



Main Features

- OnBoard Intel® Atom™ Dual Core D2550 processor, 1.86GHz
- 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
- 2 x RS232/422/485 and 2 x RS232
- 6 x USB 2.0
- 1 x external CFast socket
- 1 x Mini-PCIe with two antenna holes

Product Overview

Powered by Intel® Atom™ Dual Core D2550 1.86GHz and NM10 PCH, NET104-ECM has higher graphic and computing performance, but less power consumption! With performance enhance, NET104-ECM is an ideal compact EtherCAT controller with fanless and cables-less concept housed in a compact chassis, 185mm (W) x 131mm (D) x 54mm (H). The NET104-ECM offers dual independent display capability through DVI-I and HDMI connectors, Dual Intel® GbE LAN ports, 6 x USB 2.0, 2 x RS232, 2 x RS232/422/485, CFast socket and Mini-PCIe socket for optional wireless module connection, either Wi-Fi or 3.5G module.

NET104-ECM's support for +10 to 28VDC input enhances its reliability in different power condition in factory automation or machinery automation. NET104-ECM offers comprehensive and easy-to-use application configurator, NexCAT, for system development and debugging to speed up development period.

Specifications

CPU Support

- OnBoard Intel® Atom™ Dual Core D2550 processor, 1.86GHz,
- 1M L2 cache
- Intel® NM10 Express chipset

Main Memory

- 1 x DDR3 SO-DIMM sockets, support up to 4G DDR3 800/1066
- SDRAM, un-buffered and non-ECC

I/O Interface-Front

- ATX power on/off switch
- HDD access/power status LEDs
- 4 x COM ports (COM2& 3: RS232/422/485)
- 2 x USB 2.0 port
- Audio jack (Line-out and Mic-in)
- 2 x antenna holes

I/O Interface-Rear

- Dual Intel® 82574L GbE LAN ports; Support WoL, teaming and PXE
- 4 x USB 2.0 port
- 1 x HDMI
- 1 x DVI-I (support VGA & DVI-D display via cable)
- 1 x 2-pin DC input, Support +10 to 28VDC input
- 1 x external screwed type CFast socket

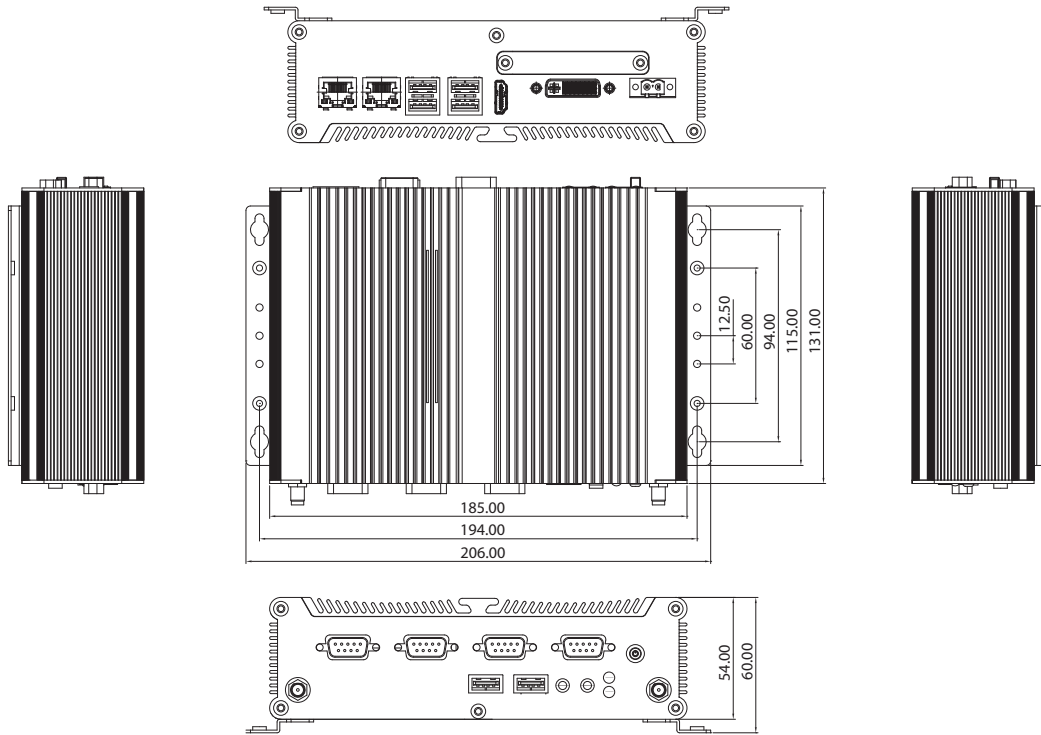
Device

- 1 x 2.5" HDD driver bay
- 1 x External CFast Socket
- 1 x Mini-PCIe socket (support optional Wi-Fi or 3.5G module)

Pre-installed Software Package

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

Dimension Drawing



Dimensions

- 185mm (W) x 131mm (D) x 54mm (H) (7.28" x 5.2" x 2.13")

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
 - CFast: 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 A
- UL

Ordering Information

EtherCAT Controller

- **NET104-ECM (P/N: 10J10010400X0)**
Compact EtherCAT controller
- **12V, 60W AC/DC power adapter w/ o power cord**
(P/N: 7400060018X00)

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	√