

P6457 TTL/MOS PATTERN GENERATOR PROBE OPERATOR'S MANUAL ADDENDUM

**TO THE DAS 9100 SERIES OPERATOR'S MANUAL
(PART NUMBER 062-5847-00, -01, AND UP)**

This Tektronix Manual Addendum supports the following products:

P6457 TTL/MOS Pattern Generator Probe

This addendum is designed to be inserted into *DAS 9100 Series Operator's Manuals*. The 062-5847-00 manual set is a package consisting of loose leaf binders with manuals and addenda. Each manual and addendum in the set has its own part number starting with the prefix 070. You can find your manual part number in the bottom left corner of the manual title page. (Note: Some manuals may already have this addendum inserted in the back of their binders or after sections 1, 2 and 8. Check your manual to see if there is a duplicate.)

This addendum contains operator's information specific to the P6457 TTL/MOS Pattern Generator Probe. It adds information to the *DAS 9100 Series Operator's Manual*; it does not replace information.

Refer to the *DAS 9100 Series Operator's Manual* for information on other products, including mainframes, instrument modules, probes, and options.


How To Use This Addendum. Information within this addendum corresponds to sections within the *DAS 9100 Series Operator's Manual*. You can place the addendum at the back of the operator's manual binder, or you can insert the pages into their corresponding manual sections. You can also order a second operator's binder using P/N 016-0788-00.

This addendum affects three of the operator's manual sections: *General Information* (Section 1), *Operating Instructions* (Section 2), and *Pattern Generator Menu* (Section 8).

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

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SPECIFICATIONS

Table 1
ELECTRICAL SPECIFICATIONS

Characteristic	Performance Requirements	Supplemental Information
Module-to Probe Signals		
Maximum Operating Power Requirement		
Current		
+5 V Supply		160 mA Maximum
-5 V Supply		200 mA Maximum
+6 V Supply		120 mA Maximum
Voltage		
+5 V Supply		±3% @ module end ±5% @ probe end
-5 V Supply		±3% @ module end ±5% @ probe end
+6 V Supply		±3% @ module end ±5% @ probe end
Number of Channels		6
Channel Characteristic		Differential ECL, V _{cc} = +5V, V _{ee} =GND
INHIBIT (tri-state control)		Differential ECL, V _{cc} = +5V, V _{ee} =GND
Maximum Frequency	25 MHz (V _L =GND, V _H = +5V)	
Minimum Pulse Width		15 ns
Signal Transit Time		21.5 ns ± 5 ns
INHIBIT, UNINHIBIT Delay Time		< 10 ns after transit time

**ELECTRICAL SPECIFICATIONS
(Cont.)**

Characteristic	Performance Requirements	Supplemental Information
Probe-to Module Signals		
IDENT		GND true, normally open (through 100Ω)
PODSNS		Grounded at pod
Probe-to-SUT Signals: Output levels		
Logical Low	$< V_L + 0.5 \text{ V}$ with current load of 10mA. $V_L + 0.6 \text{ V}$ @ 20 mA.	
Logical High	$> V_H - 1.6 \text{ V}$ with current load of 20mA.	
Short Protection		Between $V_L - 5 \text{ V}$ and $V_L - 0.5 \text{ V}$ in low state; between $V_H - 5 \text{ V}$ and $V_H + 0.5 \text{ V}$ in high state. (short < 4 sec.)
Maximum Voltage Difference Out		25 V +15 V and -10 V
Rise/Fall Times (TTL and MOS, V_{DIFF} 5 V to 15 V)		Slew rate $> 1.0 \text{ V per ns}$, 15 pF load. 10%-90% of steady state voltage.
Inhibited Output		
Leakage		$< 100 \mu\text{A}$
Capacitance		10 pF, nominal without lead set. Lead set adds $\approx 10 \text{ pF}$.
Resistance		$> 100 \text{ k}\Omega$
Transition Spikes When data bit and corresponding inhibit bit both change on same clock.		15 ns maximum.

**ELECTRICAL SPECIFICATIONS
(Cont.)**

Characteristic	Performance Requirements	Supplemental Information
Maximum Source or Sink Current V Difference 3 V to 5 V V Difference > 5 V to 25 V		20 mA 10 mA
SUT-to-Probe V _H Range V _L Range V _H -V _L Difference Current Drain	0 V to +15 V -15 V to 0 V 3 V to 25 V User load current + 75 mA max.	
Maximum Non-Destructive Input Voltages V _H V _L V _L -to-V _H Difference		±20 V -20 V to +5 V ±25V

**Table 2
ENVIRONMENTAL SPECIFICATIONS**

Characteristic	Description
Temperature Operating Storage	0°C to +50°C -55°C to +75°C
Humidity	90% to 95% relative humidity
Altitude Operating Non-operating	4.5 km (15,000 ft.) 15 km (50,000 ft.)
Electrical Discharge	12 kV maximum from 500 pF with 1K Ω series resistance

**Table 3
PHYSICAL SPECIFICATIONS**

Characteristic	Description
Weight	12 oz.
Overall Dimensions	
Pod	4.5 in. long, 2.2 in. wide, 0.85 in. deep
Cable	78.75 in. (2 m)

OPERATING INSTRUCTIONS

P6457 TTL/MOS PATTERN GENERATOR PROBE

The P6457 TTL/MOS Pattern Generator Probe is designed for use with the 91P16 Pattern Generator module or the 91P32 Pattern Generator Expander module of the DAS 9100 Series.

The P6457 supplies TTL or MOS stimulus outputs at frequencies up to 25 MHz. Outputs consists of four data channels, a clock line, and a strobe line. The four data channels can be inhibited (tri-stated) collectively as well as independently.

The P6457 can occupy any available pod connector at the rear of a 91P16 or 91P32 module. To display the bus slot location of modules installed in your DAS, press the STOP key on the DAS keyboard while holding the SHIFT key down. To make sure the probe is positioned correctly, press the button located next to the cable outlet at the base of the probe. The probe's pod assignment (module and connector number) will appear at the upper left of the DAS screen.

FREQUENCY AND LEAD SETS. You may use either the flying lead set or the pattern generator lead set without strobe and clock grounds attached with most loads at clock rates up to 1 MHz. For clock rates up to 10 MHz, use the two

lead set grounds and the center short black lead. For clock rates greater than 10 MHz, use the high speed pattern generator lead set.

The pattern generator lead set has eight data channel leads. The P6457 outputs four data channels 0 through 3. The remaining leads, 4 through 7 are not used, and should not be connected. Refer to the section 8 portion of this addendum.

VL/VH Sense Leads. The VL and VH sense leads must be used in order to provide power and threshold sensitivity to the probe. The VL lead serves as voltage low and may be connected to a voltage range of -15 V to 0 V . The VH lead serves as voltage high and may be connected to voltage range of 0 V to $+15\text{ V}$. The maximum non-destructive voltage difference between VL and VH is 25 V.

Diagnostic Switch. A diagnostic switch is located at the back of the probe. This switch should be set to NORM, unless you are using the diagnostic lead set. Procedures on how to use the diagnostic lead set are contained in the *DAS 9100 Series Operator's Manual*.

PATTERN GENERATOR MENU

ENTERING TRI-STATE VALUES FOR THE P6457

The P6457 Pattern Generator probe has the ability to tri-state each of the four data channels independently, as well as collectively. The strobe and clock channels are not tri-statable.

Independent Tri-state. The independent tri-state condition of the four data channels is determined by the state of the four most significant bits received from the pattern generator. Refer to figure 1 below. Bits 4 through 7 individually inhibit bits 0 through 3, respectively. A high on the control bit causes the corresponding output bit to be tri-stated. These four higher order bits are not available for output.

Collective Tri-state. To collectively tri-state move the cursor to any POD field on the program line you want to tri-state and press the DON'T CARE key. The DAS sets all channels associated with that program line to tri-state.

The P6457 collective tri-state is also supported by the pattern generator INHIBIT field. The inhibit signal is supplied via the External Clock Probe (from the Trigger/Time Base Module). This external signal is used to control the tri-state condition of the pattern generator.

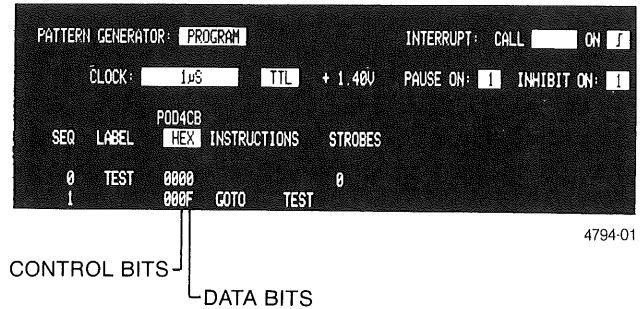


Figure 1. Control and data bits for the P6457.

