



HRI-3622

Sensor Hub Bus Transformer

——Driving third-party Sensor





Document version

Version	Time	Description	Remark
Rev. 1.0	2023-4-26	Preliminary version	Aaron

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1. Description

1.1 Overview

HRU-3622 is a sub-model of the Sensor Hub for outdoor series that specifically drives third-party sensors. Its interface is a flange seat, with RS-485 interfaces and 4 GPIO interfaces, can be used to connect RS-485 sensors directly.

Sensor Hub for Industry has excellent low power consumption and long transmission distance characteristics, comes with a built-in 1100mAh rechargeable battery. The stainless-steel shell and high-strength plastic provide an IP66 protection level, allowing it to perform stably and excellently in complex industrial environments.

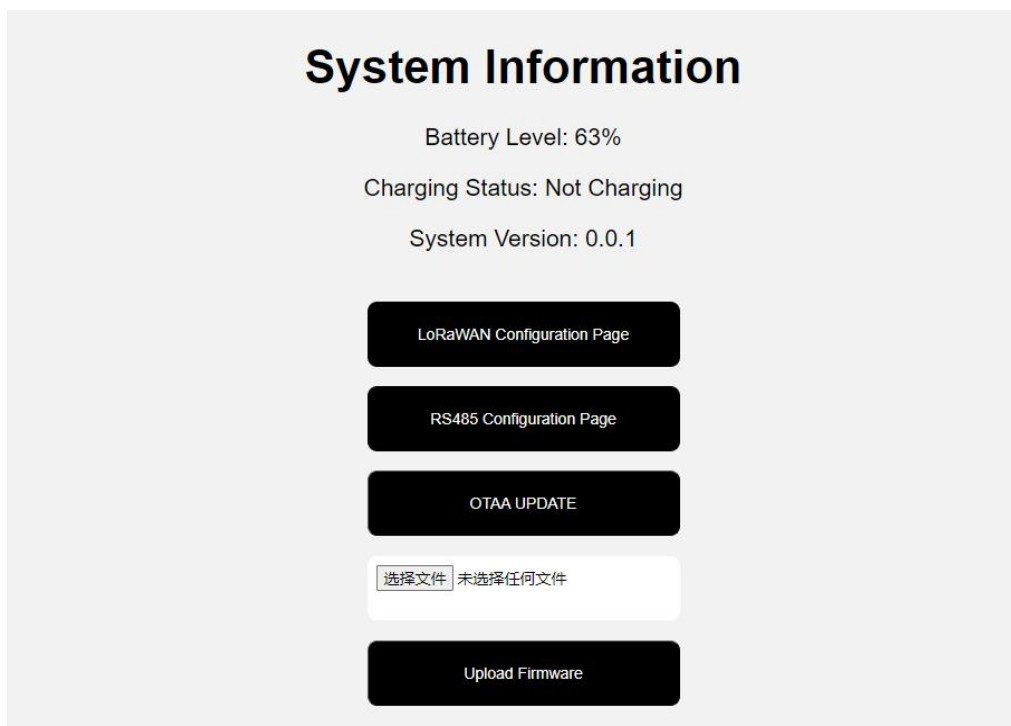
HRI-3622 are available in 3 product variants:

No.	Model	Description
1	HRI-3622-470	470~510MHz working LoRa frequency, used for China mainland (CN470) LPW band
2	HRI-3622-868	863~870MHz working LoRa frequency, used for EU868, IN865 LPW bands.
3	HRI-3622-915	902~923MHz working frequency, used for AS923, US915, AU915, KR920 LPW bands.



1.2 Product features

- Industrial grade protection structure, IP66 protection grade.
- Ultra-low power consumption design, built-in 1000mAh 18350 rechargeable battery.
- Compatible with wall fixing or cylinder fixing.
- Wireless data transmission communication radius up to 3km (no occlusion).
- Working temperature¹: --20~60°C, Working humidity: ≤90% (non-condensing).
- Power supply mode: built-in battery or external 5V DC power supply.
- Can register by scanning the QR code through the APP, or easily register through the device WiFi.



¹ This refers to the operating temperature and humidity of the circuit and battery, not the sensor.



2. Specifications

2.1 General specification

Table 2.1 General specification

Parameters	Description
Recommended operating condition	-20~ 60°C , 10 ~ 90(no condensing) RH%
Interface	Flange Seat
Input format	RS485
Microcontroller	Heltec Wireless Shell
Sensor module	Custom
LoRaWAN Channel Plan	EU868/US915/AU915/ AS923/KR920/RU864/CN470
Max. Receiving Sensitivity	-136dBm@SF12 BW=125KHz
Max. TX Power	+20 ± 2 dBm
Communication Distance	2 to 6km (depending on gateway antenna and environments)
IP Rating	IP66
Operating Temperature	-20 ~ 60 °C
Operating Humidity	10% ~ 100%, no-condensing
Battery Capacity	1100mAh
Battery Type	18350



2.2 Operating conditions

2.2.1 Power supply range

Table 2.2: Power supply range

Parameter	Min.	Typical	Max.	Unit
Device operating input voltage	2.7	3.7	5	V

2.2.2 Power consumption @3.7V

Table 2.2.1: Working current

Mode	Condition	Min. ^①	Max. ^②
Active-Mode (TX)	TX power is 22dBm @3.7 supply.	200mA	235mA
Active-Mode (RX)	TX disabled; RX enabled.	35mA	42mA
Deepsleep		25~40 μ A	

2.3 RF characteristics

The following table gives typically sensitivity level of the Sensor Hub.

Table 2.4: LoRa RF characteristics

Signal Bandwidth/[KHz]	Spreading Factor	Sensitivity/[dBm]
125	SF12	-135
125	SF10	-133
125	SF7	-125
125	SF5	-121
250	SF9	-124



2.4 LoRaWAN Frequency

Note: **No Frequency limitation.** Except CN470, the sensor can be switched to other frequency plans at any time.

Frequency Plan	Common Name	Sub-band
EU863-870	EU868	--
US902-928	US915	Sub-band from 1 to 8
AU915-928	AU915	Sub-band from 1 to 8
AS923	AS923	AS923_1, AS923_2, AS923_3, AS923_4
KR920-923	KR920	--
RU864-867	RU864	--
CN470-510	CN470	--

2.5 LED indicator light description

LED Color	Condition	Description
White	Steady on	Long press the button, the white light means to enter the working mode, release and then go out
Yellow	Steady on	Long press the button, the yellow light means to enter the configuration mode
Blue	Blink	The button flashes, wakes up the device, and sends a message once
Green	Blink	Flash once after successful transmission
Purple	Blink	Flash once after successful reception
Red	Blink	Charge in working mode, press the button once flashing red light; The charging red light is always on in configuration mode



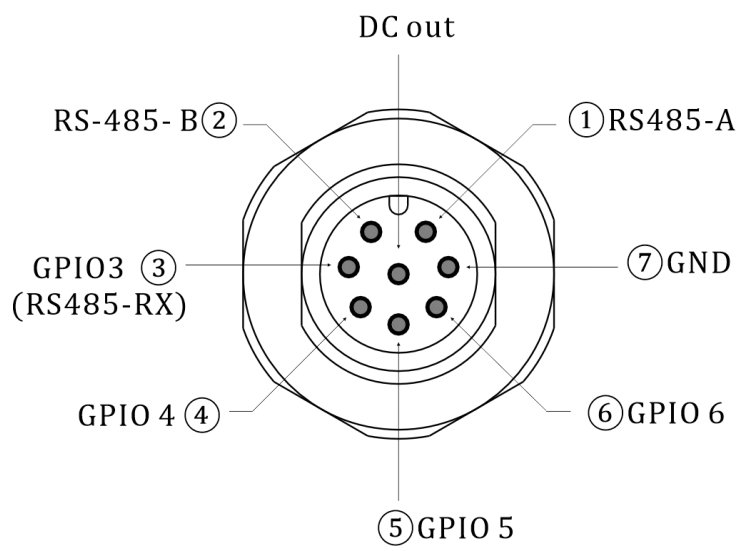
3. Hardware characteristics

3.1 Physical Dimensions



3.2 interface definition

Flange seat B





4.Resource

4.1 Relevant resource

- [User's manual](#)
- [Related Downloads](#)
- [Heltec LoRaWAN test server based on TTS V3](#)

4.2 Heltec Contact Information

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