BBU emulation
Speed up cell site commissioning

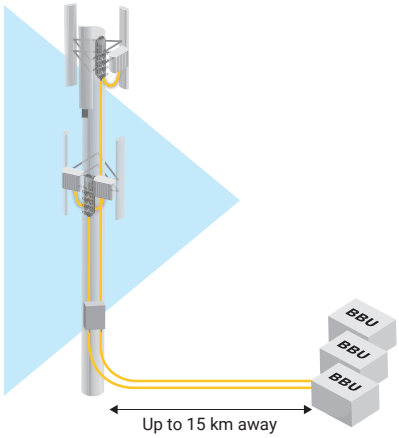
Smarter network in sight.

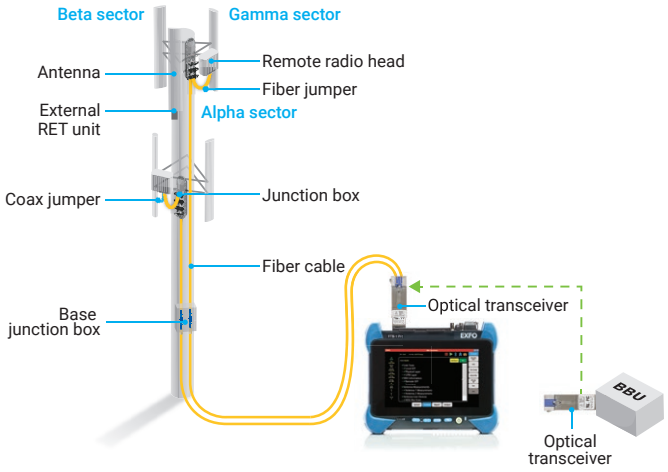
With skyrocketing subscriber expectations for faster connections and more bandwidth, as well as shrinking OPEX and CAPEX budgets, mobile network operators (MNOs) are under pressure to consistently deliver outstanding service quality, at a lower cost.

Today, the majority of new or upgraded cell sites are using fiber-to-the-antenna (FTTA) technology, which provides many benefits but also comes with its share of challenges, and can be costly if traditional test methods are used.

With fiber optic cabling, testing of the optical link between the baseband unit (BBU) and the remote radio head (RRH) is essential, but additional testing of the RF capabilities of the RRH are also required.

Having the right test and measurement tools will provide reliable test data and clear insights into mobile network performance–critical for making smart decisions and ensuring optimal quality of experience.





EXFO's baseband unit (BBU) emulation test application enables operators to speed up deployment of fiber-based mobile networks, which means faster time-to-revenue for new services. The BBU emulation feature allows mobile contractors, technicians and engineers to ensure that cell sites are installed correctly the first time, prior to handing them over to the mobile network operator (MNO) for BBU integration, resulting in lower overall cost of cell site installation.

The BBU emulation application is designed for a simple one-click operation with clear pass/fail results enabling problems to be isolated quickly and test reports to be generated, creating a "birth certificate" for the cell site. Now, validation of the RRH and cell sites can be done quickly, easily and accurately using the truly all-in-one compact and powerful FTB-1 Pro test platform.

Key features

- CPRI layer-2 link validation
- RRH polling and TX and RX configuration
- Local and remote SFP identification
- Antenna line device scan (AISG bus)
- Voltage standing wave ratio (VSWR) reading
- Receive signal strength indicator (RSSI) reading
- RRH physical cell identification (PCI) configuration
- Orthogonal channel noise simulator (OCNS) configuration
- Antenna remote electrical tilt (RET) configuration and status
- Over-the-air (OTA) LTE transmission
- Implied passive intermodulation (PIM) testing
- Uplink RF spectrum analysis

EXFO

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Industry's highest resolution and most accurate RF spectrum analyzer, now combined with the easy-to-use BBU emulation

The receive RF spectrum observed at the bottom of the tower using an analog RF spectrum analyzer can be very different from the one observed by an antenna mounted high above the ground. As BBU emulation brings the RRH up to an operational state, it is possible to see the receive spectrum that the RRH presents to the BBU. This provides early indication to the MNO of any RF interference issues that may exist and that were not detected during the initial site survey. This can include PIM or other external interference sources not seen from the ground. By integrating BBU emulation into the test process, the costs associated with cell site installation are significantly reduced as unnecessary truck rolls and tower climbs to troubleshoot RF issues are now eliminated.

BBU emulation–test and validation use cases

- Fiber cable installation and validation
- RRH installation and validation
- Antenna and coax cable validation
- RF interference source identification–internal or external
- PIM testing–implied or external
- Antenna diversity imbalance test

EXFO's BBU emulation	
Application	Cell site validation using BBU emulation combined with real-time RF spectrum analysis using digitized RF data (IQ data) in the CPRI link
CPRI rate support	CPRI rate options from 2 to 7 (1.2 Gbit/s to 9.8 Gbit/s) Hardware-ready for CPRI rate option 9 (12.1 Gbit/s)
Air technology support	LTE, W-CDMA, CDMA, UMTS
Radio support	Alcatel-Lucent (ALU)
Test configs	ALU-LTE basic: basic emulation test (RRH inventory and SFP information) ALU-LTE link validation: CPRI link validation with RRH ALU-LTE turn-up NoRET: full turn-up of the cell site without RET support (inventory, SFP, VSWR and RSSI) ALU-LTE turn-up: full turn-up of the cell site (inventory, SFP, ALD, AISG bus scan, RET, VSWR and RSSI) Self test: BBU emulation application self test (fiber loopback needed) SFP test: fiber and SFP validation (fiber loopback needed)
RF spectrum settings	Refer to EXFO's OpticalRF™ specifications sheet
Remote control and collaboration	The unit can be remotely controlled via a wired or wireless internet connection
Test solutions supported	FTB-870v2, FTB-880v2, FTB-870Q, FTB-880Q, FTB-720Gv2, FTB-730Gv2 and FTB-890NGE
Ordering information SW option	CPRI-ALU-BBUe CPRI-ALU-BBUe-PACK

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