

# UG65

## LoRaWAN<sup>®</sup> Gateway

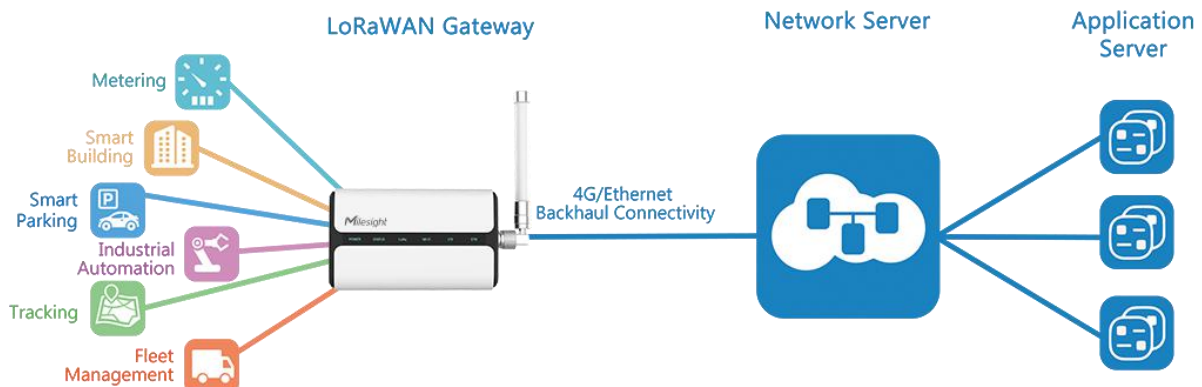
### Datasheet



UG65 is a robust 8-channel indoor LoRaWAN<sup>®</sup> gateway. Adopting SX1302 LoRa chip and high-performance quad-core CPU, UG65 supports connection with more than 2000 nodes. UG65 has line of sight up to 15 km and can cover about 2 km in urbanized environment, which is ideally suited to smart office, smart building and many other indoor applications.

UG65 supports not only multiple back-haul backups with Ethernet, Wi-Fi and cellular, but also has integrated mainstream network servers (such as TTI, ChirpStack, etc.) and built-in network server and Milesight IoT Cloud for easy deployment.

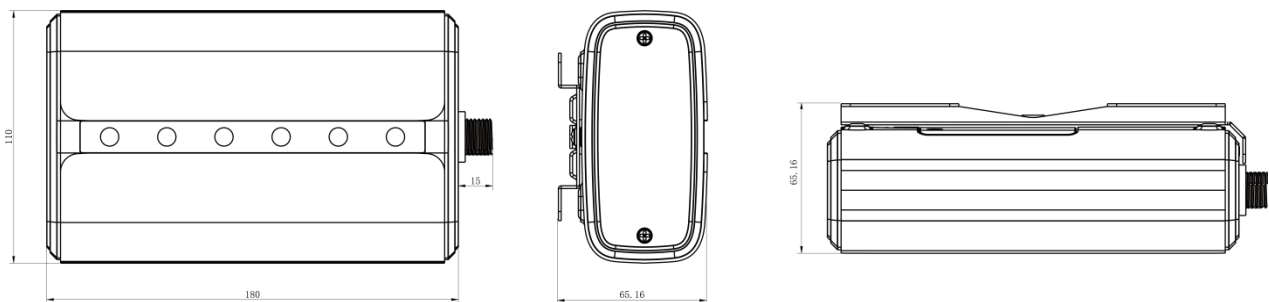
### ◆ Application Example



## ◆ Features

- Quad-core industrial processor with big memory
- Equip with SX1302 chip, handling a higher amount of traffic with lower consumption
- 8 half/full-duplex channels
- IP65 enclosure and industrial design for parts of outdoor environment applications like eaves
- Desktop, wall or pole mounting
- Multi backhaul backups with Ethernet, cellular (4G/3G) and Wi-Fi
- DeviceHub and Milesight IoT Cloud provide easy and centralized management of remote devices
- Enable security communication with multiple VPNs like IPsec/OpenVPN/L2TP/PPTP/DMVPN
- Compatible with mainstream network servers like The Things Industries, ChirpStack, etc.
- Detect and analyze the noise level and provide intuitive diagram for deployment
- Built-in network server and MQTT/HTTP/HTTPS API for easily integration
- Embedded Python SDK for users secondary development
- Fast and user-friendly programming by Node-RED development tool

## ◆ Dimensions(mm)



## ◆ Specifications

### Hardware System

|        |  |
|--------|--|
| CPU    | Quad-core 1.5 GHz, 64-bit ARM Cortex-A53 |
| Memory | 512 MB DDR4 RAM                          |
| Flash  | 8 GB eMMC                                |

### LoRaWAN

|                |  |
|----------------|--|
| Antenna        | 2 × Internal Antennas (Optional: 1 × 50 Ω N-Female External Connector) |
| Channel        | 8 (Half/Full-duplex)   |
| Frequency Band | CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4                |
| Sensitivity    | -140dBm Sensitivity @292bps  |

|                                      |   |
|--------------------------------------|---|
| Output Power                         | 27dBm Max   |
| Protocol                             | V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C                                   |
| <b>Ethernet Interface</b>            |   |
| Port                                 | 1 × RJ45 (PoE PD supported)   |
| Physical Layer                       | 10/100/1000 Base-T (IEEE 802.3)   |
| Data Rate                            | 10/100/1000 Mbps (Auto-Sensing)   |
| Interface                            | Auto MDI/MDIX   |
| Mode                                 | Full or Half Duplex (Auto-Sensing)  |
| <b>Wi-Fi Interface</b>               |   |
| Antenna                              | Internal Antenna  |
| Standards                            | IEEE 802.11 b/g/n, 2.4GHz   |
| Mode                                 | AP or Client mode   |
| Security                             | WPA/WPA2 authentication, WEP/TKIP/AES encryption  |
|                                      | 802.11b: 18 dBm +/-2.0 dBm (11 Mbps)  |
|                                      | 802.11g: 15 dBm +/-2.0 dBm (6 Mbps)   |
|                                      | 802.11g: 15 dBm +/-2.0 dBm (54 Mbps)  |
| Tx Power                             | 802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS0_HT20)  |
|                                      | 802.11n@2.4 GHz: 14 dBm +/-2.0 dBm (MCS7_HT20)  |
|                                      | 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS0_HT40)  |
|                                      | 802.11n@2.4 GHz: 13 dBm +/-2.0 dBm (MCS7_HT40)  |
| <b>Cellular Interface (Optional)</b> |   |
| Antenna                              | Internal Antenna  |
| SIM Slot                             | 1 (mini SIM-2FF)  |
| <b>Others</b>                        |   |
| Reset Button                         | 1 × RST   |
| Console Port                         | 1 × Type-C  |
| LED Indicators                       | 1 × POWER, 1 × STATUS, 1 × LoRa, 1 × Wi-Fi, 1 × LTE, 1 × ETH                                      |
| Built-in                             | Watchdog, RTC, Timer  |
| <b>Software</b>                      |   |
| Network Protocols                    | PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, MQTT, etc. |
| VPN Tunnel                           | OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN   |
| Firewall                             | ACL/DMZ/Port Mapping/MAC Binding/URL Filter   |
| Management                           | Web, CLI, SMS, On-demand dial up, DeviceHub, Milesight IoT Cloud, Yeastar Workplace Platform      |

|             |              |
|-------------|--------------|
| Reliability | WAN Failover |
|-------------|--------------|

|     |                      |
|-----|----------------------|
| App | Python SDK, Node-RED |
|-----|----------------------|

### Power Supply and Consumption

|             |   |
|-------------|---|
| Power Input | 1. DC Jack Connector for 9-24 VDC power supply<br>2. 1 × 802.3 af PoE input |
|-------------|---|

|                   |                          |
|-------------------|--------------------------|
| Power Consumption | Typical 2.9 W, Max 4.2 W |
|-------------------|--------------------------|

### Physical Characteristics

|                    |      |
|--------------------|------|
| Ingress Protection | IP65 |
|--------------------|------|

|            |   |
|------------|---|
| Dimensions | 180 x 110 x 56.5 mm (7.09 x 4.33 x 2.22 in) |
|------------|---|

|              |                                |
|--------------|--------------------------------|
| Installation | Desktop, Wall or Pole Mounting |
|--------------|--------------------------------|

### Environmental

|                       |                                  |
|-----------------------|----------------------------------|
| Operating Temperature | -40°C to +70°C (-40°F to +158°F) |
|-----------------------|----------------------------------|

|             |   |
|-------------|---|
| Temperature | Reduced Cellular Performance Above 60°C |
|-------------|---|

|                     |                                  |
|---------------------|----------------------------------|
| Storage Temperature | -40°C to +85°C (-40°F to +185°F) |
|---------------------|----------------------------------|

|                    |            |
|--------------------|------------|
| Ethernet Isolation | 1.5 kV RMS |
|--------------------|------------|

|                   |   |
|-------------------|---|
| Relative Humidity | 0% to 95% (non-condensing) at 25°C/77°F |
|-------------------|---|

### Approvals

|            |             |
|------------|-------------|
| Regulatory | CE, FCC, IC |
|------------|-------------|

|               |      |
|---------------|------|
| Environmental | RoHS |
|---------------|------|