WiiGate – The IoT Gateway

The gateway acts as the coordinator in the IoT network, it bridges remote sensor nodes to the enterprise network, allowing you to remotely configure, monitor and manage your assets.

Features

- Hundreds of sensors accessed from a single gateway;
- Multi-radio interfaces and extensible network connectivities;
- Plug & play, simple setup and configuration;
- Low-cost cellular service packages;
- Remote device configuration and OTA (Over-The-Air) capability;
- Local status LEDs with transmission and online status indicators;
- AC power supply (DC/POE version also available);

Applications

- Industrial grade wireless gateway;
- Transmit sensor data to the WiiHey's online sensor monitoring platform;

Overview

One of the most important aspects of IoT is "how" everything will be connected. Many IoT devices have been deployed in short-range areas such as smart homes and offices. However, the market is now requiring wider coverage networks where LPWAN (Low Power Wide Area Network) is introduced, it describes a set of technologies for transferring very small amounts of data but spreading across a wide area. The LPWAN devices enables a long battery life of several years, reducing operational costs and maintenances.

LPWAN technologies can be divided into licensed and unlicensed bands: LoRa and SIGFOX work in unlicensed bands, while cellular IoT, such as NB-IoT and LTE-M are typically used in licensed spectrum. Furthermore, NB-IoT and LTE-M have been standardized and are part of the 3GPP Release 13.
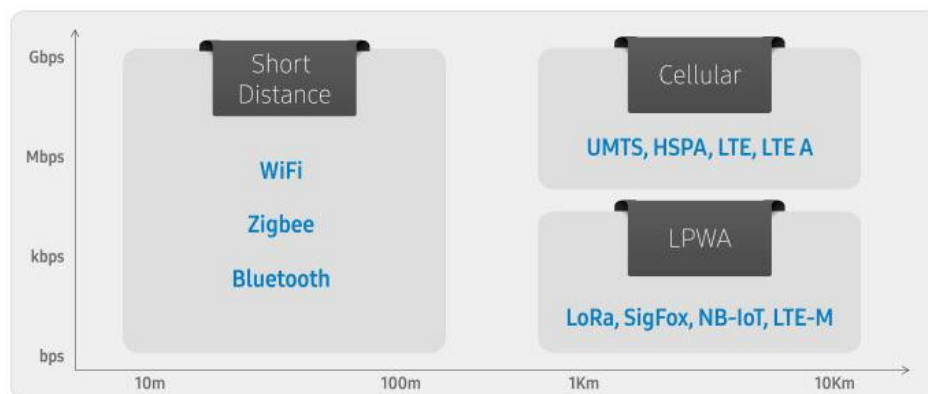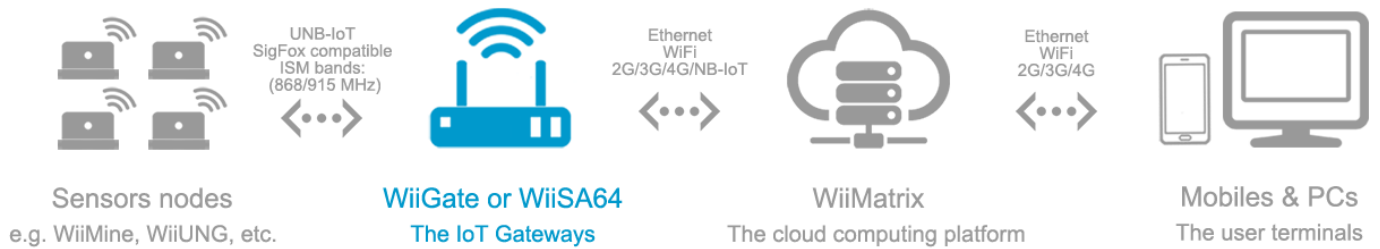

The gateway connects remote LPWAN devices. It is the network coordinator in charge of things like device authentication, message buffering, communication scheduling, and bridging devices from LPWAN to enterprise network via traditional communication methods like Ethernet or Cellular network. Eventually, users could monitor and manage these devices and the

associated assets with cloud-based management systems. For those licensed LPWAN, the telecom operators would take care and be in charge of setting up the gateways, aka, the base stations, as well.

WiiGate is an IoT gateway that may contain up to 4 radio interfaces: a WiFi 2.4 GHz (Access Point), a Bluetooth Smart 2.4 GHz , a Sub-1GHz (868/915 MHz), a GSM/GPRS/3G/4G/NB-IoT. WiiGate also integrates a GPS module for mobile applications and a backup battery that allows the device to continue operating for up to 24 hours in the event of a power failure. These features along with an aluminum IP65 enclosure allows WiiGate to be placed outdoors.

Topology

UNB-IoT
SigFox compatible
ISM bands:
(868/915 MHz)

Ethernet
WiFi
2G/3G/4G/NB-IoT

Ethernet
WiFi
2G/3G/4G

Sensors nodes
e.g. WiiMine, WiiUNG, etc.

WiiGate or WiiSA64
The IoT Gateways

WiiMatrix
The cloud computing platform

Mobiles & PCs
The user terminals

Tech Specifications

General	
Processor	32-bit ARM MCU
RAM	4M Bytes
Flash	2M Bytes
External storage memory	Support 4G Bytes Micro SD
Internet protocols	HTTP, HTTPS, TCP/IP, MQTT
GPS module	Supported
Sampling	
Sensor sampling mode	Synchronized, low duty cycle, continuous, periodic burst, event-triggered
Network capacity	1000 nodes per gateway depending on sampling settings
Connectivity	
Radio	a WiFi 2.4 GHz (Access Point), a Bluetooth Smart 2.4 GHz, a Sub-1GHz (868/915 MHz, SigFox compatible), a GSM/GPRS/3G/4G/NB-IoT;
Range	WiFi/Bluetooth: 20 m line-of-sight; Sub-1GHz: 1~2 km;
Antenna	SMA Type
Ethernet	Auto-negotiation 10/100Mbps
Power	
Power supply	110-240 V AC 50/60 Hz; 9 to 36 V DC; POE (Power Over Ethernet);
Battery life	Built-in backup battery for 24 hours operating
Mechanical	
Dimensions	105mm * 130 mm * 28 mm without antennas or cables
Weight	0.45 kg
Enclosure material	Black anodized aluminum
Environmental	
Operating temperature	-20 °C to 75 °C
IP Rating	IP65

Gallery