

HP 54710 and HP 54720 System Specifications

SPECIFICATION	HP 54700 Series with HP 54711A	HP 54700 Series with HP 54712A	HP 54700 Series with HP 54713B	HP 54700 Series with HP 54721A	HP 54714A/715A	HP 54722A
<b>Time Base</b>						
Time base scale (full screen is 10 div)	100 ps/div to 1 s/div					
Time base position range Pre-trigger Post-trigger	0 to -1 s, or one full-scale screen width (whichever is larger) 0 to 1 s, or one full-scale screen width (whichever is larger)					
Time Interval Measurement Accuracy <sup>1</sup> Real time Equivalent time (16 averages)	< ±0.2 sample interval ±0.007% of Δ Time-marker reading < ±30 ps ±0.007% of Δ Time-marker reading					
Time interval measurement resolution	1 ps					
Maximum sampling rate Real time Equivalent time	2 GSa/s 500 MSa/s	2 GSa/s 500 MSa/s	2 GSa/s 500 MSa/s	4 GSa/s 500 MSa/s	2 GSa/s <sup>2</sup> 500 MSa/s	8 GSa/s 500 MSa/s
Maximum waveform record length/ plug-in	A model: 16,384 points D model: 64,536 points	16,384 points 54700D: 64,536 points	16,384 points 54700D: 64,536 points	32,768 points 54720D: 128K	54720A: 8K/channel 54710D: 32K/channel 54720D: 32K/channel	54720A: 64K 54720D: 256K
<b>Channel</b>						
Number of channels	1	1	1	1	2/1	1
Number of slots	1	1	1	2	1	4
Bandwidth (-3dB) <sup>1</sup>	dc to > 2.0 GHz	dc to > 1.1 GHz	dc to > 500 MHz	dc to > 1.1 GHz	dc to > 400 MHz	dc to 2.0 GHz
Bandwidth to HP 54701A probe tip (-3dB) <sup>1</sup> :	dc to > 1.5 GHz	dc to > 1 GHz	dc to > 500 MHz	dc to > 1 GHz	dc to > 400 MHz	dc to > 1.5 GHz
Channel scale Minimum Maximum	20 mV/div 1 V/div	10 mV/div 1 V/div	7 mV/div 5 V/div	10 mV/div 1 V/div	20 mV/div 5 V/div	80 mV/div 4 V/div
Vertical resolution (full scale is 8 divisions)	8 bits, up to 12 bits with averaging					
DC gain accuracy (best accuracy calibration)	< ±1% of full screen at full resolution channel scale					
Offset accuracy (best accuracy calibration)	< ±0.5% of offset setting ±1% of full screen at full resolution channel scale					
DC voltage measurement accuracy (single marker) <sup>1</sup>	± gain accuracy ± offset accuracy					
RMS noise	< 300 μV	< 350 μV	< 350 μV	< 350 μV	< 300 μV	< 1.2 μV
Input resistance <sup>1</sup>	50 Ω ± 1.5%	50 Ω ± 1.5%	50 Ω ± 1% 1 MΩ (@ ~7 pF) ± 1%	50 Ω ± 1.5%	50 Ω ± 1% 1 MΩ (@ ~7 pF) ± 1%	50 Ω ± 1.5%
Input coupling	dc	dc, ac (34 KHz)	dc, ac (90 or 450 Hz)	dc, ac (34 KHz)	dc, ac (10, or 450 Hz)	dc
Probe power	Yes				HP 54715A supports HP 54701A and 1141A differential probes	

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<b>Trigger</b>						
Type	External trigger	Internal	Internal	Internal	External trigger	Internal
Modes	Edge (all plug-ins). Glitch, pattern, state, delay by time, delay by events (all plug-ins except HP 54711A).					
Trigger sensitivity <sup>1</sup>	Edge (all plug-ins). Glitch, pattern, state, delay by time, delay by events (all plug-ins except HP 54711A).					
High sensitivity	dc to 100 MHz: 40 mVpp increasing linearly to 200 mVpp @ 2.5 GHz	0.3 div @ 1 GHz, 0.1 div @ 100 MHz	0.3 div @ 500 MHz, 0.1 div @ 100 MHz	0.3 div @ 1 GHz, 0.1 div @ 100 MHz	20 mVpp @ 1 GHz, 6 mVpp @ 100 MHz	0.3 div @ 500 MHz
Normal sensitivity	dc to 100 MHz: 40 mVpp increasing linearly to 200 mVpp @ 2.0 GHz	1.5 div @ 1 GHz, 0.5 div @ 100 MHz	1 div @ 500 MHz, 0.5 div @ 100 MHz	1.5 div @ 1 GHz, 0.5 div @ 100 MHz	90 mVpp @ 1 GHz, 30 mVpp @ 100 MHz	0.5 div @ 100 MHz; 1 div @ 500 MHz
Noise reject	N/A	3.0 div @ 1 GHz, 1 div @ 100 MHz	3.0 div @ 500 MHz, 1 div @ 100 MHz	3.0 div @ 1 GHz, 1 div @ 100 MHz	150 mVpp @ 1 GHz, 60 mVpp @ 100 MHz	1 div @ 100 MHz; 3.0 div @ 500 MHz
Minimum pulse width at normal sensitivity <sup>1</sup>	< 200 ps @ 200 mVpp	< = 500 ps @ > = 1 div	< = 700 ps @ > = 1 div	< = 500 ps @ > = 1 div	< = 500 ps @ > = 60 mVpp	< = 700 ps @ > = 1 div
RMS jitter	< 6 ps ± 0.01% of delay setting					
External probe power	Yes	See channel	See channel	See channel	Yes	See channel
						Yes

<sup>1</sup> Only the characteristics designated with a superscript 1<sup>0</sup> are specified performance.  
<sup>2</sup> Channels alternate with trig

