

# UG65

## LoRaWAN<sup>®</sup> Gateway

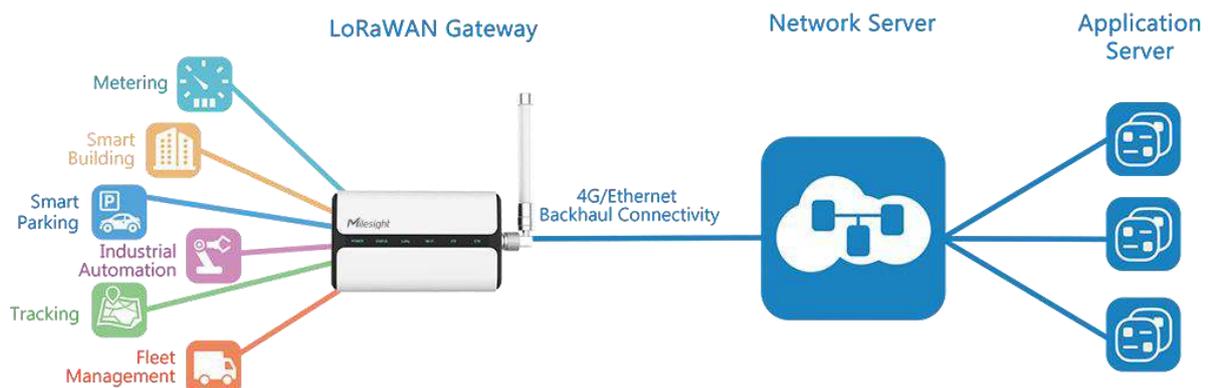
Milesight



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, Actility, Everynet, 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

## ◆ 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        |

### Ethernet Interface

|                |                                    |
|----------------|------------------------------------|
| 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) |

### Wi-Fi Interface

|           |  |
|-----------|--|
| 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 |
| Tx Power  | 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)             |
|           | 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)   |

### Cellular Interface (Optional)

|          |                  |
|----------|------------------|
| Antenna  | Internal Antenna |
| SIM Slot | 1 (mini SIM-2FF) |

### Others

|                |  |
|----------------|--|
| 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   |

### Software

|                   |   |
|-------------------|---|
| 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. 9-24 VDC by DC Male Jack Connector |
|                   | 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

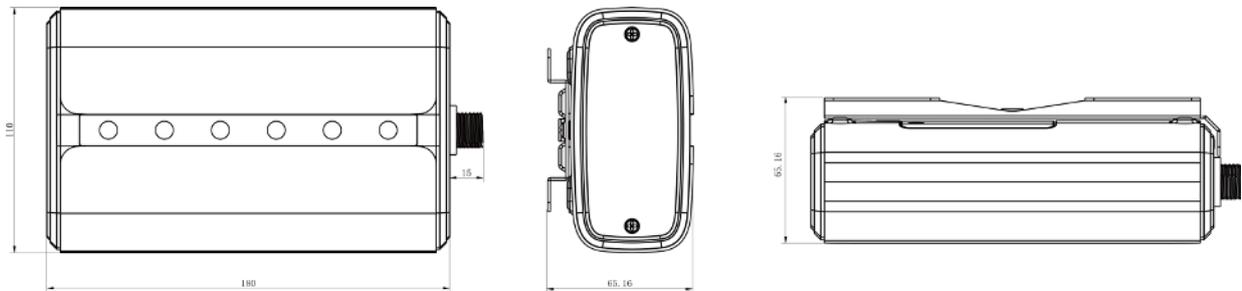
**Environmental**

|                       |   |
|-----------------------|---|
| 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, REACH |

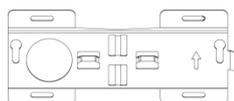
◆ Dimensions(mm)



◆ Accessories



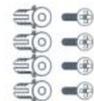
1 × DC Jack Power Adapter



1 × Mounting Bracket



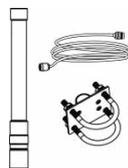
2 × Bracket Fixing Screws



4 × Wall Mounting Kits



1 × 18 cm LoRaWAN<sup>®</sup> Antenna (External antenna version included)



1 × 60cm LoRaWAN<sup>®</sup> Fiber-Glass Antenna Kit (Optional)

**\*Note:** Contact us if you need any other special accessories or customized accessories.

