

EIS-S232

Simplifying the multi-cloud with a domain focus application

Preliminary



DeviceOn/iEdge



Features

- Integrated hardware plus software for back-end data service and light private cloud
- Pre-configured system: Intel 10th gen. Core i3/i7Xeon CPU, Ubuntu OS and RAM/mSATA SSD
- Open and standard structure: Kubernetes built-in, Multiple DB Connections, On-demand Microservices
- Integrated IoT Software: Grafana, Prometheus, Kubeapps, RabbitMQ, etc.
- Application integration: Vertical Application Deployment, Platform Management, AI model inference runtime, Data Synchronization
- Sustainable Management: Microservices Condition Monitoring, Load Balancing and Self-Healing
- DeviceOn/iEdge inside for IoT Device Operation Management, Data collection and protocol convert

Introduction

For accelerating IoT application landing, Advantech provide Edge cloud solution EIS-S232 for our customer to build a stable and reliable back-end data service or light private cloud. EIS-S232 is a all-in-one solution for user. It built in Intel Xeon CPU to offer extreme computing power for data service. Moreover, EIS-S232 is integrated Kubernetes to support micro-service, and build-in complete back-end software components, includes RabbitMQ for IoT Hub, mongoDB and PostgreSQL for database, Grafana for data visualization and Prometheus for Back-end management. EIS-S232 also provide dynamically scale out function, user can extend the resources if necessary. It help customer create IoT applications more easily and flexibly. Speed up the time to market.

Software Stack

Platform Management



Message Broker

- Lightweight and easy to deploy on premises and in the cloud. It supports multiple messaging protocols.



Backend Management

- Kubernetes is a deployment, scaling, and management of containerized applications. MicroK8s derived from it, provides a smaller footprint, scalable from a single node to a high-availability production cluster.
- Prometheus, an open-source software application that is used for event monitoring and alerting.



Database Management

- A powerful, open source object-relational database system.
- MongoDB is a document database, which means it stores data in JSON-like documents.



Operation Management

DeviceOn/iEdge



Data Synchronization

- DB Synchronization
- Data Visualization
- Data center migration



Vertical APP Deployment

- Centralize Management
- Easy deploy cloud to Edge
- Save development time and cost



Cloud Service Integration

- Flexible API
- Ready to use app
- Platform security protection

Application Development



Data Visualization

- Allows you to query, visualize, alert on and understand your metrics.



App Management

- Kubeapps is a web-based UI for deploying and managing applications in Kubernetes clusters.
- The Docker Registry is a stateless, highly scalable server side application that stores and lets you distribute Docker images.
- ChartMuseum is an open-source Helm Chart Repository server written in Go (Golang).



Machine Learning

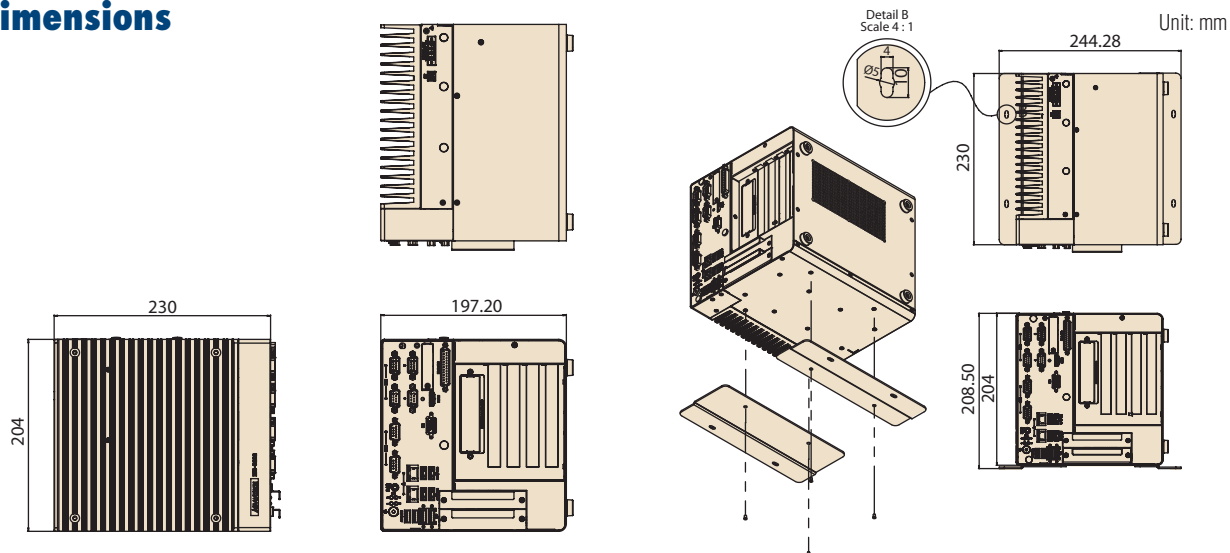
- Making deployments of machine learning (ML) workflows on Kubernetes Device Management

Specifications

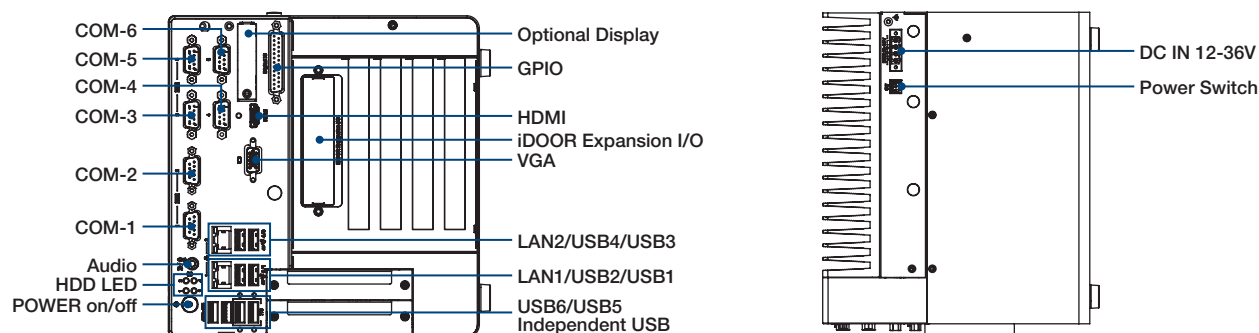
Processor System	CPU	W-1290TE	i7-10700E	i3-10100E
	Frequency	1.8-4.5GHz	2.9-4.5GHz	3.2~3.8GHz
	L3 Cache	20MB	16MB	6MB
	Cores	10	8	4
	TDP	35W	65W	65W
	Chipset	W480E		
	BIOS	AMI EFI 256Mbit		
Memory	Capacity	DDR4 2666 ECC 32GB		
Graphics	Chipset	Intel® UHD Graphics 630		
	Graphic Engine	DirectX 12, OpenGL 4.5 HW Encode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, JPEG/MJPEG and VP8. HW Decode: H.265/HEVC, H.264/MPEG-4 AVC, MPEG-2, VC-1/WMV9, JPEG/MJPEG, VP8 and VP9		
	VGA	1920x1200@ 60Hz		
	HDMI	1 HDMI port, HDMI 1.4 for HD video playback, 4096x2160@30Hz		
	Optional 3rd Display module	DVI-D / DP / HDMI Display Port		
	Triple Display	VGA+HDMI + 3rd display module		
Ethernet	LAN1	10/100/1000 Mbps Intel I219-LM GbE, support Wake On Lan		
	LAN2	10/100/1000 Mbps Intel I210 GbE, support Wake On Lan		
Audio	Interface	Realtek ALC888S, High Definition Audio, Line-out/Mic-in (switch)		
Others	Watch dog Timer	255-level timer interval, setup by software		
	TPM	TPM 2.0 (by optional AMO-I029)		
I/O Interface	Serial Port	4 x RS-232/422/485 port with auto flow control, 2 x RS-232; COM3 support 5V/12V power supply (by jumper)		
	USB	4 x USB 3.2 (Gen2,10G),2 x USB 3.0, 2 x Independent USB 3.0		
	GPIO	16bit GPIO		
Expansions	Mini PCIe	1 x Full-size Mini PCIe (1 x support mSATA, 1 x support SIM holder) #1		
	M.2	1 x E key for WiFi #1		
	Add-on Card Slot	2 Slot PCI + 1 Slot PCIe16		
	Maximum card size	110mm (H) x 180mm (L)		
Storage	HDD	2 x 2.5" SATAIII 15mm height HDD bay support Intel SW RAID (Up to 4 x 2.5" SATAIII HDD bays by optional AMK-A0035)		
	mSATA	1 x mSATA socket (Share with Mini PCIe)		
Software Support	Microsoft Windows	Windows 10		
	Linux	By Project Support		
Power Requirements	Power Type	AT/ATX		
	Power Input Voltage	12-36V		
	Power Adapter	AC to DC, 230W (Optional)		
Power Consumption (CPU/Memory Only)	Typical	30W		
	Max.	64.8W		
Mechanical	Construction	Aluminum housing		
	Mounting	Desk mounting		
	Dimensions (W x H x D)	197.2 x 204 x 230 mm		
	Weight	6.41Kg		
Environment	Operating Temperature	Up to 65W processor with extended temp peripherals: -20 ~ 60° C with 0.7m/s air flow with HDD: 0 ~ 40° C with 0.7m/s air flow		
	Storage Temperature	-40 ~ 85° C		
	Relative Humidity	95% @ 40° C (non-condensing)		
	Vibration During Operation	With SSD: 3 Grms, IEC 60068-2-64, random, 5 ~ 500 Hz, 1 hr/axis.		
	Shock During Operation	With SSD: 30 G, IEC 60068-2-27, half sine, 11 ms duration		
	EMC	CE/FCC Class B, CCC, BSMI		
	Safety	CB, UL, CCC, BSMI		

#1 SIM holder and M.2 slot are hardware interfaces for wireless communication integration only. System level RF certification is not available.

Dimensions



External I/O Mechanical Layout/Drawing



Ordering Information

Part No.	CPU	DDR4	SSD	Gbe	VGA	HDMI	RS-232	RS-232/422/485	USB	MiniPCle	SIM	M.2	DC Input	Expansion
EIS-S232-U20STB1	Xeon W-1290TE	DDR4 2666 ECC 32GB	1TB SSD	2	1	1	2	4	8	1	1	1	12-36V	PCIe x 16 + 2PCI
EIS-S232-01DSTB1	I7-10700E	Optional	Optional	2	1	1	2	4	8	1	1	1	12-36V	PCIe x 16 + 2PCI
EIS-S232-01DS281	I3-10100E	Optional	Optional	2	1	1	2	4	8	1	1	1	12-36V	PCIe x 16 + 2PCI

Packing List

Part Number	Description
-	EIS-S232 Unit
-	User Manual (Simplified Chinese)
-	China RoHS
-	Desk mounting kit
36WSWPE21001A1	DeviceOn\Edge
36WSWPOBD0211	McAfee Application Control Lite/Acronis Backup 11.7 for Windows PC

EIS-S232 Default SKU Option Items

Optional Item for Default SKU

Part Number	Description
96PSA-A230W24P4-3	AC to DC adapter, DC 24V 230W, -20 ~ 60 °C
1702002600	Power cable 3-pin 183cm, USA type
1702002605	Power cable 3-pin 183cm, EU type
1702031801	Power cable 3-pin 183cm, UK type
1700000237	Power cable, 3-Pin 183cm, PSE type

Embedded OS

Part Number	Description
20706WX9HS0148	Win 10 IoT 2019 Ent 64-bit
20706U20DS0033	Ubuntu Desktop 20.04 LTS 64bit for EIS-DS232

EIS-S232 Optional HDD expansion Kit

Part Number	Description
AMK-A0035	2 x internal HDD bays kit (Max Height 15mm)