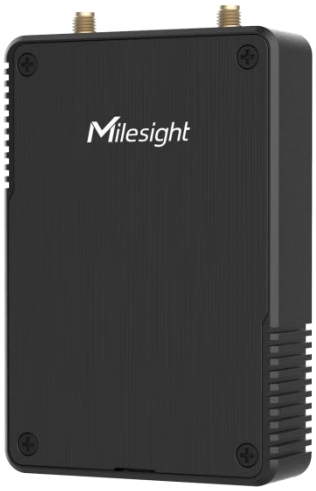
Industrial LoRaWAN® Gateway

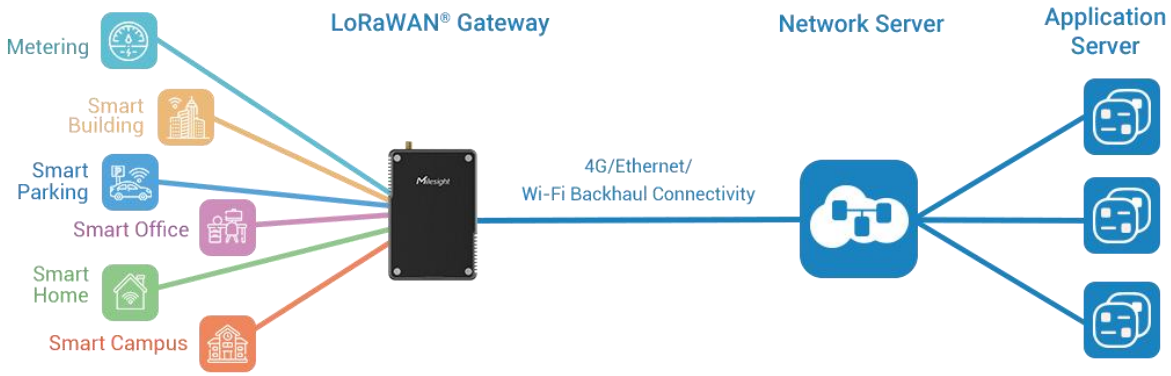
UG56



UG56 is a robust 8-channel indoor LoRaWAN® gateway. Adopting SX1302 chip and high-performance quad-core CPU, UG56 supports connection with more than 2000 nodes. UG56 has line of sight up to 15 km and can cover about 2 km in urbanized environment, which is ideally suited to smart building, smart industries and many other indoor applications.

UG56 supports not only multiple back-haul backups with Ethernet, Wi-Fi and cellular, but also has integrated mainstream network servers (such as The Things Stack, ChirpStack, etc.), built-in network server and Milesight Development Platform 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-duplex channels
- Rugged metal enclosure for industrial applications
- Desktop, wall or DIN rail mounting
- Multi backhaul connectivity backups with Ethernet, cellular (4G) and Wi-Fi
- DeviceHub and Milesight Development Platform provide easy and centralized management of remote devices
- Enable security communication with multiple VPNs like IPsec/OpenVPN/L2TP/PPTP/DMVPN/WireGuard
- Compatible with mainstream network servers like The Things Stack, ChirpStack, Actility, AWS, 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
- Support BACnet/IP and Modbus to integrate LoRaWAN® data to BMS/PLC system easily
- Embedded Python SDK for users secondary development
- Fast and user-friendly programming by Node-RED development tool

◆ Hardware Specifications

Hardware System	
CPU	Quad-core 1.3 GHz, 64-bit ARM Cortex-A35
Memory	512 MB DDR3 RAM
Flash	8 GB eMMC
Extendable Storage	1 × Micro SD Slot (Internal)
LoRaWAN	
Antenna Connector	1 × 50 Ω SMA Connector (Center PIN: SMA Female)
Channel	8 (Half-duplex)
Frequency Band	CN470/IN865/EU868/RU864/US915/AU915/KR920/AS923-1&2&3&4
Sensitivity	-140 dBm Sensitivity @292bps
Tx Power	27 dBm Max
Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C
LBT[1]	Support

[1] AU915 and US915 do not support LBT.

Ethernet Interface	
Port	1 × RJ45 WAN Port (PoE PD supported)
Physical Layer	10/100 Base-T (IEEE 802.3)
Data Rate	10/100 Mbps (Auto-Sensing)
Interface	Auto MDI/MDIX
Mode	Full or Half Duplex (Auto-Sensing)
Ethernet Isolation	1.5 kV RMS
Wi-Fi Interface	
Antenna	Internal Antenna
Standards	IEEE 802.11b/g/n, 2.4 GHz
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)	
Network	4G LTE
Tx Power	Class 3 (23 dBm ±2 dB)
Antenna Connector	1 × 50 Ω SMA Connector (Center PIN: SMA Female)
SIM Slot	1 (Mini SIM-2FF)
Others	
Reset Button	1 × RST (Internal)
USB	1 × USB Type-C for Power Supply and Console
LED Indicators	1 × SYSTEM, 1 × LoRa
Built-in	Watchdog, Timer
Power Supply and Consumption	
Power Input	1. 802.3 af PoE 2. 5V/2A by Type-C Port
Power Consumption	Typical 1.8 W, Max 6.9 W
Physical Characteristics	
Ingress Protection	IP30
Housing & Color	Metal, Black
Weight	186g

Dimensions	110 x 75 x 24 mm (4.33 x 2.95 x 0.94 in)
Installation	Desktop, Wall Mounting, DIN Rail Mounting[2]
Environmental	
Operating Temperature	-20°C to +60°C (-4°F to +140°F)
Storage Temperature	-40°C to +85°C (-40°F to +185°F)
Relative Humidity	0% to 95% (non-condensing) at 25°C/77°F
Approvals	
Regulatory	CE, CE(RED), RCM, FCC, ISED
Environmental	RoHS

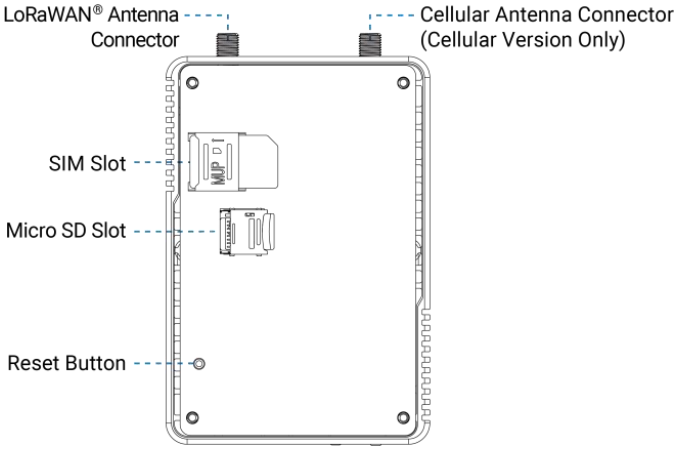
◆ Software Specifications

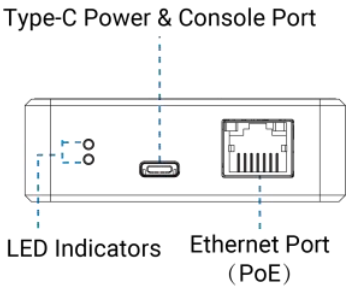
LoRaWAN®	
Supported Devices	Around 2000 Class A/B/C Devices (10 min uplink interval)
Protocol	V1.0 Class A/Class B/Class C and V1.0.2 Class A/Class B/Class C
Compatibility	DeviceHub LNS, Milesight Development Platform LNS, Milesight IoT Cloud, etc. For more see ecosystem program.
Packet Forwarder	
Noise Analyzer	Scan the noise of the frequencies for channel selection
Packet Filter	Add whitelist or blacklist to filter the packets
Data Retransmission[3]	Re-transmit the data packets after network recovery
Embedded Network Server	
Decode and Encode	Inbuilt Milesight devices codec library, support custom codec setup
Gateway Fleet	Work as the network server of other Milesight blind-filling gateways
Multicast	Support multicast downlink control
FUOTA	Upgrade FUOTA supported end devices
Integration	MQTT(s), HTTP(s), BACnet/IP, BACnet/SC, Modbus TCP, Modbus RTU over TCP
Network	
Network Protocols	PPPoE, SNMP v1/v2c/v3, TCP, UDP, DHCP, DDNS, HTTP, HTTPS, DNS, ARP, SNTP, Telnet, SSH, etc.

[2] Only new hardware devices support DIN Rail mounting. Please contact Milesight for it before purchase.
[3] Only parts of packet forwarders support this feature.

VPN Tunnel	OpenVPN/IPsec/PPTP/L2TP/GRE/DMVPN/WireGuard
Firewalls	Access Control, DMZ, Port Mapping (DNAT), MAC Binding, Filtering (IP&Domain)
DDNS	Supported >16 service providers, others can be configured manually
Multilevel Authority	Multiple Levels of User Authority
Reliability	WAN Failover
Diagnostics Tools	Ping, Traceroute, Tcpdump, QXDM, Log Server
Wi-Fi Interface	
Standards	IEEE 802.11 b/g/n, 2.4GHz
Mode	AP or Client mode
Security	AP: WPA-PSK/WPA2-PSK authentication, WEP/TKIP/AES encryption Client: WPA-PSK/WPA2-PSK/WPA-Enterprise/WPA2-Enterprise authentication, WEP/TKIP/AES encryption
Management	
Configuration	Web, CLI (SSH/Telnet), SMS, On-demand dial up, SNMP, HTTP API, MQTT API, Milesight Development Platform, DeviceHub
Update	Web, Milesight Development Platform, DeviceHub
Device Management	Milesight Development Platform, DeviceHub
Event Alarm	Power On, Network Up/Down, VPN Up/Down, etc.
Others	
App	Python SDK, Node-RED

◆ Hardware Overview

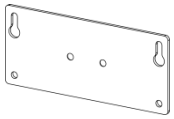




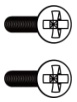
◆ Accessories



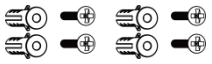
1 × LoRaWAN® Magnetic Antenna



1 × Wall Mounting Bracket



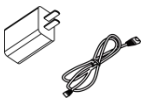
2 × Bracket Fixing Screws



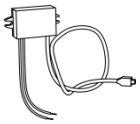
4 × Wall Mounting Kits



1 × Magnetic Cellular Antenna **(Cellular Version Only)**



1 ×Type-C Cable & Power Adapter **(Optional)**



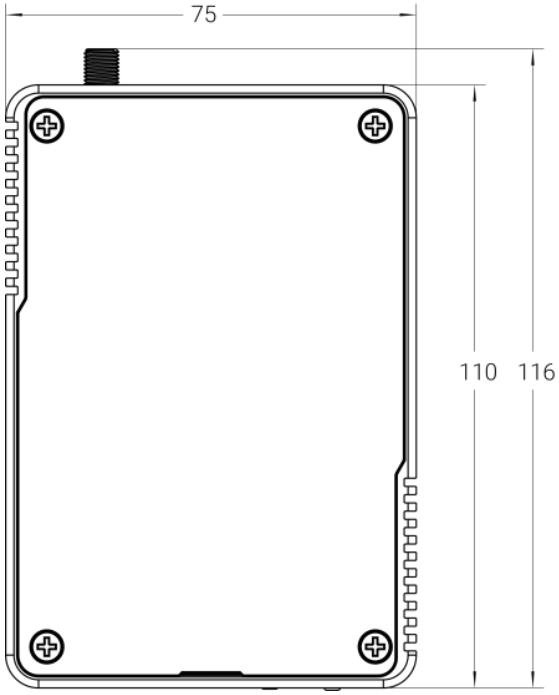
1 × AC/DC-DC Power Converter Kit **(Optional)**

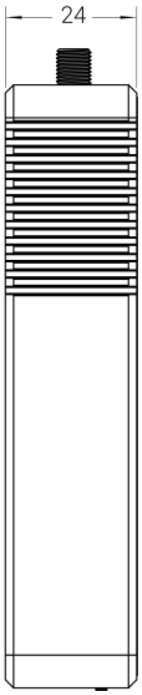


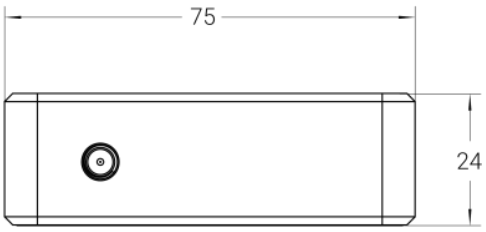
1 × DIN Rail Clip Kit **(Optional)**

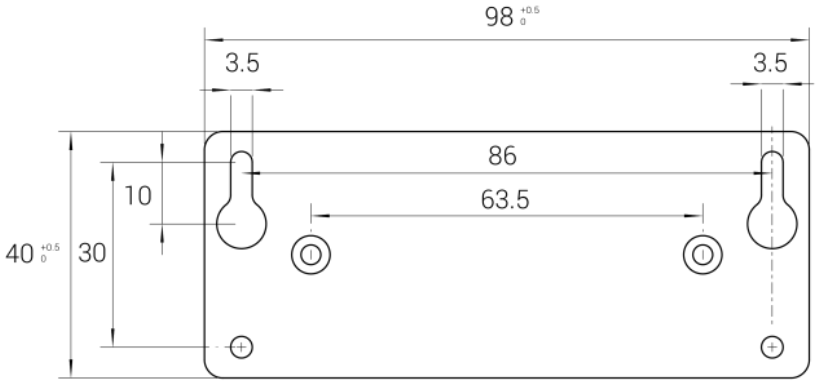
***Note:** Contact us if you need any other special accessories or customized accessories.

◆ Dimensions(mm)








98 +0.5 0
3.5
3.5
86
10
63.5
40 +0.5 0
30