

DS01828

RHF2S208 Product Specifications

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V1.3



Document information

| Info     | Content                                                                                  |
|----------|------------------------------------------------------------------------------------------|
| Keywords | LoRaWAN, IOT, GW, specifications, full-duplex                                            |
| Abstract | This document describes the specifications of the high performance outdoor GW RHF2S0208. |

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## 1 Preface

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This document describe the technical specifications and features of the high performance outdoor gateway RHF2S208.

RHF2S208 LoRaWAN GW is a new generation LoRaWAN gateway designed by Xinghang, which has some new features, Half-duplex or Full-duplex alternated, 8 channel or 16 channel alternated, internal battery backup available, and so on.

## 2 RHF2S208 LoRaWAN Gateway description

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RHF2S208 is an new generation telecommunication level IOT gateway based on LoRaWAN and target to LPWAN network, which could support half-duplex/full-duplex mode, 8 channel/16channel for particular part number. With an high reliability IP67 level water-proof industrial adapter, the gateway could be installed outdoor easily with maintenance-free. It is an IEEE 802.3 af/at compatibility PD, which also could be powered by PoE. Both Ethernet and LTE-4G are supported to connect to the cloud server. With an integrated GPS module, the GW could support LoRaWAN Class B protocol with the synchronous clock from GPS PPS signal. Thanks to the industrial WiFi module, customer could login into the gateway in field, which make it easy when engineer do installation and check status of the device in field.

This device integrate an high performance CPU ARM Cortex-A53 core, one or two pcs of baseband processor SX1301, that it could support 8 multi-SF channels (RHF2S208xx8 series) or 16 multi-SF channels (RHF2S208xxF series), 1 or 2 single-SF channel and GFSK channel. Output power could achieve to 27dBm max. Sensitivity is as low as -141dBm@300bps. With specified payload length and transmit period, one GW could support more than 10k nodes.

### 2.1 Functional Block

RHF2S208 LoRaWAN functional block is shown below.

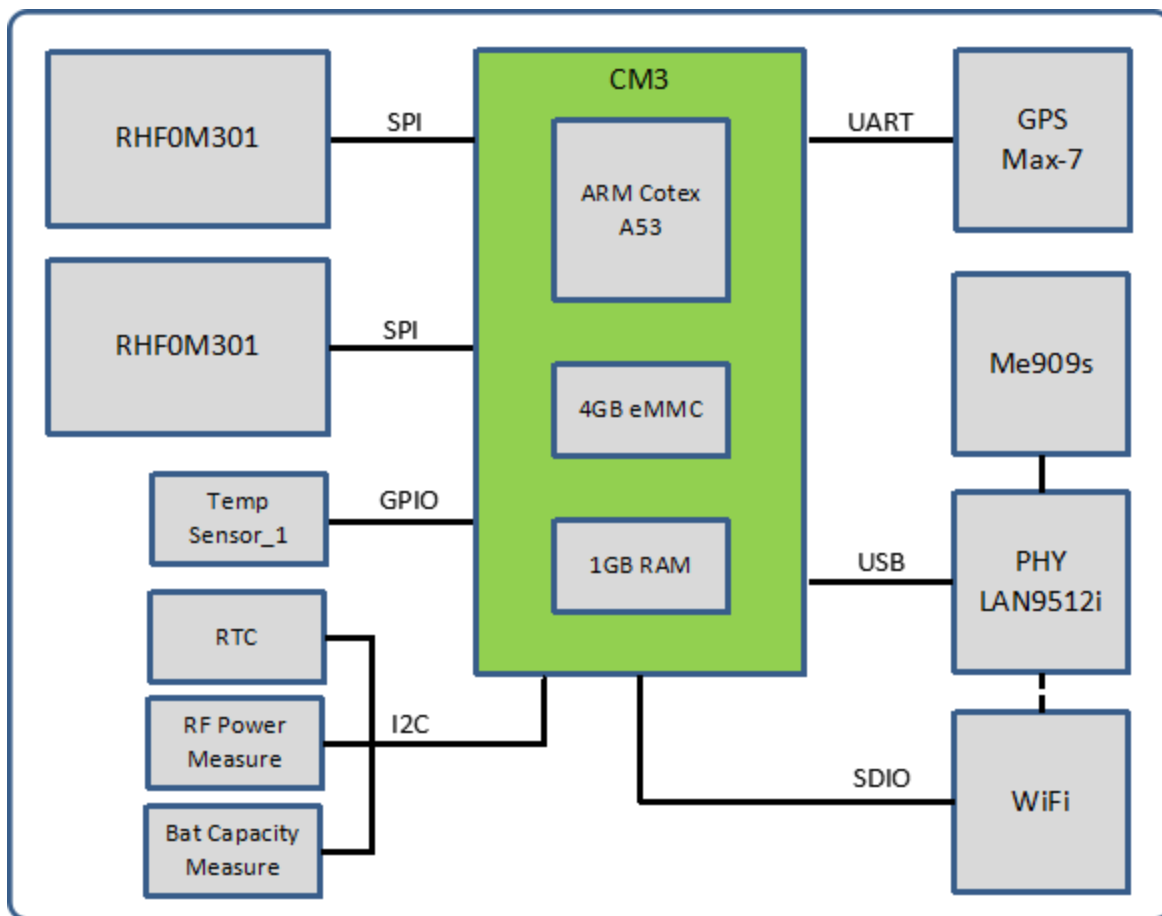


Figure 2-1 RHF2S208 functional block

## 2.2 Product features and application

### Features:

- ✓ LoRaWAN half-duplex or full-duplex operation mode available;
- ✓ RHF2S208xx8 series: Uplink include 8 multi-SF LoRa channel, 1 single-SF LoRa channel, and 1 GFSK channel;
- ✓ RHF2S208xxF series: Uplink include 16 multi-SF LoRa channel, 2 single-SF LoRa channel, and 2 GFSK channel; (No Release yet)
- ✓ Output power achieve to 27dBm max, receiver sensitivity as low as -141dBm@300bps;
- ✓ Support LoRaWAN ClassA/B/C mode;
- ✓ Support PoE IEEE 802.3 af/at;
- ✓ Support 10/100M Ethernet connection and GPRS/3G/4G connection, switch automatically;
- ✓ Supply with 100m cable via PoE;
- ✓ High reliability industrial device, IP67 device, easy to setup LPWAN network outdoor
- ✓ Quick configuration and maintenance through WiFi;
- ✓ Power supply: DC jack, PoE and internal LiFePO4 battery
- ✓ More than 4hr duration time with backup battery
- ✓ -40℃ to +75℃ ;
- ✓ 10kA surge protection
- ✓ Water proof level: IP67

## Application:

- ✓ M2M, IOT, and LPWAN
- ✓ Wireless sensor network
- ✓ AMR
- ✓ Industry 4.0, Industrial monitor
- ✓ Wireless remote control and monitor
- ✓ Smart Home, Smart building, Smart community and Smart city;
- ✓ Wireless alarm and security

- ✓ environment monitor

## 2.3 Specifications

Table 2-1 RHF2S208 Specifications

| Item Group                       | Item                       | Description                                                                                                                              |
|----------------------------------|----------------------------|------------------------------------------------------------------------------------------------------------------------------------------|
| <b>System Configuration</b>      | Core                       | ARM Cortex-A53                                                                                                                           |
|                                  | Main Frequency             | 1.2GHz                                                                                                                                   |
|                                  | RAM                        | 1Gbytes                                                                                                                                  |
|                                  | Flash                      | 4Gbytes eMMC                                                                                                                             |
| <b>Communication</b>             | Wired Network              | Ethernet 10M/100Mbps                                                                                                                     |
|                                  | Mobile Cellular            | GSM/3G/4G Wireless connection                                                                                                            |
|                                  | LoRaWAN                    | Long Range Wireless Communication                                                                                                        |
| <b>Electrical Specification</b>  | Power supply input         | External DC Jack (default);<br>PoE +48 Input compatible with IEEE 802.3 af/at;<br>Internal battery back up available (RHF2S208Bxx only); |
|                                  | Average Power Consumption  | 5.5W                                                                                                                                     |
|                                  | LoRa Output Power          | type: 14dBm@868MHz; 17dBm@470MHz<br>Max: 27dBm                                                                                           |
|                                  | LoRa Sensitivity           | -141dBm@SF12,BW=125kHz                                                                                                                   |
| <b>Sensor</b>                    | Temperature                | Monitor device internal temperature                                                                                                      |
| <b>User Interface (External)</b> | Mobile Cellular 4G Antenna | Connect gateway with internet                                                                                                            |
|                                  | LoRaWAN Antenna            | LoRaWAN transceiver, IoT data collection                                                                                                 |
|                                  | Ethernet                   | Connect gateway with internet                                                                                                            |
|                                  | GPS                        | GPS function                                                                                                                             |
|                                  | WiFi                       | WiFi accessing                                                                                                                           |
|                                  | USB                        | USB interface                                                                                                                            |
|                                  | Power supply               | Power supply input                                                                                                                       |
| <b>User Interface (Internal)</b> | Standard SIM Card Slot     | Support Standard SIM Card (25mm × 15mm × 0.8mm)                                                                                          |
|                                  | USB                        | USB bootloader (Device Firmware Upgrade)                                                                                                 |
|                                  | UART                       | UART Terminal for debugging                                                                                                              |
|                                  | LED400 (Internal)          | System indicator                                                                                                                         |
|                                  | LED600 (Internal)          | Ethernet full/half duplex indicator                                                                                                      |
|                                  | LED601 (Internal)          | Ethernet link status indicator                                                                                                           |

|                                    |                               |                                            |
|------------------------------------|-------------------------------|--------------------------------------------|
|                                    | LED602 (Internal)             | Ethernet data speed indicator              |
|                                    | LED206 (Internal)             | Charging indicator                         |
|                                    | LED207 (Internal)             | Charged indicator                          |
|                                    | LED500 (Internal)             | 4G modem                                   |
| <b>Dimensions<br/>Installation</b> | Dimensions                    | 210x 200x 85 mm                            |
|                                    | Weight                        | 2100g (RHF2S208Exx)<br>2510g (RHF2S208Bxx) |
|                                    | Installation                  | Derrick installation, Fixed on the wall    |
| <b>Operating Range</b>             | Operational temperature range | -40 to +75°C                               |
|                                    | Storage temperature range     | -40 to +85°C                               |

### 2.3.1 Hardware

CPU: ARM Cortex-A53

Main Frequency: 1.2GHz

Memory: 1Gbytes RAM, 4GB eMMC

Hardware Watchdog

RTC

Internal Temperature Sensor

PoE module;

GPS module;

WiFi module;

Internal battery back up;

LoRaWAN Module x1/x2;

4G Modem (For China version, RHF2S208xxx-434, RHF2S208xxx-470):

*FDD LTE: Band 1, Band 3, Band 8, all bands with diversity*

*TDD LTE: Band 38, Band 39, Band 40, Band 41, all bands with diversity*

*DC-HSPA+/HSPA+/HSPA/UMTS: Band 1, Band 5, Band 8, Band 9, all bands with diversity*

*TD-SCDMA: Band 34, Band 39*

*GSM/GPRS/EDGE: 1800 MHz/900 MHz*

4G Modem (For International version, RHF2S208xxx-868, RHF2S208xxx-915):

*FDD LTE: Band 1, Band 2, Band 3, Band 4, Band 5, Band 7, Band 8, Band 20, all bands with diversity*

*WCDMA/HSDPA/HSUPA/HSPA+: Band 1, Band 2, Band 5, Band 8, all bands with diversity*

*GSM/GPRS/EDGE: 850 MHz/900 MHz/1800 MHz/1900 MHz*

### 2.3.2 Software

- Based on Linux Kernal
  - Version: 4.14.34-v7+
- SPI Driver
- I2C Driver
- USB Host/Device Driver
- LoRaWAN module Driver

- 4G Modem Driver ( Supports GSM/GPRS/3G/4G communication)
- Ethernet driver
- GPS driver to support synchronization
- WiFi accessing driver;
- DMA Driver
- Power and charging Management Driver
- Temperature Sensor Driver
- Watch dog
- RTC;

Bootloader:

- Support image programming
- Support USB downloading
- Support USB booting

## 3 Reference standards and specifications

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RF Test based on ETSI EN300 220-1 V2.4.1 (2012-05) ; ETSI EN300 220-2 V2.4.1 (2012-05) ;  
EMC Test based on ETSI EN 301 489-1 V1.9.2 (2011-09); ETSI EN301 489-3 V1.6.1 (2013-08) ;  
ETSI EN301 489-17 V2.2.1 (2012-09) ;

IEC 61000-4-2;

IEC 61000-4-3;

IEC 61000-4-4;

IEC 61000-4-5;

IEC 61000-4-6;

IEC 61000-4-11。

Safety test based on EN60950-1:2006 +A11: 2009 +A1: 2010 +A12: 2011+A2:2013

IP level test based on GB 4208-2008

Environment test based on below:

JESD22-A1 ;

GB/T 2423.1-2001 Low temperature

GB/T 2423.2-2001 High temperature

## 4 Global electrical specifications and reliability

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### 4.1 Electrical specifications

#### 4.1.1 Power Supply

1. External DC power supply (default)

Input voltage range: 12V to 24V DC.

A 19V output DC adapter is a standard configuration part with the GW. The industrial adapter is IP67 level. Below is the key parameters and specifications of the adapter.

**Table 4-1 AC Input Voltage Limitations**

| Minimum | Nominal | Maximum |
|---------|---------|---------|
| 100Vac  | 220Vac  | 240Vac  |

**Table 4-2 AC Input Frequency Limitations**

| Minimum | Nominal   | Maximum |
|---------|-----------|---------|
| 50Hz    | 50Hz/60Hz | 60Hz    |

**Table 4-3 DC Output voltage regulation limits**

| Parameter | Line Regulation | Load regulation | Cross regulation |
|-----------|-----------------|-----------------|------------------|
| V1:19V    | N/A             | ±5%             | N/A              |

**Table 4-4 DC output current limits**

| Parameter | Min Current | Rate Current | Max Current | Unit |
|-----------|-------------|--------------|-------------|------|
| V1: 19V   | 1.5         | 1.5          | 2.5         | A    |

2. Internal battery backup (only available for RHF2S208Bxx Series)  
9.6V 3200mAh LiFePo4 battery.

**Table 4-5 Internal battery specifications**

| No. | Item                  | General Parameter | Remark                                 |
|-----|-----------------------|-------------------|----------------------------------------|
| 1   | Rated Capacity        | (Typ.) 3200mAh    | Standard charge and Standard discharge |
|     |                       | (Min.) 3150mAh    |                                        |
| 2   | Nominal Voltage       | 9.6V              |                                        |
| 3   | End of Charge Voltage | 10.95V            |                                        |
| 4   | Charge mode           | CC, CV            |                                        |

|    |                                          |                     |                          |
|----|------------------------------------------|---------------------|--------------------------|
| 5  | Charging current                         | 0.2C                | Charger charging current |
| 6  | Charging cut-off current                 | 0.02C               |                          |
| 7  | Charging time                            | 5~6H                |                          |
| 8  | Over-Charge Voltage Protection (cell)    | 3.9V                |                          |
| 9  | Max continuous charge current            | 3A                  |                          |
| 10 | Maximum Continuous Discharging Current   | 3A                  |                          |
| 11 | Discharge of Peak current                | -----               |                          |
| 12 | Over-discharge Voltage Protection (cell) | 2.0V                |                          |
| 13 | Over-Current Discharge Protection        | 6±1A                |                          |
| 14 | Short circuit protection                 | With protection     |                          |
| 15 | Short circuit protection Release         | Cut off Load        |                          |
| 16 | Cell Dimension                           | Length MAX: mm      |                          |
|    |                                          | Width MAX: mm       |                          |
|    |                                          | Height MAX:mm       |                          |
| 17 | Weight                                   | ≈260g               |                          |
| 18 | Operation Temperature Range              | Charge: 0~45°C      | 60±25%R.H. Bare Cell     |
|    |                                          | Discharge: -10~60°C |                          |

|    |                           |                                                                                                                                                                                         |                                                        |
|----|---------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| 19 | Storage Temperature Range | 1 month:<br>-20°C ~ 45°C<br>3 month:<br>-20°C ~ 45°C<br>1 year:<br>-20°C ~ 20°C                                                                                                         | 60±25%R.H. at the shipment state                       |
| 20 | Cycle Life                | 1. Charge:0.2c to10.95V<br>2.Constant voltage to 0.02c<br>Rest time : 10 min<br>3. Discharge: 0.2c to 6.0V<br>4. Rest Time between Charge and Discharge: 10min<br>5. Temperature:25±5°C | Higher than 70% of the Initial Capacities of the Cells |

### 3. PoE injector

RHF2S208 is a PD device which is compatible with PoE IEEE 802.3af/at standard, that support up to 100m cable for remote power supply and communications.

**Table 4-6 PoE Requirement**

| Item                     | 802.3af (PoE)             | 802.3at (PoE plus)        |
|--------------------------|---------------------------|---------------------------|
| Classification           | 0~3                       | 0~4                       |
| Max current support      | 350mA                     | 600mA                     |
| PSE output voltage       | 44~57V DC                 | 50~57V DC                 |
| PSE output power         | ≤15.4W                    | ≤30W                      |
| PD Input voltage         | 36~57V DC                 | 42.5~57V DC               |
| PD maximum power         | 12.95W                    | 25.5W                     |
| Cable requirement        | Unstructured              | CAT-5e or better          |
| Cable length requirement | <100m                     | <100m                     |
| Related cable pair       | 2<br>(1/2,3/6 or 4/5,7/8) | 2<br>(1/2,3/6 or 4/5,7/8) |

## 4.1.2 Consumption

**Table 4-7 RHF2S208 total consumption**

| Item    | Value typ/W | Test condition                       |
|---------|-------------|--------------------------------------|
| Standby | 3           | No Tx and Rx in LoraWAN,4G connected |
| Average | 5.5         | LoRaWAN work with 4G                 |

|      |    |                                |
|------|----|--------------------------------|
|      |    | connected                      |
| Peak | 15 | All module work with full load |

### 4.1.3 RF Specifications (LoRaWAN)

Conducted Receiver sensitivity and Transmitter output power would be used to evaluate the performance here.

#### 1) Sensitivity

Test condition: 32byte payload, PER=10%, +25℃.

**Table 4-8 Conducted Receiver sensitivity**

| Part Number            | Bandwidth/kHz | Spreading Factor | Sensitivity/dBm |
|------------------------|---------------|------------------|-----------------|
| <b>RHF2S208xxx-434</b> | 125           | 12               | -140            |
|                        |               | 7                | -126            |
|                        | 250           | 12               | -137            |
|                        |               | 7                | -123            |
|                        | 500           | 12               | -134            |
|                        |               | 7                | -120            |
| <b>RHF2S208xxx-470</b> | 125           | 12               | -140            |
|                        |               | 7                | -125            |
|                        | 250           | 12               | -136            |
|                        |               | 7                | -122            |
|                        | 500           | 12               | -133            |
|                        |               | 7                | -119            |
| <b>RHF2S208xxx-780</b> | 125           | 12               | -139            |
|                        |               | 7                | -125            |
|                        | 250           | 12               | -136            |
|                        |               | 7                | -122            |
|                        | 500           | 12               | -133            |
|                        |               | 7                | -119            |
| <b>RHF2S208xxx-868</b> | 125           | 12               | -139            |
|                        |               | 7                | -125            |
|                        | 250           | 12               | -136            |
|                        |               | 7                | -122            |
|                        | 500           | 12               | -133            |
|                        |               | 7                | -119            |
| <b>RHF2S208xxx-915</b> | 125           | 12               | -139            |
|                        |               | 7                | -125            |
|                        | 250           | 12               | -136            |
|                        |               | 7                | -122            |
|                        | 500           | 12               | -133            |
|                        |               | 12               | -133            |

|  |  |   |      |
|--|--|---|------|
|  |  | 7 | -119 |
|--|--|---|------|

## 2) Output power

Test condition: CW signal, +25°C.

**Table 4-9 Output power**

| Part Number            | Parameter                                        | Min  | Typ | Max | Unit |
|------------------------|--------------------------------------------------|------|-----|-----|------|
| <b>RHF2S208xxx-434</b> | Frequency Range (Rx/Tx)                          | 430  |     | 437 | MHz  |
|                        | Max Output power                                 |      | 25  |     | dBm  |
|                        | Output Power Variation                           | -1.5 |     | 1.5 | dB   |
|                        | TX Power Variation Temperature (-40 to 85°C)     | -1.5 |     | 1.5 | dB   |
|                        | TX Frequency Variation Temperature (-40 to 85°C) | -3   |     | 3   | ppm  |
| <b>RHF2S208xxx-470</b> | Frequency Range (Tx)                             | 470  |     | 510 | MHz  |
|                        | Frequency Range (Rx)                             | 470  |     | 490 | MHz  |
|                        | Max Output power                                 |      | 25  |     | dBm  |
|                        | Output Power Variation                           | -1.5 |     | 1.5 | dB   |
|                        | TX Power Variation Temperature (-40 to 85°C)     | -1.5 |     | 1.5 | dB   |
|                        | TX Frequency Variation Temperature (-40 to 85°C) | -3   |     | 3   | ppm  |
| <b>RHF2S208xxx-780</b> | Frequency Range (Rx/Tx)                          | 779  |     | 787 | MHz  |
|                        | Max Output power                                 |      | 26  |     | dBm  |
|                        | Output Power Variation                           | -1.5 |     | 1.5 | dB   |
|                        | TX Power Variation Temperature                   | -1.5 |     | 1.5 | dB   |
|                        | TX Frequency Variation Temperature               | -3   |     | 3   | ppm  |
| <b>RHF2S208xxx-868</b> | Frequency Range (Rx/Tx)                          | 859  |     | 871 | MHz  |
|                        | Max Output power                                 |      | 25  |     | dBm  |
|                        | Output Power Variation                           | -1.5 |     | 1.5 | dB   |
|                        | TX Power Variation Temperature (-40 to 85°C)     | -1.5 |     | 1.5 | dB   |
|                        | TX Frequency Variation Temperature (-40 to 85°C) | -3   |     | 3   | ppm  |
| <b>RHF2S208xxx-915</b> | Frequency Range (Rx/Tx)                          | 900  |     | 930 | MHz  |
|                        | Max Output power                                 |      | 25  |     | dBm  |

|  |                                                    |      |  |     |     |
|--|----------------------------------------------------|------|--|-----|-----|
|  | Output Power Variation                             | -1.5 |  | 1.5 | dB  |
|  | TX Power Variation Temperature<br>(-40 to 85℃)     | -1.5 |  | 1.5 | dB  |
|  | TX Frequency Variation Temperature<br>(-40 to 85℃) | -3   |  | 3   | ppm |

#### 4.1.4 Antenna performance

High performance, high efficiency fibre-glass epoxy antenna is used for RHF2S208 GW.

Resistance 50 Ω

VSWR<2.0

Gain=2dBi@434/470MHz; Gain=3dBi@868/915MHz

Efficiency@434MHz/470MHz>50%

Efficiency @868MHz/915MHz>70%

## 4.2 Reliability

### 4.2.1 Environment test

Table 4-10 Environment test requirement

| Item                       | Test condition                                                                             | Standard               | Results                                                      |
|----------------------------|--------------------------------------------------------------------------------------------|------------------------|--------------------------------------------------------------|
| Low temperature operation  | Temperature: -40℃<br>Operation mode: working with service connected<br>Test duration: 12 h | JESD22-A1<br>GB/T 2423 | Appearance ok;<br>LoRaWAN RF performance ok;<br>Function ok; |
| High temperature operation | Temperature: +75℃<br>Operation mode: working with service connected<br>Test duration: 12 h | JESD22-A1<br>GB/T 2423 | Appearance ok;<br>LoRaWAN RF performance ok;<br>Function ok; |
| Low temperature Storage    | Temperature: -40℃<br>Operation mode: no power, no package<br>Test duration: 24 h           | JESD22-A1<br>GB/T 2423 | Appearance ok;<br>LoRaWAN RF performance ok;<br>Function ok; |
| High temperature Storage   | Temperature: +75℃<br>Operation mode: no power, no package<br>Test duration: 24 h           | JESD22-A1<br>GB/T 2423 | Appearance ok;<br>LoRaWAN RF performance ok;<br>Function ok; |

### 4.2.2 EMC and ESD

RHF2S208 is an high reliability industrial device, and ESD, Radio Frequency Electromagnetic Field Immunity, Electrical Fast Transient/Burst Immunity and Surge Immunity are operated on it based on IEC61000-4 standard.

Table 4-11 Reliability test requirement

| Item | Standard | Test condition |
|------|----------|----------------|
|------|----------|----------------|

|                                                   |               |                                                                  |
|---------------------------------------------------|---------------|------------------------------------------------------------------|
| ESD                                               | IEC 61000-4-2 | Air Discharge:15kV<br>Contact Discharge:8kV<br>Positive/Negative |
| Radio Frequency<br>Electromagnetic Field Immunity | IEC 61000-4-3 | 80MHz to 1000MHz and 1400MHz to<br>2700MHz;<br>3V/m;             |
| Electrical Fast Transient/Burst<br>Immunity       | IEC 61000-4-4 | AC power port:10kV;<br>Positive/Negative                         |
| Surge Immunity                                    | IEC 61000-4-5 | Common mode: 6kV<br>Differential mode: 3kV<br>Positive/Negative  |

### 4.2.3 IP level for outdoor use

Referred to GB 4208-2008, the level is IP67.

## 5 Mechanical size and package information

### 5.1 Mechanical size

The outline size is 210\*200\*85 mm.

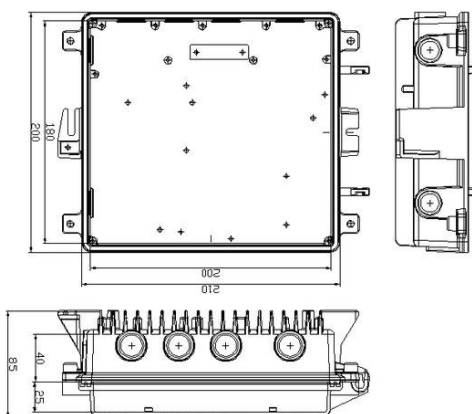


Figure 5-1 RHF2S208 mechanical size

### 5.2 Package information

#### 5.2.1 Package list

Table 5-1 package list

| Material                 | PN                                     | Qty |
|--------------------------|----------------------------------------|-----|
| Main unit                | RHF2S208xxx-xxx                        | 1   |
| Industrial AC/DC Adapter | RCL-X190150C                           | 1   |
| LoRaWAN Antenna          | M1G. 0042-R0A                          | 1   |
| GPS Antenna              | V1468-001-A-03                         | 1   |
| WiFi Antenna             | V1437-002-A-04                         | 1   |
| 4G Antenna               | V1437-002-A-05                         | 1   |
| hexagon bar wrench       | 5mm, long bar length=73.3MM, short bar | 1   |

|                                      |                                         |   |
|--------------------------------------|-----------------------------------------|---|
|                                      | length=22mm, for inner hexagon screw M6 |   |
| Screw to fix GW (Inner hexagonal M5) | Inner hexagonal M6x8                    | 4 |
| Screw to fix the adapter             | M3x8                                    | 4 |
| Screw for ground                     | M5x10                                   | 1 |
| Surge protector                      | N-JK-G-Y-6                              | 1 |
| Grounding wire                       | 1.5m                                    | 1 |
| Mounting bracket                     | 256x135x92 mm                           | 1 |
| Box for package                      | 50x26x12 cm                             | 1 |

### 5.2.2 Package information

Package Size: 650\*340\*125 mm.

Weight with package:

RHF2S208Exx-xxx (No battery) 5.5 kg;

RHF2S208Exx-xxx (No battery) 6 kg.

Weight without package:

RHF2S208Exx-xxx (Battery Inside) 4.5 kg;

RHF2S208Exx-xxx (Battery Inside) 5 kg.



Figure 5-2 RHF2S208 package



Figure 5-3 package inside

## 6 Order information

RHF2S208 have two series, one is without internal battery and another one is with internal battery, which both include several part number, different part number would be used in different band and area, please contact with [sales@xinghangmeters.com](mailto:sales@xinghangmeters.com) for detailed information.

**Table 6-1 RHF2S208Exx series (NO battery integrated)**

| Num | Series      | Part Number     | Band@Uplink         | Band@Downlink       | specifications       |
|-----|-------------|-----------------|---------------------|---------------------|----------------------|
| 1   | RHF2S208EH8 | RHF2S208EH8-434 | 430MHz~437MHz       | 430MHz~437MHz       | 8channel/Half duplex |
| 2   | RHF2S208EH8 | RHF2S208EH8-470 | 470MHz~490MHz       | 470MHz~510MHz       | 8channel/Half duplex |
| 3   | RHF2S208EH8 | RHF2S208EH8-868 | 859MHz~871MHz       | 859MHz~871MHz       | 8channel/Half duplex |
| 4   | RHF2S208EH8 | RHF2S208EH8-915 | 900MHz~930MHz       | 900MHz~930MHz       | 8channel/Half duplex |
| 5   | RHF2S208EF8 | RHF2S208EF8-470 | 470MHz~490MHz       | 500MHz~510MHz       | 8channel/Full duplex |
| 6   | RHF2S208EF8 | RHF2S208EF8-AL1 | 470. 2MHz~476. 6MHz | 483. 8MHz~490. 2MHz | 8channel/Full duplex |

**Table 6-2 RHF2S208Bxx series (internal battery integrated)**

| Num | Series      | Part Number     | Band@Uplink         | Band@Downlink       | specifications                         |
|-----|-------------|-----------------|---------------------|---------------------|----------------------------------------|
| 1   | RHF2S208BH8 | RHF2S208BH8-434 | 430MHz~437MHz       | 430MHz~437MHz       | 8channel/Half duplex<br>Battery Inside |
| 2   | RHF2S208BH8 | RHF2S208BH8-470 | 470MHz~490MHz       | 470MHz~510MHz       | 8channel/Half duplex<br>Battery Inside |
| 3   | RHF2S208BH8 | RHF2S208BH8-868 | 859MHz~871MHz       | 859MHz~871MHz       | 8channel/Half duplex<br>Battery Inside |
| 4   | RHF2S208BH8 | RHF2S208BH8-915 | 900MHz~930MHz       | 900MHz~930MHz       | 8channel/Half duplex<br>Battery Inside |
| 5   | RHF2S208BF8 | RHF2S208BF8-470 | 470MHz~490MHz       | 500MHz~510MHz       | 8channel/Full duplex<br>Battery Inside |
| 6   | RHF2S208BF8 | RHF2S208BF8-AL1 | 470. 2MHz~476. 6MHz | 483. 8MHz~490. 2MHz | 8channel/Full duplex<br>Battery Inside |

## **Modifications**

V1.3 2020-05-21

- + Update package information.

V1.2 2019-07-15

- + Update package weight information.

V1.1 2018-09-28

- + Update package information.

V1.0 2018-07-20

- + Create draft.

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