

# MTX-DIN modem

## Industrial applications DIN rail GSM/GPRS M2M Modem



Java programmable



Five Band UMTS (WCDMA) HSPA+



I2C Optocoupled GPIO



USB 2.0 RS232/485/422



Analog inputs



Relay outputs



Extended Temperature Range



DIN rail housing



Automatic restart after shutdown



RoHS & WEEE compliant Pb-free



The MTX-DIN modem family are a new **GSM/GPRS** and **UMTS/HSPA** modems designed for **industrial environments** due to its extended operating temperature range. The **Quad/Five Band** functionality allows it to operate at all relevant GSM frequencies. It has an intrinsic and powerful **TCP/IP** communication stack with Internet Services such: TCP, UDP, HTTP, FTP, SMTP, and POP3.

The MTX-DIN is sized in DIN 9 modules for DIN rail housing, containing all the necessary interfaces used in industrial applications: 2 configurable **RS232/RS422/RS485** buses, **4 1P1C relays** 1P1C, **optoisolated inputs/outputs**, **0-2.4V** or **0-20mA** analog **inputs**, etc. Together with the SIM card reader, it minimizes the need for further hardware components and facilitates integration. The auto power-on feature allows it to restart in case of faulty power conditions. The **USB**, **SPI/I2C** and serial ports allow it to be connected to PCs, control boards and other peripherals like GPS, Bluetooth, RFID or other devices.

The MTX-DIN includes Java embedded programmability and a full range of I/Os. The unit can host and control your **Java J2ME application** allowing you to develop and embed your code directly onto the terminal to shorten time to market and reduce costs by avoiding external components.

It is manufactured using SMD technology following ISO-9001 & ISO-14001 Quality certifications and it is RoHS/WEEE compliant.

# MTX-DIN Family

## 2G models

### General features

- Quad-Band GSM 850/900/1800/1900MHz
- GPRS multi-slot class 12
- SIM Application Toolkit, 3GPP release 99
- Control via AT commands (Hayes, TS 27.007, TS 27.005)
- TCP/IP stack access via AT commands
- Internet services: TCP, UDP, HTTP, FTP, SMTP, POP3
- Supply voltage range:
  - DC: 9 to 30VDC (typ. 12VDC)
  - AC: 12 to 24VAC (typ. 24VAC)
- Average power consumption (at 12V)
  - Idle mode (registered DRX=2): 17mA
  - Speech mode (average): 250mA
  - GPRS class 12 (average): 570mA
- Operating temperature range: -30°C to +80°C
- Dimensions, excluding connectors: 157 x 86 x 58mm
- Weight: <300 g
- Powered by Cinterion TC65i module

### Interfaces

- GSM FME M antenna connector
- USB 2.0 High Speed port up to 480Mbps
- SIM card interface 3V, 1.8V
- Plug-in 52-way (45 usable) 5mm pitch terminal block:
  - 2x digital input/outputs
  - 4x optoisolated inputs
  - 2x analog inputs
  - 1x analog output (PWM)
  - 1x I2C/SPI bus
  - 2x RS232/RS422/RS485 configurable ports
  - 4x form C switching contact relays
  - Speaker and microphone signals available (not amplified)
- 2 status LEDs (GSM status and user programmable)

### Open application resources

- ARM® Core, Blackfin® DSP
- Memory: 400KB (RAM) and 1.7MB (Flash)
- Improved power-saving mode
- Internal watchdog

### Specification

- **GPRS**
  - GPRS class 12
  - Mobile station class B
  - PBCCH support
  - Coding schemes CS 1-4
- **CSD data transmission**
  - Up to 14.4kbit/s
  - V.110
  - Non-transparent mode
  - USSD support
- **SMS**
  - Point-to-point MO and MT
  - SMS cell broadcast
  - Text and PDU mode
- **Fax**
  - Group 3, class 1,2
- **Voice**
  - Triple-rate codec for HR, FR and EFR
  - Adaptive multi-rate AMR
  - Basic hands-free operation
  - Echo cancellation
  - Noise reduction

### Java™ features

- CLDC 1.1 HI
- J2ME™ profile IMP-NG
- Secure data transmission with HTTPS, SSL and PKI

### Over-the-air update

- Application SW: OTAP
- Firmware: FOTA (OMA compliant)

# MTX-DIN Family

## 3G models

### General features

- Quad-Band GSM/GPRS/EDGE 850/900/1800/1900MHz
- Five-Band UMTS/HSPA+ 800/850/900/1900/2100MH
- SIM Application Toolkit, 3GPP release 99
- Control via AT commands (Hayes, TS 27.007, TS 27.005)
- TCP/IP stack access via AT commands
- Internet services: TCP, UDP, HTTP, FTP, SMTP, POP3
- Supply voltage range:
  - DC: 9 to 30VDC (typ. 12VDC)
  - AC: 12 to 24VAC (typ. 24VAC)
- Average power consumption (at 12V)
  - Idle mode (registered DRX=2): 17mA
  - Speech mode (average): 250mA
  - GPRS class 12 (average): 570mA
- Operating temperature range: -30°C to +80°C
- Dimensions, excluding connectors: 157 x 86 x 58mm
- Weight: <300 g
- Powered by Cinterion EHS6 module

### Interfaces

- GSM FME M antenna connector
- USB 2.0 High Speed port up to 480Mbps
- SIM card interface 3V, 1.8V
- Plug-in 52-way (45 usable) 5mm pitch terminal block:
  - 2x digital input/outputs
  - 4x optoisolated inputs
  - 2x analog inputs
  - 1x analog output (PWM)
  - 1x I2C/SPI bus
  - 2x RS232/RS422/RS485 configurable ports
  - 4x form C switching contact relays
  - Speaker and microphone signals available (not amplified)
- 2 status LEDs (GSM status and user programmable)

### Special features

- USB interfaces support multiple composite modes and a Linux/Mac compliant mode
- Firmware update via USB/RS232
- Real Time Clock with alarm functionality
- Multiplexer according 3GPP TS 27.010
- RLS Monitoring (Jamming detection)
- Informal Network Scan

### Specifications

- **HSPA (3GPP Release 6,7)**
  - DL 7.2Mbps, UL 5.7Mbps
  - HSDPA Cat.8 / HSUPA Cat.6 data rates
  - Compressed mode (CM) according to 3GPP TS25.212
- **UMTS (3GPP Release 4)**
  - PS data rate – 384 kbps DL, UL 384kbps
  - CS data rate – 64 kbps DL, UL 64kbps
- **HSPA (3GPP Release 6,7)**
  - DL 7.2Mbps, UL 5.7Mbps
  - HSDPA Cat.8 / HSUPA Cat.6 data rates
- **GPRS**
  - GPRS class 12
  - Mobile station class B
  - PBCCH support
  - Coding schemes CS 1-4
- **EGPRS**
  - Multislot class 12
  - EDGE E2 power class for 8PSK
- **CSD data transmission**
  - Up to 9.6kbps
  - V.110
  - Non-transparent mode
  - USSD support
- **SMS**
  - Point-to-point MO and MT
  - SMS cell broadcast
  - Text and PDU mode

### Java™ features

- Oracle Java ME Embedded 3.2
- Compliant to CLDC 1.1 HI and IMP-NG standards
- Capable of running multiple MIDlets in parallel with inter-MIDlet communication
- Additional Java standards APIs:
  - JSR75 (FileConnection)
  - JSR177 (CRYPTO)
  - JSR280 (XML)
- Additional accessible periphery for Java applications
  - I/O pins, I2C, SPI interfaces, ADC/DAC
  - Serial interfaces (API): ASC0, ASC1, USB
- Memory space for Java applications
  - Flash File System: 8MB
  - RAM: 6MB
  - Just-in-Time (JIT) Compiler execution optimization

# MTX-DIN Family

	<i>MTX-DIN-2G</i>	<i>MTX-DIN-3G</i>
Cellular modem	2G	3G
RS232/485/422	x2	x2
USB	X	X
I2C/SPI	X	X
ADC	x2	x2
DAC	x1	x1
Optoisolated IO	x6	x6
Relay	x4	x4

## Ordering information

### MTX-DIN-2G

○ Ordering code: 199801103

### MTX-IND-3G

○ Ordering code: 199801139