

Instruction Sheet

Repeater Radio and Board Replacement Kit

Part Number 0094070

Kit Contents



1	Desiccant pack (0087630)
2	Repeater board (0098430 ver2010A)
3	Radios (2) (0075330)
4	Pigtail UFL connection

Optional Components Purchased Separately

- Pigtail UFL to N connector (0085460)
- Standard antenna UFL to RPSMA connector (0085440)

Programming Module Purchased Separately

A programming module (0085410) is necessary for programming the radios with the network settings.

Radio Settings Definitions

MK – Address Mask

The Address Mask is used with the Destination Address.

DT – Destination Address

The Destination Address is used with the Address Mask to establish Parent/Child relationships and to determine which radios communicate with each other.

ID – Modem VID

The Modem VID must be unique for each installation. This prevents radios from communicating with radios at another location. However, radios with different VIDs may still interfere with each other if they use the same hopping channel (HP).

HP – Hopping Channel (0-6)

The Hopping Channel defines a subset of the radio frequency range. Radios set with the same hopping channel will communicate with each other. Radios set to different hopping channels will not interfere with each other.

SM – Sleep Mode

Sleep Mode is used to put the radio in low power mode when not in use. Sleep mode is set to a value of 1 (Pin Sleep) only on buoy radios. The SM setting must be set to 0 on host modem and controller radios.

Program Radio Network Settings

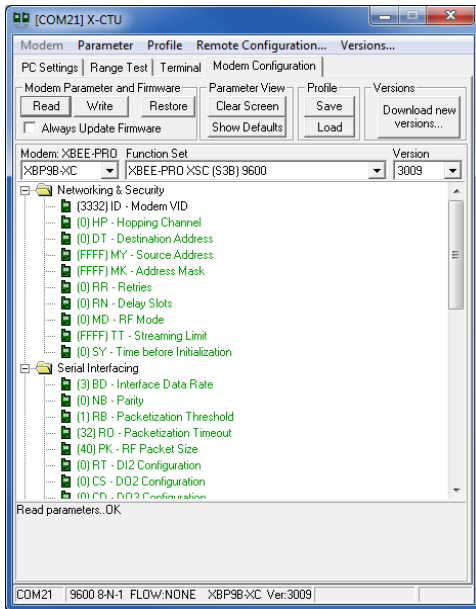
Inspect the buoy transceiver, controller, or repeater housing for a label listing the existing radio settings so you can program the settings to the new radio. It may also be possible to obtain documentation from site files. If documentation is unavailable, you can read the settings from an existing radio to establish a starting place. See page 4.

1. Locate the replacement radio and the programming module.
2. Align the radio pins with the sockets on the programming module and press the replacement radio into place.
3. Attach signal and power cables to the programming module.
4. Connect the cables to a computer with Digi-MaxStream software installed.



You can download the software from www.digi.com/support.

5. Go to Start>Programs>Digi>X-CTU and open the software.
6. Select the appropriate COM port.
7. Select the **Modem Configuration** tab and scroll to the **Networking** section.

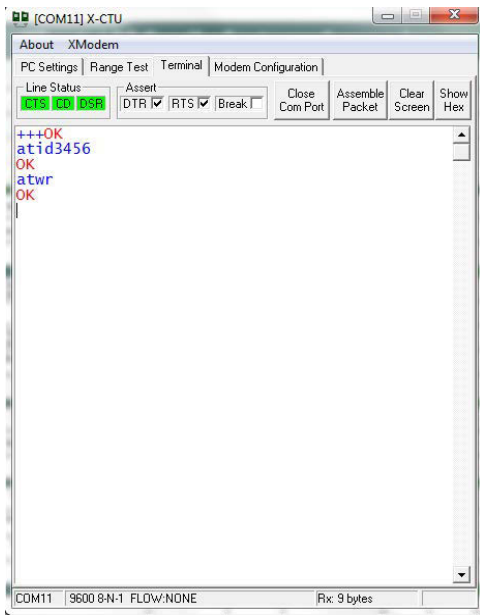


- Click the following labels one at a time and enter the proper network settings: HP, DT, MK, and SM. See page 2.



If you do not know the network settings you might be able to determine them from a known-good radio on the network. See page 4.

- Click the **Write** button to write the settings to the new radio.
- Click the **Terminal** tab to change the **Modem VID**.
- All radios in a network must be set with the same **VID**.
- Type **+++** to put the radio into programming mode for 20 seconds.



- Type **atid** followed by the 4-digit ID number (e.g. atid3456) and click **Enter**.

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14. Type atwr and click **Enter**.
 15. Disconnect the programming module from power and the computer.
 16. Remove the replacement radio from the programming module and set it aside.
 17. Pull the non-functional radio from the main board and properly discard it.
 18. Align the radio pins with the sockets and press the replacement radio into place.
 19. Replace the housing and attach the cables.

Determining Settings from a Known-Good Radio

1. Find a known-good radio from which you would like to determine settings.
2. Disconnect power and remove the known-good radio from its housing.
3. Place the known-good radio on the programming module.



If the radio does not fit on the programming module, it is probably an obsolete radio. You can determine the settings from a large obsolete radio by connecting it to the Host radio board.

4. Connect the signal and power cables to the programming module.
5. Connect the cables to a computer with Digi-MaxStream/X-CTU and open the software.
6. Select the appropriate COM port.
7. Select the **Modem Configuration** tab.
8. Click the **Read** button. The settings appear on screen and are temporarily stored in memory.
9. Remove the known-good radio and return it to its original housing.
10. Put the replacement radio on the programming module.
11. Click the Write button to copy the settings to the replacement radio.
12. Change the **ID** parameter.
13. In most cases you must change some of the new settings to properly complete the installation. See page 4.
14. Click the following settings one at a time and enter the proper network settings. See page 6.

Copy Guidelines

Copying Settings from Buoy to Buoy

When you copy settings from one buoy to another in a network that does not include a repeater, you do not need to change any settings.

Copying Settings from Buoy to Controller or Controller to Buoy

When you copy settings from a buoy to a controller or vice versa, the sleep mode setting (SM) must be changed. The buoy SM must be set to 1, and the controller SM must be set to 0.

Copying Settings from a Host Radio Modem to a Controller or a Buoy

Installations that do not include a repeater allow you to copy settings from a host radio modem to a controller or to a buoy. However, you must exchange the DT and MK settings and increment the DT value by one.

Repeater Settings

The radio on one side of the repeater communicates with the host, so it is set up like a controller would be when a repeater is not used.

The radio on the other side of the repeater is set up like a host radio, but on a different hopping channel. See page 6.

Install Desiccant Pack

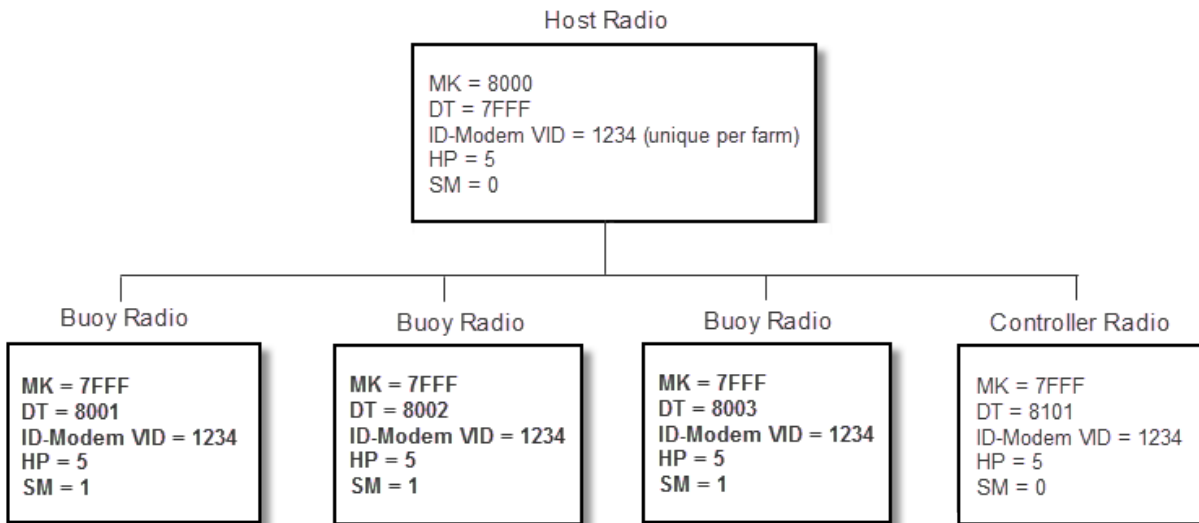
A desiccant pack is included in the kit. After the replacement radio module is installed on the board and the settings are correct, place a desiccant pack inside the instrument housing, while taking care not to disturb the wiring connections.



Replace the desiccant pack before the indicator beads change from blue to pink.



Standard Radio Network Diagram



Radio Network Diagram Including a Repeater

