TECHNICAL BULLETIN NO. 20150807 August 7, 2015

SUBJECT **Customer-Supplied SIM Cards with DataScout Modems**

PRODUCT FAMILY **SpecConnect/DataScout, Item Numbers 3921 and 3923**

DETAILS

The DataScout Cellular Modems (Model 120 GSM/GPRS and Model 130 HSPA+) utilize SIM cards to provide access to the cellular networks. Spectrum Technologies includes pre-configured SIM cards with the Modems when they are sold and the SpecConnect subscription includes the cellular network access. If the standard cellular network access is unavailable in the location where the Modem is installed or if a customer needs to use a different SIM for other reasons, the included SIM can be replaced and the Modem settings updated to support the new SIM. Note that the DataScout only supports Micro SIM cards, not the larger Standard (Mini) SIM (common with older phones) or smaller Nano SIM (used in newer phones like iPhone 5 and higher).

Firmware Update

1. If your DataScout Modem is not running the latest operational firmware or you are not sure, update the firmware to the latest version available on the SpecMeters website here: http://www.specmeters.com/technical-support/software-updates/datascout-software/

2. If a firmware update is not necessary, skip to the APN setting instructions below.

3. Follow the directions on the website to perform the firmware update. Leave the Modem powered up after the firmware update is complete.

Access Point Name (APN) Setting

1. If not already powered on, power on the DataScout Modem by connecting the battery clip to the battery pack.

2. Connect the DataScout Modem to a PC using the Spectrum Technologies 3661U USB-to-RS-232 cable. Plug the stereo pin end into the PC port on the Modem and the USB end into a PC. If not already installed, the drivers should be loaded automatically and the PC will assign a COM port to the cable. Make sure no cable is plugged into the Aux port on the Modem.

3. Using the Device Manager in Windows, determine which COM port has been assigned to the cable. It will show up as "USB Serial Port (COMXX)" under Ports where XX is the assigned port number.

4. Using a terminal program like TeraTerm or the serial monitor window in SpecWare (WatchDog Manager -> Advanced -> Monitor), open a connection to the Modem using the COM port identified previously. The connection should be set to 9600 baud rate, 8 data bits, no parity bit, and one stop bit (8-N-1). If using a program like TeraTerm, turn on Local Echo in the settings to see the characters typed since the Modem does not echo characters to the terminal.

5. Obtain the APN information from the cellular service that provided the SIM. APNs are typically formatted like a web address, such as fast.t-mobile.com for T-Mobile.

6. Type the following command into the terminal to send to the Modem: $MP;<APN><CR> where <APN> is replaced with the APN provided by the cellular service and <CR> is a carriage return (usually sent by pressing the Enter key on the keyboard). Example: type $MP;fast.t-mobile.com then press Enter

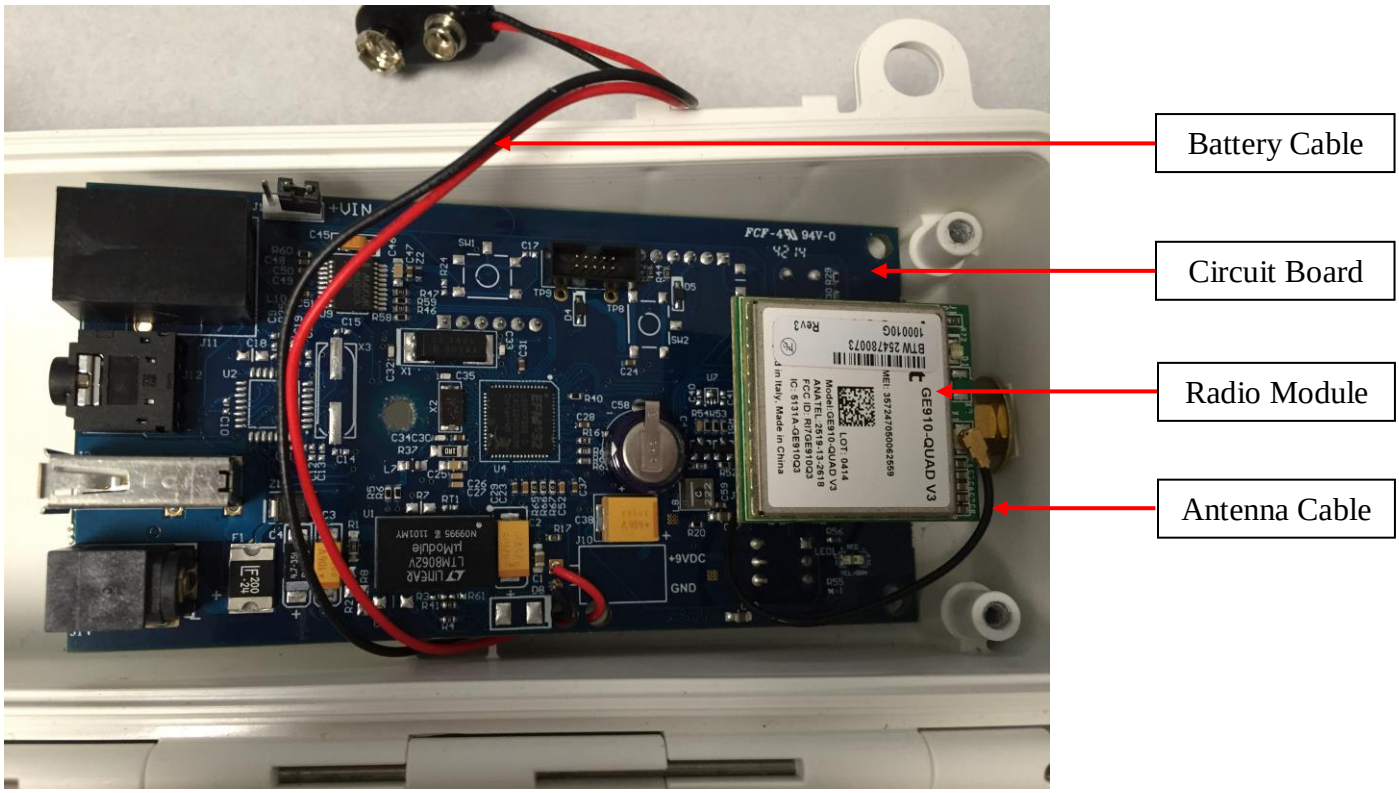
7. If the command was entered successfully, the Modem will respond with OK.

8. Wait about 1 minute for the settings to be saved and then remove power from the Modem by disconnecting the battery clip from the battery pack.

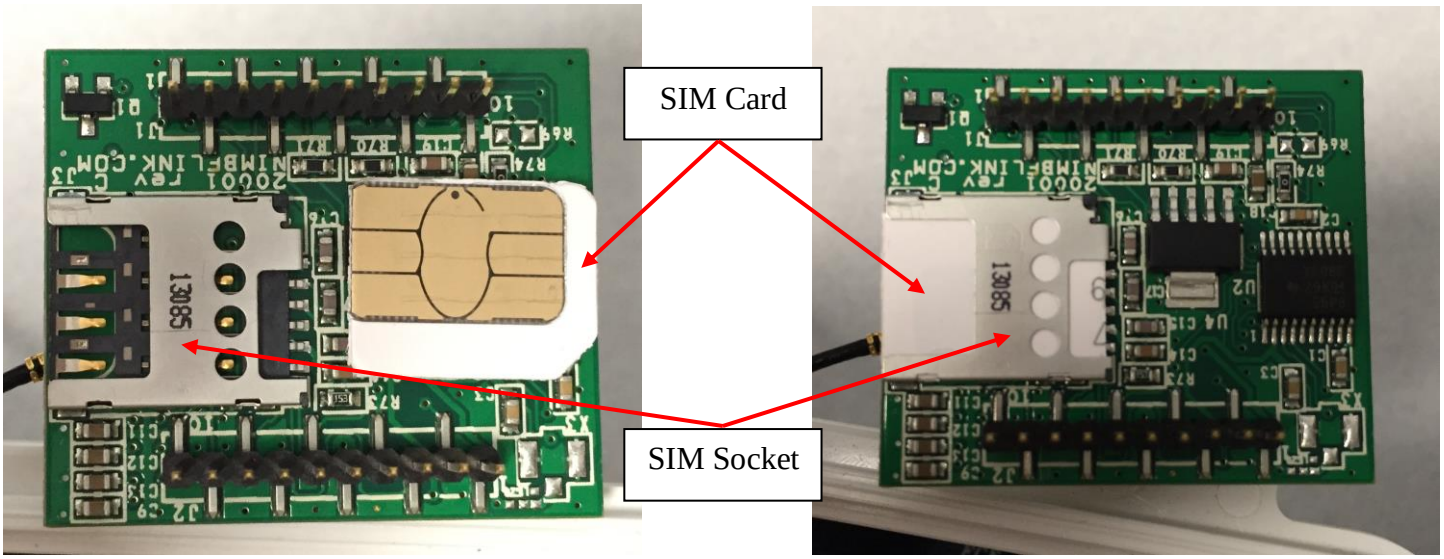
SIM Card Replacement

1. Make sure the battery has been disconnected. Unplug all cables (Power, PC, Aux) from the Modem. Remove the 3 screws holding down the faceplate and set aside the screws and faceplate.

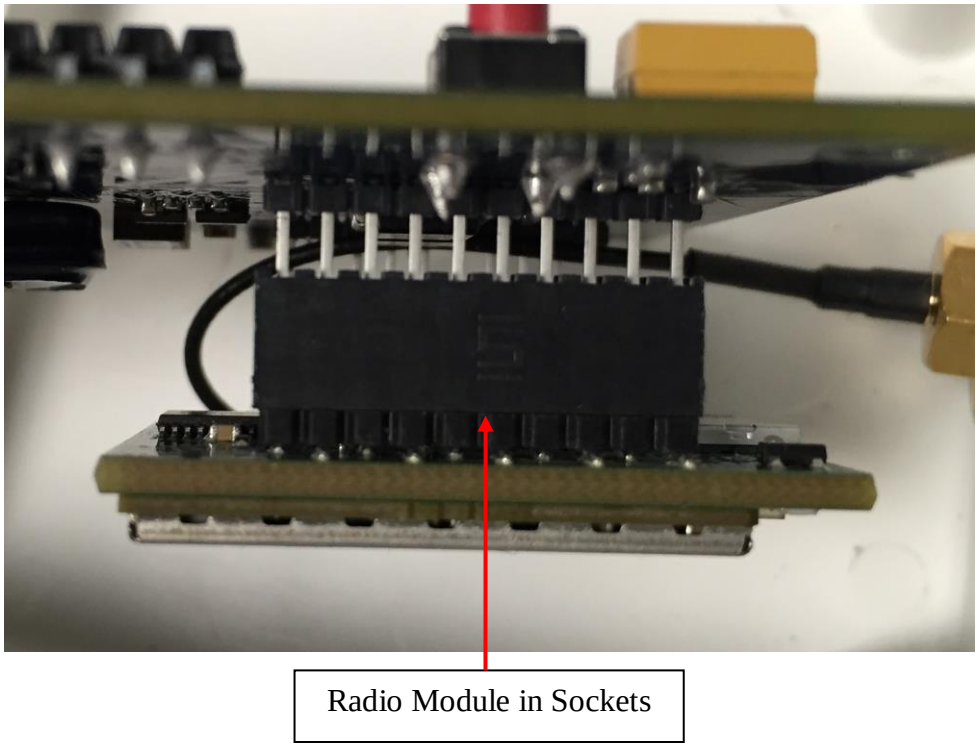
2. Carefully flip the electronic circuit board over making sure not to tug on the thin cable attaching the radio module (will have GE910 or HE910 written on a white label) to the antenna at the top of the enclosure. Note the placement and orientation of the radio module for when it is to be replaced.



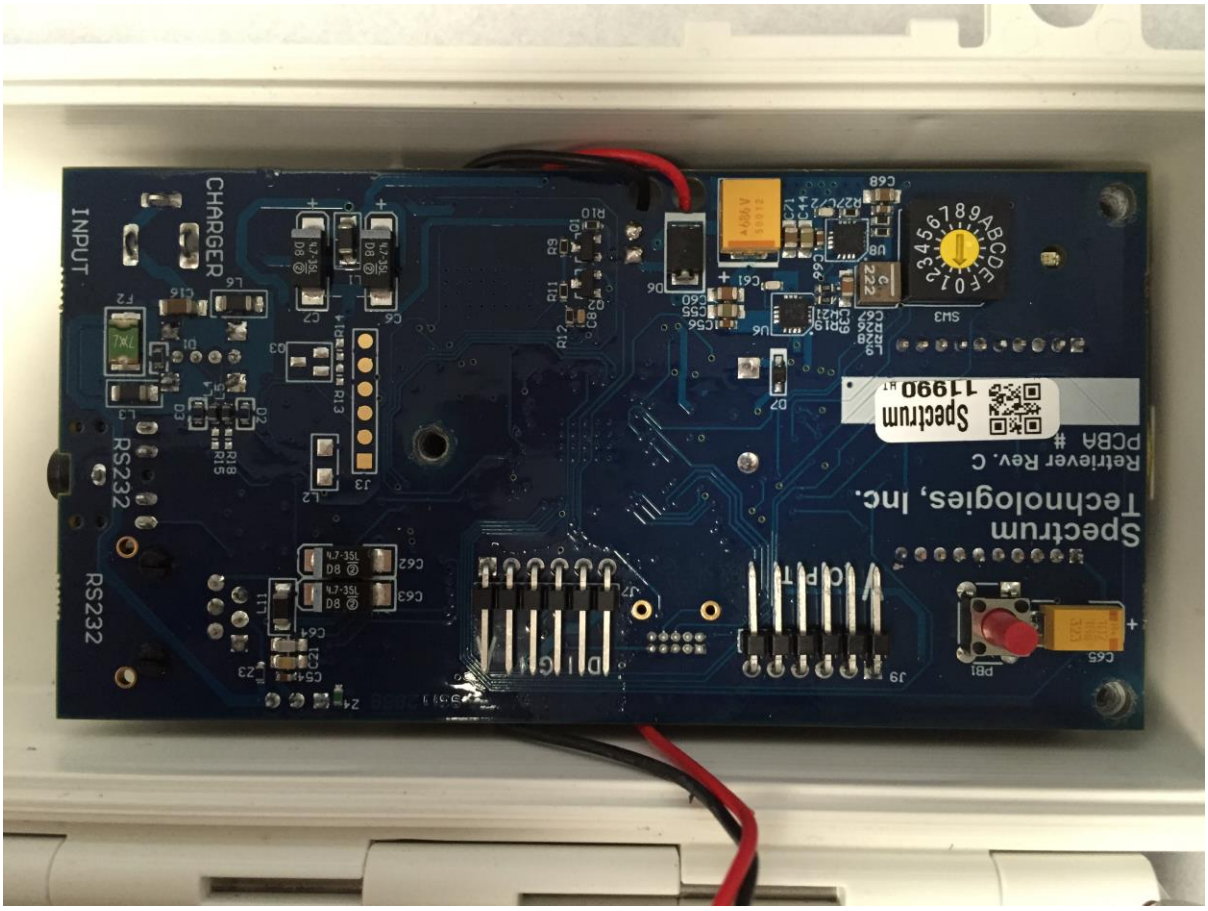
3. Gently pull the radio module off the main board, again being careful with the antenna cable. Flip over the radio module and remove the existing Micro SIM from the socket on the bottom of the module. Insert the new SIM card in the same orientation with the gold contacts down.



4. Replace the radio module into the sockets on the electronic circuit board. The antenna cable should pass from the top of the enclosure, underneath the module, and remain connected to the top of the module. The module is inserted correctly when both rows of pins are securely in the sockets and not offset in any way. The antenna cable connection on the top of the module is towards the top of the enclosure.



5. Flip the electronic circuit board over and line up the holes in the board with those in the enclosure.



6. Set faceplate over circuit board while making sure the battery cable is not pinched between the faceplate and the enclosure and exits through the notch in the side. Secure the faceplate down with the 3 screws.

7. Re-connect the battery. After the unit powers on (Status light will blink green while the software starts up) it will utilize the new APN setting along with the new SIM card to establish data connections to the SpecConnect.net servers. An initial connection will be made within 2 minutes of power-on. The Status LEDs will flash amber and green when a connection is being made and data is being sent/received. Check that signal is good by holding down the button until the Status light turns on. Green or amber indicates sufficient signal. If the light turns red, check that the antenna is still connected, that the unit has been re-assembled properly, and that the proper APN settings have been entered (repeat that section if necessary).

8. Re-connect the Modem to the Weather Station or Retriever using the Aux port connection and associated cable. Ensure the USB cable has been removed from the PC port. Re-connect the solar panel connection in the Power port.

9. Retain the existing SIM with the modem (tape it to the inside of the enclosure, for example) in case it is needed again in the future.