

Cell Site Installation Tips



FIBER TEST DOMAIN



VIAVI FFL-050 Visual Fault Locator

Continuity Test (Visual Fault Locator)

Visible (and safe) red light is passed through a fiber to prove continuity end to end and reveal any gross near-end problems on the fiber by seeing the light leak out of cuts, bends, and breaks.



Connector Inspection and Cleaning: Inspect Before You Connect (IBYC)

Ensure all end faces of fiber cables, connectors, and modules are clean and undamaged.



Optical Insertion Loss (dB)

Send a known optical power level through the fiber under test and measure the drop (dB) at the far end. Often done with loopback at the tower top end of the fiber.



Optical Time Domain Reflectometry (OTDR)

Pulses of light are injected into the fiber under test. The delay and intensity of light scattered or reflected back to the instrument is calculated and displayed as events along the fiber. Thresholds can be set for the various events such as splices, bends, connectors and the end of the fiber.



CPRI Check

Ensure that the SFP or QSFP to be installed in the BBU or RRU is the correct one and that it is clean with a good power level and no bit errors.

VIAVI 3Z RF Vision



Cable and Antenna Testing

- ✓ Antenna Alignment
- ✓ VSWR
- ✓ Distance to Fault
- ✓ Return Loss

Fronthaul Testing

- ✓ Fiber Inspection
- ✓ Optical continuity and power
- ✓ SFP/SFP+/QSFP
- ✓ OTDR
- ✓ CPRI Rate (1-9)
- ✓ 10G, 25G eCPRI

3 TEST AS YOU GO

Fronthaul Testing

- ✓ Fiber Inspection
- ✓ OTDR
- ✓ SFP/SFP+/QSFP
- ✓ CPRI Rate (1-9)
- ✓ 10G, 25G eCPRI

Cable and Antenna Testing

- ✓ VSWR
- ✓ Return Loss

Job Manager

- ✓ Job Manager allows you to follow MOPs automatically
- ✓ At a minimum, run spot checks while on the ground at the garage and/or before you hoist and attach components

2 TEST BEFORE YOU HOIST

VIAVI OneAdvisor-800



4 TEST BEFORE YOU LEAVE

Everything on the tower is connected and powered, but there is no Base Band Unit (BBU) or backhaul installed at the site yet.

How do you ensure the site is ready to integrate and that you can confidently pack up and leave?

- ✓ Fiber Inspection
- ✓ CPRI Rate (1-9)
- ✓ 10G, 25G eCPRI

Fronthaul Testing

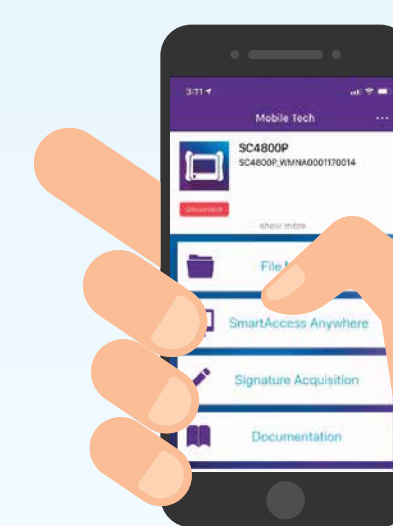
- ✓ Fiber Inspection
- ✓ VLAN Testing
- ✓ RFC2544

Ethernet Backhaul Testing

Now you are confident that you have successfully completed your MOP

5 MOBILE TECH

- ✓ Upload complete test results via VIAVI MobileTech App



COAX/RF TEST DOMAIN



VIAVI OneAdvisor-800 Cell Site Installation Tool

Cable Loss

Send RF energy through the cable with a short installed at the far end. The energy lost divided by 2 is the one-way loss of the cable.



VIAVI OneAdvisor-800 Cell Site Installation Tool

Return Loss

Send RF energy through the cable with a Load or the Antenna connected at the far end. Some of that energy will reflect. Make sure it is not above a desired threshold.



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Distance to Fault (DTF)

If the Return Loss measurement exceeds the threshold, convert to the DTF view to locate the worst fault. Correct that fault and retest (Return Loss).



VIAVI OneAdvisor-800 Cell Site Installation Tool

Passive Intermodulation (PIM)

Non-linearities anywhere in the electrical path can cause signals to mix and create new, undesired signals.



VIAVI 3Z RF Vision

Antenna Alignment

Make sure the antenna is pointed in the right direction (azimuth) and tilt. Document the antenna's field of view through the camera embedded in the alignment tool.

VIAVI StrataSync

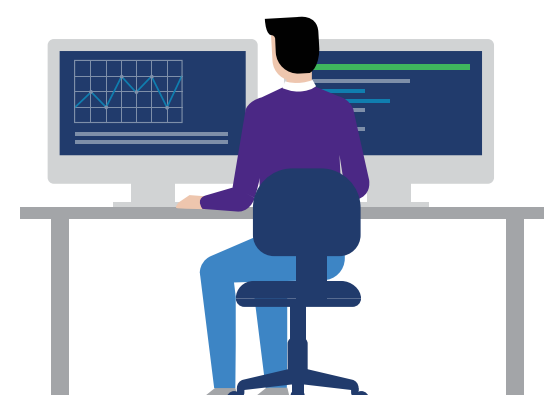
1 ACCEPT WORK ORDER

6 SUBMIT CLOSE-OUT REPORTS

TEST PROCESS AUTOMATION

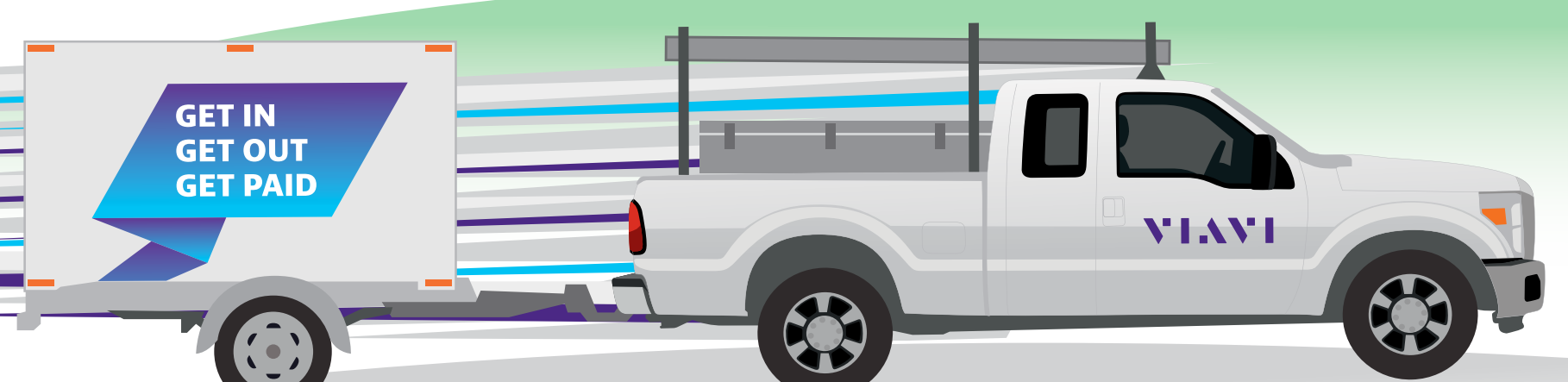
Planning Phase

- Create a test plan that indicates everything required for a successful installation and close-out package
- Distribute to each instrument through StrataSync or by thumb drive



Close-Out Phase

- Results uploaded through technician's phone
- Consolidated PDF direct from field along with zip file containing each individual test



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