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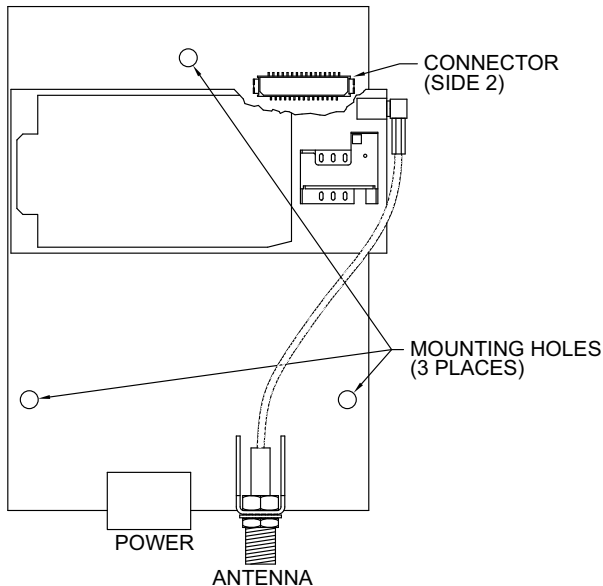Fax +1 (717) 764-0839
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MODEL G3GSM - GSM/GPRS CELLULAR MODEM OPTION CARD FOR G3 OPERATOR INTERFACE TERMINALS

- CONFIGURED USING CRIMSON ® 2.0 SOFTWARE
- INSTALLS INSIDE A G3 OPERATOR INTERFACE TERMINAL
- INSTALLATION AND CONNECTION HARDWARE INCLUDED WITH CARD

GENERAL DESCRIPTION

The G3GSM option card allows the user to add GSM/GPRS cellular modem capability to their G3 operator interface terminal. 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 G3GSM modem option card is quad-band, allowing it to work in frequencies across 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 G3GSM requires the addition of a SIM (Subscriber Identity Module) card, which is inserted into the holder prior to installation of the G3GSM 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.

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.

⚠ **CAUTION: Risk of Danger.**
Read complete instructions prior to installation and operation of the unit.

CONTENTS OF PACKAGE

- G3GSM Option Card
- Cable already attached to G3GSM option card
- Hardware pack consisting of three screws.
- This hardware bulletin

ORDERING INFORMATION

MODEL NO.	DESCRIPTION	PART NUMBER
G3GSM	GSM/GPRS Modem Option Card for G3 operator interface [1]	G3GSM000
ANT	Quad-band, 6 inch, direct mount GSM/GPRS cellular antenna [2]	G3QANT00
SFCRM2	Crimson 2.0 [3]	SFCRM200

[1] Antenna is NOT included with the card. Must be purchased separately if needed.

[2] Contact your Red Lion distributor or visit www.redlion.net/g3 for complete selection of accessories.

[3] Use this part number to purchase Crimson on CD with a printed manual, USB cable, and RS-232 cable. Otherwise, the software can be downloaded from www.redlion.net/g3.

⚠ THIS EQUIPMENT IS SUITABLE FOR USE IN CLASS I, DIVISION 2, GROUPS A, B, C, D, HAZARDOUS LOCATIONS, OR NON-HAZARDOUS LOCATIONS ONLY

⚠ WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT EQUIPMENT WHILE THE CIRCUIT IS LIVE OR UNLESS THE AREA IS KNOWN TO BE FREE OF IGNITABLE CONCENTRATIONS.

⚠ WARNING - EXPLOSION HAZARD - SUBSTITUTION OF ANY COMPONENT MAY IMPAIR SUITABILITY FOR CLASS I, DIVISION 2

SPECIFICATIONS

1. **POWER REQUIREMENTS**:
   24VDC ± 20%; 0.25A max; 0.25A typical (independent from the host G3 power connection). Must use NEC Class 2 or Limited Power Source (LPS) rated power supply.
2. **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.
3. **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 50Ω 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.
4. **CERTIFICATIONS AND COMPLIANCES**:
   SAFETY:
   IEC 61010-1, EN 61010-1: Safety requirements for electrical equipment for measurement, control and laboratory use, Part 1.

ELECTROMAGNETIC COMPATIBILITY
Emissions and Immunity to EN 61326: Electrical Equipment for Measurement, Control and Laboratory use.
Immunity to Industrial Locations: Reference G3 unit for immunity specifications

Emissions:

Emissions	EN 55011	Class A

Note:
   1. G303 unit's emission level changes from Class B to Class A levels when G3GSM option card is installed.
   2. The G3GSM 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.
5. **CONSTRUCTION**: Installation Category I, Pollution Degree 2.
6. **INSTALLATION REQUIREMENTS**: Card must be installed inside the rear cover of a G3 operator interface with the hardware provided. See "Installing the G3GSM Option Card" for more details.
7. **WEIGHT**: 3.0 oz (85.41g)

INSTALLING THE G3GSM OPTION CARD

INSTALLATION INSTRUCTIONS

Caution: The option 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: Depending upon the G3 operator interface, high voltage may be present inside the operator interface. Be sure to remove all power before removing the rear cover of the operator interface.

Each G3GSM option card comes with a cable for communications from the main G3 operator interface PC board. It also comes with three screws for attaching the option card to the inside of the G3 operator interface's rear cover.

The first step is to buy a SIM Card from one of the GSM/GPRS providers and insert into the option card SIM Card slot. The SIM Card slot is the rectangular slot on top of the GSM/GPRS Cellular Modem in G3GSM option card as shown in Figure 1. See SIM Card details in the Software/Unit Operation section for more details.
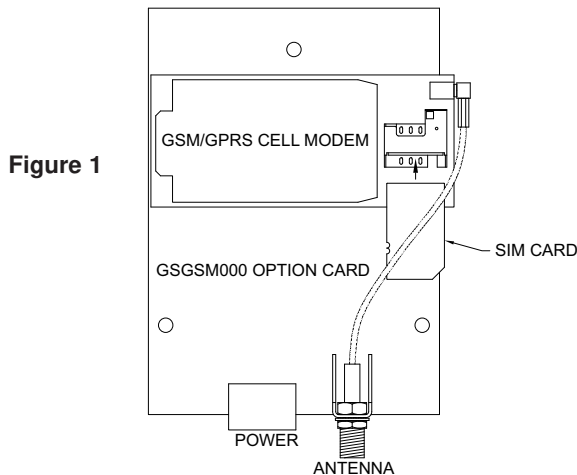
To install the option card remove all power and communication cables from the unit. The chassis ground connection to the rear cover may be left connected. The G3 operator interface literature contains instructions for removing the rear cover, refer to the "Battery & Time Keeping" section.

Using the three screws provided connect the option card to the rear cover as shown in Figure 2.
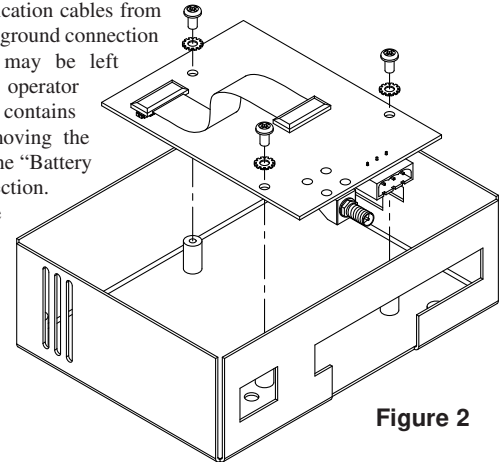

Figure 2

Connect the cable from the option card to CN11 on the main board of the G3 operator interface as shown in Figure 3. Be sure both ends of the cables are firmly seated into their appropriate connector housing.
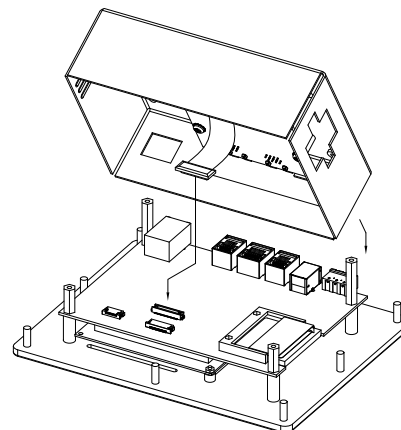

Figure 1

GSM/GPRS CELL MODEM

GSGSM000 OPTION CARD

SIM CARD

POWER

ANTENNA

Figure 3

Carefully replace the rear cover by reversing the previous instructions for removing the rear cover. An external antenna must be attached to the bracket on the option card as shown in Figure 4. See Antenna Connector in the Specifications section for more information.
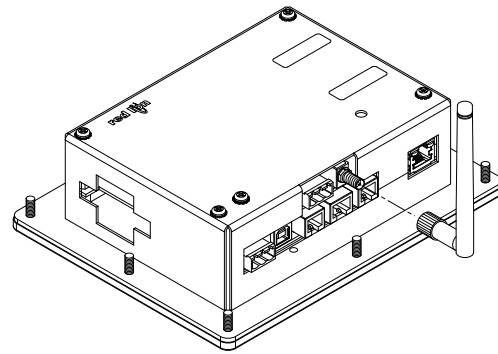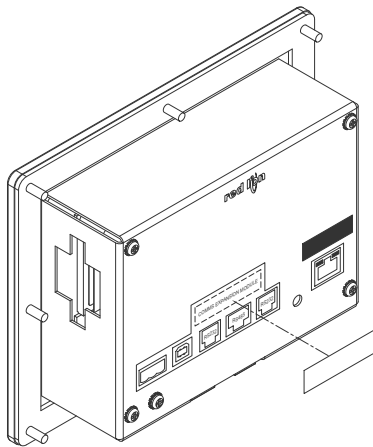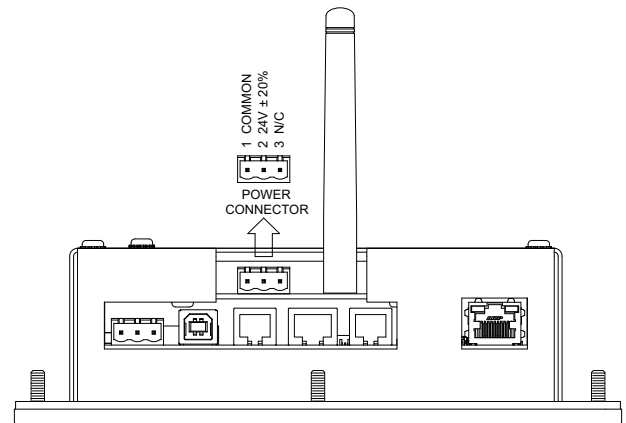

Figure 4

THE OPTION CARD LABEL

Place the option card label on your rear cover in the space indicated by the dashed lines and labeled "COMMS EXPANSION MODULE." The label would also display the FCC ID of the particular modem being used.

POWER SUPPLY REQUIREMENTS

NEW AND EXISTING INSTALLATIONS

The G3GSM option card needs 24 V power independently of the G3. Wires should be jumpered from the 24 V main supply of the G3 to the option card. The power connections described above are absolutely essential to prevent any ground loops. The 24 V power terminal connector for the G3GSM option card is shown below.

SOFTWARE/UNIT OPERATION

CRIMSON SOFTWARE

Crimson 2.0 software is available as a free download from 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.

LED

The G3GSM option card has an LED through the back cover once the option card is installed. The status of the LED is described in the table below.

LED STATUS		
OFF	Modem in OFF mode	
ON	Permanent	Modem switched on, not registered on the network
SLOW FLASH	LED ON for 200 msec, OFF for 2 sec	Modem switched on, registered on the network
QUICK FLASH	LED ON for 200 msec, OFF for 600 msec.	Modem switched on, registered on the network and communication is in progress.

CONFIGURING A G3GSM OPTION CARD

The G3GSM is configured using Crimson software. Crimson is available as a free download from 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 G3GSM 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 G3GSM 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. Find additional information in your G3 operator interface hardware literature and the Crimson 2.0 manual.

All G3GSM 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 G3 operator interface terminal. Once the option card is configured through Crimson software, it needs to be downloaded to the G3 terminal. The G3 with the G3GSM option card needs to be power cycled for the configuration changes with respect to the GSM/GPRS frequency band to take effect.

SIM CARD INSTALLATION & DETAILS

A SIM Card has to be installed on the G3GSM option card before installing the option card in the G3 operator interface.

TROUBLESHOOTING YOUR G3GSM OPTION CARD

If for any reason you have trouble operating, connecting, or simply have questions concerning your new G3GSM option card, contact Red Lion's technical support. For contact information, refer to the back page of this bulletin for phone and fax numbers.

EMAIL: techsupport@redlion.net
Web Site: http://www.redlion.net

LIMITED WARRANTY

The Company warrants the products it manufactures against defects in materials and workmanship for a period limited to two years from the date of shipment, provided the products have been stored, handled, installed, and used under proper conditions. The Company's liability under this limited warranty shall extend only to the repair or replacement of a defective product, at The Company's option. The Company disclaims all liability for any affirmation, promise or representation with respect to the products.

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