

ECU-479

IEC-61850-3 Certified Power Automation Computer Based on 14th Generation Intel® Core™ Processors

NEW



Features

- 13th/14th Gen Intel® Processor with up to 8+12 Cores
- Quad display interfaces for SCADA and more multi-display use cases
- Support for a RAID card, HSR/PRP expansion card, and redundant PSU
- Supports Intel® AMT, iBMC, SNMP for remote management
- Wide operating temperature range, fanless rugged design for harsh environments
- Optional 10-year warranty and long product life cycle for substations

Introduction

The ECU-479 is an IEC 61850-3 and IEEE 1613 certified product that provides high reliability and stability for power automation applications. The ECU-479 boasts a fanless, durable design, high CPU performance, easy maintenance, versatile expansion options, and a wide range of communication interfaces. Additionally, it supports virtualization technology, making it well suited for the digitalization of power substations.

Specifications

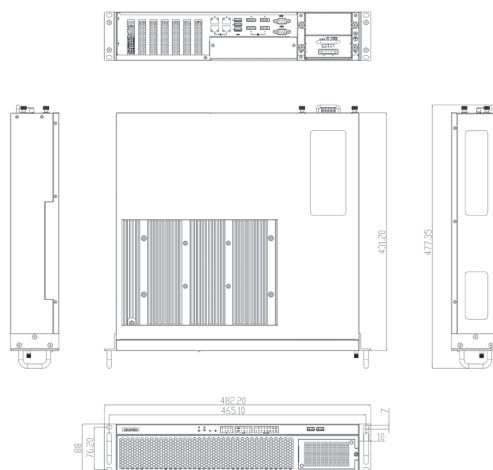
14th Generation Processors	CPU	i7-14700T	i5-14500T	i5-14400T	i3-14100T	i7-14701TE	i5-14501TE	i5-14401TE
	Processor Base Frequency	1.30 GHz	1.70 GHz	1.50 GHz	2.70 GHz	2.10 GHz	2.20 GHz	2.00 GHz
	Intel® Smart Cache	33 MB	24 MB	20 MB	12 MB	33 MB	24 MB	24 MB
	Core Number	20 (8 P-cores, 12 E-cores)	14 (6 P-cores, 8 E-cores)	10 (6 P-cores, 4 E-cores)	4 P-cores	8 P-cores	6 P-cores	6 P-cores
	TDP	Limited to 25W						
13th Generation Processors	Chipset	Intel® R680E chipset						
	CPU	i7-13700TE		i5-13500TE		i3-13100TE		
	Processor Base Frequency	1.10 GHz		1.30 GHz		2.40 GHz		
	Intel® Smart Cache	30 MB		24 MB		12 MB		
	Core Number	16 (8 P-cores, 8 E-cores)		14 (6 P-cores, 8 E-cores)		4 P-cores		
Memory*	TDP	Limited to 25W						
	Chipset	Intel® R680E chipset						
	Technology	Dual-channel DDR4						
Ethernet	Capacity	Up to 64 GB						
	DIMM Slot	2 x DDR4 SODIMM RAM with ECC						
	Controller	1 x Intel® I210 + 3 x Intel® I226						
Storage*	Speed	10/100/1000 Base-T, 2,500V isolation. Supports iBMC (LAN1), Intel® AMT (LAN2), SNMP remote management						
	Connector	4 x RJ-45						
	2.5" SSD	4 x 2.5" hot-swappable SATA SSDs, up to 9.5mm height. Supports Intel® RST RAID 0,1,5						
I/O	M.2 SSD	1 x M.2 2280 M-Key NVMe PCIe Gen. 3 x4 or SATA						
	External USB	3 x USB 3.2 Gen1 (rear), 2 x USB 3.2 Gen1 (front)						
	Internal USB	1 x USB 2.0						
Expansion Interface	Serial	2 x RS-232/422/485 (DB9 connectors) 2,500V isolation, 50 - 115200 bps.						
	Display	4 x DP++ 1.2 up to 4K @ 60Hz						
	Proprietary PCI/PCIe	1						
Software	PCIe	1 x standard PCIe x16 slot Gen. 4 low profile 3 x standard PCIe x4 slot Gen. 3 low profile						
	Optional Module	RJ45 Port, SFP Port, Isolated Serial Port, Isolated Digital I/O, HSR/PRP, PCIe, Mini-PCIe, PCI-104, IIRIG-B						
	Operating System	Windows11, Windows10, Windows Server 2022, Linux (Ubuntu 22.04)						
Power**	2 x hot-swappable redundant power supply, 150W							
	Input Voltage	Power1: 100 ~ 240 V _{ac} , 100 ~ 240 V _{dc} (Inside) Power2: 100 ~ 240 V _{ac} , 100 ~ 240 V _{dc} (Option)						
	Operating Temperature	-25 to 70°C (Depends on CPU model and configuration)						
Enviornment	Storage Temperature	-40 to 85°C						
	Relative Humidity	Operating, 95% RH @ 40°C, non-condensing Non-operating, 95% RH @ 60°C, non-condensing						
	Dimensions (W x H x D)	483 x 478 x 88 mm (19" x 3.5" x 18.8")						
Mechanical	Mounting	2U Rackmount						
	Weight	13.0 kg (28.66lbs)						
	Ingress Protection	IP20						
Certification	EMC	CE, FCC, IEEE 1613						
	Safety	CB, UL						
	Type approval	IEC 61850-3						
	Shock Protection	IEC 60068-2-27: 20G half sine, 11 ms with SSD						
	Vibration Protection	IEC 60068-2-64: Random 1 Oct./min, 1hr/axis with SSD						
Other	Trusted Platform Module	TPM 2.0 (Option)						
	Watchdog Timer	Programmable 256 levels time interval, from 1 to 255 seconds for each tier						
	Relay	Relay Output Form C Contact 5A @ 125V _{ac} / 5A @ 30V _{dc} Channel 1						

*To be assembled in the Advantech CTOS center.

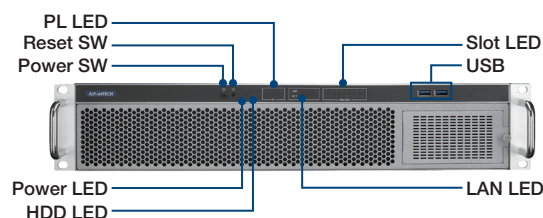
**Please refer to user manual for hot-swap operation.

Dimensions

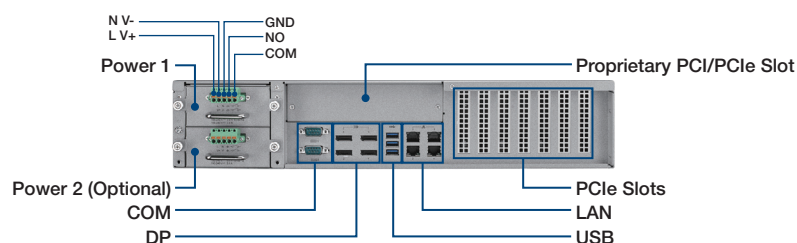
Unit: mm



Front View



Rear View



Ordering Information

Part Number	Description	PSU	COO
ECU-479-V1-S1	RPL-S Processors, 1 x PSU (AC/DC), 4 x LAN, 4 x DP, 1 x EP Slot, 4 x PCIe	1	China
ECU-479-V1-S1U	RPL-S Processors, 1 x PSU (AC/DC), 4 x LAN, 4 x DP, 1 x EP Slot, 4 x PCIe	1	Taiwan

RAM Compatibility List

Part Number	Size	Speed	Operating Temperature	ECC
SQR-SD4I32G3K2SEAB	32GB	3200	-40 ~ 85°C	Y
SQR-SD4I16G3K2SECB	16GB	3200	-40 ~ 85°C	Y
SQR-SD4I8G3K2SECB	8GB	3200	-40 ~ 85°C	Y
AQD-SD4U32E32-SBW	32GB	3200	-40 ~ 85°C	Y
AQD-SD4U16E32-SEW	16GB	3200	-40 ~ 85°C	Y
AQD-SD4U8E32-SEW	8GB	3200	-40 ~ 85°C	Y

CPU Compatibility List

Part Number	Description
96MPI-13700TE-16E	Intel® Core™ i7-13700TE Processor
96MPI-13500TE-14E	Intel® Core™ i5-13500TE Processor
96MPI-13100TE-4E	Intel® Core™ i3-13100TE Processor
96MPI-14700T-20E	Intel® Core™ i7-14700T Processor
96MPI-14500T-14E	Intel® Core™ i5-14500T Processor
96MPI-14400T-10E	Intel® Core™ i5-14400T Processor
96MPI-14100T-4E	Intel® Core™ i3-14100T Processor
96MPI-14701TE-8E	Intel® Core™ i7-14701TE Processor
96MPI-14401TE-6E	Intel® Core™ i5-14401TE Processor
96MPI-14501TE-6E	Intel® Core™ i5-14501TE Processor

OS List

Part Number	Description
20706WXH1S0003	Windows 11 IoT Enterprise 64bit for Intel® Core™ i7 processors
20706WXV1S0003	Windows 11 IoT Enterprise 64bit for Intel® Core™ i5/i3 processors
20706WX1HS0127	Windows 10 IoT Enterprise 2021 LTSC 64bit for Intel® Core™ i7 processors
20706WX1VS0127	Windows 10 IoT Enterprise 2021 LTSC 64bit for Intel® Core™ i5/i3 processors

Optional List

Part Number	Description
FRU-ECUPWR-100A	PSU module 150W 100-240Vac/dc
96NIC-1G2P-PE-IN3	Intel® NIC 100/1000M dual RJ-45 PCIe x4
PCIE-1131PS-00A1E	Intel® I350 Quad 1G SFP PCIe x4
PCA-TPMSPI-00A1	TPM 2.0 module by SPI for CPU cards
ECU-P1761A-AE	4-ch DI & 4-ch DO & IRIG-B board w/ ECUP slot
ECU-P1624D-B	4-port Isolated RS-232/422/485 with IRIG B
ECU-P1618D-B	8 x RS-232/422/485 w/ ECUP slot w/ ECUP slot
ECU-P1628D-B	8 x Isolated RS-232/422/485 w/ ECUP slot
ECU-P1524PE-AE	2 x SFP 100Mbps HSR/PRP Card w/ ECUP slot
ECU-P1524PE-GAE	2 x SFP Gigabit HSR/PRP Card w/ ECUP slot
ECU-P1528RE-B	8-Port RJ45 Gigabit Base Ethernet Card w/ ECUP slot
ECU-P1528PE-B	8-Port SFP Gigabit Base Ethernet Card w/ ECUP slot
ECU-P1522LPE-A	2-Port SFP Ethernet with HSR/PRP Low Profile PCIe
UNOP-1000J-BE	PCI-104 & Mini-PCIe Expansion Card w/ ECUP slot
UNOP-1000K-AE	PCIe Expansion Card w/ ECUP slot

RAID Set

Part Number	Description
96RC-SAS-4P-PE-AD6	Adaptec 3101E-4i SAS PCIe x8 RAID card. Supports RAID 0,1,10.
96RC-SAS-8P-PE-AD6	Adaptec 2100-8i SAS PCIe x8 RAID card. Supports RAID 0,1,10, 5
ECU-KIT-47904	ECU-479 cable kit for RAID card