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Specifications and Characteristics

Specifications

The specifications are the performance standards against which the product is tested.

Maximum External Input Clock Rate: 100 MHz

Setup/Hold Time:* Adjustable

Setup	Hold
4 ns	0 ns
2 ns	2 ns
0 ns	4 ns

* Specified for an input signal: VH = −0.9 V, VL = −1.7 V, slew rate = 1 V/ns, threshold = −1.3 V.

Characteristics

The characteristics are not specifications, but are included as additional information.

Channel Count	16 channels
Maximum Sequencer Speed	100 MHz
Internal Clock Rate	10 ns
Memory Depth Per Channel	1,048,576 (2,097,152 in half- channel mode)
Trigger Width	Pattern recognition to full width of analyzer at 100 MHz
Input R	100 kΩ plus or minus 2%
Input C	approximately 8 pF
Lead Sets Included	Yes (minigrabbers support through-hole and surface mount)

Supplemental Characteristics

Probes

Input Resistance	100 kΩ +/- 2%
Input Capacitance	~ 8 pF Input
Threshold Accuracy	100 mV +/- 2% of threshold setting
Input Dynamic Range	10V about the threshold
Minimum Input Overdrive	250 mV or 30% of the input amplitude, whichever is greater
Minimum Input Voltage	40 V peak
Minimum Voltage Swing	500 mV, peak-to-peak
Threshold Range	−3.5 V to +5.0 V adjustable in 0.1-V increments

State Analysis (External Clocking Mode)

Clocks	2
Minimum Clock Pulse Width	3 ns
Clock Qualifiers	1 Master-Slave Clocking (Mixed Clocking)
	Master must follow slave clock by at least 2 ns and precede the next slave clock by at least 11 ns.

Timing Analysis(Internal Clocking Mode)

Sample Period	10 ns
Sec/Div	10 ns to 1000 s in a 1-2-5 sequence

Triggering

Pattern Recognizers Each recognizer is the AND combination of bit patterns (0,1, or don't care) in each label. Four pattern recognizers are available.

Storage Qualification There are three storage qualifiers. No storage qualification is available in the internal clocking mode.

Qualifier A user-specified term definable as anystate, no state, a single pattern recognizer.

Measurement and Display Functions

Arming Each module can be armed by the Run key, by the external PORT IN, or by another module via the Intermodule Bus (IMB).

Displayed Waveforms 24 lines maximum, with scrolling across 96 waveforms.

Labels Channels may be grouped together and given a 6-character name. Up to 126 labels in each analyzer may be assigned with up to 32 channels per label. Up to 60 labels may be viewed at one time in the listing menu and the compare menu.

Display Modes State Listing, State Waveforms, Chart, Compare Reference Listing, Compare Difference Listing, Timing Waveforms, and Timing Listing.

Measurement Functions

Run/Stop Functions Run starts acquisition of data. Stop terminates the acquisition of data.

Stop In single trace mode or the first run of a repetitive acquisition, STOP halts acquisition and displays the current acquisition data. For subsequent runs in repetitive mode, STOP halts acquisition of data after one more complete measurement is made.

Acquisition Mode Single mode acquires data once per trigger specification. Repetitive mode repeats single mode acquisitions until stop is pressed or until the user-defined stop condition has been satisfied.

Indicators

Activity Indicators Provided in the Configuration and Format menus for identifying high, low, or changing states on the inputs.

Markers Two markers (X and 0) are shown as dashed lines on the display.

Trigger Displayed as a vertical dashed line in the Timing Waveform display and as line 0 in the State Listing display.

Timing Waveform Pattern readout of timing waveforms at X or 0 marker.

Bases Binary, Octal, Decimal, Hexadecimal, ASCII (display only), Two's Complement, and User-defined symbols.

Symbols 500 maximum. Symbols can be downloaded over RS-232 or HP-IB.

Marker Functions

Time Interval The X and 0 markers measure the time interval between one point on a timing waveform and trigger, two points on the same timing waveform, two points on different waveforms).

Patterns The X and 0 markers can be used to locate the nth occurrence of a specified pattern from trigger, or from the beginning of data. The 0 marker can also find the nth occurrence of a pattern from the X marker.

Statistics X and 0 marker statistics are calculated for repetitive acquisitions. Patterns must be specified for both markers and statistics are kept only when both patterns can be found in an acquisition. Statistics are minimum X to 0 time, maximum X to 0 time, average X to 0 time, number of valid runs, and number of total runs.

Auxiliary Power

Power Through Cables	1/3 amp at 5 V maximum per cable

Operating Environment

Temperature	Instrument, 0° C to 55° C (+32° F to 131° F). Probe lead sets and cables, 0° C to 65° C (+32° F to 149° F).
Humidity	Instrument, probe lead sets, and cables, up to 95% relative humidity at +40° C (+122° F).
Altitude	To 4600 m (15,000 ft.).
Vibration	Operating: Random vibration 5 to 500 Hz, 10 minutes per axis, 0.3 g (rms). Non-operating: Random vibration 5 to 500 Hz, 10 minutes per axis, 2.41 g (rms); and swept sine resonant search, 5 to 500 Hz, 0.75 g (0-peak), 5 minute resonant dwell at 4 resonances per axis.