

AlphaNet™ DM3X DOCSIS® Status Monitor

DM3X Transponder Installation for XM2 Quick Start Guide

Overview



CAUTION!

For XM2 units in service, backup battery power will not be available during this procedure.

DM3X Transponder installation and setup is comprised of three basic steps:

1. Configuring the Network: provisioning the DHCP Server with the transponder's MAC address and assigning it a DOCSIS configuration file.
2. Installation of the DM3X transponder into the power supply, making front panel connections and verifying operation.
3. Setting Options: The DM3X Transponder is designed for out-of-the-box, "plug and play" operation. Non-default settings such as SNMP trap destination addresses may be required for the Network Management System (NMS). SNMP trap addresses can be set automatically via the DOCSIS configuration file's docsDevNmAccessTable per RFC 4639 (IPv4) or through the SNMPv3 Notification settings (IPv6), while DM3.0 Series proprietary options may be set through type 11 TLV entries. The SCTE-HMS MIBs may need to be compiled into a MIB browser before it can be used to monitor or set transponder and power supply parameters. Refer to the DM3.0 Series Technical Manual for details.

These steps can be performed independently of one another. However, configuring the network prior to field installation will allow the installation to be verified while personnel are still on-site. Performing field installation before network configuration might result in additional field service calls to correct mistakes.

Installation / Replacement Procedure

Before removing the Inverter Module, verify the power supply device address is correct.

The power supply device address must not be set to zero and no two power supplies monitored by a single DM3.0 Series Transponder can have the same address. Power supplies must have 1, 2, 3, 4 or 5 as an address.

To verify the power supply's address, go to the Smart Display on the inverter module and push the ENTER arrow twice to access the Set Up Menu. Scroll to the "Device Address" menu item and verify the device address is set to something other than 0 (Zero).



NOTICE:

The DM3X is powered via the Battery A/B Sense Harness. The sense harness must be connected to the batteries before being plugged into the DM3X A/B connector to power the transponder.

Removing the Inverter Module:



CAUTION!

Service personnel must verify the Inverter Module battery breaker remains in the OFF position until instructed to return the unit to service.

1. Turn off the battery breaker.
2. Disconnect the battery input and temperature sensor cables from the Inverter Module, followed by the tamper, RF, ENV, and battery sense cables if a transponder is currently installed.
3. Loosen the thumbscrew on the XM2 Inverter Module and the two thumbscrews on the transponder (if applicable).
4. Grasp the handle on the right side of the Smart Display. Pull firmly to release the module from the inverter connector. Gently slide the module assembly straight out until the Inverter Module is accessible. (If the Inverter Module is already equipped with a Communications Module, remove it by loosening the two captive screws.)
5. Disconnect the ribbon cable attached at the back of the Inverter Module.
6. Verify the Jumpers (J10 / J11) on the DM3X transponder are in the correct position for an XM2 installation (Fig. 1).

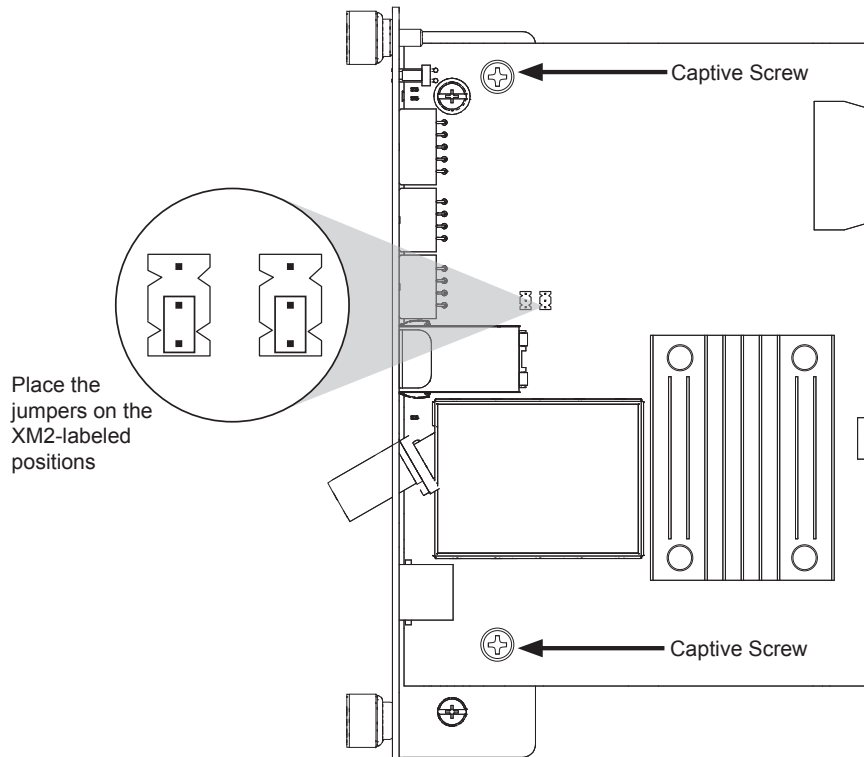


Fig. 1, Captive Screw Locations and Jumpers

7. Line up the 18-pin connector on the transponder (Fig. 2) with the 18-pin socket on the Inverter Module and connect the two units together.
8. Fasten the transponder to the Inverter Module by tightening the two captive screws (Fig. 1). It is recommended that the screws be tightened alternately, a few turns at a time, so the transponder aligns in parallel to the Inverter Module.

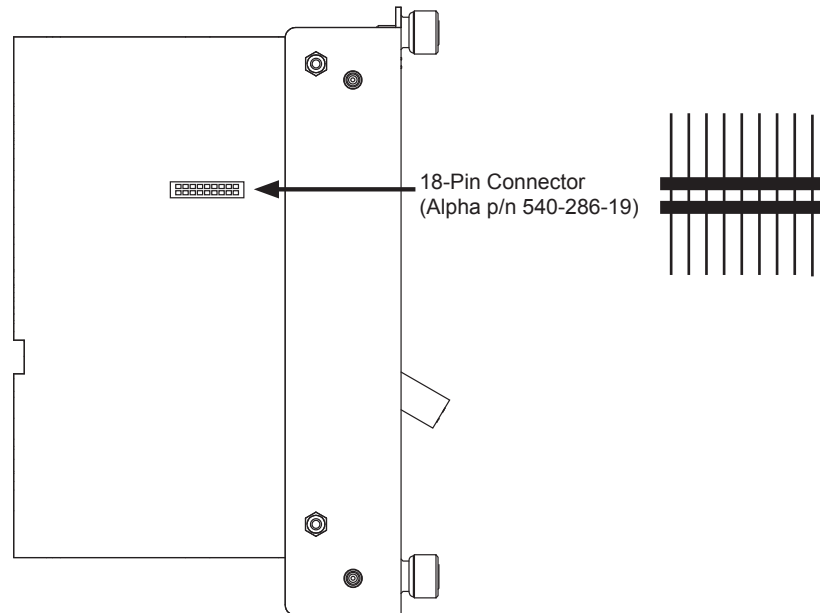


Fig. 2, 18-Pin Connector



NOTICE:

Ensure that ALL 18 pins are lined up to the proper sockets. Sometimes the 18-pin jumper will be removed when removing the old transponder, ensure that the correct 18-pin jumper (Alpha p/n 540-286-19) is in the XM2 inverter module.

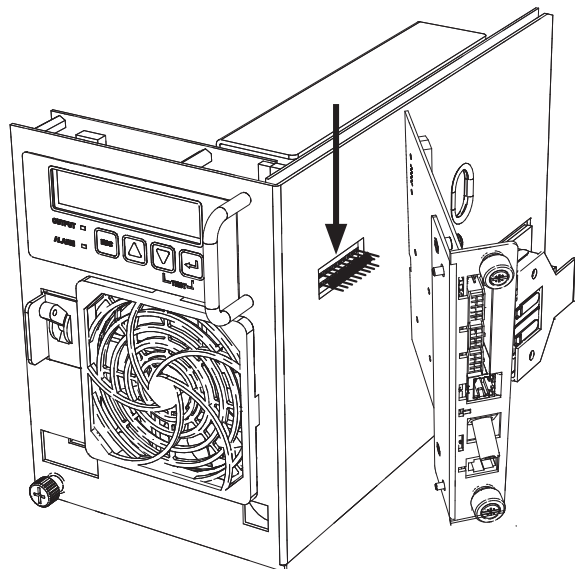


Fig. 3, Connecting the Transponder to the Inverter Module

9. Reconnect the ribbon cable to the back of the Inverter Module.
10. Reinstall the Inverter Module, tighten the thumbscrews and reconnect the front panel connections (tamper, temperature sensor, battery harness, etc.).
11. Connect the Battery Sense/Power Wire Kit to the A/B port and C/D port (as applicable) to power the transponder. Refer to the battery diagrams provided with the sense wire kit or reference the DM3X for XM2 Technical Manual (Alpha p/n 704-939-B10) for battery wiring.
12. Verify the recording of the cable modem MAC address (RF MAC). This can be viewed on XM2 display's with the I²M Inverter Module or the DM3X's internal Web page. Otherwise it must be recorded from the shielding on the side of the DM3X.

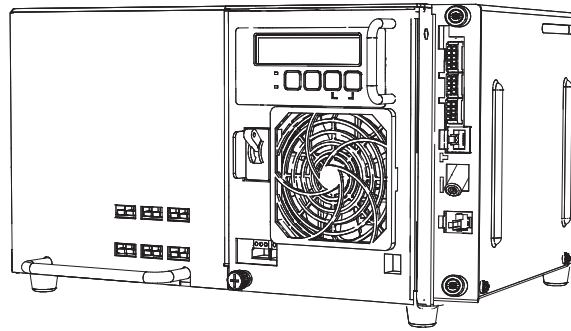


Fig. 4, Completed Installation of DM3X in XM2

13. Connect the RF drop and make front panel connections as shown in Fig. 5 for the DM3X. The DOCSIS specification for downstream power level is ± 15 dBmV. However, for optimal performance, set the level as close to 0 dBmV as possible. RF attenuators or cable simulators may be required to obtain optimal downstream and upstream RF levels.

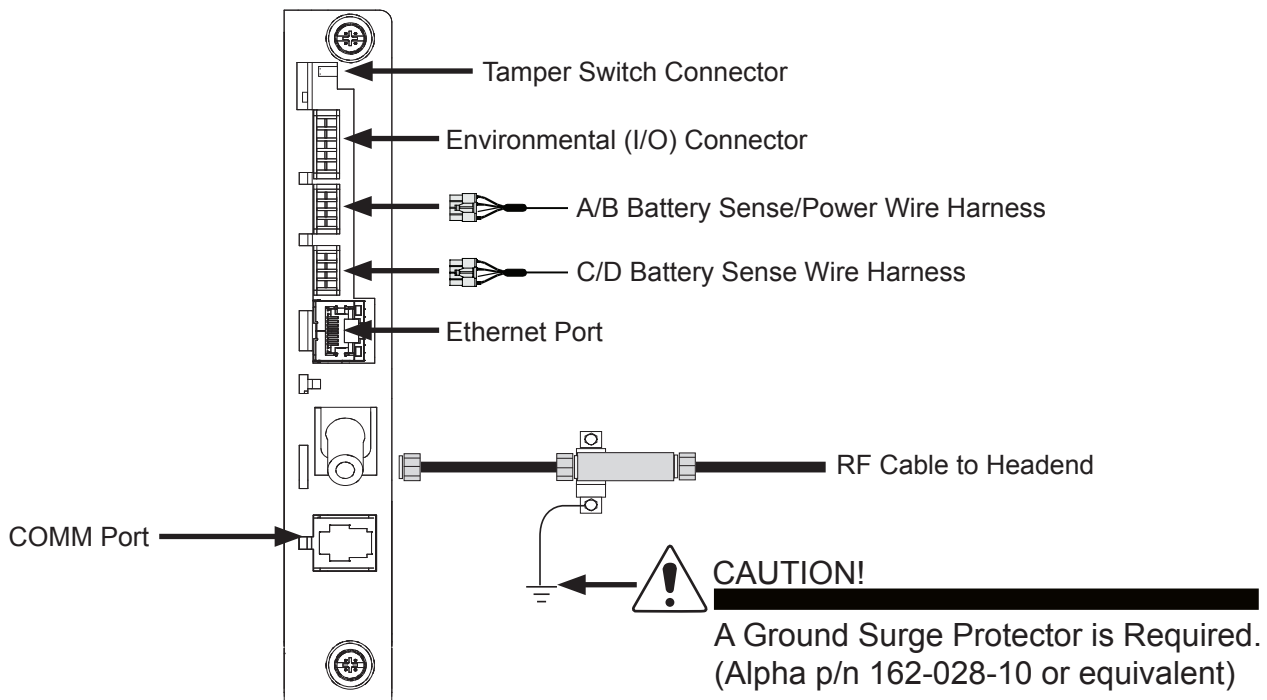
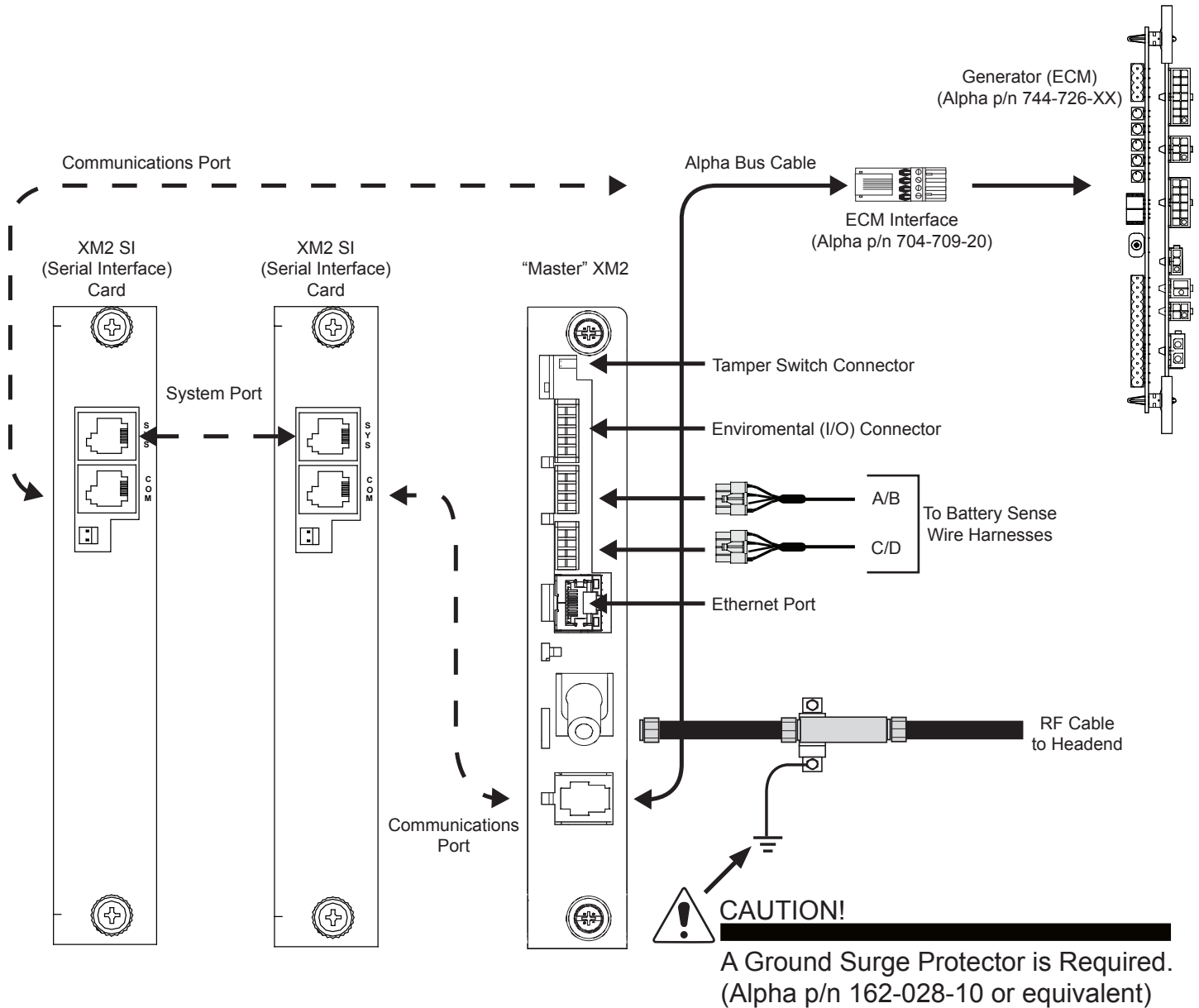


Fig. 5, DM3X Front Panel Connections



NOTICE:

Refer to Fig. 6 when using a DM3X in a system configuration with multiple power supplies or AlphaGen generator.



Legend

- Connections
- Connections with more than one power supply

Fig. 6, DM3X Front Panel Connections, Multiple Power Supplies



NOTICE:

Each power supply must have a unique address other than 0. Refer to Intelligent CableUPS technical manual (p/n 017-805-B0), or the DM3 Series Transponder technical manual (p/n 704-939-B10) for additional information.

Initial Power-Up and Test / Returning the Unit to Service

✓ **NOTICE:**

Verify that the A/B Battery Sense/Power Harness is connected prior to these instructions.

1. Plug the power supply into the AC outlet.
2. Switch battery breaker ON.
3. The transponder LEDs will all blink in unison upon initial power up. The RDY LED will then begin blinking steadily indicating normal processor activity.
4. Verify the DS, US, and OL LEDs are on solid. This verifies the Communications Module has registered an IP address on the network.
5. Verify the RF LED is solid Green, indicating Upstream and Downstream Power is within the default specified range and the Upstream RF Power is below the recommended +50 dBmV (Table 1).
6. Verify no XM2 alarms are active.

RF Power Default Values		
LED Color	Rx Range (dBmV)	Tx Range (dBmV)
Green	+10 to -10	0 to +50
Blue	+15 to +10 and -10 to -15	+50 to +55
Red	>+15 and <-15	>+55

Table 1, RF Power Default Values

Test Connection

✓ **NOTICE:**

DM3X transponder communication parameters on the XM2 Smart Display are only available on XM2's with the blue LCD Inverter Module

- XM2 Smart Display - COMMS STATUS/MENU:
 - Verify the DM3X transponder communication parameters such as IP address, RF Power Levels and Signal/ Noise Ratio on the COMMS STATUS/MENU of the XM2 Smart Display. Press Enter to open the COMMS STATUS Menu enabling the operator to view values for communications parameters. Pressing the up or down arrow softkeys will show two lines of information for each submenu item (Fig. 7).

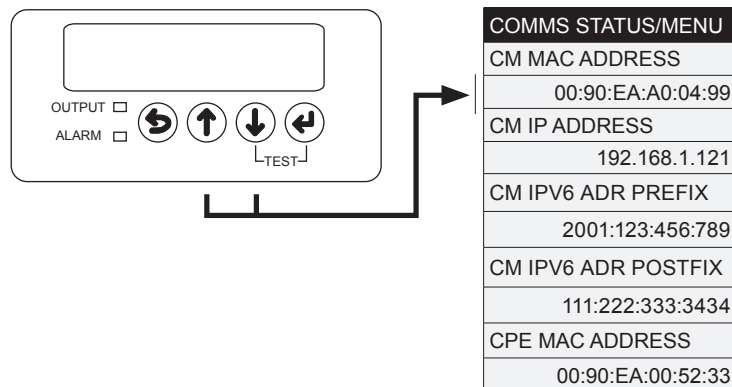


Fig. 7, XM2 Smart Display

- Local Web Server Access:
 - You may also test the connection using a computer and a standard Ethernet cable. Connect the computer to the Ethernet port on the transponder, launch an Internet browser (e.g. Internet Explorer) and enter 192.168.100.1 in the address field. The General Configuration page shown below will appear and display connectivity, power levels and power supply status information such as alarms, output voltage, output current and individual battery voltages. System Name, System Location, System Contact and Common Logical ID may be edited on this page; when prompted for a User Name and Password, use “Alpha” and “AlphaGet”.
- Remote Web Server Access:
 - Connect the computer to the cable modem network, launch an Internet browser (e.g. Internet Explorer) and enter the designated transponder IP address in the address field. The General Configuration page will appear (Fig. 8).

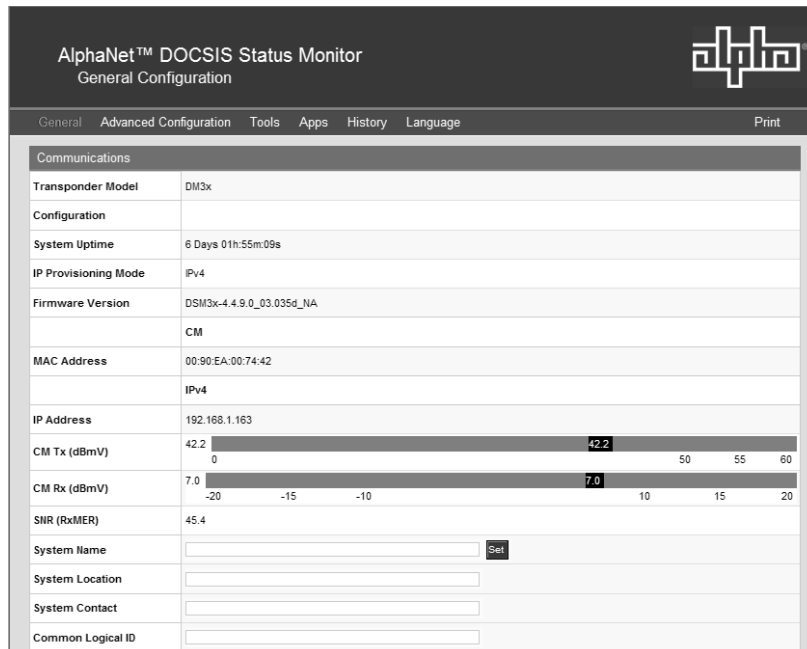


Fig. 8, General Page

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