VIAVI
OneAdvisor 800 Wireless
Radio Communications Kits

All-in-One Wireless Communications Test Solution
One Solution. One Process. One Report.

The OneAdvisor 800 Radio Communications Kit combines all of the Wireless, Ethernet, and Fiber test tools needed for spectrum clearing, monitoring, and communications deployment in a single, lightweight portable unit.

Key test functions include:

- Real-time Persistent Spectrum Analysis from 9kHz to 9 GHz/18 GHz/44GHz with 110MHz bandwidth capture

- Over-the-Air spectrogram testing and logging capability to effectively characterize intermittent interference signals

- Ultra-fast swept spectrum to quickly assess and monitor spectrum for interference mitigation, spectrum clearing and AM/FM demodulation

- Spectral limit masks to easily identify unwanted or out of limit signals

- Directional Radar Map to identify direction of incoming signal

- Multi-point direction finding with triangulation to pinpoint the interference source

- Spectrum route map validating radio coverage and signal propagation

- Data Logging, recording and re-play capability up to 72 hours for finding and analyzing intermittent interference

- Coaxial cable and antenna reflection tests, distance to fault and cable loss

- Fiber end-face inspection and fiber validation including OTDR testing

- Ethernet and protocol analysis verifying communications link

- Channel Scanner with route map to track RSSI and coverage of multiple carriers with different technologies

- Blind Scan for easy identification and analysis of LTE and NR signals including carrier frequency, carrier BW, and MCC/MNC

- Spectrum analysis with gated sweep for interference analysis of TDD signals

- Remote operation on phone, tablet or PC with SmartAccess Anywhere or VNC

Realtime Persistent Spectrum

Direction Finding & Interference Analysis


Cable and Antenna Analysis

Fiber Validation and Characterization

Real-Time Spectrum Analyzer

The OneAdvisor 800 Real-Time spectrum Analyzer (RTSA) can find the most challenging intermittent signal with its 110MHz of instantaneous bandwidth and persistent display capability.

The color coding of the persistent display highlights the relative amount of time a signal is present. Intermittent or overlapping carriers can be easily identified due to the persistence and variable decay on the display. The RTSA provides 2D or 3D spectrogram/waterfall views which provide you with the ability to monitor frequencies over time to capture and identify bursty and frequency hopping carriers. The RTSA spectrograms can be logged, saved, stored and replayed for analysis.
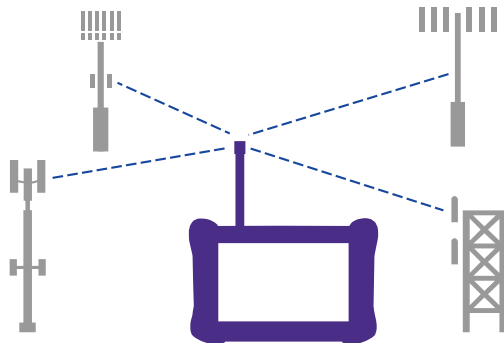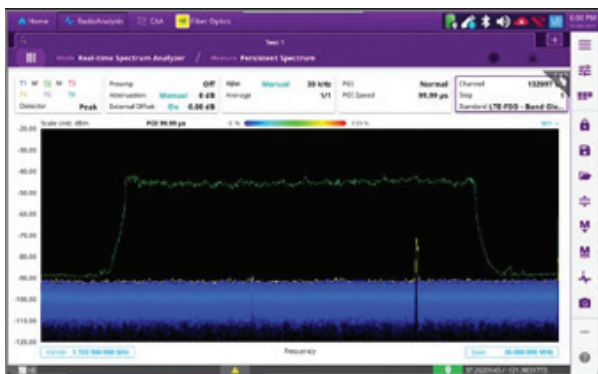

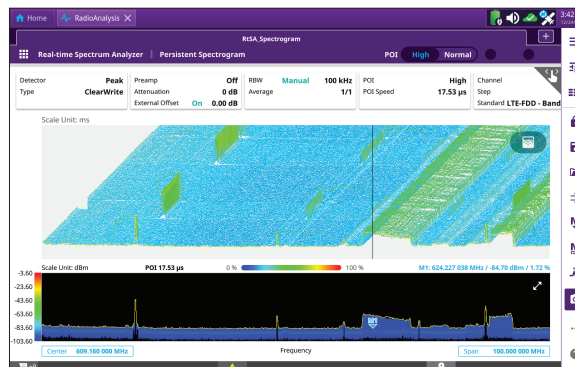OneAdvisor 800 Real-time Spectrum Analysis Heatmap

OneAdvisor 800 Real-Time 2D Spectrogram

Communications that use the same frequency channel for uplink and downlink signals, such as Time Division Duplex (TDD) are difficult to analyze with traditional swept spectrum. RTSA with persistence shows the uplink and downlink power within the same channel due to the color coding of signal duration and power level. Multiple markers can be used on the traces or within the heatmap to identify the channel power, occupied bandwidth, and signal to noise of the carriers.

Real-time Spectrum capturing an underlying interfering carrier

Real-time 3D spectrogram capturing bursty communications

Ultra-Fast Swept Spectrum Analysis

The OneAdvisor 800 Sweep Tuned Spectrum Analyzer is a fast and powerful swept spectrum analyzer that spans from 9kHz to 44GHz. For spectral monitoring the Swept Spectrum Analyzer provides a fast method to monitor a wide range of spectrum to identify active carriers. To help measure the power of specific carriers the OneAdvisor 800 provides multiple markers that can be set and viewed. Additional traces can be viewed such as max, min, average that can show the carrier activity and events that occurred.

The OneAdvisor 800 allows the user to configure complex spectral masks with limit identifications to quickly identify undesired spectral transmissions.

The OneAdvisor 800 Interference Analysis Spectrogram test combines the ultra-fast spectrum analysis with 2D or 3D spectrogram. The spectrograms provide easy visualization of carrier activity over time. The spectrograms can be logged over extended time periods and saved. The saved spectrograms can be re-played, viewed and analyzed. The files can be shared and viewed by other OneAdvisor 800 users.
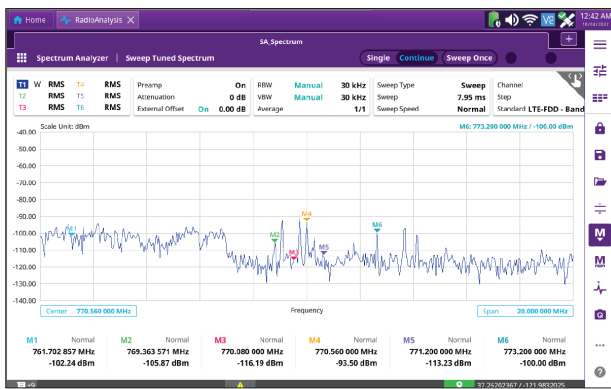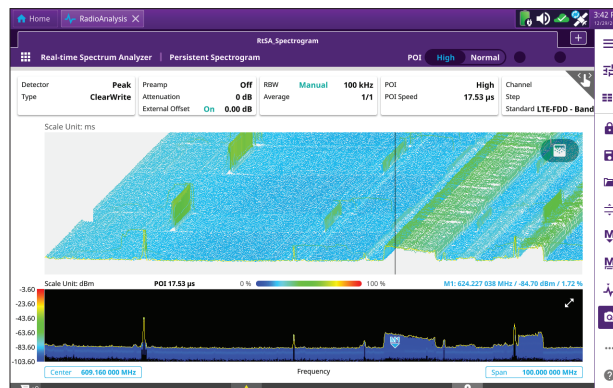

Swept Spectrum with multiple markers
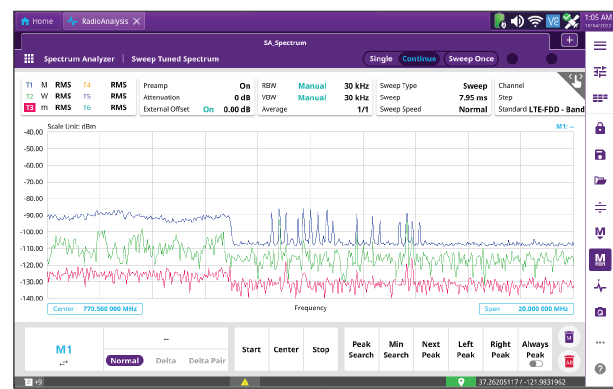
Swept Spectrum with multiple traces and peak finding markers
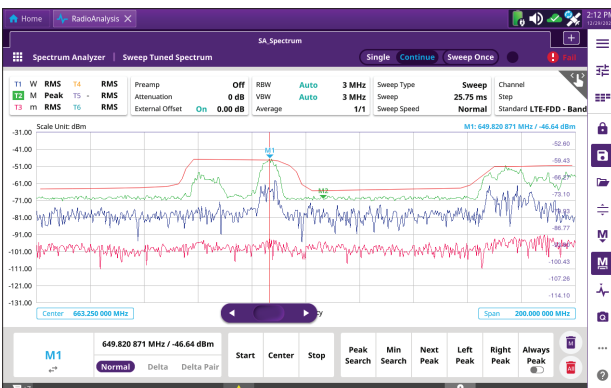
Swept Spectrum with limit mask

Swept Spectrum interference analysis with 3D Spectrogram

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Interference Analysis Radar Chart

Identifying the direction of an interferer is critical for spectral clearing and interference mitigation. The OneAdvisor 800 Radar Chart utilizes the azimuth sensing capability of the Antenna Advisor directional antenna to plot the measured signal strength and the direction the antenna was pointing as a field technician sweeps the antenna across the area. The Radar Chart provides a quick visualization of the direction of the maximum signal strength to quickly pinpoint the direction of the interferer.
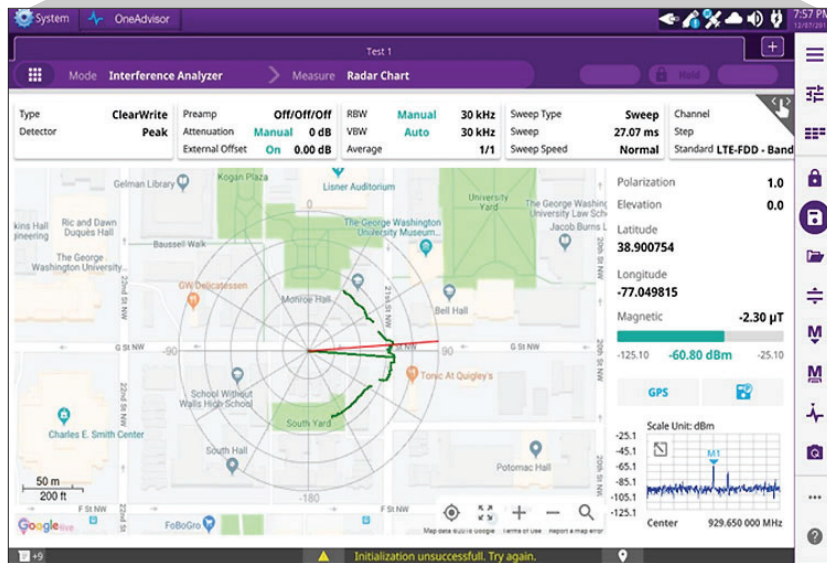
OneAdvisor 800 Interference Analysis – Radar Chart pinpointing the direction of the interferer

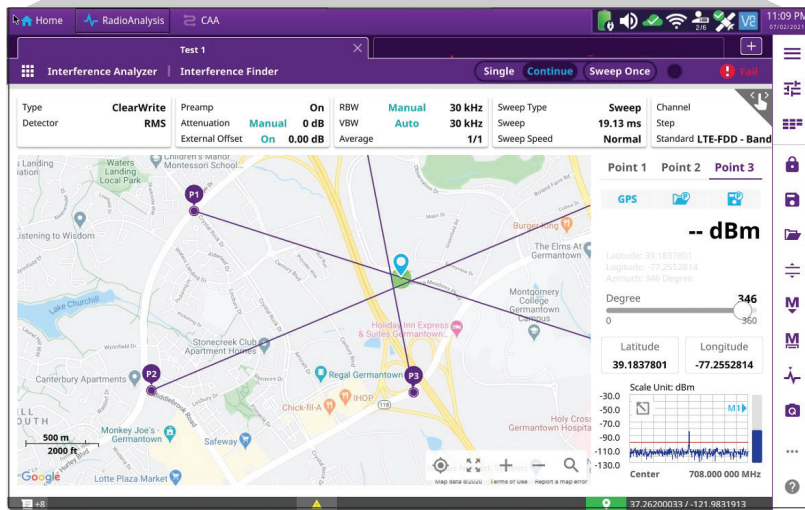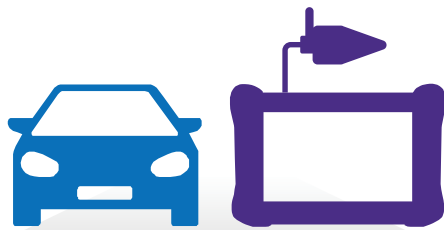# Interference Finder

Interference mitigation requires locating the precise location of the interfering signal source. The Interference Finder identifies the location of the interferer by taking multiple directional signal strength readings coupled with integrated GPS readings and triangulating the measurements to identify the location of the interference source.

The display provides the user with a live signal strength and directional arrow to easily hone-in on the direction of the incoming interferer while recording the specific measurement points.

A single user can take the OneAdvisor 800 to multiple locations then record the direction and signal strength which will plot the intersection lines overlayed on the map identifying the area of the interference source. Each point can be saved and loaded. This provides the ability to have multiple field technicians to be working in coordination and share their measurement points for rapid interference source identification. Alternately to saving and loading the measurement points, the user can manually input the longitude, latitude strength and direction of the measured points.

OneAdvisor 800 Interference Finder

Enterprise and data center

Network equipment manufacturers

Small business

Residential

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Route Map

The OneAdvisor 800 Route Map test helps validate signal coverage across a large geography. By attaching a roof mounted antenna and driving with the OneAdvisor 800 the route map will plot the relative signal strength overlayed on a map using the GPS location. The OneAdvisor 800 can also be hand-carried and the coverage mapping can be done via walking for much higher-frequency measurements with much shorter propagation distances. The relative signal strength is identified on the display with a color scheme relative to the received power. By analyzing the route map, the technician can ensure proper signal coverage and verify that there aren't dead zones or that the transmitter is at the proper level and not transmitting too high.

With the online mapping functionality, the OneAdvisor 800 can download an active map for use and saved for offline usage. A map can also be imported into the OneAdvisor 800.

The test data can be logged and saved for post analysis. This test data can also be exported into csv, comma separated format for analysis on a PC.


OneAdvisor 800 Channel Scanner Channel Scanner - Route Map

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Interference Hunting

InterferenceAdvisor™ is a fully automated RF interference hunting solution that runs on an Android tablet. This easy to set up and simple to use tool allows one RF engineer to identify and locate an interference source quickly, simply by following voice prompts on a familiar map-style application.

The InterferenceAdvisor software communicates with OneAdvisor 800 to retrieve RF power measurements (Peak, RSSI, Channel) and creating a power heat-map during a drive test. This process automatically detects the location with the highest presence of interference, giving optional navigation instructions to the detected interference location.

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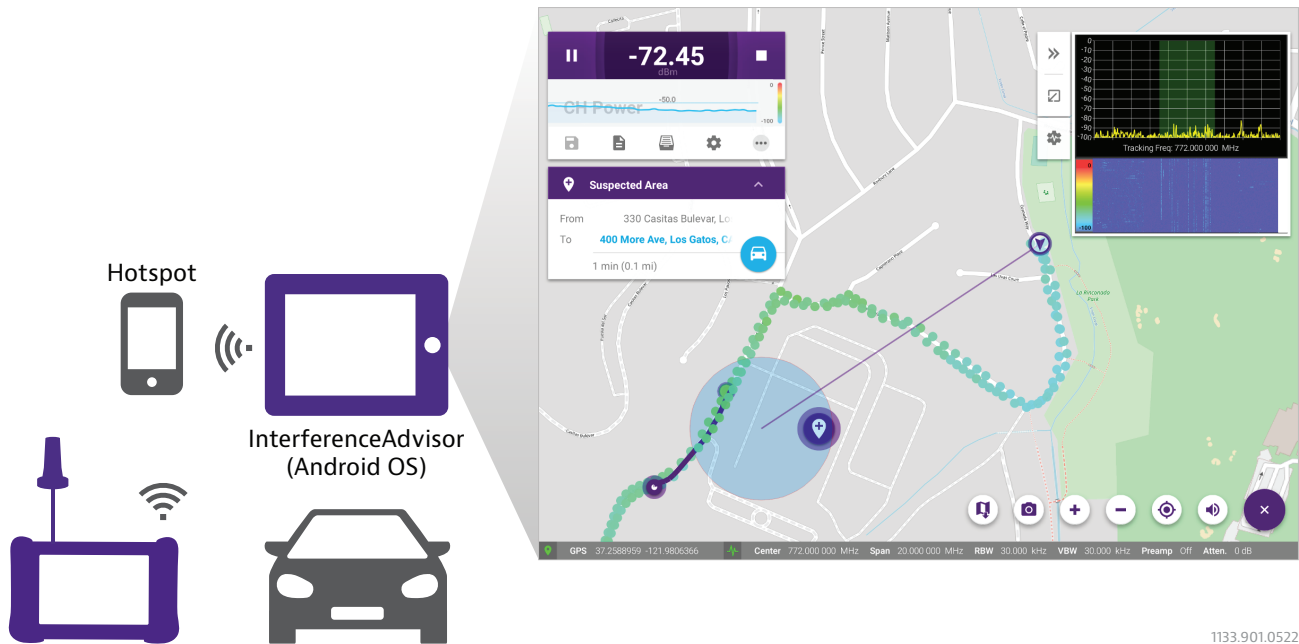
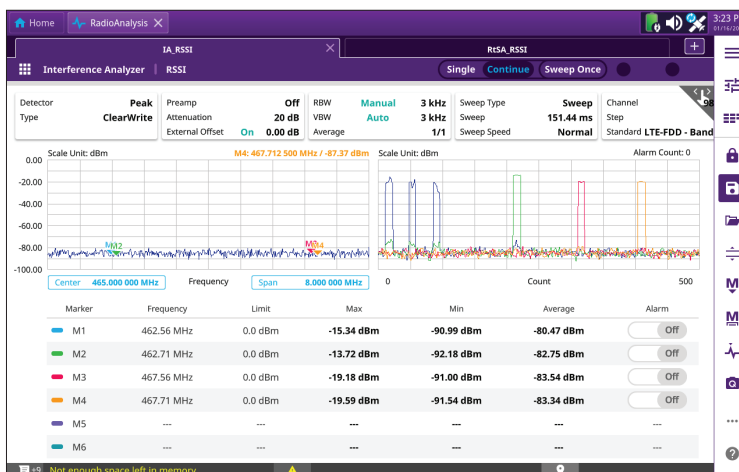InterferenceAdvisor – Interference Hunting

Received Signal Strength Indicator (RSSI)

The OneAdvisor 800 can measure the RSSI over time for as many as 6 signals. Either the traditional swept spectrum or RTSA Persistent Analyzer can be used for RSSI recording. By assigning markers to specific frequencies, events and alarms can be logged over time. In RSSI measurements power limits can be set for audible alarms and increase alarm counters every time a signal exceeds the defined limit line. The color coding of the signals correspond with the markers giving the ability to see signal strengths over time from multiple carriers. For long-term analysis, the spectrogram and RSSI measurements can be saved into an external USB memory for post-analysis.
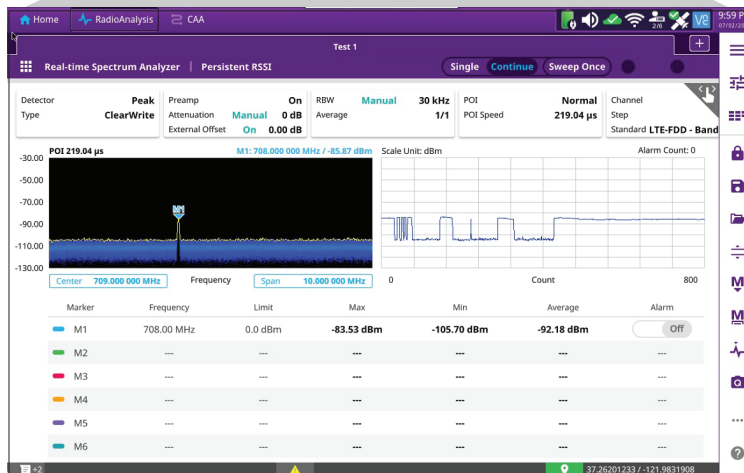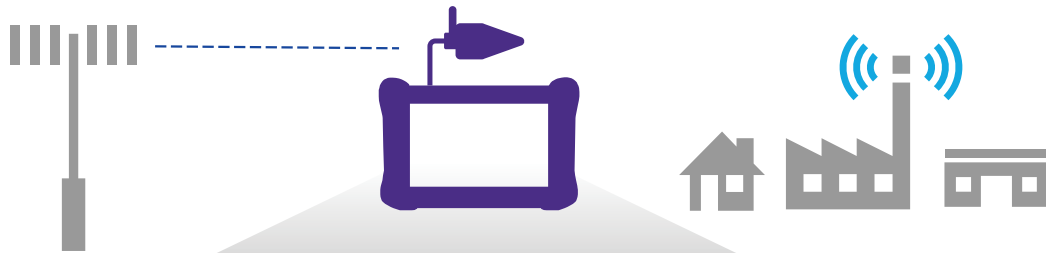
OneAdvisor 800 Interference Analysis (RSSI)

OneAdvisor 800 Interference Analysis RSSI using swept spectrum

Capture, Record and Playback

The OneAdvisor 800 can capture, log and record most of the Spectrum Analysis, Real Time Spectrum Analyzer, Interference Analysis and Route mapping tests. These files can be opened and re-played at a later time. The files can also be offloaded and exported for viewing on another instrument.

The OneAdvisor 800 spectrum re-player provides full user control of marker and view settings. RTSA re-player lets the user view Spectrum, Spectrogram, or RSSI from the logged data which provides alternate ways to look at the data compared to the original RTSA view on the display. Full control of markers is available allowing for detailed signal analysis on the captured data.

Real time I/Q capture is also available for some wireless signals that can be saved and sent for analysis.
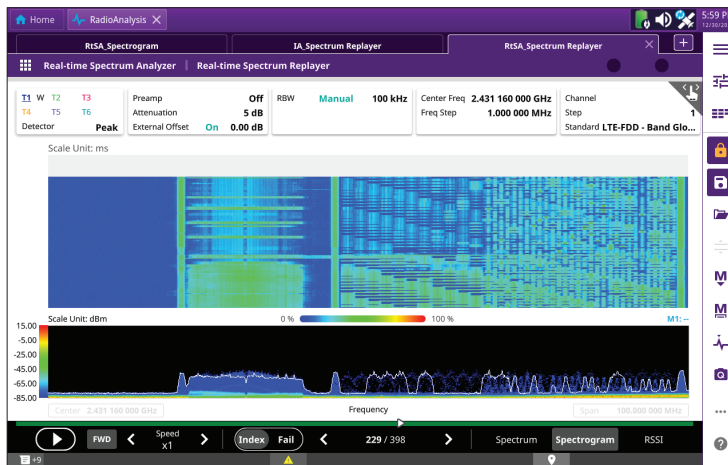

OneAdvisor 800 Real Time Spectrum Re-player

Remote Operation

The OneAdvisor 800 can be accessed and controlled remotely for either unmanned operation or live results sharing. VIAVI SmartAccessAnywhere provides full control of the instrument via PC, SmartPhone, or Tablet and can operate the unit through firewalled installations. With SmartAccessAnywhere it is easy to share field findings with a second set of eyes or to simply transfer files.

The OneAdvisor 800 can also be configured for remote access using traditional VNC clients.
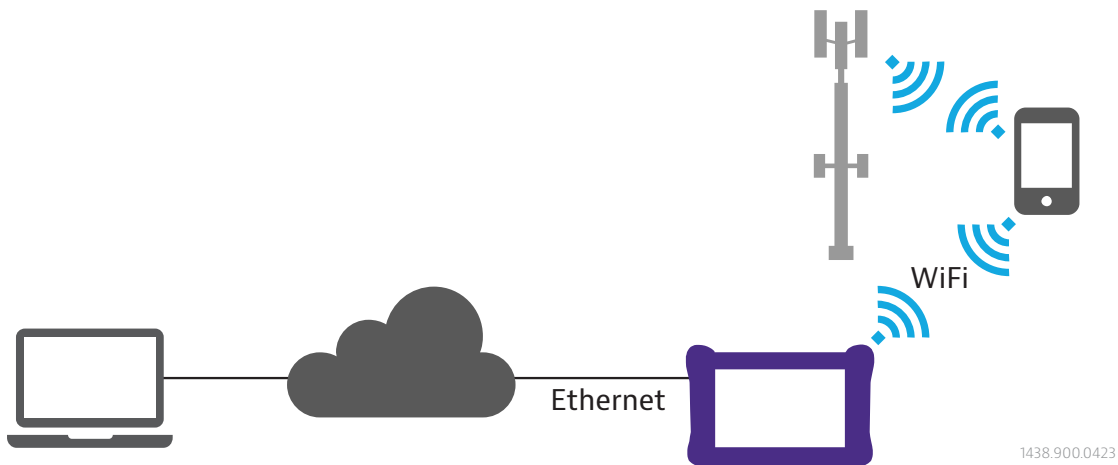
OneAdvisor 800 Remote Connection to PC, Tablets, or Phones

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One Advisor Multi Technology and Physical Layer Testing

Cable and Antenna Analysis

OneAdvisor 800 Cable and Antenna Analyzer (CAA) module provides the ability of wireless technicians to verify cable integrity between the radio and antennas. The specific RF elements in the signal chain, such as cables, jumpers, filters, diplexers, and antennas can be analyzed. The CAA module measurements include sweeping these elements over frequency for:
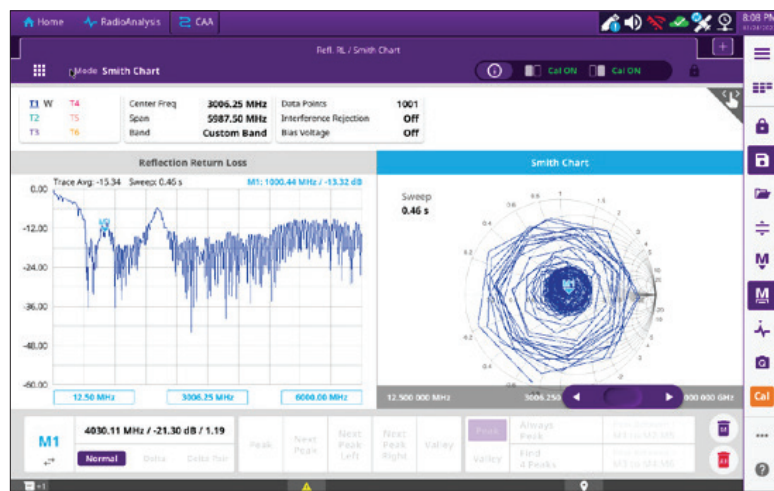
• Return Loss and VSWR

• Distance to Fault

• Cable Loss

Cable and antenna limits can be configured providing the technician with clear PASS/FAIL results to make sure that the cable, antenna, or component is meeting specifications for proper operation.
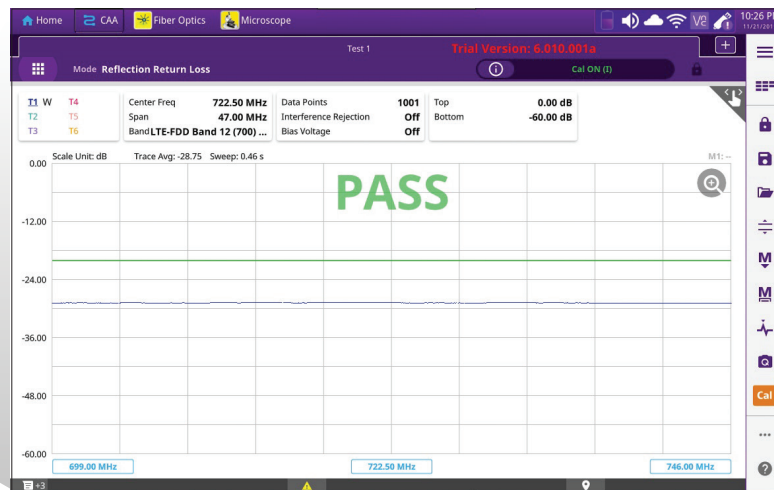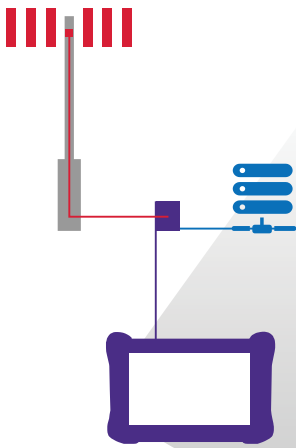
OneAdvisor 800 Coaxial Cable and Antenna Analysis – Return Loss

OneAdvisor 800 Coaxial Cable and Antenna Analysis – Smith Chart

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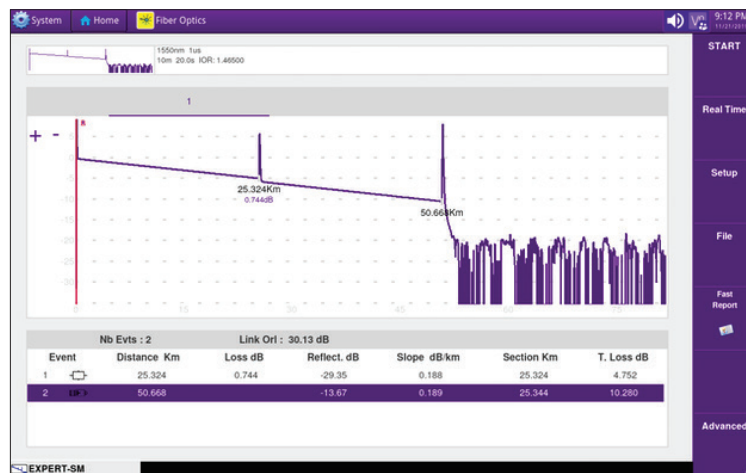
Fiber Characterization

Communication networks are predominately fed by fiber optic networks. Fiber optic cabling has it's own vulnerabilities and requirements for proper operation.

The OneAdvisor 800 provides single mode or multi-mode Optical Time Domain Reflectometer (OTDR) testing via an add on module. The OTDR can characterize a fiber link and identify any faults or issues with the cable. To simplify the analysis of the OTDR results, VIAVI's SmartLink mapper will perform the analysis of the OTDR trace and show any events or elements with clear pass/fail results.
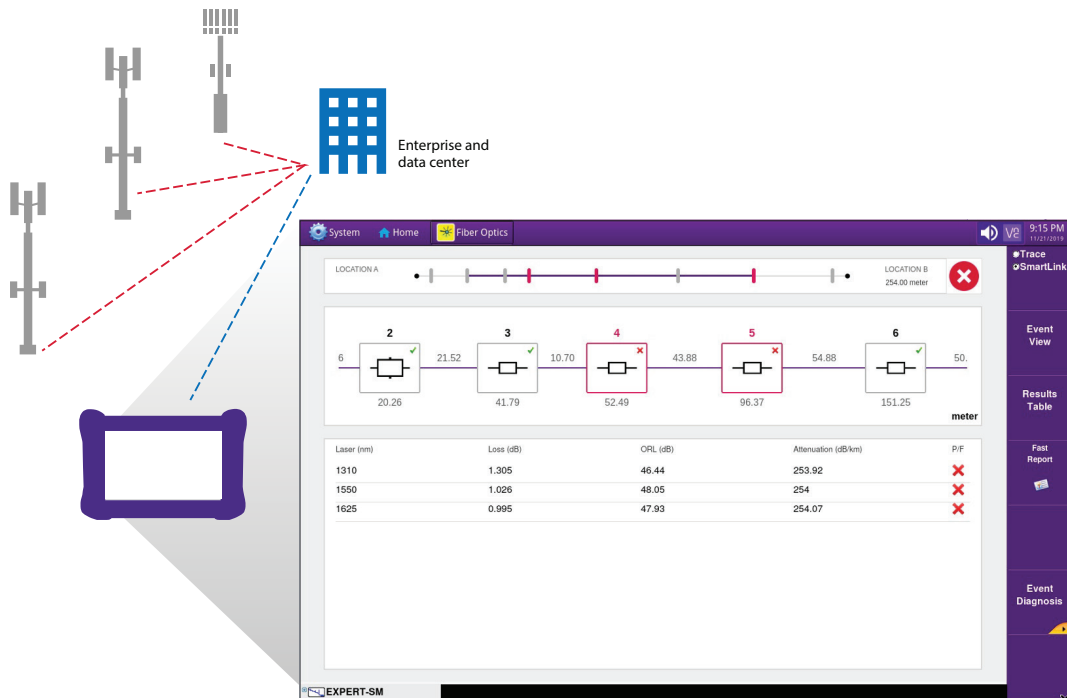

OneAdvisor 800 Fiber Characterization – OTDR

OneAdvisor 800 Fiber Characterization – OTDR SmartLink View

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Fiber Inspection

The most common cause of signal degradation in an optical transmission system between transmitter, fiber link and receiver, is dirt on fiber connectors, which can get contaminated very easily when the connectors are exposed to the environment and permanently damage the fiber if connected while dirty.

VIAVI's P5000i and FiberCheck Probe provide a clear PASS/FAIL identification of the fiber cleanliness. If the fiber is dirty, simply clean the fiber with the appropriate tool and re-inspect before connecting. Fiber inspection can be incorporated into any fiber workflow to ensure proper adherence to the process. Detailed reporting of results is provided for the overall fiber inspection and testing process.
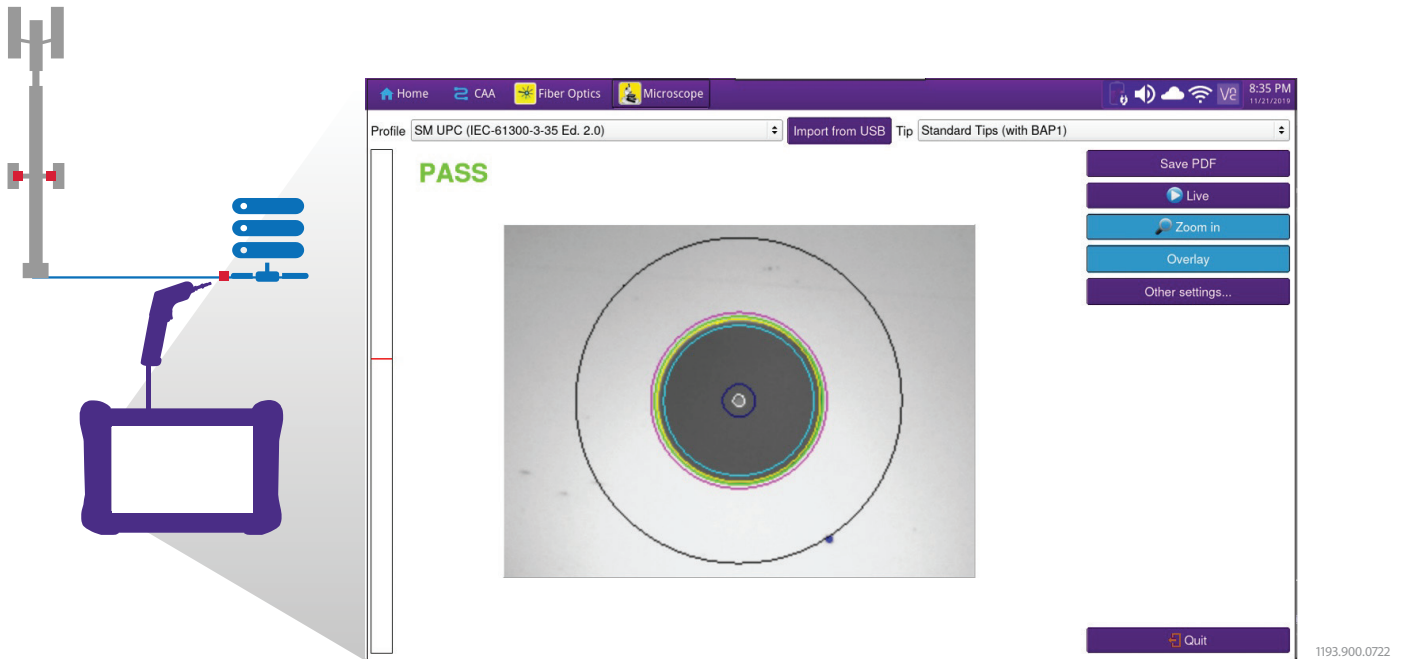

OneAdvisor 800 Fiber Inspection

Ethernet and Transport testing

The OneAdvisor 800 Radio Communications Kit includes a full suite of Ethernet Transport tests to validate/ troubleshoot communication links. Support for both Optical and Electrical Ethernet is provided when used with compatible SFP's The tests available include:

• Ethernet Test (1G, 10G, 25G, 100G)

• Synchronization and Timing (PTP/1588)

• Network Devices: Throughput, Latency, Frame Loss (RFC 1544 / 5180)

• Ethernet Service Activation (Y.1564)
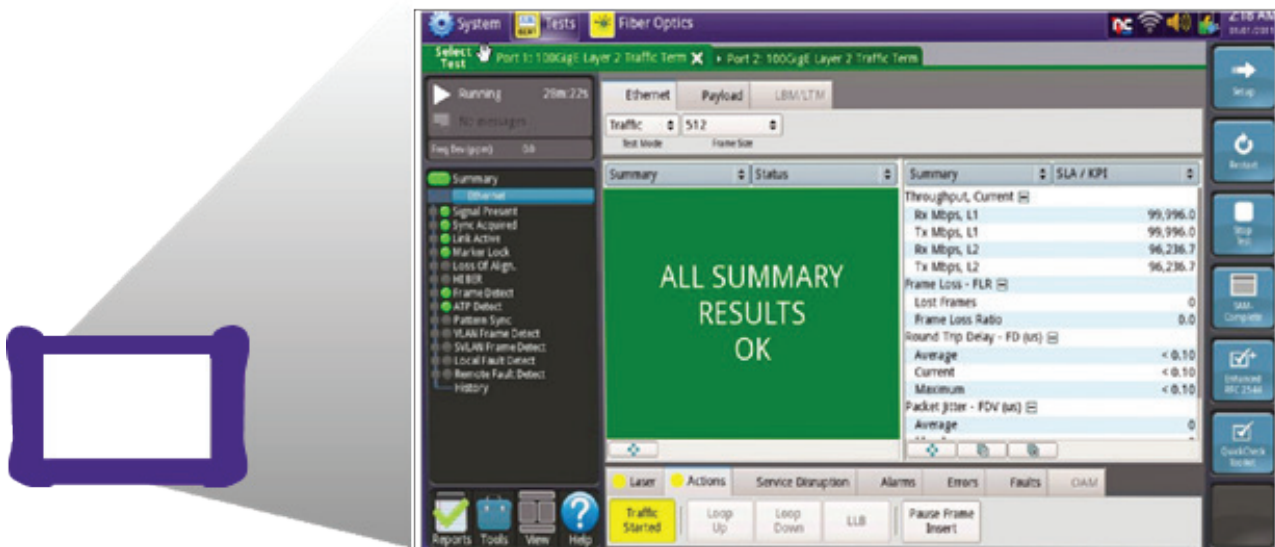
OneAdvisor 800 Ethernet Testing

OneAdvisor 800 Wireless Tools for Commercial Signals

Wireless Signal Analysis

OneAdvisor 800 has a powerful suite of cellular wireless tools to identify, analyze and verify proper operation for latest generation of wireless signals used by commercial wireless providers

Key signal analysis measurement functions include:

• Blind Scanner for finding and identifying commercial wireless carriers.

• LTE Signal Analysis

• 5G Signal Analysis

• Dynamic Spectrum Sharing Signal Analysis

• EMF Analysis

Wireless Signal Analysis

The Blind Scanner function on the OneAdvisor 800 will search and identifying any of the following signal types:

• LTE Frequency Division Duplex (FDD)

• LTE Time Division Duplex (TDD)

• 5G New Radio (NR)

• Dynamic Spectrum Sharing (DSS)
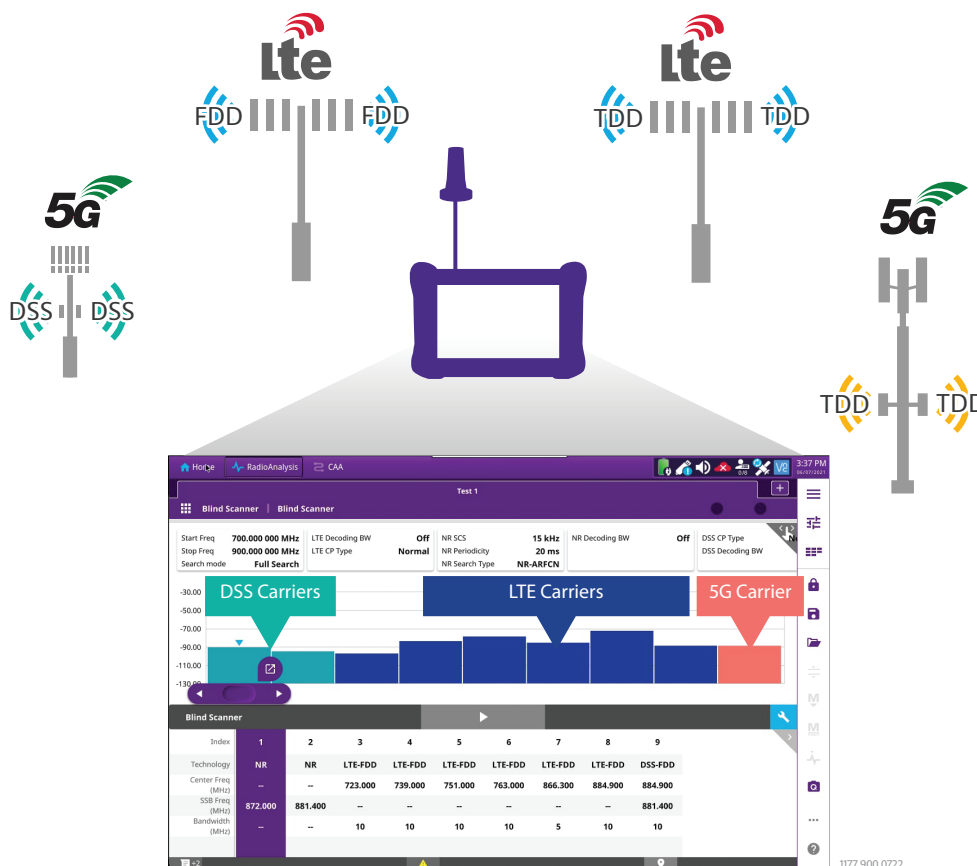
OneAdvisor 800 RF Blind Scanner

LTE Signal Analysis

OneAdvisor 800 LTE Signal Analysis tool can analyze LTE-FDD and LTE-TDD signal formats, covering the following key measurements:

• RF Characterization: 3GPP conformance tests including, channel power, occupied bandwidth, adjacent channel leakage ratio, and spectrum emission mask

• LTE Over-the-Air: LTE carrier scanner for carrier aggregation validation; LTE ID scanner for multi-serving cell sites; LTE control channel for signal quality assessment; and LTE Route

• Route Mapping for service coverage verification
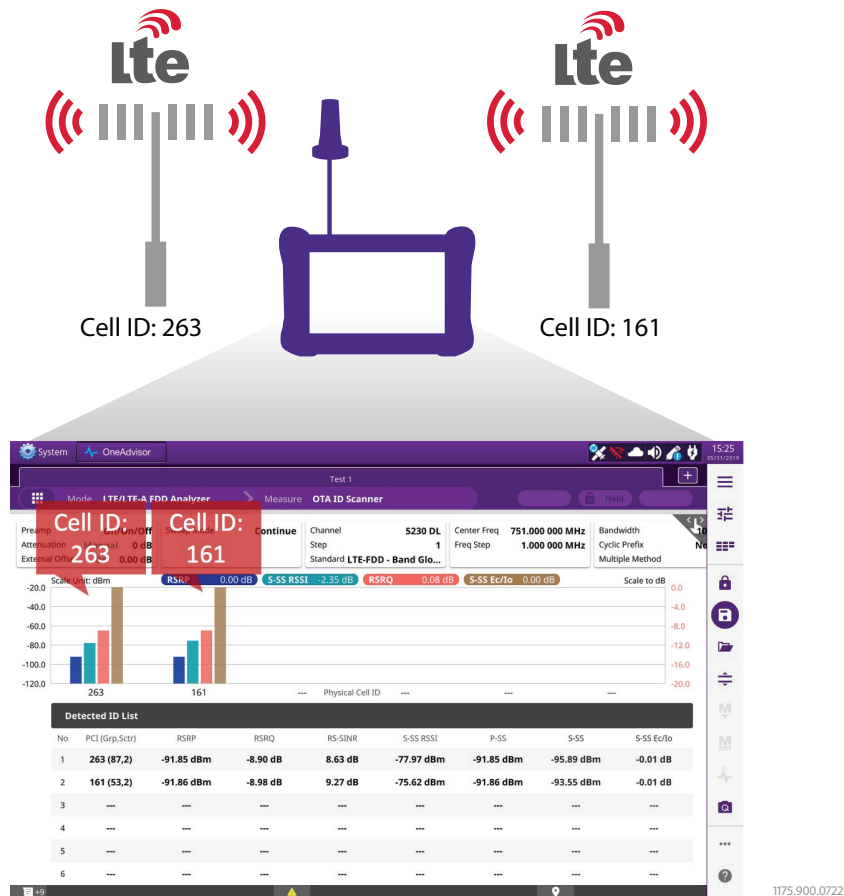
OneAdvisor 800 LTE Signal Analysis

5G Signal Analysis

OneAdvisor 800 5G Signal Analysis capability covers the following key measurements:

- RF Characterization: 3GPP conformance tests including: channel power, occupied bandwidth, adjacent channel leakage ratio, and spectrum emission mask.

- 5G Over-the-Air: 5G carrier scanner for carrier aggregation validation and signal quality assessment; 5G Beam Analyzer, for beamforming assessment and over-lapping cell sites; and 5G Route Map for service coverage verification.
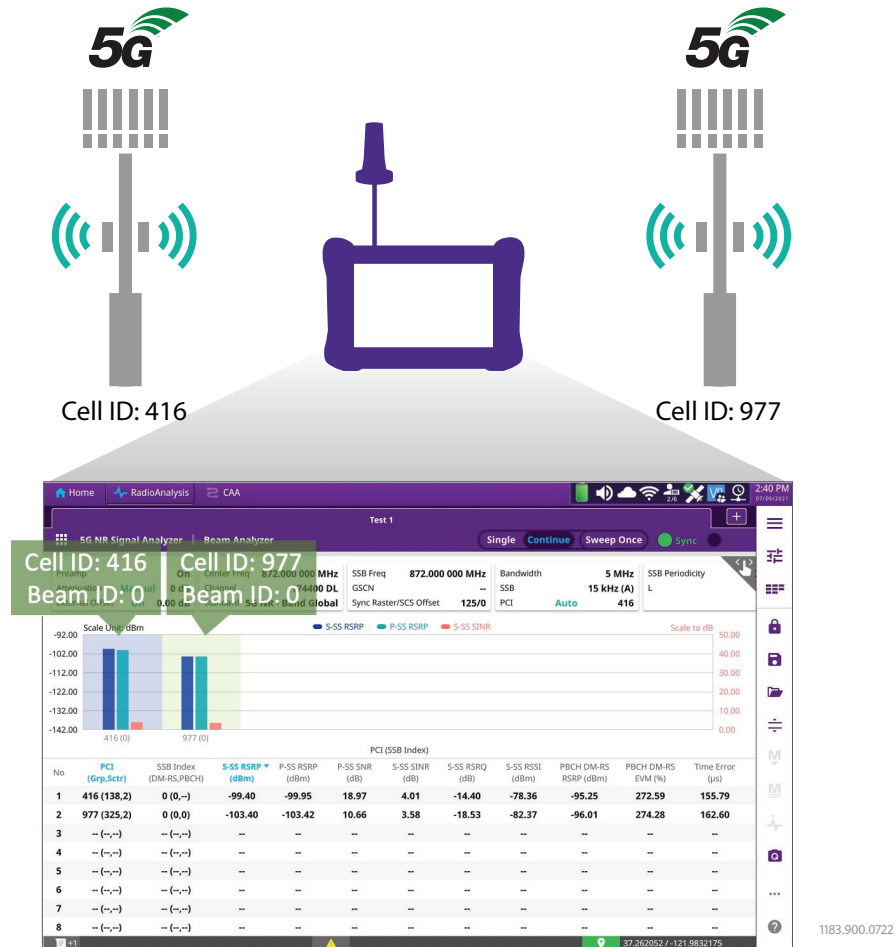

OneAdvisor 800 5G Signal Analysis – Beamforming

Channel Scanner

The OneAdvisor 800 Channel Scanner tool takes measurements of multiple commercial wireless signals of different technologies. The Channel Scanner can be configured to scan equally spaced carriers either by channel or by frequency. Additionally, the Channel Scanner can perform a custom scan of variable frequency spacing by creating a custom scanner configuration. The channel scanners measure the signal strength of the each of the carriers and provides a convenient bar graph of the received signal strength with pass/fail indication.

The Channel Scanner can also be used with Route Mapping functionality to quickly assess overall signal coverage across a region of all the various carriers.
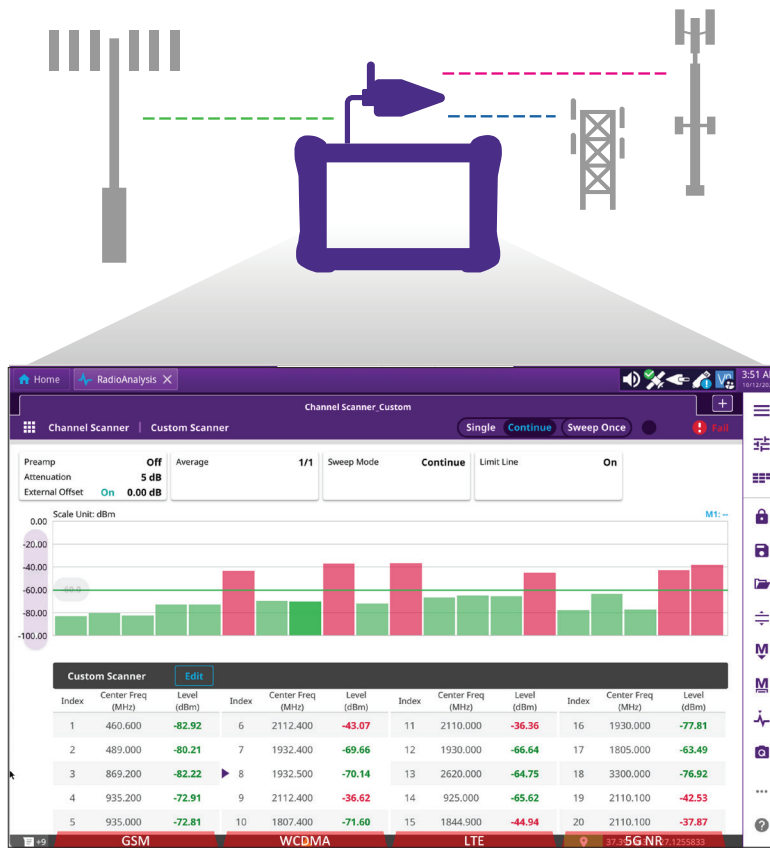

OneAdvisor 800 Channel Scanner - Custom Scanner

TDD Interference Analysis (Gated Spectrum)

Interference analysis in TDD signals (LTE or 5G) requires a different measurement technique than conventional spectrum analysis, since the uplink and downlink signals are transmitted on the same frequency, but different timeslots.

OneAdvisor 800 performs single or dual gated sweep spectrum, effectively providing spectrum measurements triggered only during the timeslots assigned for uplink transmission.
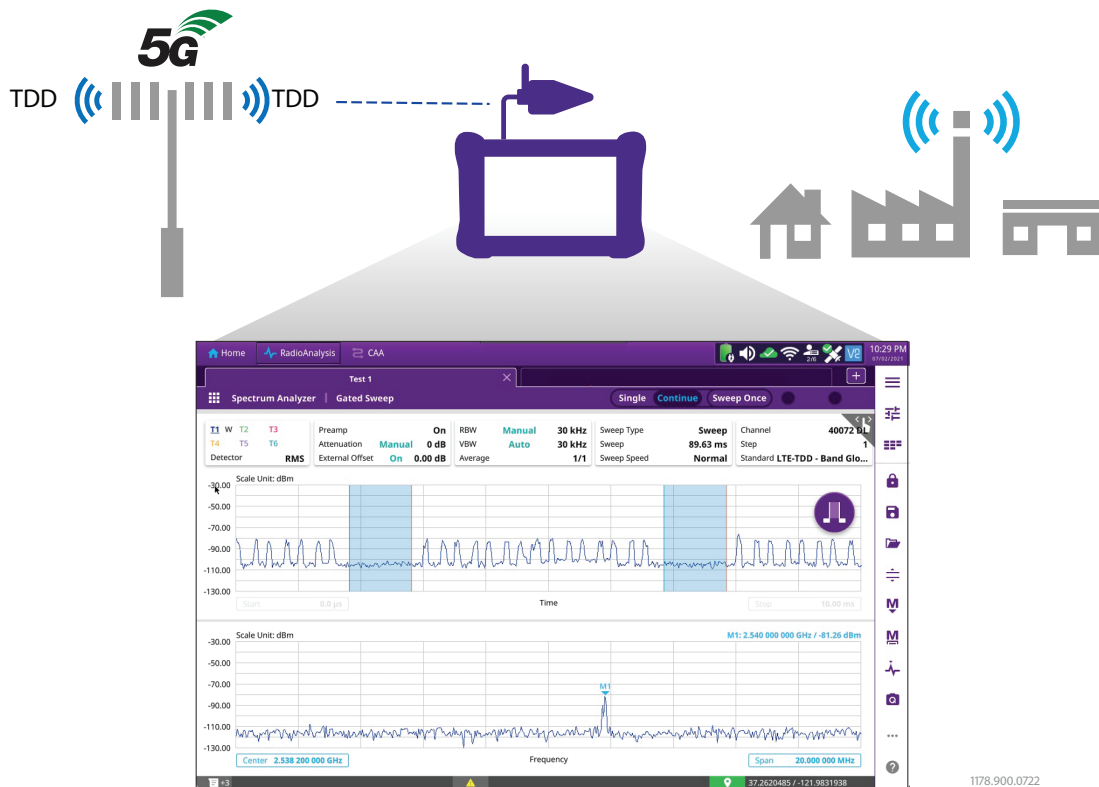
OneAdvisor 800 Dual Gate Spectrum Analysis (TDD Interference)

Modular Platform

The OneAdvisor 800 is a modular platform that provides the ability to add additional capabilities to the unit and perform upgrades in the field.

Users can keep spare stock of the various components of the OneAdvisor 800 that can easily be swapped out in the field for replacement and or repair such as the display or battery.

To increase overall battery capacity and field operating time, the OneAdvisor 800 Power Expansion Module can be added or swapped onto the unit with one of the separate half size measurement modules.

Accessories

The OneAdvisor 800 Radio Communication Kit comes complete with a variety of accessories. This includes both directional and omni-directional antennas.

Antennas

600MHz-6GHz Directional Log Periodic w/handle

600MHz-6GHz Omni Directional mag mount

26.5-44GHz Omi and directional antennas

Filters

Modules

Cable and Antenna Analyzer with calibrator

Fiber Optic OTDR Modules

Fiber Inspection Scope

Cases

Available Radio Communications Kits

Description	Catalog Number	ONA800A-GADSP09 9GHz Radio Kit	ONA800A-GADSP18 18 GHz Radio Kit	ONA800A-GADSP44 44 GHz Radio Kit	ONA800A-GADSP44-AOS 44GHz Radio and Comms Kit
OneAdvisor ONA 800A Mainframe and Display	ONA-800A	■	■	■	■
WiFi Connectivity	ONA-MF-WIFI	■	■	■	■
Bluetooth Connectivity	ONA-MF-BT	■	■	■	■
Smart Access Anywhere	SAA-ADVISOR	■	■	■	■
Power Meter and VFL mainframe module for OneAdvisor 800	ONA-PMVFL				■
Spectrum Analysis Modules					
9 kHz to 9 GHz Spectrum Analyzer Module with Optical Hardware	RA09MA-O	■			
9 kHz to 18.5 GHz Spectrum Analyzer Module with Optical Hardware	RA18MA-O		■		
9 kHz to 44 GHz Spectrum Analyzer Module with Optical Hardware	RA44MA-O			■	■
Options					
GPS connectivity with GPS antenna	ONA-SP-GNSS	■	■	■	■
Realtime Spectrum Analysis (100MHz)	ONA-SP-RT100	■	■	■	■
Interference Analysis	ONA-SP-INTAN	■	■	■	■
Gated Sweep Spectrum	ONA-SP-GSS	■	■	■	■
Channel Scanner	ONA-SP-CHSC	■	■	■	■
Spectrum Route Map	ONA-SP-RM	■	■	■	■
Online Spectrum Route Map	ONA-SP-ORM	■	■	■	■
LTE-E/LTE-Adv FDD OTA Signal analysis	ONA-SP-LTEFDOTA				■
5GNR OTA Beamforming analyzer	ONA-SP-5GOTA				■
NSA OTA Analyzer	ONA-SP-NSAOTA				■
TDD Auto Gated Spectrum	ONA-SP-TAGS	■	■	■	■
RFoCPRI line rates 1 to 8 for interference analysis	ONA-SP-CPRI18				■
Blind Scanner FR1	ONA-SP-BS	■	■	■	■
Blind Scanner FR2	ONA-SP-BS-FR2			■	■
Ethernet Tests					
10G Ethernet Test	ONA-SP-10GELAN				■
10GE 1588/PTP Test Option	ONA-SP-10G1588				■
10M and 1G Ethernet Test	ONA-SP-10M1GE				■

Available Radio Communications Kits continued

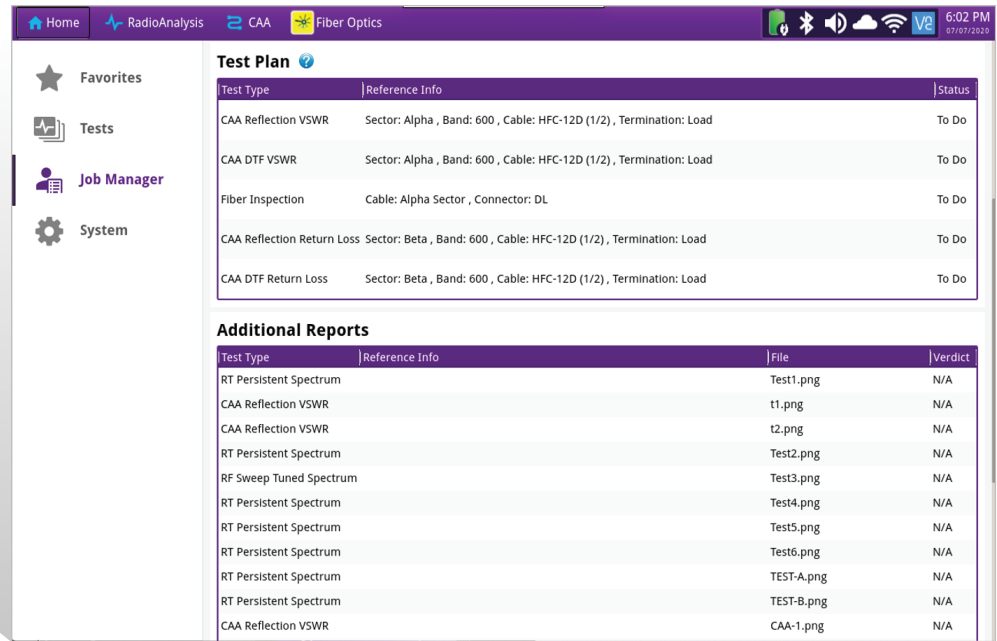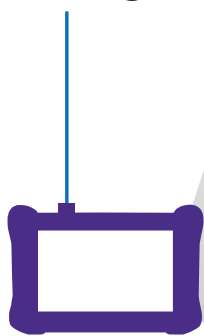| Antennas					
Mag mount RF omni antenna TypeN_f 600 MHz to 6 GHz	G700050345	■	■	■	■
RF Log Periodic Antenna SMA-f 650 to 6000 MHz 2.85 dBd	G700050367	■	■	■	■
AntennaAdvisor Handle	JD70050007	■	■	■	■
RF omni antenna with LNA (Type-K-f, 26 GHz to 40 GHz)	G700050342			■	■
RF directional horn antenna kit, K(f), 26.5 GHz to 40 GHz, 20 dBi	G700050370			■	■
RF cable DC to 40 GHz, K_m to K_f, 1.5 m	G700050552			■	■
Cable and Antenna Analysis					
6 GHz Cable and Antenna Analyzer Module	CAA06MA	■	■	■	■
Y- CALIBRATION KIT TYPE-N_M _DC TO 6 GHZ_50 OHM	JD78050509	■	■	■	■
2 Port Transmission Measurement	ONA-CAA-2P	■	■	■	■
RF CW Source	ONA-CAA-RFS	■	■	■	■
Fiber Optics					
4100 Module A OTDR - 1310/1550 NM - PC	E4126A-PC				■
FTTA-SLM Function	EFTTASLM				■
20M Singlemode Patchcord SC/PC to LC/PC	EPCSM20M-SC-LC				■
FiberCheck Autofocus WiFi Microscope Kit withTips	FIT-FC-KIT3				■
Miscellaneous					
Power Expansion Module for ONA-800-MF2	ONA-MF2-PEM	QTY 2	QTY 2	QTY 2	QTY 2
OneAdvisor Back Cover	ONA-800A-BC	■	■	■	■
Large hard carrying case with wheels	G700050701	■	■	■	■
CA5G Automotive cigarette lighter DC/DC adapter	G700050125	■	■	■	■
Backpack carrying case	ONA-800A-BP	■	■	■	■
OneAdvisor Harness	ONA-800A-HN	■	■	■	■
Large soft side carrying case	CC-034601	■	■	■	■
BandPass Filters	(multiple)				■

StrataSync

Measurement Automation with Job Manager and StrataSync

VIAVI Job Manager provides the ability to automate the instrument and guide the user. A user can choose different sequences that provides step by step process for running and completing a battery of tests in the field.

These sequences can be pre-built by experts and then deployed on the OneAdvisor 800. The test regimen can include any of the OneAdvisor test modes in any sequence coupled with specific configurations and limit sets.

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OneAdvisor 800 Job Manager

Cloud Integration

The OneAdvisor 800 can save and synchronize the test results, reports and configurations to the VIAVI StrataSync instrument management and reporting service. Through StrataSync , users can automatically save and retrieve field test results. Additionally, complete workflow management with test configurations and specific workflows can also be achieved via StrataSync.


OneAdvisor 800 Interference Analysis Custom Signal capture and push to server

StrataSync

VIAVI StrataSync is a cloud-hosted system that provides a centralized management of test solutions including test set configuration management, test configurations, and test data management.
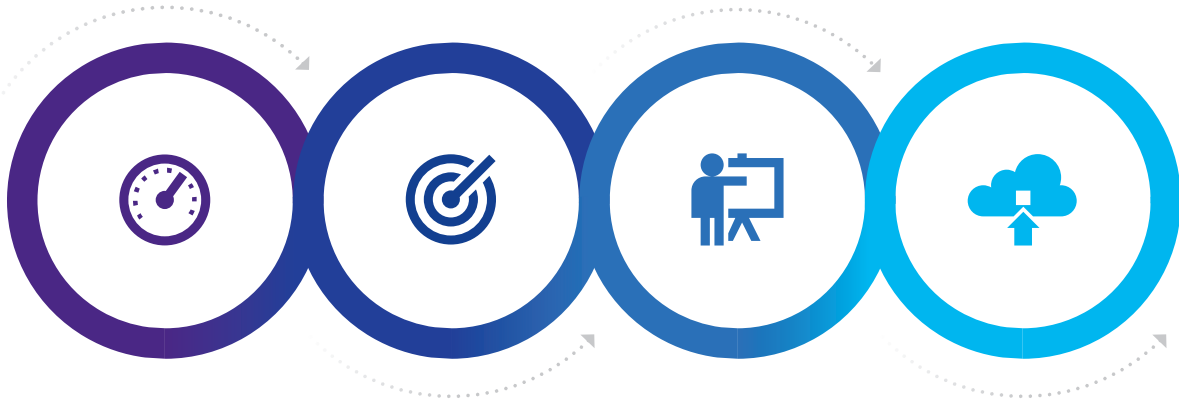
StrataSync is designed to eliminate email dispatches, manual test procedures, manual report consolidation, test device dispatch and test device calibration visibility.
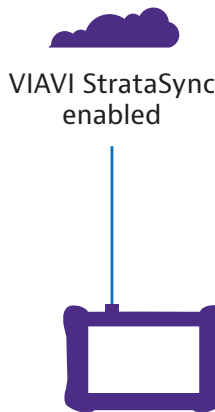
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StrataSync – Asset Management

Faster Work Speed

Eliminate wasted time trying to remember which tests to run and how to run them

Greater Consistency

Drive consistent, repeatable results, regardless of technician skill or experience

Lower Training Costs

New technicians get up to speed quickly with easy-to-follow prompts

Peace of Mind

Test results automatically saved to StrataSync cloud

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