DCU-C V2 standard monitoring

OVERVIEW

The DCU-C V2 (fully backward compatible to 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) in industrial vehicles.

Main features are:
• Controlling of a color VGA Display with touch-screen
• Handling of external video signals
• High speed data communication (4G/LTE)

The hardware is based on a dual-core ARM® Cortex®-A9 (2 x 800MHz) SOC, with advanced graphic capacity (handling of 2 independent displays, 3D accelerator OpenGL ES2.0). The main Controller is equipped with 1GByte DDR3 (64Bit, 400MHz) and 512 MByte NAND Flash (High quality SLC chip), The Flash memory is expandable up to 64 Gbyte with two micro SD Card slots.

Additional to the main processor the system has a secondary micro-controller (ARM® Cortex®-M33, 150MHz) to control and monitor the power-supply and the I/O resources of the unit.

The system is based on WINDOWS EMBEDDED COMPACT 7 to guarantee a real-time response. This gives the possibility to use standard Windows programming tools (Microsoft® Visual Studio Silverlight etc.).

The DCU-C V2 has a wide range of communication interfaces:
USB 2.0, Ethernet, RS232/RS485, CAN-FD, CAN-Bus 2.0 and the following internal sensors: 3 axis accelerometer and 3 axis gyroscope.
Furthermore the unit is equipped with an internal GPS and 4G/LTE Module.

SPECIFICATIONS

• CPU master: NXP i.MX6DL (2 x Cortex-A9 @ 800Mhz), Internal memory: 144 kByte RAM (OCRAM), 32i + 32d kByte L1 Cache, 512 kByte L2 Cache
• External memory:
  ◦ Ram : 1 GByte DDR3, (2 / 4 GByte DDR3 optional)
  ◦ NAND Flash : 512 Mbyte, (1 / 2 / 4 GByte optional)
  ◦ 2 x Slot micro Sd-card (optional memory up to 2 x 32 Gbyte)
• CPU slave (supervisor): NXP LPX5526 150 MHz (Cortex-M33), Memory: 256 kByte Flash, 144 kByte RAM
• 3 axis accelerometer
• 3 axis gyroscope
• 3 axis magnetic-sensor **(optional)**
• miniPCIe slot for LTE/4G with micro SIM-Holder
• M.2 slot **(optional)**
• GPS module

OUTPUTS

• Standard VGA output
• HDMI Output **(optional)**
• Audio output **(optional)**
• 6 high-side PWM (4A max.), with self diagnostics and short circuit protection
• 5Vdc output/1A max. for external sensors
• PoE 24Vcc/48Vcc output **(optional)**

INPUTS

• Audio input line or Mic (optional)
• 4 programmable analog inputs (0..5V, 0..25mA, 0..500mV o 0..25mA), one with programmable current pump (0..30mA).

• 16 digital inputs configurable via software for high-side or low-side operation, 4 usable as RPM / frequency inputs (up to 2kHz) and one as D+ input (controlled power down).
• 3 video (PAL/NTSC/SECAM) camera inputs (only one camera at a time handled)

CONNETTIVITY

• Serial interface RS232 or RS422/RS485 (configurable in SW) with programmable baud-rate from 1.2kBit/s to 115,2 kBit/s
• 2 USB 2.0 interfaces (Hi-speed): 1 Host and 1 Device
• Ethernet 10/100 MBit/s
• 1 CAN-FD Bus (backward compatible with CAN 2.0B) from 125kBit/s to 8MBit/s
• 2 CAN-bus full 2.0B, programmable baud-rate from 125kBit/s to 1MBit/s, CANOpen and J1939 protocols **(optional ISOBUS)**
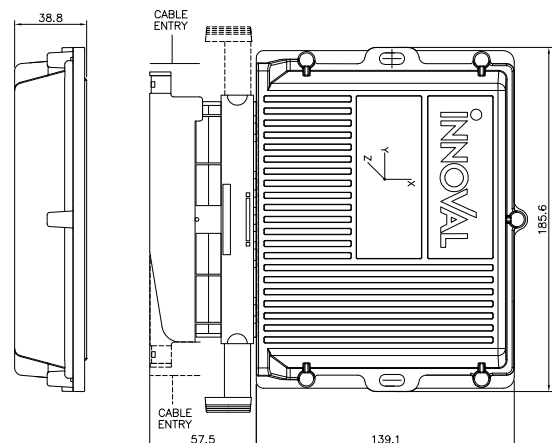
OPERATING CONDITION

• Supply voltage: 9 .. 32 Vdc
• Operating temperature range: -40 .. +70 °C
• Storage temperature range : -40 .. +85 °C
• Max. Humidity level:: 95% (without condensation)
• Protection grade: IP67 (with connector plugged)
• Weight: 720 g

CERTIFICATIONS

• UENECE 10R06 (E3-10R06-1314)
• IP6K8 according to ISO 20653:2013
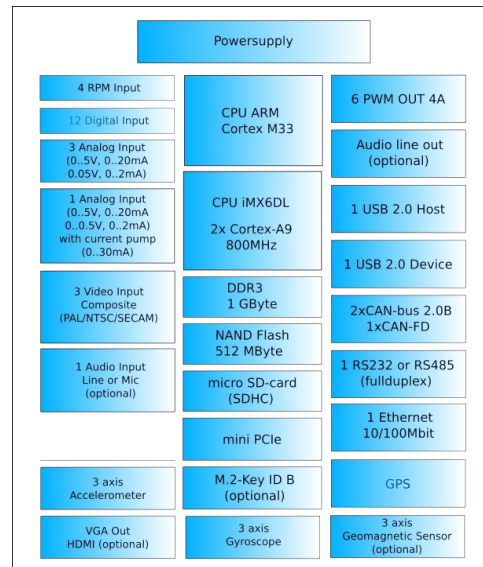
MECHANICAL DRAWING

Nota: uscita cavi possibile da entrambi I lati.