LGW915SH LoRaWAN Mini Indoor Gateway

Quick Start Guide

1. Product Overview

1.1 What Is This Product?

The LGW915SH is a mini indoor IoT gateway built on LoRaWAN® low-power wide-area network (LPWAN) technology. Supporting global LoRaWAN frequency bands, it connects up to 100 LoRaWAN end nodes and quickly establishes a LoRaWAN low-power private network for small industrial environments, with a coverage range of up to 500 m.
With built-in LoRa and Wi-Fi antennas in a compact housing, the gateway connects to the wide area network via Wi-Fi or Ethernet and forwards node data to the cloud, enabling remote IoT data monitoring. It is designed for small industrial environments such as workshops, warehouses, and small plants. The gateway uploads data to the cloud via Wi-Fi or wired Ethernet. It is compatible with mainstream LoRaWAN network servers (such as ChirpStack and The Things Stack), and also provides a built-in network server (NS) with on-gateway terminal management, so you can deploy your own IoT applications quickly and flexibly. In this guide, the gateway is used with the AdoModel LoRaWAN NS cloud platform (http://adomodelcloud.com:4560/).

Key features at a glance:

- Global LoRaWAN bands, 100 nodes — 8-channel full-duplex SX1302 transceiver, up to 100 LoRaWAN end nodes
- Built-in antennas — LoRa and Wi-Fi antennas integrated; nothing to install
- Private LoRaWAN network in minutes — coverage up to 500 m, ideal for small industrial sites
- Built-in NS with terminal management — add OTAA/ABP end devices directly on the gateway
- Flexible backhaul — Wi-Fi (2.4 GHz only) or wired Ethernet
- Open ecosystem — works with mainstream LoRaWAN network servers, built-in NS, or third-party

1.2 Where the Gateway Fits in Your System

The gateway is one link in a complete data chain. Figure 1 shows a typical AdoModel IoT deployment and the role of each component.

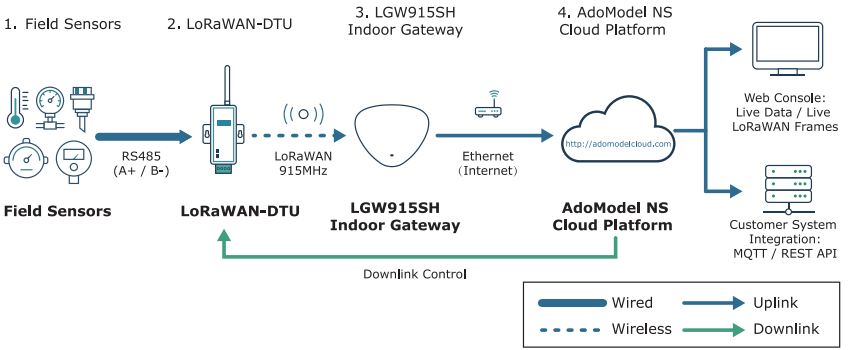


Figure 1 System architecture of a typical IoT deployment

How data flows through the system:

• **Uplink:** field sensors report their readings over an RS485 cable to a LoRaWAN-DTU, which packages the data into LoRaWAN frames and transmits them over the air. The gateway receives these radio signals and forwards them — via Wi-Fi or wired Ethernet — to the cloud, where the AdoModel LoRaWAN NS platform decodes them into application data.

• **Downlink:** commands sent from the platform travel the reverse path. The gateway transmits them over the air to the DTU, which outputs them through its RS485 port to the sensor or controller.

The role of each component:

Component	Role in the System
Field Sensor	Measures physical quantities (temperature, pressure, flow, etc.) and outputs data through its RS485 interface.
LoRaWAN-DTU	The translator between sensors and the wireless world: converts RS485 data to LoRaWAN radio frames, and vice versa.
LGW915SH Gateway	The relay station between wireless and the Internet: receives LoRaWAN radio frames from end nodes and forwards them to the cloud over Wi-Fi or Ethernet.
AdoModel LoRaWAN NS Platform	The brain of the network: manages gateways and devices, decodes application data, and provides web console, downlink control, and MQTT / REST API integration.

The gateway itself never interprets your sensor data — it simply relays LoRaWAN frames. All intelligence (decoding, device management, integrations) lives in the NS platform. This separation is what allows one gateway to serve thousands of heterogeneous devices.

1.3 What This Guide Helps You Accomplish

This guide walks you through everything needed to get a single gateway from the box to a working connection with the AdoModel LoRaWAN NS platform. Follow the chapters in order; by the end you will have:

- unpacked and verified the shipment (Chapter 2);
- familiarized yourself with the interfaces and indicators (Chapter 3);
- powered the gateway and connected it to the Internet via Ethernet or Wi-Fi (Chapters 4–5);
- opened the gateway web console and verified its platform connection settings (Chapters 6–7);
- seen the gateway appear online on the AdoModel LoRaWAN NS platform (Chapter 8);
- learned what the platform can do for you once the gateway is online (Chapter 9).

If anything does not work as described, turn to Chapter 10 (Troubleshooting).
Connecting end-node devices (e.g., a LoRaWAN-DTU with sensors) to the network is covered in a companion document, the LoRaWAN-DTU Quick Start Guide.

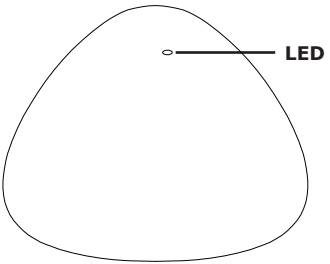
2. Packing List

				
LoRaWAN Type III Mini Indoor Gateway	Power Adapter 1	Type-C Data Cable 1	Factory Reset Pin 1	Certificate of Conformity Quick Installation Manual

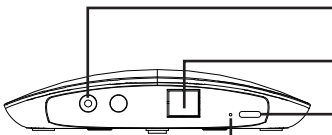
! NOTE: All antennas are built into the gateway — there is nothing to screw on. If any items are damaged or missing, or if you have other accessory requirements, please contact your agent or sales representative promptly.

3. Interfaces and Indicators

The interfaces are arranged on the rear of the device. Figure 2 shows the layout; the tables list each interface and indicator.



Color&Function	Meaning
Red System power & Basic operation	**Solid:** Powered on, running normally **Off:** Not powered, or power fault Blinking Slow: booting or factory reset in progress; **Blinking Fast:** system fault or critical error
Green IP network connection	**Solid:** IP address obtained, network connected **Off:** Network not connected or not enabled **Blinking:** Trying to connect (Wi-Fi / Ethernet searching or dialing)
Blue LoRaWAN service	**Solid:** Packet Forwarder running, connected to the LoRaWAN network server **Off:** LoRaWAN module not started, or no network server configured **Blinking:** Receiving or sending LoRa packets (RF activity)



DC power jack
Main power input, 12 V / 2 A, with the included adapter

RJ45 Ethernet port
10/100 Mbps wired network interface for routers or switches; dual-color status

Type-C port
Dual function: auxiliary power (temporary power via a phone charging cable) and debug serial port (read device logs / debug parameters from a computer)

Reset pinhole
Press and hold with the supplied pin (or a toothpick) for 5 seconds to restore factory settings; all network and device configurations are cleareddual-color status

Figure 2 Interface layout

After power-on, a solid red indicator with the green indicator off or blinking means the gateway is ready for first-time configuration through the gateway hotspot (Section 6.1). The green indicator turns solid once the network connection is established.

NOTE: The device supports desktop placement and wall mounting.

4. Installation and Power

No special tools are required. The gateway needs no antenna installation.

4.1 Powering the Gateway

1.Plug the included power adapter into the DC jack on the rear of the gateway and into a wall outlet.

NOTE: The Type-C port can be used for temporary backup power with a phone charging cable, but the DC adapter is the primary power supply.

4.2 Connecting the Network (choose the backhaul)

2.For Ethernet backhaul: connect a network cable from your router or switch to the RJ45 port. A solid green light on the port indicates a successful connection.

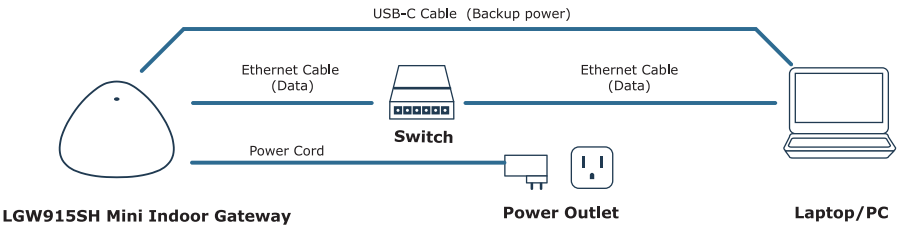


Figure 3 Gateway wiring

NOTE: DC power preferred; TYPE-C is temporary backup only

3.For Wi-Fi backhaul: no cable needed — configure the Wi-Fi connection on the gateway web console (Chapter 6 → Network → WiFi).

4.3 Reset (if needed)

Use the supplied factory reset pin to press and hold the reset pinhole for 5 seconds. The device is restored to factory settings and all configurations are cleared.

WARNING: Factory reset clears all network and device configurations. Export a backup of the configuration first if possible (web console → Export Configuration).

5. Power On & Network Backhaul

The gateway supports three backhaul options:

Backhaul	Best for	What to do
Wi-Fi	Sites without a wired network outlet near the gateway	Connect to the gateway's setup hotspot (Section 6.1), then configure the gateway to join your local Wi-Fi (STA mode) on the web console. 2.4 GHz networks only — 5 GHz Wi-Fi is not supported.
Ethernet (recommended)	Installations with a wired network available	Connect the Ethernet cable (Section 4.2) — the gateway obtains an IP address automatically (DHCP). No further configuration is needed.

5.1 Post Power-On Checks

✓ The power adapter is connected and the device is powered.
✓ The Ethernet cable is firmly seated (if used); the Ethernet port LED is solid green.
✓ The green status indicator is solid once the gateway has obtained an IP address and the network connection is up.

Once powered and connected to the Internet, the gateway automatically starts sending data to the NS platform. In a good network environment the gateway comes online within 1–3 minutes of power-on (up to ~5 minutes). You will verify this on the platform in Chapter 8, after checking the web console settings in Chapters 6–7.

6. Accessing the Gateway Web Console

The gateway is managed through a built-in web console. The mini indoor gateway differs from the outdoor/indoor models: its console is reached primarily through the gateway's own Wi-Fi hotspot. There are three ways to reach it:

- **Option 1 — Gateway Wi-Fi hotspot:** connect your computer to the gateway's built-in hotspot and open the console at 192.168.4.1. Works out of the box, no network infrastructure needed.
- **Option 2 — Ethernet via your LAN:** connect the gateway to your router or switch and look up its IP address with the supplied LoraGW_IPScan tool.
- **Option 3 — Remote access via the CMP platform:** if the gateway is already online, open its web console remotely through the AdoModel IoT Management Platform (CMP) without going on site.

6.1 Option 1: Gateway Wi-Fi Hotspot

For first-time setup, the gateway broadcasts a Wi-Fi hotspot with default settings:

Item	Default value
Hotspot name (SSID)	LGW_XXXXXX (XXXXXX = digits of the MAC address)
Hotspot password	lgwwifipsw
Console address	http://192.168.4.1
Username / password	root / admin

1. On your computer, find the gateway's Wi-Fi hotspot and connect to it with the password above.
2. Open a browser (Chrome recommended) and enter http://192.168.4.1.
3. Log in with the default credentials: root / admin.

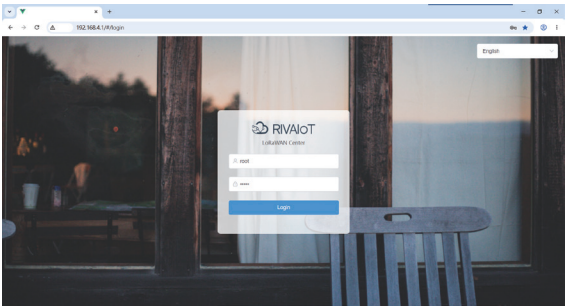


Figure 4 Web Management Interface Login Page

Default value
Username/Password: root/admin

6.2 Option 2: Ethernet via Your LAN

1. Connect the gateway's Ethernet port to your router or switch (Section 4.2).
2. Make sure the network has DHCP enabled — the gateway obtains its IP address automatically.
3. On a computer connected to the same LAN, use the supplied LoraGW_IPScan tool to find the gateway's IP address.(LoraGW_IPScan can be downloaded from www.adomodeltech.com or obtained from your account manager.)
4. Enter the IP address in a browser to access the web console.

6.3 Option 3: Remote Access via the CMP Platform

NOTE: This option requires the gateway to be already connected to the Internet (Ethernet or Wi-Fi) and shown as Online in CMP.

1. Log in to the AdoModel IoT Management Platform (CMP): http://adomodelcloud.com/ (account provided by your account manager).
2. Click "Device Management" to expand the menu, then click "Group".
3. Enter the gateway ID (IMEI) in the search box and click "Search" .
4. Click "View" on the found device.
5. Under the operation column, click "Remote Configuration"(Figure 5).
6. Confirm the device status is "Online", then click "Enable Remote Connection". Wait until a dialog confirms success and shows the "Open Configuration Page" and "Close Remote Connection" buttons.
7. Click "Open Configuration Page" — the gateway web console login page opens.

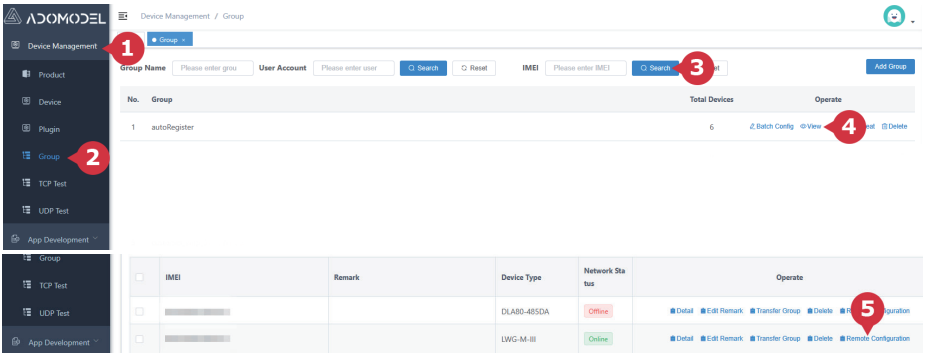


Figure 5 Remote Configuration in CMP

7. Connecting to the AdoModel Platform

The gateway is factory-configured for the North American band (US915) and for the AdoModel LoRaWAN NS platform. In most cases you do not need to change anything — just verify that the settings match the table below.

7.1 Verifying the NS Settings

1. Open the gateway web console (Chapter 6).
2. Go to "Gateway Configuration" → "NS Network Server Settings".
3. Verify the following values:

Setting	Expected value (North America)
NS server address	adomodelcloud.com
Uplink port	915
Downlink port	915
Band	US915 (US_902-928)

NOTE: If any value differs, correct it and click Save. If the gateway cannot connect to the network server, check the server address, ports, firewall, and the gateway's network connection.

7.2 Using the Built-in NS

The gateway also provides a built-in network server: set the server address to 127.0.0.1 with uplink port 1780 and downlink port 1782, and you can add OTAA/ABP end devices directly on the gateway (Terminal Management). This is useful for standalone deployments without a cloud platform. See the LGW-SH Gateway Web Configuration Guide for details.

7.3 Using a Different Network Server

If you operate your own LoRaWAN network server (e.g., ChirpStack or The Things Stack), enter its address and ports on the same page. Frequency-plan customization is beyond the scope of this guide — see the LGW-SH Gateway Web Configuration Guide.

8. Verifying the Gateway Is Online

8.1 Log In to the NS Platform

1.Open http://adomodelcloud.com:4560/ in your browser.
2.Log in with the account provided by your account manager.

> NOTE: If your gateway has not yet been registered on the platform, follow the registration procedure described in the companion LoRaWAN-DTU Quick Start Guide, or contact your account manager.

8.2 Check the Gateway Status

1.Click the "Gateway" tab on the left side.
2.Enter the gateway MAC ID in the "Search" box and locate your gateway (Figure 6). If it does not exist, click the "CREATE" button in the upper left corner to create it.

> NOTE: Gateway ID rule: if the MAC ID on the label has 15 digits, append a "0" at the end to make 16 digits before entering it on the platform (e.g., 866999……7 → 866999……70).

3. Check the status dot: green = online; red = offline. After power-on (or a new registration), the gateway typically comes online within 1–3 minutes, and within about 5 minutes at most. If it is still offline after 5 minutes, see Chapter 10.

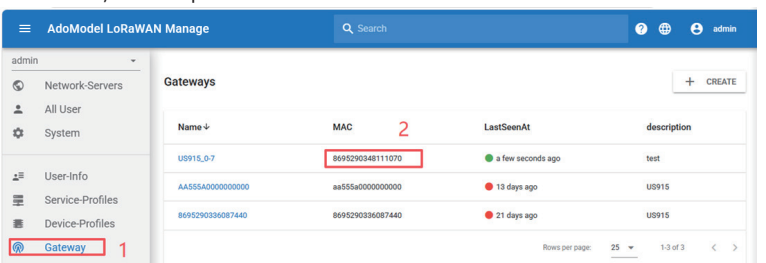


Figure 6 Gateway list on the NS platform — green dot indicates online

8.3 Alternative Check via CMP

You can also confirm that the gateway has Internet access from the CMP platform (http://adomod-elcloud.com/): search the gateway IMEI as described in Section 6.3; an "Online" status means the backhaul link works. If the gateway is online in CMP but offline on the NS platform, re-check the NS settings of Chapter 7.

9. What the Platform Can Do for You

Once your gateway is online, the AdoModel LoRaWAN NS platform is your window into the network. Highlights:

- Applications & device management — organize end-node devices into applications; register devices, manage activation keys (OTAA), and monitor device status.
- Live Data — view decoded application data from your devices in real time.
- Live LoRaWAN Frames — inspect raw LoRaWAN protocol frames (e.g., JoinRequest / JoinAccept) for network debugging.
- Downlink control — send commands to devices from the platform (e.g., through the downlink tool).
- Integration — retrieve your data via standard RESTful APIs and MQTT subscriptions for custom application development.

A quick end-to-end walkthrough — registering the gateway and a LoRaWAN-DTU node, and testing uplink/downlink data — is provided in the companion LoRaWAN-DTU Quick Start Guide. The complete platform documentation is available separately (AdoModel NS Platform User Guide).

10. Troubleshooting

Symptom	Possible cause	What to do
Cannot find or connect to the gateway hotspot	Gateway not powered; too far away; hotspot disabled after STA configuration	Check power and the red indicator (solid = powered on); move closer to the gateway.If the gateway has joined a local Wi-Fi network (STA mode) and the hotspot is off, use Ethernet or CMP remote access instead.
Web console page will not open (hotspot)	Wrong address; browser cache	Confirm http://192.168.4.1; try Chrome; clear the browser cache.
Web console page will not open (CMP remote)	Gateway not Online in CMP	Remote configuration only works when the gateway has Internet access. Use the hotspot method (Section 6.1) instead.
Login fails	Wrong credentials	Use the defaults root / admin. If the password was changed and lost, use the reset pinhole (Section 4.3) to restore factory settings.

Symptom	Possible cause	What to do
Gateway never comes online on the NS platform	No backhaul link; wrong gateway ID on the platform; NS settings mismatch	1) Check that the Wi-Fi/Ethernet link works (CMP status, Section 8.3). 2) Compare the gateway ID on the platform with the label on the device (mind the 15→16 digit rule). 3) Verify the NS settings (Chapter 7). 4) Power the gateway off for about 15 seconds and power it on again.
Wi-Fi backhaul does not connect	5 GHz network; wrong password; weak signal	The gateway supports 2.4 GHz networks only; check the SSID and password on the web console (Network → WiFi); improve signal strength or use Ethernet.

For further assistance, contact your agent or sales representative, or visit www.adomodeltech.com.

Appendix A: Specifications

Key specifications of the gateway (from the LGW-L-III Product Specification; refer to the full specification sheet for details):

Item	Specification
MCU	ESP32-S3
Storage	128 Mbit (16 M × 8)
LoRaWAN channels	8 (full-duplex / half-duplex)
Frequency band	US915
Receiving sensitivity	-143 dBm
Transmission power	Max. 30 dBm
LoRaWAN antenna	2 built-in antenna interfaces, 50 Ω
LoRaWAN protocol	V1.0.4 and V1.0.2, Class A / C
Ethernet port	1× 10/100 Mbps
Wi-Fi	2.4 GHz 802.11 b/g/n only (5 GHz not supported); built-in antenna;
Other interfaces	client (STA) or AP mode
Power supply	Reset pinhole ×1; Type-C (aux power + debug) ×1; RGB status LED ×1
Power consumption	DC 12 V adapter (Type-C as temporary backup)
Casing	Avg. 3.4 W; peak 5 W
Operating temperature	-50 °C to +100 °C

Storage temperature	-50 °C to +100 °C
Relative humidity	10%–90% RH, non-condensing
EMC protection	Contact discharge 4 kV; air discharge 8 kV
Installation	Desktop placement or wall mounting (indoor); coverage up to 500 m

Appendix B: Default Parameters

Parameter	Default value
Gateway hotspot SSID	LGW_XXXXXX (digits of the MAC address)
Gateway hotspot password	lgwwifipsw
Web console address (hotspot)	http://192.168.4.1
Web console username / password	root / admin
Ethernet mode	DHCP
NS server address (external)	adomodelcloud.com
NS uplink / downlink port (external)	915 / 915
Built-in NS	127.0.0.1, uplink 1780 / downlink 1782
Band	US915
NS platform web address	http://adomodelcloud.com:4560/
CMP platform web address	http://adomodelcloud.com/

Related Documents

- **LoRaWAN-DTU Quick Start Guide** — end-to-end system setup: gateway + DTU node + platform, uplink/downlink testing.
- **LGW-SH Gateway Web Configuration Guide** — complete reference for the gateway web console (advanced network, LoRaWAN, and system settings).
- **AdoModel LoRaWAN NS Platform User Guide** — complete reference for the NS platform.

Regulatory Compliance

FCC ID: 2BWC6LGW915SH

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.

RF Exposure: This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. The antennas must be installed to provide a minimum separation distance of at least 20 cm from all persons, and must not be co-located or operating in conjunction with any other antenna or transmitter, except in accordance with FCC multi-transmitter product procedures.

Caution: Any changes or modifications to this device not expressly approved by the manufacturer could void the user's authority to operate the equipment.