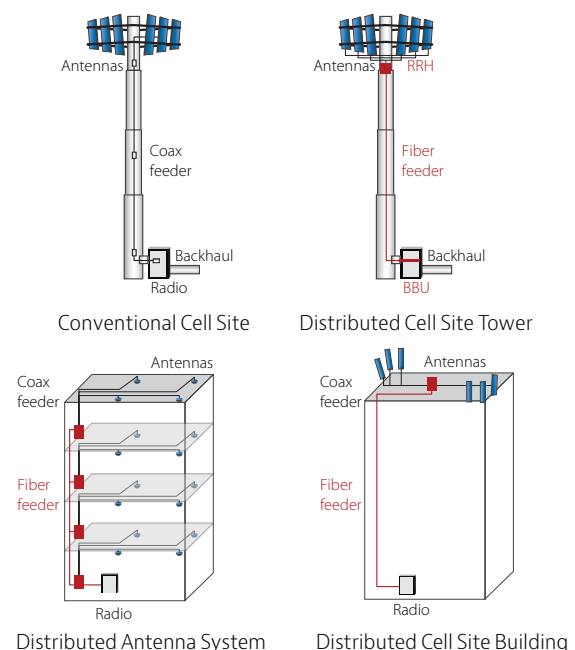


# Testing Fiber and Coax Feeders in Fiber to the Antenna (FTTA) Systems

In conventional cell sites, radio equipment at the base of a tower/building transmits RF signals via coax to antennas at the top of the tower/building. However, these coax-based feeders produce the majority of problems in cell sites due to their inherent loss and susceptibility to interference. In addition, cable and connector deterioration can create passive intermodulation (PIM).

Modern FTTA cell sites have a distributed architecture where the radio is divided in two main elements. The first is the radio equipment control (REC) or baseband unit (BBU) installed at the base of the tower. The second element is the radio equipment (RE) or remote radio head (RRH) installed at the top of the tower. This distributed architecture provides the benefit of replacing most of the coax-based feeders with fiber, and therefore, significantly reduces the problems of signal loss and reflections. However, since this new architecture is a combination of coax and fiber, test equipment that tests both coax and fiber such as the unique Viavi Solutions™ CellAdvisor™ is required. This equipment can ensure proper installation and qualification of antennas, coax feeds, and fiber feeds to optimize both short- and long-term system performance.



## CellAdvisor Cable Antenna Analysis with Fiber Test Features

Viavi, the global leader in wireless test solutions, has integrated fiber test capability into CellAdvisor analyzers to enable construction qualification and maintenance of FTTA systems. Combining these capabilities in one solution optimizes test times and provides the flexibility required in modern cell site infrastructure.

Cell technicians gain convenience and OpEx efficiencies by reducing the number of test platforms they need. CellAdvisor with fiber testing lets the test technician accurately characterize the following critical system parameters prior to site activation:

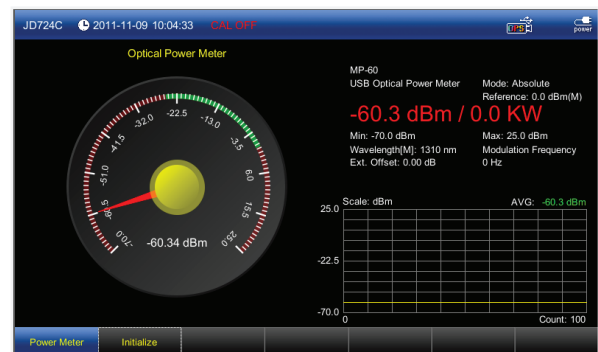
- Signal reflection, sweeping coax cables and antennas to verify low return loss or VSWR and guarantee maximum cell coverage
- Problem isolation, sweeping coax cables and antennas with distance-to-fault (DTF) measurements that accurately identify elements with excessive loss



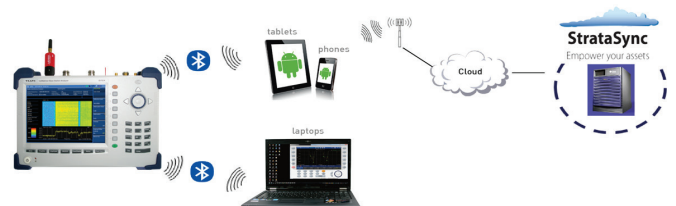
- Fiber inspection, at both the bottom and top of a tower/building, preventing contamination or damage of optical components and certifying quality fiber connections in adherence to IEC specifications
- Optical power loss, performing optical insertion loss measurements from the BBU and remote radios to ensure minimal loss on the uplink and downlink.



- Technicians test safely from the bottom of the tower by remotely controlling CellAdvisor via Bluetooth from up to 100 m.



- StrataSync™ enables automated cloud-based management of all CellAdvisors as well as centralized data storage. This reduces OpEx by tracking and ensuring all instruments are updated regularly. And, technicians can upload results for approval at the site, reducing revisits and faster billing.



## The Optimal Cell Site Testing Solution for HFC Applications

CellAdvisor JD720C Series cable antenna analyzers are complete test solutions for cell site technicians and engineers, with unique and integrated test capabilities covering coax and fiber feeders. Importantly, CellAdvisor supports StrataSync for cloud-based asset management, data management, and dynamic notifications.



Contact Us **+1 844 GO VIAVI**  
(+1 844 468 4284)

To reach the Viavi office nearest you,  
visit [viavisolutions.com/contacts](http://viavisolutions.com/contacts).

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