

The IoT Gateway & Edge Computing Platform — WII SA64

Collect, relay and "analyze" sensor data at the edge of your IoT network with the intelligent WII SA64 Gateway for richer business insights.

Features

- Hundreds of sensors accessed from a single gateway;
- Multi-radio interfaces and extensible network connectivities;
- Remote device configuration and OTA (Over-The-Air) capability;
- Provide programmability to enable edge computing applications;
- Linux OS with built-in support for Docker, Python, Node.js & Java;
- AC power supply (DC/POE version also available);



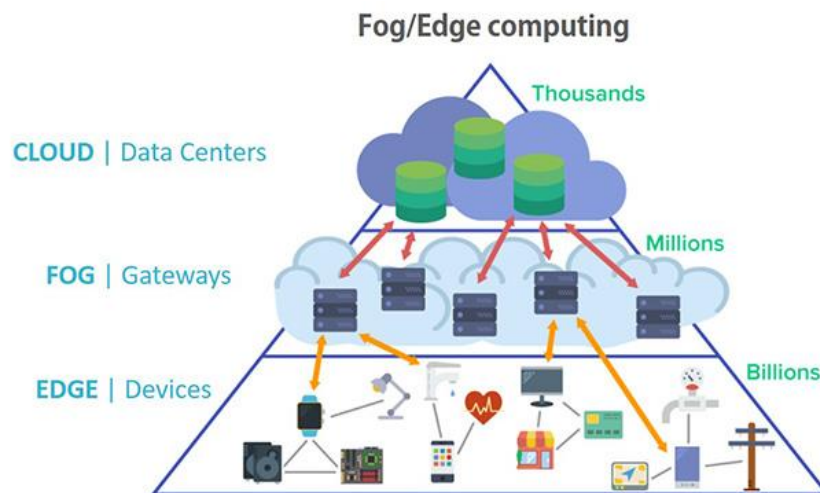
Applications

- Industrial grade wireless gateway;
- Transmit sensor data to the WiiHey's online sensor monitoring platform;
- Perform IoT solution with specific edge computing applications;

Overview

As more IoT devices are being deployed, data will be generated faster and in greater volume than ever before. Since IoT devices attempt to send every bit of data to the cloud or data center for analysis, many enterprises now are faced with challenges of network latency and bandwidth problem.

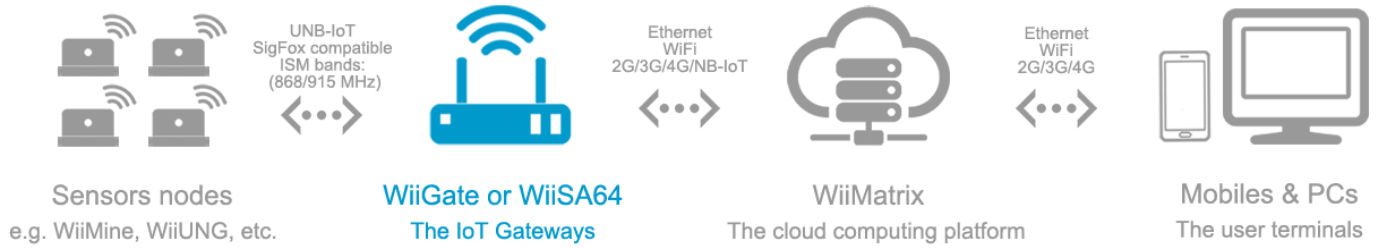
New and smarter gateways are developed to meet these situations, providing capacity to perform analytics at local or edge of IoT network (e.g. buildings, factories, zones), so that only meaningful information is sent to the next level. This minimizes consumption of expensive network bandwidth and reduces overall system latency.



WiiSA64 is an edge gateway, besides its flexible IoT connectivity abilities, integrating a powerful quad-core 64-bit ARM CPU and big memory, connecting varied wireless devices, aggregating and analyzing the sensor data locally, empowering the edge computing platform.

Topology

Acting as the coordinator in the network, WiiSA64 schedules communication among remote sensor nodes, performs edge computing and presents meaningful results to the cloud server.

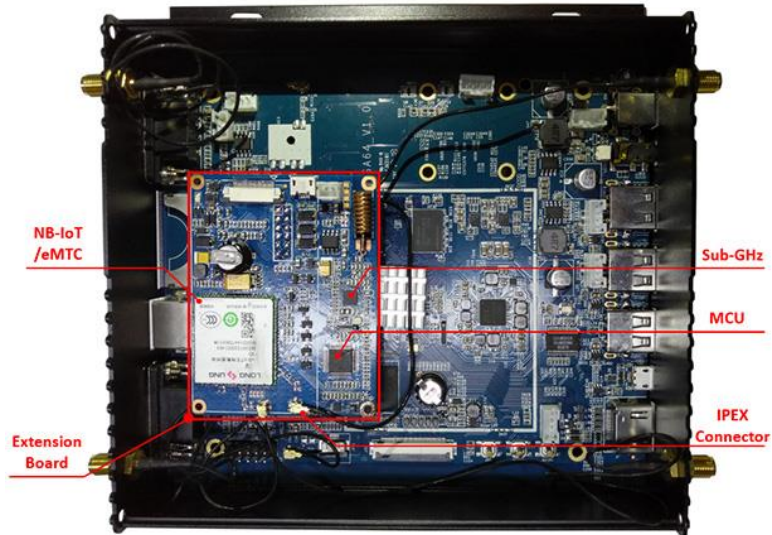


Tech Specifications

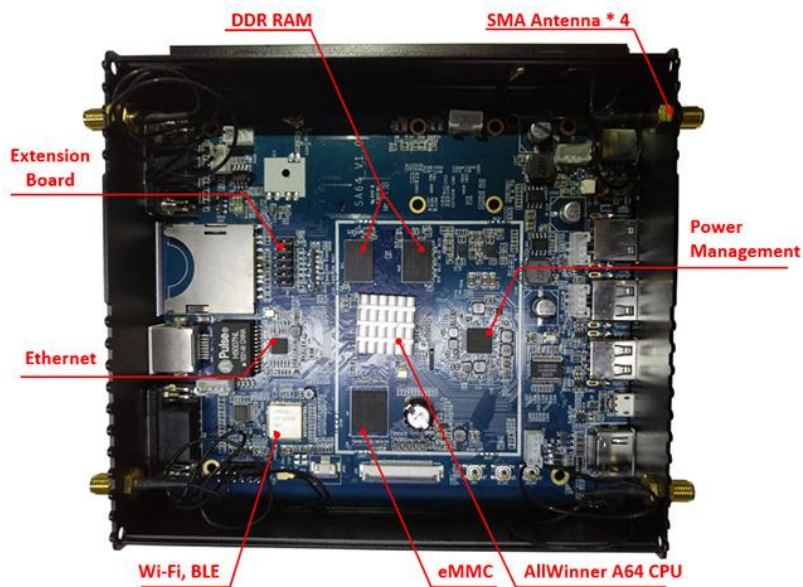
(See table below)

| Hardware | |
|-----------------------|---|
| CPU | AllWinner A64 @64bit Quad Core ARM A53 1.2GHz |
| GPU | AllWinner A64 @Dual Core Mali 400-MP2 GPU |
| RAM | 1GB/2GB DDR3 SDRAM |
| SD Card | MicroSD Slot, up to 256GB |
| USB | 3 USB Host Port, 1 MicroUSB Port |
| Ethernet | 10/ 100/1000MB Ethernet RJ45 Port |
| Video/ Audio | 4K * 2K HDMI port/ 3.5mm Stereo Output |
| Interface | RS-232, RS-485, I2C, SPI, multiple GPIOs, etc. |
| Software | |
| OS | Linux |
| Programmability | Docker, Python, Node.js, Java, NodeRED |
| Protocols | TCP/IP, HTTP, HTTPS, MQTT, SSH, etc. |
| Database | Time Series Database |
| 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 |
| 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 | 154mm * 168 mm * 40 mm without antennas or cables |
| Weight | 0.68 kg |
| Enclosure material | Black anodized aluminum |
| Environmental | |
| Operating temperature | -20 °C to 70 °C |
| Operating humidity | 80% max, relative humidity, non-condensing |

Gallery



Internal look: extension board



Internal look: bottom board



Angled view 1



Angled view 2