



XLE / XLT GSM MODEM COM MODULE DATASHEET

HE-XRC3D

1 TECHNICAL SPECIFICATIONS

1.1 General

Antenna Interface	Female SMA		
Frequency Bands	GSM, GPRS, EDGE: 850, 900, 1800, 1900; UMTS, HSPA: 800/850, 900, AWS1700, 1900, 2100 MHz		
GSM / GPRS Features Supported	Provides for all GSM / GPRS authentication, encryption, and frequency hopping algorithms.		
	GPRS Coding Schemes CS1 - CS4 supported		
	Multi-Slot Class 10 (4RX/2TX, Max 5 slots)		
Regulatory Agency Approvals	CE, GCF (Europe)		
	FCC, PTCRB, IC (North America)		
	RoHS Compliant		
UMTS/HSPA+	800/850MHz		
	900MHz		
	1700AWS MHz		
	1900MHz		
	2100MHz		
	Quad Band GSM, GPRS, EDGE supported		
SIM	1.8V / 3 V Mini Subscriber Identity Module (SIM) compatible		
Size (L x W)	28.2 mm x 28.2 mm x 2.2 mm		
Weight	Less than 80 grams		
Operating & Storage Temperature	-40° C to 85° C (operating)		
	-40° C to 125° C (Storage)		
Relative Humidity	5 - 95%		
Air Pressure (altitude)	70 kPa to 106 kPa (-400 m to 3000 m)		
Transmit Power	FREQUENCY	POWER CLASS	TRANSMIT POWER
	1900 MHz	GSM Power Class 1	1W, 30 dBm
	1800 MHz		
	UMTS	UTMS Power Class 3	0.25W, 25 dBm
	850 MHz	GSM Power Class 4	2W, 33 dBm
	900 MHz		
	850 MHz	EDGE Power Class E2	0.5W, 27 dBm
	900 MHz		
	1900 MHz	EDGE Power Class E2	0.4W, 26 dBm
	1800 MHz		
Receive Power	FREQUENCY	SENSITIVITY	MODE
	850 MHz	-109 dBm	GPRS
	900 MHz		
	UTMS	-111 dBm	UTMS
	1800 MHz	-110 dBm	DCS/PCS
	1900 MHz		

2 OPERATION & INSTALLATION

operations & installation continued...

2.1 - Introduction

The HE-XRC3D utilizes the same internal communications channel (UART) as the MJ1 serial port; thus, enabling the modem deactivates the MJ1 serial port. However, support is provided to select which device (or port) is currently active. XL4, EXL6, XL7 & EXL10 provide a COM port to support the modem thereby leaving MJ1 free for other use.

2.2 - Installation

1. Disconnect all power from the X-Series unit including I/O power.
2. Remove the four screws on the back of the unit and remove the back cover. The back cover will be replaced with the extended back cover that ships with the communication add-on. Screws are re-used (Figure 1, below).

REMOVE 4 SCREWS AS SHOWN AND REMOVE BACK COVER. DISCARD BACK COVER ONLY - DO NOT DISCARD SCREWS

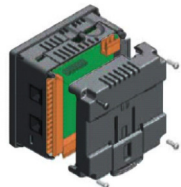


Figure 1

3. Plug the communication board onto the 24-pin connector. Ensure that all the pins are properly aligned (Figure 2, below).

INSTALL COM BOARD BY ALIGNING CONNECTOR AND SEATING BOARD FULLY ON STANDOFFS. INSTALL NEW BACK COVER RE-USING THE FOUR SCREWS.

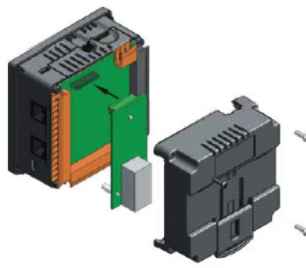
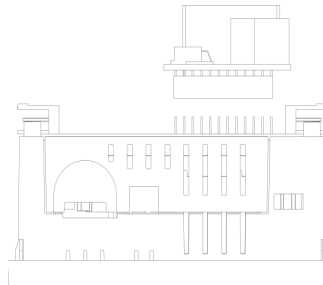


Figure 2

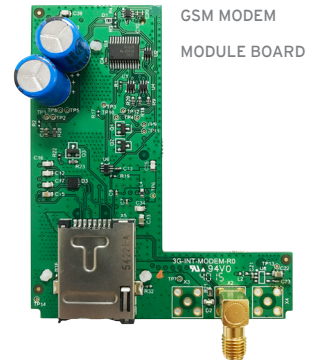
4. Place the extended back cover onto the unit. It can be helpful to tip it at an angle so the connector on the COM board passes through the opening on the back cover.
5. Place the screw back into the hole and turn the screw slowly counter clockwise until it clicks into the threads. This prevents the screw from being cross-threaded. Now, turn the screw clock-wise until the cover is firmly secured. Repeat this process for all four (4) screws.



EXTENDED BACK COVER

Warning: be careful when installing the module to align properly. Misalignment will damage the module.

Add support standoffs from the kit.



GSM MODEM MODULE BOARD

3 COMMUNICATIONS

3.1 - General

The GSM modem module supports the following features :

- SMS
- 3G Data
- Email
- 63-word Status block includes communication status, Initialization status, signal strength, invalid messages count and Retry count for Initialisation commands.

3.2 - SMS Functionality

- Up to 32 Send and 32 Receive messages with up to 20 Variables per message.
- Group Names allow multiple devices to be grouped together so that a particular message will be sent to a number of different devices.
- Phone number including country code and area code. The phone numbers may have special characters such as brackets, comma, plus and dash.
- Register numbers can be used instead of phone numbers. In this case, the phone number is stored in PLC registers as ASCII data with a maximum size of 20 chars (10 words).
- Bit, Byte, Word, Double Word and Real variable types supported.
- 160 character message buffer stores last sent or received message.

communications continued...

3.3 - 3G DATA

- Connection with Cscape & Envision
- Support for Protocols on Ethernet.

3.4 - EMAIL

- Support for email send
- Support for Email with attachment (CSV, Text, Images) send.

4 SAFETY

4.1 - WARNINGS

1. To avoid the risk of electric shock or burns, always connect the safety (or earth) ground before making any other connections.
2. To reduce the risk of fire, electrical shock, or physical injury, it is strongly recommended to fuse the voltage measurement inputs. Be sure to locate fuses as close to the source as possible.
3. Replace fuse with the same type and rating to provide protection against risk of fire and shock hazards.
4. In the event of repeated failure, do NOT replace the fuse again as repeated failure indicates a defective condition that will NOT clear by replacing the fuse.
5. Only qualified electrical personnel familiar with the construction and operation of this equipment and the hazards involved should install, adjust, operate, or service this equipment. Read and understand this manual and other applicable manuals in their entirety before proceeding. Failure to observe this precaution could result in severe bodily injury or loss of life.
6. To comply with FCC RF exposure requirements, a separation distance of 20cm (7.87") or more must be maintained between this antenna and all persons.
7. Maximum antenna gain is limited to 3 dBi in mobile products and applications. Maximum antenna gain is limited to 7 dBi in fixed products and applications.

4.2 - FCC REGULATORY NOTICES

To comply with FCC RF exposure requirements, a separation distance of 20 cm (7.87") or more must be maintained between this antenna and all persons

Telit certifies that the Telit™ MHz GSM Radio Module (FCC ID: MIVGSM0308) complies with the RF hazard requirements applicable to broadband PCS equipment operating under the authority of 47 CFR Part 22 or Part 24, Subpart E of the FCC Rules and Regulations.

This certification is contingent upon installation, operation and use of the Telit module and its host product in accordance with all instructions provided to both the OEM and end user. When installed and operated in a manner consistent with the instructions provided, the Telit module meets the maximum permissible exposure (MPE) limits for general population / uncontrolled exposure as defined in Section 1.1310 of the FCC Rules and Regulations.

- Maximum antenna gain is limited to 2 dBi* in mobile products and applications
 - For fixed applications (2 meter separation) the antenna gain can be as much as 26 dBi.
 - Modifications and/or additions to the Telit transceiver, including use of antennas with higher gain than those authorized by the FCC, are prohibited.
- * dBi = antenna gain in dB relative to an isotropic radiator

Any antenna used with the modem must be approved by the FCC or as a Class II Permissive Change (including MPEL or SAR data as applicable). The "professional installation" provision of FCC Part 15.203 does not apply.

WARNING: The transmitter and antenna must not be collocated or operating in conjunction with any other antenna or transmitter. Failure to observe this warning could produce an RF exposure condition.

4.3 - PRECAUTIONS

All applicable codes and standards need to be followed in the installation of this product. Adhere to the following safety precautions whenever any type of connection is made to the module:

safety continued...

1. Connect the safety (earth) ground on the power connector first before making any other connections.
2. When connecting to the electric circuits or pulse-initiating equipment, open their related breakers.
3. Do NOT make connection to live power lines.
4. Make connections to the module first; then connect to the circuit to be monitored.
5. Route power wires in a safe manner in accordance with good practice and local codes.
6. Wear proper personal protective equipment including safety glasses and insulated gloves when making connections to power circuits.
7. Ensure hands, shoes, and floor are dry before making any connection to a power line.
8. Make sure the unit is turned OFF before making connection to terminals.
9. Make sure all circuits are de-energized before making connections.
10. Before each use, inspect all cables for breaks or cracks in the insulation. Replace immediately if defective.
11. Use copper conductors in Field Wiring only, 60/75° C.

4.5 - RECOMMENDATIONS

Be sure that the use of this product is allowed in the country and environment required. The use of this product may be dangerous and has to be avoided in the following areas:

1. Where it can interfere with other electronic devices in environments such as hospitals, airports, aircraft, etc. etc.
2. Where there is risk of explosion such as fuel stations, oil refineries, etc. etc.

6 TECHNICAL SUPPORT

For assistance and manual updates, contact Technical Support at the following locations:

North America

+1 (317) 916-4274
www.hornerautomation.com
techsppt@heapg.com

Europe

+353 (21) 4321-266
www.horner-apg.com
technical.support@horner-apg.com