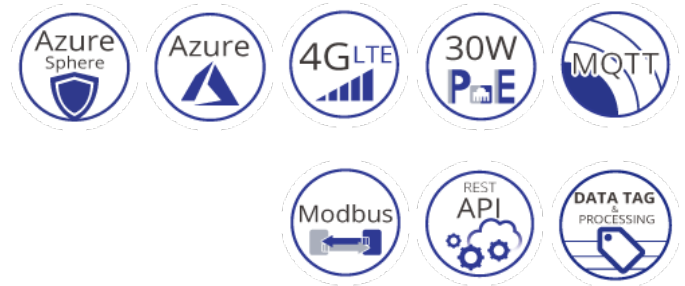# AiR GUARD
Industrial IoT Cellular Smart Security Gateway

Overview

Over the past few years, the Internet of Things (IoT) has captured headlines across the world. With its network of "Smart," sensor-enabled devices that can communicate and coordinate with one another via the Internet, the IoT can facilitate computer-mediated strategies for managing city resources, energy management, and numerous other tasks. However, the way forward for IoT may be complicated. As with any technology in its early stages, cybersecurity concerns will be prevalent. There have already been instances of hackers wreaking havoc by infiltrating connected IoT devices.

In light of the essential need for security, EtherWAN's AiR GUARD is an advanced IIoT cellular gateway and 4G LTE PoE device specifically optimized for secure IoT data transmission, running with Microsoft's Azure Sphere. Offering not only secure connectivity, it also provides industrial protocols and easy to use data pre-processing and conversion for efficient and low-cost edge to cloud connectivity. AiR GUARD is your IoT guardian.

EtherWAN — "**When Connectivity is Crucial.**"

Spotlight

+ Built-in Microsoft security technology

AiR GUARD's built-in Azure Sphere chip provides secure connectivity based on a hardware root of trust, and its OS adds layers of protection with continuous updates to ensure a trustworthy platform.

+ Highly-reliable network connection

Offers multiple internet access methods: 10/100 BASE-T(X) & Gigabit Ethernet; Global 3G/4G LTE Cat.4 networks

+ Convenient 30W PoE to power connected devices

Offers one port of 10/100/1000 BASE PoE IEEE802.3at Power over Ethernet

+ Data processing and conversion ability

Built-in Data Tag Engine
Easy integration of equipment data into middleware with secured data conversion to optimize efficiency with connected equipment

+ Automatic OTA firmware upgrade

The ability to add new software features to a product after a device has been deployed in the field to improve functionality over time
The opportunity to rapidly respond to bugs and security updates

+ Supports RESTful API

Easy to acquire data or remote configure settings

Azure Sphere

+ Azure Sphere certified microcontroller

Azure Sphere MT3620

+ Hardware-based root of trust

Prevents device forgery or spoofing

+ Defense in depth

Multiple layers of security - each layer of soft-ware (Azure Sphere OS) verifies that the layer above it is secured

+ Certificate-based authentication

Signed certificates validated by cryptographic Key

+ Renewable security

Device software is automatically updated to correct known vulnerabilities or security breaches

+ IIoT Connectivity with Azure Sphere Security Service

Microsoft secures the Firmware with timely updates for 10 years
Protects your devices and your customers with certificate-based authentication of all devices and communication
Detects emerging security threats through automated processing of on-device errors

Specifications

➕ Cellular

Standards
4G LTE: FDD-LTE, TDD-LTE, Transfer rate (max):
LTE FDD: 150Mbps down; 50Mbps up
LTE TDD: 130Mbps down; 35Mbps up
3G: WCDMA, Transfer rate (max): 42Mbps down;
5.76Mbps up
2G: GSM/EDGE, Edge Transfer rate (max):
236.8Kbps down & up

SIM Slot
1 x nano SIM card slot

Antenna connector
2 x SMA Female

➕ Ethernet

Standards
IEEE 802.3 10BASE-T
IEEE 802.3u 100BASE-TX/100BASE-FX
IEEE 802.3ab 1000BASE-T
IEEE802.3at Power over Ethernet

Ports
1 x 10/100/1000 PoE 802.3at PSE + 1x 100/1000
BASE-T(X) + 1 x 10/100BASE-T(X)

➕ Serial

Ports
2 x RS485

➕ I/O

DI/DO
1 x Digital In ("Logic 0": 0-2V, "Logic 1": 5-30V)
1 x Digital Out (Relay Mode, up to 30V/1A)

➕ Power

Input
12-24VDC

Power consumption
18 Watts (without PoE active)

➕ Physical

Casing Material
Metal case

IP Rating
IP30

Dimensions
138 x 110 x 45mm (HxDxW)

Weight
0.7Kg

Installation Type
DIN-Rail mounting

➕ Environment Limits

Operating Temp.
-40 to 75°C (-40 to 167°F)

Storage Temp.
-40 to 85°C (-40 to 185°F)

Relative Humidity
5% to 95% (non-condensing)

+ Micro SD

Capacity
Max. Storage of 64GB

+ LED Indicators

System
Power , System status, LTE status , AZS (Azure Sphere) , COM 1, COM 2

+ Regulatory Approvals

Safety
EN IEC 62368-1:2020+A11:2020

Emissions/Immunity
EU: CE
UK: UKCA
US: FCC part 15B
Taiwan: NCC
Singapore: IMDA
Thailand: NBTC
Australia: RCM

Features

+ Functions

Cellular
3GPP, 3G/4G

Ether-WAN
Dynamic IP, Static IP, PPPoE

Protocols
DHCP Server. LLDP

Port Forwarding
NAT, Virtual Server/Computer

+ Network Management

Configuration
Web Console, SSH, HTTPS

System
Firmware upgrade, configuration backup & restore, reboot & reset default

Diagnostic
Ping, Traceroute

+ Security

VPN
OpenVPN:
• Server / Client

+ Field Communication

Modbus
Modbus TCP, Modbus RTU Master

Data Interchange
MQTT Client

RESTful API
Easy to acquire data or remote configure settings

Data Tag Engine
Front-end device raw data to convert to be logical data by Tag based and specified Tag data format combination to the cloud.

## + Service

OTA F/W upgrade automatically
Use Cellular or Ethernet WAN to update new version system firmware and Azure Sphere Security

Frequency Bands

➕ Frequency Bands Region Code Optional

| Sku Code | 4G LTE | | 3G | 2G | Region |
	FDD LTE	TDD LTE	WCDMA	GSM/EDGE	
TA	B1(2100)/3(1800)/ 4(AWS)/5(850)/7(2600)/ 8(900)/28(700 APT)	B40(2300)	B1(2100)/2(1900)/ 5(850)/8(900)	B2(1900)/3(1800)/ 5(850)/8(900)	Taiwan & Australia
EA	B1(2100)/3(1800)/5(850)/ 7(2600)/8(900)/20(800)	B38(TD 2600)/40(TDV 2300)/ 41(TD 2500)	B1(2100) / 5(850)/ 8(900)	B3(1800)/8(900)	EU & APAC*/ Singapore / Thailand

Application
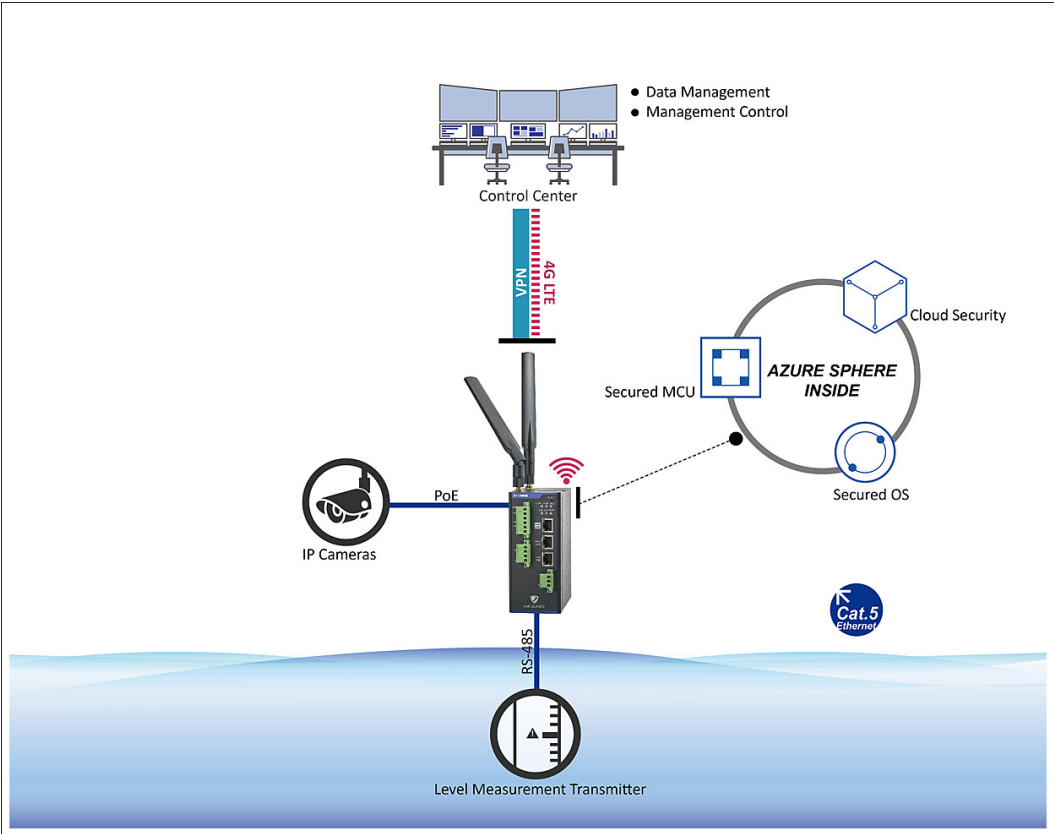
Dimensions
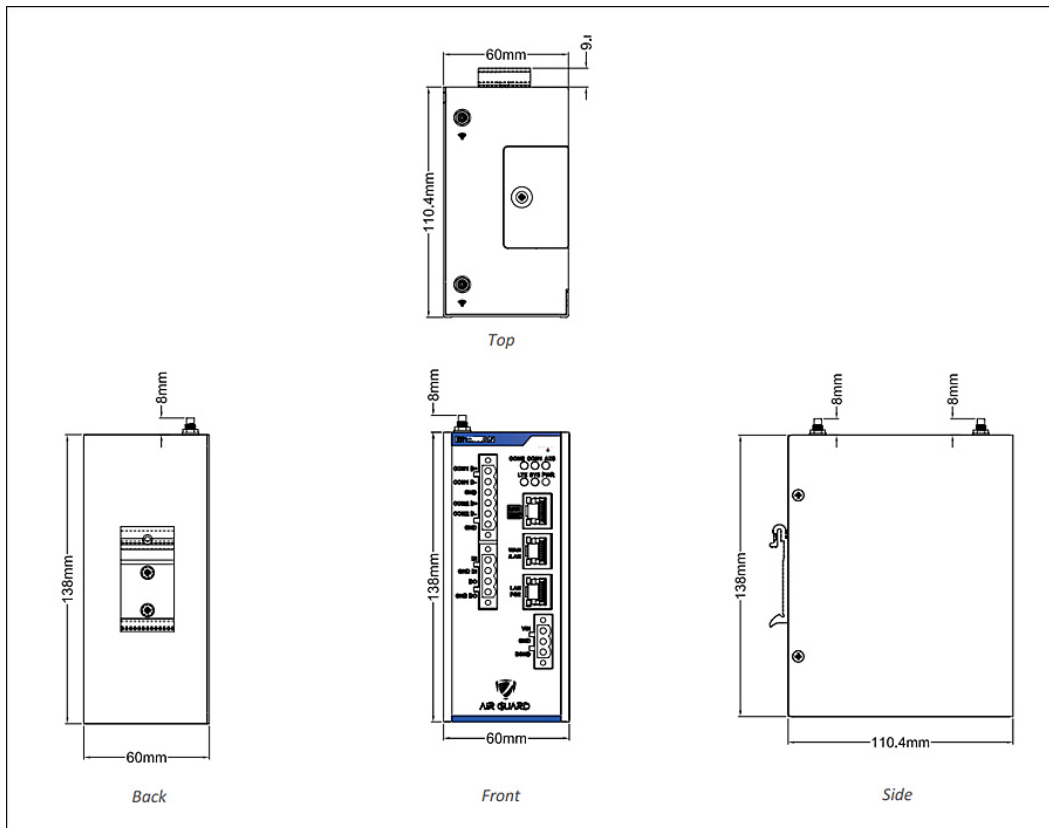
Ordering Info

➕ 4G LTE Gateway

Model	Description	RF	Region
AiR GUARD-TA	Industrial IoT Cellular Smart Security Gateway	4G LTE Cat.4	Taiwan & Australia
AiR GUARD-EA	Industrial IoT Cellular Smart Security Gateway	4G LTE Cat.4	EU & APAC* / Singapore / Thailand