

XR-3(W) Base Instrument QUICK START REFERENCE GUIDE



Introduction

Congratulations on your XR-3(W) purchase. The XR-3(W)'s rugged construction, modular design, and ease of use are ideal for technicians who install and troubleshoot signal networks.

Charge the Battery

Fully charge the meter's battery while meter is powered off. Indicator on screen will show 100% when battery is fully charged.

AC Power (i.e. from wall outlet)

When 110VAC or 220VAC power is applied to the external AC to DC switching power supply, it supplies 15VDC power to charge the battery and run the meter. The meter can be used while it is charging. The meter's ability to power external LNAs or LNAs is current limited to 750 mA.

DC Power (i.e. from vehicle)

When external 12VDC power is provided from a vehicle, it supplies enough power to charge the battery, but not enough power to operate the instrument while the battery is being charged.

Install the Module

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

Check for Software Updates

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 See Software Updates section of Quick Start Guide for more details.

Safety / Protection

- 1) Ensure all rubber port cover plugs are securely closed on bottom of XR-3 before using meter outdoors.
- 2) Close the cordura protective flap when meter is not in use to protect the front panel and display.
- 3) Shield the meter from moisture (i.e. rain) when using outdoors.

Attach Shoulder Strap

Attach shoulder strap carabiner clips to loops on top of XR-3's rubber shock guards, if desired. See instruction manual or video for different strap attachment configurations.

Begin Using the XR-3(W)

- 1) Press ON/OFF button to power the meter on.
- 2) Refer to your module's Quick Start Guide for instructions of how to take measurements and navigate the menus.

Connections



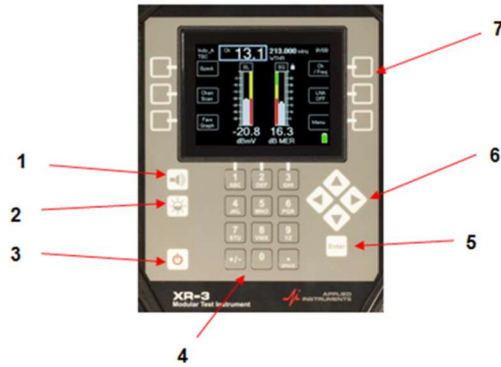
- 1) Charge cord port for battery charger
 - a. AC charging via wall outlet (100-240VAC, 50-60 Hz Input and 15VDC output)
 - b. DC charging from 12VDC (at least 1 amp) vehicle outlet (cigarette adapter)
- 2) PC port - USB connection to PC for updating software and transferring files
- 3) Audible tone (speaker) port
- 4) Ethernet port (Ethernet option to be offered in future)



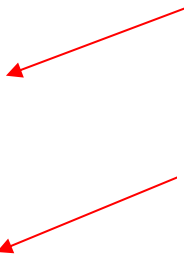


5) Base-to-module connection port

Front Panel Buttons



- 1) Audible Tone
- 2) Screen Brightness
- 3) ON / OFF Power
- 4) Alphanumeric Keypad
- 5) Enter button
- 6) Arrow keys
- 7) Soft-keys (six)



Software Updates

Updates to the Field Guide and to the instrument firmware are available from the Applied Instruments website.

Requirements

- 1) A PC running Microsoft Windows 95, 98, 2000, NT, XP, Vista, Windows 7, Windows 8, 8.1, or Windows 10
- 2) An open USB connection port on your PC
- 3) An internet connection
- 4) The USB data transfer cable provided with the instrument

Installation

Before you can update your instrument, you must obtain and install the FlashUpdate software application onto your PC:

- 1) Ensure that you are signed on as Administrator or have Administrator rights for Microsoft Windows.
- 2) Temporarily disable your computer's anti-virus software and firewall so it doesn't interfere with the installation of the FlashUpdate and MeterMaid programs and the related USB drivers.
- 3) Go to the Applied Instruments website www.appliedin.com. With your mouse, move your cursor over Service and Support and click on it, then click Software Updates, then click on 'XR-3(W) Modular Test Instrument'.
 - a. Click on "Click Here to Download FlashUpdate Zip Software" or use the following link directly: www.appliedin.com/downloads/flashupdatezip.exe
- 4) This is a self-extracting archive file (.ZIP file). You may choose to open or run the file directly from the website or may save it to your disk and then open or run it. It is recommended that you run the file. You may receive a warning message. Press Run to continue to open the file.
- 5) When you open this self-extracting archive file, the WinZip Self-Extractor program will appear. It is recommended that you press the Unzip button to unzip the files to the default location (c:\FlashUpdate\).
- 6) It will unzip several files onto your PC to the location you indicated. Press OK.
- 7) A Command Prompt screen will appear. Using your computer's keyboard, type the number that corresponds to your computer's operating system.

- 8) Another Command Prompt screen appears to let you know that USB drivers are being installed. After the USB driver installation is complete, you will receive a message advising you to press Enter. Pressing Enter will complete the software application installation process and the "DOS looking" screen disappears.
- 9) Close your internet browser window if you still have it open and view your desktop screen.
- 10) You will notice that two new shortcut icons have been installed on your desktop. If the icons do not appear on your desktop, you can use "My Computer" or Windows Explorer to navigate to the C:\FlashUpdate\ folder and open FlashUpdate.exe from there and you can also copy and paste shortcut icons from the folder to your Desktop. If you choose an installation location other than the default folder, then the shortcuts won't work.
 - a. FlashUpdate is the program used to download the latest software updates to the XR-3 instrument. Application filename: FlashUpdate.exe
 - b. MeterMaid is the program used to upload stored Channel Scans, Favorites, Spectrum Scans, Constellation Scans, Limits files, Channel Plans, Proof of Performance Scans, and Limit Scans from your XR-3 instrument to the PC. Application filename: MeterMaid.exe

Updating

- 1) Ensure you have an active internet connection.
- 2) Ensure meter's battery is well charged. Or plug your XR-3 into an AC outlet and power the meter on.
- 3) Connect the XR-3(W) to your PC using the supplied USB data transfer cable and turn the instrument on.
- 4) Double click the FlashUpdate shortcut icon or start the application from wherever you saved it (i.e. your C drive).
- 5) If connection is established, a picture of the XR-3(W) will appear in the top left corner of the FlashUpdate program and the top center portion of the program will be filled in with data obtained from the instrument (i.e. serial number, loaded software version, etc.). If the connection is working, proceed to the next step. If connection is not established, please refer to the Updating section in the detailed operation manual online for troubleshooting steps.

- 6) As soon as the connection is established, the application will access the website and obtain the latest available versions for the various software components. These will be compared with the versions installed on your instrument. Any component with a newer version available will be checked.
- 7) For satellite module applications, select your desired Limit Values file and Postal Code region using the pull down lists.
- 8) Click "UPDATE" to start updating the instrument. The progress bar at the bottom will show the installation progress of each component. The download process can take up to approximately 5 minutes to complete, depending on the number of components that need to be updated. The word "REMOTE" should appear on the LCD screen of the XR-3(W) to indicate that the instrument is being programmed and controlled remotely. Standby while the instrument is updated. Do NOT press any buttons on the XR-3(W) meter while the update is in progress. Do NOT bump or unplug the USB data transfer cable from the meter while the update is in progress.
- 9) When finished, the program will display "Update Complete. Reconnecting", click "Exit". You may now disconnect the XR-3(W) instrument from the computer, reboot the meter, and then it is ready to use.

Channel Plans (applies to CATV / Off-Air module only)

- 1) Standard Cable Plans
 - a. EIASTD - North American analog (NTSC) & digital (QAM64 / QAM256)
 - b. EIASTD QAM – North American EIA digital (QAM64/256)
 - c. EIASTD ANLG – North American EIA analog
 - d. HRC
 - e. IRC
 - f. PAL BG
 - g. PAL I
 - h. SECAM
- 2) Standard Off-Air Plans:
 - a. NTSC ATSC – North American analog (NTSC) & digital (8VSB)
 - b. OTA DIGITAL – North American digital (8VSB)
 - c. OTA ANALOG – North American analog (NTSC)
 - d. FM N. Am

Field Guides (applies to satellite modules only)

- 1) Regional Field Guides currently available are:
 - a. North American Field Guide (for 48 Continental USA states)
 - b. Alaska-Hawaii Field Guide
 - c. Carib-CentralAm Field Guide (for Caribbean & Central America)
 - d. South American Field Guide
 - e. European Field Guide
 - f. African Field Guide
 - g. Middle East Field Guide
 - h. Asian Field Guide
 - i. South Pacific Field Guide

Limit Values (currently applies to satellite modules only)

For technicians that will be using the meter for Dish Network related work, select 'Dish Limits'. If you won't be using the XR-3 for Dish Network applications, select 'No Limits'. For C Band applications for SES or Intelsat, select CBand Limits. You can select the Limit Values you need using the pull down list.

Postal Codes (applies to satellite modules only)

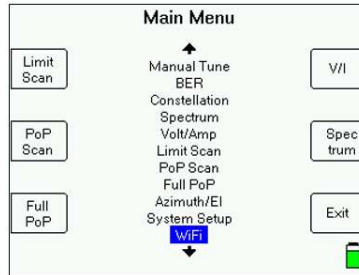
Postal Code files provide look-up of latitude and longitude based on the postal code. Postal code files for the United States and Canada are available now; more may be added in the future. Select the Postal Code file using the pull down list.

If you are using the meter outside of the United States and Canada, then choose "No Postal Codes." This allows you to type in and save your latitude and longitude coordinates for your location, which will calculate the azimuth, elevation, and skew settings of the dish antenna as it relates to each satellite.

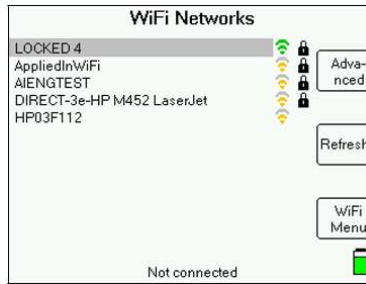
Wi-Fi Operations

- 1) Hardware Compatibility (hardware versions of XR-3):
 - a. <3.0, the XR-3 is not Wi-Fi ready
 - b. 3.00, Wi-Fi/Ethernet ready, but does not have either module installed
 - c. 3.01, Wi-Fi module is installed
 - d. 3.02, Ethernet module is installed
 - e. 3.03, Both the Wi-Fi and Ethernet modules are installed

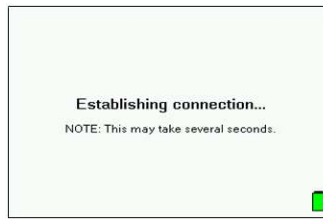
- 2) Features
 - a. Meter software updates
 - b. File uploads (scan results)
 - c. Hands free display (XR-3W's screen mirrored on phone or tablet)
- 3) Wi-Fi Networks
 - a. Select Wi-Fi from the Main Menu and press Enter.



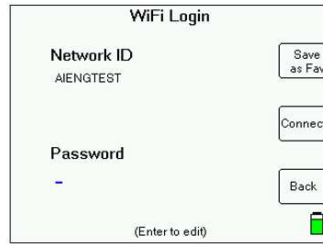
- b. The available Wi-Fi networks will be shown by network name (SSID), signal strength indicator, and encryption status.



- c. The signal strength is displayed using a color coded icon.
 - i. Green = strong signal
 - ii. Yellow = medium signal
 - iii. Red = weak signal
- d. To connect to a Wi-Fi network, select the network and press Enter.
 - i. If network is not encrypted, the meter will begin to connect.

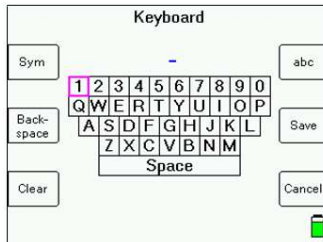


- ii. If network is encrypted, you will go to the login screen.



4) Wi-Fi Login

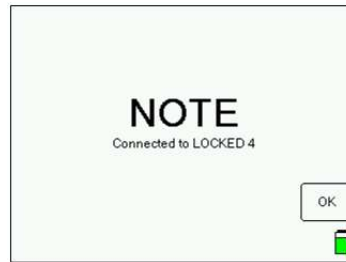
- a. Press Enter and an on-screen keypad will appear so you can type in the password.



b. Soft-keys:

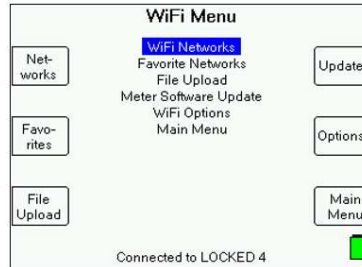
- i. ABC - Upper case letters with numbers
- ii. abc - Lower case letters with numbers
- iii. Sym – Symbols
- iv. Backspace – Clears character to left of cursor
- v. Clear – deletes all characters and clears the field
- vi. Save – saves entire field and exits from keyboard
- vii. Cancel – returns to previous screen without saving changes

- c. Use the four arrow buttons to select a character and press Enter to record it. When all characters are recorded, press “Save” soft-key to save the entire field.
- d. After the password is entered, you can press “Save as Fav” to save it as a favorite Wi-Fi network. Up to five favorites can be saved.
- e. Press “Connect” to connect to the specified network. This process may take several seconds.



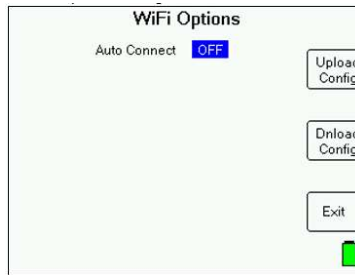
- f. Once connected, press “OK” to return to the Wi-Fi menu screen.

5) Wi-Fi menu



- a. Wi-Fi Networks – Displays list of available networks
- b. Favorite Networks – Displays stored favorites
- c. File Upload – Transfer stored files via FTP (File Transfer Protocol)
 - i. For detailed instructions on the file upload process, please see the application note on our website.
- d. Meter Software Update – Downloads software updates for the meter
- e. Wi-Fi Options – Change Wi-Fi options settings
- f. Main Menu – Exits to Main menu

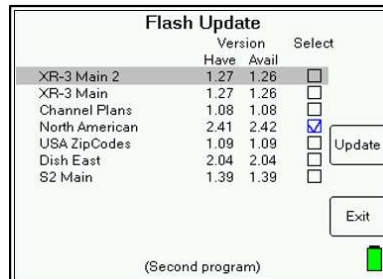
6) Wi-Fi Options



- a. Auto Connect – Will automatically connect to one of the favorite networks (if detected to be within range) once Wi-Fi is selected in the Main Menu.
- b. Upload Config – Specifies the webserver domain, subdirectory, username, and password to use for the file upload destination
- c. Dnload Config – Specifies the webserver domain and subdirectory where the meter files will be downloaded from

7) Meter Software Update

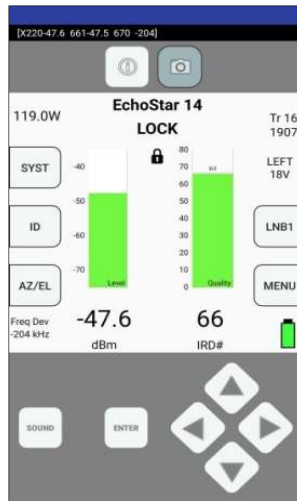
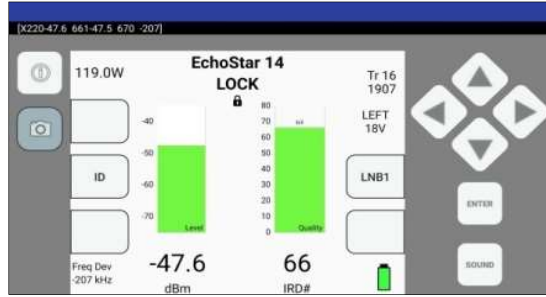
- a. Select "Software Update" from the Wi-Fi Menu.
- b. The meter will connect to the server.



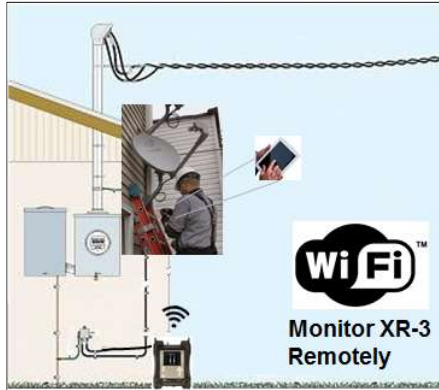
- c. The meter will show the versions you currently have installed and the versions that are available for updating. It operates like FlashUpdate does on the PC. See Software Updates section for more details.
- d. Some components have different options available. To see all available options, highlight the component using up or down arrow button and then press the left or right arrow button to select between the various options.

- e. Once the desired components are selected, press the Update soft-key to continue. The meter will begin downloading each component and will display a progress bar for each.
- f. Download process can take up to 5 minutes to complete. When complete, the meter will reboot and default back to the main run screen.

Remote Meter Control App (Phone/Tablet App for XR-3W)



- 1) Purpose: wirelessly monitor and control your XR-3W from your mobile device
- 2) Applications
 - a. Align or check dish antennas for proper alignment while remotely monitoring signal level and quality on a phone or tablet. This is especially helpful when the dish is mounted up high, so you can leave the XR-3W at the ground block location at ground level and climb the ladder with your phone on your forearm to remotely monitor the signal level and quality while you check alignment or realign the dish. This prevents you from having to temporarily replace the long coax cable from the LNBF with a short jumper cable to your meter. It provides a speed and safety benefit.



- b. Remotely monitor the XR-3W with a phone or tablet while troubleshooting coax cable. Leave the XR-3W at point A and make adjustments at point B in the network, while monitoring the mobile device to confirm that the issue has been resolved.
- 3) App OS Compatibility
 - a. Android (available from Google Play or from www.appliedin.com)
 - b. iOS compatible app will be offered in the future.
- 4) Technical Specs: 2.4 GHz 802.11 technology
- 5) Distance Reach (approximate, varies depending on solid walls & objects)
 - a. Indoors – up to 150 feet
 - b. Outdoors – up to 300 feet
- 6) Available Functions
 - a. Satellite main Run screen
 - i. LNB, ID, Sound, Enter, and Arrow buttons are active now.

- b. Other soft-keys, screens, and functions will be enabled in the future via software updates to the app and XR-3.
- 7) Linking XR-3W with Phone or Tablet using device's Wi-Fi hotspot feature
- a. Power on the XR-3W.
 - b. Enable Wi-Fi hotspot on the phone or tablet.
 - c. On the XR-3W:
 - i. Select MENU > WiFi > WiFi Networks
 - ii. Select phone's SSID from list of networks and enter password, if applicable. (Network can be saved as a "Favorite Wi-Fi Network")
 - iii. Exit Wi-Fi Menu and return to main Run screen.
 - d. On the Phone or Tablet:
 - i. Open the RemoteMeterControl app.
 - ii. The phone or tablet will sync with the XR-3W and the meter's main Run screen will be mirrored on your mobile device.
- 8) Linking XR-3W with Phone or Tablet without Wi-Fi hotspot
- a. Power on the XR-3W.
 - b. Enable Wi-Fi on the phone or tablet.
 - c. On the phone or tablet, select the SSID of the XR-3W network and enter the password to join. In your XR-3, you can view and modify the SSID and password by selecting MENU > WiFi > WiFi Menu > WiFi Options > Hands Free Cfg.
 - d. On the XR-3W, exit the Wi-Fi menu to return to the main Run screen.
 - e. On the phone or tablet, open the RemoteMeterControl app.
 - f. The phone or tablet will sync with the XR-3W and the meter's main Run screen will be mirrored on your mobile device.
- 9) RemoteMeterControl App Functions
- a. Functions in both landscape and portrait modes
 - b. Interface on the phone app is the same as the XR-3 meter.
 - c. Additional app buttons:



- i. Info – Provides app version number and contact info for Applied Instruments (call or email for technical support)
- ii. Screenshot – allows user to capture and save screenshots to mobile device

Owner Name:

XR-3(W) Base Instrument Serial Number:

XR-3(W) Module Serial Number(s):

Purchase Date(s):

Notes:

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



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