



ACTERNA TEST & MEASUREMENT SOLUTIONS

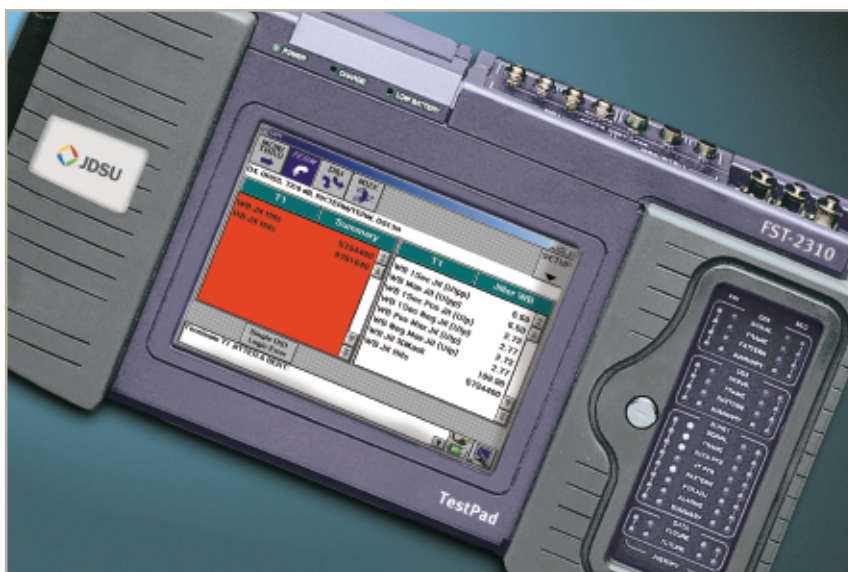
JDSU FST-2310 TestPad SONET Services Module

Detect SONET timing problems with DS3/DS1 jitter tests

Highlights

The FST-2310 measures jitter at DS1 and DS3 interfaces including:

- Wideband, highband
- Peak-to-peak
- Jitter hits
- Selectable jitter hits threshold
- Auto-ranging (jitter amplitude range)
- Selectable section trace (J0)



SONET networks require accurate timing to provide reliable service. Timing errors caused by misprovisioning and facility errors impact embedded DS1/DS3 tributary signals. Symptoms range from higher transmission errors to long periods of network downtime affecting customers links or adjacent SONET networks. These symptoms may not be evident until days or weeks following the installation. By including jitter tests into the turn-up processes of SONET networks and DS1/DS3 service provisioning, timing problems can be detected before turning the circuit to customers.

Differences in the clock signals in two networks or between two networks or network elements are compensated by pointer movements. These differences may not cause a problem at the initial stages of network use, but will deteriorate with time. SONET systems are designed to cope with pointer movements assuring error-free transport of STS-N signals. However, excessive pointer movements cause transmission errors within embedded DS3 and DS1 tributaries. Jitter measurement at the DS1/DS3 tributary level reliably detects SONET timing problems. To limit revenue loss and maintenance costs incurred by timing errors, operators increasingly include DS1/DS3 jitter test into their test procedures for the installation of SONET networks and provisioning of DS1/DS3 services.

The Jitter analysis function is offered as an add-on option for the widely-deployed FST-2310 TestPad SONET Services Module. In addition, jitter results are available in conjunction with BERT, eliminating the need for specialized test configurations with no increase in test time.

Installation and maintenance of special services

Special service crews installing or troubleshooting DS3/DS1 circuits can quickly isolate timing problems by performing jitter tests. The jitter test results can then be used to prove the need for verification and correction of SONET timing packs by working groups responsible for the setup and provisioning of SONET equipment.

The FST-2310 performs both wideband and highband jitter tests. Peak-to-peak, positive and negative jitter results are also displayed and compared against selectable jitter thresholds to capture jitter hits. With the FST-2310 jitter analysis function, DS3/DS1 jitter results are available in conjunction with DS3/DS1 BERT results eliminating the need for specialized test configurations with no increase in test time.

Installation, maintenance, and technical support of SONET networks

Transmission problems related to timing problems reported by access customers or providers of adjacent networks can be quickly isolated by performing jitter tests at an available plesiochronous tributary interface. If an operator receives its reference timing from another operator's network, jitter test can isolate problems caused by reference timing impairments. Maintenance/troubleshooting, regional technical support, as well as manufacturers' tier 2/3 support, can now isolate timing problems without the use of dedicated, bulky jitter testers.

In addition to maintenance/troubleshooting applications, operators increasingly include a DS1 or DS3 jitter test into their turn-up processes of SONET networks as a proactive measure.

DS1 jitter specifications

Item	Description
Wideband	10 Hz to 40 kHz
Highband	8 kHz to 40 kHz
Input signal source	Primary DS1 receiver interface
Input signal range	0 to 3 dB cable loss and 15 to 21 dB resistive loss maximum from DSX
Input frequency range	±100 ppm
Measurement range	±1999 UI peak maximum*
Resolution	0.01 UI peak to peak
Accuracy	0.025 UI ± (7% of reading) ± (pattern error) See ITU-T standard 0.172
Acquisition time	12 seconds maximum
Wideband mask	5.0 UI**
Highband mask	0.10 UI**

* In accordance with ITU-T 0.172 (03/2001) Section 9.2.1.

** In accordance with ANSI T1.102 and ITU-T G.824 standards.

DS3 jitter specifications

Item	Description
Wideband	10 Hz to 400 kHz
Highband	30 kHz to 400 kHz
Input signal source	Primary DS3 receiver interface
Input signal range	±3 dB cable loss and 15 to 21 dB resistive loss maximum from DSX
Input frequency range	±100 ppm
Measurement range	±1999.99 UI peak maximum*
Resolution	0.01 UI
Accuracy	0.025 UI ± (7% of reading) ± (pattern error) See ITU-T standard 0.172
Acquisition time	12 seconds maximum
Wideband mask	5.0 UI**
Highband mask	0.10 UI**

* In accordance with ITU-T 0.172 (03/2001) Section 9.2.1.

** In accordance with ANSI T1.102 and ITU-T G.824 standards.



Test & Measurement Regional Sales

NORTH AMERICA TEL: 1 866 228 3762 FAX: +1 301 353 9216	LATIN AMERICA TEL: +55 11 5503 3800 FAX: +55 11 5505 1598	ASIA PACIFIC TEL: +852 2892 0990 FAX: +852 2892 0770	EMEA TEL: +49 7121 86 2222 FAX: +49 7121 86 1222	WEBSITE: www.jdsu.com
---	--	---	---	--