



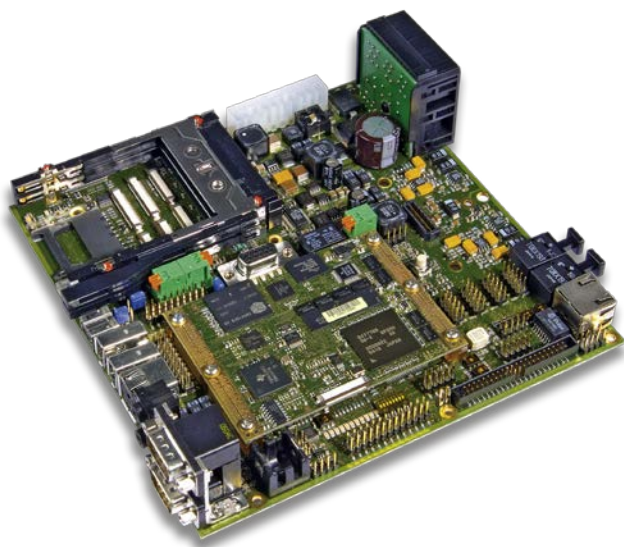
# Product Sheet



## EXM 32

### MSC EXM-DEV

#### Development Platform



#### Features

- Development environment for Windows® CE, Linux or QNX
- Small footprint (car radio DIN slot)
- CRT and/or LCD graphics
- IDE interface
- MMC / SD / SDIO card socket
- Ethernet connector
- RS232, TTL serial, USB connectors
- CAN bus interface
- Audio interface, surround sound
- GPIO and test I / O
- Extendible using stackable I / O modules

#### Description

EXM32 modules are compact, robust embedded computing modules conforming to the EXM32 standard. The CPU modules contain the rich feature set of a complete embedded computer and connect 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.

MSC developed the EXM32 system-on-module (SOM) standard for use in challenging environments like industrial, outdoor and automotive computing applications. The rugged modules are offering high computing power and are specified for the industrial temperature range.

The EXM32 Development Platform contains everything necessary to get a Windows® CE, QNX® or Linux development environment for EXM32 modules working very quickly.

The main components are the EXM32 Motherboard and an EXM32 CPU module (IMX35 or AU1200).

The EXM32 Motherboard provides a perfect development and evaluation platform for EXM32 modules and systems. It incorporates all necessary interfaces, connectors and power supplies to operate and test an EXM32 CPU Module. For specific requirements MSC also offers I/O modules or a more compact Starter Kit using the EXM32 Motherboard LITE2.

To fully support our customers, we also can provide engineering services for developing custom carrier boards.

# Technical Data – MSC EXM32 Development Platform

## Communication and Data Interfaces

**Motherboard Controllers:** ATAPI, Touch Screen, Key Matrix, Audio DSP, AC'97 or I<sup>2</sup>S Audio Codec, MOST

**Ethernet:** 10/100 BaseT (RJ-45)

**Firewire:** 2 x IEEE 1394a (6 pin connector)  
2 x IDB-1394 (optical, on optional Comm I/F Module) or:  
2 x IEEE 1394b (9 pin connector, on optional Comm I/F Module)

**USB:** 1 x Type A , non-OTG (USB1)  
1 x OTG, Type A or Mini USB (USB2)

**CAN:** 2 x CAN 2.0B (10-pin header & ISO)

**LIN:** 1 x LIN interface (on CAN connectors)

**Serial:** 2 x RS232/422/485 (9-pin Sub-D, 10-pin header),  
4 x UART (10-pin header), IrDA

**Memory Card Interfaces:** 2 x PC-Card (Type I/II), MMC/SD/SDIO

**IDE:** ATAPI Interface (44-pin header)

**CRT:** Analog VGA (9-pin DSUB)

**LCD:** Dual LCD Interface, each: 2 x TTL, 2 x LVDS)

**Audio I/O:** Line In / Line Out, 5.1 Sound, SPDIF electrical: 4 x In / 1 x Out, SPDIF optical: 1 x In / 1 x Out,

Test: 8 x LED, 8 x DIP switch, GPIO (8 x in, 8 x out)

## Power Supply

**Power:** 9 ... 36 V DC ( ISO A, B, C) or ATX compatible

## Environment

**Temperature:** -25°C ... +85°C (ambient, operating)

**Humidity :** 0 .. 95% (non condensing)

**Certification :** designed to meet DIN 60068 (electronic equipment for road vehicles – environmental conditions)

## Mechanical

**Dimensions:** 179 mm x 173 mm (Eurocard Size)

## Optional Accessories

### I/O Modules:

EXM32 Navigation and Communication Module, optional antenna set (see data sheet of the EXM32 Navigation Module for details)

### LCD Display Kit:

8.4" VGA TFT (NEC NL6448BC26-09), inverter and cable set

## Supported CPU Modules

### MSC EXM32-IMX35 :

The IMX35 CPU module provides high-performance computing power at extremely low power consumption and a wide temperature range. It incorporates a high performance 32-bit RISC CPU, Flash memory, DDR2 SDRAM and an extensive set of interface controllers (see MSC EXM32-IMX35 data sheet for details).

### MSC EXM32-AU1200 :

The AU1200 CPU module provides high-performance computing power and unique multimedia support (MPEG1/2/4, WMV and DIVX decoding) at extremely low power consumption and a wide temperature range. It incorporates a high performance 32-bit MIPS CPU, Flash memory, DDR2 SDRAM and an extensive set of interface controllers (see MSC EXM32-AU1200 data sheet for details).

## Communication and Data Interfaces

### MSC EXM32-IMX35:

#### Windows CE 6.0

Driver support for most functions of the EXM32 hardware is available.

#### Linux

Driver support for most functions of the EXM32 hardware is available.

#### QNX

Driver support for most functions of the EXM32 hardware is available.

### MSC EXM32-AU1200:

#### Windows CE 6.0 - Driver support:

Driver support for most functions of the EXM32 hardware is available.

#### QNX

Driver support for most functions of the EXM32 hardware is available.

#### Linux

Driver support for most functions of the EXM32 hardware is available.

## Order Reference – MSC EXM32 Development Platform

Product	Description
MSC EXM-IMX35-MB-WINCE-KIT002	EXM32 WinCE Development Platform
MSC EXM-IMX35-MB-QNX-KIT002	EXM32 QNX Development Platform
MSC EXM-IMX35-MB-LINUX-KIT002	EXM32 Linux Development Platform
MSC EXM-AU1250-MB-WINCE-KIT002	EXM32 AU1250 WinCE Development Platform
MSC EXM-AU1250-MB-LINUX-KIT002	EXM32 AU1250 Linux Development Platform

## Accessories

Accessories	Description
MSC EXM-NAVCOM-003	EXM32 Navigation and Communication Module (GPS/GSM/GPRS)
MSC EXM-NAVCOM-004	EXM32 Navigation and Communication Module (GPS/UMTS/HSDPA)
MSC EXM-ANTENNA-2	EXM32 Antenna Kit for Navigation Module (GPS/GSM/GPRS)
MSC EXM-ANTENNA-3	EXM32 Antenna Kit for Navigation Module (GPS/UMTS)
MSC EXM-LCD-NL6448-8.4-TTL	EXM32 LCD Display Kit, 8.4" VGA TFT
MSC EXM-DEBUGADAPTER	EXM32 Debug Adapter

## Note

**Notes:** The Navigation and Communication Module fits on top of each EXM32 CPU module and can be used for GPS/GSM/GPRS functions, alternatively for GPS/UMTS/HSDPA.

The LCD Display Kit comes prepared for direct connection to the EXM32 Motherboard and allows to display VGA resolution screen output on the 8.4-inches full-colour TFT panel included.

The Debug Adaptor is required to connect a Debugger (e.g. Lauterbach) to any EXM32 CPU module.

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