

Application Note



5 May 2023

Installing Ku Band VSAT System with XR-3(W) satellite meter

Requirements: XR-3(W) base unit with the VSAT S2X or VSAT S2X w/NIT satellite module.

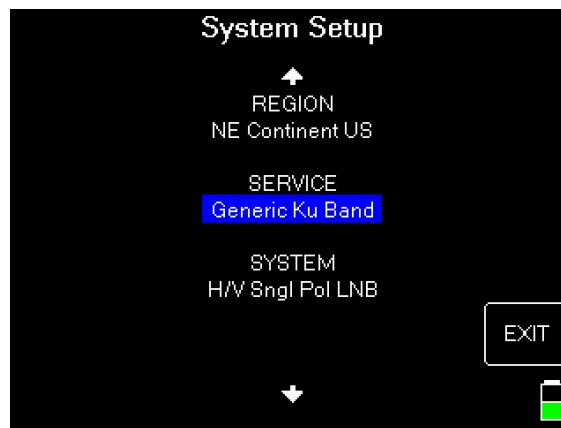
Connections: Coax cable connected from LNB output port to XR-3 satellite meter module's ODU / LNB port

Meter set-up

Press the **SYST** System shortcut soft key (located near top left corner of LCD screen) to enter the System Setup menu. Then select the following:

- REGION your geographic region (i.e. **NE Continental US**)
- SERVICE **Generic Ku Band**
- SYSTEM Selection based on the style of your LNB and feed horn (most likely **H/V Sngl Pol LNB**)
- LNB MODEL **LO= 10.75 11.7-12.2** (LO 10.75 GHz is most common in North America, but you may choose other LO options if applicable to your LNB)
- SWITCH TYPE defaults to **none** assuming you'll have meter connected directly to LNB with no multi-switch in line

*To make selections, arrow up or down to the item to change (using the meter's Up and Down arrow buttons) and press **Enter**, then arrow up or down to the desired option and press **Enter**. Press **EXIT** or **DONE** to return to Run Mode*



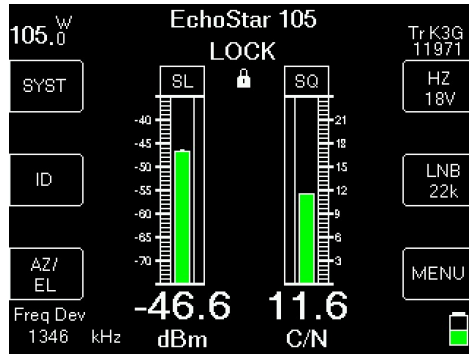
Antenna Pointing

Install the mast plumb, preset the antenna vertical angle, mount to mast, grossly align azimuth, and preset the polarization offset by rotating the feed horn assembly or skew of antenna reflector (if applicable). You may want to use the AZ/EL lat/long or postal code look-up feature to obtain rough antenna settings.

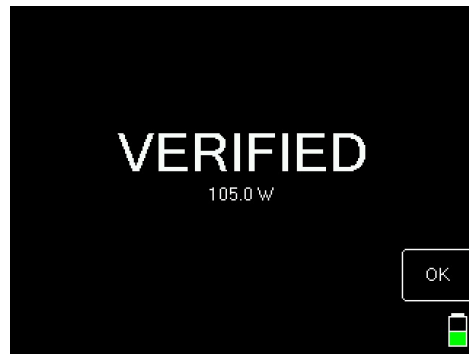
- Use left / right arrow keys to select the desired satellite (orbital position displayed in upper left). Refer to your service paperwork to know which satellite to aim dish at (i.e. Echostar 105).
- Press the **AZ/EL** soft-key (located near lower left corner of main Run screen), type in the local postal code or latitude and longitude, and press **ENTER**. Approximate antenna settings (i.e. magnetic compass heading, azimuth, elevation, and polarization offset) will be displayed. Press **EXIT** soft-key to return to the main Run screen.

Run Mode

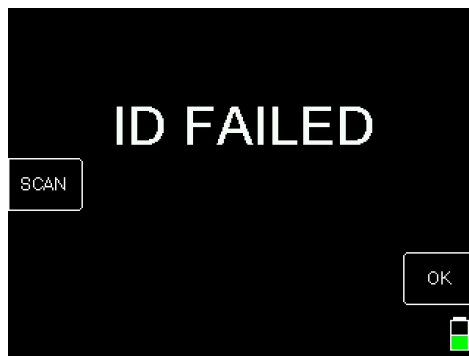
- Select the vertical or horizontal receive polarity (**VT** or **HZ**) with the upper right soft-key. Refer to your service paperwork to know which receive polarity to choose. You must have your feed horn physically oriented for the same downlink/receive polarization that you specify to the meter.
- Press **LNB** soft-key (located near middle right side of LCD screen) to power the LNB.
- Adjust antenna reflector alignment (azimuth and elevation) to obtain maximum signal level (shown on left bar graph in dBm or dBmV or dBμV), signal quality (shown on right bar graph in IRD, C/N, Eb/No, or Es/No), and LOCK status.
- Rotate the LNB and feed horn assembly (adjusting the polarization offset) or skew of dish antenna reflector (if applicable) to maximize signal level and quality.



- Press the **ID** soft key to verify the satellite. "ID VERIFIED" means you are pointed correctly.



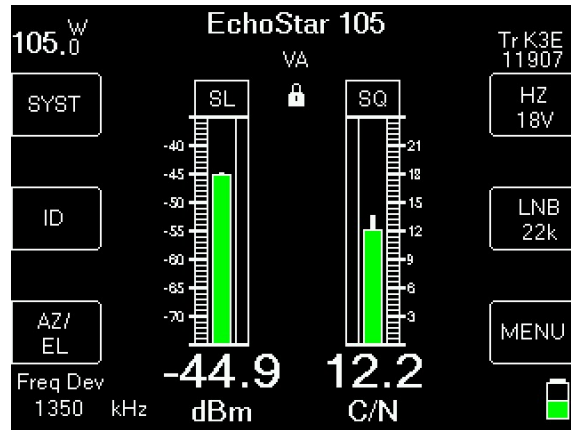
- If "ID FAILED" is displayed, press **SCAN** soft key and XR-3 will find which satellite you are aimed at.



- You may also use the Up/Down arrow keys to scroll through other transponders (besides the default transponder) to check for LOCK (for more supporting evidence that you are at the desired satellite) and proper level and quality.
- Set cross-pol using methods described in SatProf's VSAT courses (i.e. by verbally talking to NOC, using modem software, etc.). Visit www.satprof.com or www.gvf.org/training for more information.

NIT Feature

- If you have the VSAT S2X w/NIT module, the meter will display the Network ID, if available, once a “LOCK” is obtained.
- The meter will display the Network ID above the two bar graphs in place of the “LOCK” status.



- If there is no Network ID in the data stream of the carrier, the meter will display the “LOCK” status as normal.

Other Notes:

- It is NOT recommended to keep XR-3 meter in line while checking IRD/receiver/modem status due to attenuation from the meter's circuitry.
- Various Ku Band VSAT systems are offered in the market. Examples are iDirect™, Sagenet™, StarBand™, Gilat™, HughesNet™, etc.