

Brochure

# 5G Network Installation & Maintenance Solutions

**5G**

Command the 5G network.





# Contents

<b>5G Networks Demand A New Approach to Test and Measurement</b>	<b>4</b>
--	----------

---

<b>Tools for 5G Network Installation and Commissioning</b>	<b>6</b>
--	----------

OneAdvisor-800 Cell Site Installation and Maintenance Tool .....	8
Connector Inspection.....	9
P5000i and FiberChek Probe.....	9
Fiber Inspection.....	10
Sidewinder and Fiber Handhelds .....	10
Coax and Sweep Test.....	11
Cable and Antenna Installation .....	11
One-Advisor 800 Cable and Antenna Analyzer (CAA) Module .....	11
Antenna Alignment .....	12
RF Vision.....	12

---

<b>Tools for 5G Maintenance and Optimization</b>	<b>14</b>
--	-----------

Fiber Troubleshooting .....	17
OneAdvisor OTDR Module.....	17
Radio Access Verification.....	18
OneAdvisor Spectrum Analyzer Module .....	18
Real-Time Spectrum Analysis.....	19
OneAdvisor RTSA.....	20
Interference Analysis.....	21
OneAdvisor-800 Interference Analyzer.....	21
RFoCPRI Interference Analysis .....	22
Received Signal Strength Indicator (RSSI) .....	22
Spectrum Logging and Replaying.....	23
Gated Sweep Spectrum.....	23
Interference Finder .....	24
Interference Hunting .....	24
Signal Analysis.....	25
5G Route Map .....	26
EMF Analysis .....	26

---

<b>Stratasync™ Test Process Automation</b>	<b>27</b>
--	-----------

# 5G Networks Demand A New Approach to Test and Measurement

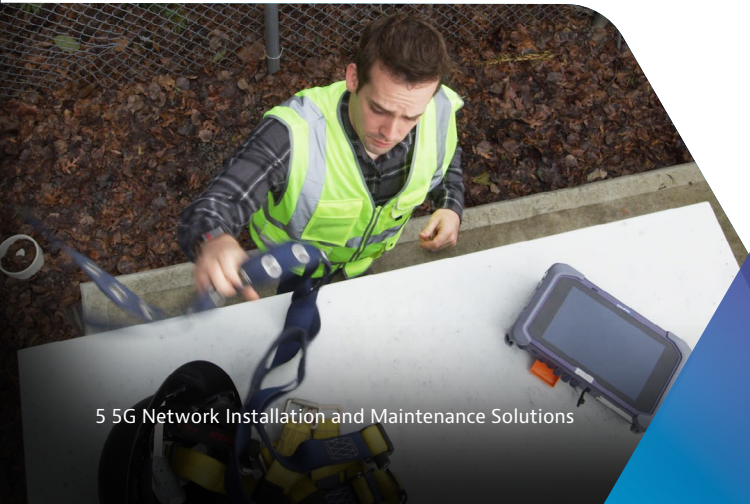
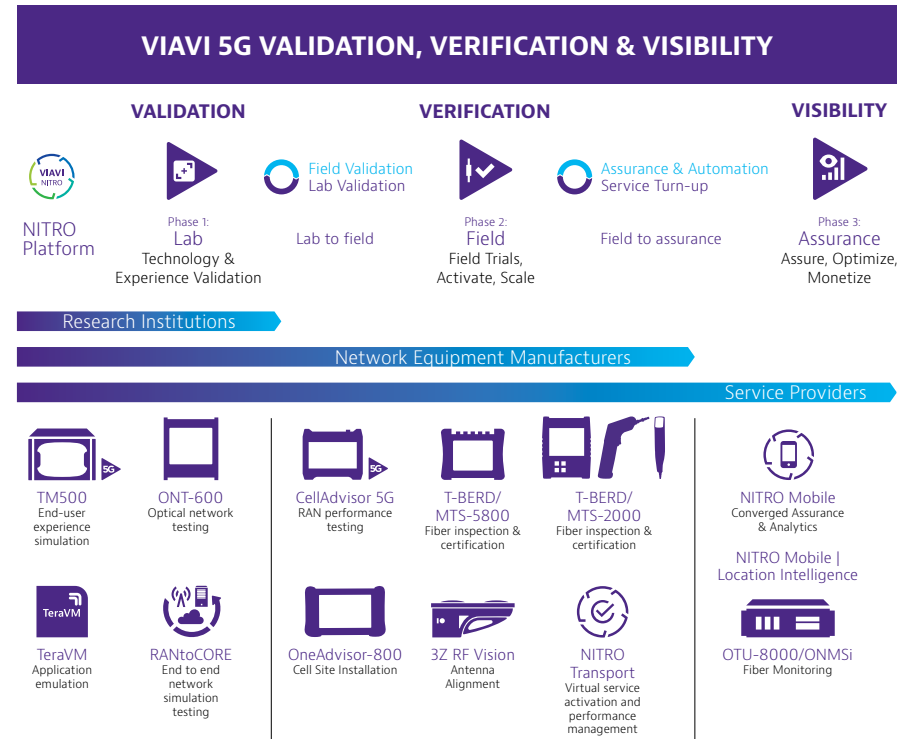


As 5G moves to mass deployment field engineers, technicians and installers require specialized tools to overcome the myriad challenges of the complexity of 5G network deployment. Not only is 5G deployment driving upgrades across the entire network—fiber infrastructure to 5G NR radios—but 5G cell site construction and installation brings new unique requirements.

The massive scale of the 5G network will challenge even the best-prepared service providers to ramp their deployment and maintenance operations with a pool of resources that not only assists with managing operational expense but also meets the stringent test and automation requirements.

Traditional methods of service activation and manual ways of working will not suffice to efficiently deploy an ever evolving 5G network. Automation of service activation and performance management are key to successful deployment, maintenance, and monetization of the 5G network. VIAVI 5G test solutions address all facets of the 5G network—from lab to field to assurance.

## Tools for Every 5G Work Group from Lab to Field to Assurance



5G Network Installation and Maintenance Solutions

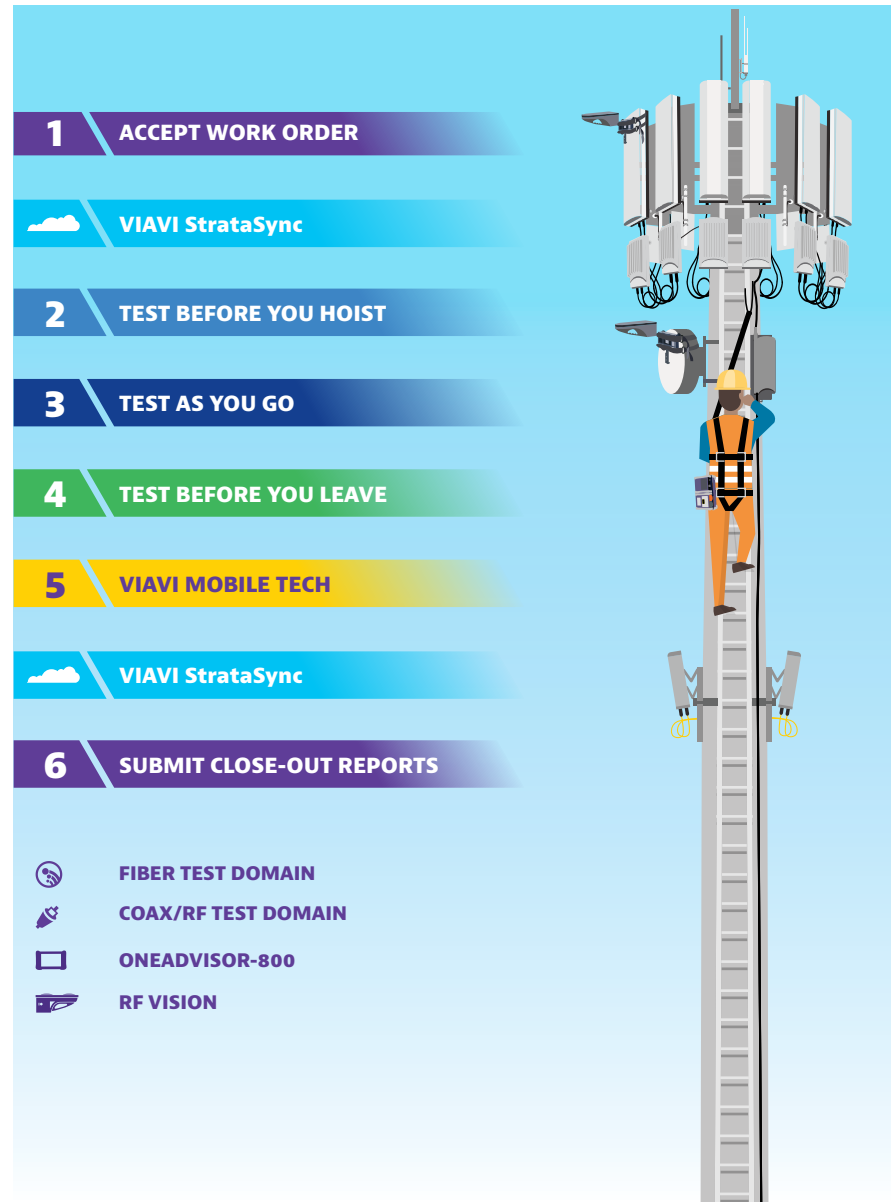
# Tools for 5G Network Installation and Commissioning



Installing new radios, fiber infrastructure and antennas are the essential tasks during the installation phase. Because the industry faces a shortage of trained technicians and there are multiple technologies in play, the most difficult challenge during this phase is staffing work crews and providing them with the right tools to complete the work quickly, accurately and consistently.

Installing a cell site requires that technicians follow a standardized approach to perform a series of tests to ensure that all equipment performs to specification. These can include a range of fiber tests, coax and sweep tests, cable and antenna analysis, connector tests, antenna alignment, and more, depending on the provider's specified methods and procedures.

VIAVI brings you a complete solution for cell site installation and commissioning and VIAVI test process automation (TPA) simplifies the process end to end. Offered on all VIAVI instruments for cell-site deployment, TPA allows novice technicians to deliver quality results every time by removing any guesswork and streamlining the workflow.



## OneAdvisor-800 Cell Site Installation and Maintenance Tool

The VIAVI OneAdvisor™-800 is an ideal solution for technicians installing or upgrading cell sites. OneAdvisor-800 brings unprecedented simplicity, speed, and accuracy to site turn-up through multi-test capability and TPA that streamlines the work into a short sequence of push-button tests.

OneAdvisor-800 combines fiber inspection, optical power measurements, OTDR, cable and antenna analysis, CPRI, SFPCheck, and antenna alignment, delivering easy, fast, low-cost installation because field technicians get built-in guidance, automatic configuration, pass/fail results, and a single report package ready for closeout—*every time at every site.*



### Key Benefits

- **Improved tool efficiency.**  
Replaces multiple independent tools (OTDR, CAA, Fiber scope, etc).
- **Broad coverage.**  
Covers all radios types (LTE and 5G) and topologies (Macro-cell, Small-cell, C-RAN, and/or DAS)
- **Scalable.**  
As a team's test responsibility grows, so can the OneAdvisor platform with modular test components



### Test Process Automation Benefits

- **Greater accuracy.**  
Complete test plans exactly to the specifications of the service provider with precise measurements.
- **Consistency.**  
Test processes and workflows are defined centrally and "pushed" to test instruments, eliminating the variability of manual procedures and drives consistent, repeatable results, regardless of technician skill or experience level.
- **Lower Training Costs.**  
Training focus shifts to the test process itself, which is faster and easier to learn, rather than on technical information that is generally time-consuming and overwhelming for new technicians.
- **Speed.**  
Job Manager eliminates wasted technician time trying to remember which tests to run and how to run them.



## Connector Inspection

The most common cause of signal impairment in an optical system is a dirty connector or end-face which can get contaminated very easily at a windy, outdoor cell site. The first step in achieving acceptable insertion- and return-loss measurements is to inspect end-faces with a fiber microscope.

### P5000i and FiberChek Probe

Multiple VIAVI microscopes integrate with the OneAdvisor-800, including the P5000i and FiberChek Probe Microscope. The P5000i connects to the OneAdvisor-800 via USB and makes quick, easy work of certifying that every connection in the mobile network is clean.

FiberChek Probe is an all-in-one handheld solution every fiber technician can rely on for all of today's fiber inspection needs in a fully autonomous, handheld device. With built-in capabilities for image viewing, auto-focus, pass/fail analysis, and storing/recalling results, the FiberChek Probe completely automates inspection workflows to ensure fast and accurate performance. Whether used on its own or connected to OneAdvisor-800, the FiberChek Probe is the essential fiber tool for every technician to efficiently inspect all fiber end faces.



### Benefits

- Inspect and certify fiber end-face quality at the push of a button, making your technicians instant fiber experts
- Ensure physical-layer performance by guaranteeing fiber connectivity meets industry standards
- Eliminate confusion with fast, easy, and objective testing
- Certify fiber end-face quality with your existing VIAVI test platform or mobile device
- Let your technicians get it right the first time, drive best practices, improve quality of work, and optimize workflows



### Key Features for FiberChek Probe

- Integrated touch screen with live fiber viewing
- Auto-Center / Auto-Focus
- Built-in fiber end-face analysis
- User-selectable acceptance profiles
- Stores results on device or export
- WiFi and USB connection capabilities

### Key Features for P5000i

- User-selectable acceptance profiles allow certification to any acceptance criteria
- Includes FiberChekPRO™ software for analysis and reporting with PC/laptop
- Automatic Fiber Image Centering
- Dual-Magnification
- Easily connect to mobile Android™ devices/tablets using FiberChekMOBILE (available at Google Play) to inspect and certify fiber connectors directly on the mobile device



## Fiber Inspection

With 5G cell-site upgrades and new installations take on new levels of complexity and the tasks technicians perform differ greatly from 3G and 4G. In fiber to the antenna (FTTA), rather than a single fiber pair going to a radio, there are multiple fibers, meaning multi-fiber connections at the radio, higher order wave division multiplexing (WDM). This calls for different installation, verification and troubleshooting tools for fiber.

Inspecting and cleaning fiber connectors continues to be a requirement during the site construction phase. With multi-fiber connectors now infiltrating the cell-sites fiber inspection tools need to be upgraded.

### Sidewinder and Fiber Handhelds

VIAVI Sidewinder, Multi-fiber Push On (MPO) light source and power meter simplifies the verification of connectors and fiber lines. Similarly, for C-RAN or xWDM topology OCC-55 and OCC-56 power meters, COSA-4055 and OCC-4056 modules can be used efficiently to verify per wavelength paths.



### Key Benefits

- Fully autonomous multifiber inspection
- Automates the inspection workflow
- Certify end face quality to customer requirements
- Ensure accurate and fast test performance with automatic test results at the press of a button
- Easily access connections in any location



### Key Features

- Integrated touchscreen
- Live fiber viewing
- Auto-center, auto-focus, auto-pan/scroll
- Built-in fiber end-face analysis
- Audible sounds for Pass/Fail results
- User-selectable acceptance profiles
- All-day battery life
- Built in acceptance criteria to industry standards (IEC-61300-3-35)



## Coax and Sweep Test

Sites where coax is still used, especially FR1 band sites, continue to require sweep testing. Because the scale of deployment is also increasing, all of these tests must be performed with results delivered in a more efficient way. The OneAdvisor-800 meets all cell site coax and sweep test needs

## Cable and Antenna Installation

Cell-site performance relies on pristine cable and antenna installation. Additional loss in the system can be introduced by a number of factors—a break in the cable, poor seating at the connectors, moisture, or a bad connector splice anywhere in the antenna and the transmission line. Any of these issues can cause the cell-site to exceed the link budget specification resulting in poor call retention, low data throughput, and high access failures. Therefore, performing a cable sweep test during the installation phase is as essential as putting the cable and antenna system together.

### OneAdvisor-800 Cable and Antenna Analyzer (CAA) Module

The VIAVI OneAdvisor-800 equipped with the CAA module guides a technician through a sweep test that confirms system integration and antenna performance. The user-friendly GUI with intuitive pass/fail results instantly identifies problems enables a technician to easily determine if the performed installation meets the required performance specifications.



### Benefits

- Simplifies sweeping antenna and feed line system by following step by step guided methods of procedure
- Cable and antenna reflection tests, distance to fault and cable loss
- Generate reliable and automated reports using TPA solution
- Reduce test time by making two measurements simultaneously on one display
- Modular architecture reduces overall cost and training requirements



### Key Features

- Trace overlay that detects signal degradation over time
- Dual display and multiple tabs that allow fast and efficient measurements
- Intuitive pass/fail analysis that instantly notifies a problem
- Integrated RF CW source
- EZ-Cal™ that calibrates faster and easier
- CAA Check and Job Manager that enable test process automation and consolidated reports



## Antenna Alignment

How do you ensure that RF coverage meets the design requirements for a certain geographic area? And further, how do you ensure that sure antennas are orientated correctly, with no obstruction in their path, and have the proper tilt? Manual methods using a compass to verify antenna alignment are neither accurate nor efficient. For accurate alignment, installers must be equipped with an effective and reliable antenna alignment tool.

### RF Vision

RF Vision allows technicians to perform antenna alignment as indicated per RF design specifications. With RF Vision cell-techs conduct a line-of-sight survey with every alignment. With dual-frequency GNSS technology, RF Vision measures satellites twice, delivering more accurate and faster readings, even in high-density urban and crowded environments. A key advantage is the delivery of a secure report without the need to post-process data. The report includes the target coordinates, final measured alignment data, site sector identifiers, geocoding, geolocation, date and time stamp, and line-of-sight photo validation.



### Benefits

- Accurately align directional antennas (panel, microwave, and 5G cylindrical antennas)
- Generate reliable and automated line-of-sight surveys.
- Match antenna alignment with RF design
- Maximize voice quality and data traffic.
- Improve data user throughput & KPIs.
- Reduce customer churn.
- Reduce OPEX.



### Key Features

- Built-in camera
- Bullseye target alignment with augmented reality
- Dual-frequency technology
- Impact-resistant 5" touch screen display
- Mobile application to share line-of-sight surveys
- Weather-resistant, rugged design

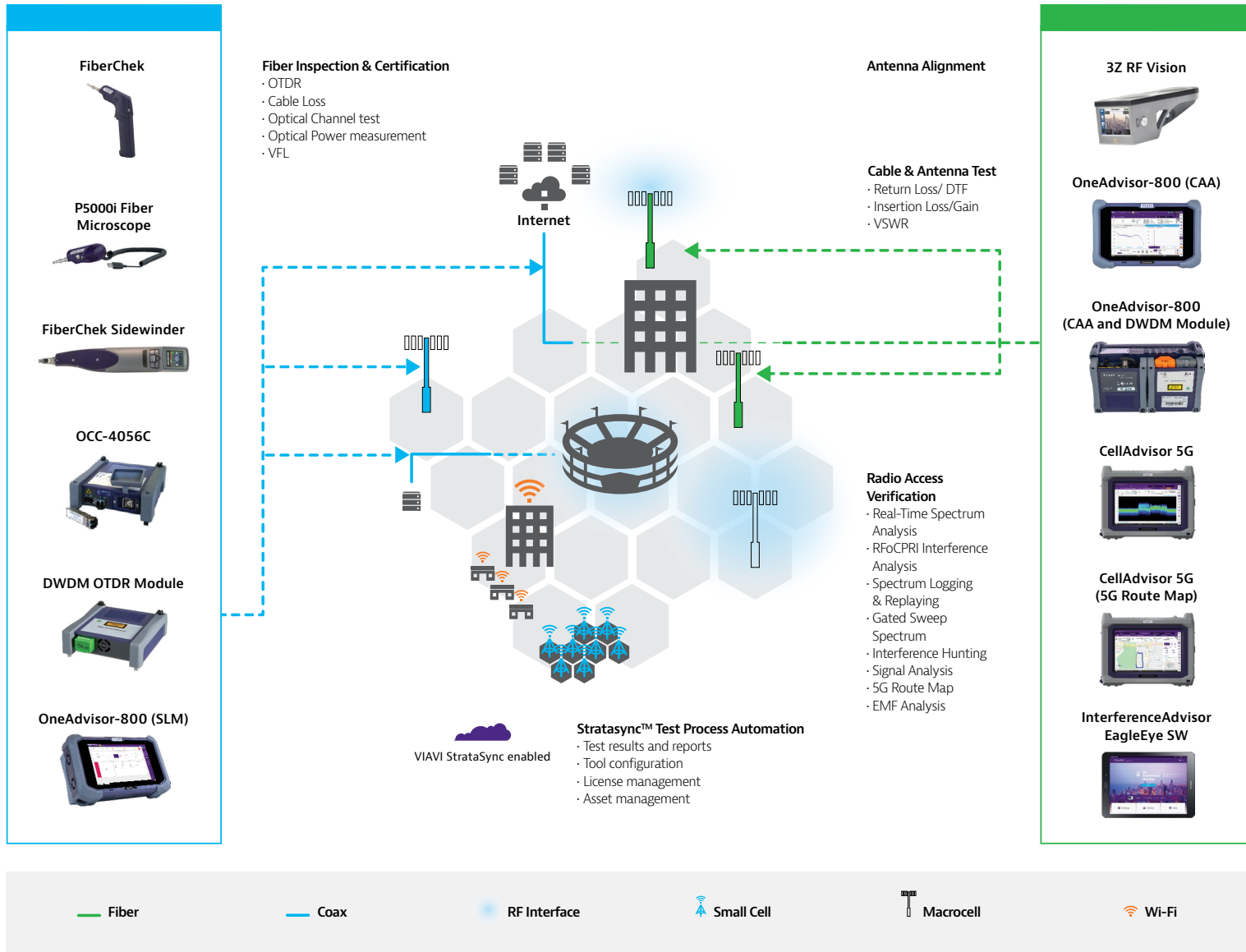




# Tools for 5G Maintenance & Optimization



# VIAVI Surround the Antenna Solution



Maintaining 5G in the field can span working on an array of subsystems and situations including layer 1 fiber, cable and antenna system, interference, radio performance, or and radio configuration issues.

Optimal cell-site performance relies upon a quality installation. This means all cables, connectors, splices, radios, antennas and other inline components of the cable and antenna system have been thoroughly tested and meet specifications. However, with time and environmental changes, components in the field can deteriorate. When this happens, performance will degrade causing customer dissatisfaction and revenue loss. Cell-site maintenance is essential for every service provider. It is a key step to guard against poor user experience and customer churn.

To keep the OPEX low, service providers and their partners require efficient, easy-to-use test solutions that can identify network performance issues quickly and in a consistent manner. VIAVI works closely with service providers to deliver on that challenge. This collaboration led to the development of the OneAdvisor-800 cell site installation and maintenance tool. Using the OneAdvisor-800 equipped with the appropriate module, technicians can easily verify and troubleshoot any 5G service anomaly.

OneAdvisor-800 can be optioned to perform the following maintenance functions:

1. Physical Layer fiber troubleshooting and characterization using an Optical Time Domain Reflectometry (OTDR) module
2. Cable and Antenna system analysis using an CAA module
3. OTA testing using the spectrum analyser module
4. RFoCPRI, PIM detection and interference testing



## Fiber Troubleshooting

Top fiber performance is essential for 5G service delivery. A fiberscope validates the basic hygiene of the cell-site fiber end faces. After the technician establishes that connector end faces are clean, fiber characterization can be performed to identify the root cause of a performance issue.

### OneAdvisor OTDR Module

Using the correct OTDR module with OneAdvisor-800 for the specific type of application, e.g., xWDM, PON etc., the technician can perform these crucial tests.

- **Insertion Loss (IL):** IL measures the optical power loss across the optical link. Contributors to link loss include fiber attenuation and loss through mated connectors or splices. Contaminated, damaged, or poorly mated connectors are the most common sources for excess link loss. Stress on the fiber by over-bending, pinching, or kinking frequently can be the source of problems.
- **Optical Return Loss (ORL):** ORL is the ratio of reflected over transmitted optical power levels for the end-to-end fiber link. The largest contributor to reflected optical power is connectors. Exceeding ORL limits can cause data errors, increase system noise, and can sometimes damage transmitters in higher-power environments.
- **OTDR:** OTDR testing is the only way to characterize and locate any in-line element of a fiber link, such as optical connectors, splices, bends, and breaks. Testing a fiber link with an OTDR also helps document the system for future verification



### Benefits

- Automatic macro bend detection
- Summary results table with pass/fail analysis
- Bidirectional OTDR analysis
- Smart Link Mapper (SLM) icon-based map view of the fiber link
- SmartAcq perform a short and long pulse acquisition to improve measurement reliability



### Key Features

- Up to 45 dB dynamic range and 256,000 acquisition points
- Quad module, combined single-mode/multimode 850, 1300, 1310, 1550 nm
- Dual/tri-wavelength modules with 1310/1550/1625 nm
- Tunable DWDM OTDR module at ITU-T G.694.1 wavelengths
- Integrated CW light source and power meter TIA/IEC pass/fail thresholds
- Instantly detects traffic when connected to live fiber (except on live/filtered port)
- ITU Fiber type identification (G65x A, B, C and D)
- IEC 61280-4-1-compliant using an external modal controller
- Ready for SLM, FTTA-SLM, and FTTHSLM intelligent optical application software



## Radio Access Verification

When a network performance issue is identified, the first step in resolving the issue is to perform an analysis of the alarms and the key performance indicators (KPIs) and logs from the operational support system (OSS). This allows the technician to determine whether the issue is a simple hardware failure or a configuration issue. If it is neither, the suspicion then points to a field issue, potentially interference-related or something that may have changed the RF environment of that cell-site.

Typically, an RF engineer and/or cell technician visits the area where the performance issue was observed. In cases where KPI analysis indicates that the issue may be only related to one cell site, the engineer can perform certain tests using a spectrum analyzer at the cell site. The objective of these tests is to help isolate the source of the issue.

The VIAVI OneAdvisor-800 offers a range of modules and options to diagnose and resolve issues stemming from each of these sources.

### OneAdvisor Spectrum Analyzer Module

The OneAdvisor-800 equipped with the spectrum analyzer module (SPA06MA-O) is an RF test solution covering a comprehensive range of RF tests:

- Real Time Spectrum Analysis
- Interference Analysis
- LTE FDD/TDD Signal AnalysisCoverage Analysis (RF Coverage Map)
- EMF Analysis

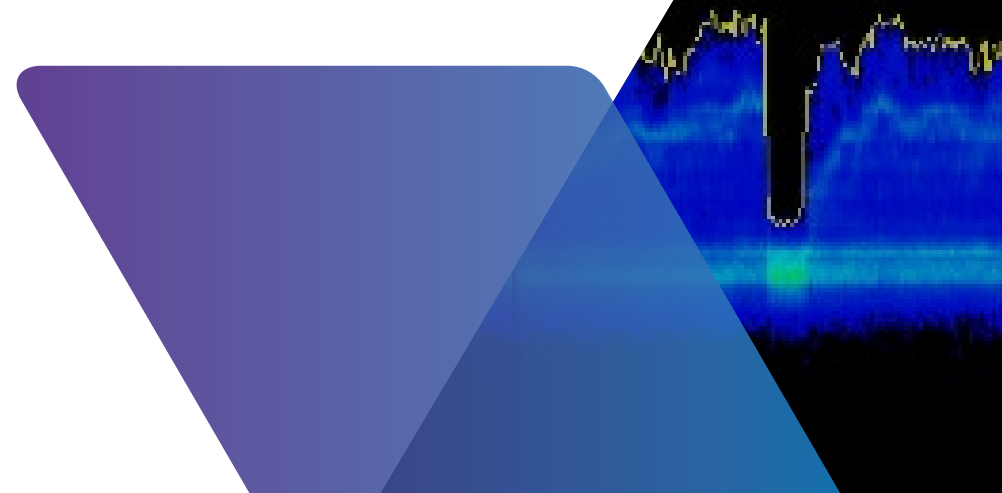


## Real-Time Spectrum Analysis

In 5G TDD plays an important role because large chunks of spectrum are available in the C-band and mmwave, which only support TDD based communications. In the TDD scheme, both DL and UL use the same frequency but are allocated different time slots for transmission and reception. In that scenario, identifying an interference signal is extremely difficult when the base station is transmitting the signal in the DL. To overcome this challenge, gated sweep functionality that only measures the signals during the UL transmission period is used. Gated sweep is essential to isolate interfering signals in the UL. However, as 5G NR introduces dynamic TDD where UL and DL transmissions can be changed dynamically, the gated sweep function will no longer be effective.

A real-time spectrum analyzer (RTSA) can overcome this challenge. It detects signal level and frequency of occurrence of rapidly changing interfering signals overlapped with the 5G NR signal. An RTSA can capture transient and fast signals more quickly as well. Traditional spectrum analyzers perform data sampling and Fast Fourier Transform (FFT) processing in a serial manner, sweeping across the spectrum by capturing small parts of the spectrum at a time and building a complete picture over time. As a result of this serial process, a traditional spectrum analyzer is blind to other spectral regions during the sweep time. If an event (interfering signal) occurs in one part of the spectrum while a different part of the spectrum is being examined, the event will be missed. On the other hand, a real-time spectrum analyzer can perform the data sampling and FFT processing in parallel, and theoretically can capture every intermittent signal without missing any signals for the entire range of spectrum.

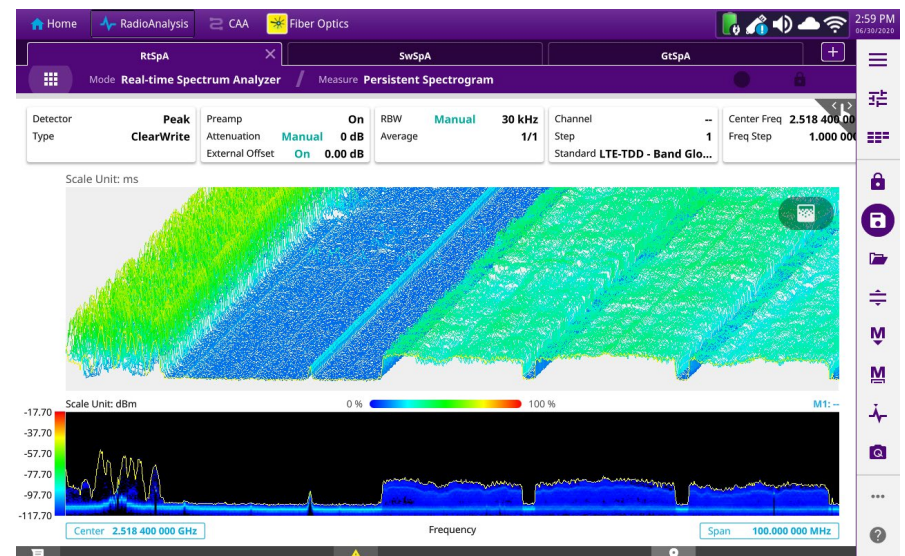
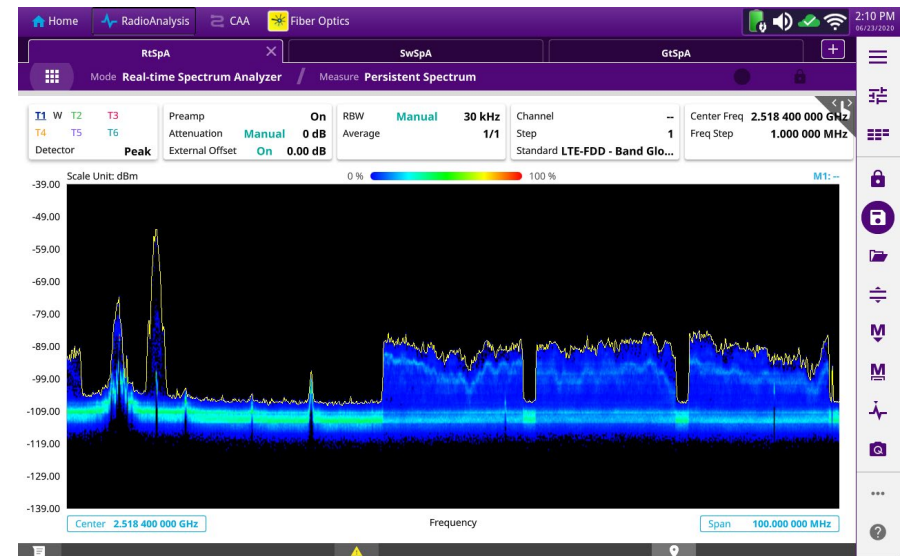
A real-time spectrum analyzer can process thousands to hundreds of thousands of spectrums per second, but the visually perceptible screen update rate is about 30 frames per second. To overcome this, the RTSA uses a viewing method called persistent spectrum display which shows hundreds or thousands of spectrum data on a screen, but with a different color or brightness per frequency of occurrence to determine the probability of signals appearing rather than just the amplitude of a signal. Persistent display effectively distinguishes UL traffic with all irregularities and interference signals with relatively high repeatability, thereby effectively detecting interference signals in the UL



## OneAdvisor RTSA

OneAdvisor real-time spectrum analysis (RTSA) performs a persistence power measurement in high-speed providing a comprehensive view of intermittent signals for fast, accurate characterization of wireless signals. Further, it identifies intermittent interference signals through its 2D and 3D spectrogram measurements that characterize signals in power, frequency and time.

The OneAdvisor RTSA is ideal to characterize signals that have different communication profiles in time domain such as time division duplex (TDD) transmissions. Here the same frequency channel allocates different time-slots for uplink and downlink signals which is the case of 5G carriers above 3GHz. It also provides the ability to identify the presence and location of 5G beam signals, referred to as synchronization signal block (SSB) due to its 100MHz of instantaneous analysis bandwidth.



## Interference Analysis

Radio spectrum (frequency range from 3 kHz up to 300 GHz) is a limited resource and the proliferation of wireless applications and services has increased the need to utilize more and more RF spectrum. As a growing number of radio transmitters is added into the RF system, so grows the potential for RF interference.

Radio frequency interference is the effect of unwanted energy due to one or a combination of emissions, radiations, conduction, or inductions upon reception in a radio communication system, manifested by any performance degradation, misinterpretation, or loss of information which could be extracted in the absence of such unwanted energy.

To enable 5G, new and much larger chunks of spectrums in the mid and mmwave frequency ranges are made available. Although, the probability of interference is relatively low due to the characteristic of the spectrum and the utilization in the mid and mmwave bands, interference can happen if proper network planning, installation and maintenance activities are not performed. To ensure a thorough prevention strategy, it is useful to understand the causes, characteristics, and effects of interference and how it can be identified and mitigated.



### OneAdvisor-800 Interference Analyzer

OneAdvisor Interference Analyzer functions provides the most comprehensive measurement techniques to effectively identify, characterize and locate interfering signals.

#### Key interference analysis measurement functions:

- RFoCPRI interference analysis
- Received signal strength indicator (RSSI)
- Spectrum logging and replaying
- Gated Sweep Spectrum
- Interference Finder
- Interference Hunting





## RFoCPRI Interference Analysis

RFoCPRI technology performs RF measurements through the fiber fronthaul which is the link between base band units and remote radio heads. RFoCPRI verifies the control signals and extracts the RF (IQ) data transmitted between the BBU and the radio at the ground without the need to climb the tower.

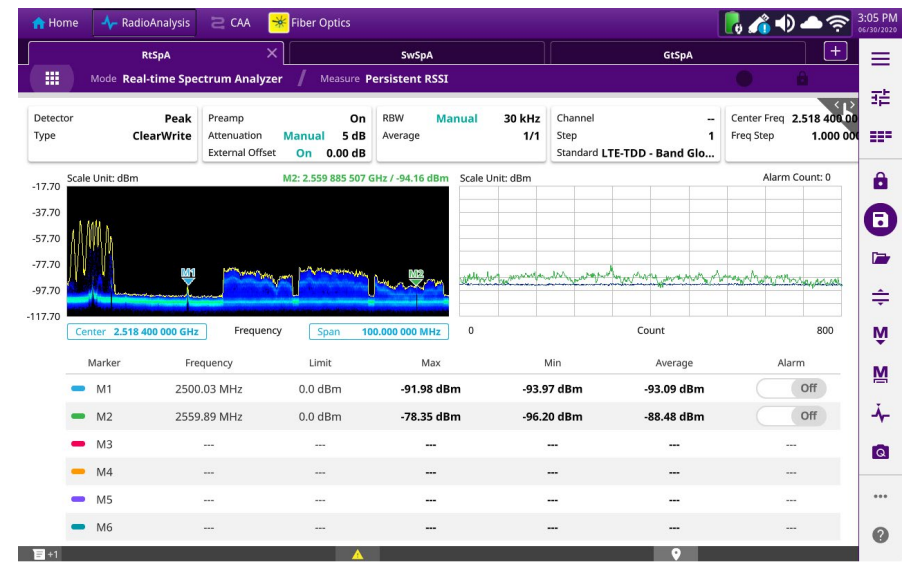
The key benefit of RFoCPRI is that it enables monitoring and analysis of uplink signals (mobile devices), and PIM detection, precisely as they are received by the cell site.



## Received Signal Strength Indicator (RSSI)

RSSI performs a multi-signal measurement (up to 6 simultaneously signals) in time, assessing the power-level variations of interference signals 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.

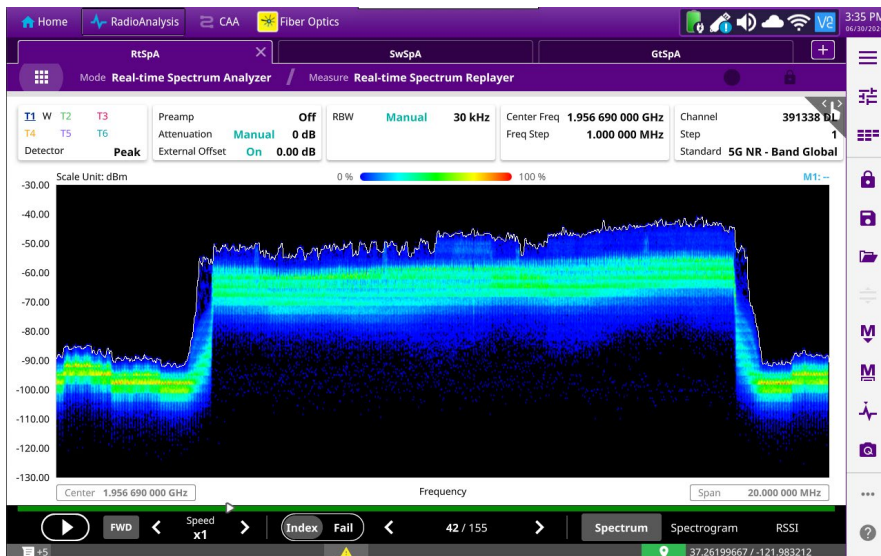




## Spectrum Logging and Replaying

The spectrum can be logged and replayed to identify intermittent interference signals. Spectrum measurements logged can be played back in the spectrum, spectrogram or RSSI mode, and limit lines can be set to create failure points when signals exceed it.

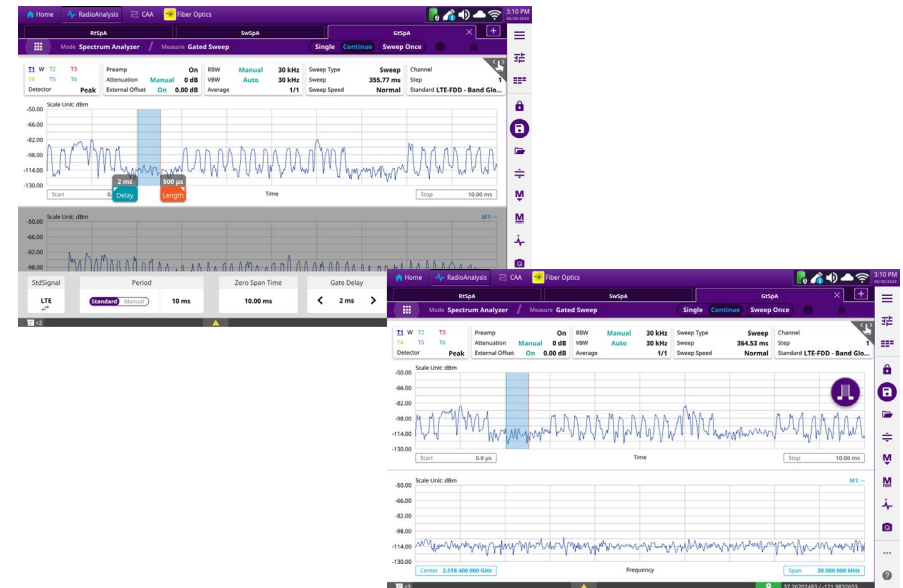
The OneAdvisor-800 clearly displays the failure points on the trace timeline for quick access during playback.



## Gated Sweep Spectrum

Interference analysis in TDD signals requires a different measurement technique than conventional spectrum analysis because the uplink and downlink signals are transmitted on the same frequency, but different in timeslots.

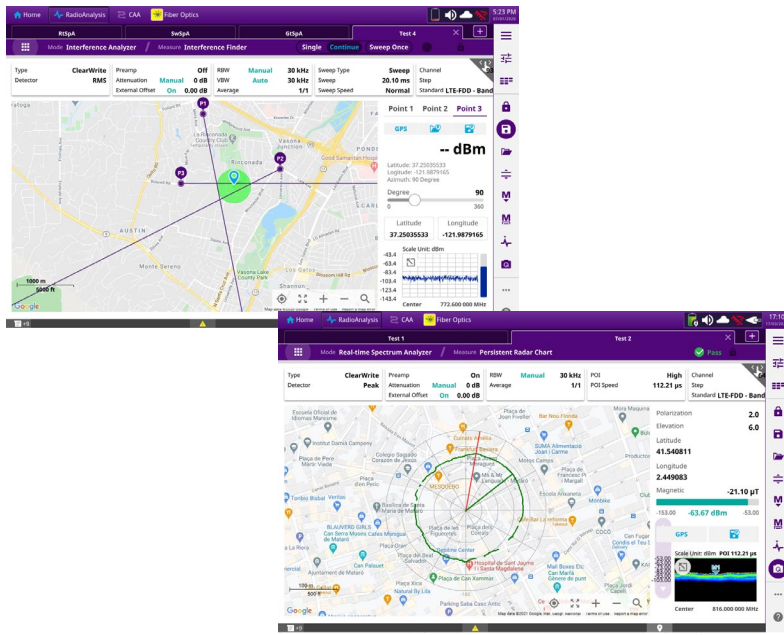
OneAdvisor-800 performs gated sweep spectrum, effectively conducting spectrum measurements triggered only on the timeslots assigned for uplink transmission.





## Interference Finder

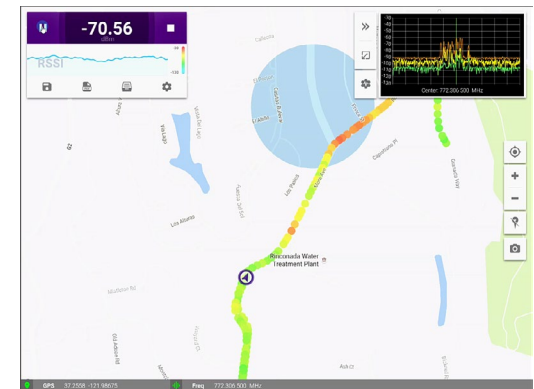
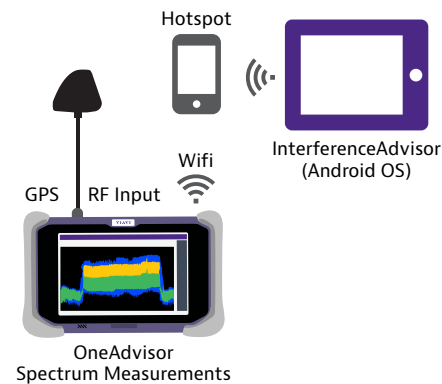
Interference Finder is an automatic triangulation algorithm that uses GPS coordinates to locate the source of interference based on three measurement reference points. The interference finder automatically calculates the interference locations using an inscribed or circumscribed area based on the measured intersection points.



## Interference Hunting

VIAMI InterferenceAdvisor™ software is a fully automated RF interference hunting solution. Easy to set up and simple to use, it allows one RF engineer to identify and locate an interference source in just hours, simply by following voice prompts on a familiar map-style application on an Android tablet.

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



## Signal Analysis

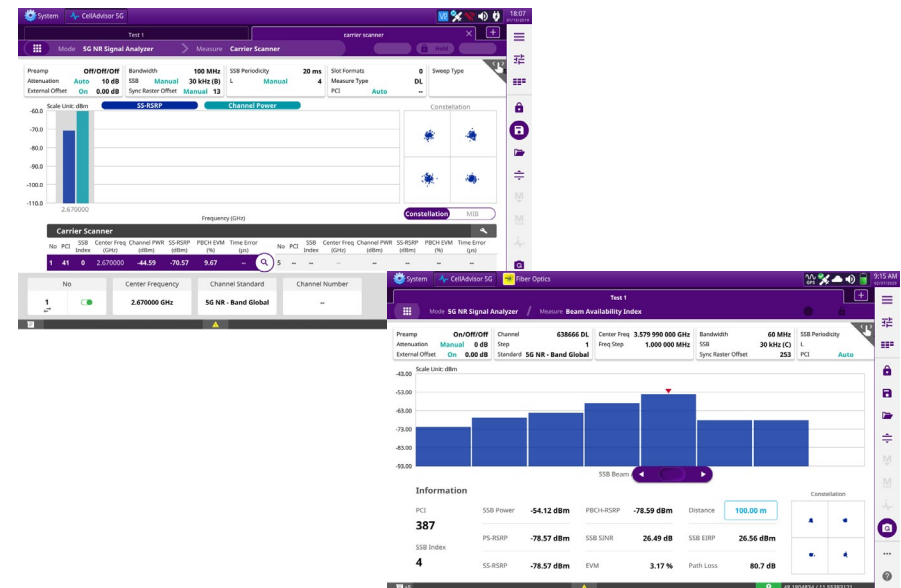
Often it is essential to perform a detailed analysis of the radio signal to isolate anomalies observed in the field. With the OneAdvisor-800, engineers can quickly analyze radio signals to validate both LTE and 5G network parameters and signals. Good RSSI does help in identifying the presence of a strong signal; however, identifying impairments at a channel, PCI, antenna and beam level can help in isolating the problem.

For example, carrier aggregation (CA) is the method through which both LTE and 5G-NR can offer higher throughput, but in case when cell throughput is low how does the technician isolate a CA problem? A key test in this case is to simultaneously analyze the performance of each individual carrier and validate whether the carriers actually are stitched together and are offering the true experience of carrier aggregation. OneAdvisor-800 allows engineers to perform that analysis, to show how different carriers are behaving in an aggregated signal.

Another example of troubleshooting is analyzing the synchronization signaling block (SSB) for 5G NR. SSB carries primary sync signal (PSS), secondary sync signal (SSS) and the physical broadcast channel (PBCH). SSB is used by the UEs or CPEs (phones, modems, etc.) for network acquisition. Basically, the SSB transmits the different reference signals that allow user devices to attach to the networks. Hence, when installing and commissioning a new 5G-NR cell site, one of the first steps is validating that the SSB is transmitting correctly. If it is not, then devices will not be able to connect to the network. Again, using a OneAdvisor-800, the engineer can efficiently perform that exercise.

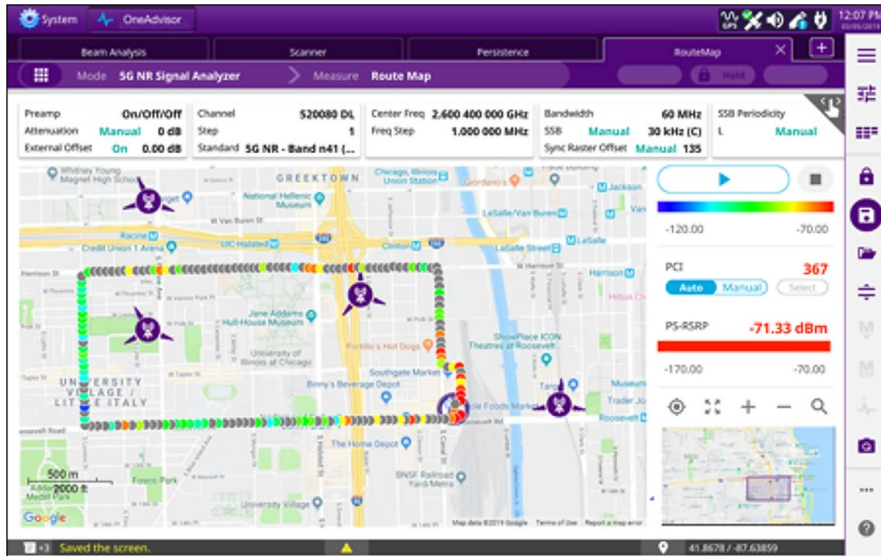
### OneAdvisor-800 over-the-air signal analysis capability measures:

- LTE Over the Air Control Channel: MIMO Analysis
- LTE Over the Air ID Scanner: PCI Dominance
- LTE Carrier Aggregation: Carrier Aggregation Quality Assessment (LTE CC 5x, MIMO 4x and LAA)
- 5G Carrier Scanner: Carrier Aggregation (any band, any channel bandwidth)
- 5G Beam Availability: Beams available and quality indicator



## 5G Route Map

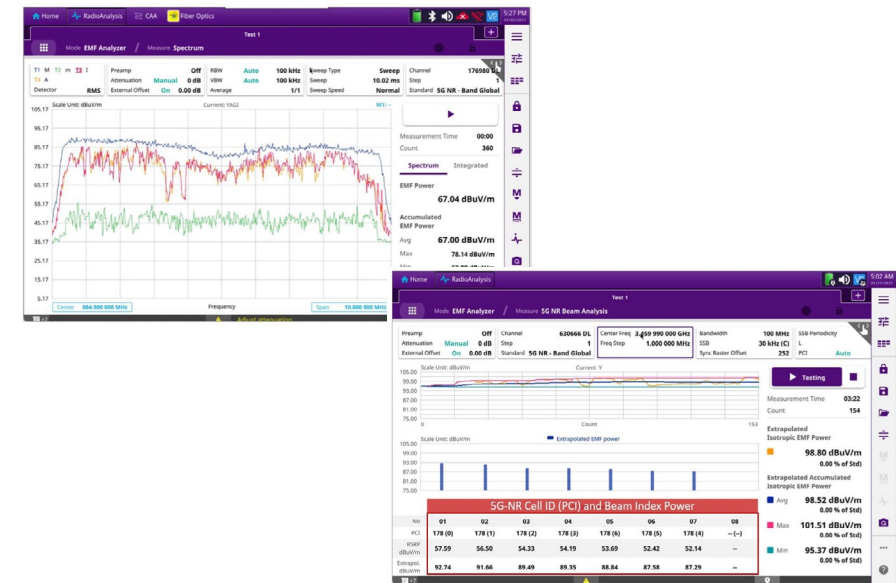
5G Route map feature gives a good indication of the 5G NR coverage area at a PCI and beam level, it also identifies the dominant server.



## EMF Analysis

Radios deployed in cell sites must comply with the electro-magnetic field (EMF) emissions according to thresholds defined by government agencies and regulators responsible for public health and safety.

OneAdvisor-800 with EMF spectrum analysis measures all the radiation power in a defined frequency band, integrating all the power received in a configurable test time, from 1 to 60 minutes. The EMF Spectrum Analysis is applicable for most RF signals, particularly for cellular signals with frequency division duplex (FDD). EMF Spectrum Analysis can be conducted with an isotropic antenna, performing a 3-axis power measurement controlled by the OneAdvisor, or with a directional antenna.



## StrataSync™ Test Process Automation

To truly deliver on the enhanced mobile broadband (eMBB) use case, service providers need to take two key actions: deploy fiber and add cell sites especially in the c-band and millimeter wave.

To bring a large number of sites online, traditional deployment methods will not scale. Finding skilled technicians to install, optimize and manage a complex network becomes an expensive proposition for service providers and their services partners.

To remain competitive, service providers (SPs) must find the right resources, tools and management solutions to scale evolving mobile networks. The same can be said for network equipment manufacturers (NEMs) and the army of contractors that help them deploy, launch, and maintain networks. Ideally, all installations are flawless, and construction and commissioning is plug-and-play with no need to test any network components or the cables that connect them.

### However, in the real world, we routinely encounter:

- Components that are defective or damaged during the installation process.
- Installers that lack adequate training and/or experience.
- Pressure to meet unrealistic daily quotas, which induces human errors or drives teams to take shortcuts or, in some cases, skip testing altogether.
- Overwhelmingly complex deployment processes that are nearly impossible to execute flawlessly.

The strategy for SPs, NEMs and contractors to overcome time-to-market and network quality issues is efficient, automated testing, validation, and optimization. While the goals for the three industry segments differ and are directly related to their role in the 5G ecosystem, SPs want to launch and maintain their networks with ease and low OPEX, contractors want to get paid fast with no revisits, and NEMs want to achieve acceptance the first time. Each can achieve scale and growth through consistent, repeatable and streamlined test process automation (TPA).

TPA is the key for all industry stakeholders to scale 5G with confidence: this means higher production yield for manufacturers, solutions that enable novice technicians to deliver expert-level test results and close projects on the first try, every time, and monitoring and assurance solutions that leverage Machine Learning to predict future network issues and pinpoint failures. It all culminates in a 5G network that can truly deliver mission-critical services reliably for 5G customers and cost-effectively for ecosystem stakeholders.

### VIAMI works closely with industry leaders to develop increasingly automated test solutions, such as StrataSync, that help:

- Service providers launch and maintain their networks with ease
- Contractors to get paid quickly and NEMs to achieve acceptance the first time



## StrataSync: A Better Way to Test

Traditional test processes are filled with manual tasks and stacks of paper reports. Risk is introduced at every step if each technician does not perform all of the manual steps in the prescribed order to the specifications.

### The Old Way

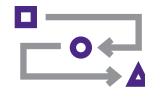
Manual Tasks | Inconsistent Results | Wasted Resources



**Correctly name & organize each test report**



**Remember how to perform each test and what settings to use**



**Remember test sequence and ensure nothing was missed to avoid repeat trips**



**Type in specs from paper to instrument**




**Correctly set up each test**

[Learn more about StrataSync and the entire suite](#)

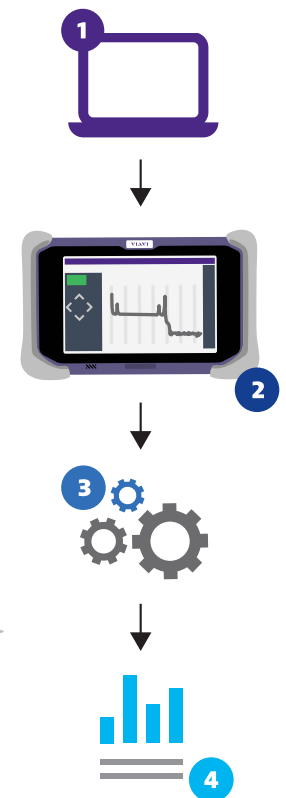
The StrataSync™ Test Process Automation Suite is a VIAVI software option that empowers you to deploy test plan procedures to technicians to simplify and automate tests. With StrataSync JobManager, the OneAdvisor-800 Cell Site Installation and Maintenance Tool streamlines the entire test process so that technicians can follow a consistent workflow and do their work quickly and safely every time.

## The Better Way with StrataSync

Automated Tasks | Consistent Results | High Productivity



- 1 Job definition and assignment:**  
Syncs job assignments to instruments to avoid manual hand-offs, lost job tickets and ill-prepared dispatches.
- 2 Test procedure implementation:**  
MOPs are directly transferred to the instrument to make it easy for technicians to follow the test process in a step by step fashion and perform proper testing.
- 3 Real-time reporting with test data storage:**  
Auto-collects and collates test reports and KPIs for faster network acceptance and issue resolution.
- 4 Test as set management:**  
Avoids email inventories and lost test tools and prevents buying excess tools.





**Emitec Messtechnik AG**  
Birkenstrasse 47  
6343 Rotkreuz

+41 41 748 60 10  
info@emitec.ch  
www.emitec-industrial.ch



Emitec Group   
#1 in Test & Measurement, worldwide.