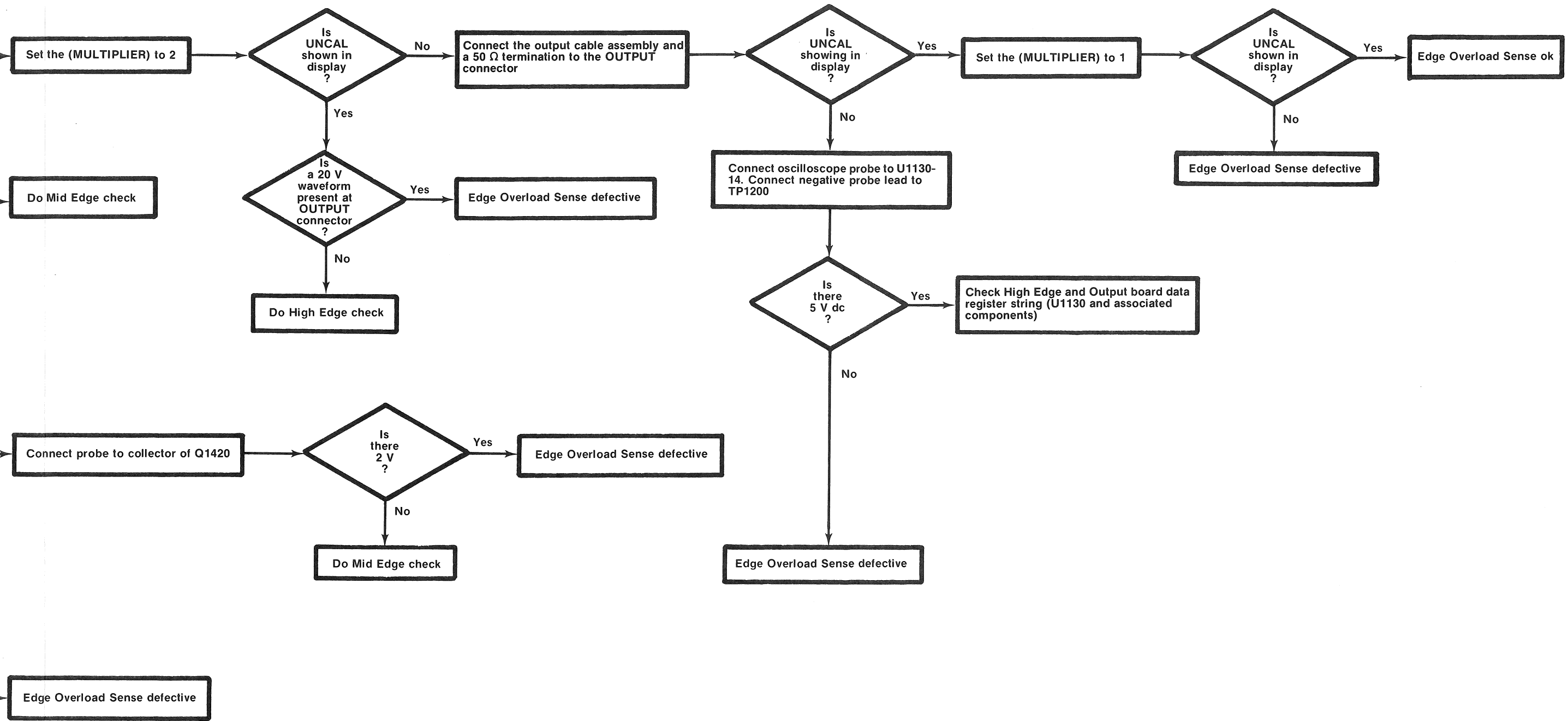


Fig. 9-24.

@

POWER ON TEST CHECK 26 A8

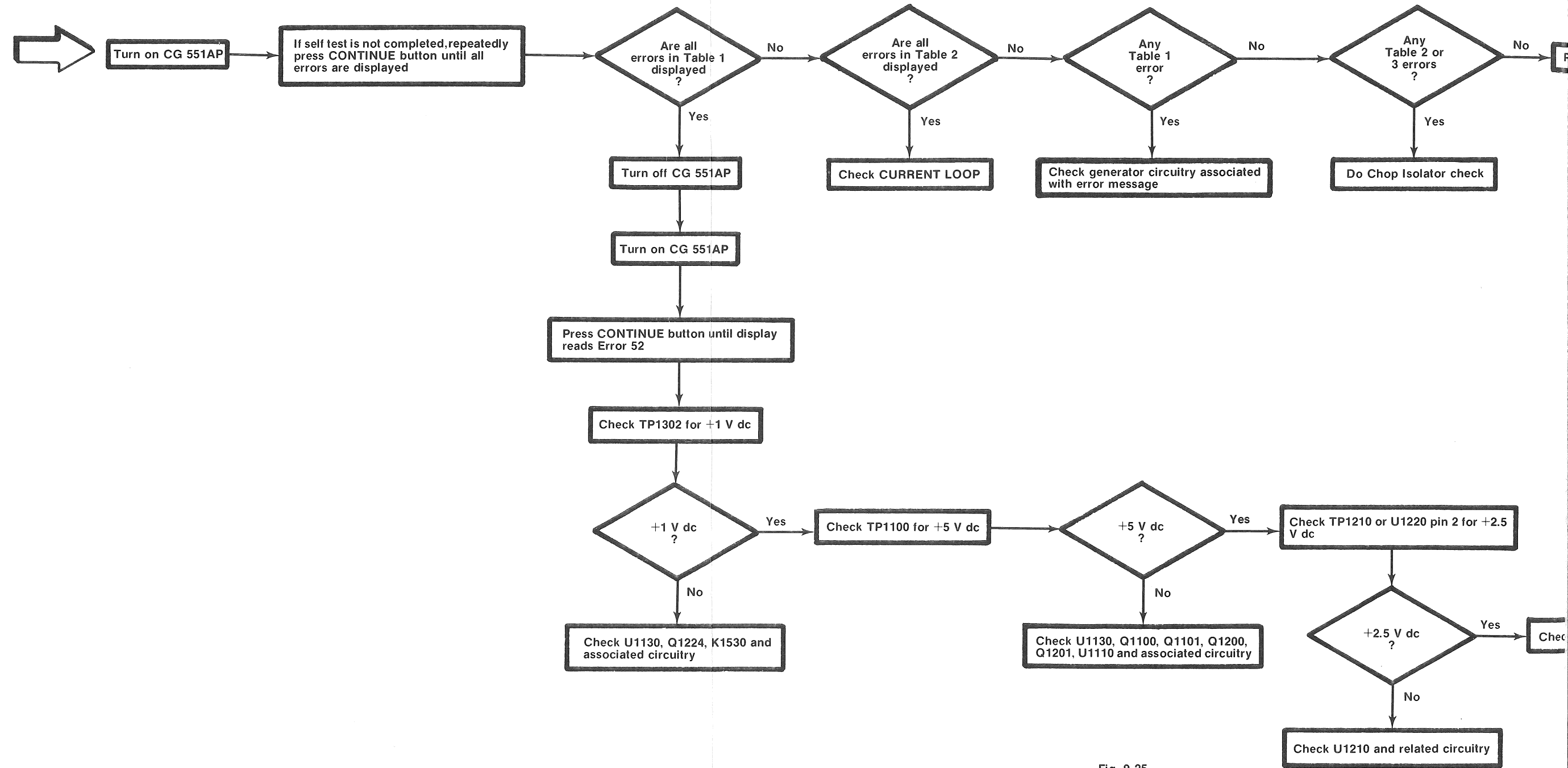
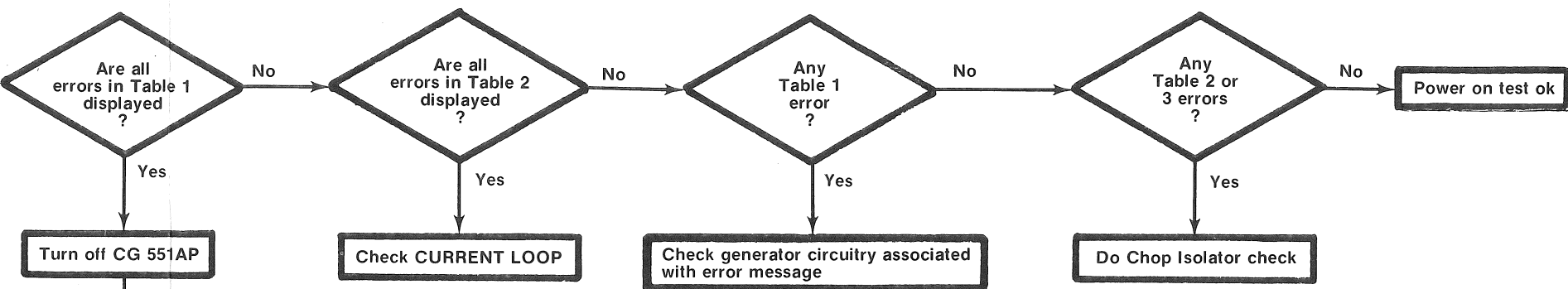


Fig. 9-25.

POWER ON TEST CHECK 26 A8



ERROR CODES

Table 1	Table 2	Table 3
51	51	53
52	56	55
54	81	57
56	83	82
81		84
83		86
85		88
87		

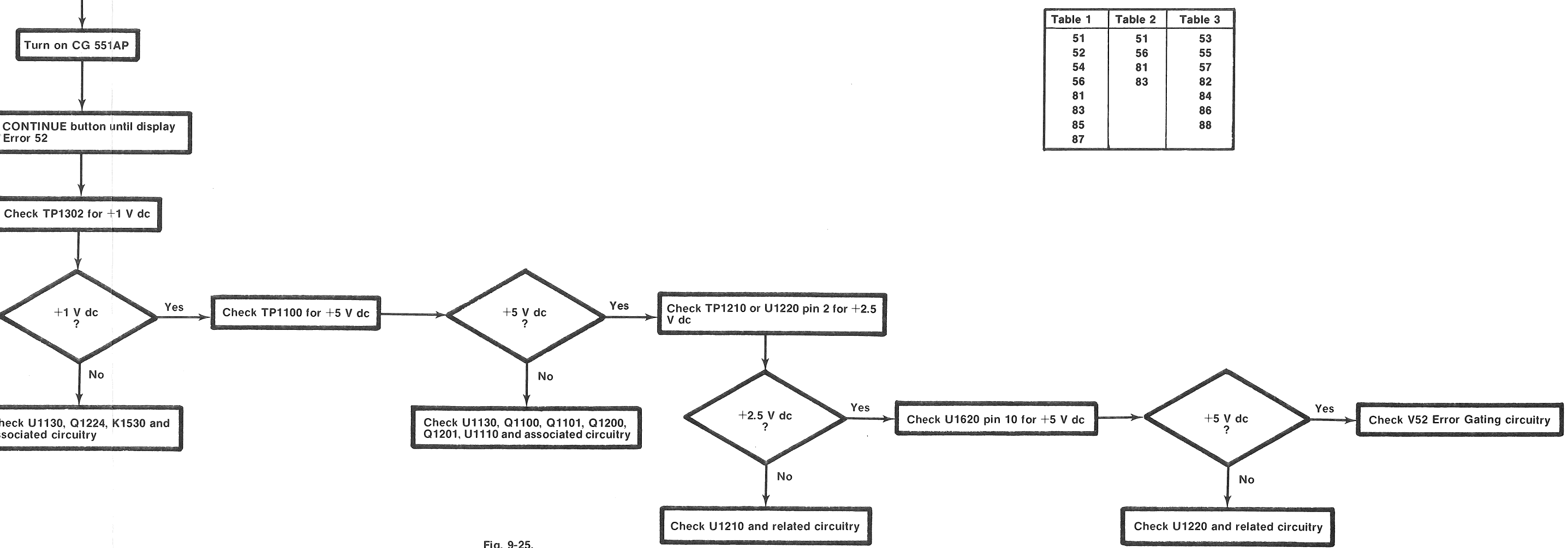


Fig. 9-25.

@

POWER ON TEST CHECK TROUBLESHOOTING TREE 20

HEAD PROGRAMMER CHECK 26 A8

HEAD PROGRAMMER CHECK TROUBLESHOOTING TREE 21

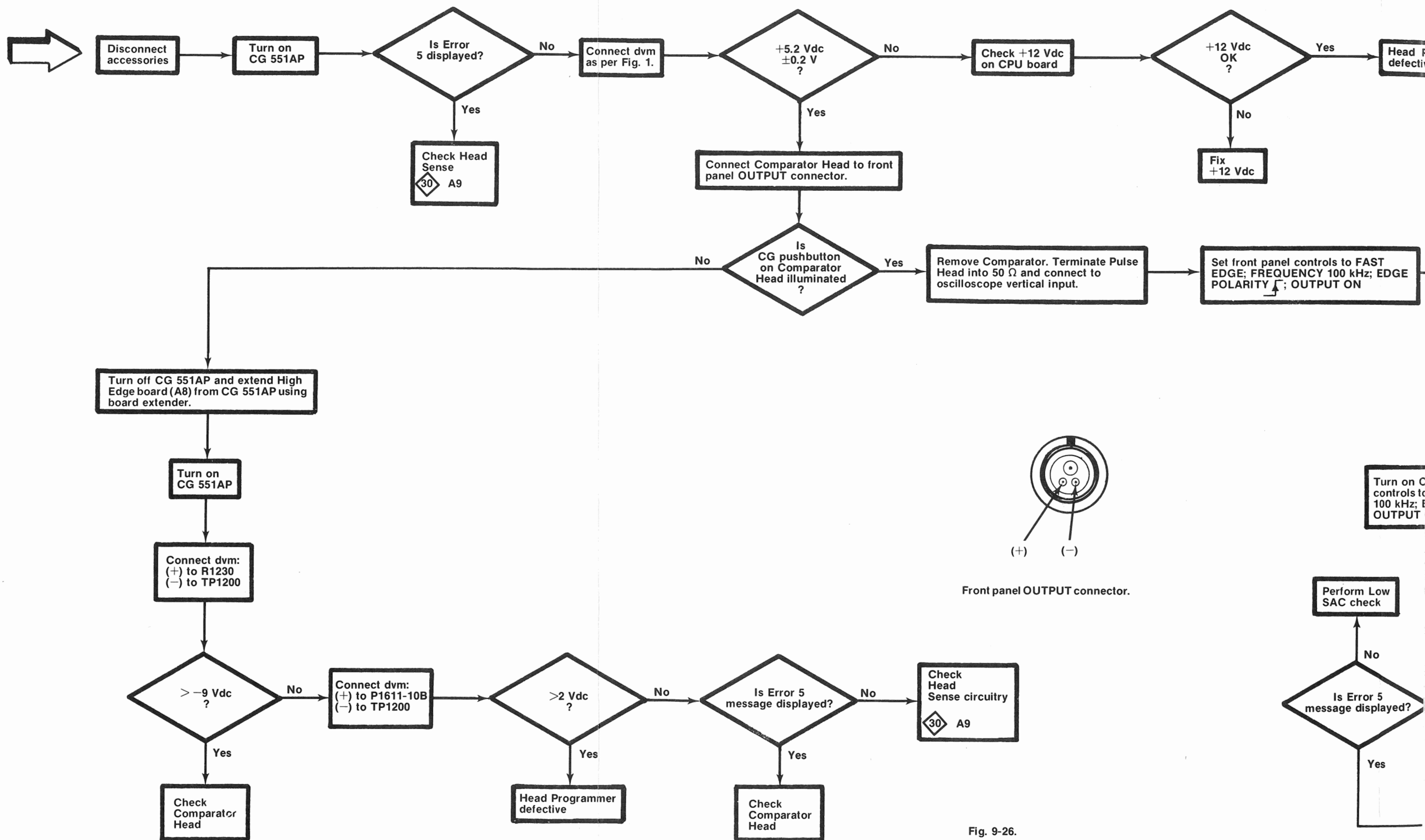
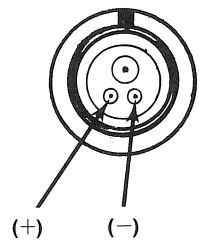
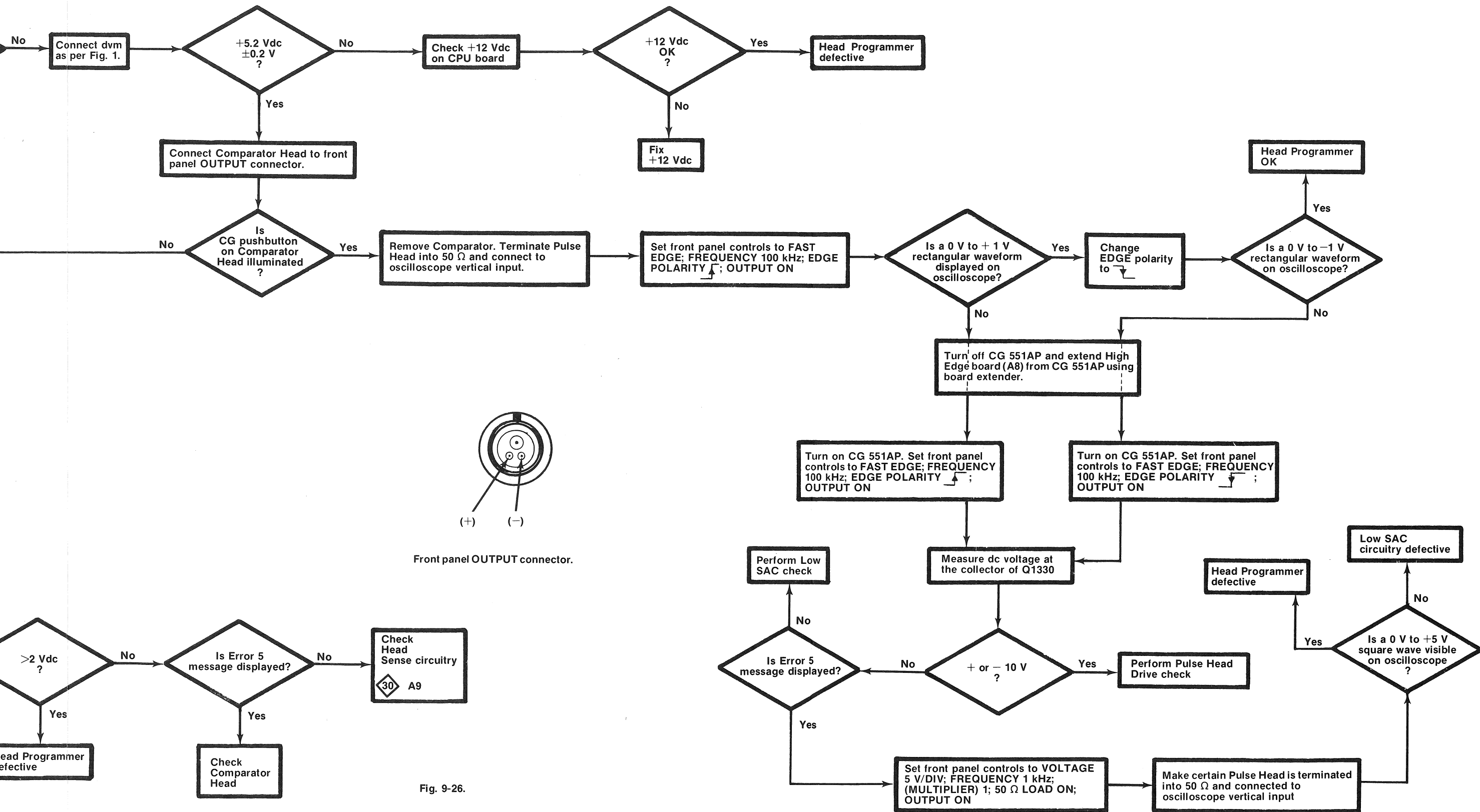


Fig. 9-26.

HEAD PROGRAMMER CHECK 26 A8



Front panel OUTPUT connector.

Fig. 9-26.

@

TIMING MODE CHECK

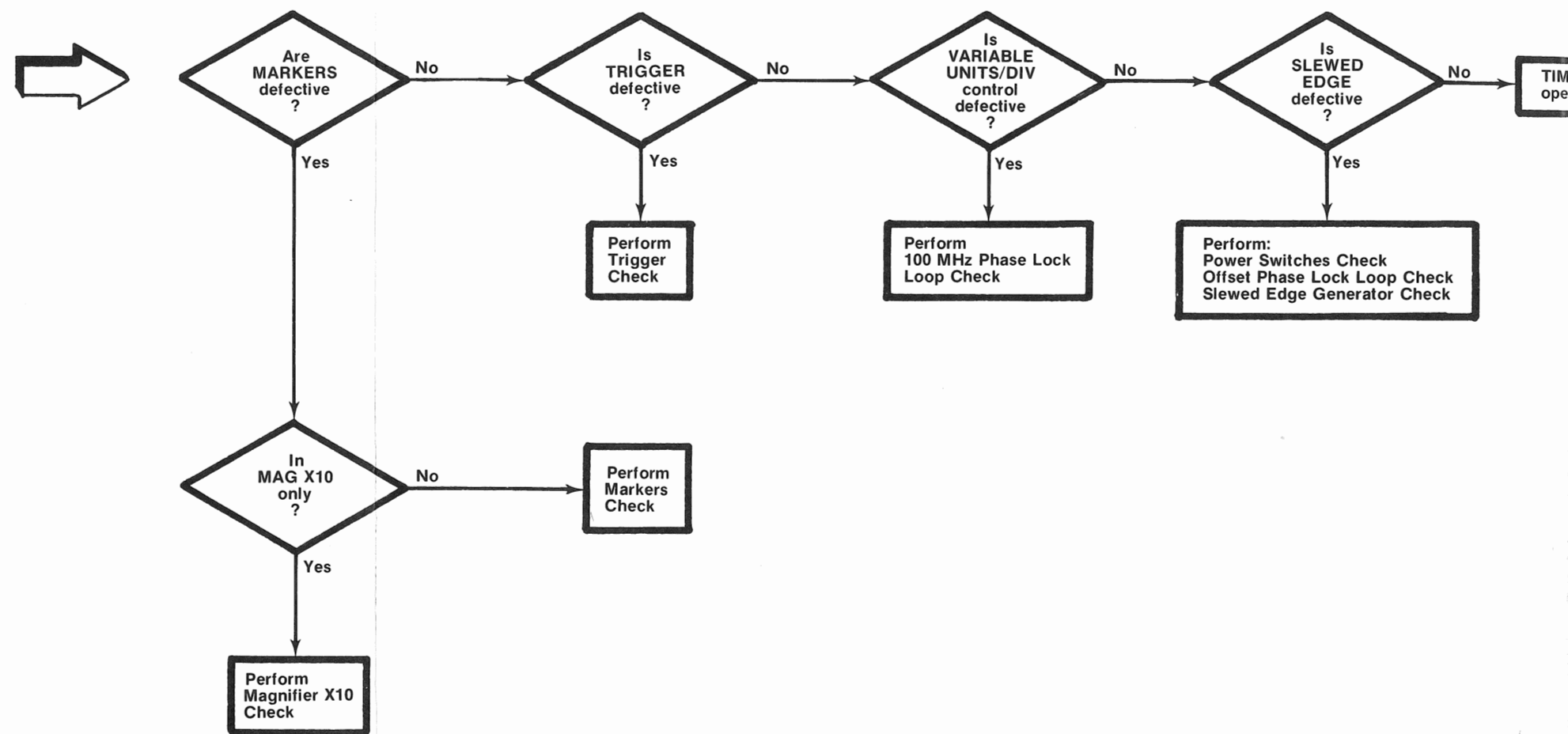


Fig. 9-27.

TIMING MODE CHECK

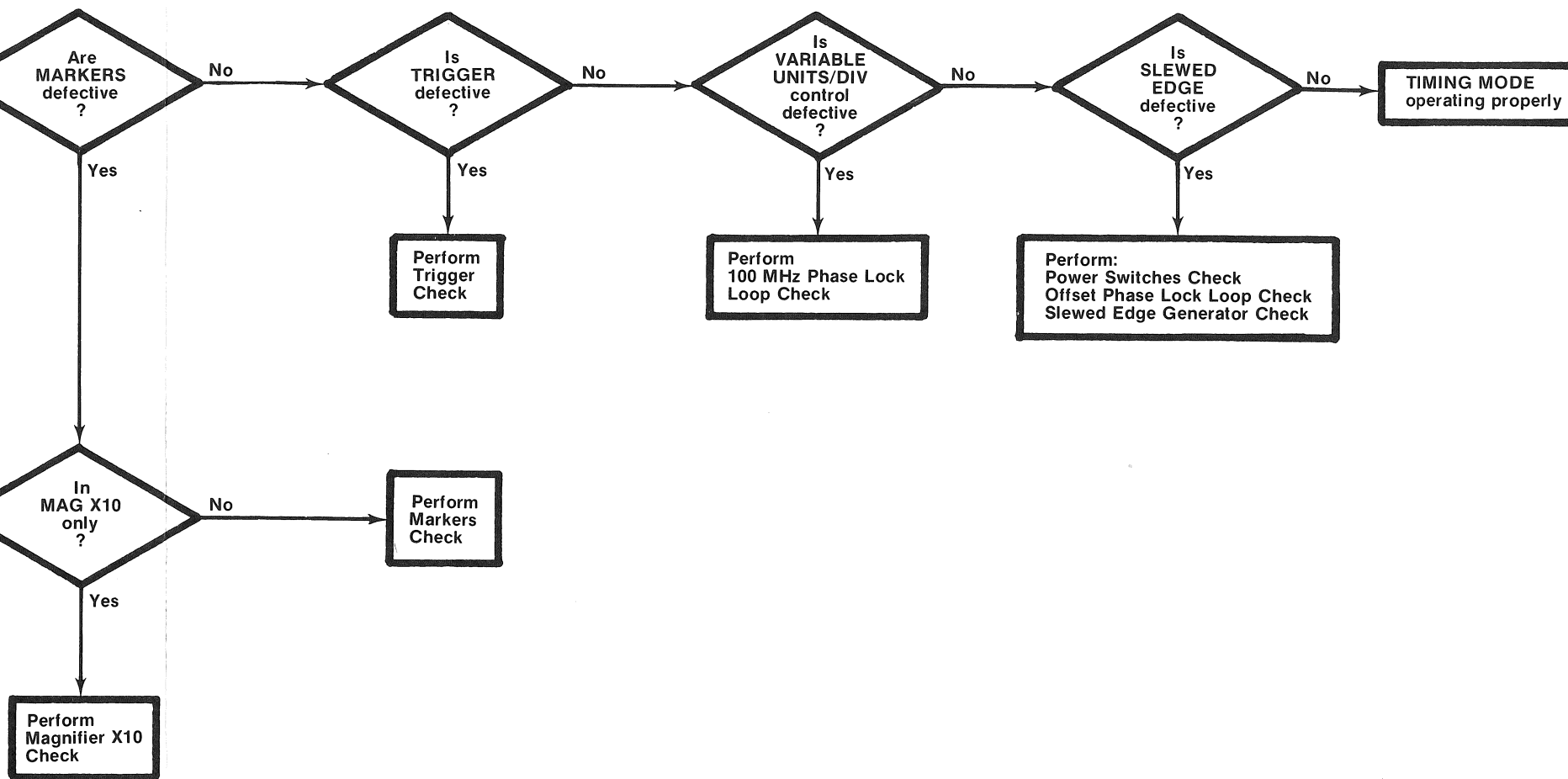
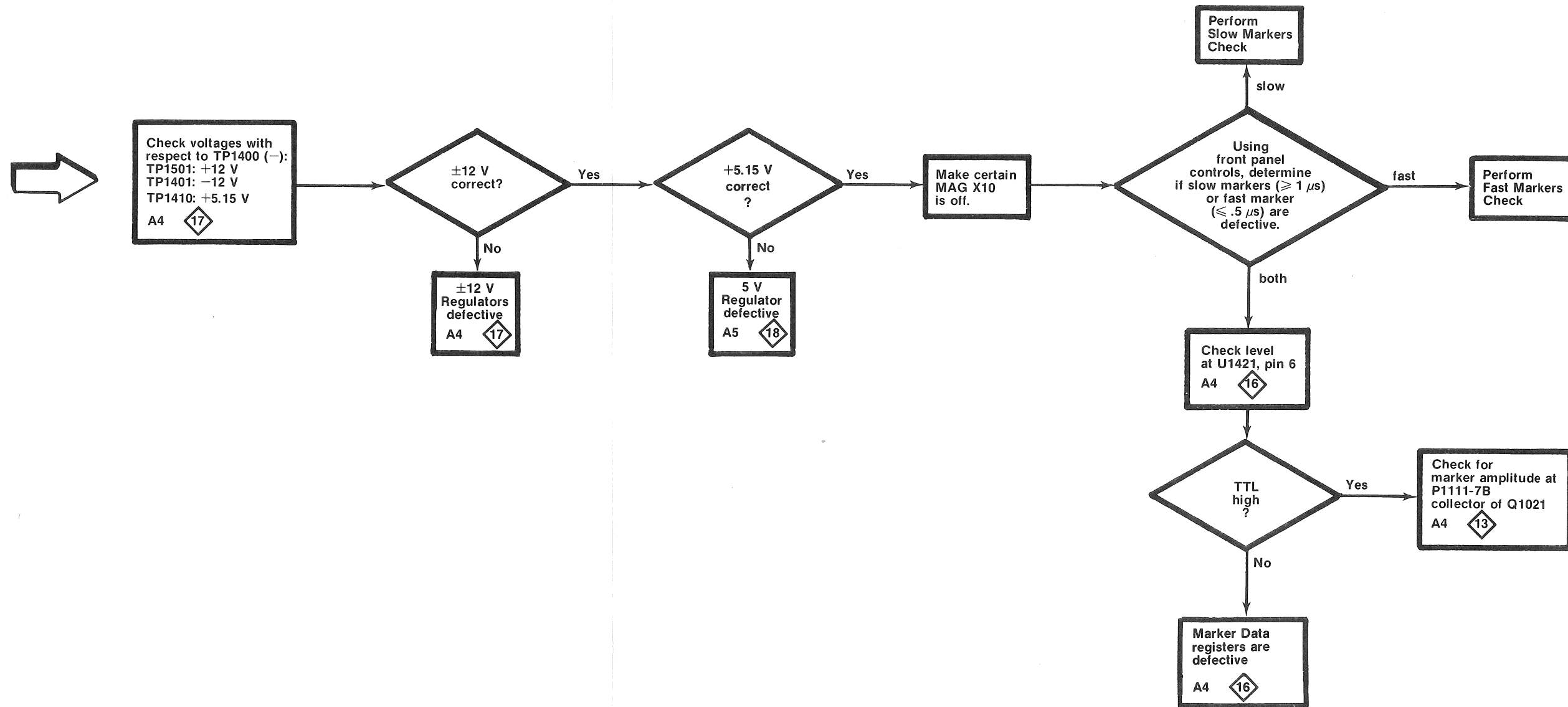


Fig. 9-27.

@

MARKERS CHECK

13 16 17 A4 18



MARKERS CHECK
TROUBLESHOOTING TREE 23

Fig. 9-28.

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MARKERS CHECK

13 16 17 A4 18 A5

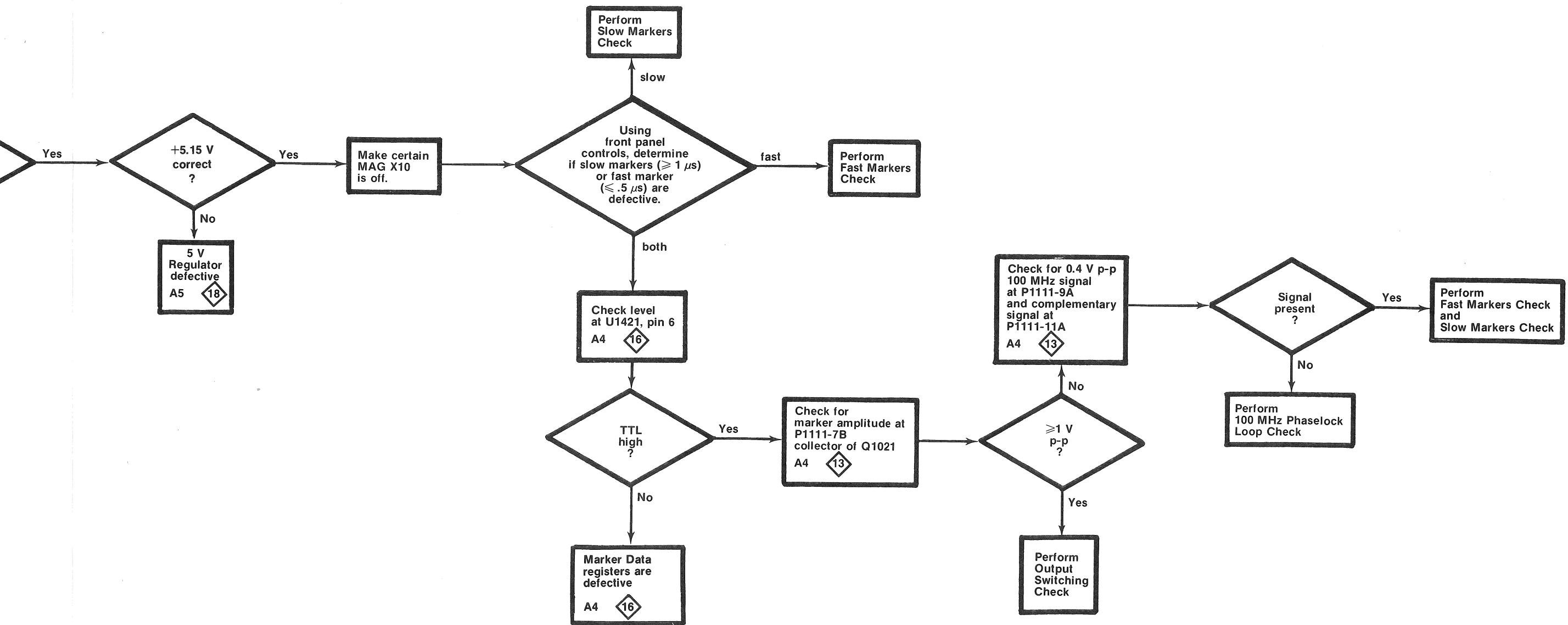


Fig. 9-28.

REV A JUL 1980

FAST MARKERS (≤ 500 ns) CHECK

13

14

16

Assumes slow markers ($\geq 1 \mu s$) are present at output

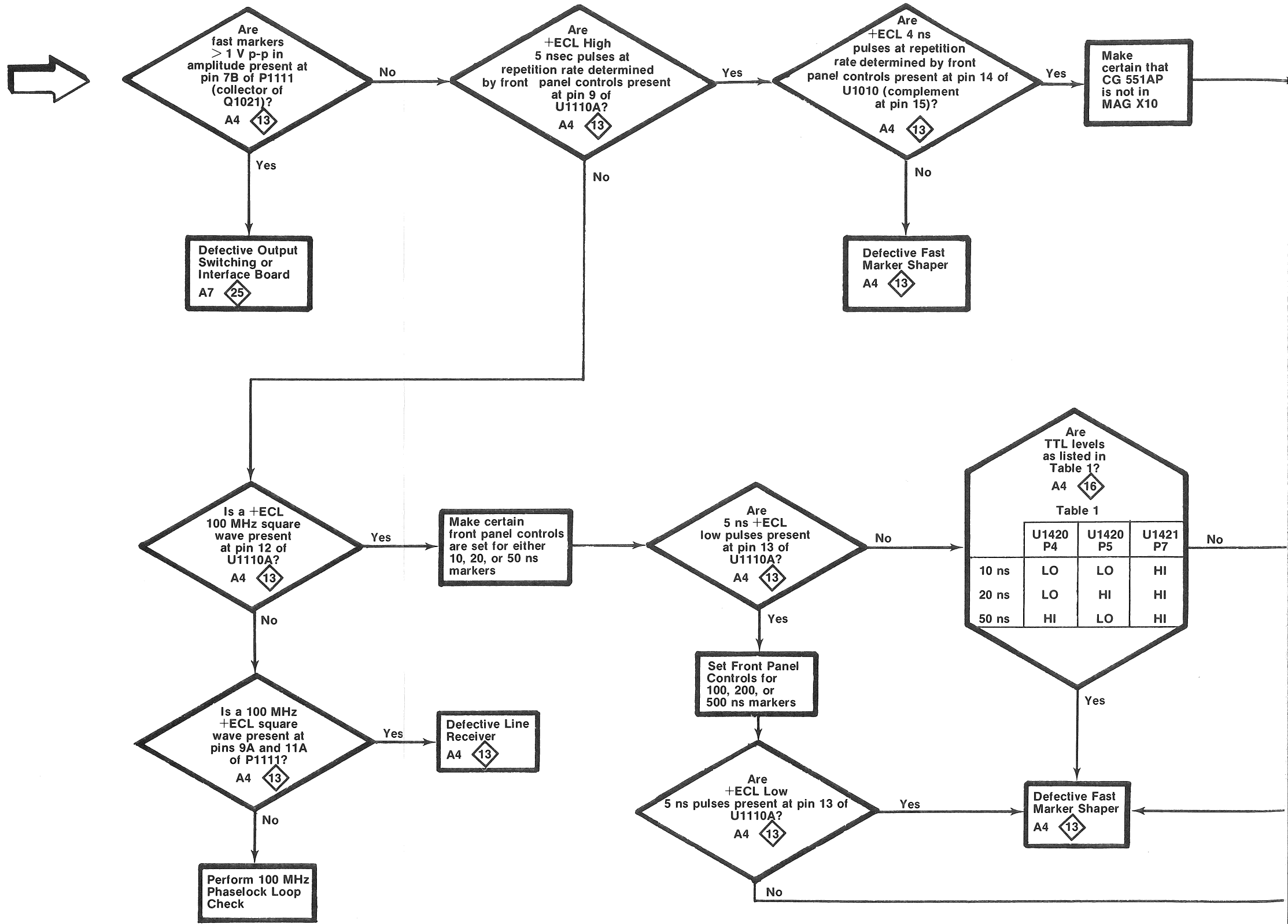


Fig. 9-29.

FAST MARKERS (≤ 500 ns) CHECK

Assumes slow markers ($\geq 1 \mu s$) are present at output

13 14 16 A4 25 A7

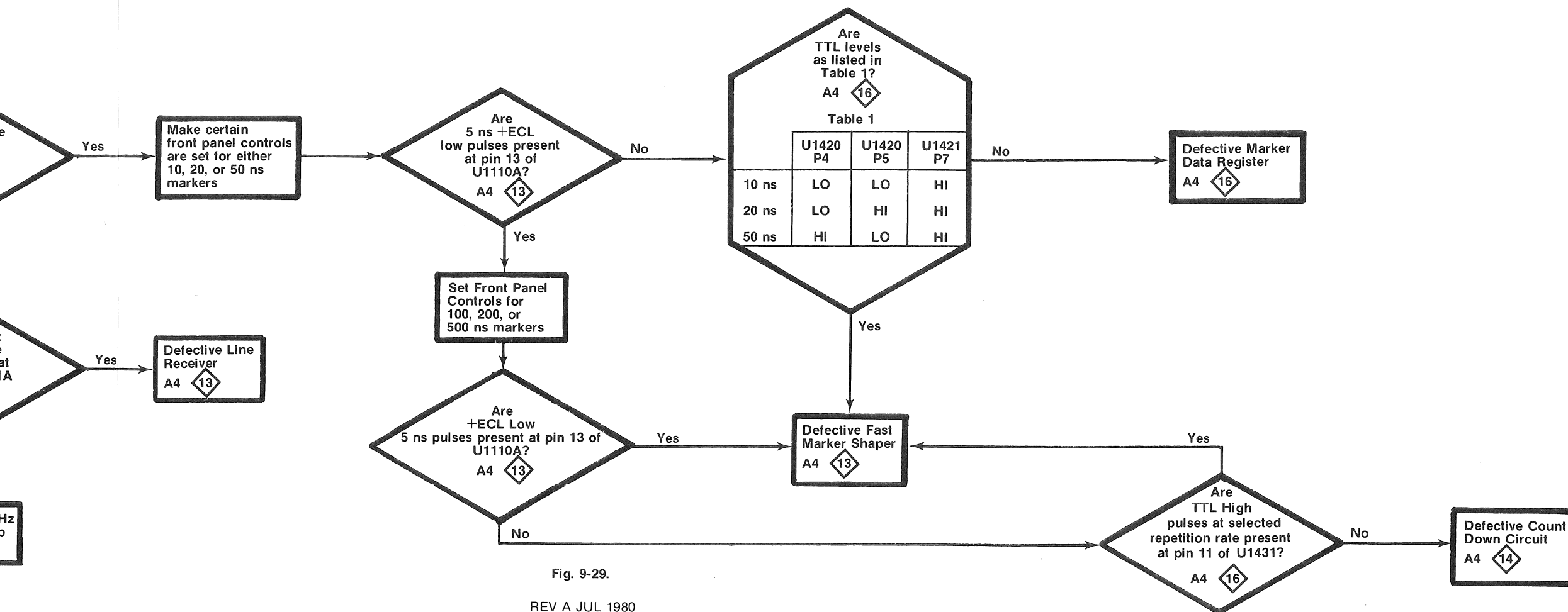
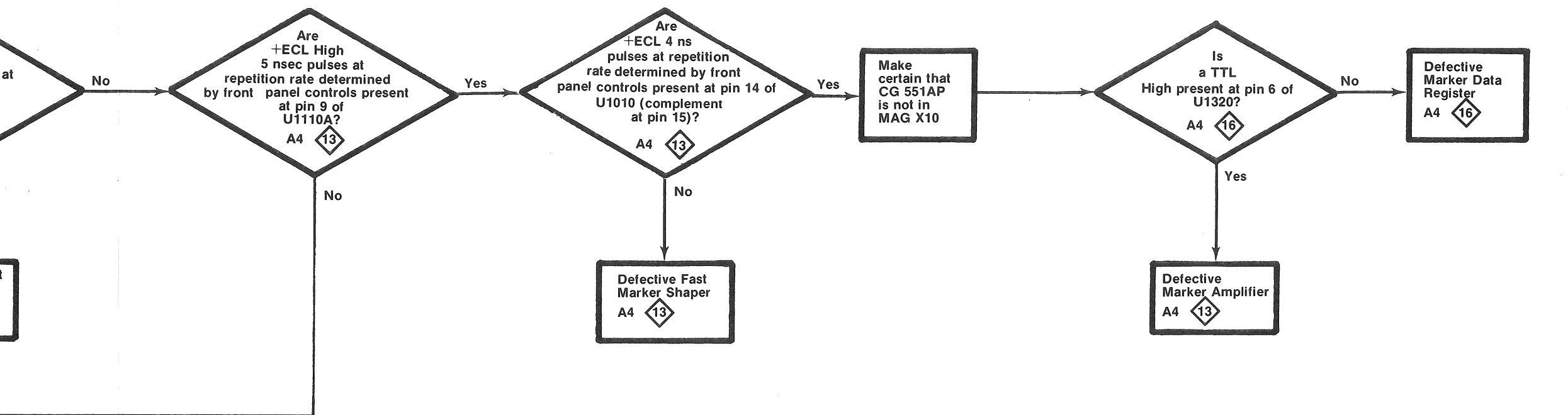


Fig. 9-29.
REV A JUL 1980

SLOW MARKERS ($\geq 1 \mu s$) CHECK

This chart assumes fast markers ($\leq 500 ns$) are present at OUTPUT connector

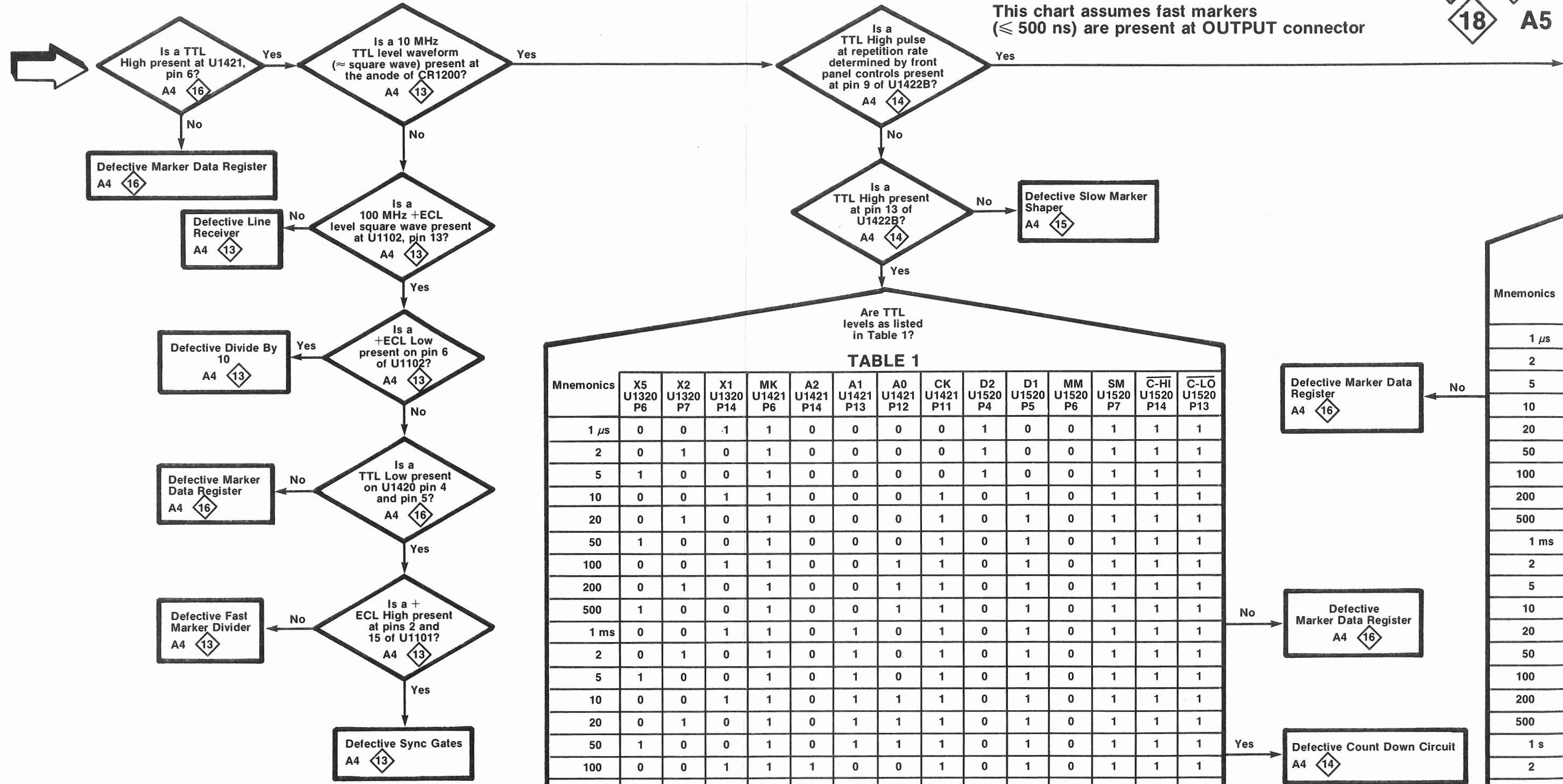


TABLE 1

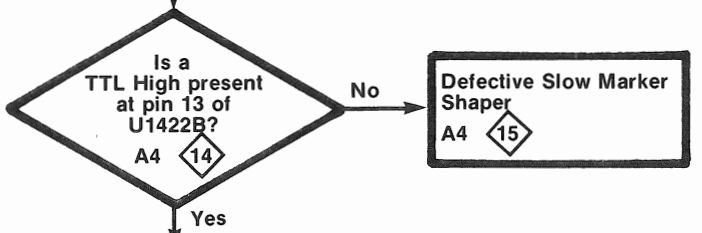
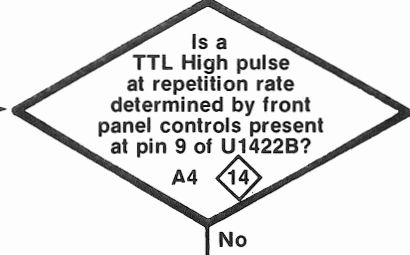
Mnemonics	X5 U1320 P6	X2 U1320 P7	X1 U1320 P14	MK U1421 P6	A2 U1421 P14	A1 U1421 P13	A0 U1421 P12	CK U1421 P11	D2 U1520 P4	D1 U1520 P5	MM U1520 P6	SM U1520 P7	C-HI U1520 P14	C-LO U1520 P13
1 μs	0	0	.1	1	0	0	0	0	1	0	0	1	1	1
2	0	1	0	1	0	0	0	0	1	0	0	1	1	1
5	1	0	0	1	0	0	0	0	1	0	0	1	1	1
10	0	0	1	1	0	0	0	1	0	1	0	1	1	1
20	0	1	0	1	0	0	0	1	0	1	0	1	1	1
50	1	0	0	1	0	0	0	1	0	1	0	1	1	1
100	0	0	1	1	0	0	1	1	0	1	0	1	1	1
200	0	1	0	1	0	0	1	1	0	1	0	1	1	1
500	1	0	0	1	0	0	1	1	0	1	0	1	1	1
1 ms	0	0	1	1	0	1	0	1	0	1	0	1	1	1
2	0	1	0	1	0	1	0	1	0	1	0	1	1	1
5	1	0	0	1	0	1	0	1	0	1	0	1	1	1
10	0	0	1	1	0	1	1	1	0	1	0	1	1	1
20	0	1	0	1	0	1	1	1	0	1	0	1	1	1
50	1	0	0	1	0	1	1	1	0	1	0	1	1	1
100	0	0	1	1	1	0	0	1	0	1	0	1	1	1
200	0	1	0	1	1	0	0	1	0	1	0	1	1	1
500	1	0	0	1	1	0	0	1	0	1	0	1	1	1
1 s	0	0	1	1	1	0	1	1	0	1	0	1	1	1
2	0	1	0	1	1	0	1	1	0	1	0	1	1	1
5	1	0	0	1	1	0	1	1	0	1	0	1	1	1

SLOW MARKERS CHECK TROUBLESHOOTING TREE 25

Fig. 9-30.
REV A JUL 1980

SLOW MARKERS ($\geq 1 \mu s$) CHECK 14 16 17 A4

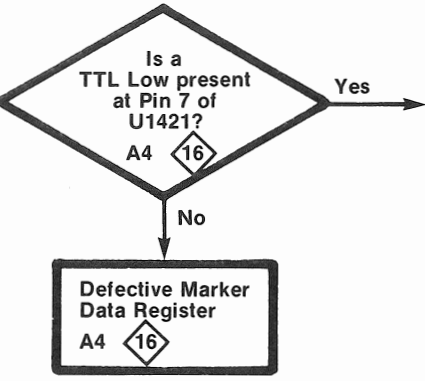
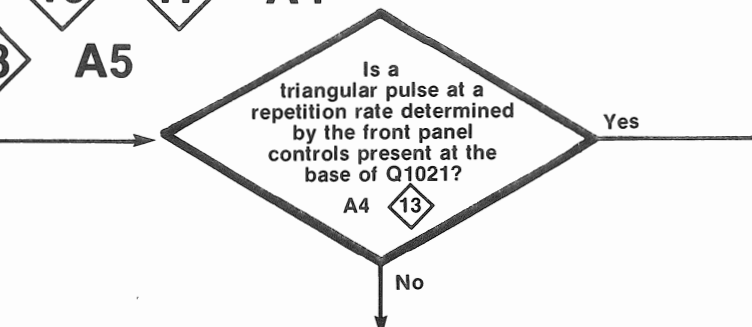
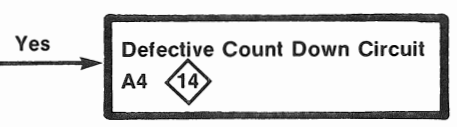
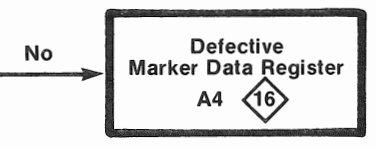
This chart assumes fast markers ($\leq 500 ns$) are present at OUTPUT connector 18 A5



Are TTL levels as listed in Table 1?

TABLE 1

X2 1320 P7	X1 U1320 P14	MK U1421 P6	A2 U1421 P14	A1 U1421 P13	A0 U1421 P12	CK U1421 P11	D2 U1520 P4	D1 U1520 P5	MM U1520 P6	SM U1520 P7	C-HI U1520 P14	C-LO U1520 P13
0	1	1	0	0	0	0	1	0	0	1	1	1
1	0	1	0	0	0	0	1	0	0	1	1	1
0	0	1	0	0	0	0	1	0	0	1	1	1
0	1	1	0	0	0	1	0	1	0	1	1	1
1	0	1	0	0	0	1	0	1	0	1	1	1
0	0	1	0	0	0	1	0	1	0	1	1	1
0	1	1	0	0	1	1	0	1	0	1	1	1
1	0	1	0	0	1	1	0	1	0	1	1	1
0	0	1	0	0	1	1	0	1	0	1	1	1
0	1	1	0	1	0	1	0	1	0	1	1	1
1	0	1	0	1	0	1	0	1	0	1	1	1
0	0	1	0	1	0	1	0	1	0	1	1	1
0	1	1	0	1	1	1	0	1	0	1	1	1
0	1	1	1	0	0	1	0	1	0	1	1	1
1	0	1	1	0	0	1	0	1	0	1	1	1
0	0	1	1	0	0	1	0	1	0	1	1	1
0	1	1	1	0	1	1	0	1	0	1	1	1
1	0	1	1	0	1	1	0	1	0	1	1	1
0	0	1	1	0	1	1	0	1	0	1	1	1



Are TTL levels as listed in Table 2?

Table 2

Mnemonics	C3* U1420 P6	C2* U1420 P7	C1* U1420 P14	I3 U1420 P13	I2 U1420 P12	I1 U1420 P11
1 μs	0	0	0	1	0	1
2	0	0	0	1	0	0
5	0	0	0	0	1	1
10	0	0	1	1	0	1
20	0	0	1	1	0	0
50	0	0	1	0	1	1
100	0	0	1	0	1	0
200	0	0	1	0	0	1
500	0	0	1	0	0	0
1 ms	0	1	0	1	0	1
2	0	1	0	1	0	0
5	0	1	0	0	1	1
10	0	1	0	0	1	0
20	0	1	0	0	0	1
50	0	1	0	0	0	0
100	1	0	0	1	0	1
200	1	0	0	1	0	0
500	1	0	0	0	1	1
1 s	1	0	0	0	1	0
2	1	0	0	0	0	1
5	1	0	0	0	0	0

*For these lines only
High (1) = 0.7 V
Low (0) = 0.0 V

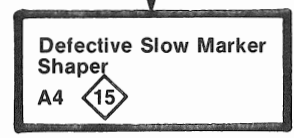


Fig. 9-30.

MAGNIFIER X10 CHECK

13 15 16 A4

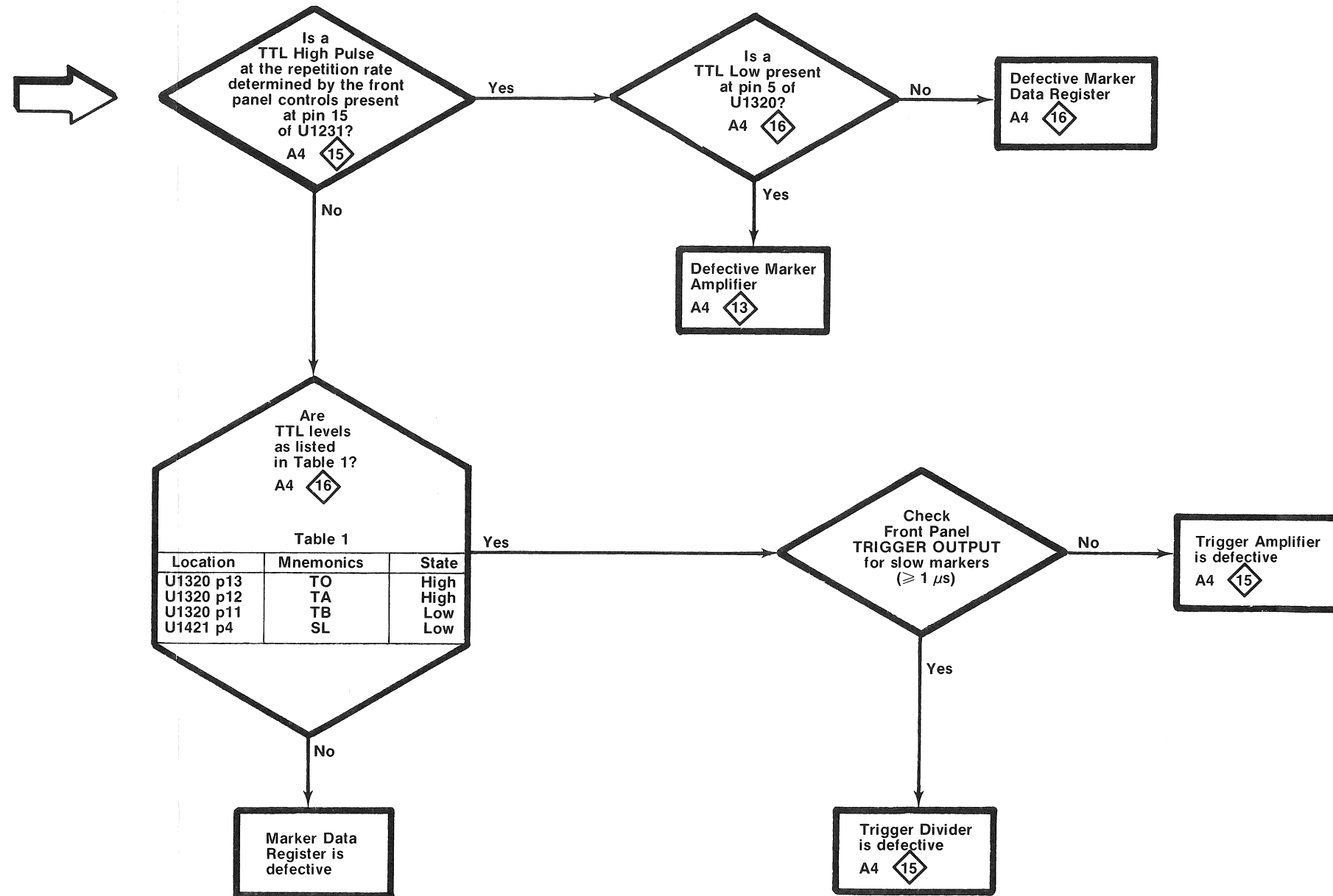


Fig. 9-31.

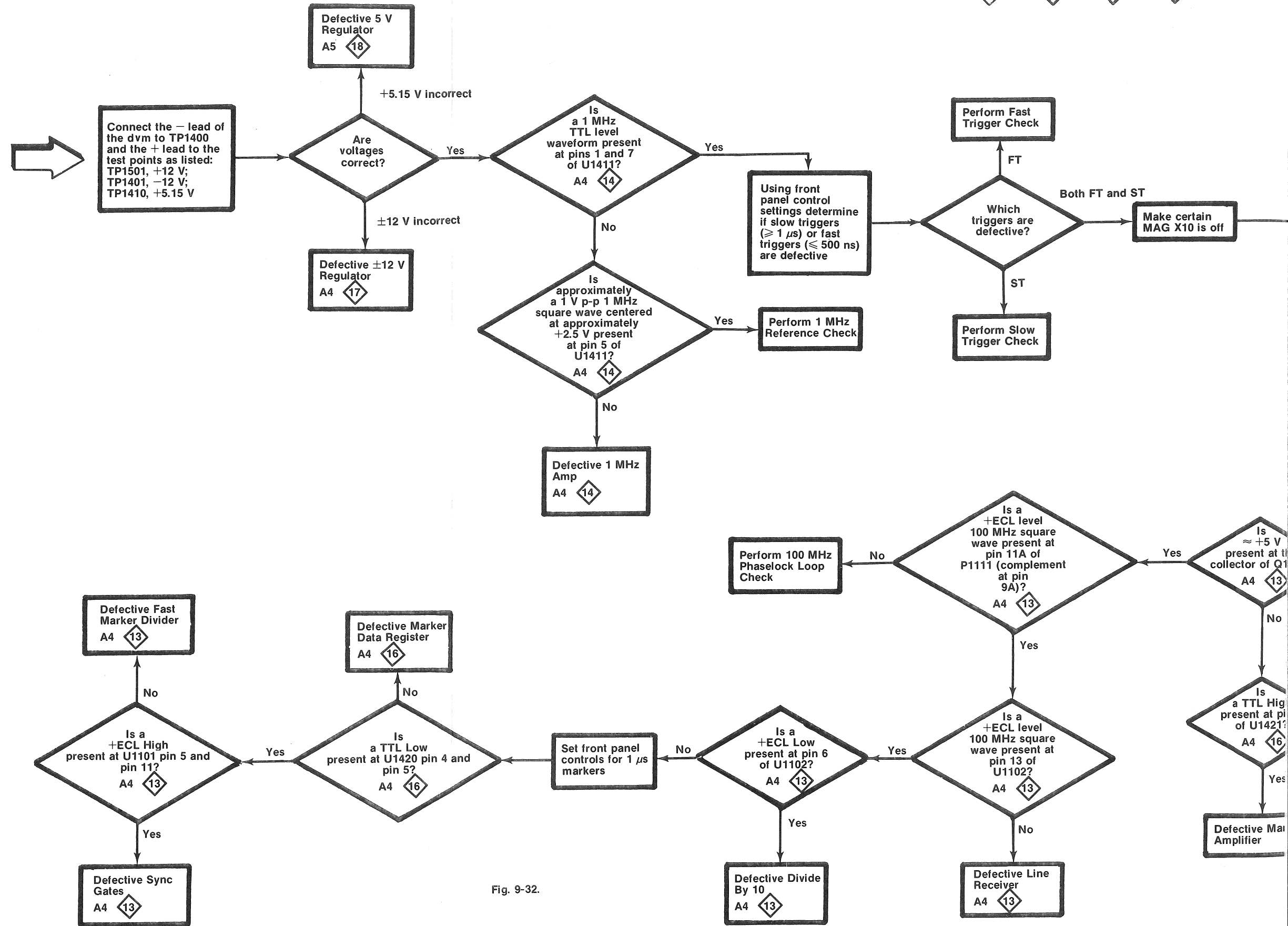


Fig. 9-32.

@

TRIGGER CHECK 13 14 16 17 A4 18 A5

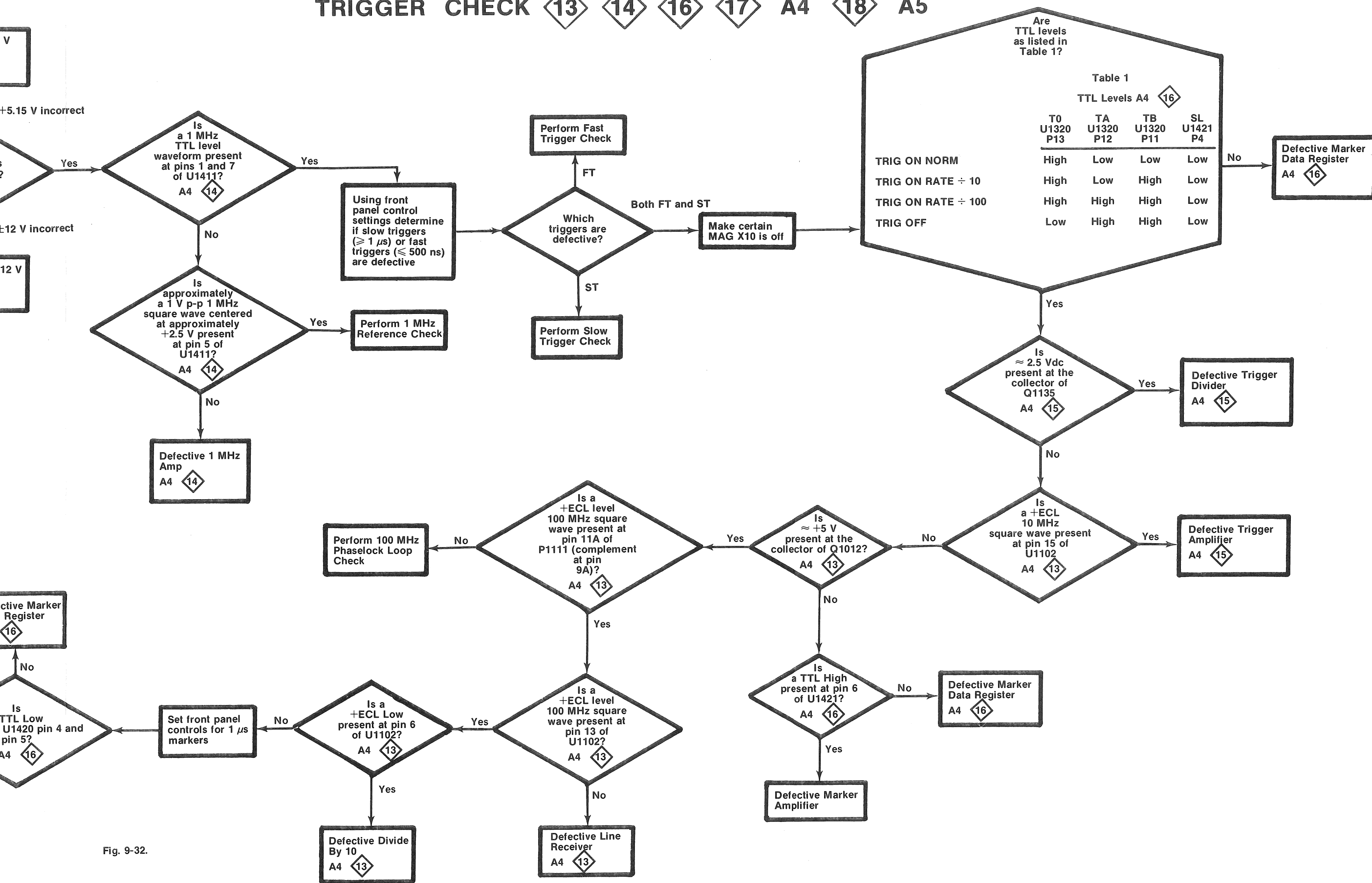


Fig. 9-32.

FAST TRIGGER (≤ 500 ns)
 This check assumes that the slow trigger is working.

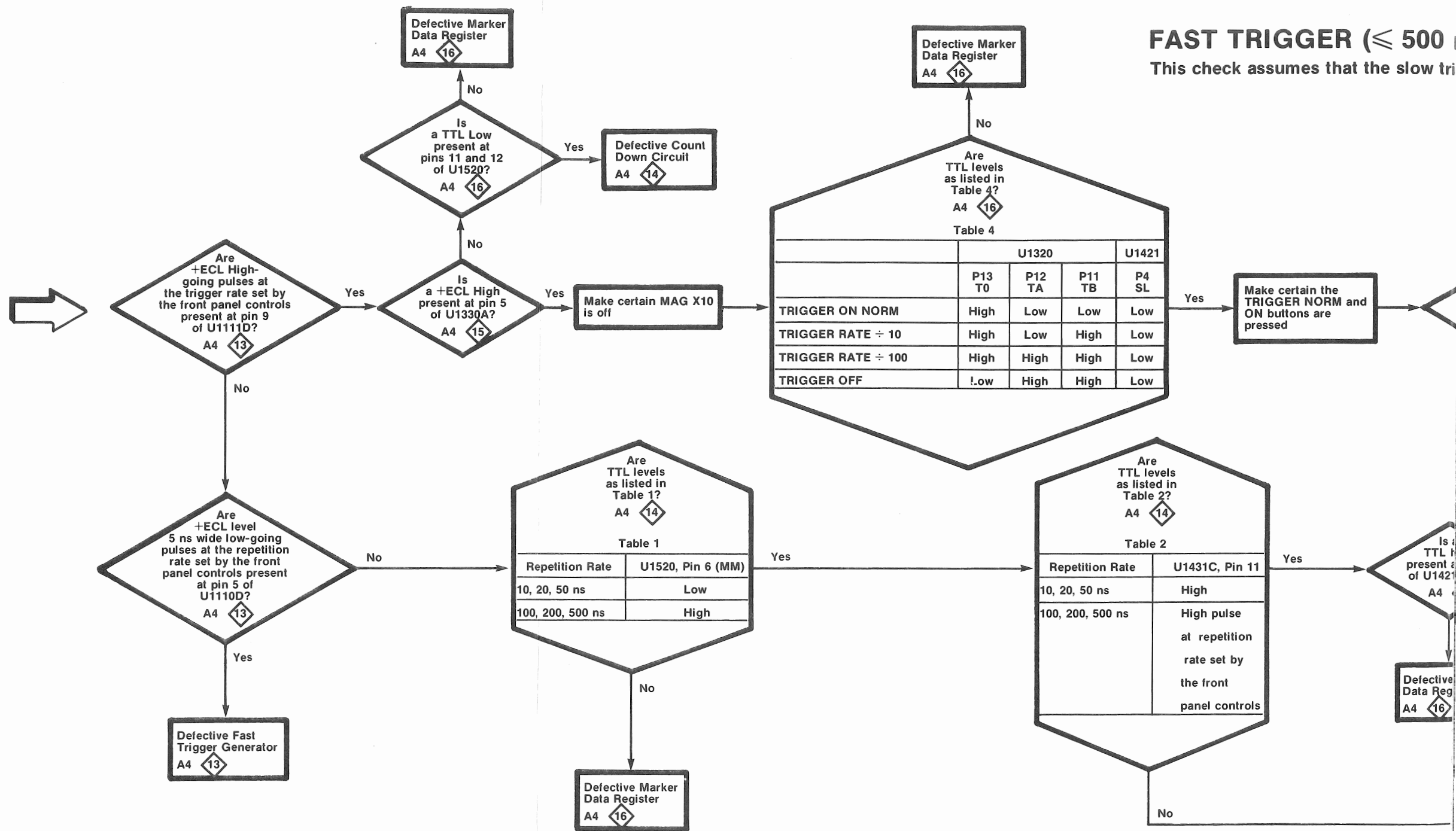


Fig. 9-33.

FAST TRIGGER (≤ 500 ns) CHECK 13 14 15 16 A4

This check assumes that the slow triggers are operating properly

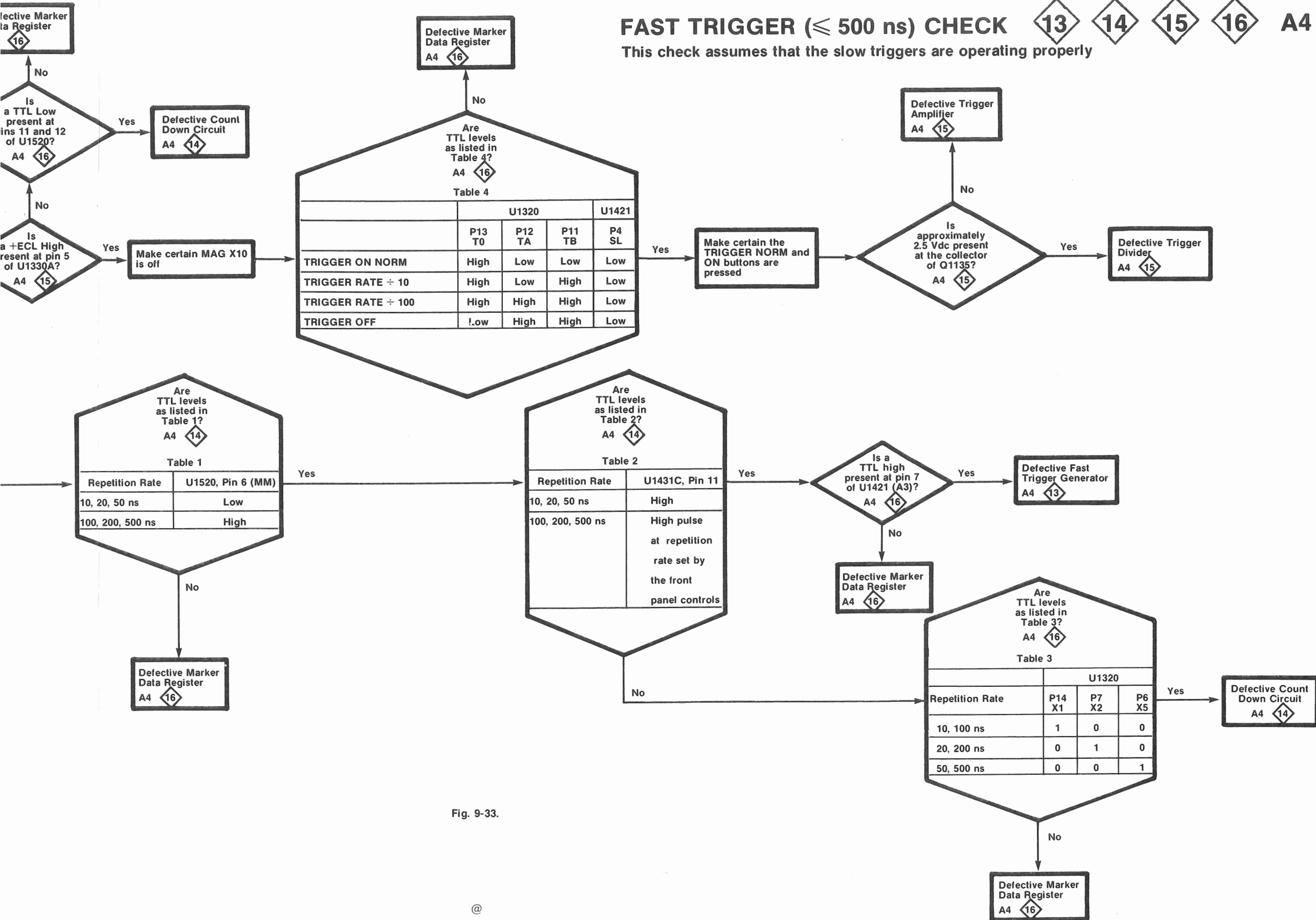
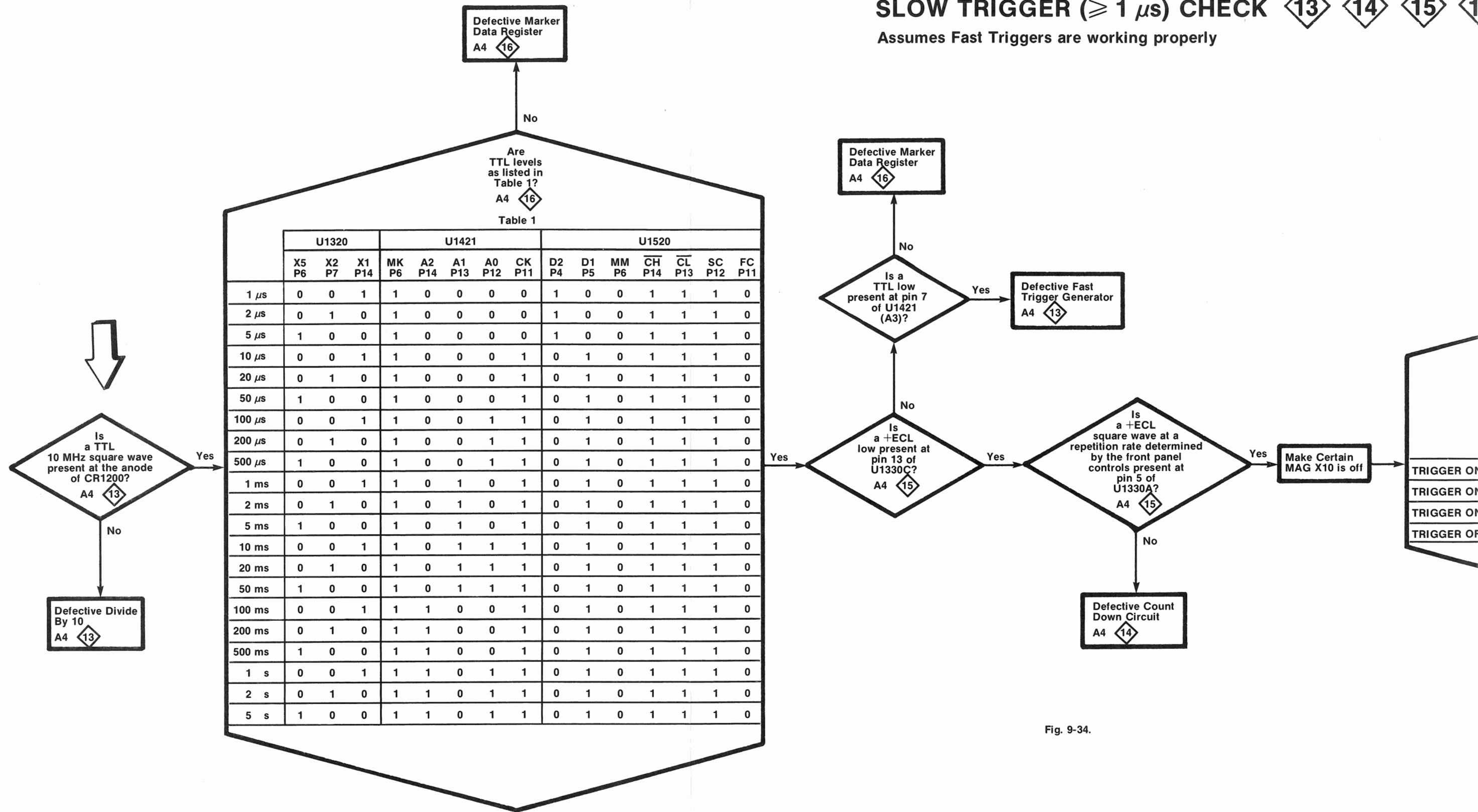


Fig. 9-33.

@

SLOW TRIGGER ($\geq 1 \mu s$) CHECK

Assumes Fast Triggers are working properly



Defective Marker Data Register
A4 16

Are TTL levels as listed in Table 1?
A4 16

Table 1

	U1320			U1421					U1520						
	X5 P6	X2 P7	X1 P14	MK P6	A2 P14	A1 P13	A0 P12	CK P11	D2 P4	D1 P5	MM P6	CH P14	CL P13	SC P12	FC P11
1 μs	0	0	1	1	0	0	0	0	1	0	0	1	1	1	0
2 μs	0	1	0	1	0	0	0	0	1	0	0	1	1	1	0
5 μs	1	0	0	1	0	0	0	0	1	0	0	1	1	1	0
10 μs	0	0	1	1	0	0	0	1	0	1	0	1	1	1	0
20 μs	0	1	0	1	0	0	0	1	0	1	0	1	1	1	0
50 μs	1	0	0	1	0	0	0	1	0	1	0	1	1	1	0
100 μs	0	0	1	1	0	0	1	1	0	1	0	1	1	1	0
200 μs	0	1	0	1	0	0	1	1	0	1	0	1	1	1	0
500 μs	1	0	0	1	0	0	1	1	0	1	0	1	1	1	0
1 ms	0	0	1	1	0	1	0	1	0	1	0	1	1	1	0
2 ms	0	1	0	1	0	1	0	1	0	1	0	1	1	1	0
5 ms	1	0	0	1	0	1	0	1	0	1	0	1	1	1	0
10 ms	0	0	1	1	0	1	1	1	0	1	0	1	1	1	0
20 ms	0	1	0	1	0	1	1	1	0	1	0	1	1	1	0
50 ms	1	0	0	1	0	1	1	1	0	1	0	1	1	1	0
100 ms	0	0	1	1	1	0	0	1	0	1	0	1	1	1	0
200 ms	0	1	0	1	1	0	0	1	0	1	0	1	1	1	0
500 ms	1	0	0	1	1	0	0	1	0	1	0	1	1	1	0
1 s	0	0	1	1	1	0	1	1	0	1	0	1	1	1	0
2 s	0	1	0	1	1	0	1	1	0	1	0	1	1	1	0
5 s	1	0	0	1	1	0	1	1	0	1	0	1	1	1	0

Defective Marker Data Register
A4 16

Is a TTL low present at pin 7 of U1421 (A3)?

Defective Fast Trigger Generator
A4 13

Is a +ECL low present at pin 13 of U1330C? (A4 15)

Is a +ECL square wave at a repetition rate determined by the front panel controls present at pin 5 of U1330A? (A4 15)

Make Certain MAG X10 is off

Defective Count Down Circuit
A4 14

TRIGGER ON
TRIGGER ON
TRIGGER ON
TRIGGER OF

Fig. 9-34.

CHOP CHECK 14 16 17 A4 18

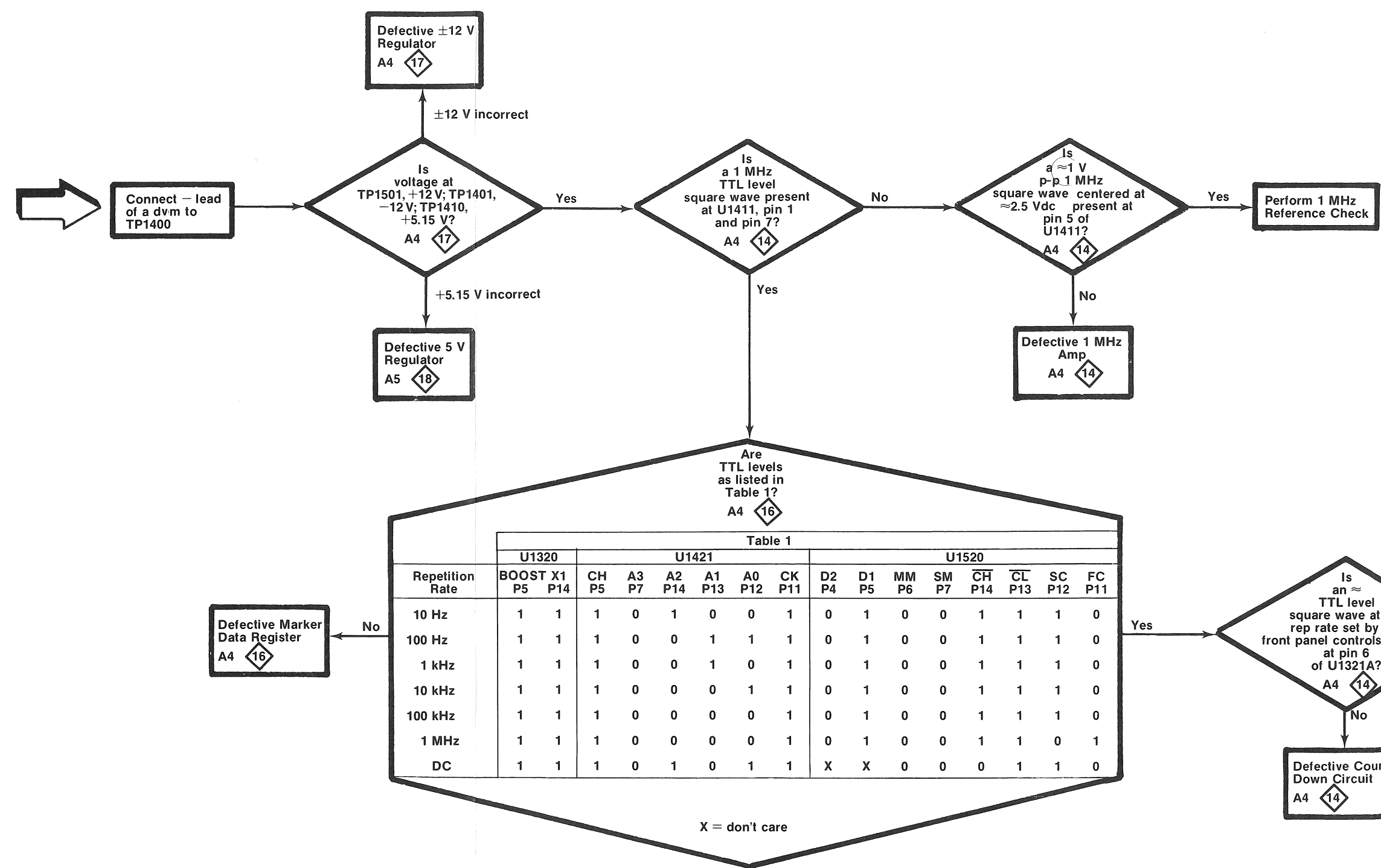


Table 1

Repetition Rate	U1320		U1421						U1520							
	BOOST P5	X1 P14	CH P5	A3 P7	A2 P14	A1 P13	A0 P12	CK P11	D2 P4	D1 P5	MM P6	SM P7	CH P14	CL P13	SC P12	FC P11
10 Hz	1	1	1	0	1	0	0	1	0	1	0	0	1	1	1	0
100 Hz	1	1	1	0	0	1	1	1	0	1	0	0	1	1	1	0
1 kHz	1	1	1	0	0	1	0	1	0	1	0	0	1	1	1	0
10 kHz	1	1	1	0	0	0	1	1	0	1	0	0	1	1	1	0
100 kHz	1	1	1	0	0	0	0	1	0	1	0	0	1	1	1	0
1 MHz	1	1	1	0	0	0	0	1	0	1	0	0	1	1	0	1
DC	1	1	1	0	1	0	1	1	X	X	0	0	0	1	1	0

X = don't care

Fig. 9-35.

CHOP CHECK 14 16 17 A4 18 A5

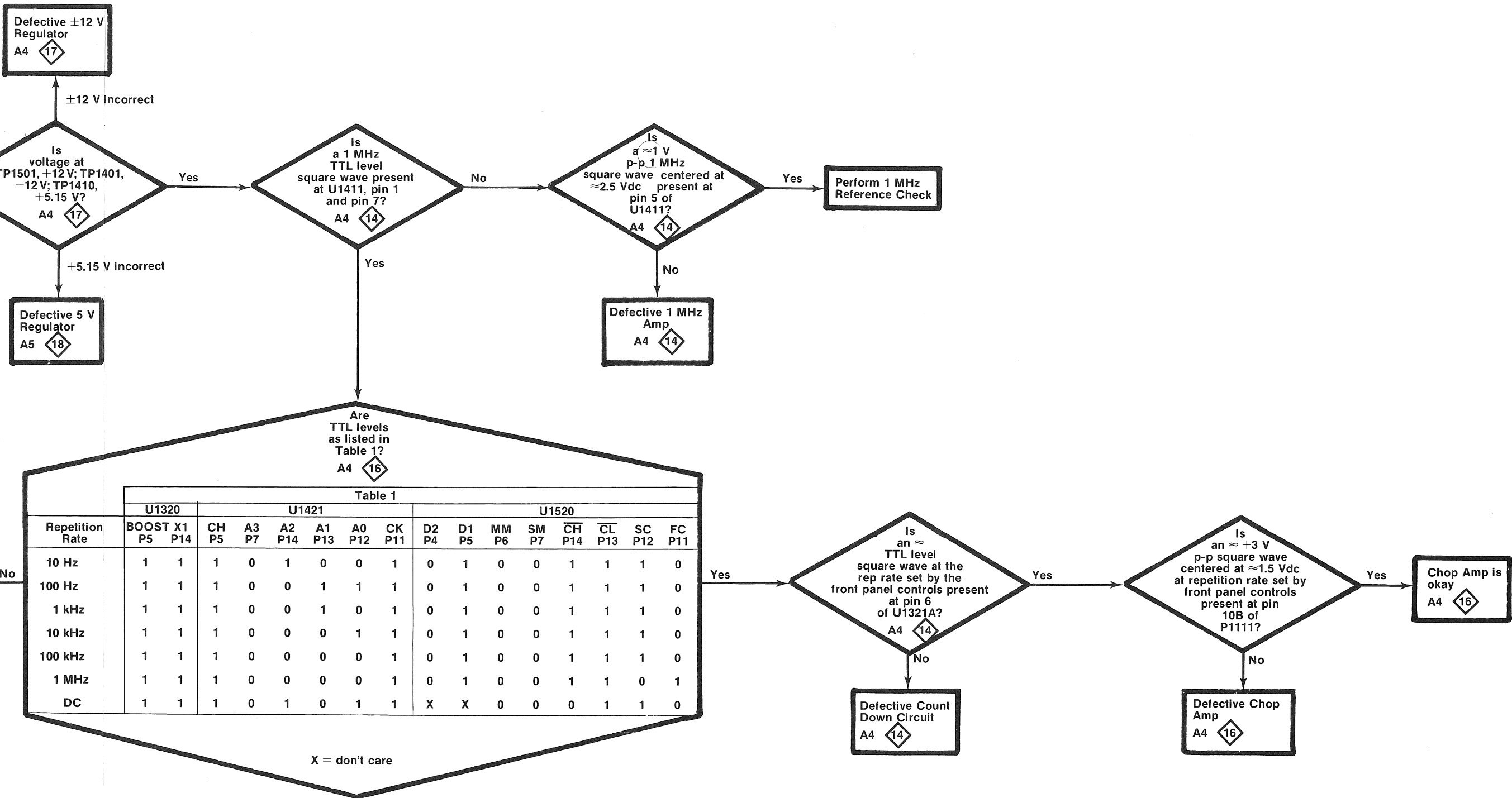


Fig. 9-35.

@

POWER SWITCHES CHECK 10 A3A6 A3A8

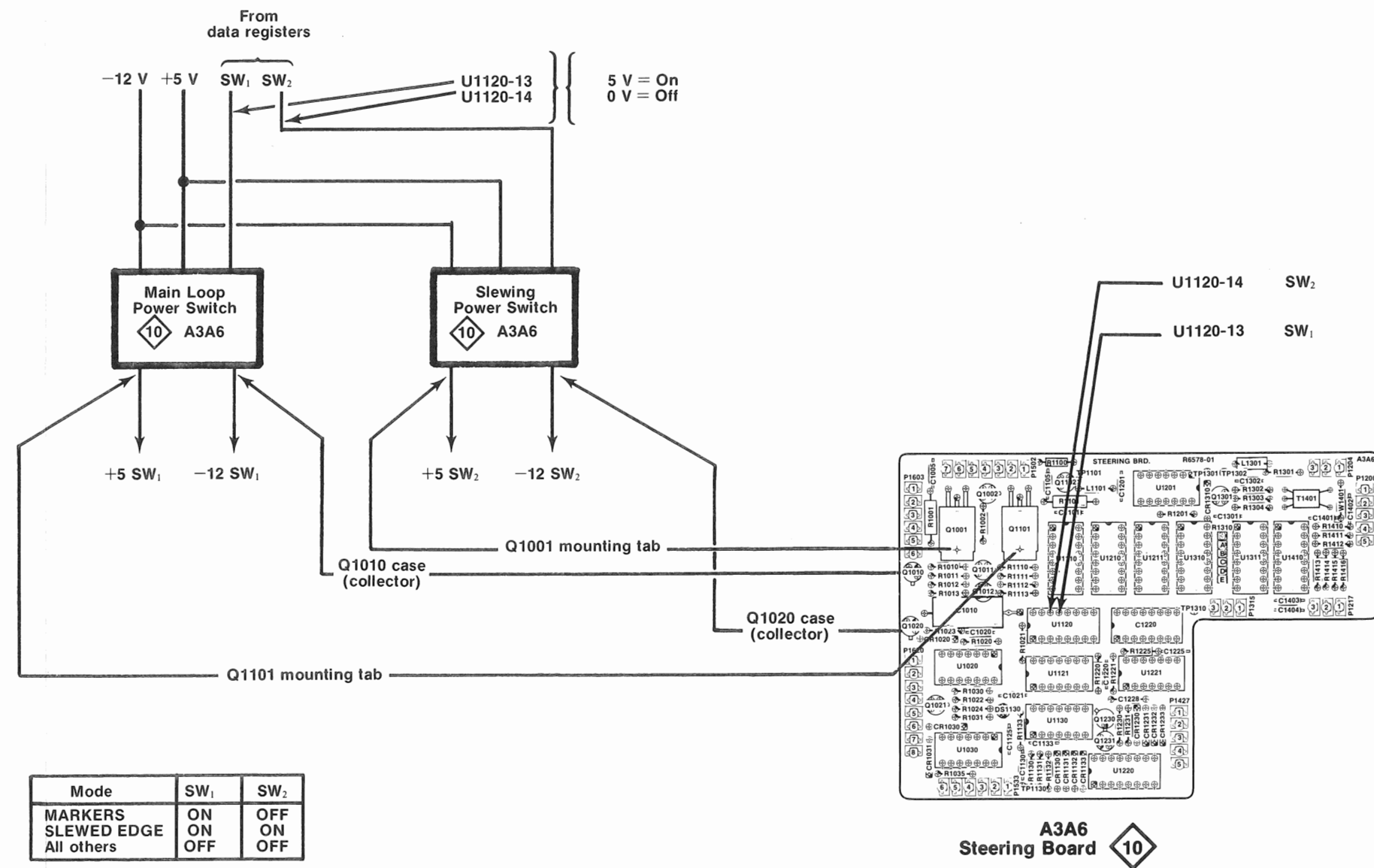


Fig. 9-36.

OFFSET PHASELOCK LOOP CHECK 6 A3A1 A3A3

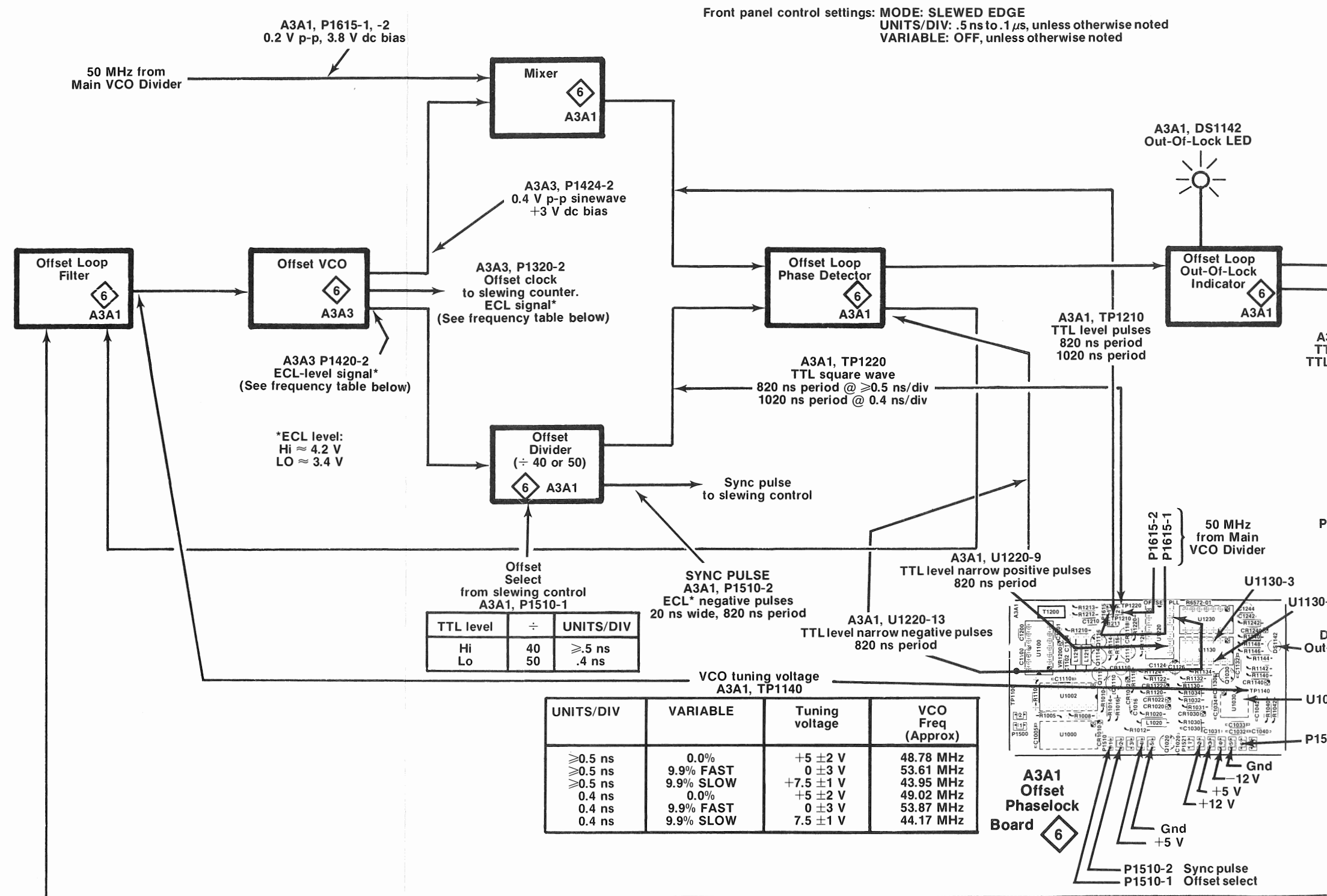


Fig. 9-38.

OFFSET PHASELOCK LOOP CHECK 6 A3A1 A3A3

Front panel control settings: **MODE: SLEWED EDGE**
UNITS/DIV: .5 ns to .1 μ s, unless otherwise noted
VARIABLE: OFF, unless otherwise noted

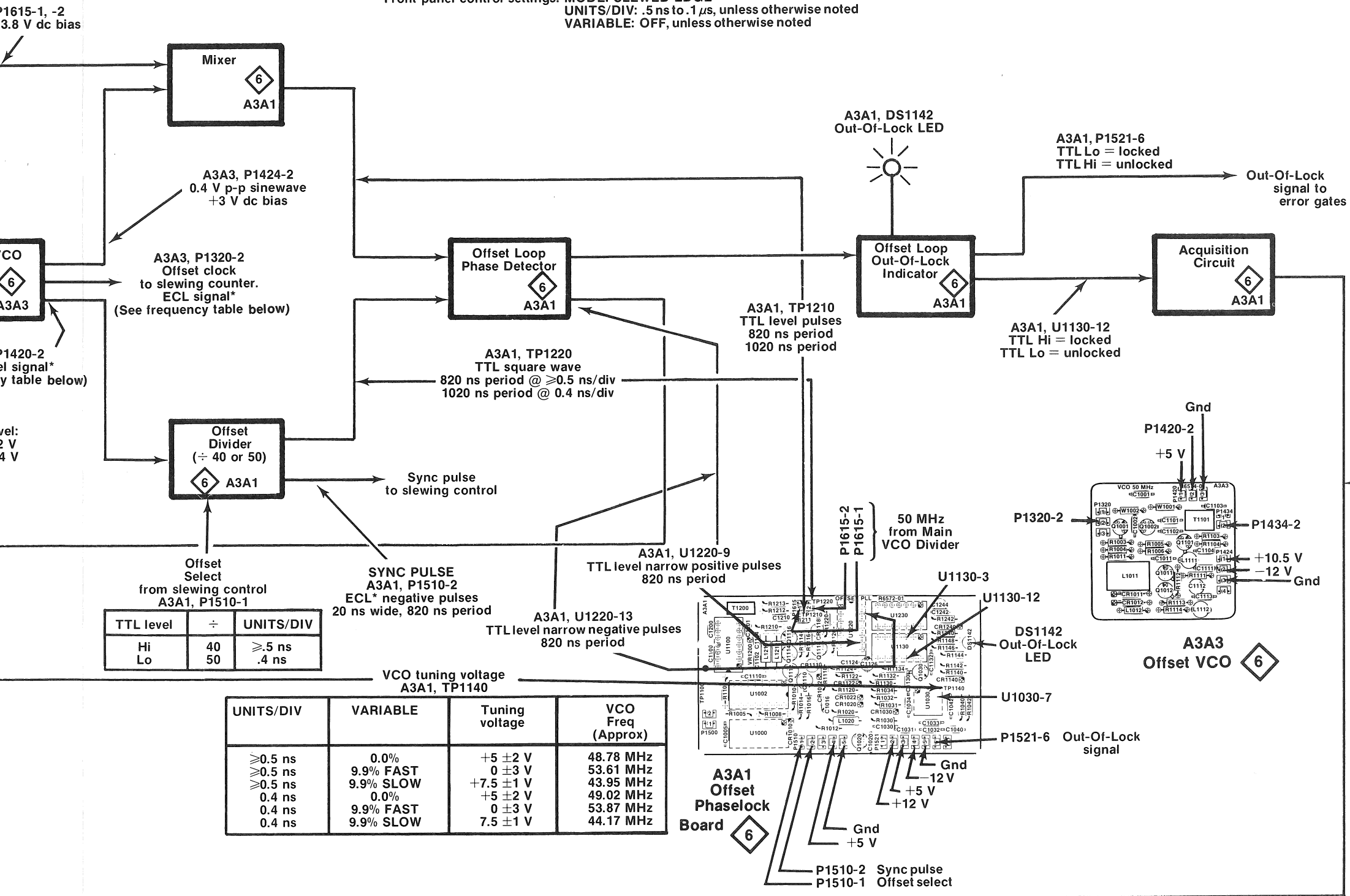


Fig. 9-38.

100 MHz PHASELOCK LOOP CHECK

10 11 12 A3A6 A3A7 A3A8

Front Panel Control Settings:
 MODE: MARKERS or SLEWED EDGE
 VARIABLE OFF, except where noted

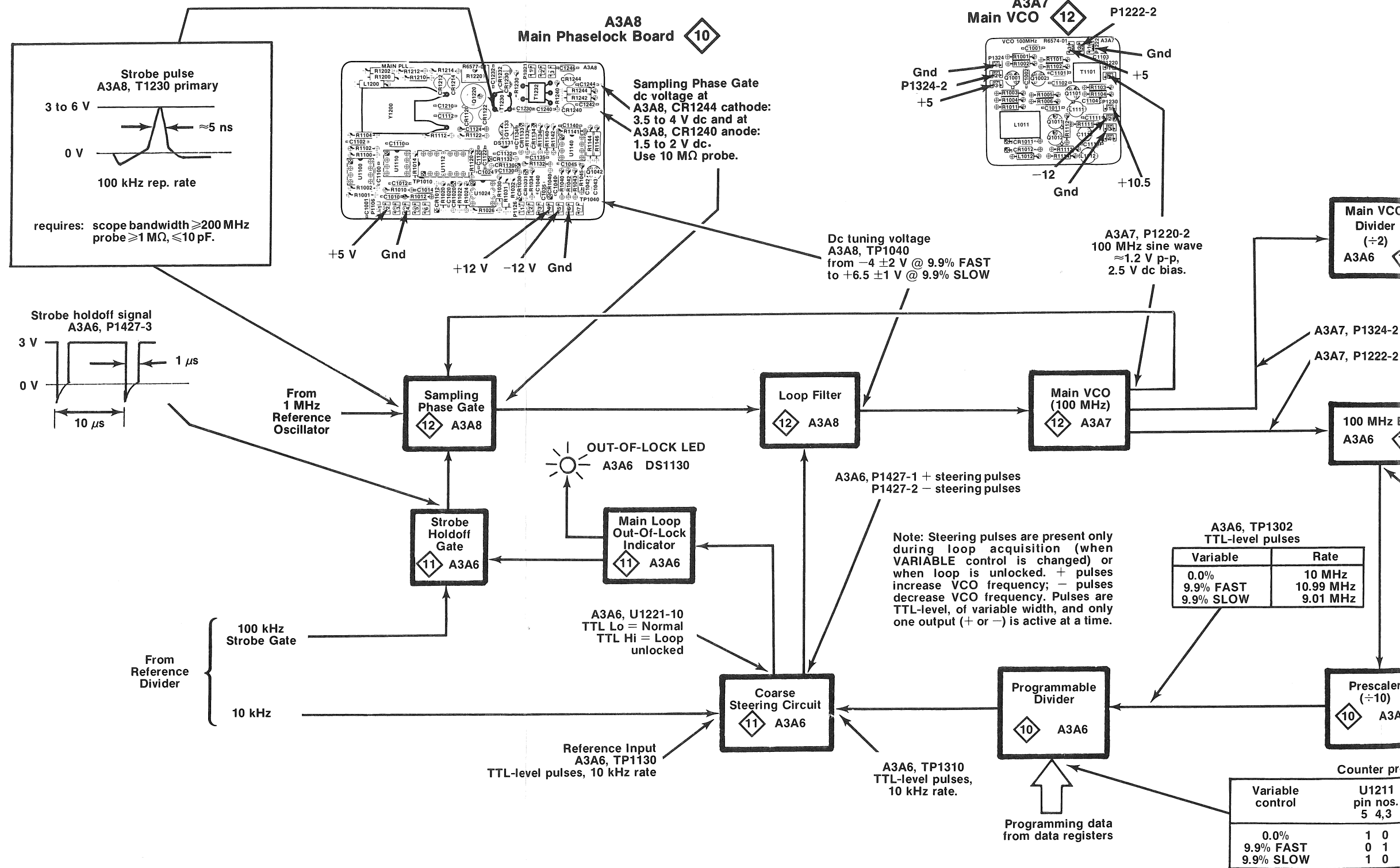


Fig. 9-39.

REV A JUL 1980

Most significant bit

100 MHz PHASELOCK LOOP CHECK

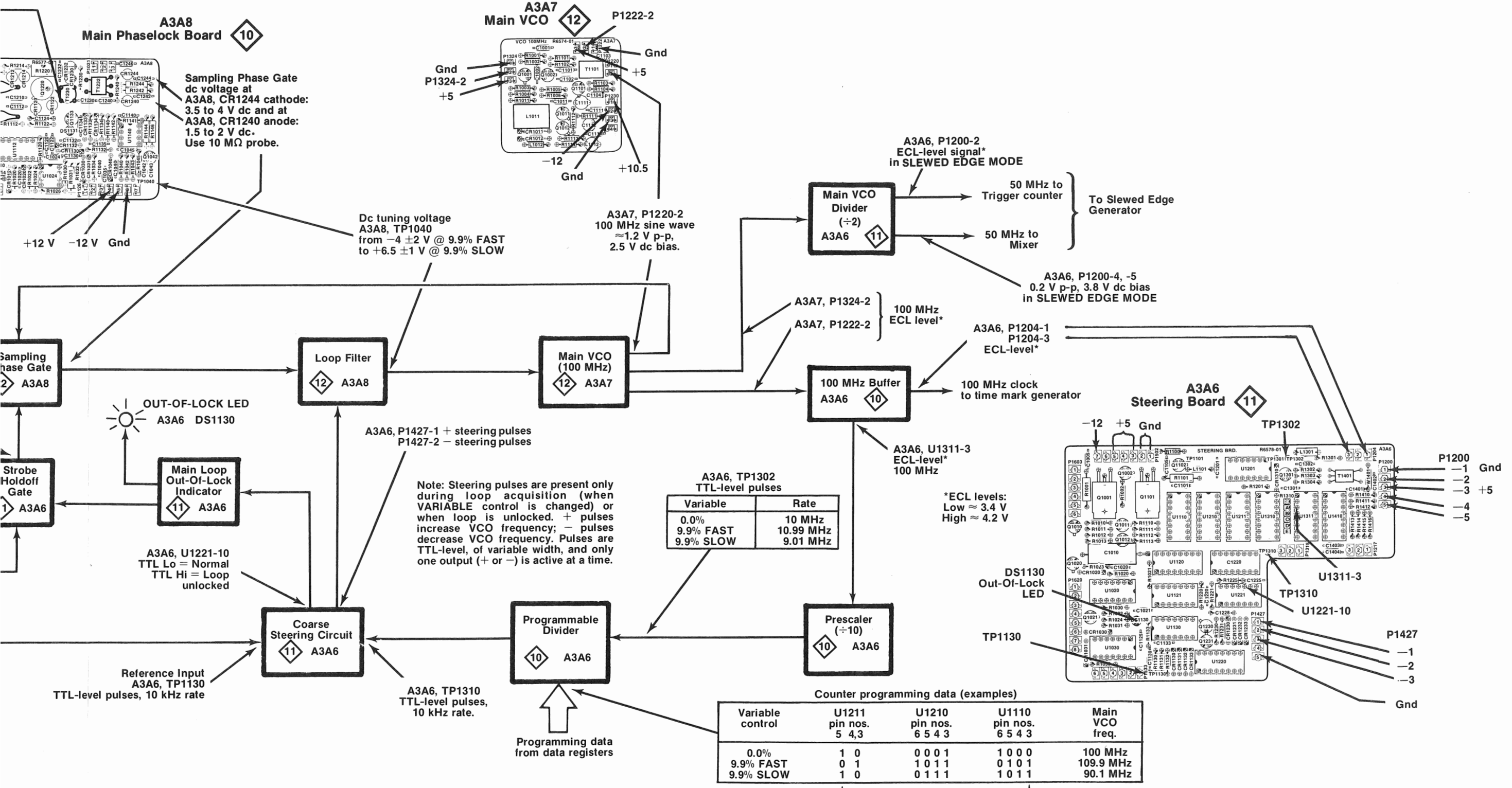


Fig. 9-39.
REV A JUL 1980

SLEWED EDGE GENERATOR CIRCUITS CHECK

7 8 9 A3A2 A3A4 A3A5

Front panel control settings: MODE: SLEWED EDGE
 UNITS/DIV: 0.1 μ s
 VARIABLE: OFF
 SHIFT: RESET

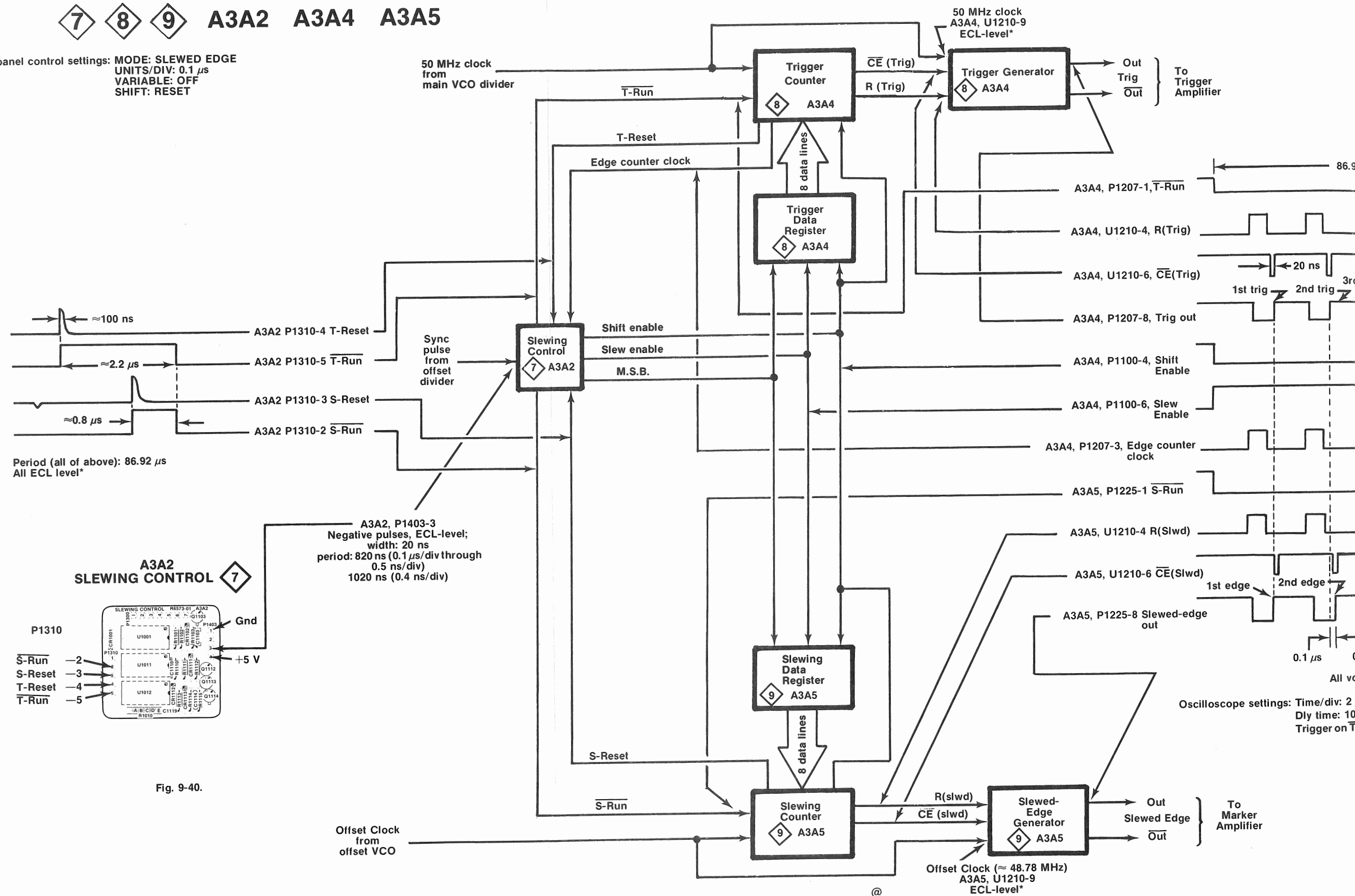
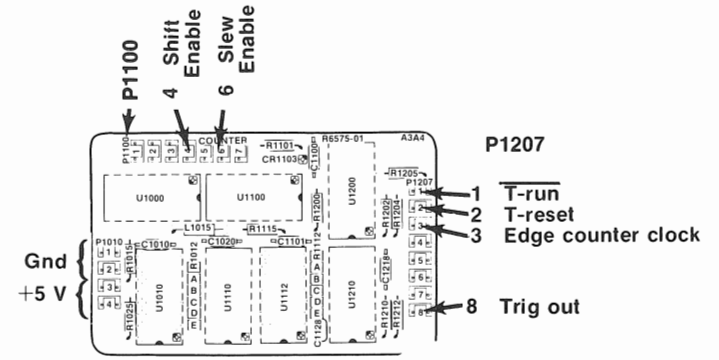
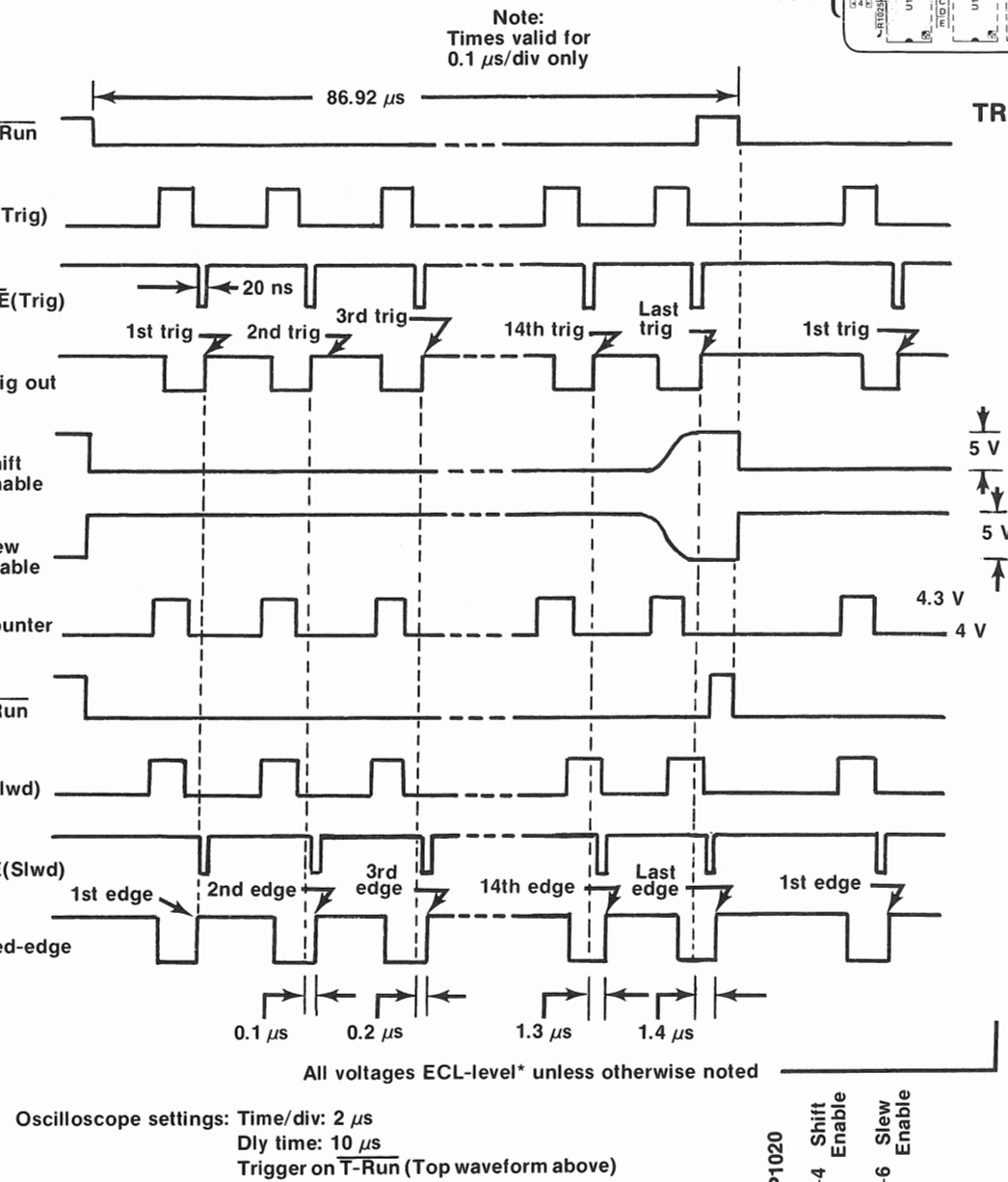
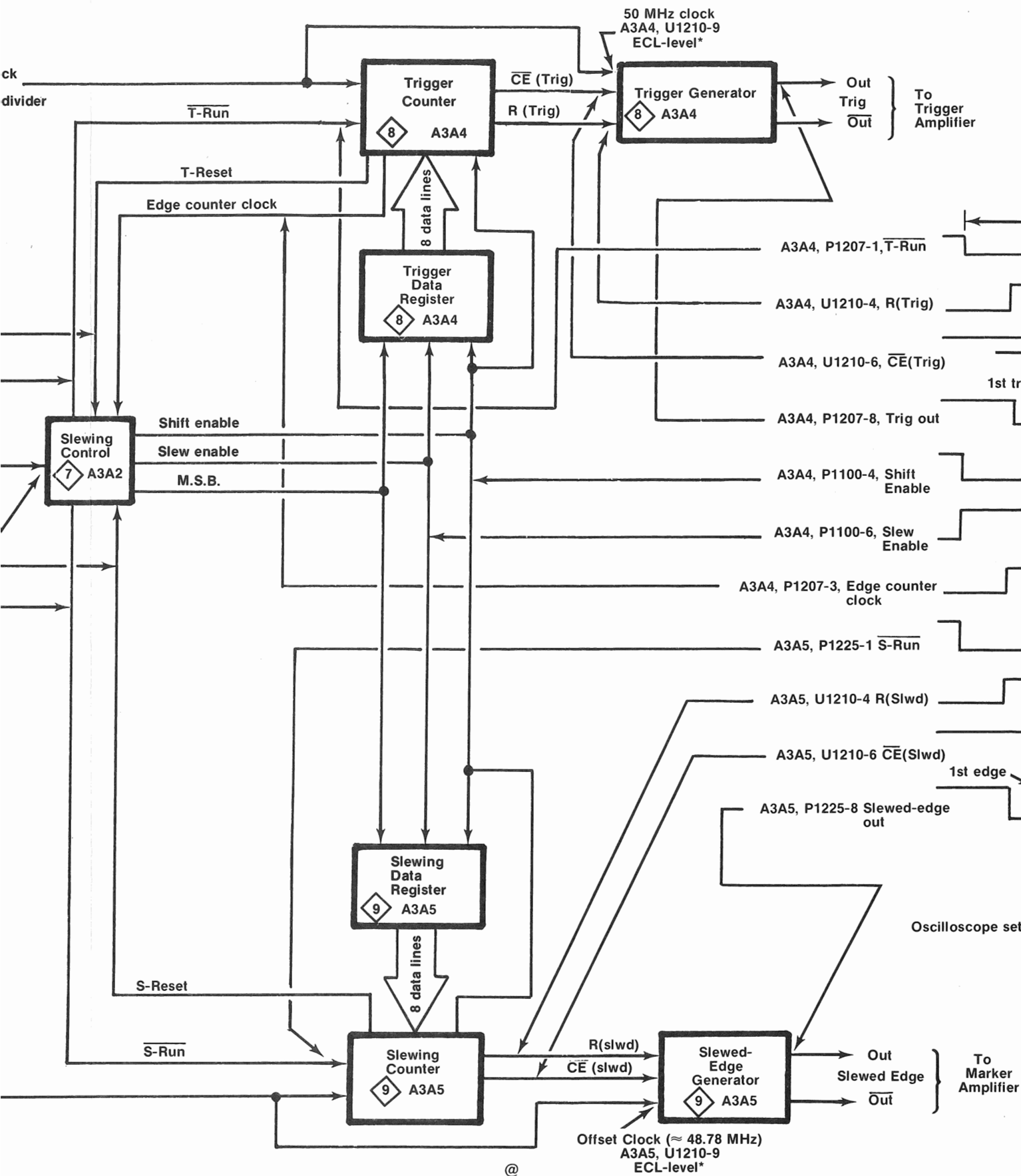
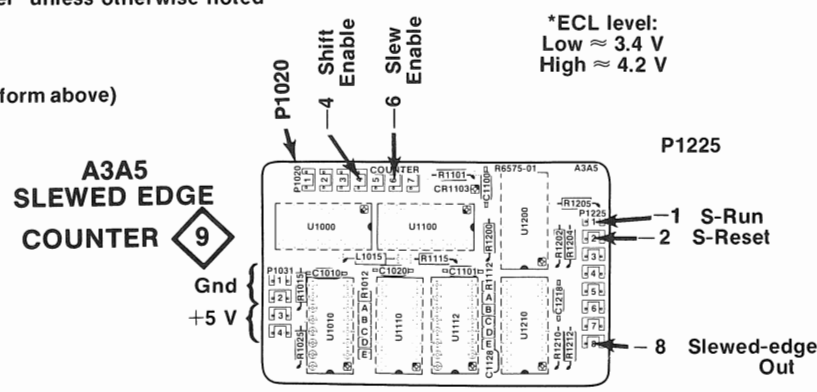


Fig. 9-40.

S CHECK



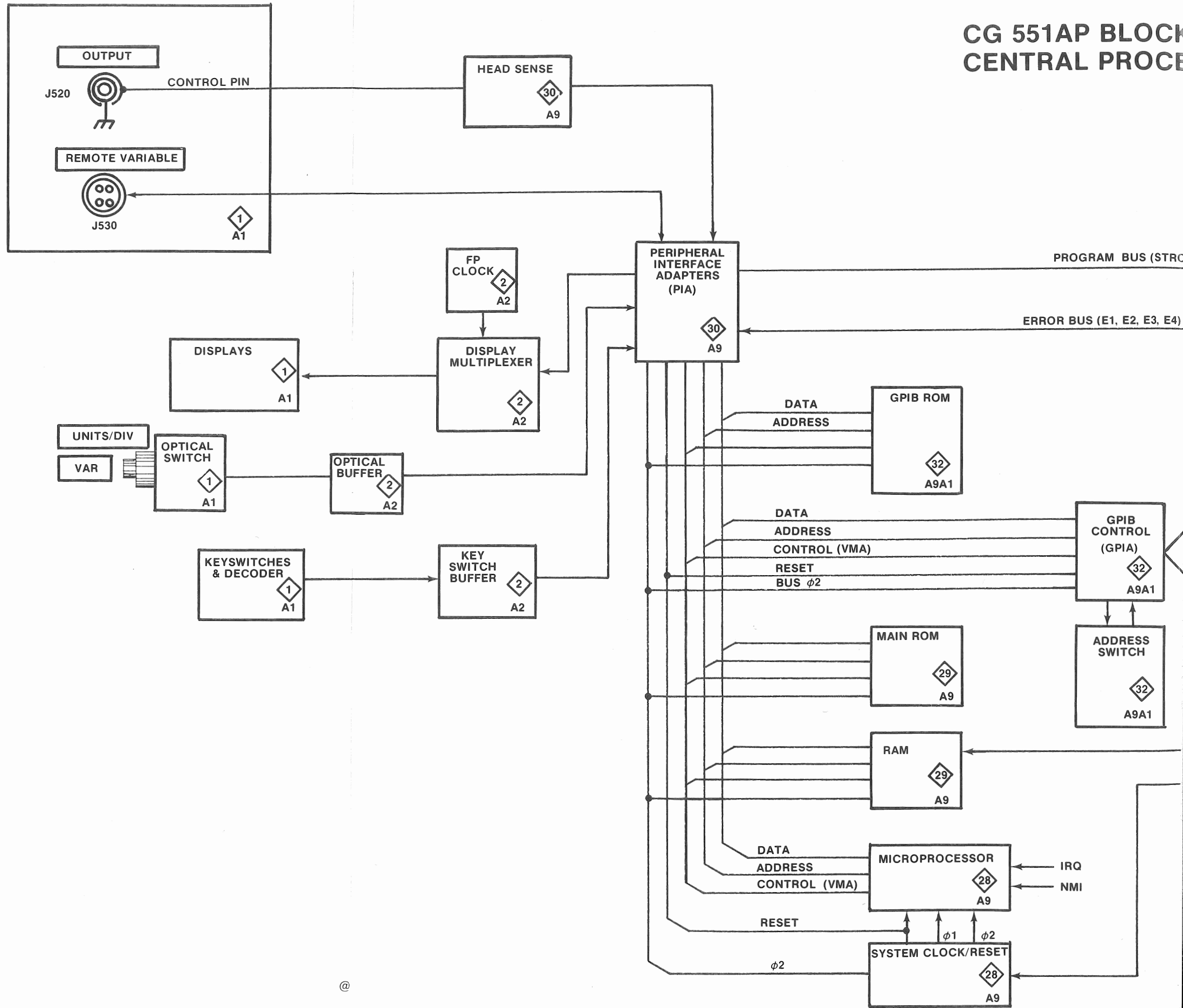
A3A4 TRIGGER COUNTER 8



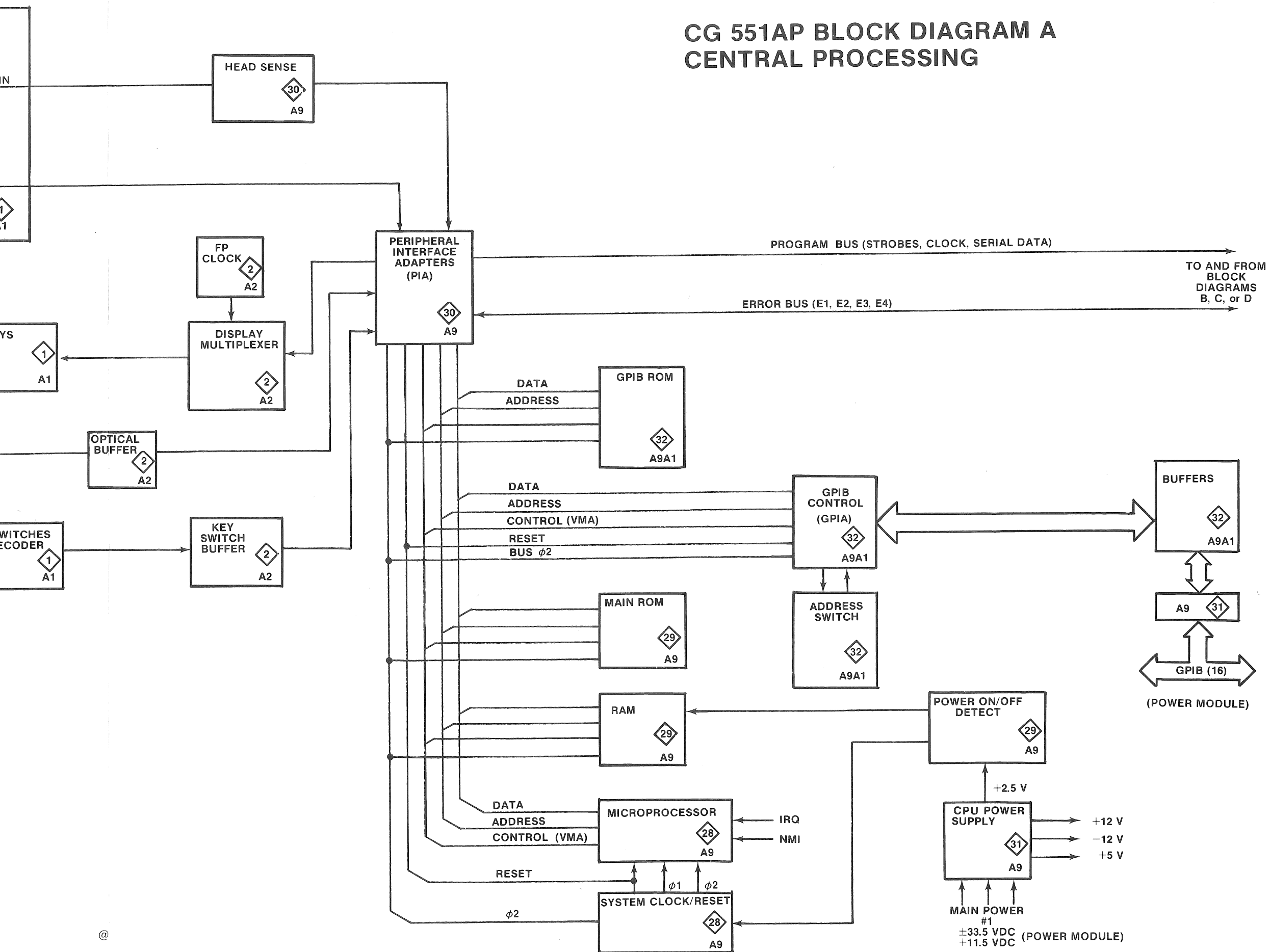
A3A5 SLEWED EDGE COUNTER 9

*ECL level:
Low \approx 3.4 V
High \approx 4.2 V

CG 551AP BLOCK
CENTRAL PROC



CG 551AP BLOCK DIAGRAM A CENTRAL PROCESSING

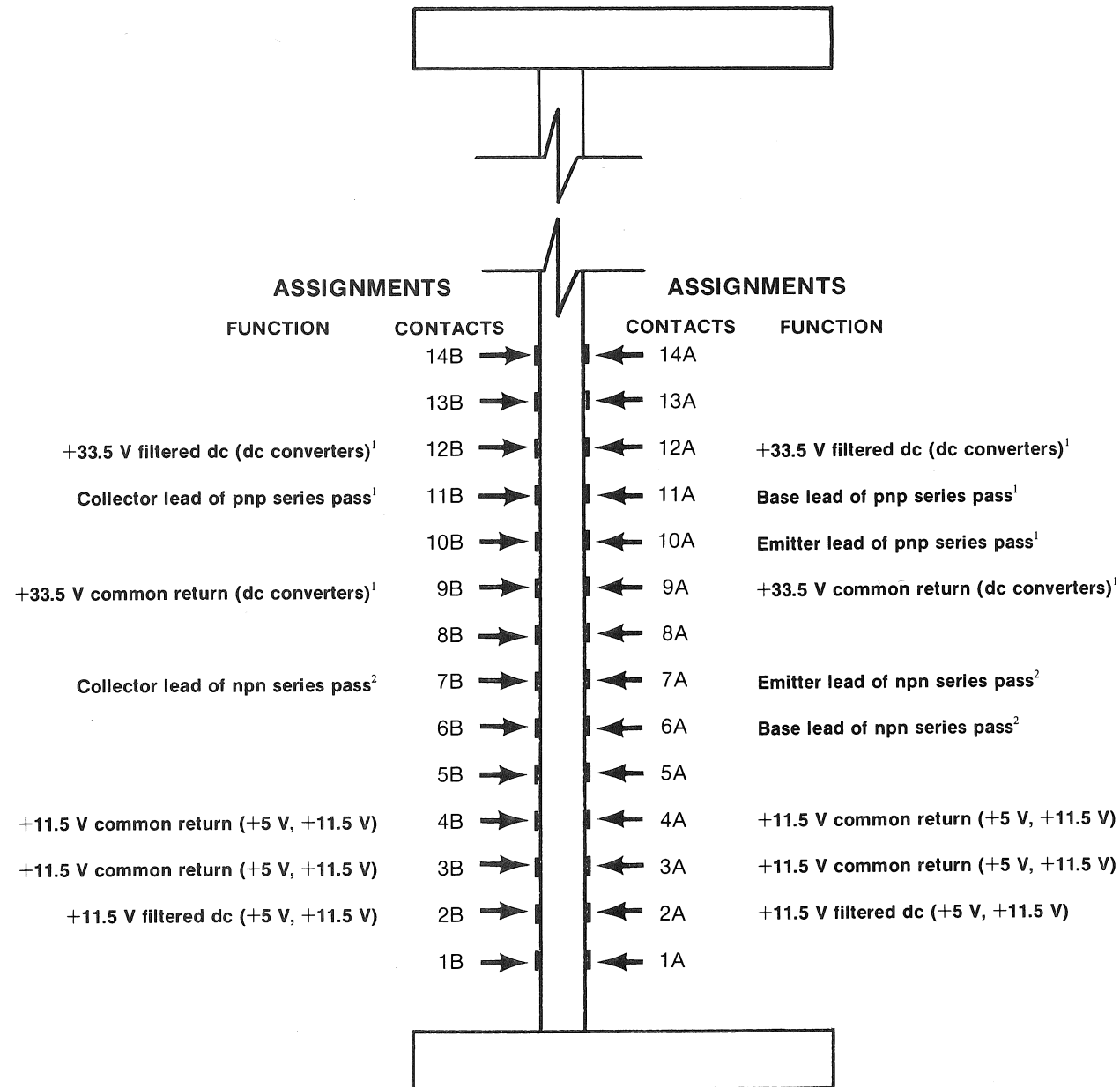


BLOCK DIAGRAM A
CENTRAL PROCESSING

Table 9-1
POWER CONNECTIONS
(REAR INTERFACE)

PS INTERFACE BOARD
A5A2
P1003

POWER CONNECTIONS
REAR INTERFACE

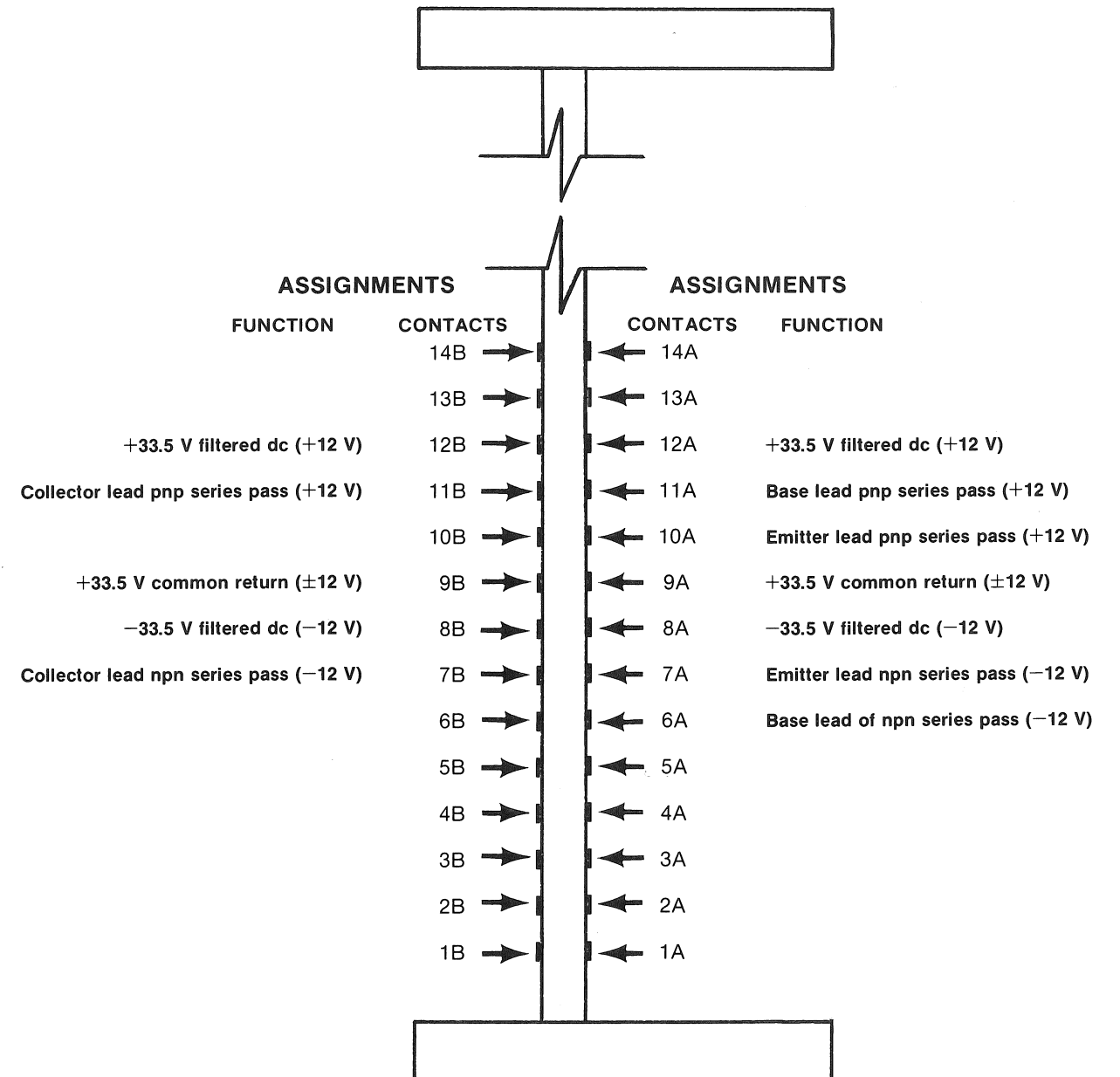


Power connections used on the PS INTERFACE board (A5A2) as viewed from the rear of the plug-in. Only those connections used in the CG 551AP are shown. Information in parenthesis is the CG 551AP voltage supplies associated with each connection.

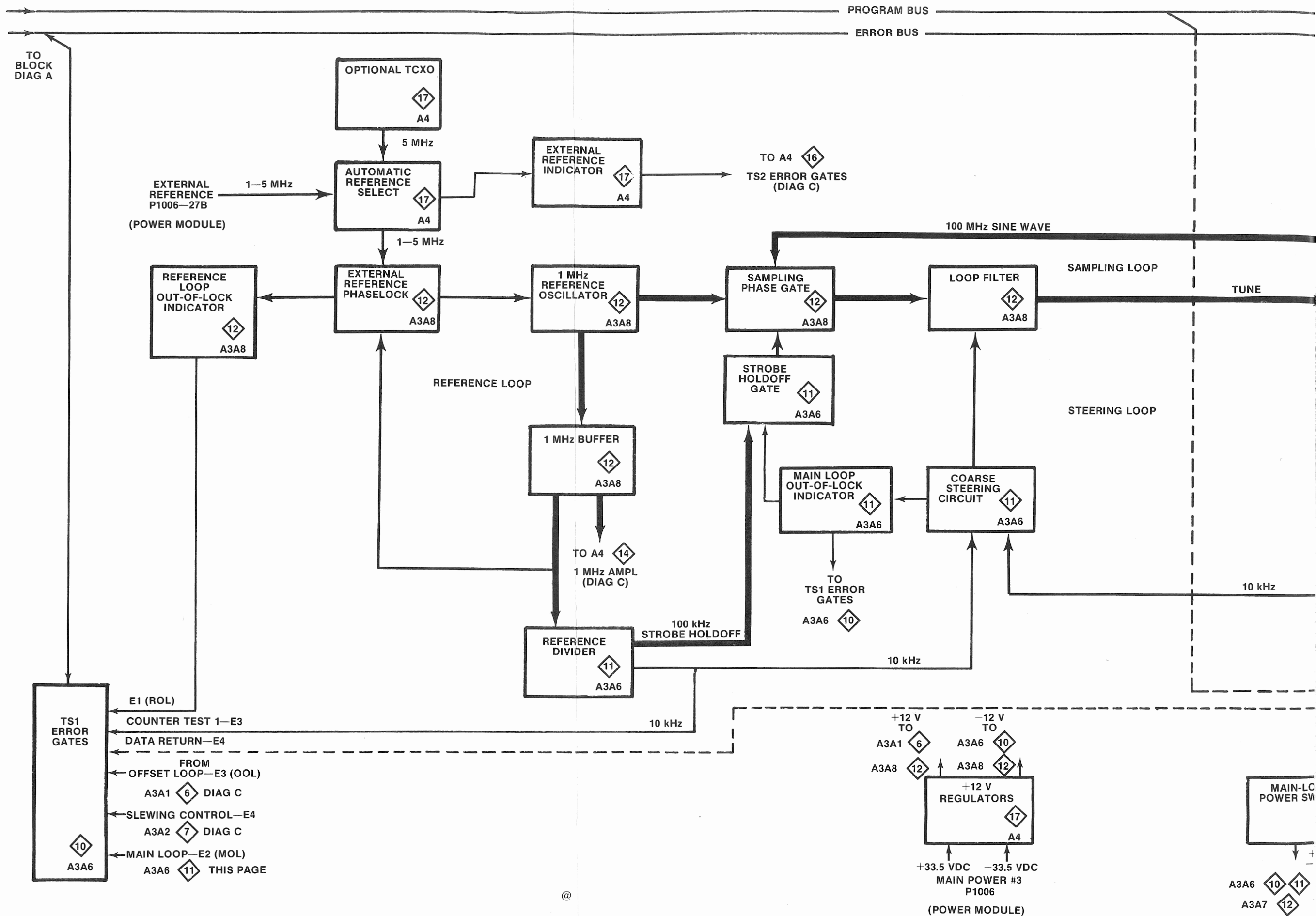
- Two dc-dc converters (derived from the +33.5 V source) provide the following internal supply voltages:
High Voltages: -120 V, +120 V, +240 V.
Low Voltages: -25 V, -15 V, +15 V, +25 V.
- The npn series pass transistor (located in the mainframe) is associated with the voltages supplied by the +11.5 V filtered dc source (2A-4B).

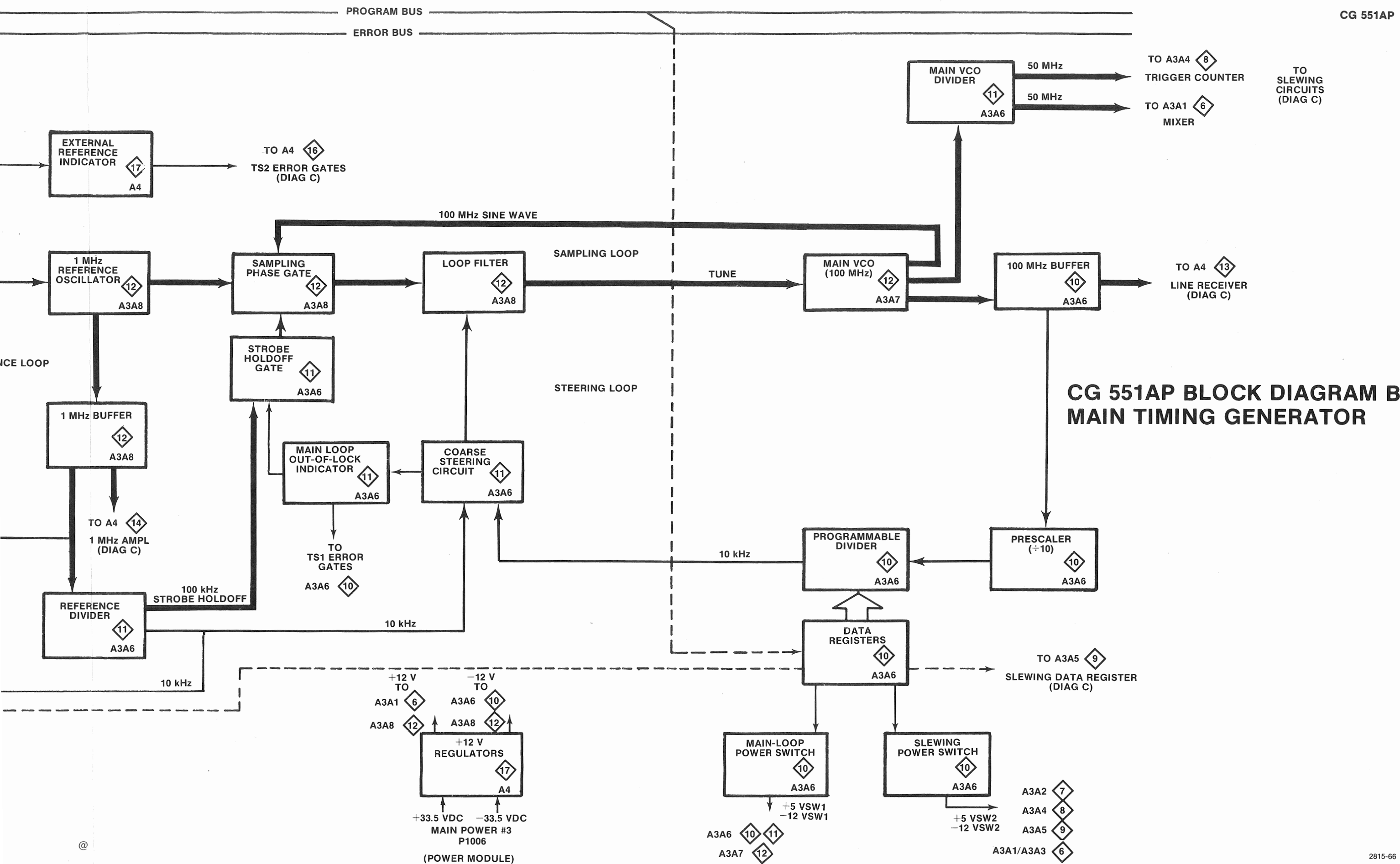
Table 9-2
POWER CONNECTIONS
(REAR INTERFACE)

TIME MARK BOARD
A4
P1006



Power connections used on the TIME MARKS interface board (A4) as viewed from the rear of the plug-in. Only those connections used in the CG 551AP are shown. Information in parentheses gives CG 551AP voltage supplies associated with each connection.

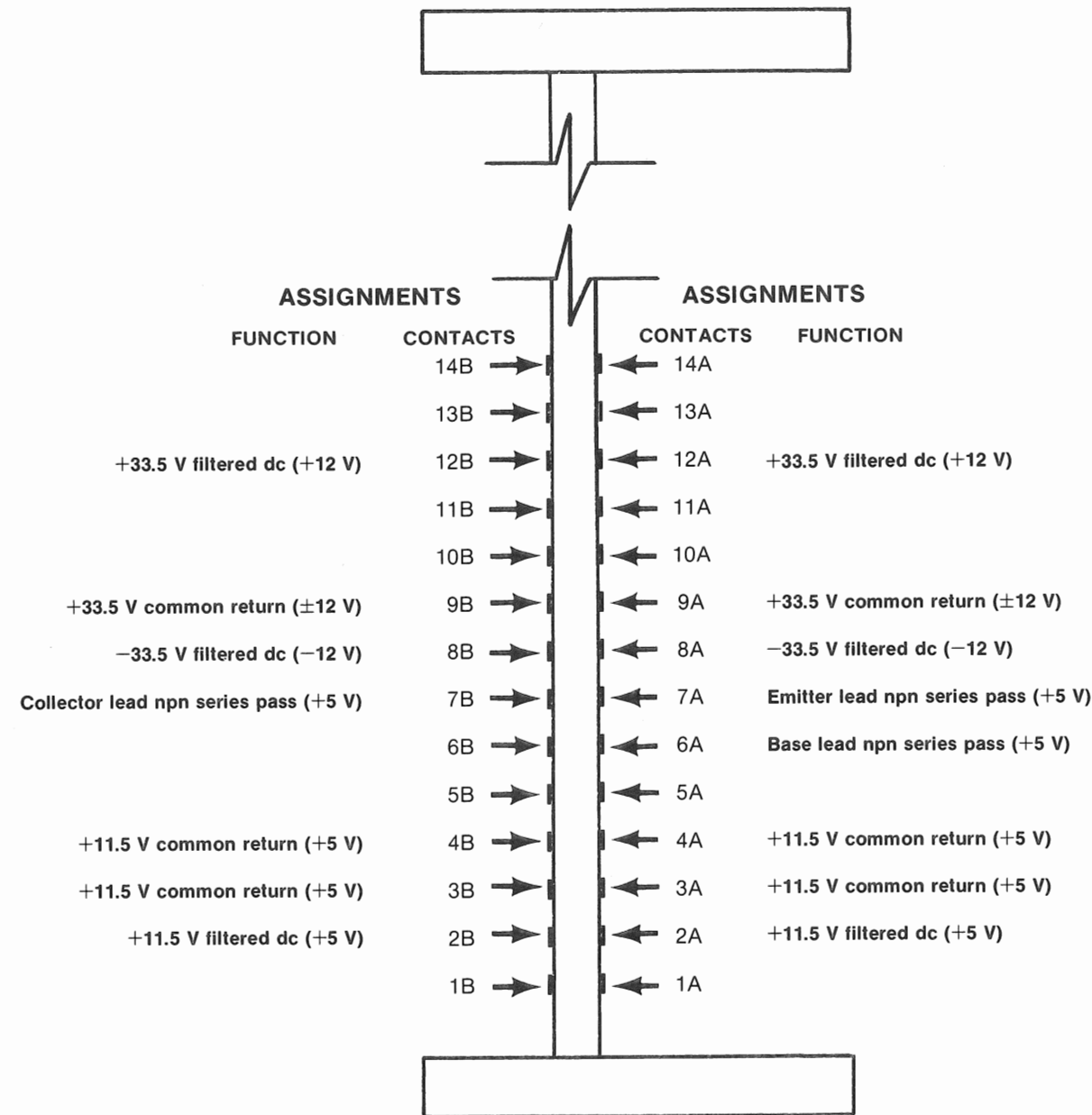




BLOCK DIAGRAM B
MAIN TIMING GENERATOR

**Table 9-3
POWER CONNECTIONS
(REAR INTERFACE)**

CPU BOARD
A9
P1001

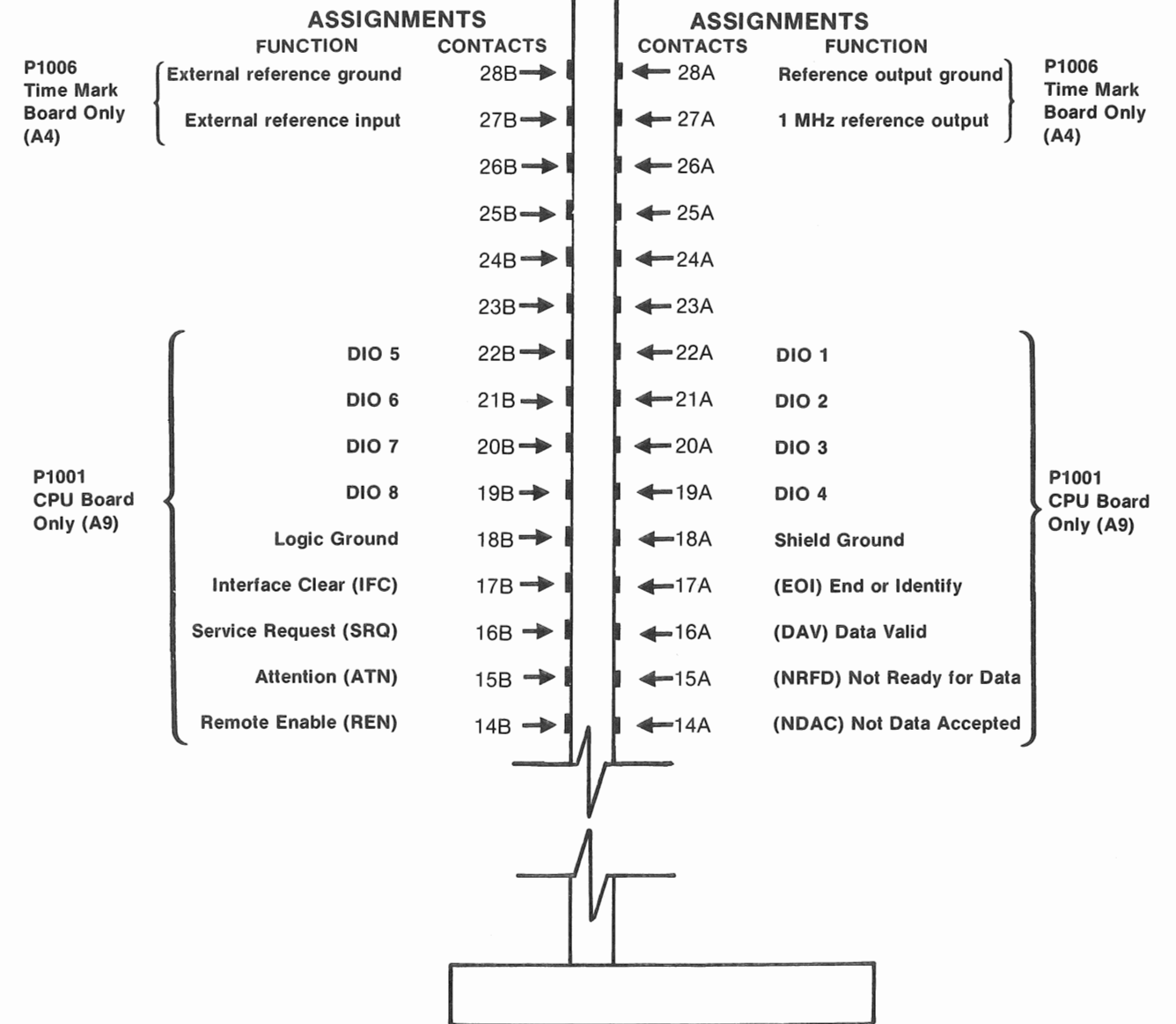


GPIB/POWER CONNECTIONS
REAR INTERFACE

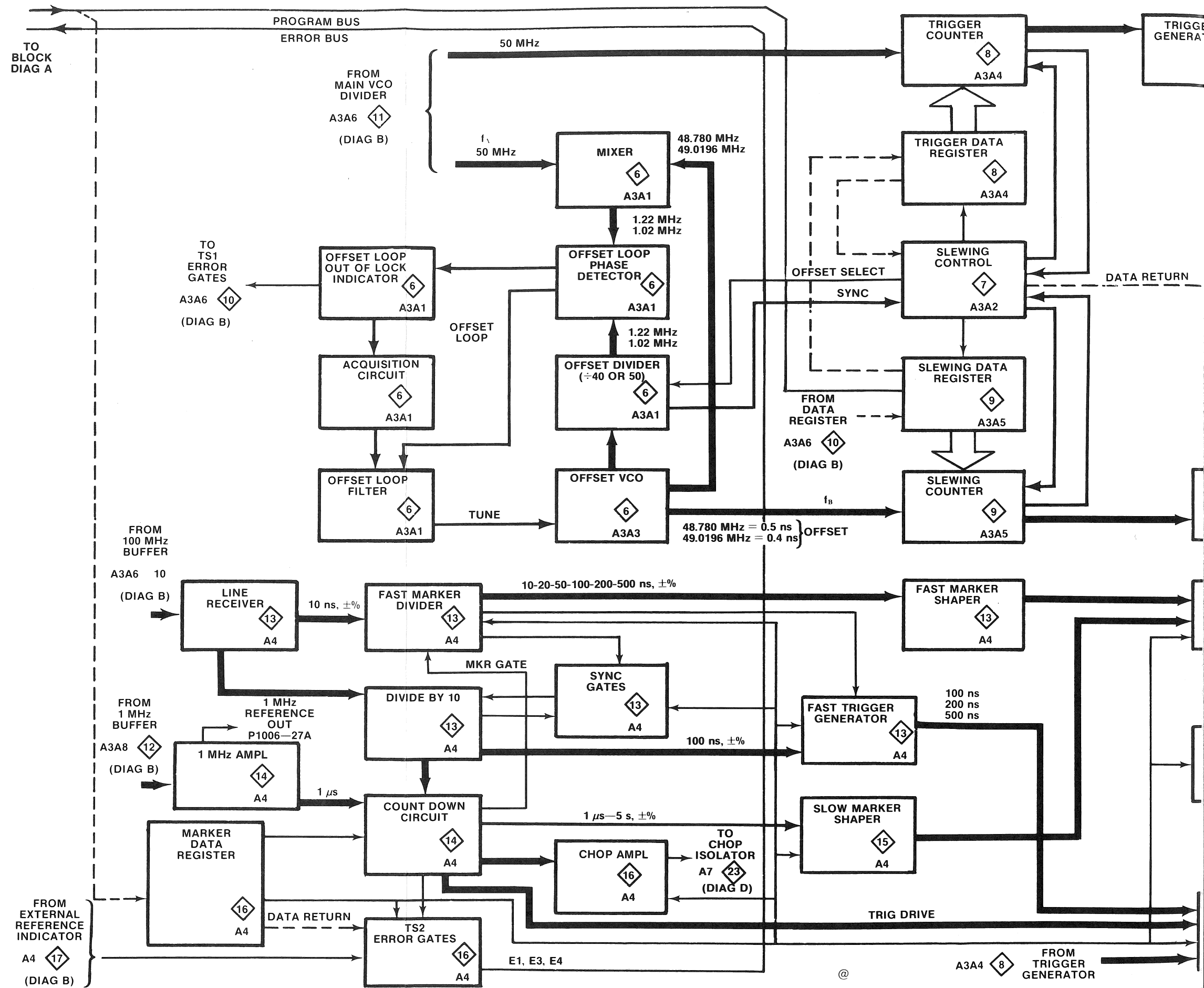
Power connections used on the CPU interface board (A9) as viewed from the rear of the plug-in. Only those connections used in the CG 551AP are shown. Information in parentheses gives CG 551AP voltage supplies associated with each connection.

**Table 9-4
GPIB/TIME REFERENCE SIGNALS
(REAR INTERFACE)**

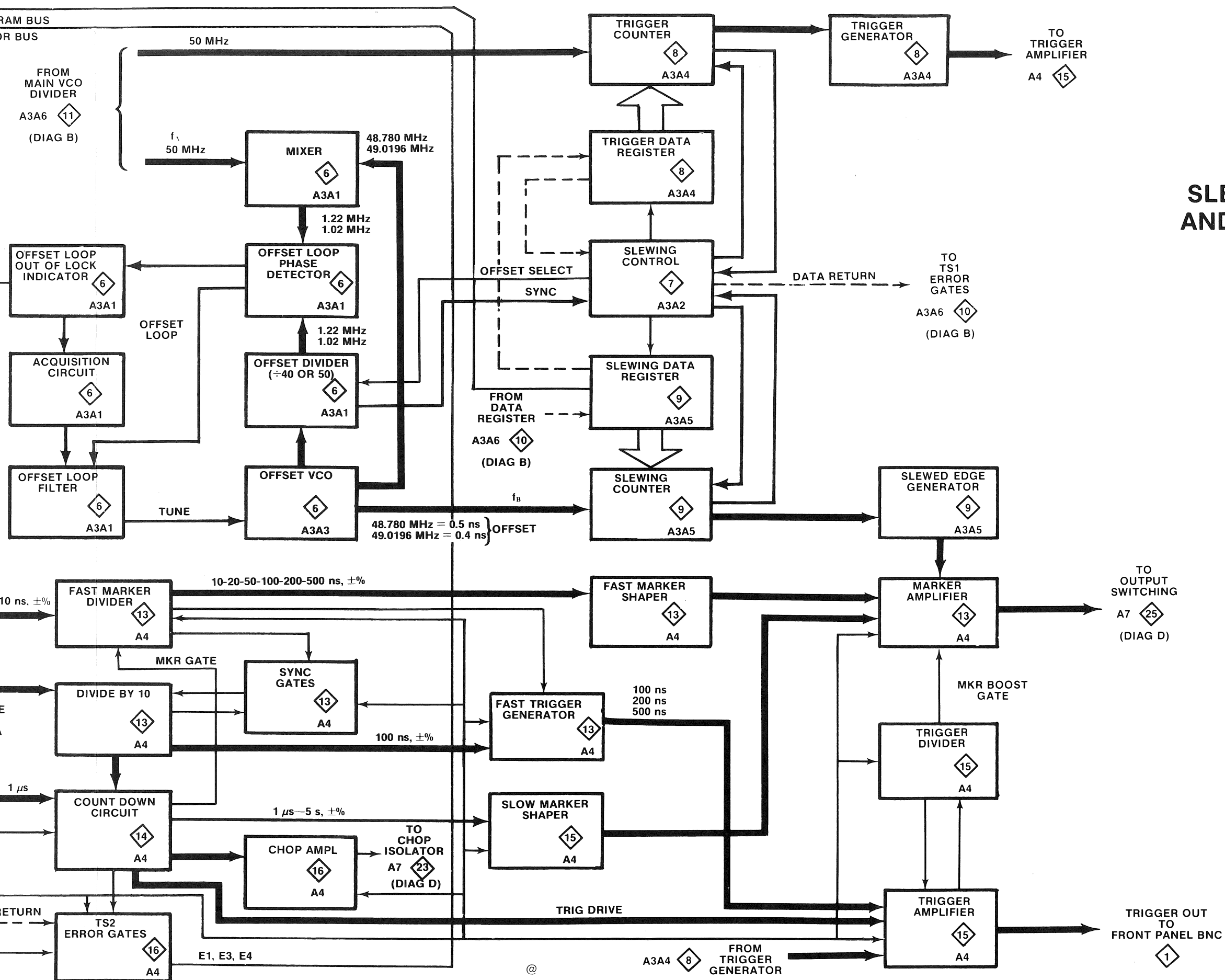
TIME MARK BOARD AND CPU BOARD
A4 AND A9
P1006 AND P1001



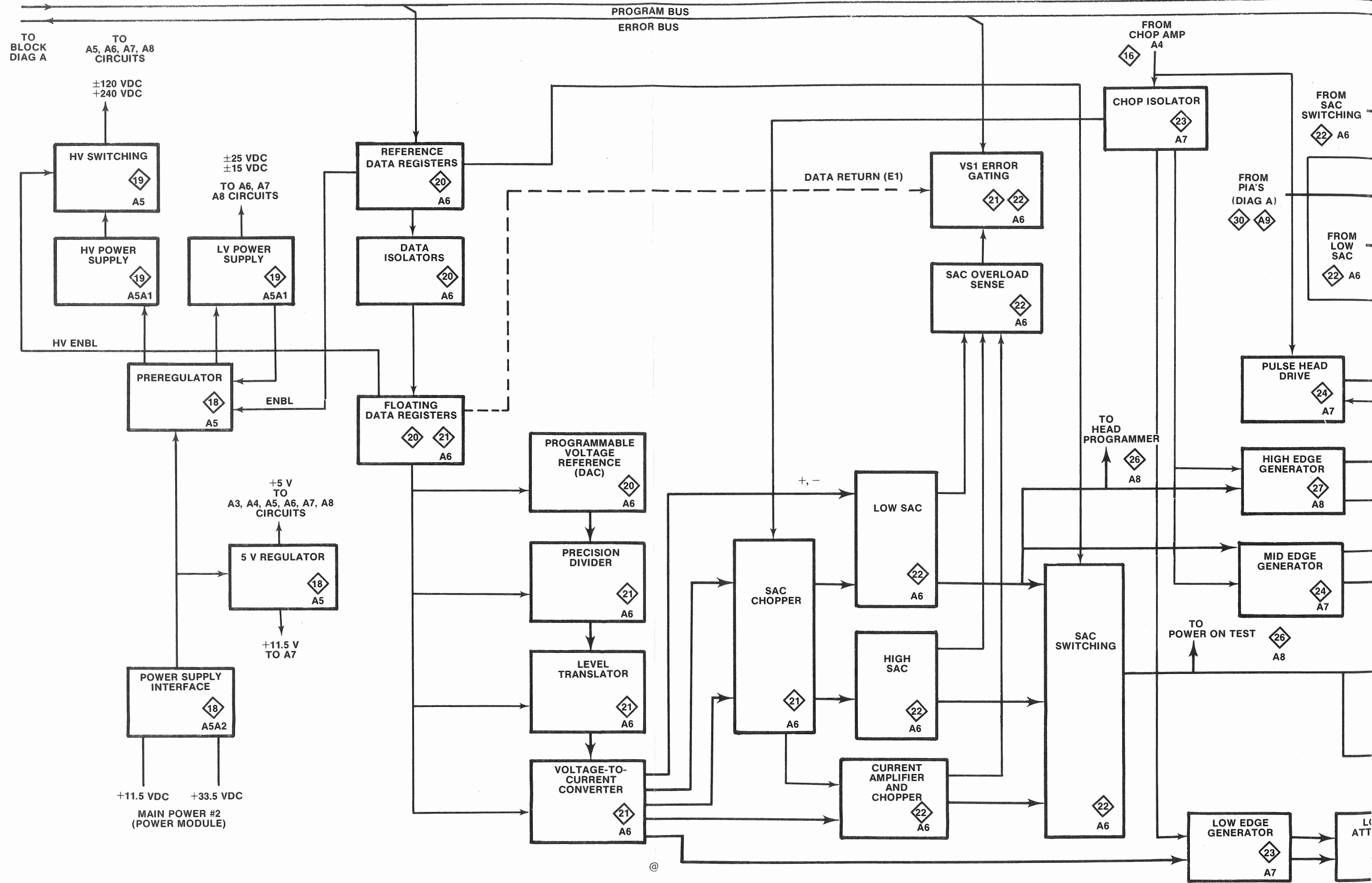
Input/output connections for time reference signals are located on the TIME MARK board (A4).

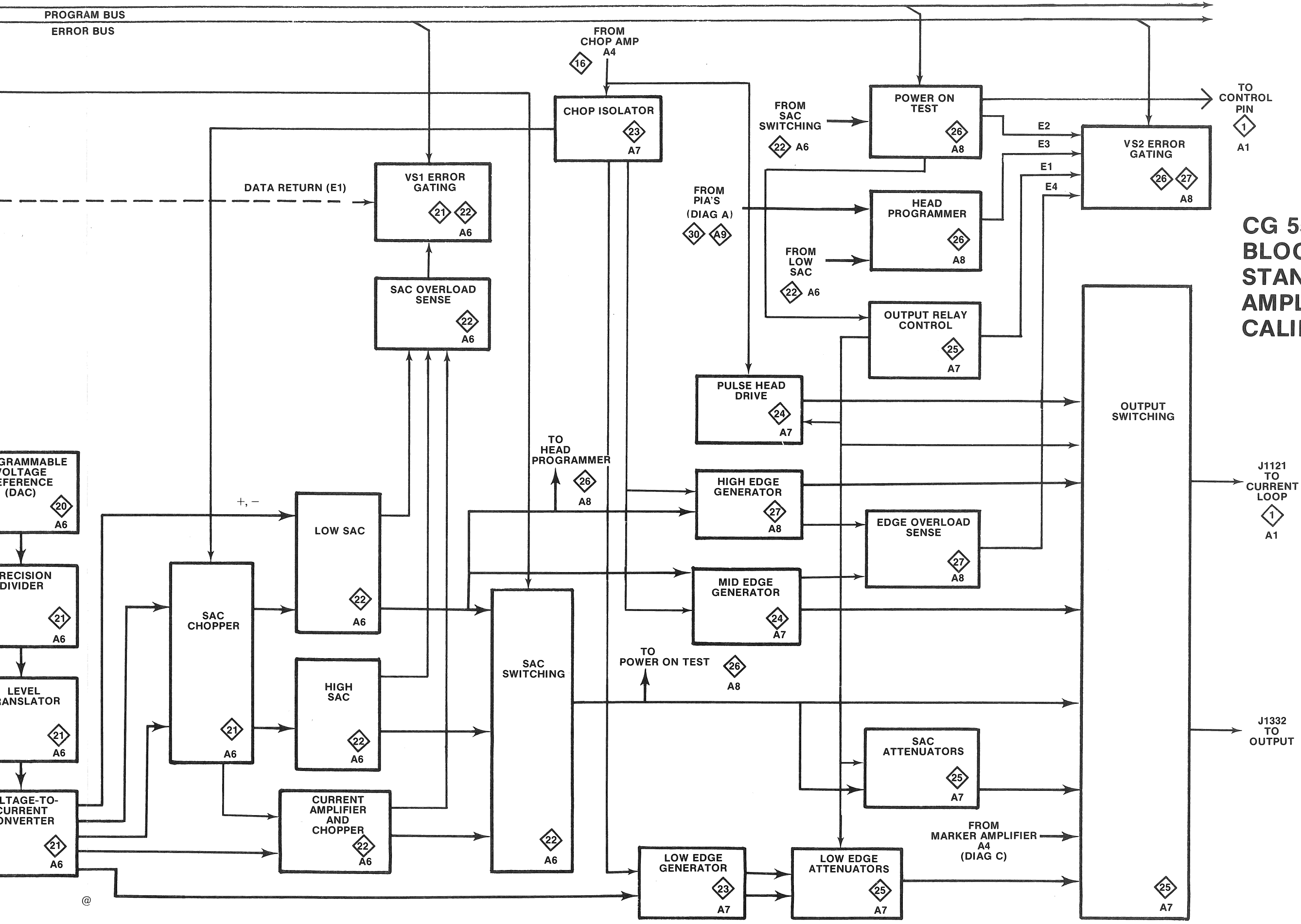


CG 551AP BLOCK DIAGRAM C SLEWED EDGE, TIME MARK, AND TRIGGER GENERATORS



BLOCK DIAGRAM C SLEWED EDGE/
TIME MARKS/TRIGGER GENERATORS





CG 551 AP
BLOCK DIAGRAM D
STANDARD
AMPLITUDE
CALIBRATOR

PARTS LOCATION GRID

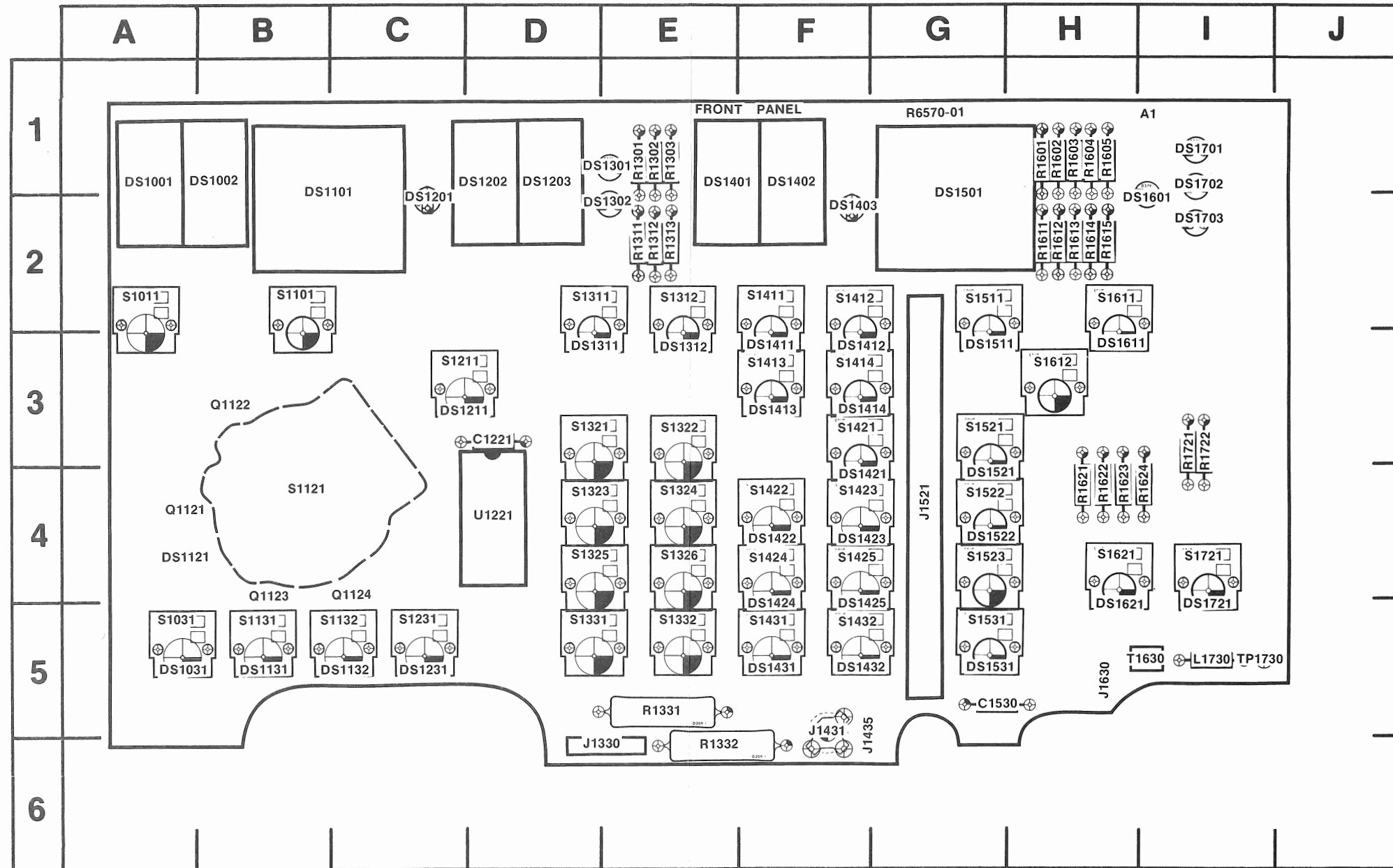
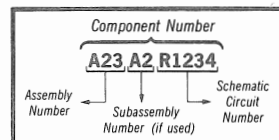


Fig. 9-41. Front Panel Board (A1)

 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

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Table 9-5 COMPONENT REFERENCE CHART

A1 ASSY			FRONT PANEL 1		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1221	B1	D3	R1311	H4	E2
C1530	K4	G5	R1312	H3	E2
DS1001	B5	A1	R1313	H3	E2
DS1002	C5	B1	R1331	K3	E5
DS1031	F5	A5	R1332	K3	E6
DS1101	H3	B1	R1601	H5	H1
DS1121	K5	A4	R1602	H5	H1
DS1131	D6	B5	R1603	H5	H1
DS1132	E5	B5	R1604	H6	H1
DS1201	F3	C2	R1605	H7	H1
DS1202	D5	D1	R1611	H4	H2
DS1203	E5	D1	R1612	H6	H2
DS1211	F4	C3	R1613	H7	H2
DS1231	E6	C5	R1614	H6	H2
DS1301	F4	E1	R1615	H6	H2
DS1302	F4	E2	R1621	C1	H4
DS1311	F4	D3	R1622	D1	H4
DS1312	D6	E3	R1623	E1	H4
DS1401	B7	E1	R1624	E1	I4
DS1402	C7	F1	R1721	L7	I3
DS1403	F4	F2	R1722	L7	I3
DS1411	D6	F3	S1011	C2	A2
DS1412	F7	F3	S1031	C2	A5
DS1413	E6	F3	S1101	D2	B2
DS1414	F6	F3	S1121	K4	B4
DS1421	F5	F4	S1131	E2	B5
DS1422	D6	F4	S1132	C2	B5
DS1423	E6	F4	S1211	E2	C3
DS1424	E7	F4	S1231	D2	C5
DS1425	E7	F4	S1311	E2	D2
DS1431	D7	F5	S1312	E2	E2
DS1432	E7	F5	S1321	E2	D3
DS1501	J3	G1	S1322	E2	E3
DS1511	E6	G3	S1323	E2	D4
DS1521	F6	G4	S1324	E2	E4
DS1522	F7	G4	S1325	C2	D4
DS1531	D7	G5	S1326	C2	E4
DS1601	F6	I2	S1331	D2	D5
DS1611	F6	H3	S1332	D2	E5
DS1621	F7	H5	S1411	E2	F2
DS1701	F5	I1	S1412	E2	F2
DS1702	K7	I1	S1413	D2	F3
DS1703	K7	I2	S1414	D2	F3
DS1721	D7	I5	S1421	E1	F3
J1330	L8	E6	S1422	E2	F4
J1431	K3	F5	S1423	E1	F4
J1435	L3	F5	S1424	C2	F4
J1521	L2	G4	S1425	C2	F4
J1521	B2	G4	S1431	D2	F5
J1521	L7	G4	S1432	D1	F5
J1521	L4	G4	S1511	E2	G2
J1630	L6	H5	S1521	E2	G3
L1730	K6	I5	S1522	D1	G4
P1330	L8	E6	S1523	C1	G4
P1431	K3	F5	S1531	C1	G5
P1435	L3	F5	S1611	E2	H2
P1521	M7	G4	S1612	E2	H3
P1521	M2	G4	S1621	E1	H4
P1521	M4	G4	S1721	E1	I4
P1521	A2	G4	T1630	K6	I5
P1630	L6	H5	TP1730	K6	I5
Q1121	K4	A4	U1221	C1	D4
Q1122	K4	B3	C520	M6	CHASSIS
Q1123	K5	B4	J510	M3	CHASSIS
Q1124	K5	C4	J520	M6	CHASSIS
R1301	H5	E1	J525	M3	CHASSIS
R1302	H4	E1	J530	M8	CHASSIS
R1303	H4	E1			

PARTS LOCATION GRID

PARTS LOCATION
MAIN INTERCONNECT BD (A2 ASSY)

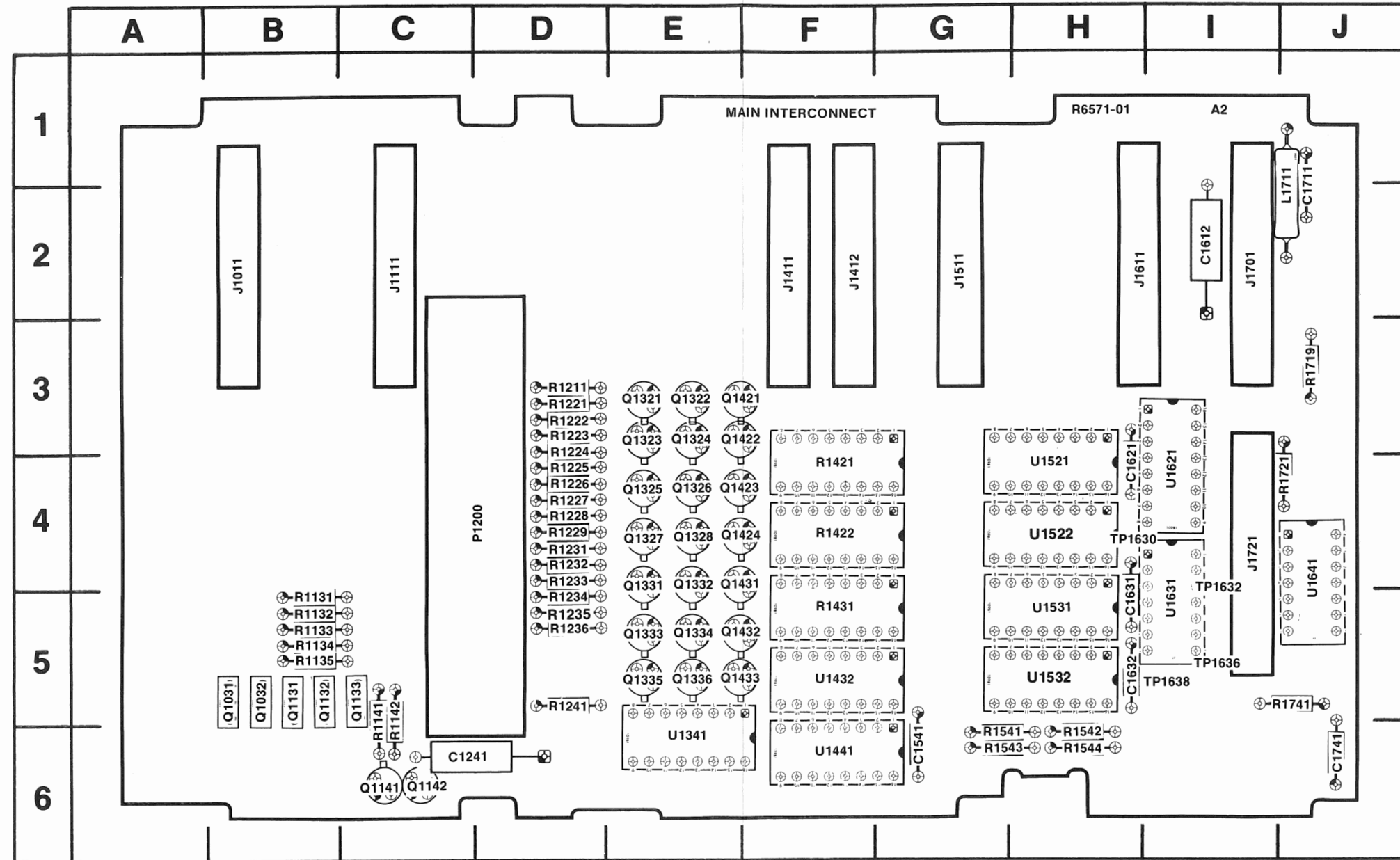
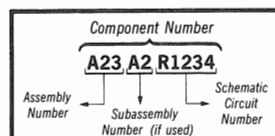


Fig. 9-42. Main Interconnect Board (A2).

Static Sensitive Devices
See Maintenance Section


COMPONENT NUMBER EXAMPLE



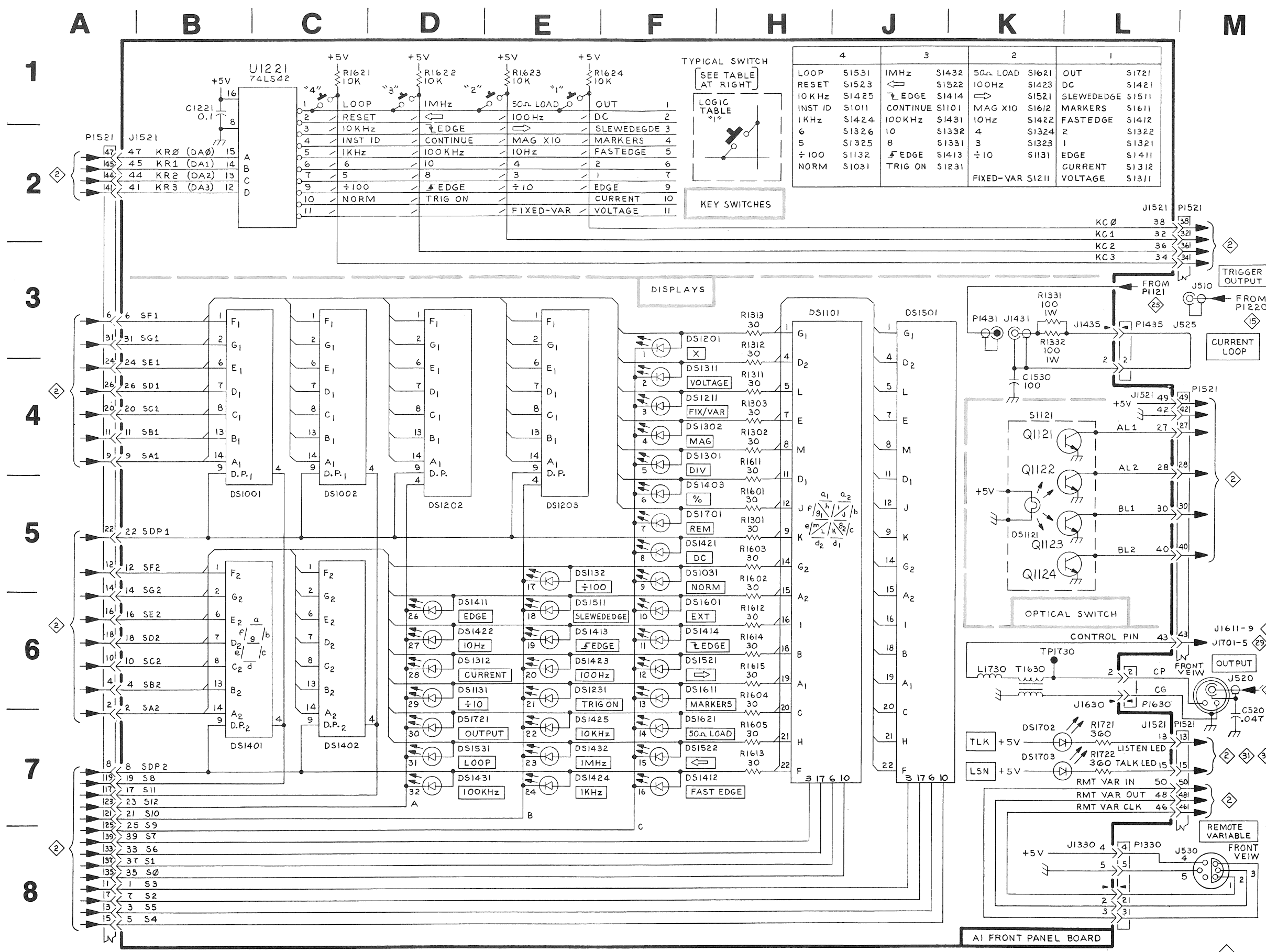
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

@

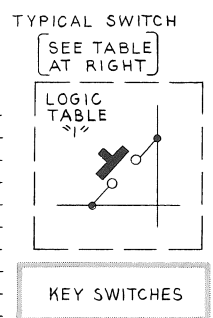
**Table 9-6
COMPONENT REFERENCE CHART**

P/O A2 ASSY			DISPLAY MULTIPLEXER 		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1241	L1	C6	R1131	K5	B5
C1541	F6	G6	R1132	K5	B5
C1612	B2	I2	R1133	K5	B5
C1621	E1	H4	R1134	K5	B5
C1631	E3	H5	R1135	K5	B5
C1632	E5	H5	R1141	J5	C5
C1711	B2	J2	R1142	H5	C5
C1741	A7	J6	R1211	L2	D3
J1701	A4	I2	R1221	L2	D3
J1701	A6	I2	R1222	L2	D3
J1701	A2	I2	R1223	L2	D3
J1701	A7	I2	R1224	L2	D3
J1701	A1	I2	R1225	L2	D4
J1721	A7	I4	R1226	L2	D4
J1721	L8	I4	R1227	L3	D4
L1711	B2	J2	R1228	L4	D4
P1200	M1	D4	R1229	L3	D4
P1200	A3	D4	R1231	L3	D4
Q1031	L5	B5	R1232	L4	D4
Q1032	L5	B5	R1233	L4	D4
Q1131	L5	B5	R1234	L3	D5
Q1132	L6	B5	R1235	L4	D5
Q1133	L5	C5	R1236	K4	D5
Q1141	J5	C6	R1241	H5	D5
Q1142	J5	C6	R1421	H1	F4
Q1321	K1	E3	R1422	H3	F4
Q1322	K2	E3	R1431	H4	F5
Q1323	K2	E3	R1541	D8	G6
Q1324	K2	E3	R1542	E8	I6
Q1325	K3	E4	R1543	E8	G6
Q1326	K3	E4	R1544	E8	I6
Q1327	K4	E4	R1721	B6	J4
Q1328	K3	E4	R1741	A6	J5
Q1331	K4	E4	TP1630	C7	H4
Q1332	K4	E4	TP1632	D6	I4
Q1333	K4	E5	TP1636	C7	I5
Q1334	K5	E5	TP1638	C6	I5
Q1335	K5	E5	U1341	K6	E6
Q1336	K5	E5	U1432	E7	F5
Q1421	K2	E3	U1441	H7	F6
Q1422	K2	E3	U1521	E1	H4
Q1423	K3	E4	U1522	E3	H5
Q1424	K3	E4	U1531	E3	H5
Q1431	K4	E4	U1532	E6	H4
Q1432	K4	E5	U1621A	B4	I4
Q1433	K5	E5	U1621B	B7	I4
			U1631	C6	I5
			U1641B	B7	J4
			U1641C	B7	J4

P/O A2 ASSY also shown on 



	4	3	2	1
LOOP	S1531	1MHz S1432	50Ω LOAD S1621	OUT S1721
RESET	S1523	← S1522	100Hz S1423	DC S1421
10 KHz	S1425	↔ EDGE S1414	↔ S1521	SLEWEDEGDE S1511
INST ID	S1011	CONTINUE S1101	MAG X10 S1612	MARKERS S1611
1 KHz	S1424	100KHz S1431	10Hz S1422	FASTEDGE S1412
6	S1326	10 S1332	4 S1324	2 S1322
5	S1325	8 S1331	3 S1323	1 S1321
÷100	S1132	↔ EDGE S1413	÷10 S1131	EDGE S1411
NORM	S1031	TRIG ON S1231	FIXED-VAR S1211	CURRENT S1312
				VOLTAGE S1311



Active Devices
Resistance Section
EXAMPLE
Number
234
Schematic
Circuit
Number
no Assembly Number
Electrical Parts List.

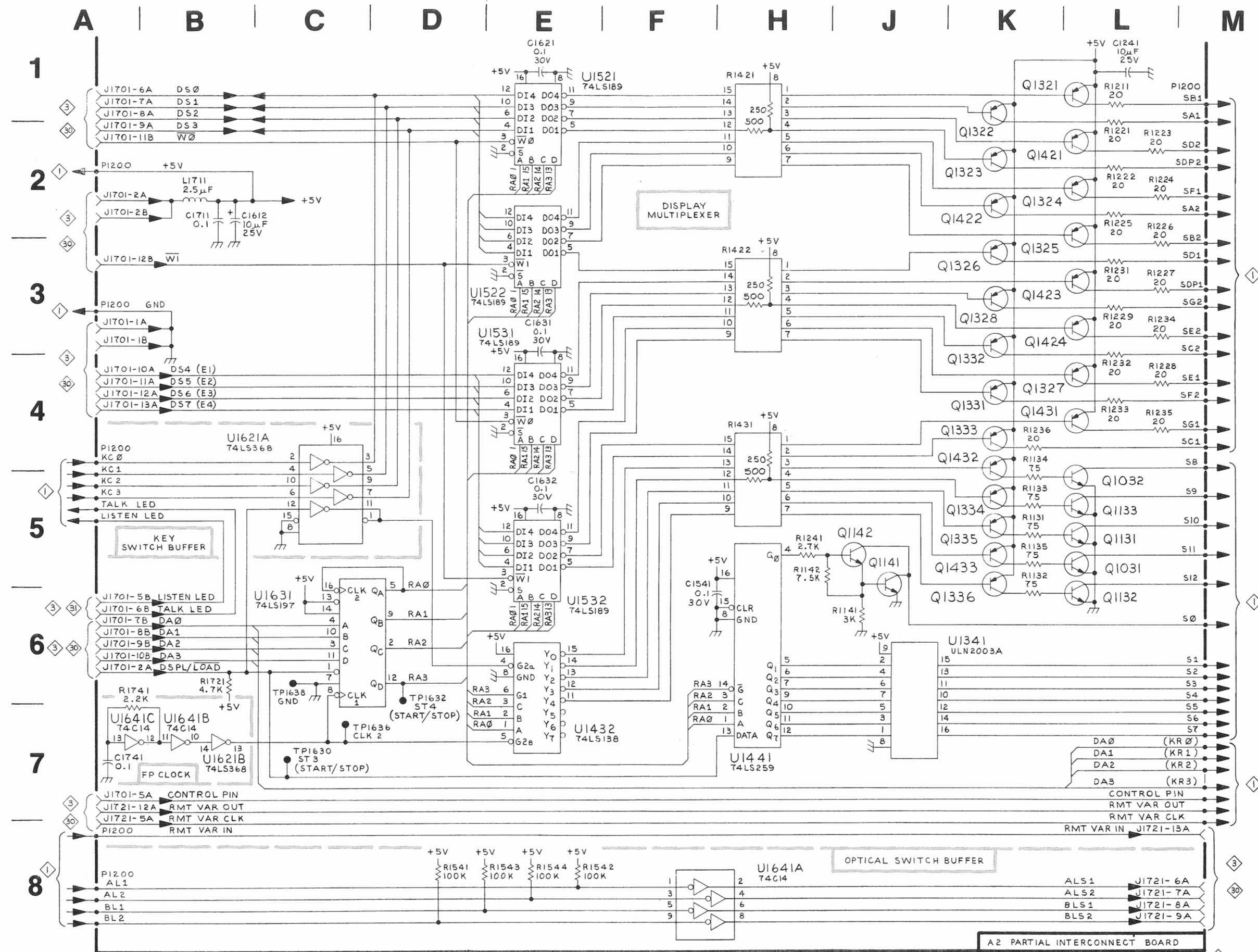
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2815-141

AI FRONT PANEL BOARD
FRONT PANEL

FRONT PANEL-A1

JP



CG 551AP

2815-142
REV A JUL 1980

DISPLAY MULTIPLEXER-A2 JP

DISPLAY MULTIPLEXER-A2 JP

PARTS LOCATION GRID

PARTS LOCATION
MAIN INTERCONNECT BD (A2 ASSY)

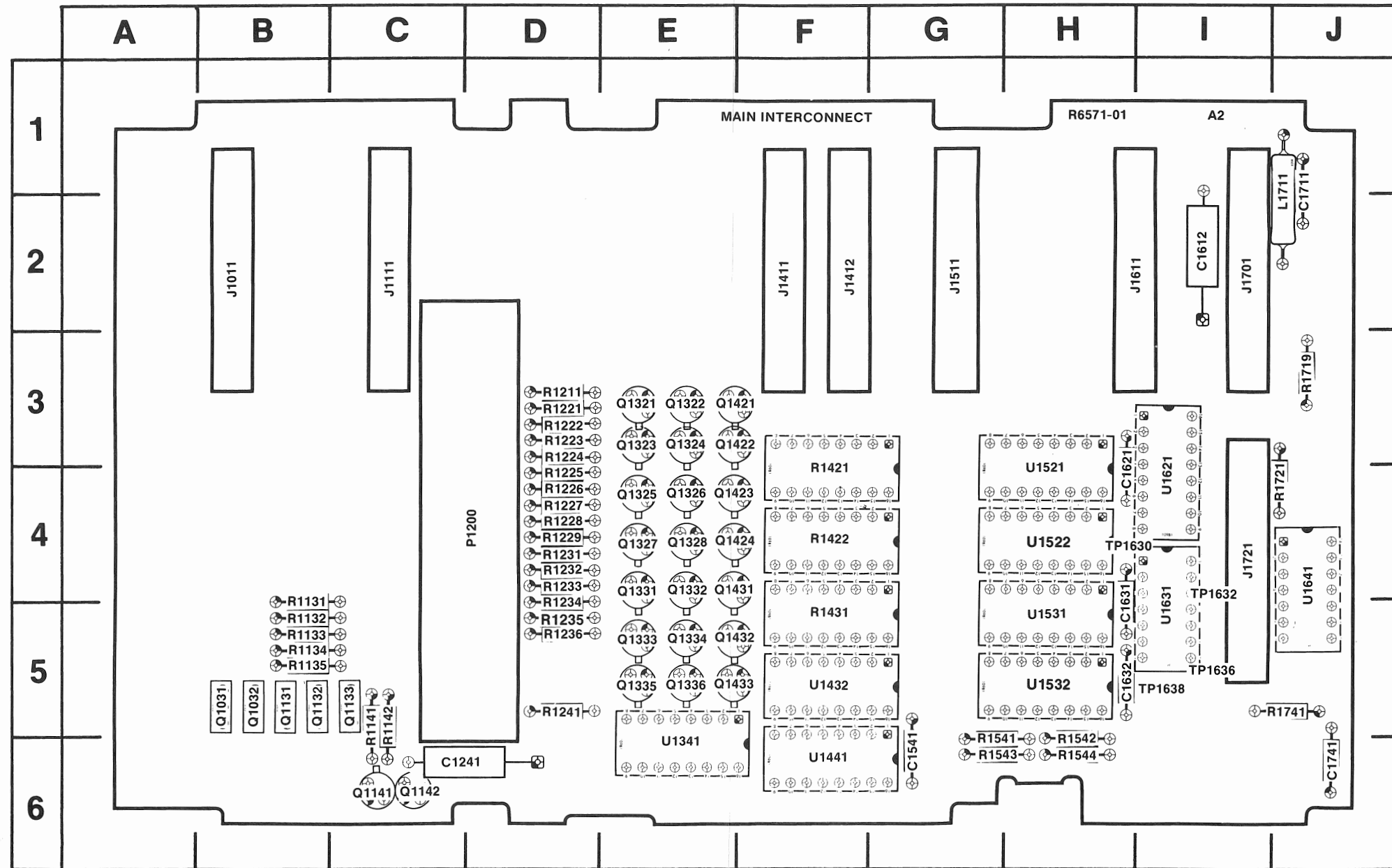
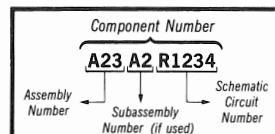


Fig. 9-43. Main Interconnect Board (A2).

 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



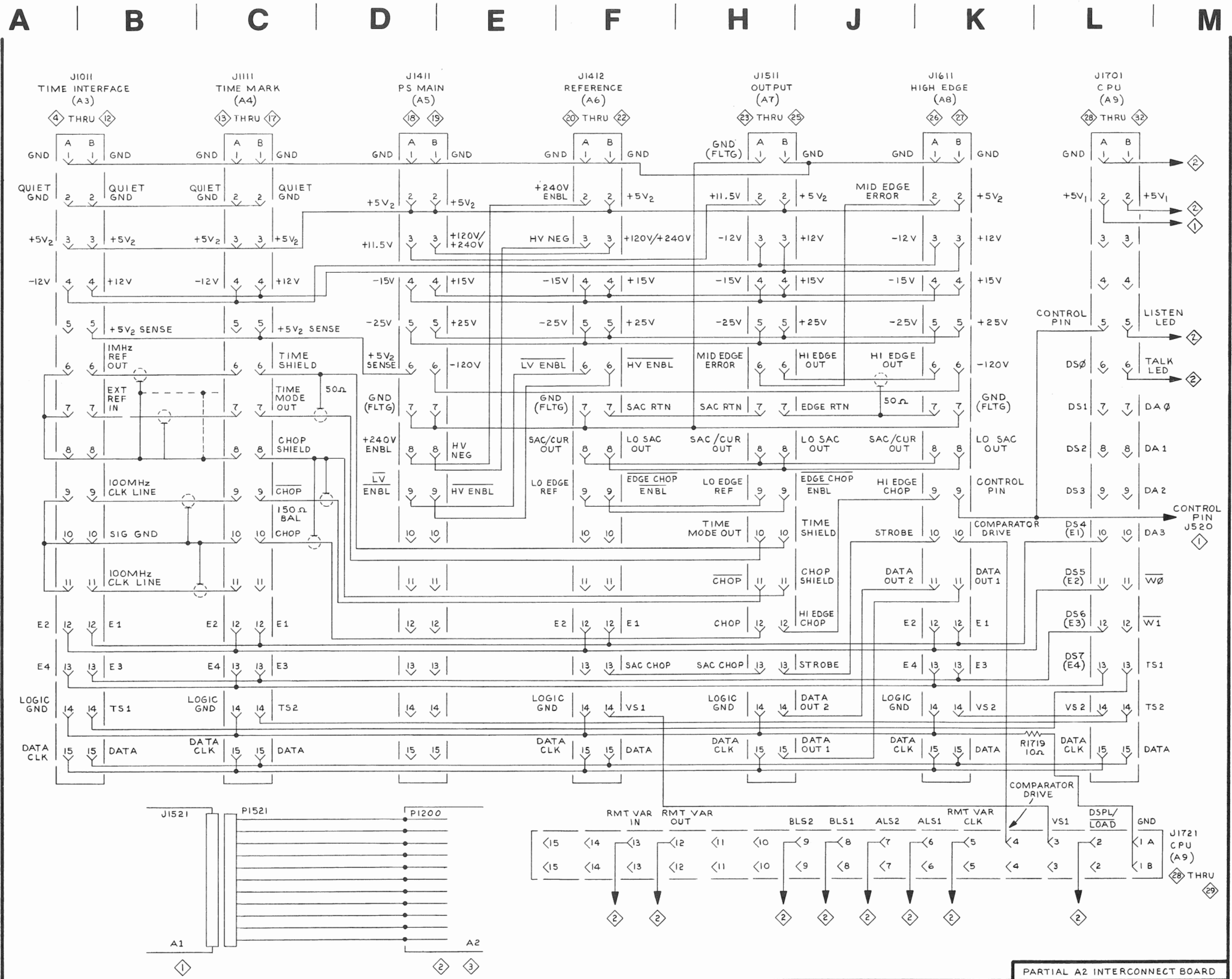
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

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Table 9-7 COMPONENT REFERENCE CHART

P/O A2 ASSY MAIN INTERCONNECT ◇ 3		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J1011	A1	B2
J1111	C1	C2
J1411	D1	F2
J1412	F1	F2
J1511	H1	G2
J1611	K1	H2
J1701	L1	I2
J1721	M7	I4
R1719	L7	J3

P/O A2 ASSY also shown on ◇ 2



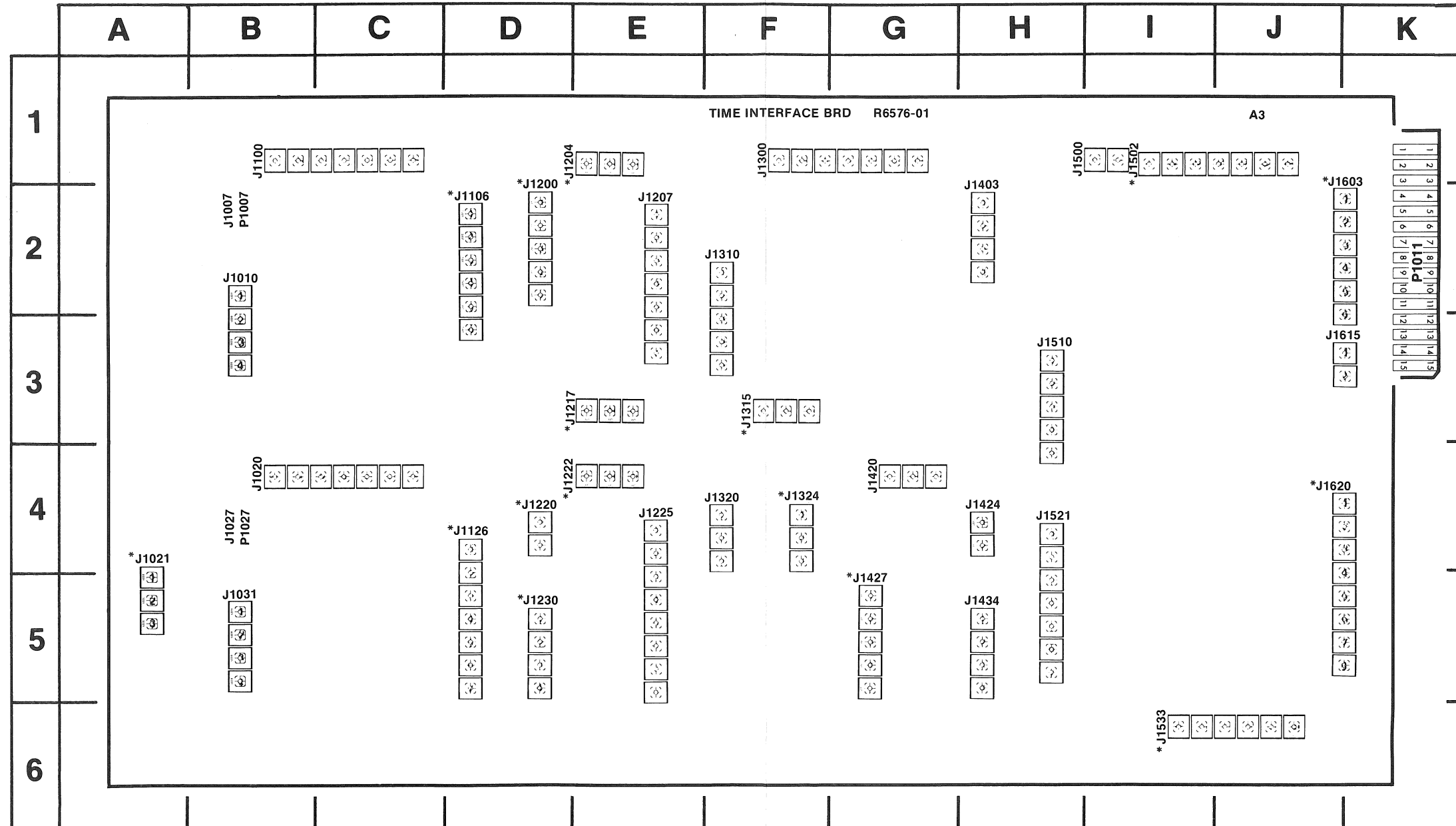
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REV DEC 1981
2815-143

PARTIAL A2 INTERCONNECT BOARD
MAIN INTERCONNECT

MAIN INTERCONNECT-A2

PARTS LOCATION GRID



* NOTE THESE COMPONENTS ARE LOCATED ON THE REVERSE SIDE (REFERENCE SIDE) OF THE A3 BOARD.

Fig. 9-44. Time Interface Board (A3).

PARTS LOCATION
TIME INTERFACE BOARD (A3 ASSY)

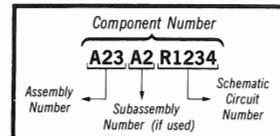
Table 9-8 COMPONENT REFERENCE CHART

P/O A3 ASSY		TIME INTERFACE (REFERENCE) 4
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J1010	E2	B2
J1020	E6	B4
J1021	L4	A4
J1031	E2	B5
J1100	E6	B1
J1106	K3	D2
J1126	K5	D4
J1200	H3	D2
J1204	F2	E1
J1207	H3	E2
J1217	H4	E3
J1220	J6	D4
J1222	H6	E4
J1230	J7	D5
J1300	E6	F1
J1315	F4	F3
J1324	H7	F4
J1427	E4	G5
J1434	B8	H5
J1502	E2	I1
J1521	E7	H4
J1521	B8	H4
J1533	D5	I6
J1603	C3	K2
J1615	H3	K3
J1620	C4	K4
P1011	A1	K2

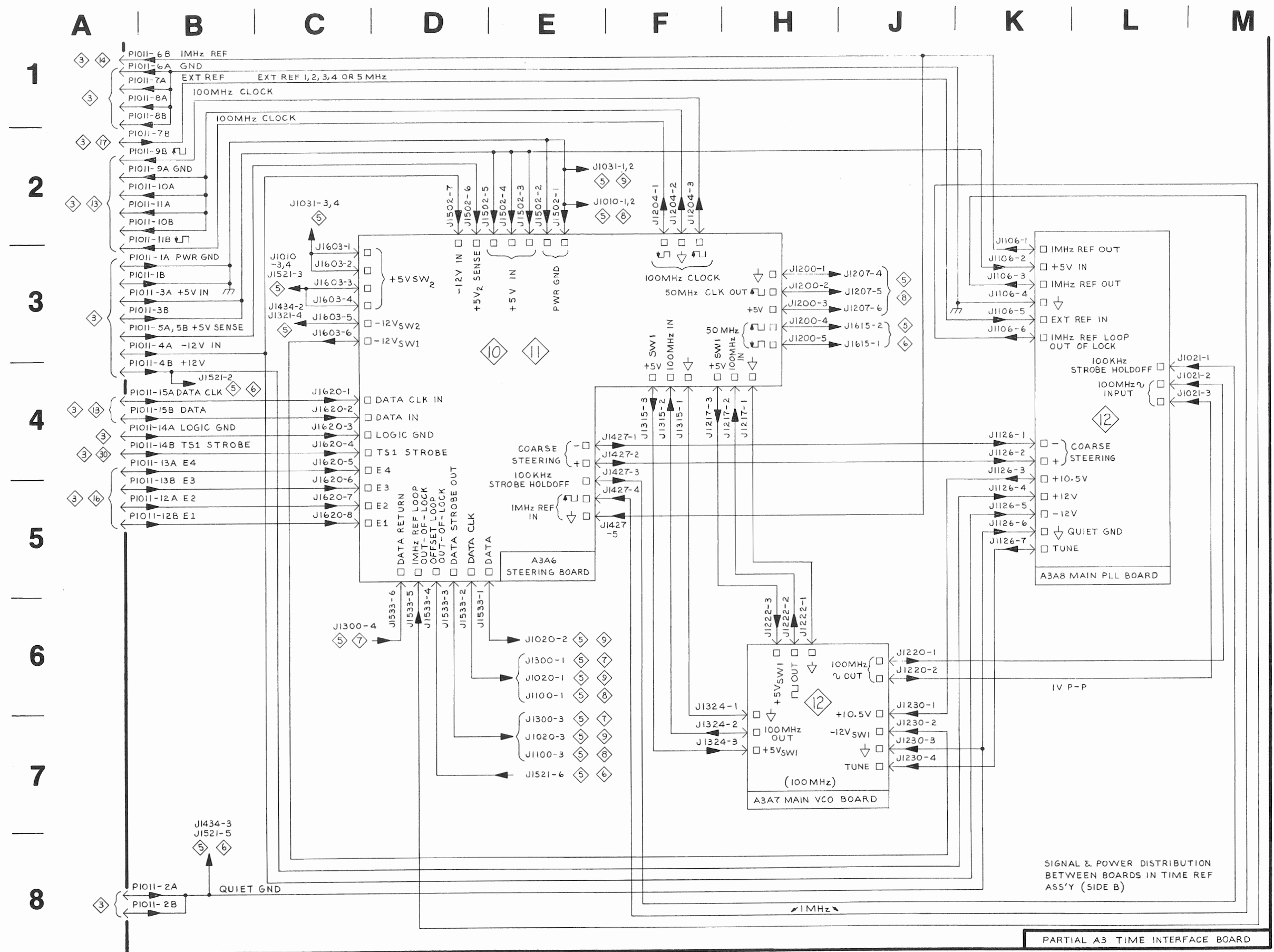
P/O A3 ASSY also shown on 5

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.



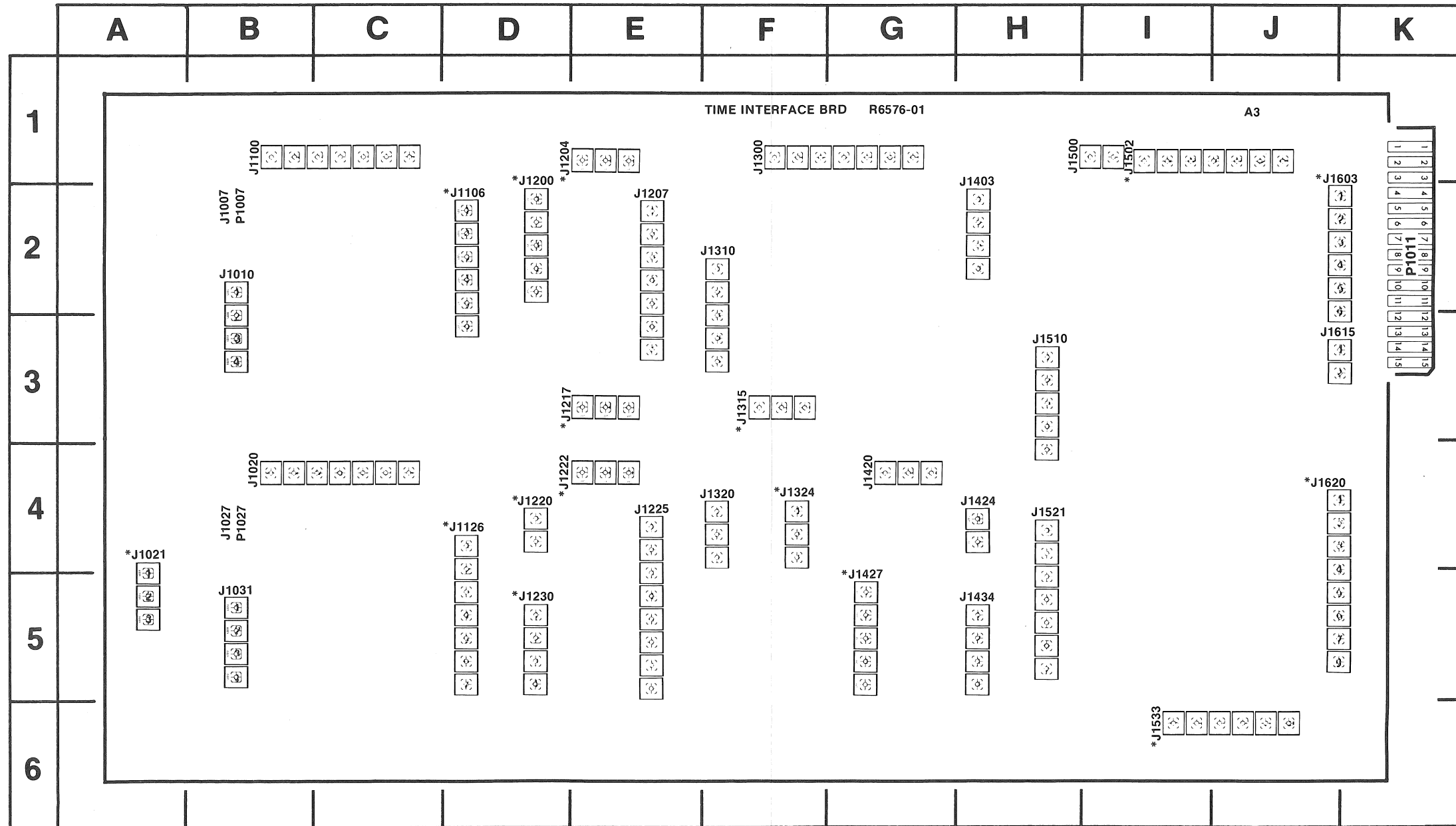
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REV DEC 1981
2815-144

TIME INTERFACE (REFERENCE SIDE) 4 JP

PARTIAL A3 TIME INTERFACE BOARD

PARTS LOCATION GRID



* NOTE THESE COMPONENTS ARE LOCATED ON THE REVERSE SIDE (REFERENCE SIDE) OF THE A3 BOARD.

Fig. 9-45. Time Interface Board (A3).

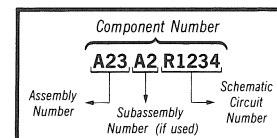
Table 9-9 COMPONENT REFERENCE CHART

P/O A3 ASSY TIME INTERFACE (SLEWING) ◇ 5		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
J1007	L5	B2
J1010	K6	B2
J1020	J3	B4
J1027	L1	B4
J1031	K2	B5
J1100	J8	B1
J1200	H7	D2
J1200	A6	D2
J1207	H6	E2
J1225	H3	E4
J1225	H3	E4
J1300	E7	F1
J1310	F7	F2
J1320	F3	F4
J1403	D6	H2
J1420	E3	G4
J1424	D3	H4
J1434	D3	H5
J1434	D2	H5
J1500	B6	I1
J1502	K3	I1
J1502	K6	I1
J1510	C4	H3
J1521	C3	H4
J1533	C2	I6
J1533	D8	I6
J1533	L4	I6
J1603	K6	K2
J1603	C2	K2
J1603	K2	K2
J1603	D2	K2
J1615	A5	K3
P1007	L5	B2
P1011	D2	K2
P1027	L1	B4

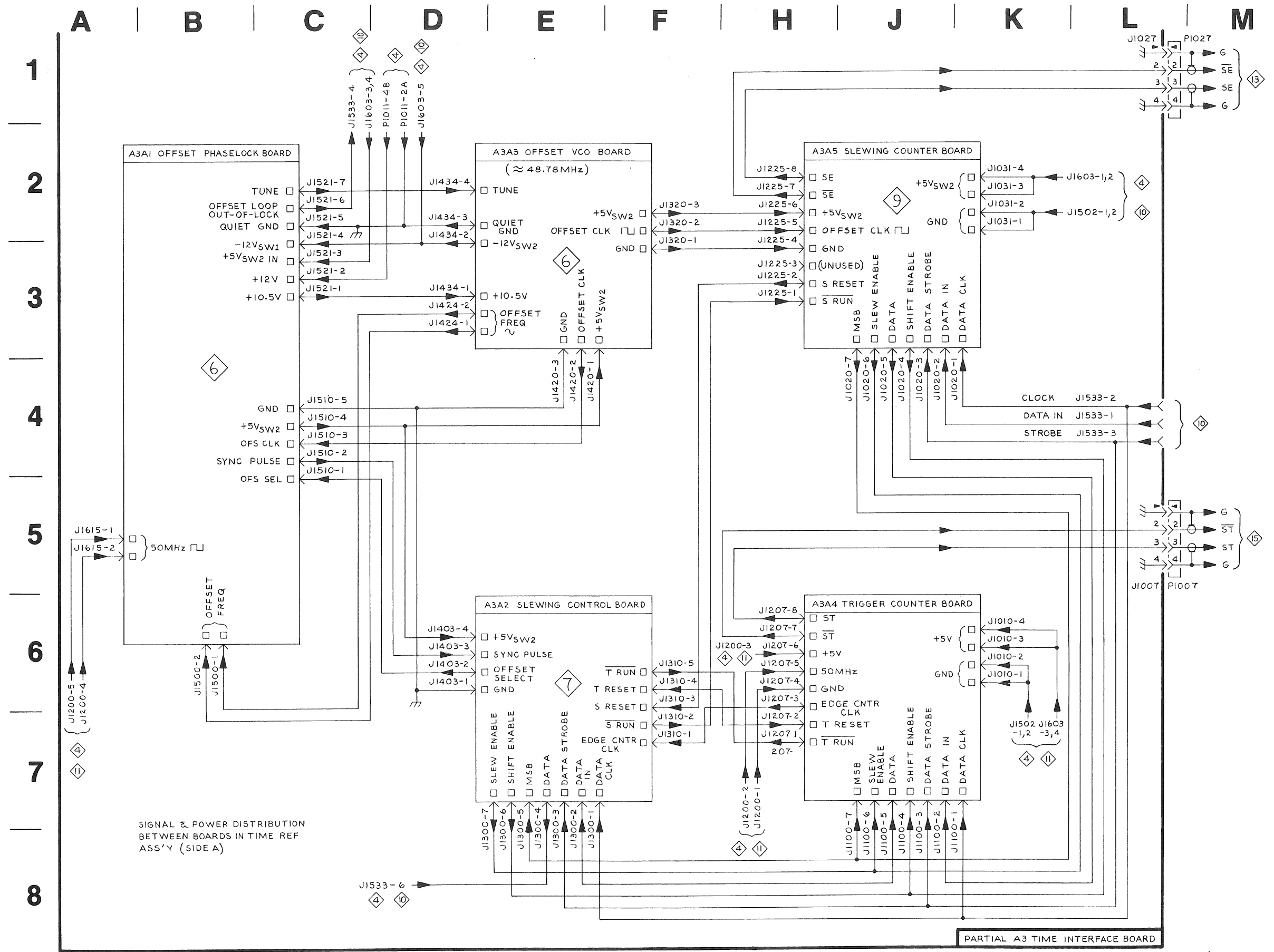
P/O A3 ASSY also shown on ◇ 4

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.



SIGNAL & POWER DISTRIBUTION BETWEEN BOARDS IN TIME REF ASS'Y (SIDE A)

PARTIAL A3 TIME INTERFACE BOARD

PARTS LOCATION GRID

PARTS LOCATION
OFFSET PLL BOARD (A3A1 ASSY)
OFFSET VCO BOARD (A3A3 ASSY)

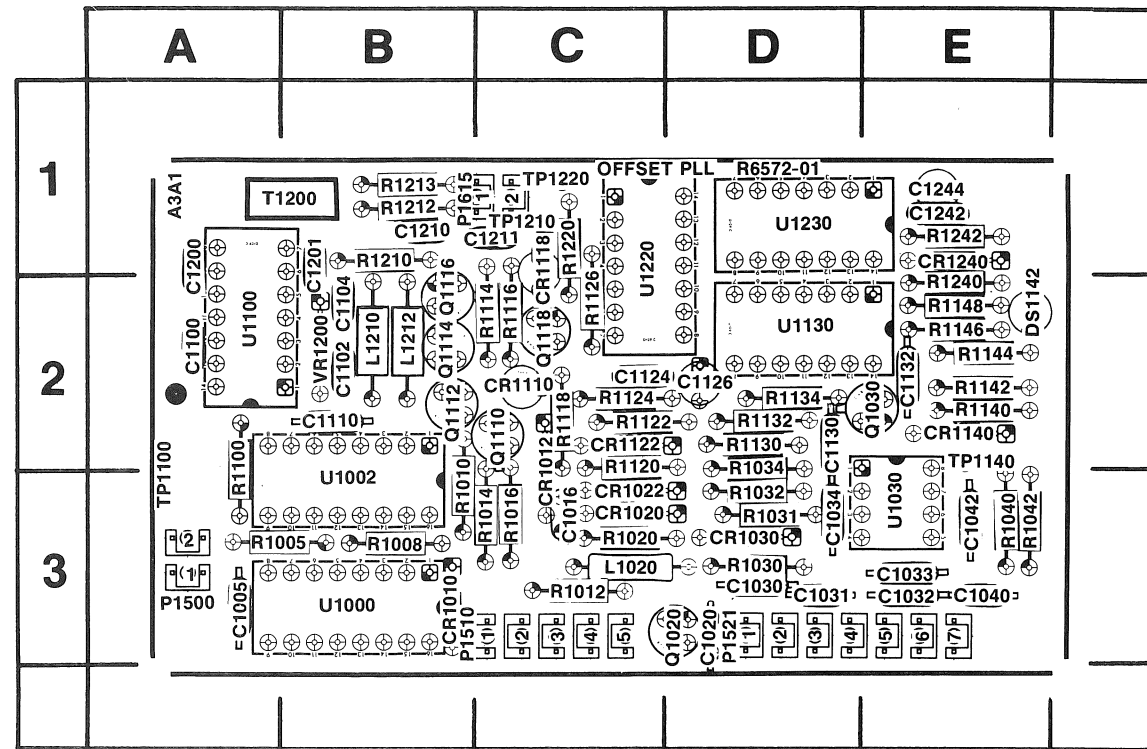


Fig. 9-46. Offset PLL Board (A3A1).

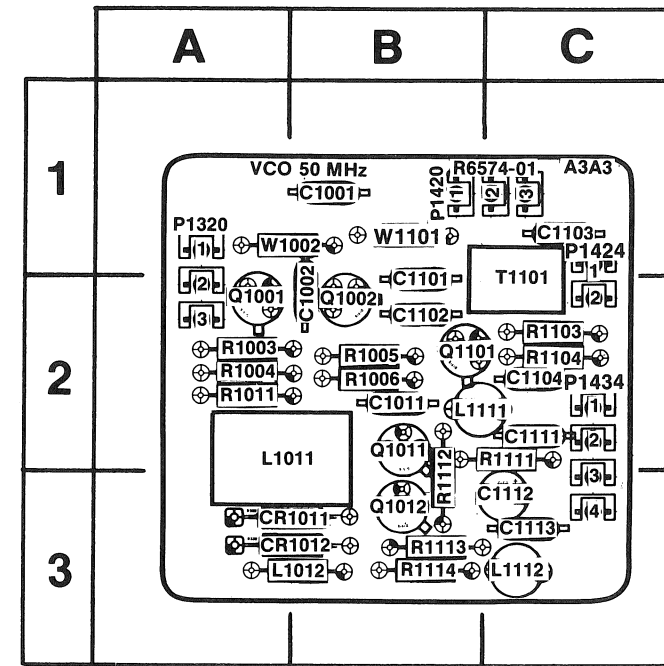
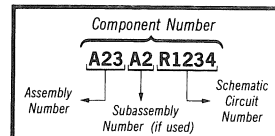


Fig. 9-47. Offset VCO Board (A3A3).

 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

LOCATION GRID

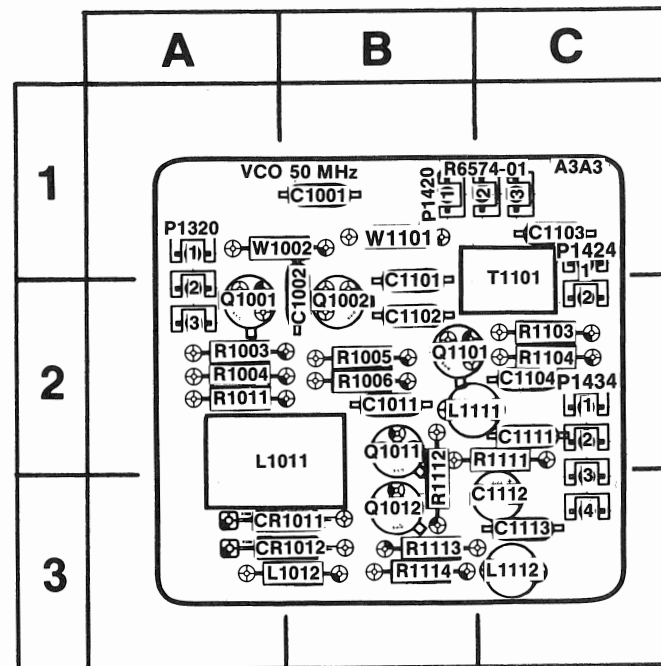
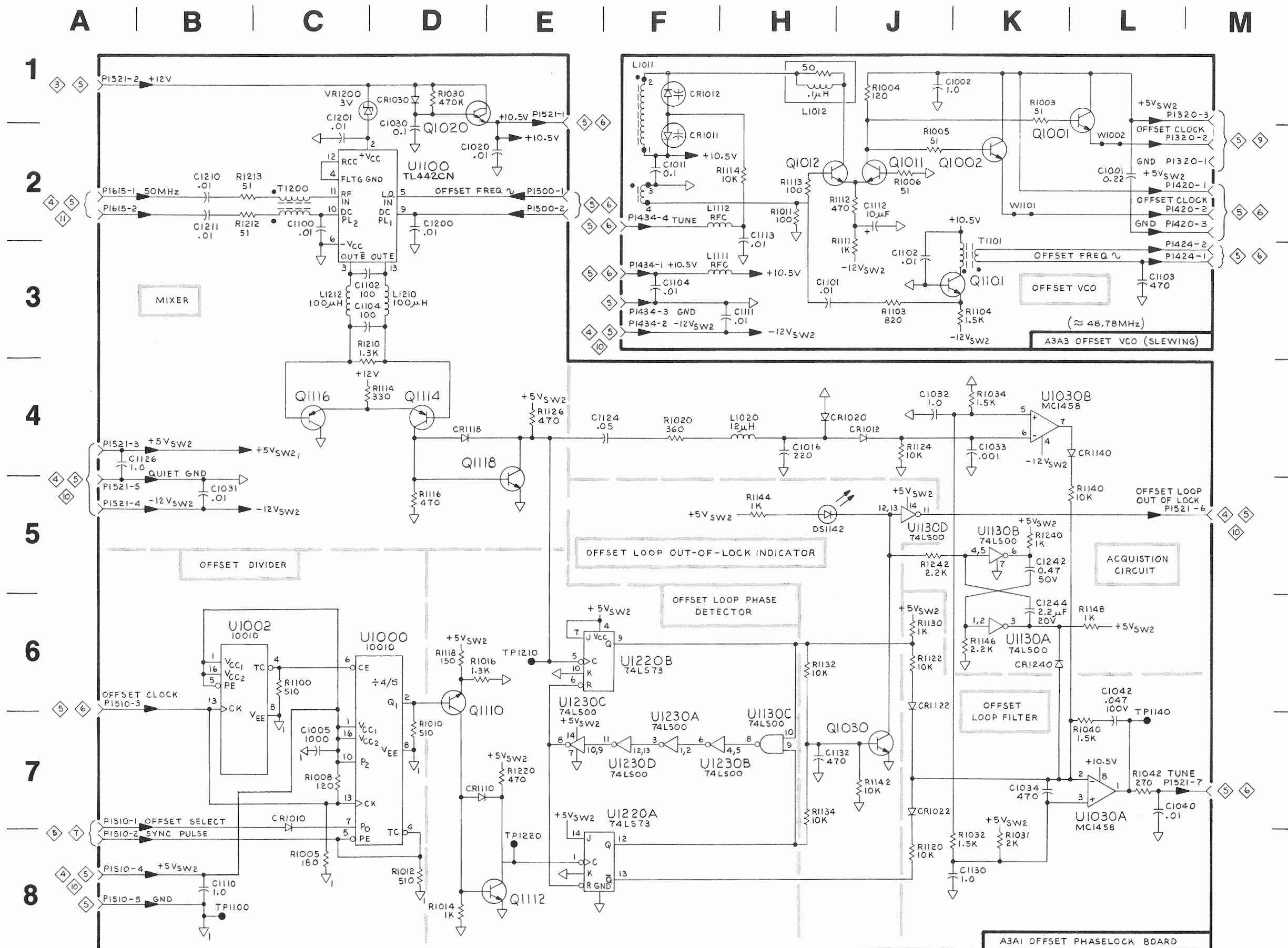


Fig. 9-47. Offset VCO Board (A3A3).

Table 9-10 COMPONENT REFERENCE CHART

A3A1 ASSY						OFFSET LOOP 6		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1005	C7	A3	L1020	F4	C3	R1122	J6	C2
C1014	D8	C3	L1210	D3	B2	R1124	J4	C2
C1016	H4	C3	L1212	C3	B2	R1126	E4	C2
C1020	D2	D3				R1130	J6	D2
C1030	D2	D3	P1500	E2	A3	R1132	H6	D2
C1031	B5	D3	P1510	A7	C3	R1134	J7	D2
C1032	J4	E3	P1510	A8	C3	R1140	K4	E2
C1033	K4	E3	P1521	E1	D3	R1142	J7	E2
C1034	K7	D3	P1521	A1	D3	R1144	H5	E2
C1040	L7	E3	P1521	A5	D3	R1146	K6	E2
C1042	L6	E3	P1521	M5	D3	R1148	L6	E2
C1100	C2	A2	P1521	L7	D3	R1210	C3	B1
C1102	C3	B2	P1615	A2	B1	R1212	B2	B1
C1104	C3	B2				R1213	B2	B1
C1110	B8	B2	Q1020	D1	D3	R1220	E7	C1
C1124	E4	C2	Q1030	J7	E2	R1240	K5	E2
C1126	A4	D2	Q1110	D6	C2	R1242	J5	E1
C1130	K8	D2	Q1112	E8	B2			
C1132	J7	E2	Q1114	D4	B2	T1200	C2	B1
C1200	D2	A1	Q1116	C4	B2			
C1201	C2	B1	Q1118	D4	C2	TP1100	B8	A3
C1210	B2	B1				TP1140	L7	E2
C1211	B2	C1	R1005	C8	B3	TP1210	E6	C1
C1242	K5	E1	R1008	C7	B3	TP1220	E8	C1
C1244	K6	E1	R1010	D7	B3			
CR1010	C7	B3	R1012	D8	C3	U1000	C6	B3
CR1012	F1	C2	R1016	D6	C3	U1002	B6	B3
CR1020	J4	C3	R1020	F4	C3	U1030B	K4	E3
CR1022	J7	C3	R1030	D1	D3	U1030A	L7	E3
CR1030	D1	D3	R1031	K8	D3	U1100	C2	A2
CR1110	D7	C2	R1032	K8	D3	U1130A	K6	D2
CR1118	D4	C1	R1034	K4	D2	U1130B	K5	D2
CR1122	J6	C2	R1040	L7	E3	U1130C	H7	D2
CR1140	K4	E2	R1042	L7	E3	U1130D	J5	D2
CR1240	K6	E1	R1100	C6	A3	U1220A	F8	C1
			R1114	C4	C2	U1220B	F6	C1
			R1116	D5	C2	U1230	F7	D1
			R1118	D6	C2			
			R1120	J8	C2	VR1200	C1	B2
DS1142	H5	E2						

A3A3 ASSY						OFFSET VCO 6		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1001	L2	B1	L1011	F1	A2	R1003	K1	A2
C1002	J1	B2	L1012	H2	B3	R1004	J1	A2
C1011	F2	B2	L1111	F3	B2	R1005	J2	B2
C1101	H3	B2	L1112	F2	C3	R1006	J2	B2
C1102	J3	B2				R1011	H2	A2
C1103	L3	C1	P1320	M2	A1	R1103	J3	C2
C1104	F3	C2	P1420	M2	B1	R1104	K3	C2
C1111	F3	C2	P1424	M3	C1	R1111	J2	C2
C1112	J2	C3	P1434	F3	C2	R1112	J2	B3
C1113	H2	C3				R1113	H2	B3
CR1011	F2	B3	Q1001	K2	A2	R1114	H2	B3
CR1012	F1	B3	Q1002	K2	B2			
			Q1011	J2	B2	T1101	K2	C1
			Q1012	H2	B3			
			Q1101	K3	B2	W1001	K2	B1
						W1002	L2	B1



CG 551AP

2815-146

REV A JUL 1980

OFFSET LOOP & OFFSET VCO

OFFSET LOOP-A3A1
OFFSET VCO-A3A3

6

PARTS LOCATION GRID

PARTS LOCATION
SLEWING CONTROL BD (A3A2 ASSY)

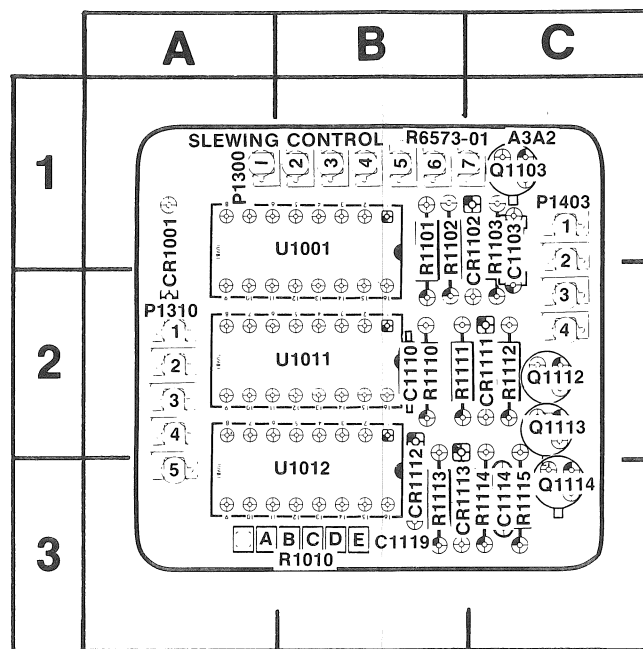
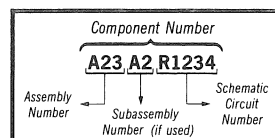


Fig. 9-48. Slewing Control Board (A3A2).


 Static Sensitive Devices
See Maintenance Section

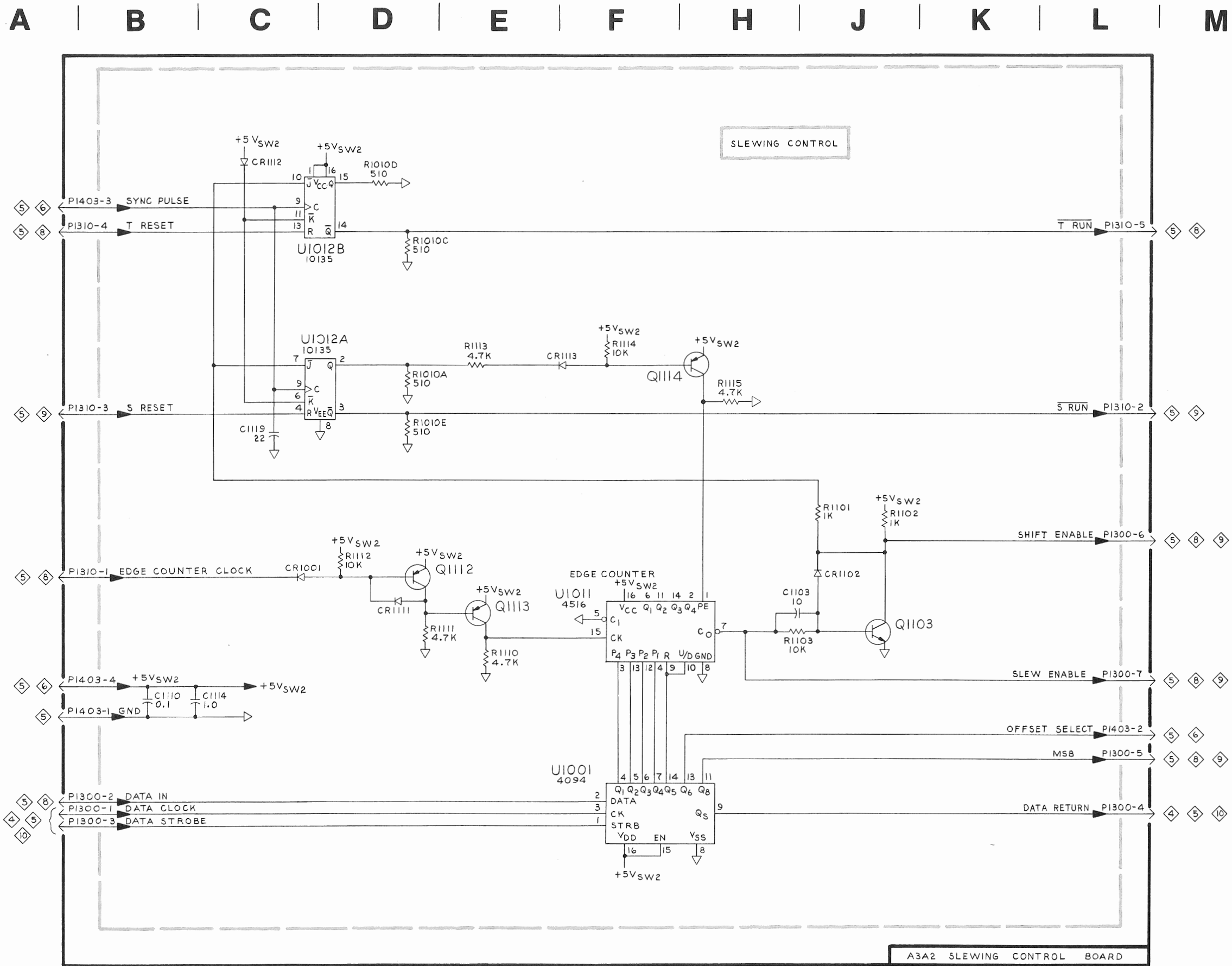
COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Table 9-11 COMPONENT REFERENCE CHART

A3A2 ASSY			SLEWING CONTROL 		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1103	J5	C1	Q1103	J6	C1
C1110	B6	B2	Q1112	D5	C2
C1114	B6	C3	Q1113	E5	C2
C1119	C4	B3	Q1114	H3	C3
CR1001	C5	A1	R1010A,E	D4	B3
CR1102	J5	C1	R1010C,D	D2	B3
CR1111	D5	C2	R1101	J5	B1
CR1112	C2	B3	R1102	J5	B1
CR1113	E3	B3	R1103	J6	C1
P1300	B7	A1	R1110	E6	B2
P1300	L7	A1	R1111	D5	B2
P1300	L5	A1	R1112	D5	C2
P1300	L6	A1	R1113	E3	B3
P1310	B5	A2	R1114	F3	C3
P1310	L4	A2	R1115	H4	C3
P1310	B4	A2	U1001	F7	B1
P1310	B2	A2	U1011	F5	B2
P1310	L2	A2	U1012A	D4	B3
P1403	B6	C1	U1012B	D2	B3
P1403	L6	C1			
P1403	B2	C1			



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SLEWING CONTROL

7 JP

SLEWING CONTROL-A3A2 7

PARTS LOCATION GRID

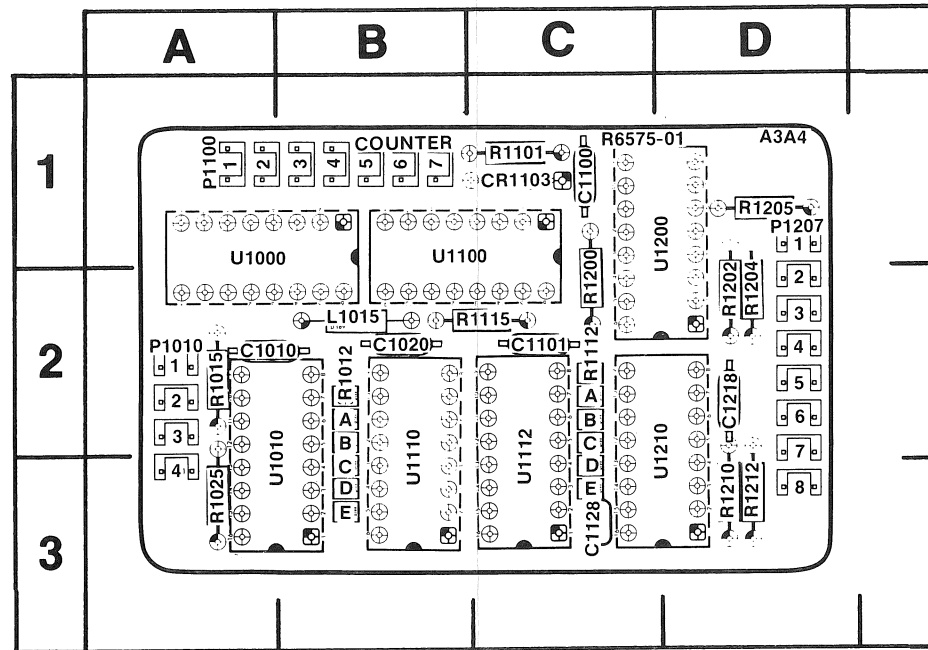
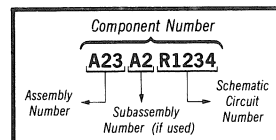


Fig. 9-49. Counter (Trigger) Board (A3A4).

PARTS LOCATION
COUNTER (TRIGGER) BD (A3A4 ASSY)

 Static Sensitive Devices
See Maintenance Section


COMPONENT NUMBER EXAMPLE

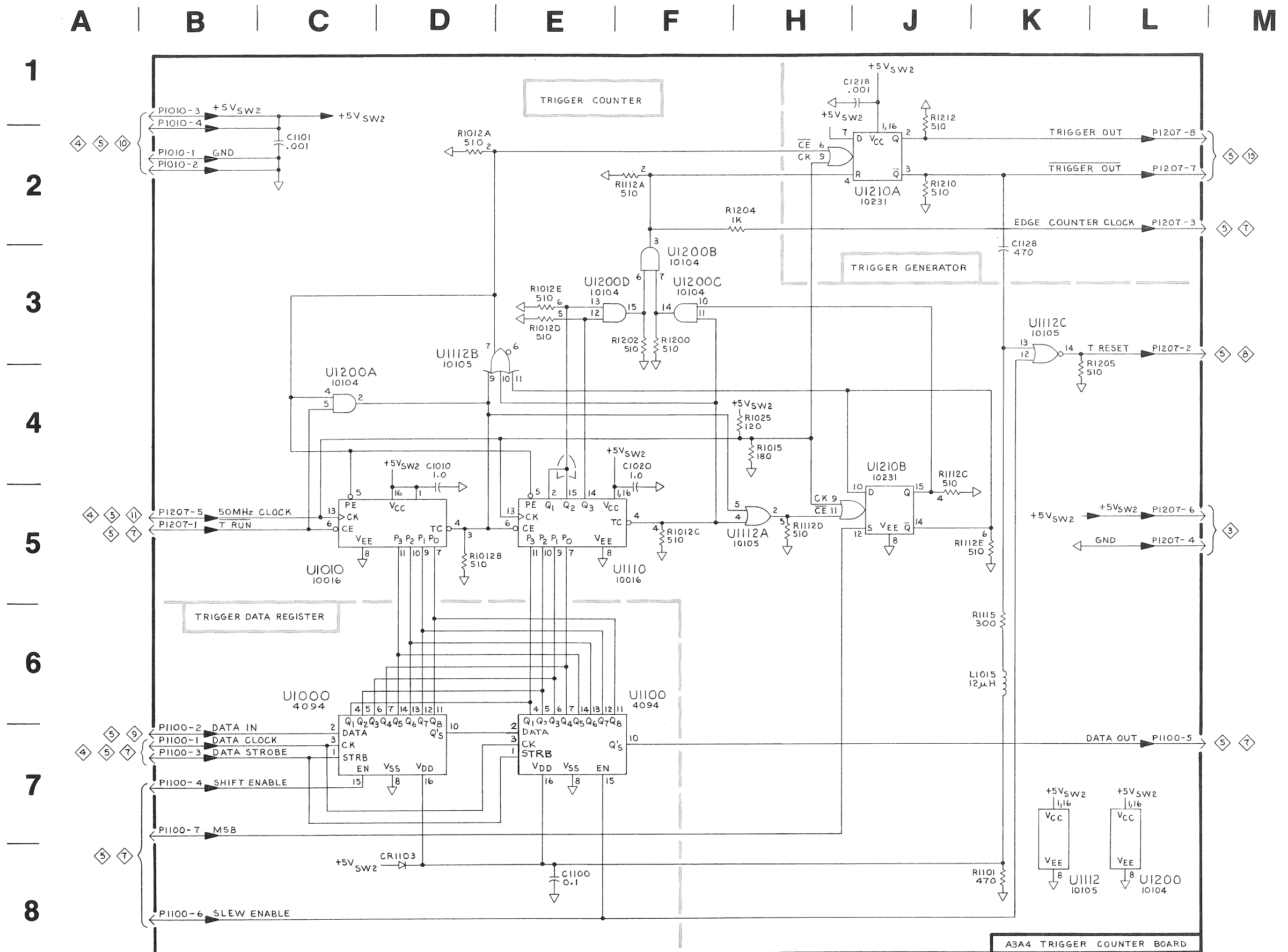


Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

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**Table 9-12
COMPONENT REFERENCE CHART**

A3A4 ASSY			TRIGGER COUNTER 		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1010	D5	A2	R1101	K8	C1
C1020	F5	B2	R1112A	F2	C2
C1100	E8	C1	R1112C	J4	C2
C1101	C2	C2	R1112D	H5	C2
C1128	K3	C3	R1112E	K5	C2
C1218	J1	D2	R1115	K6	C2
CR1103	D8	C1	R1200	F3	C2
L1015	K6	B2	R1202	F3	D2
P1010	B2	A2	R1204	H2	D2
P1100	B7	A1	R1205	L4	D1
P1100	L7	A1	R1210	J2	D3
P1100	B8	A1	R1212	J1	D3
P1207	B5	D1	U1000	C6	A1
P1207	L3	D1	U1010	C5	A3
P1207	L2	D1	U1100	F7	B1
P1207	L5	D1	U1110	F5	B3
R1012A	D2	B2	U1112A	H5	C3
R1012B	D5	B2	U1112B	D4	C3
R1012C	F5	B2	U1112C	K3	C3
R1012D	E3	B2	U1200A	C4	D1
R1012E	E3	B2	U1200B	F3	D1
R1015	H4	A2	U1200C	F3	D1
R1025	H4	A3	U1200D	E3	D1
			U1210A	J2	D3
			U1210B	J5	D3



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TRIGGER COUNTER 8 JP

PARTS LOCATION GRID

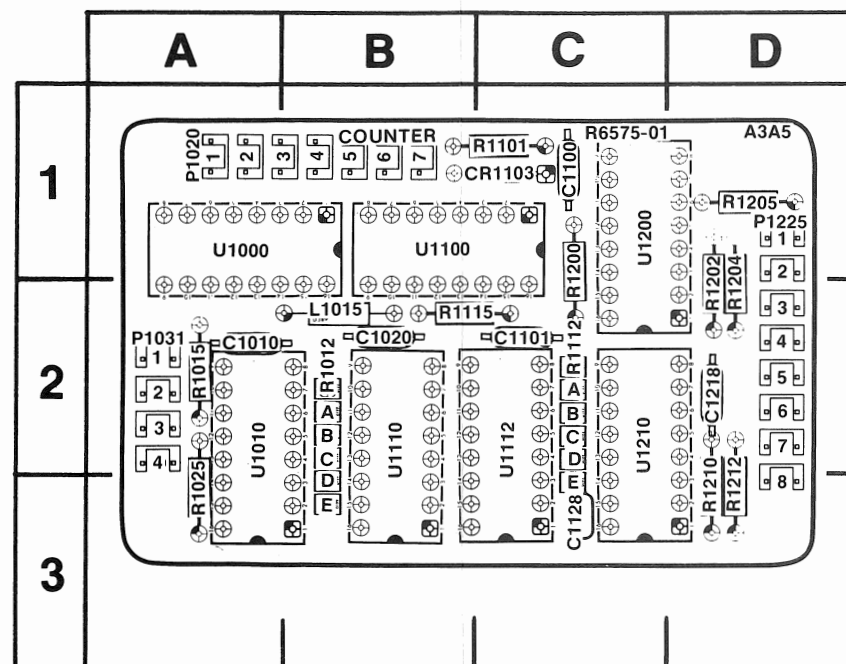
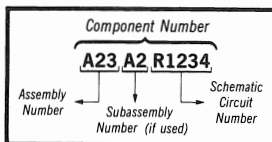


Fig. 9-50. Counter (Slewing) Board (A3A5).

 **Static Sensitive Devices**
See Maintenance Section

COMPONENT NUMBER EXAMPLE



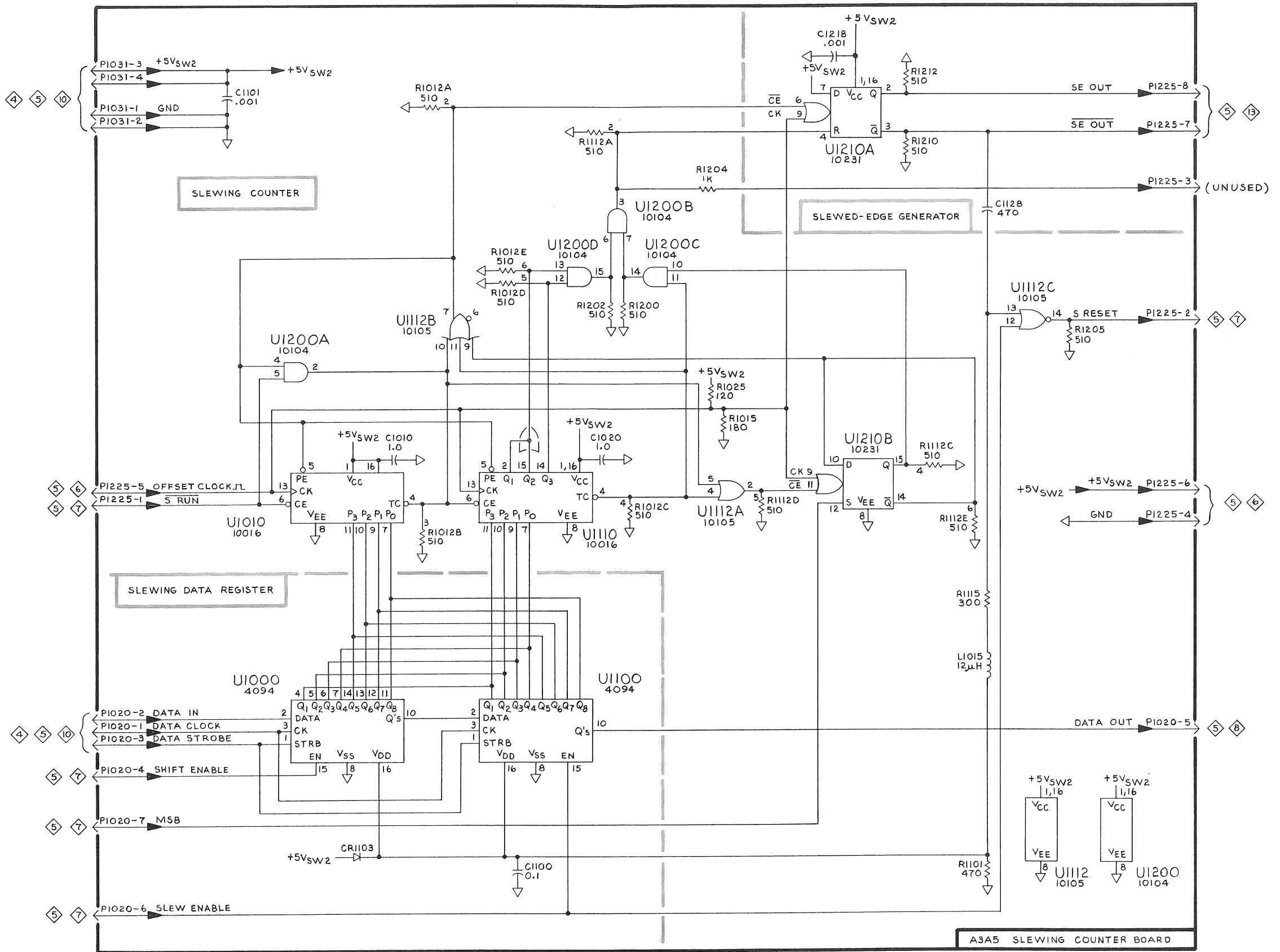
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Table 9-13
COMPONENT REFERENCE CHART

A3A5 ASSY			SLEWING COUNTER			9
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	
C1010	D5	A2	R1015	H4	A2	
C1020	F5	B2	R1025	H4	A3	
C1100	E8	C1	R1101	K8	C1	
C1101	C2	C2	R1112A	F2	C2	
C1128	K3	C3	R1112C	J5	C2	
C1218	J5	D2	R1112D	H5	C2	
			R1112E	K5	C2	
J1020	B7	A1	R1115	K6	B2	
J1020	L7	A1	R1200	F3	C1	
J1031	B2	A2	R1202	F3	D2	
J1225	B5	D1	R1204	H2	D2	
J1225	L3	D1	R1205	L3	D1	
			R1210	J2	D3	
CR1103	D8	C1	R1212	J2	D3	
			U1000	C7	A1	
L1015	K6	B2	U1010	C5	A2	
			U1100	E7	B1	
P1020	B7	A1	U1110	E5	B2	
P1020	L7	A1	U1112A	H5	C2	
P1031	B2	A2	U1112B	D4	C2	
P1225	B5	D1	U1112C	K3	C2	
P1225	L3	D1	U1200A	C4	C1	
			U1200B	F3	C1	
R1012A	D2	B2	U1200C	F3	C1	
R1012B	D5	B2	U1200D	E3	C1	
R1012C	F5	B2	U1210A	J2	C3	
R1012D	E3	B2	U1210B	J5	C3	
R1012E	E3	B2				

A | B | C | D | E | F | H | J | K | L | M

1
2
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4
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6
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8



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SLEWING COUNTER 9 JP

SLEWING COUNTER—A3A5 9

PARTS LOCATION GRID

PARTS LOCATION
STEERING BOARD (A3A6 ASSY)

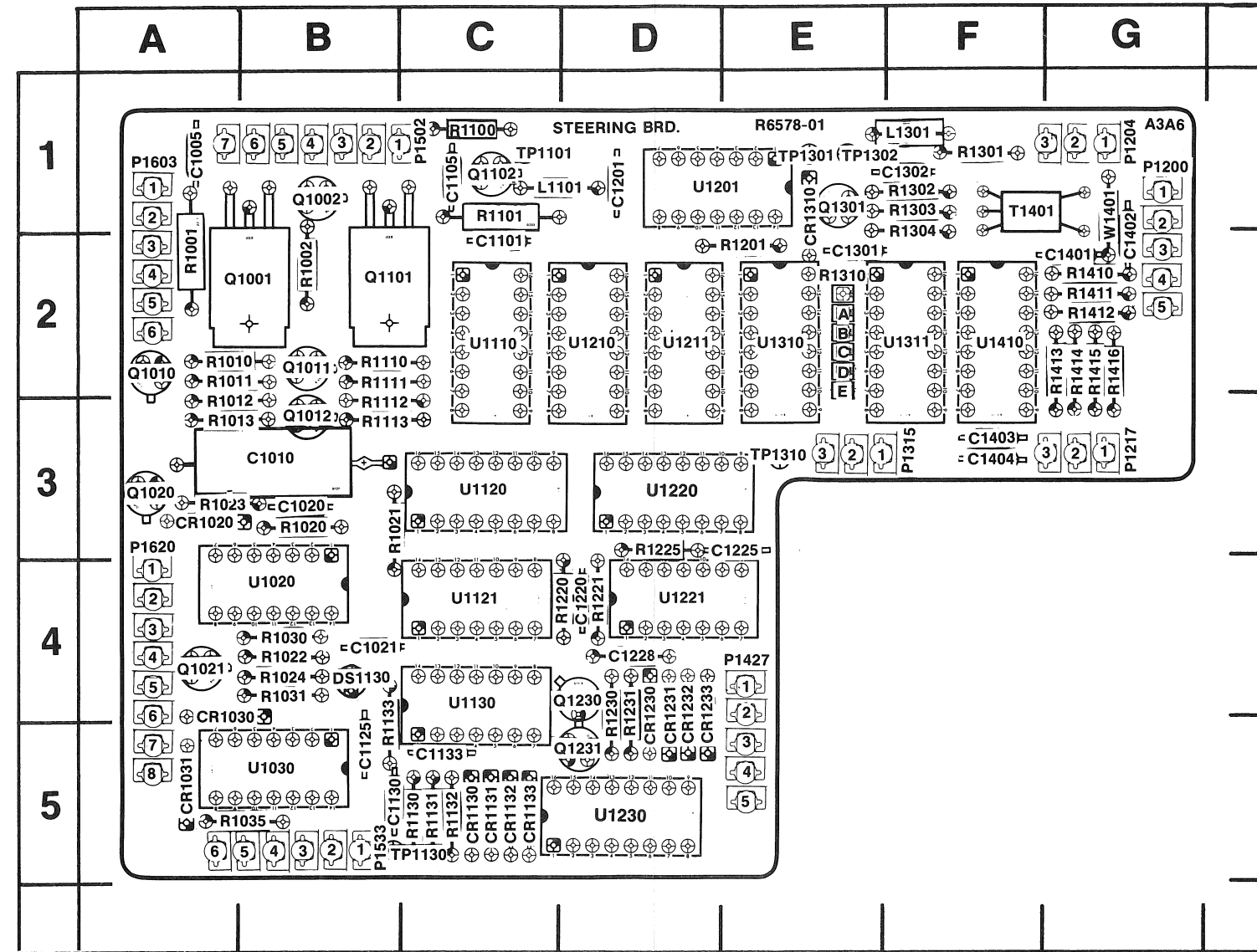
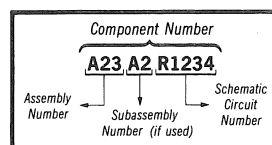


Fig. 9-51. Steering Board (A3A6).

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



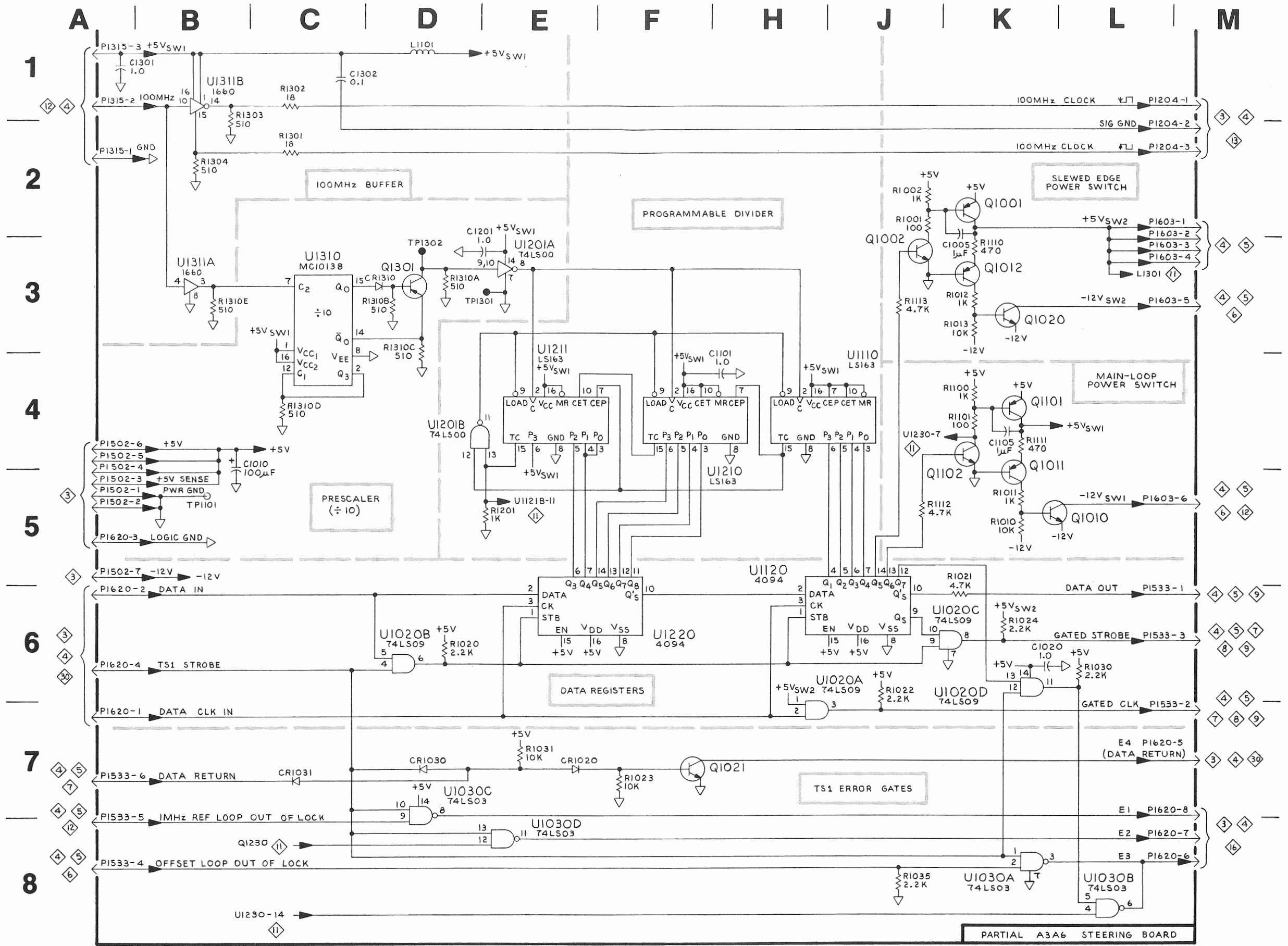
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

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Table 9-14 COMPONENT REFERENCE CHART

P/O A3A6 ASSY			STEERING LOOP (PARTIAL) 10		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1005	K3	A1	R1013	K3	A3
C1010	B5	B3	R1020	D6	B3
C1020	K6	B3	R1021	K6	B3
C1101	H4	C2	R1022	J6	B4
C1105	K4	C1	R1023	F7	A3
C1201	D3	D1	R1024	K6	B4
C1301	A1	E2	R1030	L6	B4
C1302	C1	F1	R1031	E7	B4
			R1035	J8	B5
CR1020	E7	A3	R1100	K4	C1
CR1020	D7	A3	R1101	K4	C1
CR1030	D7	A4	R1110	K3	B2
CR1031	C7	A5	R1111	K4	B2
CR1310	D3	E1	R1112	J5	B3
			R1113	J3	B3
L1101	D1	C1	R1201	E5	E2
			R1301	C2	F1
P1204	M2	G1	R1302	C1	F1
P1315	A1	F3	R1303	B2	F1
P1502	A5	C1	R1304	B2	F1
P1533	M6	B5	R1310A	D3	E2
P1533	A7	B5	R1310B	D3	E2
P1603	M3	A1	R1310C	D3	E2
P1603	M5	A1	R1310D	C4	E2
P1620	A6	A3	R1310E	B3	E2
P1620	A5	A3			
P1620	M7	A3	TP1101	B5	C1
			TP1301	E3	E1
Q1001	K2	B2	TP1302	D3	E1
Q1002	J3	B1			
Q1010	L5	A2	U1020A	J6	B4
Q1011	K4	B2	U1020B	D6	B4
Q1012	K3	B3	U1020C	K6	B4
Q1020	K3	A3	U1020D	K6	B4
Q1021	H7	A4	U1030A	K8	B5
Q1101	K4	B2	U1030B	L8	B5
Q1102	K4	C1	U1030C	D7	B5
Q1230	C8	D4	U1030D	E8	B5
Q1301	D3	E1	U1110	J4	C2
			U1120	H5	C3
R1001	J2	A2	U1201A	E3	D1
R1002	J2	B2	U1201B	D4	D1
R1010	K5	A2	U1210	H5	D2
R1011	K5	A2	U1211	E3	D2
R1012	K3	A3	U1220	F6	D3
			U1310	C3	E2
			U1311A	B3	F2
			U1311B	B1	F2

P/O A3A6 ASSY also shown on 11



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STEERING LOOP (PARTIAL) 10 JP

STEERING LOOP-A3A6
(PARTIAL) 10

PARTIAL A3A6 STEERING BOARD

PARTS LOCATION GRID

PARTS LOCATION
STEERING BOARD (A3A6 ASSY)

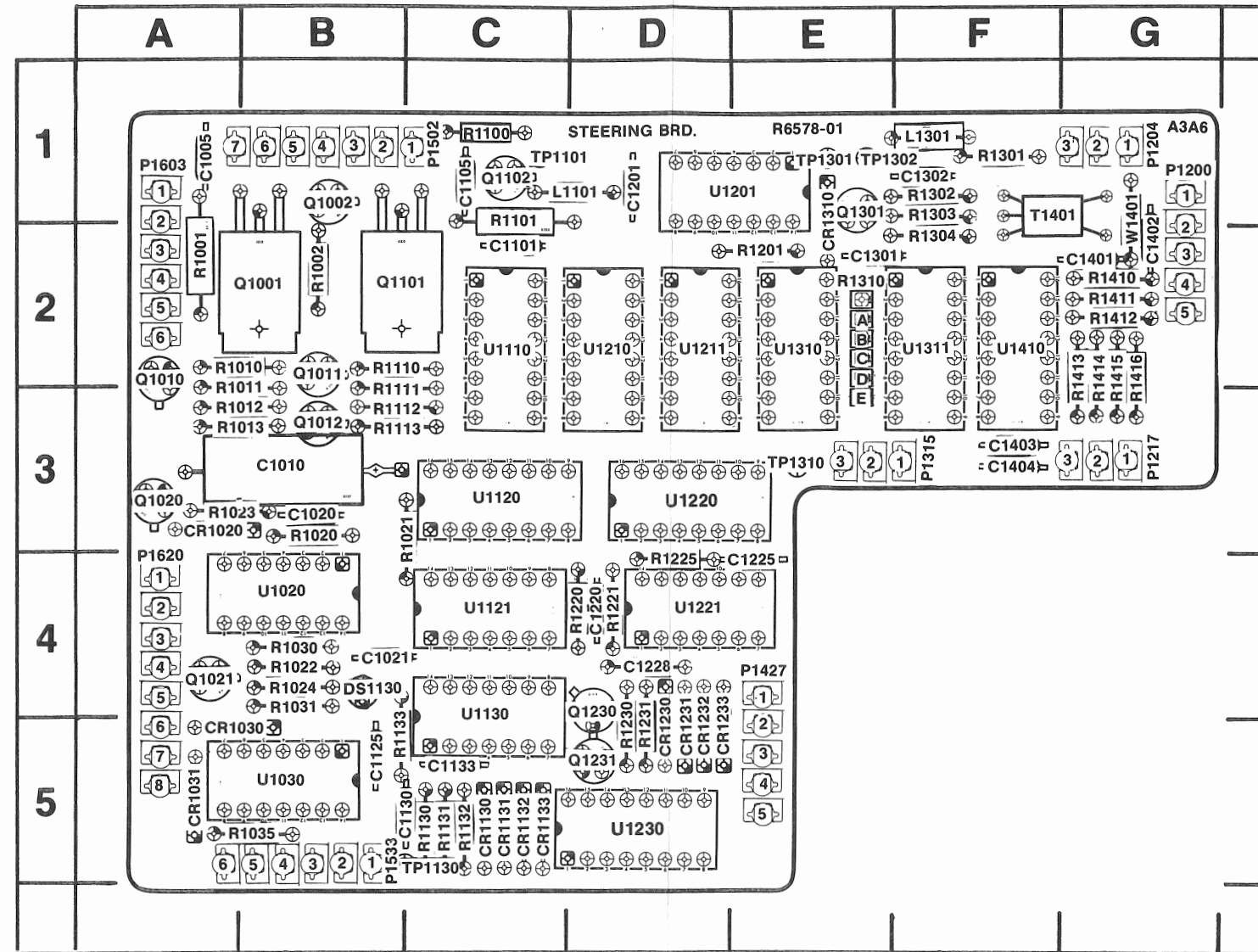
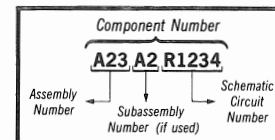


Fig. 9-52. Steering Board (A3A6).

 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



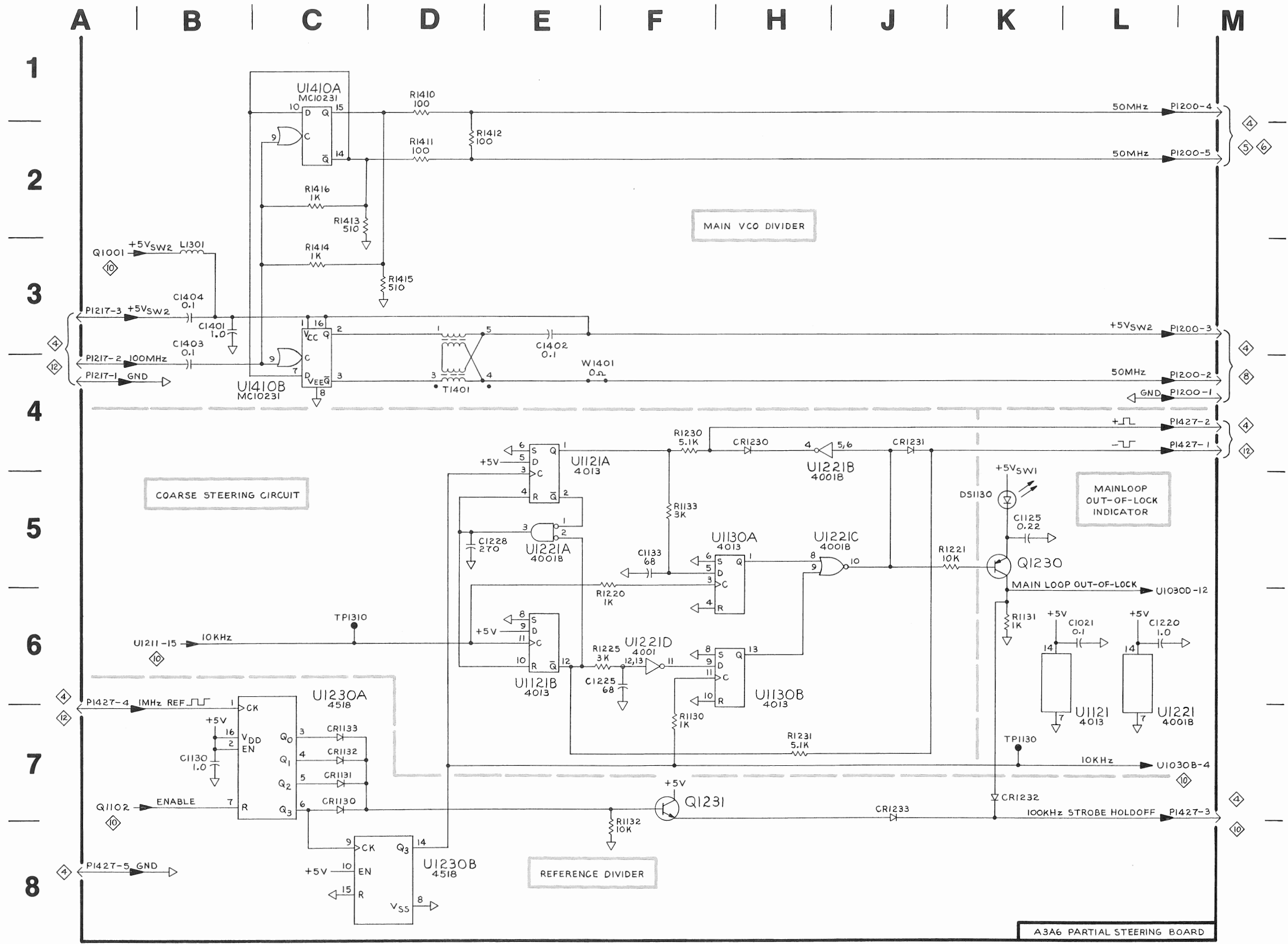
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

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Table 9-15 COMPONENT REFERENCE CHART

P/O A3A6 ASSY			STEERING LOOP (PARTIAL)			11
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	
C1021	L6	B4	R1130	F7	C5	
C1125	K5	B5	R1131	K6	C5	
C1130	B7	B5	R1132	F8	C5	
C1133	F5	C5	R1133	F5	B4	
C1220	L6	D4	R1220	F6	D4	
C1225	F7	E3	R1221	K5	D4	
C1228	D5	D4	R1225	E6	D3	
C1401	B3	G2	R1230	F4	D4	
C1402	E3	G2	R1231	H7	D4	
C1403	B3	F3	R1410	D1	G2	
C1404	B3	F3	R1411	D2	G2	
			R1412	D2	G2	
CR1130	C7	C5	R1413	C2	G2	
CR1131	C7	C5	R1414	C3	G2	
CR1132	C7	C5	R1415	D3	G2	
CR1133	C7	C5	R1416	C2	G2	
CR1230	H4	D4				
CR1231	J4	D4	T1401	D4	F1	
CR1232	K7	D4				
CR1233	J7	D4	TP1130	K7	C5	
			TP1310	C6	E3	
DS1130	K5	B4				
			U1121A	E4	C4	
L1301	B3	F1	U1121B	E6	C4	
			U1130A	H5	C4	
P1200	M2	G1	U1130B	H6	C4	
P1200	M4	G1	U1221A	E4	D4	
P1217	A4	G3	U1221B	H4	D4	
P1427	A7	E4	U1221C	J5	D4	
P1427	M4	E4	U1221D	F6	D4	
P1427	M7	E4	U1230A	C6	D5	
			U1230B	D8	D5	
Q1230	K5	D4	U1410A	C1	F2	
Q1231	F7	D5	U1410B	C4	F2	
			W1401	F4	G1	

P/O A3A6 ASSY also shown on 10



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STEERING LOOP (PARTIAL) JP

A3A6 PARTIAL STEERING BOARD

STEERING LOOP-A3A6 (PARTIAL) 11 JP

Table 9-16
COMPONENT REFERENCE CHART

LOCATION GRID

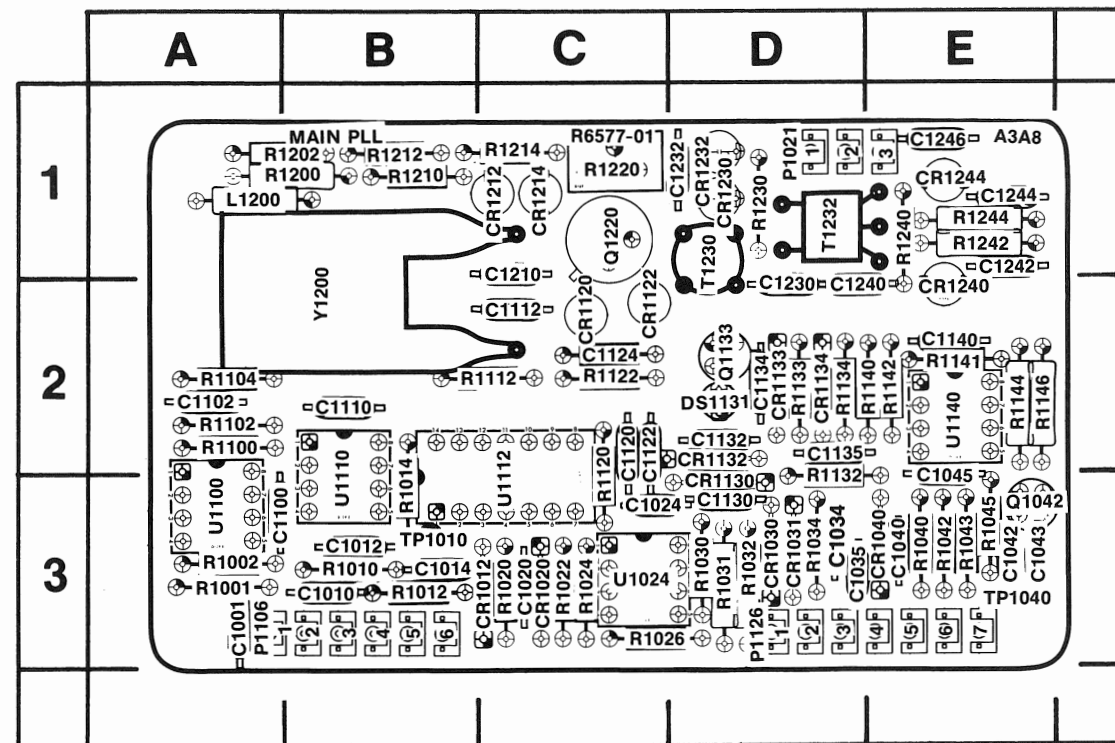
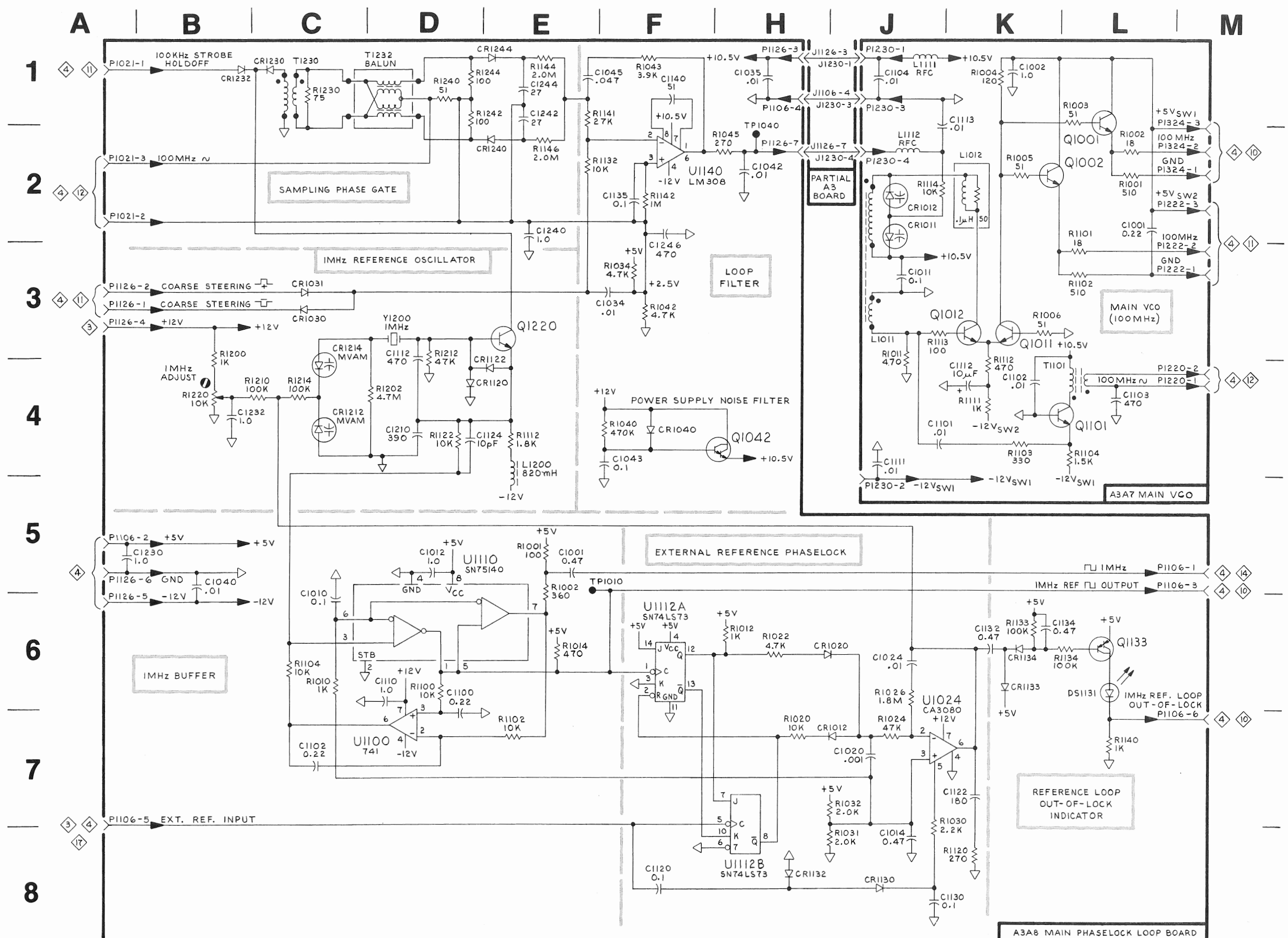


Fig. 9-54. Main PLL Board (A3A8).

A3A8 ASSY						REFERENCE LOOP 12		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1001	L2	B1	L1011	J3	A2	R1001	L2	A1
C1002	K1	B1	L1012	K2	B3	R1002	L2	A1
C1011	J3	B2	L1111	J1	B2	R1003	L1	A2
C1101	J4	B1	L1112	J2	C3	R1004	K1	A2
C1102	K4	B2				R1005	K2	B2
C1103	L4	C1	P1220	M4	C1	R1006	K3	B2
C1104	J1	C2	P1222	M3	C1	R1011	J3	A2
C1111	J4	C2	P1230	J1	C2	R1101	L3	B1
C1112	K4	C3	P1324	M2	A1	R1102	L3	B1
C1113	J2	C3				R1103	K4	C2
CR1011	J2	B3	Q1001	L1	A2	R1104	L3	C2
CR1012	J2	B3	Q1002	K2	B2	R1111	K4	C2
			Q1011	K3	B2	R1112	K3	B2
			Q1012	K3	B3	R1113	J3	B3
			Q1101	K4	B2	R1114	J2	B3
						T1101	L4	C1

A3A7 ASSY						MAIN VCO 12		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1001	E5	A3	CR1130	J8	D3	R1045	H2	E3
C1010	C6	B3	CR1132	H8	D2	R1100	D6	A2
C1010	D6	B3	CR1133	K6	D2	R1102	E7	A2
C1012	D5	B3	CR1134	K6	D2	R1104	C6	A2
C1014	J7	B3	CR1212	C4	C1	R1112	E4	C2
C1020	J7	C3	CR1214	C4	C1	R1120	K8	C3
C1024	J6	C3	CR1230	C1	D1	R1122	D4	C2
C1034	F3	E3	CR1232	B1	D1	R1132	F2	D3
C1035	H1	D3	CR1240	E2	E2	R1133	K6	D2
C1040	B5	D3	CR1244	E1	E1	R1134	L6	D2
C1042	H2	E3				R1140	L6	D2
C1043	F4	E3	DS1131	L6	D2	R1141	E1	E2
C1045	E1	E3				R1142	F2	E2
C1100	D6	A3	L1200	E5	A1	R1144	E1	E2
C1102	C7	A2				R1146	E2	E2
C1110	D6	B2	P1021	A2	D1	R1200	B3	B1
C1112	D4	C2	P1106	M5	A3	R1202	D4	B1
C1120	F8	C2	P1126	A3	D3	R1210	B4	B1
C1122	K7	C2				R1212	D4	B1
C1124	D4	C2	Q1042	H4	E3	R1214	C4	C1
C1130	J8	D3	Q1133	L6	D2	R1220	B4	C1
C1132	K6	D2	Q1220	E3	C1	R1230	C1	D1
C1134	K6	D2				R1240	D1	E1
C1135	F2	D2	R1001	E5	A3	R1242	D1	E1
C1140	F1	E2	R1002	E5	A3	R1244	D1	E1
C1210	D4	C1	R1010	C6	B3			
C1230	A5	D2	R1012	H6	B3	T1230	C1	D1
C1232	B4	D1	R1014	E6	B3	T1232	D1	D1
C1240	E2	D2	R1020	H7	C3			
C1242	E1	E1	R1022	H6	C3	TP1010	E6	B3
C1244	E1	E1	R1024	J6	C3	TP1040	H2	E3
C1246	F2	E1	R1026	J6	C3			
CR1012	J7	C3	R1030	J7	D3	U1024	J7	C3
CR1020	H6	C3	R1031	J8	D3	U1100	D7	A3
CR1030	C3	D3	R1032	J7	D3	U1110	D6	B3
CR1031	C3	D3	R1034	F3	D3	U1112A	F6	C3
CR1040	F4	E3	R1040	F4	E3	U1112B	H7	C3
CR1120	D4	C2	R1042	F3	E3	U1140	F2	E2
CR1122	E4	C2	R1043	F1	E3	Y1200	D3	B2



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REFERENCE LOOP & MAIN VCO

12 JP

MAIN VCO—A3A7
REFERENCE LOOP—A3A8
12

PARTS LOCATION GRID

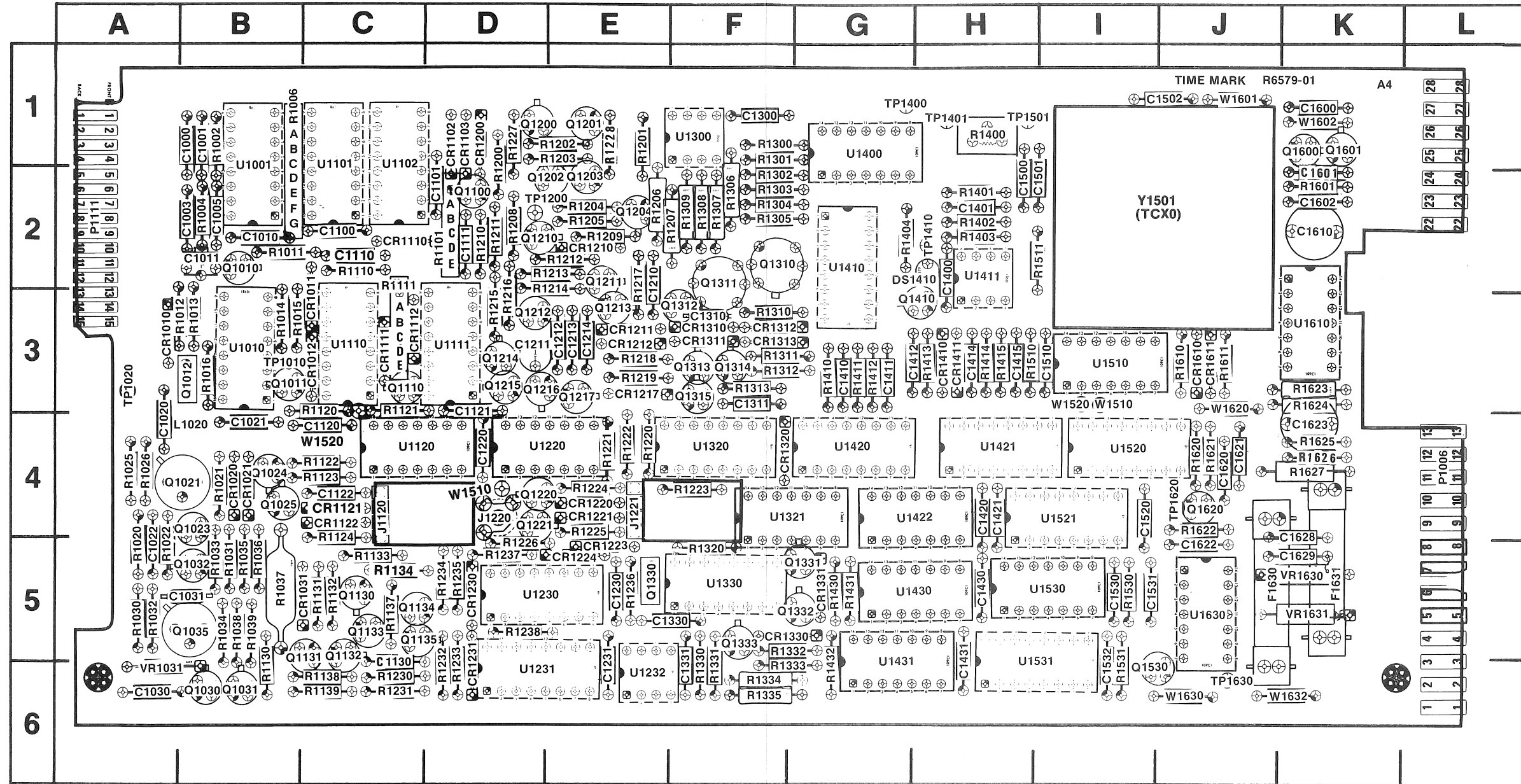
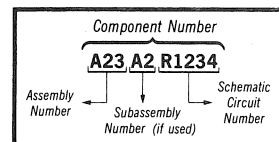


Fig. 9-55. Time Mark Board (A4).

 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



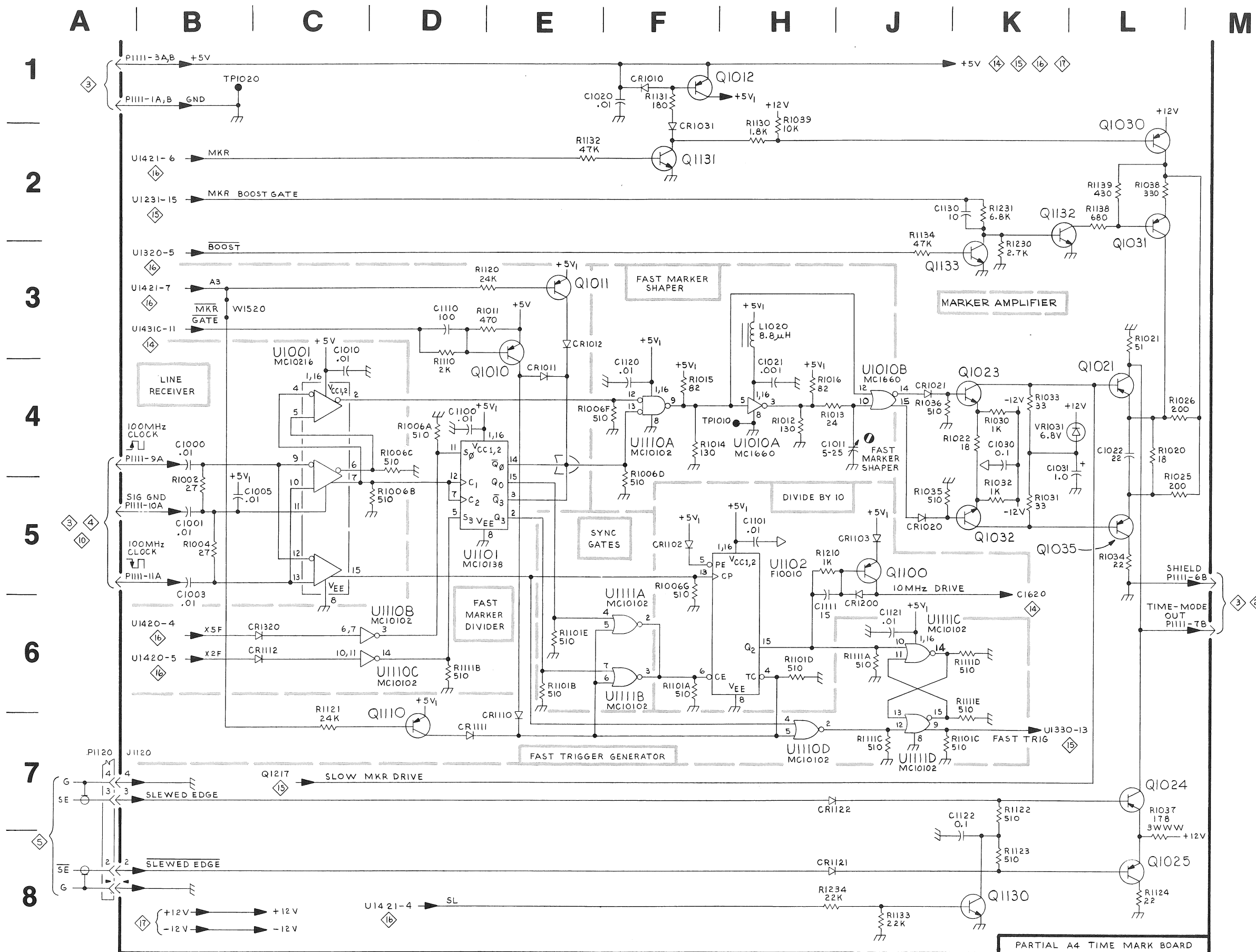
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Table 9-17 COMPONENT REFERENCE CHART

P/O A4 ASSY			FAST MARKERS & MARKER AMPLIFIER ◇13		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1000	C4	B1	R1011	D3	B2
C1001	B5	B1	R1012	H4	A3
C1003	B5	B2	R1013	H4	B3
C1005	C5	B2	R1014	F4	B3
C1010	C4	B2	R1015	F4	B3
C1011	H4	B2	R1016	H4	B3
C1020	F1	A3	R1020	L4	A5
C1021	H4	B4	R1021	L3	B4
C1022	L4	A5	R1022	J4	A5
C1030	K4	A6	R1025	L5	A4
C1031	K4	B5	R1026	L4	A4
C1100	D4	C2	R1030	K4	A5
C1101	H5	D2	R1031	K5	B5
C1110	D3	C2	R1032	K5	A5
C1111	H5	D2	R1033	K4	B5
C1120	F4	C4	R1034	L5	B5
C1121	J6	D4	R1035	J5	B5
C1122	J8	C4	R1036	J4	B5
C1130	K2	C6	R1037	L7	B5
			R1038	L2	B5
CR1010	F1	A3	R1039	H2	B5
CR1011	E4	C3	R1101A	F6	D2
CR1012	E3	C3	R1101B	E6	D2
CR1020	J5	B4	R1101C	J7	D2
CR1021	J4	B4	R1101D	H6	D2
CR1031	F2	C5	R1101E	E6	D2
CR1102	F5	D1	R1110	D4	C2
CR1103	J5	D1	R1111A	J6	C3
CR1110	E7	C2	R1111B	D6	C3
CR1111	D7	C3	R1111C	J7	C3
CR1112	C6	C3	R1111D	K6	C3
CR1121	H8	C4	R1111E	K7	C3
CR1122	H7	C4	R1120	D3	C4
CR1200	J5	D1	R1121	C7	C4
CR1320	C6	F4	R1122	K7	C4
J1120	B7	C4	R1123	K8	C4
L1020	H3	B4	R1124	L8	C4
			R1130	H2	B6
P1111	A1	A2	R1131	F1	C5
P1111	A5	A2	R1132	E2	C5
P1111	A6	A2	R1133	J8	C5
P1120	B7	C4	R1134	J3	C5
			R1138	L2	C6
Q1010	D4	B2	R1139	L2	C6
Q1011	E3	B3	R1210	H5	D2
Q1012	F1	B3	R1230	K2	C6
Q1021	L4	B4	R1231	K2	C6
Q1023	K4	B4	R1234	H8	D5
Q1024	L7	B4			
Q1025	L8	B4	TP1010	H4	B3
Q1030	L2	B6	TP1020	B1	A3
Q1031	L2	B6			
Q1032	K5	B5	U1001	C4	B1
Q1035	L5	B5	U1010A	H4	B3
Q1100	J5	D2	U1010B	J4	B3
Q1110	D7	C3	U1101	D5	C1
Q1130	K8	C5	U1102	H5	C1
Q1131	F2	C5	U1110A	F4	C3
Q1132	K2	C5	U1110B	D6	C3
Q1133	K3	C5	U1110C	D6	C3
			U1110D	H2	C3
R1002	B5	B1	U1111A	F6	D3
R1004	B5	B2	U1111B	F6	D3
R1006A	D4	B1	U1111C	J6	D3
R1006B	D5	B1	U1111D	J7	D3
R1006C	D4	B1			
R1006D	F5	B1	VR1031	K4	A6
R1006F	F4	B1			
R1006G	F5	B1	W1520	B3	I3

P/O A4 ASSY also shown on





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FAST MARKERS & MARKER AMPLIFIER 13 JP

FAST MARKERS-A4
MARKER AMPLIFIER-A4
13

PARTS LOCATION GRID

PARTS LOCATION
TIME MARK BOARD (A4 ASSY)

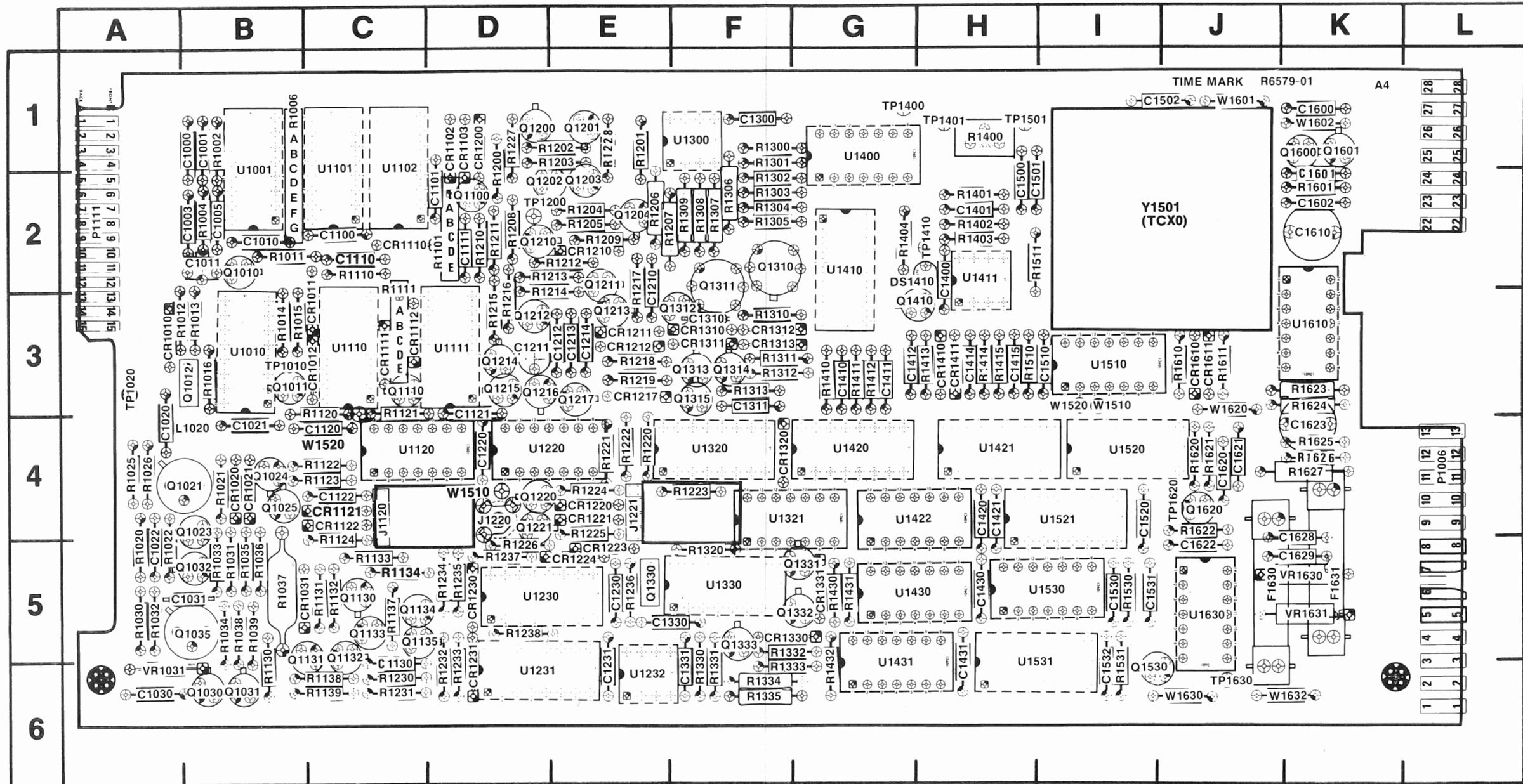
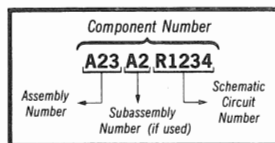


Fig. 9-56. Time Mark Board (A4).

Static Sensitive Devices
See Maintenance Section


COMPONENT NUMBER EXAMPLE







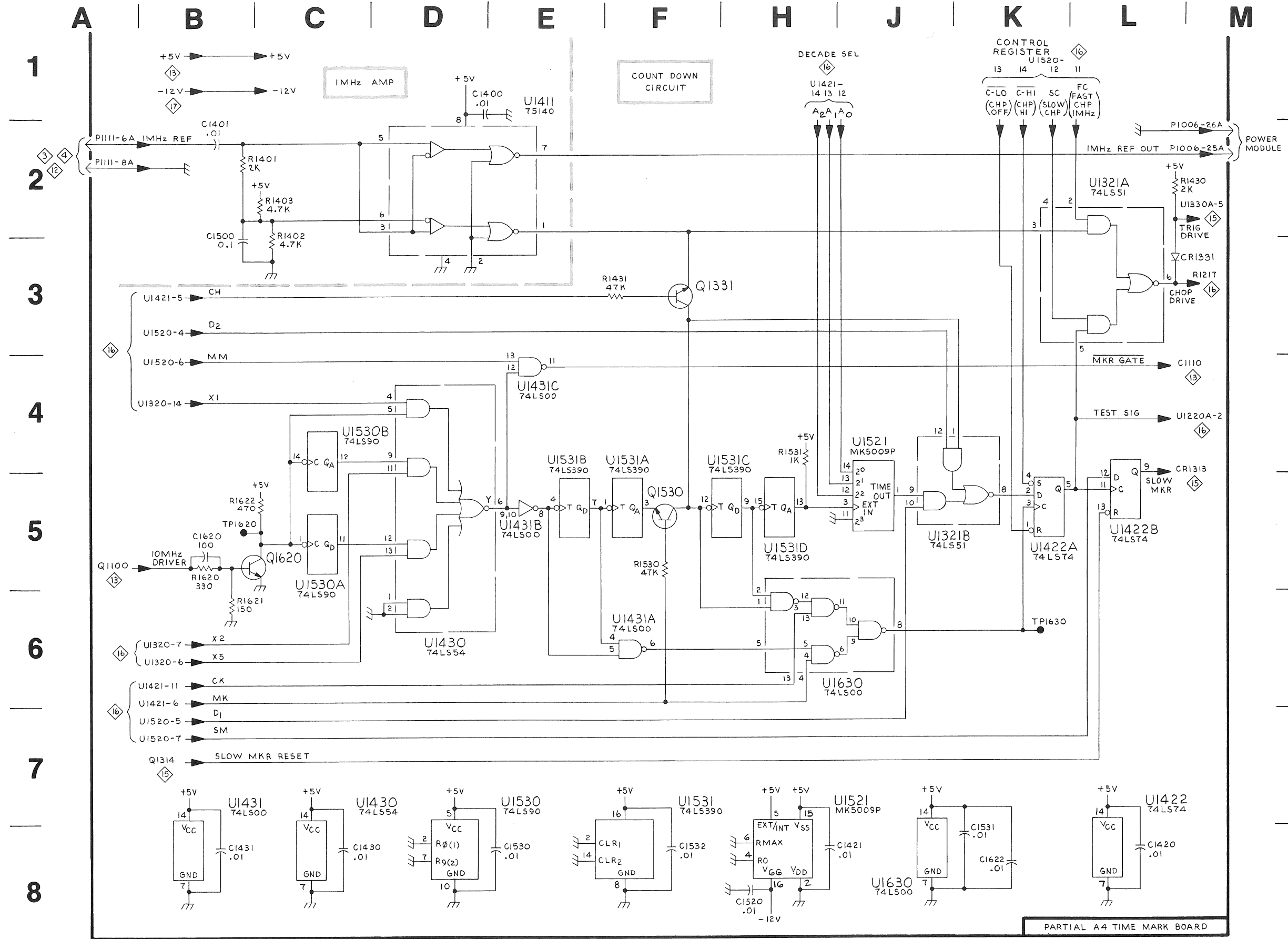
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

@

Table 9-18 COMPONENT REFERENCE CHART

P/O A4 ASSY			COUNT DOWN CIRCUIT			
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	
C1400	D1	H2	R1431	E3	G5	
C1401	B2	H2	R1530	F5	I5	
C1420	L8	H4	R1531	H5	I5	
C1421	H8	H4	R1620	B5	J4	
C1430	C8	H5	R1621	B6	J4	
C1431	B8	H5	R1622	B5	J4	
C1500	C3	H2				
C1520	H8	I4	TP1620	B5	J4	
C1530	D8	I5	TP1630	K6	J6	
C1531	K8	I5				
C1532	F8	I5	U1321A	L2	F4	
C1620	B5	J4	U1321B	J5	F4	
C1622	K8	J5	U1411	E1	H2	
			U1422A	K5	H4	
CR1331	L2	G5	U1422B	L5	H4	
			U1430	D6	H5	
P1006	M2	L4	U1431A	F6	G5	
P1111	A2	A2	U1431B	E5	G5	
			U1431C	E4	G5	
Q1331	F3	G5	U1521	J5	I4	
Q1530	F5	J6	U1530A	C5	I5	
Q1620	C5	J4	U1530B	C4	I5	
			U1531A	F5	I5	
R1401	B2	H2	U1531B	E5	I5	
R1402	B3	H2	U1531C	H5	I5	
R1403	C2	H2	U1531D	H5	I5	
R1430	L2	G5	U1630	H6	J5	

P/O A4 ASSY also shown on    



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COUNT DOWN CIRCUIT 14

COUNT DOWN CIRCUIT-A4 14

JP

PARTS LOCATION GRID

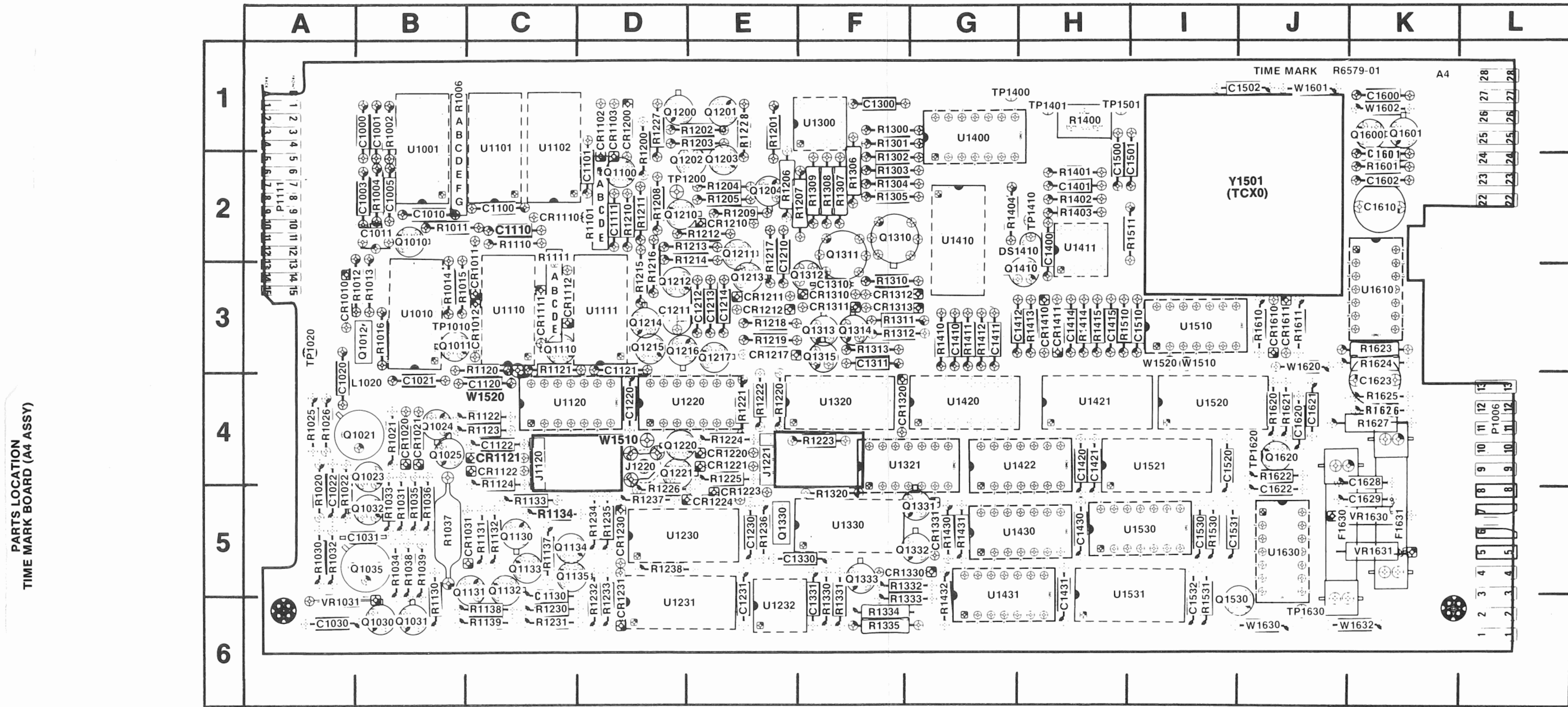
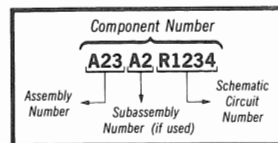


Fig. 9-57. Time Mark Board (A4).

 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



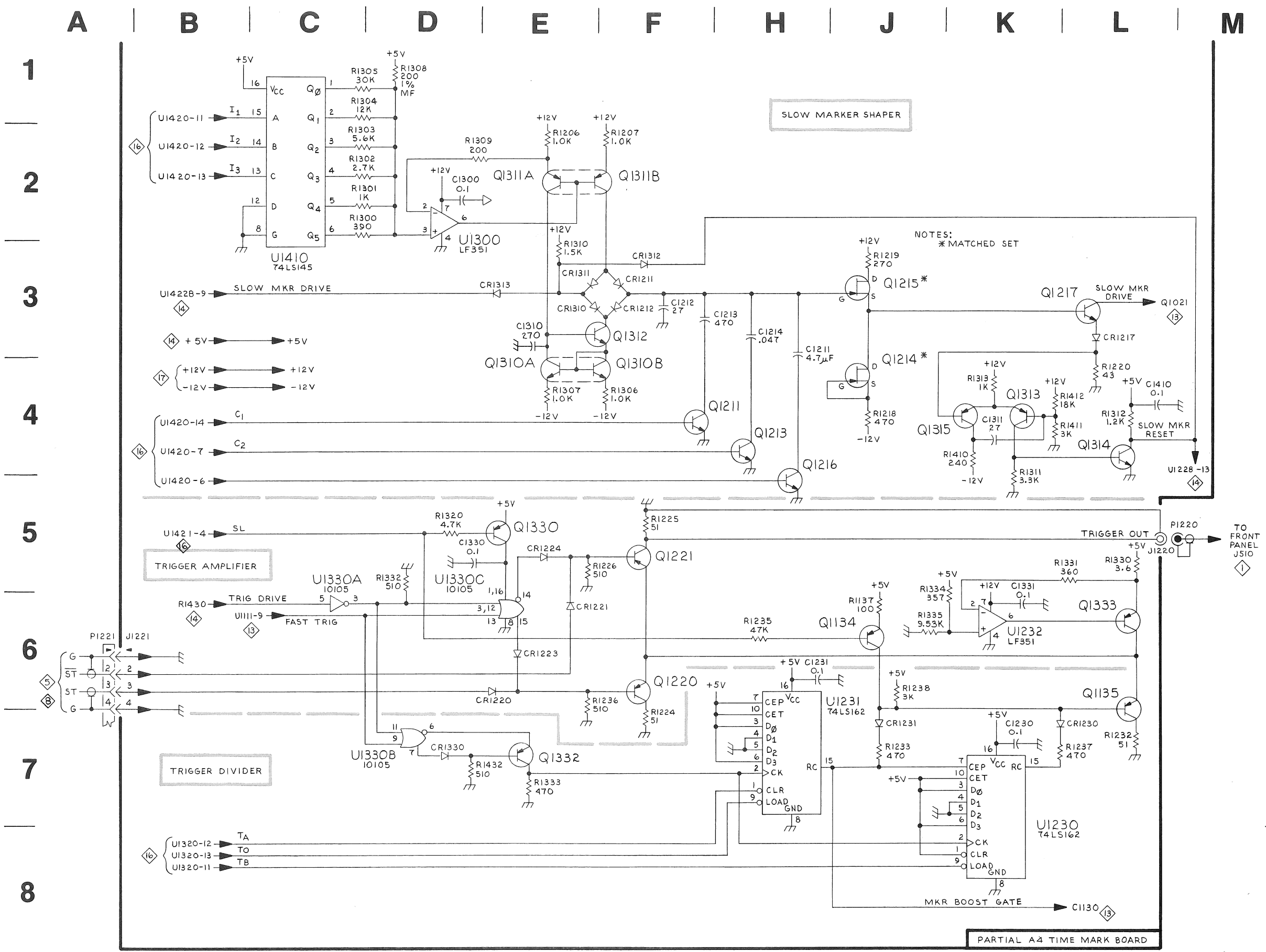
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Table 9-19 COMPONENT REFERENCE CHART

P/O A4 ASSY			SLOW MARKER SHAPER & TRIGGER DIVIDER		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1211	H3	D3	R1137	J6	C5
C1212	F3	E3	R1206	E2	E2
C1213	H3	E3	R1207	F2	F2
C1214	H3	E3	R1218	J4	E3
C1230	K7	E5	R1219	J3	E3
C1231	H6	E6	R1220	L4	E4
C1300	D2	F1	R1224	F7	E4
C1310	E3	F3	R1225	F5	E4
C1311	K4	F3	R1226	E5	D5
C1330	D5	F5	R1232	L7	D6
C1331	K6	F6	R1233	J7	D6
C1410	L4	G3	R1235	H6	D5
CR1211	F3	E3	R1236	E7	E5
CR1212	F3	E3	R1237	L7	D5
CR1217	L3	E3	R1238	J6	D5
CR1220	E6	E4	R1300	C3	F1
CR1221	E6	E4	R1301	C2	F1
CR1223	E6	E5	R1302	C2	F2
CR1224	E5	E5	R1303	C2	F2
CR1230	L7	D5	R1304	C1	F2
CR1231	J7	D6	R1305	C1	F2
CR1310	E3	F3	R1306	F4	F2
CR1311	E3	F3	R1307	E4	F2
CR1312	F3	F3	R1308	D1	F2
CR1313	E3	F3	R1309	D2	F2
CR1330	D7	F5	R1310	E2	F3
J1220	M5	D4	R1311	K4	F3
J1221	B6	E4	R1312	L4	F3
P1220	M5	D4	R1313	K4	F3
P1221	A6	E4	R1320	D5	F5
Q1134	J6	C5	R1330	L5	F6
Q1135	L6	C5	R1331	L5	F6
Q1211	F4	E2	R1332	D5	F5
Q1213	H4	E3	R1333	E7	F5
Q1214	J4	D3	R1334	K6	F6
Q1215	J3	D3	R1335	J6	F6
Q1216	H5	D3	R1410	K4	G3
Q1217	L3	E3	R1411	K4	G3
Q1220	F6	D4	R1412	K4	G3
Q1221	F5	D4	R1432	D7	G5
Q1310	E4	F2	U1230	K7	D5
Q1311	E2	F2	U1231	H7	D6
Q1312	E3	F3	U1232	K6	E6
Q1313	K4	F3	U1300	D3	F1
Q1314	L4	F3	U1330A	C6	F5
Q1315	K4	F3	U1330B	D7	F5
Q1330	E5	E5	U1330C	E6	F5
Q1332	E7	G5	U1410	C3	G2
Q1333	L6	F5			

P/O A4 ASSY also shown on





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SLOW MARKER SHAPER & TRIGGER DIVIDER

M15 JP

SLOW MK SHAPER-A4
TRIGGER DIVIDER-A4

PARTS LOCATION GRID

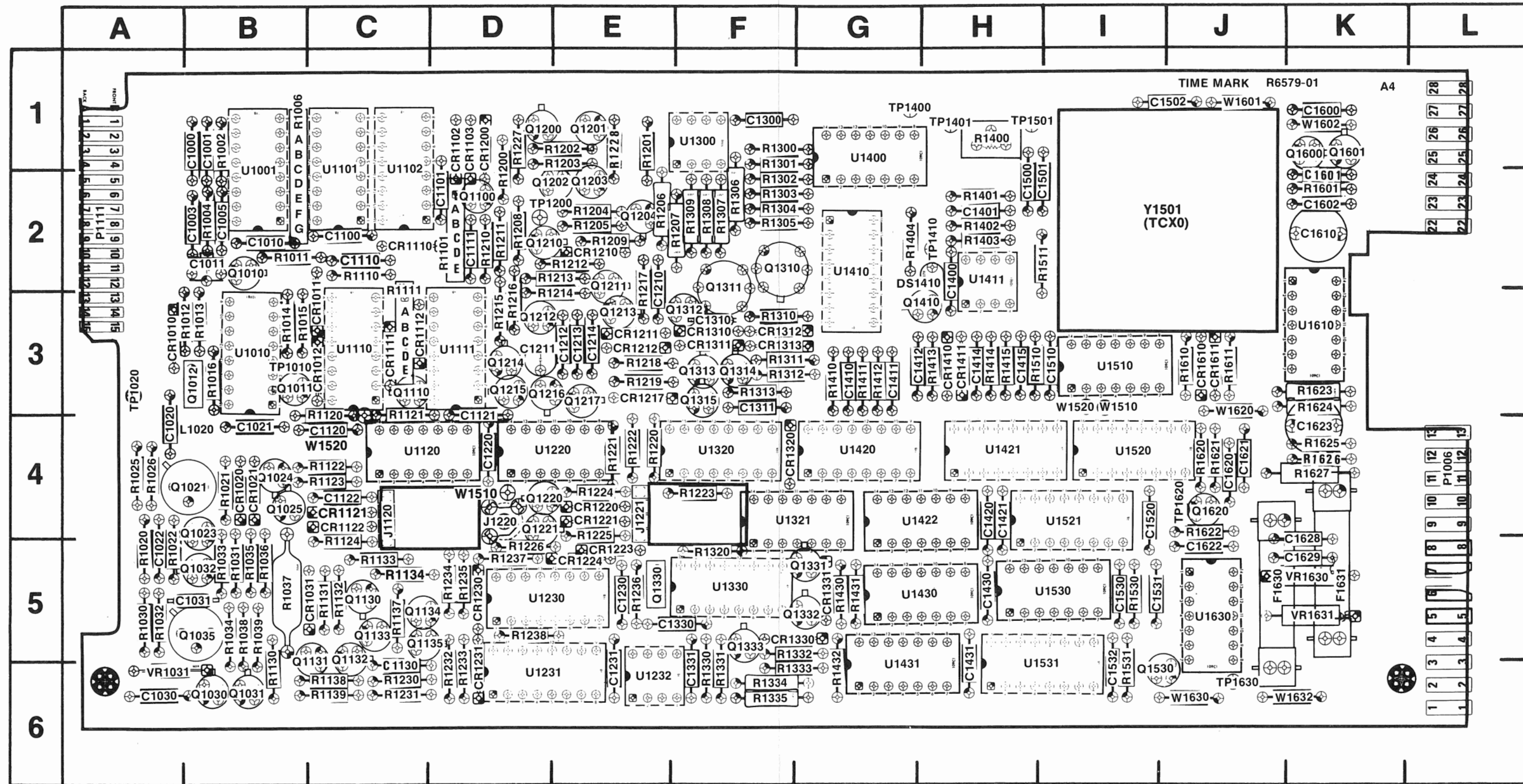
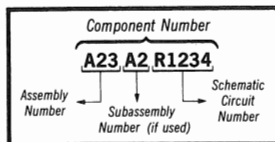


Fig. 9-58. Time Mark Board (A4).

PARTS LOCATION
TIME MARK BOARD (A4 ASSY)

 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE

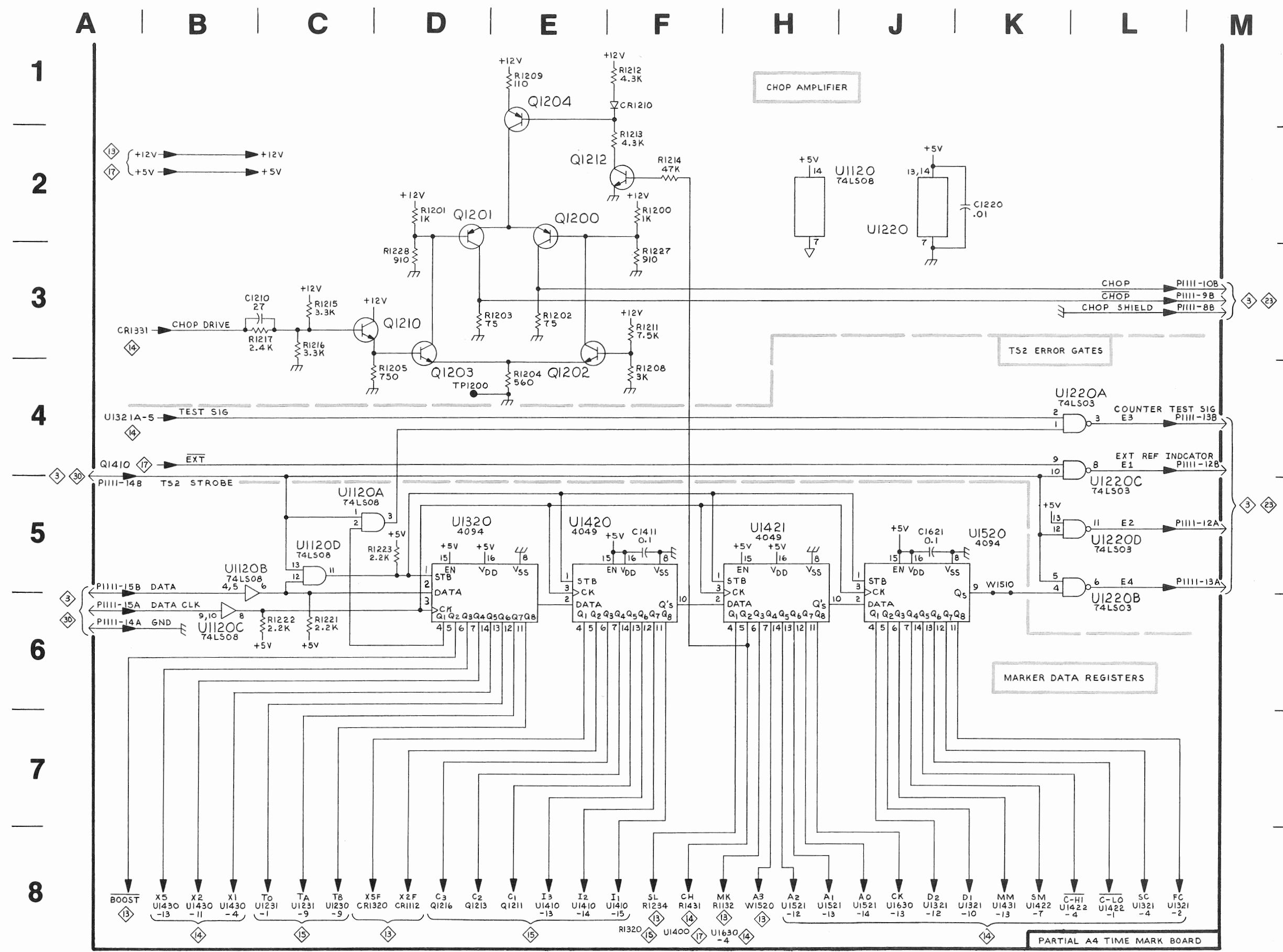


Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Table 9-20 COMPONENT REFERENCE CHART

P/O A4 ASSY			MARKER DATA REGISTERS & CHOP AMPLIFIER			◇16◇
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	
C1210	B3	E2	R1211	F3	D2	
C1220	K2	D4	R1212	F1	E2	
C1411	F5	G3	R1213	F2	E2	
C1621	J5	J4	R1214	F2	E2	
CR1210	F1	E2	R1215	C3	D3	
P1111	M3	A2	R1216	C3	D3	
P1111	A6	A2	R1217	B3	E2	
Q1200	E2	D1	R1221	C6	E4	
Q1201	D2	E1	R1222	C6	E4	
Q1201	E3	E1	R1223	D5	F4	
Q1201	C3	E1	R1227	F3	D1	
Q1202	E4	D2	R1228	D3	E1	
Q1203	D4	E2	TP1200	D4	D2	
Q1204	E2	E2	U1120A	C5	C4	
Q1210	D3	D2	U1120B	B5	C4	
Q1212	E2	D3	U1120C	B6	C4	
R1200	F2	D1	U1120D	C5	C4	
R1201	D2	E1	U1220A	L4	D4	
R1202	E3	E1	U1220B	L5	D4	
R1203	D3	E1	U1220C	L4	D4	
R1204	E4	E2	U1220D	L5	D4	
R1205	C4	E2	U1320	D5	F4	
R1208	F4	D2	U1420	E5	G4	
R1209	E1	E2	U1421	H5	H4	
			U1520	J5	I4	
			W1510	K5	I3	

P/O A4 ASSY also shown on ◇13◇ ◇14◇ ◇15◇ ◇17◇



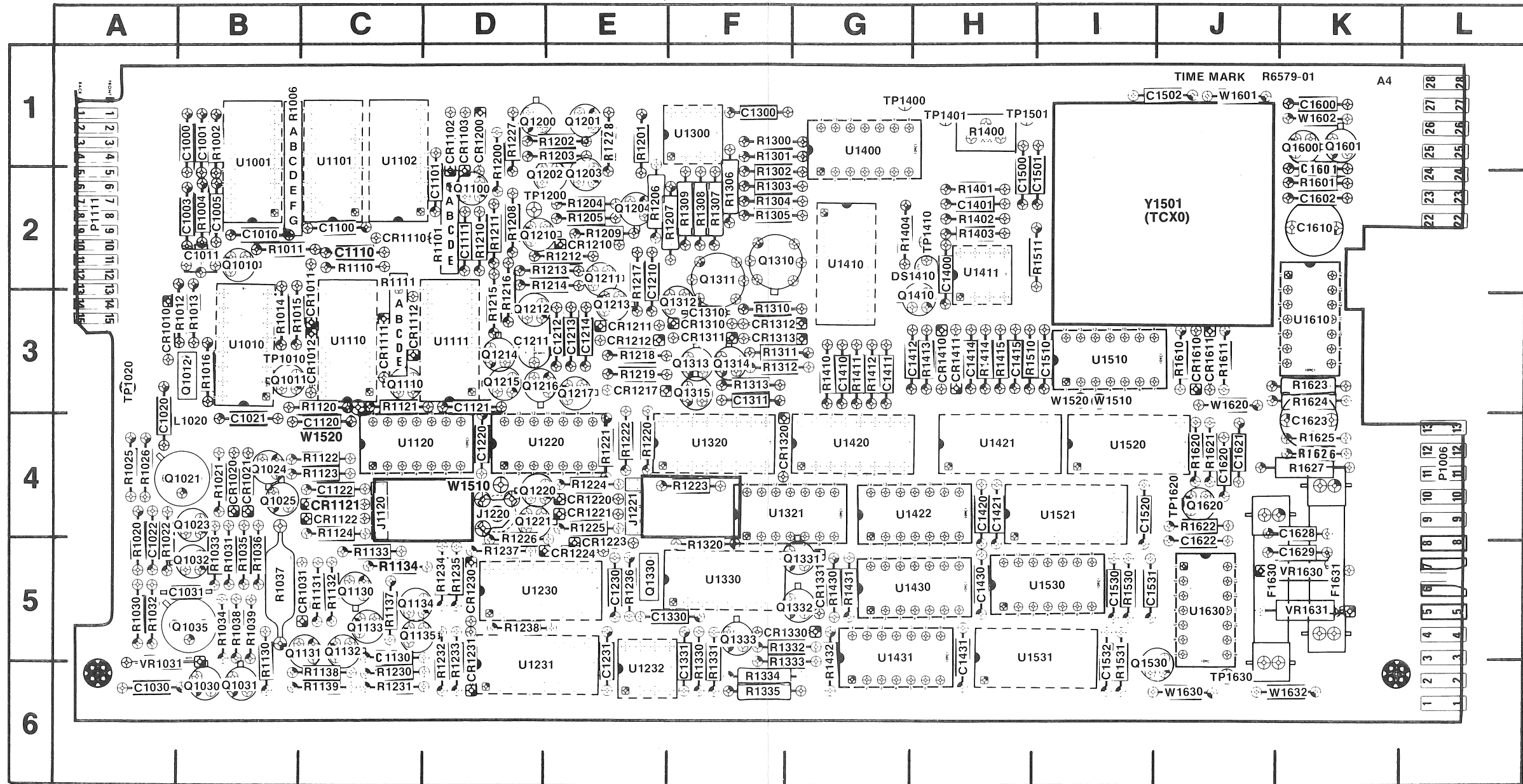
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MARKER DATA REGISTERS & CHOP AMPLIFIER

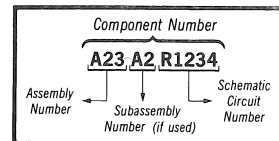
16 JP

PARTS LOCATION GRID



Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



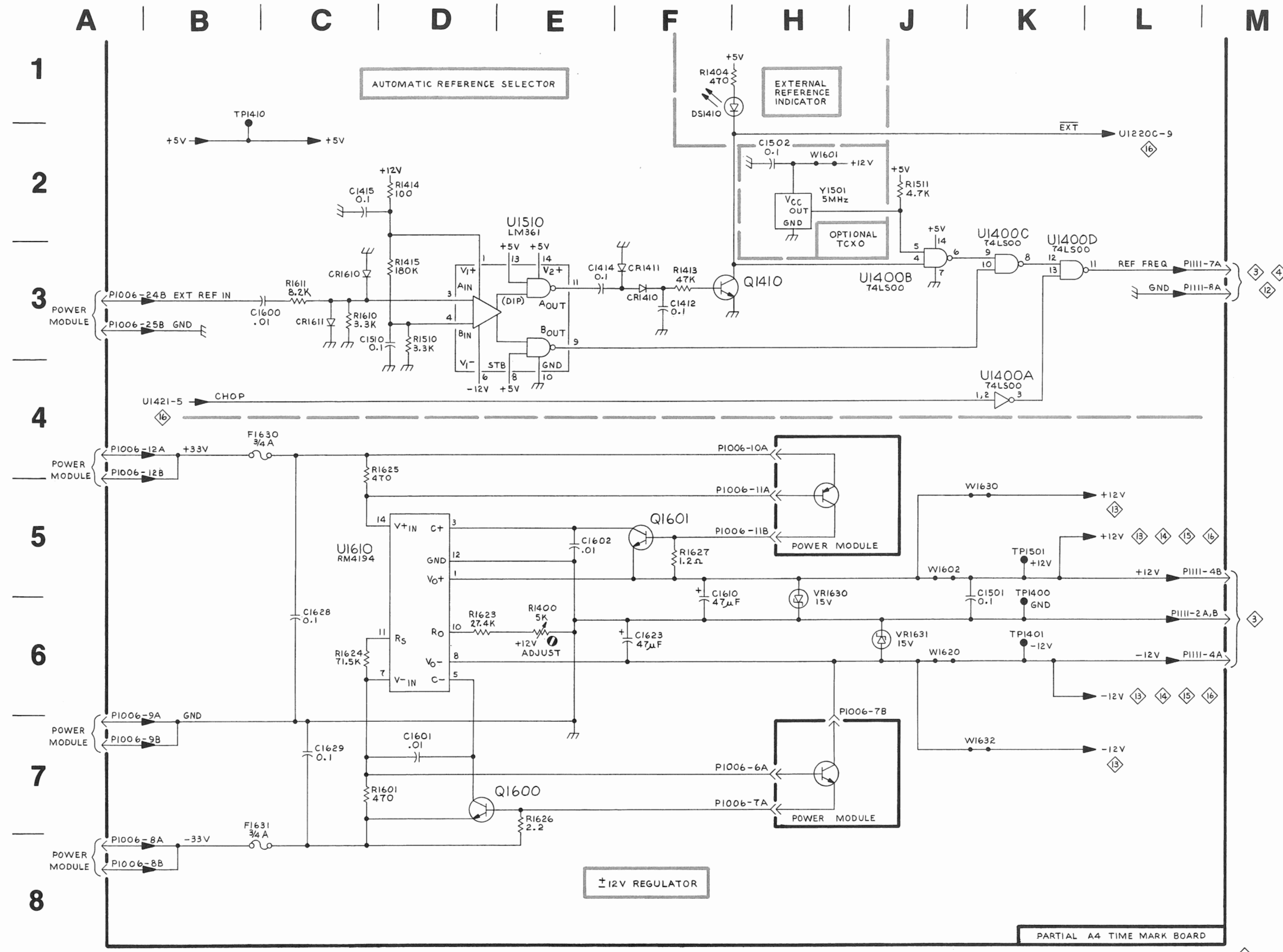
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Fig. 9-59. Time Mark Board (A4).

Table 9-21 COMPONENT REFERENCE CHART

P/O A4 ASSY		AUTO REFERENCE SELECT & ±12 V REGULATOR		17	
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1412	F3	H3	R1511	J2	H2
C1414	E3	H3	R1601	C7	K2
C1415	C2	H3	R1610	C3	J3
C1501	K6	H2	R1611	C3	J3
C1502	H2	J1	R1623	D6	K3
C1510	D3	I3	R1624	C6	K3
C1600	B3	K1	R1625	C5	K4
C1601	D7	K2	R1626	E7	K4
C1602	E5	K2	R1627	F5	K4
C1610	F6	K2			
C1623	F6	K4	TP1400	K6	G1
C1628	C6	K4	TP1401	K6	H1
C1629	C7	K5	TP1410	B1	H2
			TP1501	K5	H1
CR1410	F3	H3			
CR1411	F3	H3	U1400A	K4	G1
CR1610	C3	J3	U1400B	J3	G1
CR1611	C3	J3	U1400C	K3	G1
			U1400D	K3	G1
DS1410	F1	H2	U1510	E2	I3
			U1610	C5	K3
F1630	B4	J5			
F1631	B7	K5	VR1630	H6	K5
P1006	A4	L4	VR1631	J6	K5
Q1410	H3	H3	W1601	H2	J1
Q1600	D7	K1	W1602	J5	K1
Q1601	F5	K1	W1620	J6	J3
			W1630	K5	J6
R1400	E6	H1	W1632	K7	K6
R1404	F1	G2	W1630	K5	J6
R1413	F3	H3			
R1414	D2	H3	Y1501	H2	J2
R1415	D3	H3			
R1510	D3	H3			

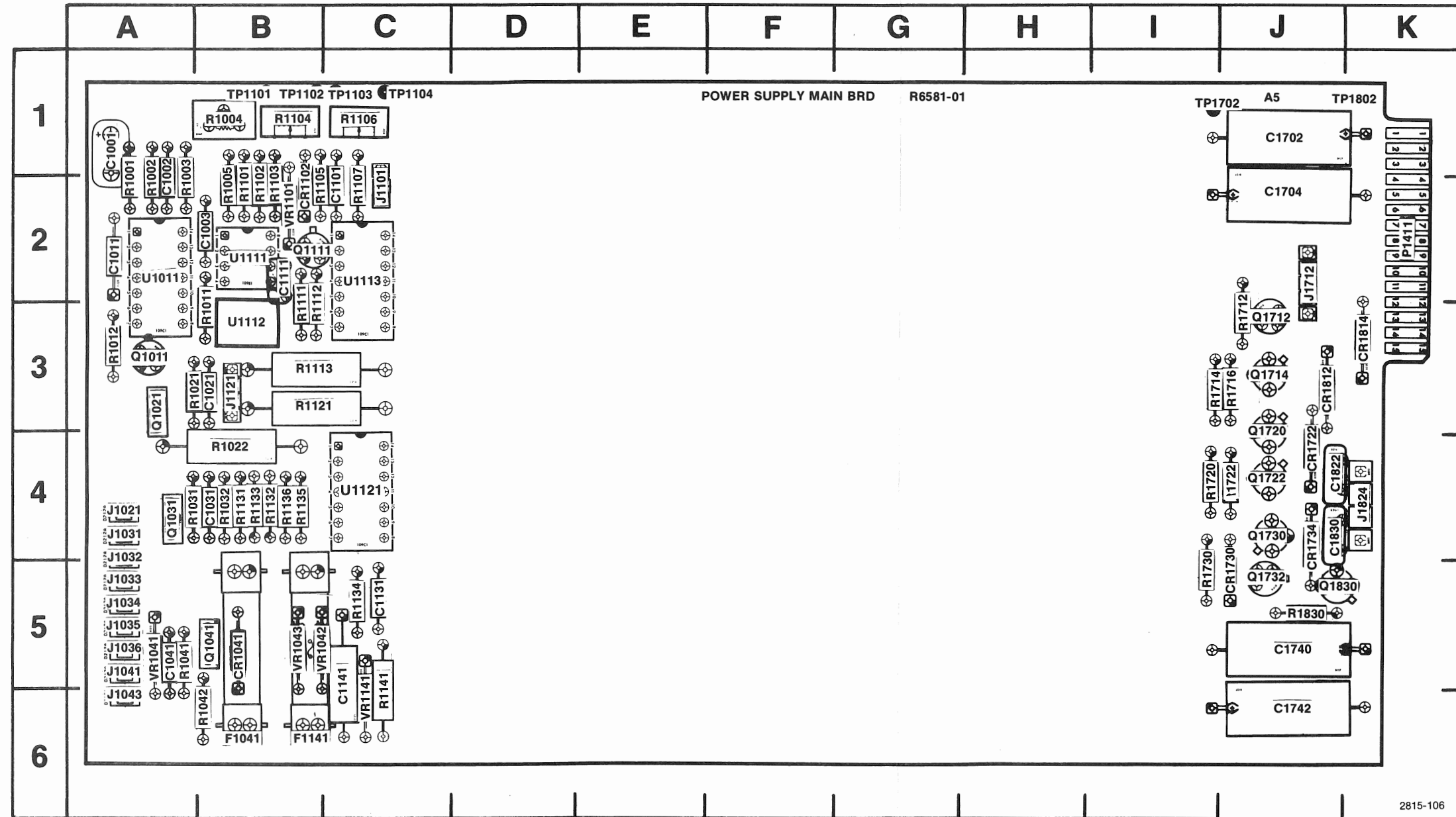
P/O A4 ASSY also shown on 13 14 15 16



AUTO REF SELECT-A4
 ±12V REGULATOR-A4
 17

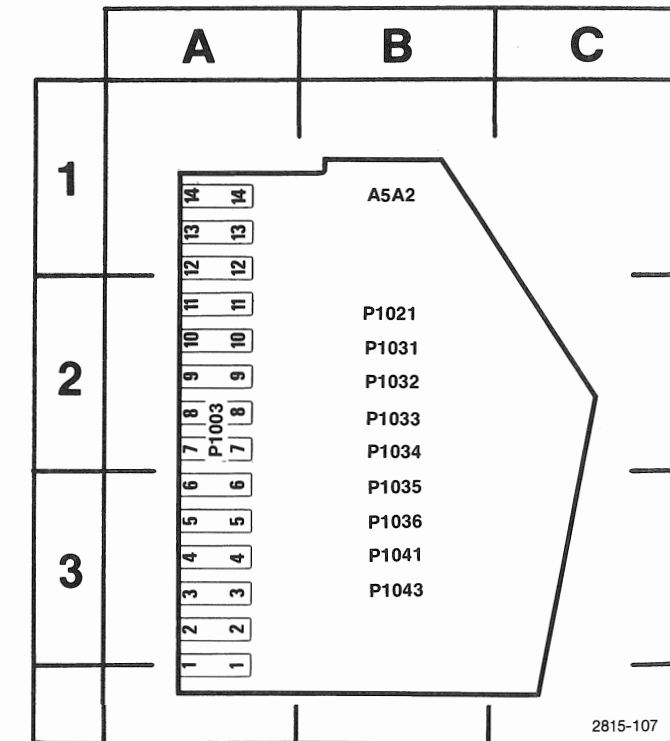
PARTS LOCATION GRID

PARTS LOCATION
PS MAIN BOARD (A5 ASSY)
PS INTERFACE BOARD (A5A2 ASSY)



2815-106

Fig. 9-60. PS Main Board (A5).

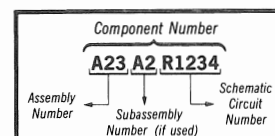


2815-107

Fig. 9-61. PS Interface Board (A5A2).

⊗ Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

LOCATION GRID

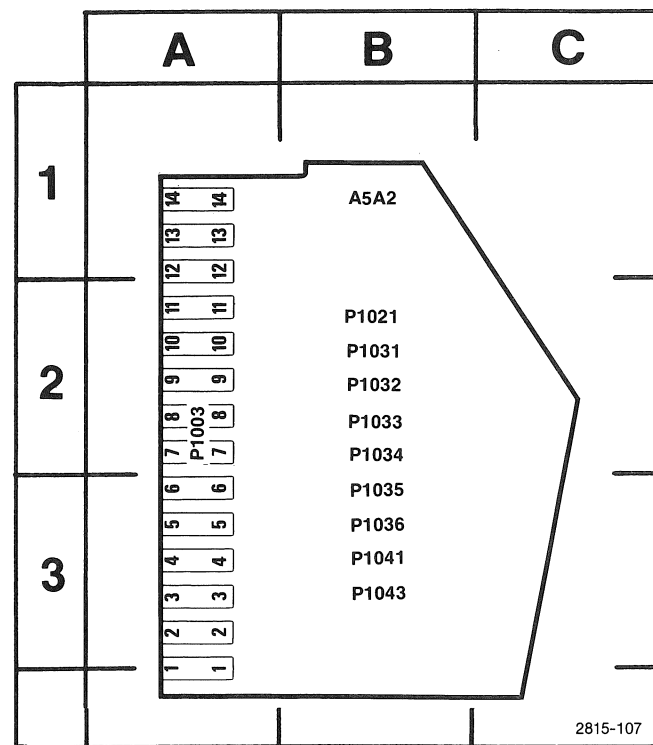
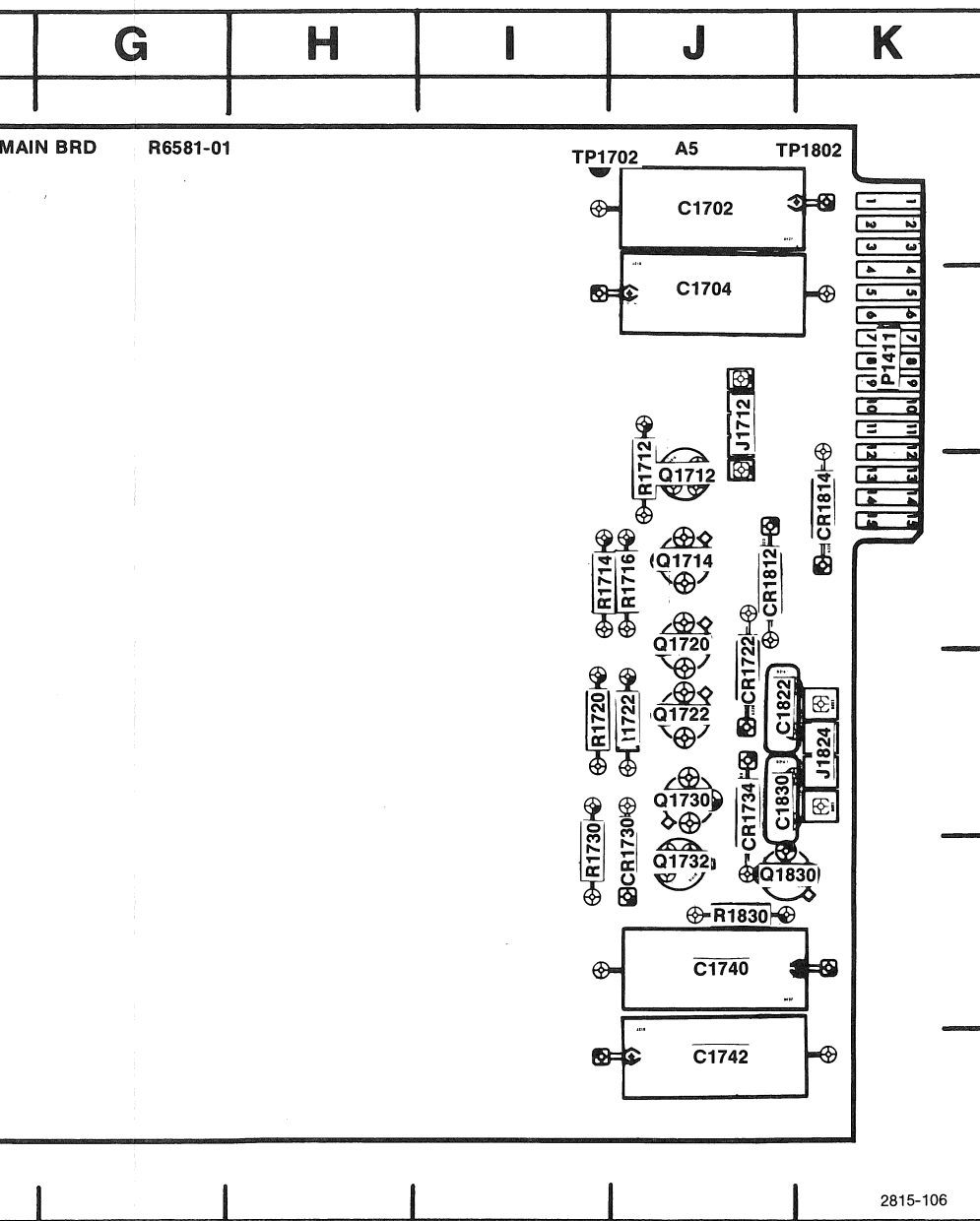
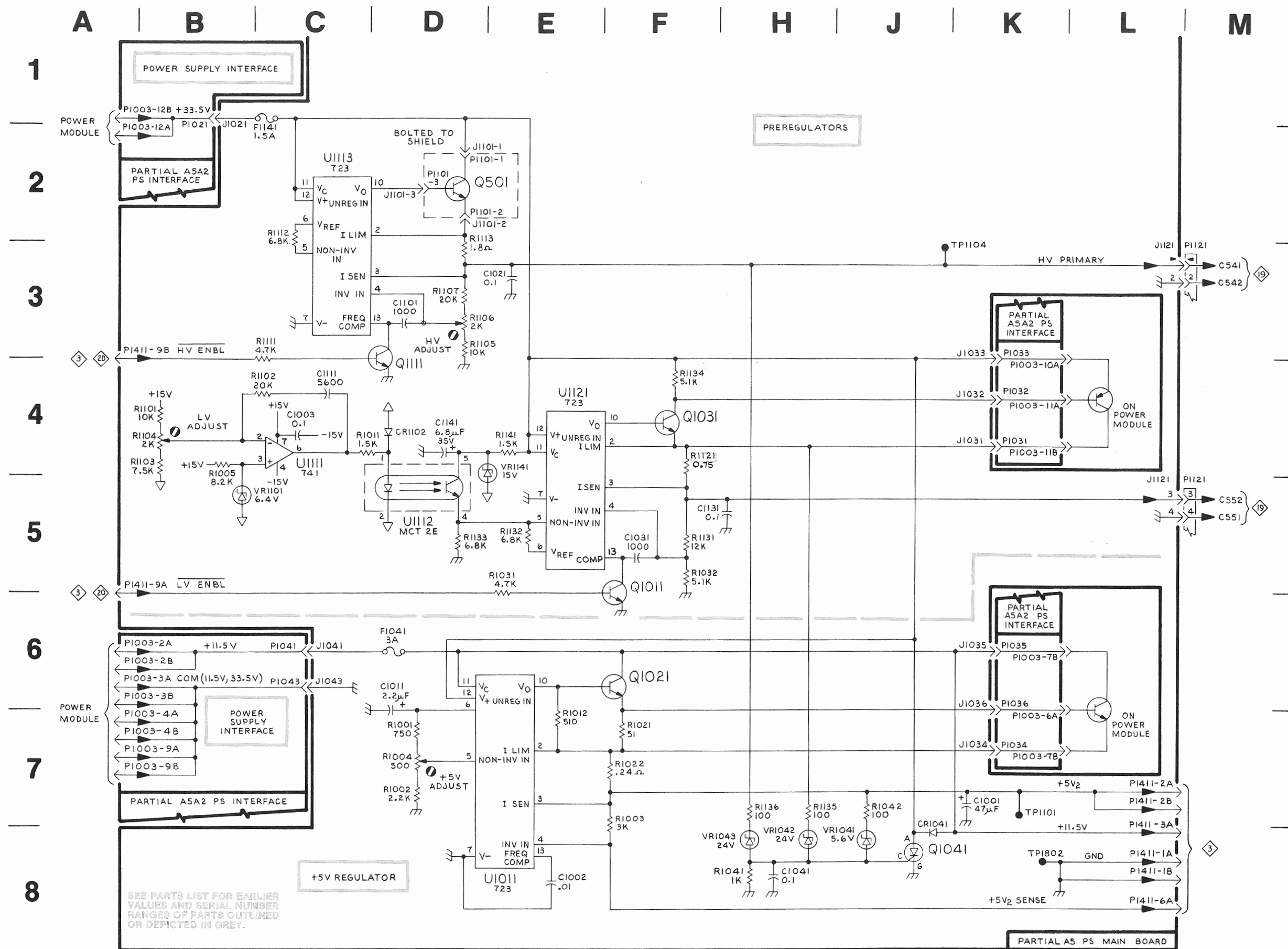


Fig. 9-61. PS Interface Board (A5A2).

Table 9-22
COMPONENT REFERENCE CHART

P/O A5 ASSY			PREREGULATORS & +5 V REGULATOR 18		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1001	K7	A1	R1004	D7	B1
C1002	E8	A1	R1005	B4	B2
C1003	C4	B2	R1011	C4	B3
C1011	D6	A2	R1012	E7	A3
C1021	D3	B3	R1021	E7	B3
C1031	F5	B4	R1022	E7	B4
C1041	H8	A5	R1031	E5	B4
C1101	D3	C2	R1032	F5	B4
C1111	C4	B2	R1041	H8	A5
C1131	F5	C5	R1042	J7	B6
C1141	D4	C5	R1101	B4	B2
			R1102	B4	B2
CR1041	J7	B5	R1103	B4	B2
CR1102	D4	B2	R1104	B4	B1
			R1105	D3	B2
F1041	D6	B6	R1106	D3	C1
F1141	C1	B6	R1107	D3	C2
			R1111	C3	B3
J1021	B1	A4	R1112	C3	B3
J1031	K4	A4	R1113	D3	B3
J1032	K4	A4	R1121	F4	B3
J1033	K3	A5	R1131	F5	B4
J1034	K7	A5	R1132	E5	B4
J1035	K6	A5	R1133	D5	B4
J1036	K7	A5	R1134	F4	C5
J1041	C6	A5	R1135	H8	B4
J1043	C6	A6	R1136	H8	B4
J1101	D2	C2	R1141	E4	C5
J1121	L3	B3			
J1121	L5	B3	TP1101	K8	B1
			TP1104	J3	C1
P1101	D2	C2	TP1802	K8	K1
P1121	M3	B3			
P1121	M5	B3	U1011	E8	A2
P1411	L7	K2	U1111	C4	B2
P1411	A5	K2	U1112	D5	B3
P1411	A3	K2	U1113	C2	C2
			U1121	E4	C4
Q1011	F5	A3			
Q1021	E6	A3	VR1041	H8	A5
Q1031	F4	A4	VR1042	H8	B5
Q1041	J8	B5	VR1043	H8	B5
Q1111	D3	B2	VR1101	B5	B2
			VR1141	E4	C5
R1001	D7	A1			
R1002	D7	A1	Q501	D2	SHIELD
R1003	E7	A1			
P/O A5 ASSY also shown on 19					
A5A2 ASSY			PREREGULATORS & +5 V REGULATOR 18		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
P1003	K3	A2	P1032	K4	B2
P1003	A2	A2	P1033	K3	B2
P1003	A6	A2	P1034	K7	B2
P1003	K7	A2	P1035	K6	B3
P1021	B1	B2	P1036	K7	B3
P1031	K4	B2	P1041	C6	B3
			P1043	C6	B3



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PREREGULATOR & +5V REGULATOR 18 JP

PREREG-AS/A5A2
+5V REG-A5/A5A2
18

SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.

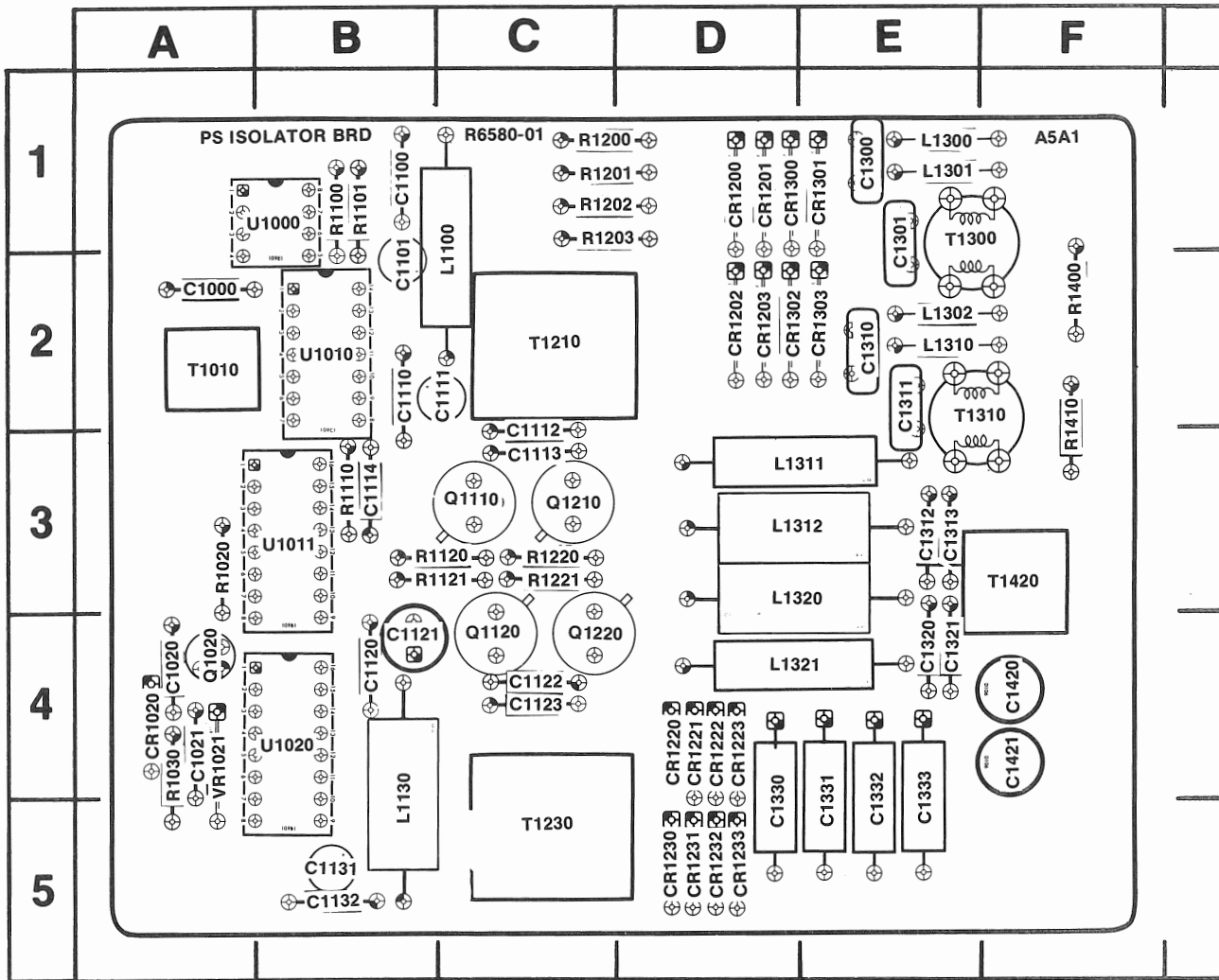
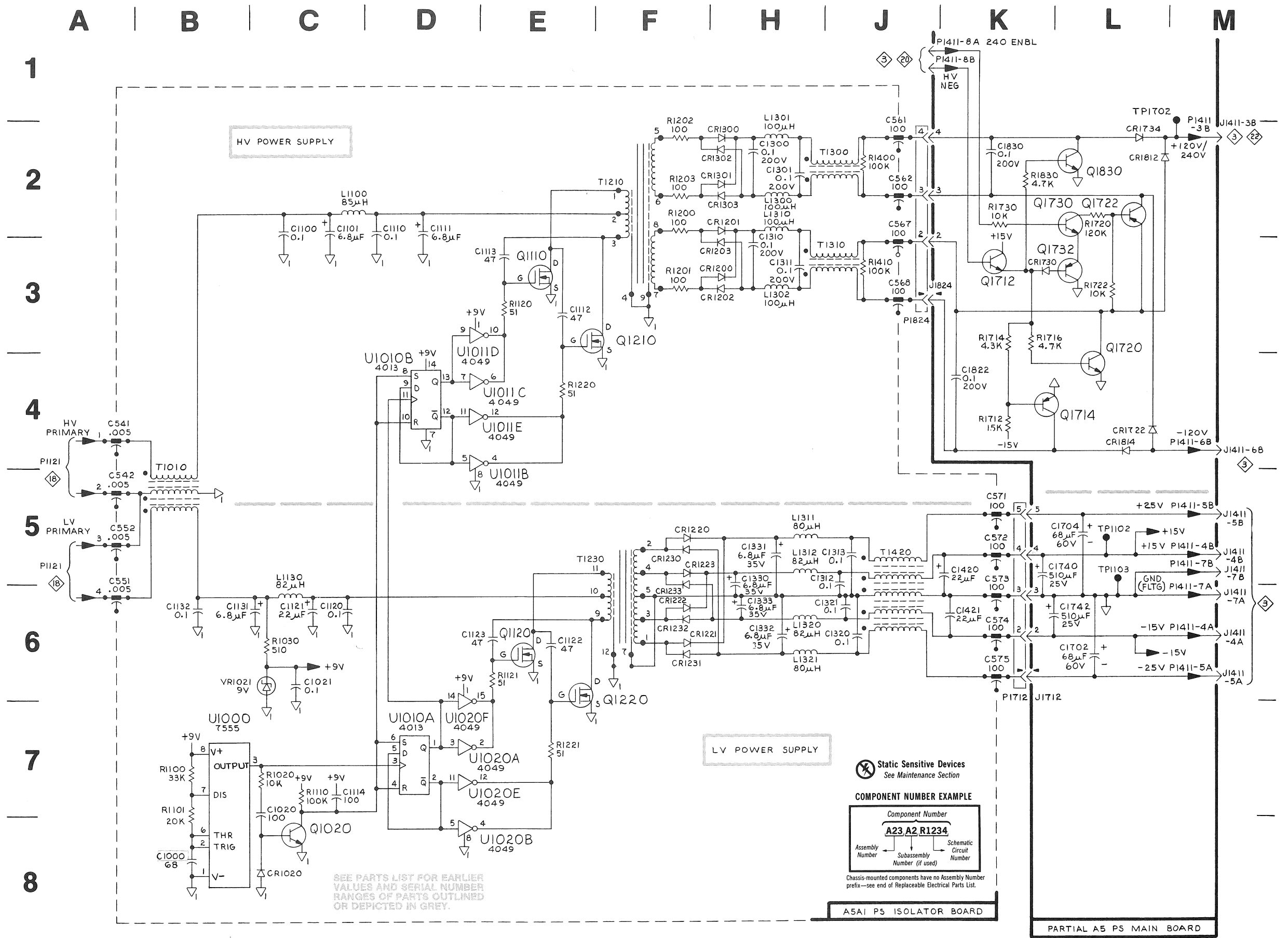


Fig. 9-63. PS Isolator Board (A5A1).



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REV B MAR 1981
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HV & LV POWER SUPPLIES 19 JP

HV & LV POWER SUPPLIES—A5/A5A1

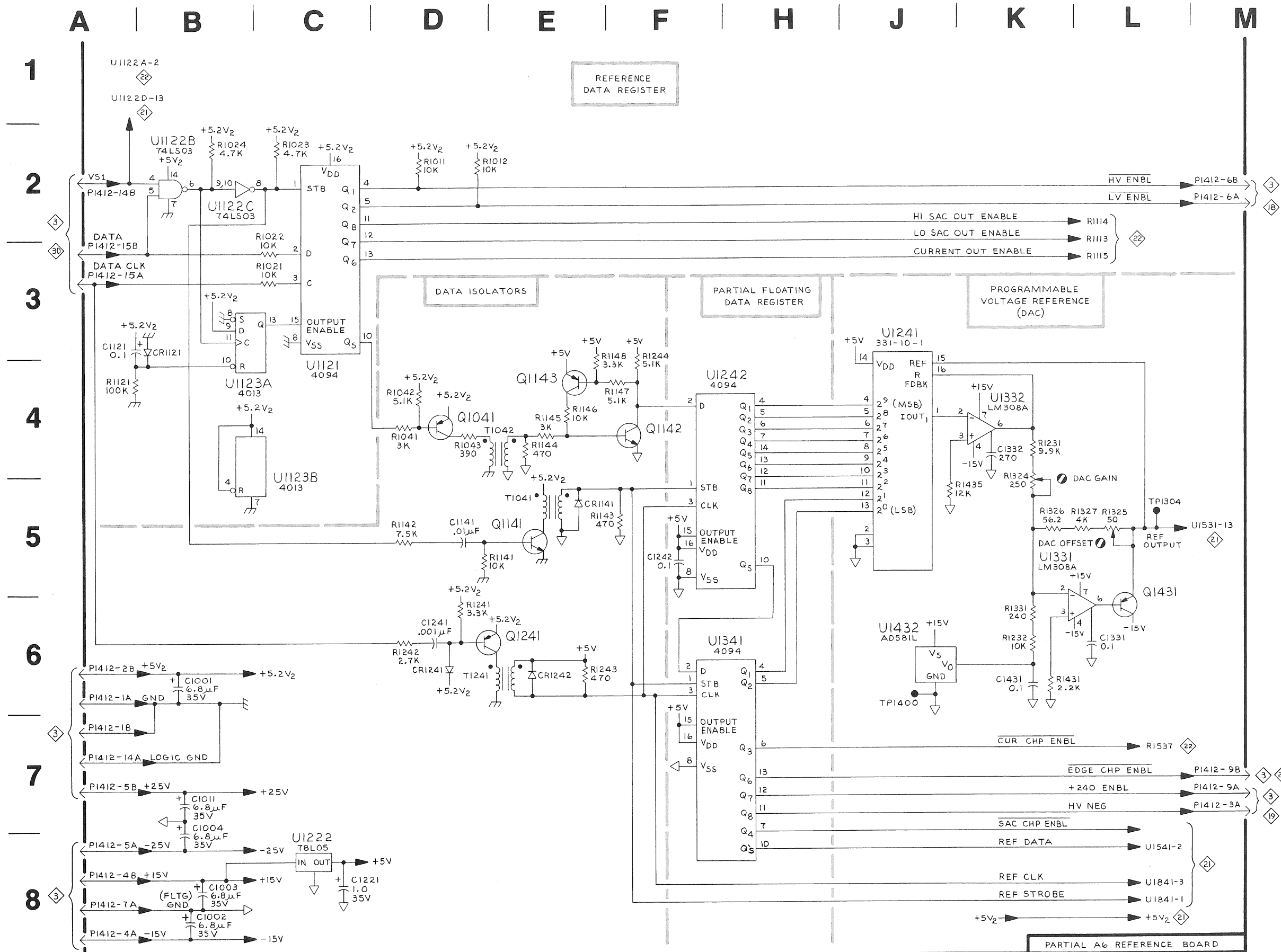
19

Table 9-24 COMPONENT REFERENCE CHART

P/O A6 ASSY			VOLTAGE REFERENCE & DATA ISOLATORS			◇ 20 ◇
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	
C1001	B6	B1	R1121	B4	C4	
C1002	B8	B1	R1141	E5	B5	
C1003	B8	B2	R1142	D5	C5	
C1004	B8	B2	R1143	F5	C5	
C1011	B7	B2	R1144	E4	B6	
C1121	B3	C3	R1145	E4	B6	
C1141	D5	C5	R1146	E4	B6	
C1221	C8	D4	R1147	E4	C6	
C1241	D6	C5	R1148	E4	C6	
C1242	F5	D6	R1231	K4	D4	
C1331	L6	E4	R1232	K6	D5	
C1332	K4	E5	R1241	D6	C5	
C1431	K6	F5	R1242	D6	C5	
			R1243	E6	D5	
CR1121	B3	C4	R1244	F4	C6	
CR1141	E5	C5	R1324	K5	E4	
CR1241	D6	C5	R1325	L5	E4	
CR1242	E6	D5	R1326	K5	E4	
			R1327	L5	F4	
P1412	M7	A2	R1331	K6	E5	
P1412	M2	A2	R1431	K6	F5	
P1412	A3	A2	R1435	K5	F5	
P1412	A7	A2				
Q1041	D4	A5	T1041	E5	B5	
Q1141	E5	B5	T1042	E4	B6	
Q1142	F4	C6	T1241	E6	D6	
Q1143	E4	C6				
Q1241	E6	C6	TP1304	L5	E1	
Q1431	L6	F4	TP1400	J6	F1	
R1011	D2	B2*	U1121	C3	B3	
R1012	D2	B2*	U1122B	B2	B4	
R1021	C3	B3	U1122C	B2	B4	
R1022	C3	B4	U1123A	B4	C4	
R1023	C2	C4	U1123B	B4	C4	
R1024	B2	B4	U1222	C8	D4	
R1041	D4	A6	U1241	J4	D5	
R1042	D4	A6	U1242	F4	D6	
R1043	D4	B6	U1331	L6	E5	
			U1332	K4	E5	
			U1341	F7	F6	
			U1432	J6	F5	

P/O A6 ASSY also shown on ◇ 21 ◇ ◇ 22 ◇

*Moved to back of
board SN B020237



CG 551AP

REV DEC 1981
2815-160

PROGRAMMABLE VOLTAGE REFERENCE & DATA ISOLATORS

PARTS LOCATION GRID

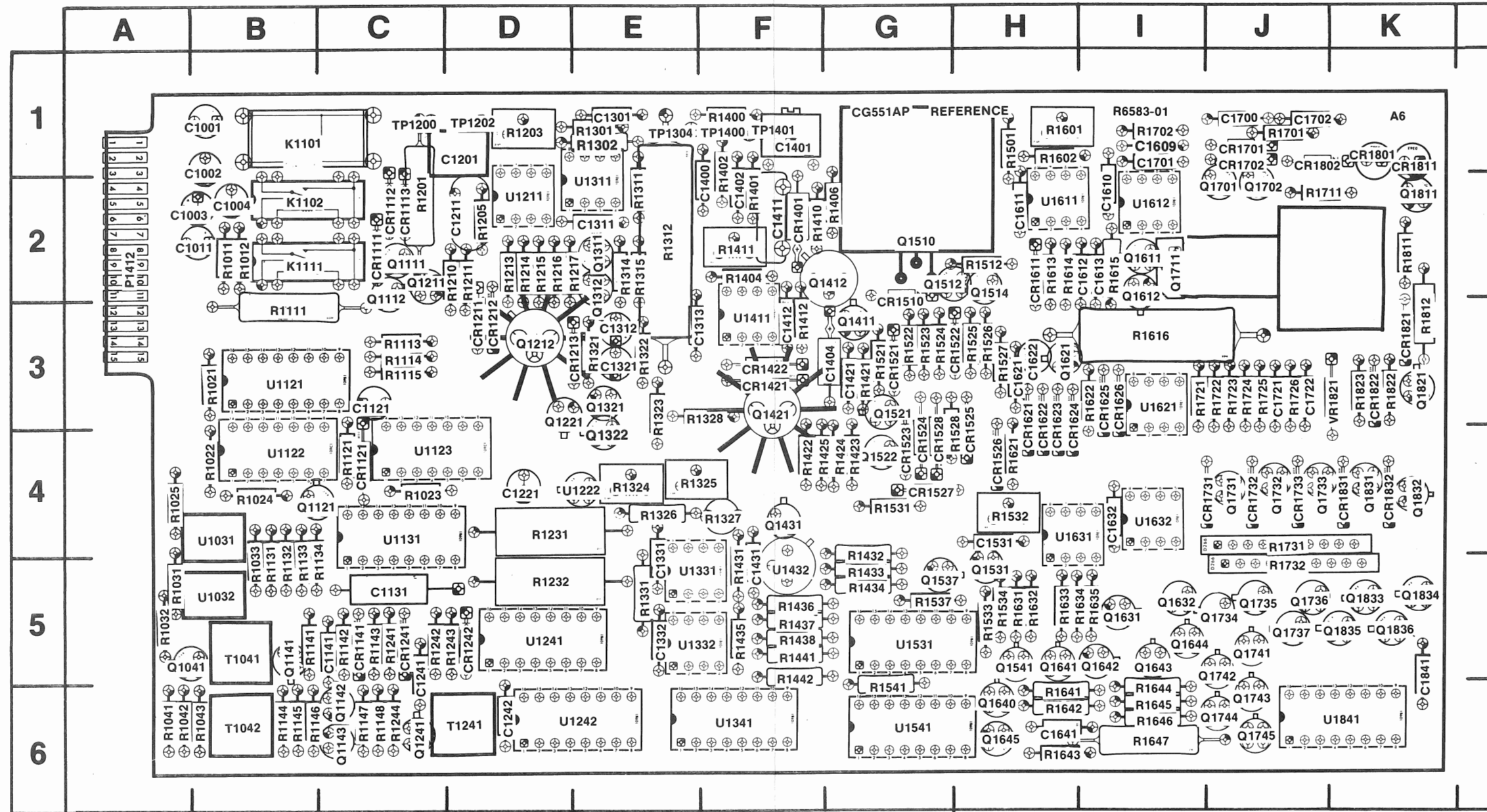
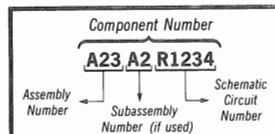


Fig. 9-65. Reference Board (A6).

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

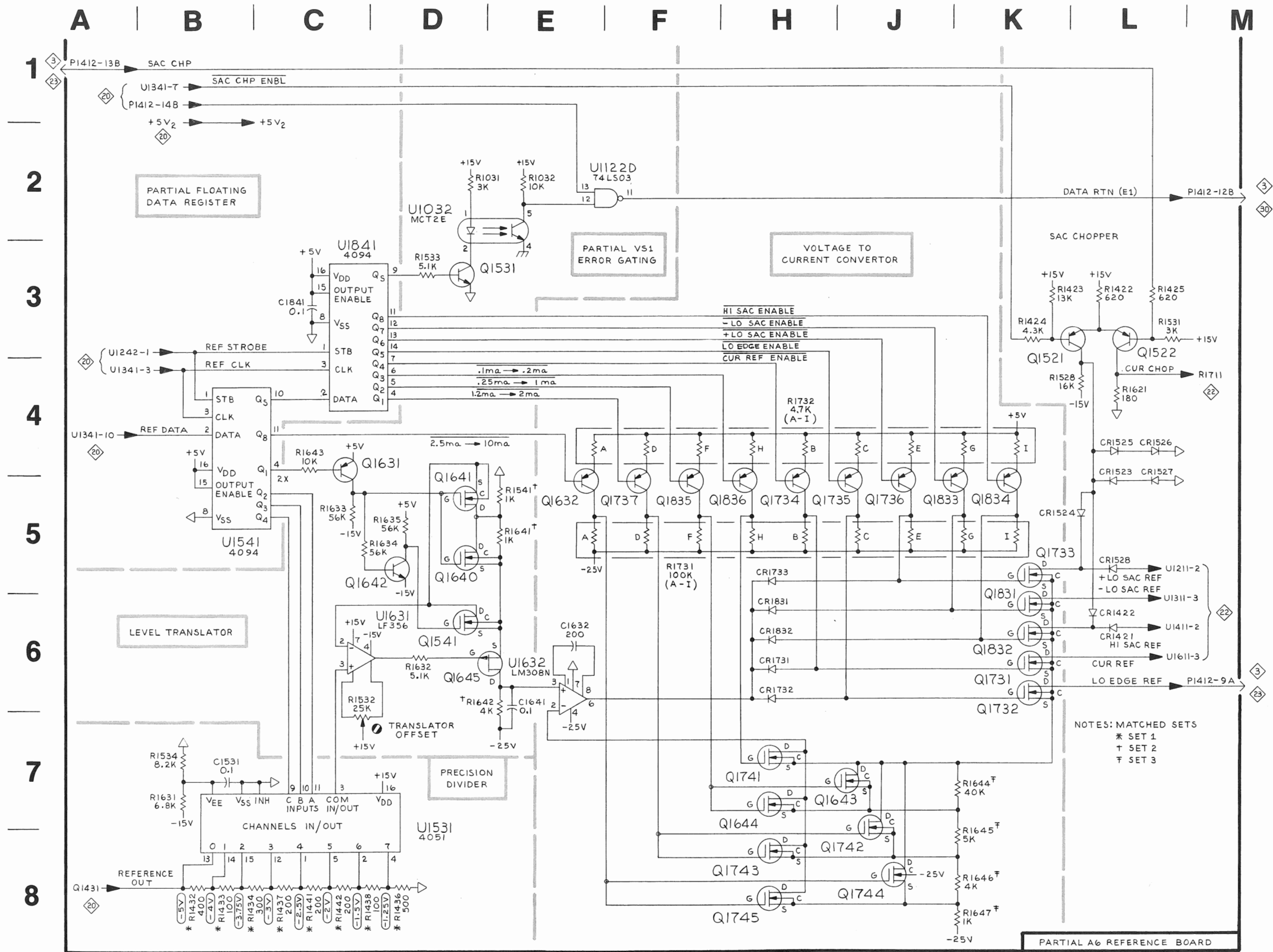
Table 9-25 COMPONENT REFERENCE CHART

P/O A6 ASSY			PRECISION DIVIDER & VOLTAGE TO CURRENT CONVERTER			21
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	
C1531	B7	H4	Q1833	K5	K5	
C1632	E6	I4	Q1834	K5	K5	
C1641	E7	H6	Q1835	F5	K5	
C1841	C3	K5	Q1836	H5	K5	
CR1421	L6	F3	R1031	D2	A5	
CR1422	L6	F3	R1032	E2	A5	
CR1523	L5	G4	R1422	L3	F4	
CR1524	L5	G4	R1423	K3	G4	
CR1525	L4	H4	R1424	K3	G4	
CR1526	L4	H4	R1425	L3	F4	
CR1527	L5	G4	R1432	B8	G4	
CR1528	L5	G4	R1433	B8	G5	
CR1731	H6	I4	R1434	B8	G5	
CR1732	H6	J4	R1436	D8	F5	
CR1733	H5	J4	R1437	C8	F5	
CR1831	H6	K4	R1438	C8	F5	
CR1832	H6	K4	R1441	C8	F5	
P1412	A1	A2	R1442	C8	F5	
P1412	M2	A2	R1528	L4	G4	
P1412	M6	A2	R1531	L3	G4	
Q1521	K3	G3	R1532	D7	H4	
Q1522	L3	G4	R1533	D3	H5	
Q1531	D3	H5	R1534	B7	H5	
Q1541	D6	H5	R1541	E5	G5	
Q1631	D4	I5	R1621	L4	H5	
Q1632	E5	I5	R1631	B7	H5	
Q1640	D5	H6	R1632	D6	H5	
Q1641	D5	H5	R1633	C5	H5	
Q1642	D5	I5	R1634	C5	H5	
Q1643	J7	I5	R1635	D5	H5	
Q1644	H7	I5	R1641	E5	H6	
Q1645	E6	H6	R1642	E7	H6	
Q1731	K6	J4	R1643	C4	H6	
Q1732	K6	J4	R1644	K7	I6	
Q1733	K5	J4	R1645	K8	I6	
Q1734	H5	J5	R1646	K8	I6	
Q1735	J5	J5	R1647	K8	I6	
Q1736	J5	J5	R1731	H5	J4	
Q1737	F5	J5	R1732	H4	J5	
Q1741	H7	J5	U1032	D2	B5	
Q1742	J7	J5	U1122D	F2	B4	
Q1743	H8	J6	U1531	C7	G5	
Q1744	J8	J6	U1541	B4	G6	
Q1745	H8	J6	U1631	D6	H4	
Q1831	K6	K4	U1632	E7	I4	
Q1832	K6	K4	U1841	C3	K6	

P/O A6 ASSY also shown on

20

22



CG 551AP

REV A JUL 1980
2815-161

PRECISION DIVIDER & VOLTAGE TO CURRENT CONVERTER

21 JP

PRECISION DIVIDER-A6
V-I CONVERTER-A6
21

PARTS LOCATION GRID

PARTS LOCATION
REFERENCE BOARD (A6 ASSY)

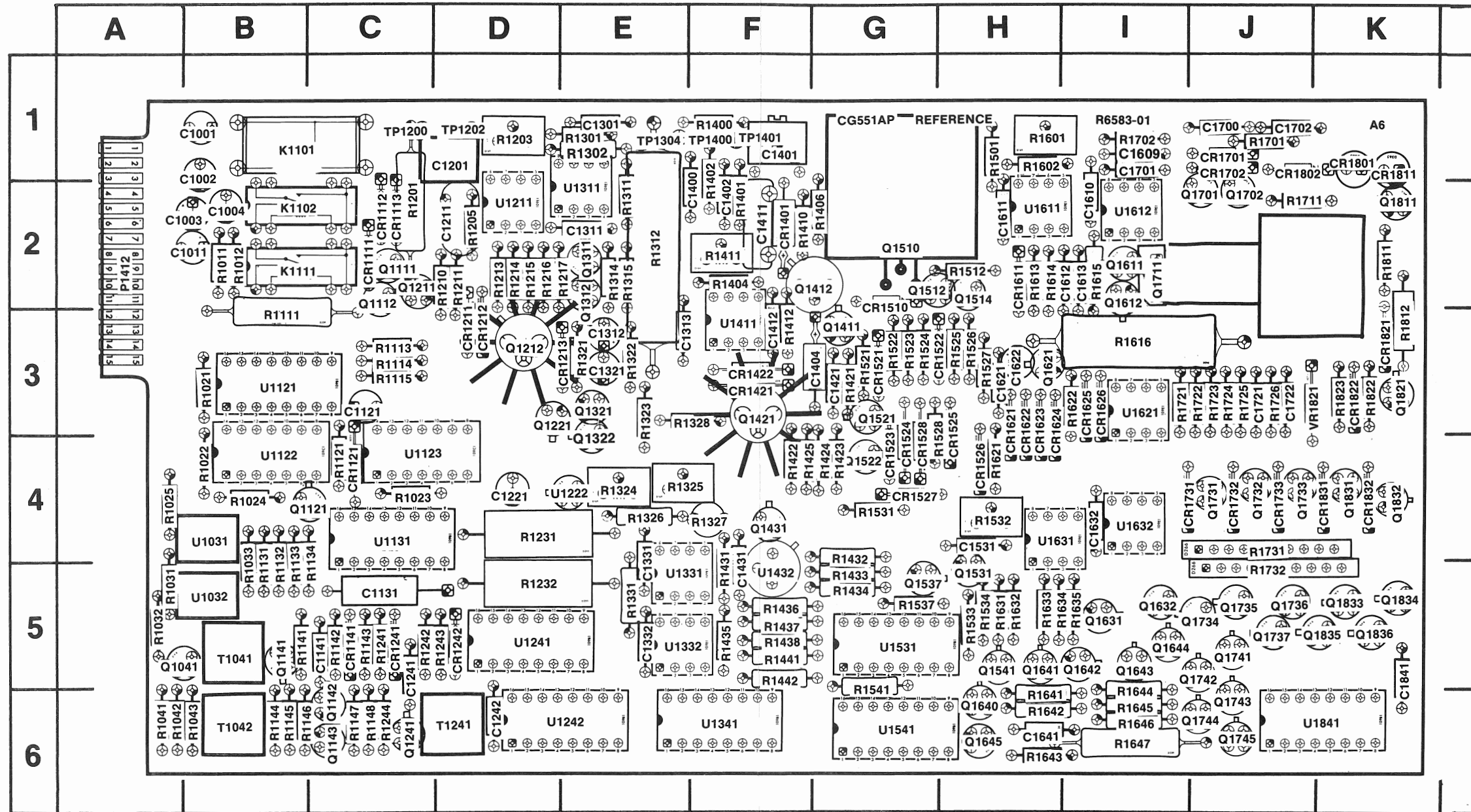
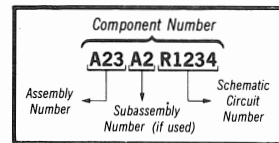


Fig. 9-66. Reference Board (A6).

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



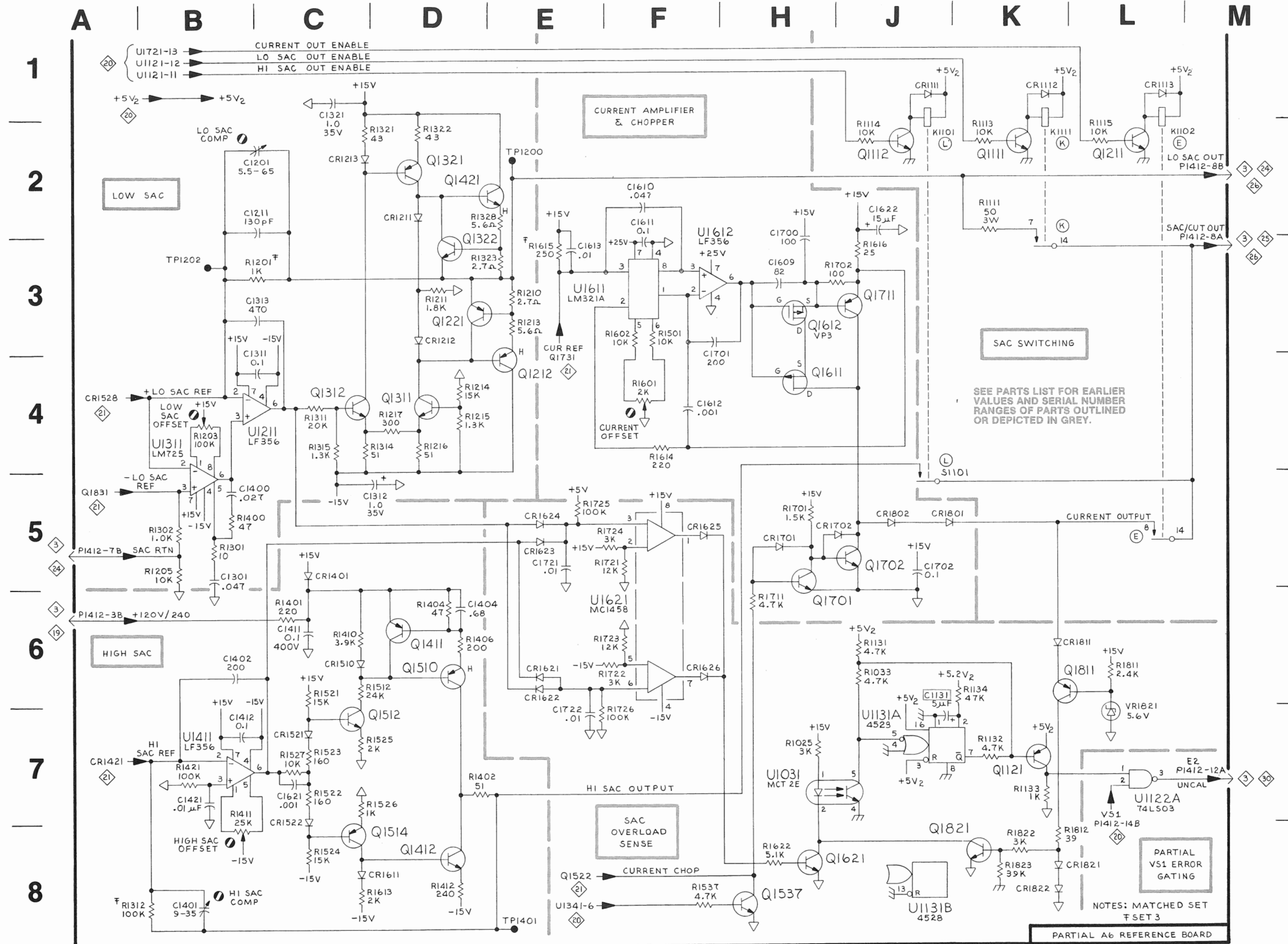
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Table 9-26 COMPONENT REFERENCE CHART

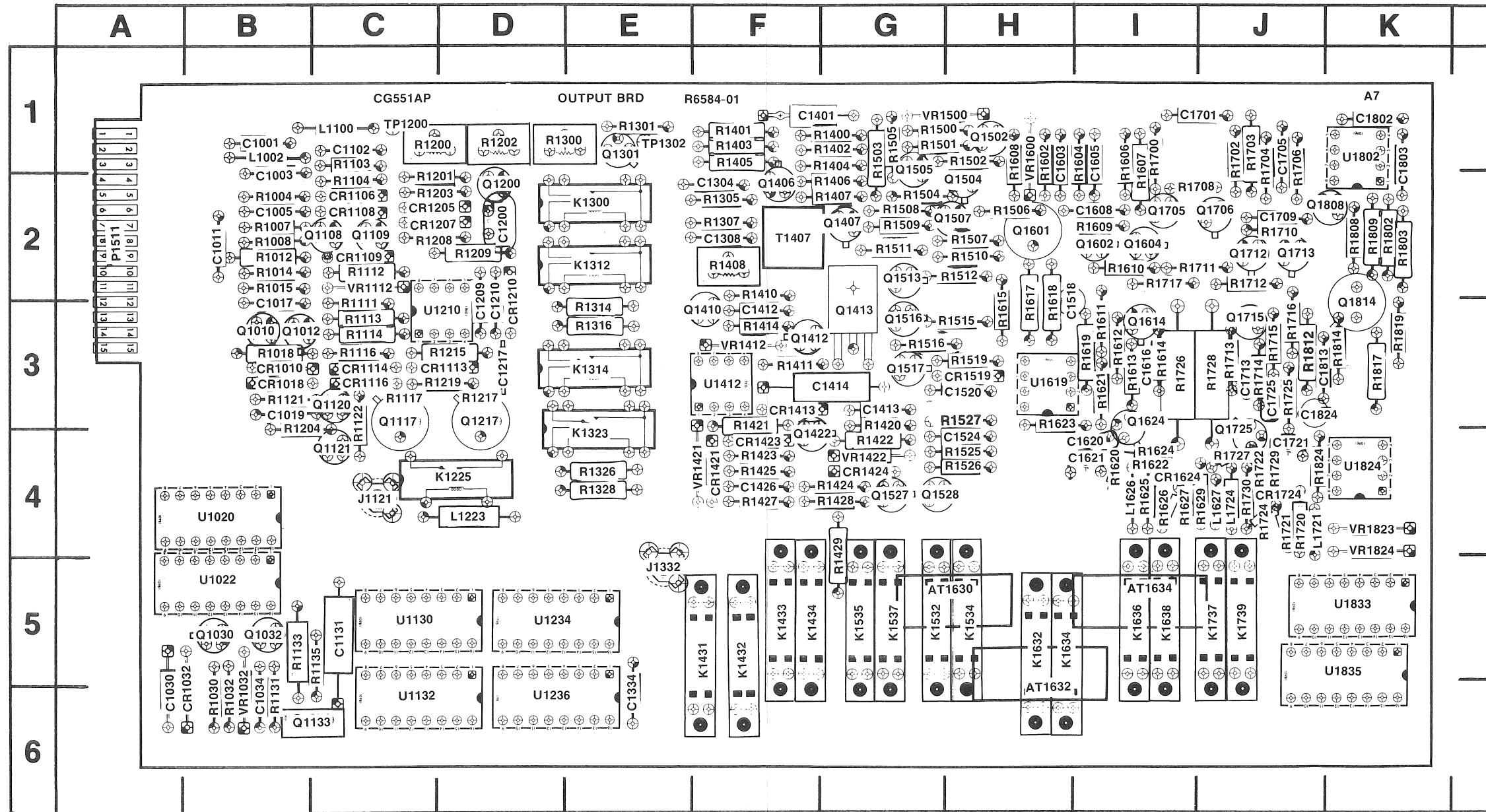
P/O A6 ASSY						HIGH SAC, LOW SAC & CURRENT AMPLIFIER 22		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1131	J7	C5	P1412	A5	A2	R1323	E3	E3
C1201	B2	D1	P1412	M2	A2	R1328	E2	E3
C1211	C2	D2	P1412	M7	A2	R1400	B5	F1
C1301	B5	E1				R1401	C6	F2
C1311	C3	E2	Q1111	K2	C2	R1402	D7	F2
C1312	D5	E3	Q1112	J2	C2	R1404	D6	F2
C1313	C3	E3	Q1121	K7	B4	R1406	D6	F2
C1321	C1	E3	Q1211	L2	C2	R1410	C6	F2
C1400	B5	F2	Q1212	E4	D3	R1411	B8	F2
C1401	B8	F1	Q1221	D4	D3	R1412	D8	F3
C1402	B6	F2	Q1311	D4	E2	R1421	B7	G3
C1404	D6	F3	Q1312	C4	E2	R1501	F3	H1
C1411	C6	F2	Q1321	D2	E3	R1512	C6	H2
C1412	B7	F3	Q1322	D3	E4	R1521	C6	G3
C1421	B7	G3	Q1411	D6	G3	R1522	C7	G3
C1609	H3	I1	Q1412	D8	F2	R1523	C7	G3
C1610	F3	I2	Q1421	E2	F3	R1524	C8	G3
C1611	F3	H2	Q1510	D6	G2	R1525	C7	H3
C1612	F4	H2	Q1512	C7	G2	R1526	C8	H3
C1613	E3	I2	Q1514	C8	G2	R1527	C7	H3
C1621	C7	H3	Q1537	H8	G5	R1537	F8	G5
C1622	J2	H3	Q1611	H4	I2	R1601	F4	H1
C1700	H2	J1	Q1612	H3	I2	R1602	F3	H1
C1701	F3	I1	Q1621	H8	H3	R1613	C8	H2
J1702	J5	J1	Q1701	H5	J2	R1614	F4	H2
C1721	E5	J3	Q1702	J5	J2	R1615	E3	I2
C1722	E7	J3	Q1711	J3	I2	R1616	J3	I3
			Q1811	K6	K2	R1622	H8	I3
			Q1821	K8	K3	R1701	H5	J1
CR1111	J1	C2*				R1702	J3	I1
CR1112	K1	C2	R1025	H2	A4	R1711	H6	J2
CR1113	L1	C2	R1033	J6	B4	R1721	F5	I3
CR1211	D2	D3	R1111	K2	B3*	R1722	F6	J3
CR1212	D3	D3	R1113	K2	C3	R1723	F6	J3
CR1213	C2	D3	R1114	J2	C3	R1724	F5	J3
CR1401	C5	F2	R1115	L2	C3	R1725	E5	J3
CR1510	C6	G2	R1131	J6	B4	R1726	E7	J3
CR1521	C7	G3	R1132	K7	B4	R1811	L6	K2
CR1522	C8	G3	R1133	K7	B4	R1812	K8	K3
CR1611	C8	H2	R1134	K7	B4	R1822	K8	K3
CR1621	E6	H3	R1134	K6	B4	R1823	K8	K3
CR1622	E6	H3	R1201	C3	C2			
CR1623	E5	H3	R1203	B4	D1			
CR1624	E5	H3	R1205	B5	D2	TP1200	E2	C1
CR1625	F5	I3	R1210	E3	D2	TP1202	B3	D1
CR1626	F6	I3	R1211	D3	D2	TP1401	E8	F1
CR1701	H5	J1	R1213	E3	D2			
CR1702	H5	J1	R1214	D4	D2	U1031	H7	B4
CR1801	K6	K1	R1215	D4	D2	U1122A	L7	B4
CR1802	J5	J1	R1216	D4	D2	U1131	J7	C4
CR1811	K6	K1	R1217	D4	D2	U1211	B4	D2
CR1821	K8	K3	R1301	B5	E1	U1311	B5	E2
CR1822	K8	K3	R1302	B5	E1	U1411	B7	F3
			R1311	C4	E2	U1611	F3	H2
			R1312	B8	E2	U1612	F3	I2
			R1314	C4	E2	U1621	F6	I3
			R1315	C4	E2			
			R1321	C2	E3			
			R1322	D2	E3	VR1821	L7	J3
K1101	J2	B1						
K1102	L2	B2						
K1111	K2	B2						

P/O A6 ASSY also shown on 20 21

*Moved to back of board SN B020237



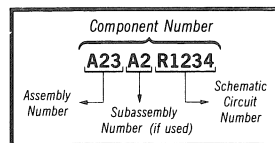
PARTS LOCATION GRID



PARTS LOCATION
OUTPUT BOARD (A7 ASSY)

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

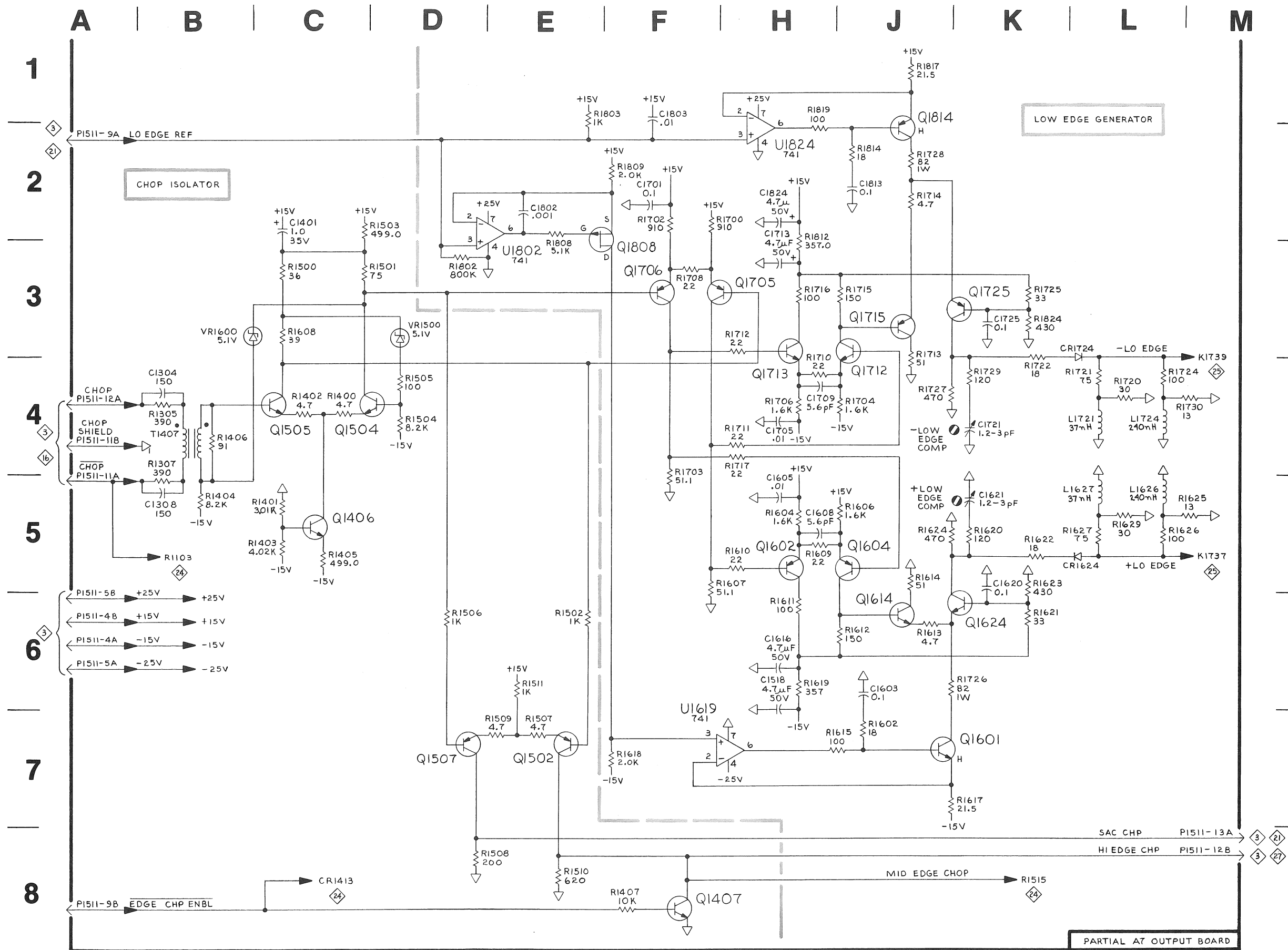
Fig. 9-67. Output Board (A7).

Table 9-27 COMPONENT REFERENCE CHART

P/O A7 ASSY			LOW EDGE GENERATOR & CHOP ISOLATOR			23
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	
C1304	B4	F2	R1507	E7	H2	
C1308	B5	F2	R1508	E8	G2	
C1401	C2	F1	R1509	E7	G2	
C1518	H6	H3	R1510	E8	H2	
C1603	J6	H1	R1511	E6	G2	
C1605	H5	I1	R1602	J7	H1	
C1608	H5	I2	R1604	H5	I1	
C1616	H6	I3	R1606	J5	I1	
C1620	K5	I4	R1607	H5	I1	
C1621	K5	I4	R1608	C3	H1	
C1701	F2	I1	R1609	H5	I2	
C1705	H4	J1	R1610	H5	I2	
C1709	H4	J2	R1611	H6	I3	
C1713	H2	J3	R1612	J6	I3	
C1721	K4	J4	R1613	J6	I3	
C1725	K3	J3 *	R1614	J5	I3	
C1802	E2	K1	R1615	J7	H3	
C1803	F1	K1	R1617	K7	H3	
C1813	J2	J3	R1618	F7	H3	
C1824	H2	J3	R1619	H6	I3	
CR1624	L5	I4	R1620	K5	I4	
CR1724	L3	J4	R1621	K6	I3	
			R1622	K5	I4	
			R1623	K5	H3	
L1626	L5	I4	R1624	J5	I4	
L1627	L5	J4	R1625	M5	I4	
L1721	L4	J4	R1626	L5	I4	
L1724	L4	J4	R1627	L5	I4	
P1511	A4	A2	R1629	L5	J4	
P1511	A8	A2	R1700	H2	I1	
P1511	A2	A2	R1702	F2	J1	
P1511	M8	A2	R1703	F4	J1	
P1511	A6	A2	R1704	J4	J1	
			R1706	H4	J1	
Q1406	C5	F2	R1708	F3	I2	
Q1407	F8	G2	R1710	H4	J2	
Q1502	E7	H1	R1711	H4	I2	
Q1504	C4	H2	R1712	H3	J2	
Q1505	C4	G1	R1713	J4	J3	
Q1507	D7	H2	R1714	J2	J3	
Q1601	K7	H2	R1715	J3	J3	
Q1602	H5	I2	R1716	H3	J3	
Q1604	J5	I2	R1717	H4	I2	
Q1614	J5	I3	R1720	L4	J4	
Q1624	K6	I3	R1721	L4	J4	
Q1705	H3	I2	R1722	K4	J4	
Q1706	F3	J2	R1724	M4	J4	
Q1712	J4	J2	R1725	K3	J3	
Q1713	H4	J2	R1726	K6	I3	
Q1715	J3	J3	R1727	J4	J4	
Q1725	K3	J3	R1728	J2	J3	
Q1808	F3	K2	R1729	K4	J4	
Q1814	J1	K2	R1730	M4	J4	
			R1802	D3	K2	
R1305	B4	F2	R1803	E1	K2	
R1307	B5	F2	R1808	E3	K2	
R1400	C4	G1	R1809	F2	K2	
R1401	C5	F1	R1812	H3	J3	
R1402	C4	G1	R1814	J2	K3	
R1403	C5	F1	R1817	J1	K3	
R1404	B5	G1	R1819	H1	K3	
R1405	C5	F1	R1824	K3	J4	
R1406	B4	G2				
R1407	F8	G2	T1407	B4	F2	
R1500	C3	G1				
R1501	C3	G1	U1619	F7	H3	
R1502	E6	H1	U1802	E3	K1	
R1503	C2	G1	U1824	H2	K4	
R1504	D4	G2				
R1505	D4	G1	VR1500	D3	G1	
R1506	D6	H2	VR1600	B3	H1	

P/O A7 ASSY also shown on 24 25

icated on back of board.



CG 551AP

@ 2815-163

LOW EDGE GENERATOR & CHOP ISOLATOR

23 JP

LOW EDGE GEN-A7
CHOP ISOLATOR-A7

23

PARTS LOCATION GRID

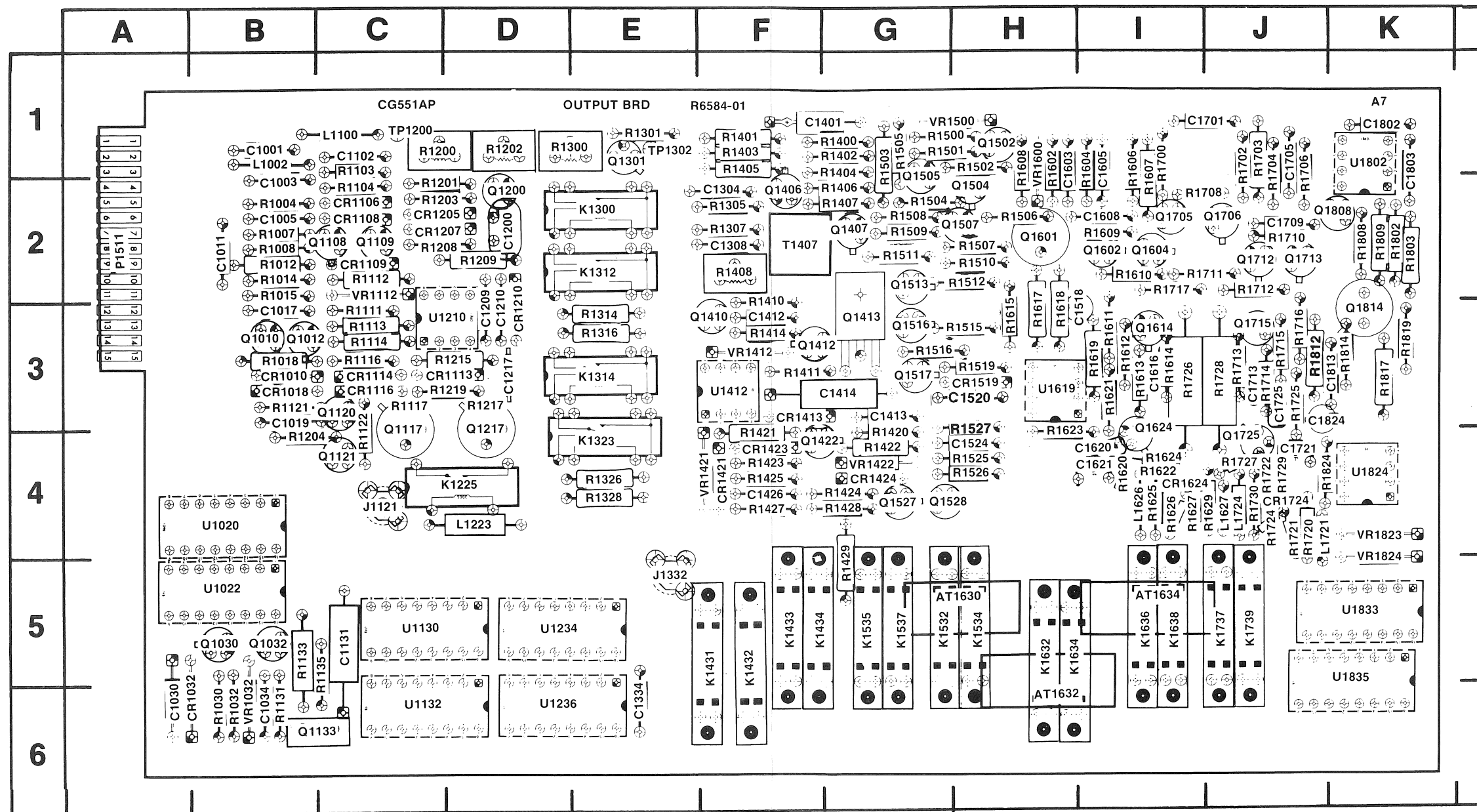
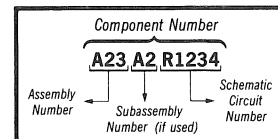


Fig. 9-68. Output Board (A7).

PARTS LOCATION
OUTPUT BOARD (A7 ASSY)

 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



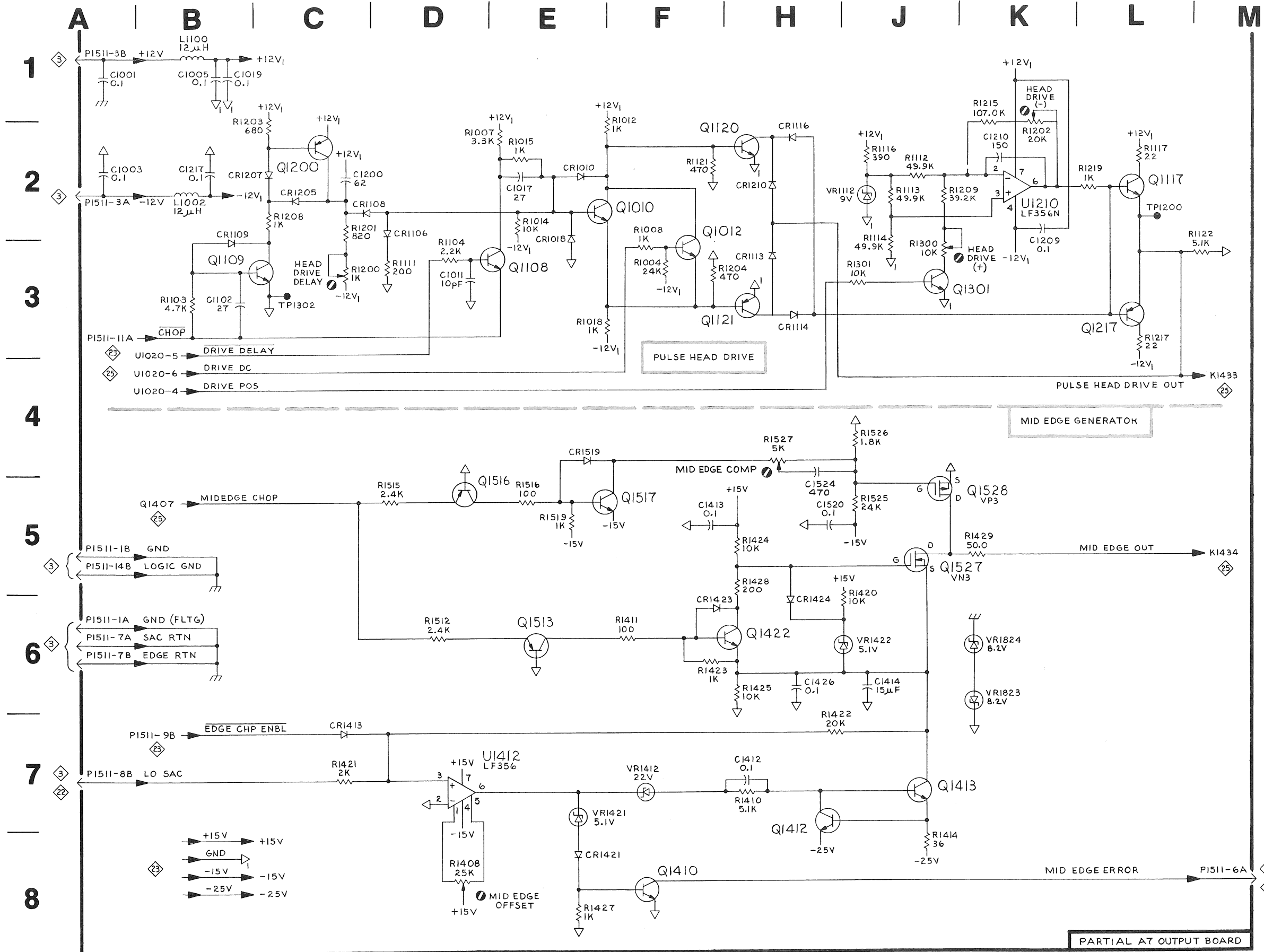
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Table 9-28 COMPONENT REFERENCE CHART

P/O A7 ASSY			MID EDGE GENERATOR & PULSE HEAD DRIVE			◇24◇
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	
C1001	A1	B1	R1004	F3	B2	
C1003	A2	B2	R1007	E2	B2	
C1005	B1	B2	R1008	F2	B2	
C1011	D3	B2	R1012	E2	B2	
C1017	E2	B2	R1014	E2	B2	
C1019	B1	B3	R1015	E2	B2	
C1102	B3	C1	R1018	E3	B3	
C1200	C2	D2	R1103	B3	C1	
C1209	K2	D3	R1104	D3	C2	
C1210	K2	D3	R1111	D3	C3	
C1217	B2	D3	R1112	J2	C2	
C1412	F7	F3	R1113	J2	C3	
C1413	H5	G3	R1114	J3	C3	
C1414	J6	G3	R1116	J2	C3	
C1426	H6	F4	R1117	L2	C3	
C1520	H5	H3	R1121	F2	B3	
C1524	H4	H4	R1122	M3	C3	
CR1010	E2	B3	R1200	C3	C1	
CR1018	E2	B3	R1201	C2	D2	
CR1106	D2	C2	R1202	K2	D1	
CR1108	C2	C2	R1203	C1	D2	
CR1109	B3	C2	R1204	F3	B3	
CR1113	H3	D3	R1208	C2	D2	
CR1114	H3	C3	R1209	J2	D2	
CR1116	H2	C3	R1215	K2	D3	
CR1205	C2	D2	R1217	L3	D3	
CR1207	C2	D2	R1219	L2	D3	
CR1210	H2	D3	R1300	J3	D1	
CR1413	C7	F3	R1301	J3	E1	
CR1421	E8	F4	R1408	D8	F2	
CR1423	H6	F4	R1410	F7	F2	
CR1424	H6	G4	R1411	F6	F3	
CR1519	E4	H3	R1414	J8	F3	
L1002	B2	B1	R1420	H6	G3	
L1100	B1	C1	R1421	C7	F3	
P1511	A2	A2	R1422	H7	G4	
P1511	A5	A2	R1423	F6	F4	
P1511	A1	A2	R1424	H5	G4	
P1511	A7	A2	R1425	H6	F4	
P1511	A6	A2	R1427	E8	F4	
P1511	M8	A2	R1428	H5	G4	
Q1010	E2	B3	R1429	K5	G5	
Q1012	F3	B3	R1512	D6	H2	
Q1108	D3	C2	R1515	D5	H3	
Q1109	C3	C2	R1516	E5	G3	
Q1117	L2	C3	R1519	E5	H3	
Q1120	H2	C3	R1527	H5	H4	
Q1121	H3	C4	R1525	J5	H4	
Q1200	C2	D2	R1526	J4	H4	
Q1217	L3	D3	TP1200	L2	C1	
Q1301	J3	E1	TP1302	C3	E1	
Q1410	F8	F3	U1210	K2	D3	
Q1412	H7	F3	U1412	D7	F3	
Q1413	J7	G3	VR1112	J2	C2	
Q1422	H6	F4	VR1412	F7	F3	
Q1513	E6	G2	VR1421	E7	F4	
Q1516	D5	G3	VR1422	H6	G4	
Q1517	E5	G3	VR1823	K6	K4	
Q1527	J5	G4	VR1824	K6	K4	
Q1528	J4	G4				

P/O A7 ASSY also shown on





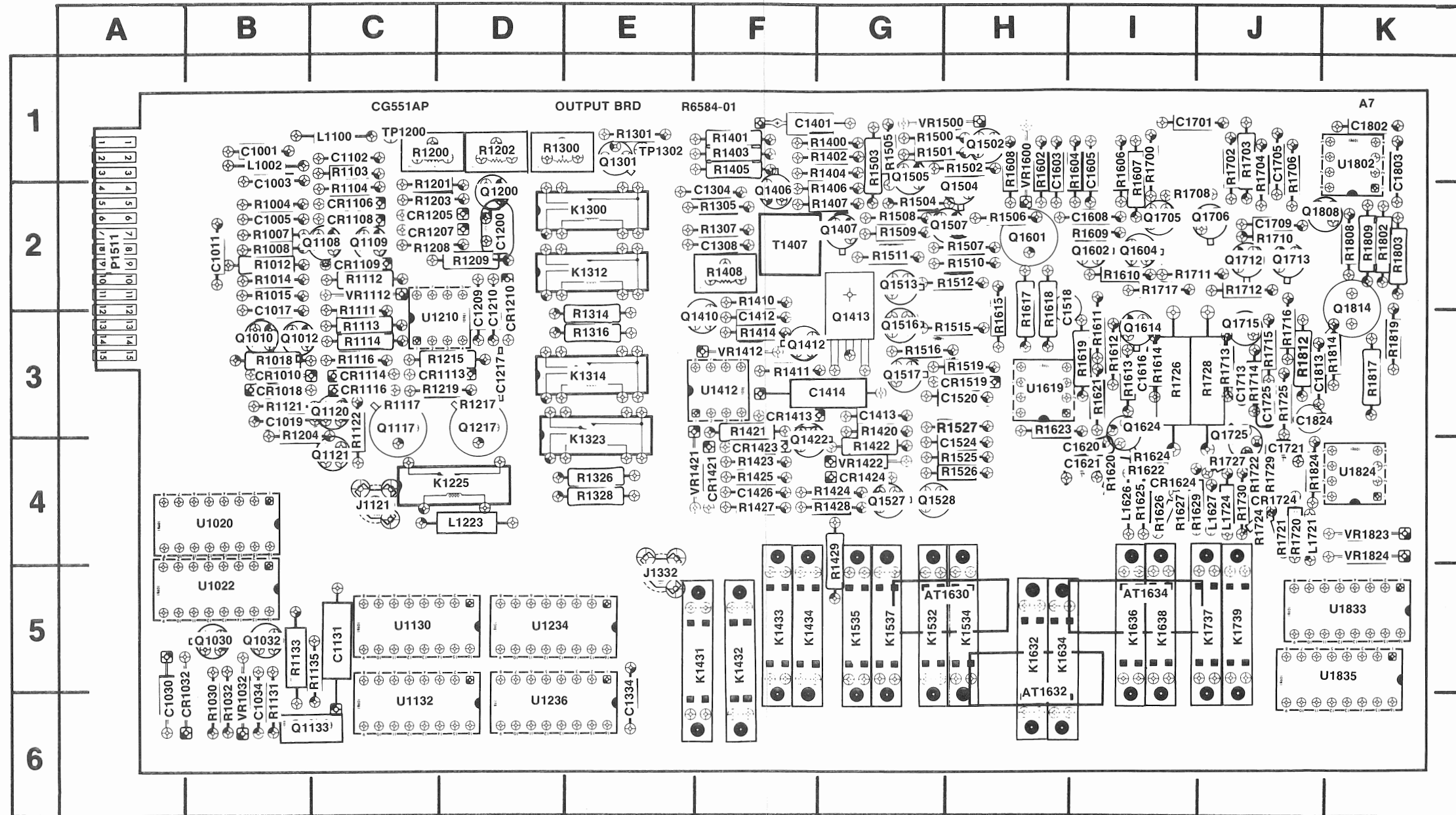
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MID EDGE GENERATOR & PULSE HEAD DRIVE

24 JP

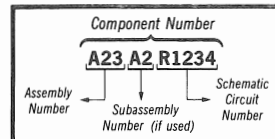
PARTS LOCATION GRID



Static Sensitive Devices
See Maintenance Section

Fig. 9-69. Output Board (A7).

COMPONENT NUMBER EXAMPLE

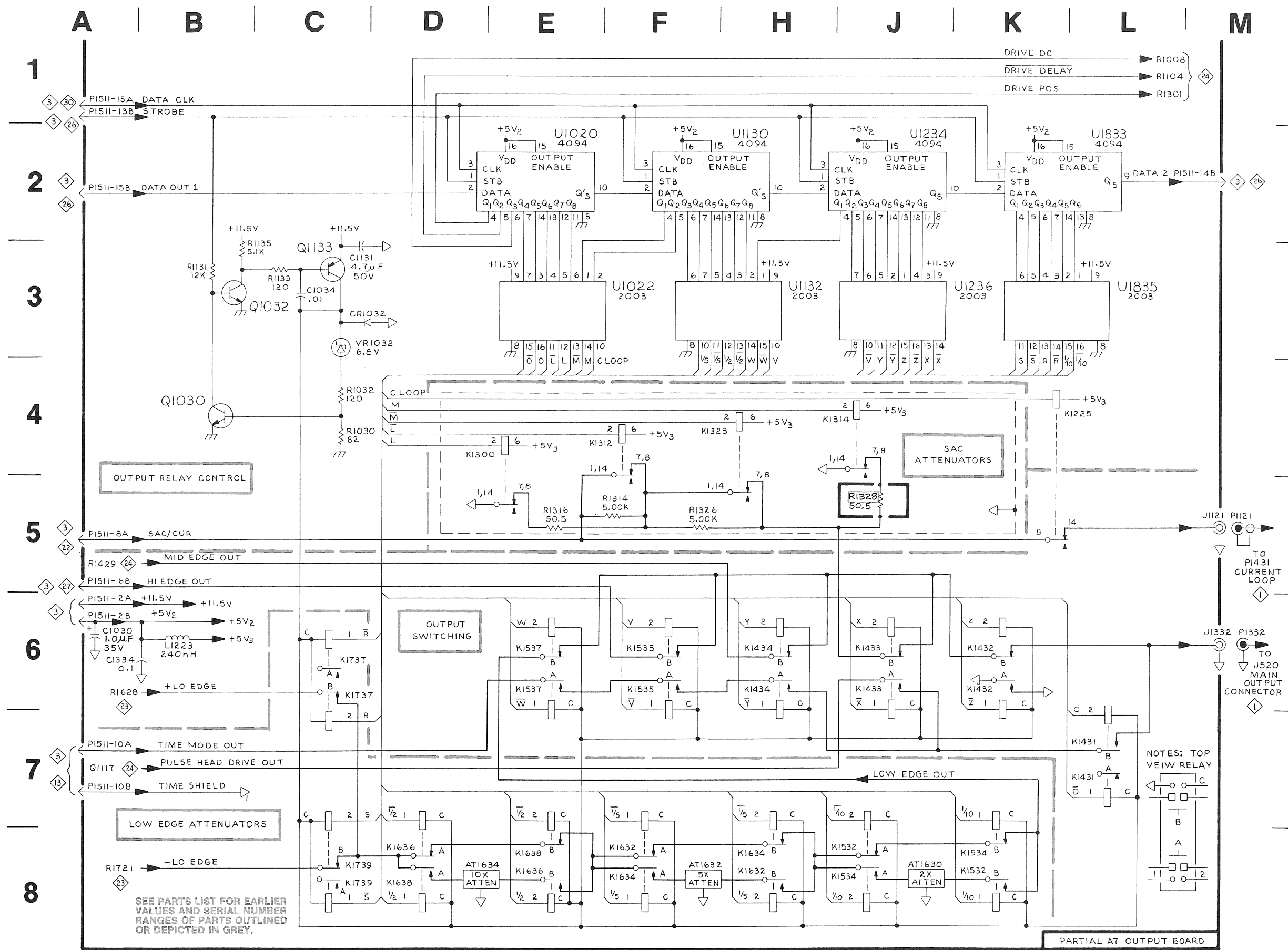


Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

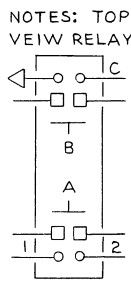
Table 9-29 COMPONENT REFERENCE CHART

P/O A7 ASSY			OUTPUT SWITCHING & ATTENUATORS			◇25◇
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	
AT1630	J8	G5	L1223	B6	D4	
AT1632	F8	H5	P1121	M5	C4	
AT1634	D8	I5	P1332	M6	E5	
C1030	A6	A6	P1511	M2	A2	
C1034	C3	B6	P1511	A6	A2	
C1131	C3	C5	P1511	A2	A2	
C1334	A6	E6	Q1030	B4	B5	
CR1032	C3	A6	Q1032	B3	B5	
J1121	M5	C4	Q1133	C3	B6	
J1332	M6	E5	R1030	C4	B6	
K1225	L4	D4	R1032	C4	B6	
K1300	D4	E2	R1131	B3	B6	
K1312	E4	E2	R1133	C3	B5	
K1314	H4	E3	R1135	B3	C5	
K1323	F4	E3	R1314	F5	E3	
K1431	L7	F5	R1316	E5	E3	
K1432	K6	F5	R1326	F5	E4	
K1433	J6	F5	R1328	J5	E4	
K1434	H6	F5	U1020	E2	B4	
K1532	J8	G5	U1022	F3	B5	
K1534	K8	H5	U1130	H2	C5	
K1535	F6	G5	U1132	H3	C6	
K1537	E6	G5	U1234	J2	D5	
K1632	F8	H5	U1236	K3	D6	
K1634	F8	H5	U1833	L2	K5	
K1636	D8	I5	U1835	L3	K5	
K1638	D8	I5				
K1737	C6	G5	VR1032	C3	B6	
K1739	C8	J5				

P/O A7 ASSY also shown on ◇23◇ ◇24◇



SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.



PARTS LOCATION GRID

PARTS LOCATION
HIGH EDGE BOARD (A8 ASSY)

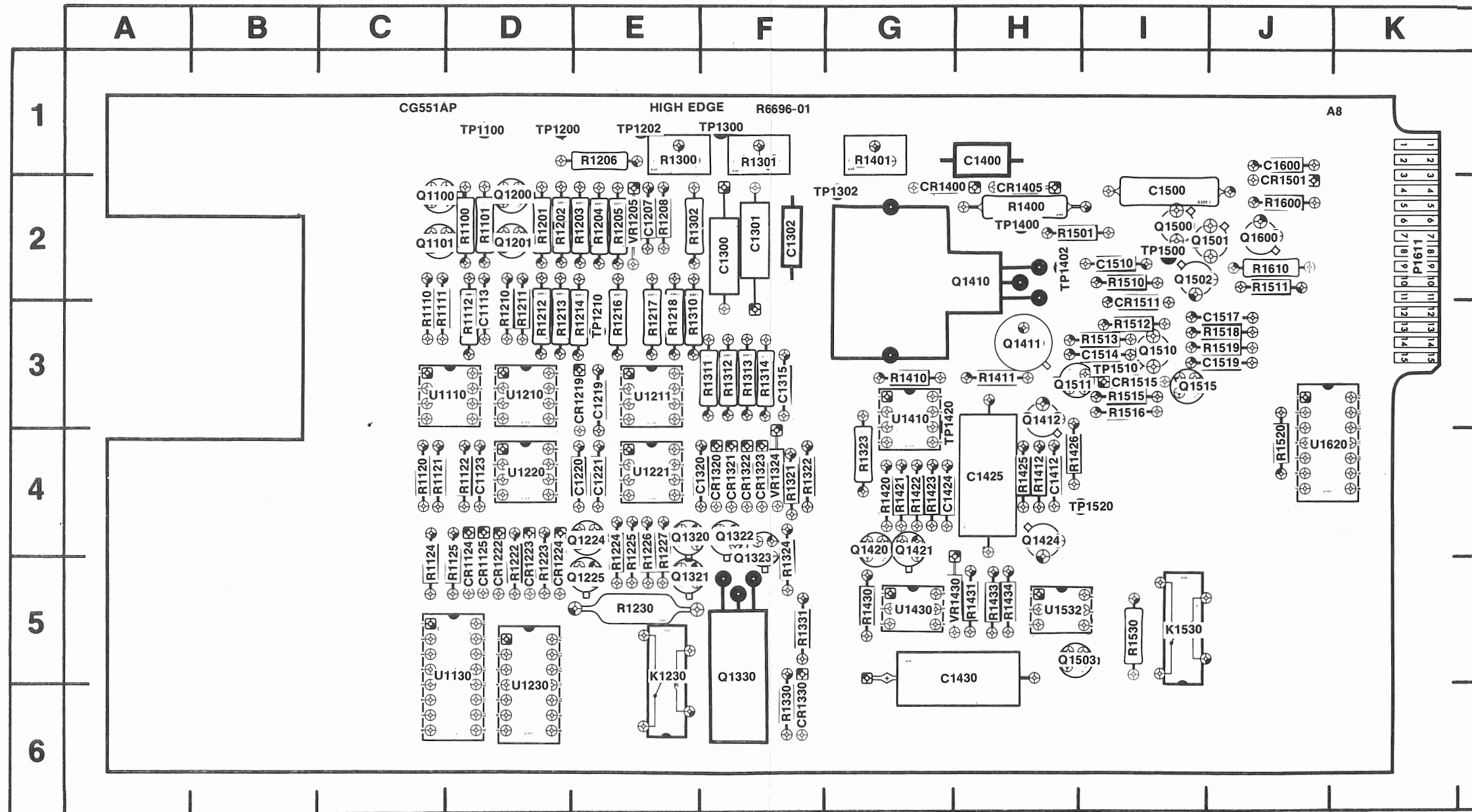
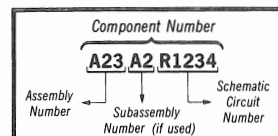


Fig. 9-70. High Edge Board (A8).

Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE

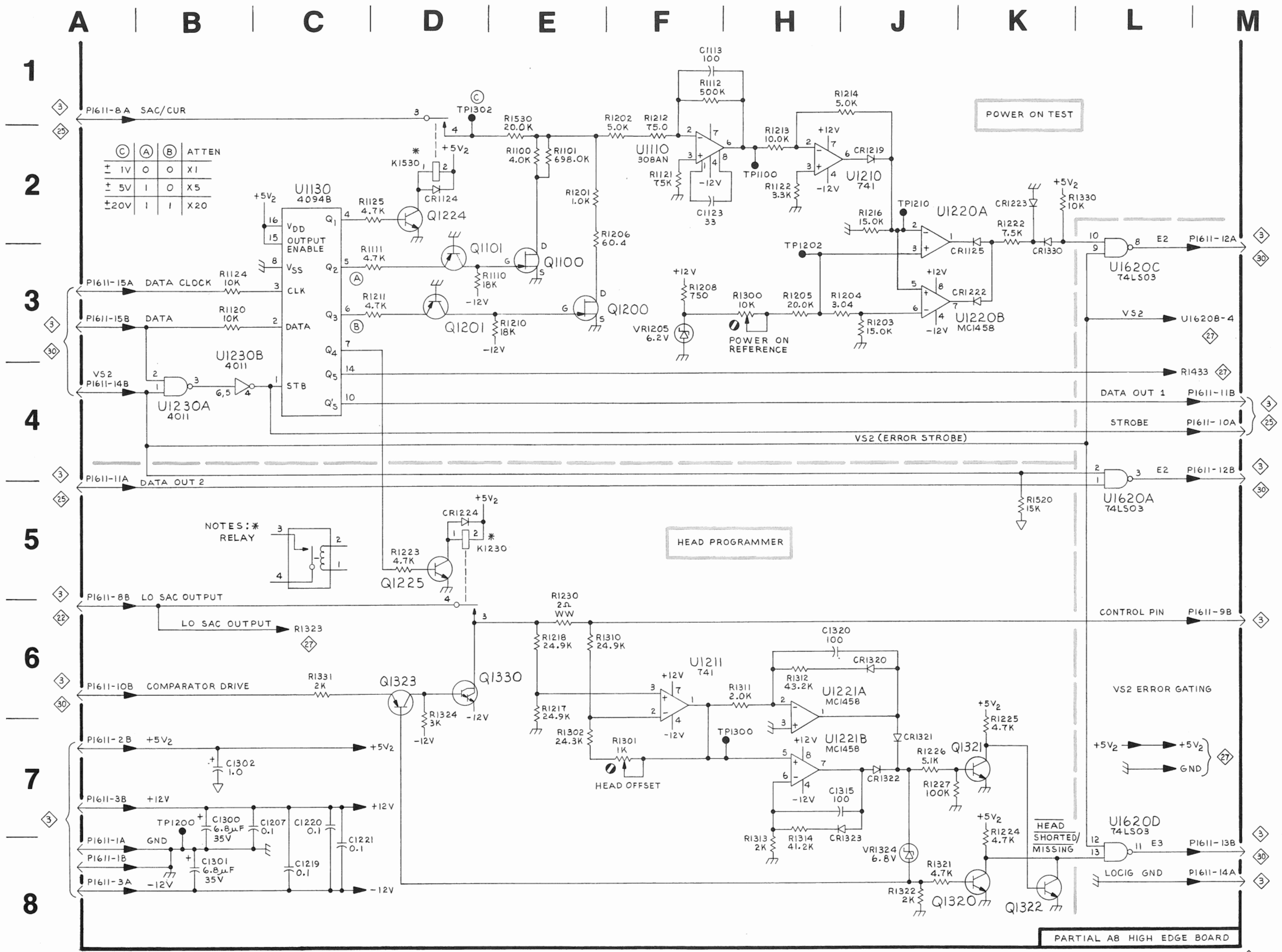


Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Table 9-30 COMPONENT REFERENCE CHART

P/O A8 ASSY			POWER ON TEST & HEAD PROGRAMMER		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1113	F1	D3	R1205	H3	E2
C1123	F2	D4	R1206	E2	E1
C1207	C7	E2	R1208	F3	E2
C1219	C8	E3	R1210	E3	D3
C1220	C7	E4	R1211	C3	D3
C1221	C8	E4	R1212	F1	D3
C1300	B7	F2	R1213	H2	D3
C1301	B8	F2	R1214	J1	E3
C1302	B7	F2	R1216	J2	E3
C1315	H7	F3	R1217	E6	E3
C1320	H6	F4	R1218	E6	E3
CR1124	D2	D5	R1222	K2	D5
CR1125	K3	D5	R1223	D5	D5
CR1219	J2	E3	R1224	K7	E4
CR1222	J3	D5	R1225	K7	E4
CR1223	K2	D5	R1226	J7	E4
CR1224	D5	D5	R1227	J7	E4
CR1320	J6	F4	R1230	E5	E5
CR1321	J7	F4	R1300	H3	E1
CR1322	J7	F4	R1301	F7	F1
CR1323	J8	F4	R1302	E7	E2
CR1330	K3	F6	R1310	E6	E3
K1230	D5	E5	R1311	H6	F3
K1530	D2	I5	R1312	H6	F3
P1611	M6	K2	R1313	H8	F3
P1611	A7	K2	R1314	H8	F3
Q1100	E3	C2	R1321	J8	F4
Q1101	D3	C2	R1322	J8	F4
Q1200	F3	D2	R1324	D6	F4
Q1201	D3	D2	R1330	K2	F6
Q1224	D2	E4	R1331	C6	F5
Q1225	D5	E5	R1520	K5	J4
Q1320	K8	E4	R1530	E1	I5
Q1321	K7	E5	TP1100	H2	D1
Q1322	K8	F4	TP1200	B7	D1
Q1323	D6	F4	TP1202	H3	E1
Q1330	D6	F5	TP1210	J2	F3
R1100	E2	D2	TP1300	H7	F1
R1101	E2	D2	TP1302	D1	G2
R1110	D3	C3	U1110	F2	D3
R1111	C3	C3	U1130	C2	D5
R1112	F1	D3	U1210	J2	D3
R1120	B3	C4	U1211	F6	E3
R1121	F2	C4	U1220A	J2	D4
R1122	H2	D4	U1220B	K3	D4
R1124	B3	C5	U1221A	H6	E4
R1125	C2	D5	U1221B	H7	E4
R1201	E2	D2	U1230A	B4	D5
R1202	F1	D2	U1230B	B3	D5
R1203	J3	E2	U1620A	L5	J4
R1204	H3	E2	U1620C	L3	J4
			U1620D	L7	J4
			VR1205	F3	E2
			VR1324	J8	F4

P/O A8 ASSY also shown on 27



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POWER ON TEST & HEAD PROGRAMMER

26 JP

POWER ON TEST-A8
HEAD PROGRAMMER-A8
26

PARTS LOCATION GRID

PARTS LOCATION
HIGH EDGE BOARD (A8 ASSY)

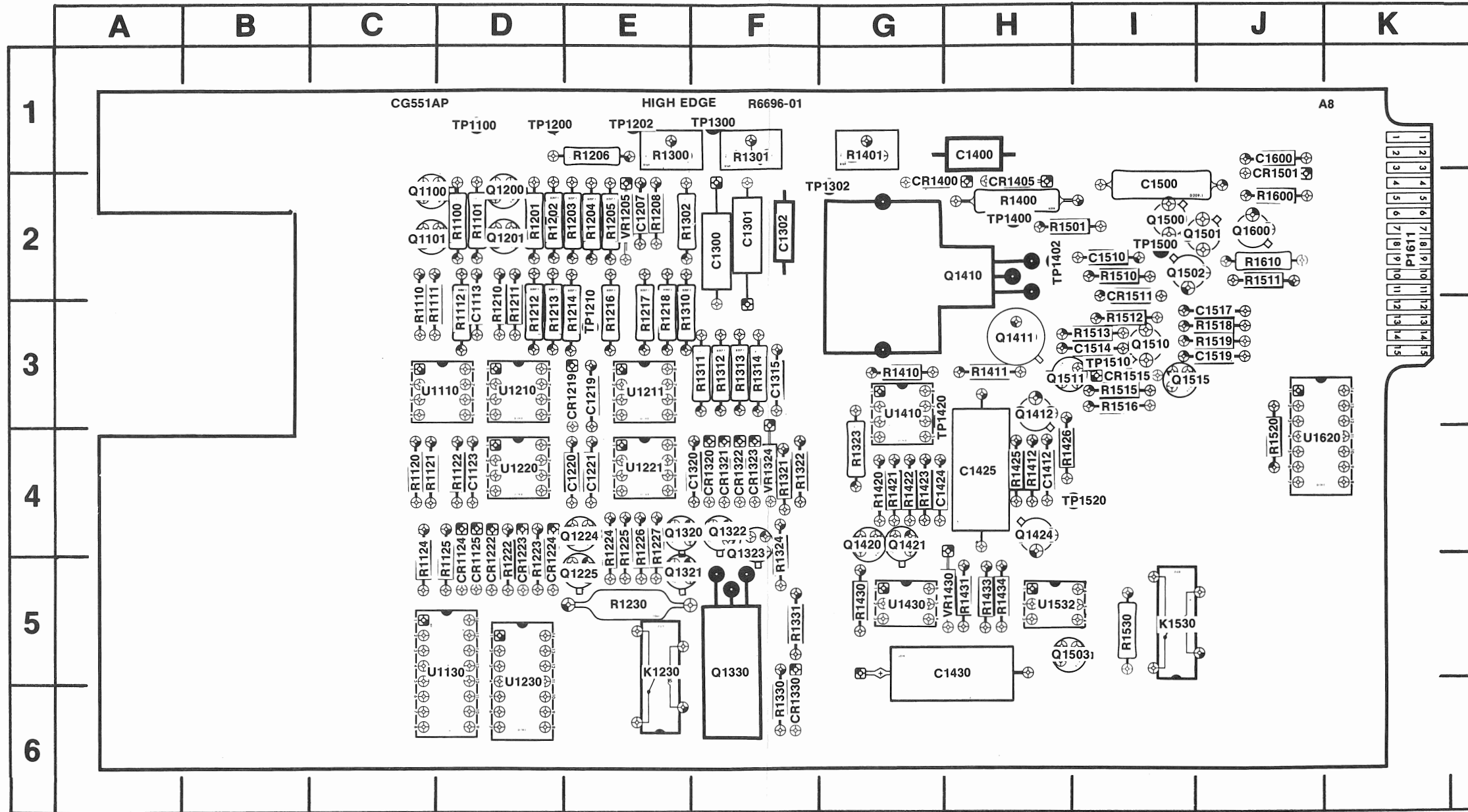
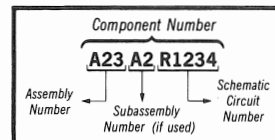


Fig. 9-71. High Edge Board (A8).

 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



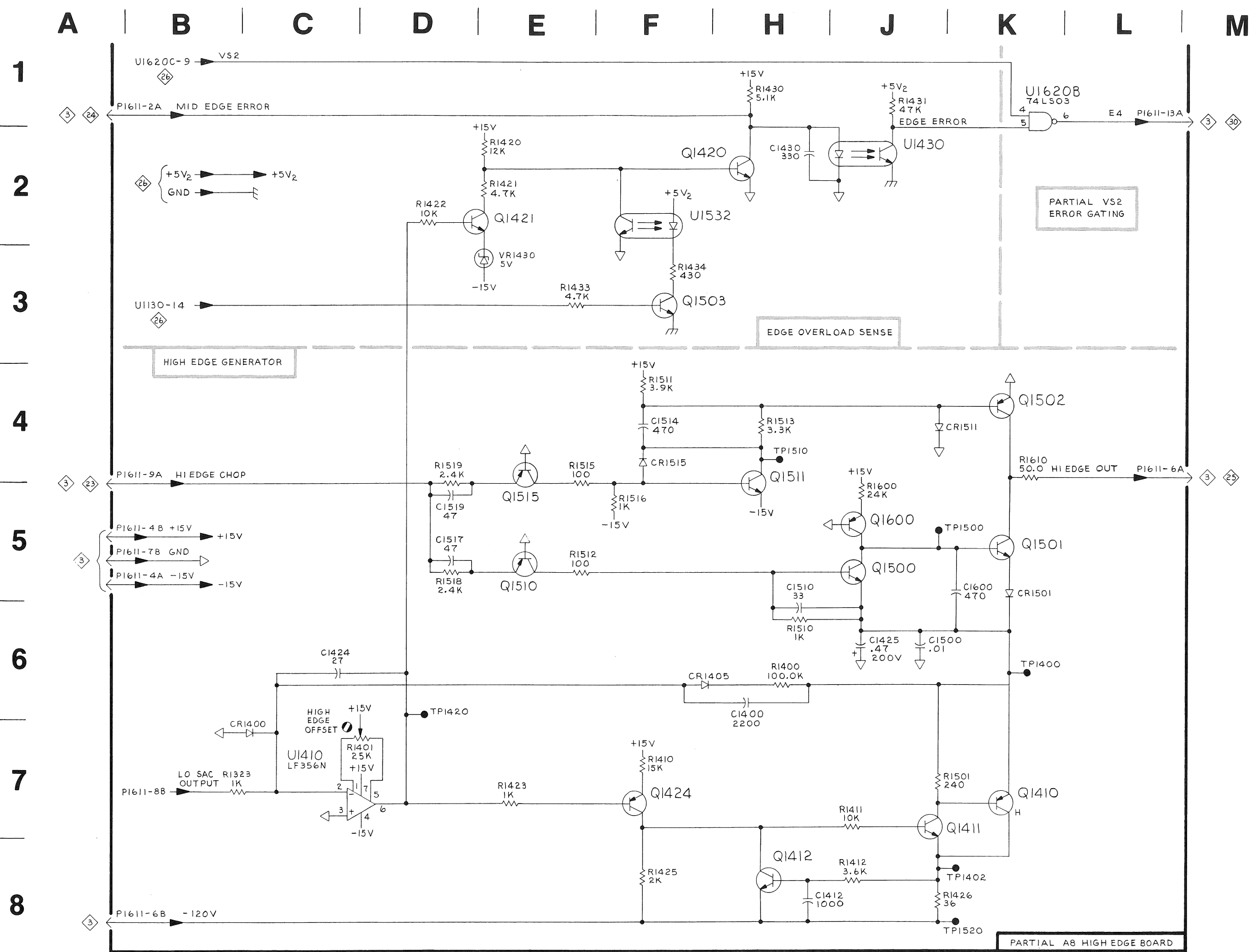
Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

Table 9-31 COMPONENT REFERENCE CHART

P/O A8 ASSY			HIGH EDGE GENERATOR & EDGE OVERLOAD SENSE			◇ 27
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	
C1400	H6	H1	R1323	B7	G4	
C1412	H8	H4	R1400	H6	H2	
C1424	C6	G4	R1401	D7	G1	
C1425	J6	H4	R1410	F7	G3	
C1430	H2	H5	R1411	J7	H3	
C1500	J6	I2	R1412	J8	H4	
C1510	H5	I2	R1420	E2	G4	
C1514	F4	I3	R1421	E2	G4	
C1517	D5	A3	R1422	D2	G4	
C1519	D5	J3	R1423	E7	G4	
C1600	K5	J1	R1425	F8	H4	
			R1426	K8	H4	
CR1400	L7	G2	R1430	H1	G5	
CR1405	F6	H2	R1431	J1	H5	
CR1501	K5	J2	R1433	E3	H5	
CR1511	K4	I2	R1434	F3	H5	
CR1515	F4	I3	R1501	K7	H2	
			R1510	H6	I2	
P1611	A5	K2	R1511	F4	J2	
P1611	A8	K2	R1512	E5	I3	
P1611	M1	K2	R1513	H4	I3	
P1611	A1	K2	R1515	E4	I3	
P1611	M4	K2	R1516	F5	I3	
			R1518	D5	J3	
Q1410	K7	H2	R1519	D4	J3	
Q1411	K7	H3	R1600	J5	J2	
Q1412	H8	H3	R1610	K4	J2	
Q1420	F2	G4				
Q1421	E2	G4	TP1400	K6	H2	
Q1424	F7	H4	TP1402	K8	H2	
Q1500	J5	I2	TP1420	D6	G3	
Q1501	K5	I2	TP1500	K5	I2	
Q1502	K4	I2	TP1510	H4	I3	
Q1503	F3	H5	TP1520	K8	I4	
Q1510	E5	I3				
Q1511	H4	H3	U1410	C7	G3	
Q1515	E5	I3	U1430	J2	G5	
Q1600	J5	J2	U1532	F2	H5	
			U1620B	K1	J4	
			VR1430	E3	H5	

P/O A8 ASSY also shown on

◇ 26



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HIGH EDGE GENERATOR & EDGE OVERLOAD SENSE

PARTIAL A8 HIGH EDGE BOARD

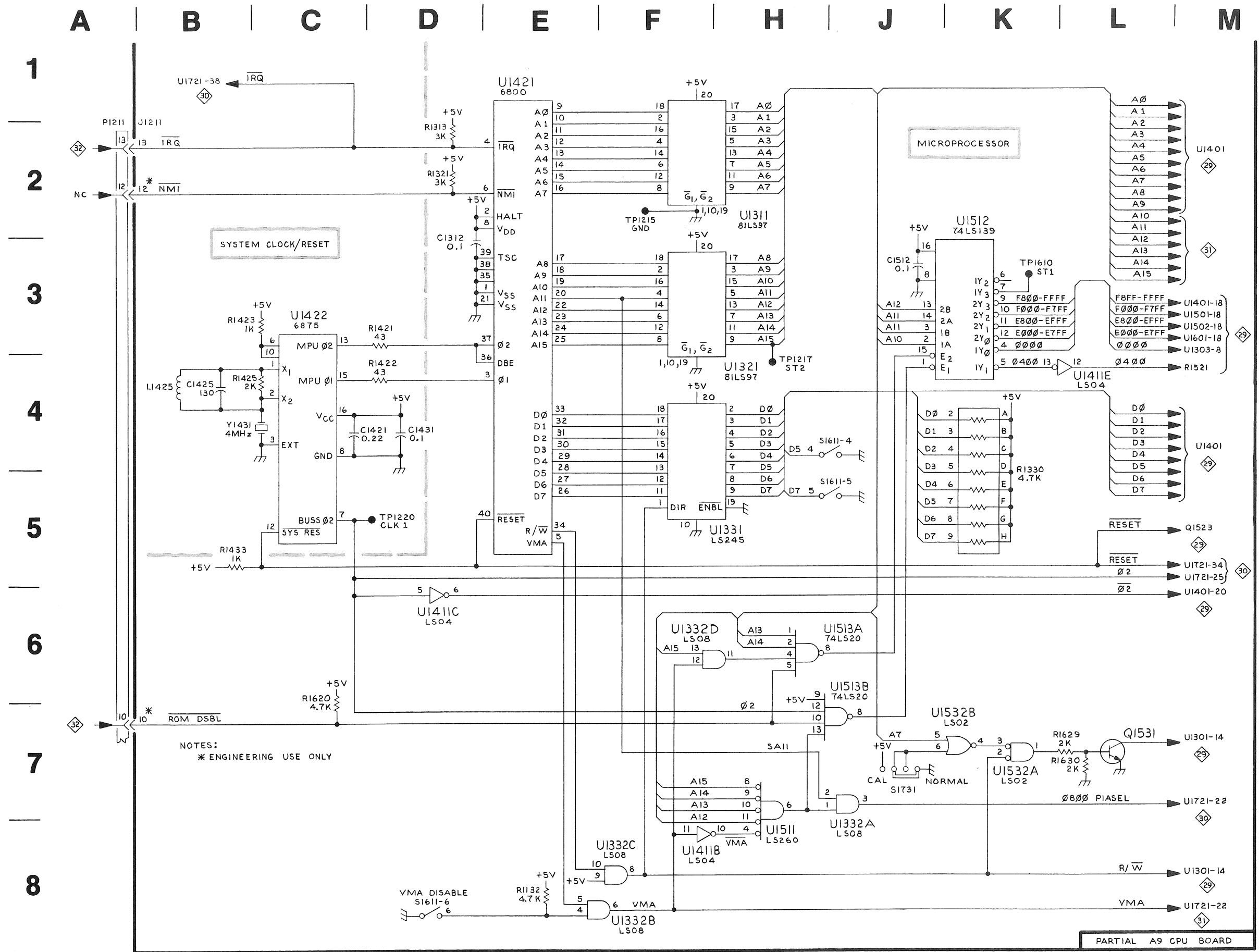
HIGH EDGE GEN-A8
EDGE OVRDLD SENSE-A8

JP

Table 9-32 COMPONENT REFERENCE CHART

P/O A9 ASSY			MICROPROCESSOR & SYSTEM CLOCK/RESET 28		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1312	D3	F3	S1611-4	H4	J3
C1421	D4	H4	S1611-5	H5	J3
C1425	B4	G4	S1611-6	D8	J3
C1431	D4	G5	S1731	J7	K6
C1512	K3	I3	TP1215	F2	E3
J1211	A2	C3	TP1217	H4	E3
L1425	B4	H4	TP1220	D5	E4
P1211	A2	D3	TP1610	J3	J3
Q1531	L7	I5	U1311	H2	F3
R1132	E8	D5	U1321	H4	F4
R1313	D2	F3	U1331	H5	E5
R1321	D2	F4	U1332A	J8	F6
R1330	K5	E5	U1332B	F8	F6
R1421	D3	H4	U1332C	F8	F6
R1422	D4	H4	U1332D	F6	F6
R1423	B3	H4	U1411B	F8	H3
R1425	B4	H4	U1411C	D6	H3
R1433	B5	G5	U1411E	L4	H3
R1620	C6	I4	U1421	E1	G4
R1629	K7	J5	U1422	C3	H5
R1630	K7	J5	U1511	H8	H3
			U1512	K2	I3
			U1513A	H6	I3
			U1513B	H6	I3
			U1532A	K7	I4
			U1532B	K7	I4
			Y1431	B4	G6


P/O A9 ASSY also shown on 29 30 31






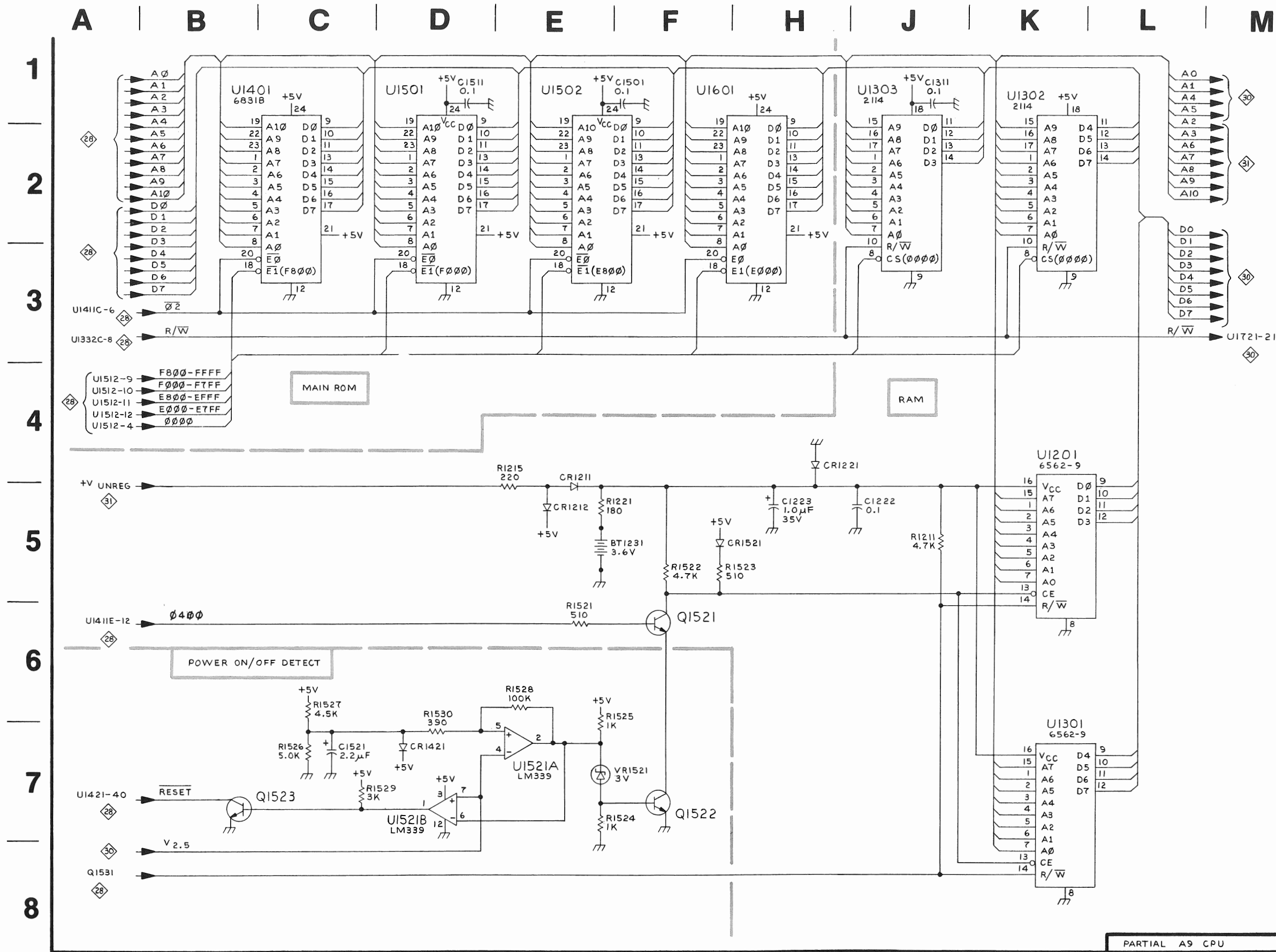
NOTES:
* ENGINEERING USE ONLY

PARTIAL A9 CPU BOARD

Table 9-33
COMPONENT REFERENCE CHART

P/O A9 ASSY			MEMORY (ROM/RAM) & POWER ON/OFF DETECT 		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
BT1231	E5	D5	R1221	F5	E5
C1222	J5	E5	R1521	E6	H4
C1223	H5	D5	R1522	F5	H4
C1311	J1	F2	R1523	H5	H4
C1501	F1	I1	R1524	F7	I4
C1511	D1	H3	R1525	F7	I4
C1521	C7	I5	R1526	C7	I5
CR1211	E4	E2	R1527	C6	I5
CR1212	E5	E2	R1528	E6	H4
CR1221	H4	E5	R1529	C7	I5
CR1421	D7	H5	U1201	K4	E2
CR1521	F5	H4	U1301	K7	E2
Q1521	F6	I4	U1302	K2	F2
Q1522	F7	I4	U1303	J1	F2
Q1523	B7	I5	U1401	C2	G2
R1211	J5	E2	U1501	D2	H2
R1215	E4	E3	U1502	E2	I2
			U1521A	E7	H5
			U1521B	D7	H5
			U1601	H2	J2
			VR1521	E7	I4

P/O A9 ASSY also shown on   



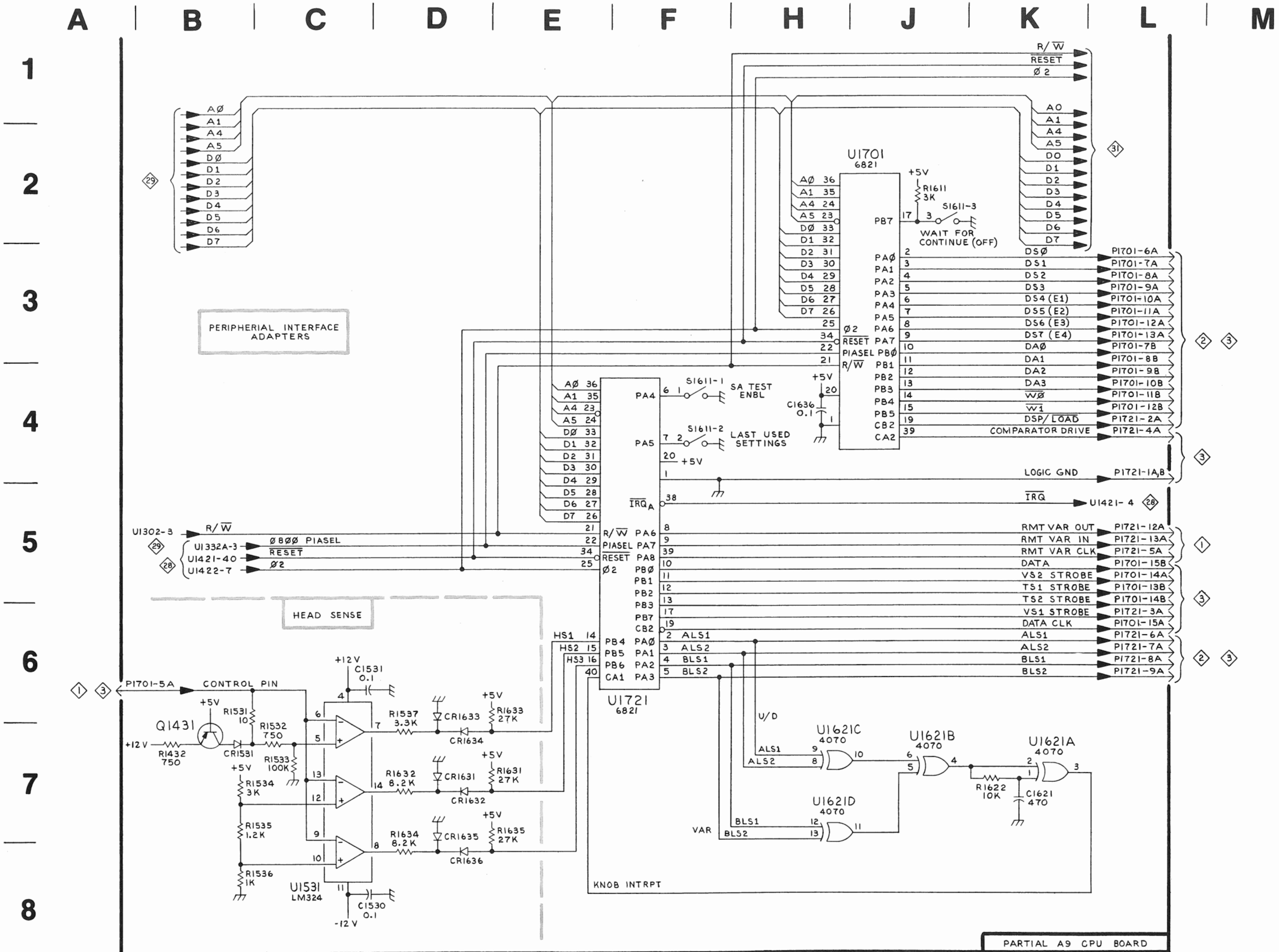
MEMORY (ROM/RAM) - A9
PWR ON/OFF DETECT - A9

PARTIAL A9 CPU

Table 9-34 COMPONENT REFERENCE CHART

P/O A9 ASSY			PERIPHERAL INTERFACE ADAPTERS & HEAD SENSE 30		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1530	C8	I5	R1535	B7	I6
C1531	C6	H5	R1536	C8	I6
C1621	K7	J4	R1537	D7	I6
C1636	H4	J6	R1611	J2	J4
CR1531	B7	H6	R1622	K7	J4
CR1631	D7	J5	R1631	E7	J5
CR1632	D7	J5	R1632	D7	J5
CR1633	D6	J6	R1633	E6	J6
CR1634	D7	J6	R1634	D8	J6
CR1635	D8	J6	R1635	E7	J6
CR1636	D8	J6	S1611-1	F4	J3
P1701	L3	L2	S1611-2	F4	J3
P1721	L6	L4	S1611-3	J2	J3
Q1431	B7	H6	U1531	C7	I6
R1432	B7	H6	U1621A	K7	J5
R1531	B6	H6	U1621B	J7	J5
R1532	C7	H6	U1621C	J7	J5
R1533	C7	H6	U1621D	J7	J5
			U1701	J3	M2
			U1721	F5	K5

P/O A9 ASSY also shown on 28 29 31



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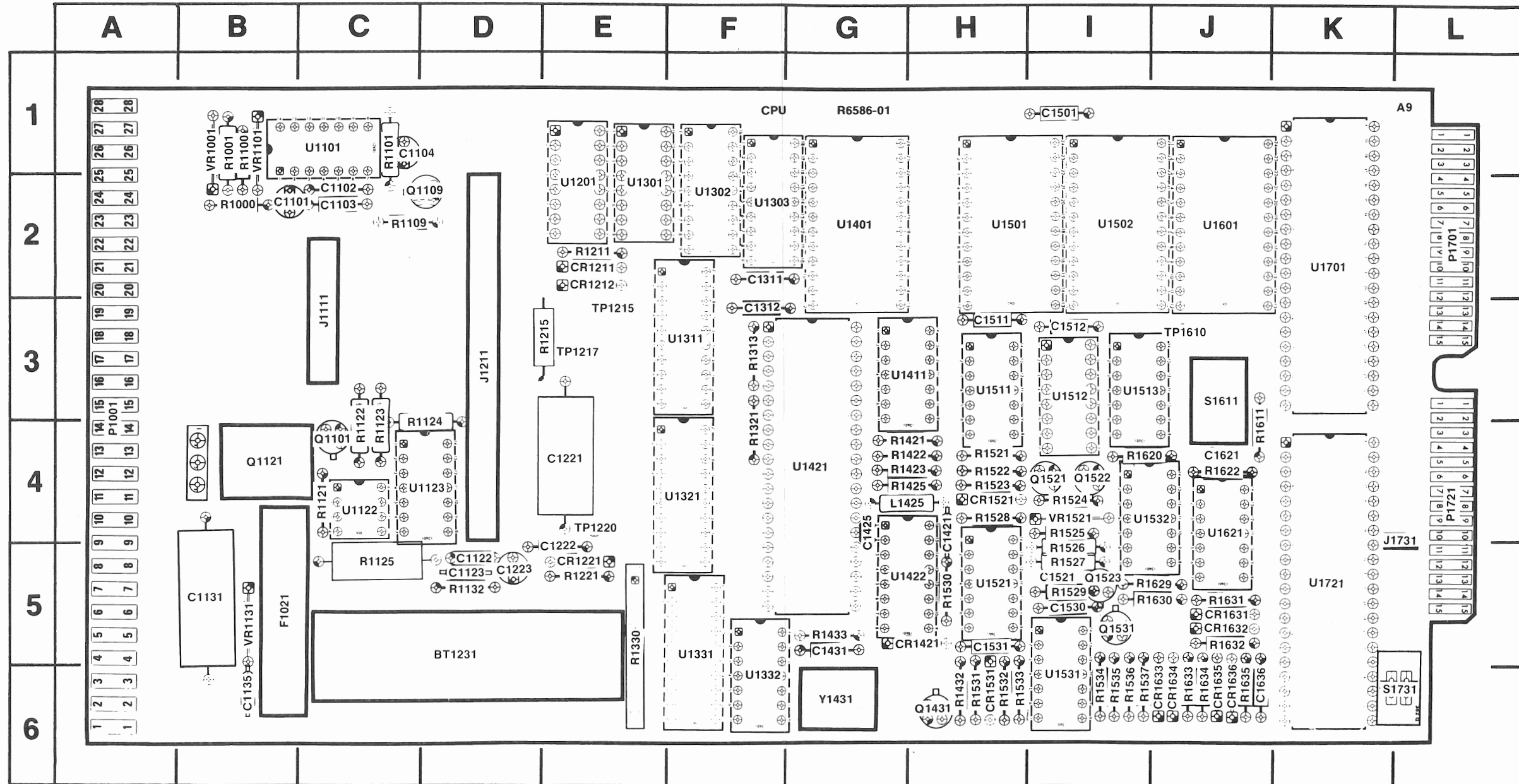
PERIPHERAL INTERFACE ADAPTERS & HEAD SENSE

30 JP

PERIPH INTFC ADPT-A9
HEAD SENSE-A9

30

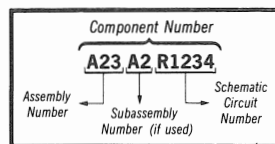
PARTS LOCATION GRID



PARTS LOCATION
CPU BOARD (A9 ASSY)

 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

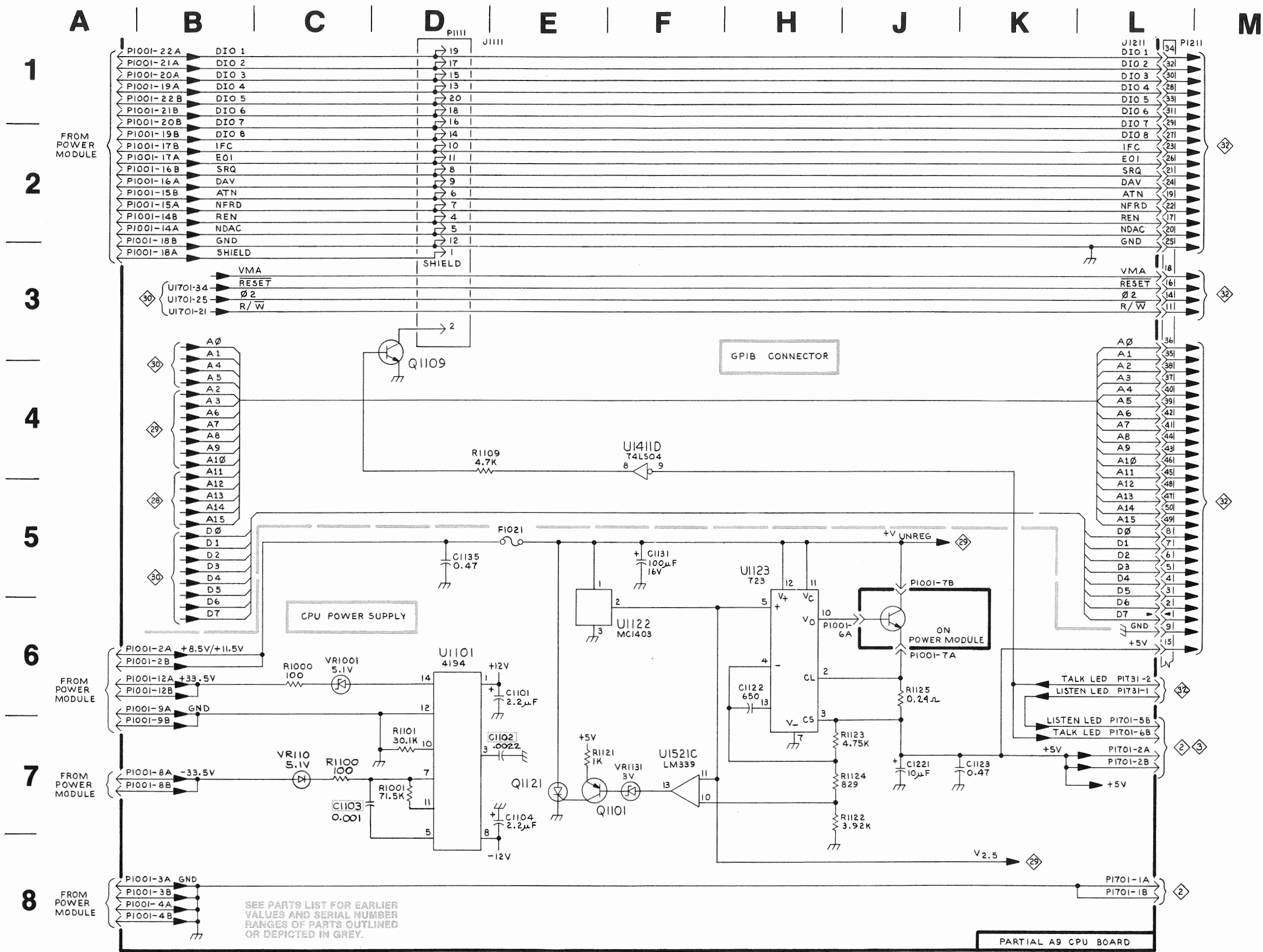
Fig. 9-75. CPU Board (A9).

Table 9-35 COMPONENT REFERENCE CHART

P/O A9 ASSY			CPU POWER SUPPLY 31		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1101	E6	B2	Q1101	E7	C4
C1102	E7	C2	Q1109	D3	C2
C1103	D7	C2	Q1121	E7	B4
C1104	E7	C1			
C1122	H6	D5	R1000	C6	B2
C1123	K7	D5	R1001	D7	B1
C1131	F5	B5	R1100	C7	B1
C1135	D5	B6	R1101	D7	C1
C1221	J7	E4	R1109	D4	C2
F1021	E5	B5	R1121	E7	C4
J1111	D2	C3	R1109	D4	C2
J1211	L3	D3	R1122	J7	C4
J1731	L6	K4	R1123	J7	C4
P1001	A2	A3	R1124	J7	D4
P1001	J6	A3	R1125	J6	C5
P1211	M4	D3	U1101	D7	C1
P1701	L7	L2	U1122	E6	C4
P1721	L4	L4	U1123	H6	D4
			U1411D	F4	G3
			U1521C	F7	H5
			VR1001	C6	B1
			VR1101	C7	B1
			VR1131	F7	B5

P/O A9 ASSY also shown on

28
29
30



SEE PARTS LIST FOR EARLIER VALUES AND SERIAL NUMBER RANGES OF PARTS OUTLINED OR DEPICTED IN GREY.

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CPU POWER SUPPLY-31 JP

CPU POWER SUPPLY-A9
(±5 V & ±12 V)
31

PARTS LOCATION GRID

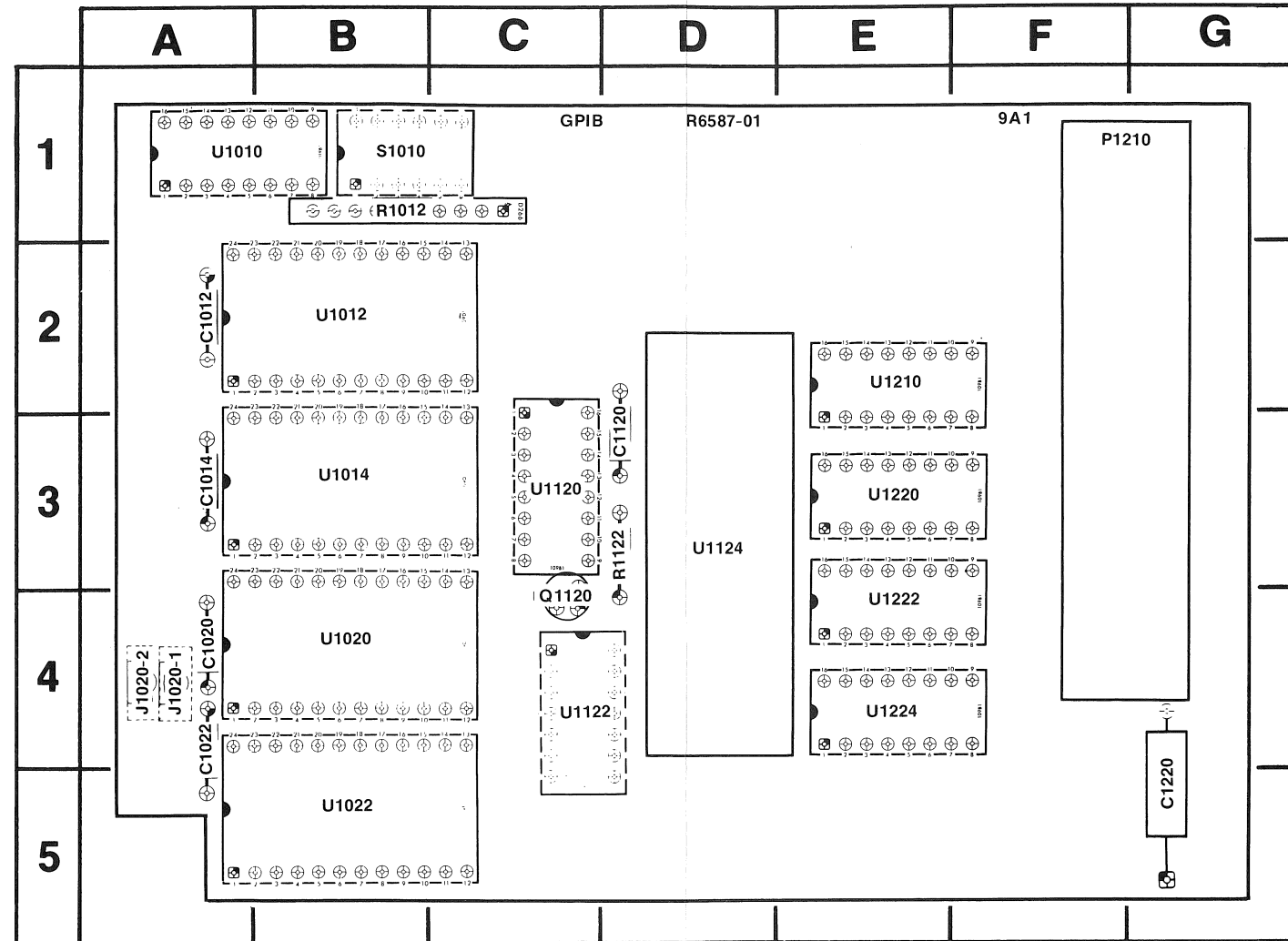
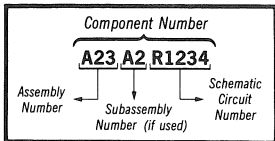


Fig. 9-76. GPIB Board (A9A1).

PARTS LOCATION
GPIB BOARD (A9A1 ASSY)

 Static Sensitive Devices
See Maintenance Section

COMPONENT NUMBER EXAMPLE



Chassis-mounted components have no Assembly Number prefix—see end of Replaceable Electrical Parts List.

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Table 9-36
COMPONENT REFERENCE CHART

A9A1 ASSY			GPIB CONTROL & GPIB ROM		
CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION	CIRCUIT NUMBER	SCHEMATIC LOCATION	BOARD LOCATION
C1012	F1	A2	U1010	E7	A1
C1014	E1	A3	U1012	F2	B2
C1020	D1	A4	U1014	E2	B3
C1022	C1	A4	U1020	D2	B4
C1120	H7	D3	U1022	C2	B5
C1220	B7	G5	U1120	C5	C3
J1020	L4	A4	U1122A,B	J4	C4
P1210	A2	F1	U1122C	K4	C4
P1210	L5	F1	U1122D	B4	C4
Q1120	B5	C4	U1124	H5	D3
R1012	D7	B1	U1210	J5	E2
R1122	B5	D3	U1220	J5	E3
S1010	D8	B1	U1222	L7	E4
			U1224	K6	E4

REPLACEABLE MECHANICAL PARTS

PARTS ORDERING INFORMATION

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

Changes to Tektronix instruments are sometimes made to accommodate improved components as they become available, and to give you the benefit of the latest circuit improvements developed in our engineering department. It is therefore important, when ordering parts, to include the following information in your order: Part number, instrument type or number, serial number, and modification number if applicable.

If a part you have ordered has been replaced with a new or improved part, your local Tektronix, Inc. Field Office or representative will contact you concerning any change in part number.

Change information, if any, is located at the rear of this manual.

SPECIAL NOTES AND SYMBOLS

X000 Part first added at this serial number
00X Part removed after this serial number

FIGURE AND INDEX NUMBERS

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

INDENTATION SYSTEM

This mechanical parts list is indented to indicate item relationships. Following is an example of the indentation system used in the description column.

```

1 2 3 4 5           Name & Description
Assembly and/or Component
Attaching parts for Assembly and/or Component
    --- * ---
Detail Part of Assembly and/or Component
Attaching parts for Detail Part
    --- * ---
Parts of Detail Part.
Attaching parts for Parts of Detail Part
    --- * ---
  
```

Attaching Parts always appear in the same indentation as the item it mounts, while the detail parts are indented to the right. Indented items are part of, and included with, the next higher indentation. The separation symbol --- * --- indicates the end of attaching parts.

Attaching parts must be purchased separately, unless otherwise specified.

ITEM NAME

In the Parts List, an Item Name is separated from the description by a colon (:). Because of space limitations, an Item Name may sometimes appear as incomplete. For further Item Name identification, the U.S. Federal Cataloging Handbook H6-1 can be utilized where possible.

ABBREVIATIONS

"	INCH	ELCTRN	ELECTRON	IN	INCH	SE	SINGLE END
#	NUMBER SIZE	ELEC	ELECTRICAL	INCAND	INCANDESCENT	SECT	SECTION
ACTR	ACTUATOR	ELCTLT	ELECTROLYTIC	INSUL	INSULATOR	SEMICON	SEMICONDUCTOR
ADPTR	ADAPTER	ELEM	ELEMENT	INTL	INTERNAL	SHLD	SHIELD
ALIGN	ALIGNMENT	EPL	ELECTRICAL PARTS LIST	LPHLDR	LAMPHOLDER	SHLDR	SHOULDERED
AL	ALUMINUM	EQPT	EQUIPMENT	MACH	MACHINE	SKT	SOCKET
ASSEM	ASSEMBLED	EXT	EXTERNAL	MECH	MECHANICAL	SL	SLIDE
ASSY	ASSEMBLY	FIL	FILLISTER HEAD	MTG	MOUNTING	SLFLKG	SELF-LOCKING
ATTEN	ATTENUATOR	FLEX	FLEXIBLE	NIP	NIPPLE	SLVG	SLEEVING
AWG	AMERICAN WIRE GAGE	FLH	FLAT HEAD	NON WIRE	NOT WIRE WOUND	SPR	SPRING
BD	BOARD	FLTR	FILTER	OBD	ORDER BY DESCRIPTION	SQ	SQUARE
BRKT	BRACKET	FR	FRAME or FRONT	OD	OUTSIDE DIAMETER	SST	STAINLESS STEEL
BRS	BRASS	FSTNR	FASTENER	OVH	OVAL HEAD	STL	STEEL
BRZ	BRONZE	FT	FOOT	PH BRZ	PHOSPHOR BRONZE	SW	SWITCH
BSHG	BUSHING	FXD	FIXED	PL	PLAIN or PLATE	T	TUBE
CAB	CABINET	GSKT	GASKET	PLSTC	PLASTIC	TERM	TERMINAL
CAP	CAPACITOR	HDL	HANDLE	PN	PART NUMBER	THD	THREAD
CER	CERAMIC	HEX	HEXAGON	PNH	PAN HEAD	THK	THICK
CHAS	CHASSIS	HEX HD	HEXAGONAL HEAD	PWR	POWER	TNSN	TENSION
CKT	CIRCUIT	HEX SOC	HEXAGONAL SOCKET	RCPT	RECEPTACLE	TPG	TAPPING
COMP	COMPOSITION	HLCPS	HELICAL COMPRESSION	RES	RESISTOR	TRH	TRUSS HEAD
CONN	CONNECTOR	HLEXT	HELICAL EXTENSION	RGD	RIGID	V	VOLTAGE
COV	COVER	HV	HIGH VOLTAGE	RLF	RELIEF	VAR	VARIABLE
CPLG	COUPLING	IC	INTEGRATED CIRCUIT	RTNR	RETAINER	W/	WITH
CRT	CATHODE RAY TUBE	ID	INSIDE DIAMETER	SCH	SOCKET HEAD	WSHR	WASHER
DEG	DEGREE	IDENT	IDENTIFICATION	SCOPE	OSCILLOSCOPE	XFMR	TRANSFORMER
DWR	DRAWER	IMPLR	IMPELLER	SCR	SCREW	XSTR	TRANSISTOR

CROSS INDEX—MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip
000BH	FAB-TEK	17 SUGAR HALLOW ROAD	DANBURY, CT 06810
000GK	RIGGS/LAMOREE CO.	422 N.W. 8TH AVE.	PORTLAND, OR 97209
01881	ANACONDA AMERICAN BRASS COMPANY, A DIV. OF ANACONDA COMPANY	414 MEADOW STREET	WATERBURY, CT 06720
04713	MOTOROLA, INC., SEMICONDUCTOR PROD. DIV.	5005 E MCDOWELL RD, PO BOX 20923	PHOENIX, AZ 85036
05820	WAKEFIELD ENGINEERING, INC.	AUDUBON ROAD	WAKEFIELD, MA 01880
06090	RAYCHEM CORPORATION	300 CONSTITUTION DRIVE	MENLO PARK, CA 94025
06915	RICHCO PLASTIC CO.	5825 N. TRIPP AVE.	CHICAGO, IL 60646
08261	SPECTRA-STRIP CORP.	7100 LAMPSON AVE.	GARDEN GROVE, CA 92642
13103	THERMALLOY COMPANY, INC.	2021 W VALLEY VIEW LANE P O BOX 34829	DALLAS, TX 75234
18722	RCA CORP., SOLID STATE DIVISION	CRESTWOOD ROAD	MOUNTAINTOP, PA 18707
22526	BERG ELECTRONICS, INC.	YOUK EXPRESSWAY	NEW CUMBERLAND, PA 17070
27264	MOLEX PRODUCTS CO.	5224 KATRINE AVE.	DOWNERS GROVE, IL 60515
46384	PENN ENGINEERING AND MFG. CORP.	P O BOX 311	DOYLESTOWN, PA 18901
49671	RCA CORPORATION	30 ROCKEFELLER PLAZA	NEW YORK, NY 10020
57771	STIMPSON, EDWIN B., CO., INC.	900 SYLVAN AVENUE	BAYPORT, NY 11705
59730	THOMAS AND BETTS COMPANY	36 BUTLER ST.	ELIZABETH, NJ 07207
71643	CONNECTICUT HARD RUBBER CO.	407 EAST ST.	NEW HAVEN, CT 06509
71785	TRW, CINCH CONNECTORS	1501 MORSE AVENUE	ELK GROVE VILLAGE, IL 60007
73743	FISCHER SPECIAL MFG. CO.	446 MORGAN ST.	CINCINNATI, OH 45206
73803	TEXAS INSTRUMENTS, INC., METALLURGICAL MATERIALS DIV.	34 FOREST STREET	ATTLEBORO, MA 02703
75915	LITTELFUSE, INC.	800 E. NORTHWEST HWY	DES PLAINES, IL 60016
78189	ILLINOIS TOOL WORKS, INC. SHAKEPROOF DIVISION	ST. CHARLES ROAD	ELGIN, IL 60120
79136	WALDES, KOHINOOR, INC.	47-16 AUSTEL PLACE	LONG ISLAND CITY, NY 11101
80009	TEKTRONIX, INC.	P O BOX 500	BEAVERTON, OR 97077
83330	SMITH, HERMAN H., INC.	812 SNEDIKER AVE.	BROOKLYN, NY 11207
83385	CENTRAL SCREW CO.	2530 CRESCENT DR.	BROADVIEW, IL 60153
86928	SEASTROM MFG. COMPANY, INC.	701 SONORA AVENUE	GLENDALE, CA 91201
87308	N. L. INDUSTRIES, INC., SOUTHERN SCREW DIV.	P. O. BOX 1360	STATESVILLE, NC 28677
91506	AUGAT, INC.	33 PERRY AVE.	ATTLEBORO, MA 02703
93907	TEXTRON INC. CAMCAR DIV	600 18TH AVE	ROCKFORD, IL 61101
98159	RUBBER TECK, INC.	19115 HAMILTON AVE., P O BOX 389	GARDENA, CA 90247
98291	SEALECTRO CORP.	225 HOYT	MAMARONECK, NY 10544

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty	1	2	3	4	5	Name & Description	Mfr Code	Mfr Part Number
1-1	337-2665-00		1						SHIELD,ELEC:SIDE	80009	337-2665-00
-2	337-2787-00		1						SHIELD,ELEC:RIGHT,AL	80009	337-2787-00
-3	366-1707-01		1						KNOB:GRAY,0.127 ID,0.5 OD,0.531 HIGH	80009	366-1707-01
-4	366-1737-00		1						KNOB:GRAY,0.252 ID,0.7 OD,0.52 H	80009	366-1737-00
-5	175-2830-00		1						CABLE ASSY,RF:50 OHM COAX,16.0 L,6-0 (FROM J510 TO A4J1220)	80009	175-2830-00
-6	-----		1						CONN,RCPT,ELEC:(SEE J530 REPL)		
-7	175-2823-00		1						LEAD ASSY,ELEC:5,26 AWG,1.5 L (FROM J530 TO A1J1330)	80009	175-2823-00
	352-0163-00		1						. CONN BODY,PL,EL:5 WIRE BLACK	80009	352-0163-00
	175-3096-00		1						LEAD ASSY,ELEC:2,26 AWG,1.5 L (FROM J525 TO A1J1435)	80009	175-3096-00
	352-0169-01		1						. HLDR TERM CONN:2 WIRE,BROWN	80009	352-0169-01
	175-1402-00		1						CABLE ASSY,RF:50 OHM COAX,9.25 L (FROM A1J1431 TO A7J1121)	80009	175-1402-00
-8	-----		1						COIL,CAL:(SEE J525 REPL) (ATTACHING PARTS)		
-9	210-0442-00		2						NUT,PLAIN,HEX.:3-48 X 0.187 INCH,CD PL BRS	73743	3014-402
-10	210-0259-00		2						TERMINAL,LUG:0.099"ID INT TOOTH,SE	80009	210-0259-00
-11	210-0994-00		2						WASHER,FLAT:0.125 ID X 0.25" OD,STL	86928	5702-201-20
-12	210-0849-00		2						WSHR,SHOULDERED:0.11 ID X 0.188"OD,FIBER	83330	2151
-13	210-0224-00		2						TERMINAL,LUG:0.20 ID X 0.344 OD,SE,BRS	86928	A373-148-1
-14	210-0593-00		2						NUT,FINISHING:0.25 HEX X 0.312" LONG,BRS	80009	210-0593-00
									-----*-----		
-15	361-0059-01		1						INSULATOR,PLATE:1.093 X 0.343 X 0.125 INCH	80009	361-0059-01
-16	175-2824-00		1						CABLE ASSY,ELEC:1,26 AWG,1.25 L,9-N (FROM J520 TO A7J1332)	80009	175-2824-00
-17	352-0169-09		1						. CONN BODY,PL,EL:2 WIRE WHITE	80009	352-0169-09
-18	334-3616-00		1						MARKER,IDENT:	80009	334-3616-00
-19	378-2035-00		1						LENS,LIGHT:RED	80009	378-2035-00
-20	333-2574-00		1						PANEL,FRONT:	80009	333-2574-00
	255-0581-00		FT						PLASTIC CHANNEL:0.156 X 0.156,POLYETHYLENE	06915	PGS-2
-21	333-2576-00		1						PANEL,REAR: (ATTACHING PARTS)	80009	333-2576-00
-22	213-0776-00		4						SCREW,TPG,TF:6-32 X 0.625,FLH	93907	234-25540-024
-23	211-0108-00		18						SCREW,MACHINE:2-56 X 0.156 INCH,PNH STL	83385	OBD
-24	386-3761-00		4						SUPPORT,PLUG-IN:STAINLESS STEEL	80009	386-3761-00
									-----*-----		
-25	343-0828-00		1						RETAINER,CKT BD:6.125 L,SST	80009	343-0828-00
-26	426-1645-01		1						FRAME,REAR:ALUMINUM (ATTACHING PARTS)	80009	426-1645-01
-27	211-0105-00		2						SCREW,MACHINE:4-40 X 0.188,100 DEG,FLH STL	83385	OBD
									-----*-----		
-28	214-1061-00		2						SPRING,GROUND:FLAT	80009	214-1061-00
-29	426-1647-00		1						FR SECT,PLUG-IN:TOP LEFT (ATTACHING PARTS)	80009	426-1647-00
-30	211-0541-00		2						SCREW,MACHINE:6-32 X 0.25"100 DEG,FLH STL	83385	OBD
									-----*-----		
-31	337-2670-00		1						SHIELD,ELEC:TOP (ATTACHING PARTS)	80009	337-2670-00
-32	211-0541-00		2						SCREW,MACHINE:6-32 X 0.25"100 DEG,FLH STL	83385	OBD
									-----*-----		
-33	426-1646-00		1						FR SECT,PLUG-IN:TOP RIGHT (ATTACHING PARTS)	80009	426-1646-00
-34	211-0541-00		2						SCREW,MACHINE:6-32 X 0.25"100 DEG,FLH STL	83385	OBD
									-----*-----		
-35	351-0604-00		10						GUIDE,CKT BD:PLASTIC	80009	351-0604-00
-36	337-2734-01		1						SHIELD,ELEC:CIRCUIT BOARD,RIGHT	80009	337-2734-01
-37	337-2733-01		1						SHIELD,ELEC:CIRCUIT BOARD,LEFT	80009	337-2733-01
-38	426-1648-00		1						FR SECT,PLUG-IN:BOTTOM (ATTACHING PARTS)	80009	426-1648-00
-39	211-0502-00		2						SCREW,MACHINE:6-32 X 0.188",FLH STL	83385	OBD
									-----*-----		
-40	337-2669-00		1						SHIELD,ELEC:BOTTOM (ATTACHING PARTS)	80009	337-2669-00
-41	211-0502-00		2						SCREW,MACHINE:6-32 X 0.188",FLH STL	83385	OBD
									-----*-----		

Replaceable Mechanical Parts—CG 551AP, VOL. 2

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Qty	1	2	3	4	5	Name & Description	Mfr Code	Mfr Part Number
1-42	426-1699-00			1						FR SECT, PLUG-IN: BOTTOM RIGHT (ATTACHING PARTS)	80009	426-1699-00
-43	211-0105-00			2						SCREW, MACHINE: 4-40 X 0.188, 100 DEG, FLH STL	83385	OBD
-44	211-0502-00			2						SCREW, MACHINE: 6-32 X 0.188", FLH STL	83385	OBD
-45	105-0719-00			2						LATCH, RETAINING: PLUG-IN (ATTACHING PARTS)	80009	105-0719-00
-46	213-0120-00			2						SCR, TPG, THD FOR: 2-32 X 0.250 INCH, PNH STL	83385	OBD
-47	105-0967-00			2						RELEASE BAR, LCH: PLASTIC	80009	105-0967-00
-48	214-2943-00			1						ACTUATOR, LATCH:	80009	214-2943-00
-49	386-4210-01			1						SUBPANEL, FRONT: ALUMINUM (ATTACHING PARTS)	80009	386-4210-01
-50	211-0097-00			3						SCREW, MACHINE: 4-40 X 0.312 INCH, PNH STL	83385	OBD
-51	378-0886-01			1						LENS, LIGHT: CLEAR, MKD X	80009	378-0886-01
-52	378-0886-02			1						LENS, LIGHT: CLEAR, MKD DIV	80009	378-0886-02
-53	378-0886-03			1						LENS, LIGHT: CLEAR, MKD MAG	80009	378-0886-03
-54	378-0886-04			1						LENS, LIGHT: CLEAR, MKD %	80009	378-0886-04
-55	378-0886-05			1						LENS, LIGHT: CLEAR, MKD EXT	80009	378-0886-05
-56	378-0886-06			1						LENS, LIGHT: CLEAR, MKD REM	80009	378-0886-06
-57	378-0886-07			1						LENS, LIGHT: CLEAR, MKD TLK	80009	378-0886-07
-58	378-0886-08			1						LENS, LIGHT: CLEAR, MKD LSN	80009	378-0886-08
-59	-----			1						CKT BOARD ASSY: FRONT PANEL (SEE A1 REPL) (ATTACHING PARTS)		
-60	211-0116-00	B010100	B020234	5						SCR, ASSEM WSHR: 4-40 X 0.312 INCH, PNH BRS	83385	OBD
	211-0292-00	B020235		5						SCR, ASSEM WSHR: 4-40 X 0.29, BRS NI PL	78189	OBD
-61	-----			-						CKT BOARD ASSY INCLUDES:		
-62	136-0260-02			1						. TERM, TEST POINT: (SEE A1TP1730 REPL)		
-63	136-0252-07			1						. SKT, PL-IN ELEC: MICROCIRCUIT, 16 DIP, LOW CLE	71785	133-51-92-008
-64	-----			1						. SOCKET, PIN CONN: W/O DIMPLE	22526	75060-012
-65	-----			1						. CONN, RCPT, ELEC: (SEE A1J1431 REPL)		
-66	-----			1						. CONT SET, ELEC: (SEE A1J1330, J1435, J1630 REPL)		
	162-0541-00			1						. CONN, RCPT, ELEC: (SEE A1J1521 REPL)		
-67	-----			FT						. INSUL SLVG, ELEC: 0.018 ID, PTFE, BLACK	000GK	OBD
	-----			1						. SWITCH, ROTARY: (SEE A1S1121 REPL) (ATTACHING PARTS)		
-68	210-0406-00			3						. NUT, PLAIN, HEX: 4-40 X 0.188 INCH, BRS	73743	12161-50
-69	210-0054-00			3						. WASHER, LOCK: SPLIT, 0.118 ID X 0.212" OD STL	83385	OBD
-70	-----			-						. SWITCH, ROTARY ASSY INCLUDES:		
-71	-----			1						. . LAMP, INCAND: (SEE A1DS1121 REPL)		
	-----			4						. . SEMICOND DVC, PH: (SEE A1Q1121, Q1122, Q1123, . . Q1124 REPL)		
-72	343-0703-00			2						. . RETAINER, PXSTR: DELRIN, GRAY	80009	343-0703-00
-73	-----			1						. SWITCH PB ASSY: (SEE A1S1101 REPL)		
-74	-----			1						. SWITCH PB ASSY: (SEE A1S1011 REPL)		
-75	-----			25						. SWITCH PB ASSY: (SEE A1S1031, S1131, S1132, S1211, . . S1231, S1311, S1312, S1411, S1412, S1413, S1414, . . S1421, S1422, S1423, S1424, S1425, S1431, S1432, . . S1511, S1521, S1522, S1531, S1611, S1621, S1721 . . REPL)		
-76	-----			10						. SWITCH PB ASSY: (SEE A1S1321, S1322, S1323, S1324, . . S1325, S1326, S1331, S1332, S1523, S1612 REPL)		
-77	386-4212-00			2						SUPPORT, CKT BD: ALUMINUM (ATTACHING PARTS)	80009	386-4212-00
-78	211-0116-00	B010100	B020234	2						SCR, ASSEM WSHR: 4-40 X 0.312 INCH, PNH BRS	83385	OBD
	211-0292-00	B020235		2						SCR, ASSEM WSHR: 4-40 X 0.29, BRS NI PL	78189	OBD
-79	-----			1						CKT BOARD ASSY: MAIN INTERCONNECT (SEE A2 REPL)		
-80	-----			4						. TERM, TEST POINT: A2TP1630, TP1632, TP1636, . . TP1638 REPL)		
-81	-----			8						. CONN, RCPT, ELEC: (SEE A2J1011, J1111, J1411, J1412, . . J1511, J1611, J1701, J1721 REPL)		

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Qty	1	2	3	4	5	Name & Description	Mfr Code	Mfr Part Number
1-82	386-4211-00			1	.					SUPPORT,CKT BD:ALUMINUM (ATTACHING PARTS)	80009	386-4211-00
-83	210-0630-00			3	.					EYELET,METALLIC:0.089 OD X 0.187 L -----*-----	57771	SE-36
-84	175-2650-00			1	.					CA ASSY,SP,ELEC:50,28 AWG,4.0 L	80009	175-2650-00
	-----			-	.					(FROM A2P1200 TO A1J1521)		

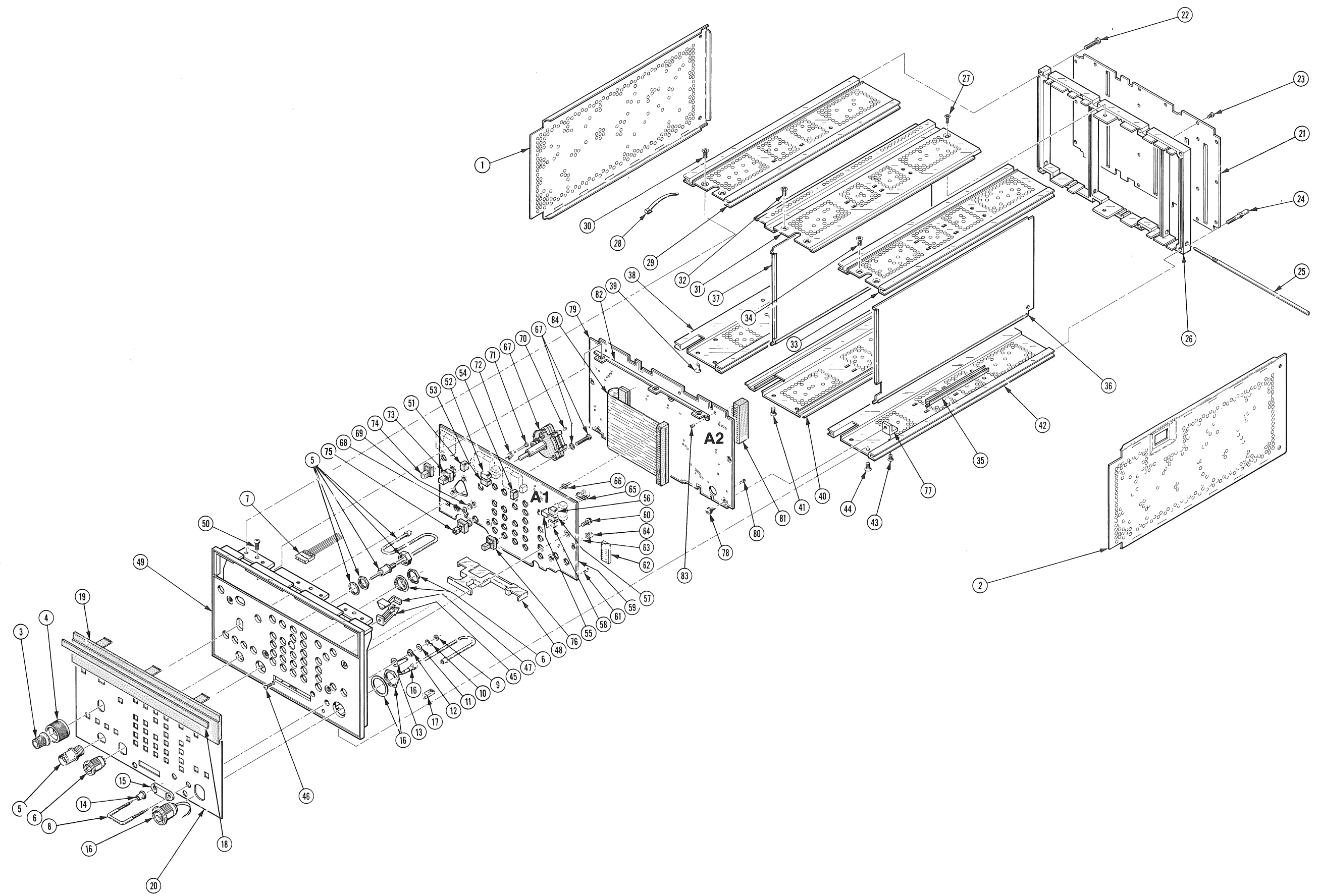
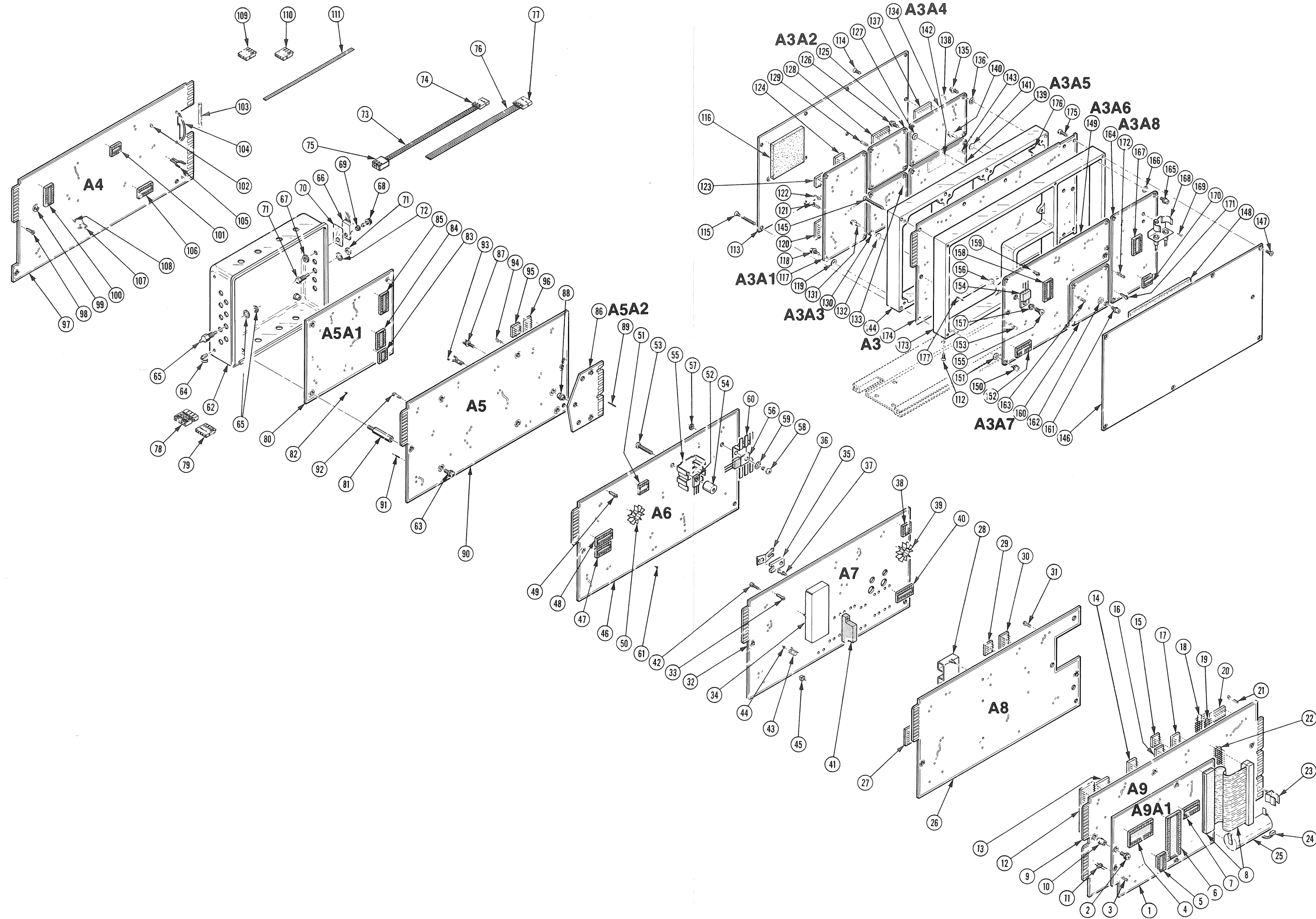


FIG 2 CIRCUIT BOARDS



Replaceable Mechanical Parts—CG 551AP, VOL. 2

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty	1	2	3	4	5	Name & Description	Mfr Code	Mfr Part Number
2-1	-----	-----	1						CKT BOARD ASSY: GPIB(SEE A9A1 REPL) (ATTACHING PARTS)		
-2	211-0116-00	B010100 B020234	3						SCR, ASSEM WSHR: 4-40 X 0.312 INCH, PNH BRS	83385	OBD
	211-0292-00	B020235	3						SCR, ASSEM WSHR: 4-40 X 0.29, BRS NI PL	78189	OBD
									- - - * - - -		
	-----	-----	-						CKT BOARD ASSY INCLUDES:		
-3	-----	-----	2						. SOCKET, PIN TERM: (SEE A9A1J1020 REPL)		
-4	136-0578-00		4						. SKT, PL-IN ELEK: MICROCKT, 24 PIN, LOW PROFILE	73803	C S9002-24
-5	136-0269-02		1						. SKT, PL-IN ELEK: MICROCIRCUIT, 14 DIP, LOW CLE	73803	CS9002-14
-6	136-0623-00		1						. SOCKET, PLUG-IN: 40 DIP, LOW PROFILE	73803	CS9002-40
-7	136-0260-02		6						. SKT, PL-IN ELEK: MICROCIRCUIT, 16 DIP, LOW CLE	71785	133-51-92-008
-8	175-2649-00		1						. A ASSY, SP, ELEC: 50, 28 AWG, 2.375 L	80009	175-2649-00
			-						. (FROM A9A1P1210 TO A9J1211)		
-9	-----	-----	1						CKT BOARD ASSY: CPU(SEE A9 REPL)		
-10	129-0277-00		3						. SPACER, POST: 0.18 L, W/4-40THD THRU, BRASS	80009	129-0277-00
-11	-----	-----	1						. TERM SET, PIN: (SEE A9J1731 REPL)		
-12	136-0623-00		3						. SOCKET, PLUG-IN: 40 DIP, LOW PROFILE	73803	CS9002-40
-13	136-0634-00		3						. SOCKET, PLUG-IN: 20 LEAD DIP, CKT BD MTG	73803	CS9002-20
-14	136-0670-00		2						. SKT, PL-IN ELEK: MICROCKT, 18 PIN, LOW PROFILE	73803	CS9002-18
-15	136-0514-00		1						. SKT, PL-IN ELEK: MICROCIRCUIT, 8 DIP	73803	CS9002-8
-16	136-0260-02		4						. SKT, PL-IN ELEK: MICROCIRCUIT, 16 DIP, LOW CLE	71785	133-51-92-008
-17	136-0578-00		4						. SKT, PL-IN ELEK: MICROCKT, 24 PIN, LOW PROFILE	73803	C S9002-24
-18	-----	-----	1						. CONTACT SET, ELE: (SEE A9J1111 REPL)		
-19	131-1425-00		1						. CONTACT SET, ELE: R ANGLE, 0.150" L, STR OF 36	22526	65521-136
			-						. (PART OF A9J1111)		
-20	136-0269-02		10						. SKT, PL-IN ELEK: MICROCIRCUIT, 14 DIP, LOW CLE	73803	CS9002-14
-21	-----	-----	4						. TERM, TEST POINT: (SEE A9TP1215, TP1217, TP1220, TP1610 REPL)		
			-						. TP1610 REPL)		
-22	-----	-----	1						. CONTACT SET, ELEC: (SEE A9J1211 REPL)		
-23	344-0326-00		2						. CLIP, ELECTRICAL: FUSE, BRASS	75915	102071
-24	343-0549-00		2						. STRAP, TIEDOWN: 0.091 W X 3.62 INCH LONG	59730	TY100
-25	-----	-----	1						. BATTERY, STORAGE: (SEE A9BT1231 REPL)		
-26	-----	-----	1						CKT BOARD ASSY: HIGH EDGE(SEE A8 REPL)		
-27	136-0269-02		2						. SKT, PL-IN ELEK: MICROCIRCUIT, 14 DIP, LOW CLE	73803	CS9002-14
-28	214-2518-00		1						. HEAT SINK, XSTR: T0-220 OR T0-202	000BH	106B-B-HT
-29	136-0514-00		6						. SKT, PL-IN ELEK: MICROCIRCUIT, 8 DIP	73803	CS9002-8
-30	136-0260-02		1						. SKT, PL-IN ELEK: MICROCIRCUIT, 16 DIP, LOW CLE	71785	133-51-92-008
-31	-----	-----	12						. TERM TEST POINT: (SEE A8TP1100, TP1200, TP1202, TP1210, TP1300, TP1302, TP1400, TP1402, TP1420, TP1500, TP1510, TP1520 REPL)		
			-						. TP1500, TP1510, TP1520 REPL)		
-32	-----	-----	1						CKT BOARD ASSY: OUTPUT(SEE A7 REPL)		
-33	-----	-----	2						. TERM, TEST POINT: (SEE A7TP1200, TP1302 REPL)		
-34	337-2666-00		1						. SHIELD, ELEC: ATTENUATOR, 5AC, OUTPUT BD	80009	337-2666-00
-35	-----	-----	3						. ATTENUATOR, FXD: (SEE A7AT1630, AT1632, AT1634 REPL)		
			-						. AT1634 REPL)		
									(ATTACHING PARTS)		
-36	344-0248-00		3						. CLIP, ATTENUATOR:	80009	344-0248-00
-37	214-1797-00		6						. PIN, ATTEN CLIP:	80009	214-1797-00
									- - - * - - -		
-38	136-0514-00		5						. SKT, PL-IN ELEK: MICROCIRCUIT, 8 DIP	73803	CS9002-8
-39	214-1292-00		2						. HEAT SINK, ELEC: TRANSISTOR	05820	205-AB
-40	136-0260-02		8						. SKT, PL-IN ELEK: MICROCIRCUIT, 16 DIP, LOW CLE	71785	133-51-92-008
-41	-----	-----	14						. RELAY: (SEE A7K1431, K1432, K1433, K1434, K1532, K1534, K1535, K1537, K1632, K1634, K1636, K1638, K1737, K1739 REPL)		
			-						. K1534, K1535, K1537, K1632, K1634, K1636, K1638, K1737, K1739 REPL)		
									(ATTACHING PARTS)		
-42	213-0848-00		28						. SCREW, TPG, TF: 0-40 X 0.25, PLASTITE	80009	213-0848-00
									- - - * - - -		
-43	-----	-----	2						. CONN, RCPT, ELEC: (SEE A7J1121, J1332 REPL)		
-44	136-0252-07		64						. SOCKET, PIN CONN: W/O DIMPLE	22526	75060-012
-45	131-0157-00		3						. TERMINAL, PIN: 0.25 L X 0.040D, BRS	98291	013-1001-000-479
-46	-----	-----	1						CKT BOARD ASSY: REFERENCE(SEE A6 REPL)		
-47	136-0269-02		2						. SKT, PL-IN ELEK: MICROCIRCUIT, 14 DIP, LOW CLE	73803	CS9002-14
-48	136-0260-02		8						. SKT, PL-IN ELEK: MICROCIRCUIT, 16 DIP, LOW CLE	71785	133-51-92-008
-49	-----	-----	5						. TERM, TEST POINT: (SEE A6TP1200, TP1202, TP1304, TP1400, TP1401 REPL)		
			-						. TP1400, TP1401 REPL)		
-50	214-1292-00		2						. HEAT SINK, ELEC: TRANSISTOR	05820	205-AB

Replaceable Mechanical Parts—CG 551AP, VOL. 2

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part Number
2-51	136-0514-00		10	.	SKT,PL-IN ELEC:MICROCIRCUIT,8 DIP	73803	CS9002-8
-52	-----		1	.	TRANSISTOR:(SEE A6Q1510 REPL) (ATTACHING PARTS)		
-53	211-0152-00		1	.	SCR,ASSEM WSHR:4-40 X 0.625 INCH,PNH BRS	83385	OBD
-54	129-0143-00		1	.	INSULATOR,STDF:0.312 OD X 0.406" L,NYLON - - - * - - -	80009	129-0143-00
-55	214-1692-01		1	.	HEAT SINK,XSTR:FINGER TYPE,BLACK	80009	214-1692-01
-56	-----		1	.	TRANSISTOR:(SEE A6Q1711 REPL) (ATTACHING PARTS)		
-57	210-0406-00		1	.	NUT,PLAIN,HEX.:4-40 X 0.188 INCH,BRS	73743	12161-50
-58	211-0008-00		1	.	SCREW,MACHINE:4-40 X 0.25 INCH,PNH STL	83385	OBD
-59	210-1122-00		1	.	WASHER,LOCK:0.12 ID,DISHED,0.025 THK - - - * - - -	86928	OBD
-60	214-2955-00		1	.	HEAT SINK,XSTR:TO-220,AL	80009	214-2955-00
-61	136-0252-07		63	.	SOCKET,PIN CONN:W/O DIMPLE	22526	75060-012
	672-0821-00		1	.	CKT BOARD ASSY:POWER SUPPLY	80009	672-0821-00
-62	337-2664-00		1	.	SHIELD,ELEC:CIRCUIT BOARD (ATTACHING PARTS)	80009	337-2664-00
-63	211-0116-00		4	.	SCR,ASSEM WSHR:4-40 X 0.312 INCH,PNH BRS - - - * - - -	83385	OBD
-64	343-0088-00		2	.	CLAMP,LOOP:0.062 INCH DIA	80009	343-0088-00
-65	-----		9	.	CAPACITOR:(SEE C561,C562,C567,C568,C571,C572, C573,C574,C575 REPL)		
-66	-----		1	.	TRANSISTOR:(SEE Q501 REPL) (ATTACHING PARTS)		
-67	210-0586-00		1	.	NUT,PL,ASSEM WA:4-40 X 0.25,STL CD PL	83385	OBD
-68	211-0116-00		1	.	SCR,ASSEM WSHR:4-40 X 0.312 INCH,PNH BRS	83385	OBD
-69	210-1178-00		1	.	WSHR,SHOULDERED:FOR MTG TO-220 TRANSISTOR - - - * - - -	49671	DF 137A
-70	342-0203-00		1	.	INSULATOR,PLATE:XSTR,0.675 X 0.625 X 0.001	18722	DF103C
-71	-----		4	.	CAPACITOR:(SEE C541,C542,C551,C552 REPL)		
-72	210-0008-00		4	.	WASHER,LOCK:INTL,0.172 ID X 0.331"OD,STL	78189	1208-00-00-0541C
	198-4219-00		1	.	WIRE SET,ELEC:	80009	198-4219-00
-73	175-0826-00		1	.	WIRE,ELECTRICAL:3 WIRE RIBBON	80009	175-0826-00
-74	352-0161-01		1	.	CONN BODY,PL,EL:3 WIRE BROWN - . . (TO A5J1101)	80009	352-0161-01
-75	204-0678-00		3	.	CONN BODY,PL,EL:FOR 3 FEMALE CONTACTS - . . (TO Q501)	27264	10-17-2032
-76	175-0827-00		1	.	CABLE,SP,ELEC:4,26 AWG,STRD,PVC JKT,RBN	08261	SS04267(1061)0C
-77	352-0162-04		1	.	CONN BODY,PL,EL:4 WIRE YELLOW - . . (TO A5J1121)	80009	352-0162-04
-78	352-0200-03		1	.	HLDR,TERM CONN:4 WIRE ORANGE - . . (TO A5J1824)	80009	352-0200-03
-79	352-0163-01		1	.	CONN BODY,PL,EL:5 WIRE BROWN - . . (TO A5J1712)	80009	352-0163-01
-80	-----		1	.	CKT BOARD ASSY:PS ISOLATOR(SEE A5A1 REPL) (ATTACHING PARTS)		
-81	129-0404-00		4	.	SPACER,POST:0.853 L,W/4-40 TAP 1 END - - - * - - -	80009	129-0404-00
	-----		-	.	CIRCUIT BOARD INCLUDES:		
-82	136-0252-07		12	.	SOCKET,PIN CONN:W/O DIMPLE	22526	75060-012
-83	136-0514-00		1	.	SKT,PL-IN ELEC:MICROCIRCUIT,8 DIP	73803	CS9002-8
-84	136-0269-02		1	.	SKT,PL-IN ELEC:MICROCIRCUIT,14 DIP,LOW CLE	73803	CS9002-14
-85	136-0260-02		2	.	SKT,PL-IN ELEC:MICROCIRCUIT,16 DIP,LOW CLE	71785	133-51-92-008
-86	-----		1	.	CKT BOARD ASSY:PS INTERFACE(SEE A5A2 REPL) (ATTACHING PARTS)		
-87	211-0116-00		3	.	SCR,ASSEM WSHR:4-40 X 0.312 INCH,PNH BRS - - - * - - -	83385	OBD
	-----		-	.	CIRCUIT BOARD INCLUDES:		
-88	129-0320-00		3	.	POST,ELEC-MECH:0.187 OD X 0.15 INCH LONG	80009	129-0120-00
-89	-----		9	.	CONTACT,ELEC:(SEE A5A2P1021,P1031,P1032, P1033,P1034,P1035,P1036,P1041,P1043 REPL)		
-90	-----		1	.	CKT BOARD ASSY:PS MAIN(SEE A5 REPL)		
-91	-----		16	.	TERMINAL,PIN:(SEE A5J1101,J1121,J1712, J1824 REPL)		
-92	-----		6	.	TERM,TEST POINT:(SEE A5TP1101,TP1102,TP1103, TP1104,TP1702,TP1802 REPL)		

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty	1 2 3 4 5	Name & Description	Mfr Code	Mfr Part Number
2-93	344-0154-03		4		CLIP,ELECTRICAL:FUSE,CKT BD MT	80009	344-0154-03
-94	-----		9		SOCKET,PIN:(SEE A5J1021,J1031,J1032,J1033, J1034,J1035,J1036,J1041,J1043 REPL)		
-95	136-0514-00		1		SKT,PL-IN ELEC:MICROCIRCUIT,8 DIP	73803	CS9002-8
-96	136-0269-02		3		SKT,PL-IN ELEC:MICROCIRCUIT,14 DIP,LOW CLE	73803	CS9002-14
-97	-----		1		CKT BOARD ASSY:TIME MARK(SEE A4 REPL)		
-98	-----		8		TERM,TEST POINT:(SEE A4TP1010,TP1020,TP1200, TP1400,TP1401,TP1410,TP1501,TP1620,TP1630 REPL)		
-99	342-0324-00		2		INSULATOR,DISC:TO-5 TRANSISTOR	13103	7717-5N-BLUE
-100	136-0260-02		16		SKT,PL-IN ELEC:MICROCIRCUIT,16 DIP,LOW CLE	71785	133-51-92-008
-101	136-0514-00		3		SKT,PL-IN ELEC:MICROCIRCUIT,8 DIP	73803	CS9002-8
-102	210-1256-00		4		WASHER,FLAT:0.04 ID X 0.02 THK (OPTION 1 ONLY)	80009	210-1256-00
-103	162-0546-00		FT		INSUL SLVG,ELEC:HT SHRINK,0.078 ID	06090	OBD
-104	346-0032-00		1		STRAP,RETAINING:0.075 DIA X 4.0 L,MLD RBR	98159	2859-75-4
-105	344-0154-03		4		CLIP,ELECTRICAL:FUSE,CKT BD MT	80009	344-0154-03
-106	136-0269-02		11		SKT,PL-IN ELEC:MICROCIRCUIT,14 DIP,LOW CLE	73803	CS9002-14
-107	-----		1		CONN,RCPT,ELEC:(SEE A4J1220 REPL)		
-108	136-0252-07		13		SOCKET,PIN CONN:W/O DIMPLE	22526	75060-012
-109	175-2825-00		1		CABLE ASSY,RF:1 EA 50 OHM COAX (FROM A4J1221 TO A3J1007)	80009	175-2825-00
	352-0162-05		1		CONN BODY,PL,EL:4 WIRE GREEN	80009	352-0162-05
-110	175-2822-00		1		CABLE ASSY,RF:1 EA 50 OHM COAX (FROM A4J1120 TO A3J1027)	80009	175-2822-00
-110	352-0162-04		1		CONN BODY,PL,EL:4 WIRE YELLOW	80009	352-0162-04
-111	175-2829-00		1		CA ASSY,SP,ELEC:2,26 AWG,5.5 L (FROM W1510 TO W1520)	80009	175-2829-00
	672-0822-00		1		CKT BOARD ASSY:TIME REFERENCE (ATTACHING PARTS)		
-112	211-0105-00		2		SCREW,MACHINE:4-40 X 0.188,100 DEG,FLH STL -----*-----	83385	OBD
	-----				TIME REF ASSY INCLUDES:		
-113	200-2390-00		1		COVER,CKT BOARD:SLEW MODULE,LEFT (ATTACHING PARTS)	80009	200-2390-00
-114	211-0030-00		5		SCREW,MACHINE:2-56 X 0.25"82 DEG,FLH STL	83385	OBD
-115	211-0250-00		6		SCREW,MACHINE:2-56 X 0.937,FLH,STL -----*-----	80009	211-0250-00
-116	348-0642-00		2		PAD,CUSHIONING:1.5 X 1.8 X 0.125 THK	71643	R-10480
-117	-----		1		CKT BOARD ASSY:OFFSET PLL(SEE A3A1 REPL)		
-118	211-0284-00		4		SCREW,CAP:2-56 X 0.237 L,HEX SOC	80009	211-0284-00
-119	354-0330-00		4		RING,RETAINING:EXT TYPE E,U/O 0.062 DIA	79136	5133-6-MD
-120	136-0269-02		4		SKT,PL-IN ELEC:MICROCIRCUIT,14 DIP,LOW CLE	73803	CS9002-14
-121	-----		4		TERM,TEST POINT:(SEE A3A1TP1100,TP1140, TP1210,TP1220 REPL)		
-122	-----		16		SOCKET,PIN TERM:(SEE A3A1P1500,P1510,P1521, P1615 REPL)		
-123	136-0514-00		1		SKT,PL-IN ELEC:MICROCIRCUIT,8 DIP	73803	CS9002-8
-124	136-0260-02		2		SKT,PL-IN ELEC:MICROCIRCUIT,16 DIP,LOW CLE	71785	133-51-92-008
-125	-----		1		CKT BOARD ASSY:SLEWING CONTROL(SEE A3A2 REPL)		
-126	211-0284-00		4		SCREW,CAP:2-56 X 0.237 L,HEX SOC		
-127	354-0330-00		4		RING,RETAINING:EXT TYPE E,U/O 0.062 DIA	79136	5133-6-MD
-128	136-0260-02		3		SKT,PL-IN ELEC:MICROCIRCUIT,16 DIP,LOW CLE	71785	133-51-92-008
-129	-----		16		SOCKET,PIN TERM:(SEE A3A2P1300,P1310, P1403 REPL)		
-130	-----		1		CKT BD ASSY:VCO,50MHZ(OFFSET) (SEE A3A3 REPL)		
-131	211-0284-00		4		SCREW,CAP:2-56 X 0.237 L,HEX SOC	80009	211-0284-00
-132	354-0330-00		4		RING,RETAINING:EXT TYPE E,U/O 0.062 DIA	79136	5133-6-MD
-133	-----		12		SOCKET,PIN TERM:(SEE A3A3P1320,P1420,P1424 P1434 REPL)		
-134	-----		1		CKT BOARD ASSY:COUNTER(TRIGGER)(SEE A3A4 REPL)		
-135	211-0284-00		4		SCREW,CAP:2-56 X 0.237 L,HEX,SOC	80009	211-0284-00
-136	354-0330-00		4		RING,RETAINING:EXT TYPE E,U/O 0.062 DIA	79136	5133-6-MD
-137	136-0260-02		7		SKT,PL-IN ELEC:MICROCIRCUIT,16 DIP,LOW CLE	71785	133-51-92-008
-138	-----		19		SOCKET,PIN TERM:(SEE A3A4P1010,P1100, P1207 REPL)		

Replaceable Mechanical Parts—CG 551AP, VOL. 2

Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff Dscont	Qty	1	2	3	4	5	Name & Description	Mfr Code	Mfr Part Number
2-139	-----	-----	1	.	.	.	.	.	CKT BOARD ASSY: COUNTER(SLEWING)(SEE A3A5 REPL)		
-140	211-0284-00		4	.	.	.	.	.	SCREW, CAP: 2-56 X 0.237 L, HEX SOC	80009	211-0284-00
-141	354-0330-00		4	.	.	.	.	.	RING, RETAINING: EXT TYPE E, U/O 0.062 DIA	79136	5133-6-MD
-142	136-0260-02		7	.	.	.	.	.	SKT, PL-IN ELEK: MICROCIRCUIT, 16 DIP, LOW CLE	71785	133-51-92-008
-143	-----	-----	19	.	.	.	.	.	SOCKET, PIN TERM: (SEE A3A5P1020, P1031, P1225 REPL)		
-144	337-2668-00		1	.	.	.	.	.	SHIELD, ELEC: CIRCUIT BOARD LEFT (ATTACHING PARTS)	80009	337-2668-00
-145	211-0250-00		2	.	.	.	.	.	SCREW, MACHINE: 2-56 X 0.937, FLH	80009	211-0250-00
-146	200-2391-00		1	.	.	.	.	.	COVER, CKT BOARD: SLEW MODULE, RIGHT (ATTACHING PARTS)	80009	200-2391-00
-147	211-0030-00		6	.	.	.	.	.	SCREW, MACHINE: 2-56 X 0.25"82 DEG, FLH STL	83385	OBD
-148	348-0641-00		3	.	.	.	.	.	PAD, CUSHIONING: 2.7 L X 1.8 WX 0, 125 THK	71643	R-10480
-149	-----	-----	1	.	.	.	.	.	CKT BOARD ASSY: STEERING(SEE A3A6 REPL)		
-150	211-0284-00		5	.	.	.	.	.	SCREW, CAP: 2-56 X 0.237 L, HEX SOC	80009	211-0284-00
-151	354-0330-00		5	.	.	.	.	.	RING, RETAINING: EXT TYPE E, U/O 0.062 DIA	79136	5133-6-MD
-152	136-0269-02		6	.	.	.	.	.	SKT, PL-IN ELEK: MICROCIRCUIT, 14 DIP, LOW CLE	73803	CS9002-14
-153	-----	-----	46	.	.	.	.	.	SOCKET, PIN TERM: (SEE A3A6P1200, P1204, P1217, P1315, P1427, P1502, P1533, P1603, P1620 REPL)		
-154	-----	-----	2	.	.	.	.	.	TRANSISTOR: (SEE A3A6Q1001, Q1101 REPL) (ATTACHING PARTS)		
-155	211-0008-00		2	.	.	.	.	.	SCREW, MACHINE: 4-40 X 0.25 INCH, PNH STL	83385	OBD
-156	220-0829-00		2	.	.	.	.	.	NUT, PRESSMOUNT: 4-40 X 0.216 OD, STL CD PL	46384	KF2-440
-157	210-0054-00		2	.	.	.	.	.	WASHER, LOCK: SPLIT, 0.118 ID X 0.212"OD STL	83385	OBD
-158	136-0260-02		9	.	.	.	.	.	SKT, PL-IN ELEK: MICROCIRCUIT, 16 DIP, LOW CLE	71785	133-51-92-008
-159	-----	-----	5	.	.	.	.	.	TERM, TEST POINT: (SEE A3A6TP1101, TP1130, TP1301, TP1302, TP1310 REPL)		
-160	-----	-----	1	.	.	.	.	.	CKT BOARD ASSY: VOC, 100MHZ(MAIN)(SEE A3A7 REPL)		
-161	211-0284-00		4	.	.	.	.	.	SCREW, CAP: 2-56 X 0.237 L, HEX SOC	80009	211-0284-00
-162	354-0330-00		4	.	.	.	.	.	RING, RETAINING: EXT TYPE E, U/O 0.062 DIA	79136	5133-6-MD
-163	-----	-----	12	.	.	.	.	.	SOCKET, PIN TERM: (SEE A3A7P1220, P1222, P1230 P1324, EPL)		
-164	-----	-----	1	.	.	.	.	.	CKT BOARD ASSY; MAIN PLL(SEE A3A8 REPL)		
-165	211-0284-00		4	.	.	.	.	.	SCREW, CAP: 2-56 X 0.237 L, HEX SOC	80009	211-0284-00
-166	354-0330-00		4	.	.	.	.	.	RING, RETAINING: EXT TYPE E, U/O 0.062 DIA	79136	5133-6-MD
-167	136-0269-02		1	.	.	.	.	.	SKT, PL-IN ELEK: MICROCIRCUIT, 14 DIP, LOW CLE	73803	CS9002-14
-168	136-0153-00		1	.	.	.	.	.	SKT, PL-IN, ELEK: CRYSTAL, 2 CONT, W/CLAMP (ATTACHING PARTS)	91506	8000AG6
-169	210-0632-00		2	.	.	.	.	.	EYELET, METALLIC: 0.089 OD X 0.125"LONG, BRS	01881	3168
-170	136-0514-00		4	.	.	.	.	.	SKT, PL-IN ELEK: MICROCIRCUIT, 8 DIP	73803	CS9002-8
-171	-----	-----	2	.	.	.	.	.	TERM, TEST POINT: (SEE A3A8TP1010, TP1040 REPL)		
-172	-----	-----	16	.	.	.	.	.	SOCKET, PIN TERM: (SEE A3A8P1021, P1106, P1126 REPL)		
-173	337-2667-00		1	.	.	.	.	.	SHIELD, ELEC: CIRCUIT BOARD RIGHT	80009	337-2667-00
-174	-----	-----	1	.	.	.	.	.	CKT BOARD ASSY: TIME INTERFACE(SEE A3 REPL) (ATTACHING PARTS)		
-175	211-0001-00		2	.	.	.	.	.	SCREW, MACHINE: 2-56 X 0.25 INCH, PNH STL	87308	OBD
-176	-----	-----	8	.	.	.	.	.	CKT BOARD ASSY INCLUDES: TERM, PIN: (SEE A3J1007, J1027 REPL)		
-177	-----	-----	156	.	.	.	.	.	TERM, PIN: (SEE A3J1010, J1020, J1021, J1031, J1100, J1106, J1126, J1200, J1204, J1207, J1217, J1220, J1222, J1225, J1230, J1300, J1310, J1315, J1320, J1324, J1403, J1420, J1424, J1427, J1434, J1500, J1502, J1510, J1521, J1533, J1603, J1615, J1620 REPL)		

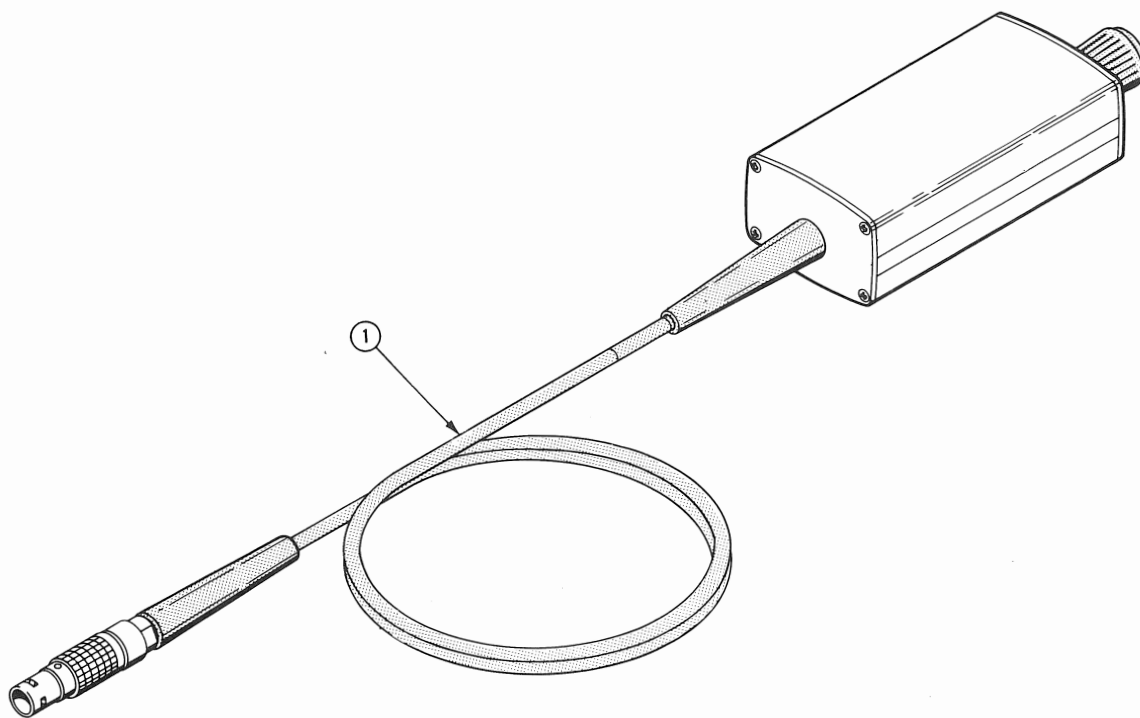


Fig. & Index No.	Tektronix Part No.	Serial/Model No. Eff	Dscont	Qty	1	2	3	4	5	Name & Description	Mfr Code	Mfr Part Number
ACCESSORIES												
-1	015-0311-01			1						ACCESSORY ASSY:PULSE HEAD	80009	015-0311-01
	012-0884-00			1						CABLE,INTCON:1 METER	80009	012-0884-00
	070-2690-00			1						MANUAL,TECH:INSTR CG 551AP VOL 01	80009	070-2690-00
	070-2815-00			1						MANUAL,TECH:INSTR CG 551AP VOL 02	80009	070-2815-00
	070-2816-00			1						MANUAL,TECH:REFERENCE GUIDE	80009	070-2816-00
	070-2818-00			1						MANUAL,TECH:INSTRUCTION 015-0311-01	80009	070-2818-00
OPTIONAL ACCESSORIES												
	015-0309-01			1						ACCESSORY ASSY:REMOTE VARIABLE	80009	015-0309-01
	015-0310-01			1						ACCESSORY ASSY:COMPARATOR	80009	015-0310-01
	070-2819-00			1						MANUAL,TECH:INSTR 015-0309-01	80009	070-2819-00
	070-2817-00			1						MANUAL,TECH:INSTR 015-0310-01	80009	070-2817-00

MANUAL CHANGE INFORMATION

At Tektronix, we continually strive to keep up with latest electronic developments by adding circuit and component improvements to our instruments as soon as they are developed and tested.

Sometimes, due to printing and shipping requirements, we can't get these changes immediately into printed manuals. Hence, your manual may contain new change information on following pages.

A single change may affect several sections. Since the change information sheets are carried in the manual until all changes are permanently entered, some duplication may occur. If no such change pages appear following this page, your manual is correct as printed.



Date: 10-27-81 Change Reference: M43780

Product: CG 551AP, Vol. 2 Manual Part No.: 070-2815-00


DESCRIPTION

EFF SN B020350

REPLACEABLE ELECTRICAL PARTS AND SCHEMATIC CHANGES

CHANGE TO:

A6	670-6088-02	CKT BOARD ASSY:REFERENCE
A6C1131	290-0219-00	CAP.,FXD,ELCTLT:5UF,+75-10%,25V
A6U1131	156-1152-00	MICROCIRCUIT,DI:PRCN,RETRIG,RESET,MONO,MV

The above parts are located on the REFERENCE circuit board and are shown on diagram  HIGH SAC & LOW SAC -A6 CURRENT AMPLIFIER-A6.

MECHANICAL PARTS LIST CHANGES

CHANGE TO:

Fig. 2-118	} 211-0022-00	4	SCREW,CAP:2-56 x 0.188, PNH
126, 131,			
135, 140,			
161, 165			
Fig. 2-150	211-0022-00	5	SCREW,CAP:2-56 x 0.188, PNH

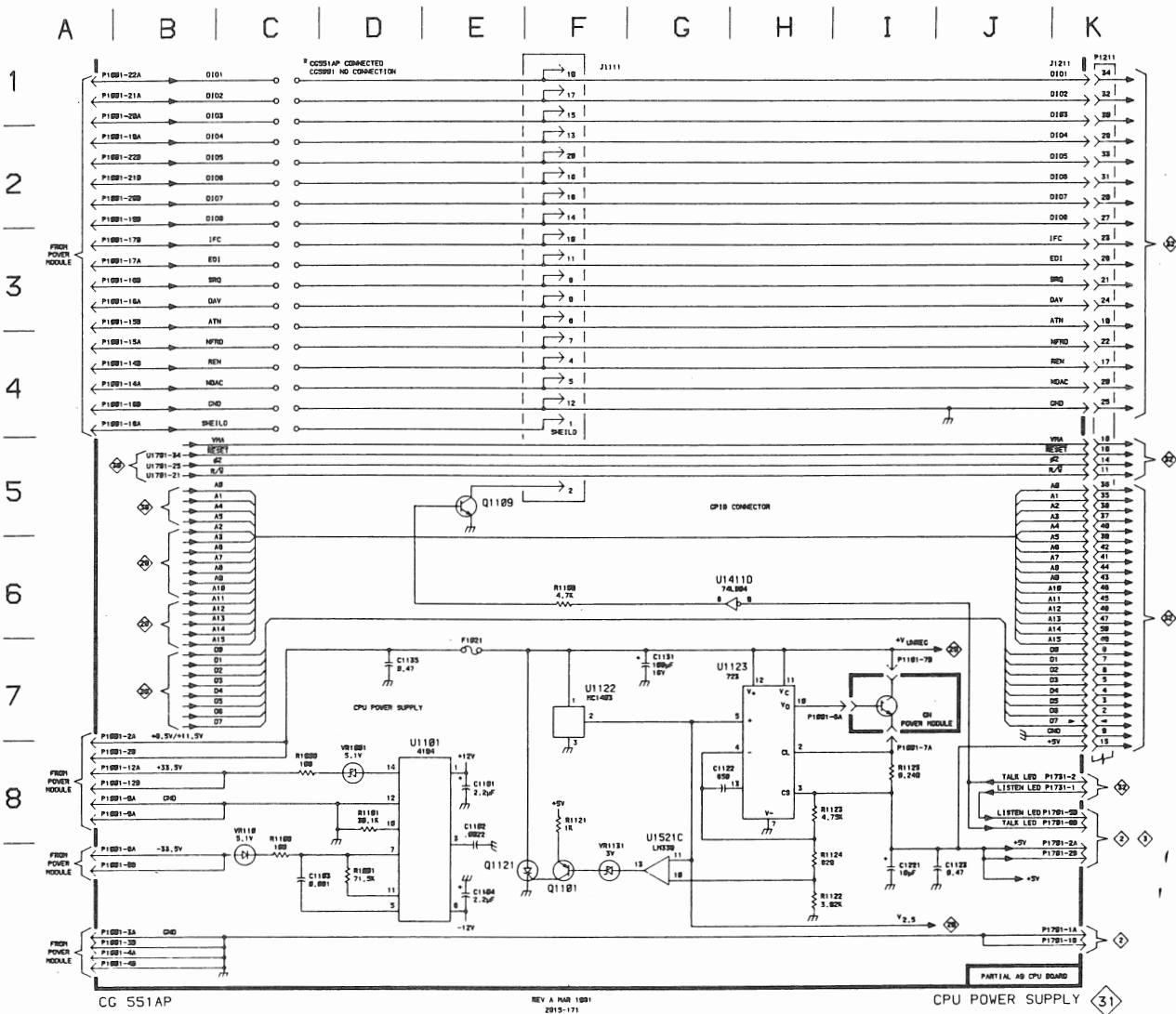
DESCRIPTION

Add this note to the Introduction on page 5-1.

NOTE

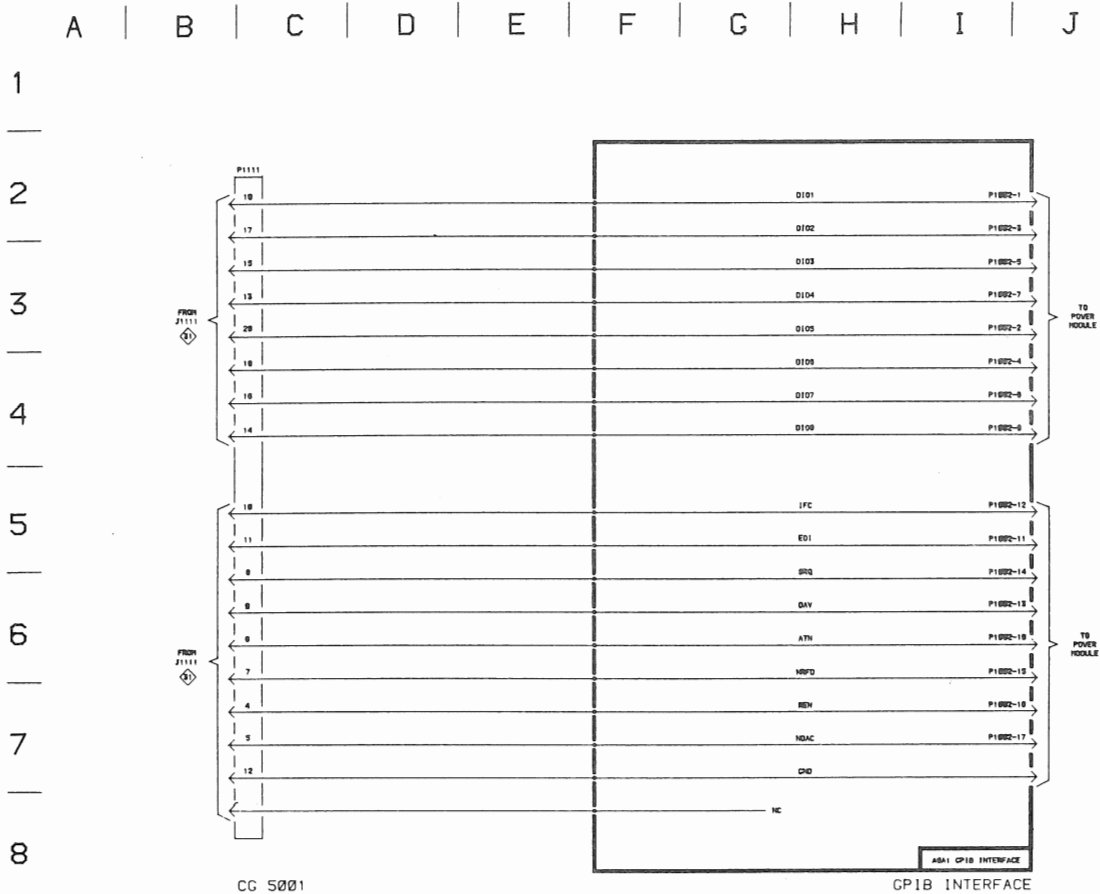
The references to the CG 551AP in this manual apply equally to the CG 5001. The CG 5001 has a newly designed Power Module to plug-in GPIB interface connector. This allows it to be used in all TM 5000 Power Modules. The CG 551AP functional information also applies to the CG 5001.

Change fold-out schematic 31 to the following:



DESCRIPTION

Add fold-out Schematic 33 as shown below:



Static Sensitive Devices
See Maintenance Section
COMPONENT NUMBER EXAMPLE

Component Number		
A23 A2 R1234		
Assembly Number	Subassembly Number (if used)	Schematic Circuit Number

Crack mounted components have no Assembly Number pins—see end of Replaceable Electrical Parts List

ADD:

A8A1 670-7386-00 CKT. BOARD ASSY: GPIB INTERFACE
334-5033-00 FRONT PANEL

CHANGE TO:

A9A1 670-6092-01 CKT. BOARD ASSY: GPIB
FRAMES 1-26 426-1645-02 (rear)
1-29 426-1647-01 (top left)
1-38 426-1648-01 (bottom left)

ADD:

1 each 214-3089-00 to top left and bottom left frames. These lockouts keep the CG 5001 from being used in TM 500 Main frames.

DESCRIPTION

EFF SN B030400

Change to:

A9 670-6091-02
 A9C1521 290-0512-00 CAP., FXD, ELCLT; 22 μ F, 20%, 15V, TANTALUM

Remove:

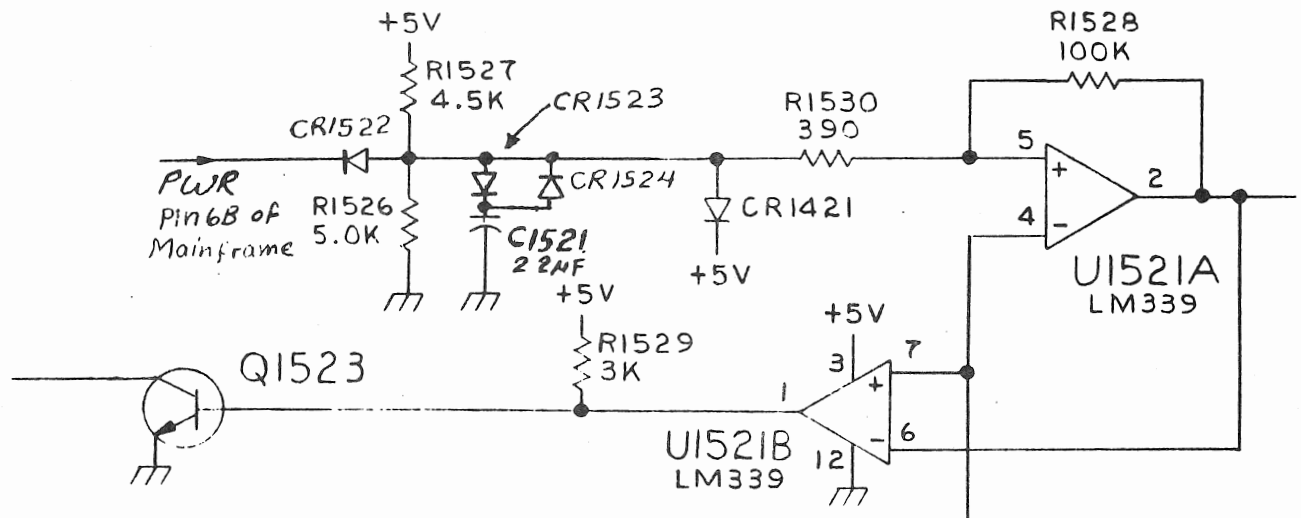
A9R1425 315-0202-00 RES, FXD, CMPSN; 2K OHM, 5%, 0.25W
 A9L1425 108-0249-00 COIL, RF; 12 μ H
 A9C1425 283-0526-00 CAP., FXD, CER DI: 130PF, 5%, 100V
 A9Y1431 158-0056-00 XTAL UNIT, QTZ; 4MHz, 0.003%, Series

Add:

A9CR1522 152-066-00 SEMICOND DEVICE; SILICON, 400V, 750MA
 A9CR1523 152-0141-02 SEMICOND DEVICE; SILICON, 30V, 150MA
 A9CR1524 152-0141-02 SEMICOND DEVICE; SILICON, 30V, 150MA

DIAGRAM 29 MEMORY AND POWER ON/OFF DETECT - PARTIAL.

POWER ON/OFF DETECT



Change to:

A7 670-6089-02
 A7R1617 321-0032-00 RES., FXD, FILM; 21 OHM, 1%, 0.125W

Add:

A7R1816 315-0511-00 RES., FXD CMPSN; 510 OHM, 5%, 0.25W
 (R1816 is added in parallel with R1817)

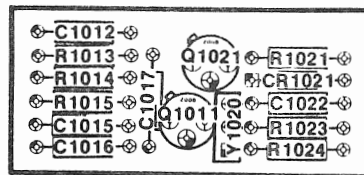
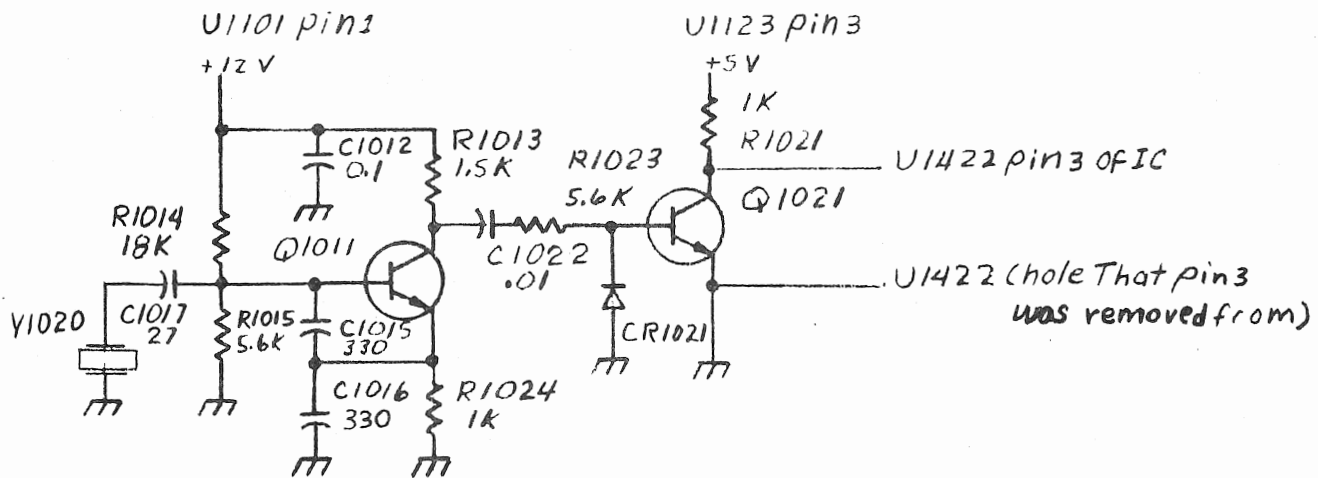
DESCRIPTION

Add:

A9A2	670-7826-00	CKT. BD. ASSY; CPU OSCILLATOR
A9A2Q1011	151-0190-00	TRANSISTOR; SILICON, NPN
A9A2Q1021	151-0190-00	TRANSISTOR; SILICON, NPN
A9A2CR1021	152-0141-02	SEMICONV DEVICE; SILICON, 30V, 150MA
A9A2Y1020	158-0056-00	XTAL UNIT QTZ; 4MHz, 0.003%, Series
A9A2C1017	281-0762-00	CAP, FXD, CER DI; 27pF, 20%, 100V
A9A2C1015	281-0767-00	CAP, FXD, CER DI; 330pF, 20%, 100V
A9A2C1016	281-0767-00	CAP, FXD, CER DI; 330pF, 20%, 100V
A9A2C1022	281-0733-00	CAP, FXD, CER DI; .01μF, 10%, 100V
A9A2C1012	281-0775-00	CAP, FXD, CER DI; 0.1μF, 20%, 50V
A9A2R1012	315-0102-00	RES, FXD, CMPSN; 1K, 5%, 0.25W
A9A2R1024	315-0102-00	RES, FXD, CMPSN; 1K, 5%, 0.25W
A9A2R1013	315-0152-00	RES, FXD, CMPSN; 1.5K, 5%, 0.25W
A9A2R1014	315-0183-00	RES, FXD, CMPSN; 18K, 5%, 0.25W
A9A2R1015	315-0562-00	RES, FXD, CMPSN; 5.6K, 5%, 0.25W
A9A2R1023	315-0562-00	RES, FXD, CMPSN; 5.6K, 5%, 0.25W

A9A2 circuit board is located on the back side of the CPU board.

A9A2 Circuit and Board layout:



DESCRIPTION

EFF SN: CG551AP B030490
CG5001 B030550

REPLACEABLE ELECTRICAL PARTS & SCHEMATIC CHANGES

CHANGE TO:

A6	670-6088-03	CKT BOARD ASSY: REFERENCE
A9	670-6091-03	CKT BOARD ASSY: CPU
A6CR1524	152-0245-00	SEMICON DVC, DI: SW, SI, 40V
A6CR1528	152-0245-00	SEMICON DVC, DI: SW, SI, 40V
A6CR1802	152-0536-00	SEMICON DVC, DI: SW, 4V

ADD:

A6R1727	315-0105-00	RES, FXD, CMPSN: 1M OHM, 5%, 0.25W
A9C1528	283-0204-00	CAP, FXD, CER DI: 0.01UF, 20%, 50V

DIAGRAM 22 HIGH SAC, LOW SAC, & CURRENT AMPLIFIER

ADD: R1727 (See partial schematic)
CHANGE: Connection of R1725 (See partial schematic)

DIAGRAM 29 MEMORY & POWER ON/OFF DETECT

ADD: C1528 (See partial schematic)

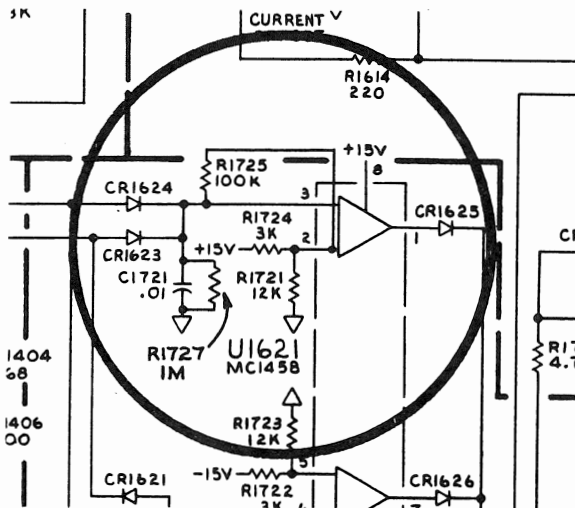


DIAGRAM 22

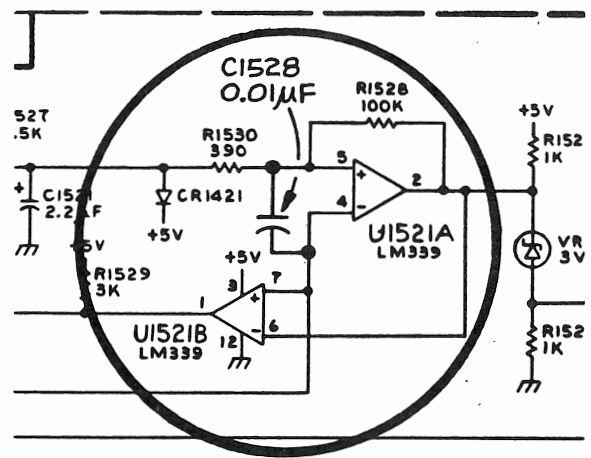


DIAGRAM 29

