RXT-1200
Modular Test Platform

The new and completely redesigned RXT-1200™ addresses the challenges of communication service providers to increase efficiency and productivity. The flexible test platform lowers operational and capital expenditures associated with handling multiple technologies required to address today's Access, Business, Metro, Transport and Core services.

With flexible modularity, the new RXT-1200 defines the test set of the future. The RXT-1200's capability to combine multiple technologies into a rugged modular platform increases the productivity of technicians who are responsible for the installation, verification, and maintenance of today's complex services from legacy to state-of-the-art technologies. RXT-1200's intuitive user interface boosts productivity by helping technicians and field engineers make their job easier, accelerating the learning curve, and reducing training requirements.

RXT-1200 represents the next-generation in integrated toolkits for field technicians, combining advanced multi-service testing capabilities, built in a single high-performance compact format.

Testing is one important part of the daily tasks and the RXT-1200 leads your workforce to go beyond testing and into getting the job completed quickly and accurately on the first dispatch.

Platform Highlights

- Modern test platform, with a broad range of available test modules covering Access (copper and fiber), Metro, Transport and Core technologies, including DWDM
- Application-oriented GUI
- GUI familiarity across different test modules and other VeEX products reduces the learning curve
- View test results and create detailed reports by region, area, system, and technician
- Enables all jobs to be completed correctly the first time
- Multi-technology: Datacom, DSL, Fiber Optics, WDM, DSn/PDH, SONET/SDH, OTN, Ethernet, Fibre Channel, CPRI/OBSAI; from 300 bps to 100 Gbps
- Expand test functions with a growing list of test modules
- Future-proof cost-effective platform
- The optional RXT-2000A carrier module brings forward compatibility to Sunrise Telecom's popular MTT test modules, protecting your original investment and facilitating easy transition
- Test set connectivity via Ethernet Management interface, WiFi, Bluetooth®, or Data Card for back office applications and workflow optimization
- User defined test profiles and thresholds
- Fast and efficient test result transfer to USB memory stick
- Ultra-high capacity field-exchangeable Li-ion battery pack extends testing time

Advanced Modularity

RXT field-replaceable modules allow flexibility to fit any application, for example, legacy, Access, Carrier Ethernet, SAN, DAS, WDM, 100GE, OTU4, Fiber, CATV and much more. Common graphical user interface (GUI), among different applications, reduces the learning curve.

QuickSwap™ Modularity

- Flexible Test Module design eliminates physical limitations and accommodates different module sizes allowing future growth of the RXT-1200 platform into more complex technologies and high-end applications
- Reduces time to switch technologies, identify and correct problems, eliminates repeat service visits, eliminates the need to carry multiple test sets
- No tools required
- Compatibility with Existing MTT Test Modules

Durable and Field Upgradeable Platform

- One compact, lightweight, and rugged forward-looking design
- Modular software adds even more flexibility
- VeExpress™ ready (test module dependent)

Test Modules & Technologies

Multi-service Test Modules

The all-in-one RXT-3000, RXT-3200 and RXT-3900 offer a comprehensive combination of legacy and state-of-the-art transmission and protocol technologies. From 64 kbps to 11G bps or 16 Gbps, these modules cover all day-to-day testing requirements, including Carrier Ethernet, SyncE, PTP, Fibre Channel, OTN, SDH/SONET, PDH/DSn, CPRI/OBSAI, Synchronization, among others. Transport, Core, Metro, SAN, Access, Backhaul and Fronthaul (DAS) applications.

100G/40G Multi-service Test Module

The RXT-6000 is a perfect complement to the RXT Platform, extending its testing range to 100 Gbps. It offers state-of-the-art testing capabilities from 10 Mbps to 100 Gbps, including Carrier Ethernet, SyncE, Fibre Channel, OTN, SDH/SONET, among others. Fast troubleshooting and comprehensive analysis of transmission problems can be performed using its common graphical user interface. Novice users benefit from the easy-to-use GUI, while experienced users will appreciate an array of advanced features such as OTL/PCS, CAUI-4/XLAUI Lane BERT, Service Disruption, overhead monitor/control, Tandem Connection Monitoring, Protocol Capture/Decode, BERT, Throughput test, and much more.

Fiber Optics Modules

The RXT-4100 Fiber Optics test module family features a variety of full-featured physical layer test tools with a range of Optical test functions. They include the first Tunable CWDM and DWDM OTDRs for testing optical Mux/Demux, verify channel routing and end to end connectivity, as well as traditional OTDR, OPM, Light Source and VFL.

C/DWDM OSA Modules

The RXT-4500 family of OSA Module offer Optical Spectrum and Channel Analyzer functions for CWDM and DWDM networks. Using superior micro-optic design and MEMS tuning technology, the RXT-4500 modules measure key optical parameters such as wavelength, channel power, OSNR and offer the added ruggedness required in field testing.

Cable Expert Module

Designed for the MSO Super-Tech, the RXT-8000 Module provides a complete set of test features addressing RF, QAM, DOCSIS, MPEG, and Ethernet applications.

Compatibility with Existing MTT Test Modules

Adds backward compatibility with a select number of Sunrise Telecom's popular MTT test modules. It assures easy transition and protects previous investment in legacy technologies that are still relevant and are no longer supported by modern test sets. (requires RXT-2000A Carrier Module)

VeExpress™

Minimize CAPEX and optimize OPEX by managing your RXT-1200 fleet with VeExpress. The RXT-1200 provides an all-inclusive test platform* at lower cost while VeExpress manages the test sets, test functions licenses and workflow.

Stop purchasing test sets loaded with extra features or modules, just in case, or placing multiple orders with varying configurations for different user groups. Reduce your CAPEX by buying what you really need and proactively manage your software and hardware assets.

Own, Rent or Lease-to-own only the required test features, in the right quantities, to optimize your OPEX
- Buy commonly used test functions required to get the day-to-day job done
- Lease newly adopted technologies without the risk of paying for it up-front
- Rent test features used on a contingency-basis for special cases or projects. Rent ticker only starts when the feature is first assigned and used
- Share the software license pool among different users, including owned, leased and rented features.

VeExpress secure cloud-based environment provides the redundancy and speed of geographically-distributed servers around the world as well as scalability and up time. Test sets and web clients automatically connect to the closest/fastest server available
- Improve first-dispatch success by making sure test sets are up-to-date, have all required test options, and the right test profiles to get each job done right the first time
- Missing a test function? Supervisors can assign test features on the go, making them immediately available in the test set, using VeExpress. Less time wasted due to unexpected cases. Peer-to-peer mode also available for users to share directly.

Asset Management
- Buy, Rent or Lease new test functions
- Share test features assignment with floating licenses
- Test features are no longer tied to specific test sets, so software assets can be reallocated as needed
- Track test sets and usage
- Manage software versions to keep all test sets aligned to the latest approved software version. With time saving "Delta Push" software upgrade mechanism, no need for a full software upgrade each time
- Simple to use VeExpress user interface integrated into the RXT-1200 to avoid getting in the way of users' daily tasks
- Intuitive web-based VeExpress client interface for users and managers
- Customized reporting

R300 Server Option
Centralized workflow optimization repository
- Upload, download and share test profiles and test results
- Advanced Save function appends work order (trouble ticket) information to test reports

Excludes optional factory-installed hardware options such as GPS, Atomic Clock or pluggable optics.

Network Troubleshooting Tools

Wi-Fi Spectrum Analyzer

The RXT-1200 offers an optional powerful portable spectrum analyzer on a USB dongle that displays all RF activity in the Wi-Fi bands. With dual 2.4 GHz and 5 GHz bands support, the analyzer covers all 802.11a/b/g/n/ac networks and is the ideal tool for enterprise environments with a mix of wireless technologies.
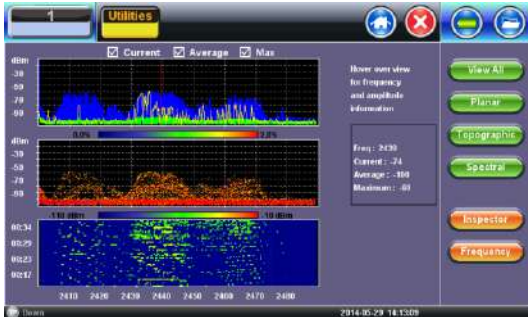
With multiple graphical format displays it helps to visualize and locate RF signals in the spectrums as well as locate and eliminate interference sources (cordless phones, microwave ovens, Bluetooth devices, etc.), discover and remedy competing access points.

- Frequency Range: 2.400 to 2.495 GHz and 5.150 to 5.850 GHz
- Amplitude Range: -100 to -6.5 dBm
- Antenna: RP-SMA
- Planar, topographic, spectral view

* Requires optional Wi-Fi Spectrum Analyzer USB dongle.

Wi-Fi inSSIDer

The Wi-Fi InSSIDer provides the best tools for Wi-Fi networks discovery and performance troubleshooting. With compatible USB Wi-Fi adapter for 802.11 a/b/g/n/ac wireless in 2.4 GHz and 5 GHz bands the inSSIDer provides a clear picture of the environment. It helps identify poor channel placement, low signal strength and interferences in easy to understand graphs and tables.

- Requires compatible USB Wi-Fi adapter for a/b/g/n/ac networks in 2.4 GHz and 5 GHz bands
- Network scan results in Graphical or table format
- Lists: Network names, BSSID, encryption type, channel allocation, signal strength, co-channels, and overlapping channels
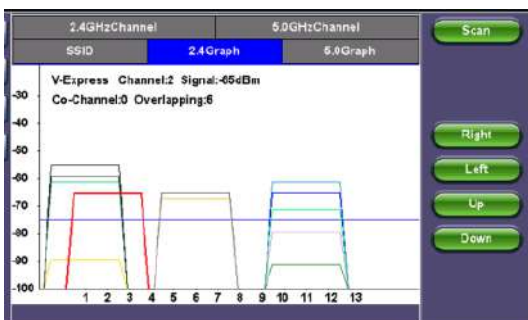
Wi-Fi Wiz

The Wi-Fi Wiz function with USB Wi-Fi adapter for 802.11 a/b/g/n/ac wireless in 2.4 GHz and 5 GHz bands makes troubleshooting Wi-Fi connectivity issues a simple task.

Scan for available networks and view all access points detailed information along with SSID, signal strength and channel allocation. Connect to Access Points with WEP/WPA or WPA2 encryption and verify IP capabilities to ensure the wireless network is properly installed and configured. A full suite of IP testing features is supported (ping, trace, web browser, etc.).

- Requires compatible USB Wi-Fi adapter for a/b/g/n/ac networks in 2.4 GHz and 5 GHz bands
- Access Points scan with signal level and link quality measurement
- WEP/WPA1/WPA2 encryption
- IP Connectivity test (Ping, trace route, ARPWiz, Web browser)
- Provides Wi-Fi LAN access to the test set (e.g. VeExpress, R-Server, Remote Control, ReVeal)

Net Wiz

Network Discovery Tool
- Discovery: TX Frames, RX Frames, RX Errors, Advertised Speed, Advertised Duplex, Devices found, Networks found
- Devices: Total number, Routers, Servers, Hosts
- Device Details: Attribute, IP address, MAC address, Group Name, Machine Name, Ping OK
- Networks: IP Subnets, Hosts, Domains, Hosts Names

IP Tools

Provides basic Ethernet and Internet connectivity to the test set as well as connectivity troubleshooting tools to Ethernet Management port (10/100BaseT)
- IP: IPv4 (Static, DHCP)
- Ping, Trace Route check
- HTTP Web browsing internet connectivity check

Fiber Optic Tools

Digital Fiber Inspection Scope

Dirty connectors can damage or degrade the performance of expensive optical modules, or produce inaccurate results. Inspecting and cleaning patch cords and pluggable optics connectors before mating them is always recommended.

This option allows digital video microscope probes* to be connected directly to the RXT-1200 through a USB 2.0 port. Featuring live video feed on the RXT-1200 screen for visual analysis. It offers image capture, compare (before and after), IEC 61300-3-3 Sect 5.4 Pass/Fail templates for SMF and MMF, save, export and generate report to USB flash drives.

Visual Inspection
- Visual file selector
- Image comparison for before-after reports

Auto-Focus Detection and Analysis option

Test set automatically detects when image is in-focus, captures the image and analyzes it. This process is faster than complex mechanically-driven auto-focus systems as it uses human fast reaction and finesse.
- Analysis per IEC 61300-3-3
- SMF and MMF templates (Core, Cladding, Adhesive and Contact areas)
- Dots or square to highlight contamination, debris and scratches
- Report Generation

USB Fiber Scope sold separately. Check its datasheet for details.

Optical Power Meter GUI**

Supports USB OPM dongles
The optional OPM helps checking for proper output power from optical ports before safely making an optical connection or running a test
- Numerical and bar graph readings
- Hold function
- Display Units: dBm, mW and µW
- User definable Maximum and Minimum power limits, with color-coded Pass/Fail indication
- Optical Loss Meter function with zero reference calibration
- Loss limit settable in dB, dB/km and dB/mi

*** OPM dongle sold separately. For available Wavelength Range, Calibrated Wavelengths, Power Range, Accuracy and Connectors, refer to the USB dongle specs.*

Precision Timing References

The test platform offers highly accurate and stable clock reference options to provide precise timing to all its test modules. The physical clock can be used as a reference for frequency, phase and wander measurements and the UTC time of day (ToD) can be used for time sensitive tests like one-way-delay measurements.

Disciplining and holdover: Combining the long-term accuracy of the GNSS option, the stability of the Atomic clock option and its battery operation, the test platform can offer precision clock reference even in places where GNSS is not available or can't be trusted (e.g. in-building or urban canyon applications). The test set precision oscillator can also be disciplined by an external 1PPS (Cs or Rb) 1PPS signal.

GPS Receiver Option (Z88-00-008P)

This optional high-sensitivity GPS module (built-in) provides UTC timing synchronization to the test platform, in the form of internal 1PPS clock source and ToD. This module is recommended for basic delay measurements and location tagging applications (not recommended for disciplining).

GNSS: GPS only
Frequency: 1575.42 MHz L1C/A
Channels: 20
Sensitivity
- Cold start: -144 dBm
- Tracking: -159 dBm
Clock Output: 1PPS (internal)
Accuracy
- Time: 50 ns RMS (clear sky)
- Position: 5m
Acquisition Time (first fix)
- Cold start: 35s
- Hot start: 1s
Antenna Power: 3.3 Vdc, 30 mA
Connector: SMA, 50 Ohms
Temperature range: 0 to 45°C

GNSS Timing Receiver Option (Z88-00-009P)

This high-sensitivity timing GNSS module (built-in) provides precise UTC timing synchronization to the test platform, in the form of internal 1PPS clock source and ToD. It offers optimized accuracy with site survey and timing mode. Its timing mode provides a fixed-position mode to improve timing stability for stationary applications. This is the recommended module for atomic clock disciplining (GPS-DO), wander, phase error, holdover, delay measurements and location tagging applications.

GNSS: GPS + GLONASS
Frequency: 1575.42 MHz L1C/A, 1602 MHz L1OF, 1561.098 MHz B1 (BeiDou ready)
Channels: Up to 72
Sensitivity
- Cold start: -148 dBm
- Tracking: -167 dBm
Clock Output: 1PPS (internal)
Accuracy
- Time: ≤ 20 ns RMS (clear sky)
- Position: 2.5m
- Programmable in-survey accuracy threshold and time window

Acquisition Time (first fix)
- Cold start: 26s
- Hot start: 1.5s

Location Survey (Programmable)
- Accuracy Threshold (m)
- Observation Window (s)

Cable Delay Compensation (ns)
NMEA message log/monitor
Antenna Power: 3.3 Vdc, 30 mA
Connector: SMA, 50 Ohms
Temperature range: 0 to 45°C

Recommended Antenna
- GPS and GLONASS bands
- Type: Active, 3 to 3.3V
- Gain: >26 dB
- Noise: <1.5 dB

Atomic Clock Option

The optional built-in chip-scale Atomic Clock module provides a highly stable clock source to the test platform and its modules, in the form of internal 1PPS or 10 MHz signals. The Atomic Clock can also be disciplined by the GNSS (requires Z88-00-009P option) and later be used in holdover mode (e.g. temporary timing holdover or frequency reference for indoor usage).

Technology
- Cesium (Cs) Vapor Cell
- Coherent Population Trapping with VCSEL Laser Interrogation

Frequency Accuracy: $\pm 5 \times 10^{-11}$ (free-running)
Aging: $< 9 \times 10^{-10}$/month

Short Term Stability
- 2.5×10^{-10} (TAU=1s)
- 8.0×10^{-11} (TAU=10s)
- 2.5×10^{-11} (TAU=100s)
- 8.0×10^{-12} (TAU=1000s)

Warm-up time: < 180s
Temperature range: 0 to 45°C

Modes of Operation
- Free run
- GNSS-discipline and PRTC-discipline (ext. 1PPS)
- Holdover
- Sleep Mode >16 hours

Programmable disciplining time constant up to 10000s
Programmable stability threshold

Precision References (internal)
- Frequency: Atomic 10 MHz
- Phase/Time: Atomic 1PPS

Frequency Calibration Function
- Recommended interval: At least once a year

Upgradeable Firmware
Low power consumption (<120mW) for full-featured field battery operation

Platform Sleep Mode

Standby mode allow users to carry the test set in its carrying case with a fully active Atomic Clock in holdover mode. It also helps control the oscillator's temperature while stored in uncontrolled environments.
- Keeps the disciplined Atomic Clock fully powered to hold frequency and timing
- Holdover time counter while in standby
- Up to 20 hours of standby power

Platform Features & Options

Dedicated navigation and function buttons for non-touch screen operation (e.g. operating the test set with gloves on)
- Rugged design with integrated connector cover/stand and dual-shot rubber for protection, extra grip, and ergonomics
- Flexible shoulder straps configurations
- Integrated stylus holder

ReVeal RXTS

This companion management PC software is included standard with each test set. The ReVeal provides an easy-to-use and intuitive interface that allows users to take full advantage of RXT-1200 and TX300s test sets by providing the following productivity tools:
- Convenient test profile management
- Flexible test results management
- Advanced report generation with html, pdf, or csv formats, combine test results, add logos and comments
- Test profiles management: Online or offline Ethernet test profile creation, upload and download
- Remote Control

Compatible with Windows XP, 7, 8.1 and 10, 32 bits or 64 bits operating systems.

Remote Access

The RXT-1200 offers multiple ways to Remote Control it or access the information remotely (e.g. test results, test profiles, etc.). The test set can be reached via:
- ReVeal PC software
- Web browser (Web Remote Control)
- VNC® Client
- SCPI Remote and Command Reference Tool PC software*
- Scripting via SCPI commands

Connectivity: 10/100Base-T, Wi-Fi 802.11 a/b/g/n/ac*

Not included.

File Manager

Profiles: Save and recall test profiles
Saves results to internal SD card View, Rename, Delete and Lock profile and result files
Filter and sort by Name, Test Mode, Test Type, Port, Date and Result/Profile
Report generation: Test results generation in PDF format
Export test results and profiles via USB memory, Bluetooth, web browser, Data Card or ReVeal RXTS companion PC software
File Backup and Retrieve to/from USB
Screen capture: Screen shots in PNG format

Advanced Management

This option allow users to append work order information to test results (e.g. Job ID, account, location, comments).
- Compatible with R300 Productivity Server (R-Server)
- Authorized test sets can register with specific VeSion R300 Server
- Test results can be uploaded via LAN, Wi-Fi or cellular data connection

General

Size	260 x 180 x 65 mm (W x H x D)
	10.2 x 7.1 x 2.6 in
Weight	1.74 kg (3.85 lb) with high-capacity battery
Battery	Li-ion smart battery
	7500 mAh @ 11.1 VDC (83Wh)
	Field replaceable
Power Supply (AC Adaptor)	Input: 100-240 VAC, 50-60 Hz
	Output: 15 VDC, 5.33 A
Vehicle Accessory Charger*	Input: 12-24 VDC
	Output: 15 VDC, 4.80 A
Module Sizes	Small: 208 x 158 x 31 mm,
	8.2 x 6.2 x 1.2 in (W x H x D)
	Large: 208 x 158 x 58 mm,
	8.2 x 6.2 x 2.2 in (W x H x D)
Module Weight	Refer to individual module's specification sheet for details
Operating Temperature	0˚C to 50˚C (32˚F to 104˚F)
	Refer to individual module's specification sheet for system wide operation range
Storage Temperature	-20˚C to 70˚C (-4˚F to 158˚F)
Humidity	5% to 90% non-condensing
Display	800x480 TFT 7" color display
	Touch screen
Management Interfaces	2x USB 2.0
	1x 10/100Base-T Ethernet (RJ45)
	Bluetooth (optional via USB)
	Cellular Data Card (optional via USB)
	Wi-Fi 802.11a, b, g, n and/or ac (optional via USB)
Languages	Multiple languages supported

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