

TEK

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Product Group 37

**TEST SIGNAL
GENERATING BOARD
INSTRUCTION MANUAL**

Tektronix[®]
COMMITTED TO EXCELLENCE

TEST SIGNAL GENERATING BOARD INSTRUCTION MANUAL

*Please Check for
CHANGE INFORMATION
at the Rear of This Manual*

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Tektronix[®]
COMMITTED TO EXCELLENCE

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INSTRUMENT SERIAL NUMBERS

Each instrument has a serial number on a panel insert,
 tag, or stamped on the chassis. The first number or letter
 designates the country of manufacture. The last five digits
 of the serial number are assigned sequentially and are
 unique to each instrument. Those manufactured in the
 United States have six unique digits. The country of
 manufacture is identified as follows:

B000000	Tektronix, Inc., Beaverton, Oregon, USA
100000	Tektronix Guernsey, Ltd., Channel Islands
200000	Tektronix United Kingdom, Ltd., London
300000	Sony/Tektronix, Japan
700000	Tektronix Holland, NV, Heerenveen, The Netherlands

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Operators Safety Summary

Power Source

The Test Signal Generating Board operates from a 9-V dc power supply. You can power the board from your main ac power source by means of the included step-down transformer. The Option 2F transformer is for use with a 110-V to 120-V, 60-Hz ac power source. The Option 3F transformer is for use with a 220-V to 250-V, 50-Hz ac power source. To power the board, connect the power cord to power jack J10 on the board and plug the transformer into the wall socket.

Alternatively, you can power the Test Signal Generating Board from the "Blue Box" CRS10 Power Unit Board. Connect the ribbon cable from the Power Unit Board to connector J9 on the Test Signal Generating Board.

When properly powered, the LED DS109 (in the upper-right corner of the board) is lit.

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.

General Information

Overview

The Test Signal Generating Board produces signals specifically designed to demonstrate the timing- and voltage-measurement capabilities of modern oscilloscopes. The board is especially useful for demonstration and training purposes, because some of its output signals incorporate imperfections of the kind found in the "real world."

This Instruction manual documents the Test Signal Generating Board. The manual includes safety and warranty information, instructions for configuring the board, descriptions of the output signals, an adjustment procedure, circuit diagrams, and a replaceable parts list.

Board Removal and Replacement

The board has rubber feet on its underside. Therefore, when you want to use the board, you may remove it from the carrying case and place it on any flat surface.

To remove the Test Signal Generating Board from the carrying case, pull up on each of the three mounting tabs located at the corners of the board. Then lift the board out of the carrying case.

To replace the board, perform the reverse procedure.

Warranty

Tektronix, Inc. warrants the Test Signal Generating Board and the step-down transformer to be free from defects in materials and workmanship for a period of 90 days from the shipment date. If the board or transformer fails during the warranty period, return it to the nearest Tektronix Service Center.

Repackaging

To ship by commercial transportation, package the board or transformer as follows:

1. Obtain a corrugated cardboard shipping carton having inside dimensions at least six inches greater than the circuit board or transformer dimensions and having a carton test strength of at least 200 pounds.
2. If the package is being shipped to the Tektronix Service Center for Warranty service, attach a tag to the circuit board or transformer showing:
 - Owner (with address).
 - Name of a person who can be contacted.
 - Board or transformer type and serial number.
 - Description of the problem.
3. Place the circuit board in an anti-static bag to protect static-sensitive components.
4. Cushion the board or transformer on all sides by tightly packing dunnage or urethane foam between the carton and the instrument, allowing three inches on each side.
5. Seal the carton with shipping tape or with an industrial stapler.
6. Mark the address of the Tektronix Service Center and the return address on the carton in one or more prominent places.

Non-Warranty Repairs

Tektronix Service Centers are not authorized to repair Test Signal Generating Boards that fail after the 90-day warranty period has expired. In the event of such failure, you can purchase a replacement board by ordering part number 671-0799-00 from your local Tektronix representative.

Alternatively, you can repair the board yourself. All electrical components on the board are "off-the-shelf" parts and can be obtained through a local commercial source.

Test Signal Generating Board

User Controls

The Test Signal Generating Board has three user controls:

- SW1, a momentary switch.
- C4, a variable capacitor to adjust the frequency of the TTL reference clock.
- R31, a variable resistor to adjust the frequency of the 1-kHz sine wave.

Configuring the Board

Jumpers

The output signals appearing at test pins TP1 through TP15 depend on the configuration of eight jumpers, J1 through J8, which are located along one edge of the board.

Each jumper consists of a socket and a cap (shorting block). The socket contains two, three, or four pairs of square pins labeled A through D. The jumper cap is used to select the mode for that jumper's function.

Table 1 shows each jumper's function, and the mode selected by each setting of its jumper cap.

Table 1
Jumper Functions and Modes

Jumper	Function	Cap	Mode
J1	TTL Clock on TP7	A	70 MHz Clock
		B	40 MHz Clock
		C	20 MHz Clock
J2	Power ¹	A	ECL circuits enabled
		B	Eye Diagram circuits enabled
J3	Spikes on the TP10 Sine Wave	A	Single shot spike fired by pressing SW1
		B	Continuous spikes while SW1 is depressed
		C	Continuous spikes
		D	No spikes
J4	40 MHz Noise on the TP10 Sine Wave	A	40 MHz noise
		B	No 40 MHz noise
J5	Transient Pulse on TP8	A	Transient pulse frequency = 15.5 Hz
		B	Transient pulse frequency = 1 KHz
		C	Single shot transient pulse
J6	Metastability on the TP1-TP6 ECL Pulses	A	Metastability (requires J7-A or C)
		B	No metastability
J7	ECL Pulses on TP1-TP6	A	Continuous train of ECL pulses
		B	Single shot burst of ECL pulses
		C	Repetitive bursts of ECL pulses
J8	Noise on the TP15 Ringing Square Wave	A	Square wave noise
		B	No square wave noise

¹ Press SW1 to reset power after changing J2 from A to B or from B to A.

Test Pins

Fifteen test pins are arranged along two edges of the board. Each test pin has from one to four related jumpers, as shown in Table 2. The jumper-cap settings on unrelated jumpers have no effect on a test pin's output signal.

Table 2
Test Pins and Their Related Jumpers

Test Pin	Related Jumpers							
	J1	J2	J3	J4	J5	J6	J7	J8
TP1 ECL Pulses	X	A				X	X	
TP2 ECL Pulses	X	A				X	X	
TP3 ECL Pulses	X	A				X	X	
TP4 ECL Pulses	X	A				X	X	
TP5 ECL Pulses	X	A				X	X	
TP6 ECL Pulses	X	A				X	X	
TP7 TTL Clock	X	A or B						
TP8 Transient Trigger		A or B			X			
TP9 Transient Pulse		A or B			X			
TP10 1-KHz Sine Wave		A or B	X	X				
TP11 TTL Framing Pulse	X	A						X
TP12 TTL Framing Pulse	X	A						X
TP13 Eye Diagram	X	B						
TP14 Eye Diagram	X	B						
TP15 Ringing Square Wave		A or B						X

Output Signal Descriptions

The output signals fall into seven categories:

- ECL Pulses (TP1-TP6).
- Triggers (TP7, TP8, TP11, TP12).
- Sine Wave (TP10).
- Ringing Square Wave (TP15).
- TTL Square Waves (Q1, Q2, Q3).
- Eye Diagrams (TP13, TP14).
- Transient (TP9).

ECL Pulses

The output signals on TP1-TP5 are all groups of level-shifted, fast-rise ECL pulses, and the signal on TP6 is a single ECL pulse. The TP6 pulse is the index for the TP1-TP5 groups of pulses. Depending on the setting of J7, the pulses:

- Are repeated in a continuous train (J7-A).
- Occur as a single-shot burst when you push SW1 (J7-B).
- Recur in equally spaced bursts (J7-C).

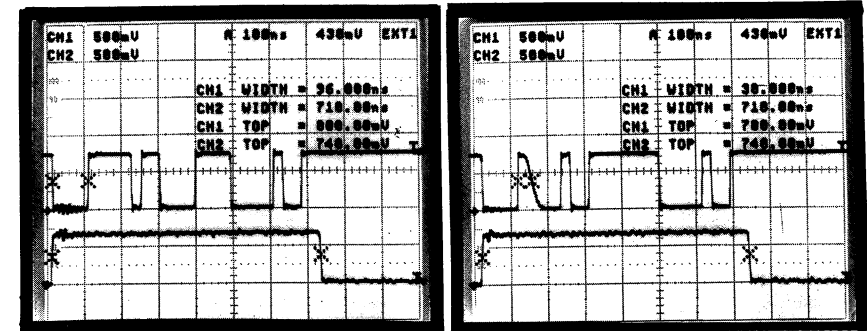
The interval between the recurring bursts is a function of variable resistor R31. When R31 is adjusted for a 1-kHz sine wave on TP10, the bursts occur at intervals of approximately 15.5 μ s. The clock frequency, selected by J1, affects the pulse widths but does not affect the interval between bursts.

When J6 is set to select metastability (J6-A), J7 must be set for continuous pulses (J7-A), or repetitive bursts (J7-C). The resulting display jitters occasionally, even when triggered. However, you need the 2467's high writing rate to observe metastability.

In the following photographs of the output signals, the clock is set to 20 MHz (J1-C) unless otherwise indicated.

TP1 Description

The signal on TP1 consists of five negative-going, level-shifted ECL pulses. In the photographs below, CH1 shows the TP1 signal in burst mode (J7-C), and CH2 shows TP6. The display on the left uses Trigger A (TP12) for a normal signal on TP1. The display on the right uses Trigger B (TP11) for a degraded signal on TP1.



7123-04

TP1 Applications

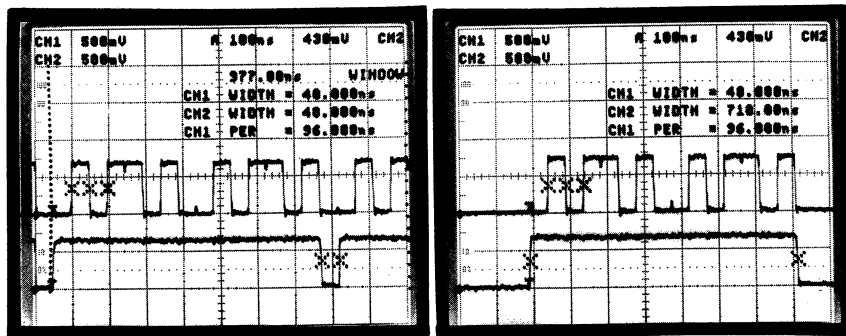
Use the signal on TP1 to demonstrate:

- Delay by Events. (Use the recurring bursts in conjunction with one of the framing pulses on TP11 and TP12.)
- Word Recognizer Probe. (Use the recurring bursts in conjunction with Q1, Q2, and Q3.)
- Single shot applications.

Trigger B (TP11) is normally high. A low on Trigger B frames every eighth group of ECL pulses. When Trigger B is low, the signal on TP1 changes. Therefore, since every eighth group of pulses is different from the other seven, TP1 is not recommended for demonstrating metastability.

TP2 Description

The signal on TP2 consists of six positive-going, level-shifted ECL pulses. In the photographs below, CH1 shows TP2, and CH2 shows TP6. Both displays are triggered on TP6. The display on the left is in continuous mode (J7-A), and the display on the right is in burst mode (J7-C).



7123-05

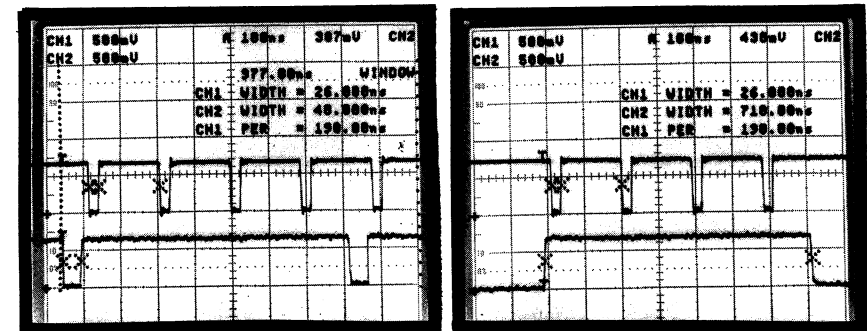
TP2 Applications

Use the signal on TP2 to demonstrate:

- ECL rise and fall times.
- Single shot applications.
- Metastability, using the 2467.

TP3 Description

The signal on TP3 consists of four equally spaced, negative-going, level-shifted ECL pulses. In the photographs below, CH1 shows TP3, and CH2 shows TP6. Both displays are triggered on TP6. The left-hand display is in continuous mode (J7-A), and the right-hand display is in burst mode (J7-C).



7123-06

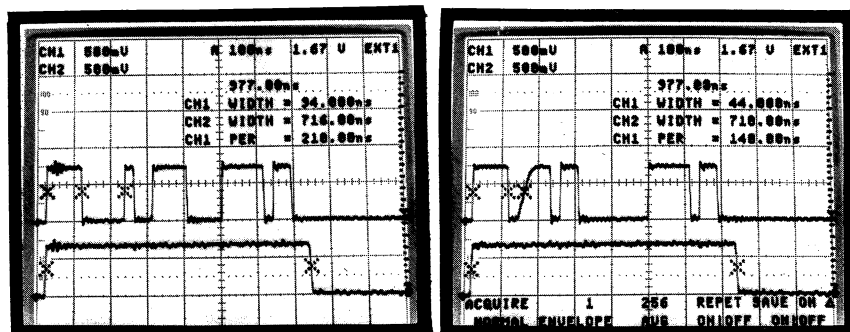
TP3 Applications

Use the signal on TP3 to demonstrate:

- ECL rise and fall times.
- Single shot applications.
- Metastability, using the 2467.

TP4 Description

The signal on TP4 is the inverse of the signal on TP1. In the photographs below, CH1 shows the TP4 signal in burst mode (J7-C), and CH2 shows TP6. The left-hand display uses Trigger A (TP12) for a normal signal on TP4. The right-hand display uses Trigger B (TP11) for a degraded signal on TP4.



7123-07

TP4 Applications

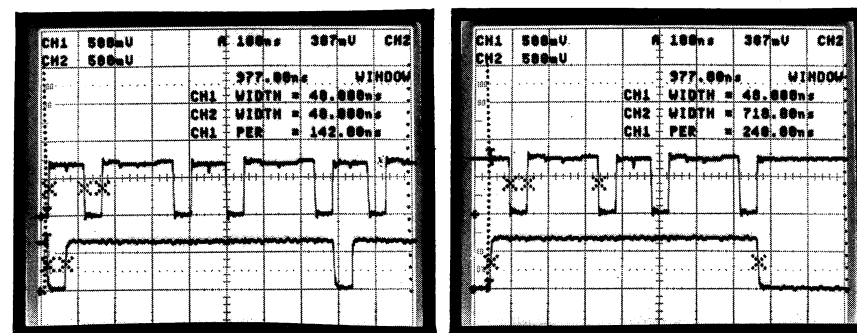
Use the signal on TP4 to demonstrate:

- Delay by Events. (Use the recurring bursts in conjunction with one of the framing pulses on TP11 and TP12.)
- Word Recognizer Probe. (Use the recurring bursts in conjunction with Q1, Q2, and Q3.)
- Single shot applications.

Trigger B (TP11) is normally high. A low on Trigger B frames every eighth group of ECL pulses. When Trigger B is low, the signal on TP4 changes. Therefore, since every eighth group of pulses is different from the other seven, TP4 is not recommended for demonstrating metastability.

TP5 Description

The signal on TP5 consists of four unequally spaced, negative-going, level-shifted ECL pulses. In the photographs below, CH1 shows TP5, and CH2 shows TP6. Both displays are triggered on TP6. The left-hand display is in continuous mode (J7-A), and the right-hand display is in burst mode (J7-C).



7123-08

TP5 Applications

Use the signal on TP5 to demonstrate:

- ECL rise and fall times.
- Single shot applications.
- Metastability, using the 2467.

TP6 Description

The signal on TP6 consists of a single positive-going, level-shifted ECL pulse. This signal is shown on CH2 in the photographs for TP1-TP5.

TP6 Applications

Use the signal on TP6 to demonstrate:

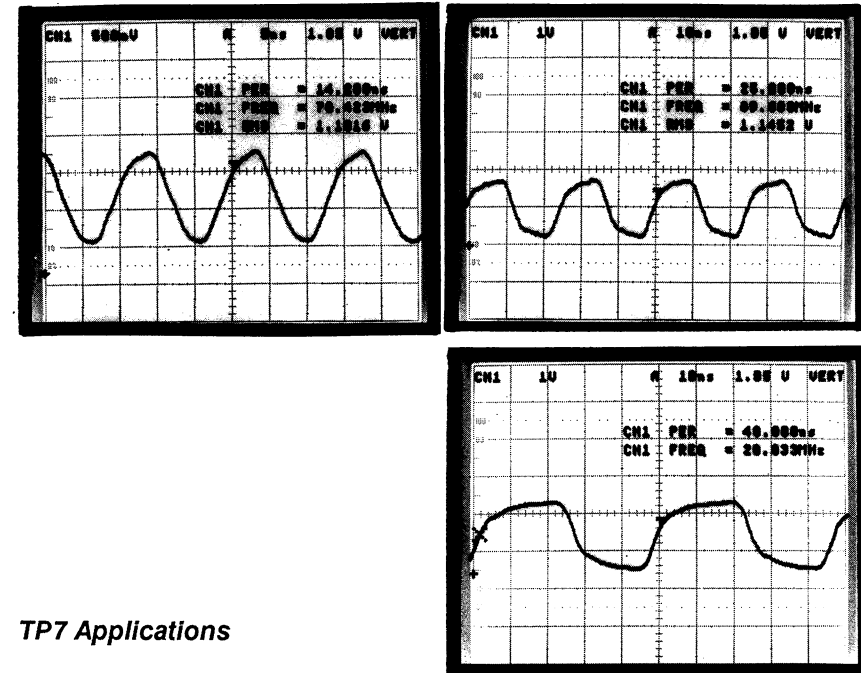
- ECL rise and fall times.
- Single shot applications.
- Metastability, using the 2467.

Triggers

The output signals on TP7, TP8, TP11, and TP12 are used primarily as triggers.

TP7 Description

The signal on TP7 is the TTL Reference Clock. The frequency of the clock depends on the setting of J1 and the adjustment of the variable capacitor C4. In the photographs below, the clock frequency appears in the readout. The highest frequency is selected by J1-A, the lowest by J1-C.



7123-09

TP7 Applications

Use the signal on TP7 to:

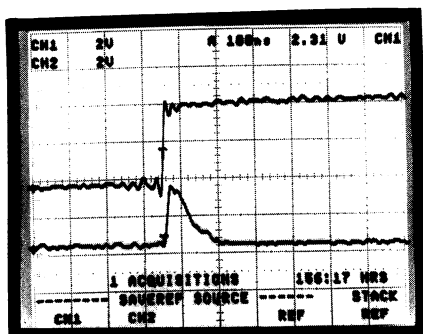
- Adjust the clock frequency.
- Trigger the eye diagrams on TP13 and TP14.

TP8 Description

The signal on TP8 is a TTL square-wave. The frequency depends on the setting of J5.

When J5 is in the C position, the signal is low until you press SW1. The signal goes high when you press SW1, and stays high until you release SW1.

The photograph below shows the TP8 Trigger signal on CH1 and the TP9 Transient signal on CH2. The transient occurs on the rising edge of the TP8 square wave. The TP9 signal is described under the "Transient" heading at the end of the "Output Signal Descriptions" section.



7123-10

TP8 Applications

Use the signal on TP8 to trigger the fast transient on TP9.

TP11 and TP12 Description

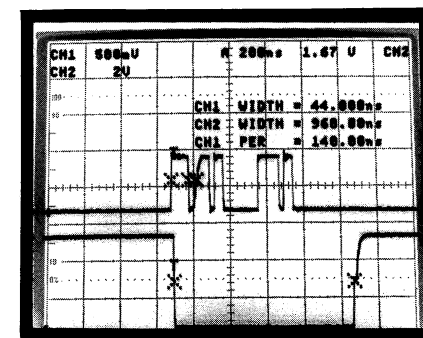
The signals on TP11 and TP12 are normally high TTL framing pulses for the ECL bursts on TP1-TP5. The framing-pulse frequency depends on the adjustment of variable resistor R1. When R1 is adjusted for a 1-kHz sine wave on TP10, the framing-pulse frequency is about 8 kHz.

The framing-pulse width varies with the setting of J7. With the J7 jumper cap set to:

- J7-A, the framing-pulse width depends on the adjustment of variable resistor R31. When R31 is adjusted for a 1-kHz sine wave on TP10, the pulse width is approximately 15.5 μ s.
- J7-B, the TP11 and TP12 signals remain high.
- J7-C, the framing-pulse width depends on the clock frequency, which is determined by the setting of J1 and the adjustment of the variable capacitor C4. When the clock is calibrated for the J1 values given in Table 1, the pulse width is approximately:
 - 410 ns, for J1-A.
 - 610 ns, for J1-B.
 - 970 ns, for J1-C.

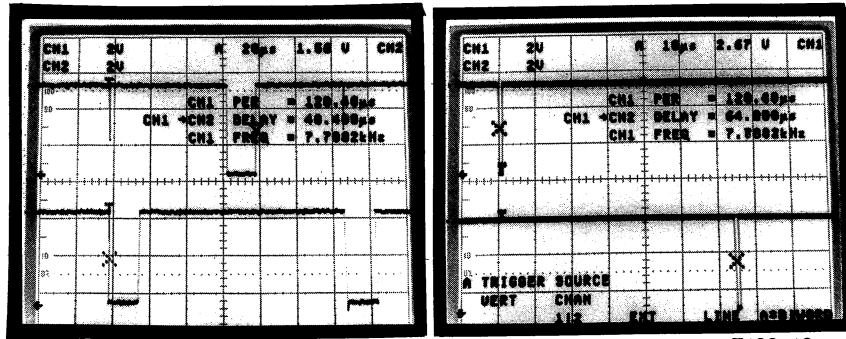
When the TP11 signal is low, the pulses on TP1 and TP4 are degraded. When the TP12 signal is low, the pulses on TP1 and TP4 are normal. Refer to the photographs under the descriptions of TP1 and TP4 to compare the TP1 and TP4 signals using TP11 as a trigger with the TP1 and TP4 signals using TP12 as a trigger.

In the photograph on the right, the TP4 burst of pulses on CH1 is shown framed by the TP11 pulse on CH2. The display is triggered on the TP11 signal.



7123-11

The photographs below show TP11 on CH1 and TP12 on CH2. The pulse width varies with the setting of J7: J7-A is on the left, and J7-C is on the right.



7123-12

TP11 and TP12 Applications

Use the signals on TP11 and TP12 to demonstrate:

- Delay by Events in conjunction with TP1 or TP4 as a changing ECL waveform.
- Timing measurements by showing the delay between the TP11 and TP12 pulses.

Sine Wave

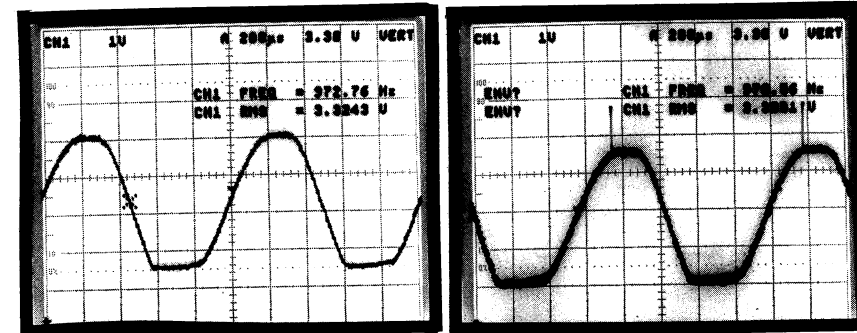
The output signal on TP10 is a sine wave.

TP10 Description

The sine wave on TP10 is approximately 3.7 V peak-to-peak. The sine-wave frequency is 1 kHz +/- approximately 30%, adjustable by variable resistor R31. Depending on the setting of J3, the sine wave may have:

- A single-shot spike when SW1 is pushed (J3-A).
- Continuous spikes while SW1 is depressed. (J3-B).
- Continuous spikes (J3-C).
- No spikes (J3-D).

The photographs below show the 1-kHz sine wave without spikes (J3-D) and with spikes (J3-C, or J3-B with SW1 depressed).

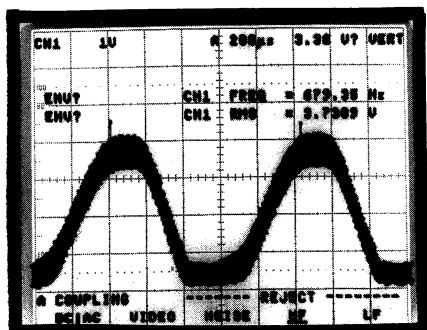


7123-13

To add 40-MHz noise to the sine wave, you must set:

- J1-B (40 MHz).
- J4-A (add noise).

The photograph below shows the sine wave with 40-MHz noise (J4-A). Notice that in this illustration the sine wave also has spikes (J3-C).



7123-14

TP10 Applications

Use the sine wave on TP10 to demonstrate:

- Save on Delta glitch capture.
- Envelope Glitch capture.
- Averaging (with noise).
- Bandwidth limit (with noise).
- Noise Reject Trigger coupling (with noise).

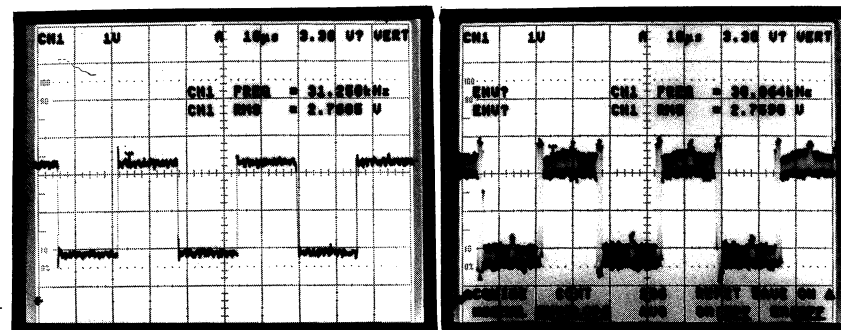
Ringling Square Wave

The output signal on TP15 is a ringing square wave.

TP15 Description

The signal on TP15 is a square wave of approximately 3 V peak-to-peak with ringing of about 1 V peak-to-peak. The square-wave frequency depends on the adjustment of variable resistor R1. When R1 is adjusted for a 1-kHz sine wave on TP10, the square-wave frequency on TP15 is 32 kHz.

The photographs below show the TP15 signal without noise (J8-B) and with noise (J8-A).



7123-15

TP15 Applications

Use the signal on TP15 to demonstrate:

- The Average function on a digital storage oscilloscope.
- Glitch capture using Envelope mode.

TTL Square Waves

The signals on Q1, Q2, and Q3 are TTL square waves.

Q1 Description

The signal on Q1 is an approximately 32-kHz TTL square wave.

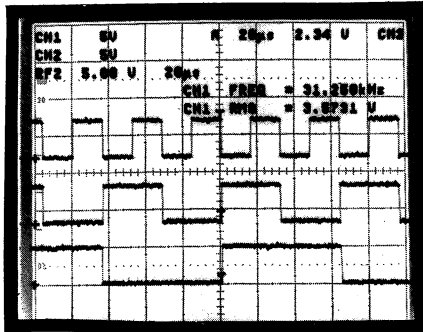
Q2 Description

The signal on Q2 is an approximately 16-kHz TTL square wave.

Q3 Description

The signal on Q3 is an approximately 8-kHz TTL square wave.

The photograph below shows Q1 on top (CH1), Q2 in the middle (CH2), and Q3 on the bottom (RF2).



7123-16

Q1, Q2, and Q3 Application

Use the signals on Q1, Q2, and Q3 to demonstrate digital-word triggering with the Word Recognizer Probe.

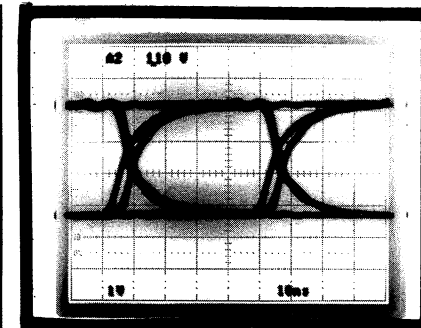
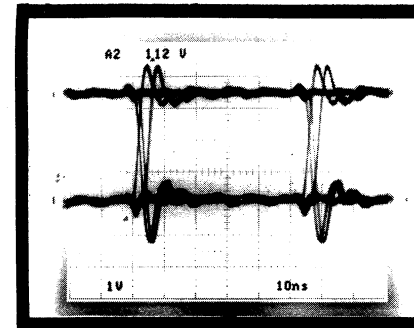
Eye Diagrams

The signals on TP13 and TP14 are eye diagrams.

TP13 and TP14 Description

The signals on TP13 and TP14 are one-bit, two-level eye diagrams. These signals are representative of computer-bus eye patterns. The TP13 and TP14 signals must be triggered with the TTL clock (TP7). To display the eye diagrams, you need an analog scope. Also, the Test Signal Generating Board's oscillator frequency must be 40 MHz (J1-B) or 20 MHz (J1-C). At 40 MHz, set the scope's sec/div to 5 ns; at 20 MHz, set the scope's sec/div to 10 ns.

The photograph on the left shows the eye diagram on TP13. The photograph on the right shows the eye diagram on TP14. The signals are displayed on a Tektronix 2467 350-MHz analog real-time portable oscilloscope.



7123-17

TP13 and TP14 Application

Use the signals on TP13 and TP14 to demonstrate how an analog scope triggers on and displays an eye pattern.

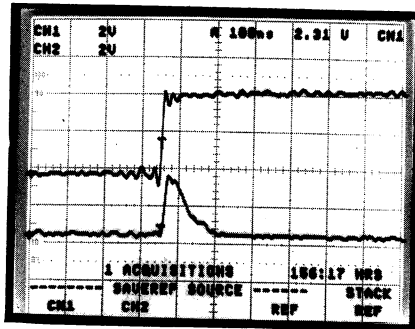
Transient

The signal on TP9 is a random fast transient.

TP9 Description

The TP9 signal is a transient pulse, varying randomly from 0 to 5 volts in amplitude and from 20 to 150 ns in duration. Depending on the setting of J5, the frequency of the pulse is selectable as 15.5 Hz (J5-A), 1 kHz (J5-B), or single shot (J5-C). The pulse occurs on the rising edge of the TP8 square wave.

The photograph below shows the TP8 signal on CH1 and the TP9 transient on CH2. The transient occurs on the rising edge of the TP8 square wave.



7123-10

TP9 Application

Use the TP9 signal to demonstrate fast transients in either single-shot or repetitive applications. For single shot, set J5-C and press SW1.

Adjustment Procedure

The only test equipment required to adjust and verify the Test Signal Generating Board performance is an oscilloscope with a vertical bandwidth of 100 MHz or greater and a 10X probe.

1. Connect the jack on the power cord to J10 on the board, and plug the transformer into an ac power-source outlet. Observe that LED DS109 is lit.
2. Connect the 10X probe to the test oscilloscope vertical input. Select dc input coupling. Set the vertical deflection to 1 volt/div and the sweep speed to 1 ms/div.
3. Connect the probe tip to TP7. (Make sure the J1 jumper cap is set in the A position.)
4. Change the vertical deflection to 500 mV/div and the sweep speed to 10 ns/div.
5. ADJUST--variable capacitor C4 for a 70-MHz sine wave (exactly seven cycles in the 10 divisions of the screen).
6. Move the J1 jumper cap to the B position.
7. CHECK--the frequency of the TP7 sine wave is approximately 40 MHz.
8. Move the J1 jumper cap to the C position.
9. CHECK--the frequency of the TP7 sine wave is approximately 20 MHz.
10. Move the probe tip to TP10. Connect the probe ground to the nearest GND test pin.
11. ADJUST--variable resistor R31 for a 1-kHz sine wave (1 cycle per division at 1 ms/div).
10. Disconnect the test oscilloscope from the Test Signal Generating Board.

REPLACEABLE 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.

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.

COMPONENT NUMBER (column one of the Electrical Parts List)

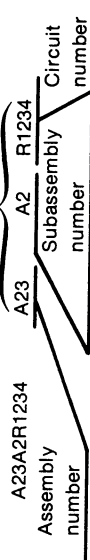
A numbering method has been used to identify assemblies, subassemblies and parts. Examples of this numbering method and typical expansions are illustrated by the following:

Example a.



Read: Resistor 1234 of Assembly 23

Example b.



Read: Resistor 1234 of Subassembly 2 of Assembly 23

TEKTRONIX PART NO. (column two of the Electrical Parts List)

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

Replaceable Parts
Test Signal Generating Board

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
01121	ALLEN-BRADLEY CO	1201 S 2ND ST	MILWAUKEE WI 53204-2410
01295	TEXAS INSTRUMENTS INC	13500 N CENTRAL EXPY	DALLAS TX 75265
02735	SEMICONDUCTOR GROUP RCA CORP	PO BOX 655012 ROUTE 202	SOMERVILLE NJ 08876
03508	SOLID STATE DIVISION GENERAL ELECTRIC CO	W GENESEE ST	AUBURN NY 13021
04222	SEMI-CONDUCTOR PRODUCTS DEPT AVX CERAMICS	19TH AVE SOUTH P O BOX 867	MYRTLE BEACH SC 29577
04713	DIV OF AVX CORP MOTOROLA INC	5005 E MCDOWELL RD	PHOENIX AZ 85008-4229
05397	SEMICONDUCTOR PRODUCTS SECTOR UNION CARBIDE CORP	11901 MADISON AVE	CLEVELAND OH 44101
05820	MATERIALS SYSTEMS DIV EG AND G WAKEFIELD ENGINEERING	60 AUDUBON RD	WAKEFIELD MA 01880-1203
07263	FAIRCHILD SEMICONDUCTOR CORP NORTH AMERICAN SALES	10400 RIDGEVIEW CT	CUPERTINO CA 95014
11236	SUB OF SCHLUMBERGER LTD MS 118 CTS CORP BERNE DIV	406 PARR ROAD	BERNE IN 46711-9506
17856	THICK FILM PRODUCTS GROUP SILICONIX INC	2201 LAURELWOOD RD	SANTA CLARA CA 95054-1516
18324	SIGNETICS CORP MILITARY PRODUCTS DIV	4130 S MARKET COURT	SACRAMENTO CA 95834-1222

Replaceable Parts
Test Signal Generating Board

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
19701	MEPCO/CENTRALAB A NORTH AMERICAN PHILLIPS CO	PO BOX 760	MINERAL WELLS TX 76067-0760
22526	MINERAL WELLS AIRPORT DU PONT E I DE NEMOURS AND CO INC	515 FISHING CREEK RD	NEW CUMBERLAND PA 17070-3007
31918	DU PONT CONNECTOR SYSTEMS DIV MILITARY PRODUCTS GROUP	8061 WALLACE RD	EDEN PRAIRIE MN 55344-2224
32997	ITT SCHADOW INC BOURNS INC	1200 COLUMBIA AVE	RIVERSIDE CA 92507-2114
50434	TRIMPOT DIV HEWLETT-PACKARD CO	370 W TRIMBLE RD	SAN JOSE CA 95131
52763	OPTOELECTRONICS DIV STETCO INC	3344 SCHIERHORN 92 HAYDEN AVE	FRANKLIN PARK IL 60131 LEXINGTON MA 02173-7929
56289	SPRAGUE ELECTRIC CO WORLD HEADQUARTERS	8 WHATNEY PO BOX 19515	IRVINE CA 92713
57668	ROHM CORP	1327 6TH AVE	GRAFTON WI 53024-1831
60705	CERA-MITE CORPORATION INDUSTRIAL SPECIALTIES, INC.	19070 REYES AVE	WARREN, MI 48091
74932	BELL INDUSTRIES INC	PO BOX 5825	COMPTON CA 90224-5825
76493	JW MILLER DIV	ST CHARLES ROAD	ELGIN IL 60120
78189	ILLINOIS TOOL WORKS INC SHAKEPROOF DIV		
80009	TEKTRONIX INC	14150 SW KARL BRAUN DR PO BOX 500	BEAVERTON OR 97707-0001

Replaceable Parts
Test Signal Generating Board

CROSS INDEX - MFR. CODE NUMBER TO MANUFACTURER

Mfr. Code	Manufacturer	Address	City, State, Zip Code
83014	HARTWELL CORP LOCKWELL DIVISION	950 S RICHFIELD RD	PLACENTIA CA 92670-6732
TK0435	LEWIS SCREW CO	4300 S RACINE AVE	CHICAGO IL 60609-3320
TK1345	ZMAN AND ASSOCIATES	7633 S 180TH	KENT WA 98032
TK1727	PHILIPS NEDERLAND BV AFD ELONCO	POSTBUS 90050	5600 PB EINDHOVEN THE NETHERLANDS
TK2042	ZMAN & ASSOCIATES	7633 S 180TH	KENT WA 98032

Replaceable Parts
Test Signal Generating Board

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Name & Description	Mfr. Code	Mfr. Part No.
	671-0799-00			CIRCUIT BD ASSY: SIGNAL GENERATOR	80009	671-0799-00
C1	281-0773-00			CAP, FXD, CER DI: 0.01UF, 10%, 100V	04222	MA201C103KAA
C2	281-0765-00			CAP, FXD, CER DI: 100PF, 5%, 100V	04222	MA101A101JAA
C3	281-0762-00			CAP, FXD, CER DI: 27PF, 20%, 100V	04222	MA101JA270MAA
C4	281-0093-00			CAP, VAR, CER DI: 5.5-18PF, 350V	52763	302322237
C4	281-0184-00			CAP, VAR, PLASTIC: 2-18PF, 500VDC (ALTERNATE)	TK1727	2222-809-05003
C5	281-0775-01			CAP, FXD, CER DI: 0.1UF, 20%, 50V	04222	SA105E104MAA
C6	281-0763-00			CAP, FXD, CER DI: 47PF, 10%, 100V	04222	MA101JA470KAA
C7	281-0775-01			CAP, FXD, CER DI: 0.1UF, 20%, 50V	04222	SA105E104MAA
C8	281-0763-00			CAP, FXD, CER DI: 47PF, 10%, 100V	04222	MA101JA470KAA
C9	281-0775-01			CAP, FXD, CER DI: 0.1UF, 20%, 50V	04222	SA105E104MAA
C10	281-0763-00			CAP, FXD, CER DI: 47PF, 10%, 100V	04222	MA101JA470KAA
C11	281-0865-00			CAP, FXD, CER DI: 1000PF, 5%, 100V	04222	MA101A102JAA
C12	281-0775-01			CAP, FXD, CER DI: 0.1UF, 20%, 50V	04222	SA105E104MAA
C13	281-0775-01			CAP, FXD, CER DI: 0.1UF, 20%, 50V	04222	SA105E104MAA
C14	281-0775-01			CAP, FXD, CER DI: 0.1UF, 20%, 50V	04222	SA105E104MAA
C15	281-0773-00			CAP, FXD, CER DI: 0.01UF, 10%, 100V	04222	MA201C103KAA
C16	281-0865-00			CAP, FXD, CER DI: 1000PF, 5%, 100V	04222	MA101A102JAA
C17	281-0775-01			CAP, FXD, CER DI: 0.1UF, 20%, 50V	04222	SA105E104MAA

Replaceable Parts
Test Signal Generating Board

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Name & Description	Mfr. Code	Mfr. Part No.
C18	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C19	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C20	281-0759-00			CAP, FXD, CER DI:22PF, 10%, 100V	04222	MA101A220KAA
C21	281-0759-00			CAP, FXD, CER DI:22PF, 10%, 100V	04222	MA101A220KAA
C22	281-0765-00			CAP, FXD, CER DI:100PF, 5%, 100V	04222	MA101A101JAA
C23	281-0773-00			CAP, FXD, CER DI:0.01UF, 10%, 100V	04222	MA201C103KAA
C24	281-0773-00			CAP, FXD, CER DI:0.01UF, 10%, 100V	04222	MA201C103KAA
C25	281-0773-00			CAP, FXD, CER DI:0.01UF, 10%, 100V	04222	MA201C103KAA
C26	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C27	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C28	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C29	281-0773-00			CAP, FXD, CER DI:0.01UF, 10%, 100V	04222	MA201C103KAA
C30	283-0912-00			CAP, FXD, CER DI:2.7PF, 1000V	60705	561CRE501EE2R7CA
C31	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C32	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C33	281-0865-00			CAP, FXD, CER DI:1000PF, 5%, 100V	04222	MA101A102JAA
C34	281-0773-00			CAP, FXD, CER DI:0.01UF, 10%, 100V	04222	MA201C103KAA
C35	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C36	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C37	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C38	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C39	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA

Replaceable Parts
Test Signal Generating Board

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Name & Description	Mfr. Code	Mfr. Part No.
C40	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C41	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C42	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C43	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C45	290-0527-00			CAP, FXD, ELCTLT:15UF, 20%, 20V	05397	T3688156M020AS
C49	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C134	290-0530-00			CAP, FXD, ELCTLT:68UF, 20%, 6V	56289	196D686X0006K1
C148	290-0527-00			CAP, FXD, ELCTLT:15UF, 20%, 20V	05397	T3688156M020AS
C149	281-0775-01			CAP, FXD, CER DI:0.1UF, 20%, 50V	04222	SA105E104MAA
C150	281-0765-00			CAP, FXD, CER DI:100PF, 5%, 100V	04222	MA101A101JAA
C170	281-0765-00			CAP, FXD, CER DI:100PF, 5%, 100V	04222	MA101A101JAA
C180	281-0765-00			CAP, FXD, CER DI:100PF, 5%, 100V	04222	MA101A101JAA
CR2	152-0141-02			SEMICON DVC, DI:SW, SI, 30V, 150MA, 30V, DO-35	03508	DA2527 (1N4152)
CR3	152-0141-02			SEMICON DVC, DI:SW, SI, 30V, 150MA, 30V, DO-35	03508	DA2527 (1N4152)
CR4	152-0141-02			SEMICON DVC, DI:SW, SI, 30V, 150MA, 30V, DO-35	03508	DA2527 (1N4152)
CR5	152-0141-02			SEMICON DVC, DI:SW, SI, 30V, 150MA, 30V, DO-35	03508	DA2527 (1N4152)
CR6	152-0141-02			SEMICON DVC, DI:SW, SI, 30V, 150MA, 30V, DO-35	03508	DA2527 (1N4152)
CR7	152-0141-02			SEMICON DVC, DI:SW, SI, 30V, 150MA, 30V, DO-35	03508	DA2527 (1N4152)
DS109	150-1152-00			LT EMITTING DIO:RED .5V, T-1 PACKAGE	50434	HLMP3600 OPT 002
J1	131-0608-00			TERMINAL, PIN:0.365 L X 0.025 BRZ GLD PL (QUANTITY OF 3)	22526	48283-036
J2	131-0608-00			TERMINAL, PIN:0.365 L X 0.025 BRZ GLD PL	22526	48283-036

Replaceable Parts
Test Signal Generating Board

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discount	Name & Description	Mfr. Code	Mfr. Part No.
J3	131-0608-00			(QUANTITY OF 2) TERMINAL, PIN: 0.365 L X 0.025 BRZ GLD PL	22526	48283-036
J4	131-0608-00			(QUANTITY OF 4) TERMINAL, PIN: 0.365 L X 0.025 BRZ GLD PL	22526	48283-036
J5	131-0608-00			(QUANTITY OF 2) TERMINAL, PIN: 0.365 L X 0.025 BRZ GLD PL	22526	48283-036
J6	131-0608-00			(QUANTITY OF 3) TERMINAL, PIN: 0.365 L X 0.025 BRZ GLD PL	22526	48283-036
J7	131-0608-00			(QUANTITY OF 2) TERMINAL, PIN: 0.365 L X 0.025 BRZ GLD PL	22526	48283-036
J8	131-0608-00			(QUANTITY OF 3) TERMINAL, PIN: 0.365 L X 0.025 BRZ GLD PL	22526	48283-036
J9	131-0608-00			(QUANTITY OF 2) TERMINAL, PIN: 0.365 L X 0.025 BRZ GLD PL	22526	48283-036
J10	131-4368-00			TERMINAL, PIN: 0.365 L X 0.025 BRZ GLD PL	22526	48283-036
L1	108-0260-00			JACK, POWER: CKT BD MOUNT, RT ANG	80009	131-4368-00
L2	108-0182-00			COIL, RF: FIXED, 98NH	TK2042	ORDER BY DESCR
L3	108-0723-00			COIL, RF: FIXED, 293NH	80009	108-0182-00
L4	108-0249-00			COIL, RF: FIXED, 1.07UH	TK1345	108-0723-00
P1	131-0993-00			CHOKE, RF: FIXED, 12MF	76493	B-4992
P2	131-0993-00			BUS, CONDUCTOR: SHUNT ASSEMBLY, BLACK	22526	65474-005
P3	131-0993-00			BUS, CONDUCTOR: SHUNT ASSEMBLY, BLACK	22526	65474-005
P4	131-0993-00			BUS, CONDUCTOR: SHUNT ASSEMBLY, BLACK	22526	65474-005
				BUS, CONDUCTOR: SHUNT ASSEMBLY, BLACK	22526	65474-005

Replaceable Parts
Test Signal Generating Board

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discount	Name & Description	Mfr. Code	Mfr. Part No.
P5	131-0993-00			BUS, CONDUCTOR: SHUNT ASSEMBLY, BLACK	22526	65474-005
P6	131-0993-00			BUS, CONDUCTOR: SHUNT ASSEMBLY, BLACK	22526	65474-005
P7	131-0993-00			BUS, CONDUCTOR: SHUNT ASSEMBLY, BLACK	22526	65474-005
P8	131-0993-00			BUS, CONDUCTOR: SHUNT ASSEMBLY, BLACK	22526	65474-005
Q1	151-0712-00			TRANSISTOR: PNP, SI, TO-92	04713	SPS8223
Q2	151-0712-00			TRANSISTOR: PNP, SI, TO-92	04713	SPS8223
Q3	151-0712-00			TRANSISTOR: PNP, SI, TO-92	04713	SPS8223
Q4	151-0712-00			TRANSISTOR: PNP, SI, TO-92	04713	SPS8223
Q5	151-0712-00			TRANSISTOR: PNP, SI, TO-92	04713	SPS8223
Q6	151-0712-00			TRANSISTOR: PNP, SI, TO-92	04713	SPS8223
Q7	151-0190-00			TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
Q8	151-0712-00			TRANSISTOR: PNP, SI, TO-92	04713	SPS8223
Q9	151-0220-00			TRANSISTOR: PNP, SI, TO-92	80009	151-0220-00
Q10	151-0190-00			TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
Q11	151-0190-00			TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
Q12	151-0190-00			TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
Q13	151-0712-00			TRANSISTOR: PNP, SI, TO-92	04713	SPS8223
Q14	151-0190-00			TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
Q15	151-0190-00			TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
Q16	151-0190-00			TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
Q17	151-0190-00			TRANSISTOR: NPN, SI, TO-92	80009	151-0190-00
Q18	151-0712-00			TRANSISTOR: PNP, SI, TO-92	04713	SPS8223

Replaceable Parts
Test Signal Generating Board

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Name & Description	Mfr. Code	Mfr. Part No.
Q19	151-1121-00			TRANSISTOR:FE,N CHANNEL,S1,T0-92	17856	VI0206
R1	315-0223-00			RES,FXD,FILM:22K OHM,5%,0.25W	19701	5043CX22K00J92U
R2	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
R3	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
R4	315-0510-00			RES,FXD,FILM:51 OHM,5%,0.25W	19701	5043CX51R00J
R13	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25W	57668	NTR25J-E68E0
R14	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25W	57668	NTR25J-E68E0
R15	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25W	57668	NTR25J-E68E0
R16	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25W	57668	NTR25J-E68E0
R17	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25W	57668	NTR25J-E68E0
R18	315-0680-00			RES,FXD,FILM:68 OHM,5%,0.25W	57668	NTR25J-E68E0
R19	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
R20	315-0224-00			RES,FXD,FILM:220K OHM,5%,0.25W	57668	NTR25J-E220K
R21	315-0242-00			RES,FXD,FILM:2.4K OHM,5%,0.25W	57668	NTR25J-E02K4
R22	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
R23	315-0242-00			RES,FXD,FILM:2.4K OHM,5%,0.25W	57668	NTR25J-E02K4
R24	315-0362-00			RES,FXD,FILM:3.6K OHM,5%,0.25W	19701	5043CX3600J
R25	315-0331-00			RES,FXD,FILM:330 OHM,5%,0.25W	57668	NTR25J-E330E
R26	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
R27	315-0682-00			RES,FXD,FILM:6.8K OHM,5%,0.25W	57668	NTR25J-E06K8
R28	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
R29	315-0202-00			RES,FXD,FILM:2K OHM,5%,0.25W	57668	NTR25J-E 2K

Replaceable Parts
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Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Name & Description	Mfr. Code	Mfr. Part No.
R30	315-0151-00			RES,FXD,FILM:150 OHM,5%,0.25W	57668	NTR25J-E150E
R31	311-0614-00			RES,VAR,NONWM:TRMR,30K OHM,0.5W	32997	3329H-L58-303
R32	315-0682-00			RES,FXD,FILM:6.8K OHM,5%,0.25W	57668	NTR25J-E06K8
R33	315-0153-00			RES,FXD,FILM:15K OHM,5%,0.25W	19701	5043CX15K00J
R34	315-0472-00			RES,FXD,FILM:4.7K OHM,5%,0.25W	57668	NTR25J-E04K7
R35	315-0391-00			RES,FXD,FILM:390 OHM,5%,0.25W	57668	NTR25J-E390E
R36	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
R37	315-0474-00			RES,FXD,FILM:470K OHM,5%,0.25W	19701	5043CX470K0J92U
R38	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
R39	315-0101-00			RES,FXD,FILM:100 OHM,5%,0.25W	57668	NTR25J-E 100E
R40	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
R41	315-0203-00			RES,FXD,FILM:20K OHM,5%,0.25W	57668	NTR25J-E 20K
R42	315-0153-00			RES,FXD,FILM:15K OHM,5%,0.25W	19701	5043CX15K00J
R43	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
R44	315-0103-00			RES,FXD,FILM:10K OHM,5%,0.25W	19701	5043CX10K00J
R45	315-0104-00			RES,FXD,FILM:100K OHM,5%,0.25W	57668	NTR25J-E100K
R46	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
R47	315-0102-00			RES,FXD,FILM:1K OHM,5%,0.25W	57668	NTR25JE01K0
R48	315-0471-00			RES,FXD,FILM:470 OHM,5%,0.25W	57668	NTR25J-E470E
R49	315-0183-00			RES,FXD,FILM:18K OHM,5%,0.25W	19701	5043CX18K00J
R50	315-0183-00			RES,FXD,FILM:18K OHM,5%,0.25W	19701	5043CX18K00J
R51	315-0183-00			RES,FXD,FILM:18K OHM,5%,0.25W	19701	5043CX18K00J

Replaceable Parts
Test Signal Generating Board

Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Name & Description	Mfr. Code	Mfr. Part No.
R52	315-0471-00			RES, FXD, FILM:470 OHM, 5%, 0.25W	57668	NTR25J-E470E
R53	315-0102-00			RES, FXD, FILM:1K OHM, 5%, 0.25W	57668	NTR25JE01K0
R54	315-0361-00			RES, FXD, FILM:360 OHM, 5%, 0.25W	19701	5043CX360R0J
R56	315-0201-00			RES, FXD, FILM:200 OHM, 5%, 0.25W	57668	NTR25J-E200E
R57	315-0201-00			RES, FXD, FILM:200 OHM, 5%, 0.25W	57668	NTR25J-E200E
R58	315-0151-00			RES, FXD, FILM:150 OHM, 5%, 0.25W	57668	NTR25J-E150E
R59	315-0472-00			RES, FXD, FILM:4.7K OHM, 5%, 0.25W	57668	NTR25J-E04K7
R65	315-0331-00			RES, FXD, FILM:330 OHM, 5%, 0.25W	57668	NTR25J-E330E
R69	315-0561-00			RES, FXD, FILM:560 OHM, 5%, 0.25W	19701	5043CX560R0J
R70	315-0161-00			RES, FXD, FILM:160 OHM, 5%, 0.25W	57668	NTR25J-E 160E
R71	315-0681-00			RES, FXD, FILM:680 OHM, 5%, 0.25W	57668	NTR25J-E680E
R72	315-0103-00			RES, FXD, FILM:10K OHM, 5%, 0.25W	19701	5043CX10K00J
R73	315-0102-00			RES, FXD, FILM:1K OHM, 5%, 0.25W	57668	NTR25JE01K0
R74	315-0103-00			RES, FXD, FILM:10K OHM, 5%, 0.25W	19701	5043CX10K00J
R75	315-0102-00			RES, FXD, FILM:1K OHM, 5%, 0.25W	57668	NTR25JE01K0
R76	315-0103-00			RES, FXD, FILM:10K OHM, 5%, 0.25W	19701	5043CX10K00J
R137	315-0102-00			RES, FXD, FILM:1K OHM, 5%, 0.25W	57668	NTR25JE01K0
R148	315-0101-00			RES, FXD, FILM:100 OHM, 5%, 0.25W	57668	NTR25J-E 100E
R149	315-0161-00			RES, FXD, FILM:160 OHM, 5%, 0.25W	57668	NTR25J-E 160E
R150	315-0102-00			RES, FXD, FILM:1K OHM, 5%, 0.25W	57668	NTR25JE01K0
R158	315-0103-00			RES, FXD, FILM:10K OHM, 5%, 0.25W	19701	5043CX10K00J
R170	315-0471-00			RES, FXD, FILM:470 OHM, 5%, 0.25W	57668	NTR25J-E470E

Replaceable Parts
Test Signal Generating Board

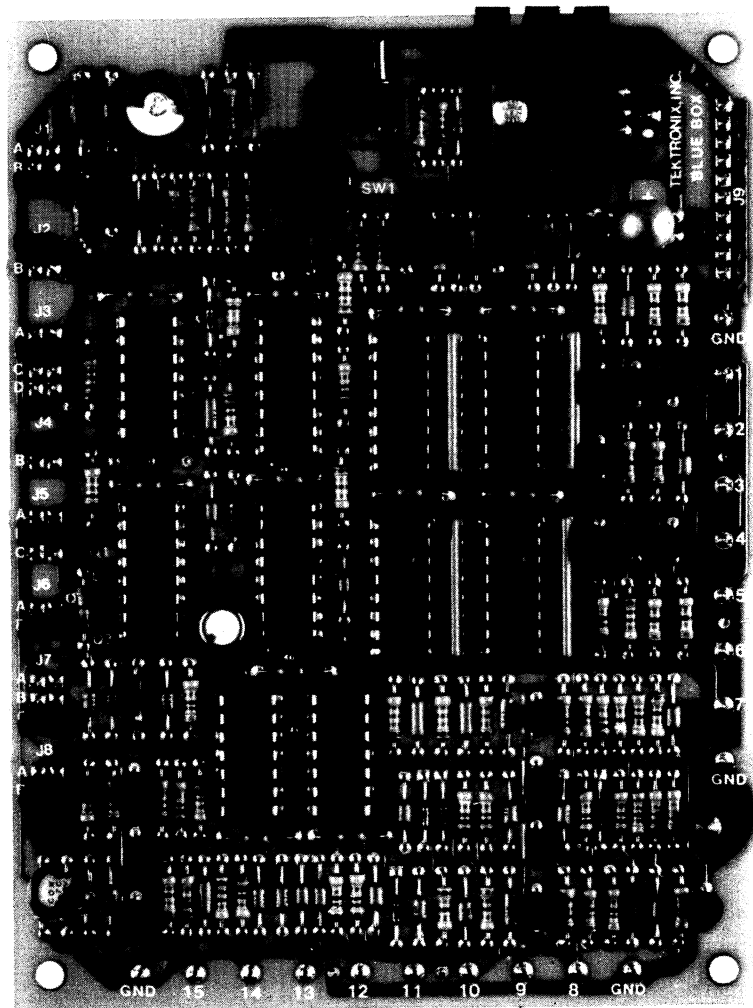
Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Name & Description	Mfr. Code	Mfr. Part No.
R171	315-0510-00			RES, FXD, FILM:51 OHM, 5%, 0.25W	19701	5043CX51R00J
R180	315-0203-00			RES, FXD, FILM:20K OHM, 5%, 0.25W	57668	NTR25J-E 20K
RN2	307-0711-00			RES NTWK, FXD, FI:4.68 OHM, 2%, 0.2W	01121	1088680
RN3	307-0711-00			RES NTWK, FXD, FI:4.68 OHM, 2%, 0.2W	01121	1088680
RN4	307-0539-00			RES NTWK, FXD, FI:(7)510 OHM, 10%, 1W	11236	750-81-R510 OHM
RN5	307-0539-00			RES NTWK, FXD, FI:(7)510 OHM, 10%, 1W	11236	750-81-R510 OHM
S1	260-2072-00			SWITCH, PUSH:SPST, 10MA, 35VDC, MOMENTARY	31918	532.000.001
TP1	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP2	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP3	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP4	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP5	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP6	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP7	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP8	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP9	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP10	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP11	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP12	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP13	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP14	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP15	131-0589-00			TERMINAL, PIN:0.46 L X 0.025 SQ PH BRZ	22526	48283-029

Replaceable Parts
Test Signal Generating Board

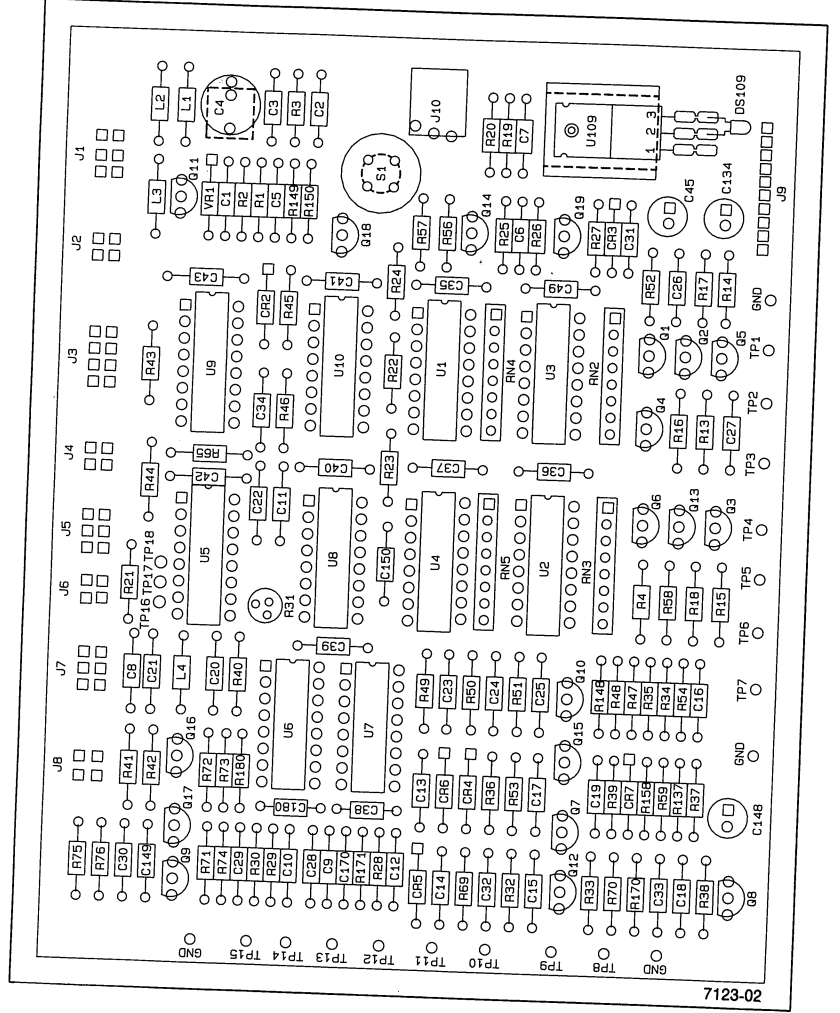
Component No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Name & Description	Mfr. Code	Mfr. Part No.
TP16	131-0589-00			TERMINAL, PIN: 0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP17	131-0589-00			TERMINAL, PIN: 0.46 L X 0.025 SQ PH BRZ	22526	48283-029
TP18	131-0589-00			TERMINAL, PIN: 0.46 L X 0.025 SQ PH BRZ	22526	48283-029
U1	156-2142-00			MICROCKT, DGT: ECL, 4-BIT COUNTER	04713	MC10H016(P OR L)
U2	156-1642-00			MICROCKT, DGT: TPL 2-3-2 INP OR/NOR GATE	04713	MC10H105(L OR P)
U3	156-1676-00			MICROCKT, DGT: ECL, TRIPLE 2 INP EX OR/NOR	04713	MC10H107LD
U4	156-1642-00			MICROCKT, DGT: TPL 2-3-2 INP OR/NOR GATE	04713	MC10H105(L OR P)
U5	156-2601-00			MICROCKT, DGT: HCMOS, 12 STAGE	04713	74HC4040CP/CL
U6	156-2392-00			MICROCKT, DGT: CMOS, HEX SCHMITT TRIG INV	04713	MC74HC14ND
U7	156-1800-00			MICROCKT, DGT: ASTTL, QUAD 2 INP EXCL OR GATE	18324	N74F86(NB OR JB)
U8	156-1956-00			MICROCKT, DGT: HCMOS, OCTAL DECODER, SCRN	01295	SN74HCT138N
U9	156-0366-00			MICROCKT, DGT: DUAL D FLIP-FLOP	02735	CD4013BF
U10	156-1973-00			MICROCKT, DGT: STTL, QUAD D FF	07263	74F175PQQR
U109	156-0277-00			MICROCKT, LINEAR-VOLTAGE REGULATOR	04713	LM340T-5.0
VR1	152-0322-00			SEMICOND DVC, DI: SCHOTTKY, SI, 15V, 1.2PF, DO-35	50434	5082-2672

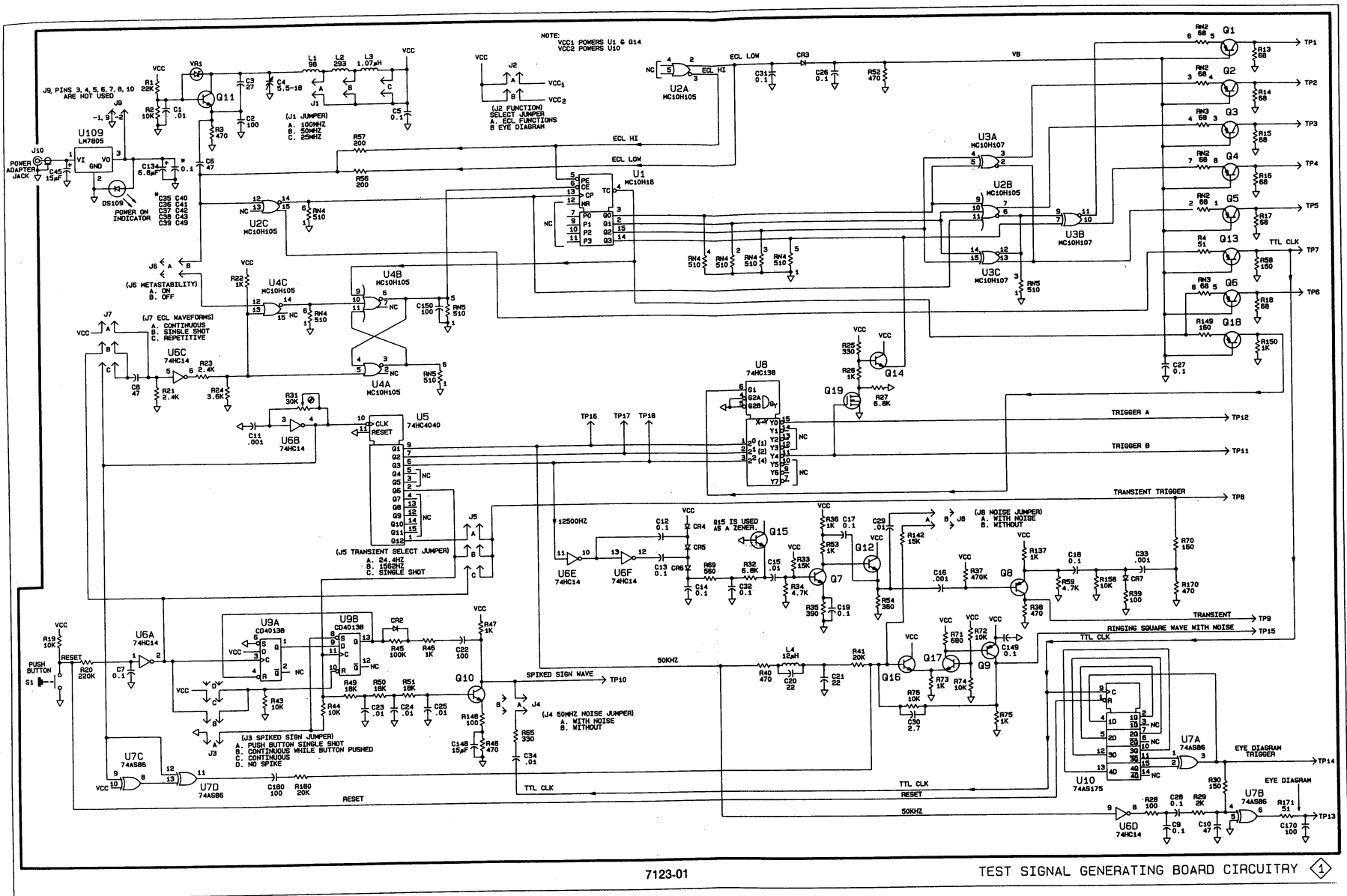
Replaceable Parts
Test Signal Generating Board

Fig. & Index No.	Tektronix Part No.	Serial/Assembly No. Effective	Discont	Qty	12345	Name & Description	Mfr. Code	Mfr. Part No.
	119-3297-00			1		ADPTR, BTRY CHGR: 220V, 500MA	80009	119-3297-00
	119-3306-00			1		ADPTR, BTRY CHGR: 500MA POWER SUPPLY (PLUGS INTO JACK ADAPTER)	80009	119-3306-00
	210-0586-00			1		NUT, PL, ASSEM WA: 4-40 X 0.25, STL CD PL (HEAT SINK)	78189	211-041800-00
	211-0097-00			1		SCREW, MACHINE: 4-40 X 0.312, PNH, STL (HEAT SINK)	93907	ORDER BY DESCOR
	214-1967-00			1		HEAT SINK, DIODE: (2) 0.15 DIA HOLES, AL	05820	289-AB
	348-0430-00			4		BUMPER, PLASTIC: BLACK POLYURETHANE (ON THE BACK OF THE BOARD)	74932	SJ5027
	214-3732-00			3		PLUNGER, FSTNR: 0.187 DIA, NYLON BLACK (TO HOLD BOARD IN TRAY)	83014	HN3P-34-4-1
	348-0430-00			4		BUMPER, PLASTIC: BLACK POLYURETHANE (TO HOLD BOARD IN TRAY)	74932	SJ5027
	348-0849-00			3		GROMMET, FSTNR: 0.187 ID, NYLON BLACK	83014	HN3G-34-1
						ACCESSORIES		
	020-1679-00			1		COMPONENT KIT: QUICK START KIT	80009	020-1679-00
	020-1681-00			1		UPGRADE KIT: EUROPEAN, QUICK START	80009	020-1681-00
	070-7118-00			1		MANUAL, TECH: GUIDE, 2430A/32 OPT 2F	80009	070-7118-00
	070-7123-00			1		MANUAL, TECH: SERVICE, 2430A/32 OPT 2F	80009	070-7123-00
	070-7447-00			1		MANUAL, TECH: QUICKSTART GUIDE 2402 TEKWATE	80009	070-7447-00



7123-03





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