

# MMCModem™ GPRS

## Embedded Cellular Modem



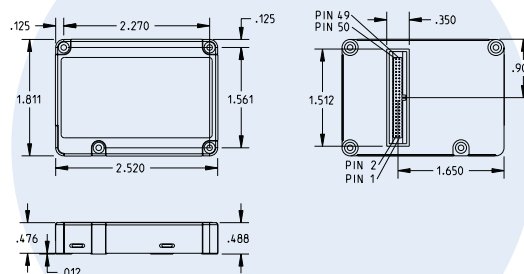
The MMCModem™ GPRS cellular modem offers standards-based quad-band GPRS Class 10 performance. Packaged in a compact, rugged industrial chassis this quick-to-market communications device allows developers to add wireless communication to products with a minimum of development time and expense. The MMCModem GPRS cellular modem is based on industry-standard open interfaces and can be board-to-board or board-to-cable mounted.

## Features

- GPRS Class 10
- Quad-band 850/900/1800/1900 MHz
- Packet data up to 85K bps
- Embedded TCP/IP stack
- Circuit-switched data (GSM) up to 14.4K bps transparent and non-transparent
- Short Message Services (SMS)
- Supports DTMF transmission
- Allows for emergency calls, Full Rate, Enhanced Full Rate and Half Rate (FR/EFR/HR)
- Compatible with supplementary services
- Advanced management features include phone book management, fixed dialing number, real time clock and alarm management
- MMCX antenna connector and SIM socket
- Board-to-board or board-to-cable mounting
- Serial interface supports DTE speeds to 115.2K bps
- AT command compatible
- MNP 2 error correction, V.42bis compression
- Two-year warranty

## Benefits

- Compact, rugged industrial chassis design
- Board-to-board or board-to-cable mounting
- Quick time-to-market
- Carrier approved



## Highlights

**Applications.** The MMCModem GPRS cellular modem is targeted at applications that periodically need to send or receive data over a wireless network. It is an ideal solution for:

- Appliances
- ATM terminals
- Automotive
- Data collection
- Gas pumps
- Industrial and medical remote monitoring systems
- Remote diagnostics
- Remote metering
- Security systems
- Vending/gaming machines
- Other devices requiring wireless connectivity

**Reduces Development Time.** The MMCModem GPRS cellular modem can make your existing and next generation device, machine, or system, communication-ready without requiring significant hardware changes to its design. It actually provides faster time-to-market because it relieves the burden and expense of obtaining PTCRB and RF approvals.

**Internet-enabled.** The MMCModem GPRS cellular modem includes an embedded TCP/IP protocol stack to bring Internet connectivity to any device. Using the Internet protocols and the wireless connection to an IP network, it sends and receives data over the Internet.

**MMCModem Pin-Out.** The MMCModem GPRS cellular modem interfaces easily with existing products through a standard serial communication channel.

The serial DTE channel is capable of transfer speeds to 115.2K bps and can be interfaced directly to a UART or microcontroller. The complete on-board RF transceiver interfaces with an antenna for direct connection to wireless SMS, circuit-switched dial-up or packet data networks.

**Developers Kit.** The Developer's Kit allows you to plug in the communications device and use it for testing, programming and evaluation. The kit includes one development board with RS-232 DB-25 connector, universal power supply, antenna and RS-232 cable.

### Pin Connector

|              |    |    |           |
|--------------|----|----|-----------|
| GND          | 1  | 2  | GND       |
| +5V          | 3  | 4  | +5V       |
| CT109/DCD    | 5  | 6  | GND       |
| GPI04        | 7  | 8  | SPK2N     |
| CT125/RI     | 9  | 10 | SPK2P     |
| Flashing LED | 11 | 12 | SPK1P     |
| CT106/CTS    | 13 | 14 | SPK1N     |
| ON/~OFF      | 15 | 16 | MIC2P     |
| AUXV0        | 17 | 18 | MIC2N     |
| ~RST         | 19 | 20 | MIC1P     |
| GND          | 21 | 22 | MIC1N     |
| BOOT         | 23 | 24 | GND       |
| CT103/TX     | 25 | 26 | GPI00     |
| CT107/DSR    | 27 | 28 | CT104/RX  |
| CT108-2/DTR  | 29 | 30 | CT105/RTS |
| COL3         | 31 | 32 | COL4      |
| COL1         | 33 | 34 | COL2      |
| ROW4         | 35 | 36 | COL0      |
| ROW2         | 37 | 38 | ROW3      |
| ROW0         | 39 | 40 | ROW1      |
| NC           | 41 | 42 | SPI_EN    |
| SPI_I/O      | 43 | 44 | SPI_CLK   |
| SIMCLK       | 45 | 46 | SIMRST    |
| SIMVCC       | 47 | 48 | SIMPRES   |
| SIMDATA      | 49 | 50 | GPO0      |

## Specifications

### Packet Data Features

GPRS Class 10, PBCCH support  
Coding Schemes: CS1 to CS4  
Embedded TCP/IP stack

### Circuit Switched Data/Fax Features

Asynchronous, transparent & non-transparent up to 14.4K bps, MNP 2 & V.42bis

### SMS Features

Text & PDU, Point-to-Point, cell broadcast

### IP Protocols Supported

DNS Resolve, FTP client, IP, IPCP, LCP, PPP (dial-out), TCP socket, UDP socket, CHAP, PAP

### Connectors

50-pin  
Antenna: MMCX  
SIM: Standard 3V SIM receptacle (5V SIM with external level shifter)

### Power Requirements

5VDC; 400mA typical, 1.4A maximum

### Physical Description

2.5" w x 1.8" h x 0.48" d; 2.8 oz.  
(6.4 cm x 4.6 cm x 1.2 cm; 79 g)

### Operating Environment

-30° to +70° C

### Certifications

CE Mark  
EMC: FCC Part 2, 15, 22, 24, EN 55022, EN 55024  
Safety: cUL, EN 60950, UL 60950  
Network: PTCRB

## Ordering Information

| Product        | Description    | Region |
|----------------|----------------|--------|
| MTMMC-G-F4*    | GSM/GPRS Modem | Global |
| MTMMC-G-F4-ED† | GSM/GPRS Modem | Global |

\* Quad-band Modem, 850/1900 MHz default

† Quad-band Modem, 900/1800 MHz default

Made in Mounds View, MN, U.S.A.

Features and specifications are subject to change without notice.

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