AlphaNet™ DM3.0 Series DOCSIS® Status Monitor

DM3.0 Series Transponder Installation for XM3 Quick Start Guide

Overview

⚠ **CAUTION!**

For XM3 units in service, backup battery power will not be available during this procedure.

DM3.0 Series Transponder installation and setup is comprised of three basic steps:

1. Installation of the DM3.0 Series transponder into the power supply, making front panel connections and verifying operation.
2. Setting Options: The DM3.0 Series Transponders are 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.
3. Configuring the Network: provisioning the DHCP Server with the transponder's MAC address and assigning it a DOCSIS configuration file.

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 LCD display on the inverter module and enter the "PWR CNFG" menu. Scroll to the "Device Address" menu item and verify the device address is set to something other than 0 (Zero).
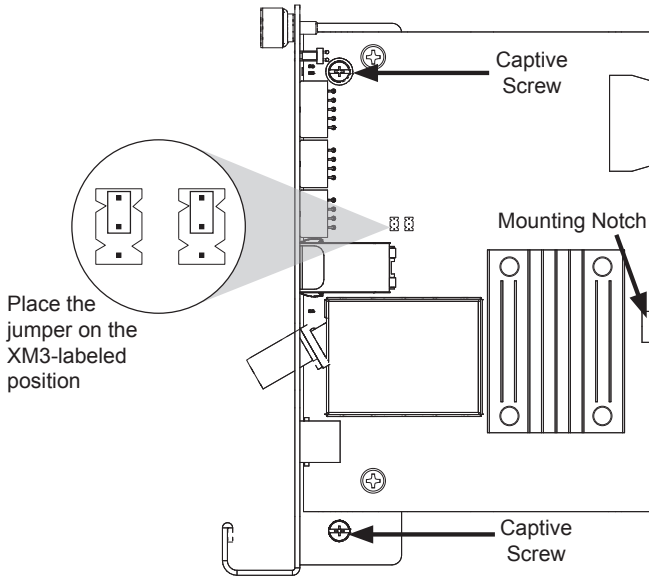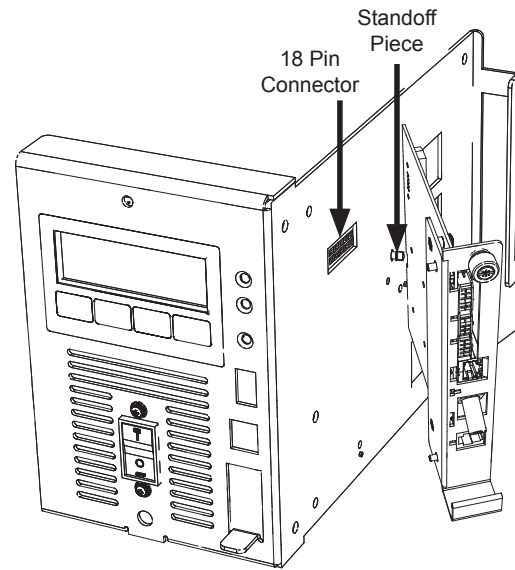
Removing the Inverter Module:

⚠ **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 and battery sense cables if a transponder is currently installed.
3. Loosen the thumbscrew on the XM3 Inverter Module and the thumbscrew on the transponder (if applicable).
4. Grasp the handle on the bottom right side of the Inverter Module. Pull firmly to release the module from the inverter connector. Gently slide the module assembly straight out until the Inverter Module is accessible.

5. If applicable, remove the old transponder from the inverter module.

6. Verify the Jumpers (J10 and J11) on the transponder are in the correct position for an XM3 installation (Fig. 1).

7. Set the notch at the back of the DM3.0 Series Transponder onto the white stand-off on the side of the Inverter Module (Fig. 2). Then, line up the 18-pin connector on the transponder (Fig. 3) 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.

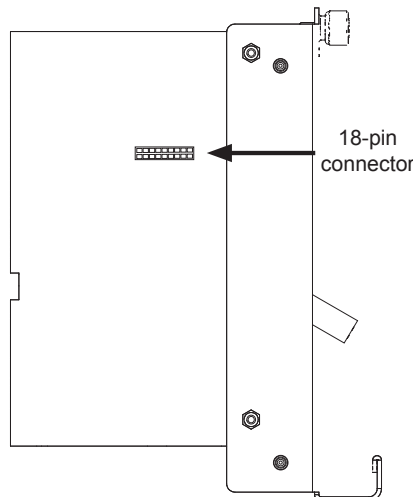**Fig. 1, Captive Screw Locations and Jumpers**

**Fig. 2, Connecting the Transponder to the Inverter Module**

✓ **NOTICE:**

When connecting the DM3.0 Series Transponder to the power supply, ensure that the notch at the back of the DM3.0 Series Transponder is set on the stand-off on the side of the Inverter Module. Ensure that ALL 18 pins are lined up to the proper sockets.
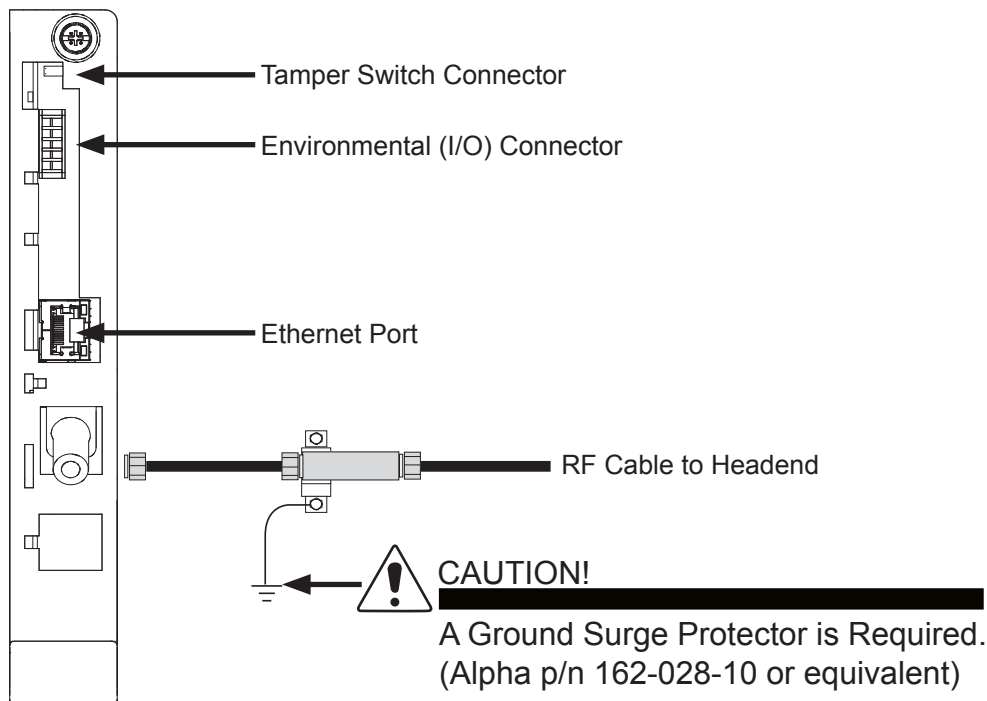

Fig. 3, 18-pin Connector

9. Reinstall the Inverter Module, tighten the two thumbscrews and reconnect the front panel connections (tamper, temperature sensor, battery harness, etc.).

10. For the DM3X, connect the Battery Sense Wire Kit (not required with Smart AlphaGuard). Refer to the battery diagrams provided with the Sense Wire Kit or reference the DM3.0 Series Technical Manual (Alpha p/n 704-939-B0).

11. For the DM3, ensure that the Smart AlphaGuard Wire Kit is connected on the left side of the XM3.

12. Verify the recording of the cable modem MAC address (RF MAC) by navigating to the XM3 Smart Display's COMM Menu.
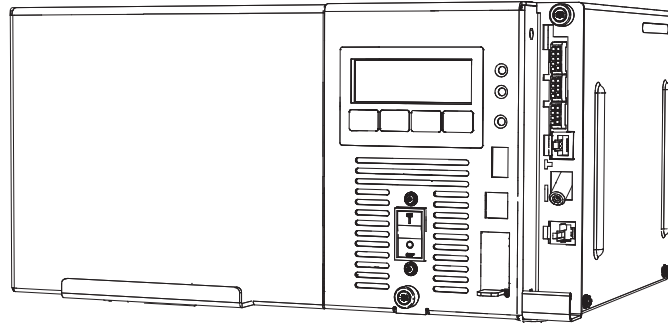
Fig. 4, Completely Installed DM3X in XM3-HP

13. Connect the RF drop as shown in Fig. 5 for the DM3, or Fig. 6 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.

Tamper Switch Connector

Environmental (I/O) Connector

Ethernet Port

RF Cable to Headend

⚠ CAUTION!

A Ground Surge Protector is Required.
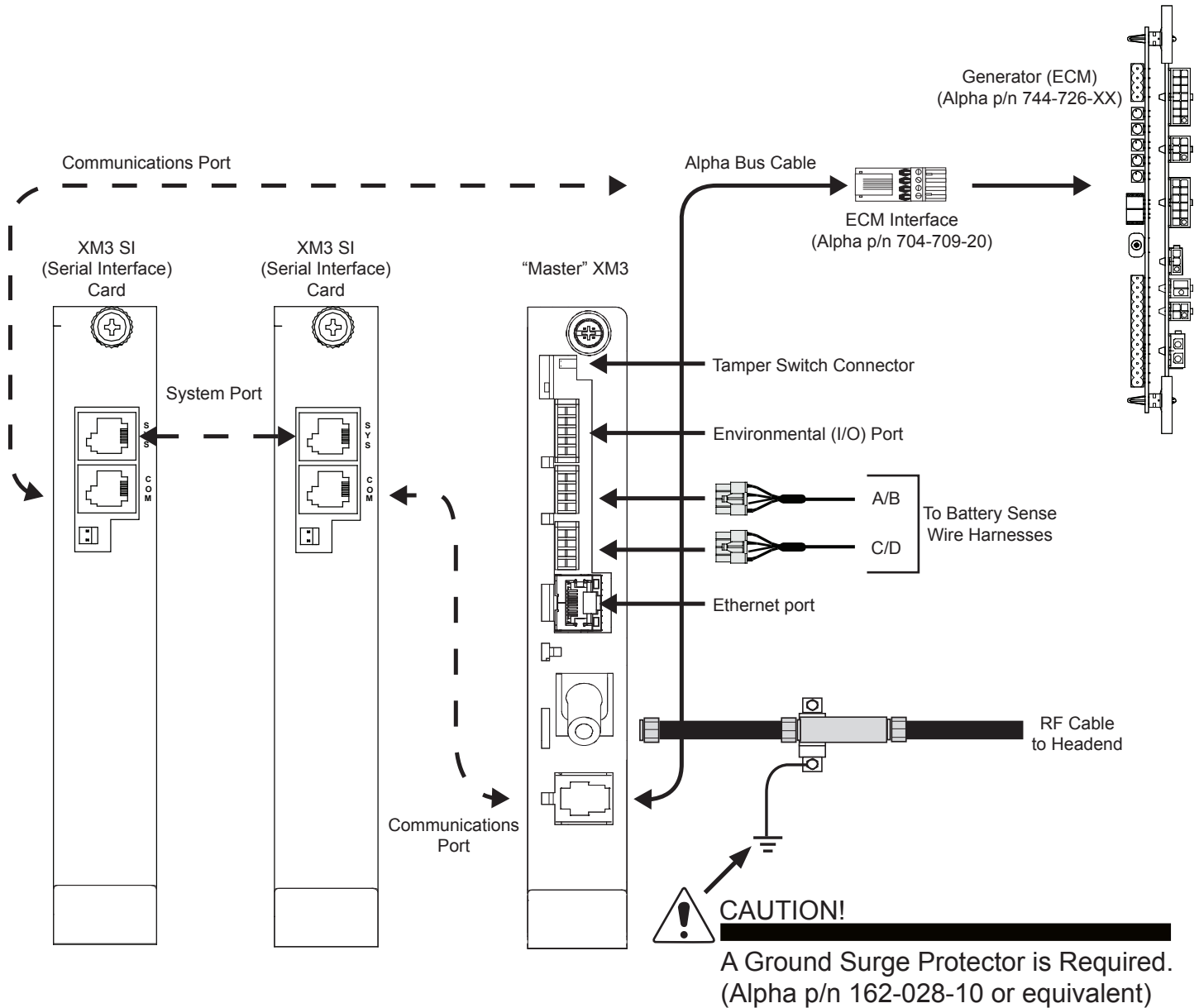(Alpha p/n 162-028-10 or equivalent)

Fig. 5, DM3 Front Panel Connections

NOTICE:

Using a DM3X in a system configuration with multiple power supplies or AlphaGen generator is optional.

Communications Port

Generator (ECM)
(Alpha p/n 744-726-XX)

Alpha Bus Cable

ECM Interface
(Alpha p/n 704-709-20)

XM3 SI
(Serial Interface)
Card

XM3 SI
(Serial Interface)
Card

"Master" XM3

System Port

Tamper Switch Connector

Environmental (I/O) Port

A/B

C/D

To Battery Sense
Wire Harnesses

Ethernet port

RF Cable
to Headend

Communications
Port

CAUTION!

A Ground Surge Protector is Required.
(Alpha p/n 162-028-10 or equivalent)

Legend

Connections

Connections with more than one power supply

Fig. 6, DM3X Front Panel Connections

NOTICE:

Each power supply must have a unique address other than 0. Refer to Intelligent CableUPS technical manual (p/n 017-882-B0), or the DM3 Series Transponder technical manual (p/n 704-939-B0) for additional information.

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

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 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 XM3 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

- XM3 Smart Display - COMM Menu:

  - Verify the DM3.0 Series transponder communication parameters such as IP address, RF Power Levels and Signal/Noise Ratio on the COMM menu of the XM3 Smart Display. Press Enter <ENTR> to open the COMM-GENERAL 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).
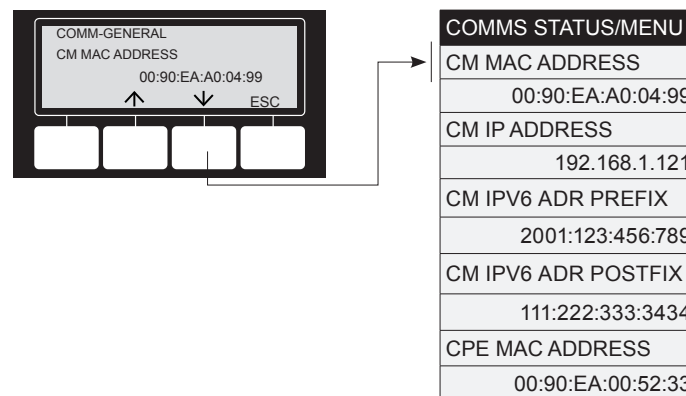
Fig. 7, XM3 Smart Display Screen

- 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".

NOTICE:

If the home page of the DM3.0 Series Transponder does not load using IP address 192.168.100.1, the Local Area Connection on the computer may require a Temporary Static IP address to be manually configured to 192.168.100.2

- 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).
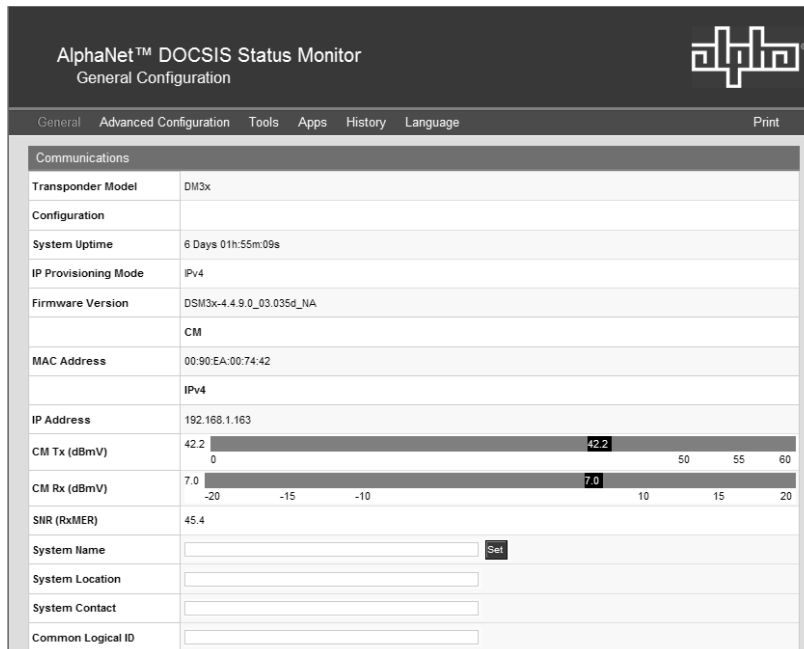

Fig. 8, General Page

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