

General Description

The hipecsCORE 10 is an all round high performance PLC kernel. It offers the powerful CoDeSys PLC runtime system, a CANopen master, the Serial Graphic Interface (SGI) for frenzel + berg visualization panels and an Ethernet interface. This gives an optimized platform for realizing OEM control systems and operator panel controls. Its small form factor allows the module to be easily build into target hardware.



PLC

The implemented PLC runtime system is programmable with the (3S) CoDeSys V2.3 Software. This is one of the most powerful IEC 61131-3 programming tools for controllers' applications for Windows. All five languages of this standard are supported, plus a graphic editor for freehand FBD (function block diagram). CoDeSys produces native machine code for the hipecsCORE based CPU. The integrated file system offers file handling with up to 3 SD-Cards.

CANopen

The hipecsCORE supports four CANopen interfaces, that work independently from each other. All interfaces support either CANopen master or slave functionality.

Visualization

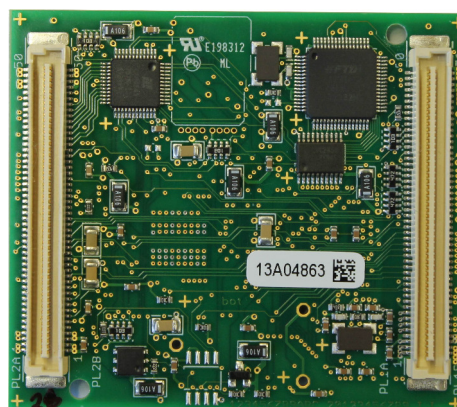
One of the serial channels can be configured as Serial Graphic Interface (SGI) in order to connect a visualization panel of the VISU-Pxxx series. With this panels a peripheral operator interface, that is also programmed with the CoDeSys development environment, can be added to the system. So the hipecsCORE is superb to realize OEM control systems with operator interface.

Communication

The hipecsCORE has an integrated web server, a FTP file server and free user programmable socket communication for the network interface. Functions for sending emails are implemented by several libraries.

3 asynchronous serial interfaces (RS232 / RS422 / TTL) provide communications with several external components like PCs, scanners, machines etc.

The hipecsCORE provides an USB interface for CoDeSys programming.



I/O and special features

16 digital inputs and 16 digital outputs with several special functions are realized on this module. 2 additional analog inputs are implemented and with few external components, another two analog outputs can be integrated.

There are several additional features provided with the I/O pins:

Three pairs of input pins may be used for direct connection of encoders with tracks A and B. One additional channel provides hardware counting features with direction control. The encoder channels may also be configured as event counter input pins. 8 channels may be used as interrupt inputs.

You need more ?

Customer specific features, libraries or firmware extensions are available on request.

Features

The following chapters describe the main features of the hipecsCORE module. Additional features and libraries are available on request.

PLC

- High speed 16 bit CPU kernel
2000 IEC commands per millisecond
- IEC 61131-3 programmable
CoDeSys V2.3 development environment
- Programming interface USB or Ethernet
- Powerful preemptive multi tasking operating system. 8 CoDeSys application tasks.
- Memory
3 MByte PLC application code memory
1 MByte PLC application data memory
4 kByte of retain memory.
- Real Time Clock
- 16 digital input lines (3,3V)
- 16 digital output lines (3,3V)
- 2 analog inputs 0..3,3V 10 bit resolution
- 2 PWM controlled analog outputs (external components required)

Network

- 1 Ethernet interface
- FTP file server
- web server
- simple mail transfer protocol SMTP
- DHCP client
- Telnet
- Socket communication with TCP and UDP protocol for CoDeSys application

File System

- 1 SD-Card slot onboard
- optional soldered SD on board (on request)
- up to 2 external SD-card slots
- microSD max. 2GB, preformatted FAT16 or FAT32 file system
- Firmware and Application update using SD-Card

CANopen

The hipecs CORE supports four completely independent CANopen interfaces that can be configured as a CANopen master or slave.

- CANopen master according to
DS301 Version 4
DSP302 Version 3.0
DSP405 Version 2.0
- Up to 32 CANopen slaves supported
- Slave configuration with EDS files directly within CoDeSys PLC programming tool.
- CANopen slave according to
DS401 Version 2.1
- Up to 250 Transmit PDOs (master mode)
Up to 16 Transmit PDOs (slave mode)
- Up to 250 Receive PDOs (master mode)
Up to 16 Receive PDOs (slave mode)
- Dynamic PDO mapping
- Variable PDO Identifier
- Node guarding, Life guarding, Heartbeat
- Sync
- Emergency reporting for PLC application
- Client SDO transfer for PLC application
- Basic CAN communication
- Baud rate up to 1 Mbaud

VISU

- Powerful CoDeSys target visualization with peripheral VISU-PXXX series for operator panels.
- In system Serial Graphic Interface (SGI) Driver
- External Graphic Controller reduces system load caused by visualization to a minimum.
- Support of multiple predefined graphic objects like lines, rectangles, buttons, bitmaps etc.
- Several fonts and text sizes.
- Support of Unicode16 characters.
- Support for different languages using the CoDeSys .xml file based language switching.
- Connection to operator panel with any serial interface possible.
- Baud rate up to 460000 Baud when using RS422

Interrupt

- Interrupt processing for IEC61131 tasks
- 8 of the digital input lines can be configured as interrupt channels.
- Programmable edge sensitivity for all interrupt channels:
rising, falling or both edges
- Programmable priority level for each channel with 30 interrupt levels

Encoder

- Integrated incremental encoder interface with 3 channels.
- Direct connection of 2 track encoder types
- Event counter mode optional
- 32 Bit count values
- Built in library for complete encoder control

Serial Interfaces

- 3 serial interfaces (3,3 V) with programmable baud rates up to 115200
- 1 interface can be used as RS422 interface with programmable baud rate up to 460000
- Each of the interface ports can be used as a SGI interface port to a visualization panel.

Additional features

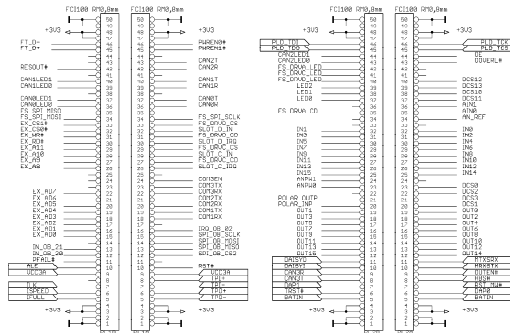
- Command Shell for PC
- PWM control library for digital outputs
- Position control library for stepper motors
- Firmware and Application update using SD-Card
- Temperature range 0°-70° (other on request)
- Package FBESmartModule (64mm x 54mm)

Customer features

Additional library features or OEM versions with own CoDeSys target file are available on request. Do not hesitate to contact us.

Pin Assignment

This view shows the pinning and the headers position as they are used on an application board.



See attachment for enlarged figure

Pin Listing

| Header PL1A | | |
|-------------|-------------------------|---------------------------------------|
| pin no. | pin name | function |
| 1, 2 | GND | Ground |
| 3, 4 | +3V3 | 3,3V Power Supply |
| 5,6, 7, 8 | TPO-/TPO+/ TPI-/TPI+ | Ethernet communication lines |
| 9 | VCC3A | 3,3V Power output for Ethernet |
| 10,11 | nc | not connected |
| 12 | SPI_OB_CS2 | reserved |
| 13 | SPI_OB_MISO | reserved |
| 14 | SPI_OB_MOSI | reserved |
| 15 | SPI_PB_SCLK | reserved |
| 16 | IRQ_OB_02 | reserved |
| 17 | nc | not connected |
| 18 | COM1Rx | serial interface 1 Receiver |
| 19 | COM1Tx | serial interface 1 Transmitter |
| 20 | COM2Rx | serial interface 2 Receiver |
| 21 | COM2Tx | serial interface 2 Transmitter |
| 22 | COM3Rx | serial interface 3 Receiver |
| 23 | COM3Tx | serial interface 3 Transmitter |
| 24 | COM3EN | serial interface 3 Transmitter enable |
| 25 | nc | not connected |
| 26 | SLOT_C_IRQ | reserved |
| 27 | FS_DRVC_CD | Card detect for Drive C |
| 28 | SLOT_C_IN | reserved |
| 29 | FS_DRVC_CS | Card Select for Drive C |
| 30 | SLOT_D_IRQ | reserved |
| 31 | FS_DRVD_CD | Card detect for Drive D |
| 32 | SLOT_D_IN | Reserved |
| 33 | FS_DRVD_CS | Card Select for Drive D |
| 34 | FS_SPI_SCLK | File System SPI Shift Clock |
| 35 | nc | not connected |
| 36 | CAN0R | CAN interface 0 Receive |
| 37 | CAN0T | CAN interface 0 Transmit |
| 38 | Nc | not connected |
| 39 | CAN1R | CAN interface 1 Receive |
| 40 | CAN1T | CAN interface 1 Transmit |
| 41 | Nc | not connected |
| 42 | CAN2R | CAN interface 2 Receive |
| 43 | CAN2T | CAN interface 2 Transmit |
| 44 | nc | not connected |

| Header PL1A continued | | |
|------------------------------|-----------------|-------------------|
| pin no. | pin name | function |
| 45 | PWREN1# | Reserved |
| 46 | PWREN0# | Reserved |
| 47,48 | +3V3 | 3,3V Power Supply |
| 49,50 | GND | Ground |

| Header PL1B | | |
|--------------------|------------------|---|
| pin no. | pin name | function |
| 1, 2 | GND | Ground |
| 3, 4 | +3V3 | 3,3V Power Supply |
| 5 | IFULL | Ethernet LED Full Duplex Mode |
| 6 | ISPEED | Ethernet LED Speed Status |
| 7 | ILK | Ethernet LED Link Status / Activity |
| 8 | nc | not connected |
| 9 | VCC3A | 3,3V Power output for Ethernet |
| 10 | ALE | Address Latch Enable |
| 11 | PFAIL# | Power Fail |
| 12 | IN_OB_20 | Reserved |
| 13 | IN_OB_21 | Reserved |
| 14 | nc | not connected |
| 15 .. 22, | EX_AD0 .. EX_AD7 | External 8 bit data bus extension. Multiplexed address and data |
| 23...25 | nc | not connected |
| 26 .. 29 | EX_A8 .. EX_A11 | External 8 bit data bus extension. Address output |
| 30 | EX_RD# | External Bus Read |
| 31 | EX_WR# | External Bus Write |
| 32 | EX_CS0# | External Bus Chip Select |
| 33 | EX_CS1# | External Bus Chip Select |
| 34 | FS_SPI_MOSI | File System SPI Master Out Slave In Line |
| 35 | FS_SPI_MISO | File System SPI Master In Slave Out Line |
| 36 | CAN0LED0 | CAN interface 0 run LED |
| 37 | CAN0LED1 | CAN interface 0 error LED |
| 38 | nc | not connected |
| 39 | CAN1LED0 | CAN interface 1 run LED |
| 40 | CAN1LED1 | CAN interface 1 error LED |
| 41 | nc | not connected |
| 42 | RESOUT# | Reset Output |
| 43,44 | nc | not connected |
| 45 | FT_D+ | USB D+ |
| 46 | FT_D- | USB D- |
| 47,48 | +3V3 | 3,3V Power Supply |
| 49,50 | GND | Ground |

| Header PL2A | | |
|-------------|----------------------------|--|
| pin no. | pin name | function |
| 1,2 | GND | Ground |
| 3,4 | +3V3 | 3,3V Power Supply |
| 5 | BATIN | Battery input |
| 6 | DAP0 | Reserved |
| 7 | RST_MW# | Reserved |
| 8 | HBS# | Reserved |
| 9 | OUTEN# | Output Enable for external output power driver |
| 10 | MRXSTX | Reserved |
| 11 | MTXSRX | Reserved |
| 12 | OUT14 | Digital Output Byte 1.6 |
| 13 | OUT12 | Digital Output Byte 1.4 |
| 14 | OUT10 | Digital Output Byte 1.2 |
| 15 | OUT8 | Digital Output Byte 1.0 |
| 16 | OUT6 | Digital Output Byte 0.6 |
| 17 | OUT4 | Digital Output Byte 0.4 |
| 18 | OUT2 | Digital Output Byte 0.2 |
| 19 | OUT0 | Digital Output Byte 0.0 |
| 20 .. 23 | DCS01, DCS03, DCS02, DCS00 | Configuration Switch SW1 |
| 24 | nc | not connected |
| 25 | IN14 | Digital Input Byte 1.6 |
| 26 | IN12 | Digital Input Byte 1.4 |
| 27 | IN10 | Digital Input Byte 1.2 |
| 28 | IN8 | Digital Input Byte 1.0 |
| 29 | IN6 | Digital Input Byte 0.6 |
| 30 | IN4 | Digital Input Byte 0.4 |
| 31 | IN2 | Digital Input Byte 0.2 |
| 32 | IN0 | Digital Input Byte 0.0 |
| 33 | nc | not connected |
| 34 | AN_REF | Input Analog Reference Voltage for AINx |
| 35 | AIN0 | Analog Input Channel 0 |
| 36 | AIN1 | Analog Input Channel 1 |
| 37 .. 40 | DCS11, DCS10, DCS13, DCS12 | Configuration Switch SW2 Boot-Mode/Drive selection |
| 41,42 | nc | not connected |
| 43 | OOVERL# | Output Overload Monitoring Input |
| 44 | OE | Reserved |
| 45 | PLD_TCS | Reserved |
| 46 | PLD_TCK | Reserved |
| 47,48 | +3V3 | 3,3V Power Supply |
| 49, 50 | GND | Ground |

| Header PL2B | | |
|-------------|-------------|---|
| pin no. | pin name | function |
| 1,2 | GND | Ground |
| 3,4 | +3V3 | 3,3V Power Supply |
| 5 | BATIN | Battery Input |
| 6 | TRST# | Firmware update mode |
| 7 | DAP1 | Reserved |
| 8 | CAN3T | CAN interface 3 Transmit |
| 9 | CAN3R | CAN interface 3 Receive |
| 10 | DAISYi | Reserved |
| 11 | DAISYO | Reserved |
| 12 | OUT15 | Digital Output Byte 1.7 |
| 13 | OUT13 | Digital Output Byte 1.5 |
| 14 | OUT11 | Digital Output Byte 1.3 |
| 15 | OUT9 | Digital Output Byte 1.1 |
| 16 | OUT7 | Digital Output Byte 0.7 |
| 17 | OUT5 | Digital Output Byte 0.5 |
| 18 | OUT3 | Digital Output Byte 0.3 |
| 19 | OUT1 | Digital Output Byte 0.1 |
| 20 | POLAR_INP | Polarity Selector Input digital input channels |
| 21 | POLAR_OUTP | Polarity Selector Input digital output channels |
| 22 | nc | not connected |
| 23 | ANPW0 | Analog Output 0 PWM |
| 24 | ANPW1 | Analog Output 1 PWM |
| 25 | IN15 | Digital Input Byte 1.7 |
| 26 | IN13 | Digital Input Byte 1.5 |
| 27 | IN11 | Digital Input Byte 1.3 |
| 28 | IN9 | Digital Input Byte 1.1 |
| 29 | IN7 | Digital Input Byte 0.7 |
| 30 | IN5 | Digital Input Byte 0.5 |
| 31 | IN3 | Digital Input Byte 0.3 |
| 32 | IN1 | Digital Input Byte 0.1 |
| 33,34 | nc | not connected |
| 35 | P510 | Reserved |
| 36 | nc | not connected |
| 37 | LED0 | User LED 0 |
| 38 | LED1 | User LED 1 |
| 39 | LED2 | User LED 2 |
| 40 | FS_DRVD_LED | LED File system drive D |
| 41 | FS_DRVC_LED | LED File system drive C |
| 42 | FS_DRVA_LED | LED File system drive A |
| 43 | CAN2LED0 | CAN interface 2 run LED |
| 44 | CAN2LED1 | CAN interface 2 error LED |
| 45 | PLD_TDO | Reserved |
| 46 | PLD_TDI | Reserved |
| 47,48 | +3V3 | 3,3V Power Supply |
| 49, 50 | GND | Ground |

Pin Description

All Pins of the device work with 3,3V logic levels. The ranges of the analog inputs are also 0V to +3,3V. All ground signals are connected to module ground. All input / output pins are high impedance during reset. The hipecsCORE does not support internal pull up/down resistors. Use external components where needed. All digital input pins have Schmitt trigger characteristics. See chapter "Typical Applications" for additional information.

IN0 to IN15: Digital Input pins

In default operation mode these pins are digital inputs with a range from 0V to 3,3V. They all use internal Schmitt trigger circuits. The function of several input lines depends on setting of the selected hardware-configuration. (e.g. encoders)

POLAR_INP: Input Polarity

Pulling this pin to either low or high, sets the active polarity for the inputs to the corresponding level.

OUT0 to OUT15: Digital output pins

In default operation mode these pins are used as digital output lines with 3,3V levels. All output pins are high impedance during reset. The function of any alternative Output depends on setting of the selected hardware-configuration.

OUTEN#: Output Enable

The OUTEN# signal may be used to activate external output drivers.

POLAR_OUTP: Output Polarity

By pulling this pin to low, the active output polarity is low. Pulling this pin to Vcc, turns the output polarity to active high.

ANPW0/1: Analog output PWM

The CoDeSys analog output block is represented as a PWM signal on the ANPWx pins with a signal frequency of 2,5 kHz. By using an external circuit, the signal can be converted into an analog voltage.

CoDeSys Value Range:

0: (100% duty cycle)

10000: (0% duty cycle)

AIN0/1: Analog Input 0/1

Analog input pins from 0 ..3,3 Volt. Resolution 10 bit.

ANREF: Analog Reference input

Input for the analog reference voltage. Attention! Maximum reference voltage is Vcc!

OOVERL#: Output Overload Input

Use this pin to connect a diagnostic pin of the output drivers in order to detect malfunction or overload.

RESOUT#: Reset Output pin

The on board reset chip does the power up reset. It pulls the RESET# line low. So it is possible to reset external components during power up using this signal. For resetting the device, use the PFI pin.

TRST#: Firmware update mode

For activating the firmware update mode, the TRST# pin must be pulled to Vcc via a 1k pull up resistor.

PFAIL#: Power Fail

By pulling the power fail pin to low, the power fail interrupt will be executed by the firmware. This routine stores all non-volatile data types into the FRAM. Triggering must be done by external circuit.

BATIN: Battery Input

In order to maintain the RTC functionality if the device is not connected to the supply voltage, the RTC may be connected to a 3,3V battery. The battery may be mounted on the hipecsCORE 10 module or the voltage is kept by supplying this pin.

COMx Rx/Tx:

Receive and transmit lines for serial RS232 interfaces. All signals are 3,3 Volt signals. To set up an external communication, interface drivers are required on the application board. COM3 can also be used as a RS422 interface.

ALE / EX_AD0..7 / EX_A8..11 / RD# / WR#:

The hipecs provides an external data bus extension. Address and data lines 0..7 are multiplexed by using the address latch enable (ALE) signal. An external Latch is necessary. Read (EX_RD#), write (EX_WR#) and chips select signals are generated by the hipecs firmware. Read/Write access is provided by a library.

FT_D+/FT_D-:

Data lines for USB interface. The data lines can be directly connected to a USB connector.

The hipecs provides 2 separated serial connections via USB. One (lower) is for CoDeSys programming, the other one (higher) provides a shell communication via hyper terminal.

LEDs:

The hipecsCORE 10 module offers several pins for connecting specific LEDs. All of these pins are **active low**.

FS_XX: File system

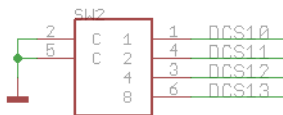
The hipecsCORE10 provides a file system, which can handle up to 3 SD cards. Depending on the device configuration, the cards can be on the module or on the application board. Please check jumper setting for exact information. The file system is realized with a SPI bus system and needs the following signal lines for all SPI devices: FS_SPI_MISO, FS_SPI_MOSI and FS_SPI_SCLK. The signals FS_DRVX_CD report detection of Drive X. (A, C & D are available at this time) The signals FS_DRVX_CS are used for activating the corresponding drive X. (A,C & D are available at this time)

DCS00...DCS03: Configuration Switch 0

Reserved for future use. Leave these pins unconnected.

DCS10...DCS13: Boot Drive Configuration Switch

By connecting rotary encoder switches to these pins, it is possible select the boot drive and the boot mode of the device.



The following configurations are supported at the moment.

| Switch Pos | DCS | | | | Boot-Mode |
|------------|-----|----|----|----|--|
| | 10 | 11 | 12 | 13 | |
| 0 | 1 | 1 | 1 | 1 | Normal boot from internal SD-Card Drive A |
| 1 | 0 | 1 | 1 | 1 | Normal boot from external SD-Card Drive C |
| E | 1 | 0 | 0 | 0 | Only start boot loader from internal SD-Card Drive A |
| F | 0 | 0 | 0 | 0 | Only start boot loader from external SD-Card Drive C |

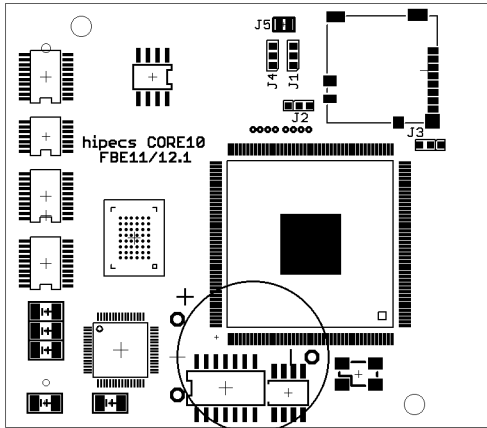
Memory

Memory Size

The following table shows the memory that is available for the PLC application program and data

| | hipecsCORE10 | |
|-------------------------|------------------------------|--|
| data memory | 1 MByte | |
| code memory | 3 Mbyte | |
| retain memory | 4 kByte | |
| file system FAT16/FAT32 | max. 3 SD-cards 4 GB each | |

Jumper Settings



| Jumper | Setting | Function |
|--------|---------|--|
| J1 | | Card Select for SD-Card |
| | 1-2 | onboard SD on top is drive C |
| | 2-3 | onboard SD on top is drive A |
| J2 | | Reserved for future use. Do not change! |
| | 1-2 | standard setting |
| | 2-3 | |
| J3 | | Reserved for future use. Do not change! |
| | 1-2 | standard setting |
| | 2-3 | |
| J4 | | Card Detect Line for SD-Card |
| | 1-2 | onboard SD on top is drive C |
| | 2-3 | onboard SD on top is drive A |
| J5 | | Card Detect for soldered SD (special version!) Use only if card is soldered! |
| | open | No Card Detect for soldered SD. This is standard setting! |
| | closed | Set Card Detect for soldered SD (bottom side). Card is drive A then! |

Absolute Maximum Ratings

Stresses greater than those listed parameters may cause permanent damage to the device. Functional operation should be restricted to recommended operation conditions. Exposure to absolute maximum rating conditions for extended times may affect reliability.

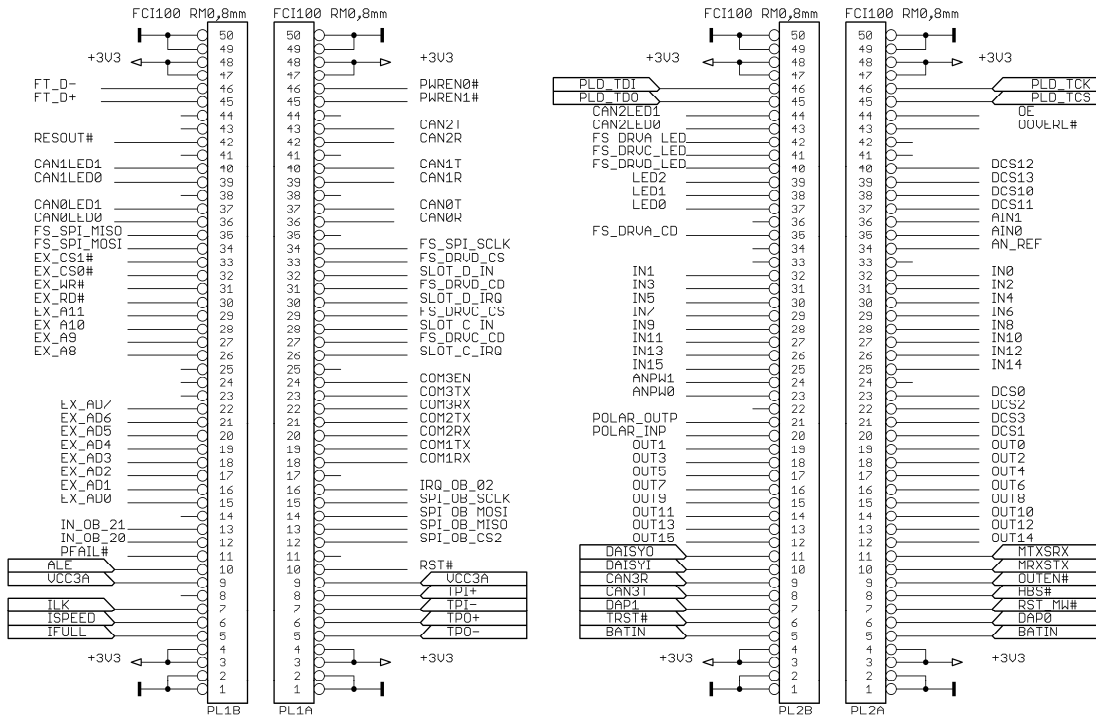
| Parameter | Symbol | Rated Value | | | Units | Remarks |
|--------------------------------|------------------|-------------|--|------|-------|--|
| | | Min. | | Max. | | |
| Power supply voltage | VCC | -0.2 | | 3.5 | V | |
| Analog power supply voltage | AVCC | VCC - 0.3 | | VCC | V | |
| Analog reference voltage | AVREF | VCC - 0.3 | | VCC | V | |
| Input voltage | Vi | -0.3 | | | V | |
| Output voltage | Vo | VCC - 1.0 | | | V | |
| L level maximum output current | IOLMAX | | | | mA | |
| L level maximum output current | IOL | | | | mA | |
| H level maximum output current | IOHMAX | 10 | | | mA | max. 3 parallel outputs / max 50 mA for all channels |
| H level nominal output current | IOH | 2,5 | | | mA | |
| Maximum Power dissipation | P _{MAX} | | | | mW | |
| Operating temperature | T _A | 0 | | 70 | °C | Standard temperature version |
| | T _A | -40 | | 85 | °C | Extended temperature version |
| Storing temperature | T _A | -50 | | 125 | °C | |

Recommended Operation Conditions and Characteristics

Functional operation should be restricted to recommended operation conditions.

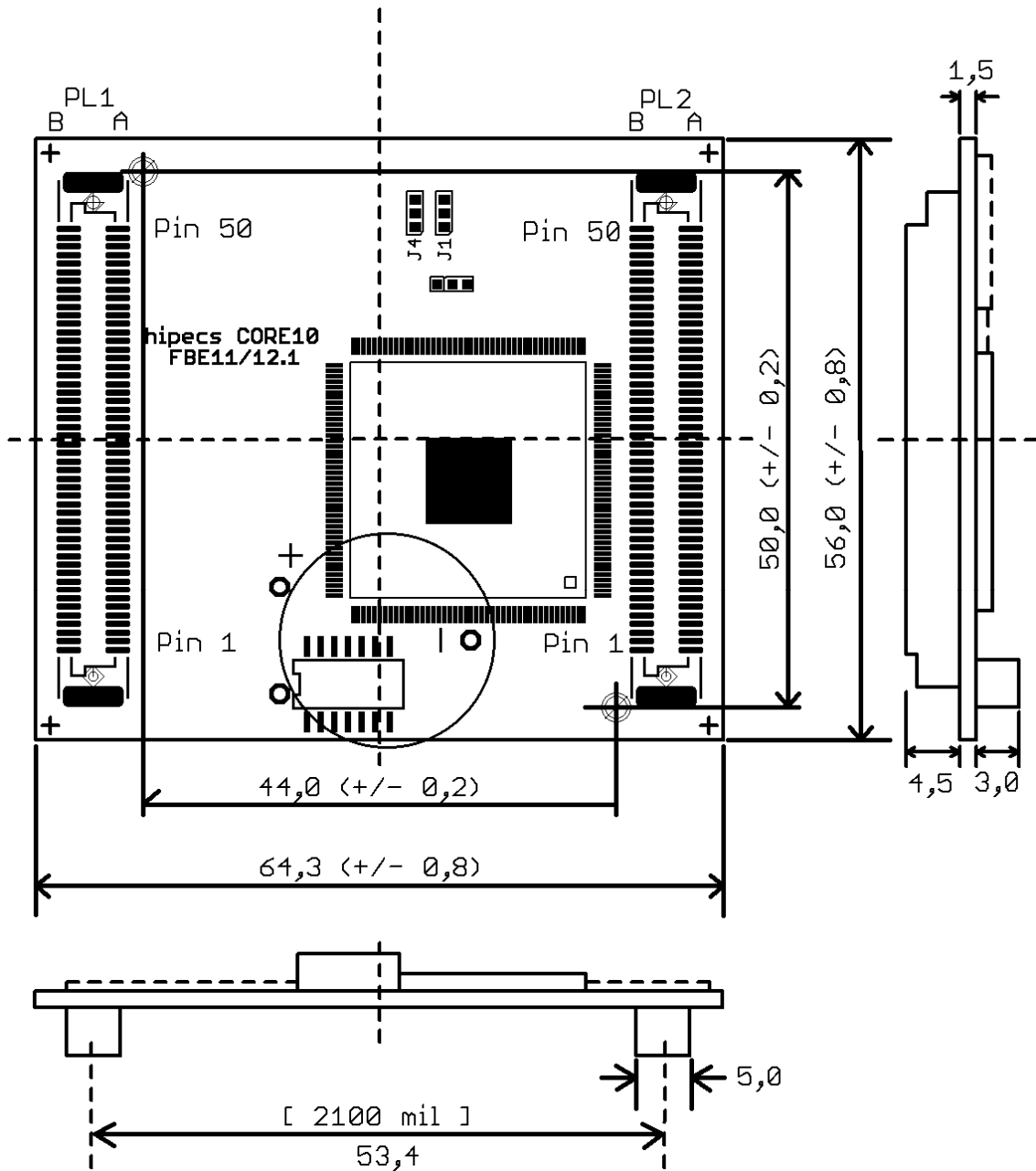
| Parameter | Symbol | Rated Value | | | Units | Remarks |
|-----------------------------|--------------------|-------------|------|-----------|-------|--|
| | | Min. | Typ. | Max. | | |
| Power supply voltage | VCC | 3.0 | 3.3 | 3.5 | V | |
| Analog power supply voltage | AVCC | | VCC | | V | |
| Analog reference voltage | AVREF | | VCC | | V | |
| Battery Voltage | VRTC | | 3.0 | | V | |
| Power supply current | I _{CC} | | 250 | 350 | mA | All inputs V _{IL} or V _{IH} All outputs open |
| Power supply current | I _{CC} | | 380 | 500 | mA | CAN-Tranceiver, Line drivers and Ethernet transformer connected. No Ethernet cable conn. |
| Power supply current | I _{CC} | | 420 | 550 | mA | Ethernet cable connected and communication running |
| Input H voltage | V _{IH} | 0.8 * VCC | | VCC + 0.3 | V | |
| Input L voltage | V _{IL} | VSS - 0.3 | | 0.3 * VCC | V | |
| Output H voltage | V _{OH} | VCC - 0.4 | | | V | |
| Output L voltage | V _{OL} | | | 0.4 | V | |
| Input leakage current | I _{LKC} | | 0.2 | 2.5 | uA | |
| Reset pulse width | t _{res} | 100 | | | us | |
| Power on rise time | t _{RESLH} | | | | ms | |
| Maximum Power dissipation | P _{MAX} | | | | mW | |

Pinning



Pinning of hipecs CORE10 FCI connectors
(top view / module transparent)

Dimensions



All dimensions are given in mm! Exceptions in []

Version History And Changes

The following table shows all relevant changes of the device and datasheet during product life time.

| Version | Date | Changes |
|-------------|-------------|---|
| 1.0 Rev. 02 | Oct/11/2012 | First version |
| 1.0 Rev. 03 | Dec/03/2012 | Changed number of CAN interfaces to four |
| 1.0 Rev. 04 | Dec/17/2012 | Changed picture of pinning according to CAN interface changes |
| 1.0 Rev. 05 | Mar/04/2013 | Rework of dimensions and ordering information, added jumper setting |
| 1.0 Rev. 06 | Mar/11/2013 | Current draw added |
| 1.0 Rev. 07 | Aug/29/2013 | Added TRST# pin description |
| 1.0 Rev. 08 | Mar/18/2014 | Description of pins DCSxx corrected |

Ordering Information

| Part Number | Part Name | Description |
|-------------------------|-------------------|--|
| PLC Modules | | |
| EZ00000.2000.01 | hipecs CORE10 | PLC-Core-Module with IEC61131 programmable embedded PLC, 16/16 digital I/O, 2 analog inputs, CANopen Master/Slave, SGI visualization, 3 ser. interfaces, CoDeSys programming system 2 x USB, Filesystem, SD-Card, Ethernet, RTC, FCI-connector temperature range 0°... 70°C |
| EZ00000.2100.01 | hipecs CORE10E | PLC-Core-Module with IEC61131 programmable embedded PLC, 16/16 digital I/O, 2 analog inputs, CANopen Master/Slave, SGI visualization, 3 ser. interfaces, CoDeSys programming system 2 x USB, Filesystem, SD-Card, Ethernet, RTC, FCI-connector extended temperature range -40°... 85°C |
| Evaluation Board | | |
| EZ00000.2040.01 | hipecs-CORE10-EVA | Evaluation board for hipecs CORE10 module, wall power supply included, with FCI connectors |
| FCI Connectors | | |
| EZ00000.0173.01 | M167-CON9/FCI | SMD-Connector FCI / PCB to PCB distance 9 mm / 2 pieces necessary |
| EZ00000.0174.01 | M167-CON5/FCI | SMD-Connector FCI / PCB to PCB distance 5 mm / 2 pieces necessary |

Attention please!

All rights reserved.

The information herein is given to describe certain components and shall not be considered as warranted characteristics. Terms of delivery and all rights to technical changes are reserved.

We hereby disclaim any and all warranties, including but not limited to warranties of non-infringement, regarding circuits, descriptions and charts stated herein.

The electronic product described in this document is designed, developed and manufactured as contemplated for general use, including without limitation, ordinary industrial use, general office use, personal use, and household use, but is not designed, developed and manufactured for use in applications accompanying fatal risks or dangers that, could have a serious effect to the public, and could lead to death, personal injury, severe physical damage or other loss (i.e. nuclear reaction control in nuclear facility, aircraft flight control, air traffic control, mass transport control, medical life support system, missile launch or flight control or in weapon system).

The product is not designed, developed and manufactured for applications requiring extremely high reliability (i.e. submersible repeater and artificial satellites).

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Any electronic products and/or semiconductor devices have an inherent chance of failure. You must protect against injury, damage or loss from such failures by incorporating safety design measures into your application, facility and equipment such as redundancy, fire protection, and prevention of over-current levels and other abnormal operating conditions.

The product includes run time licenses for CODESYS PLC and VISU for international use, but the product is not licensed for usage in the United States of America (USA).

The product described herein is not UL rated.

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