CPU-163-16

Rugged Fanless COM Express Mini Type 10 - Intel Atom E3900 Series

- **Powerful**
- **Rugged**
- **Small**
- **Low Power**
- **Fanless**
- **IoT Support**
- **Professional Services**

Features

Powerful - Powered by Intel Atom E39xx CPU: two and four core configurations, up to 1.6GHz (2.0GHz burst)

Rugged - Supporting wide operating temperature (-40 to +85°C), conformal coating options, soldered CPU, ECC RAM and flash storage

Small - Compliant with PICMG COM Express R2.1, with a 84x55mm (Mini) form factor and a Type 10 pinout

Low Power - Enabling fanless designs with a CPU TDP starting from 6W

IoT Support - Core support for IoT, including IoT middleware and access to Eurotech IoT Integration Platform

Professional Services - Cuts Time-To-Market with Eurotech Design Services, which include deep module customization, BIOS personalization, carrier board and system design and production

Description

The CPU-163-16 is a rugged COM Express module designed to meet the requirements for Industrial, Transportation and Defense rugged fanless applications.

Compliant with PICMG COM Express® R2.1, Type 10, the CPU-163-16 is a Mini (84x55mm) form factor module based on the Intel Atom E3900 processor family with 2 and 4 cores, up to 8GB ECC RAM and up to 64GB eMMC.

Other features include high speed interfaces: one Gbit Ethernet, two SATA 3.0, two USB 3.0 and eight USB 2.0, four PCIe x1 Gen 3, one LVDS and one DDI (supporting HDMI, DVI and DP).

The CPU-163-16 features soldered down ECC memory and flash storage, making it the ideal hardware platform for applications requiring long life cycle, resistance to vibration and reliable data retention, even in extended temperature.

Supported Operating Systems include Linux and Windows 10 IoT Enterprise. The CPU-163-16 is also an ideal building block for IoT projects, supporting core Everyware Software Framework (ESF) capabilities. ESF is a commercial, enterprise-ready edition of Eclipse Kura, the open source Java/OSGi middleware for IoT gateways. Full porting of ESF on the customer carrier is available as a Professional Service.

Distributed and supported by Eurotech, ESF delivers ready-to-use Field protocols (including Modbus, OPC-UA, S7), MQTT connectivity, web-based visual data flow programming and deep configuration. ESF is also integrated with Everyware Cloud (EC), Eurotech IoT Integration Platform (separately available), enabling advanced diagnostics, provisioning, and full remote device access and management.

Professional Services are available for the CPU-163-16, starting from BIOS personalization and including carrier board design, system development and production. Deep module customization, such as feature changes are also available to select customers.

Ordering code: CPU-163-16-XX						
XX	-01	-02	-03	-04	-05	-06
PROCESSOR — CPU	Intel Atom x5-E3930 1.30/1.80GHz, 2 Core		Intel Atom x5-E3940 1.60/1.80GHz, 4 Cores			Intel Atom x7-E3950 1.60/2.00GHz, 4 Cores
BIOS — Type	AMI BIOS					
BIOS — Size	128Mbit SPI BIOS (UEFI Boot Only)					
MEMORY — RAM	4GB 1600MHz DDR3L	8GB 1600MHz DDR3L	4GB 1600MHz DDR3L	8GB 1600MHz DDR3L	8GB 1600MHz DDR3L	8GB 1600MHz DDR3L
MEMORY — ECC	No	Yes	No		Yes	
STORAGE — Embedded Storage	16GB eMMC	32GB eMMC	16GB eMMC	32GB eMMC		64GB eMMC
STORAGE — SATA	2x SATA 3.0					
I/O INTERFACES — Ethernet	1x 10/100/1000Mbps					
I/O INTERFACES — USB	2x USB 3.0, 8x USB 2.0					
I/O INTERFACES — Serial	2x Serial (TX/RX)					
I/O INTERFACES — Digital IO	Standard Configuration: 1x SDIO (Factory Option: 8x GPIO)					
I/O INTERFACES — Video	Dual Display: DDI + LVDS or DDI + sDP; 1x DDI (HDMI, DVI, DP); 1x LVDS/eDP; HDMI/DVI: Resolution up to 3840x2160@30Hz; DP++: Resolution up to 4096x2160@60Hz; eDP++: Resolution up to 3840x2160@60Hz; LVDS: 24bit, Single Channel, Resolution up to 1366x768@60Hz; Hardware Decode: HEVC/H.265, VP8, VP9, MVC, AVC/H.264, MPEG2, VC1, WMV9, JPEG/MJPEG; Hardware Encode: HEVC/H.265, VP8, VP9, MVC, AVC/H.264, JPEG/MJPEG; Support for: OpenGL, DirectX, OpenCL					
I/O INTERFACES — Audio	High Definition Audio Interface					
I/O INTERFACES — PCI Express	4x (PCIe x1 Gen 2)					
I/O INTERFACES — LPC	Yes					
I/O INTERFACES — I2C	Yes					
I/O INTERFACES — SPI	Yes					
I/O INTERFACES — SMBus	Yes					
OTHER — RTC	Yes					
OTHER — Watchdog	Software Programmable (From 1 to 255s)					
OTHER — TPM	No					
OTHER — Conformal Coating	Factory Option					
POWER — Power Input	4.75V~20V, 5VSB, VCC_RTC (ATX Mode); 4.75V~20V, VCC_RTC (AT Mode)					
POWER — Power Consumption	6.5W CPU TDP		9.5W CPU TDP			12W CPU TDP
ENVIRONMENT — Operating Temperature	- 40 to + 85°C					
ENVIRONMENT — Storage Temperature	- 40 to +85°C					
ENVIRONMENT — Humidity	5% to 90%RH					
CERTIFICATIONS — Compliance	PICMG COM Express® R2.1, Type 10					
CERTIFICATIONS — Environmental	RoHS3					
MECHANICAL — Dimensions	COM Express Mini 84mm (3.30") x 55mm (2.16")					

Software		
SOFTWARE — OS	Eurotech Everyware Linux; Windows 10 IoT Enterprise 64bit; Carrier support and Porting: Professional Service	
SOFTWARE — IoT Framework	Professional service: Everyware Software Framework (Java/OSGi)	