



RFoCPRI Interference Analysis

OneAdvisor 800

Table of Contents

1. Scope	2
2. OneAdvisor 800 Overview	2
2.1 RFoCPRI Interference Analysis	3
2.1.1 RFoCPRI Connectivity.....	3
2.1.2 RFoCPRI Analysis – Auto CPRI	4
2.1.3 RFoCPRI Analysis – Manual CPRI.....	6
3. Annex.....	12
3.1 Save Measurement Results.....	12
4. Technical Support.....	13

1. Scope

This document describes how to configure the OneAdvisor 800 for RFoCPRI interference analysis.

The required products and parts to complete this procedure are as follows:

Description	Diagram
<p>OneAdvisor 800 with the following functions:</p> <ul style="list-style-type: none"> - OneAdvisor 800 platform equipped with the following modules and options: <ul style="list-style-type: none"> o Any radio analysis module with optical hardware: <ul style="list-style-type: none"> ▪ SPAMA-O: Optical HW ▪ SPA06MA-O: Spectrum up to 6 GHz and Optical HW ▪ RA18MA-O: Spectrum up to 18 GHz and Optical HW ▪ RA32MA-O: Spectrum up to 32 GHz and Optical HW ▪ RA44MA-O: Spectrum up to 44 GHz and Optical HW o Any of RFoCPRI option: <ul style="list-style-type: none"> ▪ ONA-SP-CPRI17: RFoCPRI line rates 1 to 7 for interference analysis ▪ ONA-SP-CPRI8: RFoCPRI line rate 8 for interference analysis ▪ ONA-SP-CPRI18: RFoCPRI line rates 1 to 8 for interference analysis 	 <p style="text-align: center;">OneAdvisor-800</p>
<p>Fiber accessories</p> <ul style="list-style-type: none"> - Pluggable SFP (it is recommended to use same type as BBU or RRH), alternatively: <ul style="list-style-type: none"> o CSFPPLUS-1G-10G-3-1: 1310 SFP+ supporting 1G to 10G all rates CPRI. - Fiber jumpers: <ul style="list-style-type: none"> o EPCSM10M-LC-LC: 10M SM Patch-cord LC/PC to LC/PC - Any optical tap: <ul style="list-style-type: none"> o TO1-SM-LC-55-K: Optical nTAP one channel SM-LC 50/50 split ratio o TO3-SM-LC-55-K: Optical nTAP three channels SM-LC 50/50 split ratio 	 <p style="text-align: center;">Pluggable SFP</p>  <p style="text-align: center;">Fiber Jumper</p>  <p style="text-align: center;">Optical tap</p>

2. OneAdvisor 800 Overview

The OneAdvisor-800 are portable instruments for radio access installation, maintenance, and optimization. Their main test functions include:

- Realtime Spectrum Analysis
- Interference Analysis
- LTE-TDD and LTE-FDD Signal Analysis
- 5GNR Signal Analysis
- NSA Signal Analysis (multi-carrier LTE and 5G)
- DSS Signal Analysis (co-channel LTE and 5G)
- Blind Scanner (DSS, LTE and 5G)
- RFoCPRI Interference Analysis

2.1 RFoCPRI Interference Analysis

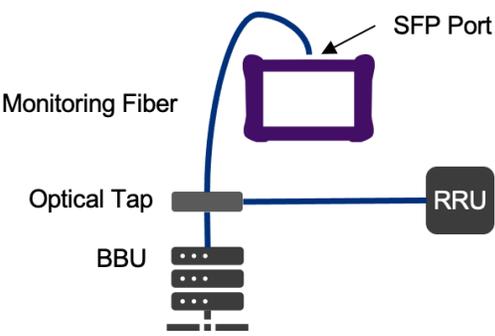
The following procedure describes the steps to perform RFoCPRI Interference Analysis with the OneAdvisor 800.

The following information is required to complete the test:

- Active frequencies/bands at site to be tested
- RRH NEM Vendor (Ericsson/Nokia/Samsung)
- Carrier center frequency / Channel BW / MIMO config for RX antennas.

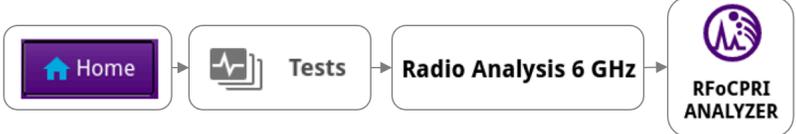
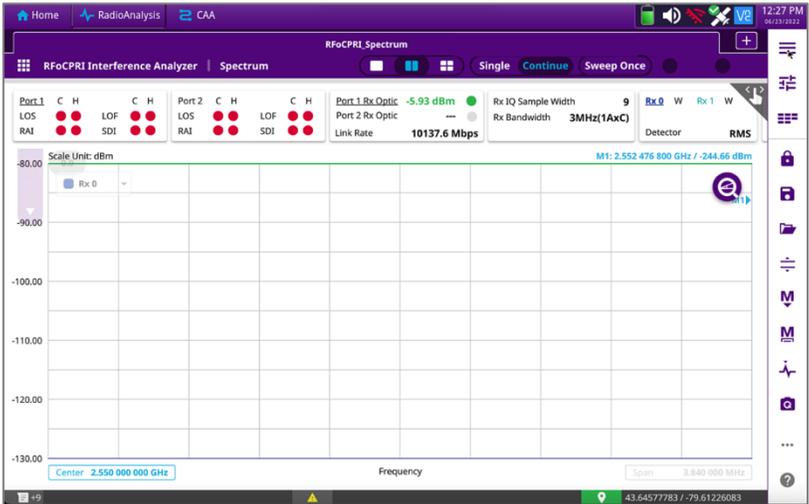
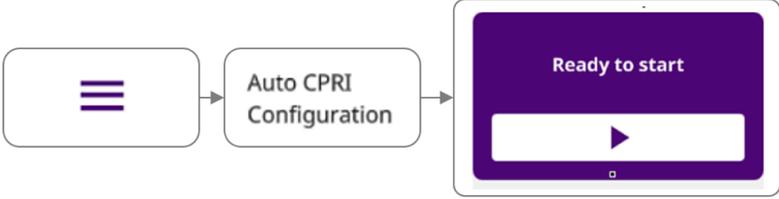
2.1.1 RFoCPRI Connectivity

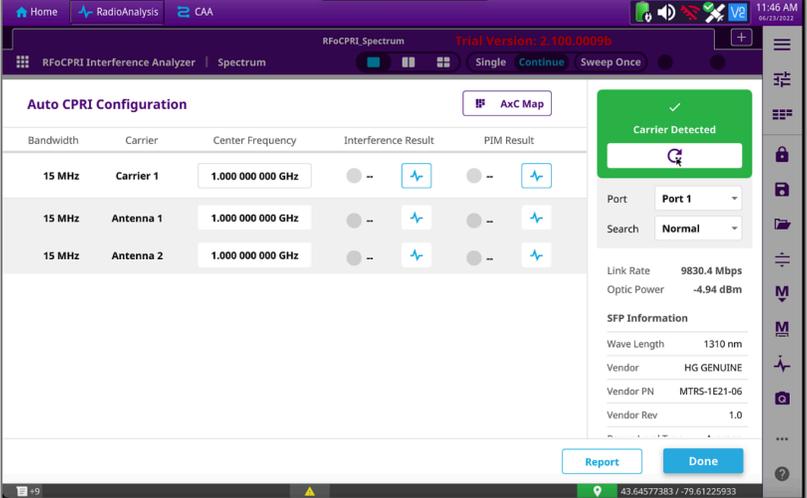
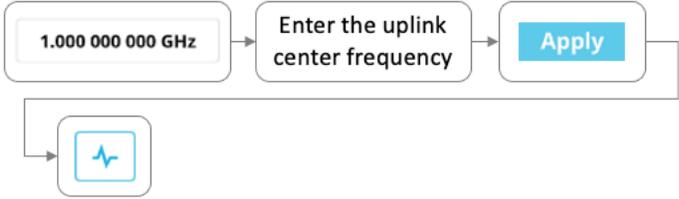
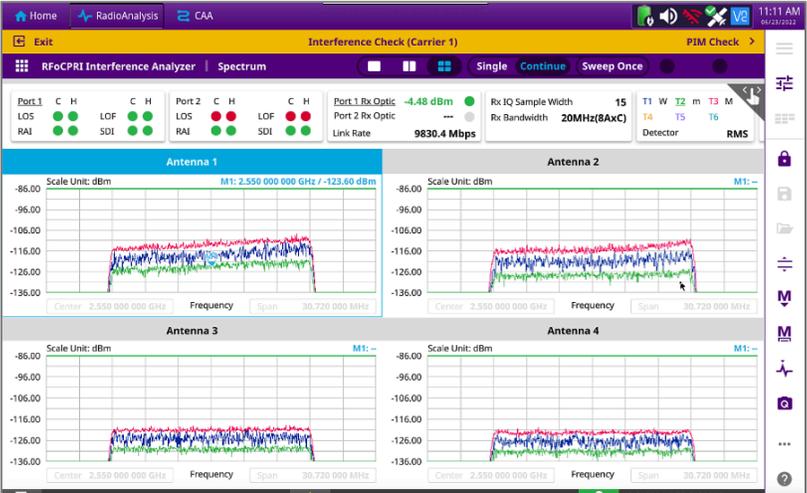
The following procedure describes the initial setup of cable and antenna analysis, including turn-up and connectivity.

Step	Action	Description
1	Power ON OneAdvisor-800	<p>Press and hold the ON/OFF button for 3 seconds</p>  <p>OneAdvisor-800</p>
2	<p>Inspect and clean fiber endpoints, including SFP, fiber jumpers and Tap ports</p> <p>Using fiber jumpers connect the optical tap between the BBU and RRH with fiber jumpers; and from the optical tap to the instrument's SFP.</p>	 <p>Fiber Connectivity (BBU-Tap-RRH and Tap-Instrument)</p>

2.1.2 RFoCPRI Analysis – Auto CPRI

The following procedure describes the steps to perform RFoCPRI Analysis with Auto CPRI Configuration.

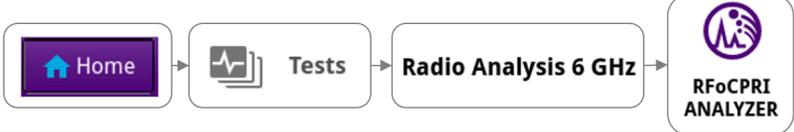
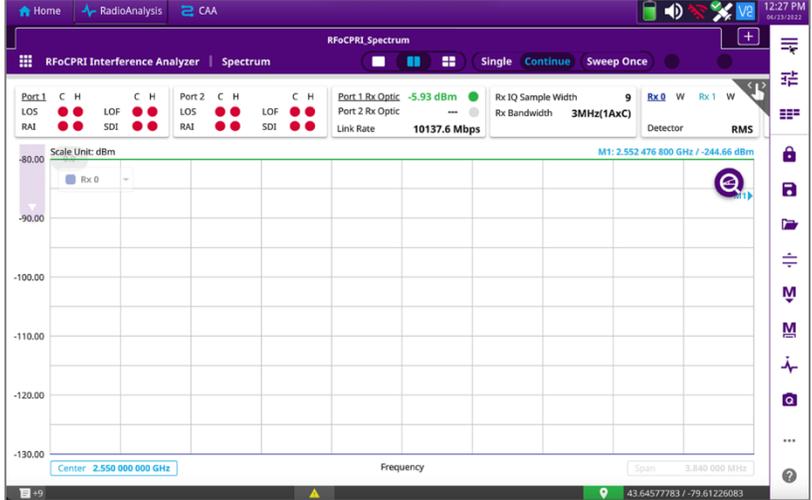
Step	Action	Description
1	<p>RFoCPRI Analyzer</p> <p>After the instrument finish its initialization process select:</p> <ul style="list-style-type: none"> - Home - Tests - Radio Analysis - RFoCPRI ANALYZER 	 <p style="text-align: center;">RFoCPRI Measurement Mode</p>  <p style="text-align: center;">RFoCPRI Spectrum Analyzer</p>
2	<p>To perform an Auto CPRI Configuration select:</p> <ul style="list-style-type: none"> - Settings - Auto CPRI Configuration - Play 	 <p style="text-align: center;">Auto CPRI Configuration</p>

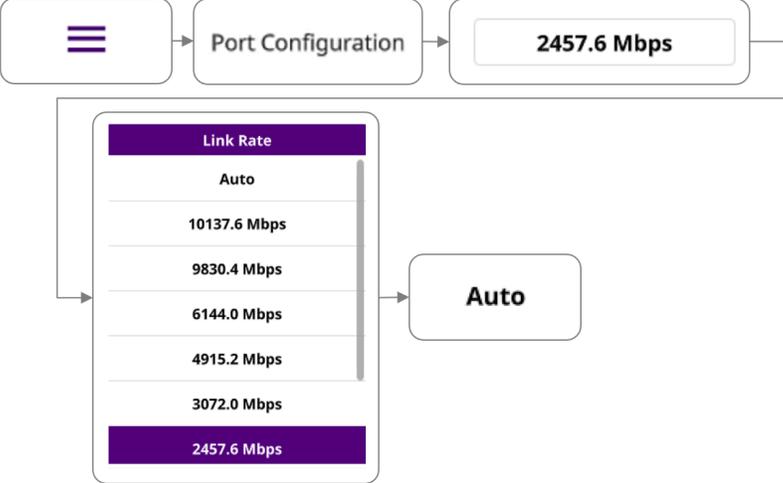
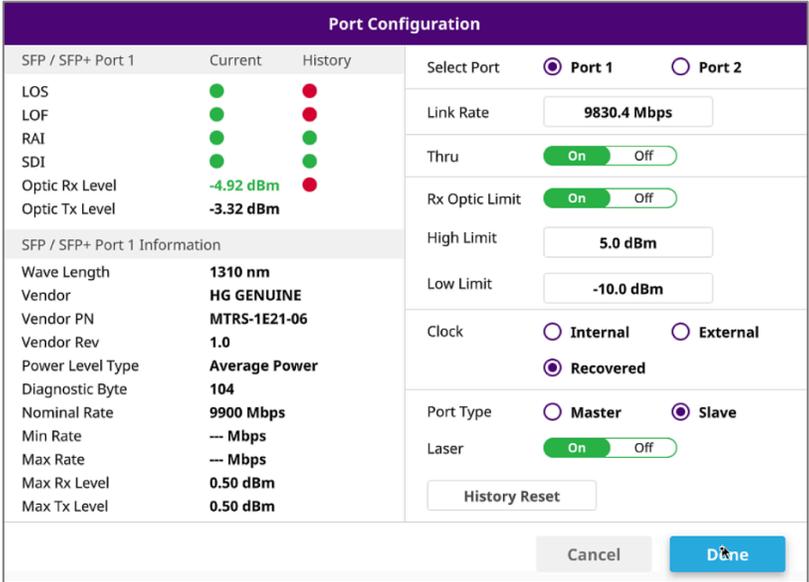
Step	Action	Description
		 <p style="text-align: center;">Auto CPRI Configuration</p>
3	<p>To perform Interference or PIM Detection measurement, select the following:</p> <ul style="list-style-type: none"> - Carrier Center Frequency (default value is 1GHz) - Enter the corresponding center frequency of the uplink. - Apply - Measurement Icon for either Interference or PIM result (e.g., Interference Result) - Scroll to the other measurement (e.g., PIM Check) 	<div style="text-align: center;">  <p>Uplink Center Frequency and Measurement Results</p> </div> <div style="text-align: center;">  <p>Interference Check</p> </div> <div style="text-align: center;">  <p>Scroll to the other measurement mode (PIM Check)</p> </div>

Step	Action	Description
		 <p style="text-align: center;">PIM Check</p>

2.1.3 RFoCPRI Analysis – Manual CPRI

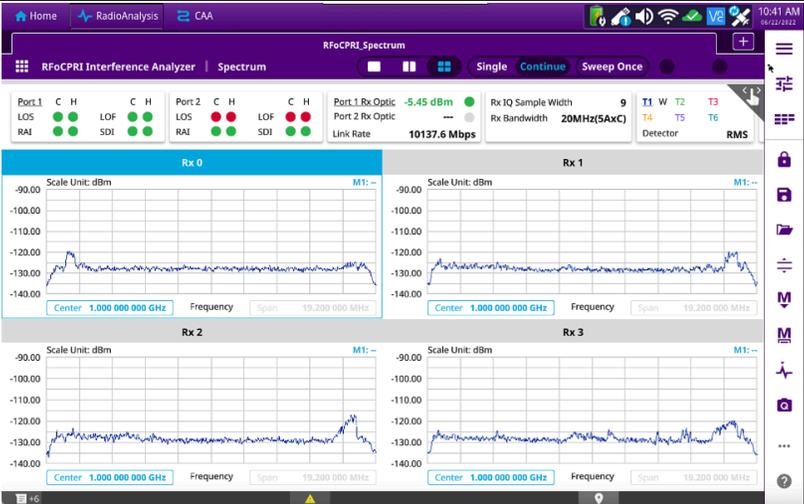
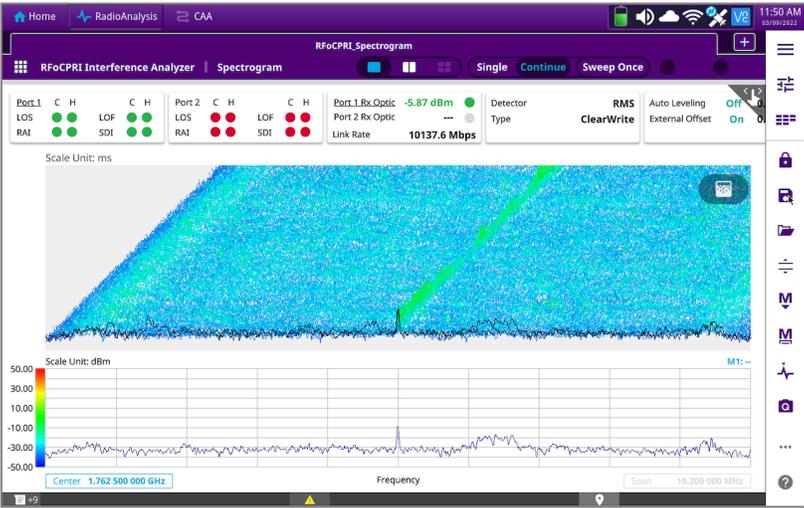
The following procedure describes the steps to perform RFoCPRI Analysis with Manual CPRI Configuration.

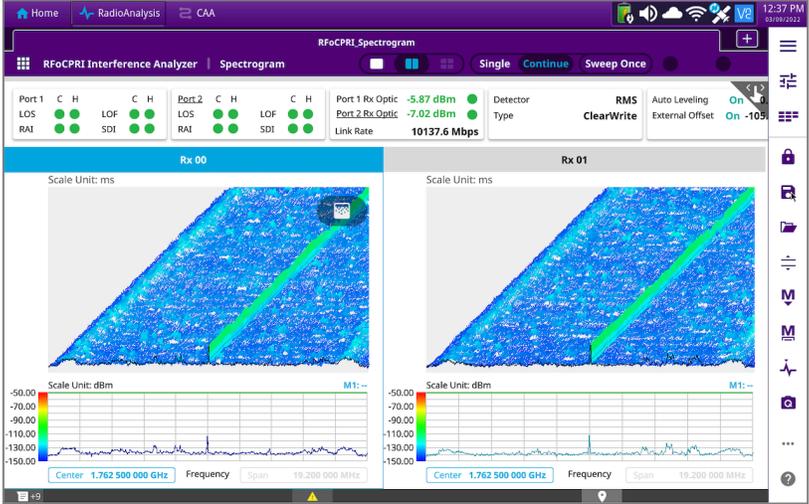
Step	Action	Description
1	<p>RFoCPRI Analyzer</p> <p>After the instrument finish its initialization process select:</p> <ul style="list-style-type: none"> - Home - Tests - Radio Analysis - RFoCPRI ANALYZER 	 <p style="text-align: center;">RFoCPRI Measurement Mode</p>  <p style="text-align: center;">RFoCPRI Spectrum Analyzer</p>

Step	Action	Description
2	<p>CPRI Line Rate</p> <p>Select the proper CPRI line rate by selecting:</p> <ul style="list-style-type: none"> - Settings - Port Configuration - Line Rate Value - Select Auto to automatically scan the line rate or select the corresponding line rate from the list. - Ensure all the Layer-2 Current indicators (LOS, LOF, RAI, SDP) should be green. - Select Done 	 <p style="text-align: center;">Line Rate Configuration</p>  <p style="text-align: center;">Line Rate Configuration</p>

Step	Action	Description
3	<p>Setting NEM and Carrier's Bandwidth</p> <p>Set the corresponding NEM by selecting:</p> <ul style="list-style-type: none"> - Settings - Rx Settings - NEM field - Select the corresponding NEM from the list <p>Set the carrier's bandwidth by selecting:</p> <ul style="list-style-type: none"> - Bandwidth - Select the corresponding bandwidth of the carrier 	<p style="text-align: center;">NEM Configuration</p> <p style="text-align: center;">Carrier's Bandwidth</p>

Step	Action	Description
4	<p>Antenna Container Mapping</p> <p>To de-map the RF components of the antenna container, select:</p> <ul style="list-style-type: none"> - IQ Activity Scan <p>The gray section indicates where the RF data is transmitted. It is needed to overlap the colored bars (analysis containers) of the instrument to occupy the entire section of RF data (gray). To adjust the analysis container bars (color), select:</p> <ul style="list-style-type: none"> - Arrow keys to align the first container to the beginning of the RF data. - Select Align <p>Ensure that the RF Spectrum is properly displayed in the preview</p> <ul style="list-style-type: none"> - Select Apply 	<div data-bbox="922 212 1289 317" style="text-align: center;"> <p>IQ Activity Scan</p> </div> <div data-bbox="873 401 1338 485" style="text-align: center;"> <p>Position the Analysis Containers (Color Bars)</p> </div> <div data-bbox="1024 569 1182 653" style="text-align: center;"> <p>Alignment of Analysis Containers</p> </div> <div data-bbox="703 730 1507 1234" style="text-align: center;"> <p>Antenna Container RF De-mapping</p> </div> <div data-bbox="987 1314 1219 1409" style="text-align: center;"> <p>Apply Configuration</p> </div>

Step	Action	Description
		 <p style="text-align: center;">RFoCPRI Spectrum</p>
5	<p>To perform RFoCPRI Spectrogram test to characterize intermittent interferences select:</p> <ul style="list-style-type: none"> - Measurement Menu - Spectrogram <p>To change the spectrogram view between 2D and 3D views select:</p> <ul style="list-style-type: none"> - RFoCPRI View Icon <p>To change the spectrogram view from single uplink antenna to dual uplink antenna select:</p> <ul style="list-style-type: none"> - RFoCPRI Dual Spectrogram Icon 	<div style="text-align: center;">  <p>RFoCPRI Spectrogram Mode</p> </div> <div style="text-align: center; margin-top: 20px;">  <p>RFoCPRI view Icon (2D to 3D)</p> </div> <div style="text-align: center; margin-top: 20px;">  <p style="text-align: center;">RFoCPRI Spectrogram (Single)</p> </div>

Step	Action	Description
		<div style="text-align: center;">  <h3>RFoCPRI Dual Spectrogram</h3> </div>  <p style="text-align: center;">RFoCPRI Spectrogram</p>

3. Annex

3.1 Save Measurement Results

The following procedure describes the steps to save measurement results with OneAdvisor 800

Step	Action	Description
1	<p>Saving measurements</p> <ul style="list-style-type: none"> - Select the save icon and enter file name - Select the type of file to save: <ul style="list-style-type: none"> o Result (to be replayed or post-processed by the CellAdvisor 5G) o Result as CSV, to be post-processed by a PC application o Screen, as a picture - Select the destination to save the file - Select "Save" 	<p>The screenshot shows a save dialog with the following elements:</p> <ul style="list-style-type: none"> A save icon (floppy disk) next to a text input field labeled "Save_". The text "Save and File Name Sequence" below the input field. Two radio button options: "Result" and "Screen". The text "File Type as Result, Result as CSV or Screen" below the radio buttons. Two radio button options for destination: "Internal" and "USB A". The text "Select the destination either Internal or USB" below the destination radio buttons. A blue "Save" button at the bottom. The text "Select Save" below the button.



4. Technical Support

Technical support is provided by:

- Phone: 1-844-GO-VIAVI (1-844-468-4284) options 3-2-3
- Email: diagnostics.tac@viavisolutions.com

Regularly new firmware updates for the OneAdvisor 800 are released and it is recommended to keep the instrument in the latest firmware to provide all the enhancements and bug fixes.

- For firmware updates go to: <https://ona-800.updatemyunit.net>
- For how-to-test videos go to: https://www.viavisolutions.com/en-us/products/oneadvisor-800-platform#resources_videos
- For additional information of cell site test go to: <http://www.viavisolutions.com/en/products/network-test-and-certification/cell-site-test>