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RE: CISCO Systems. BWX8415-2.5-R1. 2.5 GHz Base Station. ATCB008550.

Michael Derby:

This letter details a response to your questions concerning controls and limits on setting frequency, output power, and the accuracy of the actual output power transmitted when this basestation is installed and commissioned for commercial use. The question about output power accuracy is addressed first. Then a description of the EMS software limits and associated user manuals and training materials is described, which provides instructions and controls on how the system is configured.

The basestation output power and internal path losses are measured at the factory. Internal path loss data is stored in non-volatile memory in each individual basestation and this data is accurate to ± 0.1 dB. Software and hardware control the output power of the basestation to a resolution of ± 0.5 dB. Inaccuracies of this power control add another ± 0.1 dB for a total of ± 0.7 dB output power tolerance.

During actual operation of the system the output power is periodically checked (about once an hour) against an internal reference and adjustments are automatically made to compensate for output power changes/drift that can occur over time and temperature. Our design verification test results (testing was performed over the full operating temperature range) show that the worst case output power error for that basestation was measured to be 0.4 dB.

The EMS software will not allow any value larger than 33 dBm to be entered. All manuals and training documents are being updated to reflect this limit. Therefore, as stated above, the actual output power conducted to an antenna input will be 33 dBm ± 0.7 dB, if the operator sets the antenna power parameter in the EMS software to the maximum value of 33 dBm.

All of our customers are provided with user guides, installation and commissioning manuals, several other software and hardware manuals, and instructor based training on the configuration, operation, and maintenance of this basestation equipment. All of the guides and manuals contain the warning shown below that states only trained and certified personnel are allowed to install and configure this equipment. The manuals and training instruct the personnel to only set the frequency and output power within the limits allowed by the operator's license.

About This Document

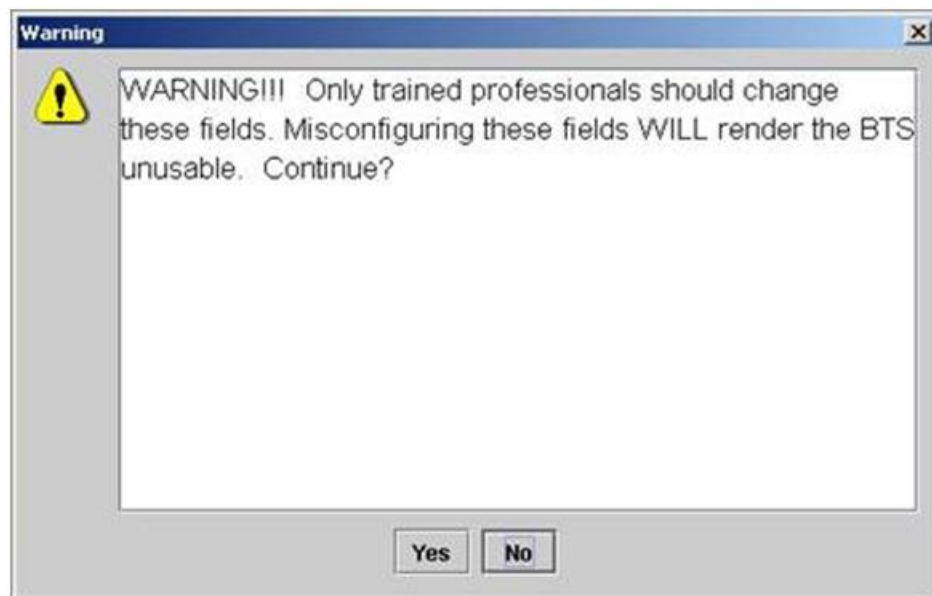
Purpose

This document provides a Cisco-qualified BWX Mobile WiMAX™ Installation & Commissioning Technician or Field Engineer with instructions to properly install a BWX 8415 Basestation (BS). The scope includes the Radio Unit (RU), Antenna Unit (AU), power and grounding, the backhaul network, the Access Services Network-Gateway (ASN-GW) & Broadband Wireless Gateway (BWG), and all cabling. It also includes acceptance testing procedures.



For safety and compliance reasons, the installation and configuration described in this document should be attempted only by persons who have completed appropriate training and achieved proper technical certifications regarding the use and support of the applicable products. Incorrect installation, configuration and/or service may lead to damage to the product(s) and/or risk of personal injury, and may void your product warranty and/or entitlement to support services. You, the customer, are responsible for obtaining and maintaining any required regulatory licenses, following appropriate safety procedures, and providing adequately trained staff to perform any installation, configuration and service of the products described herein.

In addition, the following pop-up window occurs whenever the operator attempts to configure either the frequency, output power, or several other parameters of the system. The operator must click on the Yes button to acknowledge this warning before that person can proceed:





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We are also in the process of developing a relatively small, portable, test system that allows installation personnel to perform a final functional check of the basestation prior to installation on a tower or building rooftop. The only way to use this tester is to remove the radio subsystem from the main housing (i.e., disconnected from the antennas). This tester, which has been requested by our customers, provides a way to power up the radio system perform basic functional checks, and measure output power and frequency with a portable spectrum analyzer.

Please let me know if this letter sufficiently answers your questions concerning configuration of frequency and output power and output power tolerance.

Regards,
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