

NET3140P2E-ECM

EtherCAT Controller with PCI and PCIe Expansion Slots



Main Features

- Support Intel® Core™ 2 Duo/Celeron® processor
- EtherCAT technology with NexECM, Class B EtherCAT Master, and RTX2012
- EtherCAT communication cycle up to 250 µs
- Support CoE protocol
- Support high-level API for CiA 402 profile
- Build-in full function EtherCAT application configurator, NexCAT
- Dual VGA or VGA/DVI Independent Display
- 3 x RS232 and 1 x RS232/422/485 with Auto Direction Control
- One external locked CF socket
- OnBoard DC to DC power design to support +16 to 30VDC power input

Product Overview

Utilizing the Intel® GM45 chipsets, NET3140P2E-ECM is highly scalable supporting a wide variety of Intel® Core™ 2 Duo and Celeron® processors. With pre-installed NexECM EtherCAT master software, NET3140P2E-ECM delivers exceptional performance with notable stability. NET3140P2E-ECM supports dual independent displays through 2 x VGA, DVI or LVDS outputs. Housed in a robust aluminum chassis, its fanless design offers noise-free, ultra reliable operating in the demanding industrial environment. NET3140P2E-ECM offers comprehensive and easy-to-use application configurator, NexCAT, for system development and debugging to speed up development period.

Specifications

Main Board

- NISB 3140
- Support Intel® Core™ 2 Duo Processor P8400 (3M Cache, 2.26GHz, 1066MHz FSB)
- Support Intel® Celeron® Processor 575 (1M Cache, 2.00GHz, 667MHz FSB)

Main Memory

- 2 x 240-pin DIMM, up to 4GB DDR3 800/1066MHz SDRAM, un-buffered and non-ECC

Chipset

- Intel® GM45 Graphics and Memory Controller Hub
- Featuring the Mobile Intel® Graphics Media Accelerator 4500MHD
- Intel® 82801IBM (ICH9M) I/O Controller Hub

I/O Interface-Front

- ATX power on/off switch
- HDD Access/Power status LEDs
- 1 x Front Access CF Card Socket
- 2 x USB 2.0 ports

I/O Interface-Rear

- 2-pin Remote Power on/off switch
- +16 to 30VDC input

- 1 x PS/2 for Keyboard/Mouse
- 1 x DB25 Parallel Port (Optional GPIO or LVDS interface)
- 1 x DB44 Serial Port for 4 x RS232 (COM2: RS232/422/485 with Auto Flow Control)
- 2 x GbE LAN ports (support WoL & LAN teaming)
- 4 x USB 2.0 ports
- 1 x DB15 VGA port
- 1 x DVI-I Port (DVI-D + VGA)
- 1 x Line-out and 1 x Mic-in

Device

- 1 x 2.5" SATA HDD drive bay
- 1 x external locked CF card socket
- Optional power adapter

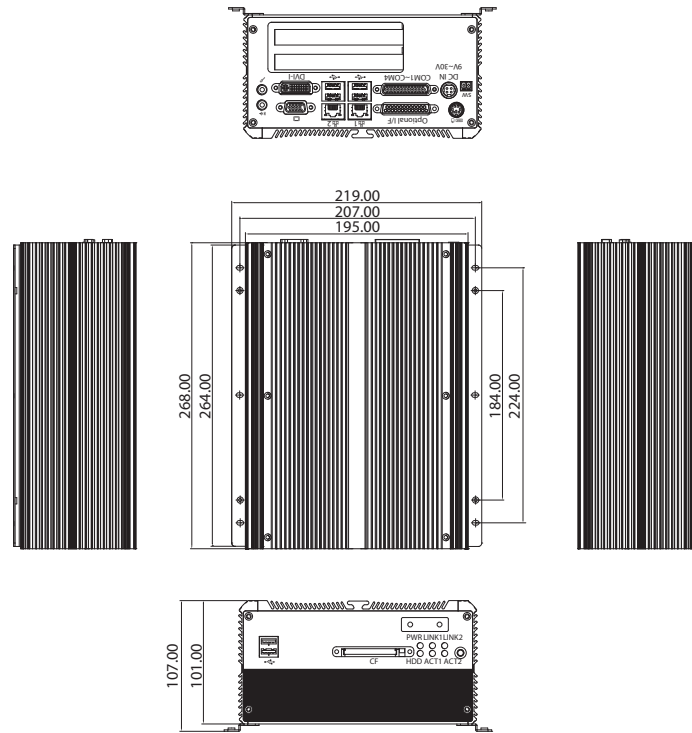
Pre-installed Software Package

- Operating System: Windows Embedded Standard 7
- Windows Extension: RTX 2012
- EtherCAT Master: NexECM
- EtherCAT Configurator: NexCAT

Expansion

- Add-on card length support:
 - Max. 169mm x1 and 240mm x1 (with 2.5" HDD installed)
 - Max. 240mm x2 (without 2.5" HDD installed)

Dimension Drawing



Power Requirements

- ATX power mode
- OnBoard DC to DC power support from +16 to 30VDC

Dimensions

- 195mm (W) x 268mm (D) x 101mm (H) (7.7" x 10.5" x 3.98")

Environment

- Operating temperature:
Ambient with air flow: -5°C to 55°C
(According to IEC60068-2-1, IEC60068-2-2, IEC60068-2-14)
- Storage temperature: -20°C to 80°C
- Relative humidity: 10% to 93% (non-condensing)
- Shock protection:
 - HDD: 20G, half sine, 11ms, IEC60068-2-27
 - CF: 50G, half sine, 11ms, IEC60068-2-27
- Vibration protection w/ HDD Condition
 - Random: 0.5Grms @ 5 ~ 500Hz according to IEC60068-2-64
 - Sinusoidal: 0.5Grms @ 5 ~ 500Hz according to IEC60068-2-6

Certifications

- CE approval
- FCC Class B

Ordering Information

EtherCAT Controller

- **NET3140P2E-ECM (P/N: 10J10314000X0)**
EtherCAT Controller with PCI and PCIe Expansion Slots
- **19V, 120W AC/DC power adapter w/ o power cord (P/N: 7410120002X00)**

Remote I/O

- **AXE-9200 (P/N: 10J40920000X0)**
Remote I/O module with 16-CH digital input and 16-CH digital output

EtherCAT Support Table

Feature Name	Short Description	NexECMRtx
Basic Features		
Service Commands	Support of all commands	√
IRQ field in datagram	Use IRQ information from Slave in datagram header	√
Slaves with Device Emulation	Support Slaves with and without application controller	√
EtherCAT State Machine	Support of ESM special behavior	√
Error Handling	Checking of network or slave errors, e.g. Working Counter	√
Process Data Exchange		
Cyclic PDO	Cyclic process data exchange	√
Network Configuration		
Reading ENI	Network Configuration taken from ENI file	√
Compare Network configuration	Compare configured and existing network configuration during boot-up	√
Explicit Device Identification	Identification used for Hot Connect and prevention against cable swapping	√
Station Alias Addressing	Support configured station alias in slave, i.e. enable 2nd Address and use it	√
Access to EEPROM	Support routines to access EEPROM via ESC register	√
Mailbox Support		
Support Mailbox	Main functionality for mailbox transfer	√
Mailbox polling	Polling Mailbox state in slaves	√
CAN application layer over EtherCAT (CoE)		
SDO Up/Download	Normal and expedited transfer	√
Complete Access	Transfer the entire object (with all sub-indices) at Once	√
Distributed Clocks		
DC	Support of Distributed Clock	√