


## TT230702 – LoRa - LoRaWAN Gateway Setup

1. In this document, we will show you how setup the LoRaWAN gateway (DS-LoRaGateway).

**LoRaWAN technology**  
Technology for intelligent buildings

**LoRaWAN Gateway** – with integrated Modbus interface for building automation




DS-LoRaGateway

**Highlights at a glance <sup>1)</sup>**

- ✓ Our data collector – exchanges building data with the DEOS pro.building Suite through the Internet
- ✓ Data provision for further use to the local control system via Modbus/TCP
- ✓ Accessories to strengthen the radio signal for indoor and outdoor use
  - ✓ Antennas
  - ✓ Antenna extension cables
- ✓ Expandable with LoRaWAN enabled DEOS or third-party components

2. Then we will connect the AM307 LoRaWAN sensor to the LoRaWAN gateway.

**◆ Introduction**



AM300 series is a compact indoor ambience monitoring sensor for measurement of temperature, humidity, light, CO<sub>2</sub> concentration, HCHO/O<sub>3</sub> level, TVOC, barometric pressure, PM2.5, PM10 and motion. The data will be shown on the E-ink screen in real-time, which helps to measure the indoor environment and comfort. AM300 series is widely used for offices, stores, classrooms, hospitals, etc.

Sensor data is transmitted using LoRaWAN<sup>®</sup> technology. Combining Milesight LoRaWAN<sup>®</sup> gateway and Milesight IoT Cloud, users can manage all sensor data remotely and visually.

3. Below are the default settings for the LoRaWAN gateway.

### **4. Login the Web GUI**

UG65 provides web-based configuration interface for management. If this is the first time you configure the gateway, please use the default settings below:

ETH IP Address: **192.168.23.150**

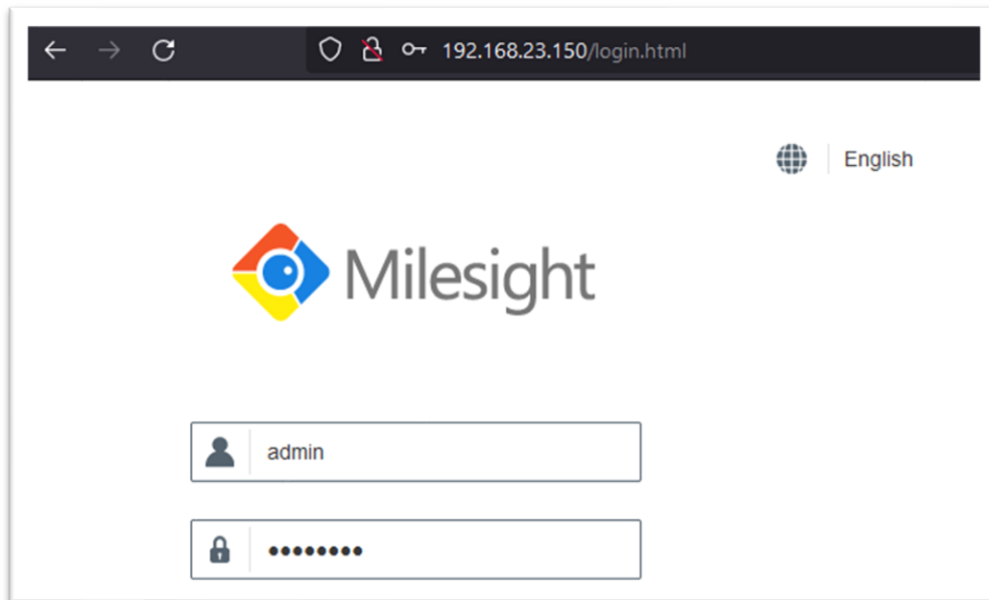
Wi-Fi IP Address: **192.168.1.1**

Wi-Fi SSID: **Gateway\_\*\*\*\*\***

Username: **admin**

Password: **password**

4. Connect the gateway to your network and login using the default username and password.



5. Select the antenna type and change the password.

1
LoRa Antenna Type
Step 1: Choose Your LoRa Antenna Type  
Please confirm whether your device uses external antennas or not, which will affect your product signal.

Internal Antenna
External Antenna

2
Change Password
Step 2: Change Your Default Password  
For your device security, please change the default password in time.

Old Password
New Password
Confirm New Password

6. Now you should see the below overview of the gateway.

Status	Overview	Network	WLAN	VPN	Host List
Packet Forwarder	System Information				
Network Server	Model	UG65-915M-EA			
Network	Region	AS923			
System	Serial Number	6221B4691570			
Maintenance	Firmware Version	60.0.0.36-r12			
APP	Hardware Version	V1.2			
	Local Time	2023-06-30 13:39:31 Friday			
	Uptime	00:02:41			
	CPU Load	4%			
	RAM (Capacity/Available)	512MB/134MB(26.17%)			
	eMMC (Capacity/Available)	3.0G/2.8G(92.16%)			

7. Click on "Network", "Interface". Change the "Port" settings (e.g. IP address) to meet your network settings. Click "Save & Apply" button.

The screenshot shows the 'Port' configuration tab for 'Port\_1'. The left sidebar contains a menu with 'Interface' selected. The main area displays the following configuration fields:

Field	Value
Port	eth 0
Connection Type	Static IP
IP Address	192.168.170.77
Netmask	255.255.255.0
Gateway	192.168.170.2
MTU	1500
Primary DNS Server	8.8.8.8
Secondary DNS Server	114.114.114.114

- Wait until it's finished and connect to the gateway again with the new IP address. Click on "System", "General Settings", and then the "System Time" tab to setup the "System Time Settings". The gateway is now ready for use.

The screenshot shows the 'System Time' configuration tab. The left sidebar contains a menu with 'System' selected and 'General Settings' highlighted. The main area displays the following configuration fields:

Field	Value
Current Time	2023-06-30 13:45:50 Fri
Time Zone	8 China (Beijing)
Sync Type	Sync with NTP Server
NTP Server Address	1.cn.pool.ntp.org
Enable NTP Server	<input type="checkbox"/>

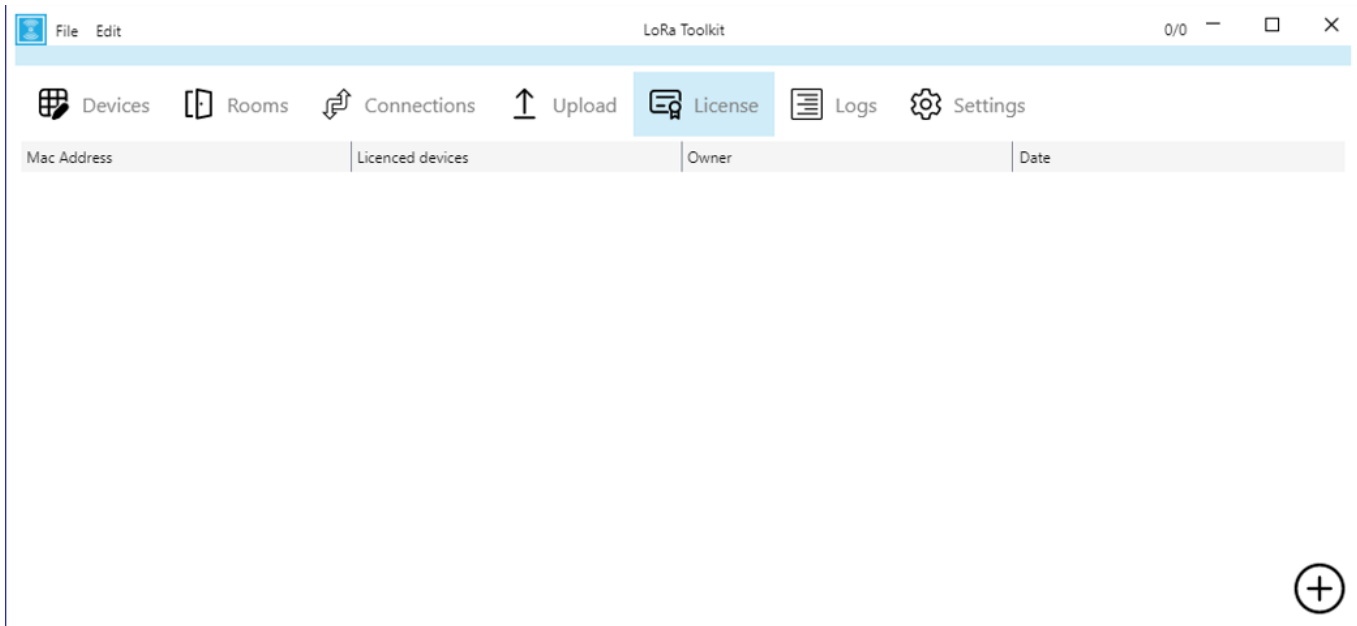
A 'Save' button is located at the bottom of the configuration area.

- Download the "DEOS LoRa Toolkit for (DEOS TEO)" from <https://portal.deos-ag.com>. It's under "Download Center", "Beta Tools".

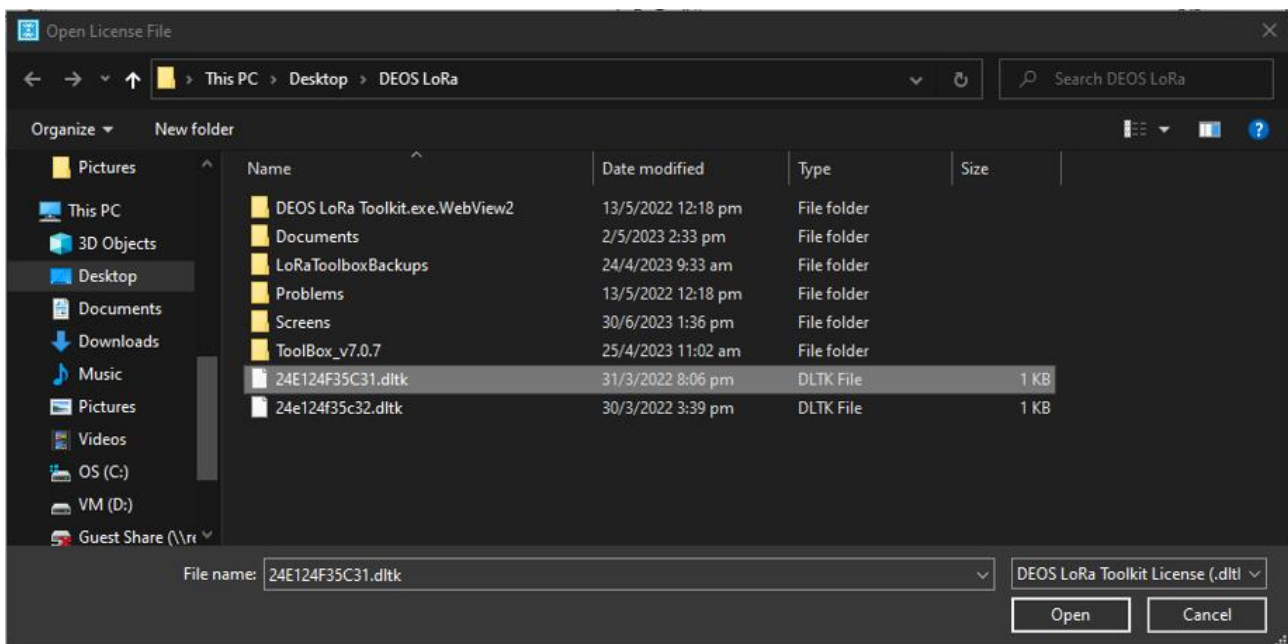
The screenshot shows the DEOS LoRa Toolkit download page. The left sidebar contains a menu with 'DASHBOARD' and 'DOV' visible. The main area displays the following information:

DEOS LoRa Toolkit (DEOS TEO)		Description
Version	1.0.8403.24718	DEOS LoRa Toolkit for DEOS TEO - for configuration of room temperature - for connection of DEOS LoRaWAN gateway to pro.Building Suite
Change Date	03/01/2023	
Product group	LoRa	
Language	Deutsch Englisch	
Downloads		
LoRaToolkit-1.0.8403.24718.msi 70.98 MB		
Comments		
Greife, Dominik wrote on 22.06.2023 at 08:06		

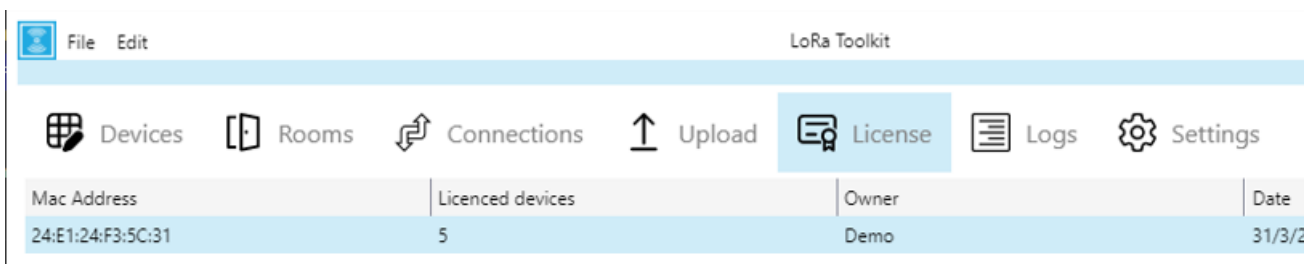
10. Install and run it. Go to the “License” tab, click the “+” button at the bottom right-hand corner.



11. Select the license file you ordered from DEOS.



12. Now you should see the license details. Please note that the license is linked to the MAC address of the gateway. In this example, we connect to the gateway using LAN (Ethernet), so it is linked to the MAC address of the gateway Ethernet port (i.e. Gateway EUI).



13. Please note that there are multiple MAC addresses in the gateway (e.g. wireless), so make sure you use the correct MAC address when purchasing the license.

14. Click “Upload” tab, enter the gateway IP address, username and password. Click the “Update app on gateway” button.

File Edit LoRa Toolkit

Devices Rooms Connections **Upload** License Logs Settings

IP-Address  
192.168.170.77

24:E1:24:F3:5C:31

Username  
admin

Password  
\*\*\*\*\*

☐ Remove unknown devices

Upload configuration

Update app on gateway

15. Click “Yes” to proceed the upload and wait until it’s finished.

Upload

Upload configuration?  
All settings on the gateway will be overwritten by the configuration!  
If necessary, please update the local configuration in the "Rooms" tab before uploading.

Yes No

16. Click the “Devices” tab and click the “+” button.

File Edit LoRa Toolkit 0/5

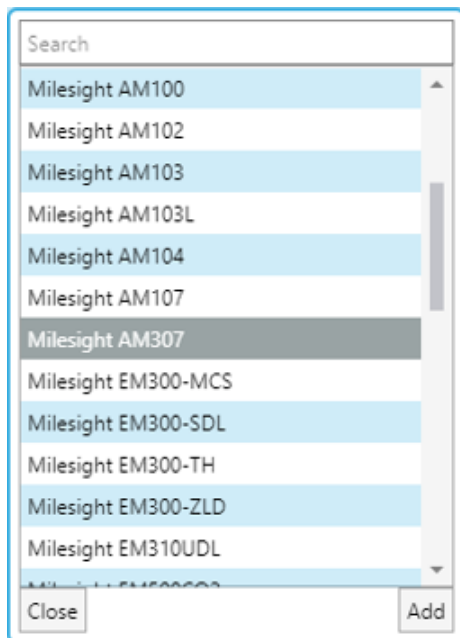
Devices Rooms Connections Upload License Logs Settings

Search

Nr	Type	Name	Description	Dev EUI	App Key	Timeout	Signal Quality RSSI
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+

17. Select the LoRaWAN device you want to add. In this example, we select the “Milesight AM307” device. Click the “Add” button to add to the gateway.



18. Type the “Name” and “Description” for the device.

LoRa Toolkit						
File Edit						
<div> <div>Devices</div> <div>Rooms</div> <div>Connections</div> <div>Upload</div> <div>License</div> <div>Logs</div> <div>Settings</div> </div>						
Nr	Type	Name	Description	Dev EUI	App Key	Timeout
1	Milesight AM307	AM307	AM307	24e124707b429540	5572404c696e6b4c6f52613230313823	1000

19. The “Dev EUI” is a unique ID for each LoRaWAN device. For Milesight AM307, you can find it at the back of the device.
20. The “App Key” is similar to a password for the device. For Milesight AM307, the default “App Key” is “5572404C696E6B4C6F52613230313823”.
21. You can change the “App Key” for each device for security reasons. For details, please refer to the LoRaWAN device manual.
22. You can set the “Timeout” to, for example, 1 second (i.e. 1000).
23. Go to the “Upload” tab, set “Remove unknown devices” and click the “Upload configuration” button.

File Edit

LoRa Toolkit

Devices

Rooms

Connections

Upload

License

Logs

IP-Address

192.168.170.77

24:E1:24:F3:5C:31

Username

admin

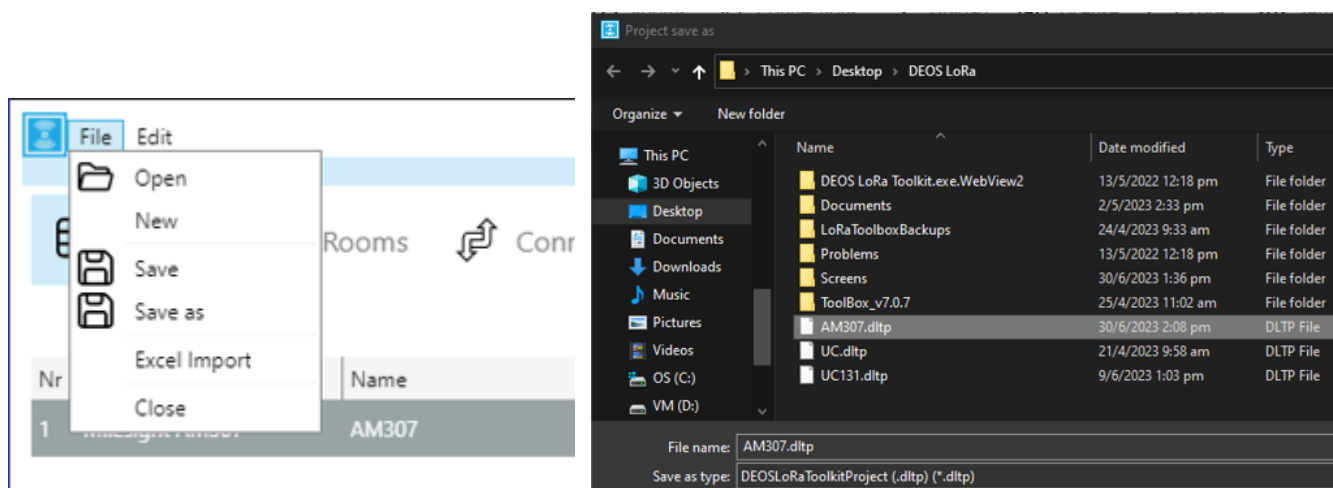
Password

\*\*\*\*\*

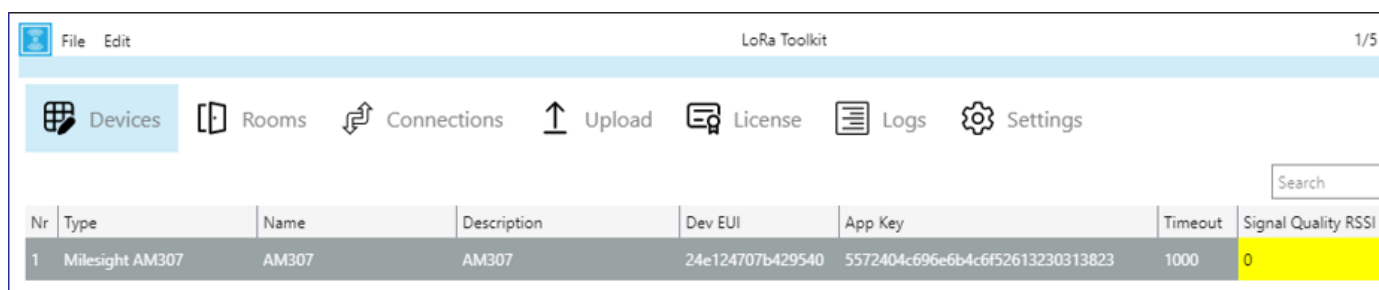
☒ Remove unknown devices

Upload configuration

24. Wait until it's finished. Save the project.



25. Now the setup of the LoRaWAN gateway and device are finished. If everything OK, then you should see the “Signal Quality RSSI” change to green color with a negative number. If you see like below as yellow color after a few minutes, then you can restart (power off and then on) the LoRaWAN device (not the gateway).



26. After device restart (and maybe a few minutes later), you should see like below and now it's done.

