TestCenter

Synchronous Ethernet Base Package

The Synchronous Ethernet Base Package provides support for the Synchronous Status Message (SSM) protocol as specified by ITU-T G.8264. The package allows TestCenter ports to act as main or subordinate synchronous Ethernet clocks and exchange SSM messages with attached devices. This enables the testing of the synchronization trail and frequency synchronization of DUTs that act as Ethernet Equipment Clocks (EEC).

Solution Overview

The frequency accuracy inherent in the TestCenter architecture is ideal for testing Synchronous Ethernet clocks and Ethernet mobile backhaul applications. By combining Carrier Ethernet, MPLS, 1588v2 and Synchronous Ethernet packages, the TestCenter system provides the industry's most complete solution for testing converged mobile backhaul networks and devices.

Applications

- Synchronous Status Messaging (SSM) compliance, performance, and interoperability testing for mobile backhaul applications.
- Offering can be used by Network Equipment Manufacturers and Service Providers to ensure that mobile users won't suffer from dropped calls or corrupt data.
- Offering can be used by power distribution and industrial automation companies to ensure that all nodes in the network are frequency synchronized.
- Combine with TestCenter 1588v2, Carrier Ethernet, Routing and MPLS base packages for complete mobile backhaul system testing.

Features and Benefits

- TestCenter ports can operate as Option-1 or Option-2 main or subordinate synchronous Ethernet clocks and emulate complex routing and MPLS topologies.
  - Enables users to test complex, real-world mobile backhaul scenarios with fewer DUTs
- Combine with Calnex Paragon-X to generate and measure impairments such as wander and jitter for exhaustive mobile backhaul testing
  - Enables users to measure wander and jitter and perform wander transfer and wander tolerance testing per G.8262 specifications

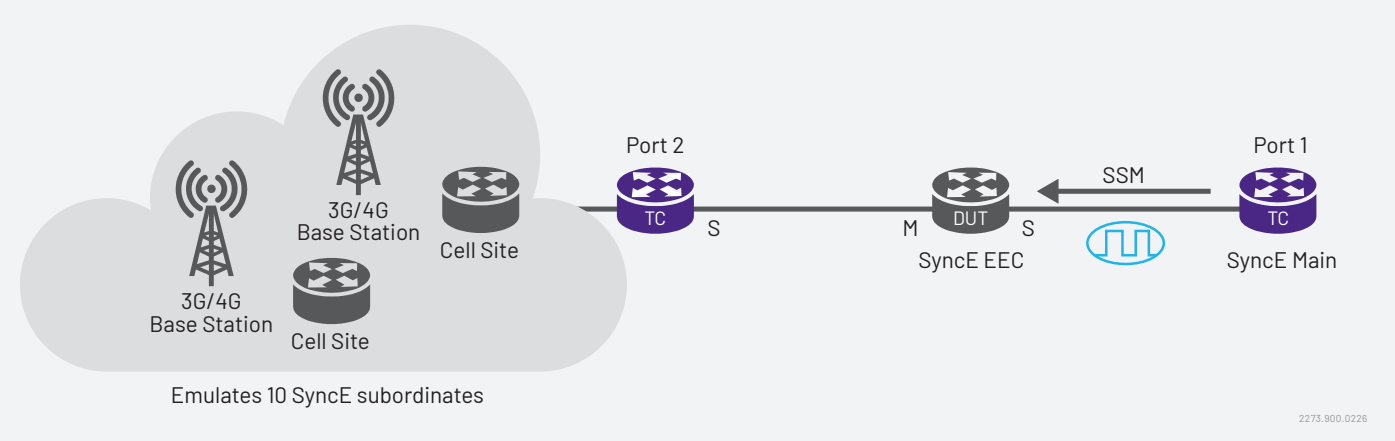

Figure 1: SyncE Ethernet Equipment Clock Testing

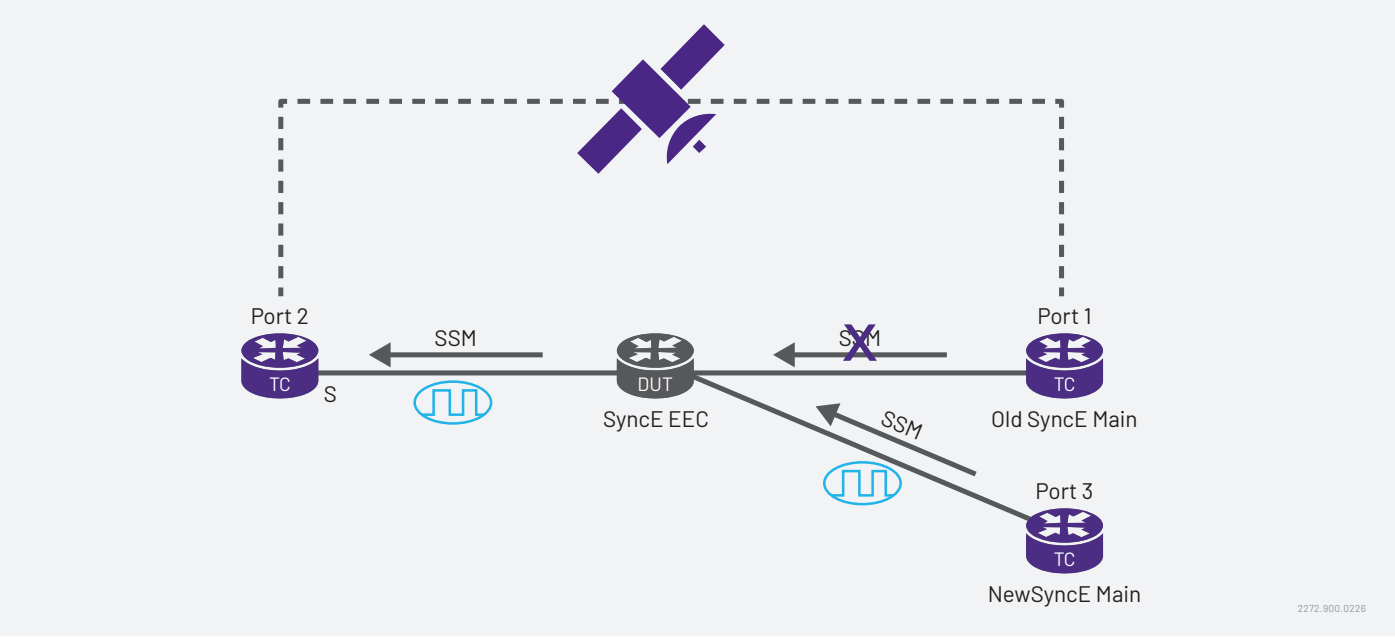

Figure 2: QL Deterioration and Main Switchover Testing

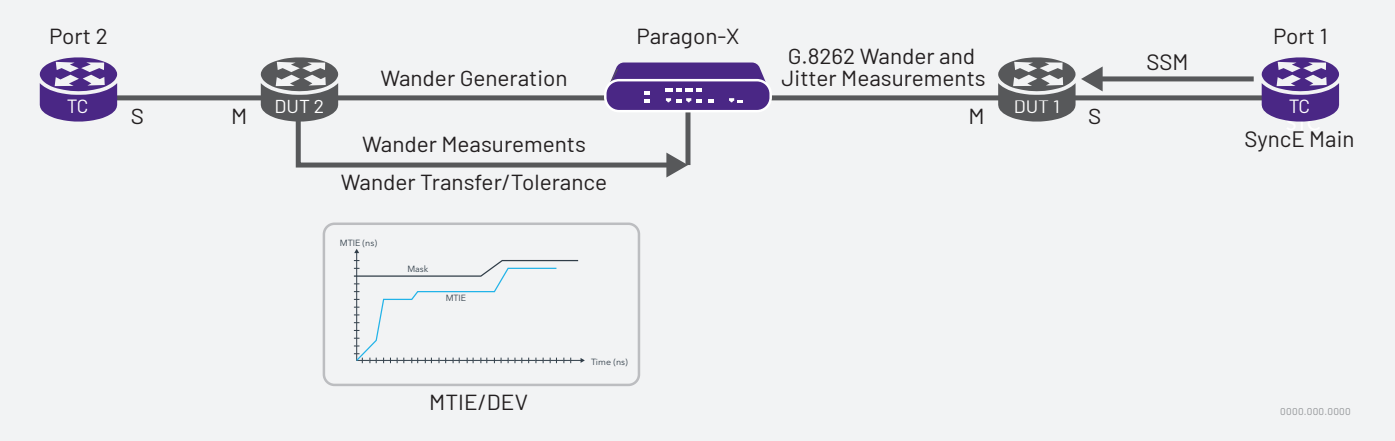

Figure 3: Wander measurement using Paragon-X

Technical Specifications

SyncE Configuration Parameters	• Quality Level • Message Rate	• SyncE Option Type
SyncE Port Results	• Clock State • Tx/Rx Information Messages	• Tx/Rx Event Messages
SyncE Device Results	• Transmit Quality Level • Receive Quality Level • Tx/Rx Information Messages • Tx/Rx Event Messages	• Rx Minimum Inter-arrival Time in Secs • Rx Maximum Inter-arrival Time in Secs • Rx Average Inter-arrival Time in Secs
SyncE Option 1 Results (for each clock in a port)	• Tx QL-PRC Quality Message Count • Tx QL-SSUA Quality Message Count • Tx QL-SSUB Quality Message Count • Tx QL-SEC Quality Message Count • Tx QL-DNU Quality Message Count	• Rx QL-PRC Quality Message Count • Rx QL-SSUA Quality Message Count • Rx QL-SSUB Quality Message Count • Rx QL-SEC Quality Message Count • Rx QL-DNU Quality Message Count
SyncE Option 2 Results (for each clock in a port)	• Tx QL-STU Quality Message Count • Tx QL-PRC Quality Message Count • Tx QL-TNC Quality Message Count • Tx QL-ST2 Quality Message Count • Tx QL-ST3 Quality Message Count • Tx QL-SMC Quality Message Count • Tx QL-ST3E Quality Message Count • Tx QL-PROV Quality Message Count • Tx QL-DUS Quality Message Count	• Rx QL-STU Quality Message Count • Rx QL-PRC Quality Message Count • Rx QL-TNC Quality Message Count • Rx QL-ST2 Quality Message Count • Rx QL-ST3 Quality Message Count • Rx QL-SMC Quality Message Count • Rx QL-ST3E Quality Message Count • Rx QL-PROV Quality Message Count • Rx QL-DUS Quality Message Count
SyncE Log Entries (per clock/port)	• Clock QL change event	• State Change

Ordering Information

Part Number	Description
BPK-1180A	Synchronous Ethernet Base Package
BPK-1155A	IEEE-1588v2 Timing and Synchronization Base Package
BPK-1160B	MPLS-TP Test Package B
BPK-1059A/B	802.1AG/Y.1731 EOAM Fault Management Base Package A/B
BPK-1150A	Y.1731 EOAM Performance Monitoring Base Package A

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