

# Infiniium UXR-Series Real-Time Oscilloscopes: The World's Most Advanced Oscilloscope

## Models from 13 GHz to 110 GHz of full bandwidth

For more than two decades, Keysight Infiniium oscilloscopes have been advancing the way engineers develop and validate their designs, understand complex issues, ensure superior product quality, and bring next-generation technologies to market faster. Insatiable demand for better performance, shorter design cycles, and faster systems, with ever more bandwidth, has driven the need for a new class of ultra-high-performance oscilloscopes.

That's the promise delivered by Keysight's Infiniium UXR-Series real-time oscilloscopes. They offer the industry's widest range of models, from 13 GHz to 110 GHz of full bandwidth on up to four channels per frame, with sample rates as high as 256 GSa/s. They are undeniably the fastest, highest-bandwidth, lowest-noise, best-signal-fidelity, and most powerful oscilloscopes in the world.

## Key benefits of the Infiniium UXR-Series oscilloscopes

### Infiniium UXR-Series key benefits

- **More accurate**
  - 4x more vertical resolution with 10-bit ADC
  - lowest-noise high-performance oscilloscope
  - most ENOB at any vertical scale or bandwidth
  - lowest jitter measurement floor in the industry
- **Hardware-accelerated analysis**
  - 100x faster waveform plotting
  - 50x faster mmWave analysis with DDC
  - up to 20x faster NRZ and PAM4 eye rendering
  - 6x faster equalization (DEF, FFE, and CTLE)
  - full bandwidth edge triggering to 110 GHz
- **Multipurpose**
  - time and frequency domain analysis
  - industry's best wideband EVM results
- **Fully upgradable and expandable**



Infiniium UXR-Series' superior signal integrity makes it the only real-time oscilloscope capable of 100+ Gbaud PAM4 analysis



Infiniium UXR-Series 3.90625 ps / sample resolution at 256 GSa/s

Learn more at: [www.keysight.com](http://www.keysight.com)

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# Specification Comparisons — Infiniium UXR-Series

Spec/criteria	Infiniium UXR-Series		
Input connector	3.5 mm AutoProbe II	1.85 mm AutoProbe III	1 mm Ruggedized AutoProbe III
Number of channels	4	2 or 4	2 or 4
Bandwidth	13, 16, 20, 25, 33 GHz	40, 50, 59, 70 GHz	25, 40, 59, 70, 80, 100, 110 GHz
Frequency interleaving	No		
Bandwidth upgradeability	License only — to 33 GHz w/ HW — up to 110 GHz	License only — to 70 GHz w/ HW — up to 110 GHz	License only — up to 110 GHz
Additional upgradability	Memory, DDC, BW extension	Channels, memory, DDC, BW extension	
Max sampling rate	128 GSa/s		256 GSa/s (2 ch and 4 ch)
ADC / vertical resolution	10 bits (≥ 14 bits with averaging)		
Max high-resolution bits	Up to 16 bits		
Standard memory	200 Mpts / ch		
Hardware acceleration	Yes		
Hardware sensitivity (full scale)	40 mV to 8 V	60 mV to 4 V	60 mV to 4 V
Vertical sensitivity (w/ zoom)	1 mV to 4 V full scale		
Minimum rise / fall time	33.8 ps to 13.3 ps (10–90%)	11 ps to 6.3 ps (10–90%)	17.6 ps to 4.0 ps (10–90%)
Noise floor (50 mV / div)	1.48 mV rms @ 33 GHz	2.2 mV rms @ 70 GHz	2.9 mV rms @ 110 GHz
Noise density (10 mV / div)	-161 dBm / Hz @ 25 GHz	-160 dBm / Hz @ 25 GHz	-160 dBm / Hz @ 25 GHz
ENOB	> 6 bits @ 33 GHz (40 mV / div)	> 5.4 bits @ 70 GHz (40 mV / div)	> 5 bits @ 100 GHz (40 mV / div)
DC gain accuracy	±1.5% of full scale (typical: < 1%)		±2% of full scale (typical: ±1%)
Timebase accuracy	25 ppb		
Intrinsic jitter (< 10 μs duration)	25 fs rms		
Max waveform plot rate	> 1,000,000 wfm/s		
Power	1,350 W (4-channel) 100 to 240 VAC	1,460 W (2-channel) / 2,620 W (4-channel) 110 to 240 VAC (2-channel) / 200 to 240 VAC (4-channel)	
Dimension	17.1" W x 12.24" H x 22.05" D		

## Industry-best specifications empower deeper insights

- **Largest breadth of tools**
  - PCIe, USB, TBT, DDR, PAM4, HDMI, DP, MIPI®
- **Visibility into design margins**
  - noise from 50 μVRMS
  - ENOB of 6.8 and > 5.0 at 110 GHz
  - jitter < 25 fs RMS
- **Faster capture and analysis**
  - full bandwidth triggering
  - 20x faster eye plotting
  - 7x faster equalization
  - 50x faster mmWave analysis with DDC
- **EVM-rivaling signal analyzers**
  - 0.77% for OTA 5G NR MIMO @ 28 GHz



13 GHz to 33 GHz (2.92 / 3.5 mm connectors)



40 GHz to 70 GHz (1.85 mm connectors)



80 to 110 GHz (1.0 mm connectors)

Learn more at: [www.keysight.com](http://www.keysight.com)

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