

## MODEL XCGSM – GSM/GPRS CELLULAR MODEM OPTION CARD FOR DATA STATION PLUS AND MODULAR CONTROLLER



- CONFIGURED USING CRIMSON® SOFTWARE
- INSTALLS INSIDE A DATA STATION PLUS OR A MODULAR CONTROLLER
- INSTALLATION AND CONNECTION HARDWARE ARE INCLUDED WITH CARD

### GENERAL DESCRIPTION

The XCGSM option card allows the user to add GSM/GPRS cellular modem capability to their Data Station Plus or Modular Controller. GSM/GPRS is the most prevalent cellular technology in today's markets. GPRS can be used for services such as Wireless Application Protocol (WAP) access, Short Message Service (SMS), and for Internet communication services such as email and World Wide Web access. The XCGSM modem option card is quad-band, allowing it to work in frequencies across the Americas, Europe and Asia. US and Canada work in the 850/1900 MHz bands, while Europe, Middle East, Africa and most of Asia work in the 900/1800 MHz GSM/GPRS frequencies.

The XCGSM requires the addition of a SIM (Subscriber Identity Module) card, which is inserted into the holder prior to installation of the XCGSM card. The SIM card securely stores the service-subscriber key (IMSI) used to identify a subscriber, and is used to connect to the network to obtain an IP address from the provider.

The XCGSM communication card is easily installed by removing the blank expansion port cover of your Modular Controller or Data Station Plus, and plugging the XCGSM card into the expansion port. Configuration is simple using Red Lion's free Crimson® 2.0 software.

### SAFETY SUMMARY

All safety related regulations, local codes and instructions that appear in the literature or on equipment must be observed to ensure personal safety and to prevent damage to either the instrument or equipment connected to it. If equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

Do not use the controller to directly command motors, valves, or other actuators not equipped with safeguards. To do so can be potentially harmful to persons or equipment in the event of a fault to the controller.



### CONTENTS OF PACKAGE

- XCGSM option card
- This hardware bulletin

### ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PART NUMBER
XCGSM	GSM/GPRS Cell Modem Option Card	XCGSM000
ANT	Quad band GSM/GPRS Cellular antenna <sup>1</sup>	G3QANT00
SFCRM2	Crimson 2.0 with G3/Data Station Manual <sup>2</sup>	SFCRM200
SFCRM2	Crimson 2.0 with Modular Controller Manual <sup>2</sup>	SFCRM2MC

<sup>1</sup> G3QANT00 is a 6 inch direct mount Quad-band antenna.

<sup>2</sup> Use these part numbers to purchase Crimson 2.0 on CD with a printed manual, USB cable and RS-232 cable. Otherwise, download free of charge from [www.redlion.net](http://www.redlion.net).

### SPECIFICATIONS

1. **POWER REQUIREMENTS:** Power is supplied to the option card from the main board of the Modular Controller Master or Data Station Plus.
2. **ANTENNA CONNECTOR:**  
 SMA Female connector requires:  
 50 Ohm antenna with SMA male connector  
 Quad-band antenna (850/900/1800/1900 MHz) for global support.  
 Dual-band (850/1900 MHz) antenna for US and Canada only  
 Dual band (900/1800 MHz) for Europe only  
 The antenna cable should be 50 Ω impedance, RG178/U or RG174/U type and be able to connect to the RSMA (Male) jack bulkhead. The antenna could be horizontal, vertical or right angled. Longer antenna cable would equate to signal loss.
3. **CERTIFICATIONS AND COMPLIANCES:**  
 Refer to main unit manual or "Agency Approvals" section of Red Lion's website for agency certifications.  
**ELECTROMAGNETIC COMPATIBILITY**  
 Emissions and Immunity to EN 61326: Electrical Equipment for Measurement, Control and Laboratory use.  
 Reference Modular Controller Master or Data Station Plus unit for EMC specifications  
*The XCGSM option card has been tested and found to comply with the limits for a Class A digital device, pursuant to part 15 of the FCC rules.*
4. **ENVIRONMENTAL CONDITIONS:**  
 Operating Temperature Range: 0 to 50°C  
 Storage Temperature Range: -20 to 80°C  
 Operating and Storage Humidity: 80% maximum relative humidity (non-condensing) from 0 to 50°C.  
 Altitude: Up to 2000 meters.
5. **CONSTRUCTION:** Installation Category I, Pollution Degree 2.
6. **INSTALLATION REQUIREMENTS:** See "Installing the XCGSM Option card" for more details.
7. **WEIGHT:** 3.2 oz (94.64g)

## INSTALLING THE XCGSM OPTION CARD

The first step is to buy a SIM Card from one of the GSM/GPRS providers and insert it into the SIM Card slot of the option card. The SIM Card slot is the rectangular slot on top of the GSM/GPRS Cellular Modem in the XCGSM option card as shown in Figure 1. See SIM Card details in the Software/Unit Operation Section for more details.

1. Remove power from the unit.
2. Insert a flat-bladed screwdriver into the slot at the top of the expansion port cover. Gently apply pressure on the screwdriver in an upward direction until the expansion port cover disengages from the unit as shown in Figure 2.
3. Verify that the option card knobs are in the "unlocked" position as shown in Figure 3.
4. Carefully insert the option card into the expansion port opening while aligning the card-edge connector on the option card with the main board's header, as shown in Figure 4. Once aligned, gently press on the front of the card until it is flush with the front of the case.
5. Turn the option card knobs to the locked position as shown in Figure 5.



**Caution:** The expansion and main circuit boards contain static sensitive components. Before handling the cards, discharge static charges from your body by touching a grounded bare metal object. Ideally, handle the cards at a static controlled clean workstation. Also, handle the cards by the edges only. Dirt, oil, or other contaminants that may contact the cards can adversely affect circuit operation.



**Warning: Risk of Danger:** Be sure to remove all power before removing the expansion port cover.

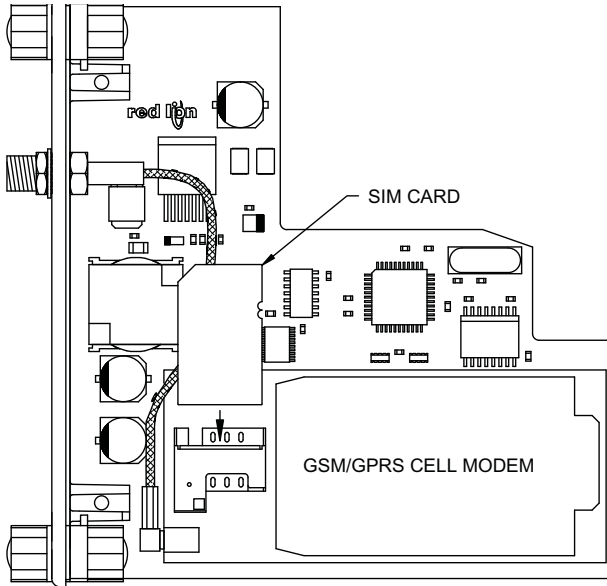


Figure 1

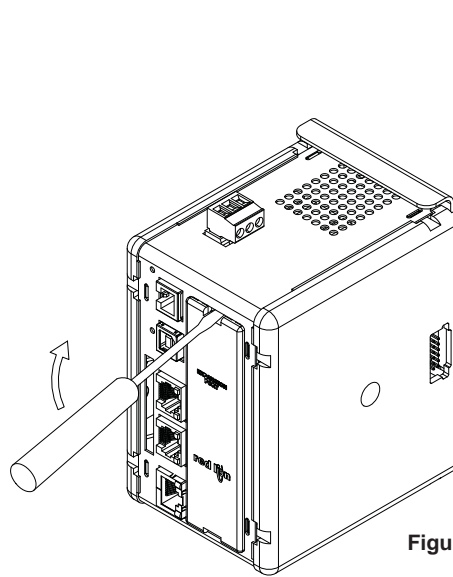


Figure 2

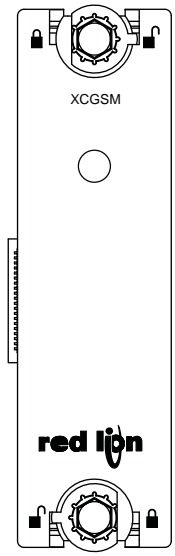


Figure 3

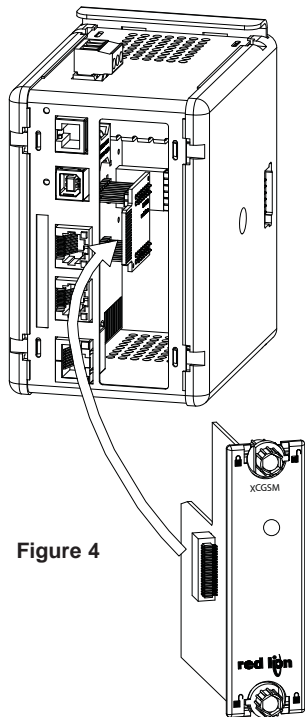


Figure 4

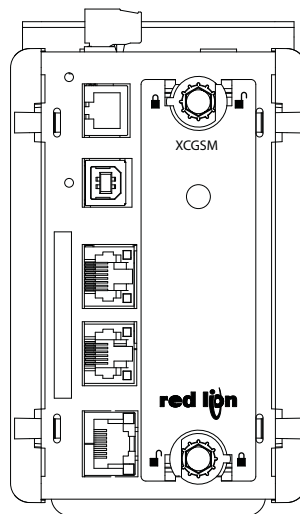


Figure 5

### THE OPTION CARD LABEL

Place the option card label on your outer plastic cover of the Modular Controller Master or Data Station Plus. The label displays the FCC ID of the particular modem being used in the XCGSM card.

# POWER SUPPLY REQUIREMENTS

## NEW AND EXISTING INSTALLATIONS

The XCGSM option card draws all of its power from the main board of the Modular Controller Master or Data Station Plus. The specifications of the Modular Controller Master or Data Station Plus account for the power needs of an option card.

## SOFTWARE / UNIT OPERATION

### CRIMSON SOFTWARE

Crimson® 2.0 software is available as a free download from [www.redlion.net](http://www.redlion.net) or it can be purchased on a CD, see "Ordering Information" for part number. The latest version of the software is always available from the web site, and updating your copy is free.

### CONFIGURING A XCGSM OPTION CARD

The XCGSM is configured using Crimson® software. Crimson is available as a free download from [www.redlion.net](http://www.redlion.net), or it can be ordered on CD. Updates to Crimson for new features and drivers are posted on the website as they become available. By configuring the XCGSM using the latest version of Crimson 2.0, you are assured that your unit has the most up to date feature set. Crimson 2.0 software can configure the XCGSM through the option card selection. After choosing the Cellular Modem option card, it is set up as a PPP Modem client, PPP Modem server or SMS via GSM Modem.

All XCGSM option cards are configured to US GSM/GPRS frequency band (850/1900 MHz) by default. During setup of the Cellular Modem Option card, the appropriate GSM/GPRS frequency band must be chosen depending on the geographical location of the Modular Controller or Data Station Plus. Once the option card is configured through Crimson software, it needs to be downloaded to the Modular Controller Master or Data Station Plus. The Modular Controller Master or Data Station Plus with the XCGSM option card needs to be power cycled for the configuration changes with respect to the GSM/GPRS frequency band to take effect.

Additional information can be found in your Modular Controller Master or Data Station Plus hardware bulletin and the Crimson 2.0 user manual.

### SIM CARD INSTALLATION & DETAILS

A SIM Card has to be installed on the XCGSM option card before installing the option card in the Modular Controller Master or the Data Station Plus.

### TROUBLESHOOTING YOUR XCGSM OPTION CARD

If for any reason you have trouble operating, connecting, or simply have questions concerning your new XCGSM option card, contact Red Lion's technical support. For contact information, refer to the back page of this bulletin for phone and fax numbers.