

Wireless M-Bus and ZigBee Expansion cards for Wavecom Fastrack Supreme GSM/GPRS/EDGE modems

ADVANCE INFORMATION

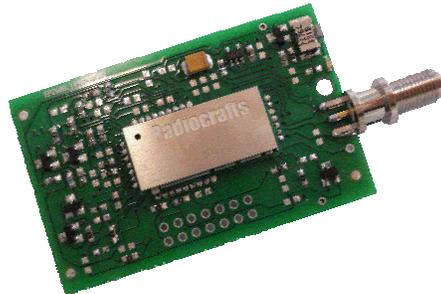
This document contains information on a new product. Specifications and information herein are subject to change without notice.

Product Description

The RC-IESM (Internal Expansion Module) series of expansion cards for Wavecom Fastrack Supreme modems contains an RF module which interfaces to the UART serial bus inside the modem and to an SMA connector for external antenna. The RF module is a Wireless M-Bus module, a ZigBee module or a module from the RC232 protocol family from Radiocrafts. An embedded protocol inside the RF module handles all RF communication and only data payload and easy-to-use instructions are sent over the UART serial bus. The PCB is the same for all modules and only requires different BOM (Bill of Material) to support the various protocols.

Supported Protocols and Network Standards

- Wireless M-Bus
- IEEE 802.15.4
- ZigBee
- 6LoWPAN
- RC232 (proprietary)



Applications

GSM/GPRS/EDGE gateway solutions for:

- AMR / Smart Metering
- Home automation, building automation and industrial automation
- Fleet and inventory management
- Wireless sensor networks

Features

- GSM/GPRS/EDGE Gateway for Wireless M-Bus, ZigBee and RC232
- On-board radio module with embedded protocol
- Easy-to-use UART interface connects to powerful Wavecom-internal ARM9 processor
- RF interface with SMA connector connects to standard antennas
- Same PCB supports modules from a large portfolio of RF modules
- Miniature manual switch and LED (connects to ARM-processor)
- Free open AT-command based demo software for socket connection and module configuration
- CE certified
- FCC pre-qualified for dedicated RF modules

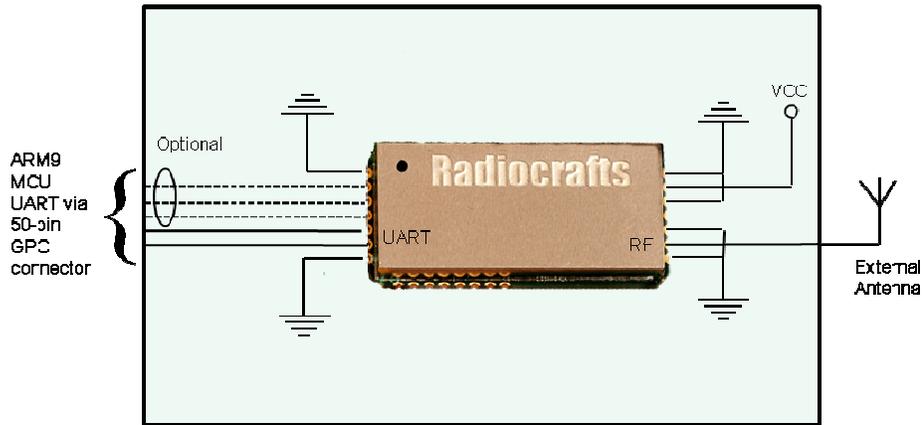
Article Numbers

Ordering Number	Module Description
RC1180-MBUS-IESM	Embedded Wireless M-Bus protocol (EN13757-4:2005, 868 MHz radio) for gas, water, heat and electricity meter readings
RC2300-ZNM-IESM	ZigBee Network Module
RC11x0-RC232-IESM	433, 868 and 915 MHz high speed modules, RC232 protocol
RC12x0-RC232-IESM	433, 868 and 915 MHz narrowband long range, RC232 protocol

Visit www.radiocrafts.com for product description of each module.

Functional Layout

The ARM9 processor connects to the IESM board via a 50-pin GPC, General Purpose Connector, mounted on the secondary side of the board. The antenna connector is a standard SMA connector.



Antenna connection

A quarterwave antenna can be directly connected to the SMA antenna connector. If the modem is placed in environments where RF performance is reduced, an external antenna can be connected via a coaxial cable to the SMA connector.

Wavecom modem embedded resources and tools

MCU: ARM9 32 bit, 26-104 MHz core
IDE: Open AT IDE, Integrated Development Environment, where applications can be written, compiled, downloaded and monitored through the debugging phase of the development
Software: Standard ANSI C, Open AT built on Eclipse, a fully integrated tool chain encompassing CDT, Terminal Emulator, Target Monitor, Compiler, Downloader and Supervisor

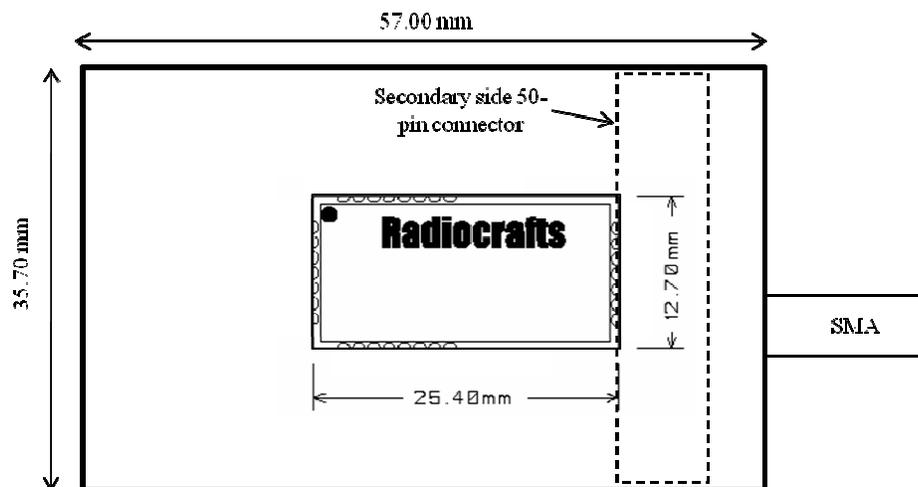
Demonstration firmware and source code availability

Demonstration software for enabling a socket connection for transparent GPRS payload transfer, and for enabling RF modem configuration, is available from Radiocrafts and Asvito, www.asvito.no.

GPC, General Purpose Connector, Pin Description

Pin no	Pin name	Description and internal MCU connection
1-2	GND	System ground
3-22	NC	Not Connected
23	RXD2	Connects to modules RXD-pin
24	TXD2	Connects to modules TXD-pin
25	CTS2	Connects to modules CTS-pin
26	RTS2	Connects to modules RTS-pin
27-28	NC	Not Connected
29	GPIO19	Push Button
30	NC	Not Connected
31	GPIO20	LED (green)
32	NC	Not Connected
33	GPIO23	Config (enable module configuration mode)
34	NC	Not Connected
35	DTR1	Pull-up to pin 41
36-40	NC	Not Connected
41	VCC-2V8	Used for board-internal pull-up
42	GND	System ground
43-44	NC	Not Connected
45	GND	System ground
46-47	4V	Connected to modules VCC pin via on-board Low Dropout Regulator
48-50	GND	System ground

Mechanical Drawing



Mechanical Dimensions

The board size is 35.7 x 57.0 x 4.1 mm (total height for PCB and module).

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