



# Product Sheet



## EXM 32

### MSC EXM-NAVCOM

#### Navigation and Communication Module



#### Features

- Quad band 800/900/1800/1900 MHz EGSM/GPRS
- UMTS/HSDPA/EDGE version available
- I<sup>2</sup>S digital audio interface for voice mode
- GPS receiver 16-channel 2.5m CEP
- Dual antenna connectors (Mini BNC MMS / Murata MXTK)
- Interface for MEMS gyro sensor ADXRS150 module (supports dead reckoning)
- 16-bit microcontroller supporting independent gyro and wheel pulse pre-processing, ASCII output with timestamps on COM port and access to GSM and GPS hardware for emergency calls
- Quad UART integrated on module connects to local CPU bus
- Extended temperature range
- EXM32 compliant



65 x 90



2.3 W

#### Description

The **EXM32** system-on-module (SOM) standard was developed by MSC for use in challenging environments like industrial and automotive computing applications.

EXM32 modules contain the rich feature set of a complete embedded computer and are connected to carrier boards via high-density elastomeric connectors. Expansion modules can add more I/O functionality being mounted easily on top of the CPU module.

The compact and rugged EXM32 modules offer high computing power and are specified for the industrial temperature range.

The **EXM32 Navigation and Communication Module** is an expansion module for EXM32 systems which adds communication (GSM, GPRS) and navigation (GPS) functionality to an EXM32 system. Optionally UMTS and/or gyro support is also offered.

Using this module, navigation and fleet management systems can be implemented with very little development effort.

For evaluation and design-in of the EXM-IMX35 CPU module, development platforms and starter kits are available.

## Technical Data – MSC EXM-NAVCOM

### Wireless Communication

#### GSM/UTMS

Telit **GC864 GSM** module

Quad band EGSM 850/900/1800/1900 MHz

ETSI GSM 07.05 / 07.07

GPRS Class 10 (4 x RX / 2 x TX)

Or

Telit **UC864 UMTS** module

UMTS/HSDPA 2.1GHz

HSDPA 7.2Mbps

Quad band EGSM 850/900/1800/1900 MHz

GPRS multi-slot class 12

ESGE multi-slot class 12

I<sup>2</sup>S interface for voice applications

SIM card connector 1.8V - 5V

### Navigation

#### GPS

u-Blox 5

16 channel

Accuracy: 2.5m CEP

Signal reacquisition <1sec

Hot start 3.5 sec

Warm start 33 sec

Cold start 34 sec

Aided start 5 sec

NMEA-0183 / UBX-binary / RTCM input supported

Dead reckoning support with external gyro sensor and wheel pulse processing using a dedicated 16-bit M16C microcontroller

Emergency call functionality independent of host processor

### Bus Interfaces

#### EXM32 Interface

16554 UART / I2C / USB

The EXM32 CPU module accesses the GC864 via the EXM32 local bus and a quad UART integrated on the module.

Gyro and wheel pulse data are transmitted via the I<sup>2</sup>C bus.

For UMTS data the USB interface is used.

### Power Supply

#### Power

3.3V DC +/- 10%

5.0V DC +/- 10% 1.5A peak

### Environment

#### Ambient Temperature

-40° ... +85° C (operating)

-40° ... +85° C (storage)

Note: GSM performance can be out of ETSI minimum requirements below -20° C and above +55° C

#### Humidity

5 ... 95% (non condensing)

### Mechanical

#### Dimensions

90 mm x 65 mm x 13.6 mm (without antenna connector)

#### Weight

46g

## Order Reference – MSC EXM-NAVCOM

Order Number	Description	Reference
36998	EXM32 Navigation and Communication Module Quad band 850/900/1800/1900 MHz GSM/GPRS; GPS Receiver; Dual Antenna Connector; Dual UART	MSC EXM-NAVCOM-003
36999	EXM32 Navigation and Communication Module Quad band 850/990/1800/1900MHz; UMTS/HSDPA 2.1 GHz; GPS Receiver, Dual Antenne Connector; Dual UART	MSC EXM-NAVCOM-004

## Accessories

Order Number	Description	Reference
32502	Antenna kit including cables for EXM-NAVCOM navigation and communication module. Dual antenna for GSM and GPS.	MSC EXM-ANTENNA-2
39925	Antenna kit including cables for EXM-NAVCOM navigation and communication module. Dual antenna for UMTS and GPS	MSC EXM-ANTENNA-2
On request	Gyro module	

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