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Anritsu's Master Users Group newsletter that delivers solutions to today's field and maintenance challenges

WiMAX Network Deployment Brings List of Measurement Requirements

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As WiMAX operators join existing wireless carriers in deploying RF equipment to create networks, they face a new challenge – installing and maintaining wireless networks. When deploying a base station, an operator must comply with government regulations regarding RF emissions, frequency, and interference, as well as assure correct operation of network equipment. This should satisfy the regulatory agencies as to the correct use of the frequency band and provide quality service to users.

To accomplish these goals, a series of network tests must be performed, including:

- **Frequency Spectrum Availability** – Prior to base station deployment, engineers must verify spectrum availability via a site survey. This determines if anything will interfere with the assigned transmit frequency or if anybody else is transmitting on the base station's assigned frequency.
- **Transmit Frequency** – Regulatory agencies dictate that wireless operators must deploy their services only on approved designated frequencies. This needs to be verified, not just for compliance but also to guarantee interoperability with the end user stations.

- **Power Level** – To ensure correct coverage in the designated area, the power level needs to be accurately measured. The WiMAX standard also requires that the ACPR (Adjacent Channel Power Ratio) be verified to make sure that the transmitter does not put out significant power on neighboring channels.

- **Signal Quality** – There are many aspects that need to be verified. The main issue, Relative Constellation Error (RCE), is the error vector of the received modulation constellation expressed in dB versus % as done in the Error Vector Magnitude (EVM) measurement. RCE and EVM are important metrics for measuring the signal quality in digital communications.



Figure 1: BTS Master™ MT8222A is a handheld solution for making WiMAX Measurements.

Fortunately for field engineers and technicians, the BTS Master™ MT8222A has the capability to conduct all these measurements quickly and accurately. And it can do so while weighing only 4 kg (9 lbs).

To read more about deploying WiMAX networks and how to conduct WiMAX measurements using the BTS Master, visit www.us.anritsu.com/wimax.