# EIS-D210

## Wireless Connectivity Edge Intelligence Server

**NEW**

**DeviceOn iEdge**
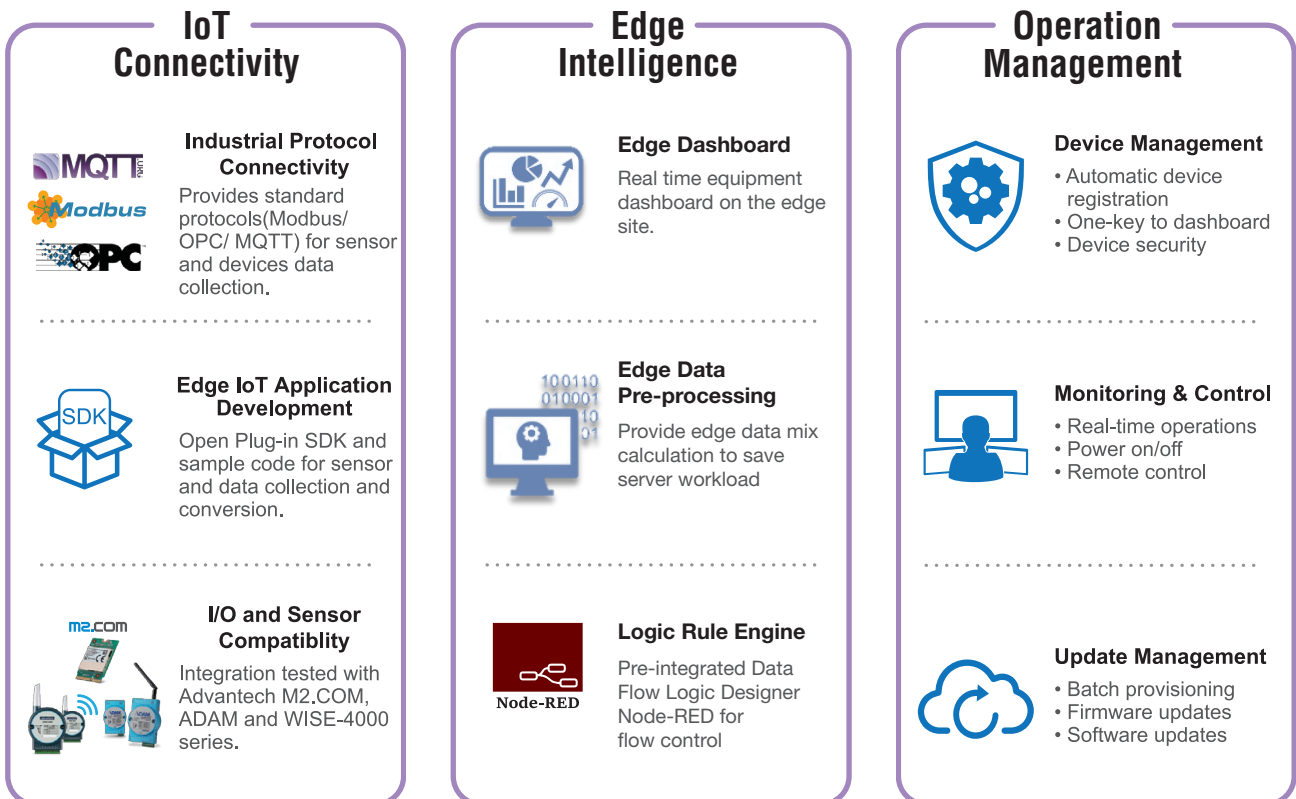
**DeviceOn/iEdge**

## Features

- Integrated hardware plus software to build up edge-to-cloud applications
- Pre-configured system: Intel® Celeron® N3350/E3940 SoC, Win 10 Ent with 4GB Memory, 64 GB SSD and wireless networking
- Pre-integrated software package: WISE-DeviceOn, WebAccess/SCADA and iEdge for equipment connectivity
- Pre-configured Microsoft Azure service: Device Management Package/ Data Intelligence Package (Optional)
- Pre-configured AWS service: Connect & Collect Package (Optional)
- Comprehensive developer tools and documents: Node-RED data flow logic designer, dashboard builder, protocol plug-in SDK & configuration tools

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## Introduction

To fulfill customer requirements in equipment connectivity, data visualization, and predictive maintenance applications, Advantech offers the EIS-D210 Edge Intelligence Server, which is equipped with an Intel® Celeron® Processor N3350 and comes integrated with AWS Greengrass and Microsoft Azure IoT Edge, thus ensuring that IoT devices can respond quickly to local events, interact with local resources, operate with intermittent connections, and minimize the cost of transmitting IoT data to the cloud. In addition to supporting field protocols (MQTT/OPC/Modbus) for sensor/device data acquisition, the EIS-D210 can be used with the Advantech IoT SDK for wireless sensor (Wi-Fi, Bluetooth, LoRa) data integration. Furthermore, the EIS-D210 comes pre-integrated with Advantech's DeviceOn/iEdge software solution, allowing users to incorporate sensor data aggregation, edge analytics, and cloud applications for fast and easy real-time operational intelligence. EIS-D210 provides a range of connectivity options with excellent data handling and networking connection capabilities for various IoT applications.

## Solution Block Diagram

### IoT Connectivity

**MQTT Modbus OPC**

**Industrial Protocol Connectivity**

Provides standard protocols(Modbus/ OPC/ MQTT) for sensor and devices data collection.

**SDK**

**Edge IoT Application Development**

Open Plug-in SDK and sample code for sensor and data collection and conversion.

**m2.COM**

**I/O and Sensor Compatiblity**

Integration tested with Advantech M2.COM, ADAM and WISE-4000 series.

### Edge Intelligence

**Edge Dashboard**

Real time equipment dashboard on the edge site.

**Edge Data Pre-processing**

Provide edge data mix calculation to save server workload

**Node-RED**

**Logic Rule Engine**

Pre-integrated Data Flow Logic Designer Node-RED for flow control

### Operation Management

**Device Management**

- Automatic device registration
- One-key to dashboard
- Device security

**Monitoring & Control**

- Real-time operations
- Power on/off
- Remote control

**Update Management**

- Batch provisioning
- Firmware updates
- Software updates

# Cloud Integration

### Microsoft Azure Cloud Services

Pre-configured with Azure Kubernetes services to quickly integrate with other cloud modules and shorten development effort.

Microsoft Azure

### Cloud Connectivity

Azure IoT Edge / Plug and play certification and AWS Greengrass certification

Azure    aws

### Edge Cloud

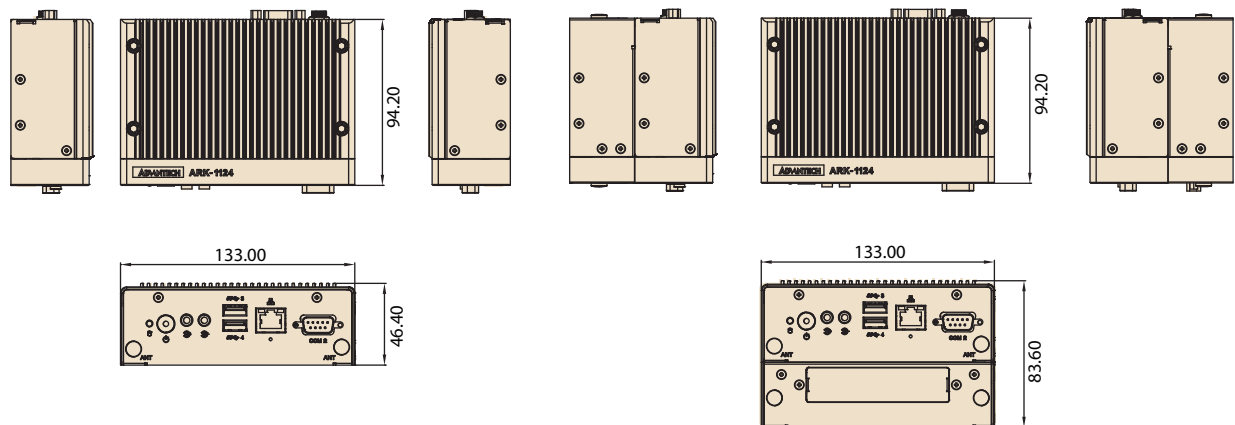Edge Cloud (EIS-S230) provides a scalable data management platform with Kubernetes open standard environment

# IoT Development Tools

| | |
|---|---|
| Node-RED Utility | Pre- integrated logic edit tool Node-RED |
| Data Collection | Receive Data to Agent and transfer to WISE-PaaS/RMM server |
| Data Conversion | Conversion data protocol to MQTT with JSON format |
| Plug-in SDK | Agent and protocol conversion plug-in SDK for developer |
| GUI Protocol Config Tool (for Modbus) | Provide Modbus GUI for quick configuration |
| Back-up and System Recovery | Acronis Hot back-up/ Recovery/ Hot-Key recovery |
| Security | McAfee white list protection |
| Remote Update (OTA) | Software(Advantech & 3rd party) update |
| Zero Downtime | Reserve edge data when lost connection and recover it when the connection is back |
| Light Analytic | Statistics and graphical representation of historical data |
| Dashboard Builder | Customizable dashboard to display sensor data with text, spark line, gauge, etc. types of widgets |

**Support depends on device type, OS and account permission.

# Dimensions

Unit: mm



94.20

133.00

46.40

94.20

133.00

83.60

# Specifications

| Processor System | CPU | Intel® Celeron® N3350 Dual Core SoC |
|---|---|---|
| | Frequency | 1.1GHz, turbo burst 2.4 GHz |
| | L2 Cache | 2 MB |
| | BIOS | AMI EFI 64 bit |
| Memory | Technology | DDR3L 1866 MHz |
| | Max. Capacity | 8 GB |
| | Socket | 1 x 204-pin SO-DIMM |
| Graphics | Chipset | Intel® HD Graphics 500 |
| | Graphic Engine | 4K Codec Decode& Encode for H.264, MPEG2, MVC, VC-1, WMV9, H.265 / HEVC, VP8, JPEG / MJPEG |
| | VGA | Up to 2048 x 1280 @ 60Hz |
| Ethernet | LAN1 | 10/100/1000 Mbps Intel i210 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,,Line-in |
| IO Interface | Serial Ports | 2 x RS-232/422/485 port with auto flow control |
| | USB Interface | 4 x USB 3.0 |
| Other | Watchdog timer | 255 levels timer interval, setup by software |
| | TPM | Infineon SLB9665XQ 2.0 |
| Expansion | Mini PCIe | 1 x full-size mPCIe for WLAN/WWAN with SIM holder |
| | M.2 | 1 x M.2 E-key for WIFI (by CTOS or T-PN) |
| | iDoor | 1, optional (2nd layer) |
| Storage | HDD/SSD | Supports 1 x SATA III Drive Bay (Compatible with 9.5mm height) |
| Software Support | Microsoft Windows | Win 10 IoT Enterprise LTSB |
| | Linux | Support by project |
| Power Requirement | Power Type | AT/ATX |
| | Power Input Voltage | 12$V_{DC}$ (Optional 12~24V power module) |
| | Minimum Power Input | 12 V, 5 A |
| | Power Adapter | AC to DC, DC12 V/5 A, 60 W with lockable DC Jack |
| Power Consumption | Typical | 5W |
| | Max. | 15.73W |
| Mechanical | Construction | Aluminum housing |
| | Mounting | DIN-Rail/Wall/VESA Mounting Kits (Optional) |
| | Dimensions (W x H x D) | 133 x 46.4 x 94.2mm (5.24" x 1.83" x 3.71") |
| | Weight | 0.7 Kg (1.55lb) |
| Environment | Operating Temperature | With extended temperature peripherals: -20 ~ 60 °C (-4 ~ 140 °F) with 0.7m/s air flow<br>With 2.5-inch hard disk 0 ~ 40 °C (32 ~ 104 °F) with 0.7m/s air flow |
| | Storage Temperature | - 40 ~ 85 °C ( -40 ~ 185 °F) |
| | 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<br>With HDD: 0.5Grms, 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<br>With HDD: 10G, IEC 60068-2-27, half sine, 11 ms duration |
| | EMC | CE/FCC Class B, CCC, BSMI |
| | Safety Certifications | UL, CB, CCC, BSMI |

# Ordering Information

| Part Number | CPU | Memory | Storage | OS | Display | GbE | USB 3.0 | RS-232/ 422/485 | Audio | RF Controller | Power Input | mSATA | Operating Temperature* |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| EIS-D210W-E1DS641 | Intel N3350 Dual Core SoC | 4 GB | 64G 2.5" SATAIII SSD | Win 10 Ent | 1 x VGA | 2 | 4 | 2 | Line in Line out | Atheros QCA6174A | 12 $V_{DC}$ | 1 | -20 ~ 60° C |
| EIS-D210-01D0002 | Intel N3350 Dual Core SoC | Option | Option | Option | 1 x VGA | 2 | 4 | 2 | Line in Line out | Option | 12 $V_{DC}$ | 1 | -20 ~ 60° C |

* If industrial grade memory and SSD selected.

# Packing List

| Item | Description |
|---|---|
| 1 | EIS-D210 Edge Computer |
| 2 | WISE-PaaS software packages |
| 3 | 12V/60W AC to DC Adaptor |
| 4 | Accessory Package |

# Optional Items

| Part Number | Description |
|---|---|
| 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 |
|---|---|
| 20706U20DS0023 | Ubuntu Desktop 20.04 LTS 64bit for EIS-D210 |