

# Mini LoRaWAN<sup>®</sup> Gateway UG63

Quick Start Guide



#### **Safety Precautions**

Milesight will not shoulder responsibility for any loss or damage resulting from not following the instructions of this operating guide.

- The device must not be modeled in any way.
- Do not place the device close to objects with naked flames.
- Do not place the device where the temperature is below/above the operating range.
- Do not power on the device or connect it to other electrical device when installing.
- Check lightning and water protection when used outdoors.
- Do not connect or power the device using cables that have been damaged.

#### **Related Documents**

This Quick Start Guide only explains the installation of Milesight UG63 LoRaWAN<sup>®</sup> Gateway. For more functionality and advanced settings, please refer to the relevant documents as below.

Document	Description
UG63 Datasheet	Datasheet for UG63 LoRaWAN® Gateway.
UG63 User Guide	Users can refer to the guide for instruction on how to log in the web GUI, and
	how to configure all the settings.

The related documents are available on Milesight website: https://www.milesight-iot.com

## **Declaration of Conformity**

UG63 is in conformity with the essential requirements and other relevant provisions of the CE, FCC, and RoHS.



#### FCC Statement:

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and

(2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the



instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

-Reorient or relocate the receiving antenna.

-Increase the separation between the equipment and receiver.

-Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

-Consult the dealer or an experienced radio/TV technician for help.

#### FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator& your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.



For assistance, please contact Milesight technical support: Email: iot.support@milesight.com Tel: 86-592-5085280 Fax: 86-592-5023065

#### **Revision History**

Date	Doc Version	Description
March 9, 2022	V1.0	Initial version



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## 1. Packing List

Before you begin to install the UG63 LoRaWAN<sup>®</sup> Gateway, please check the package contents to verify that you have received the items below.



If any of the above items is missing or damaged, please contact your sales representative.

## 2. Hardware Introduction

#### 2.1 Overview

You can check below interfaces after taking off the mounting plate on the back of the device.



LED Area
SYS: System Indicator
LoRa: LoRa Indicator

- 2 Reset Button
- ③ Ethernet Port (PoE PD) & Indicator
- ④ Type-C Console Port



## 2.2 Dimensions (mm)



#### 2.3 LED Indicators

LED	Indication	Status	Description
		Off	The system is starting up
SYS Sy	System Status	Green Light	The system is running properly
		Red Light	The system goes wrong
LoPa	oRa LoRa Status	Off	Packet Forwarder mode is running off
LONG	Lona Status	Green Light	Packet Forwarder mode is running well
	LoRa Status	Off	Disconnected or connect failure
Ethornot		On	Connected
Dort	(reliow)	Blinking	Transmitting data
FUIL	Rate Indicator	Off	100 Mbps mode
	(Green)	On	Other mode

#### 2.4 Reset Button

Function	Description			
	SYS LED	Action		
Reset	Static Green	Press and hold the reset button for more than 5 seconds.		
	Static Green →	Release the button and wait		
	Rapidly Blinking			
	Off → Static Green	The gateway resets to factory default.		

## 3. Power Supply

UG63 can be powered by 802.3af standard PoE or type-C port (5 VDC). If both connected, PoE power is preferred.





Note: When connecting, Ethernet cable of UG63 device side should be installed first, otherwise, PoE devices or gateway may be damaged.

## 4. Installation

UG63 supports multiple installation methods like desktop, wall mounting, ceiling mounting, etc. Before you start, make sure that all cables have been installed and configurations are completed. **Note:** Do not connect device to power supply or other devices when installing.

#### 4.1 Desktop

Take off the baffle and mounting plate on the back of the device, then you can place the device on the desktop.





## 4.2 Wall/Ceiling Mounting

A. Take off the mounting plate on the back of the device.



B. Align the mounting plate horizontally to the desired position on the wall or ceiling to mark two mounting holes, drill two holes as these marks, insert wall plugs into the holes respectively.





C. Fix the mounting plate to the wall plugs with screws.



D. Turn the device clockwise to lock it to the mounting plate.



## 5. Login the Web GUI

UG63 provides web-based configuration interface for management. If this is the first time you configure the gateway, please use the default settings below:

Username: **admin** 

Password: password

Connect PC to UG63 ETH port through PoE injector or PoE switch. The following steps are based on Windows 10 operating system for your reference.

A. Go to "Control Panel"  $\rightarrow$  "Network and Internet"  $\rightarrow$  "Network and Sharing Center", then click "Ethernet" (May have different names).

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B. Go to "Properties"  $\rightarrow$  "Internet Protocol Version 4 (TCP/IPv4)" and select "Use the following IP address", then assign a static IP manually within the same subnet of the gateway.

Internet Pratound Western 4 (307-19-	d) Properties	3
Server.		
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C. Open a Web browser on your PC (Chrome is recommended) and type in the IP address 192.168.23.1 50 to access the web GUI.

D. Enter the username and password, click "Login".

		Language Dogino, in
	Milesight	
1.1	Copyright & 2022 Managel, An English Reserved	Sec.

If you enter the username or password incorrectly more than 5 times, the login page will be locked for 10 minutes.



E. After logging the web GUI, you can view system information and perform configuration of the gateway. It's suggested that you change the password for the sake of security.

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#### 6. Network Connection

A. Go to "Network"  $\rightarrow$  "Interface"  $\rightarrow$  "Port" page to select the connection type and configure Ethernet port information, click "Save & Apply" for changes to take effect. UG63 supports Static IP, DHCP and PPPoE modes. If you use static IP, ensure the "Gateway" IP address is the same as your modem/router Ethernet port address.

Status		Port Loopback	
Packel Forwarder		- Port_1	
		Port	eth 0
vetwork server		Connection Type	Static IP 👻
Network	17	IP Address	192,168,45,161
		Netmask	255 255 255 0
Interface		Gateway	192.168.45.1
VPN		MTU	1500
System		Primary DNS Server	8.8.8.8
		Secondary DNS Server	114 114 114 114

B. Connect Ethernet port of gateway to network devices like router or modem.

C. Log in the web GUI via the newly assigned IP address and go to "Status"  $\rightarrow$  "Network" to check Ethernet port status.

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#### 7. Packet Forwarder Configuration

UG63 has pre-installed multiple packet forwarders including Semtech UDP Packet Forwarder, Chirpstack-Generic MQTT broker, LoRa Basic Station, etc. This section explains how to connect the gateway to network servers.

Make sure the gateway connects to the network as shown in <u>Section 6</u>.

A. Go to "Packet Forwarder"  $\rightarrow$  "General" page and click  $\pm$  to add a network server.

Status'		General	Radios ;	Advenced	Culton	Tuto		
Parter Forwards		General Setting						
Network Server		Galeriay ESI Galeriay 10	24E124					
Autoort 1	٠	Propansy Syst	Disabled					
Bysiam		Multi Destination						
Manufactor		10	Ejietie	lype		Server Address	Connect Status	Operation
			Evaluat	Ermade	AL.	heatheat	Dacemedad	

B. Fill in the server information and enable this server.

Гуре	Semtech 🛩
Server Address	eu1.cloud.thethings.network *
fort Up	1700
ort Down	1700

C. Go to "Packet Forwarder"  $\rightarrow$  "Radio" page to configure center frequency and channels. The channels of the gateway and network server need to be the same.

		15915		¥	
	Name			Canter FrequencyMits	
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xi Charinais Battin	u.				
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53	2	Redu-1	9	904.3	
53	3	Radio 0	~	954.6	
53		Radio 1	w	904.7	
	5	Radio 1	-	904.9	
53		Hado: 1	÷	905.1	

D. Add the gateway on network server page. For more details about the network server connection please refer to <u>Milesight IoT Support portal</u>.

E. Go to "Traffic" page to view the data communication of UG63.

General	Radk	is Adv	anced	Custom	Traffic			
Ship		Har -						
Rich	Direction	Time	Ticks	Frequency	Datarate	Coderate	R55i	SNR
1	up	11.52.38	317882157 1	865.965	SF78W125	4/5	-01	50
1	υp	11 52 22	316226269 2	866 585	SF78W125	47	-108	-11.8
0	dawn	÷.	311888813 1	665.5625	5F78W125	4/5	- F	5
0	ц	11.51.37	311788813 1	865 0625	5F78W125	4/5	-95	-0.8

## 8. Connect UG63 to Milesight IoT Cloud

UG63 can connect to Milesight IoT Cloud to manage Milesight product's data. Due to the limitation of memory, it's suggested to bind not more than 20 devices.



A. Ensure the gateway has access to the Internet and is able to ping the domain of Milesight IoT Cloud.

Constant Selectory		Fing	Tracecoute
Network Server	1.	SP Ping	
Network	•	Host	about mileslight-lot.com Ping Step
System	•	PING clour 64 bytes fr 64 bytes fr	d milesight-lot com (54.192.18.40). 56 data bytes rom 54.192.18.40. soq=0.ttl=241 time=35.763 ms rom 54.192.18.40. seq=1.ttl=241 time=29.067 ms
Mantenance		64 bytes fr 64 bytes fr	non 54 192 18 40. seq=2 til=241 time=29 501 me non 54 192 18 40. seq=3 til=241 time=29 261 me
CTORE		- cloud né 4 packeté t sound-trip r	illenight-lat.com.ping.statiatics — transmitted, 4 packets received, 0% packet isse miniarymes = 29.607/30.900/35.763 ms
Schodule		11515-1151	

B. Go to "Packet Forwarder"  $\rightarrow$  "General" page to enable the embedded network server.

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Partetinenter		General Setting					
Network Server		Gateroop DVF	16.134	-			
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C. Go to "Packet Forwarder"  $\rightarrow$  "Radio" page to select the center frequency and channels. The channels of the gateway and nodes need to be the same.

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-	2	Radio 0	~	904.3	
53	3	Racke 0		904.5	
2	4	Redit 1	*	904.7	
	5	Reds 1	*	814.9	
8	6	Rade 1	*	905.1	
-	- P	Darks 1		805.3	-

D. Go to "Network Server"  $\rightarrow$  "General" page to enable the network server and "Milesight IoT Cloud" mode.

Status	General	Applications	Profiles	Device	Gateways
Packet Forwarder	General Setting				
Network Server	Enable Misight IoT Clou	Id 🖸			
Network	NetID	010203	1		
	Join Delay	5		sec	
System	RX1 Delay	1		sec	
Maintenance	Lease Time	8760- 0- 0	1	hh-mm-ss	
Maintenance	Log Level	info	~		

E. Log in the Milesight IoT Cloud. Then go to "My Devices" page and click "+New Devices" to add gateway to Milesight IoT Cloud via SN. Gateway will be added under "Gateways" menu item.

Dashboard	Devices	Gatew	a y 5	History	•						
MyDevices	Search	g		Normal 1	宣 Alarm 1	offline l	Inactive 3		t+	New D	Jevi ces
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F. The gateway is online on Milesight IoT Cloud. After that you can add node devices to cloud directly.

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#### 9. Connect UG63 to UG65/UG67

Milesight UG6x LoRaWAN<sup>®</sup> gateway can set up multi-gateway architecture, which can make different ga teway failover each other and extend signal coverage, while make one node device roams in multiple gateways. One UG65/UG67 gateway can be used as network server and other UG6x series gateways can be used as packet forwarder and transmit all data to the main gateway.



A. Go to "Packet Forwarder"  $\rightarrow$  "General" page to enable the "Remote Embedded NS" and fill in the main gateway IP address which can reach.

Enable	2	
Туре	Remote Embedded NS	۷
Server Address	192 168 45 150	
MQTT Port	18883	

B. Go to "Network Server"  $\rightarrow$  "Gateway Fleet" page of UG65/UG67 to add the gateway ID of UG63 gateway and define a name, then save the settings.

Gateway ID	24E124T	
Name	UG63-1	
Location		
GPS into will be dropi	ayed by default or can be changed manua	tRy :
Latitude	Eg 0.026811	
Latitude Longitude	Eg. 18 286764	

C. After connected, the UG63 can transfer node data to UG65/UG67 and you can check the data details on "Network Server"  $\rightarrow$  "Packets" page of UG65/UG67.

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