HP Agilent 11801C Digital Sampling Oscilloscope

Characteristics

Vertical Systems

Rise Time/Bandwidth - Determined by the sampling head used.*[1]
Vertical Resolution - 8 bits full screen (78 µV LSB at 2 mV/div deflection factor).
Amplifier Gain Accuracy - ±1% of all settings.
Deflection Factors - 2 to 255 mV/div in
1 mV/div increments.
Offset Range - ±2 V.

Horizontal System

Main and Window Time Base - 1 ps/div to 5 ms/div, settable in 1-2-5 sequence or in 1 ps increments.
Time Interval Accuracy - 8 ps + 0.01% x (interval) + 0.001% x (position), guaranteed;
4 ps + 0.004% x (interval) + 0.0004% x (position), typical, where interval >/=1 ns;
2.5 ps + 0.0004% x (position), typical, where interval = 100 ps;
1 ps + 0.0004% x (position), typical, where intervals <10 ps.
Notes: 1) For intervals <100 ps, the above holds for time/div </=20 ps/div.
2) For other intervals not listed above, linearity interpolate the cardinal points.
Record Length - 512, 1024, 2048, 4096, and 5120 samples.
Windows - Any number of window records may be placed on any number of main records, up to a maximum of 8 displayed traces. All window records have the same duration, but may be independently positioned on any main record. Windows may be set to automatically track a moving edge on the main record.
Maximum Sampling Rate - 200 ks/s.

Trigger System*[2]

Trigger Bandwidth - Direct 4 GHz typical, Prescaled 12.5 GHz typical.

Trigger Sensitivity - Direct DC to 4 GHz: 50 mV typical.
Prescaled 2 to 10 GHz: 500 mV,
10 to 12.5 GHz: 800 mV typical.

Delay Jitter - 1.1 ps +4 ppm of a position typical. 2.0 ps +5 ppm of position maximum (RMS).

Metastability: Raw <0.005 ppm at 2.488 GHz with 200mV input trigger voltage, typical.
Enhanced is theoretically zero.

Internal Clock - 100 kHz (drives TDR, Internal Clock Output, and Calibrator).

Trigger Level Range - ±1.0 V (±10 V with 10X trigger attenuator activated).

Trigger Input Range - ±1.5 V (±1.5 V, 5 V
RMS maximum with 10X).

Trigger Holdoff - 5 µs to 2.5 s.

Measurement System

Waveform Processing Functions - Add, subtract, multiply, divide, absolute, average, differentiate, envelope, exponent, integrate, natural log, log, signum, square root, smoothing, and filter.

Measurement Set - Max, min, mid, p-p, mean, RMS, amplitude, extinction ratio, overshoot, undershoot, noise*[3], rise, fall, spectral magnitude, spectral frequency, THD, SNR, frequency, period, prop delay, cross, width, phase, duty cycle, jitter*[3], area +, area -, and energy. Measurements are constantly updated; mean and standard deviation available on all measurements.

Measurement Parameters - (Proximal, mesial, distal, and start/stop levels): May be set to absolute levels.

Cursors - Paired or split dots, vertical bars, and horizontal bars.

TDR System (SD-24 Only)

Combined TDR/Acquisition Reflected Risetime - 35 ps or less.

TDR Step Amplitude - Adjustable to ±250 mV (polarity of either step may be inverted).

Time Coincidence Between TDR Steps - Adjustable to less than 1 ps.

Source Resistance - 50 ±0.5 Ohm.

Typical Aberrations (at ±250 mV Amplitude) - 10 ns to 20 ps before step: ±3% or less;

less than 300 ps after step: +10%, -5% or less;

300 ps to 5 ns after step: ±3% or less; elsewhere: ±1% or less.

CRT and Display Features

CRT - 9 in. diagonal, magnetic deflection, vertical raster scan orientation. Color.

Colors - Eight-color default color set included; or, colors are user-selectable from palette of 262,144 colors.

Video Resolution - 552 horizontal by 704 vertical displayed pixels.

*1 Vertical system specifications of 11801C with SD-14 non-applicable. See 11800 Series Sampling Head specifications.

*2 11801C has external trigger only; requires 23 ns pretrigger or DL-11 Delay Lines to view trigger point (45.5 ns with Option 1M).

*3 Available only in statistical measurement mode.

Power Requirements

Line-Voltage Ranges - 90 to 132 V RMS, 180 to 250 V RMS.

Line Frequency - 48 to 440 Hz.

Maximum Power Consumption - 214 W.

Environmental and Safety

Temperature - Operating: 0°C to +50°C; non-operating: -40°C to +75°C.

Humidity - Operating and nonoperating: up to 95% relative humidity, up to 50°C. Per Mil-T-28800E, Type III, Class 5.

Altitude, Vibration, Shock non-operating, Bench Handling - Meets MIL-T-28800E, Type III, Class 5.

Electromagnetic Compatibility (with sampling heads or optional blank panels installed in all sampling head compartments) - Meets the requirements of: MIL-STD-461B; FCC Part 15, sub-part J, Class A; VDE 0871/6.78 Class B.

Safety - Listed UL 1244, CSA Bulletin 556B September 1973.

Physical Characteristics

		Cabinet		Rackmount	
	Dimensions	**mm**	**in.**	**mm**	**in.**
11801C	Width	448	17.6	483	19.0
	Height	238	9.4	222	8.8
	Depth	599	23.6	550	21.6
SM-11	Width	448	17.6	483	19.0
	Height	238	9.4	222	8.8
	Depth	558	22.0	550	21.6
	Weights	**kg**	**lb.**	**kg**	**lb.**
11801C	Net	22.3	49.0	23.2	51.0
	Shipping	25.9	57.0	26.8	59.0
SM-11	Net	20.0	44.0	20.9	46.0
	Shipping	23.6	52.0	24.5	54.0