

# PRODUCT CATALOG

>> TEST & MEASUREMENT SOLUTIONS >>

Telecom

RFTS

VeSion®

NEMs

100G

Fiber Optics/FTTx

Wi-Fi

800G

xPON

400G

Broadband



# ABOUT VeEX Inc.

VeEX® is a leader in innovative test and measurement solutions for next generation communication networks. Founded in 2006 by test and measurement industry veterans, VeEX combines advanced technology with vast technical expertise to deliver reliable, intuitive test tools that meet the demanding needs of today's network operators, service providers, and equipment manufacturers.



## PRODUCTS & SOLUTIONS

VeEX solutions streamline efficient deployment, maintenance, and service activation across a wide range of network technologies. From Fiber Optics to DOCSIS®, Mobile 4G/5G backhaul and fronthaul, advanced Transport, Fibre Channel, Carrier and Metro Ethernet, and WLAN, we deliver the test and verification tools needed to ensure performance and quality across the entire network lifecycle.

### Fiber Optics

Optimized for P2P, xWDM, FTTx/PON, R-PHY/DAA and C-RAN/FTTA networks, VeEX Fiber Optics solutions support every phase of deployment, from construction and service activation/QoE, to verification, troubleshooting and monitoring. Our instruments combine advanced measurement technology, intuitive workflows, and rugged portability to help teams accelerate deployment, minimize repeat visits, and maintain fiber networks with confidence and precision.

### Ethernet/Transport

VeEX Ethernet and Transport products help service providers, equipment manufacturers and installers perform efficient QoE assessment and SLA QoS validation of Ethernet business services, Ethernet backhaul, and packet transport networks. Test interface rates ranging from Fast Ethernet to 800 Gigabit Ethernet, coupled with Y.1564, RFC2544, RFC6349, and broadband speedtest applications address all aspects of converged IP networking.

### Broadband

VeEX Broadband products are optimized for digital CATV and DOCSIS/OFDM signal validation while retaining support for legacy analog carrier measurements. Select models incorporate true DOCSIS 3.1 OFDM analysis to verify multi-gigabit services, while others address key prequalification and maintenance test requirements for High-Split and DOCSIS 4.0 Extended Spectrum applications. Additional applications include Upstream signal generation/analysis, TDR, Forward/Return path sweep, Forward/Return path monitoring systems, and MPEG analysis.

### Wi-Fi

VeEX Wi-Fi solutions integrate multiple test and diagnostic functions into either a standalone, easy-to-use instrument or a swappable platform module. Featuring both Wi-Fi and wired Ethernet interfaces, they support the full scope of installation and maintenance workflows from RF network discovery, site surveys, and interference analysis to troubleshooting, AP channel selection, roaming validation, and traffic load/performance testing.

## Workflow Management Solutions

VeEX Workflow Management Solutions optimize how service providers build, test, and maintain modern networks. By connecting field teams, test equipment, and operational systems into one unified environment, VeEX enables faster turn-up, consistent test practices, and real-time visibility across every job. The result is greater efficiency, improved network reliability, and the confidence to deliver exceptional service quality every time.

## GLOBAL PRESENCE

VeEX's multinational structure consists of specialized business units operating in different parts of the world. Management, finance, sales and marketing entities are headquartered in Fremont, CA, USA. Regional sales offices are located in Philadelphia, PA; Paris, France; Vienna, Austria; Beijing, China; Bangkok, Thailand; Mexico City, Mexico; and Guatemala City, Guatemala. R&D centers are strategically located in Fremont, CA; Atlanta, GA; Tampa Bay, FL; Plymouth, UK; Vilnius, Lithuania; Beijing, China; ChengDu, China; and Montreal, Canada, with regional service centers in Plymouth, UK; New Taipei City, Taiwan; Tampa Bay, FL; and Fremont, CA, USA.

## CUSTOMER BASE

Over 250,000 units have been shipped since volume production began. AT&T, Verizon, British Telecom, Charter Communications, Claro, Comcast, Cox, Deutsche Telekom, Colt, TATA, Entel, Ericsson, Lumen Technologies, Optus, Relacom, SingTel, SKBB, Telecom Malaysia, Telefonica, Telekom Austria, Telia Company, Telkom SA, Spectrum, True, Virgin Media, Vodafone, China Mobile, Chung-Hwa Telecom, major Hyper-scale Data Centers, and many others comprise the growing reference list.

## PATENTS & INTELLECTUAL PROPERTY

With over 50 active patents, including innovations developed in-house as well as intellectual property acquired through strategic company acquisitions, VeEX continues to shape the future of network test and measurement. Our expanding list of pending patents further reinforces our commitment to advancing technology, solving real-world challenges, and delivering tools that set new performance and reliability standards.

## TABLE OF CONTENTS

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➤ FIBER OPTICS SOLUTIONS .....	4
➤ ETHERNET/TRANSPORT SOLUTIONS .....	8
➤ BROADBAND SOLUTIONS .....	12
➤ WI-FI SOLUTIONS .....	13
➤ WORKFLOW MANAGEMENT SOLUTIONS .....	14

# FIBER OPTICS SOLUTIONS

VeEX's optical test and measurement solutions are optimized for today's FTTx, xPON, DWDM, CWDM and Metro networks and are perfectly suited for demanding outside plant environments. The fast growing optical product range complements existing VeEX Transmission and Ethernet testing solutions for Core, Node, Data Center, Transport, Metro, Access, and Business Services.

## FTTX SOLUTIONS

### PX92/PX92T PON Analyzer & Multi-Gig QoE Meter

- Compatible with GPON, XG(S)-PON, EPON, 10G EPON networks
- Pass-through selective wavelength PON meter for ONT/ONU service verification
- Pass/Fail ITU-T/IEEE thresholds enable fast, efficient, and consistent turn-up of services
- Complete Layer 4+ test suite: V-TEST (Ookla® Speedtest®), V-PERF (RFC6349)
- Wi-Fi (802.11a/b/g/n/ac/ax) 2.4 GHz, 5 GHz and 6 GHz scan, coverage verification and speed test.
- Built-in RJ45 test interface with PHY for 1000BASE-T, 2.5GBASE-T, 5GBASE-T, 10GBASE-T (no adapters required)
- SFP+ test interface for 100/1000BASE-X and 10GBASE-R, and ONU Emulation
- NoApp® (US Patent 12,190,199) QR code capability for faster result transfer
- Terminated filtered Optical Power Meter for GPON and XGS-PON downstream signals, with ONT and OLT pass/fail thresholds (PX92T)



### FX120 PON Analyzer & Multi-Gigabit Service QoE Test Set

- Pass-through PON/Ethernet analyzer for service activation and verification
- Supports ITU-T and IEEE standards
- Displays PON ID, OLT TX/class, and ONU status/SN
- Advanced PON features: Active ONU list, PLOAM, OC decode, OLT Commission, Construction, ONT emulation
- Built-in SFP+ cage and Ethernet port for QoE verification
- Full Layer 4+ testing: Speed Test (V-TEST), V-PERF, and V-FTP up to 10GE
- Optional Optical Fault Locator for drop cable validation
- Flow® and NoApp support for efficient test/report workflows
- Streamlined PON analyzer with drop fiber testing for first-time right installation (FX120 Lite)
- Terminated PON analyzer for validating construction at the OLT-side (FX120T)



### PX90 PON Service Installation Meter

- Terminated filtered Optical Power Meter for GPON and XGS-PON downstream signals, with ONT and OLT pass/fail thresholds.
- Internet Speed Testing: Support Ookla Speedtest and iPerf for robust internet performance validation
- Wi-Fi (802.11a/b/g/n/ac/ax) 2.4 GHz, 5 GHz and 6 GHz scan, coverage verification and speed test.
- LAN 1000BASE-T speed test.
- NoApp QR code capability for faster result transfer



### FX150+ PON Optimized OTDR

- Advanced PON OTDR with balanced/unbalanced splitters and taps analysis
- Up to 46 dB Dynamic Range and 0.8/3.5m Dead Zones
- 0.03m resolution & up to 256,000 data points
- OTDR, OPM, Light Source and VFL support
- Attach GNSS/GPS location data to results for physical GIS mapping through V-Connect mobile app



### FL150 FaultScout® Fiber Optic Multimeter

- Filtered 1650 nm port for in-service testing
- In-line wavelength selective PON 1490 nm and 1577 nm meter
- FTTx service activation: GPON, EPON, XGS-PON, 10GE EPON
- Certify PON link up to 24 dB (single 1x64 splitter)



### OTT\* Optical Test Tool for Fiber Construction and Maintenance

- 1x16 port optical switch
- One input port for external optical source
- One output MPO fan-out cable
- Fast switching time, <1 sec
- Geo-tagging with built-in GNSS receiver
- Simple control and operation; no apps or configuration required
- Field portable, battery operated
- Intuitive LED status indicators
- IoT remote connectivity



\*patent pending

### FX41xT PON Terminated Power Meter

- Dual 1G/10G Terminated selective PON meter 1490/1577 nm
- Broadband OPM or VFL options
- NoApp QR code support for test result processing



### FL41 Optical Fault Locator (FL)

- Verify short fiber links during service activation
- Distance Range: 10m to 20 km
- Optional filter for in-service testing
- Optical power meter included



## GENERAL PURPOSE

### FX40/FX45 Optical Power Meter & Light Source

- InGaAs range 800-1700 nm
- OPM or OLS or OLTS (FX45)
- Date/Time stamp with results (FX45)
- VFL option (select OPM models only)



### FX83 Optical Light Source (OLS)

- Single test port up to four laser options
- Multimode - 850, 1300 nm
- Singlemode - 1310, 1490, 1550, and/or 1625 nm
- Modes: CW/Auto or Modulated (270/330/1000/2000 Hz)



### FX84 Loss Test Set (OLTS)

- OPM and OLS functions in one unit
- Uni-directional insertion loss testing
- Singlemode and Multimode configurations
- OPM WaveID when paired with VeEX OLS
- Bluetooth option to transfer results to mobile device or PC



### FX15 Optical Fiber Identifier

- Signal detection and traffic direction
- Supports 250/900  $\mu$ m and 3 mm MM/SM fibers including G.657A2 Bend Insensitive Fiber
- Tone detection (270 Hz, 1 kHz, 2 kHz) with both visual (LED) and audible warning
- Swappable mandrel chucks to accommodate different fiber diameters



### FX10+ Pen Style Visual Fault Locator

- Output power: 1 mW or 10 mW max
- Wavelength: 650 nm  $\pm$  10 nm
- Connector: 2.5 mm universal; optional 2.5 mm to 1.25 converter adapter



## xWDM

### RXT-4113+ DWDM/CWDM OTDR

- Available in CWDM 18/10/8-Ch ITU-T 694.2, DWDM 50 GHz ITU-T 694.1 C-band Ch14 to Ch62, Combo CWDM+DWDM or new combo DWDM+1310/1550//1625(F) configurations
- DWDM Integrated wavelength locker stable to within  $\pm$  2.5 GHz
- LinkMap to identify WDM or Splitter events
- End-to-end continuity testing using either CWDM or DWDM CW light source (via OTDR port)
- CWDM/DWDM 270/1000/2000Hz OLS Modulation
- Attach GNSS/GPS location data to results for physical GIS mapping through V-Connect app
- OLS/OPM/VFL/FiberScope options



### FX92 DWDM Optical Channel Checker

- DWDM 100GHz spacing ITU-T G694.1 grid
- Optional 50GHz spacing
- Ultra-fast <1 second scan for real-time channel detection
- Summary, Tiles (US Patent 11,784,893), Bar, and Table view
- Built-in tools like Max Hold, Span Power, and Test Point Compensation
- User-configurable channel plans
- Programmable Pass/Fail thresholds



### FX86 CWDM Quad Optical Light Source (OLS)

- Quad output, stabilized DFB laser source
- Supports any four CWDM or PON wavelengths
- Outputs can be activated and modulated independently (270 Hz, 330 Hz, 1 kHz, 2 kHz)
- Channel spacing: 20 nm (ITU G.694.2 grid)
- Wavelength accuracy:  $\pm$  3 nm
- Linewidth:  $\pm$  0.5 nm



### FX180X CWDM Optical Channel Checker

- CWDM ITU-T G.694.2 from 1271 to 1611 nm
- Active Channel Pass/Fail detection
- Fast < 3 seconds measurement time
- Summary, Tiles (US Patent 11,784,893), Graph, and Table view
- Built-in wavelength reference
- Programmable channel tables
- Programmable Pass/Fail thresholds



# FIBER OPTICS SOLUTIONS

## OTDRs

### FX160 FiberBEAST™ Bidirectional OLTS and OTDR

- Automated bidirectional insertion loss and ORL measurement with one-way OTDR
- Supports up to 3 wavelengths: 1310, 1550, 1625 nm OLTS/ORL and OTDR
- Insertion loss range up to 40 dB
- PON optimized OTDR option for single or cascaded splitters
- Optimized dead zones (DZ) for FTTx/PON applications: Event 0.8m, Attenuation 3.5m typical
- User-defined pass-fail thresholds
- 15 second OLTS/ORL test time
- Combined OLTS and OTDR reports generated on the device



### FX150+ Point-to-Point OTDR

- Supports up to 4 wavelengths including quad multimode and singlemode configurations
- Up to 46 dB Dynamic Range, 0.8m Dead Zones
- Up to 256,000 sampling points
- Filtered 1625 or 1650 nm port for in-service testing
- Live traffic detection with embedded power meter
- Flow for optimized workflow & test reporting
- Geo Tagging of OTDR test data using V-Connect
- Telcordia SR-4731.sor file format
- Auto mode - single pulse setup, events detection, and trace diagnostics



### RXT-4100+ Point-to-Point OTDR

- Quad MM/SM configurations for P2P & PON
- Up to 50 dB Dynamic Range and 0.8/3.5m Dead Zones
- 0.03m resolution and up to 500,000 data points
- OTDR, OPM, OLS, VFL and FiberScope support



### OPX-BOXe Compact OTDR

- Multimode and Singlemode configurations
- Up to 43 dB Dynamic Range and <1m Dead Zones
- Up to 128,000 sampling points
- Up to 3 wavelengths for OTDR testing including Live port (1625 nm, 1650 nm)
- Optional Light Source and/or Visual Fault Locator (VFL)
- Wi-Fi & Bluetooth (wireless) and USB & Ethernet (wired) remote control



## OSA RXT-4500/4510 Optical Spectrum Analyzer

- S, C and C+L band wavelength ranges
- Fast scanning - full spectrum in < 5s
- Simultaneous measurements - up to 160 channels
- DWDM channel spacing down to 25 GHz\*
- Channel & Span power measurement
- High wavelength accuracy: ± 50 pm

- Continuous sweep with min/max hold
- In-band OSNR measurement
- High dynamic range: > 50 dB
- OSNR measurement: > 40 dB\*

\*Module dependent



## FIBER INSPECTION

### DI-1000 Digital Fiber Inspection Scope

- Optimized for single fiber inspection
- Precise and stable one-finger focus knob
- One hand operation
- Inspect patch cords and bulkheads
- Compatible with TX300s series, RXT-1200 platform, MTTPlus platform, V150-series, and PCs
- Direct USB 2.0 connection to test set
- Powered by USB
- Robust for field use (no motors or batteries)
- Ergonomic design
- Comprehensive line of tips available
- Quick tip replacement



### DI-3000 Digital Fiber Inspection Scope

- One hand (left or right side), one touch operation
  - Wireless connectivity with host device via Wi-Fi
  - Wired connectivity with host device via USB cable
  - Fast (2-4s), auto-focus image capture with focus indication
  - 1/4" CMOS camera enabling 400x magnification
- Compatible with a wide variety of VeEX host devices:
- Android mobile devices with Fiberizer® FMS software
  - iOS® mobile devices with Fiberizer FMIOS software
  - Windows PCs equipped with Fiberizer Scope software
  - VeEX test platforms equipped with USB or Wi-Fi option (MTTplus, TX300 Series, V150 Series and RXT)



## REMOTE FIBER TEST SYSTEM (RFTS) & OPTICAL SWITCHES

Fiber Monitoring is a proven, proactive, risk-reduction and asset protection approach of pinpointing fiber degradation and breaks that threaten strategic infrastructure providing service to thousands of customers. VeEX's remote fiber test system (RFTS) is designed and optimized to test and monitor point-to-point fibers used in metro and long-distance core applications, as well as point-to-multipoint fibers employed in PON access networks. The modular architecture and a wide range of test modules support live or dark fiber testing in either P2P or FTTx networks. State-of-the-art OTDR technology along with advanced analysis ensures fiber faults are detected quickly, improving troubleshooting, restoration, workflow, and reducing Mean Time to Repair (MTTR).

### RFTS-400 RFTS Platform



Used as a standalone, serverless fiber monitoring probe or as part of VeEX VeSion, the RFTS-400 supports dark fiber monitoring, in-service monitoring, PON construction and monitoring, infrastructure monitoring, and security monitoring applications.

#### Hardware

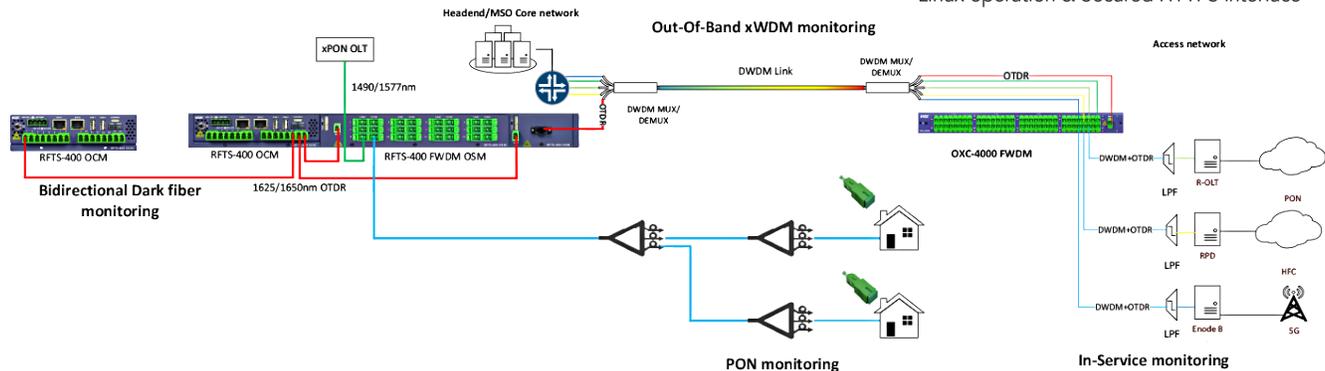
- 1U, 19" rackmount unit supports up to six single-slot modules
  - OCM module occupies two slots; OSM module one slot (up to 4x OSM)
- 10/100/1000 Base-T Management interface

#### Optical Switch Module (OSM)

- Up to 288 ports in a 1-slot module
- Controlled via serial link
- Integrated FWDM option
- Requires no configuration or external communication, powered by the OCM

#### Optical Control Module (OCM)

- Up to 50 dB Dynamic Range with 500,000 sampling points
- Serverless RFTS control option
- SSD storage & redundant -48V DC inputs
- Controls Internal/External switches
- Linux operation & Secured HTTPS interface



### OXC-4000 Optical Switches



#### OXC-4000 Series

- Controlled by VeSion server or RTU/ RFTS via Ethernet
- Up to 288 ports (single 1U with MPO-24 connectors)
- MPO/APC, SC/APC or LC/APC configurations
- Cascading multiple switches for higher fiber counts

## FIELD-REPLACEABLE OPTICAL CONNECTOR PROTECTOR SYSTEM\*

VeEX's Optical Connector Protector System (US Patent 12,481,111) offers a simple, field-replaceable solution to safeguard sensitive optical test ports from contamination and physical damage, without sacrificing performance or calibration. It extends instruments' lifespan by preventing calibrated optical test ports from getting damaged and allows test set users to replace the ferrule and end-face type (APC or UPC) in the field.



Universal Adapter



Locking Ring



Replaceable Ferrule



Base

- Field-replaceable. No tools, splicing or expertise required
- Low insertion loss
- Ferrules are available in single-mode APC and UPC versions
- Connector Adapters<sup>1</sup> available for SC, FC and LC form factors
- Cost-effective 4-pack APC or UPC spare ferrule replacement
- Available Protective Base Cover and Dust Cap options
- Internal (calibrated) APC end-faces are protected to prevent accidental touch and contamination. (Other replaceable optical cassette/module systems use regular SC connectors, which expose their internal end-faces to accidental contact and contamination during the exchange process)
- Existing test sets may be retrofitted with this new solution, when sent to a service center for regular maintenance, repair or recalibration

\*US Patent 12,481,111



# ETHERNET/TRANSPORT SOLUTIONS

VeEX offers comprehensive Ethernet and Transport test solutions for Business Services, Access, Metro, Core, Transport, Data Center Interconnect and Utility networks. Versatile test platforms combine a broad range of technologies to ensure optimal performance and reliability across the entire network lifecycle. From deployment and turn-up to ongoing maintenance and troubleshooting, VeEX empowers service providers to confidently deliver high-quality, high-speed connectivity.

## RXT® Series Advanced Modular Test Platform with VeExpress™

800G 400G



The RXT's ultra-modular, open platform design combines multiple technologies, from legacy 64k to state-of-the-art dual port 400G and 800G, into a rugged modular handheld platform. Its intuitive user interface helps technicians and field engineers work faster, accelerate the learning curve, simplify training, and ensure efficient installation, verification, and maintenance of today's complex networks and services.

- Flexible test module design accommodates different module sizes allowing future growth of the RXT platform into more complex technologies and high-end applications, including dual 4x100GE breakout mode and dual port 400GE
- Scalable architecture supports a range of testing configurations including 1x800GE, 2x400GE, 8x100GE, and 1x800GE PCS/FEC testing, ensuring readiness for next-generation high-speed networks!
- Multi-technology: Ethernet, Fibre Channel, Fiber Optics, WDM, OTN, SDH/SONET, PDH/DSn, eCPRI, CPRI/OBSAI
- Supported modules: 800G, 400G, 100G, Multi-Service (64k to 16G), OSA, tunable xWDM OTDRs

## RXT-6802/RXT-6811 Advanced Dual 800G Multi-Service Test Module

- 800GE IEEE and ETC
- Dual 800GE/400GE
- Breakout modes: 2x400GE, 8x100GE, 4x200GE, 4x100GE
- Native 800G QSFP-DD800 and OSFP-800G, 400G QSFP-DD and OSFP, QSFP56, SFP-DD112G, and SFP56 PAM4 hardware for best-in-class signal integrity
- Offers dual ports for all pluggable optics form factors, required for AOC/DAC, fan-out and wrap-around tests (from 10M to 800GE)
- 800G QSFP-DD ZR+ including DWDM grid spacing and wavelength tuning



## RXT-6402 Advanced Dual 400G Multi-Service Test Module

- Available in two hardware options: Full and Lite
- Full version supports up to (4) concurrent and independent tests; Lite version supports up to (2)
- Full version includes native RJ45 ports, SDH/SONET, and PDH/DSn testing capabilities
- Dual port 400GE concurrent testing capabilities
- Offers dual ports for all pluggable optics form factors, required for AOC/DAC, fan-out and wrap-around tests (from 10M to 400GE)
- Native QSFP-DD, QSFP56 and SFP-DD PAM4 hardware for best-in-class signal integrity
- V-Perf (RFC6349) 1G, 10G, 100G, & 400G
- 400G QSFP-DD ZR+ including DWDM grid spacing and wavelength tuning
- VeSion R-Server, VeExpress, EZ-Remote, Web Remote, VNC, SCPI



## RXT-6200 100G Universal Test Module

- CFP4 and QSFP28 interfaces for 100GE, OTU4 and 50GE applications
- Independent Dual-Port testing, up to 2x 112G
- Supports IEEE 802.3bj Clause 91 RS-FEC
- QSFP+ for 40GE, OTU3
- SFP28 for 25GE, 32G FC, CPRI up to 24.330G (CPRI 10), 25G eCPRI
- SFP+ for 10GE/1GE/100M, OTU2/2e/1e/1, STM-64/16/4/1/0, OC192/48/12/3/1, and Fibre Channel 16/10/8/4/2/1G and CPRI up to 12.165G (CPRI 9) and 10G eCPRI
- Electrical interfaces for legacy 10/100/1000M, SDH/SONET and PDH/DSn testing
- VeSion R-Server, VeExpress, EZ-Remote, Web Remote, VNC, SCPI



## RXT Series Test Module Summary\*

						
Supported Test Interface (Ports)	RXT-6802	RXT-6802 Lite	RXT-6811	RXT-6402	RXT-6402 Lite	RXT-6200
OSFP			1			
QSFP-DD800	2	2	1			
QSFP-DD	2	2	1	2	2	
QSFP112	2	2	1			
QSFP56	2	2	2	2	2	
QSFP28	2	2	2	2	2	2
CFP4						1
QSFP+	2	2	2	2	2	2
SFP-DD	2	2	2	2	2	
SFP56/28	2	2	2	2	2	2
SFP+/SFP	2	2	2	2	2	2
RJ45	2			2		2
RJ48 + 3xSMA	1			1		1
Test Applications	RXT-6802	RXT-6802 Lite	RXT-6811	RXT-6402	RXT-6402 Lite	RXT-6200
800G	✓	✓	✓			
2x400G	✓	✓	✓			
4x200G	✓	✓	✓			
8x100G	✓	✓	✓			
400G	✓	✓	✓	✓	✓	
4x100G	✓	✓	✓	✓	✓	
2x200G	✓	✓	✓	✓	✓	
200G	✓	✓	✓	✓	✓	
100G	✓	✓	✓	✓	✓	✓
4x25G	TBD	TBD	✓	✓	✓	✓
50G	TBD	TBD	✓	✓	✓	✓
40G	TBD	TBD	✓	✓	✓	✓
25G	✓	✓	✓	✓	✓	✓
10G	✓	TBD	TBD	✓	✓	✓
100/1000BASE-X	✓	TBD	TBD	✓	✓	✓
10/100/1000BASE-T	✓			✓	✓	✓
OTU4	TBD	TBD	TBD	✓	✓	✓
OTU3	TBD	TBD	TBD	✓	✓	✓
OTU2/2e/1e	TBD	TBD	TBD	✓	✓	✓
RFC 2544	✓	✓	✓	✓	✓	✓
Y.1564 (V-SAM)	✓	✓	✓	✓	✓	✓
Speed Test (V-Test)				✓	✓	✓
RFC 6349 (V-PERF)	TBD	TBD	TBD	✓	✓	✓
Advanced Optical Transceiver Testing	✓	✓	✓	✓	✓	✓
AOC/DAC Verification Testing	✓	✓	✓	✓	✓	✓
Coherent Optic Support	✓	✓	✓	✓	✓	✓

\*Check factory for availability



# ETHERNET/TRANSPORT SOLUTIONS

## MTX642 Dual 400G Portable Test Set

- True 2x400GE concurrent testing
- Dual ports for all common pluggable optics form factors (1G to 400GE)
- Native PAM4 hardware - no adapters required
- Full compatibility with QSFP-DD, QSFP56, SFP-DD, and SFP56 transceivers, DACs, AOCs, network equipment and 400GE links
- Broad range of supported 400GE interfaces: 400GBASE-SR8, FR8, LR8, DR4, FR4, LR4, CR8, CR4 and 400ZR/ZR+
- RJ45 interfaces supporting 10/100/1000BASE-T and 2.5G/5G/10GBASE



## MTX640 Dual 100G/Single 400G Portable Test Set

- True 2x100GE concurrent testing
- 400G Ready via software option
- Native PAM4 hardware - no adapters required
- Full compatibility with QSFP-DD, QSFP56, SFP-DD, and SFP56 transceivers, DACs, AOCs, network equipment and 400GE links
- Broad range of supported 100GE and 400GE interfaces: 100GELR4/LR1/FR1/DR1, 400GBASE-SR8, FR8, LR8, DR4, FR4, LR4, CR8, CR4 and 400ZR/ZR+
- RJ45 interfaces supporting 10/100/1000BASE-T and 2.5G/5G/10GBASE



## MTX150x/MTX150x Lite Ethernet/Multi-Gig Internet Test Set

- V-TEST Throughput Test supports VeEX Mode and Speedtest Powered™ Mode based on Ookla® technology
- V-PERF, support of RFC6349
- SFP+ test interface for 100/1000BASE-X and 10GBASE-R
- Built-in RJ45 test interface with PHY for 10/100/1000BASE-T, 2.5GBASE-T, 5GBASE-T, 10GBASE-T (no adapters required)
- NoApp (US Patent 12,190,199) QR code capability for faster result transfer
- Test Scheduling option via R-Server Profiles to ensure a stable and reliable network experience



## MTX90 Multi-Gig Internet Services & Ethernet Speed Test Set

- Complete Layer 4+ test suite: V-TEST (Ookla Speedtest), V-PERF (RFC6349)
- Wi-Fi (802.11a/b/g/n/ac/ax) 2.4 GHz, 5 GHz and 6 GHz scan, coverage verification and speed test.
- Built-in RJ45 test interface with PHY for 1000BASE-T, 2.5GBASE-T, 5GBASE-T, 10GBASE-T (no adapters required)
- SFP+ test interface for 100/1000BASE-X and 10GBASE-R
- NoApp QR code capability for faster result transfer



### MTX150x Advanced Features Only

- Dual SFP+ and Dual RJ45 test ports
- Dual-port testing capabilities
- Throughput, BERT, Loopback
- RFC2544 Throughput, latency, frame loss and back-to-back tests
- 2.5G/5G/10GBASE-T via native RJ-45 port



## MTX150 Multi-Service Installation & Maintenance Test Set

- Ethernet, Fibre Channel, SDH/SONET, PDH/DSn, Datacom and G.703 64k Codirectional Testing
- SFP+ Optical Interface for 10GBASE-X, 100/1000BASE-X, SyncE, 1/2/4GFC, STM-0 to 64, OC-1 to 192, IEEE C37.94
- RJ45 for 10/100/1000BASE-T
- Throughput, BERT, IPv4/IPv6, Loopbacks, NetWiz, Ping, trace route, Scan, L2CP Transparency, Errors, Alarms, Events, Delay, Test Profile Auto Scripting/Sequencer
- RFC2544 Throughput, latency, frame loss and back to back tests
- Layer 4+ test suite: V-TEST (speed test), V-FTP, RFC6349 V-PERF upload & download tests



## TX300s Series Multi-Service Test Set with VeExpress

The TX300s, with VeExpress license management, is a full-featured, field-configurable portable test solution for Carrier Ethernet, Backhaul, Mobile and Transport testing. This flexible and multi-tasking platform supports Carrier Ethernet, OTN, SDH, SONET, PDH, DSn networks, and offers extensive support for Mobile Backhaul technologies with SyncE, eCPRI and CPRI/OBSAI testing.



- Up to four (4) independent test ports
- OTU4, OTU3, 100GE, 50GE, 40GE, 25GE options
- OTU1/2/1e/2e, ODU0, ODUflex
- SONET/SDH up to OC-192/STM-64
- DSn/PDH: DS1, DS3, E1, E3, E4
- G.703 64k Codir & C37.94

- CPRI: 614.4 Mbps to 12.164 Gbps (up to 24.330 Gbps with TX300s-100GX)
- OBSAI: 768 Mbps to 6.144 Gbps
- Ethernet: 10/100/100BASE-T, 2.5G/5G/10GBASE-T (via copper SFP+)
- Fibre Channel: 1/2/4/8/10/16G (up to 32G with TX300s-100GX)
- VeSion R-Server, VeExpress, EZ-Remote, Web Remote, VNC, SCPI
- LACP Testing 1G & 10G
- V-Perf (RFC6349) 1G, 10G, 25G, & 100G



TX300s-OTDR Hardware Option



TX300s-100Gx Hardware Option



TX340s Dual Test Port Hardware Option



## Multi-Port Test Solutions MPA® Series

With the rapid expansion of high-speed, high-availability networks, test and verification solutions must evolve just as quickly. Not all 800G, 400G, and 100G T&M applications are alike - core, data center and lab environments each demand the right mix of scalability, power, and automation.

The Multi-Port Analyzer (MPA) series are advanced packet optical transport traffic generation and analysis platforms specifically designed for the testing challenges of NEMs R&D, SVT, production and interoperability lab environments.

### MPA Series Platform Highlights

- 800G to 10Mbps simultaneous and independent Multi-Port & Multi-User testing
- Modular and field-maintainable platforms designed for 24x7 operation
- Modern & intuitive HTML5 Web UI remote
- Test automation including Python API and SCPI CLI
- Pay-As-You-Go platform allowing test modules to easily be added on site

### MPA Series Test Applications

- Line-side and client-side interfaces
- ZR, OpenZR+ and OpenROADM pluggable DCO; LPO, LRO, AOC & DAC
- High powered DCO plug & AOC/DAC interop and benchmarking
- Ethernet/IP, OTN, SDH/SONET and Fibre Channel interfaces
- FEC/PCS, MAC/Ethernet/IP throughput, RFC2544, & SDT
- Mult-lane unframed BERT, PRBSQ, PAM4 and NRZ pattern testing

## MPA-HD & MPA-ONE Scalable High Density Test Solutions - Up to 8x 800G or 16x 400/100G Test Ports per Chassis

### MPA-HD Chassis Highlights

- 3U x 19" rack mounted or benchtop chassis
- Supports up to 4 pluggable test modules



### MPA-ONE Chassis Highlights

- 1U x 14" rack mounted or bench top chassis
- Supports 1 pluggable test module



### MPM-HD-802 Dual Port 800G Test Module with QSFP-DD800 Ports

- 800GE, 400GE, 200GE, 100GE & Breakout applications
- OTN and FlexO applications
- 106G/53G PAM4 and 28G NRZ host lane support

### MPM-HD-404 Quad Port 400G Test Module with QSFP-DD & SFP-DD Ports

- 400GE, 200GE, 100GE, 50GE, 40GE, 25GE, 10/1GE & Breakout applications
- OTN applications
- 53G PAM4 and 28/10G NRZ host lane support

### MPM-HD-822 Dual Port 800G Test Module with OSFP800 Ports

- 800GE, 400GE & Breakout applications
- OTN and FlexO applications
- 106G/53G PAM4 and 28G NRZ host lane support

### MPM-HD-402 Dual Port 400G Test Module with QSFP-DD & SFP-DD Ports

- 400GE, 200GE, 100GE, 50GE, 40GE, 25GE, 10/1GE & Breakout applications
- OTN applications
- 53G PAM4 and 28/10G NRZ host lane support

### MPM-HD-832 Dual Port 800G Test module with OSFP800-RHS Ports

- 800GE, 400GE & Breakout applications
- OTN and FlexO applications
- 106G/53G PAM4 and 28G NRZ host lane support

### MPM-HD-104 Quad Port 100G Test Module with QSFP-DD & SFP-DD Ports

- 100GE, 50GE, 40GE, 25GE, 10/1GE & Breakout applications
- 400/200GE FEC/Throughput & OTN applications
- 53G PAM4 and 28/10G NRZ host lane support

### MPM-HD-208 Eight-Port 200G Test Module with SFP-DD112 Ports

- 100GE, 50GE, 25GE, MACsec & Breakout applications
- 106G/53G PAM4 and 28G NRZ host lane support

### MPM-HD-102 Dual Port 100G Test Module with QSFP-DD & SFP-DD Ports

- 100GE, 50GE, 40GE, 25GE, 10/1GE & Breakout applications
- 400/200GE FEC/Throughput & OTN applications
- 53G PAM4 and 28/10G NRZ host lane support



# BROADBAND SOLUTIONS

As the demand for multi-gigabit services increases, operators face major deployment challenges that can affect service delivery and reliability. VeEX offers a comprehensive cable product portfolio to fully characterize every aspect of the cable network, from headend to the home, and from Access to the Core. This enables operators to quickly deliver next-generation services, optimize network quality and reliability, and ensure SLA and end-to-end QoS compliance during the installation, verification and maintenance of business-oriented services.

## CX380C Budget Friendly Advanced Maintenance

- Fast 1.8 GHz Extended Spectrum Analyzer
- VeCheck Full Band Scan
- DOCSIS 3.1 Cable Modem with V-TEST Throughput
- DOCSIS 3.1 OFDM Analysis with patented Subcarrier Scans
- Comprehensive SLM
- In Service Sweep
- Compatible with SWP-BOX™ for fast and accurate Forward & Return Sweep: for D3.1 & D4.0 network prequalification and maintenance
- One Tech Out RP Amp Balancing with SWP-BOX, reducing OpEx by half
- Layer 4+ V-PERF and V-TEST Throughput
- Cable Toolkit with TDR and DMM
- Built in Optical Power Meter



## SWP-BOX™\* Portable Extended Spectrum Sweep for DOCSIS® 3.1 & 4.0 and DAA / R-PHY Network Expansion

VeEX's patent pending SWP-BOX consists of a high performance transmitter/receiver that works in conjunction with the CX380C Maintenance meter, together comprising a full field Sweep System. Field portability and ease-of-use makes the SWP-BOX a game changer for DOCSIS 4.0/DAA plant prequalification, yielding significant time and cost savings.

- World's First Portable Sweep transmitter and receiver designed for DOCSIS 4.0 Extended Spectrum and high-split migration
- Works with the CX380C for a complete, stand alone, field Sweep System
- Extended forward path sweep up to 1.8 GHz and return path sweep to 204 MHz
- Reduces test setup from hours to minutes, yielding significant OpEx savings compared to traditional sweep systems
- Fast and accurate Sweep for network maintenance
- Integration with VeSion® R-Server system, supporting data collection and test result management



\*patent pending

## CX310/CX310 Enhanced Handheld DOCSIS 3.1 Installation and Fulfillment

Equipped with a DOCSIS 3.1 cable modem supporting true OFDM analysis and V-TEST throughput measurements, the CX310 offers unrivaled price and performance in a lightweight, ultra-portable form factor. Key features include VeCheck Full Band Scan, OFDM Subcarrier Scans (patented) and HIP Home Certification.

- Frequency range from 5 to 1218 MHz
- DOCSIS 3.1 Cable Modem with true OFDM Analysis
- Key SLM features include fast VeCheck Full Band Scan and Single Channel QAM analysis
- MER and Pre/Post BER measurements of QAM carriers
- New Enhanced model supporting Return Path Spectrum
- Return Path and Forward Path Ingress Scan
- V-TEST Throughput Test supports VeEX Mode and Speedtest Powered Mode based on Ookla technology
- Home Installation Process/Certification Auto Tests
- TDR for Cable Fault Location



## AT2500-3G Headend Maintenance

The AT2500-3G is the industry's most complete 3 GHz Advanced Spectrum Analyzer and multi-standards test solution. Incorporating a high-resolution color touch-screen, the AT2500-3G features spectrum analysis, digital channel, VeCheck, MPEG analysis and Satellite feed test capabilities. Comprehensive SLM measurements include Single Channel, Fast real-time plant level scan, Headend Check, and FCC Digital POP tests.

- 3 GHz high sensitivity professional grade Spectrum Analyzer with built-in automatic filters for increased dynamic range
- Annex A, B, C, DOCSIS 3.1, ISDB-T
- Superior QAM demodulation capability, with excellent BER performance and MER range up to 47 dB
- MPEG Explorer: QAM channel MPEG-TS analysis
- DOCSIS 3.1 OFDM analysis and Subcarrier Scan
- Headend Check auto test for the entire selected Channel Table lineup
- Satellite DVB-S & DVB-S2 analysis



With countless Wi-Fi deployments in homes, businesses and public spaces globally, Wi-Fi is a source of great opportunities and challenges for carriers. The Wi-Fi Expert series addresses challenges by combining many test tool functions into both a standalone, easy-to-use test set or swappable platform module. With Wi-Fi and wired Ethernet interfaces, our solutions cover all aspects of I&M from RF network discovery and survey, to troubleshooting, AP channel selection, and traffic load performance testing.

## WX90 Wi-Fi Expert Test Toolkit

- Internet Speed Testing: Supports Ookla Speedtest and iPerf for robust internet performance validation
- Built-in 1000BASE-T Port: Enables 1G speed testing, network performance validation, and PoE (Power over Ethernet) detection
- Discovers networks and displays Access Points, Clients, and Channels in table or graphical format
- Identifies SSID, BSSID, channels, security, data rates, signal/noise levels, associated clients and more
- Coverage issues through signal and noise level tracking
- Optional Spectrum Analyzer: Identifies Wi-Fi and non-Wi-Fi interference sources for 2.4, 5, and 6 GHz bands
- Customizable Test Profiles
- Visualizes Wi-Fi coverage by passively scanning RSSI from selected SSIDs and generating a color coded heat map



## PX92/PX92T PON Analyzer & Multi-Gig QoE Meter

- Compatible with GPON, XG(S)-PON, EPON, 10G EPON networks
- Pass-through selective wavelength PON meter for ONT/ONU service verification
- Pass/Fail ITU-T/IEEE thresholds enable fast, efficient, and consistent turn-up of services
- Complete Layer 4+ test suite: V-TEST (Ookla Speedtest), V-PERF (RFC6349)
- Wi-Fi (802.11a/b/g/n/ac/ax) 2.4 GHz, 5 GHz and 6 GHz scan, coverage verification and speed test.
- Built-in RJ45 test interface with PHY for 1000BASE-T, 2.5GBASE-T, 5GBASE-T, 10GBASE-T (no adapters required)
- SFP+ test interface for 100/1000BASE-X and 10GBASE-R
- NoApp QR code capability for faster result transfer
- Terminated selective wavelength PON meter for OLT verification (PX92T only)



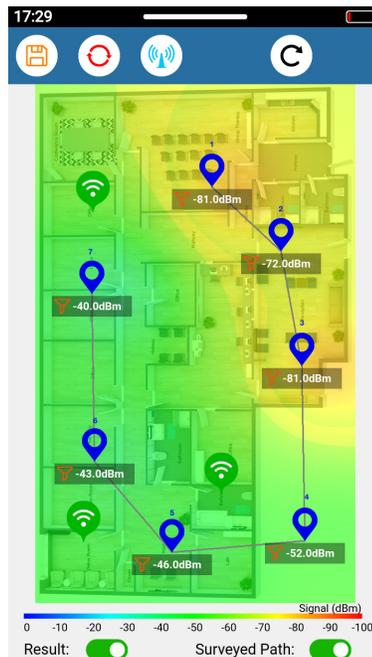
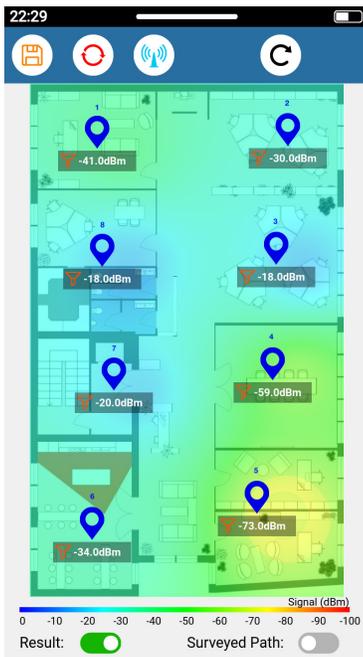
## MTX90 Multi-Gig Internet Services & Ethernet Speed Test Set

- Complete Layer 4+ test suite: V-TEST (Ookla Speedtest), V-PERF (RFC6349)
- Wi-Fi (802.11a/b/g/n/ac/ax) 2.4 GHz, 5 GHz and 6 GHz scan, coverage verification and speed test.
- Built-in RJ45 test interface with PHY for 1000BASE-T, 2.5GBASE-T, 5GBASE-T, 10GBASE-T (no adapters required)
- SFP+ test interface for 100/1000BASE-X and 10GBASE-R
- NoApp QR code capability for faster result transfer



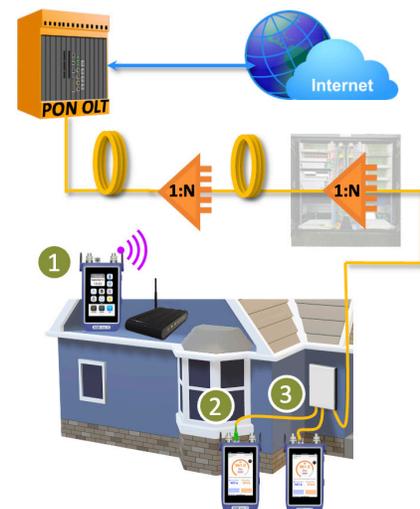
## PX90 PON Service Installation Meter

- Terminated filtered Optical Power Meter for GPON and XGS-PON downstream signals, with ONT and OLT pass/fail thresholds.
- Internet Speed Testing: Support Ookla Speedtest and iPerf for robust internet performance validation
- Wi-Fi (802.11a/b/g/n/ac/ax) 2.4 GHz, 5 GHz and 6 GHz scan, coverage verification and speed test.
- LAN 1000BASE-T speed test.
- NoApp QR code capability for faster result transfer



### Speed Test Application

- 1 – Wi-Fi Speed Test
- 2 – Speed Test via SFP+ Port
- 3 – Speed Test via Native RJ45 Port



# WORKFLOW MANAGEMENT SOLUTIONS

VeEX Workflow Management Solutions bring intelligence, automation, and visibility to every stage of network testing and operations. From the VeSion cloud-based platform that unifies monitoring and asset management, to Test with Flow® for streamlined field test result collection, NoApp® for instant browser-based connectivity, and VeSion R-Server for secure, centralized data control, VeEX simplifies how teams test, verify, and manage their networks with speed and confidence.

## VeSion® Cloud-Based One System

VeSion Cloud-Based One System Platform represents the next step in innovation for Network Monitoring. VeSion integrates RF monitoring, Fiber Pt-Pt or PON, MPEG, Sweep, PNM, advanced DOCSIS Monitoring, DOCSIS Burst Demodulation, Carrier Class Ethernet Performance testing and monitoring, as well as Workflow and Asset Management systems all under one umbrella. The VeSion system reduces network troubleshooting and problem resolution time significantly and is accessible anytime, anywhere, via web browser or mobile apps.



## VeSion R-Server

The VeEX R-Server workflow system is a comprehensive application suite for managing and optimizing workflow for centralized engineers, managers and field technicians.

- A complete, centralized workflow and asset management system
- Dynamic testing result navigation for both quick analysis and in-depth compliance verification
- Flexible distributed architecture for easy expansion
- Secured IP connection and VX-Connect app tethering for access from any location with Internet connection or phone service
- Attach GNSS/GPS location data to results for physical GIS mapping through VX-Connect
- Reduce OpEx by ensuring the job is done right the first time; Lower CapEx by integrating multiple test solutions that improve workforce productivity
- Upgradeable solutions protect investments & address future needs
- Schedule L4 tests for continuous testing and monitoring
- View historical throughput x RTT graphs

## VeSion RFTS

VeSion Remote Fiber Test System (RFTS) is a centralized monitoring system that sweeps across many fiber routes to quickly report outages or degradation. RFTS-400 probes, which can also operate in standalone mode, are deployed at various sites and communicate with VeSion cloud system to read/write data to a centralized storage point. Intuitive dashboard with KPIs and a simple yet efficient integrated GIS system make VeSion RFTS a convenient platform for not only monitoring and testing fiber but visualizing and storing the data as well.

- RFTS-400 OTDR (1550, 1625 or 1650 nm available)
- RFTS-400 OSM and OXC-4000 series optical switches (1x8, 1x16, 1x32, 1x64 or 1x128, 1x256, 1x288) with optional built-in integrated FWDM for in-service monitoring
- Integrated in VeSion Eco-system
- Provides real-time fiber network health with alarms and analysis

## VeSion Ethernet

### RTU-300+ Ethernet Performance Testing and Monitoring

The RTU-300+ is a centralized remote test unit for performance testing of Carrier Ethernet and high-speed broadband networks. With Layer 2 and 3 testing, combined with Layer 4 stateful TCP testing, it is the ideal solution for both Telco and MSO applications. Multiple RTU-340 and RTU-600x modules are supported via VeSion, allowing for a distributed network of RTUs in the service provider network for effective service provisioning, activation, and assurance.

- 10/100/1000BASE-T, 100BASE-FX, 1000BASE-X ports; 10GE, 25GE, 40GE, 100GE and 400GE ports
- Full line rate traffic generation & analysis for all supported interfaces
- Acts as a responder for field multiple portable units (concurrent multi-sessions). Up to 128 sessions for 100G, up to 64 sessions for 10G.
- V-SAM (Y.1564), RFC2544, Loopback; VPERF (RFC6349)
- Multi-user Remote Control to easily allow multiple users run and view independent tests
- Test Scheduling option

## Fiberizer®

### Fiber Optics Test Data Management. Remote & Cloud Applications

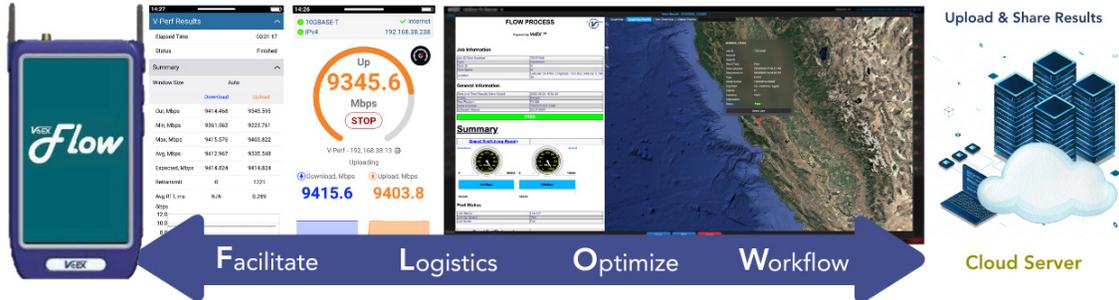
Software solutions for remote optical testing and data post-processing for managing test data and generating reports that integrate OTDR, link map, GPS coordinates, OLTS (loss and ORL), connector inspection, and captured images. Available for Window PC, Mobile Apps (Android™, iPhone® and iPad® devices) and Fiberizer Cloud (browser). See website for software applications or register for a Fiberizer Cloud account at [www.fiberizer.com](http://www.fiberizer.com).



# WORKFLOW MANAGEMENT SOLUTIONS

## FLOW® Workflow Optimization

An advanced work process optimization tool, Flow is a sophisticated feature engineered to facilitate operational efficiency. It offers robust capabilities to define a roadmap, execute batch testing, and generate detailed reports with minimal effort. Flow is designed to streamline complex workflows, enhance task optimization, and expedite result-sharing. It's the ideal solution to simplify your system, improve productivity, and maintain compliance standards.



- Results Aggregation: Consolidate and analyze test results effortlessly
- Pass/Fail Verdict: Quickly determine test outcomes with clear pass/fail indicators
- Dynamic Test Locations: Create and customize test locations tailored to your needs, predefined or on the go
- Full VeSion R-Server Support: Utilize predefined test templates and upload results seamlessly to VeSion R-Server
- Supported products: FX120, FX150+

## Test with FLOW® SaaS Workflow Management

VeEX Test with Flow is a Software-as-a-Service (SaaS) solution designed to centralize, analyze, and securely store all test report data in one place. Ideal for small providers and contractors, it offers control without hardware and IT costs. Subscription-based, scalable from small businesses to enterprises, it's a perfect choice for rural operators and contractors.

- Effortlessly upload, review, archive, and collaborate on test results
- Customizable workflow guidance to support standardized practices and compliance requirements
- Combine multiple job-related test results into a single comprehensive test report, augmented with geolocation information, comments, pictures, etc.
- Accessible anytime, anywhere, 24/7, via standard web browsers
- Compatible with a variety of test applications, including OTDR, fault locator, optical power measurement, speed test, and beyond
- Supported Products: FL41, FX41xT, FX80, FX81T, FX120, FX150+, FX92, MTX150X, MTX150X-Lite, MTX90, PX90, PX92, WX90



## NoApp®\* Test Data Transfer

VeEX's NoApp (US Patent 12,190,199) feature uses QR code technology to embed, convert, and process test results to streamline and expedite reporting tasks. The application is supported on select VeEX meters, ranging from basic PON power meters to more advanced PON Analyzers.

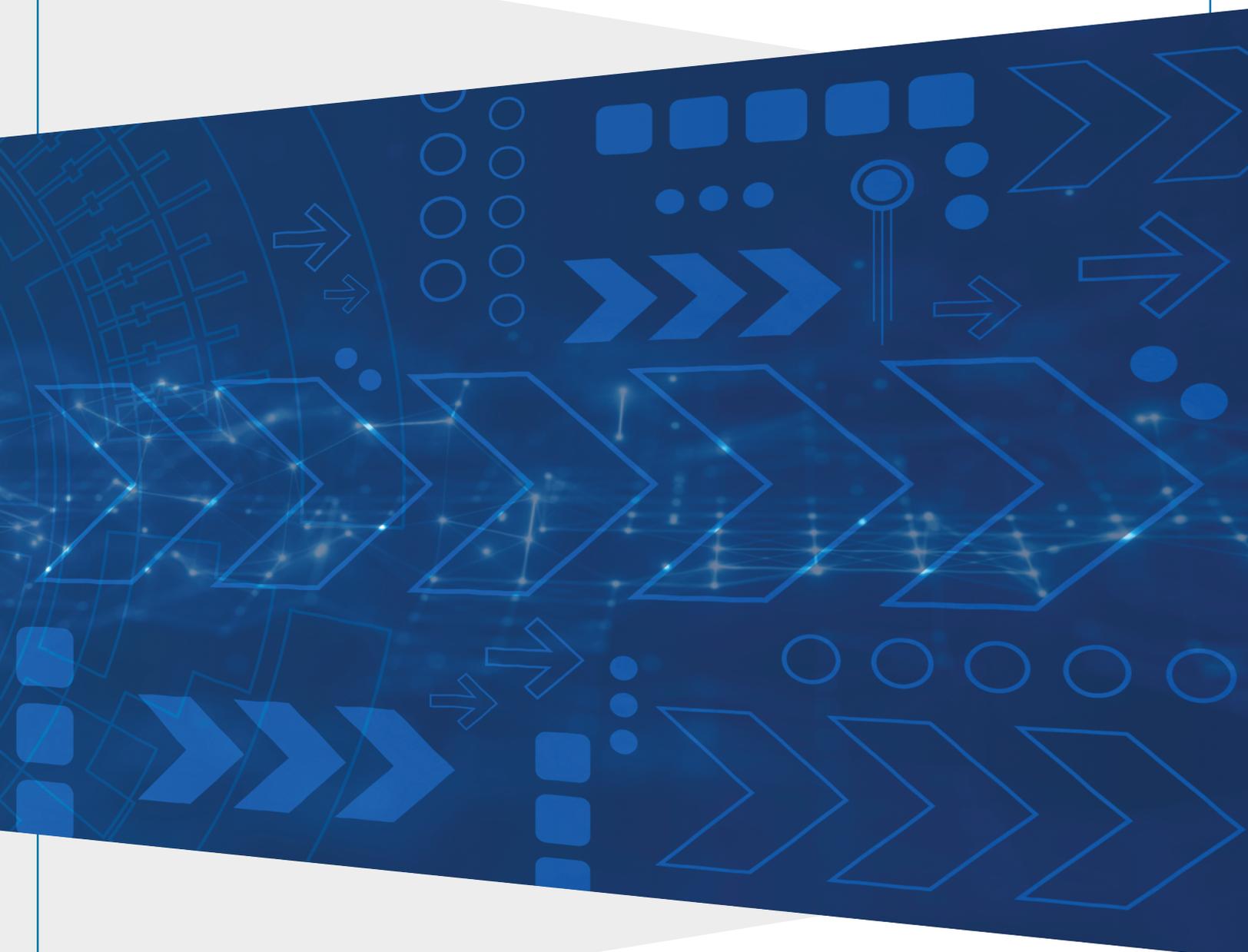
NoApp works with any iOS® or Android® smartphone or mobile device with a camera and QR code reader function. The technician simply scans the QR code displayed on the VeEX tester's screen to obtain key performance indicators (KPIs) of the system under test.

VeEX's hosted cloud service instantly processes the uploaded test data so Users can quickly and easily generate test reports - these vital documents can also be shared or uploaded to a centralized R-Server for record keeping.

Supported devices include FL41, FX41xT, FX80, FX81T, FX120, FX150+, FX92, MTX150X, MTX150X-Lite, MTX90, PX90, PX92, WX90.

\*US Patent 12,190,199





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