



Main Features

- EtherCAT technology with NexECM, Class A EtherCAT master
- EtherCAT communication cycle up to 250 μ s
- Support high-level API for CiA 402 profile
- Support Intel® 6th processor
- Intel® H110 PCH
- 1 x VGA, and 1 x HDMI for dual independent display
- 1 x front access 2.5" SATA HDD tray
- 1 x mini-PCIe socket support optional modules

Product Overview

The ECM-M100 EtherCAT controller, built-in 6th generation Intel® Celeron G3900 processor (Skylake-S). Based on a real-time operating system, ECM-M100's communication cycle time can be up to 250 μ s, and also offers EtherCAT distributed clocks functions. The EtherCAT controller supports up to 64 slave modules which could be a wide variety of third-party devices, such as servo motors/drives and I/O modules.

ECM-M100 is the ideal intelligence system for machine applications. Its front-access I/O Design simplifies the wiring, and it provides expansion mini-PCIe slot which can integrate other Fieldbus devices for more application possibilities.

Specifications

EtherCAT Master

- Slave module no.: up to 64
- Cycle time: up to 250 μ s
- Synchronization error: $\pm$ 50ns
- Support CiA 402 standard protocol

NexECM Stuido

- Powerful configuration tool:
- Verification EtherCAT slave hardware configuration
- Setting parameter for EtherCAT protocol
- Setting parameter for EtherCAT slave
- Control EtherCAT slave

CPU Support

- Intel® Celeron® G3900 Processor

Main Memory

- 1 x 4 GB DDR4 2400 SO-DIMM.

Display

- Dual independent display
- VGA and HDMI

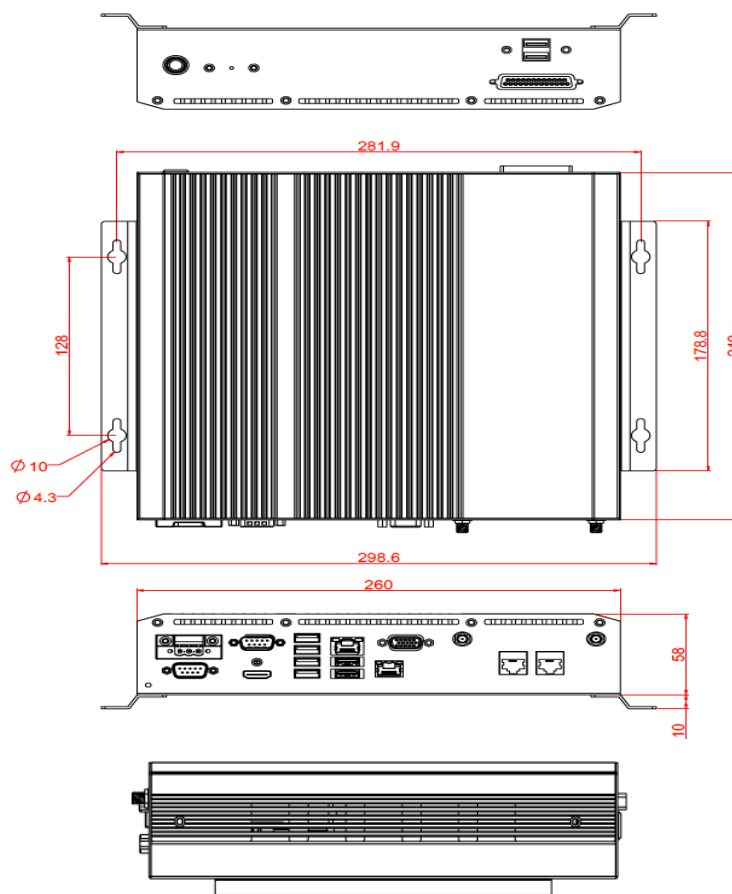
System

- 4 x Gbe LAN :
- 2 x USB3.0, 6 x USB2.0
- 1 x RS232/485/422.
- 12x GPI, 4 GPO, WDT

NexECM Function List

Feature Name	Short Description
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 functions 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 SDO Info Service	Transfer the entire object (with all sub-indices) at Once Services to read object dictionary
Emergency Message	Receive emergency messages
Distributed Clocks	
DC	Support of distributed clock

ID



Storage

- 1 x SATA III (6.0Gb/s) ports.

Expansion Slot

- 1 x PCIe16, 1 x Mini PCIe.

Rear I/O

- 1 x DB9 for RS232/422/485
- 1 x HDMI
- 1 x 4 deck USB2.0
- 1 x DB15 for VGA
- 4 x LAN port
- 2 x I210 + 2 x I211 GbE LAN by MARS100 SKU.
- 2 x I211 GbE LAN by MARS100-211 SKU.
- 1x 3pin Terminal block for DC24V in, pin define: +24V, GND, NC

Front I/O

- 1 x Power switch
- 1 x Reset switch
- 2 x USB2.0 Double deck
- 1 x DB25 for GPIO

Power Requirement

- Typical 24V DC input with $\pm 10\%$ range

Dimensions

298.6 mm(W) x 249 mm (D) x 68 mm (H)
 without wall mount bracket (260 mm(W) x 249 mm (D) x 58 mm (H))

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 95% (non-condensing)
- Shock protection:
 - SSD: 20G, half sine, 11ms, IEC60068-2-27
 - CFast: 50G, half sine, 11ms, IEC60068-2-27
- Vibration protection w/ CFast & SSD condition:
 - Random: 2Grms @ 5~500Hz, IEC60068-2-64
 - Sinusoidal: 2Grms @ 5~500Hz, IEC60068-2-6

Certifications

- Meet CE / FCC Class A

Pre-installed Software Package

- Operating system: WES7 (32/64 bit) or Win10 (64bit)
- Real-time OS
- EtherCAT Master Software: NexECM

Ordering Information

- **ECM-M100 (P/N: 10JF0MARS01X0)**
EtherCAT Master Controller
- **ECM-M100 (P/N: A0ECMM10001XF)**
EtherCAT Master Controller
Without Memory, Storage, Windows 7/10
License, Adapter. With NexECM bundle
Intime 6 runtime.