

Advanced Layer 1

Advanced physical layer testing



SOLUTION TRACK

Key Features

- Exceptionally deep access to Ethernet Layer 1 functionality for advanced PHY testing
- Convenient overview dashboard
- Special KP4 FEC error insertion and detection
- Various PCS sublayer error injection and detection
- Local and remote fault insertion
- Clock offset insertion and detection
- Suitable for Z800 Freya & Z1608 Edun traffic generators
- Requires Xena Release 106 (or later), XenaManager 3 or XOA

Layer 1 performance testing and validation are essential for high-speed Ethernet links, where signal integrity challenges must be addressed through robust FEC implementations at both the host and the transceiver or active cable. Effective Layer 1 analysis helps ensure that devices can maintain link stability, recover from error conditions, and perform reliably under demanding operating conditions.

The **Advanced L1 Solution Track** extends the Layer 1 test features of the Z800 Freya and Z1608 Edun traffic generators with features like advanced KP4 FEC stress testing, PCS block and transcode error generation and detection.

This Solution Track is ideal for developers of transceivers, active cables, and module-to-module interconnect systems that need to verify link performance and robustness when exposed to realistic and extreme error scenarios.

By enabling fine-grained access to detailed Layer 1 functions - including the ability to inject, manipulate, and monitor PCS-level faults - the **Advanced L1 Solution Track** lets engineers evaluate how devices behave under stress, validate error-handling mechanisms, and gain deeper insight into link behavior than is possible with basic PHY-level testing alone.

Dashboard features

- Events/Overview Status page (Link Down, LOA)
- Layer 1 overview dashboard*)

The **Advanced Layer 1 Solution Track** will be expanded with additional features and capabilities.

ABOUT SOLUTION TRACKS

Solution Tracks add advanced features and functionalities for specialized test scenarios to the already extensive list of core features available on Xena systems. Solution Tracks do not require any hardware update to the module they are installed on, and one module can support multiple Solution Tracks. Solution Tracks are dynamic, with new features and enhancements being added over time as demand and technology evolves. These features and enhancements are included in the general software updates and will be available as long as the module is covered by a valid warranty.

KP4 FEC specific testing

- HI BER and HI SER detection
- HI SER detection enable/disable
- FEC Uncorrectable block insertion
- FEC correction bypass*)
- Insert HI SER*)

Rx Error detection

- Detect 64b/66b Errored Block
- Detect 256/257 Transcode error
- Detect CDR LOL (Lock Indication)
- Measure RX Frequency Offset History - Min and max deviation

Tx Error insertions

- Insert 256/257 Transcode error
- Inject 64b/66b Errored Block
- Insert LOA*)

*) Future updates



Advanced Layer 1 Solution Track

Easy Deployment Process

Solution Tracks are perpetual feature packs enabling advanced features on modules and underlying ports. When a Solution Track is ordered the extra features will be activated at the time of shipment. In the near future it will be possible to activate Solution Tracks on existing modules via XenaManager 3. Please note that activating Solution Tracks requires that the system is running Xena Release 106 or later.

Ordering Information

Product Description

Solution Track for Advanced Layer 1 features on Freya-800G-4S-1P or C-Freya-800G-4S-1P
Solution Track for Advanced Layer 1 features on Freya-800G-4S-1P-OSFP or C-Freya-800G-4S-1P-OSFP
Solution Track for Advanced Layer 1 features on Freya-800G-4S-2P or C-Freya-800G-4S-2P
Solution Track for Advanced Layer 1 features on Edun-1600G-4S-1P-OSFP

Product Code

ST-Freya-800G-4S-1P-L1
ST-Freya-800G-4S-1P-OSFP-L1
ST-Freya-800G-4S-2P-L1
ST-Edun-1600G-4S-1P-OSFP-L1



Local sales offices are located throughout the world.
Visit our website to find the most convenient location.

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