

# Essentials of Fiber to the Antenna

1

Fiber  
Inspection  
and  
Connectivity



2

Cable and  
Antenna  
Testing



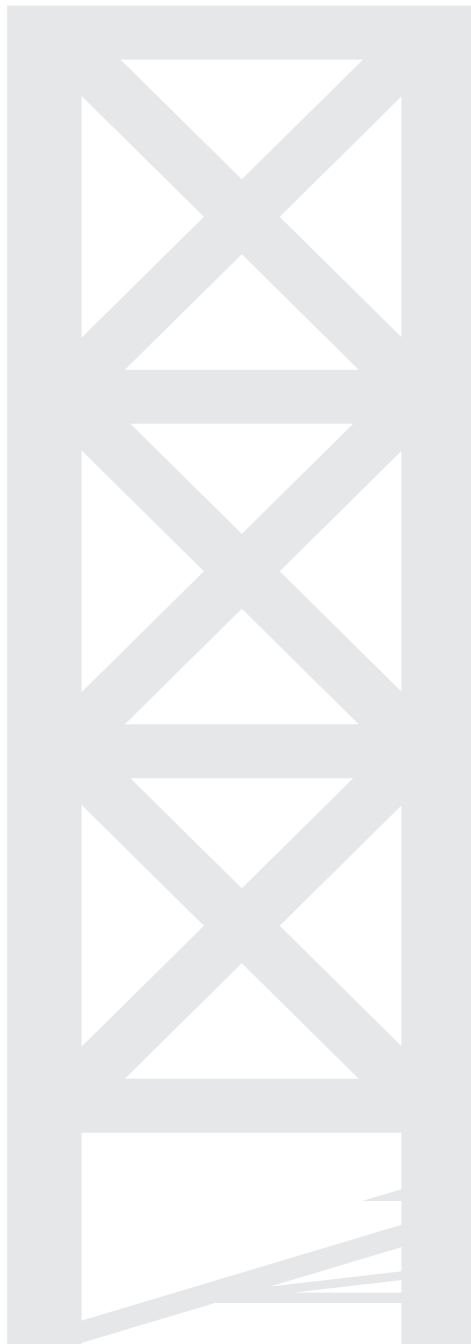
3

Fronthaul  
Installation  
Test



4

Fiber  
Certification



With the ever-increasing demand for mobile data, service providers (SPs) are constantly in a race to add capacity and improve network quality of service (QoS); disruption caused by over-the-top (OTT) services has made this situation even more complex. Mobile operators are under pressure to keep costs in check while maximizing ROI. Failure to maintain quality standards during cell site construction can delay revenue realization and can significantly impact subscriber experience, causing potential for churn. To prevent this from happening, all cell site deployments must be delivered to a high standard of quality. All cables and connectors, whether coax, fiber, or twisted pair, must be thoroughly certified, and every active and passive component in the antenna and cable system must be properly tested and performance-validated.

SPs work very closely with Network Equipment Manufacturers (NEMs) and contractors to ensure all cell sites are installed with the highest quality, and all fiber, coax and RF interfaces are tested and validated to ensure maximum ROI and QoS.

VIAVI Solutions offers comprehensive wireless installation and commissioning solutions designed to streamline workflows and simplify operations with centralized inventory and test equipment management, and consistent presentation of results. Our instruments and meters offer high durability, ease of use, fast and accurate results and are approved by most tier-1 service providers.

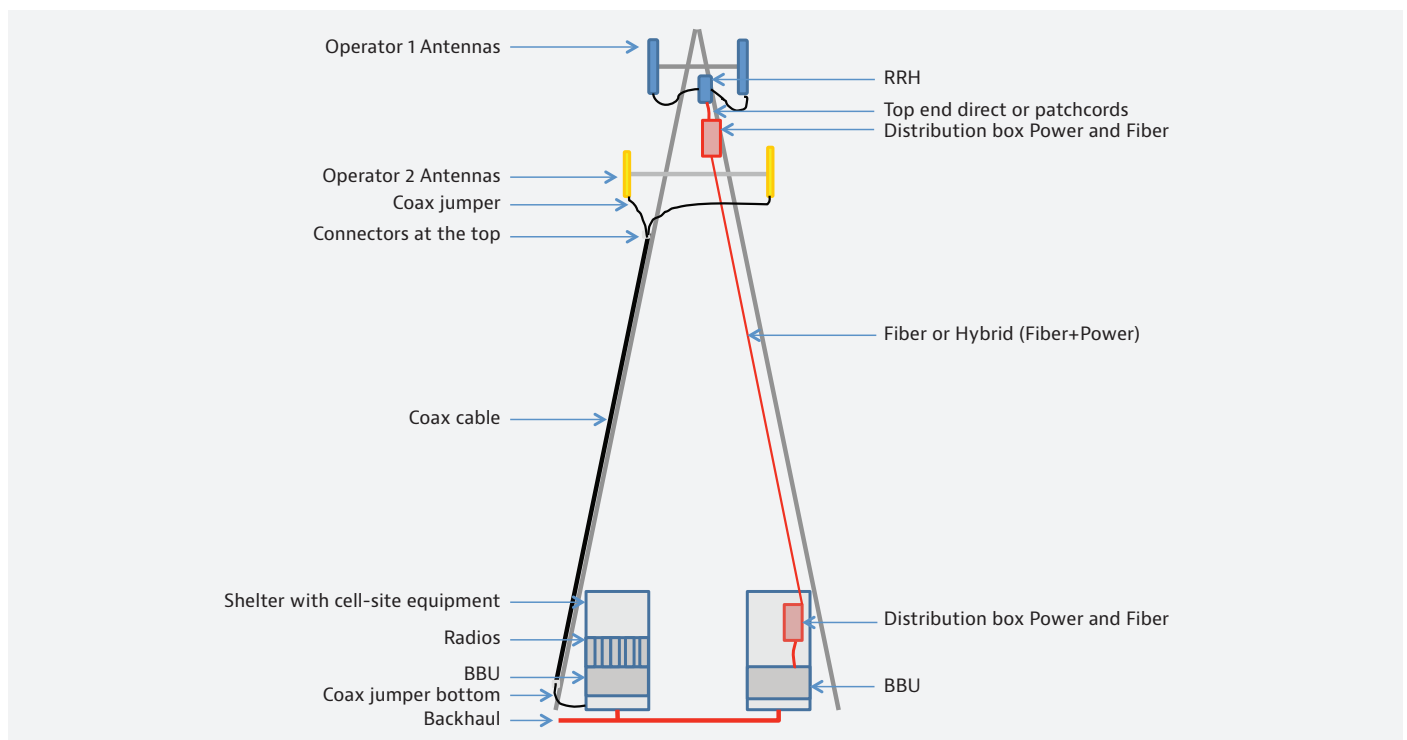


Figure 1: Common cell site structure and components

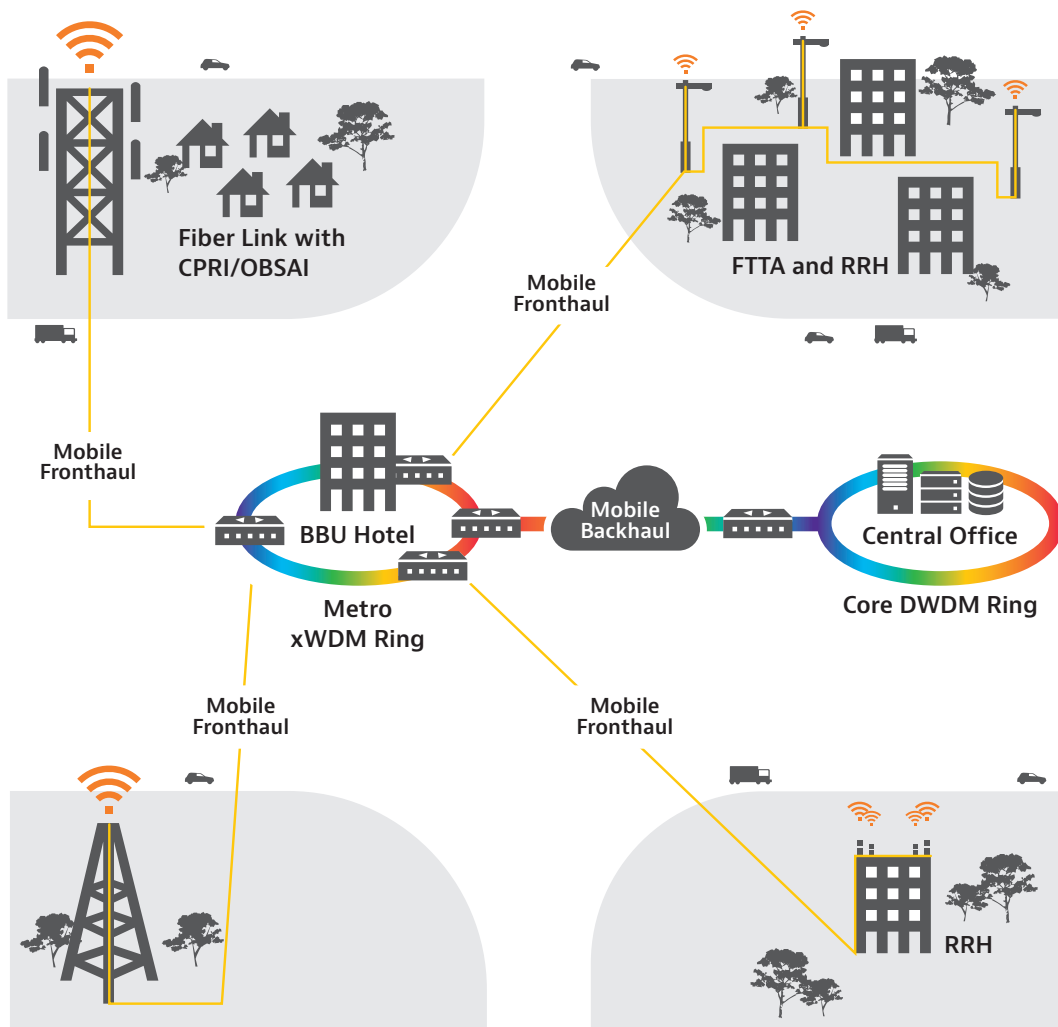
## Cell Site Installation Tests Explained

The following table describes the distinct role of each test as well as the VIAVI enhancements that provide unique, valuable advantages:

Cell Site Installation	Description	VIAVI Advantage
<b>Inspect before you connect</b>	<ul style="list-style-type: none"><li>• Connector end face inspection, cleaning, and certification</li></ul>	<ul style="list-style-type: none"><li>• Complete jobs faster, correctly, and on time—the first time</li><li>• Eliminate subjective guesswork with pass/fail analysis results</li><li>• Easily generate certification reports</li><li>• Test solutions are approved by major service providers</li><li>• Wizard like UI simplifies test configuration and results interpretation.</li></ul>
<b>Fiber Certification</b>	<ul style="list-style-type: none"><li>• Insertion Loss measurements (IL)</li><li>• Optical Return Loss measurements (ORL)</li><li>• OTDR testing</li></ul>	
<b>Fronthaul Validation</b>	<ul style="list-style-type: none"><li>• CPRI Installation Test</li><li>• BBU Emulation Test</li><li>• Link characterization of CWDM/DWDM routes</li><li>• BERT test</li></ul>	
<b>Cable and Antenna system verification</b>	<ul style="list-style-type: none"><li>• Return Loss</li><li>• VSWR</li><li>• Distance to Fault (DTF)</li><li>• Insertion Loss</li></ul>	

## Conclusion

With the VIAVI comprehensive portfolio of cloud-enabled instruments and software automation, customers can be assured that their investments will be protected. Easy-to-use instruments and solutions allow contractors, NEMs, and service providers to streamline workflows for greater operational and financial efficiency. Our solutions help contractors get paid faster and service providers launch services on time.



All products StrataSync™ compatible

— CPRI/OBSAI over Fiber

Figure 3: Centralized Radio Access Network (C-RAN)

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