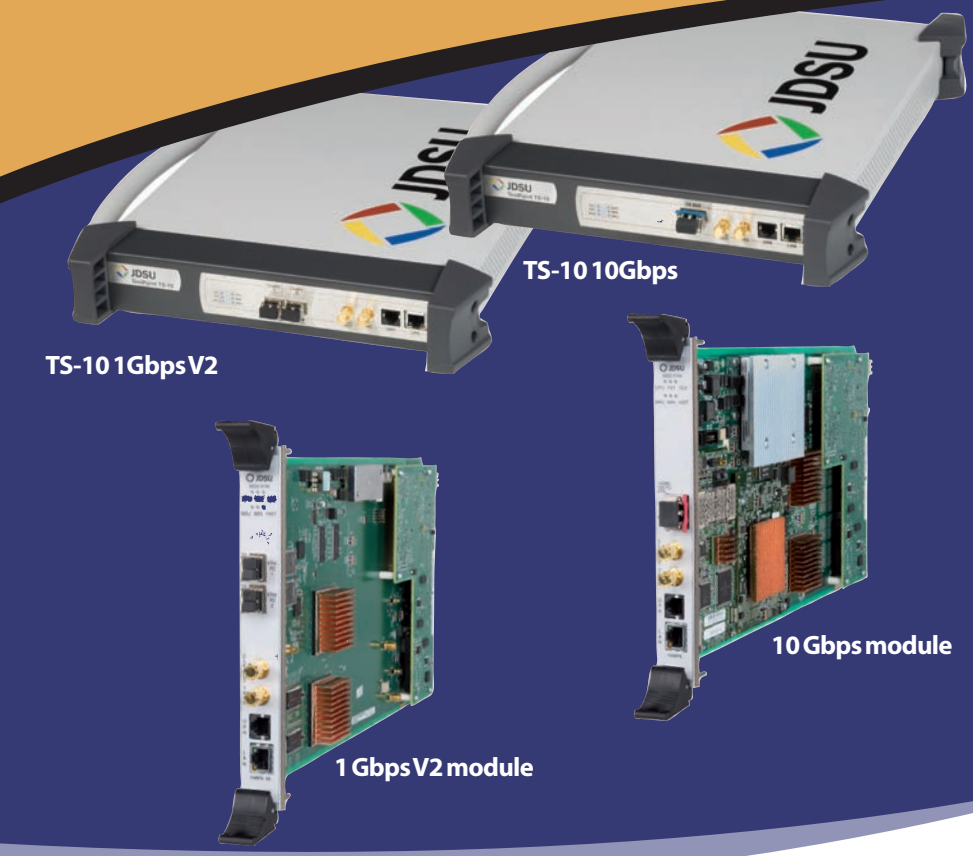

TestPoint with Fibre Channel

The TestPoint integrated solution: Fibre Channel, Ethernet, SONET/SDH/OTN

Note: TestPoint hardware is available in modules (TS-30/170) or configurations (TS-10). The term module is used in the text.

The JDSU TestPoint Fibre Channel offering provides a comprehensive Fibre Channel test solution for transport applications in verification labs, production and service provider environments (lab and field). TestPoint provides traffic generation, analysis, and impairment testing at multiple line rates.

Evolution

TestPoint currently supports 1G/2G/4GFC on the 1Gbps V2 module, 8GFC/10GFC/11.270G /11.317G (OTN with 10GFC client) on the 10 Gbps module, and 1G/2GFC on the multi-rate module. Stressed Receiver Sensitivity testing per IEEE 802.3 is also available for 10GFC (and 10GigE) module.

Features

- Fibre Channel features covering 1G/2G/4G/8G/10GFC and 11.270G/11.317G (OTN for 10GFC)
- Built-in RFC 2544 test support
- Buffer-to-buffer credit settings between 1 and 4095 (implicit login) including R_RDY support
- PRBS testing at FC-1 and FC-2 level
- Capture features: 8B/10B for 1G/2G/4G/8GFC; 64B/66B for 10GFC
- Stressed Receiver Sensitivity (SRS), also called stressed eye, feature for 10GFC (and 10GigE)
- User-friendly GUI and simple automation

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TestPoint with Fibre Channel

A Complete feature set for Fibre Channel Transport

Key TestPoint Fibre Channel features include:

Traffic Generation	At FC-1 or FC-2 (header, CRC) level; Class 3
Frame Payload	PRBS31; PRBS23; PRBS15 (10Gbps only); User 16-byte Sequence
Frame Size	12 (when running at FC-1) to 4104 Bytes
Flow Control	Buffer-to-Buffer Credit range 1 to 4095 (can be enabled/disabled)
Performance Measurements	Latency; Packet Jitter; Sequencing (loss, out-of-sequence, duplicate)
RFC 2544	Throughput; Latency; Frame Loss Rate; Back-to-Back Frames
Captures and Triggers	8B/10B for 1G/2G/4G/8GFC; 64B/66B for 10GFC
Link Initialization	Reporting of Active State or error condition
PCS Injections & Reporting	8B/10B for 1G/2G/4G/8GFC; 64B/66B for 10GFC
Test Patterns	CJTPAT, CRPAT, CJPAT for 1G/2G/4GFC, JSPAT for 8GFC
IEEE 802.3 Test Patterns	Pseudo-Random, Square Wave, PRBS31 for 10GFC
Clock Rate Variations	+/-110 ppm
Automated Test Reports	Statistics & Errors (testreport.txt); Event Log (log.csv); RFC 2544

On the 10 Gbps module, TestPoint supports an RFC 2544 test suite across two ports within the same TS-30/170 chassis when equipped with a Group Controller module.

An integrated solution

The TestPoint solution not only integrates multiple Fibre Channel rates but also provides support for Ethernet and SONET/SDH/OTN. Here is a breakdown for hardware supporting Fibre Channel:

10Gbps	8GFC, 10GFC; 11.270G; 10GigE LAN; 10GigE WAN/SONET/SDH (STS-192c/VC-4-64c); OTU2; ODU2; 11.049G; 11.095G
1Gbps V2	1GFC; 2GFC; 4GFC; 1000BASE-X; 100BASE-FX; 10/100/1000BASE-T
Multi-rate	1GFC; 2GFC; OC-3/STM-1 ; OC-12/STM-4 ; OC-48/STM-16; OTU1; ODU1; 1000BASE-X; 100BASE-FX; 10/100/1000BASE-T

Additional software features are available, including GFP on the 10Gbps module.

TestPoint is available in three chassis formats: the compact TS-10, 3-slot TS-30, and 17-slot TS-170.

Fibre Channel Specific Ordering Information

Modules (TS-30/170)	TS-10
N530-0163 10 Gbps module –XFP Version	N550-0228 TS-10 10Gbps Configuration (XFP)
OPT 0160-05 10GFC	OPT 0221-05 10GFC
OPT 0163-41 8GFC for 10 Gbps module	OPT 0228-41 8GFC for 10 Gbps module
OPT 0160-03 G.709 Digital Wrapper and FEC	OPT 0221-03 G.709 Digital Wrapper and FEC
OPT 0160-06 11.270G Extended Rate (req. 0160-03)	OPT 0221-06 11.270G Extended Rate (req. 0221-03)
OPT 0160-08 11.317G Extended Rate (req. 0160-03)	OPT 0221-08 11.317G Extended Rate (req. 0160-03)
N530-0134 1Gbps V2 Module	N550-0224 1Gbps V2 Configuration
OPT 0134-11 Dual 1G/2GFC	OPT 0224-11 Dual 1G/2GFC
OPT 0134-33 Dual 4GFC	OPT 0224-33 Dual 4GFC

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