

GDI52

LoRaWAN Gateway

Standardized Device Manual



VERSION
1.0

DOCUMENT
Device Manual

Revision History

Version	Change Description
1.0	Current published version

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Language-version note: The Chinese manual additionally states that GDI52x does not support GPS and that installation does not require opening the enclosure. The Chinese and English manuals also differ on fast network-indicator flashing: English says no 4G module is installed; Chinese says the network is being configured. Confirm behavior against the current hardware revision or with technical support before service work.

1. Product Introduction

1.1 Product Introduction

GDI52x is a new-generation indoor gateway product designed by ManThink for LoRaWAN systems.

GDI52x inherits the core functional architecture of GDI51x. Based on a high-performance LoRaWAN gateway design, it supports LoRaWAN network access, ThinkLink platform integration, and third-party LoRaWAN Network Servers. It is suitable for IoT application scenarios including industrial parks, buildings, industrial sites, and smart property management.

Compared with GDI51x, GDI52x adopts an aluminum alloy enclosure design, improving structural strength and industrial appearance. The gateway adds an RS-485 communication interface and supports DC 5-24V wide-range power input.

1.2 Product Features

- Supports ThinkLink, ChirpStack, TTN and other LoRaWAN platforms
- Supports Basic Station and GWMP gateway protocols
- Built-in ThinkLink (TKL) platform for edge data processing and management
- Supports historical data storage
- Supports device models and application data parsing
- Supports Dashboard visualization
- Supports 4G, WiFi and Ethernet backhaul
- Supports RS-485 field device connection
- Supports DC 5-24V power supply
- Supports remote maintenance and upgrade
- Provides Web configuration interface
- 8 frequency channels (BW=125kHz)
- 16 LoRa demodulators for concurrent packet processing
- 65 configurable channels
- Maximum TX power: 22dBm
- RX sensitivity: -141dBm (SF=12, BW=125kHz)
- Supports US902, AU915, AS923, EU868, EU433 and CN470 LoRaWAN regions

- Aluminum alloy industrial enclosure

2. Specifications

2.1 Parameters

SOC	* LS1012A 64-bit ARM Cortex-A53 800MHz 2W
Memory	Support DDR3L 1066 MHz Memory:512MB
Storage	* ≥ 16 GB eMMC
Software	* Built-in NS and IoT platform (with integrated TKL) * Supports ThinkLink, ChirpStack, TTN, Basic Station, and GWMP protocols * Supports PostgreSQL and Redis databases * Supports historical data storage and Leaf mode * Supports Thing Model and application data parsing * Supports Dashboard
LoRa	* Working frequency band: CN 470 470M ~ 510MHz EU868 863M~870MHz EU433 433M~434MHz AS923 920M~928MHz US902 902M-928 MHz AU915 915M-928 MHz · Communication Rate: 292bps to 15.625kbps, supports SF5 to SF12 · Transmit Power: 22dBm (Max) · Receiver sensitivity: -141 dBm (SF = 12, BW = 125 kHz) · Antenna Type: Omnidirectional · Frequency points: 8 (BW = 125 kHz) · Demodulators: 16, capable of processing 16 packets simultaneously(8 × SF5-SF12 LoRa@demodulators; 8 × SF5-SF10 LoRa@demodulators) · Channels: 65 (each channel is defined by a unique combination of SF, BW, and frequency point; BW = 125 kHz, totaling 65 channels) · Operating Mode: Half-duplex · Single Channel Bandwidth: 125KHz or higher
Data Backhaul	· Ethernet: 1000M/100M · 4G Note : The Gateway uses 4G uplink by default, CAT1 module, and supports the following frequency bands:LTE-FDD: B1/3/5/8;LTE-TDD: B34/38/39/40/41 If the frequency band used by the planned regional operator is not in the above frequency band, please contact the technical personnel of ManThink to replace the applicable 4G module.
Configure Ports	· USB-TypeC · Ethernet · WiFi
Power Supply	· POE(48V) · USB TYPE-C(5V) · DC 5-24V

SOC	* LS1012A 64-bit ARM Cortex-A53 800MHz 2W
Power Consumption	· 5W
Environmental Parameters	· Working temperature:-20 °C ~ 65 °C · Working humidity: 0% ~ 95% RH · Waterproof and dustproof: IP53
Weight	0.33kg
Dimensions	139mm x 122mm x 28mm
Installation Method	Rail mounting

2.2 Product size



Figure GDI52 dimensions

2.3 Interface Description

Interface Name	Description
WiFi	WIFI antenna interface
TF	Memory card slot
LoRa	LoRa Antenna interface
B A V- V+	RS485 interface/DC5-24V power supply
RST	Reset key
SIM	SIM card slot
RJ45	Network cable interface (POE power supply)
PWR	Type-C interface
4G	4G Antenna Interface

2.4 Indicator Description

Indicator	Function	Status	Description
	Running Indicator	Steady On	System starting up
		Off	System running normally, entering process startup phase
		Flashing at 1Hz	System running normally
	Network Indicator	Red (Wired Network Status) — Flashing at 1Hz	Network connection normal
		Flashing at 500ms	Network connection abnormal
		Fast Flashing	Gateway does not have 4G module installed
		Blue (4G Network) — Off	Gateway does not have 4G module installed
		Steady On	Gateway has 4G module installed but no SIM card inserted
		Irregular Flashing	Gateway is performing data interaction
	LoRa Data Transceiver Indicator	Red — Flashing	Gateway is sending a data packet
		Blue — Flashing	Gateway is receiving a data packet

Indicator	Function	Status	Description
	LAN Status Light	Red	System control
		Blue	WiFi connection status
	Fault Indicator	Fast Flashing	Second phase of startup process
		Off	No fault
		Flashing	Fault

2.5 Product Model

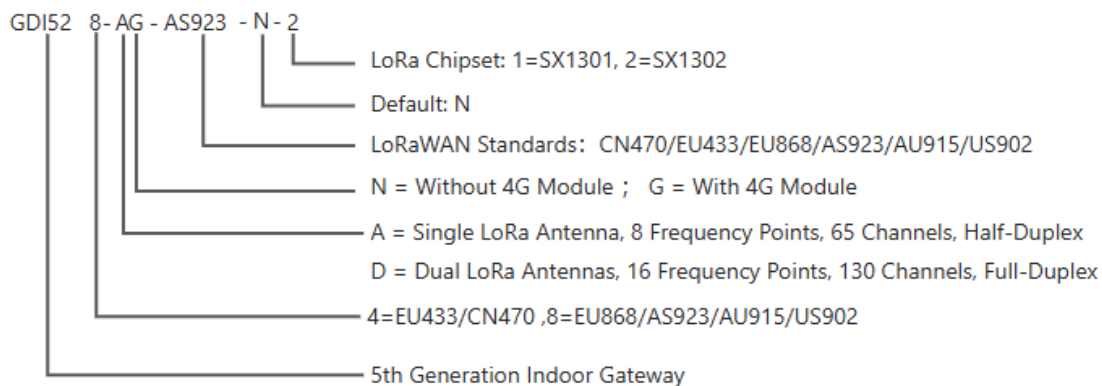


Figure GDI52 product model chart

3. Gateway Installation

3.1 Accessories Connection

3.1.1 Antenna connection

- tighten the LoRa, WiFi and 4G antennas to the corresponding interfaces respectively (LoRa, WiFi and 4G antennas are suction cup antennas)

3.1.2 Type-C power cord connection

- when using POE power supply mode, the power cord does not need to be connected
- connect the Type-C power cord to the Gateway PWR interface (Type-C interface)

3.1.3 Network cable connection

- connect the network cable to the Gateway RJ45 interface
- this interface can accept POE power supply

3.1.4 SIM card installation

- no need to insert SIM card when connecting network cable
- insert SIM card into Gateway SIM interface

NOTE the direction of SIM card insertion is, the chip is downward, and the notch is in the upper left corner.

3.1.5 RS485 connection

- B A port connected to the green terminal

3.1.6 DC5-24V supply connection

- V- V + port connected to green terminal

3.2 Gateway Installation

3.2.1 Guide rail installation

- screw the Gateway accessory rail backplane to the back of the Gateway
- install the rail back plate card in the rail

4. User Guide

4.1 Gateway Configuration

[gwTool7 Gateway Administrator Manual](#)

4.2 Using ThinkLink

[ThinkLink User Guide](#)

4.3 Connecting to Chirp Stack

[Connect to ChirpStack with Basic Station \(gwTool7\)](#)

4.4 Connecting to TTN

[Connect to TTN with Basic Station \(gwTool7\)](#)

5. Contact Us

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