Remote Auto Commissioning for Heights Networking Platform & Advanced VSAT

Overview

The installation and commissioning of remote sites has always involved highly skilled installers with extensive training. With the rapid growth of the VSAT market in both developed and emerging regions, companies are pressured to do more with less while improving the quality of installation and site commissioning and minimize unintentional satellite interferences – an increasingly issue as antennas are becoming smaller and more ubiquitous.

Existing Challenge

Traditionally, site commissioning has always been time consuming and labor intensive as this procedure is performed on-site by an installer and involves real-time coordination with the customer's Network Operations Center (NOC) personnel to assist with line up measurements. In some of the very remote and harsh areas, there may not be an easy way to establish reliable communication between the NOC and the installer. This can mean the use of costly satellite phones, increased frustration and the high potential for adjacent satellite interference.

This situation becomes even more critical with a large scale deployment of an entire VSAT network with hundreds or thousands of sites that each need to go through the same tedious process to point and peak the antennas, align polarization and set the transmit power.

Comtech EF Data's Cost-Effective Solution for VSAT Auto Commissioning

To reduce cost and the possibility of error(s) when commissioning sites, it is important to streamline this process, empower the installer in the field and reduce the interaction with the NOC or teleport personnel.

Our remote commissioning solution is a cost efficient VSAT line up tool that automates the VSAT installation process and minimizes cross-polarization and adjacent satellite interference in real-time. It is based on Satmotion Pocket developed by Integrasys and is optimized for our networking platforms – Heights Networking Platform and Advanced VSAT.

The software-based tool allows installers to autonomously visualize and measure their uplink test signal in the field without coordinating with NOC personnel, which saves time and resources. Our solution is comprised of:

- A Satmotion Monitoring server at the hub
- Our SpectrumVUE™-8 (8-port spectrum analyzer or SpectrumVUE-2 (2-port analyzer) at the hub
- Laptop or handheld device (Tablet or Smartphone) carried in the field by the installer

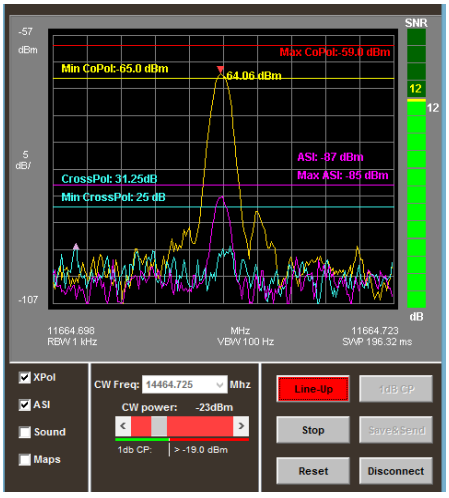

Figure 1: VSAT Line up

The intelligence of the tool resides within the NOC. Uplink signal measurements are taken at the NOC with the spectrum analyzer and the Satmotion monitoring server. Uplink signal measurements received at the NOC are sent back to the installer via the outbound link to fine-tune and complete the antenna pointing and peaking. Feedback on the antenna alignment is conveniently displayed on either a laptop or handheld device connected to a remote site Comtech EF Data device (Heights or Advanced VSAT Remote).

This auto commissioning system is based on a carrier monitoring system, which allows for the reception of the hub's spectrum analyzer measurements at the remote site without a cell phone connection, allowing for a full auto-commissioning process without the need for NOC support.

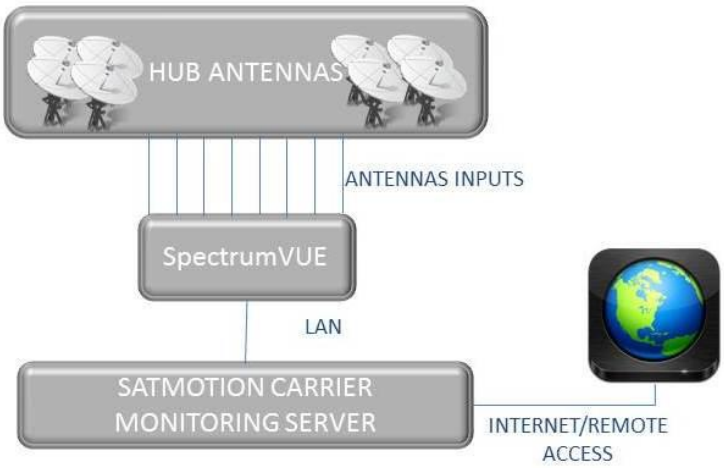

Figure 2: Hub Side Configuration

Features:

- Automatic Tx power adjustment
- Automatic 1dB BUC compression point
- VSAT Installation Report
- No mobile phone connection required
- Multiple installers can work simultaneously
- Available on laptops, tablets and smartphones
- Initial pointing with Earth Maps
- Extremely accurate satellite carrier monitoring system at the hub

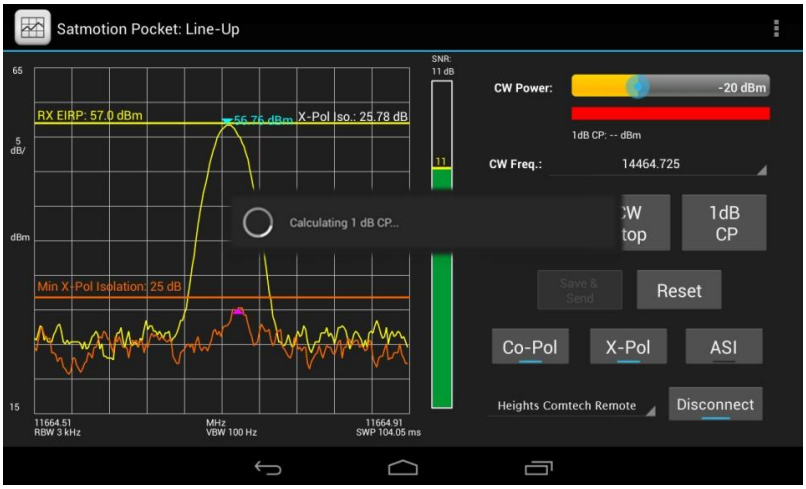

Figure 3: Automatic 1dB Compression Test

Benefits:

- Significant installation time and cost reduction
- No coordination between NOC/Hub operators and field installers
- Simple and intuitive graphical interface
- Minimize co-pol and x-pol interference and adjacent satellite interference

Key installation steps simplified by our auto commissioning solution:

- Antenna pointing/peaking through easy steps of the Satmotion Pointing
- Cross-polarization isolation
- Transmit power adjustment (Automatic 1dB compression point)

For additional information, please contact us.

2114 West 7th Street, Tempe, Arizona 85281 USA
Voice: +1.480.333.2200 ● Fax: +1.480.333.2540 ● Email: sales@comtechefdata.com