Install and Activate a Cellular Modem

Activating a Cellular Modem

Follow these basic steps to activate the cellular capabilities of your DXM Controller.

1. Purchase a cellular modem kit from Banner Engineering Corp.
2. Activate a cellular plan to the SIM card, then insert the SIM card into the cellular modem.
3. Install the cellular modem, connect the antenna cable, and connect the cellular antenna.
4. Configure the DXM to use the cellular modem.

Cellular Kit Model	Kit Description
SXI-LTE-001	**Verizon LTE** cellular modem using Telit LE910 modem kit (Verizon part number SENSX002). Includes a cellular modem, SIM card, antenna, and antenna cable. The SIM card is specific to the LTE technology and cannot be used in other cellular modems. Requires a LTE Verizon cellular wireless plan attached to the ICCID (SIM card) number and IMEI (International Mobile Equipment Identity) number. Cellular plans can be purchased through secure.bannercelldata.com.
SXI-CATM1VZW-001	**Verizon CAT M1** cellular modem using Telit ME910 modem kit (Verizon part number SXIM1V). Includes a cellular modem, SIM card, and internal adhesive antenna. The SIM card is specific to the CATM1 technology and cannot be used in other cellular modems. Requires a LTE Verizon cellular wireless plan attached to the ICCID (SIM card) number and IMEI (International Mobile Equipment Identity) number. Cellular plans can be purchased through secure.bannercelldata.com.
SXI-CATM1ATT-001	**ATT CAT M1** cellular modem using Telit ME910 model kit. (ATT part number SXIM1A). Includes a cellular modem, SIM card. and internal adhesive antenna. The SIM card is specific to the CATM1 technology and cannot be used in other cellular modems. Requires a LTE AT&T cellular wireless plan attached to the ICCID (SIM card) number and IMEI (International Mobile Equipment Identity) number. Cellular plans can be purchased through secure.bannercelldata.com.

For additional information, refer to the Banner Cloud Data Services support center (https://support.sensonix.net/hc/en-us/). The support center includes video tutorials, product documentation, technical notes, and links to download configuration software.

> **Important:** Only the DXM100 and DXM150 models offer SMS/text messaging capabilities.

Install the Cellular Modem (DXM100, 150, 700, and 1000 Models)

Follow these steps to install the cellular modem and antenna cable.

> **Important:**
> - **Electrostatic discharge (ESD) sensitive device**
> - ESD can damage the device. Damage from inappropriate handling is not covered by warranty.
> - Use proper handling procedures to prevent ESD damage. Proper handling procedures include leaving devices in their anti-static packaging until ready for use; wearing anti-static wrist straps; and assembling units on a grounded, static-dissipative surface.

Before you activate your cellular plan, verify you have one of the following cellular modem kits.

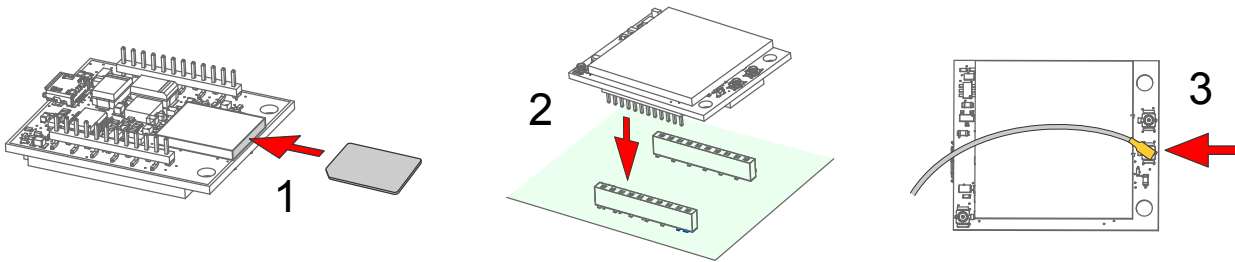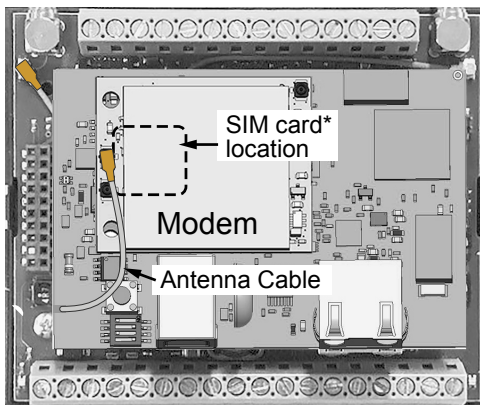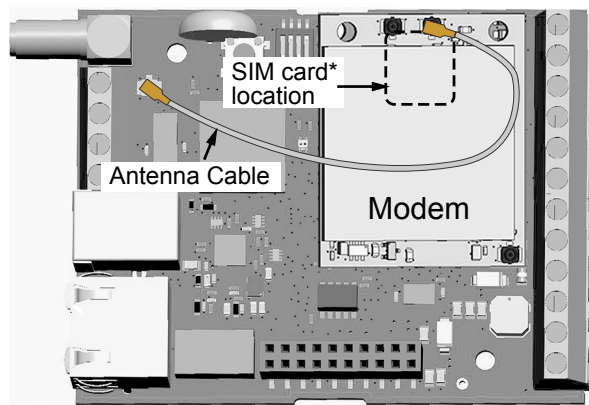| Cellular Kit Model	Kit Description
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Figure 1. Installing the cellular modem

1. Insert the SIM card into the socket on the underside of the cellular modem. SIM cards come in a credit card sized carrier. Snap it out and insert the SIM card into the holder on the cellular modem.

   Make note of the IMEI number of the cellular modem and the ICCID number of the SIM card. The numbers can be found on the cellular modem and the SIM card or SIM card carrier. You will need the SIM number to associate a wireless plan to this SIM card.

2. Orient the cellular modem according to the pin layout and verify the pins are properly aligned. Firmly press the modem into the 24-pin socket.
   - For the DXM100, DXM150, and DXM1000 models—Install the cellular modem board onto the processor board as shown. Use the diagram below to verify the orientation is correct.
   - For the DXM700 models—Install the cellular modem board onto the base board as shown. Use the diagram below to verify the orientation is correct.

3. Attach the antenna cable between the cellular modem board to the base board as shown.

4. Install the external cellular antenna on the DXM's SMA connector located next to the antenna cable.

*SIM card is located on the underside of installed modem

Figure 2. DXM100, 150, and 1000

*SIM card is located on the underside of installed modem

Figure 3. DXM700

Install the Cellular Modem (DXM1200 Models)

Follow these steps to install the cellular modem and antenna cable.

> **Important:**
> - **Electrostatic discharge (ESD) sensitive device**
> - ESD can damage the device. Damage from inappropriate handling is not covered by warranty.
> - Use proper handling procedures to prevent ESD damage. Proper handling procedures include leaving devices in their anti-static packaging until ready for use; wearing anti-static wrist straps; and assembling units on a grounded, static-dissipative surface.

Before you activate your cellular plan, verify you have one of the following cellular modem kits.

Cellular Kit Model	Kit Description
SXI-LTE-001	**Verizon LTE** cellular modem using Telit LE910 modem kit (Verizon part number SENSX002). Includes a cellular modem, SIM card, antenna, and antenna cable. The SIM card is specific to the LTE technology and cannot be used in other cellular modems. Requires a LTE Verizon cellular wireless plan attached to the ICCID (SIM card) number and IMEI (International Mobile Equipment Identity) number. Cellular plans can be purchased through secure.bannercelldata.com.

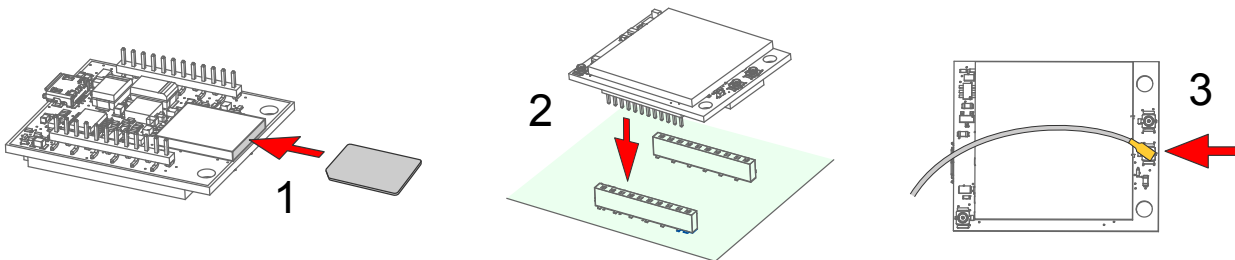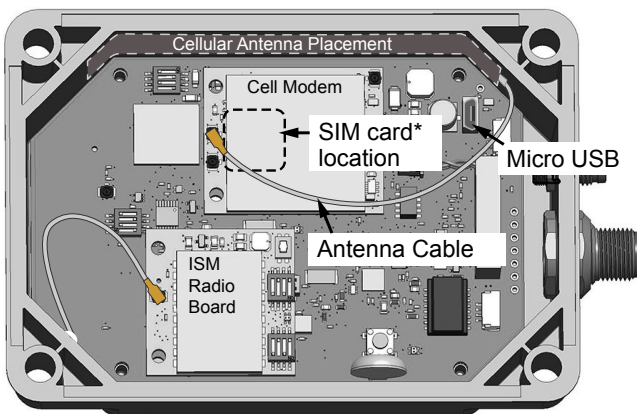| Cellular Kit Model	Kit Description
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SXI-CATM1ATT-001	**ATT CAT M1** cellular modem using Telit ME910 model kit. (ATT part number SXIM1A). Includes a cellular modem, SIM card. and internal adhesive antenna. The SIM card is specific to the CATM1 technology and cannot be used in other cellular modems. Requires a LTE AT&T cellular wireless plan attached to the ICCID (SIM card) number and IMEI (International Mobile Equipment Identity) number. Cellular plans can be purchased through secure.bannercelldata.com.

Figure 4. Installing the cellular modem

1. Insert the SIM card into the socket on the underside of the cellular modem. SIM cards come in a credit card sized carrier. Snap it out and insert the SIM card into the holder on the cellular modem.

   Make note of the IMEI number of the cellular modem and the ICCID number of the SIM card. The numbers can be found on the cellular modem and the SIM card or SIM card carrier. You will need the SIM number to associate a wireless plan to this SIM card.

2. Apply the internal antenna as shown paying attention to the antenna cable position.
   a) Pull back the adhesive protective paper from the middle of the antenna, only exposing the middle portion. Antenna application is easier if just a small middle portion of the adhesive is uncovered.
   b) Center the antenna on the side wall. Use the exposed adhesive in the middle of the antenna to hold the antenna in place while aligning the antenna to the full length of the housing.
   c) Slowly peel off the paper backing exposing the adhesive and stick to the plastic housing. The antenna should run below the rim of the housing.
   d) Press firmly.

3. Orient the cellular modem according to the diagram below and verify the pins are properly aligned. Firmly press the modem into the 24-pin socket on the board.

   The cellular modem is inserted into the main board with the antenna cable from the applied internal antenna attached to the cellular modem PCB.

4. Attach the antenna cable between the cellular modem board to the base board. The antenna cable uses the top antenna connection.

*SIM card is located on the underside of installed modem

Figure 5. Internal view of a DXM1200

Activate a 4G LTE or CAT M1 Cellular Plan

Activate a cellular plan for your DXM using the Banner Cloud Data Services website.

1. Go to secure.bannercelldata.com to purchase cellular data plans.
2. If you have previously created an account, click **Login** and enter your username and password to continue.
3. If you are creating a login for the first time:
   a) Select the region in which the device will operate.
   b) Select the cellular subscription plan.
   c) Create a username and password (use an email address for the username).
   d) Enter your payment information, mailing address, agree to the terms and conditions.
4. Go to the **My Services and Equipment** section.
5. Enter the SIM Number (ICCID) and the Module Number (IMEI).

   The **ICCID** is the 20-digit number of the SIM, the bottom barcode number on the SIM card carrier. If the carrier card is not available, the ICCID is also printed on the SIM card, but must be removed from its socket to be read. The **IMEI** is the 15-digit number on top of the 4G LTE device.
6. Click **Activate**.

> **Note:** Although new activations are typically functional in 20 minutes or less, it may take up to 24 hours for the cellular plan to become active on the wireless network.

Configure the DXM Controller for a Cellular Modem

Use the DXM Configuration Software to create a configuration using a cellular connection.

> **Important:** Only the DXM100 and DXM150 models offer SMS/text messaging capabilities.

1. Go to the **Settings** > **Cloud Services** screen.
2. Set the **Push Interface** to **Cell**
   All push data, SMS messages, or email alerts will be sent using the cellular modem.
3. Go to the **Settings** > **Cellular** screen. Under the **Cell Configuration** section, select the **Cell module** from the drop-down list.
   - **For North America**—For Verizon LTE/CATM modems, select **VZW LTE/CATM** and set the **APN** to **vzwinternet**. For ATT LTE/CATM modems, select **ATT LTE/CATM** and set the **APN** to **iot0119.com.attz**.
4. To send data to the webserver, complete the parameters on the **Settings** > **Cloud Services** screen. Set the **Cloud push interval** and the **Web Server** settings. (For more information, refer to the DXM Configuration Software Instruction Manual (p/n 201127).

When the DXM is configured to use the cellular modem, the information on the cellular modem is found on the LCD menu under **System Info** > **Cell**. The menu does not display values until a transaction with the wireless cell tower is complete.

If there are no webserver parameters defined, the user must force a push to retrieve the data from the cellular network. On the LCD menu, select **Push** > **Trigger Data Push**.

Obtaining LTE service outside of the Banner Cellular Data Plans—Customers have the option of securing a data plan for the Verizon network themselves without using the Banner cellular data portal (secure.bannercelldata.com). Suitable plans would include those available from Verizon directly or from a Mobile Virtual Network Operator (MVNO) licensed to resell Verizon network data plans. (The SXI-LTE-001 will not function on AT&T, T-Mobile, or Sprint networks.) When purchasing a data plan, it is important to refer to the modem by its official Verizon network name (for example, SENSX002) and give the IMEI number (found on the cellular modem) to the plan provider. To use the SIM card that comes with the cellular modem kit, give the SIM card number to the provider. The required SIM card form factor is 3FF - Micro.