



OVERVIEW

The **DCU-C** is a fully programmable automotive grade controller designed to be used as high performance master controller and Man-Machine-Interface (combined with an external VGA display) in industrial vehicles.

Main features are:

- Controlling of a color VGA display with touch-screen
- Handling of external audio signals and video-cameras
- High speed data communication (GRPS, Ethernet)
- Fully programmable with CoDeSys (including Visualization)

The hardware is based on a ARM11TM (1136JF-S) SoC, with a clock frequency of 500MHz, fast DDR2 (400MHz) memory and a hardware accelerated (OpenVG) video controller.

Additional to this main processor the system has a secondary micro-controller (ARM Cortex-M3 100MHz) to control and monitor the power supply and the I/O resources of the system.

The unit can be equipped with an internal Li-Ion battery, to make the system independent from power lost.

The system is based on Windows Embedded CE 6.0 (Linux 2.6 on request) to guarantee a real-time response. This give the possibility to use standard Windows programming tools (Microsoft® Visual Studio, CoDeSys, etc.).

The DCU-C 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).

Furthermore, the unit can be equipped with internal GPS and GSM/GPRS modules, giving an inexpensive opportunity to connect the machine to the external world.

SPECIFICATIONS

- CPU master: Freescale i.MX357 SoC 500 MHz (ARM11TM)
- Internal Memory: 128 kByte RAM, 16+16 kByte L1 Cache
- External Memory: 128 MByte DDR2, 1GByte NAND Flash (optional: 256 MByte DDR2 or / and 2 or 4 GByte Flash)
- CPU slave (supervisor): NXP LPC1752 100 MHz (ARM Cortex-M3TM)
- Memory: 64 kByte Flash, 16 kByte RAM
- Optional micro SD-CARD slots (for additional memory) with SDHC support
- Optional internal GSM/GPRS (MC75i) module
- Optional internal GPS module

OUTPUTS

- standard VGA output (max. resolution: 800 x 600)
- 2 channels audio output (2 x 10W @ 8Ohm)
- 4 PWM high-side (4A max.) outputs, with self diagnosis and short circuit protection
- 5Vdc (500mA max.) regulated power supply output for external sensors

INPUTS

- 4 programmable analog inputs (0..5V, 0..25mA, 0..500mV and 0..2,5mA) with 12 bit resolution (4096 steps)
- 16 digital inputs configurable via software for high-side or low-side operation; 4 of them are usable as RPM/frequency inputs (up to 2KHz) and one as D+ input (for controlled power down)
- 3 video (PAL / NTSC / SECAM) camera inputs (only one camera at a time can be handled)
- Dynamic microphone input

CONNECTIVITY

- 1 Serial interface RS232 or RS422/RS485 (configurable), with programmable baud-rate from 1.2 to 115.2 kbit/s
- 2 USB 2.0 interfaces (full-speed): 1 Host and 1 OTG (Host/Slave configurable)
- 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

- Memory expansion RAM and FLASH (see technical specifications)
- Internal rechargeable Li-Ion battery (3.7V > 400mAh)
- Third CAN-bus full 2.0B
- Micro SD-Card slot (SDHC)
- Internal GSM/GPRS module (MC75i)
- Internal GPS module

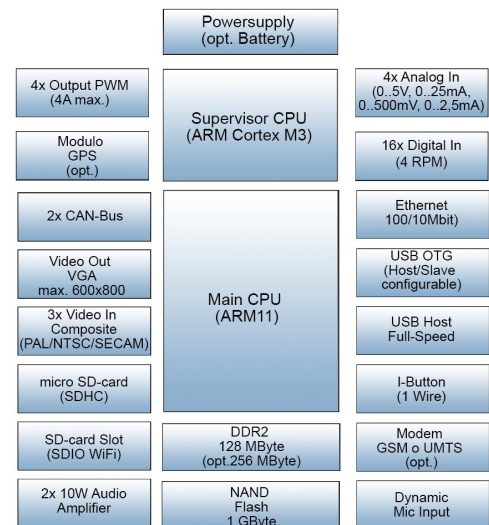
OPERATING CONDITIONS

- Supply voltage: 9 .. 32Vdc
- Operating temperature range: -40 °C .. +75 °C
- Storage temperature range: -40 °C .. +85 °C
- Max. humidity level: 95% (without condensation)
- Protection grade: IP68 (with connector plugged)
- Weight: 750 g

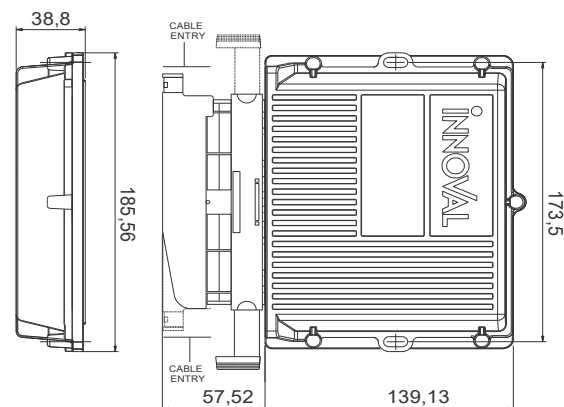
CERTIFICATIONS

- UNECE: E3 10R-05 1264
- IP6K8 according to ISO 20653:2013

BLOCK DIAGRAM



MECHANICAL DRAWING



Remark: cable exit is possible on both sides.