HT-M7603

Indoor LoRa Gateway

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Document version

Version	Time	Description	Remark
Rev. 1.0	2023-5-16	Preliminary version	Richard
Rev.1.1	2024-5-21	Add a description of MQTT	Richard

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Content

1. Description

1.1 Overview

HT-M7603 is a high cost-effective indoor standard LoRaWAN gateway, which also support private MQTT protocols[①]. It can be used independently or as a blind filling gateway. With simple configuration, it allows you to bridge LoRa wireless networks to IP networks and different network servers via Wi-Fi or Ethernet.

This gateway has a sleek, contemporary design. It is wall-mounted, can be easily placed anywhere indoor to ensure that it provides adequate signal coverage.

HT-M7603 are available in three product variants:

Table 1.1 Product model list

No.	Model	Description
1	HT-M7603-470T510	470~510MHz working LoRa frequency, used for China mainland (CN470) LPW band.
2	HT-M7603-863T870	863~870MHz working LoRa frequency, used for EU868, IN865 LPW bands.
3	HT-M7603-902T923	902~923MHz working frequency, used for AS923, US915, AU915, KR920 LPW bands.

[①] Nodes need to run the corresponding private MQTT protocol.

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1.2 Product features

- MT7628 MCU, SX1303 + SX1250 Chipset.

- Wi-Fi and Ethernet supported.

- Maximum output: 27 ± 2dBm.

- The power supply voltage: 5V.

- Strong performance, good stability and long transmission distance.

- Easy to configuration on the Web UI by connecting to the device Wi-Fi or IP address.

- Light and fashionable, wall-mounted, simple to install.

- -20°C to 70°C maximum operating temperature range.

- Support **LoRaWAN Class A, Class C, custom MQTT** protocols.

- Working bands: Full band coverage corresponds to the working frequency option.

Table1.2：HT-M7603 setting page

2. Specifications

2.1 General specification

Table 2.1 General specification

Parameters	Description
MCU	MTK7628
LoRa Chipset	SX1303 + SX1250
Multi-channel	Eight (8) uplink, one (1) downlink.
Frequency	470~510/863~870/902~923MHz
Wi-Fi	IEEE 802.11 b/g/n 2.4GHz
Ethernet	10/100M
Max. Receiving. sensitivity	-139dBm
Max. TX Power	+27 ± 2dBm
Supply voltage	5V DC
Power consumption	See Table2.2.2
Operating temperature	-20 ~ 70℃
Operating humidity	10%～90%, no-condensing
Dimensions	116*65*30 mm

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2.2 Operating conditions

2.2.1 Power supply range

Parameter	Min.	Typical	Max.	Unit
Device operating input voltage	4.80	5.00	6.00	V

2.2.2 Power consumption

Mode	Condition	Min	Max
Active-Mode (RX)	ETH	170mA	190mA
	Wi-Fi	200mA	250mA
Active-Mode (TX)	TX power is 27dBm @ 5V supply.	400mA	450mA

2.3 RF characteristics

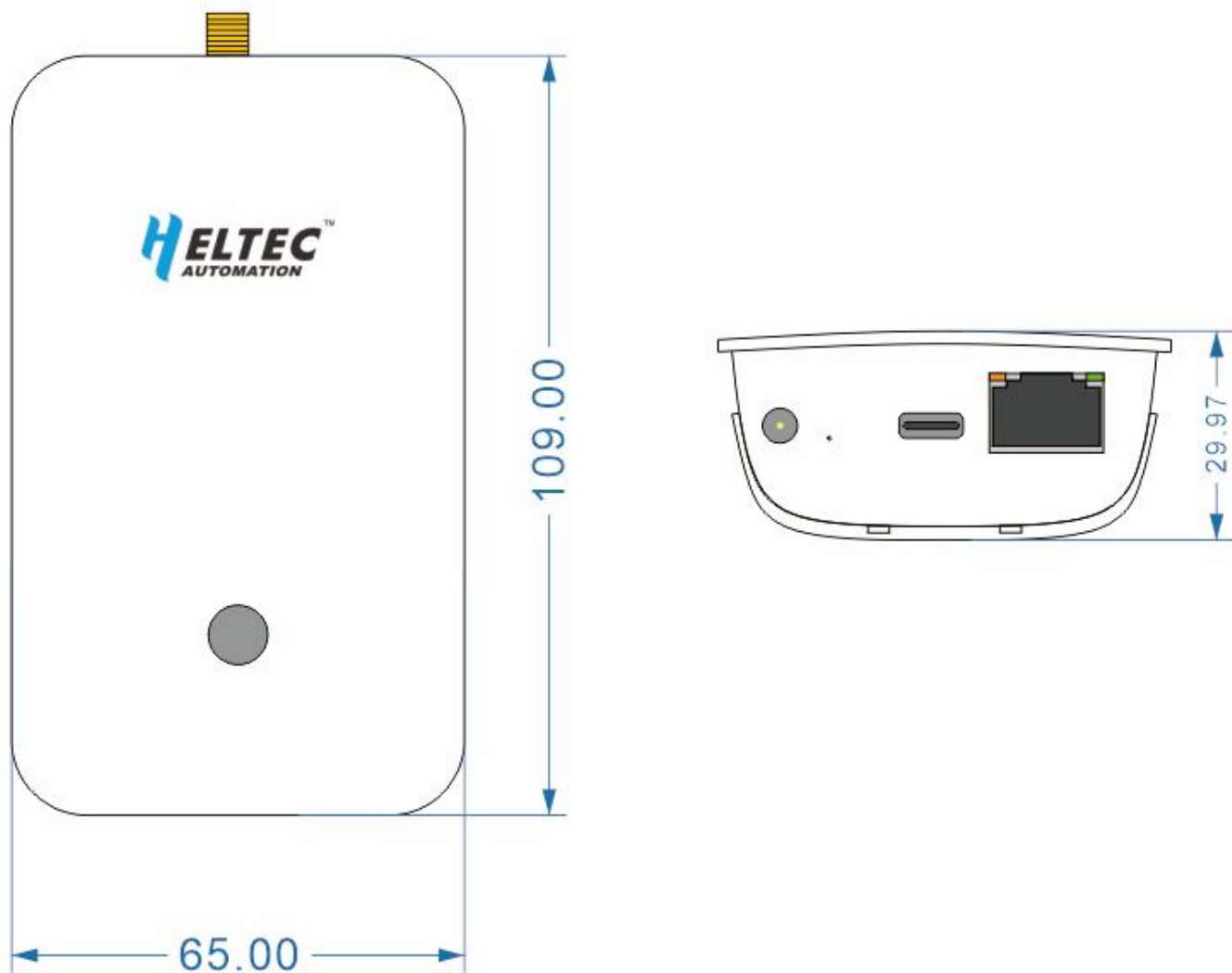The following table gives typically sensitivity level of the HT-M7603 Indoor LoRa Gateway.

Signal Bandwidth/[KHz]	Spreading Factor	Sensitivity/[dBm]
125	SF12	-139
125	SF10	-134
125	SF7	-125
125	SF5	-121
250	SF9	-124

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3. Typical hardware connections

3.1 Physical dimensions

4. Resource

4.1 Relevant resource

- Heltec LoRaWAN test server based on TTS V3:

  https://lora.heltec.org/

- HT-M7603 Documents Page:

  https://docs.heltec.org/en/gateway/ht-m7603/index.html

- HT-M7603 FAQ:

  https://heltec-hotspot-docs.readthedocs.io/en/latest/hotspot_faq.html

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