TESCOM Ku Band VSAT System with XR-3(W) Satellite Meter Installation Guide

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TESCOM Ku Band VSAT System with XR-3(W) Satellite Meter

Product Information

The product is a Ku Band VSAT System with the XR-3(W) satellite meter. It requires the XR-3(W) base unit with either the VSAT S2X or VSAT S2X w/NIT satellite module. The system is designed for satellite communication and installation.

Requirements

- XR-3(W) base unit
- VSAT S2X or VSAT S2X w/NIT satellite module

Connections

Connect a coaxial cable from the LNB output port to the XR-3 satellite meter module's ODU/LNB port.

Product Usage Instructions
Meter Set-up

1. Press the SYST System to shortcut the soft key (located near the top left corner of the LCD screen) to enter the System Setup menu.
2. Select the following options:
    - REGION: Select your geographic region (e.g., NE Continental US).
    - SERVICE: Choose Generic Ku Band.
    - SYSTEM: Select the style of your LNB and feed horn (most likely H/V Sngl Pol LNB).
    - LNB MODEL: Choose the appropriate LO (Local Oscillator) value based on your LNB specifications.
    - SWITCH TYPE: Defaults to none assuming direct connection to the LNB without a multi-switch in line.

3. To make selections, use the meter's Up and Down arrow buttons to navigate, press Enter to confirm, and then navigate to the desired option and press Enter again.
4. Press EXIT or DONE to return to Run Mode.

Antenna Pointing

1. Install the mast plumb and preset the antenna's vertical angle.
2. Mount the antenna to the mast.
3. Grossly align the azimuth.
4. Preset the polarization offset by rotating the feed horn assembly or skew of the antenna reflector (if applicable).
5. Use the AZ/EL lat/long or postal code lookup feature to obtain rough antenna settings.
    - Select the desired satellite using the left/right arrow keys (orbital position displayed in the upper left).
    - Enter the local postal code or latitude and longitude using the AZ/EL soft-key (located near the lower left corner of the main Run screen).
    - Press ENTER to display approximate antenna settings, including magnetic compass heading, azimuth, elevation, and polarization offset.
    - Press the EXIT soft-key to return to the main Run screen.

Run Mode

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1. Select the vertical or horizontal receive polarity (VT or HZ) with the upper right soft-key, based on your service paperwork.
2. Orient the feed horn for the same downlink/receive polarization as specified to the meter.
3. Press the LNB soft key (located near the middle right side of the LCD screen) to power the LNB.
4. Adjust antenna reflector alignment (azimuth and elevation) to obtain maximum signal level (shown on the left bar graph if applicable) to maximize signal level and quality.
5. Press the ID soft key to verify the satellite. "ID VERIFIED" means you are pointing correctly.
6. If "ID FAILED" is displayed, press the SCAN soft key and the XR-3 will find which satellite you are aimed at.
7. 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.
8. Set cross-pol using methods described in SatProf's VSAT courses (e.g., by verbally talking to NOC, using modem software, etc.). Visit **www.satprof.com** or **www.gvf.org/training** for more information.

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 the top left corner of the 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 the 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 it to mast, grossly align azimuth, and preset the polarization offset by rotating the feed horn assembly or skew of the antenna reflector (if applicable). You may want to use the AZ/EL lat/long or postal code lookup 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. Select the vertical or horizontal receive polarity (VT or HZ) with the upper right softkey.
- 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 the LNB soft-key (located near the middle right side of the 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 the 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

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.
- arious Ku Band VSAT systems are offered in the market. Examples are iDirect™, Sagenet™, StarBand™, Gilat™, HughesNet™, etc.NOC, using modem software, etc.). Visit www.satprof.com or www.gvf.org/training for more information.

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Documents / Resources

	TESCOM Ku Band VSAT System with XR-3(W) Satellite Meter [pdf] Installation Guide Ku Band VSAT System with XR-3 W satellite meter, Ku Band VSAT, System with XR-3 W satellite meter, XR-3 W satellite meter, satellite meter

References

- Training – GSOA – Global Satellite Operator’s Association
- Satprof
- Tescom USA – TesCom Test Equipment Sales, Repair, and Calibration