Performance Characteristics

Analog channel specifications

		MXR05xB	MXR10xB	MXR20xB	MXR25xB	MXR40xB	MXR60xB
Bandwidth (-3 db)	50 Ω [1]	500 MHz	1 GHz	2 GHz	2.5 GHz	4 GHz	6 GHz
	1 MΩ	500 MHz	500 MHz	500 MHz	500 MHz	500 MHz	500 MHz
Typical rise/fall time [4]	10/90%	860 ps	430 ps	215 ps	172 ps	107.5 ps	71.7 ps
	20/80%	620 ps	310 ps	155 ps	124 ps	77.5 ps	51.7 ps
Input channels		4 or 8 channels analog, 16 channels digital (optional)					
Sample rate, real-time		16 GSa/s, all analog channels [1]					
Sample resolution		62.5 ps (divide by interpolation factor, if enabled)					
Vertical resolution [3]		10 bits, up to 16 bits with high-resolution mode					
Real-time update rate		> 200,000 waveforms/sec					
Memory depth [1]	Standard	200 Mpts/channel, all channels					
	Optional	400 Mpts/channel, all channels (400 Mpts/ch option) 1.6 Gpts shared between channels 1-4, 5-8 (1.6 Gpts Combined Flexible Memory option) [6]					
Input impedance	50 Ω [1]	± 3.5% (typically ± 1% at 25 °C)					
	1 MΩ	± 1% (14 pF typical)					
Input sensitivity [3]	50 Ω [1]	1 mV/div to 1 V/div					
	1 MΩ	1 mV/div to 5 V/div					
Input coupling	50 Ω [1]	DC					
	1 MΩ	DC, AC (> 11 Hz)					
Bandwidth limit filters	Analog	20 MHz, 200 MHz					
	Digital [5]	14.7 MHz up to scope bandwidth, increments of one decimal point. Filter options: Brick Wall, 4th Order Bessel, or Bandpass					
Max input voltage	50 Ω	± 5 V_{MAX} [1]					
	1 MΩ	30 V_{RMS} or ± 40 V_{MAX} (DC + V_{PEAK})					
	Notes	Probing technology allows for testing of higher voltages; the included N2873A 10:1 probe supports 300 V_{RMS} or ± 400 V_{MAX} (DC + V_{PEAK}). No transient overvoltage allowed in either the 50 Ω or 1 MΩ path, with or without probes.					
Offset range	50 Ω [1]	≤ 55 mV/div: ± 0.8 V ≤ 120 mV/div: ± 1.6 V ≤ 260 mV/div: ± 3.2 V > 260 mV/div: ± 4 V					
	1 MΩ	< 10 mV/div: ± 5 V ≤ 200 mV/div: ± 20 V > 200 mV/div: ± 40 V					
Offset accuracy [1,3]		< 2 V: ± 0.1 div ± 2 mV ± 1%; >2 V: ± 0.1 div ± 2 mV ± 1.5%					
Dynamic range		± 4 divisions from center screen					
DC gain accuracy [1,2,3]		± 2% full scale (±1% typical)					
DC voltage measurement accuracy [2]		Dual cursor: ± [(DC gain accuracy) + (resolution)] Single cursor: ± [(DC gain accuracy) + (offset accuracy) + (resolution/2)]					
Channel-channel isolation		Adjacent Channels: ≤ -60 dB (DC to 2 GHz), ≤ -50 dB (2 to 6 GHz) Non-Adjacent Channels: ≤ -85 dB (DC to 2 GHz), ≤ -65 dB (2 to 6 GHz)					

1. Denotes warranted specifications, all others are typical. Specifications are valid after a 30-minute warm-up period and ± 5 °C from firmware calibration temperature. Input impedance is valid when V/div scaling is adjusted to show all waveform vertical values within the oscilloscope display.
2. Full scale is defined as 8 vertical divisions. Magnification is used below 2 mV/div, full-scale is defined as 16 mV. Testing is at maximum sample rate.
3. 50 Ω input: The major scale settings are 5 mV, 10 mV, 20 mV, 50 mV, 100 mV, 200 mV, 500 mV, and 1 V per division. 1 MΩ input: The major scale settings are 5 mV, 10 mV, 20 mV, 50 mV, 100 mV, 200 mV, 500 mV, 1 V, 2 V, and 5 V per division. For a 10:1 probe, vertical scaling is multiplied by 10.
4. 10/90 calculation based on Tr = 0.43/BW. 20/80 calculation based on Tr = 0.31/BW.
5. You may adjust bandwidth limits up to the bandwidth of the scope when using Brick Wall filter. When using 4th Order Bessel, maximum bandwidth limit is roughly 2/3 the bandwidth of oscilloscope. Bandpass is designed for use in our Phase Noise Analysis application and not designed for general purpose use. Contact Keysight if more information is needed.
6. Combined flexible memory shares 1.6 Gpts of memory between channels 1 through 4. This means you can have 1 channel with 1.6 Gpts, two channels with 800 Mpts, or three channels with 533 Mpts memory (on top of 400 Mpts on all channels). Double those channel counts for 8 channel models, as the same logic applies to channels 5-8.