

# USB4 v2 Rx Compliance Test Solution

Signal Quality Analyzer-R MP1900A

USB4 Gen4 Pattern Generation MU196020A-x45

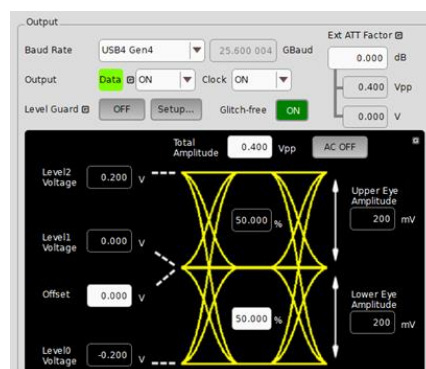
The USB4 v2 standard supports high-speed communications over USB Type-C cables to transfer large volumes of digital data, such as HD video, between smartphones, PCs, SSDs, etc. USB4 v2 uses 25.6 Gbaud PAM3 to transfer data at up to 80 Gbit/s, or twice the speed of the earlier USB4 v1 standard (40 Gbit/s), and Compliance Test support requires a pattern-generation function meeting the USB4 v2 PAM3 signaling and test specifications.

The Signal Quality Analyzer-R MP1900A is a high-performance BERT for Rx tests of high-speed serial interfaces, including USB, Thunderbolt, PCIe, etc. Adding this new USB4 v2 solution with PAM3 signaling and pattern-generation functions as well as automation software to the current USB 3.2 and USB4 v1 tests not only expands the MP1900A versatility but also cuts capital equipment costs and test work burdens.

[Target Applications] USB 3.2/USB4, Thunderbolt, USB Host/Device

## Features

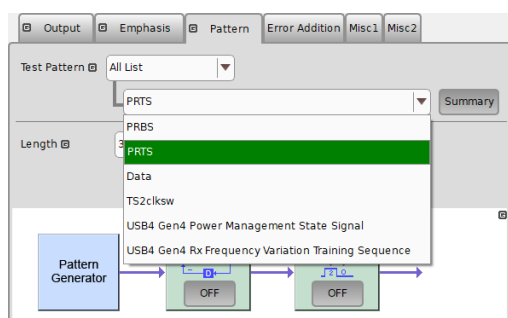
- USB4 Version 2.0 Compliance Test Pattern Generation**  
 Supports PRTS, TS2cksw patterns and USB4 Gen4 test patterns
- 25.6 Gbaud PAM3 Signal Generation Upgradable to 64.2G PAM4**  
 Wide applicability for USB4, PCIe5/6, etc.
- All-in-one USB 3.2, USB4 v1, Thunderbolt 3/4, USB4 v2 Rx Tests**  
 Cost-effective, flexible test solution by adding test module to MP1900A
- Automated Calibration and Rx Test**  
 Supports key makers' oscilloscopes\* and cuts complex test procedures and work burden.



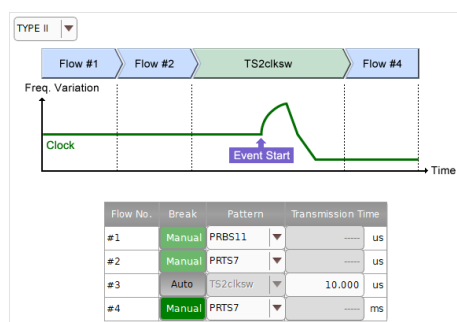
PAM3 Signal, Amplitude, Linearity Setting Screen

\*Ask about supported oscilloscopes.

## Outline of USB4 v2 Pattern Generation Function



- USB4 Gen4 Test Pattern (MU196020A-045) Support



- Rx Frequency Variation Training Sequence Setting

## Recommended Equipment Configuration

- Required Equipment for USB4 v2 Expansion

Model	Name	Qty	Remarks
MU196020A	PAM4 PPG	1	
MU196020A-001	32G baud	1	
MU196020A-011	4Tap Emphasis	1	
<b>MU196020A-045</b> <span style="background-color: yellow;">NEW</span>	<a href="#">USB4 Gen4 Pattern Generation</a>	1	
AH54192A	56Gbaud Differential Linear Amplifier	1	

- USB 3.2, USB4 v1 MP1900A Equipment Configuration

MP1900A	Signal Quality Analyzer-R	1	
MU181000B	12.5 GHz 4 Port Synthesizer	1	
MU181500B	Jitter Modulation Source	1	
MU195020A	21G/32G bit/s SI PPG	1	
MU195020A-010	1ch Data Output	1	
MU195020A-011	1ch 10Tap Emphasis	1	For USB 3.2, USB4 v1 Rx test Not required for USB4 v2
MU195040A	21G/32G bit/s SI ED	1	For USB 3.2Rx test
MU195040A-010	1ch ED	1	Not required for USB4 v2
MU195040A-011	1ch CTLE	1	
MU195040A-022	Clock Recovery	1	
MU195050A	Noise Generator	1	