CPU-180-01

Rugged 11th Gen Intel Core - COM-HPC Client Size A



- **11th Gen Intel Core**
- **Xe Integrated GPU**
- **Real Time Computing**
- **COM-HPC Client Size A**
- **Rugged and Fanless**
- **Customizable**
- **Professional Services**

Features

11th Generation Intel Core - The 11th Gen Core processors combine performance and responsiveness and deliver advanced capabilities such as PCIe Gen 4 and Thunderbolt 4 / USB4 in a low power SoC
Xe Integrated GPU - The new Xe GPU with up to 96 Execution Units accelerates dramatically both graphics and computation for applications like Artificial Intelligence and Computer Vision, while supporting 4 displays
Real Time Computing - Support for TCC (Time Coordinated Computing) and TSN (Time Sensitive Networking) enables soft Real Time applications
COM-HPC Client Size A - Compliant with COM-HPC Client, the new PICMG standard that enables unprecedented capabilities for Computer-On-Module
Rugged and Fanless - Operates from -40 to +85°C, with error correcting code memory and soldered memory
Customizable - Comes with optional personalization and full customization services, ranging from factory options to deep HW/SW configuration changes
Professional Services - Provides the foundation for Eurotech Professional Services that span from carrier board development to complete system design, certification and manufacturing

Description

The CPU-180-01 is a COM-HPC Client module that features the 11th Gen Intel Core CPUs. Designed for fanless applications in harsh environments where long term reliability is a must, the CPU-180-01 delivers up to 4 CPU cores and 96 GPU execution units and in- band ECC RAM. It features an all-soldered down design to improve resilience and thermal coupling, and comes with a -40 to +85°C operating temperature.

Both the CPU and the integrated GPU deliver great performance improvements compared to the previous Core generation, and offer AI and Deep Learning, with a combination of INT8 and VNNI instructions. Video encoding and decoding capabilites are also brought to the next level with dual decode boxes capable of up to 40 simultaneous 1080p streams at 30fps and four simultaneous displays.

The CPU-180-01 brings novel capabilities: it features Time Sensitive Networking (TSN) on an Ethernet port capable of up to 2.5GbE, which combined with Time Coordinated Computing (TCC) enables soft Real Time applications. TSN is an evolution of the Ethernet standard that provides time determinism to networked communications, while staying completely compatible with the exisiting Ethernet infrastructures. TCC bridges the sinchronization of the internal clocks with the network to achieve microsecond accuracy.

The CPU-180-01 features the latest high speed interfaces: PCIe Gen 4, with a bandwidth that is twice the previous generation and Thunderbolt 4 / USB 4 that enable PCIe, Video, USB and Power Delivery over a single, standard connector.

Supported operating systems include Everyware Linux (based on Yocto), Ubuntu and Windows 10 IoT Enterprise; additionally, the CPU-180-01 supports Everyware Software Framework (ESF), a commercial, enterprise-ready edition of Eclipse Kura, the open source Java/OSGi middleware for IoT gateways.Professional Services are available for the CPU-180-01, starting from BIOS personalization and including carrier board design, system development and production. Deep module customization, such as feature changes are also available.

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Ordering code: CPU-180-01-XX

XX		-01	-02	-03
PROCESSOR	CPU	Core i3-1115GRE, 3.0/2.2/1.7GHz, 2 Cores	Core i5-1145GRE, 2.6/1.5/1.1GHz, 4 Cores	Core i7-1185GRE, 2.8/1.8/1.2GHz, 4 Cores
GPU	Type	UHD	Integrated, Iris Xe	
	Execution Units	48EU	80EU	96EU
MEMORY	RAM	8GB LPDDR4 IBECC, 4267 MT/s, Soldered Down	16GB LPDDR4 IBECC, 4267 MT/s, Soldered Down	32GB LPDDR4 IBECC, 4267 MT/s, Soldered Down
FLASH	Type	256Mbit (SPI FLASH - UEFI BIOS)		
STORAGE	SATA	2x SATA 3.0 (up to 6Gb/s)		
MULTIMEDIA	Video Ports	1x DDI (HDMI/DP++) 1x DDI eDP (MIPI DSI Factory Option) 2x Thunderbolt 4 (4x Thunderbolt 4 Factory Option) Quad Display		
	Video Resolution	DDI1 and DD2 Resolution: 4Kp60 MIPI: 4 DPHY 2.1 (4.5Gbps), 4x Concurrent Dual Display		
	Video Acceleration	HW Encode: HEVC/H.265, H.264/AVC, VP9, M/JPEG; HW Decode: HEVC/H.265, H.264/AVC, VP8, VP9, VC1, M/JPEG, MPEG2		
	Audio	2x I2S/Soundwire 1x HDA (Factory Option)		
CAMERA INPUT	Camera Interfaces	2x MIPI-CSI2 with DPHY 2.1 (2.5Gbps/Lane) (Factory Option)		
	Capture Modes	Single Camera Capture (Factory Option): up to 4k@30FPS (HQV) / 120FPS (LQV) / 1080p@240FPS (SMV) Dual Camera Capture (Factory Option): (4K+4K)@30FPS (ViV) Quad Camera (Factory Option): (4K+2k+2k+2K) w/ Stereo Depth		
I/O INTERFACES	Ethernet	1x 10/100/1000/2500Mbps with TSN		
	USB	2x USB3/4/C, (Factory Option: 4x USB3/4/C) 8x USB2, (Factory Option: 10x USB2)		
	Serial	2x UART (TX/RX)		
	Digital I/O	12x GPIO		
	PCI Express	1x PCIe x4 Gen4 / 4x PCIe x1 Gen3 / 1x PCIe x4 Gen 3 / 1x PCIe x1 Gen3 (BMC - Factory Option is Exclusive with LAN)		
	System Bus	3x I2C (One Reserved for BMC)/ 2x SPI / 1x eSPI / 1x SMBus		
OTHER	RTC	Yes		
	Watchdog	Yes (with tamper detect)		
	TPM	TPM 2.0 (Discrete Chip)		
	Sensors	Temperature		
POWER	Input	VCC 12V (8.0-20V) VCCRTC		
	Consumption	12W/15/28W (CPU TDP)		
ENVIRONMENT	Operating Temp	-40 to +85°C		
	Storage Temp	-40 to +85°C		
	Humidity	5% to 90% RH		
CERTIFICATIONS	Regulatory	CE, FCC, ISED		
	Safety	EN 62368, UL 60950		
	Environmental	RoHS3, REACH		
	Compliance	PICMG COM-HPC Client Module (J1 Only)		
MECHANICAL	Dimensions	95x120mm (LxW) - COM-HPC Size A		

Supported Software

SOFTWARE	OS	Everyware Linux, Ubuntu, Windows 10 IoT Enterprise (Professional Services: Other Linux and RTOS)
	IoT Framework	Everyware Software Framework (Java/OSGi)

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