

# SPIRENT 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 Spirent TestCenter™ ports to act as master or slave 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 Spirent 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 Spirent TestCenter system provides the industry’s most complete solution for testing converged mobile backhaul networks and devices.

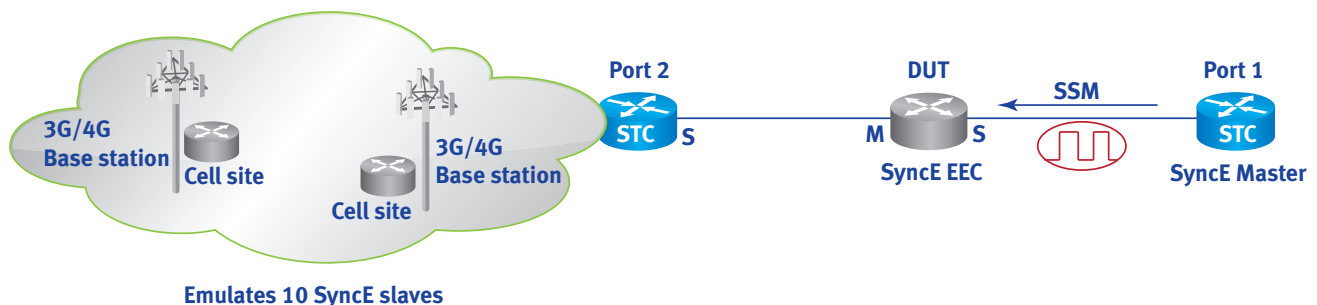
### APPLICATIONS

- 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 Spirent TestCenter 1588v2, Carrier Ethernet, Routing and MPLS base packages for complete mobile backhaul system testing.

### FEATURES & BENEFITS

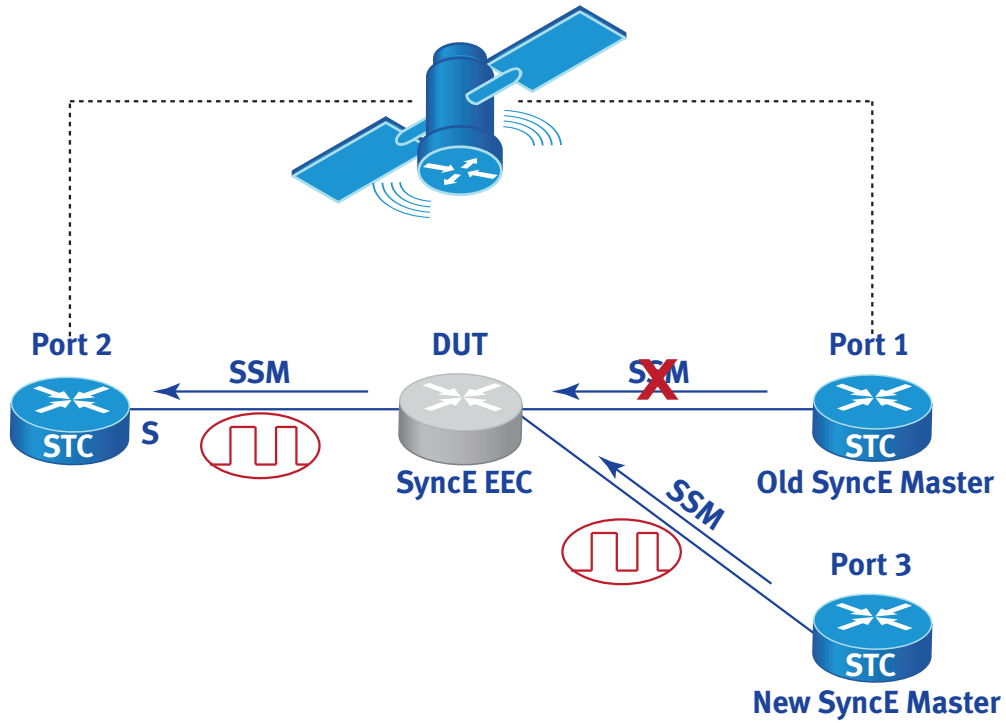
- Spirent TestCenter ports can operate as Option-1 or Option-2 master or slave synchronous Ethernet clocks and emulate complex routing and MPLS topologies.
- Enables users to test complex, real-world mobile backhaul scenarios with fewer DUTs
- Combine with Calnex Paragon-X to generate and measure impairments such as wander & 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

SyncE Ethernet Equipment Clock Testing

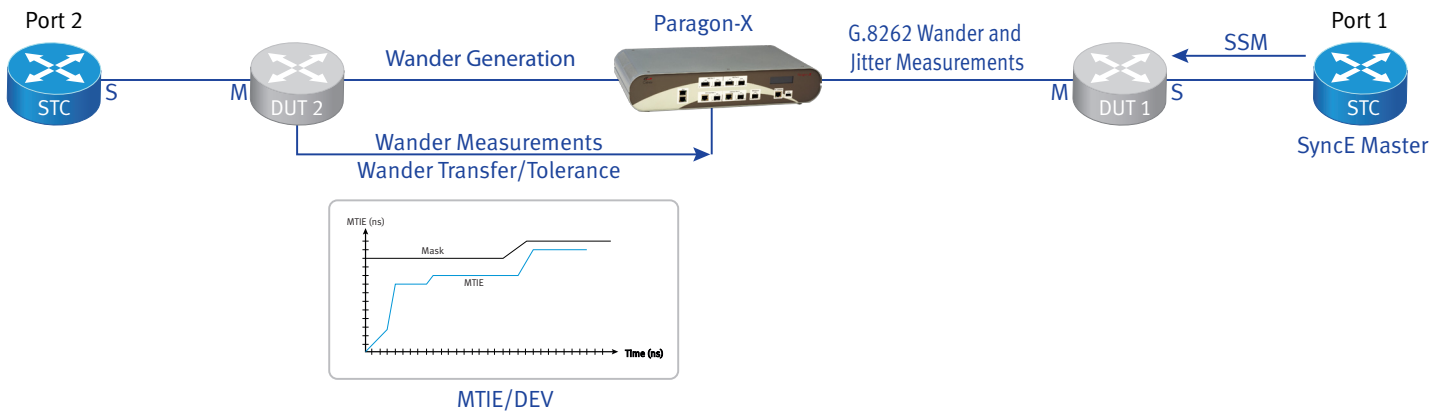


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QL Deterioration and Master Switchover Testing



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

## SPIRENT TESTCENTER SYNCHRONOUS ETHERNET BASE PACKAGE

### SUPPORTED MODULES/PLATFORMS

- Supported on Series 1000, 2000, HyperMetrics and HyperMetrics neXt Ethernet test modules
- Supported on all Spirent TestCenter chassis

### REQUIREMENTS

Spirent TestCenter Hardware Requirements

- Pentium® or greater PC running Windows® XP Professional SP2 with mouse/color monitor required for GUI operation (See Minimum PC Requirements section)
- One Ethernet cable and one 10/100/1000 Mbps Ethernet card installed in the PC, a SPT-2000A Spirent 2U Chassis and Controller, SPT-5000A Spirent 5U Chassis and Controller, SPT-9000A Spirent 9U Chassis and Controller or HyperMetrics neXt series SPT-11U Chassis and Controller
- Operating system languages supported: English, French, German, Italian, Japanese, Korean and Chinese (traditional and simplified)
- Operating systems supported: Windows XP SP2, Windows 2003 Server (32 bit), RedHat EL3 and EL5, Solaris 8.0 and 10.0
- At least one installed Spirent TestCenter Ethernet module
- BPK-1001A, Packet Generator and Analyzer Base Package

### SPIRENT SERVICES

Spirent Global Services provides a variety of professional services, support services and education services—all focused on helping customers meet their complex testing and service assurance requirements. For more information, visit the Global Services website at [www.spirent.com](http://www.spirent.com) or contact your Spirent sales representative.

### ORDERING INFORMATION

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

**AMERICAS** 1-800-SPIRENT • +1-818-676-2683 • [sales@spirent.com](mailto:sales@spirent.com)

**EUROPE AND THE MIDDLE EAST** +44 (0) 1293 767979 • [emeainfo@spirent.com](mailto:emeainfo@spirent.com)

**ASIA AND THE PACIFIC** +86-10-8518-2539 • [salesasia@spirent.com](mailto:salesasia@spirent.com)

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