Advantech Power & Energy Automation Computers

Robust Products for a Variety of Power and Energy Applications

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Advantech Power Automation Computers

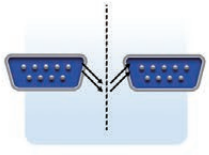
Product Features

IEC 61850-3 Certification

Products with IEC 61850-3 Certification meet the smart substation's station and bay level.

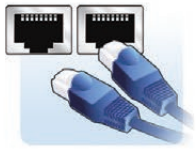
Flexible Module Expansion with Robust XPCIe Familiy

I/O expansion modules are specifically designed for the ECU-4784 rack-mount automation computer. There are multiple I/O cards such as - serial cards, fiber cards, IRIG-B cards and Gigabyte Ethernet cards -for different data applications.



2500V_{AC} Isolation with Serial Port

Isolation separates ports so there is no need to be concerned about differences in voltage.



Ethernet Redundancy

Ethernet redundancy ensures communication is maintained if one Ethernet port fails thereby avoiding loss of data.

Robust Products for a Variety of Power and Energy Applications

Advantech's powerful TUV certified ECU-4784 Embedded PC has been specifically designed to meet the critical requirements of power automation. IEC-61850-3 and IEEE1613 certification demonstrates the ECU-4784 suitability for electrical power communication protocol conversion, intelligent remote data analysis, network communications security and comprehensive monitoring applications, which provides higher reliability and stability, specially suitable for global power automation, energy automation and harsh environments.

Time Synchronization Functionality with IRIG-B

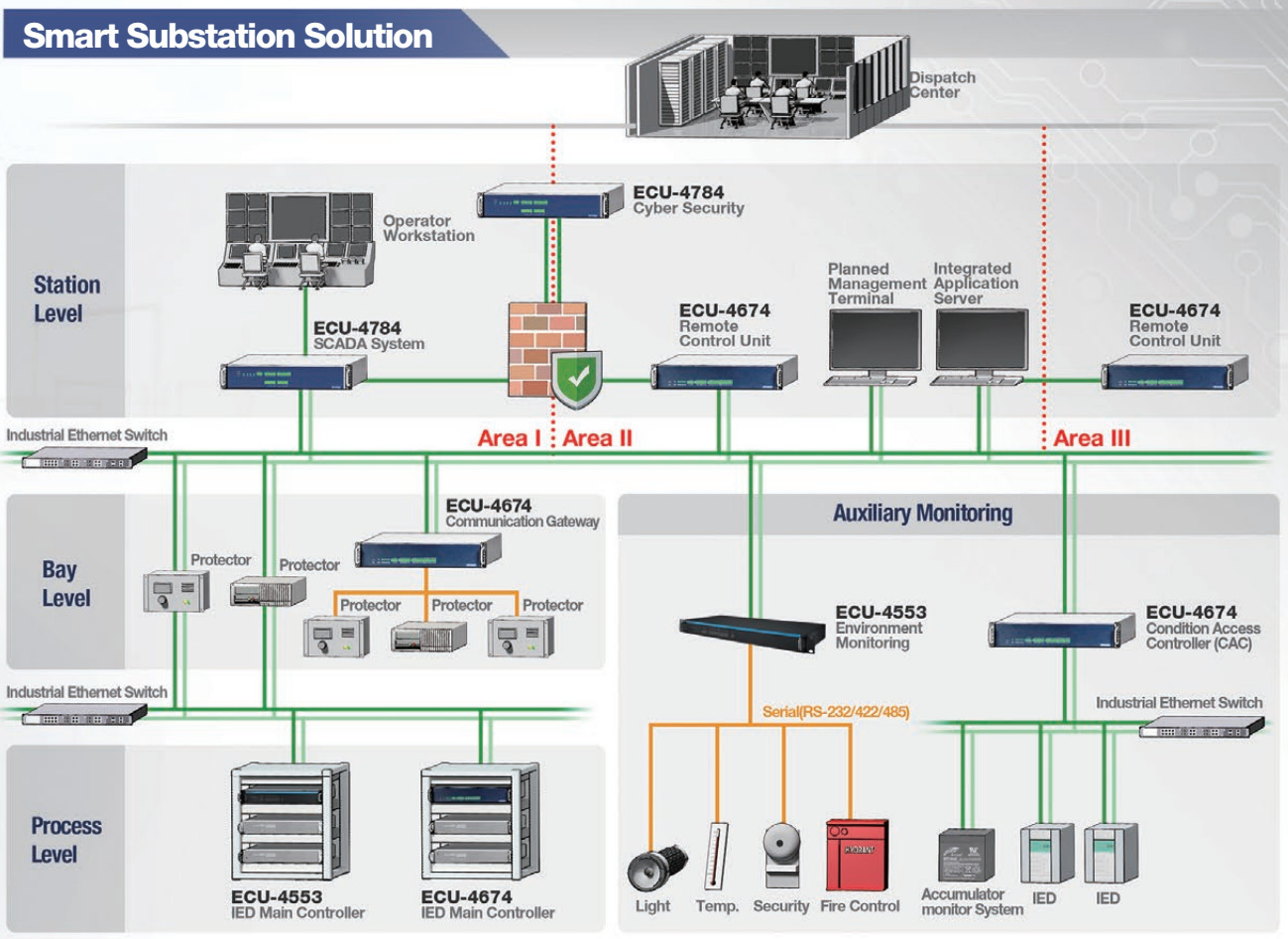
IRIG-B is an important time synchronization mode that ensures efficient and reliable communication between power automation systems.

Robust Design- Fanless and Dual Power Design

The fanless dual power design ensures that dust particles aren't drawn into the system and that if one power source fails the devices will continue working.

Application

Smart Substation Solution



SCADA Application

In the Smart Substation field, it's very important to be able to remotely monitor substation devices from a supervisory center. High performance computing platforms can easily integrate the HMI/DATA collection, data monitoring, environmental status, which helps operators accurately evaluate their devices' status and take action.

Application Requirements

- Reliable IEC 61850-3 certification
- High-performance computing platform
- AMT/TPM

Cyber Security for Smart Grids

There are different grades of network protection priorities in a substation, and use in these environments need reliable cyber security. This requires a software firewall or comparable hardware firewall devices to prevent illegal or unauthorized user access.

Application Requirements

- Reliable IEC 61850-3 certification
- High-performance Ethernet
- Virtual Machine/TPM

Communication & Data Gateway for IEC-60870/IEC-61850

Numerous intelligent electronic devices have their own isolated protocols such as IEC-60870-5(101,103,104) in the substation. Customers have to transform these isolated protocols into the unified 61850-3 standard protocol to achieve interconnected communications.

Application Requirements

- Reliable IEC 61850-3 gateway platform
- Multi-functional communication interfaces including isolated seriel port, IRIG-B, serial port, Ethernet, etc.

Selection Guide

Model Name	ECU-579	ECU-4784	ECU-4574 / ECU-4674	ECU-4553	ECU-1152 / ECU-1251
Certification	IEC 61850-3/IEEE 1613 China Electricity Certificate IV level	IEC 61850-3/IEEE 1613 China Electricity Certificate IV level	IEC 61850-3/IEEE 1613 Compliant China Electricity Certificate IV	China Electricity Certificate IV level	Compliant China Electricity Certificate IV level
CPU	Intel® Xeon® Processor Scalable Family Scalable CPU 24/20/14/8 Core (150W/125W/85W/70W)	Intel® Coffee Lake Xeon® E-2276ML Hexa-core 2.0GHz Intel® SkyLake Xeon® E3-1505L Quad-core 2.0GHz Intel® Skylake i5 6300U	Intel® ATOM E3940 1.6GHz	TI Cortex A8, 800MHz TI Cortex A8, 600MHz	TI Cortex A8, 800MHz
Onboard RAM	up to 768G w/ECC	up to 64G DDR4 RAM with ECC for Xeon up to 32G DDR3L RAM for core i	4G DDR3L SDRAM	1G DDR3L SDRAM 512M DDR3L	512MB DDR3L(ECU-1152) 256MB DDR3L(ECU-1251)
Display	VGA; DVI	DVI x 2 or VGA; DVI	DB15 VGA connector + DVI-I Connector	VGA	-
Serial Ports	NA	2 x Isolated RS-232 (Standard) 8 x RS-232/422/485 (Terminal Block)	ECU-4574:10 x RS232/485 ECU-4674:1x IRIG-B, 10 x RS232/485 or 16 x RS232/485	RS-232/485 1 x IRIG-B (COM1) (only for ECU-4553-R12SAE) 2 x Isolated CAN2.0B (option in ECU-4553-LR21SBE)	6 x Isolation RS-232/485 (ECU-1152) 4 x Isolation RS-232/485 (ECU-1251)
Ethernet Ports	4 x 10/100/1000 Base-T RJ45 ports	8 x 10/100/1000Base-T	10 x RS232/485	4 x 10/100Base-T	2 x 10/100Base-T
USB Ports	3 x USB3.0	Six (One internal)	4 x USB2.0 (include 1 x internal USB), 1 x USB3.0	One	One
Expansion	2 x PCIe x16, 1 x PCIe x8 1 x PCIe x4, Mini PCIE x1 1 x PCIe + PCI interface for ECUP card extension	2 x PCI/PCIE	-	-	-
Onboard I/O	-	-	ECU-4674-A53SCE: 8 x isolated DI, 8 x isolated DO	-	-
Watchdog Timer	Yes	Yes	Yes	Yes	Yes
Storage Slots	M.2	Cfast for ECU-4784E56/57 M.2 for ECU-4784G58/G57/E36	1 x mSATA	Two Internal mico-SD for ECU-4553-R12SAE 8G Emmc for ECU-4553-LR21SBE	Two Internal (mico-SD)
2.5" HDD Expansion	4 x SATA	2 x SATA for ECU-4784E56/E57 3 x SATA for ECU-4784G58/G57/E36	2 x SATA	-	-
Operating Systems	Windows 10, Windows Server 2019	Window 10 (2019), Windows Server 2019	Window10, Linux	RT Linux	RT Linux
Mounting	2U Rack Mount	2U Rack Mount	2U Rack Mount	1U Rack-Mount	Wall-Mount, DIN Rail
Anti-Vibration	2 G w/CFast, 1 G w/HDD	2 G w/CFast, 1 G w/HDD	2 G w/CF, 1 G w/HDD	2 G	2 G
Anti-Shock	30 G w/CFast, 20 G w/HDD	30 G w/CFast, 20 G w/HDD	30 G w/CF, 20 G w/HDD	30 G	30 G
Power Input Range	AC: 100 ~ 240 VAC DC: 110V-250V/48V	AC: 100 ~ 240 VAC DC: 100~240 VDC/48VDC	AC: 100 ~ 240 VAC DC: 100~240 VDC/48VDC	AC: 100 ~ 240 VAC DC: 100~240 VDC	DC: 10~30VDC
Operating Temperature	-20 ~ 60°C (-13 ~ 140°F)	-25 ~ 60°C with 50% CPU/ I/O loading for Xeon CPU -25 ~ 70°C with 50% CPU/ I/O loading for core i5 CPU	-25 ~ 70°C (-13 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)	-40 ~ 70°C (-40 ~ 158°F)
Power Consumption (Typical)	Max to 800W	25W~35W	24W	10W	7W
Power Requirements	Supports Redundant Power Input	Supports Redundant Power Input	Supports Redundant Power Input	Supports Redundant Power Input	Power : 24VDC (10~30VDC)
Dimensions (W x H x D)	440 x 460 x 88 mm	440 x 280 x 88 mm	440 x 272 x 44 mm (ECU-4574) 440 x 220 x 88mm (ECU-4674)	440 x 220 x 44 mm	170 x 110 x 32.2 mm (ECU-1152) 140 x 96.5 x 30 mm (ECU-1251)
Weight	6.0 kg	6.0 kg	5.5 kg	4.5 kg	1 kg
Ordering Information	ECU-579-SSDA	ECU-4784-G58SCE ECU-4784-G57SCE ECU-4784-E56SAE ECU-4784-E57SAE ECU-4784-E36SCE	ECU-4574-A53SCE ECU-4674-A53SCE ECU-4674-LBA53SCE	ECU-4553-R12SAE ECU-4553-LR21SBE	ECU-1152-R11ABE ECU-1251-R10AAE

XPCIe

Serial Port | Digitial I/O & Time Sync. | Time Sync. | Ethernet | Interface card

UNOP-1628D / 1618D
8-port Isolated/ Non Isolated/
RS-232/422/485

ECU-P1761
4-ch Isolated DI, 4-ch Isolated RO Card
with IRIG-B

UNOP-1624D
4-port Isolated
RS-232/422/485 with IRIG B

UNOP-1514RE / 1514PE
4-port RJ45 / SFP Gigabit
Base Ethernet Card

UNOP-1514C
4-port Fiber Optic LAN Card

ECU-P1524PE
2-port SFP Gigabit Base Ethernet Card
with HSR/PRP

UNOP-1000I
PCI & Mini-PCI Expansion Card

UNOP-1000J
PCI-104 & Mini-PCIe Expansion Card

UNOP-1000K
PCIe Expansion Card

Regional Service and Customization Centers

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