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TestPoint 40Gbps

Key Features

- **OC-768/STM-256 (39.813Gbps)**
- **OTU3 (43.018Gbps)**
- **PRBS framed and unframed**
- **Clock rate variations**
- **Reporting of incoming optical power and clock offset**
- **G.828/G.829 Performance Monitoring**
- **SONET/SDH Disruption Time**

FROST & SULLIVAN

2007

Global Communications
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Company of the Year Award

The TestPoint 40Gbps three-slot module fits into both the TS-30 chassis and the TS-170 chassis. It provides SONET/SDH testing at OC-768/STM-256 with PRBS traffic as standard test functionality.

The 40Gbps module also offers an option for Digital Wrapper and Forward Error Correction (FEC) support at G.709 OTU3 (43.018 Gbps).

Applications

- SONET/SDH: OC-768/STM-256
- Digital Wrapper and FEC: OTU3 (ITU-T G.709)

Compliance

- CSA Certificate of Compliance to CAN/CSA C22.2 No 60950-1 (2003) & ANSI/UL 60950-1 (2003) with CSA Mark for Canada & USA
- CSA CB Certificate of Compliance to EN60950-1, IEC 60950-1 and National Deviations with CE Marking
- Class 1 Laser Product, with compliance to EN 60825, IEC 60825 and FDA/CDRH requirements

INTERFACE SPECIFICATIONS

Fixed Optics	
Optical Connector	LC
Wavelength	1550 nm
Optical Output Power (Rx power read)	0 to +3 dBm
Optical Overload (min)	+3 dBm
Sensitivity (min)	-6 dBm
Clock Out	LVPECL signal, AC coupled on SMA connector
LAN (Ethernet) Port	RJ-45 (10/100BASE-T)
Operator Port	RJ-12 into RS-232 serial cable

LINE RATES

Reports PPM offset on receive interface

39.813 Gbps (SONET/SDH)

43.018 Gbps (OTU3)

CLOCKING

Internal (+/- 4.6 ppm accuracy)

Recovered

External via Group Controller (TS-170)

Clock rate variations +/-30 ppm: SONET/SDH, OTU3

Clock out (LVPECL, AC coupled on SMA)

CONNECTIVITY

Terminal: Source and sink traffic (all rates)

APPLICATIONS

Descriptions of the following applications follow:

SONET/SDH:

OC-768/STM-256

Digital Wrapper and FEC:

OTU3 (ITU-T G.709)

SONET/SDH

CHANNELIZATION

OC-768: STS-768c

STM-256: VC-4-256c

ALARMS

LOS / LOF / OOF / AIS-L/MS-AIS / RDI-L/MS-RDI / LOP-P/AU-LOP / AIS-P/AU-AIS / RDI-P/HP-RDI / UNEQ-P/HP-UNEQ
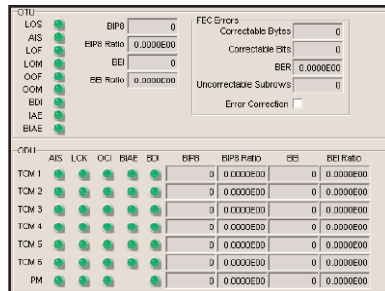
ERRORS

Single / Rates for REI-L/MS-REI / REI-P/HP-REI / B1 / B2 / B3

OVERHEADS

Pointer adjustments: Increment/Decrement (single, rates) / NDF count / Pointer Value / SS Bits

Trace Messages: J0 / J1; 1, 16 or 64 bytes

Decoded Bytes: K1 / K2 / S1 / C2

Byte Diagram: User editable Overhead Fields (includes B1, B2, B3 xor masks) in two alternating overhead banks. Interleaving and Injection Counts in Frames / Continuous Injection support

TRAFFIC

PRBS 31 / 4-Byte Sequence

DISRUPTION TIME

Resolution: Frame level (125 µsec)

Triggers: LOF / AIS-L/MS-AIS / AIS-P/AU-AIS / PRBS Sync

Measurements: Current Disruption Time / Previous / Maximum/ Minimum

PERFORMANCE MONITORING (G.828/G.829)

For Section/Regenerator Section (near-end) and Line/Multiplex Section (near-end; far-end): ES, ESR, SES, SESR, BBE, BBER, UAS

For Path (near-end; far-end): ES, ESR, SES, SESR, BBE, BBER, SEP, SEPI, UAS, Verdict

TEST REPORT

Contains Performance Monitoring settings, and statistics

SIGNAL

Framed / Unframed (raw pattern) at 39.813 Gbps

DIGITAL WRAPPER AND FEC

Supports OTU3.

ALARM

LOS / OOF / LOF / OOM / LOM / OTU-AIS (PN-11) / OTU-IAE / OTU-BDI / OTU-BIAE / ODU-AIS (PM/TCM1-6) / ODU-LCK (PM/TCM1-6) / ODU-OCI (PM/TCM1-6) / ODU-BDI (PM/TCM1-6) / ODU-BIAE (TCM1-6)

ERRORS

Single for OTU-BIP8 / OTU-BEI / ODU-BIP8 (PM/TCM1-6) / ODU-BEI (PM/TCM1-6)

OVERHEADS

Multi Frame Structures: OTU-TTI / ODU-TTI (PM/TCM1-6) / ODU-FTFL / PSI

Justification Events: Sync (line-client locked) on transmit with PRBS client

Error Suppression: To optionally suppress incoming errors/alarms: FEC / PM Errors

TRAFFIC

PRBS 31 / 4-Byte Sequence

FEC

Settings: Standard FEC / All-Zeroes FEC. Enable / Disable error correction

Injection: Single. Control of Errored Sub-Row (including all) / Errored Bytes per Sub-Row / Errored Bits per Byte / Skipped Rows between Errors. Up to 16 symbol errors.

Detection: Number of Correctable Byte Errors / Number of Correctable Bit Errors / Bit Error Rate / Number of Uncorrectable Sub-Rows

SIGNAL

Framed / Unframed (raw pattern) at 43.018 Gbps

ORDERING INFORMATION

N530-0290	40Gbps Module with SONET/SDH
Options	
OPT 0290-02	G.709 Digital Wrapper / FEC
OPT 0290-10	1550nm NRZ optics

Test & Measurement Regional Sales