ECU-579

IEC-61850-3 Certified Power Automation Server Based on Intel® Xeon® Scalable Processor Family

Features

- 2U rackmount server with wide operating temperature
- Suppports 2nd Gen. Intel® Xeon® Scalable Processors
- 12 x DIMM sockets supporting up to 768GB DDR4 SDRAM
- Up to 2 x hot-swappable PSUs and 4 x hot-swappable fans for redundancy
- Up to 4 x 2.5" hot-swappable HDD/SSD, 1 x M.2 2280 SATA/PCIe SSD
- Up to 2 x PCIe x16 Gen3 slots, PCIe x8 Gen3 slots, PCIe x4 Gen3 slots
- IPMI 2.0-compliant management with reliability and security enhancements
- Optional TPM 2.0 module

Introduction

The ECU-579 is a TUV IEC 61850-3 and IEEE 1613 certified power automation server, which can provide high reliability and stability for centralized substation protection and control system in HV/MV substations. Designed around the new Intel® Xeon® Scalable Processor Family, the ECU-579 support high performance and long system lifecycles required by the industry. Hot-swappable PSUs make the ECU-579 a platform of choice for applications requiring zero downtime. Hot-swappable fans provide the ability to withstand single fan failures.

Specifications

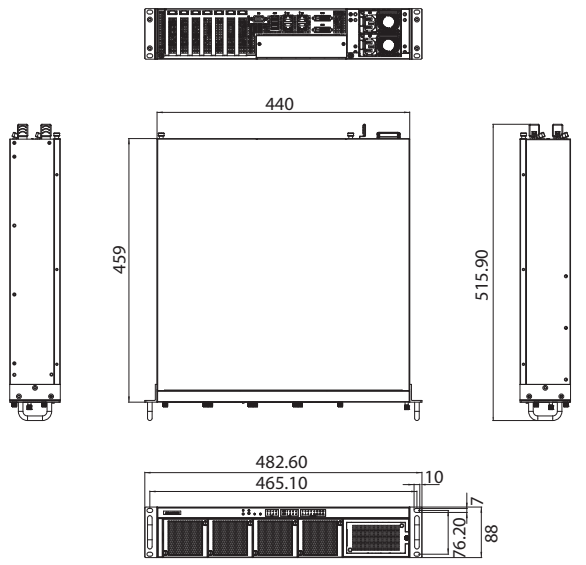
Computer system*	CPU	Xeon® Gold 6238T	Xeon® Gold 5218T	Xeon® Silver 4209T
	Processor Base Frequency	1.90 GHz	2.10 GHz	2.20 GHz
	Cache	30.25 MB	22 MB	11 MB
	Core Number	22	16	8
	TDP	125W	105W	75W
	Chipset	Intel® C621 chipset		
	Cooling	4 x hot-swappable high speed fans		
Memory*	Technology	DDR4		
	Capacity	Up to 768 GB, 64GB Per Slot With 2nd Generation Intel® Xeon® Scalable Processors		
	DIMM Slot	12 x 2400/2666/2933MHz DDR4 ECC RDIMM/LRDIMM		
Ethernet	Controller	4 x Intel® I210		
	Speed	10/100/1000 Base-T, 2,500V isolation. Supports BMC, IPMI 2.0 (LAN1), SNMP remote management		
	Connector	4 x RJ-45		
Storage*	2.5" SSD	4 x 2.5" hot-swappable SATA SSDs, up to 9.5mm height. Supports Intel® RST RAID 0,1,5,10		
	M.2 SSD	1 x M.2 M Key slot. Supports M Key, B+M Key M.2 2242/2260/2280 SSD, NVMe PCIe Gen. 3 x4 or SATA Interface		
I/O	External USB	3 x USB 3.2 Gen1 Type-A (rear)		
	Internal USB	1 x USB 2.0 Type-A, 1 x USB 2.0 Pin Header, 1 x USB 3.0 Pin Header		
	Display	2 x DVI-D up to 2K @ 60Hz, 1 x VGA		
Expansion Interface	Proprietary PCI/PCIe	1		
	PCIe	2 x standard PCIe x16 slots Gen. 3 low profile 1 x standard PCIe x8 slot Gen. 3 low profile 1 x standard PCIe x4 slot Gen. 3 low profile 1 x Mini PCIe slot (PCIe x1 Gen. 1 + USB 2.0)		
	Optional Module	RJ45 Port, SFP Port, Isolated Serial Port, Isolated Digital I/O, HSR/PRP, PCIe, Mini-PCIe, PCI-104, IRIG-B		
Software	Operating System	Windows11, Windows10, Windows Server 2022, Linux (Ubuntu Server 22.04)		
Power	Input Voltage	2 x hot-swappable redundant power supply, 800W ECU-579-SSDB: 100 ~ 240 V_{AC}, 100 ~ 240 V_{DC} ECU-579-SSDC: 48 V_{DC}		
Enviornment	Operating Temperature	-20 to 60°C (Depends on CPU model and configuration)		
	Storage Temperature	-40 to 85°C		
	Relative Humidity	Operating, 95% RH @ 40°C, non-condensing Non-operating, 95% RH @ 60°C, non-condensing		
Mechanical	Dimensions (W x H x D)	440 x 88 x 460 mm (17.3" x 3.5" x 18.1")		
	Mounting	2U Rackmount		
	Weight	10.0 kg (22.04lbs)		
	Ingress Protection	IP20		
Certification	EMC	CE, FCC, IEEE 1613		
	Safety	CB, UL, CCC		
	Type approval	IEC 61850-3		
	Shock Protection	IEC 60068-2-27: 10G 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		

*To be assembled in the Advantech CTOS center.

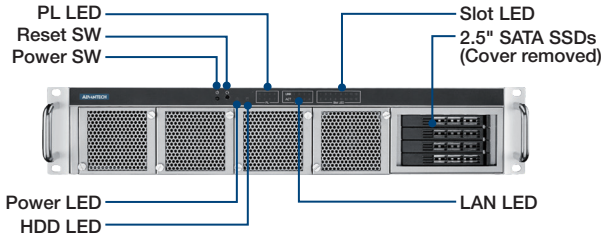
Last updated: 29-Jul-2025

Dimensions

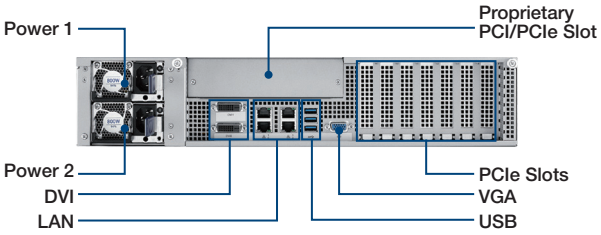
Unit: mm



Front View



Rear View



Ordering Information

Part Number	Description	100 ~ 240 V_{AC}	100 ~ 240 V_{DC}	48 V_{DC}	COO
ECU-579-SSDB	Intel® Xeon Processor Scalable Family, 4 x LAN, 4 x PCIe/LP with 100-240AC/DC redundant power	V	V	X	China
ECU-579-SSDBU	Intel® Xeon Processor Scalable Family, 4 x LAN, 4 x PCIe/LP with 100-240AC/DC redundant power	V	V	X	Taiwan
ECU-579-SSDCU	Intel® Xeon Processor Scalable Family, 4 x LAN, 4 x PCIe/LP with 48DC redundant power	X	X	V	Taiwan

CPU Compatibility List

The below CPU part numbers passed a compatible test:

Part Number	Description
96MPXECA-1.9-30M36	Intel® Xeon® Gold 6238T Processor (22 Cores, 125W)
96MPXECA-2.1-22M36	Intel® Xeon® Gold 5218T Processor (16 Cores, 105W)
96MPXECA-2.2-11M36	Intel® Xeon® Silver 4209T Processor (8 Cores, 75W)

PCIe/LP Card Options

Part Number	Description
PCIE-1220PS-00A1E	2-ports 10G fiber NIC (SFP+) with Intel® X710
PCIE-1130PS-00A1E	4-ports 1G fiber NIC (RJ-45) with Intel® I350
PCIE-1131PS-00A1E	4-ports 1G fiber NIC (SFP) with Intel® I350
PCIE-2230NP-00A1E	4-ports 10G fiber NIC (SFP+) with Intel® XL710
PCIE-2231NP-00A1E	4-ports 10G fiber NIC (RJ-45) with Intel® XL710
ECU-P1524SPE-AE	2 x SFP 100Mbps HSR/PRP Card w/ PCIe slot
ECU-P1522LPE-A	2-port SFP HSR/PRP card with Low profile.PCIe
XECU-AUDIGY-FX1570	Audio board Audigy FX1570
96VG-SM768LX1-30T	GPU card, 1G DDR3 Gen2 PCIex1 HDMIx2+VGA LP Fanless

ECU-P Card Options

Part Number	Description
ECU-P1524PE-AE	2-port SFP 100Mbps Base-FX Ethernet Card with HSR/PRP
ECU-P1524PE-GAE	2-port SFP Gigabit Base-X Ethernet Card with HSR/PRP
ECU-P1624D-B	4-port Isolated RS-232/422/485 with IRIG B
ECU-P1628D	8-port Isolated RS-232/422/485
ECU-P1618D	8-port Non-isolated RS-232/422/485

Optional Accessories

Part Number	Description
XEU500-ZRH-2800K2*	CRPS Module A/D 100-240V 800W 80+ Platinum 6K
98R35790001	Fan kits for ECU-579
ECU-KIT-57901	TPM 2.0 Module by LPC
ECU-KIT-57902**	ECU-579 48VDC PSU Module
1700035703-01	External Power cable for ECU-579 48V
96NIC-1G2P-PE-IN3	INTEL NIC 10/100/1000M PCIe x4 2pt. RJ-45 Server

*Compliant with IEC 61850-3 EMC standard.
** Only compliant with ECU-579-SSDCU

RAID Set

Part Number	Description
96RC-SAS-4P-PE-AD6	Adaptec 3101E-4i SAS PCIe x8. Supports RAID 0,1,10.
96RC-SAS-8P-PE-AD6	Adaptec 2100-8i HBA W/RAID 8P 12GB/S. Supports RAID 0,1,10
96RC-SAS-4P-PE-AD7	ADAPTEC 3101-4i 4pt 12Gb/s SAS PCIEx8. Supports RAID 0,1,5,6,10
ECU-KIT-57903	Expansion RAID cable for ECU-579 series.