Before Use:

1) While the XR-3(W) is powered off, slide the VSAT module down into XR-3(W) base unit until it clicks, and then tighten thumb screws finger-tight.

2) Attach shoulder strap carabiner clips to loops on top of XR-3's rubber shock guards, if desired.
3) Fully charge the meter's battery while meter is powered off. Indicator on screen will show 100% when battery is fully charged.
4) Load the latest available software into the XR-3, using the FlashUpdate program on a PC. For the latest available software versions and instructions, refer to our website, www.appliedin.com .
5) Ensure all rubber port cover plugs are securely closed on bottom of XR-3 before using meter outdoors.
6) Press ON/OFF button to power the meter on.

System Setup

1) Press the SYST soft key (located near top left corner of the LCD).
2) Select the region that corresponds with your general geographical location.
3) Select the service, system, LNB model, and switch type for your application.

4) Select DONE or press EXIT soft key to return to the main run screen.
5) Press the AZ/EL soft key (located near bottom left corner of the LCD).
6) Enter your postal code or Latitude and Longitude and then press Enter button to obtain the rough settings for the dish.

Antenna Alignment

1) Connect coax cable from the LNB's output port to ODU / LNB input port on the XR-3(W)'s VSAT module.
2) Press the LNB soft key (located near middle right of LCD) to apply power to the LNB.
3) Adjust the antenna reflector azimuth (left or right) and elevation (up or down) to obtain maximum signal level (left bar graph), signal quality (right bar graph), and LOCK status.
4) Press the ID soft-key (located near middle left side of LCD screen) to verify that you're aligned to the correct satellite. "ID VERIFIED" means you are pointed correctly.
5) If installing a multi-LNB system, press the LNB soft key multiple times to control the switch and toggle to the different LNBs.
6) If using the S2X w/NIT module, the Network ID, if available, will be displayed above the two bar graphs in place of the "LOCK" status.

Connections

2   1
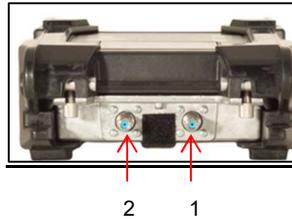
1) ODU / LNB - connects to the LNB (or receiver side of a multi-switch)
2) IDU / IRD - connects to the IRD (receiver or modem) – NOT REQUIRED

Run Screen
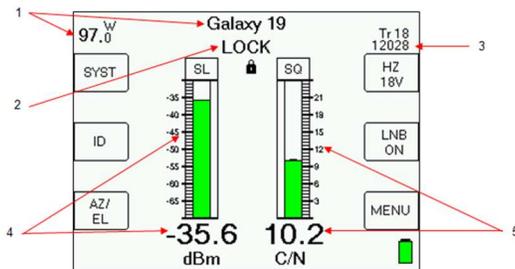
1) Selected satellite
   a) Change satellite with left and right arrow keys for single LNB systems (or with the LNB soft key when connected to multi-LNB systems, see Multi-LNB Systems below)
   b) Satellite name is on the top line
   c) Orbital position is shown at upper left
2) Lock status/Network ID
   a) Search – when searching for a matching signal
   b) LOCK – when signal lock is obtained, this indicates you MIGHT be pointed at the selected satellite, but you must use the ID soft key to confirm the satellite
   c) If you have the S2X w/NIT the Network ID will be displayed here
3) Transponder information (upper right)
   a) Change transponders with the up and down arrow keys
   b) Transponder label
   c) Frequency (L-band or downlink)
   d) Polarity (RGHT, LEFT, HZ or VT)
   e) Voltage provided to LNB (13, 18, 21, or 29 volts)
4) Signal Level
   a) Left bar graph (with peak hold center line)
   b) Numeric value in dBm, dBmV, or dBµV
   c) Scale: -75 to -15 dBm (-26 to +34 dBmV) or (+34 to +94 dBµV)
5) Signal Quality
   a) Right bar graph (with peak hold center line)
   b) Numeric value as IRD equivalent or C/N, Eb/No, or Es/No in dB
   c) Scale: 0 to 20 dB C/N
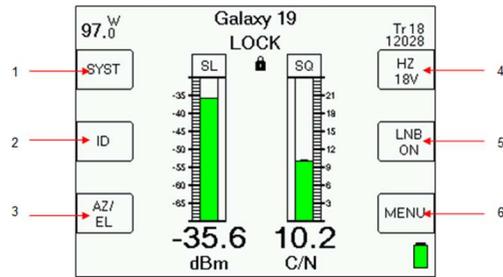
1) SYST   - transfers to the System Setup Screen
2) ID   - starts satellite identification verification function
3) AZ/EL   - transfers to the Azimuth and Elevation Lookup Screen
4) Polarity   - displays or selects polarity and LNB voltage (on single LNB
                                   setups)
5) LNB   - turns LNB power on or off (displays present state) and
                                   selects switch ports
6) MENU   - transfers to the Main Menu Screen

Multi-LNB Systems

When the selected LNB system supports multiple LNBs or multi-head LNBFs via the switch setting, the LNB ON/OFF button also controls the switch setting. Upon pressing the LNB power soft-key, the meter sends a switch command to toggle to the next feed horn and the satellite is automatically changed to the one normally used for that port.
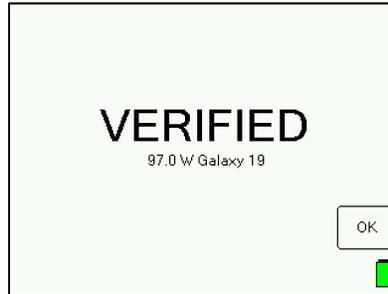
Satellite Identification

Satellites are identified by obtaining locks on one or more transponders. To obtain a lock, the frequency, signal type and symbol rate of the transponder must be known to the instrument. These combinations vary enough between the satellites that they can be used to identify the satellite. Unfortunately, one transponder is not always enough; there may be another satellite using the same combination.

ID Verification

Unlike other meters, the XR-3 has the ability to check one or more transponders looking for a match on a combination that is unique to each satellite. This is what we call the "ID Verification" feature. It is initiated when you press the ID soft-key (middle left side of LCD screen) on the Run Screen.

When you change satellites with the left/right arrow keys (or with the LNB power soft-key if you're connected to a multi-LNBF system), the default transponder shown will be one of the transponders used in ID Verification. Once you get a lock and peak the dish on this transponder, press the ID soft-key and the unit will check any other transponders needed to confirm the identification and display either "VERIFIED" or "ID FAILED".

VERIFIED
97.0 W Galaxy 19

OK

ID FAILED

SCAN

OK

Satellite Scan

If you have peaked up the signal level (left bar graph) on a satellite, but either don't see the signal quality and LOCK displayed, or get an "ID FAILED" message when performing the ID Verification, the XR-3 can try to determine which satellite you are pointed at by performing the ID Verification on different satellites sequentially. This is called the "Satellite Scan" feature.

To run a Satellite Scan, press the ID soft key to verify the selected satellite. If VERIFIED, there is no reason to run the Satellite Scan. If that fails, there will be a "SCAN" button on the "ID FAILED" Error Screen, press that and the scan begins.

The scan will start from the selected satellite, presumably the one you are looking for, and look to the east and west one satellite at a time until a positive ID is found or the horizon is reached, or you abort the scan.
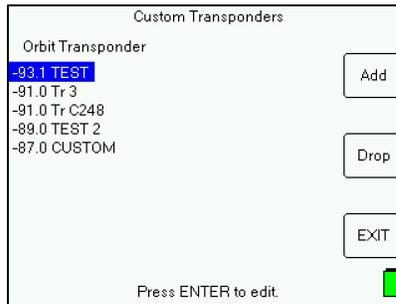
Azimuth / Elevation Lookup

The meter can look up the azimuth, elevation, and polarization offset for different satellites based on the US Zip Code, Canadian Postal Code, or by entering the Latitude and Longitude. The azimuth is given in true north (Azimuth) and in magnetic north (Magnetic) degrees. You should follow the Magnetic field value when using a compass to point the satellite dish. You may change the selected satellite using the left and right arrow keys.

1) For the United States, Puerto Rico, and US Virgin Islands the USA ZipCode database should be loaded using the FlashUpdate program.
2) For Canada, the Canadian Postal Code database should be loaded.
3) For outside of North America the No Postal Code database should be loaded.

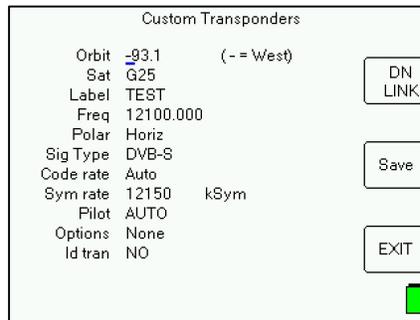**Custom Transponder**

1) You can define and permanently save up to 256 custom transponders in the database of the XR-3.
2) To enter the Custom Transponder setup screen from the main Run screen, press MENU soft-key (located near bottom right corner of LCD screen). Then use your Up or Down arrow buttons to select 'Custom Trans' near the bottom of the Main Menu list, and press the Enter button.

3) Any saved custom transponders in the meters database will be shown. If none have been saved, meter will indicate that.

```
              Custom Transponders

   Orbit Transponder

   -93.1 TEST                          Add
   -91.0 Tr 3
   -91.0 Tr C248
   -89.0 TEST 2
   -87.0 CUSTOM                        Drop




                                       EXIT


               Press ENTER to edit.
```

4) If you wish to edit those already saved custom transponders, highlight a custom transponder and press Enter button.
5) Press "Add" soft-key (located near top right corner of LCD screen) to add a new custom transponder.
6) If you wish to delete an already saved custom transponder, highlight a custom transponder and press "Drop" soft-key (located near middle right side of LCD screen).
7) Add or edit will take you to a screen to define the transponder parameters. Use alphanumeric keypad to type in field values. After entering a value, press the Enter button. Use Up and Down Arrow buttons to navigate to the next field.

```
              Custom Transponders

      Orbit   -93.1        ( - = West)
        Sat   G25                          DN
      Label   TEST                         LINK
       Freq   12100.000
      Polar   Horiz
   Sig Type   DVB-S
  Code rate   Auto                         Save
   Sym rate   12150     kSym
      Pilot   AUTO
    Options   None
    Id tran   NO                           EXIT
```

<u>Proof of Performance</u>

The Proof of Performance feature collects and stores signal level and quality data for later transfer to a PC for reporting. These features may be used to document the quality of installation for later reference.

1) Collect Test Data
    a. Perform your satellite dish alignment as usual. When the system is fully peaked, use one of the Scan options from the Proof of Performance Menu to perform the Scan and collect the data.
        i. Limit Scan (Single Satellite View) – uses the presently selected LNB port and collects data on up to 4 transponders for that LNB only.
        ii. Limit Scan (Multiple Satellite View) – steps through all LNB positions and collects data on up to 4 transponders for all related orbital positions.
        iii. Full Scan (Single Satellite View) – uses the presently selected LNB port and collects data on all transponders for that LNB only.
        iv. Full Scan (Multiple Satellite View) – steps through all LNB positions and collects data on all transponders for all related orbital positions.
    b. The meter will scan through transponders on the related satellite(s), collecting the measurement data. You can press STOP to abort the scan, otherwise, wait until the scan completes.
    c. When the scan completes, you may exit to discard the data or save the data in the meter.
2) Install PC Software
    a. The MeterMaid program is required to transfer the data from the instrument to the PC and to print reports. To download MeterMaid, visit our website, click on 'Service and Support', then click on 'Software Updates', then click on 'XR-3 Modular Test Instrument'.

Visit our website to view or print application notes or the full operation manual.

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