

FL150 FaultScout®

Fiber Optic Multimeter



Fast, Easy Testing of FTTx and Last Mile Access Links

Compact, rugged optical fiber multimeter for novice and service activation technicians to certify optical links within 30 seconds, with single fiber connection. Press Start and let our smart V-Scout link mapping technology with in-line OPM for single or dual PON 1490/1577 nm signals do all the work for you. Fiber inspection scopes are also available.

Platform Highlights

- Robust, handheld design for demanding field conditions
- High resolution, 5" TFT color touch-screen
- Fast boot-up in 30 seconds
- Intuitive display, simple function keys and touch-screen for fast navigation and easy operation
- Internal data storage for >10,000 fiber link maps (single pulse width)
- Micro-B USB OTG interface for flash drives, fiber inspection probe connection, test data transfer, or LAN interface
- Rechargeable Lithium Polymer battery with capacity indicator, low voltage alarm and Auto-off function
- > 9 hours continuous operation between charges
- Built-in WiFi option for uploading test data via wireless Internet connection and performing software upgrades
- Built-in Bluetooth® option for pairing with mobile devices
- Remote access and control via smartphone or tablet, via web server, VNC and EZ Remote features
- Sync test results with Fiberizer® Cloud directly or upload to VeEX R-server using V-Connect or VxConnect apps on a mobile device

Key Features

- Detects and evaluates splitter closest to subscriber location
- LinkMap with smart event assessment and messaging
- Simplified operation regardless of fiber optic experience or skillset (no OTDR trace analysis knowledge required)
- Certification and troubleshooting of singlemode point-to-point fiber links up to 60 km or 37.2 miles
- Certify PON link up to 24 dB (single 1x64 splitter)
- In-line Power meter with dual PON 1490 nm and 1577 nm
- Measure fiber length, link loss, and return loss (ORL)
- Identify event types and location (splices, connectors)
- FTTx service activation: GPON, EPON, XGS-PON, 10GE EPON
- Filtered 1650 nm port for in-service testing
- Pass/Fail indication based on pre-programmed thresholds
- Front panel insertion loss check function
- Generate and save results in pdf formats
- Single, fixed SC/APC interface for FaultScout, OLS and OPM with best in class dead zones
- Optional Fiber inspection probe support for evaluating damage and contamination on fiber end faces

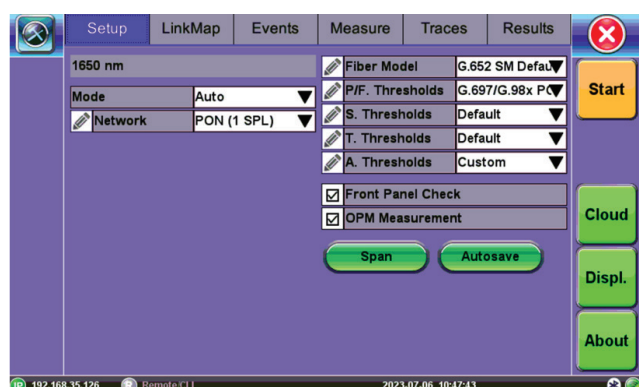
Features You Can Depend On

Fast Startup

The FaultScout powers up and is ready in ~30 seconds. The user defined display contrast, brightness and auto-off mode preserves battery life and allows testing to resume quickly. Technicians can start to work almost immediately and be in the position to locate and restore fiber breaks quickly.

Test Parameters

Its intuitive menus streamline operation for individuals who may not be well-versed in fiber technology. Users can easily select the appropriate Profile type for automatic link analysis, whether it is for Point-to-Point or FTTx/PON drop fiber testing. The analysis and alarm Pass/Fail Thresholds can be preconfigured and applied to measurements.



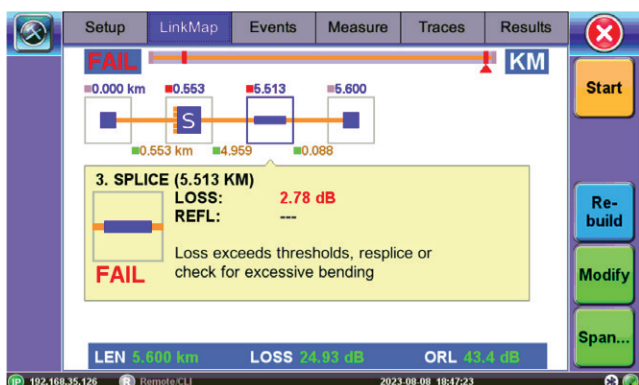
Front Panel Check

FaultScout performs an automatic evaluation of both front panel and connector saver loss before conducting any measurement. In the event that the injection level drops below predefined threshold, or the initial reflectance is high, a straightforward warning message will be issued to alert users.

V-Scout Multi-pulse Test Mode

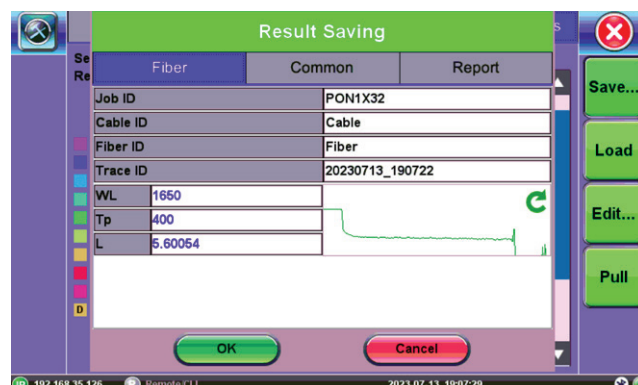
Multiple test acquisitions and advanced algorithms evaluate and characterize the fiber link for optimal range and resolution details. Intuitive icons eliminate trace interpretation, providing greater analysis confidence to the technician, regardless of optical skill set.

Default or User defined Pass/Fail thresholds flag all optical events exceeding prescribed values. Color coded icons and intuitive messaging alert the user of potential problems.



Saving Test Results

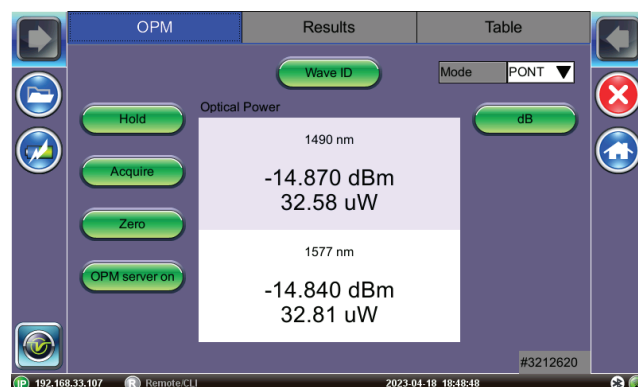
LinkMaps can be saved and organized by Job, Cable, Fiber ID information for each fiber measured. The filing structure stores data in a logical hierarchy for easy sorting/retrieval afterwards. Unique filename is created using Trace ID entry and can be applied based upon job or user preference.



Optical Power Meter (OPM) Results

Power meter options support single wavelength or simultaneous dual PON power measurements for 1G and 10G PON optical signals. Selective power meter options are calibrated at 1490 nm and 1577 nm wavelengths, for precise level measurements.

GPON and XG(S)-PON wavelength measurements can be saved and embedded into FaultScout test reports and uploaded to various server platforms for archiving or post processing.



Simple Software Upgrades

Firmware upgrades are performed easily via micro-B USB port connected to a PC or via WiFi, Internet connection. Updates are available at no charge for registered users.

Extended Battery Operation

The FaultScout provides over 9 hours of operation on a single charge. A low voltage indicator warns the user when the device power reaches critical low levels.

Fiberscope Options

Manual or Auto-focus fiber microscopes can be connected to FaultScout to evaluate the cleanliness and contamination of optical end-faces. Inspection of female/bulkhead adapters and male connectors including angled types is supported.

Depending on probe type, connection is possible using either WiFi or directly via the unit's micro-B USB OTG port which also provides power to the accessory.

Images are analyzed per IEC standards and results including Pass/Fail verdict can be transferred for reporting or archiving purposes. Focus indication (LED) or automatic image focus capture where applicable simplifies operation.

VeEX's Fiberizer Mobile and Windows® PC Software are also available for viewing saved connector end-face images.



Work from Anywhere, Anytime

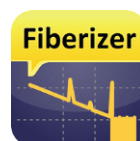
Streamlining On-site Data Reporting and Asset Management

Technicians and contractors verifying new FTTx installations are obliged to submit measurement data (link maps) to the service provider as proof of delivery. Immediately after on-site work is completed, pair FaultScout to a mobile smartphone, laptop or tablet PC and efficiently upload test data directly to your Cloud server of choice using any available wireless technology (LTE/5G, WiFi).

VeEX Fiberizer Cloud and VeSion® R-Server eliminate costly paper, e-mail or other time consuming result transferring methods.

Fiberizer Cloud

Revolutionary online cloud solution providing centralized test data management capabilities and powerful web based trace and linkmap analysis. Fully HTML5 compliant, users can use any web browser on any device thus being able to work from almost anywhere.



Fiberizer Cloud

Value added data post processing

VeSion R-Server

Centralized cloud-based asset and workflow management system that allows efficient collection, indexing and processing of large amounts of test results generated by field installation and maintenance crews.



VeSion R-Server

Data and Asset Management

Using the V-Connect mobile app, technicians are able to connect to the test set using their mobile device's personal hotspot feature. GPS information for geo-tagging test results is also supported.



Optical Specifications¹

FaultScout	
Parameter	Specification
Wavelength (nm)	1650 ± 10 live testing
Isolation (dB)	≥50 dB from 1260 to 1620
Pass-band (nm)	1640 to 1660
Fiber Type (μm)	9/125, Single mode (G.652.D and G.657.A2 compliant)
Maximum Link Loss (dB) ²	≤24
Max Link Length ³	Up to 60 km (37.2 miles or 196.8 kfeet)
Distance Measurement Accuracy (m) ⁴	±1.5
Testing Time (seconds) ⁵	V-Scout (Length, IL, ORL, Events): 15 up to 75
Laser Safety	Class 1 21 CFR 1040.1 and IEC 60825-1
Optical Connector	Fixed SC/APC connector with optional field replaceable connector saver

Power Meter		
Dual PON Wavelengths (nm)	1490	1577
Measurement Range (dBm)	-45 to +13	-45 to +13
Maximum Input Power (dBm)	+15	
Accuracy (dB)	±0.5	
Display Resolution (dBm)	0.01	
Isolation (dB)	40	
Return Loss (dB) ⁶	>45	

Light Source Option	
Wavelengths (nm)	Same as FaultScout
Output Power (dBm)	>-2.5
Power Stability (dB)	±0.2 after 15 min. warm up
Source Modulation (Hz)	CW, 270, 330, 1000, 2000

Notes

1. Unless otherwise noted, all specifications are valid at 23°C ± 2°C (73.4°F ± 3.6°F) using SC/APC connectors
2. Using longest pulse width, automatically configured by V-Scout algorithm
3. Point-to-point fibers or ODN maximum reach specifications per ITU-T recommendations (G.984, G.987 & G.9807.1 series)
4. For 5 km link, total insertion loss 3 dB, and reflectance -45 dB, excluding IOR uncertainty; $\pm (0.5 + \text{res} + (3 \times 10^{-3} \times L))$
5. Depends on link length, split ratio/s, number of faults and total loss; not to exceed 2 min V-Scout mode
6. Using master reference jumper with >45 dB reflectance

Optical Connector Protector (Hardware Option)



Optical Connector Protector



Replaceable Ferrule



*Optical Protector Cover
(optional)*

1 Patent pending
2 Spare ferrules available in
pack of 4 for APC or UPC

The innovative, patent pending field-replaceable optical ferrule system¹ adds an extra layer of protection to the internal end-face of calibrated optical test ports, preventing contamination and accidental damage.

Users can quickly replace the ferrule² without the need for any tool while maintaining the integrity of the instrument's factory calibration. This novel approach eliminates the downtime, logistical hurdles and high cost associated with sending test sets to a service center for repair and recalibration.

All components in the system are reusable, with the exception of the small replaceable ferrule, helping to reduce environmental waste.

Field-Replaceable Optical Ferrule System

Universal Adapter

The universal connector adapter allows users to change the optical connector type conveniently whenever needed. Available in FC, SC, ST and LC.

Locking Ring

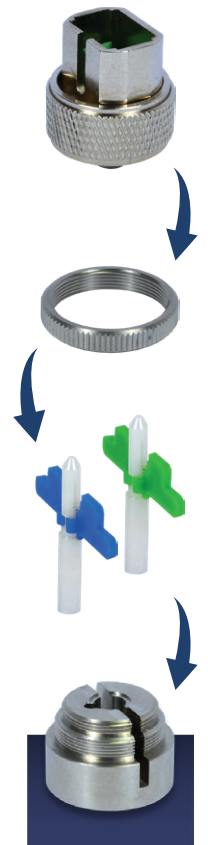
To secure the replaceable ferrule at its optimum location for the best performance.

Replaceable Ferrule with APC or UPC End-face

The self-aligned field-replaceable ferrule can be changed out in seconds. Users can select between APC or UPC end-face, ensuring compatibility with any test application requirement.

Optical Connector Protector Base

The panel mount protector base is made from high-grade stainless steel using a precision CNC process. This achieves proper alignment of the replaceable ferrule, minimizing insertion loss.



Ordering Information

FaultScout Configurations	Description
Z06-05-048P	FL150 FaultScout, 1650 nm(F) for Maintenance, In-line Dual-PON 1490/1577 nm

Add on Hardware Options & Accessories
Fiber microscope option: DI-1000, DI-1000MPO or DI-3000
OTG Ethernet cable option
WiFi/BT option
Optical Light Source option
150m launch reel option
SCA to SCA connector saver option

General Specifications

Dimensions	150 x 150 x 70 mm (5.9 x 5.9 x 2.75")
Weight	0.7 kg nominal
Battery	Lithium Polymer battery, 10 Ah with low voltage indication
Battery Autonomy	>9 hours continuous operation
Operating Temperature	-10°C to 50°C (14°F to 122°F)
Storage Temperature	-40°C to 60°C (-40°F to 140°F)
Humidity	0% to 95%, non-condensing
Altitude	3000 meters
Drop	1 meter
Display	5" color LCD, high resolution, high contrast, touchscreen
Interfaces	Micro-B USB with On The Go (OTG support)
AC Adaptor	Input: 100-240 VAC (50/60 Hz), 1.5A max Output: 12 VDC
Storage	Internal 32 GB
Connectivity	Built-in: WiFi 802.11b/g/n (optional), Bluetooth (optional)
Certifications	CE & ROHS compliant
Safety Standards	FL150 - IEC 61010-1, Class III (GOST 12.2.091) AC adaptor - IEC 61010-1, Class II (GOST 12.2.091)