Edge to Cloud Solutions

Simplify IoT Deployment, Data Visualization, and Remote Management

✓ Solution Diagram
✓ Software Integration
✓ Vertical Focus Market
✓ Application Stories

- Wireless Connectivity
- Sensor Data Generation
- Device Management
- PLC Integration
- Microsoft Azure
- aws
- Alibaba Cloud
- WISE-PaaS
- kubernetes
- DeviceOn iEdge
- SECS/GEM Data Conversion
- Equipment Connectivity
- Centralized Management
- Cross-platform Integration

ADVANTECH

Enabling an Intelligent Planet

intel. arm ▦ Microsoft CANONICAL
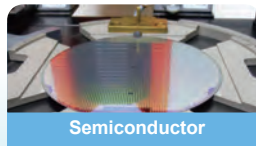
Simplify IoT Deployment from Edge to Cloud

Advantech Edge to Cloud solutions facilitate IoT connectivity, light edge analytics, and cloud integration — thus simplifying IoT application deployment, visualization, and remote management. These provide an all-in-one solution packages in hardware and software integration and accommodate in-equipment connectivity, smart factory, semiconductor equipment, smart city, back-end server, and other AIoT applications.
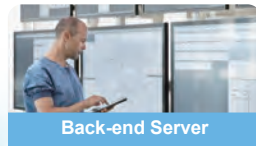
Smart Factory **Semiconductor** **Smart City** **Back-end Server**

Microsoft Azure   aws
Alibaba Cloud   WISE-PaaS

Edge Cloud

DeviceOn/iEdge

Protocol Integration Services

Real-time Edge Analytics

Edge Intelligence Systems

Auto Generated Dashboard

Centralized Remote Management

EDGE X FOUNDRY   Modbus   OPC UA   ODBC

Controllers   IoT Devices   Sensors   Motors   Workstations   Robots   CNC Machines

All solutions come pre-integrated with DeviceOn/iEdge software. This provides communication protocols, data integration, real-time computing and edge analytics, remote monitoring, and centralized management via a pre-installed dashboard UI. Indeed, this ready-to-use solution helps save time and development costs.

Data Integration
- Supports industrial protocol OPC-UA/Modbus/ODBC
- Protocol plug-in SDK

Centralized Remote Management
- Remote management tool OTA/KVM
- Edge configuration settings and deployment

DeviceOn/iEdge

Real-time Edge Analytics
- Edge data pre-processing and analysis
- Event driven rule-engine

Auto Generated Dashboard
- Multiple built-in templates
- Edge dashboard for local operators

Data Visualization
Multiple built-in templates help users create dashboards for device monitoring

Edge Intelligence
Flexible data flow and edge data analysis for operation optimization and quality control

Event Notification
Real-time edge alerts and rule reaction enables device predictive maintenance

Edge Cloud Solution

Advantech's Edge Cloud Solution provides hardware and software integrated packages with high scalability and come pre-integrated with support for both Linux-based Kubernetes and Windows Server environments. In addition, they help with microservice deployment and management and also support a hybrid-cloud structure for connecting to public clouds like Azure or AWS and private clouds.

Microsoft Azure
aws **Alibaba Cloud**
WISE-PaaS

kubernetes

EIS-S232/EIS-S230

Device Status Management
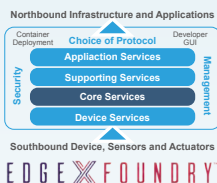

Computing Resource Management

Operation Management

Software Stack Package

Platform Management	Operation Management	Applications Development
Database Management	**WISE-DeviceOn**	**Data Visualization**
PostgreSQL mongoDB.	**Device Management** • Automatic device registration • One-key to dashboard • Device security	Grafana
Backend Management	**Monitoring & Control** • Real-time operations • Power on/off • Remote control	**Applications Management** APP Docker HCR
K8S ceph Prometheus		
Message Broker	**Update Management** • Batch provisioning • Firmware updates • Software updates	**Machine Learning**
RabbitMQ		

Edge Intelligence Solution

Advantech Edge Intelligence Systems provide a wide variety of IoT software solutions. These range between IoT devices operation management software and a domain-focused application industrial apps designed to help users build, manage, and deploy applications.

Sensing Device Connection & Data Acquisition

Northbound Infrastructure and Applications
Container Deployment | Choice of Protocol | Developer GUI
Appliation Services
Security | Supporting Services | Management
Core Services
Device Services
Southbound Device, Sensors and Actuators
EDGE X FOUNDRY

• Neutral and open platform
• Heterogeneous device connection
• Application integration and data analytics

Device Remote Operation Management

WISE-DeviceOn

• Real time monitoring & control
• McAfee security & protection
• Acroins backup & recovery

Data Integration & Edge Management

DeviceOn iEdge

• Support OPC-UA/Modbus/ODBC
• Real-time edge data pre-processing
• Centralized dashboard operation mgmt.

SECS/GEM Data Conversion

iEdge SEMI

• SEMI equipment communications standard
• Data convert to SECS/GEM protocol
• Built-in GEM300 library in SECS driver

PLC Integration & Equipment Connectivity

iEdge PLC

• Supports 450+ PLC drivers
• Lightweight PLC runtime application
• Unlimited free trial tags for connectivity

Vibration Data Monitoring & Analysis

iEdge VAM

• Real-Time vibration monitoring
• Time-Frequency vibration data analysis
• Alarm management and maintenance

EIS-D620
RISC-Based Solution

EIS-D210
Device Connectivity Solution

EI-52
Compact High-performance Solution

Entry → *High Performance*

Vertical Focus and Application Stories

Smart Factory

AIoT technology delivers real-time management and operational efficiency to automated devices and machines. Advantech provides edge to cloud solution with DeviceOn/iEdge data integration and edge management industrial App built-in and helps you launches your intelligent automation project quickly.

✓ Seamless Equipment Data Integration(OPC-UA/ Modbus/ ODBC)
✓ Supports 450+ PLC drivers for equipment connectivity
✓ Ensure remote access, monitoring, and security

DeviceOn iEdge | **iEdge PLC** | **iEdge VAM**

Semiconductor Equipment

In order to remain competitive, the semiconductor industry needs to keep pace with advanced processes and adopt smart manufacturing that boosts productivity and efficiency. Advantech provides iEdge/SEMI software and solution ready packages that address complicated production line problems and improve industry competitiveness.

✓ Collect equipment data and convert to SECS/GEM protocol for overall management
✓ Centralized equipment management and database supports operation stability
✓ Protects against unexpected equipment shutdown and conduct predictive maintenance

DeviceOn iEdge | **iEdge SEMI**

Smart City

Smart City applications often necessitate the deployment of multiple devices over a wide area. Advantech provides a range of sensing-edge-cloud solutions with EdgeX support, wireless IoT connectivity, and DeviceOn remote management to accelerate application deployment.

✓ Supports heterogeneous device connection and communication protocols
✓ Ensures facility remote access and real-time management
✓ 5G/Wi-Fi wireless connectivity and AI add-on computing

EDGE X FOUNDRY | **WISE-DeviceOn** | **5G** | **Wi Fi**

Back-end Server

Integrating substantial IoT data and devices from various system platform creates major challenges for operation managers and IT personnel. Advantech private Edge Cloud Solution is integrated with Kubernetes(K8S) micro-services and multiple databases to accelerate cross-platform integration. You can quick start back-end IoT data services.

✓ Easy cross-platform integration with K8s microservice structure built-in
✓ Pre-integrated with Azure and AWS cloud services for big data analysis
✓ Pre-integrated dashboard delivers real-time centralized management

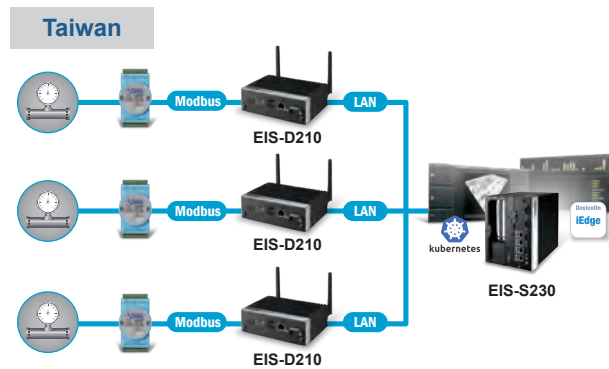**DeviceOn iEdge** | **kubernetes** | **Microsoft Azure** | **aws**

Automatic Welding Machine Monitoring with Customer-centric Demand

• Eases machine data collection with edge-to-cloud integrated system
• Customer-centric dashboard builder with development tools — NodeRed and Grafana
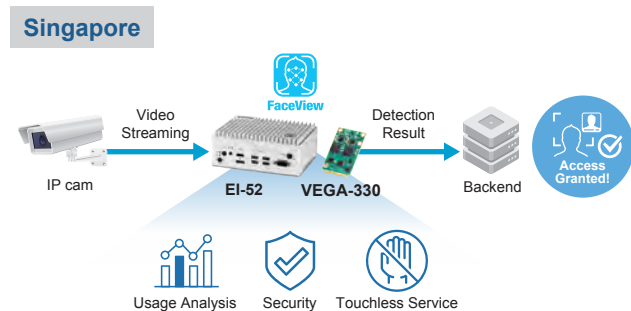• Fanless, rugged, and highly-expandable product designs

Japan

DeviceOn iEdge

Welding Machine Status Monitoring Dashboard

Grafana docker

WiFi

COM

HTTP

Welding Machine PLC   EIS-D210   AIR-300   VUE-5000

Monitor Semiconductor Production Air Pressure in Real Time

• Digitalizes analog air pressure data for collection and visualization
• Enables real-time air pressure monitoring and prompt detection
• Reduces equipment downtime risks using immediate warning notifications while boosting production capacity and improving yield rates

Taiwan

Modbus   LAN
EIS-D210

Modbus   LAN
EIS-D210

Modbus   LAN
EIS-D210

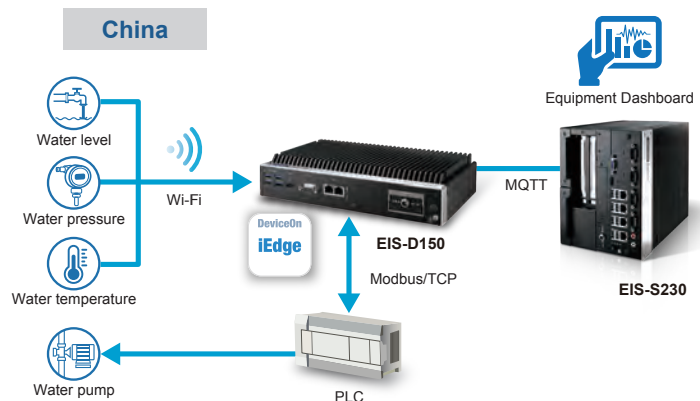DeviceOn iEdge

kubernetes

EIS-S230

Propel the Deployment of the Touchless AI Smart Access Control Systems

• Integrated high-precision facial recognition and multiple software development tools, help system integrators deploy solutions quickly
• Integrated VEGA AI module for applications that require additional AI computing power at the edge.
• Minimizes bandwidth usage and shortens system response times, ensuring system availability and timely alarm notifications in event of abnormal event

Singapore

FaceView

Video Streaming

Detection Result

IP cam   EI-52   VEGA-330   Backend

Access Granted!

Usage Analysis   Security   Touchless Service

Real-time Monitoring Water Circulation Systems

• Reduce human errors and increase efficiency via integrated monitoring system
• Supports multiple communication protocols, data collection, and dashboard visualization
• Real-time remote monitoring and control for equipment at the edge

China

Equipment Dashboard

Water level

Water pressure

Wi-Fi

MQTT

Water temperature

DeviceOn iEdge   EIS-D150

Modbus/TCP

EIS-S230

Water pump   PLC

Product Selection

Edge Intelligence System

NEW

Model Name	EIS-D620 Low Power	EIS-D210 Wireless Connectivity	EIS-D150 High Performance	EIS-D110 Ultra Compact	EI-52 Compact High Performance
CPU	Rockchip RK3399	Intel® Celeron® N3350	6th Gen Intel® Core™ i5 6300U	Intel® Celeron® J1900	11th Gen Intel® Core™ i5-1145G7E/Core i3-1115G4E/Celeron 6305E
RAM/Storage	2GB RAM/16GB eMMC built-in	4GB RAM/64GB SSD built-in	8GB RAM/256GB SSD built-in	Optional	8GB/16GB DDR4 RAM and 64GB SATA Slim SSD Built-in
OS	Debian	Win 10 IoT Enterprise	Win 10 IoT Enterprise	Optional	Win 10 IoT Enterprise
I/O Interface	2 x HDMI, 2 x GbE, 1 x RS-232, 1 x USB 3.0, 1 x USB 2.0	1 x VGA, 2 x GbE, 2 x RS232/422/485, 4 x USB 3.0, iDoor	1 x HDMI, 1 x VGA, 2 x GbE, 4 x RS232/422/485, iDoor	2 x HDMI, 2 x GbE, 1 x RS232/422/485	1 x HDMI, 1 x DP, 2 x GbE, 2 x RS232/422/485, 4 x USB 3.0, 2 x USB 2.0
Wireless Networking	Optional	CE RED/FCC RF Compliance	Optional		CE RED/FCC RF Compliance optional AIW-355 5G module optional EWM-W189H02E WIFI module
Dimensions (W x H x D)	135 x 130 x 29 mm; 5.3 x 5.1 x 1.1 in	133 x 46.4 x 94.2 mm; 5.2 x 1.82 x 3.7 in	260 x 54 x 140.2 mm; 10 x 2.12 x 5.5 in	133.8 x 43.1 x 94.2 mm; 5.26 x 1.69 x 3.7 in	156 x 112 x 60 mm; 6.1 x 4.4 x 2.3 in
Software Package	**DeviceOn/iEdge** **Data Integration and Edge Management** • Data Integration • Centralized Remote Management • Real-time Edge Analytics • Auto Generated Dashboard **Add-on Package:** • iEdgeSEMI for SECS/GEM protocol conversion • iEdgePLC support over 450+ PLC protocol drivers		**WebAccess/SCADA** **Smart SCADA** • Dashboard Editor Viewer • Widget Library & Widget Builder • Cross Browser & Device Viewing (For EIS-D150 and EIS-D210)		**WISE-DeviceOn** **IoT Device Operation** Management • Device Management • Monitoring & Control • Update Management **EDGE X FOUNDRY** • Heterogeneous Devices Connection • Application Integration • Data Analytics Neutral & Open Platform
Development Tools	Node-RED Data Flow Logic Designer & Dashboard Builder Protocol Plug-in SDK & Configuration Tools				Edge X API and SDK
Ordering Information	EIS-D620-D1DE121	EIS-D210W-E1DS642	EIS-D150-E1DS182	EIS-D110-01D0002	EI-52-S6A1 (i5), EI-52-S2A1 (i3), EI-52-U0A1 (Celeron)

Edge Cloud Solutions

NEW

Model Name	EIS-S232 High-end Expansion	EIS-S230 High-end
CPU	Intel® 10th Gen. Xeon® W-1290TE	Intel® 7th Gen. Xeon® E3-1275 V6
RAM/Storage	32GB RAM/1TB SSD built-in	32GB RAM/512GB SSD built-in
OS	Ubuntu 20.04 (64bit)	Ubuntu 16.04 (64bit)
I/O Interface	1 x HDMI, 1 x VGA, 2 x GbEx2, 4 x USB 3.2, 4 x USB 3.0, 6 x COM, GPIO 16bit	1 x HDMI, 1 x VGA, 4 x GbE, 4 x RS-232/422/485, 8 x USB 3.0
Expansion	1 PCIex16, 2 PCI and iDoor	2 PICex8
Wireless Networking	Optional	
Dimensions (W x H x D)	197 x 204 x 230 mm; 7.7 x 8.03 x 9 in	156 x 205 x 230 mm; 6.1 x 8 x 9 in
Software Package	**WISE-DeviceOn** kubernetes PostgreSQL mongoDB **IoT Device Operation Management** • Device Management • Monitoring & Control • Update Management **Platform Management** • Docker, Kubernetes • RabbitMQ, MongoDB • PostgreSQL,Grafana	
Development Tools	Kubernetes DeKvelopment Kit	
Ordering Information	EIS-S232-U20STB1	EIS-S230-U20S501

Solution Ready Package

FAB Environment Monitoring	Process Equipment Management	Equipment Health Monitoring

Solution Offerings

SECS/GEM Protocol Conversion

- Collect equipment data and convert them to SECS/GEM protocol for IT/OT integration
- Secure equipment shutdown with automated notification center

SEMI Equipment Communications Standard

Data convert to SECS/GEM protocol

GEM300

Built-in GEM300 library via SECS driver

Includes edge database and dashboard
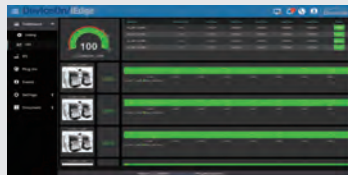
Ordering Information

IEDGE-SEMI-21A

- 1 x EI-52-S6A1 (Intel® Core™ i5-1145G7E, w/16G RAM,64G SSD)
- 1 x 20706WX9VM0024 Win10 image w/ iEdgeSEMI for EI-52
- 1 x 31ASE2ISEC0301 iEdgeSEMI License
- 1 x 36WSWPE2I001A1 DeviceOn/iEdge Client Bundle License 1 device

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PLC Equipment Management

- Supports Mitsubishi, Omron, and Simens PLC protocols
- Centralized equipment management with user friendly dashboard

450+ PLC driver support

Lightweight PLC runtime application

Unlimited free trial tags for PLC connectivity

Easy implementation and deployment
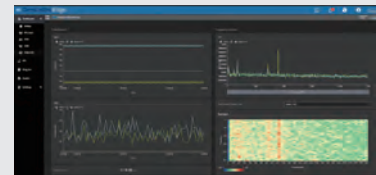
Ordering Information

IEDGE-PLC-21A

- 1 x EIS-D210 (Intel® Celeron® N3350/4GB RAM/64GB SSD/Win10)
- Win10 image w/ iEdgePLC for EIS-D210
- 1 x 36WSWPE2I001A1 DeviceOn/iEdge Client Bundle License 1 device
- iEdgePLC trial version

Vibration Data Monitoring

- Monitor rotating equipment in real time by converting sensor data to RMS/FFT/Spectrogram
- Model normal status monitoring, discover problems early, and avoid costly downtime

Real-time vibration monitoring

Time-frequency vibration data analysis

Condition monitoring

Alarm management and maintenance

Ordering Information

IEDGE-VAM-21A (by request)

- EIS-D150 x1
- 1 x 36WSWPE2I001A1 DeviceOn/iEdge Client Bundle License for 1 x device
- Vibration Sensor, Vibration Software, and Vibration DAQ

Regional Service & Customization Centers

China	Taiwan	Netherlands	Poland	USA
Kunshan 86-512-5777-5666	Taipei 886-2-7732-3399	Eindhoven 31-40-267-7000	Warsaw 00800-2426-8080	Milpitas, CA 1-408-519-3898

Worldwide Offices

Asia Pacific

Taiwan
Toll Free	0800-777-111
Taipei & IoT Campus	886-2-7732-3399
Taichung	886-4-2372-5058
Kaohsiung	886-7-392-3600

China
Toll Free	800-810-0345
Beijing	86-10-6298-4346
Shanghai	86-21-3632-1616
Shenzhen	86-755-8212-4222
Chengdu	86-28-8545-0198
Hong Kong	852-2720-5118

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Osaka	81-6-6267-1887
Nagoya	81-0800-500-1055
Nogata	81-949-22-2890

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Singapore	65-6442-1000

Malaysia
Kuala Lumpur	60-3-7725-4188
Penang	60-4-537-9188

Thailand
Bangkok	66-02-2488306-9

Vietnam
Hanoi	84-24-3399-1155
Hochiminh	84-28-3836-5856

Indonesia
Jakarta	62-21-751-1939

Australia
Toll Free	1300-308-531
Melbourne	61-3-9797-0100

India
Bangalore	91-94-4839-7300
Pune	91-94-2260-2349

Europe

Netherlands
Eindhoven	31-40-267-7000
Breda	31-76-523-3100

Germany
Toll Free	00800-2426-8080/81
Munich	49-89-12599-0
Düsseldorf	49-2103-97-855-0

France
Paris	33-1-4119-4666

Italy
Milan	39-02-9544-961

UK
Newcastle	44-0-191-262-4844
London	44-0-870-493-1433

Spain
Madrid	34-91-668-86-76

Sweden
Stockholm	46-0-864-60-500

Poland
Warsaw	48-22-31-51-100

Russia
Moscow	8-800-555-01-50
St. Petersburg	8-812-332-57-27
	8-921-575-13-59

Czech Republic
Ústí nad Orlicí	420-465-524-421

Ireland
Galway	353-91-792444

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Irvine	1-949-420-2500
Ottawa	1-815-433-5100
Chicago	1-888-576-9668
Boston	1-800-866-6008

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São Paulo	55-11-5592-5367

Mexico
Toll Free	1-800-467-2415
Mexico City	52-55-6275-2777
Guadalajara	52-33-3169-7670

Middle East and Africa
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Turkey	90-212-222-0422
Turkey-Bursa	90-224-413-3134

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