NET3500-ECM

EtherCAT Controller with one PCI Expansion Slot

Main Features

- Support Intel® Core™ i7/i5 socket 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 Flow Control
- 5th RS232 (option: 4 x digital input, 4 x digital output)
- Support +9 to 30VDC power input; Support ATX power mode

Product Overview

Utilizing 32nm Intel® Core™ i7/i5 processor, NET3500-ECM features Intel® Turbo Boost and Intel® Hyper-Threading technologies (2 cores, 4 threads), as well as on-processor graphics and two DDRIII 800/1066 memory modules up to 4GB. In addition, NET3500-ECM provides a wide variety of display I/O configurations and rich I/O interfaces including two Intel® GbE Ethernet ports, 5 x COM ports, 6 x USB, 8 x GPIO, 2 x SATAII, 2 x eSATA, audio interfaces. NET3500-ECM is designed for a broad range of applications which demand an EtherCAT controller to handle advanced motion & I/O control.

Specifications

Main Board

- NISB 3500
- OnBoard Mobile Intel® QM57 Platform Controller Hub
- Support Intel® Core™ i7-620M PGA Processor (2.66GHz, 4M Cache)
- Support Intel® Core™ i5-520M PGA Processor (2.4GHz, 3M Cache)
- Support Intel® P4500 PGA Processor (1.86GHz, 2M Cache)

Main Memory

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

I/O Interface-Front

- ATX power on/off switch
- HDD Access/Power status LEDs
- 2 x USB 2.0 ports
- 2 x eSATA ports

I/O Interface-Rear

- 2-pin Remote Power on/ff switch
- +9 to 30VDC input
- 1 x PS/2 for Keyboard/Mouse
- 1 x DB9 for COM5, RS232 (option: 4 x GPI and 4 x GPO)
- 1 x DB44 Serial Port for 4 x RS232 (COM2: RS232/422/485 with auto flow control)
- 2 x GbE LAN ports; Support WoL and PXE
- 4 x USB 2.0 ports
- 1 x DB15 VGA port
- 1 x DVI-I port
- 1 x Line-out and 1 x Mic-in

Pre-installed Software Package

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

Device

- 1 x 2.5" HDD driver bay

Expansion

- 1 x PCI expansion (10W max./per slot)
- Add-on card length: 169mm max.

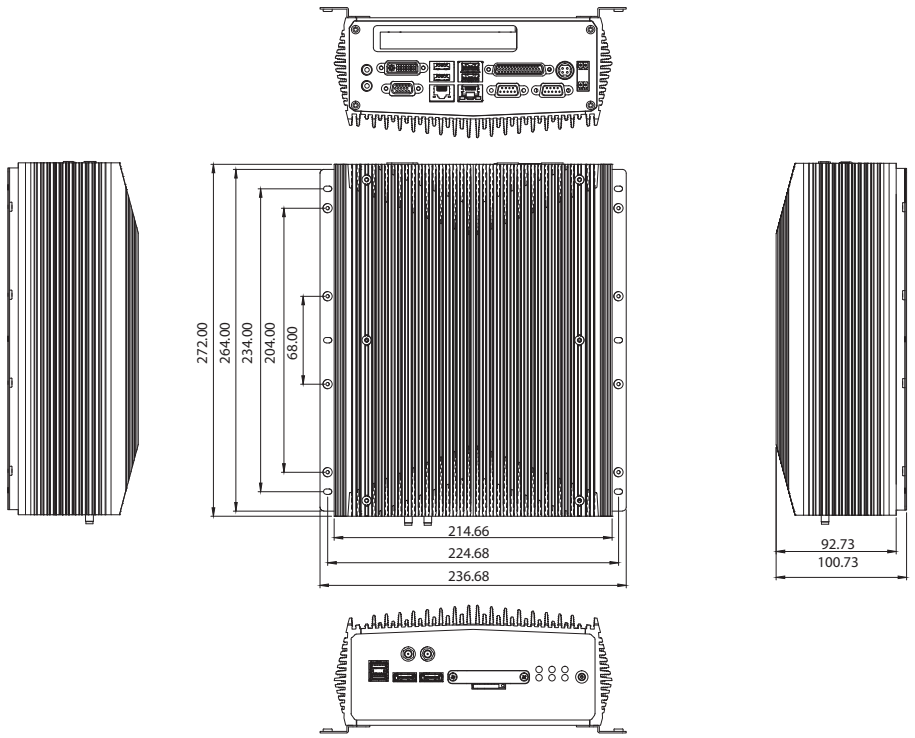
Power Requirements

- ATX power mode
- OnBoard DC to DC power support from +9 to 30VDC
- Optional power adapter

Dimensions

- 195mm (W) x 268mm (D) x 80mm (H) (7.7" x 10.5" x 3.1")

Dimension Drawing



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
- Vibration protection:
  - Random: 0.5Grms @ 5 ~ 500 Hz according to IEC68-2-64
  - Sinusoidal: 0.5 Grms @ 5 ~ 500 Hz according to IEC68-2-6

Certifications

- CE approval
- FCC Class B
- UL/cUL
- e13

Ordering Information

EtherCAT Controller

- **NET3500-ECM (P/N: 10J10350000X0)**
  EtherCAT Controller with one PCI Expansion Slot
- **19V, 120W AC/DC Power Adapter w/ o power core**
  (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	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 Exchange		
Cyclic PDO	Cyclic process data exchange	V
Network Configuration		
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