

# Why Test

## The value of testing

Failure rates for first time installs are often up to 30%, requiring repeat visits that ultimately increase the cost of installation and damage contractor reputation.

Quite simply, testing all elements across the network lifecycle saves time and money in the long term, while securing a better service for the end customer.



# What is OneAdvisor 800 and what does it do?

The OneAdvisor 800 is a modular handheld test tool allows cell site technicians to test coax, fiber, RF, and CPRI/Ethernet from a single device, replacing multiple independent tools which significantly reduces the total cost of ownership.

The instrument's workflow user interface guides techs through a pre-configured test process, making sure that techs complete jobs the same way, and to the same specifications. With OneAdvisor 800, users get built-in guidance, automatic test configs, pass/fail results, and a single closeout report every time, at every site.



LEARN MORE ABOUT OneAdvisor 800



SCAN HERE ▶



# Why VIAVI

VIAVI provides smarter solutions for cell site testing that help you save time, reduce errors and give your customers the service they deserve, with:

- Easy-to-use tools
- Simplified test processes
- Remote access
- Automated workflows and report management
- Industry-leading service and support

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# Cell Site Installation Checklist for Different Test Scenarios

# Get the Job Done Right the First Time

## Antenna alignment

- ✓ Ensure the antenna is aligned according to design (azimuth, tilt, and roll) with results embedded in a picture showing the antenna's visual field of view.



## Coax and antenna

- ✓ Test each RF path (coax + antenna) for Return Loss/VSWR. If failing, refer to Distance To Fault (DTF) screen to locate and correct the problem.



## Fiber end face inspection

- ✓ Ensure end-faces of fiber cables, connectors, SFP Modules are clean/undamaged; cleaning alone does not resolve pits and scratches.



## SFP/SFP+/SFP28

- ✓ Verify operation of the pluggable optical modules (SFP).



## Optical loss test or OTDR

- ✓ At minimum, ensure loss within optical path loss budget. Ideally, use OTDR to characterize every event and ensure total reflectance will not damage SFP.

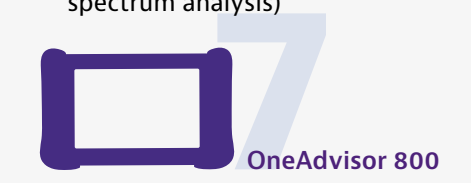


## PIM/RTWP

- ✓ Troubleshoot UL noise issues/PIM via the CPRI interface without climbing the tower; perform RF analysis of the uplink while the cell site is in service.

## RF Check

- ✓ Check if signal is present, its strength and range, and existence and nature of interference (either via gated sweep or real-time spectrum analysis)



# VIAVI OneAdvisor 800



# Tools for all your testing needs

## Fiber inspection and cleaning

Contamination is the #1 reason for fiber network failures –inspecting and cleaning connectors, test ports and reference cords before testing network connectors prevents cross-contamination.

Inspecting BOTH sides of the fiber connection is the ONLY WAY to ensure that it will be free of contamination and defects.

## Power meters, Light source, and VFL

Accurately measure downstream and upstream power with multiwavelength selective power meters.

Find faults with Visual Fault Locators and use Light Sources to measure light continuity, loss and quality.



## 3Z RF Vision Antenna Alignment Tool

Easily perform accurate antenna alignment on panel and microwave point-to-point antennas.

## SmartOTDR

Speeds and optimizes field testing of metro and access networks.

## SideWinder MPO inspection scope

"All-in-one" handheld inspection and analysis solution for multifiber connectors such as MPO.





Keep it in your tool bag or pocket

# Cell Site Testing POCKET GUIDE

A handy pocket sized guide to help you test smarter



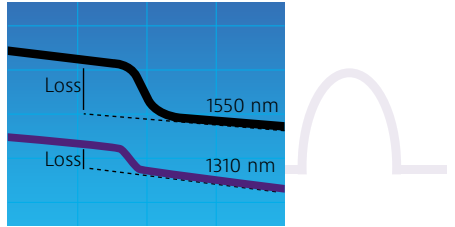
## OTDR Icons and Meanings

**Macro bend**



Macro bending results from physical constraints on the fiber. Bending loss is higher as wavelength increases. Distinguishing a bend from a splice requires using two different wavelengths.

Reflectance: none (generally)  
Insertion loss: varies according to wavelength

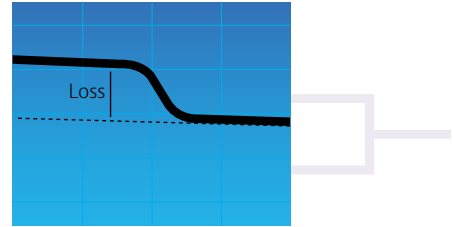


**Fusion splice**



A fusion splice using a splicing machine to thermally fuse two fibers together.

Reflectance: none  
Insertion loss: < 0.1 dB

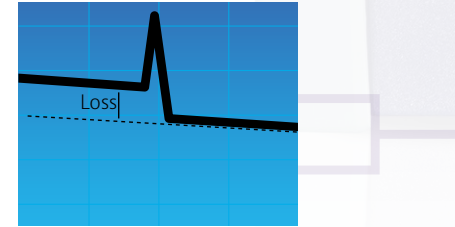


**Mechanical splice**



Mechanically aligns two fibers together using a self-contained assembly.

Reflectance: ~ -40 to -50 dB  
Insertion Loss: ~ 0.15 to 0.50 dB

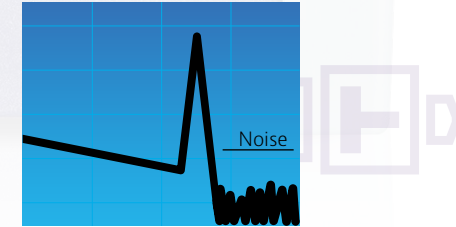


**Fiber end or break**



A fiber end or break refers to where the fiber terminates. The end reflection depends on the fiber end cleavage and its environment.

Reflectance:  
PC open to air: ~ -14 dB  
APC open to air: ~ -45 dB  
Insertion loss: high (generally)

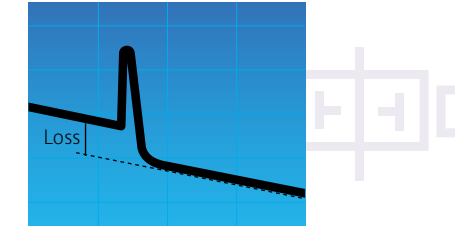


**Connector**

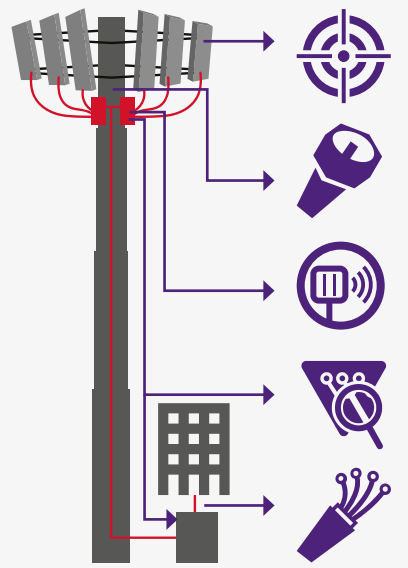


Mechanically mates two fibers together and creates a reflective event.

Reflectance:  
Polished connector: ~ -45 dB  
Ultra polished connector: ~ -55 dB  
Angled polished connector: up to -65 dB  
Insertion loss: ~ 0.5 dB  
(Loss = 0.2 dB with a very good connector)



## Test Solutions for Cell Site Deployment



**ALIGNMENT**  
Antenna (Alignment)

**COAX**  
Radio to Antenna (Coax Cabling)

**ODUe**  
Radio Verification (ODU-Emulation)

**INSPECTION**  
BBU to Radio (Fiber Inspection)

**FIBER**  
BBU to Radio (Fiber Cabling)

## Succeed with Captain Fiber

As you become more involved with fiber optic testing, Captain Fiber is here to provide with solutions and learning resources to help you succeed.



Scan here to learn more from Captain Fiber



## Additional OTDR Icons

**Launch cable**



Using a launch cable allows for characterizing the connector at the origin of the link by moving it outside the dead zone of the OTDR connector. The last connector can also be tested using a receive cable.

**Receive cable**



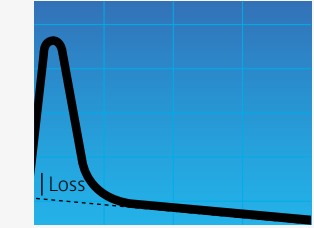
**Slope**



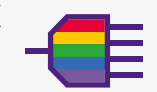
**Front-end reflective event**



Connection between the OTDR and the patch cord or launch cable.



**xWDM MUX/DMUX**



**Splitter**



Learn more about Cell Site Test solutions from VIAVI



Get it Right the First Time  
Easiest to Use  
Most Trusted & Reliable



viavisolutions.com/contractors

## Useful Acronyms and Abbreviations

Here is a useful list of everyday acronyms and abbreviations to help make your job easier and faster.

<b>BBU</b>	Base Band Unit
<b>CO</b>	Central Office
<b>CleTop</b>	Fiber cleaning ribbon strip
<b>CPRI</b>	Common Public Radio Interface
<b>DTF</b>	Distance to Fault
<b>DS/US</b>	Downstream/Upstream

<b>FTTA</b>	Fiber to the Antenna
<b>IBYC</b>	Inspect Before You Connect
<b>IL</b>	Insertion Loss
<b>MPO</b>	Multi-Fiber Push On Connectors
<b>NOC</b>	Network Operation Center
<b>ODUe</b>	ORAN Digital Unit Emulation

<b>OneClick</b>	Fiber cleaning device
<b>ORAN</b>	Open Radio Access Network
<b>ORL</b>	Optical Return Loss
<b>OTDR</b>	Optical Time Domain Reflectometer
<b>PIM</b>	Passive Intermodulation
<b>RRU/RRH</b>	Remote Radio Unit or Head

<b>RTWP</b>	Receive Total Wideband Power
<b>SFP</b>	Small Form Factor Pluggable

<b>UL</b>	Uplink
<b>VSWR</b>	Voltage Standing Wave Ratio

### Common Inspection Tips

Connector Type	Adapter Tip for Bulkhead	Adapter Tip for Fiber
<b>SC UPC</b>	FBPT-SC	FBPT-U25M
<b>SC APC</b>	FBPT-SC-APC	FBPT-U25MA
<b>LC UPC</b>	FBPT-LC	FBPT-U12M