



OVERVIEW

The MMI unit is a programmable controller built to be both the master unit of a master-slave control system and the Man-Machine-Interface for industrial mobile machines. The aluminium front panel and the stainless-steel case ensure very good EMC compatibility, mechanical strength and environmental protection.

Main characteristics are:

- Compact design, customizable front panel
- Multiple communication interfaces (LTE, Ethernet)
- full IP67 case (not the front panel only), AMP-Seal connectors

The hardware is based on a ARM9™ (926EJ-S) SoC (clock 450MHz), DDR2 RAM with 400MHz clock speed and integrated video controller. Furthermore, there is a second micro-controller (the supervisor CPU) based on a ARM Cortex-M3™ with 100MHz clock frequency. This CPU handles the I/O's and monitors the power supply status.

The system is based on Windows Embedded CE 6.0 (Linux on request) which ensure a real-time environment and give the possibility to use standard Windows programming tools (Microsoft® Visual Studio, CoDeSys, etc.).

The MMI has a wide range of communication interfaces: USB 2.0 (Host and OTG), Ethernet, RS232/485/422, CAN-Bus 2.0B, I-Button (1-wire). The unit can also be equipped with internal GSM/GPRS and GPS modules.

TECHNICAL SPECIFICATIONS

- Main CPU: Freescale i.MX28x SoC 450 MHz (ARM9™)
Internal Memory: 128 kByte RAM, 16+32 kByte L1 Cache
External memory: 256 MByte DDR2, 256MByte NAND Flash (Optional: 1, 2 o 4 GByte Flash)
- Supervisor CPU: NXP LPC 100 MHz (ARM Cortex-M3™)
Memory: 64 kByte Flash, 16 kByte RAM
- 5.7" VGA TFT sunlight-readable display (Brightness: 700 cd/m²)
- Micro SD-CARD slot with SDHC support
- Optional internal LTE module
- Optional internal GPS module

OUTPUTS

- 2 PWM high-side (4A max.) outputs, with self diagnosis and short circuit protection
- 2 constant current sources (1.68mA) for the direct handling of resistive sensors (PT100, PTC, NTC, etc.)
- 5Vdc (200mA max.) regulated power supply output for external sensors

INPUTS

- 6 programmable analog inputs (0..5V, 0..25mA, 0..500mV and 0..2,5mA) with 12 bit resolution (4096 steps)
- 8 digital Inputs configurable via software as high-active or low-active; the first 4 inputs are usable as RPM/frequency inputs (up to 2KHz)
- Keyboard up to 25 keys (5x5 matrix)

CONNECTIVITY

- 1 RS422/RS485 (configurable) serial interface with galvanic isolation
- 4 RS232 serial interfaces (1x RX/TX and RTS/CRS, 3x only RX/TX)
- 1 USB Host 2.0 port
- 1 USB OTG 2.0 port
- 1 Ethernet 10/100 Mbit
- 1 I-Button (1-Wire) interface (for operator identification and login)
- 2 CAN-bus full 2.0B, programmable baud-rate from 125Kbit/s to 1Mbit/s, CANOpen and J1939 protocols (optional: ISOBUS)

OPTIONALS

- RAM and FLASH memory expansions (see technical specifications)
- Third CAN-bus full 2.0B
- LTE module
- GPS module (multi GNSS)

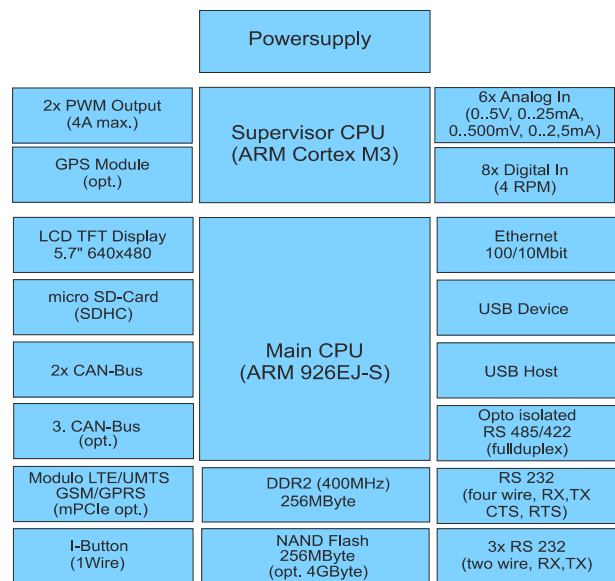
OPERATING CONDITIONS

- Supply voltage: 9 .. 32Vdc
- Operating temperature range: -30 .. +75 °C
- Storage temperature range: -40 .. +85 °C
- Max. humidity level: 95% (without condensation)
- Protection grade: IP67 (with connector plugged)
- Weight: 1300 g

CERTIFICATIONS

- UNECE 10R06 (E3-10R06-1313)

BLOCK DIAGRAM



MECHANICAL DRAWING

