Product Catalog

TEST AND MEASUREMENT SOLUTIONS



DOCSIS 3.1 V-Scout **MPEG** OSA Sweep Fibre Channel **OFDM** PNM Fiberizer **HFC Upgrades** OTDR RTU/RFTS QAM WiFi Node Certification VDSL2 Home RFoG **FCC POP** Certification ADSL2+ **CWDM DWDM** Business SAN Services PON Synchronization FTTx G.fast RFC2544 **IEEE 1588v2** TDR/DMM C37.94 CPRI/OBSAI VEEX SHDSL RFC6349 **Voice Quality** PDH/DSn SyncE VeTest™ 100G V-SAM/Y.1564 2 | www.veexinc.com

SDH/SONET

OTN

About VeEX Inc.

VeEX® develops innovative test and measurement solutions for next generation communication equipment and networks. Founded in April 2006 by test and measurement industry veterans, VeEX products blend advanced technology and vast technical expertise with the discerning measurement needs of customers.

Product Solutions

VeEX products diligently address all stages of network deployment, maintenance, field service turn-up, and service verification features across DSL, Fiber Optics, CATV/DOCSIS, Mobile, Next-Generation Transport Network, Fibre Channel, Synchronous and Carrier Ethernet technologies.

Broadband/IPTV

BX and MTTplus DSL Module products address the evolving xDSL turn-up requirements of incumbent operators and alternative service providers. Powerful test functions and flexible software options allow customers to tailor products to specific workgroups, skill sets, and operational applications. CPE emulation mode, specialized IPTV noise performance technology, and the transition from ATM to IP based networks are supported.

Cable TV

CX, AT, and Network Probe products are optimized for digital CaTV signal validation while retaining legacy analog carrier measurement capability. Selected models incorporate DOCSIS 3.0/3.1 Cable Modems to simulate and verify high bandwidth Triple Play services. Upstream QAM signal generation/analysis, TDR, Forward/Return path sweep, Forward/Return path monitoring systems, and MPEG analysis options streamline user test applications.

Carrier Ethernet

MX/TX products help service providers, equipment manufacturers and installers perform efficient QoS assessment and SLA validation of Carrier Ethernet networks. Test interface rates ranging from Fast Ethernet to 100 Gigabit Ethernet, coupled with V-SAM, RFC2544, RFC6349, and broadband speedtest applications address all aspects of converged IP networking.

Transport

TX products offer the widest range of legacy and next generation transmission test capabilities from Nx64 kbps to 100 Gbps condensed into the industry's smallest form factor. PDH/T-Carrier, SDH/SONET, OTN, Ethernet and Fiber Channel test functions can all be integrated via scalable hardware and software options ensuring a single "future proof" multi-service test platform.

Fiber Optics

VeEX® OTDR solutions are optimized for today's optical fiber networks. The FX series and fiber test accessories are perfectly suited for all the fiber plant challenges and complements the existing MSO, Carrier Ethernet, Transport, and Access testing solutions.

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, California, USA, capitalizing on the advanced technical and commercial resources that Silicon Valley has to offer. Regional sales offices are located in Philadelphia, Pennsylvania; Shenzhen, China; Beijing, China; Bangkok, Thailand; Kuala Lumpur, Malaysia; Guatemala city, Guatemala; and Seoul, Korea. R&D centers are strategically located in Fremont, California; Atlanta, Georgia; Tampa, FL; Plymouth, UK; Minsk, Belarus; Beijing, China; ChengDu, China; and Montreal, Canada, with regional service centers in Plymouth, UK; New Taipei City, Taiwan; and Fremont, California, USA.

Customer Base

Over 100,000 units have been shipped since volume production began. AT&T, Verizon, AlcaLu, Claro, Comcast, Cox, Deutsche Telekom, Colt, TATA, Entel, Ericsson, Global Crossing, Nokia Siemens Networks, Optus, Relacom, SingTel, SKBB, Telecom Malaysia, Telefonica, Telekom Austria, TeliaSonera, T-COM, Time Warner, True, UPC, Vodafone, China Mobile, Chung-Hwa Telecom, and many others comprise the growing and credible reference list.

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Telco Product Solutions

VeEX® offers a complete set of Test and Measurement solutions for Business Services, Access, Metro, Core, Transport and Utility networks. Versatile test platforms combine an unparalleled range of technologies to help optimize network performance and reliability. VeEX products address all stages of deployment and field service turn-up to deliver the highest quality services during installation, verification, maintenance, and troubleshooting of networks.

TX300s Series

Multi-Service Test Set with VeExpress™



The TX300s, with VeExpress asset management, is a full-featured, field-configurable portable test solution for Carrier Ethernet, Backhaul, Mobile, Transport and field Synchronization testing. This flexible and multi-tasking platform supports OTN, SDH, SONET, PDH, DSn networks, and offers extensive support for Mobile Backhaul technologies with SyncE, 1588v2 PTP, Carrier Ethernet and CPRI/OBSAI testing. VeExpress secure cloud-based environment manages the test sets, licenses and workflow. The all-inclusive hardware reduces CAPEX with no factory returns necessary for upgrades. Test features can be purchased, rented, leased and shared as needed. This allows proactive management of software and hardware assets, ultimately optimizing OPEX.

- Single or Dual test port configurations
- OTN: OTU1/2/1e/2e, ODU0, ODUflex
- OTU4, OTU3, 100GE, 40GE option
- 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 9.8304 Gbps
- OBSAI: 768 Mbps to 6.144 Gbps

- Ethernet: 10/100/1000BaseT, 100Base-FX/1000Base-X, 10 GE
- Fibre Channel: 1/2/4/8/10G
- SyncE & 1588v2 PTP: Master and Slave Clock emulation, protocol monitoring and decoding, wander analysis
- OTDR/LS/OPM option
- · Atomic Clock and GNSS receiver
- Remote Control and SCPI commands
- · High-capacity Li-Ion battery for uninterrupted testing

TX320s Dual Test Port **Hardware Option**



TX300s-100G **Hardware Option**



TX300s-OTDR Fiber Optics Hardware Option



RXT™

Modern Modular Test Platform with VeExpress™



RXT-3900 Dual Test Port Multi-Service Module



RXT-6000 100G Module





combine multiple technologies, from legacy Datacom to 100G, into a rugged modular platform increases the productivity of technicians who are responsible for the installation, verification, and maintenance of today's complex services. The intuitive user interface also boosts productivity by helping technicians and field engineers to make their job easier, accelerating the learning curve, and reducing training requirements.

With extreme modularity and an open platform concept, the RXT defines the test set of the future. The RXT's capability to

- Flexible Test Module design accommodates different module sizes allowing future growth of the RXT Platform into more complex technologies and high-end applications
- · Brings forward compatibility to existing MTT Test Modules to assure easy transition and protects previous investment
- Multi-technology: DSL, Fiber Optics, DSn/PDH, SONET/SDH, OTN, Ethernet, Fibre Channel, CPRI/OBSAI
- Supported Modules: 100G, Multi-Service (64k to 16G), Cable Expert (CATV/DOCSIS), SHDSL, OTDR, UDSL, SHDSL.bis, OSA
- Ethernet: 10/100/1000BaseT, 100Base-FX/1000Base-X, 10 GE
- Fibre Channel: 1/2/4/8/10G (Up to 16G with RXT-3900)
- CPRI: 614.4 Mbps to 9.8304 Gbps (Up to 10.137 Gbps with RXT-3900)
- OBSAI: 768 Mbps to 6.144 Gbps
- 100G & 40G Ethernet and OTN with RXT-6000
- OTN: OTU1/2/1e/2e, ODU0, ODUflex
- SONET/SDH/PDH/DSn up to 10G
- G.703 64k Codir & C37.94
- SyncE & 1588v2 PTP: Master and Slave Clock emulation, protocol monitoring and decoding, wander analysis
- Atomic Clock and GNSS receiver

The robust UX400 and UX400R Universal Expert are the most versatile portable multi-service transport test solution to offer test

capabilities ranging from DS1/E1 all the way up to 100GE network speeds, in a compact chassis with battery backup autonomy at all rates. Its modular architecture supports up to six independent test modules, multiple concurrent tests, and a browser-based multi-

user remote interface for accessing and operating different test modules at the same time, maximizing the use of resources. Test

modules can also operate in a centralized rack-mounted version, when portability or battery operation is not required.



UX400

Multi-Service Universal Test Platform up to 100G



AVAILABLE TECHNOLOGIES

- 40/100G Ethernet and OTN
- 40G OTN/SONET/SDH
- 10G Ethernet, OTN, SONET/SDH
- STM-0/1/4/16, OC-1/3/12/48, DSn/PDH
- Ethernet 10/100/1000Base-T, 100Base-FX/ 1000Base-X, ITU G.8261 SyncE, IEEE 1588v2 PTP
- 1/2/4/8/10/16G Fibre Channel

PLATFORM OPTIONS

- Built-in OPM and VFL
- · Built-in Atomic Clock
- · Built-in GPS receiver
- · Rack-mount version
- Remote Control and SCPI commands
- · High-capacity Li-Ion battery for uninterrupted testing



TX130M+ Advanced Services Test Set

The TX130M+ is a full-featured backhaul test solution supporting legacy DSn/ PDH, Metro Ethernet and Synchronized Packet networks. Whether your customers are adopting new carrier-class services or in the process of migrating their legacy networks from TDM to Packet-based backhaul, you will benefit from the wide range of DSn/ PDH and Ethernet interfaces and powerful test features available in the TX130M+ test set. The TX130+ test set offers a single, multifunctional access network installation and maintenance tool. Equipped with PDH/DSn, Datacom and Ethernet interface options, it performs traditional ITU-T/ANSI bring-to-service tests required by large service providers and mobile operators, Datacom tests for legacy interfaces, as well as Ethernet tests for newer IP-based networks. The TX150+ is a compact and ruggedized field test set for installing, commissioning and troubleshooting SONET, SDH, PDH and T-Carrier networks.





- Ethernet: 10/100/1000Base-T and 100Base-FX/1000Base-X
- DS1, DS3, E1, E3 testing
- ITU-T G.8261 SyncE/IEEE 1588v2 PTP
- Master Clock and Slave Clock emulation
- · Protocol monitoring/decoding
- Clock stability (wander) and accuracy (phase) testing

TX130+ PDH/DSn Test Set with Ethernet

- DS1, DS3, E1, E3 testing
- Datacom testing for RS-232, RS-449, X.21, V.35 (TX130E+)
- 64k Codir
- 10/100/1000Base-T Ethernet testing
- ISDN PRI including NFAS (2x PRI)

TX150+ SONET/SDH/PDH/DSn Test Set

- SONET: STS-1, OC-1/3/12/48
- SDH: STM-0/1/4/16
- PDH/DSn: E1, E2, E3, E4, DS1, DS3
- · Jitter and Wander
- . IP, VoIP, and ISDN testing

MX100e+/MX120e+

Advanced Metro Ethernet Test Set





The MX100e+ and MX120e+ are perfectly suited solutions for field technicians installing, commissioning, and maintaining Carrier and Metro Ethernet networks. With RFC2544 test suite and new ITU Y.1564 Ethernet Service Activation Methodology, the intuitive and automated tests ensure Carrier Ethernet SLA for services being transported across mobile backhaul and business Ethernet networks and validated using repeatable pass/fail limits.

- Single (MX100e+) or Dual (MX120e+) 10/100/1000Base-T, 100Base-FX/ 1000Base-X
- Throughput, latency, frame loss, and back-to-back measurements per industry-standard RFC2544 and V-SAM tests (per ITU-T Y.1564)
- · Ethernet BER testing at Layer 1-4, with or without VLAN and MPLS tags
- · Q-in-Q (VLAN stacking) and multiple MPLS tag
- MAC flooding and VLAN flooding
- IPv4/IPv6 traffic generation
- Advanced IP testing: Network discovery, HTTP/FTP test, VoIP,
- Multiple stream traffic generation and analysis for end-to end QoS verification of multiple services
- IEEE 802.3ah, ITU-T Y.1731, IEEE 802.1ag OAM support
- Smart Loop mode for Layer 1-4

MLX100

Ethernet Responder



The MLX100 Metro Loopback Expert is an intelligent Ethernet loopback device developed as a companion to VeEX Ethernet products. Loopback control can be performed in-band or via the built-in Ethernet management port via an Internet connection. When paired with the compatible MX/TX series, the MLX100 is a cost-effective solution for point-to-point Service Level Agreement (SLA) verification and end-to-end performance testing.

MTTplus

Compact Modular Test Platform and Modules





The MTTplus platform builds on the legacy of the legendary MTT, providing a compact, powerful and cost-effective modular test toolkit for today's wide range of evolving test needs. The compact MTTplus addresses the challenges of communication service providers to increase efficiency and productivity while lowering operational and capital expenditures associated with handling multiple technologies required to address today's Access, Business, Carrier Ethernet, Transport and Core services.

- · Modern, modular test platform with a growing range of available test modules covering legacy and modern Access (copper and fiber), FTTx, Metro, Carrier Ethernet and Transport technologies
- Multi-technology: xDSL, Fiber Optics, Teleprotection, Datacom, DSn/PDH, SONET/SDH, OTN, Ethernet, Fibre Channel, CPRI/OBSAI
- · Forward compatibility to popular MTT test modules, protecting the original investment and facilitating easy transition

MTTplus-200 Carrier Module

The MTTplus-200 Carrier Module provides backward compatibility with select MTT legacy modules.

MTTplus-260 SHDSL Module

The MTTplus-260 SHDSL Module provides CPE installation, CO emulation pre-qualification, and IP/ATM services testing capabilities for service installation and verification.

MTTplus-320 Multi-Service Test Module

The MTTplus-320 Multi-Service Module is a full-featured test solution for OTN, SONET, SDH, PDH, DSn, 64k Codirectional, C37.94, Carrier Ethernet, Fibre Channel, SyncE, PTP and CPRI/OBSAI.

MTTplus-410 Fiber Optics Test Module

The MTTplus-410 Fiber Optics Test Module for the VeEX® MTTplus adds a full range of Optical test features that support OTDR, OPM, Light Source and VFL.

MTTplus-520 AnyDSL Module

The MTTplus-520 AnyDSL Module addresses key test requirements for IP based services deployed over a 'universal' DSL Access network.

MTTplus-WiFi Air Expert Module

The MTTplus WiFi Air Expert Module is the most complete and compact tool for WiFi networks discovery, survey, optimization, performance testing and troubleshooting.

MSO Product Solutions

As the demand for voice, data, and multimedia applications over cable 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.

CX100+/CX150-D3+ Compact Installer Meter + DOCSIS 3.0 Cable Modem

The CX100+ (Cable Modem not included) is a compact installation meter designed for analog and digital cable TV networks supporting VoIP and Internet services. The handheld CX150-D3+ is a feature rich SLM with an embedded DOCSIS 3.0 Cable Modern supporting full 8x4 Channel Bonding. The DOCSIS 3.0 Cable Modem provides key Downstream and Upstream metrics as well as the VeTest feature for verifying network throughput.

- DOCSIS 3.0 8x4 Cable Modem with VeTest Throughput (CX150-D3+)
- · Comprehensive SLM features including Single Channel, Full System Scan, and Tilt
- · Return Path and Forward Path Ingress Scan with 50 dB dynamic range
- USG with CW and QAM 16/64/256 without FEC (CX150-D3+)
- Return Path Balancing (CX150-D3+)
- Return Path QAM BER/MER analysis
- HIP/Certification Auto Tests



CX310 Compact DOCSIS 3.1 Installer Meter

- DOCSIS 3.1 / 32x8 Cable Modem with VeTest Throughput
- Comprehensive SLM features including Single Channel, Full System Scan, and Tilt
- Return Path and Forward Path Ingress Scan

- HIP/Certification Auto Tests
- DOCSIS 3.1 OFDM Capable
- WiFi/Bluetooth
- · Ultra portable



CX350s-D3.1 Advanced All-in-One Installer/Business Services Meter



- Home Installation Process/ Certification Auto Tests
- · Advanced SLM with QAM analysis
- DOCSIS 3.1 32x8 Cable Modem with VeTest Throughput
- Return Path and Forward Path Ingress; Return Path QAM analysis
- USG + FEC; TDR; Remote View

- . Ethernet up to 10 GigE with SLA Validation tests including RFC2544 and Y.1564 SAM
- · Advanced T1 testing
- ISDN PRI with Call Loading
- VoIP SIP with Call Loading
- VoIP PESQ tests with far end VeEX Voice Quality Server

CX380s-D3.1

Expert Meter

- True Spectrum Analyzer with 60 dB dynamic range
- Comprehensive SLM
- DOCSIS 3.1 32x8 Cable Modem with VeTest Throughput
- Sweep (with Calan 3010H/H+)
- · Return Path QAM analysis
- USG+FEC
- Remote View

- MPEG Explorer
- · Histogram analysis
- · Headend Check auto test for all configured Analog and Digital channels
- Ethernet up to 10 GigE with SLA Validation tests including RFC2544 and Y.1564 SAM



Sweep for DOCSIS 3.1 with Calan 3010H+ and CX380s-D3.1

- Calan Sweep-based technology up to 1.8 GHz when used with the new CX380s-D3.1
- Supports CM2800, CM3800 and CX380s-D3.1 with Calan Sweep to 1 GHz
- · 1U Rack mount chassis
- Software control with VeSion via Ethernet connection
- Future-proof platform using advanced DSP technology





Compatible with VeSion

AT2500RQvPlus with RealWORX® Web

CATV/QAM/Video Spectrum Analyzer



The AT2500RQvPlus is the industry's most complete Spectrum Analyzer, combining superior QAM analysis and best-in-class analog measurement capability. Its advanced capabilities make it perfect for headend use, while its portability and ruggedness make it a powerful tool for experienced field technicians needing a high performance instrument.

- 1.5 GHz high sensitivity Spectrum Analyzer with built-in automatic filter for increased dynamic range
- Superior QAM demodulation capability and excellent BER performance, featuring MER capability to 43 dB
- QAM analysis includes constellation, statistics, group delay, frequency response, and impairment analysis for Annex A, B, C signals
- · One button Analog and Digital Proof-of-Performance tests
- Compatible with AT1601/AT1602 RF switches
- · Remote operation from web browser, reducing need for expensive truck rolls
- Complete set of CaTV measurements including CCN, CSO, CTB, ICR, DOM, Hum, carrier frequency





RealWORX Performance Verification System

- Comprehensive monitoring from 1 MHz to 1.5 GHz
- Ingress monitoring up to 200 MHz
- Supports up to 256 switch ports per analyzer
- · Automatic alarm notification
- · Modular/scalable architecture
- · Leverage CM series meters to view return spectrum

AT2500-3G CaTV/Satellite/Over-the-Air HDTV Multi-Standards Test Solution

The AT2500-3G is the industry's most complete 3 GHz advanced spectrum analyzer and multi-standards test solution. Designed for analog and digital CATV, Satellite, and Overthe-Air digital TV signal analysis and measurements, the AT2500-3G includes spectrum analysis, digital channel, DOCSIS, Sweep, MPEG analysis and Ethernet test capabilities.

- · 3 GHz high sensitivity professional grade spectrum analyzer with builtin automatic filters for increased dynamic range
- Annex A, B, C, OFDM, ISDB-T, DVB-S, DVB-S2, DVB-T, DVB-T2
- Superior QAM demodulation capability and excellent BER performance, featuring MER capability up to 45dB
- MPEG Explorer: OAM channel MPEG-TS analysis
- Upstream Generator up to 8 contiguous channels from 5 MHz to 1.2 GHz (CW, QPSK, QAM 16/64/128/256)
- Headend Check auto test for the entire selected Channel Table lineup
- Ethernet up to 10 GigE (BERT, Throughput, RFC2544 and Y.1564 SAM)
- FCC Proof test and report automation



AT3000 RF Switch

- New generation RF switch
- 16 x 2
- 5 MHz to 3 GHz



RXT Platform with C/DWDM OTDR and Full Band OSA







Leveraging the powerful RXT modular platform, the RXT-4111 OTDR test module tackles DWDM network test challenges head-on. The RXT-4111 features a range of Optical test functions including OTDR, OPM, Light Source and VFL. The RXT-4111's DWDM OTDR with full C-band tuning tests optical Mux/Demux to verify channel routing and end to end connectivity. Multi-service DWDM networks can be verified with a single test platform ensuring maximum test productivity.

The RXT-4112 test module features a range of Optical test functions including CWDM OTDR, OPM, Light Source and VFL. Via the OTDR port, test end-to-end continuity using a stabilized CWDM light source with live fiber detection. Multi-protocol networks utilizing CWDM technology can easily be verified with a single test platform ensuring maximum test productivity.

Fiber Product Solutions

VeEX offers a complete set of Test and Measurement solutions for Business Services, Access, Metro, Core, Transport and Fiber networks. VeEX's optical test solutions are optimized for today's FTTx, GPON, DWDM, CWDM and Metro networks and are well suited for the challenging outside plant environment. The fast growing optical product range complements existing VeEX Transmission and Ethernet testing solutions.

FX300 OTDR

Multi-Functional Test Platform



The VePAL FX300 is a full featured Optical test solution for technicians installing, testing, troubleshooting and restoring FTTx/ PON, Mobile Backhaul, and related converged network infrastructures.

- Filtered 1625 nm OTDR port for in-service measurements and live fiber detection with embedded power meter
- High dynamic range (up to 45 dB) for long haul fibers and testing through high-port-count PON splitters
- Telcordia GR-196/SR-4731.sor formats
- · Link characterization (multi-pulse widths) and full event table
- · Optional Built-in VFL, OPM and Light Sources
- Optional Fiber Inspection Scope
- · Multimode and Singlemode wavelength test options

TX300s with OTDR Option

The VePAL TX300s OTDR option combines the functionality of the FX300 and the power of the TX300s multi-service tester. With Advanced OTN, SDH/SONET, PDH/DSn, Ethernet, Fibre Channel, and Synchronous Packet Networks support, the unit offers a complete network test solution from physical layer up to higher layers of multiservice performance testing.



MTTplus-410 Fiber Optics Test Module

The MTTplus-410 Fiber Optics test module for the VeEX® MTTplus adds a full range of Optical test features that support OTDR, OPM, Light Source and VFL.



RXT-1200 Modular Platform

Exceptional modularity and an open platform concept, the RXT-1200 defines the test set of the future. The RXT's capability to support multiple technologies increases the productivity of technicians who are responsible for the installation, verification, and maintenance of today's complex services.

OTN, SDH/SONET, Ethernet, CPRI/OBSAI, Fibre Channel and Synchronous Packet Networks utilizing optical fibers can easily be verified with a single test platform ensuring maximum test productivity.



RXT with OTDR Module



The RXT-4100 Fiber Optics test module features a range of Optical test functions including OTDR, OPM, Light Source and VFL. Multi-protocol OTN, SDH/SONET, Ethernet, Fibre Channel and Synchronous Packet Networks utilizing optical fibers can easily be verified with a single test platform ensuring maximum test productivity. Offers the same functionality and features as the FX300 test set.

RXT with DWDM OTDR Module



Leveraging the powerful RXT modular platform, the RXT-4111 OTDR test module tackles DWDM network test challenges head-on. The RXT-4111 features a range of Optical test functions including OTDR, OPM, Light Source and VFL.

RXT with CWDM OTDR Module



The RXT-4112 test module features a range of Optical test functions including CWDM OTDR, OPM, Light Source and VFL. The RXT-4112 CWDM OTDR integrates the right combination of optical tools and test features so that a fiber link can be qualified in a single platform, eliminating additional truck rolls.

RXT and UX400 with OSA Module

Using superior micro-optic design and MEMS tuning technology, the RXT and UX400 OSA test modules measure key optical parameters such as wavelength, channel power, and OSNR.



- S, C and C+L band wavelength ranges
- Fast scanning full spectrum in < 5 s
- Simultaneous measurements up to 160 channels
- DWDM channel spacing down to 50 GHz
- · Channel and 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: > 35 dB

OPX-BOX+ OTDR Ultra-Compact Full-Featured OTDR

The OPX-BOX+ is an ultra-compact, OTDR designed to operate remotely using Fiberizer software. The unit can be controlled via USB, WiFi or Bluetooth by Windows, Linux or Android devices. Apple iOS devices supported via WiFi only.

- Up to 42 dB Dynamic Range and testing 1/4 m Dead
- Optional Light Source and Visual Fault Locator (VFL)
- Multimode and Singlemode wavelength test options
- Can be operated from Fiberizer Cloud and Fiberizer Desktop systems







Fiberizer Desktop and Cloud



Fiberizer Desktop is a standalone PC software application to analyze OTDR traces. Edit traces manually, create event tables, generate reports using built-in templates, and more.

Fiberizer Cloud is a centralized web-based fiber test data management system which forms part of the VeEX VeSion Eco-System. OTDR traces, Loss Test Results and Fiberscope images can be analyzed, archived and used for advanced reporting purposes. You can work from virtually anywhere, at any time because Fiberizer Cloud is a full online web service.

FX10 Pen Style Visual Fault Locator

- Output power: 1 mW / Distance: 5 km
- Wavelength: 650 nm ± 20 nm
- Connector: 2.5 mm universal



FX40 Series

- Singlemode and Multimode testing
- PON, Telecom, CATV and LAN/WAN applications
- 800 to 1700 nm wavelength range



- OPM, OLS, ORL, OLTS configurations
- Dual wavelength laser source and power meter



FX150 Mini OTDR

- · FTTx optimized parameters for best dead zones
- Filtered 1625 or 1650 nm OTDR port for in-service measurements
- · Live fiber detection with embedded power meter
- Dynamic range up to 39 dB



UPM100 Optical Power Meter with USB

- Transmit live dB loss readings via USB
- · Compact size; fits in your pocket
- Plug-and-play design no drivers or installation necessary



DI-1000 Digital Fiber Inspection Scope

The DI-1000 is a portable fiber optic inspection tool used to monitor the cleanliness of the connector's surface. With quick dial focus adjustment and IEC 61300-3-35 and user-defined pass/fail limits.



Digital Lightwave Network Test Solutions

Digital Lightwave provides the global communications and data networking industry with test and measurement products and services that enable the efficient development, deployment and management of high-performance optical networks. The MPA™ (Multi-Protocol Analyzer™) is an Intelligent Network Test Solution offering industry proven technology in a platform that provides continuity, maintains familiarity, and long term service and support. Flexible Test Modules and license options complete the portfolio.

Multi-Protocol Analyzer

One single platform for physical layer and multi-protocol testing requirements which will grow as needs change and expand, allowing modules to easily be added on-site and new capabilities to be downloaded. With all ports configured independently and operated simultaneously, the MPA significantly reduces the amount of testing equipment, required footprint and test time. SLAs can be remotely managed, eliminating truck rolls.

Who Needs an MPA?



Lab and Manufacturing

R&D and QA Labs: Manufacturing and Production; Automated Testing **Environments**

Service Providers

Embedded Network Monitoring Network Simulators; Load Testing

Enterprise

Data Centers; Cloud Computing Environments; Storage Area

AVAILABLE TECHNOLOGIES

OTN

- 40/100G OTU3/3e1/3e2, OTU4
- 2.6G/10G OTU1, OTU2/2e/1e/2f/1f with G.709 FEC
- Multiplexing with simultaneous generation and analysis at all levels, ODU0 & ODUflex
- Multichannel generation and analysis for ODU1/ODU2
- 1/10/40/100G Ethernet, GFP, Fibre Channel, SONET/ SDH, PRBS, and Null Client mappings

Ethernet/IP

- 40/100G with PCS layer testing
- 100GE IEEE 802.3bj RS-FEC with FEC stress test; 25/50GE ready
- 10G LAN/WAN, 1G, 100M, 10/100/1000Base-T
- 2500Base-X 2.5G Optical Ethernet
- 32 IPv4/IPv6 independent test streams with VLAN & MPLS up to 4 levels
- Y.1564, RFC-2544 Throughput/Latency/Frame Loss/Back-to-Back
- Compliant with ID-337 G.fast Certification Test Plan

SONET/SDH

- SONET/SDH up to OC-768/STM-256; All Path Testing Option
- HP/LP, PRBS, GFP, and Ethernet Clients
- 2.6G 155M OTN/SONET/SDH

· All OTN, SONET/SDH, 100M/1G/10G LAN/WAN, Fibre Channel, and CPRI

Fibre Channel

• 1/2/4/8/10G with Switch Fabric and Name Server login

Service Disruption & Round Trip Delay measurements

OTDR

• 1310/1550/1625 OTDR testing with in-service testing options

OSA/PMD/BBLS

- · Optical Spectrum Analyzer
- · PMD with integrated broadband light source
- Optical MEMs based switching and splitting modules

PLATFORM OPTIONS

- · Embedded network testing in a compact form factor system (1U x 19 in chassis)
- Low 400W max power dissipation, AC or -48VDC
- · Flexible, field upgradeable, rack-mounted platform with up to 5x Test Modules
- All ports can be configured independently and operated simultaneously
- Internal Stratum 3, BITS/SETS & 1.544/2.048 MHz clock in/out

Modular Platform

MPM-100G Module

- Native CFP4 & QSFP28 40/100G Multi-Protocol Module
- Optical Module Health Check & MDIO/I2C Access
- 100GE RS-FEC, 25/50GE ready

MPM-10G Module

- Dual Port SFP/SFP+ Multi-Rate & Multi-Protocol Module up to 11.3G
- 2500Base-X 2.5G Optical Ethernet
- · Each port can be configured independently & operated simultaneously

OSA/PMD/BBLS Module

- Optical Spectrum Analyzer
- PMD measurement and analysis
- Built-in broadband light source

OTDR Module

- 1310/1550/1625 nm with available in-service testing
- Custom application options available

WDM Filtering Module

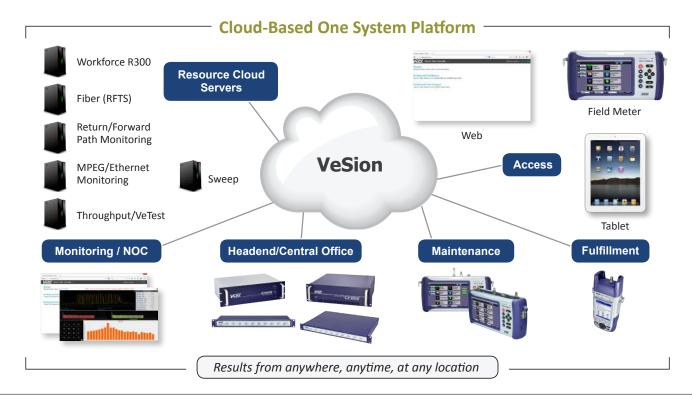
- Dual port 1550/1625 nm filter for in-service OTDR
- Custom application options available

Optical Switching and Splitting Modules

- MEMS based dual window operation (1290-1310 nm & 1530 1570 nm) optical switching and splitting modules
- 1x7 switch; 1x2 switch plus integrated 90/10 optical splitter for monitoring point
- 1x3 switch, 1x2 switch, plus integrated 90/10 optical splitter for monitoring point
- Custom application options available

VeSion

VeSion Cloud-Based One System Platform represents the next step in innovation for Network Monitoring. VeSion integrates RF monitoring systems (Return and Forward), advanced DOCSIS Monitoring, DOCSIS Burst Demodulation, Sweep, Ethernet, MPEG, PNM and Workflow and Asset management system, all under one umbrella. VeSion's one system concept reduces network troubleshooting and problem resolution time significantly. The VeSion system is accessible anytime, anywhere, using a common web browser or mobile apps.



VeExpress™ Asset Management and Optimization Service



VeExpress is a powerful and secure web-based asset management system for VeEX's new all-inclusive test sets, allowing them to be customized on demand, anywhere, any time. Share test options, purchased or leased, among multiple devices or purchase a base unit and rent the interfaces or options as required. VeExpress keeps track of software versions and delivers updates to test sets, so everyone is on the same page. Minimize CAPEX and optimize OPEX by managing your VeEX testers with VeExpress.

VeSion Probes

CX180R-240 MHz Return Path Monitoring System

The CX180R's compact 1U rackmount chassis supports simultaneous and continuous ingress scanning of all 10 ports at a fast sweep rate of 200 ms and return path spectrum monitoring rate up to 240 MHz.

CX180F Forward Path Monitoring System

The CX180F rackmount monitoring system checks the performance of analog and digital channels being transmitted downstream or toward customers across a CATV HFC network. Equipped with ten test ports and multiple test engines. The key signal parameters including level, BER, MER, and Constellation are scanned continuously and non-intrusively.

CX380X Preventative Network Monitoring

The CX380X Advanced Test Probe for Forward and Return Path monitoring, features advanced Spectrum Analysis, QAM Health, MPEG Monitoring (Priority 1, 2 and 3 per 101 290 standards) and Burst QAM Demodulator capabilities.

VeSion R300 Server

The VeEX R300 workflow system is a comprehensive application suite for managing and optimizing workflow for centralized engineers, managers and field technicians.

- A complete, centralized workflow, asset and user management system
- · VeEX field meters work in conjunction with R300 server
- Flexible distributed architecture for easy expansion
- Secured IP connection for access from any location with Internet connection via remote terminals or VeEX portable test sets
- · Reduce OpEx by ensuring the job is done right the first time
- Deliver quality by improving subscriber experience to increase ARPU & retention
- Lower CapEx by integrating multiple test solutions that improve workforce productivity; upgradeable solutions protect investments and address future needs

VeSion RFTS with OPX-RTU and OX4xxx

- OPX-RTU Active Test head combining OTDR, optional OPM and VFL (Various wavelengths and Dynamic Range available)
- ONX-4xxx Optical Switching Matrix (1x8, 1x16, 1x32, 1x64 or 1x128)
- Integrated in VeSion Eco-system
- Provides real-time Fiber Network Health with alarms and analysis

