Introduction.
This document provides the instructions necessary to replace the Main/USB PCB assembly used on the ScanX systems using Main/USB PCB Assembly Replacement Kit, P/N F3910. Make sure to read this entire document before proceeding with any service.

**WARNING:**
High Voltage (1200 Volts) can be present at Connector X2. Use extreme caution when connecting or disconnecting harness connector or performing any service.

**Power Removal**
Prior to performing the procedures contained in this document, turn off power by disconnecting the power cable and the communication cable from the Scanner.

**Task Guidelines.**
Personnel performing the replacement tasks should use standard industry guidelines for working on equipment as necessary. These include the following:

- Only a trained technician should perform any service on the equipment.
- Always use a clean, well-lit work area with ample space required for the size of the job.
- Follow all warnings and precautions for safety as shown by the labels placed on the equipment.
- Be aware of the damage impact of electrostatic discharge (ESD) on electronic devices and use ESD precautions when handling printed circuit boards and wiring comprising the ScanX system.
- Prior to removing any part or assembly, note location and orientation of assemblies being removed.
- Keep all attaching hardware and fastening screws together with the associated removed assembly. Use separate storage containers or envelopes for each hardware group if necessary. No spare hardware is included with the supplied kit.
- Always make sure to protect finished surfaces from scratches or other damage by using cushioning material such as a soft cloth or packaging material between the finished surfaces and the area that may cause damage.
- Tag wires and associated mating connectors before disconnecting.
- Use care when disconnecting mating connectors so as not to damage the connector keys and connection to the associated printed circuit board, wire or cable.
Main/USB PCB Assembly Replacement.

Perform the following steps to replace the Main/USB PCB. Refer to Figure 1 as needed.

1. Using a #2 Phillips head screwdriver, remove the 3 screws securing the Rear Service Access Door and slowly open the door as shown by Figure 1, View B.

2. Refer to View B and locate the Main/USB PCB assembly with the attached wire harness assembly.

   **Warning:** High Voltage (1200 Volts) can be present at Connector X2. Use extreme caution when connecting or disconnecting harness connector.

   **Note:** Tag wires and associated mating connectors before disconnecting if necessary.

3. As shown by Figure 2, note the location of connectors X2, X7, X8, X16 and X17 and disconnect each connector.

4. Refer to Figure 2, Detail A and disconnect the USB connector from under the USB PCB assembly.

5. Disconnect the remaining seven connectors (X4, X5, X6, X10, X11, X12 and X13) from the edge of the board by carefully pulling each away from the associated PCB mating connector.

6. Refer to Figure 3 and remove the five screws and washers (items 4 thru 8) securing the Main/USB PCB assembly.

7. Remove the Main/USB PCB assembly. Install the new replacement PCB by performing steps 8 thru 11.

8. Making sure that the board is properly oriented, align the five screw holes of the Main/USB PCB assembly with the corresponding threaded holes of the access door. Secure PCB assembly with the five Phillips head screws and washers removed step 6. Make sure only to use the nylon washers with screws 4, 5, 7 and 8. Screw 6 does not use the nylon washer.

   **Important:** Verify that each cable connector properly mates with the associated PCB connector. If cable connections are wrong, the unit will not operate properly.

9. Refer to Figure 2 and connect each of the nine cables to the associated connector (X4, X5, X6, X7, X8, X10, X11, X12 and X13) on the edge of the replacement PCB. Make sure that each is connected to the corresponding mating connector and in the correct orientation.

10. Connect connectors X2, X16 and X17 shown by Figure 2.

11. Connect the USB cable to the connector under the USB PCB assembly.

12. Turn on power by connecting the power cable and the communication cable to the ScanX unit

13. Perform Current Offset procedure provided on the next page.

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**Figure 1.** Main/USB PCB Assembly Location

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High Voltage (1200 Volts) is present at Connector X2. Use extreme caution when connecting or disconnecting harness connector.

Current Adjustment Procedure
1. In the ScanX Diagnostic software, select the “Oscilloscope mode” tab and click on the “Start/Stop” button.
2. Slide the “Edit Upper Bound of Display Graph” to the bottom so the graph range is from 0 to 150.
3. Make sure that SW1 switch on the Main PCB is in the ON position. Set to ON if necessary.
4. Observe the “dark current” level (blue line) on the PC screen (in Oscilloscope mode).
   a. If the dark current line is not visible on the Oscilloscope (below the zero level), turn the potentiometer VR1 clockwise until the line just becomes visible. Then adjust the VR1 slightly counterclockwise until the dark current line is set to zero (average level drops just below zero, with only a slight amount of noise above zero) as seen on the Oscilloscope.
   b. If the line is visible (above zero level), adjust the VR1 counterclockwise until the dark current line drops just below zero, with only a slight amount of noise above zero seen on the Oscilloscope.
5. Close the access door and secure with 3 securing screws.
6. Check the scanner operation by referring to the Operator’s Manual and performing a scan operation on one sample image using any reasonable image exposure. If the ScanX operates correctly and the scanned image appears normal, return the unit into user operation.