

# Upgraded Equalizer Function for PCI Express 5.0 Receiver Test Solution

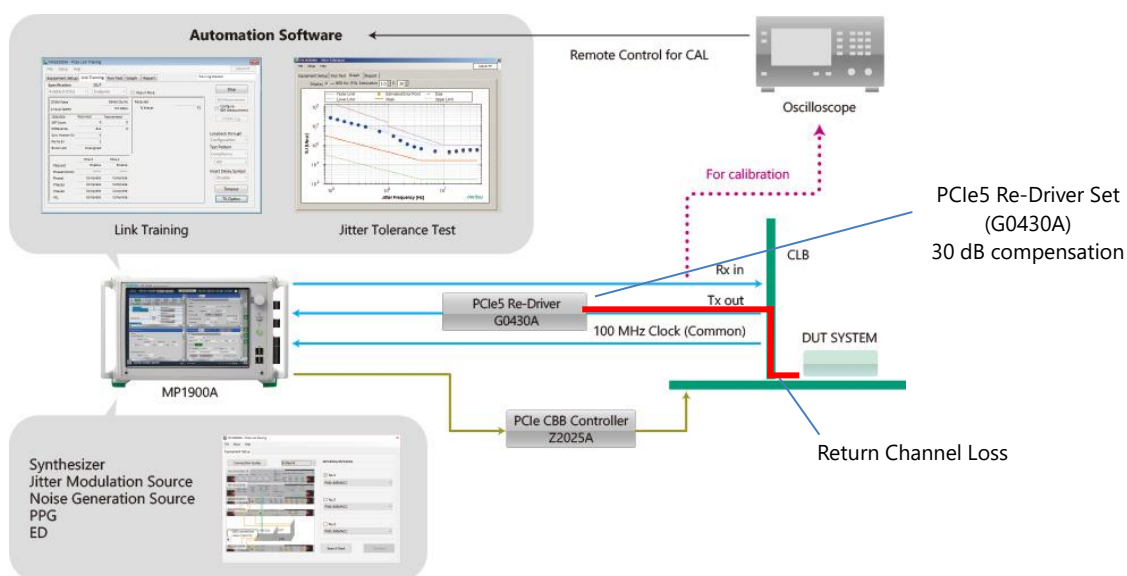
Signal Quality Analyzer-R MP1900A

PCIe5 Re-Driver set



## Outline

Testing of fifth-generation (5G) mobile communications services is progressing and data centers forming the foundation of this technology revolution are increasingly processing big data at high speeds. Internal interfaces in data-center transmission equipment, servers, storage, etc., are now undergoing pre-correlation testing to examine the impact of return-channel loss on receiver-test measurements and clarify problems between the DUT and measuring instruments at SSC addition. The Signal Quality Analyzer-R Series MP1900A has a strengthened Equalizer function for compensation of PCIe 5.0 return-channel loss to quickly resolve the challenges of PCIe 5.0 compliance tests. In addition to fully covering PCIe 1.0 to 5.0 testing needs, it also supports next-generation PCIe 6.0 (PAM4 32 Gbaud) evaluations, helping customers cut the design testing stage.



## Features

### Optimized Performance for PCIe 5.0 Receiver Tests

- Supports PCIe 5.0 compliance test using 30 dB loss compensation function
- SSC Rx performance (7000 ppm) supporting PCIe 3.0, 4.0, and 5.0 receiver tests

### Lower Capital Costs

- Supports up to PCIe 5.0 using customers' own real-time oscilloscopes from three key makers
- All-in-one coverage from PCI Express 1.0 (2.5 Gbit/s) to 5.0 (32 Gbit/s)
- Customized expandability as required by adding PAM4 PPG supporting next-generation PCI Express 6.0 (PAM4 32 Gbaud)

## Anritsu MP1900A

The Signal Quality Analyzer-R MP1900A series is a modular multichannel BERT. It is configured from a pulse pattern generator (PPG) outputting multichannel high-quality wideband NRZ signals from 2.4 to 32.1 Gbit/s, a high-input-sensitivity error detector (ED), jitter generation source, and noise generator to support automatic Jitter Tolerance tests. Refer to the Selection Guide when selecting a PPG for tests and evaluations.

### Recommended Equipment List

Model	Name	Option
MP1900A	Signal Quality Analyzer-R	-
MU181000B	12.5 GHz 4-port Synthesizer	002
MU181500B	Jitter Modulation Source	-
MU195020A	21G/32G bit/s SI PPG	001, 010, 011 or 001, 020, 021 <sup>*1</sup>
MU195040A	21G/32G bit/s SI ED	001, 010, 011, 022
MU195050A	Noise Generator	-
MU196020A	PAM4 PPG <sup>*2</sup>	001, 011
G0430A <sup>*3</sup>	PCIe5 Re-Driver set	-

\*1: Expansion to 2ch for Crosstalk test

\*2: Supports PCIe 6.0 (PAM4 32 Gbaud) performance evaluation

\*3: Required external power supply (3.3V, 0.3A). Sell outside areas where CE/KC marking is required.

### Recommended Software Options

Jitter Tolerance Test	MX183000A-PL001
PCIe Link Training <sup>*4</sup>	MX183000A-PL021
PCIe 5 Link Training <sup>*5</sup>	MX183000A-PL025

\*4: Supports PCIe 1.0 to 4.0

\*5: PCIe 5.0 support requires the MX183000A-PL025 and MX183000A-PL021 options.

## Teledyne LeCroy Software

The QPHY software supports PCI Express transmitter tests (transmitter presets as well as editing and analysis of transmitted waveforms for signal-quality tests, integrated Eye diagrams, and Jitter analysis tools), receiver tests, Gen 3/4 compliance tests (Eye Calibration, Link Training, Equalization, LTSSM Analysis), as well as soon-to-be-released Gen5 CEM<sup>\*1</sup>. Measurement reports can be output in either HTML or PDF format.

### Ordering Information

QPHY-PCIE5-Tx-Rx <sup>*2,3</sup>	PCIe Compliance Test Option Recommended main unit: 50 GHz or more)
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\*1: Enquire about support for Gen5 CEM.

\*2: Supported real-time oscilloscopes: LabMaster 10Zi-A series

\*3: Enquire about support for PAM4 PPG MU196020A.



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## Granite River Labs Software

The GRL-PCIE5-RXA software supports the PCI Express Gen5 data rate (32 GT/s) for implementing PCIe receiver tests including automated Eye calibration for Base and CEM. Transmission waveforms can be collected and analyzed automatically using the customer's own real-time oscilloscope for transmitter-preset and signal-quality tests. Measurement reports can be output in either PDF or csv format.

### Ordering Information

GRL-PCIE4-BASE-RXA <sup>*1</sup>	PCIe 3.0/4.0 Base Specification Rx Test Software License
GRL-PCIE4-CEM-RXA <sup>*1</sup>	PCIe 3.0/4.0 CEM Specification Rx Test Software License
GRL-PCIE5-BASE-RXA <sup>*1</sup>	PCIe 5.0 Base Specification Rx Test Software License
GRL-PCIE5-CEM-RXA <sup>*1</sup>	PCIe 5.0 CEM Specification Rx Test Software License

\*1: For the latest information on supported oscilloscopes and automation software, visit:

<https://www.anritsu.com/en-us/test-measurement/support/downloads/software/dwl20003>



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## Tektronix Software

The Tektronix RXSW-XXX-PCI5 software supports PCI Express Gen5 (32 GT/s) BASE and CEM stressed Eye calibration and receiver tests (Link Training, Equalization, LTSSM Analysis, Jitter Tolerance). Measurement reports can be output in HTML format.

### Ordering Information

RXSW-XXX-PCI5 <sup>*1,2</sup>	PCIe Gen5 Receiver software
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\*1: Supported real-time oscilloscope: DPO70000SX series

\*2: Contact us for details about the PAM4 PPG MU196020A.



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