400G Test Module

First native OSFP & QSFP-DD PAM4 400GE Test Equipment, in true portable form factor, enabling 400GE technologies' Lab-to-Field Transition and leading the early deployment for datacenters and telcos. It offers testing capabilities from 1GE to 400GE.

The RXT-6400 is the first truly portable 400G test set supporting native PAM4 QSFP-DD and OSFP. Equipped to support all common transceiver form-factors, this module is a perfect complement to the RXT Platform, extending its testing range to 400 Gbps and offering all-in-one 1GE-to-400GE testing capabilities. Installation, verification, commissioning, evaluation and maintenance tasks are simplified thanks to a combination of intuitive GUI and powerful test functions. Novice users benefit from the easy-to-use GUI, while experienced users will appreciate an array of advanced layer 1-4 features, such as FEC codeword Error distribution analysis, PAM4 pre-emphasis, skew, transceiver check and stress, Lane BERT, Throughput test, IPv4/IPv6, transceiver testing and much more.

HIGHLIGHTS

General

- Native OSFP and QSFP-DD PAM4 hardware for best-in-class signal integrity (no adapters required)
- 400G Ethernet testing per IEEE 802.3bs specification with KP4 Forward Error Correction (FEC)
- Provides all the necessary features to test transceivers, DAC and AOCs, including OSFP and QSFP-DD transceivers, networking equipment and 400GE links
- Advanced and flexible state-of-the-art FPGA-based design provides future-proof hardware support for emerging standards, test functions and applications
- Wide range of supported 400GE interfaces, including 400GBASE-SR8, FR8, LR8, DR4, FR4, LR4, CR8 and CR4
- MDIO/I2C registers Read and Write
- Per-lane PAM4 pre-emphasis settings
- KP4 FEC codeword symbol errors distribution and Skew
- Ethernet Throughput test
- Also supports QSFP56, QSFP28, QSFP+, SFP28, SFP+ interfaces for lower rate applications
- Battery backup for efficient operation and mobility within datacenters (no need for constant rebooting)

Applications

- Bring-into-service, verification and troubleshooting of high-speed Ethernet links
- Transceivers, DAC and AOC verification
- Evaluation labs and field support Comprehensive 400GE test applications for layers 1-4
- Full rate 400GE Throughput and frame loss measurements
- PCS & RS-FEC layer testing with skew generation and analysis
- PAM4 signal integrity testing with multi-lane unframed BERT
- MDIO verification and programming including and QSFP-DD Module Health check and stress feature
- High speed lane clock stressing/analysis and optical power level verification
- Portable for field testing, evaluations, demonstrations, interop check, benchmarking, troubleshooting, link verification, etc.
- Battery power for mobility within large datacenters, nodes, COs, R&D and evaluation labs.
- No carts or long reboots required.

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Test Interfaces

- 1x OSFP PAM4
- 1x QSFP-DD PAM4
- 2x QSFP28/QSFP+ NRZ
- 2x SFP28/SFP+/SFP NRZ
- 2x Clock Input/Output
- 1x Eye Clock Output

PAM4 Interfaces

- Native support for 400G QSFP-DD and OSFP transceivers
- 400GBASE-SR8, FR8, LR8, DR4, FR4, LR4, CR8 and CR4
- Supports IEEE 802.3bs and MSA compliant transceivers*
- 15W supply supporting power classes 1 through 7
- Transceiver voltage control and power consumption monitoring
- Internal transceiver's and cage temperature monitoring
- Native PAM4 electrical interface (no internal or external adapter required)
- Advanced transceiver verification test
- Per-lane post and pre-emphasis settings
- Lane BERT with independent test patterns

400G Ethernet Testing

- 400G Ethernet per IEEE 802.3bs
- Optical signal levels (TX and RX lanes), frequency
- Advanced KP4 FEC stress testing and analysis
- Physical, PCS/FEC, and Ethernet layer verification
- Throughput test, Frame Loss, Round Trip Delay (RTD). Errors, Alarms, events counters and rates
- Error and Alarm Injection

Ethernet Testing for 100GE and below

- 100GE, 40GE, 10GE, 1GE (50GE and 25GE ready)
- Optical signal levels (TX and RX lanes), frequency
- Physical, PCS, and Ethernet layer verification
- RFC2544, Throughput test, Frame Loss, Round Trip Delay (RTD). Errors, Alarms, events counters and rates
- Error and Alarm Injection
- Transceiver testing