A $\sim$ Appendix A: Specifications

Signal Capture

Acquisition System

Bandwidth (-3 dB):
@50 Ω: DC to 1 GHz
Number of Channels: 2
Number of Digitizers: 2
Sampling Rate:
2 ch. in use: 1 MS/s to 1 GS/s
1 ch. in use: 2 MS/s to 2 GS/s
Sensitivity:
➢ 250 mV – 2.5 V or 100 mV – 1.0 V Full Scale Range (FSR), depending on specific configuration ordered.
➢ Higher sensitivity achievable with lower bandwidth
Scale Factors: Attenuator selected for proper FSR, adjustable over 10:1 range.
Offset Range: $\geq$ FSR
DC Accuracy: typically 1%
Vertical Resolution: 8 bits (up to 11 bits with Enhanced Resolution (ERES) of Option WP01)
Bandwidth Limiter:
➢ 25 MHz, 200 MHz
Input Coupling: DC
Input Impedance: 50 Ω ± 2 %
Max. Input: 2.5 V rms, and ±5 V peak
Acquisition status output: ECL level output. Indicates acquisition is complete.
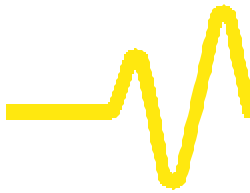
Acquisition Modes

Single shot: For transient and repetitive signals

Sequence: Stores multiple events, each time-stamped, in segmented acquisition memories

Deadtime Between Segments: Typically <40 μs, max. 60 μs

Number of Segments Available:

Memory per ch				Segments
100k				500
500k	1M	2M	4M	2000

Timebase System

Capture Time Window:

Acquisition Memory: 100kpts/ch on 2 active channels; 200kpts/ch on 1 active channel. Larger memory options available

Memory	@ 1GS/s	@ 1MS/s
100K	0.1 ms	100 ms
500K	0.5 ms	500 ms
1M	1 ms	1 s
2M	2 ms	2 s
4M	4 ms	4 s

Clock Accuracy: $\leq$ 10 ppm
Interpolator resolution: 2ns or sample size, whichever is larger
External reference: 10MHz square wave input and output. The instrument can be synchronized to an external reference. Multiple units can also be synchronized.

Triggering System

Modes: Normal, Auto, Single, Stop
Sources: CH1, CH2, Ext;
Slope:
CH1, CH2: Positive, Negative, Window
Ext: Positive, Negative
Coupling: DC
Pre-trigger Recording: 0–100 % of record size adjustable in 1 % increments
Post-trigger Delay: 0–1,000 times record size adjustable in 1% increments
Internal Trigger Range: ± FSR setting
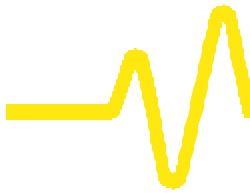**EXT Trigger:** ECL trigger standard. Optional TTL trigger in lieu of ECL.
EXT Trigger Max Input: ECL: 0.0V to –4.0V,
                                            TTL: 7.5V to –11.5V
EXT Trigger Range: ECL or TTL signal swing
Trigger Timing: Trigger Date and Time available

Signal Analysis

Waveform Processing

Processing functions: Add, Subtract, Multiply, Divide, Negate, Identity, Summation Averaging, and Sine x/x; four functions performable at one time

Average: Summed averaging of up to 1000 waveforms in the basic instrument; up to 10^6 averages possible with optional WP01 Advanced Waveform Math Package

Extrema: Roof, Floor or Envelope values of from 1 to 10^6 waveforms — with WP01 Option

ERES: Low-Pass digital filter provides up to 11 bits vertical resolution; sampled data always available, even when trace turned off; any of above modes usable without destroying data — with WP01 Option

FFT: Spectral Analysis with five windowing functions and FFT averaging, with optional WP02 Spectrum Analysis Package

Histogramming and Trending: With optional WP03 Parameter Analysis Package, in-depth diagnostics on waveform parameters
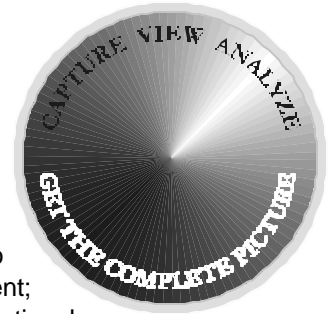
Internal Memory

Waveform Memory: Up to four 16-bit Memories.

Processing Memory: Up to four 16-bit Waveform Processing Memories.

Cursor Measurements

Relative Time: Provides time and voltage differences relative to each other

Relative Voltage: Measures voltage differences up to ±0.2% of full-scale

Absolute Time: Measures time relative to trigger and voltage with respect to ground

**Absolute Voltage:** Measures voltage with respect to ground

Interfacing

Remote Control: By Ethernet for all controls, internal functions
Ethernet Port: 10/100Base-T Ethernet
Ethernet Protocol: TCP/IP
Versatile Instrument Control Protocol (VICP): Protocol that allows Ethernet medium to emulate much of the behavior of GPIB; Remote command set conforms to the IEEE 488.2 standard to ensure compatibility with existing software.
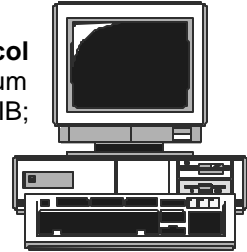
General

Humidity: <80% RH (non-condensing)
Auto-calibration: Ensures specified DC and timing accuracy
Temperature: 5 to 40 °C (41 to 104 °F) rated accuracy 0 to 45°C (32° to 113°F) operating.
Power: 90-132VAC or 180-250VAC; 45-66Hz; 200W (max)
Altitude: Up to 4600 m (15090 ft) operating, 40 °C max
Shock and Vibration: Conforms to selected sections of MIL-PRF-28800F, Class 3
Dimensions: (HWD) 3.5 x 19.0 x 17.5 inches
Weight: 10.5 kg (23 lb.) net, 15 kg (33 lb.) shipping
Warranty: Three years

Conformity

CE Conformity:
EMC: Conforms to EN50081-1 (Emissions) and EN50082-1 (Immunity)
Safety: Conforms to EN61010-1; Protection Class I, Installation (over-voltage) Category II, Pollution Degree 2
(See Declaration of Conformity for further details.)

UL and cUL Listed:
UL Standard: UL3111-1
cUL Canadian Standard: CSA-C22.2 No.1010.1-92