

MSO SOLUTIONS

CATV

BUSINESS SERVICES

CATV 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. These new applications make it necessary to fully characterize every aspect of the cable network, from headend to the home. VeEX® offers a comprehensive cable product portfolio to enable network operators to quickly deliver next-generation services and ensure network quality and reliability.

CX150-D3+

Compact Installer Meter + DOCSIS 3.0 Cable Modem

The compact, handheld CX150-D3+ is comprised of a feature rich SLM with an embedded DOCSIS 3.0 Cable Modem supporting full 8x4 or 24x8 Channel Bonding. The DOCSIS 3.0 Cable Modem provides key Downstream and Upstream metrics as well as the VeTest feature for verifying network throughput. Essential SLM features include Single Channel, System Scan, Tilt, and Ingress Scan. The Home Installation Process (HIP) feature combines these key SLM and Cable Modem test features in an Auto Test routine, enabling Home Certification conformance testing.



- DOCSIS 3.0 8x4 or 24x8 Cable Modem with VeTest Throughput
- Comprehensive SLM features including Single Channel, Full System Scan, and Tilt
- Return Path and Forward Path Ingress Scan with 50 dB dynamic range
- Ethernet VeTest Throughput
- Home Installation Process/Certification Auto Tests

INSTALLATION

FULFILLMENT

Other CX1xx Configurations

CX100+ Low Cost Basic Installer Meter with SLM functions

CX110+ Adds DOCSIS Upgrading function to CX100+

CX120+ Adds USG+FEC transmit capability to CX100+



CX350s Advanced All-In-One Installer Meter



INSTALLATION

FULFILLMENT

BUS. SERVICES

The 'All-in-One' CX350s makes it the ideal tool for Installers. Equipped with a large 7" touch-screen color LCD and an intuitive graphical user interface, the CX350s is built on a solid core of comprehensive SLM features and a DOCSIS 3.0 8x4 or 24x8 Cable Modem. The CX350s also supports a variety of essential tools needed for verifying the latest MSO services. Key capabilities include:

- Home Installation Process/ Certification Auto Tests
- Advanced SLM with QAM analysis
- DOCSIS 3.0 8x4 or 24x8 Cable Modem with VeTest Throughput
- Return Path and Forward Path Ingress
- Return Path QAM analysis
- USG + FEC
- TDR
- Remote View
- Ethernet up to GigE with SLA Validation tests including RFC2544, Y.1564 SAM, and VeTest Throughput
- Advanced T1 testing
- ISDN PRI with Call Loading
- VoIP SIP with Call Loading
- VoIP PESQ (Perceptual Evaluation of Speech Quality) tests with far end VeEX Voice Quality Server

CX380s-D3 Expert Meter

MAINTENANCE OSP

The CX380s-D3 is a Super-Tech maintenance tool for next-generation CATV networks. Equipped with a large 7" touch-screen color LCD and intuitive graphical user interface, the CX380s-D3 can be used under all light conditions. The highly flexible unit combines a 1 GHz spectrum analyzer with 60 dB dynamic range, a forward and return path digital QAM analyzer, and an MPEG analyzer in a single portable instrument. An array of advanced digital measurements are available, including MER, Pre/Post BER, EVM, HUM, Phase Jitter, Frequency Response, Equalizer taps, In-channel flatness, frequency and symbol rate errors, addressing all testing aspects of standard and high definition CATV signals. An intuitive statistic mode records up to 60 minutes of signal history displaying Level, MER, Pre/Post error rate, and errored seconds and other anomalies in minute or second resolution and intervals.

- True Spectrum Analyzer with 60 dB dynamic range
- Comprehensive SLM
- DOCSIS 3.0 8x4 or 24x8 Cable Modem with VeTest Throughput
- Advanced QAM analysis
- Return Path Sweep
- USG+FEC
- Remote View
- Return Path QAM analysis
- MPEG Explorer
- FCC Proof of Performance, including Digital POP
- QAM Wiz DOCSIS Burst Demodulator
- Headend Check auto test for all configured Analog and Digital channels
- Ethernet up to GigE with SLA Validation tests including RFC2544, Y.1564 SAM, and VeTest Throughput



RXT

OSP CORE TRANSPORT METRO

Modular Platform and Modules

The RXT modular test platform defines the test set of the future, offering a full range of link and service testing capabilities covering all wired communication technologies, including OTN, SDH/SONET, PDH/DsN, Carrier Ethernet, SyncE, 1588v2 PTP, CPRI/OBSAI (DAS), Fibre Channel, OTDR, OSA, xDSL, Outside Plant, QAM/DOCSIS, Fiber Optics, Teleprotection (IEEE C37.94), down to legacy Datacom and VF TMS testing.

Supported Modules

- **RXT-3000 Combo Module** Full-featured field-configurable test solution for carrier class services.
- **RXT-4100 OTDR Module** Complete physical layer fiber testing, with OTDR, VFL, OPM and LS support.
- **RXT-4500 OSA Module** Optical Spectrum/Channel Analyzer for CWDM and DWDM networks.
- **RXT-6000 Ethernet Module** Complete test capabilities from 10M to 100G in a single portable rugged form factor.
- **RXT-8000 Cable Expert Module** Super-Tech maintenance tool for CATV, addressing RF, DOCSIS, MPEG and Ethernet applications.

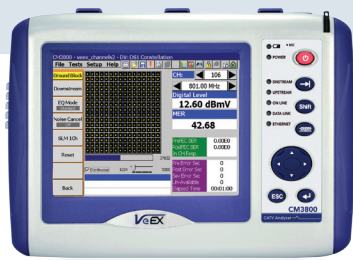


Now with DWDM



CM3000/CM3800

Sweep, Spectrum and DOCSIS 3.0 Cable Modem Analyzer



MAINTENANCE

OSP

The CM3000 and CM3800 analyze Upstream and Downstream network performance for business and bundled services. Both instruments validate the effectiveness of DOCSIS 3.0 services, by testing up to eight downstream bonded channels and four upstream channels. The CM3000 is field upgradeable to a CM3800 via simple firmware upgrades.

- Delivers next-generation service, maintenance, and installation tools to cable TV technicians
- Ensures reliable, distortion-free service by ensuring proper frequency response and levels throughout the network
- Advanced field spectrum analyzer spans entire 1000 MHz spectrum in one screen, providing a full picture of the network
- Supports ping, traceroute, and throughput testing via an integrated cable modem, WiFi, or Ethernet connection

CM3800 also supports:

- High-resolution, true non-interfering 5 to 1100 MHz downstream sweep and spectrum analysis
- Fast high-resolution 5 to 200 MHz upstream sweep functionality with ingress detection
- Compatible with existing CaLan sweep systems in the field

AT2500RQvPlus

CATV/QAM/Video Spectrum Analyzer



HEADEND

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 (POP) tests
- Fully compatible with AT1601/AT1602 RF switches
- Remote operation from any standard web browser, reducing the need for expensive truck rolls
- Complete set of CATV measurements including CCN, CSO, CTB, ICR, DOM, Hum, and carrier frequency

VeSion

Cloud-Based One System Platform

HEADEND

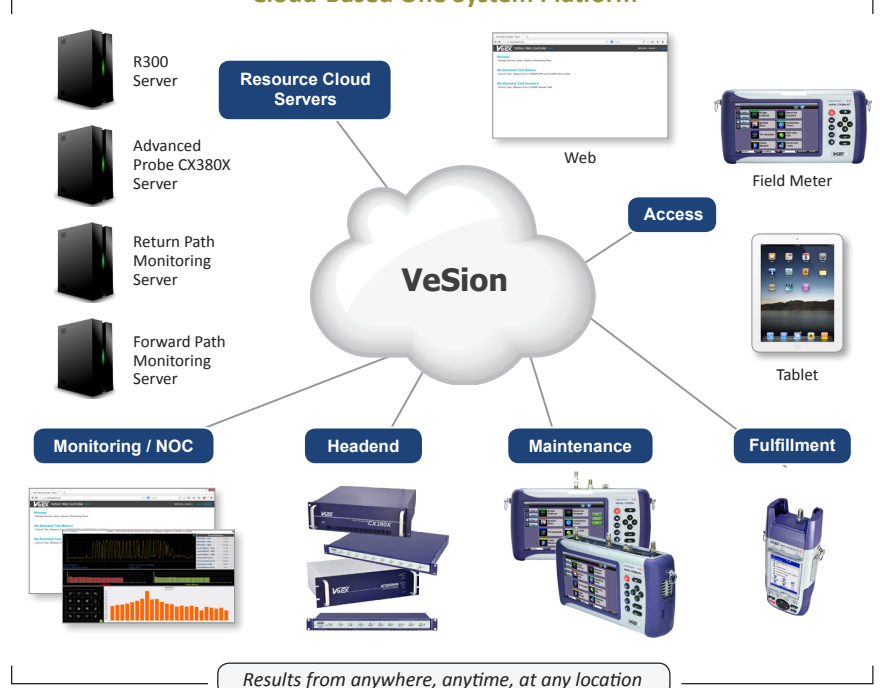


VeSion is a Cloud-Based, One System Platform, representing the next step in innovation for Network Monitoring. VeSion integrates RF monitoring systems (Return and Forward), advanced DOCSIS Monitoring, DOCSIS Burst Demodulation, Sweep, Ethernet, MPEG, and Workflow and Asset management system, all under 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. A user can review uploaded test results, system alarms, live traces, and perform on demand tests as required. VeSion offers the following key capabilities, all under one umbrella:

- 24x7 Return and Forward Path Monitoring
- Advanced Upstream Burst Demodulation and QAM analysis
- FCC Proof of Performance and MPEG analysis
- Business Class Ethernet Service Level Agreement (SLA) validation
- Workforce and Asset Management, dispatch and data enrichment
- Flexible distributed architecture for easy expansion, increased reliability, and reduced system down time

Cloud-Based One System Platform



Business Services Solutions

VeEX offers a wide range of Access, Metro, Core and Transport tools to help optimize network performance and reliability, to deliver the highest quality services, and to gain and retain subscribers. Ensure SLA and end-to-end quality of service (QoS) compliance during the installation, verification and maintenance of business-oriented services.



CX350s Advanced All-In-One Installer Meter

Refer to CATV Solutions.



INSTALLATION

FULFILLMENT

MAINTENANCE

BUS. SERVICES

TX130M+ Advanced Services Test Set

ACCESS METRO

The TX130M+ is a full-featured backhaul test solution supporting legacy DSn/PDH, Metro Ethernet and Synchronized Packet networks. The unit is capable of stressing carrier-class Ethernet services as well as emulating Master and Slave clocks according to ITU-T G.8261 SyncE and IEEE 1588v2 standards.

- Ethernet up to GigE with SLA Validation tests including RFC2544 and Y.1564 SAM
- Synchronized packet network testing: ITU-T G.8261 SyncE/IEEE 1588v2 PTP
- Clock stability (wander) and accuracy (phase) testing
- DS1, DS3, E1, E3 testing
- ISDN PRI and VoIP with Call Loading
- VoIP PESQ (Perceptual Evaluation of Speech Quality) tests with far end VeEX Voice Quality Server
- WiFi testing: 802.11a/b/g/n (2.4 and 5 GHz)



TX300s Multi-Service Test Set with VeExpress™



CORE TRANSPORT METRO

The TX300s, with VeExpress asset management, is a full-featured, field-configurable portable test solution for Carrier Ethernet, Backhaul, Mobile and Transport testing.

- Single or Dual test port configurations
- OTN: OTU1/2/1e/2e, ODU0, ODUflex
- SONET/SDH up to OC-192/STM-64
- DSn/PDH: DS1, DS3, E1, E3, E4
- CPRI/OBSAI testing up to 9.8304 Gbps
- Ethernet 10/100/1000Base-T, 100Base-FX/1000Base-X, 10 GE with RFC2544 and Y.1564 SAM
- Fibre Channel: 1/2/4/8/10G
- SyncE/1588v2 PTP emulation, wander analysis
- ISDN PRI and VoIP SIP with Call Loading
- IPTV testing
- WiFi testing: 802.11a/b/g/n/ac (2.4 and 5 GHz)



RXT-6000 and RXT-3000 Multi-Service Carrier Solutions

CORE TRANSPORT METRO

Flexible test solution with a wide range of available test modules that address all technologies, from legacy RS232 to 100G in a single platform, covering Access/OSP, Metro, Core and Transport.



RXT-6000 100G Multi-Service

Complete test capabilities from 10M to 100G in a single portable rugged form factor

- CFP2 Interface for 100GE and OTU4
- QSFP+ for 40GE and OTU3
- SFP+ for 10GBase-X, 1000Base-X, 100Base-FX, OTU2/2e/1e/1, STM-64/16/4/1/0, OC-192/48/12/3/1, 1/2/4/8/10G Fibre Channel, CPRI/OBSAI
- RJ45 for 10/100/1000Base-T
- Service Disruption Time
- One-Way-Delay
- Fast boot-up time
- GPS and Atomic Clock

RXT-3000 10G Combo

Full-featured field-configurable test solution for carrier class services

- XFP for 10GBase-X, OTU2/2e/1e, STM-64, OC-192, 8/10G Fibre Channel, CPRI
- SFP for 1000Base-X, 100Base-FX, OTU1, STM-16/4/1/0, OC-48/12/3/1, 1/2/4G Fibre Channel, CPRI/OBSAI
- RJ45 for 10/100/1000Base-T
- RJ48 and BNC for SDH, SONET, PDH and DSn
- Multi-format external clock reference input
- SyncE and 1588v2
- Jitter and Wander analysis
- IPTV, VoIP, ISDN and VF

UX400 Multi-Service Universal Test Platform up to 100G

CORE
TRANSPORT



The robust UX400 Universal Expert is the most versatile portable multi-service transport test solution to offer test capabilities ranging from DS1/E1 all the way up to the latest 100GE network speeds, in a compact chassis with battery backup. Its modular architecture supports up to six independent test modules, in a multi-user environment.

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 reference
- Built-in GPS receiver
- Rack-mount version
- CLI/SCPI scripting and remote control
- High-capacity Li-Ion battery for uninterrupted testing

DI-1000 Digital Fiber Inspection Microscope

Digital Fiber Inspection scope compatible with VeEX products. Offers automatic focus detection and analysis. Supports all common connector tips.

