Electro Rent

Telecommunications Equipment Catalog

Contents

Best Practices for Fiber Testing and Essential Tools

Testing of Connectors and Connections

Fiber connectors are key components in the network and can be a source of loss, particularly if they become contaminated, causing their optical loss to exceed budget. Contaminants can arise from several sources, including dust, oil from hands and mineral oils. A dust particle on the fiber core surface will block the light, leading to unacceptable insertion loss and back reflection (return loss). Dust particles can also cause permanent damage to the glass interface, digging into the glass and leaving pits that create back reflection if mated.

It is therefore extremely important to inspect fiber connectors during installation to ensure cleanliness. Because of their small size, proper inspection requires a microscope specifically designed for the fiber-optic end face. A video microscope can magnify the connector end face image for viewing on either a laptop or portable display, depending on the product used. These fiber inspection tools can also assist in generating required reports before fiber certification is completed.

Testing Using an OTDR (Optical Time Domain Reflectometer)

OTDRs work by injecting optical pulses into the fiber under test and measuring the light that is reflected from various points along the fiber. The reflected light is used to characterize the fiber under test with the strength of the return pulses being integrated against time and plotted as a function of fiber length. By using an OTDR at various points in the network, the feeder and distribution sections of the network can be tested independently. The OTDR can identify and locate each network component and can measure splice loss, connector loss and reflectance along with total end-to-end loss and optical return loss (ORL). The tests must be performed using two wavelengths, enabling detection of bends on the link, which give higher losses at 1550 nm than at 1310 nm.

In addition to using the OTDR as a qualification tool, it can also be used as a troubleshooting tool to pinpoint issues along the link. ODTR features like accuracy, resolution, measurement range and measurement speed vary according to their cost and there is a wide range of OTDR models on the market, each addressing different test and measurement needs. The suitability of an OTDR for a specific test scenario depends on several factors, including type of network, type of fiber (singlemode or multimode), maximum test distance and test types. Other factors to consider include size and weight, display size, battery life, data storage, connectivity, post-processing software and available upgrade modules.

Testing Using an OLTS (Optical Loss Test Set)

Optical Loss Test Sets, (OLTS), can be used in pairs, to measure insertion loss, (IL), and optical return loss (ORL). Once the pair of units have been referenced and calibrated, they can be used to take end-to-end measurements on any section of installed fiber. These tests enable verification of the IL and ORL variables and can identify any transposed fibers. Identification of mis-matched fibers is especially important when testing MPO fibers and connectors. Testing using an OLTS is simpler than with an OTDR, but two technicians are required, at different physical locations and if any problems are identified, an OTDR may be required for more detailed analysis.

Fluke Networks DSX2-5000 | RENT NOW ✔

DSX Cable Analyzer V2 with WiFi; 1 GHz Copper Modules

- DSX Cable Analyzer Series Copper Cable Certifiers
- Unmatched Speed for CAT6A, Class FA, I/II and all Current Standards
- Analyze Test Results and Create Professional Test Reports Using LinkWare Management Software

Fluke Networks DSX2-8000 | RENT NOW ✔

DSX Cable Analyzer V2 without WiFi; 2 GHz Copper Modules

- Unmatched Speed for CAT6A, 8, Class FA, I/II and All Current Standards
- Modular Design Supports Copper Certification
- Taptive User Interface Simplifies Set-up, and Eliminates Errors
- Intertek Verified to TIA Level 2G
- Copper Cable Certifiers Endorsed by Cabling Vendors Worldwide

Fluke Networks DSX2-8000QOI | RENT NOW ✔

Full Cable Analyzer, OTDR, OLTS Test Kit All in One

- Quad OTDR, Quad OLTS, DSX-8000V2 Cable Analyzer 2 GHz CAT8 with Fiber Inspection Tool and WiFi Integrated
- Unmatched Speed for CAT6A, 8, Class FA, I/II and All Current Standards
- Versiv Modular Design Supports Copper Certification
- ANSI/TIA-1152-A Level 2G

Viavi Solutions NGC-4500-FA | RENT NOW ✔

Certifier 40G NGC-4500 with Class FA Copper Kit

- Test and Certify Copper up to Category 6A
- PC Based Software
- Reporter Also Supports Other Viavi Test Solutions Including the OLTS-85, MPOLx, and OTDR Traces from the Viavi T-BERD/MTS-2000
- Supports P5000I Inspection Tool

Viavi Solutions ONX-620 | RENT NOW ✔

OneExpert ONX-620 CATV DOCSIS 3.0 3.1 3.2 Tester

- DOCSIS 3.1 Physical and Service-Level Verification
- 32x8 DOCSIS for Gigabit Speeds
- Connectivity with Built-in Bluetooth and 2.4 and 5GHz WiFi

PCTEL IBFlex | RENT NOW ✔

Drive Test Scanner; 570 MHz to 3.8 GHz

- 4G/5G dynamic spectrum sharing (DSS) support
- 2×2 and 4×2 LTE MIMO measurements
- Connect with Bluetooth or USB
- Blind scan simplifies test setup by automatically detecting channels
- Spectrum analysis and channel power measurements for any wireless technology

PCTEL GFlex | RENT NOW ✔

Scanning Receiver; 10 MHz to 8 GHz

- Measures up to 120 5G channels
- Ultra-fast concurrent 5G/4G testing
- 20/100 MHz wide step IF filter
- I/Q streaming ready hardware
- 5G mobile blind scan
- Dual polarization beamforming measurements
- 4G / 5G Dynamic Spectrum Sharing (DSS)
- 4 x 2 MIMO Measurements
- Upgradable to mmWave FR2 Bands

PCTEL HBFlex P2 Configuration | RENT NOW ✔

5G Drive Test Scanner

- Includes all FR1 bands and all FR2 band licenses, all E-UTRA bands in the 10 MHz to 6 GHz range and:
- GSM, WCDMA, CDMA, EV-DO, TD-LTE, FD-LTE, Wi-Fi, NB-IoT, LTE-LAA, Wi-Fi, 3GPP 5G NR, with CDMA and EVDO holdover (software licenses required)
- mmWave measurements 26 GHz to 40 GHz in FR2 bands
- All existing 2G, 3G, and 4G bands
- Multi-Application Spectrum clearing Interference management Baseline testing
- Integration testing, Optimization testing, Operational troubleshooting

Rohde & Schwarz TSME6 | RENT NOW ✔

Ultracompact Drive Test Scanner; 350 MHz to 6 GHz

- Different multiband and multi-technology scanners
- Ideal for verifying the coverage of all networks at once
- Decodes channels in multiple technologies
- Frequency coverage up to 6 GHz (24-44 GHz with TSME30DC / TSME44DC downconverter)
- Support for up to 4 x 4 MIMO measurements

Rohde & Schwarz ROMES4 | RENT NOW ✔

Drive Test Software

- ROMES4 is the universal software platform for network engineering, network optimization and troubleshooting. In combination with test mobile phones and drive test scanners it provides solutions for all essential tasks involved in coverage measurements, interference identification and QoS.
- Supports Rhode & Schwarz TSME6 and TSMA6 scanners
- Supports latest technologies, such as 5G, Nb-IoT and Cat-M1
- Supports test smartphones, with on-device test capabilities
- 5G NR, GSM, WCDMA, CDMA2000®, 1xEV-DO, WiMAX™, LTE, NB IoT, Cat-M1 and TETRA
- ACD, Sector and BTS position estimation, NB-IoT/LTE-M, Dynamic Spectrum Sharing, Time of Arrival measurements

Fujikura (AFL) 90S+ | RENT NOW ✔

Core Alignment Fusion Splicer

- Core Alignment Technology Achieves Consistent Lower Splice Loss
- Average Splice Loss of 0.01 to 0.04dB
- Tool-Less Replaceable Electrodes
- Ships with CT-50 Cleaver, Carry Case, and 90S Standard Package Accessories
- Cleaver Tracking and Upkeep with Wireless Communication
- Improved Real-Time Arc Control for Fibers with Poor Cleave Angles
- Distribution Fiber Repair
- Long-Haul Network Installation
- OSP Cable Installation and Repair

Fujikura (AFL) FSM90R12-K | RENT NOW ✔

Fusion Splicer Kit with CT50

- Prepare and Fuse up to 12 Fibers at a Time
- Same Core Alignment Technology Expanded to 12 Fibers
- Tool-Less Replaceable Electrodes
- Automated Wind Protector, Tube Heater and Splice Operation
- Ships with CT-50 Cleaver, Carry Case, and FSM90R Standard Package Accessories
- Data Center Cable Installation
- Trunk Cable Repair with Splice-on MPOs

Fujikura (AFL) FSM70S-K | RENT NOW ✔

Fusion Splicer Kit

- Fast Single Fiber Fusion Splicer
- Fixed V-Groove Alignment Technology
- Ships with CT-30 Cleaver, Carry Case, and FSM70S Standard Package Accessories
- Motorized Wind Protector and Tube Heater with the World's Fastest Heating Times
- Dust and Rain Proof Design Provides Superior Protection

Sumitomo TYPE-QH201e | RENT NOW ✔

Quantum Handheld Fusion Splicer

- Smallest Handheld Fusion Splicer with Fast Splice Times
- Built-in Help and Maintenance Videos
- Automatic Splice Start, Arc Calibration and Heater Start
- Fixed V-Groove Alignment Method
- Lynx CustomFit® 2 Splice-On Connector Compatible
- Micro-SD Ports for Virtually Unlimited Data Storage

EXFO FTBX-945 | RENT NOW ✔

Fiber Certifier Optical Loss Test Set

- Optimized for Data Center and Enterprise Tier-1 Fiber Certification
- Onboard PDF Reporting Converts Multiple Measurements into a Single Standardized Format
- Standard Enhanced Flux Multimode Light Source
- Packaged with FTB-1V2-Pro Compact Platform

EXFO MaxTester 945P | RENT NOW ✔

Fiber Certifier Optical Loss Test Set

- Optimized for Data Center and Enterprise Tier-1 Fiber Certification
- FastTest Performance Certifies Two Fibers at Two Wavelengths in 2.6 Seconds
- Instrument Pairs or Singles Available
- Automated Fiber Inspection with Pass/Fail Results on Both Fiber End-Faces
- Onboard PDF Reporting

Fluke Networks CFP2-100 | RENT NOW ✔

Certifiber Pro V2, with WiFi (OLTS)

- Tier-1 Certification of Fiber Cables
- Single Mode, Multimode and Quadmode OLTS with 850, 1300, 1310, 1550nm Wavelengths
- Power range: 0dBm to -65dBm (850nm) 0dBm to -70dBm (All Other Wavelengths)
- Compact Fluke Networks Versiv V2 mainframe
- Integrated USB and WiFi for reporting and project management
- Models Available with Included Inspection Probes

Viavi Solutions MPOLX | RENT NOW ✔

SmartClass Fiber MPO Optical Loss Test Set

- Measures Optical Loss on MPO Type Fiber Connections
- Quadmode OLTS with 850, 1300, 1310, 1550nm Wavelengths
- Certifies All Fibers in MPO Connection and Checks MPO Polarity
- Includes Two P5000i Fiber Inspection Probes
- Integrated USB and WiFi for Reporting and Project Management

EXFO FTBX-720C-Q1-QUAD-XX | RENT NOW ✔

QUAD OTDR Module 850/1300nm, 1310/1550nm

- Quad OTDR with Singlemode and Multimode Testing
- iOLM for Guided One-Touch Multiple Acquisitions and clear GO/NO GO Results
- Dynamic Range of 36dB in Singlemode
- Good for Both Fronthaul and Backhaul Applications Including FTTA, DAS and Small Cells
- Packaged with FTB-1v2-Pro Mainframe
- Carrier Approved

EXFO FTBX-730C-SM1-XX | RENT NOW ✔

Singlemode OTDR 1310nm/1550nm, 39/38dB

- Best OTDR Tool for Through Splitters in PON Networks
- Up to 1 x 128
- Singlemode 1310nm/1550nm
- SM3 Models Available with 1625nm Live Fiber Access
- iOLM for Guided One-Touch Multiple Acquisitions and Clear GO/NO GO Results
- Dynamic Range of 39dB for 82-Mile Point-to-Point Distance
- Packaged with FTB-1v2-Pro Mainframe
- Carrier Approved

EXFO FTBX-730C-SM3-XX | RENT NOW ✔

Singlemode OTDR Module, 1310/1550/1625nm, 39/38/39dB

- Best OTDR Tool for Through Splitters in PON Networks
- Up to 1 x 128
- Singlemode 1310nm/1550nm /1625nm
- SM3 Models Available with 1625nm Live Fiber Access
- iOLM for Guided One-Touch Multiple Acquisitions and Clear GO/NO GO Results
- Dynamic Range of 39dB for 82-Mile Point-to-Point Distance
- Packaged with FTB-1v2-Pro Mainframe
- Carrier Approved

Fluke Networks OFP2-100 | RENT NOW ✔

Optifiber Pro OTDR V2 with Built in WiFi

- Good for Both Enterprise, Data Centers, Outside Plant, or FTTx Applications
- Single Mode, Multimode and Quadmode OTDR with 850, 1300, 1310, 155nm Wavelengths
- Compact Fluke Networks Versiv V2 mainframe
- Integrated USB and WiFi for Reporting and Project Management

Viavi Solutions E4126MA | RENT NOW ✔

OTDR 1310nm/1550nm Metro Access Range

- For Maintenance of Both Metro Access, Access FTTx and PON Networks
- Singlemode 1310 /1550nm
- Smart Link Mapper (SLM) for Instant Pass/Fail Results Analysis
- Dynamic Range of 37dB

Viavi Solutions E4146QUAD | RENT NOW ✔

Multimode/Singlemode 850/1300/1310/1550nm Quad OTDR

- Ideal Test Tool for Contractors/Installers that Need Both Singlemode and Multimode
- Serves Enterprise, Access, Metro and Support of Wireless Fronthaul/ Backhaul Networks
- Smart Link Mapper (SLM) for Instant Pass/Fail Results Analysis
- Dynamic Range of 37dB in Singlemode, 27dB for Multimode
- Packaged in T-Berd 2000 Portable Mainframe

Viavi Solutions E41DWDMC-PC | RENT NOW ✔

Tunable DWDM PC OTDR - C-BAND

- Packaged with OneAdvisor ONA-800A
- End-to-End Link Characterization
- OTDR Trace interpretation is also simplified with the Smart Link Mapper (SLM)
- Validating New WDM routes for New Customers or Capacity Increases
- Verifying End-to-End Continuity Prior to Service Turn-up

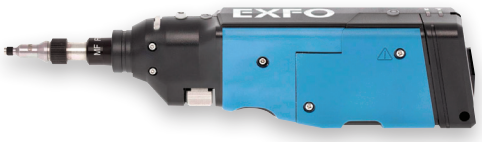
Tech Tip

Clean and Inspect Before You Connect

Dirty and/or damaged fiber connectors are one of the most common causes of optical network problems. When operators operate under amplified OPEX pressure and must speed up fiber deployments, preventing any network failures can make a difference. Inspection and cleaning are essential to successful fiber installation. We have the tools you need to get the job done right.

EXFO FIP435B | RENT NOW ✔

Wireless Analysis Digital Video Inspection Probe



- Complete Connectivity and Workflow Aided by Android or iOS Wireless Devices
- 100% Automated, One-Step Inspection Process
- High-Resolution 5 Megapixel CMOS Imager to Capture Every End-Face Detail
- Full Reporting Capabilities on Mobile Devices
- Onboard Rechargeable Battery Supporting a Full Day of Inspection and Preventing Your Smart Device to Drain its Charge
- Ideal Inspection Solution for Fiber-to-the-Antenna (FTTA) and Remote Radio Head (RRH) Applications Where Tower Climbers

Viavi Solutions FIT-FCSW-KIT2 | RENT NOW ✔

FiberCheck Sidewinder Probe Kit with WiFi and Adapters

- Fast and easy MPO inspection solution. Check 12 MPO Fibers in 12 Seconds
- 100% Automated, One-Step Inspection Process for All Skill-Levels
- Built-in Fiber End-Face Analysis
- Integrated Touch Screen
- Live Fiber Viewing
- WiFi, and USB Connection to a PC and Mobile Device
- Built in Acceptance Criteria to Industry Standards (IEC-61300-3-35)
- Audible Sounds for Pass/Fail Results
- Auto-Pan/Scroll

EXFO FTBX-88460-400GE | RENT NOW ✔

400G Multi-Service Power Blazer

- 400GE Portable System
- Windows Based OS
- Supports QSFP-DD Transceiver
- Packaged with FTB-4-PRO Base Mainframe
- FEC Testing
- BER Monitoring

EXFO FTBX-88260 | RENT NOW ✔

10M-to-100G Multi-Service Power Blazer

- 100GE Down to 10M Capable
- RFC2544 Supported
- Packaged with FTB-1v2-PRO-DC Base Mainframe
- EXFO's Open Transceiver System (OTS)
- iOptics Test Application
- Battery Operated

EXFO MAX-890-ETH-100 | RENT NOW ✔

MAXTester 890: 10M-to-100G Multi-Service Unit

- 100GE Package with Multiple Data Speeds Available
- Supports Multiple Transceivers
- Industries Fastest RFC 2544
- QSFP+/QSFP28 and CFP4 Modules Run Error-Free

Viavi Solutions MTS5800-100GE | RENT NOW ✔

TB 5800-100G Base 100GE Package Supports LR4 QSFP28

- 100GE Portable Test Unit
- Windows 10
- RFC2544
- Smart Loop Test
- Supports VIAVIs 4100-Series OTDR and COSA Modules

EXFO FTBX-8880 | RENT NOW ✔

10G Power Blazer Multi-Service Set

- 10GE Module and Mainframe System
- Fibre Channel from 1-10
- LAN/WAN Capable Test
- Packaged with FTB-1v2-Pro Mainframe
- Carrier Approved

Viavi Solutions TB/MTS-5822P | RENT NOW ✔

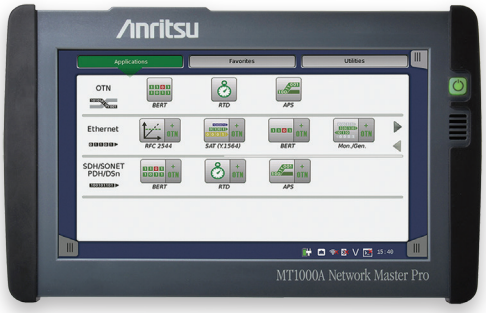
10Mbps to 10G Handheld Network Tester, TB/MTS-5822P

- 10Mbps to 10GE Capable Dual Port Handheld Network Tester
- Dual 10Mbps to 10Gbps Interfaces
- RFC2544
- SONET/SDH Capable
- Battery Operated
- Carrier Approved

Anritsu MT1000A | RENT NOW ✔

Network Master Pro Mainframe

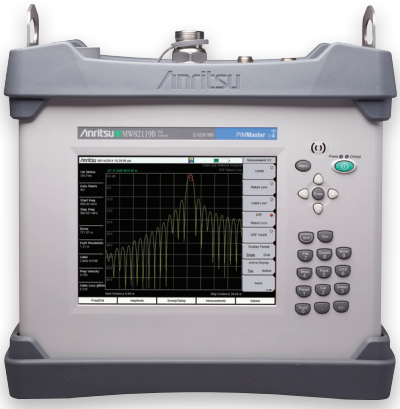
- 10GE Module and Mainframe System
- Fibre Channel from 1-10
- OTDR and 10G Transport/CPRI Module Can be Simultaneously Installed
- CPRI/OBSAI (1-8)
- Battery Operated
- Carrier Approved



Viavi Solutions (3Z) RFV2000 | RENT NOW ✔

Vision Antenna Alignment Tool

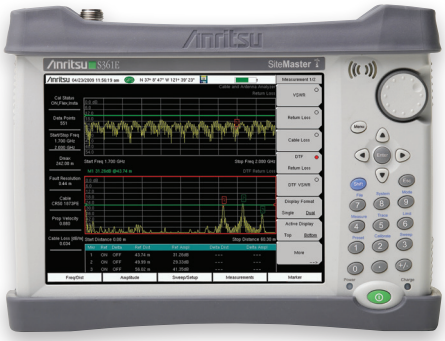
- Industry Leading Performance
- Built-in Camera
- Easy File Export
- Augmented Reality Displays a Bullseye Target in the 5-inch LCD Touch Screen Display
- Carrier Approved



Anritsu MW82119B | RENT NOW ✔

PIM Analyzer; 40W, Battery Operation

- Multiple Bands Available 600MHz, 700MHz, 850MHz, 1900/2100MHz
- 40W Output Power
- Battery Operated
- Calibration Kits Available in Backpack and Hardcase Form



Anritsu S361E | RENT NOW ✔

Site Master Handheld Cable and Antenna Analyzer; 2 MHz to 6 GHz

- Battery Operated
- Carrier Approved
- 4GHz and 6GHz available
- Touch Screen
- Easy USB Data Transfer
- Onboard Reporting

Anritsu S362E | RENT NOW ✔

Site Master Handheld Cable and Antenna Analyzer; 2 MHz to 6 GHz

- Dual Port Capable with Option 21
- 4 hour Battery Life
- Easy Reporting
- With 100 kHz to 6 GHz Spectrum Analysis

EXFO FTBX-88260-FR1 | RENT NOW ✔

RF Spectrum Analyzer; 450 MHz to 6 GHz with RTSA

- Spectrum Analyzer, and TDD Gated Sweep, With TA-FR1 and FTBX-88260 System
- 5G FR1 Enabled Real Time Spectrum Analyzer
- FR2 Module Available Separately

Viavi Solutions SPA06MA | RENT NOW ✔

RF Spectrum Analyzer; 9 kHz to 6 GHz

- Bundled with ONA-800
- DANL to +25dBm
- 100 MHz Real-time Bandwidth
- Carrier Approved

Anritsu MS2720T-709 | RENT NOW ✔

Spectrum Master Spectrum and Interference Analyzer; 9 kHz to 9 GHz

- High Performance Spectrum Analysis
- FirstNet Approved
- Portable and Battery Operated

You can reach us at **1.800.553.2255** or email **sales.na@electrorent.com**. Our experts are available to assist with your product testing and financing needs.

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