real data from real devices
Collecting data from the edge with Advantech intelligent devices
Advantech intelligent devices are compatible with numerous software solutions to bring you the data you need, when you need it. Through working with domain-focused partners, systems integrators, and additional software providers, our devices are well-suited for various systems and protocols. At Advantech we’re constantly looking for new data and networking solutions so you can get the most out of your data—and make it a painless process.

Need to integrate data from PLC and automation networks?

Get help with the top industrial PCs on the market

Advantech’s UNO is a cost effective “pocket-sized” modular Smart Edge Gateway that is fan-less and highly ruggedized for business-critical and mission-critical applications. When running, the UNO will connect with OPC-UA, MQTT Sparkplug-B, Modbus, Siemens, and Allen Bradley devices, supporting up to 500 tags. Users are able to connect to virtually any PLC. The UNO can be used in combination with Advantech sensor nodes to easily add sensor data. Additional Industrial PC sizes and configurations are available, including C1D2-rated devices, modular iDoor expansions, and more.

Need to add a local HMI, IIoT interface, or both?

Choose a compatible Touch Panel Computer

The Advantech TPC-1551 Series touch panel computer is a state-of-the-art HMI that provides seamless interaction between humans, machines, and IIoT data. Status and alarm data is available for applications, including status dashboards on system components.

Need rugged Ethernet switches?

Advantech Ethernet switches not only handle your networking needs, specific models also report network status over Modbus, Ethernet/IP or PROFINET protocols, allowing you to integrate network status and network health information directly into your SCADA system. Additionally, multiple EKI switch models also offer MQTT. Managed EKI series switches support our innovative IXM™ configuration solution, which lets you configure one switch and synchronize its settings with similar switches on a network. IXM dramatically reduces configuration time on medium and large networks.

When a “stranded asset” is really stranded

Advantech LTE & WAN/LAN Gateways bring your remote devices and networks back in reach

The Smartflex gateway is an advanced LTE router that can bridge remote devices and entire networks to your local SCADA and Industrial IoT systems. Wide temperature ratings and a wide range of Ethernet and serial port options make Smartflex the perfect solution for integrating data from remote locations into your SCADA and IIoT system. The SmartStart LTE Cat 1 and Cat 4 family of routers and gateways are the perfect way to connect Ethernet, Wi-Fi, and serial devices to an LTE network.
Need to integrate sensors and I/O?

The WISE-4000 wireless I/O module has broad adoptability, making it a reliable source of big data that benefits users in identifying next steps and actions to take. WISE can log up to 10,000 data samples with a time stamp; I/O data can be logged periodically, and when the I/O status changes. Once the memory is full, users can choose to overwrite old data, ring log, or stop the log function.

Wzzard Wireless Mesh Sensing Nodes are tailor-made for bringing hard-to-reach sensor data into SCADA and IIoT solutions. Wzzard sensor nodes are battery powered and IP67- and C1D2-rated, making them easy to integrate even in harsh environments. They utilize Smartmesh IP, a self-forming, self-healing wireless mesh protocol that not only provides a highly-reliable and resilient network, but is also easy to deploy.

WISE (LoRa) Wireless LoRaWAN MQTT Engine Outdoor rated 9-36 VDC

WISE Wi-Fi Modbus TCP MQTT Indoor 10-30 VDC

ADAM Ethernet Modbus TCP MQTT Indoor 10-30 VDC

Which sensing solution is right for your application?

Choose WISE when you can tie into an existing Wi-Fi infrastructure and have access to power for the node.

Choose Wzzard when you’ve got a cluster of sensors in one facility or campus and take advantage of its wireless mesh technology.

Choose ADAM when you have easy access to an Ethernet connection and power for the node.
The LoRa solution is ideal for applications in remote areas (e.g. for flood monitoring) and harsh environments (e.g. extreme temperatures, high humidity). This solution utilizes LoRa wireless technology to overcome the boundary of distance, thereby maximizing monitoring efficiency and overall productivity.

What is LoRa?

- **Long Distance (5 ~ 15 km)**
  Single base station provides deep penetration in dense urban/indoor regions, plus connects rural areas up to 30 miles away.

- **Low Power Consumption**
  Protocol designed specifically for low power consumption extending battery lifetime over years.

- **High Capacity**
  Supports millions of messages per base station, ideal for public network operators serving many customers.

- **Cost Effective**
  Reduces costs three ways: infrastructure investment, operating expenses, and end-node sensor.

- **High Security**
  Embedded end-to-end AES128 encryption

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**Product Selection Guide**

<table>
<thead>
<tr>
<th>Model Name</th>
<th>WISE-6610</th>
<th>WISE-4610</th>
<th>Wizzard Node</th>
</tr>
</thead>
<tbody>
<tr>
<td>Description</td>
<td>Industrial LoRaWAN Gateway</td>
<td>Industrial LoRaWAN Sensor Node</td>
<td>Industrial LoRaWAN Sensor Node</td>
</tr>
<tr>
<td>Wireless</td>
<td>LoRaWAN</td>
<td>LRWAN &amp; GNSS</td>
<td>LoRaWAN</td>
</tr>
<tr>
<td>Communication Interface and I/O</td>
<td>ETH/IO</td>
<td>S672: 6 x DI RS232, RS-485 S614: 4 x AI, 4 x DI</td>
<td>Option 1: RS-485 with Modbus RTU Option 2: 4xAI, 2xDI, 1xDO</td>
</tr>
<tr>
<td>Temperature</td>
<td>-40~75˚C</td>
<td>Battery: 0<del>60˚C No Battery: -20</del>70˚C</td>
<td>-40~75˚C</td>
</tr>
<tr>
<td>Power</td>
<td>9~36 VDC</td>
<td>400mAh Rechargable Battery 10~50 VDC line power or solar panel</td>
<td>9~36 VDC</td>
</tr>
<tr>
<td>Dimensions (without antenna) W x H x D</td>
<td>150 x 30 x 83 mm</td>
<td>82 x 122 x 48.8 mm</td>
<td>95 x 116 x 65 mm</td>
</tr>
</tbody>
</table>

LoRaWAN Gateway acts as a base station. Data will be collected from end nodes to network server so it needs to cooperate with a network service provider.
LoRa Applications

**Agriculture**
- Smart irrigation Systems
- Irrigation Control
- Environment Sensing
- Animal Tracking
- Animal Sensing - ovulation, birth

**iFactory & IEM**
- Machine Condition Monitoring
- Water Meters
- Gas Meters
- Infrastructure & Production

**Energy & Environment**
- Forest Fires
- Air Pollution
- Earthquake Sensors
- Avalanche and Flooding
- Heating and AC
- Electric Smart Grid

**Smart City**
- Smart Parking
- Traffic Sensors & Control
- Street Lighting
- Advertising Displays, Signage
- Bridge, Building, Infrastructure Monitoring

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Automation or IIoT Overlay Network

Sensor Data

Corporate Network

Managed Ethernet Switch

UNO Gateway

Ethernet I/O

Wi-Fi I/O

Wireless Sensor Mesh

PLC Network 1

HMI or IoT Panel

UNO Gateway

PLC Network 2

Ethernet I/O

Wireless Sensor Mesh

MQTT

SP-B

Gateways convert disparate industrial protocol to MQTT

Managed Ethernet Switches*

TPC-1551 Series Touch Panel Computer*

UNO Smart Factory Edge Gateway*

ADAM Ethernet I/O Module*

WISE-4000 Series Wireless I/O Module

Wzzard Wireless Nodes*

LoRaWAN Gateway & Sensor Nodes

SmartStart/SmartFlex Cellular Routers*

*Now supports MQTT
To learn more about these and additional products:
Visit us at advantech.com