4MX 50

50kW AM Transmitter
System Controller Replacement Guide

4MX 50 – 50kW AM Transmitter System Controller Replacement Guide

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1 Prepare to Replace the 4MX 50 System Controller

1.1 Tools Needed

☐ 1/4" Nut Driver

☐ No. 2 Phillips Screw Driver

1.2 Estimated Time for Replacement

Providing that you have the tools listed above, it will take approximately 30-45 minutes to complete the replacement of the System Controller.

1.3 ESD Awareness

When handling the Controller PCBs, be sure to exercise ESD precautions as the controller has ESD sensitive components.

2 Replacing the 4MX 50 System Controller

2.1 Turn the 4MX 50 AC Breaker OFF

Turn the AC Breaker to the **OFF** position

Figure 1 – Turn 4MX AC Breaker to OFF

2.2   Remove the Remote I/O Access Panel

Step 1 – Using a No. 2 Phillips Screw Driver remove the (2) screws from the right door as shown.

Step 2 – Using a No. 2 Phillips Screw Driver remove the (3) screws from the hinge area as shown

Step 3 – Use the fold-out handle to remove the Remote Control I/O and Audio Input Access Panel
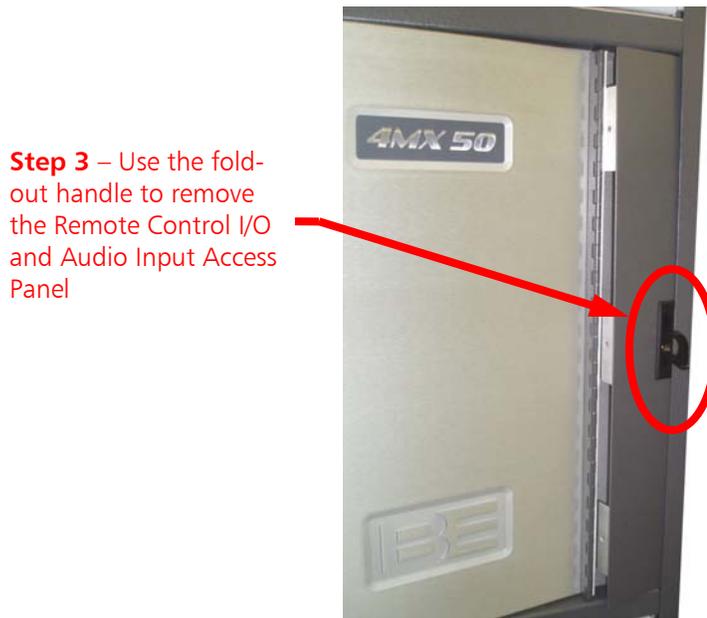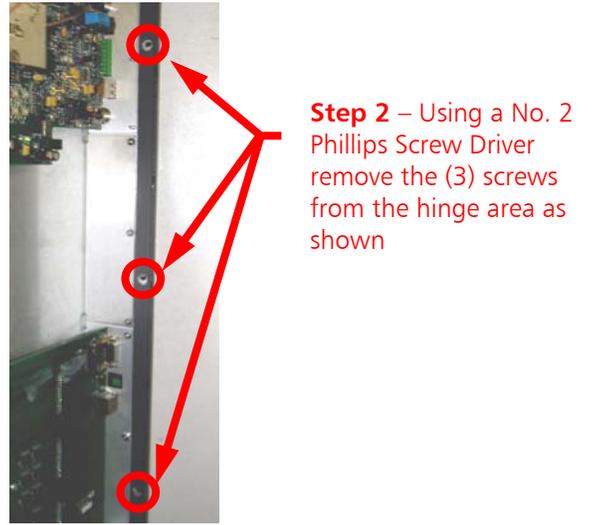
Figure 2 – Remote Control I/O Access Panel Removal

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2.3   Remove the Remote I/O PCB Assembly

Step 1 - Using a No. 2 Phillips Screw Driver remove the (2) mounting screws

Step 2 – Slide the Remote I/O PCB to the right to unplug the DB connectors from the Controller
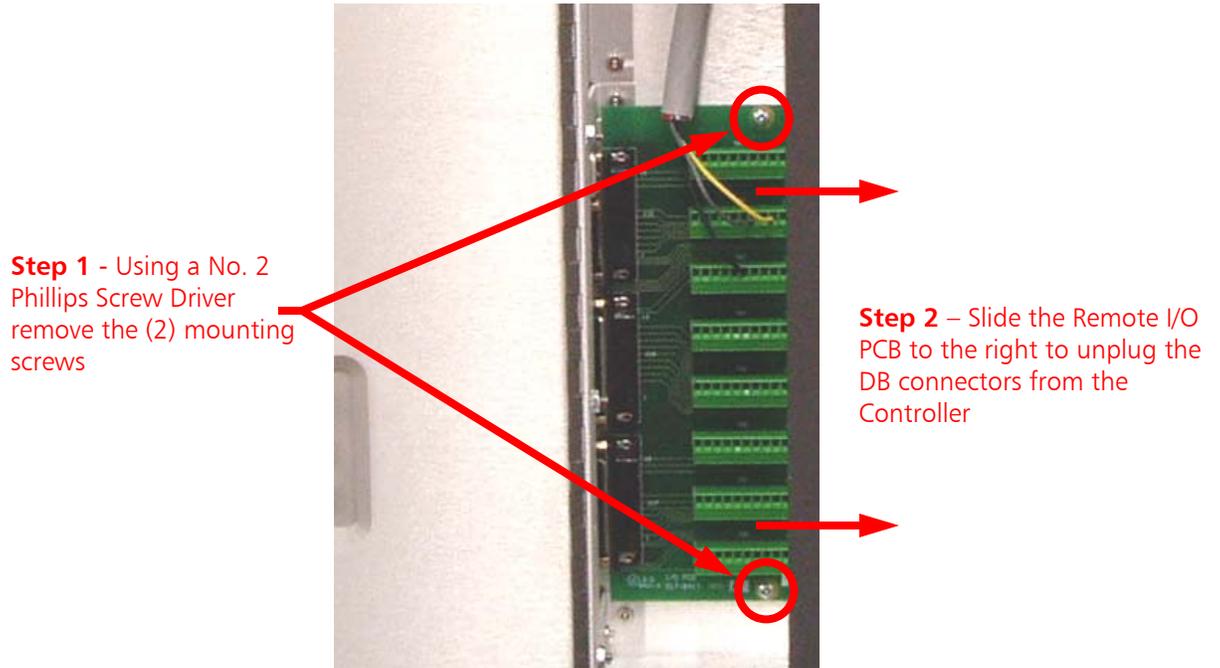
Figure 3 – Remove Remote I/O PCB

2.4   Loosen the Controller Bracket Kepnuts (in the Remote I/O Cavity)

Using a 1/4" Nut Driver loosen the (4) kepnuts (do not remove – just loosen)
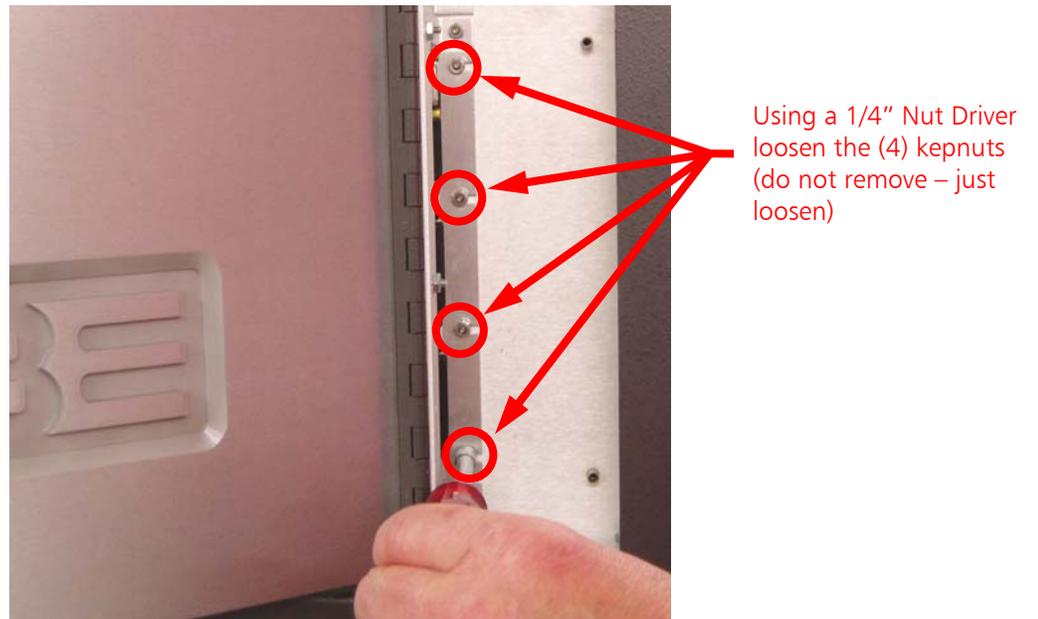
Figure 4 – Loosen System Controller PCB Bracket Kepnuts

2.5 Disconnect Cabling from the Controller PCB

Disconnect cabling (9) places

⚠️ **Before Disconnecting, mark these (2) connectors to ensure that they are plugged back in properly.**
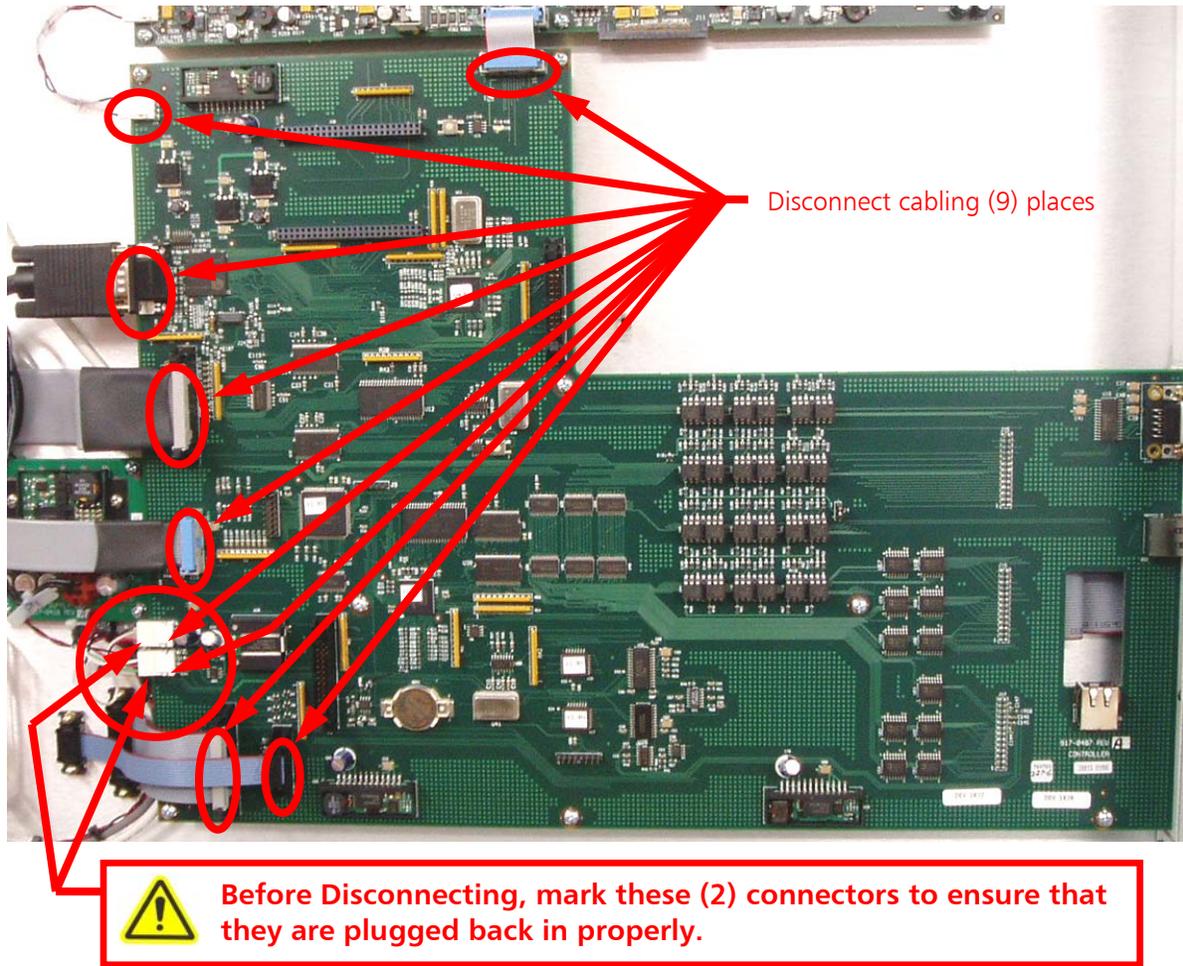
Figure 5 – Disconnect Cabling

2.6 Remove the Controller PCB Mounting Hardware

Step 1 - Using a 1/4" Nut Driver remove the (3) kepnuts as shown.

Figure 6 – Remove Kepnuts
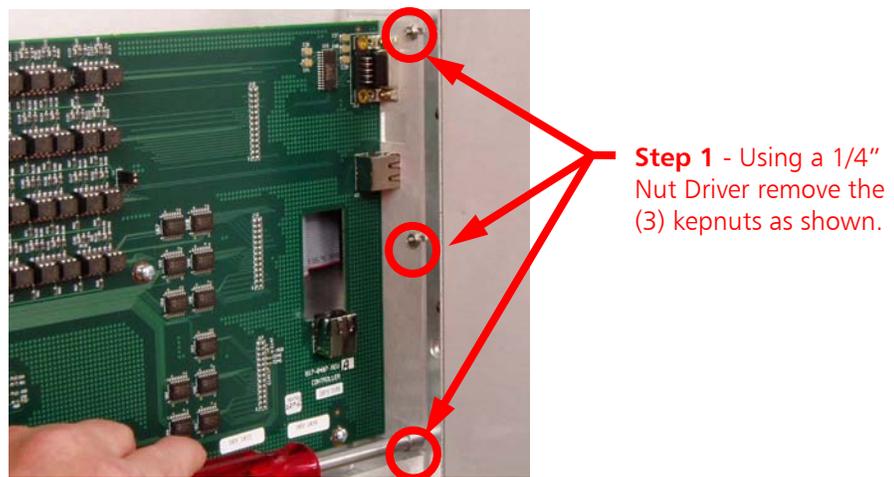
Step 2 - Using a No. 2 Phillips screw driver, remove the (9) mounting screws

Figure 7 – Remove Mounting Screws

2.7 Remove the System Controller PCB Assembly from the 4MX 50

Hold the Controller PCB Assembly as shown and remove from the transmitter
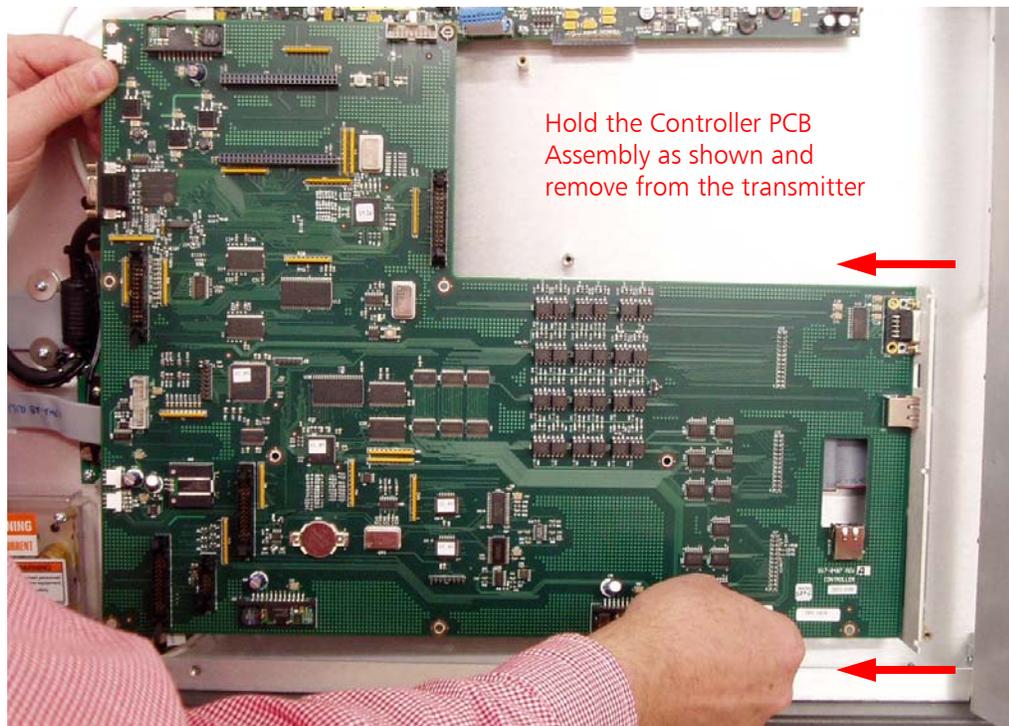
Figure 8 – Remove the Controller PCB from the 4MX 50

2.8 Send the old Controller PCB Assembly to Broadcast Electronics, Inc.

Carefully remove the new Controller PCB Assembly from the shipping packaging. Place the old Controller PCB Assembly into the packaging, and return to Broadcast Electronics, Inc.
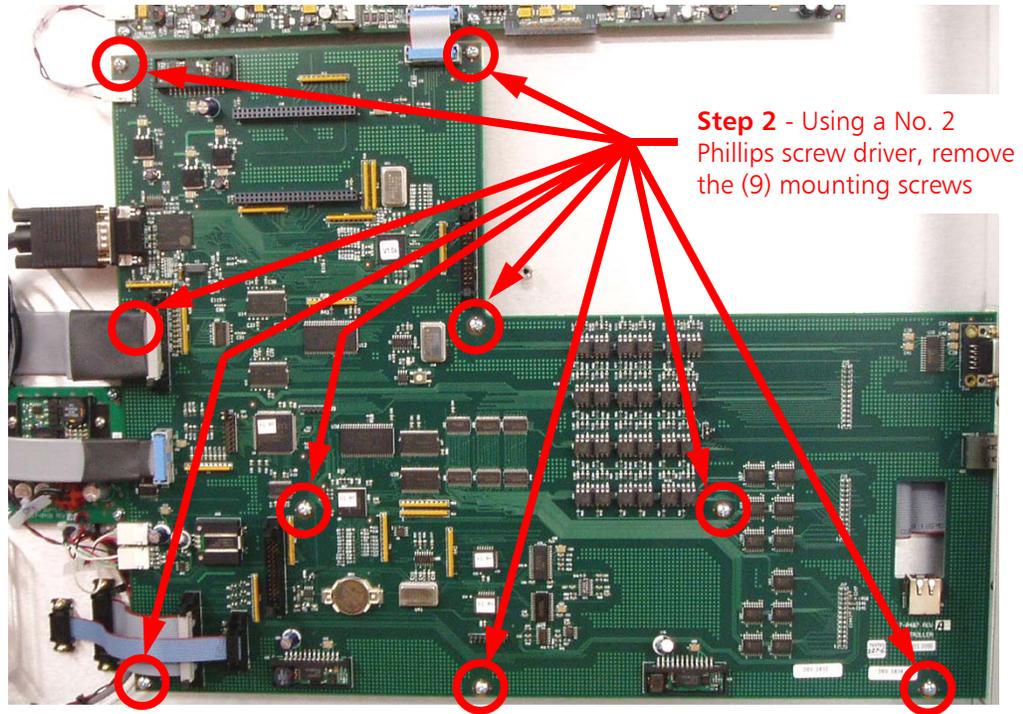
Contact the RF Customer Service department for a Return Authorization.

RF Customer Service
Phone: (217) 224-9617
E-mail: rfservice@bdcast.com
Fax: (217) 224-9607

2.9 Install the new Controller PCB Assembly into the 4MX 50

Hold the Controller PCB Assembly as shown and install into the transmitter
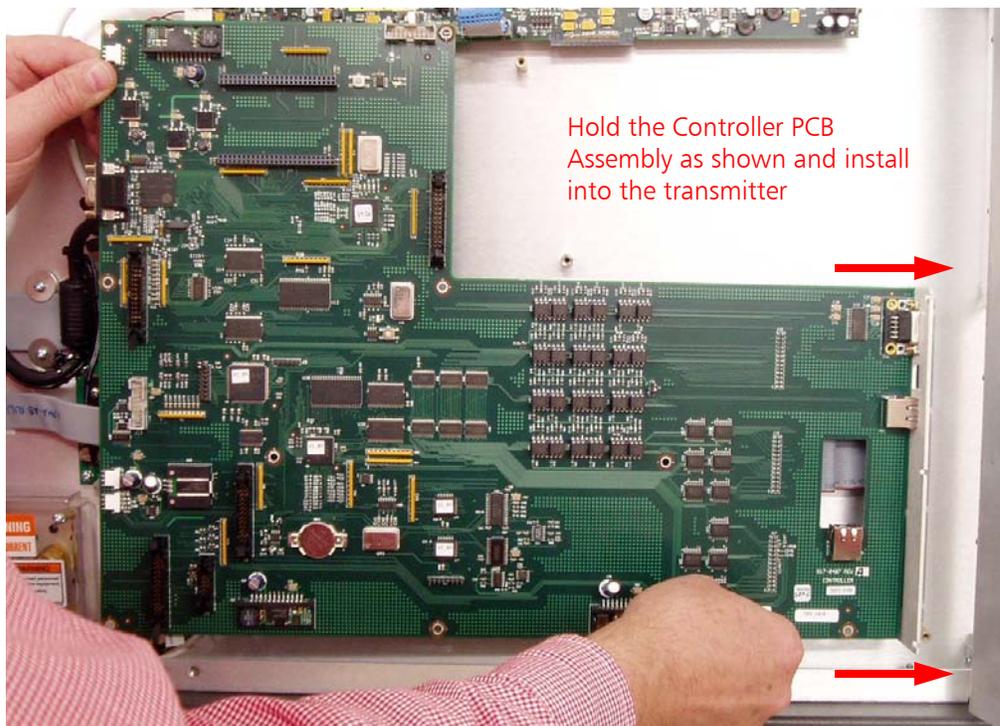
Figure 9 – Install the Controller PCB from the 4MX 50

2.10 Tighten the Controller Bracket Kepnuts (in the Remote I/O Cavity)

Using a 1/4" Nut Driver tighten the (4) kepnuts
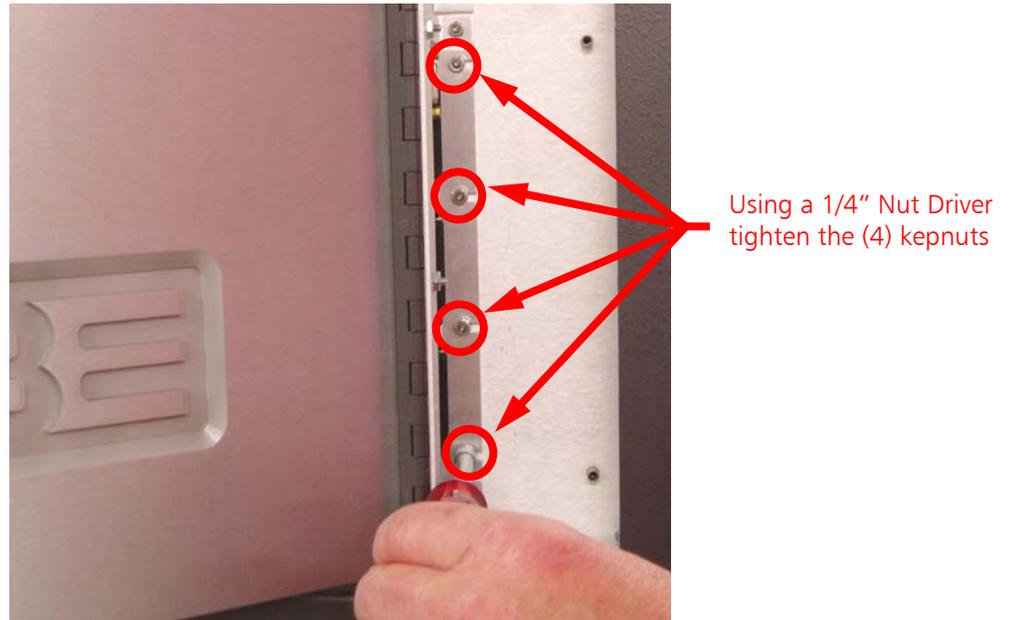
Figure 10 – Tighten System Controller PCB Bracket Kepnuts

2.11 Install Controller PCB Mounting Hardware

Step 1 - Using a 1/4" Nut Driver install the (3) kepnuts that were previously removed.
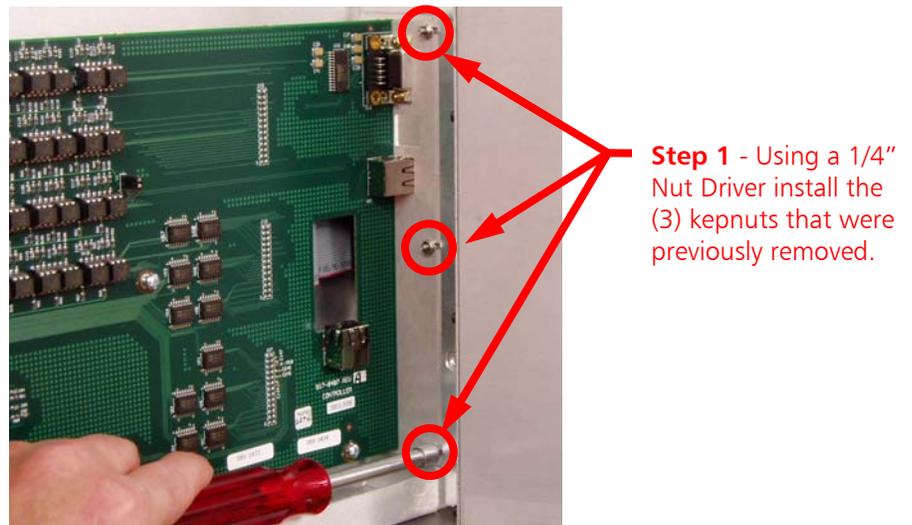
Figure 11 – Install Kepnuts

Step 2 - Using a No. 2 Phillips screw driver, install the (9) mounting screws that were previously removed
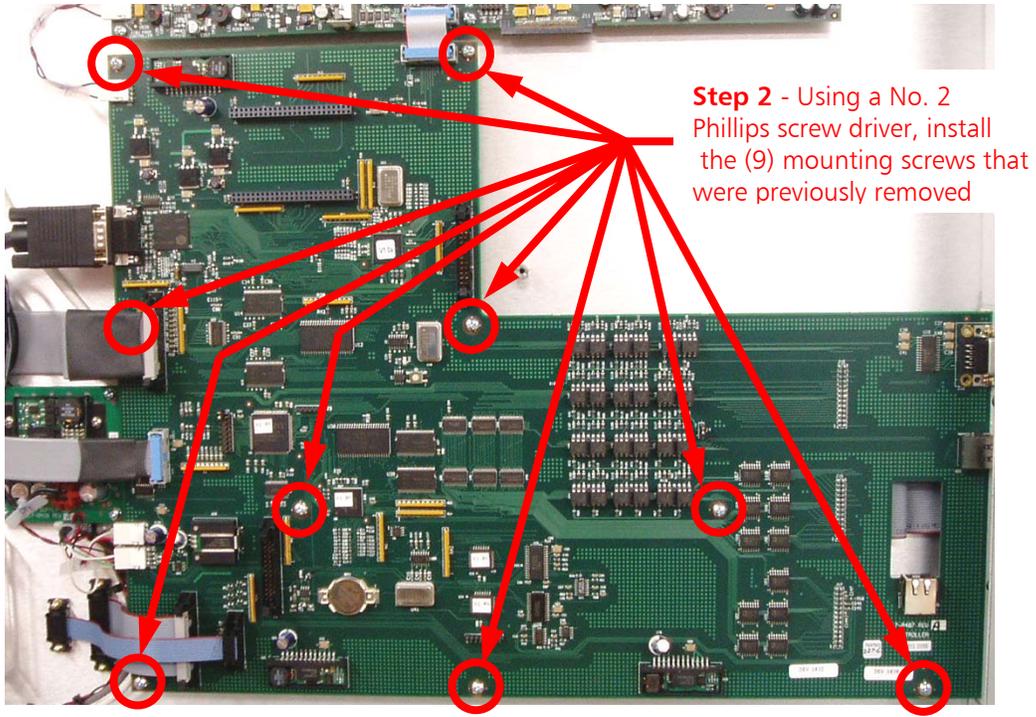
Figure 12 – Install Mounting Screws

2.12 Connect Cabling to the Controller PCB Assembly

Connect cabling (9) places

P12 – 3 Wire Connector

BLK
GRAY/WHITE
RED

BLK
WHITE
RED
GRN
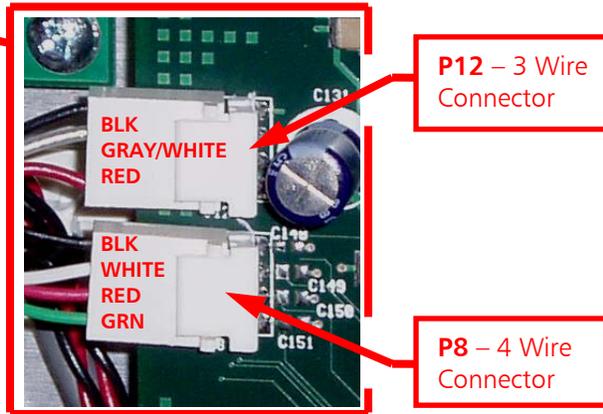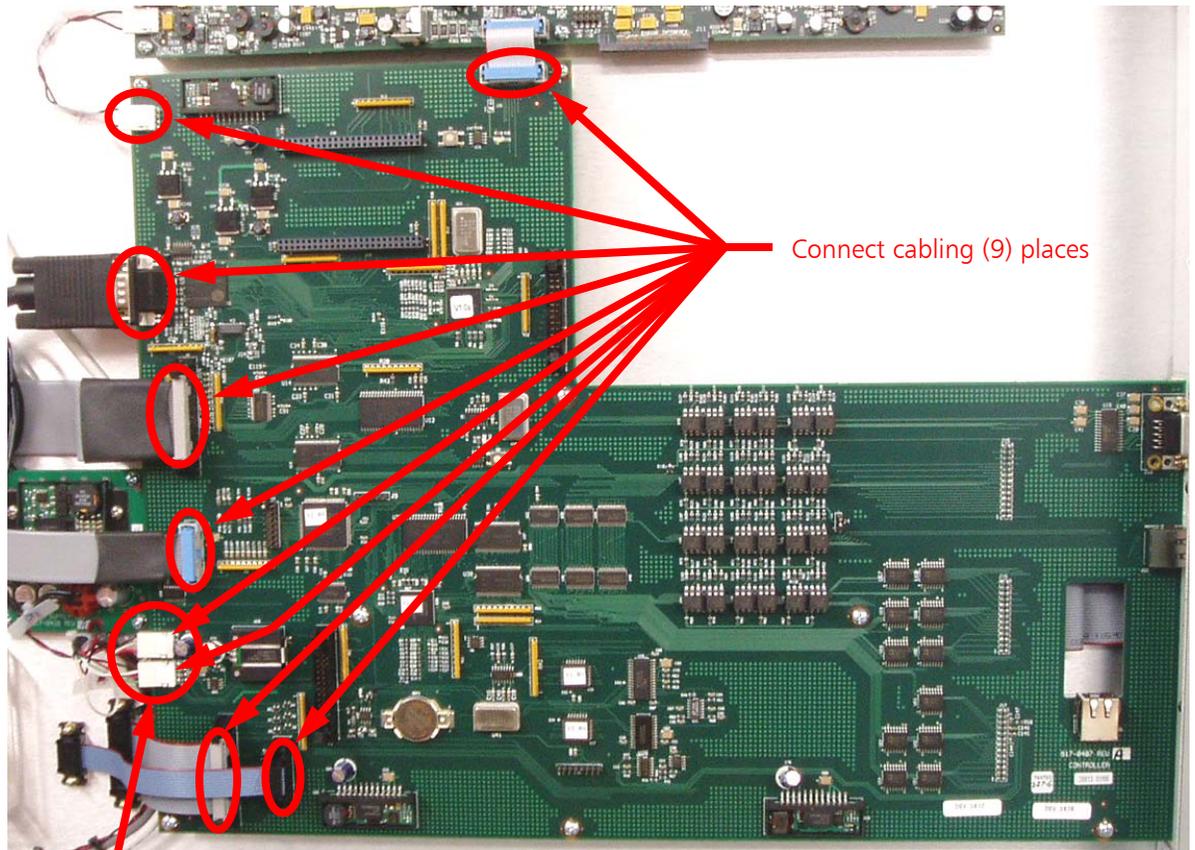
P8 – 4 Wire Connector

⚠️ **CAUTION - Ensure that these (2) connectors are connected exactly as shown! If these (2) connectors are installed incorrectly, the Controller PCB may be permanently damaged along with other components of the transmitter!**

Figure 13 – Connect Cabling

2.13 Install the Remote I/O PCB Assembly

Step 1 – Slide the Remote I/O PCB to the left to plug the connectors together

Step 2 - Using a No. 2 Phillips Screw Driver install the (2) mounting screws

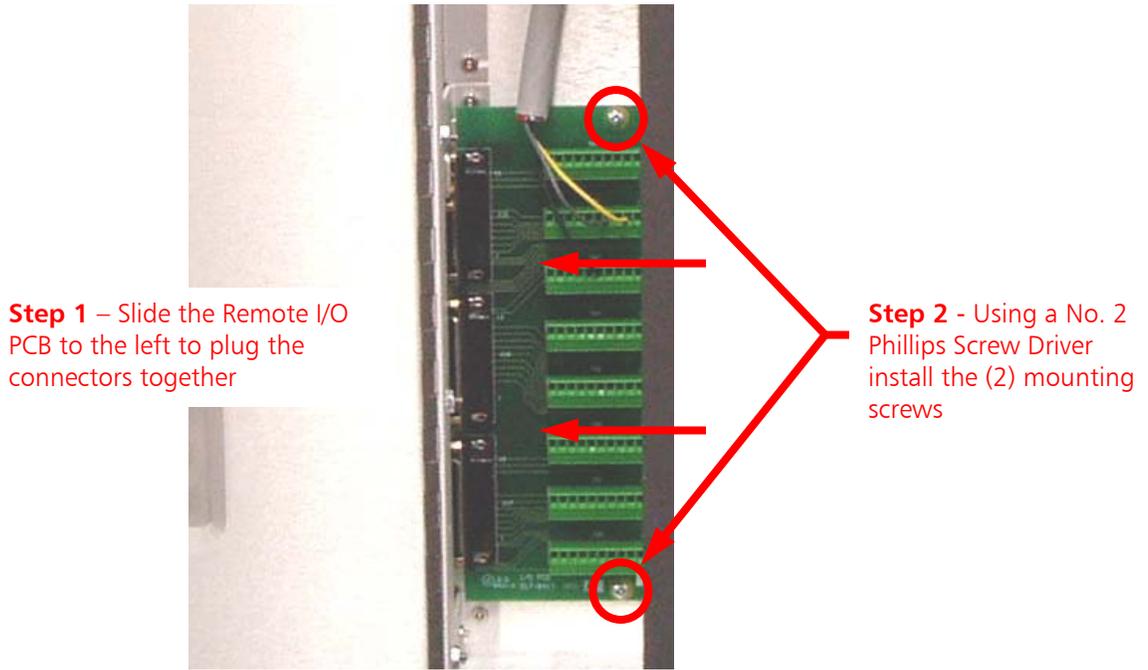**Figure 14 – Install Remote I/O PCB**

2.14 Install the Remote I/O Access Panel

Step 1 – Install the Remote I/O Access Panel

Step 2 – Using a No. 2 Phillips Screw Driver remove the (3) screws from the hinge area as shown
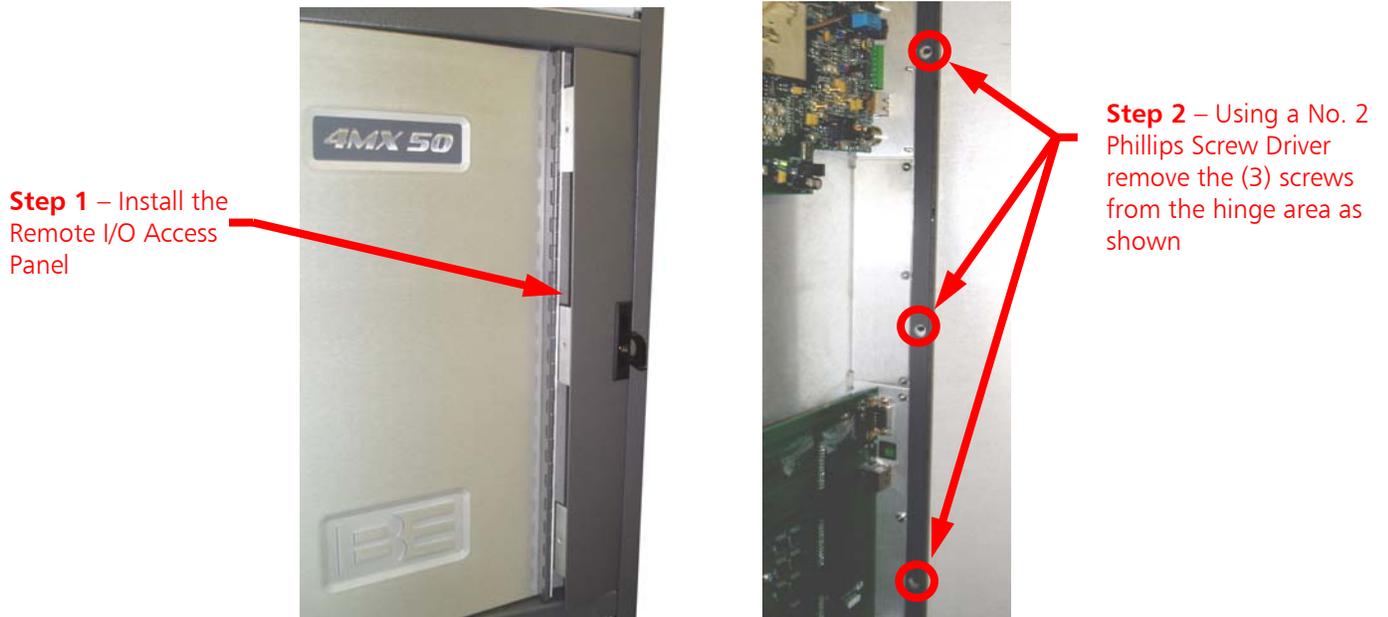
Figure 15 – Install the Remote I/O Access Panel

2.15 Install Front Door Hardware

Using a No. 2 Phillips Screw Driver install the (2) screws from the right door as shown.

Figure 16 – Install the Front Door Hardware

2.16 Turn the 4MX 50 AC Breaker ON

Turn the AC Breaker to the **ON** position
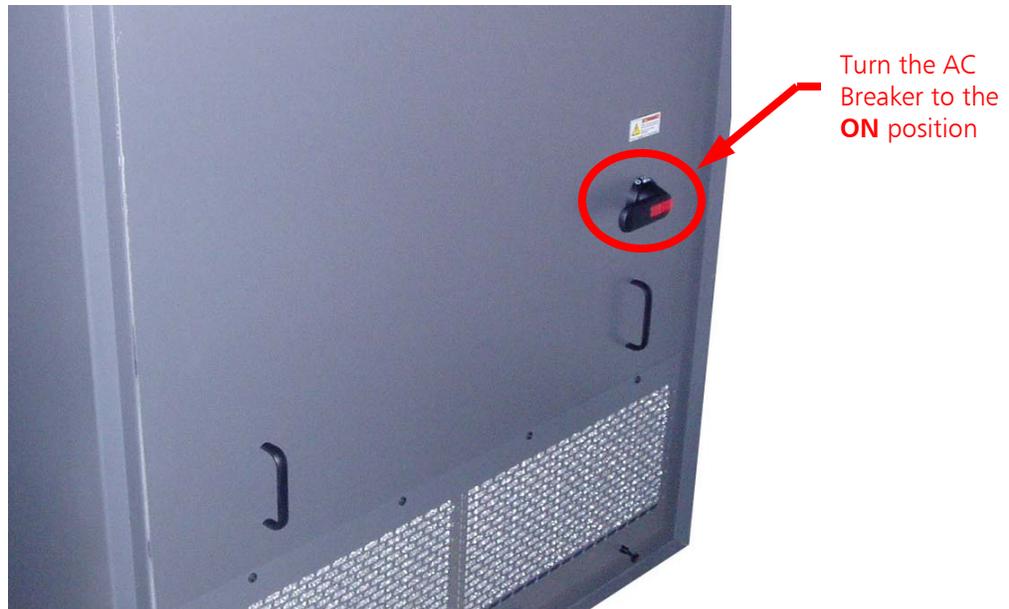
Figure 17 – Turn the 4MX 50 AC Breaker to ON

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2.17   Reprogramming Controller PCB Settings

The Controller PCB Assembly stores the **Login and Password** information, **RF Output Power Level Settings**, and **Peak Indicator Levels**. Since the Controller PCB Assembly is being replaced, this information will need to be reprogrammed into the transmitter.

Please see your **4MX 50 AM Transmitter Manual** for programming these settings.

- For programming the **Login and Password**, see **page 41** of the **4MX 50 Manual**.
- For programming the **RF Power Level Settings**, see **page 51** of the **4MX 50 Manual**.
- For programming the **Peak Indicator Levels,** see **page 44** of the **4MX 50 Manual**.

2.18   Turn the RF Output Power ON

Once all of the Controller PCB settings have be re-programmed, turn the RF Output Power ON from either the GUI or the front panel.

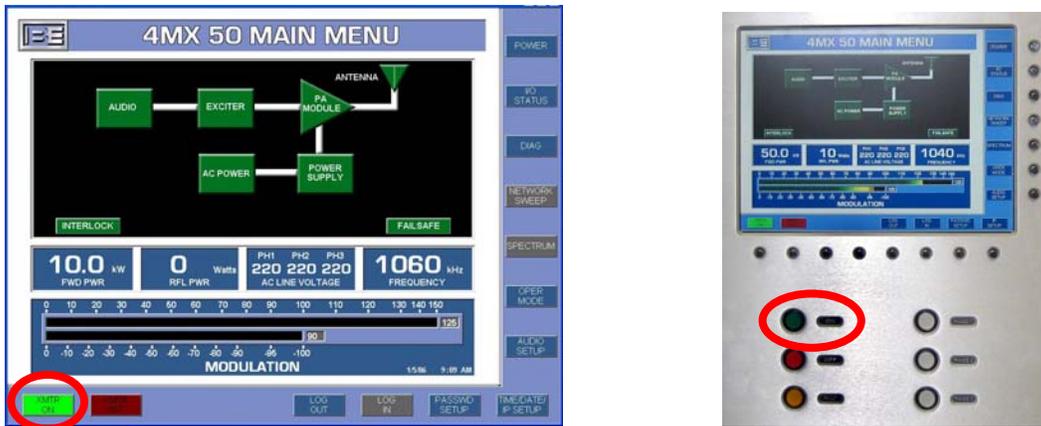The transmitter should then go to the RF Output Power Level that it is set at with no faults or alarms.

Figure 18 – Turn the RF Output Power ON