

# Test & Measurement Rental Catalogue



## Transmission & Datacomms



**Livingston**

## WELCOME

Dear Customer,

Welcome to Livingston's Transmission and Datacomms Test Equipment Catalogue. This catalogue is intended as a quick reference guide to a wide range of products available for rental within these technology sectors. If you cannot find what you are looking for, please give us a call and we will be happy to try and source this for you. And if you are not sure which equipment you need, our applications engineers will discuss your application to identify the most suitable product.

Livingston is Europe's leading rental company with over 40 years of experience and expertise in the field of test & measurement solutions. We trust that you will find this catalogue useful and we look forward to hearing from you in the future.

Masten Evans  
Director & General Manager, Livingston UK Ltd

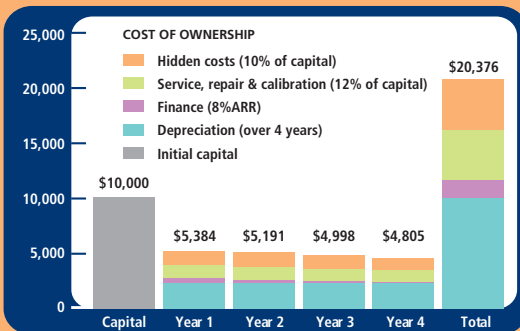
## SHOULD I RENT OR BUY MY TEST EQUIPMENT?

**Research shows that over 50% of purchased equipment is either infrequently or never used after the initial reason for purchase.**

You can decide if it is better to rent or buy by asking yourself two key questions:

- How long do I **really** need the equipment for?
- How much will it cost me to own it?

### COST OF OWNERSHIP v RENTAL COSTS



Real cost of ownership for a \$10,000 item is **\$20,400** or \$98 per week for 4 years and below is the rental cost for exactly the same equipment.

No of months	Rental per week	Total Cost
6	\$151	<b>\$3,926</b>
12	\$110	<b>\$5,700</b>
24	\$110	<b>\$11,400</b>

So, if you know you will need the equipment for more than 2-3 years without upgrading it in that time, purchase is the right decision. But if there is any uncertainty or risk (financial or obsolescence), rental costs you less and gives you greater flexibility and control.

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## NEW PRODUCTS

Livingston recognizes the need to make significant, regular investment in the latest technology. That is why we typically invest \$30,000,000 per annum on T&M equipment - through us you always have access to the newest and best equipment on the market. This page shows some of our recent investments, all of which are available to rent today.



### Exfo FTB-8130NGE Next Generation Multiservice Test Modules

- 10/100/1000M, GigE & 10 GigE (LAN/WAN) BERT & RFC 2544 testing
- DSn/PDH and SONET/SDH up to OC-192/STM-64
- 1x, 2x, 4x and 10x Fibre Channel testing

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### JDSU MTS-6000A Compact Network Test Platform

- Ultra portable high performance OTDR Series.
- Various OTDR models available, both Single and Multimode
- Also DWDM, CD and PMD modules available

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### JDSU 3075/91.51 40G SDH/SONET Test Module

- 40/43 Gbps Optical and Electrical
- SDH STM-256 and SONET OC-768
- Concatenated and fully structured signals

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### Spirent S/B Centre Network Performance Analysis System

- 144 Dual Media Gigabit ports or 24-10Gig Ethernet ports
- High Density 10/100/1000 Ethernet
- Highly Portable, Easy to Use

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### Exfo FTB-8140 NRZ 40/43 Gigabit SONET/SDH Test Module

- OC-768/STM-256 testing with STS-1/AU-3 granularity
- Supports OTN testing at the OTU3 level
- Optical transmission protocols: NRZ, ODB, DPSK and DQPSK

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## OTHER SERVICES



### NOT JUST RENTAL...

In addition to rental, here are some of the other services available from Livingston.

#### Easy2Source

An innovative alternative to purchase. Initial contracts for 6 or 12 months with the option then to either extend to 12 or 18 months at preferential rates, or to convert to a purchase (with rebates). Alternatively, the contract can be extended on a monthly basis or you can simply return the equipment. The key benefit of Easy2Source is flexibility: it passes the equipment risks to Livingston, it is off the balance sheet, avoids CapEx approvals and is cost effective. Make your decision to own at the time that is most appropriate to your business. Includes service, calibration and maintenance.

#### Rent to Buy

Key features of this finance package are that the cost is spread over 6 to 36 months (non-cancellable) with simple documentation and a nominal purchase option. Tax allowances may be available. Key benefits to this are improved cash flow and liquidity, fixed payments ensure easy budgeting and it preserves existing lines of credit. Excludes service, calibration and maintenance.

#### Leasing

Key features are payment periods of 3 to 5 years with simple documentation, you can return equipment at the lease end, and tax allowances may be available. You can also add new products and extend the lease term. Key benefits to Leasing are that it preserves capital, fixed payments ensure easy budgeting, it preserves existing lines of credit and there are no equipment disposal costs. Excludes service, calibration and maintenance.

## OTHER RENTAL CATALOGUES FROM LIVINGSTON



- Optical and DataComms
- Industrial & Power
- RF Microwave and General Purpose



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### JDSU PFA -35

#### Transmission Analyser

- 2,048 Mbit Tester: multi-interface capability
- G.703 (2048/704kb/s)

Manufacturer	Product	Description
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## LOCAL LOOP/ACCESS TESTERS

Aethra	M3195	<b>Selective Measuring Device</b> <ul style="list-style-type: none"> <li>• Balanced Input</li> <li>• Frequency Range 20 Hz to 200 kHz</li> <li>• Measurements:</li> <li>• Frequency, Selective Level, Wide Band Level</li> </ul>
Aethra	D2500	<b>Telecom Analyser</b> <ul style="list-style-type: none"> <li>• Multi Protocol Analysis/full frames decoding</li> <li>• Internet: PPP/IP, TFTP, HTTP &amp; FTP</li> <li>• Networktool for Frame Relay/FOX Test</li> <li>• Includes PC108 for Windows™ software</li> </ul>
Exfo	Puma 4300E	<b>Single Channel E1</b> <ul style="list-style-type: none"> <li>• Single Port E1 Tester</li> <li>• Built in V.35, V.24 and X.21 Sync</li> <li>• BERT Tester</li> <li>• CAS Generation and Monitoring</li> <li>• Serial Printer Port + PCMCIA Result Storage</li> </ul>
JDSU	PFA-35	<b>Transmission Analyser</b> <ul style="list-style-type: none"> <li>• 2,048 Mbit Tester: multi-interface capability</li> <li>• G.703 (2048/704kb/s)</li> <li>• Drop/Insert, MUX/DEMUX, nx64kb/s testing,</li> <li>• BER and G.821 Analysis</li> <li>• Generate &amp; Monitor Interface</li> </ul>
JDSU	Fireberd	<b>6000FE Comms Analyser (E1)</b> <ul style="list-style-type: none"> <li>• Transmission Speed 50bps - 15Mbps</li> <li>• Supports: BERT G.821/703/704. Optional:</li> <li>• RS-449/X.21, V.35, V.24/RS232 and Frame Relay</li> <li>• Jitter Generation Measurement Interface</li> <li>• ROADM-ready: In-band OSNR Measurement</li> </ul>



**JDSU EDT-135**  
**2 Mbit/S Communication Analyser**  
 • QoS: ITU-T G.821, G.826, and M.2100  
 • Provides a scalable E1 test solution

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Manufacturer	Product	Description
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**LOCAL LOOP/ACCESS TESTERS**

JDSU	PS-33A	<b>Selective Level Generator</b> <ul style="list-style-type: none"> <li>• High-performance synthesizer</li> <li>• Qualification of copper lines up to 2 MHz</li> <li>• Balanced and unbalanced Outputs</li> </ul>
JDSU	SPM-33A	<b>Selective Level Meter</b> <ul style="list-style-type: none"> <li>• Frequency Range 50 Hz to 2 MHz</li> <li>• Coaxial and Balanced Inputs</li> <li>• Frequency Setting Resolution 1 Hz</li> <li>• Storage for 100 results</li> </ul>
JDSU	EDT-135	<b>2 Mbit/S Communication Analyser</b> <ul style="list-style-type: none"> <li>• QoS: ITU-T G.821, G.826, and M.2100</li> <li>• Provides a scalable E1 test solution</li> <li>• Large range of s/w options for data services:</li> <li>• Frame Relay, GSM, X.50, HCM, V.110</li> </ul>
JDSU	HST-3000	<b>Handheld Service Tester</b> <ul style="list-style-type: none"> <li>• Applications include:</li> <li>• T1, DS3, PCM T1MS, PCM Signalling</li> <li>• DDS-LL, Frame Relay, ADSL/2/2+</li> <li>• HDSL/2/4, G.SHDSL, ISDN PRI/BRI</li> <li>• Triple Play testing</li> <li>• Verify Data, VoIP &amp; IPVideo with advanced tests</li> </ul>
JDSU	CHST-M29	<b>E1 / Datacom Module for HST-3000</b> <ul style="list-style-type: none"> <li>• Supports 50 b/s to 10 Mb/s</li> <li>• Interfaces supported:</li> <li>• RS-232/V.24, RS-449/V.36, V.35, EIA-530, X.21</li> <li>• Both Simulate and Monitor Modes</li> <li>• For use with the HST3000 Mainframe</li> <li>• USB, RS-232 and Ethernet Interfaces</li> </ul>



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### Sunrise Sunset E8

#### 2 Mbit/S Communication Analyser

- Tester for Digital Circuits: 50b/s to 2.048Mb/s
- Synchronous and Asynchronous Data

Manufacturer	Product	Description
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## LOCAL LOOP/ACCESS TESTERS

When it comes to offering the right solutions...  
...we tick all the right boxes

- ✓ **Quick turnaround for delivery & collection**
- ✓ **Superior customer support**
- ✓ **The very latest products and services**



Sunrise	Sunlite E1	<b>2 Mbit/S Tester</b> <ul style="list-style-type: none"> <li>• 2.048 Mbps Tx, Rx and external clock</li> <li>• E1 Bit Error Rate Testing</li> <li>• ITU-T G.826 and M.2100 Analysis</li> <li>• Alarm Generation/Error Injection</li> <li>• Store up to 10 test results and 10 user profiles</li> </ul>
Sunrise	Sunset E8	<b>2 Mbit/S Communication Analyser</b> <ul style="list-style-type: none"> <li>• Tester for Digital Circuits: 50b/s to 2.048Mb/s</li> <li>• Synchronous and Asynchronous Data:</li> <li>• (V.35. X.21. G.703) 50b/s to nx64Kb/s.</li> <li>• RS-232. RS-449. X50 and other interfaces</li> <li>• Full duplex drop and insert capability</li> </ul>
Sunrise	Sunset E20	<b>2 Mbit/S Communication Analyser</b> <ul style="list-style-type: none"> <li>• Tester for Digital Circuits: 50b/s to 2.048Mb/s</li> <li>• Synchronous and Asynchronous Data:</li> <li>• (V.35. X.21. G.703) 50b/s to nx64Kb/s</li> <li>• RS-232. RS-449. X50 and other interfaces</li> <li>• Full duplex drop and insert capability</li> </ul>



**Sunrise SSMTT-27  
MTT Dual E1 Module**

- Dual E1 Module for MTT Mainframe
- 2 MB Bi-directional Interfaces

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Manufacturer	Product	Description
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## LOCAL LOOP/ACCESS TESTERS

Sunrise	Sunset MTT	<b>Colour Chassis</b> <ul style="list-style-type: none"><li>• Handheld Colour Chassis</li><li>• Accepts the full range of MTT Modules</li><li>• Battery Operated</li></ul>
Sunrise	MTT-LITE-19	<b>ADSL2/2+ ATU-R Tester</b> <ul style="list-style-type: none"><li>• ADSL2+ and ATU-R Module</li><li>• Supports RFC 1483,2684,2364 and 2516 Protocols</li><li>• Suitable for Link Turn up and modem emulation</li><li>• Requires Sunset MTT Mainframe</li></ul>
Sunrise	SSMTT-14B	<b>SHDSL Module</b> <ul style="list-style-type: none"><li>• G.SHDSL is a high speed standard</li><li>• Symmetrical DSL delivery over a single copper pair</li><li>• 192kbps and 2.312Mbps.</li><li>• STU-R Emulation</li><li>• STU-C Emulation</li></ul>
Sunrise	SSMTT-19	<b>ADSL2+ ATU-R Module</b> <ul style="list-style-type: none"><li>• ADSL Technologies</li><li>• ADSL2+ (ITU-T G.992.5)</li><li>• ADSL2 (ITU-T G.992.3)</li><li>• Reach Extended ADSL2</li><li>• G.dmt ADSL/POTS and S = 1/2 option</li><li>• G.lite (ITU-T G.992.2)</li></ul>
Sunrise	SSMTT-27	<b>MTT Dual E1 Module</b> <ul style="list-style-type: none"><li>• Dual E1 Module for MTT Mainframe</li><li>• 2 MB Bi-directional Interfaces</li><li>• Simulate and Monitor Modes</li><li>• Requires Sunset MTT Mainframe</li></ul>

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**Trend Aurora Presto  
Communications Tester**

- Multiple Modem/Data Cards
- TDR and DMM

Manufacturer	Product	Description
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## LOCAL LOOP/ACCESS TESTERS

Sunrise	SSMTT-44A	<p><b>Conexant ADSL2+ ATU-R Module</b></p> <ul style="list-style-type: none"> <li>• ADSL2+ and ATU-R Module for MTT Mainframe</li> <li>• Supports Protocols:               <ul style="list-style-type: none"> <li>• RFC 1483, RFC 2684, RFC 2364 &amp; RFC 2516</li> </ul> </li> <li>• Link Turn up and modem emulation</li> <li>• Requires Sunset MTT Handheld Mainframe</li> </ul>
Sunrise	SSxDSL-4S	<p><b>ADSL ATU-C Module</b></p> <ul style="list-style-type: none"> <li>• ATU-C Function</li> <li>• Modes Supported</li> <li>• Operator Controlled (Mode 1)</li> <li>• Rate Adaptive @ Start-Up (Mode 2)</li> </ul>
Trend	Aurora Presto	<p><b>Communications Tester</b></p> <ul style="list-style-type: none"> <li>• Multiple Modem/Data Cards</li> <li>• TDR and DMM</li> <li>• ADSL ATU-R/ATU-C</li> <li>• G.SHDSL STU-R/STU-C</li> <li>• ATMF 25.6</li> <li>• ADSL over POT, ISDN, G.SHDSL</li> <li>• Analogue line testing with TDR and DMM tools</li> </ul>

## OTHER RENTAL CATALOGUES FROM LIVINGSTON



- Optical and DataComms
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- RF Microwave and General Purpose



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### Exfo Puma 4300E Datacom & Telecom Analyser

- 75 & 120 Transmitters & Receivers
- V.24, V.36/-RS449, V.35, V.24, X.21, G.703

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Manufacturer	Product	Description
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## SIGNALLING ANALYSERS

Ameritec	NLG-A	<b>Fortissimo Analogue (POTS) Call Generator</b> <ul style="list-style-type: none"><li>• Simulates various traffic types on POTS circuit</li><li>• Quality of Service Measurements</li><li>• GMOS, G-PSQM G-PESQ and R-Factor</li><li>• Ethernet Interface for PC Control</li></ul>
Exfo	Puma 4300E	<b>Datacom &amp; Telecom Analyser</b> <ul style="list-style-type: none"><li>• 75 &amp; 120 Transmitters &amp; Receivers</li><li>• V.24, V.36/-RS449, V.35, V.24, X.21, G.703</li><li>• 2 Mbps unframed G.704</li><li>• 2.048 Mbps framed G.821 result analysis</li><li>• M &amp; N x 64 kbit/s Testing</li></ul>
JDSU	PCM-4	<b>PCM Channel Measuring Set</b> <ul style="list-style-type: none"><li>• Frequency Range 20 Hz to 72 kHz</li><li>• Various Filters available to ITU specifications</li><li>• Selectable Output Impedance</li></ul>
Telesoft	TRITON	<b>Protocol Analyser</b> <ul style="list-style-type: none"><li>• Test Instrument for bulk call generation</li><li>• Protocol supported:<ul style="list-style-type: none"><li>• SS7, ISDN, CAS, R2, and V5.1 / 5.2</li></ul></li><li>• Line impedances:<ul style="list-style-type: none"><li>• 75 , 100 and 120 E1 / T1 termination</li></ul></li><li>• Windows® GUI with intuitive functionality</li></ul>
Trend	Aurora	<b>Sonata ISDN Tester</b> <ul style="list-style-type: none"><li>• Display G.703/G.704 statistics Display FAS/NFAS word</li><li>• 3.1KHz and ISDN voice calls on B-Channel</li><li>• Comprehensive range of Error measurements</li></ul>

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### Anritsu MP1570A

#### STM-1/4 SDH/PDH Analyser

- PDH: 1.5-140Mb/s, SDH: 52-622Mb/s
- Optional ATM test functionality (MP-0123A)



Manufacturer	Product	Description
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## SIGNALLING ANALYSERS

Trend	Aurora	<b>Presto Analyser and Simulator xDSL</b>
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- ATM, PPP and IP Protocols Supported
- Simulation and Monitor Modes
- TDR and DMM Functionality
- RS-232 and Ethernet Interfaces



Placing an order is easy. Call the T&M Sales Team on +44 (0) 20 8943 5151 for product availability and price



**Call the T&M team on +44 (0) 20 8943 5151**

## SDH ANALYSERS

Agilent	37718B	<b>STM 1/4 SDH/PDH Analysers</b> <ul style="list-style-type: none"> <li>• PDH: 1.5 - 140Mb/s, SDH: 52Mb - 622Mb/s</li> <li>• BNC-75 , for all PDH and STM-1.</li> <li>• Optical interface 1310/1550nm for STM-1+4.</li> <li>• Optional ATM test functionality</li> </ul>
Anritsu	MP1570A	<b>STM-1/4 SDH/PDH Analyser</b> <ul style="list-style-type: none"> <li>• PDH: 1.5-140Mb/s, SDH: 52-622Mb/s</li> <li>• Optional ATM test functionality (MP-0123A)</li> <li>• Optional Jitter Generation and Measurement</li> <li>• RS-232, Ethernet, VGA and GPIB interface</li> </ul>
Anritsu	MP1570A	<b>STM-1/4 SDH/PDH Analyser with Jitter</b> <ul style="list-style-type: none"> <li>• PDH: 1.5-140Mb/s, SDH: 52-622Mb/s</li> <li>• Optional ATM test functionality</li> <li>• Jitter Generation and Measurement</li> <li>• RS-232, Ethernet VGA and GPIB interface</li> </ul>



### JDSU ANT-20

#### Dual Optics Network Tester

- Supports E1 through to STM-4
- Electrical Interfaces for all rates

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Manufacturer	Product	Description
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## SDH ANALYSERS

JDSU	ANT-5	<b>STM-1/4 SDH/PDH Analyser</b> <ul style="list-style-type: none"><li>• PDH:1.5-140Mb/s, SDH:52-622Mb/s</li><li>• Electrical interface BNC-75</li><li>• RJ-45 120 for E1/T1</li><li>• Optical interface for STM-1+4-16 on 1310/1550nm.</li><li>• Optional ATM testing</li></ul>
JDSU	ANT-20	<b>Dual Optics Network Tester</b> <ul style="list-style-type: none"><li>• Supports E1 through to STM-4</li><li>• Electrical Interfaces for all rates</li><li>• 1310 and 1550 nm for STM-1 and STM-4</li><li>• Support for PDH and Concatenation</li><li>• PCMCIA Interface for GPIB card</li></ul>
Agilent	37718A	<b>STM1/4/16 Analyser</b> <ul style="list-style-type: none"><li>• PDH:1.5-140Mb/s, SDH:52-622Mb/s</li><li>• BNC-75 , for all PDH and STM-1</li><li>• Optical Interface 1310/1550nm for STM-1+4+16.</li><li>• Optional ATM Test Functionality</li><li>• Optional 200 Jitter Generation and Measurement O.172</li></ul>
Agilent	E4547A	<b>Wander Analysis for 37718A/B</b> <ul style="list-style-type: none"><li>• Runs on separate PC via RS-232 Interface</li><li>• Provides Real Time Measurement:</li><li>• MTIE, MRTIE and TDEV wander results</li><li>• Compatible with OmniBER 718/725</li><li>• Compatible with J7231B Series Analysers</li></ul>

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**Anritsu CMA5000 XTA  
STM 16 Module with Jitter**

- Supports DS1 through to STM-16 Data Rates
- Electrical Interfaces to STM-1



Manufacturer	Product	Description
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**SDH ANALYSERS**

**Anritsu CMA5000 XTA STM 16 Module with Jitter**

- Supports DS1 through to STM-16 Data Rates
- Electrical Interfaces to STM-1
- 1310/1550nm Interfaces for STM-1/4/16
- Jitter and Wander Measurement
- Requires CMA5000 Mainframe

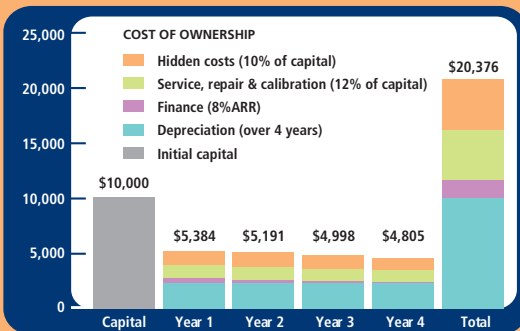
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### JDSU ONT-506

#### Optical Network Tester Mainframe

- 6 Slot Mainframe
- Available modules include SDH, Ethernet and OSA

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Manufacturer	Product	Description
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## SDH ANALYSERS

JDSU	ANT-5	<b>SDH/PDH Analyser STM-1/4/16 Handheld</b> <ul style="list-style-type: none"><li>• PDH (1.5Mb/s, 2Mb/s, 34Mb/s, 45Mb/s, 140Mb/s)</li><li>• SDH STM-1/4/16 Concatenated</li><li>• Electrical interface BNC-75</li><li>• RJ-45 120 for E1/T1</li><li>• Optical interface for STM-1+4-16 on 1310/1550nm</li><li>• Optional ATM testing</li><li>• No Jitter Generation and Measurement</li></ul>
JDSU	ANT-20SE	<b>SDH/PDH Analyser STM-1/4/16</b> <ul style="list-style-type: none"><li>• PDH (1.5Mb/s, 2Mb/s, 34Mb/s, 45Mb/s, 140Mb/s)</li><li>• SDH STM-1/4/16 Concatenated</li><li>• Electrical interface BNC-75</li><li>• Optical Interface for STM-1+4+16 on 1310/1550nm</li><li>• Optional ATM Testing</li><li>• Optional Jitter Generation and Measurement 0.172</li></ul>
JDSU	ONT-506	<b>Optical Network Tester Mainframe</b> <ul style="list-style-type: none"><li>• 6 Slot Mainframe</li><li>• Available modules include SDH, Ethernet and OSA</li><li>• 15 inch TFT Colour Display</li><li>• LINUX Operating System</li><li>• Ethernet and USB Interfaces</li></ul>
JDSU	3061/90.41	<b>NextGen STM16 (ONT506) module</b> <ul style="list-style-type: none"><li>• STM-0 through to STM-16</li><li>• Electrical and 1310/1550 nm for STM-1 to STM-16</li><li>• Support for GP, LCAS and Virtual Concatenation</li><li>• For Use with ONT5XX Series Mainframes</li></ul>

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**Sunrise Sunset**  
**SSSDHC-STM16-R Test Set**

- Handheld Testset for PDH and SDH
- PDH: 2, 34 and 139 Mbits/s

Manufacturer	Product	Description
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## SDH ANALYSERS

Sunrise	SSMTT-38	<p><b>SDH/SONET Module</b></p> <ul style="list-style-type: none"> <li>• SDH/SONET Module for MTT Mainframe</li> <li>• Supports E1 through to STM-16</li> <li>• Complete payload mapping</li> <li>• Bit Error Rate Testing</li> <li>• Requires Sunset MTT Mainframe</li> </ul>
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Sunrise	Sunset	<p><b>SSSDHC-STM16J Jitter &amp; Wander</b></p> <ul style="list-style-type: none"> <li>• Supports E1 to STM-16</li> <li>• Electrical Interfaces to STM-1</li> <li>• 1310/1550nm Interfaces for STM-1/4/16</li> <li>• Jitter or Wander Measurements</li> <li>• User friendly user Interface</li> </ul>
Sunrise	Sunset	<p><b>SSSDHC-STM16-R Test Set</b></p> <ul style="list-style-type: none"> <li>• Handheld Testset for PDH and SDH</li> <li>• PDH: 2, 34 and 139 Mbits/s</li> <li>• SDH: 52, 155 and 662 Mbits/s &amp; 2.5GB/s</li> <li>• Pulse Mask Analysis</li> <li>• ATM Test</li> </ul>
Sunrise	Sunset MTT	<p><b>Colour Chassis</b></p> <ul style="list-style-type: none"> <li>• Handheld Colour Chassis</li> <li>• Accepts the full range of MTT Modules</li> <li>• Battery Operated</li> </ul>



### Exfo FTB-8140

#### 40/43 Gigabit SONET/SDH Test Module

- OC-768/STM-256 testing, STS-1/AU-3 granularity
- Supports OTN testing at the OTU3 level

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Manufacturer	Product	Description
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## SDH ANALYSERS

Agilent	J2127A	<b>Portable SDH/PDH Analyser STM-1/4/16/64</b> <ul style="list-style-type: none"> <li>• PDH (1.5Mb/s. 2Mb/s. 34Mb/s. 45Mb/s. 140Mb/s)</li> <li>• SDH STM-1/4/16/64 Concatenated</li> <li>• Electrical interface BNC-75</li> <li>• Optical interface for STM-64 on 1550nm</li> <li>• Optional ATM measurement</li> <li>• Optional Jitter Generation and Measurement</li> <li>• Remote Control GUI, SCPI over GPIB. TCP/IP. or RS-232c</li> </ul>
Exfo	FTB-8130NG	<b>NEW SDH Analyser STM-1+4+16+64</b> <ul style="list-style-type: none"> <li>• Supports E1 to STM-64. PDH and SDH:</li> <li>• Including VCAS, LCAS (High and Low) and FEC</li> <li>• Electrical Interfaces to STM-1</li> <li>• 1310/1550nm Interfaces for STM-1/4/16/64</li> <li>• No Jitter or Wander Measurements</li> <li>• Requires FTB-200/400 mainframe.</li> </ul>
Exfo	FTB-8130	<b>10Gb/s SONET/SDH transport Blazer Mod</b> <ul style="list-style-type: none"> <li>• DS1 through to STM-64 Data Rates</li> <li>• DS1 to STM-1 Electrical, STM-1 to STM-64 Optical</li> <li>• Supports LCAS, GFP and VCAT</li> <li>• Support Forward Error Correction</li> <li>• Compatible with FTB-200 and FTB-400 Mainframes</li> </ul>
Exfo	FTB-8140	<b>40/43 Gigabit SONET/SDH Test Module</b> <ul style="list-style-type: none"> <li>• OC-768/STM-256 testing, STS-1/AU-3 granularity</li> <li>• Supports OTN testing at the OTU3 level</li> <li>• Forward error correction (FEC) as per ITU-T G.709</li> <li>• Compatible with: NRZ, ODB, DPSK and DQPSK</li> <li>• Intuitive, feature-rich user interface</li> <li>• Compatible with any of EXFO's FTB-400 modules</li> </ul>

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**JDSU MTS-8000****STM-64 & Optical Spectrum Analyser**

- MTS-8000 Mainframe with Modules
- STM-64 only Analyser 1550 nm

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**SDH ANALYSERS**

JDSU	ANT-10G	<b>SDH/PDH Analyser STM-1/4/16/64</b> <ul style="list-style-type: none"> <li>• PDH (1.5Mb/s. 2Mb/s. 34Mb/s. 45Mb/s. 140Mb/s)</li> <li>• SDH STM-1/4/16/64 Concatenated</li> <li>• Electrical Interface BNC-75</li> <li>• Optical Interface for STM-1+4-16 on 1310/1550nm.</li> <li>• STM-64 on 1550nm</li> <li>• Optional ATM Testing</li> <li>• Optional Jitter Generation and Measurement O.172</li> </ul>
JDSU	ONT-506	<b>Optical Network Tester</b> <ul style="list-style-type: none"> <li>• Supports E1 to STM-256. PDH and SDH.</li> <li>• VCAT, LCAS (High and Low) and FEC</li> <li>• (10)Gig Ethernet Testing</li> <li>• Electrical Interfaces to STM-1</li> <li>• 1310/1550nm Interfaces for STM-1/4/16/64</li> <li>• Jitter or Wander measurements options available</li> </ul>
JDSU	MTS-8000	<b>STM-64 and Optical Spectrum Analyser</b> <ul style="list-style-type: none"> <li>• MTS-8000 Mainframe with Modules</li> <li>• STM-64 only Analyser 1550 nm</li> <li>• OSA300 Optical Spectrum Analyser</li> <li>• 1250 nm to 1650 nm</li> <li>• RS-232, USB and Ethernet Interfaces</li> </ul>
JDSU	C8311	<b>STM-64 1550nm Module for MTS-8000</b> <ul style="list-style-type: none"> <li>• Standard SONET and SDH rates supported at 10Gb/s</li> <li>• Optical Interface 1550nm at STM-64</li> <li>• No Jitter or Wander</li> <li>• Requires MTS-8000 Mainframe</li> </ul>



### JDSU C8310

#### STM-64 SDH Module for MTS-8000

- SONET and SDH rates supported at 10Gb/s
- Optical Interface 1550nm at STM-64

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Manufacturer	Product	Description
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## SDH ANALYSERS

JDSU	C8310	<b>STM-64 SDH Module for MTS-8000</b> <ul style="list-style-type: none"><li>• SONET and SDH rates supported at 10Gb/s</li><li>• Optical Interface 1550nm at STM-64</li><li>• No Jitter or Wander</li></ul>
JDSU	C8530	<b>STM-1/4/16/64 + 1/10Gb Ethernet Analyser</b> <ul style="list-style-type: none"><li>• PDH and SDH:</li><li>• 1.5Mb/s to 10Gb/s + Gigabit/10 Gigabit Ethernet</li><li>• Electrical and Optical Interfaces:</li><li>• 1310nm and 1550nm to STM-16</li><li>• 1550nm at STM-64</li><li>• 1310/1550nm at GigE and 10GigE</li><li>• No Jitter or Wander</li></ul>
JDSU	C8525	<b>STM-1/4/16/64 + 1Gb Ethernet Analyser</b> <ul style="list-style-type: none"><li>• Standard PDH and SDH</li><li>• 1.5Mb/s to 10Gb/s + Gigabit Ethernet</li><li>• Electrical and Optical Interfaces</li><li>• 1310nm and 1550nm to STM-16</li><li>• 1550nm at STM-64</li><li>• 850 / 1310nm at Gigabit Ethernet</li><li>• No Jitter or Wander</li></ul>
JDSU	C8320	<b>STM-1/4/16/64 SDH Analyser</b> <ul style="list-style-type: none"><li>• Standard PDH and SDH: 1.5Mb/s to 10Gb/s</li><li>• Electrical and Optical Interfaces:</li><li>• 1310nm and 1550nm to STM-16</li><li>• 1550nm at STM-64</li><li>• No Jitter or Wander</li></ul>

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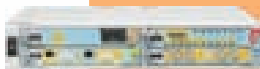
**Trend Victoria  
Combo STM-64**

- Universal Tester up to 10 Gbit/s for
- SDH, SONET, PDH and TCarrier

Manufacturer	Product	Description
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## SDH ANALYSERS

Nettest	CMA5000	<p><b>OTA SDH/PDH Analyser STM-1/4/16/64</b></p> <ul style="list-style-type: none"> <li>• PDH (1.5Mb/s. 2Mb/s. 34Mb/s. 45Mb/s. 140Mb/s)</li> <li>• SDH STM-1/4/16/64 Concatenated</li> <li>• Electrical Interface BNC-75</li> <li>• Optical Interface for STM-1+4-16 on 1310/1550nm</li> <li>• STM-64 on 1550nm</li> <li>• Optional ATM testing.</li> <li>• No Jitter Generation and Measurement</li> </ul>
Trend	Victoria	<p><b>Combo STM-64</b></p> <ul style="list-style-type: none"> <li>• Universal Tester up to 10 Gbit/s for</li> <li>• SDH, SONET, PDH and TCarrier</li> </ul>
JDSU	ONT-503	<p><b>Optical Network Tester Mainframe</b></p> <ul style="list-style-type: none"> <li>• 3 Slots to cover multiple ports/applications</li> <li>• Large 15" TFT Touchscreen</li> <li>• Interchangeable plug-in Modules</li> <li>• Linux Operating System</li> <li>• Easy Test Automation</li> </ul>
JDSU	3075/91.51	<p><b>40G SDH/SONET Test Module for ONT</b></p> <ul style="list-style-type: none"> <li>• 40/43 Gbps Optical and Electrical</li> <li>• SDH STM-256 and SONET OC-768</li> <li>• Concatenated and fully structured signals</li> <li>• OTM0.3 with PRBS signal or SDH/SONET client</li> <li>• Unframed 39.813 Gbps and 43.018 Gbps:</li> <li>• BER testing Alarm, error, overhead</li> <li>• Pointer generation and analysis</li> </ul>



**Agilent N5551A**  
**Electrical/Optical Interface**

- 4 Port 10/100/1000 Base-T
- Base-X Ethernet Test Card

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**DATACOMMS NETWORK TESTING**

Agilent	N5551A	<p><b>Electrical/Optical Interface</b></p> <ul style="list-style-type: none"> <li>• 4 Port 10/100/1000 Base-T</li> <li>• Base-X Ethernet Test Card</li> <li>• use with N2X Software Solutions</li> </ul>
Agilent	N5555A	<p><b>Protocols Test Solution</b></p> <ul style="list-style-type: none"> <li>• Software Package for N2X Test Cards</li> <li>• Includes one 4 slot chassis (N5541A)</li> <li>• E7880B Software included</li> <li>• Additional Software specific for Protocol environments</li> </ul>
Anritsu	CMA5000	<p><b>Telecomm Analyser Mainframe</b></p> <ul style="list-style-type: none"> <li>• Small Highly Portable 4-slot Mainframe</li> <li>• Ethernet module (10) Gigabit SDH module</li> <li>• OTDR module</li> <li>• Dispersion Measurement module</li> <li>• Real-time Measurement of in-service traffic</li> </ul>
Anritsu	5700-001	<p><b>CMA5000 GigE Module</b></p> <ul style="list-style-type: none"> <li>• 2 x Optical GigE Interfaces</li> <li>• 2 x Electrical GigE Interfaces</li> <li>• Optical Interface via Industry Standard GBICs</li> <li>• Traffic Generation and Monitoring</li> <li>• Requires CMA5000 Mainframe</li> </ul>
Anritsu	CMA5800	<p><b>10GigE LR Module</b></p> <ul style="list-style-type: none"> <li>• 10 Gigabit Ethernet LAN Module.</li> <li>• 1 Optical Interface 1310nm for 10GigE</li> <li>• RFC-2544 (Latency, Frame Loss measurement)</li> <li>• 10 Gigabit Module for model CMA-5000</li> <li>• Communication through Ethernet or USB CMA-5000</li> </ul>



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### Exfo FTB 8520

#### SAN Test Module

- Two-port 1 Gb/s (100 MB/s) & 2 Gb/s (200 MB/s)
- Dual port with replaceable Optical Interfaces (SFP)

Manufacturer	Product	Description
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## DATACOMMS NETWORK TESTING

Exfo	FTB-400	<b>Universal Test Platform</b> <ul style="list-style-type: none"> <li>• Five Configurations, Maximum Flexibility</li> <li>• Pentium-powered. to 512 MB Memory</li> <li>• Easy-to-read. high-resolution 12.1" TFT screen</li> <li>• Windows® 2000 operating system</li> <li>• Simultaneous acquisitions/fast data post-processing</li> </ul>
Exfo	FTB-8520	<b>SAN Test Module</b> <ul style="list-style-type: none"> <li>• Two-port 1 Gb/s (100 MB/s) &amp; 2 Gb/s (200 MB/s)</li> <li>• Dual port with replaceable Optical Interfaces (SFP)</li> <li>• Fibre Channel Module for model FTB-400</li> <li>• Communication through Ethernet or USB (FTB-400)</li> </ul>
Exfo	FTB-8510B	<b>Ethernet Tester 10/100/1000</b> <ul style="list-style-type: none"> <li>• Comprehensive measurements to RFC 2544</li> <li>• Packet-jitter Measurement</li> <li>• EtherBERT test functionality</li> <li>• Assessing the integrity on WDM networks</li> <li>• Multiple-stream generation and analysis</li> <li>• QoS verification through VLAN and TOS/DSCP</li> </ul>
Exfo	FTB-8510G	<b>10GigE Module</b> <ul style="list-style-type: none"> <li>• Portable 10GigE LAN/WAN test configuration</li> <li>• 1 Optical Interface 1310nm - 10GigE through SFP</li> <li>• RFC-2544 (Latency, Frame Loss measurement)</li> <li>• Can be used in FTB-200 or FTB-400</li> <li>• Communication through Ethernet or USB</li> </ul>
Fluke	DTX-1800	<b>Cable Analyser</b> <ul style="list-style-type: none"> <li>• Cat 5e/6/7 with superior Level IV Accuracy</li> <li>• 900 MHz for 10 GigE. Class F and CATV</li> <li>• 16 MB on-board memory and saves up 300 tests</li> </ul>



**JDSU Smarthclass  
Single Port Gig-E Tester**

- 10/100/1000 Electrical + GigE SFP Interfaces
- RFC 2544 Automated Test

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Manufacturer	Product	Description
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## DATACOMMS NETWORK TESTING

Fluke	Etherscope II	<b>LAN and WLAN Analyser</b> <ul style="list-style-type: none"><li>• Test to Gigabit Speeds in full Duplex Mode</li><li>• Monitor Network Performance</li><li>• View Wireless Networks</li></ul>
JDSU	FST-2802	<b>Gigabit Ethernet Performance Analyser</b> <ul style="list-style-type: none"><li>• Dual Media 10/100/1000 Mbps and GigE</li><li>• 2 Ports 10/100Base-T (RJ-45)</li><li>• 2 Ports 1000Base with Optical Interfaces</li><li>• Measurement to RFC-2544</li><li>• Throughput, Latency, Frame Loss rate</li></ul>
JDSU	HST-3000	<b>Handheld Service Tester</b> <ul style="list-style-type: none"><li>• Handheld platform supporting a multitude of applications:<ul style="list-style-type: none"><li>• Datacomms, Telecoms and Triple Play Testing</li></ul></li></ul>
JDSU	CHST-M35	<b>Ethernet Test Module</b> <ul style="list-style-type: none"><li>• 10 Mb/s 100 Mb/s &amp; Gigabit Ethernet</li><li>• Dual Port Electrical &amp; SFP Optical</li><li>• IP Layer 2 &amp; Layer 3 Testing</li><li>• Use with HST-3000 Mainframe</li></ul>
JDSU	C8424	<b>10Gb Ethernet, 1310/1550nm</b> <ul style="list-style-type: none"><li>• Single Port</li><li>• Terminate, Monitor &amp; Loopback Modes</li><li>• Layer 2 &amp; 3 Testing</li><li>• Requires MTS-8000 Mainframe</li></ul>
JDSU	SmartClass	<b>Single Port Ethernet Gig-E Tester</b> <ul style="list-style-type: none"><li>• 10/100/1000 Electrical + GigE SFP Interfaces</li><li>• RFC 2544 Automated Test</li><li>• Layer 2 BERT</li></ul>

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### Spirent EDM-2001B

#### Ethernet Module

- 4 Port 10/100/1000 Ethernet Module
- Copper and 1Gb SFP Fibre



Manufacturer	Product	Description
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## DATACOMMS NETWORK TESTING

Spirent	Smartbits	<b>SMB-600/6000B Mainframes</b> <ul style="list-style-type: none"> <li>• SMB-600: Small, lightweight and portable 2-slot chassis</li> <li>• SMB-6000B: 12-slot chassis</li> <li>• Available with a wide range of Smartbits software packages</li> </ul>
Spirent	TestCenter	<b>Network Performance Analysis System</b> <ul style="list-style-type: none"> <li>• 144 Dual Media Gigabit ports or 24-10Gig Ethernet ports</li> <li>• High Density 10/100/1000 Ethernet</li> <li>• Highly Portable, Easy to Use</li> </ul>

Spirent	TestCenter Modules	The following modules to be used with TestCenter Mainframes
---------	--------------------	---

Spirent	EDM-1001B	<b>Interface Module</b> <ul style="list-style-type: none"> <li>• 4 Port 10/100/1000 Ethernet</li> <li>• Dual Media, Electrical &amp; SFP Optical Interfaces</li> </ul>
Spirent	EDM-1003B	<b>Interface Module</b> <ul style="list-style-type: none"> <li>• 12 Ports 10/100/1000 Ethernet</li> <li>• Dual Media, Electrical &amp; Optical SFP Interfaces</li> </ul>
Spirent	EDM-2001B	<b>Ethernet Module</b> <ul style="list-style-type: none"> <li>• 4 Port 10/100/1000 Ethernet Module</li> <li>• Copper and 1Gb SFP Fibre</li> </ul>
Spirent	XFP-2001B	<b>Interface Module</b> <ul style="list-style-type: none"> <li>• Single Port 10GigE</li> <li>• XFP Optical Interface</li> </ul>



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### Spirent LAN-3201B

#### 1 Port GigE Smartmetrics Module

- Performance measurements of Layer 2 & 3 devices
- Interoperability testing of Layer 2 & 3 devices

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## DATACOMMS NETWORK TESTING

**Spirent**      **Smartbits Modules**      The following modules to be used with Smartbits Mainframes

<b>Spirent</b>	<b>LAN-3101B</b>	<b>10/100 Mbps Ethernet SmartMetrics Card</b> <ul style="list-style-type: none"><li>• 6 Ports 10Base-T/100Base-T (RJ-45)</li><li>• VLAN Tagged and Untagged</li><li>• Ipv4, IPv6, TCP &amp; UDP, RFC-2544</li></ul>
<b>Spirent</b>	<b>LAN-3201B</b>	<b>1 Port GigE Smartmetrics Module</b> <ul style="list-style-type: none"><li>• Performance measurements of Layer 2 &amp; 3 devices</li><li>• Interoperability testing of Layer 2 &amp; 3 devices</li></ul>
<b>Spirent</b>	<b>LAN-3310A</b>	<b>2 Port GigE XD Smartmetrics Module</b> <ul style="list-style-type: none"><li>• Generate up to 512 independent IP Streams</li><li>• Supports Full and Half Duplex Modes</li></ul>
<b>Spirent</b>	<b>LAN-3320A</b>	<b>2 Port Gigabit Ethernet Smart Metric module</b> <ul style="list-style-type: none"><li>• Dual Media 10/100/1000 Mbps and GigE</li><li>• 2 Ports 10/100/1000Base-T (RJ-45)</li><li>• 2 Port 1000Base-SX/TX</li><li>• RFC-2544</li></ul>
<b>Spirent</b>	<b>LAN-3321A</b>	<b>2 Port TeraMetrics 10/100/1000 Base Module</b> <ul style="list-style-type: none"><li>• Dual Media 10/100/1000 Mbps and GigE</li><li>• 2 Ports 10/100/1000Base-T (RJ-45)</li><li>• 2 Port 1000Base-SX/TX</li><li>• RFC-2544</li></ul>
<b>Spirent</b>	<b>LAN-3324A</b>	<b>Smartmetrics XD 4-port GigE module</b> <ul style="list-style-type: none"><li>• Dual Media 10/100/1000 Mbps and GigE</li><li>• 4 Ports 10/100/1000Base-T (RJ-45)</li><li>• 4 Port 1000Base-SX/TX</li><li>• RFC-2544</li></ul>

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### SmartBits XLW-3721A

#### Module

- For use with SMB6001 Mainframe
- Various configurations available



Manufacturer	Product	Description
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## DATACOMMS NETWORK TESTING

Spirent	Smartbits Modules	The following modules to be used with Smartbits Mainframes
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Spirent	FBC-3602A	<b>Fibre Channel 1G/2G 2-port Module</b> <ul style="list-style-type: none"> <li>• Full line-rate Traffic Generation</li> <li>• Analysis at 1 and 2Gb/s</li> <li>• Supports Point-to-Point and Loop Modes</li> </ul>
Spirent	XFP-3730A	<b>Smartmetrics 10 GigE 1 Port Module</b> <ul style="list-style-type: none"> <li>• 10 GigE LAN/WAN Interface module</li> <li>• 1 Port 10 GigE SFP transceiver 1310nm</li> <li>• RFC-2544 and RFC 2889</li> </ul>
Spirent	XFP-3731	<b>Terametrics 10 GigE Module</b> <ul style="list-style-type: none"> <li>• 10 Gigabit Ethernet Module</li> <li>• XFP Optical Interface</li> <li>• Requires Wavelengths when ordering</li> </ul>
Spirent	XLW-3720A	<b>Smartmetrics 10 GigE Module</b> <ul style="list-style-type: none"> <li>• 10 GigE LAN/WAN Interface Module</li> <li>• 1 Port 10 GigE XENPAK transceiver 1310nm</li> <li>• RFC-2544 and RFC 2889</li> </ul>
Spirent	XLW-3721A	<b>1 Port 10 GigE Terametrics Module</b> <ul style="list-style-type: none"> <li>• Protocols supported:           <ul style="list-style-type: none"> <li>• Ipv4, IPv6, UDP, TCP, ARP, ICMP &amp; IGMP</li> <li>• RIP, BGP-4, OSPF &amp; MPLS</li> </ul> </li> <li>• Generate up to 512 independent IP Streams</li> <li>• Analyse up to 64,000 unique Streams</li> </ul>



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### Sunrise Sunset MTT Portable GigE Tester

- Dual Media 10/100/1000 Mbps/GigE
- 2 Ports 10/100Base-T (RJ-45)

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Manufacturer	Product	Description
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## DATACOMMS NETWORK TESTING

Sunrise	Sunset MTT	<b>Portable Gigabit Ethernet Tester</b> <ul style="list-style-type: none"><li>• Dual Media 10/100/1000 Mbps/GigE</li><li>• 2 Ports 10/100Base-T (RJ-45)</li><li>• 2 Port 1000Base</li><li>• RFC-2544</li></ul>
Sunrise	SSMTT-28B	<b>Sunset MTT 10/100 Ethernet Module</b> <ul style="list-style-type: none"><li>• Supports 10/100 Mbps line Rates</li><li>• BERT Layers: 1, 2 and 3 for Ethernet &amp; IP Services</li><li>• Simulate and Monitor Traffic</li><li>• Requires Sunset MTT Handheld Mainframe</li></ul>
Sunrise	SSMTT-29B	<b>Gigabit Ethernet Module</b> <ul style="list-style-type: none"><li>• Gigabit Ethernet</li><li>• Two Ports</li><li>• Performance, Frame and Link Statistics</li><li>• Requires MTT Mainframe</li></ul>
Sunrise	SSMTT-29E	<b>Gigabit Ethernet Module</b> <ul style="list-style-type: none"><li>• Gigabit Ethernet</li><li>• Two Ports</li><li>• Performance, Frame and Link Statistics</li><li>• Requires MTT Mainframe</li></ul>
Sunrise	SSMTT-30Z	<b>Fibre Channel Dual Port Module 4G</b> <ul style="list-style-type: none"><li>• Fibre Channel at 1.0625, 2.125 &amp; 4.25 Gbps</li><li>• ESCON at 200 Mbps</li><li>• User settable frame length (28 - 2140 bytes)</li><li>• Programmable FC-2 header</li><li>• Test from 1% to 100% bandwidth</li></ul>

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#### Trend 402A-Z-EG-A

#### Aurora Tango Ethernet Tester

- Gigabit Ethernet Test Set
- Ethernet and IP Layer Testing to RFC-2544

Manufacturer	Product	Description
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## DATACOMMS NETWORK TESTING

Trend	402A-Z-EG-A	<b>Aurora Tango Ethernet Tester</b> <ul style="list-style-type: none"> <li>• Gigabit Ethernet Test Set</li> <li>• Ethernet and IP Layer Testing to RFC-2544</li> <li>• Simulate and Monitor Modes</li> </ul>
Agilent	N5541A	<b>N2X Network Performance Tester</b> <ul style="list-style-type: none"> <li>• Support for SONET/SDH. POS. ATM.</li> <li>• Ethernet, FR and Fibre Channel Interfaces</li> <li>• Time Synchronized to 10 ns</li> <li>• Requires additional Interface / Test Cards</li> </ul>



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DLI	NIC Plus+	<b>10GigE SONET/SDH Analyser</b> <ul style="list-style-type: none"> <li>• Modular SDH SONET Transmission Analyser</li> <li>• All Data rates from E12 through to STM-64</li> <li>• Ports for testing Ethernet 10/100, Gigabit &amp; 10GigE</li> </ul>
Navtel	01-105950A	<b>Interwatch M7 Portable Platform</b> <ul style="list-style-type: none"> <li>• Performance &amp; Verification System</li> <li>• Simultaneous support for multiple application</li> <li>• Multiport Traffic Generation at 100%</li> <li>• Real time 7 layer Protocol Analysis</li> </ul>

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