# NET 3140P2E-ECM





## Main Features

- Support Intel® Core™ 2 Duo/Celeron® processor
- EtherCAT technology with NexECM, Class A EtherCAT Master
- 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
- 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 30Vpc power input

## **Product Overview**

Utilizing the Intel® GM45 chipsets, NET 3140P2E-ECM is highly scalable supporting a wide variety of Intel® Core™ 2 Duo and Celeron® processors. With pre-installed NexECM EtherCAT Master software, NET 3140P2E-ECM delivers exceptional performance with notable stability. NET 3140P2E-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. NET 3140P2E-ECM offers comprehensive and easy-to-use application configurator for system development and debugging to speed up development period.

## **Specifications**

#### EtherCAT Master

- Slave module no.: up to 64
- Cycle time: up to 250 µs
- Synchronization error: ±50ns
- Support CiA 402 standard protocol

#### **CPU** support

• Support Intel® Core™ 2 Duo P8400

#### Main Memory

• 2 x 2GB DDR3 SDRAM

#### 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 30Vpc 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

#### 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)

## Power Requirements

- ATX power mode
- Onboard DC to DC power support from +16 to  $30V_{DC}$

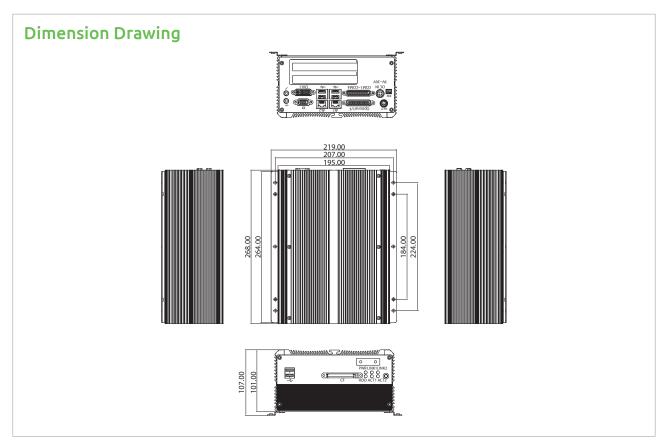
#### Dimensions

• 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)





- $\bullet~$  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

## Pre-Installed Software Package

- Operating system: Windows Embedded Standard 7
- Real-time extension:
  - RTX2012/RTX2016 for 32-bit OS
  - RTX2014 for 64-bit OS
- EtherCAT Master: NexECM
- EtherCAT configurator

## **EtherCAT Support Table**

Feature Name	Short Description	NexECMRtx	
Basic Features			
Service Commands	Support of all commands	V	
IRQ Field in Datagram	Use IRQ information from Slave in datagram header	V	
Slaves with Device Emulation	Support Slaves with and without application controller	V	
EtherCAT State Machine	Support of ESM special behavior	V	
Error Handling	Checking of network or slave errors, e.g. working counter	V	

Process Data Excha	ange		
Cyclic PDO	Cyclic process data exchange	V	
Network Configura	ation		
Reading ENI	Network configuration taken from ENI file	V	
Compare Network Configuration	Compare configured and existing network configuration during boot-up	V	
Explicit Device Identification	Identification used for Hot connect and prevention against cable swapping	V	
Station Alias Addressing	Support configured station alias in slave, i.e. enable 2nd Address and use it	V	
Access to EEPROM	Support routines to access EEPROM via ESC register	V	
Mailbox Support			
Support Mailbox	Main functionality for mailbox transfer	V	
Mailbox Polling	Polling mailbox state in slaves	V	
CAN Application Layer Over EtherCAT (CoE)			
SDO Up/ Download	Normal and expedited transfer	V	
Complete Access	Transfer the entire object (with all sub-indices) at once	V	
Distributed Clocks			
DC	Support of distributed clock	V	

# **Ordering Information**

- NET 3140P2E-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)

NECOM Machine Automation