Advanced Industrial LoRaWAN Wireless I/O Module

IIoT LoRaWAN Wireless I/O Solution

- ╱ Cloud Integration Architecture of LoRaWAN
- ╱ Factory Industrial IoT
- ╱ Smart Agriculture
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LoRa**WAN**™

WISE-4610

ADVANTECH

Enabling an Intelligent Planet

Cloud Integration Architecture of LoRaWAN

THE THINGS NETWORK

everynet

Actility

About LoRaWAN

Advantech LoRaWAN solutions provide a device-to-cloud solution by simply sending collected data through the LoRa gateway to the cloud. It supports both public LoRaWAN and private LoRaWAN solutions. With Edgelink inside the gateway, it also helps users simply plug-and-play without worrying about data parsing processes.

Private LoRa WISE-3610

LoRaWAN 3rd Party GW

WISE-4610

WISE-4610 I/O Module

Private Server or Public Cloud
Modbus RTU or MQTT to WISE-PaaS or The Things Network etc.

Rechargeable Battery
3 Ways Power WISE-4610: Line Power, Solar Panel & Battery

IP65 Water Proof Enclosure with M12 Connectors

Variety I/O Combination
AI/DI/DO/RS-485/232

High Flexibility of Deployment

GPS / Galileo / BeiDou / GLONASS

Deeper Penetration & Wide Coverage

External Detachable LoRa Antenna

Azure

AWS

ADVANTECH
WISE-PaaS

LAN/4G LTE

LoRaWAN
WISE-6610

WISE-PaaS/ EdgeLink

WISE-4610

Introduction
WISE-6610

In global community networks, routing data between devices and application servers, and connecting things to private cloud or public clouds enables big data analysis. The WISE-6610 plays a key role in connecting sensor devices to the cloud. With network service providers like "The Things Network" or WISE-PaaS EdgeLink, the WISE-6610 utilizes data collection to perform intelligent Internet of Things applications.
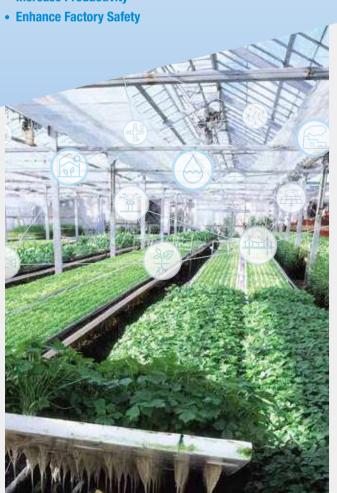
To provide a more complete solution, WISE-4610 features an IP65 enclosure with M12 connectors, solar panel rechargeable battery, and low-power consumption to make it as one of the best applications for outdoor deployment scenarios like smart agriculture and cities.
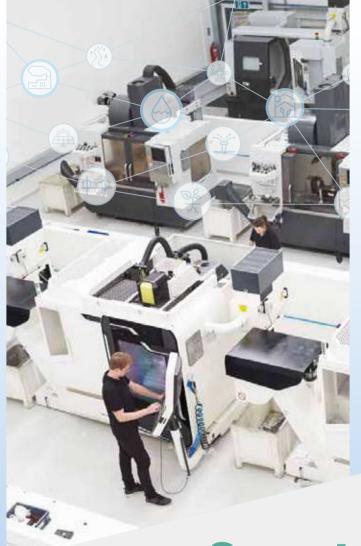
WISE-4610 is independent; users don't have to worry about the signal coverage of base stations once the gateway deployed. Not only can users build either private networks or public networks, but they also enjoy the high flexibility of infrastructure deployment. The most important feature if that WISE-4610 offers a variety of I/O combinations. We provide device solutions with a wireless interface and added I/O to collect data from monitoring to the servers. With modularization features, you can customize WISE-4610 to any kind of I/O combination for an array of IIOT scenarios.

Factory Industrial IoT

The point of IIoT (Industrial Internet of Thing) is to deploy many types of sensors in a factory to collect vast quantities of information and send the corresponding data to the control center. Users can not only set the threshold for the system but also get in-time alerts to ensure safety control and maximize productivity. The primary benefit of using the Advantech WISE-4610 outdoor LoRa/LoRaWAN I/O node in a factory is that users do not need to worry about signal penetration issues and/or tangled and complex wiring. Using humidity and temperature to monitor warehouses and storage environments through the control center offers an efficient alternative to the traditional one-by-one inspection. With the pressure sensor paired with a WISE-4610 analog input I/O board, alerts can be triggered when the pressure levels (water pressure, oil pressure, gas pressure…) are abnormal. This increases safety and improves production quality by controlling the materia usage in the manufacturing process. WISE-4610 also measures the current and voltage loading of factory electricity systems.

- **Higher Penetration**
- **Lower Power Consumption**
- **No Wiring Needed**
- **Increase Productivity**
- **Enhance Factory Safety**
- **Control Factory Resource Usage**
- **Automatic Alerts**

Smart Agriculture

The architecture of the Advantech LoRa/LoRaWAN solution in smart agriculture connects sensors with the WISE-4610 outdoor LoRa/LoRaWAN I/O node and sends the data through a gateway to the cloud. In this use case, the application collects temperature, humidity and soil PH data to better understand the environmental situation. The WISE-4610 outdoor LoRa/LoRaWAN I/O node is designed with solar panel rechargeable batteries to make the solution more independent. Users can add a solar panel with the WISE-4610 node to fulfill a power source need. WISE-4610 is designed with an IP65 enclosure and M12 connectors to offer an optimal fit for outdoor applications.

- **Flexibility of deployment without worrying about signal coverage**
- **No monthly payment by using LoRa network**
- **Solar powered or solar rechargeable battery to make the device more independent**
- **Allows farmers to minimize resources such as water and fertilizers**
- **Upgraded data collection process helps with wireless monitoring and control**
- **Cost effective**

WISE-4610 Series
(Advanced Industrial LoRaWAN I/O Module)

Advanced Industrial LoRa/LoRaWAN Wireless Module			
Model Name	WISE-4610-NA	WISE-4610-EA	WISE-4610-JA
Frequency Range	US 902~923 MHz	EU 863~870 MHz	AS 923~923.5 MHz
Function	Wireless Board		
Positioning	GPS / Galileo / BeiDou / GLONASS		
Power Input	4000 Lithium Rechargeable Battery 10~50Vdc External Power 17-21.6Vdc Solar Panel		
Configuration Interface	Micro-B USB		

IP 65 I/O Module					
Model Name	WISE-S614-A	WISE-S615-A	WISE-S617-A	WISE-S672-A	WISE-S600
Spec	4AI & 4DI	RTD	2AI, 2DI, 1DO & 1RS-485	6DI, 1RS-485 & 1RS-485/232	Upon Customization Request *MOQ required

WISE-6610 Series
(LoRaWAN Gateway)

Model Name	WISE-6610-A500	WISE-6610-E100	WISE-6610-E500	WISE-6610-N100	WISE-6610-N500	WISE-6610-A100
Wireless Communication	LoRaWAN	LoRaWAN	LoRaWAN	LoRaWAN	LoRaWAN	LoRaWAN
Frequency	923MHz	868MHz	868MHz	915MHz	915MHz	923MHz
Support Node	500	100	500	100	500	100
Antenna Number	1	1	1	1	1	1
Operating Temperature	-40 ~ 75°C (-40 ~ 167°F)	-40 ~ 75°C (-40 ~ 167°F)	-40 ~ 75°C (-40 ~ 167°F)	-40 ~ 75°C (-40 ~ 167°F)	-40 ~ 75°C (-40 ~ 167°F)	-40 ~ 75°C (-40 ~ 167°F)
Mounting	Wall	Wall	Wall	Wall	Wall	Wall
Power Input	9 ~ 36 VDC	9 ~ 36 VDC	9 ~ 36 VDC	9 ~ 36 VDC	9 ~ 36 VDC	9 ~ 36 VDC
Power Connector	4-way Molex mini-fit connector	4-way Molex mini-fit connector	4-way Molex mini-fit connector	4-way Molex mini-fit connector	4-way Molex mini-fit connector	4-way Molex mini-fit connector
Power Consumption	4W	4W	4W	4W	4W	4W

Model Name	WISE-6610-E100C-A	WISE-6610-E500C-A	WISE-6610-N100C-A	WISE-6610-N500C-A
Wireless Communication	LoRaWAN/LTE	LoRaWAN/LTE	LoRaWAN/LTE	LoRaWAN/LTE
Frequency	868MHz	868MHz	915MHz	915MHz
Support Node	100	500	100	100
Antenna Number	3	3	3	3
Operating Temperature	-40 ~ 75°C (-40 ~ 167°F)	-40 ~ 75°C (-40 ~ 167°F)	-40 ~ 75°C (-40 ~ 167°F)	-40 ~ 75°C (-40 ~ 167°F)
Mounting	Wall	Wall	Wall	Wall
Power Input	9 ~ 36 VDC	9 ~ 36 VDC	9 ~ 36 VDC	9 ~ 36 VDC
Power Connector	4-way Molex mini-fit connector	4-way Molex mini-fit connector	4-way Molex mini-fit connector	4-way Molex mini-fit connector
Power Consumption	9W	9W	9W	9W

Regional Service & Customization Centers

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