

UM02312

RHF2S209 LoRaWAN 8channel outdoor gateway Installation

V1.0



Document information

Information	Content
Keywords	<i>RisingHF, LoRaWAN, IOT, gateway, Installation</i>
<i>Summary</i>	<i>This document describes RHF2S209 LoRaWAN 8channel outdoor gateway Installation method, Mainly aimed at on-site installation and engineering maintenance</i>

Contents

Contents	2
Figure	3
1 Introduction	1
2 Appearance of host equipment	1
3 RHF2S209 Equipment packaging and accessories	2
4 RHF2S209 Installation	4
4.1 RHF2S209 Mechanical dimensions.....	4
4.2 RHF2S209 gateway installation.....	4
4.2.1 SIM Card installation.....	4
4.2.2 Install the gateway	5
4.2.3 Install the holding hoop	11
4.2.4 Install surge protector	11
5 Warning and attention for installation	12
5.1 Lightning protection.....	12
5.2 Waterproof treatment (for outdoor installation only)	13
Release version	1

Figure

Figure 1 External interface of gateway device.....	1
Figure 2 RHF2S209 Appearance diagram of the package box	2
Figure 3 RHF2S209 Sealing label.....	2
Table 1 Packing list.....	2
Figure 5 Packing of RHF2S209 Gateway and accessories	3
Figure 7 RHF2S209 mechanical dimensions	4
Figure 8 SIM Card installation operation method	5
Figure 9 install the bracket.....	6
Figure 10 power adapter installation	6
Figure 11 Gateway interface of one side.....	7
Figure 12 Power interface at the bottom of the gateway	7
Figure 14 Power supply plug.....	8
Figure 15 Install surge protector and LoRa antenna	8
Figure 16 install all the antenna	9
Figure 17 holding hoop and its accessories	11
Figure 19 Effect of holding poles installation	11
Figure 20 Surge protector	12
Figure 21 Grounding cable for the Surge protector	12
Figure 22 antenna interface waterproof treatment.....	13
Figure 23 Power supply interface waterproof treatment	14
Table 1 Packing list.....	2

1 Introduction

This document is RHF2S209 LoRaWAN 8channel outdoor gateway Installation manual.

2 Appearance of host equipment



Figure 1 External interface of gateway device

3 RHF2S209 Equipment packaging and accessories

The appearance of the packaging box is as follows:



Figure 2 RHF2S209 Appearance diagram of the package box

Please ensure that the seal is complete and intact when you get the gateway product

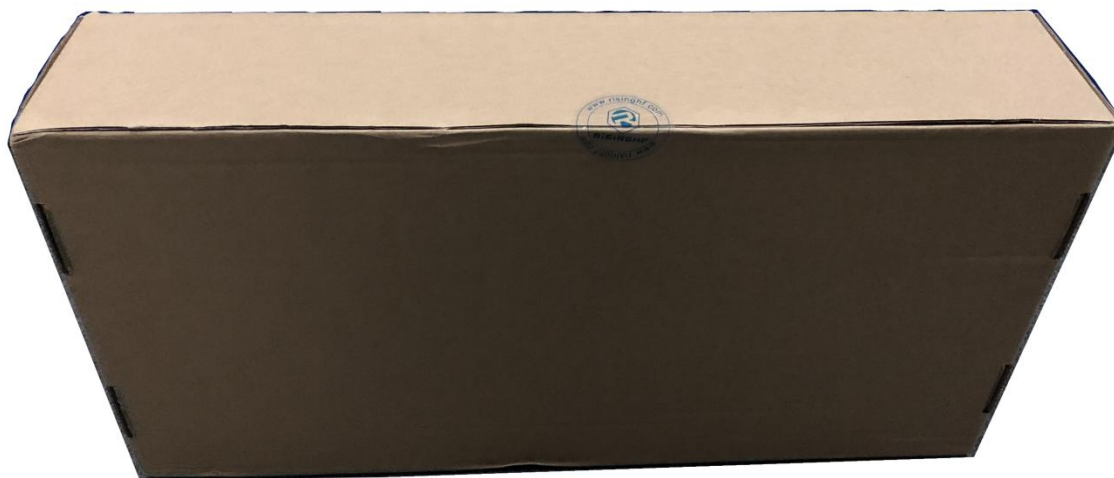


Figure 3 RHF2S209 Sealing label

Unpack, and shall include the following equipment and accessories.

Table 1 Packing list

Item Name	Specification	quantity
RHF2S209 whole machine	RHF2S209	1
Industrial power supply	XED-RX190150GJ	1

LORAWAN FRP antenna	RXHF-ANTxxx-GF	1
GPS FRP antenna	V1468-001-A-03	1
Wifi FRP antenna	V1437-002-A-04	1
LTE 4G FRP antenna	V1437-002-A-05	1
Heavenly Linespin (Optional)	N-JK-G (JC3.640.150)	1
Ground cable (Optional)	1.5m	1
Installation fixture	Including installation brackets, U-shaped hugs, tight screws, etc.	1
Open a single wrench	Simple stamping opening single wrench, material: 45#steel, galvanized, 10*70*1.8 (open 10mm)	1
Full set of packaging boxes	Size 640*338*125mm	1

After removing the bracket, the packing of the gateway and its accessories is shown in the figure below:



Figure 4 Packing of RHF2S209 Gateway and accessories

1. RHF2S209 gateway
2. LoRaWAN antenna
- 3、4、5 Curved antenna, including Wi-Fi, 4G, GPS
6. power adapter
7. holding hoop
8. grounding cable
9. Bracket
10. Bracket screw
11. Coaxial RF Surge Protector

4 RHF2S209 Installation

4.1 RHF2S209 Mechanical dimensions

Mechanical size is 217 * 217 * 71 mm

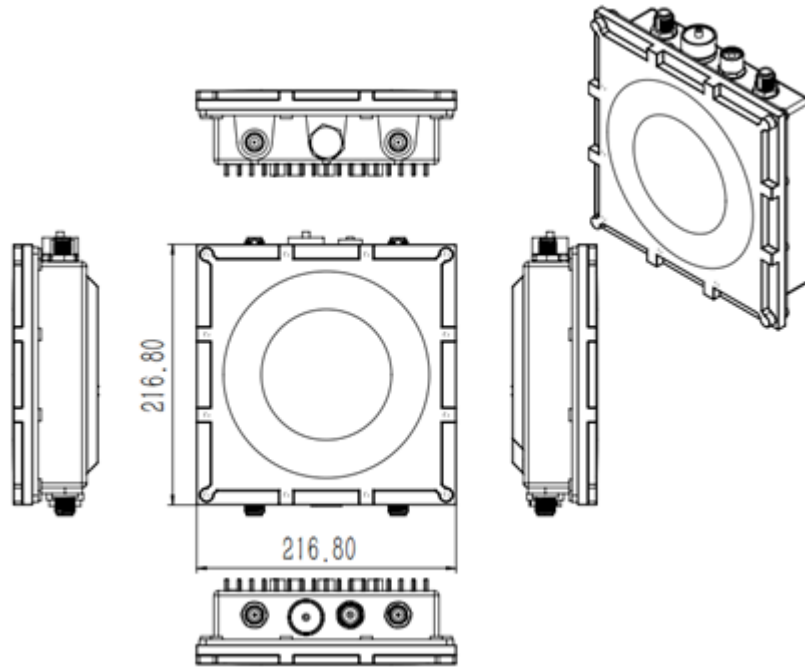


Figure 5 RHF2S209 mechanical dimensions

4.2 RHF2S209 gateway installation

4.2.1 SIM Card installation

If you need to connect with 4G network, install the SIM card inside the device in advance and conduct networking testing. The installation steps are performed as follows:

- i) Use the screwdriver to open the gateway equipment;
- ii) Push SIM holder to unlocked state, install SIM card, cover and push to locked state;
- iii) The gateway connects the 4G antenna and the power to the test the 4G network;
- iv) If the 4G network connection is successful, close the enclosure and tighten the screw with wrench.

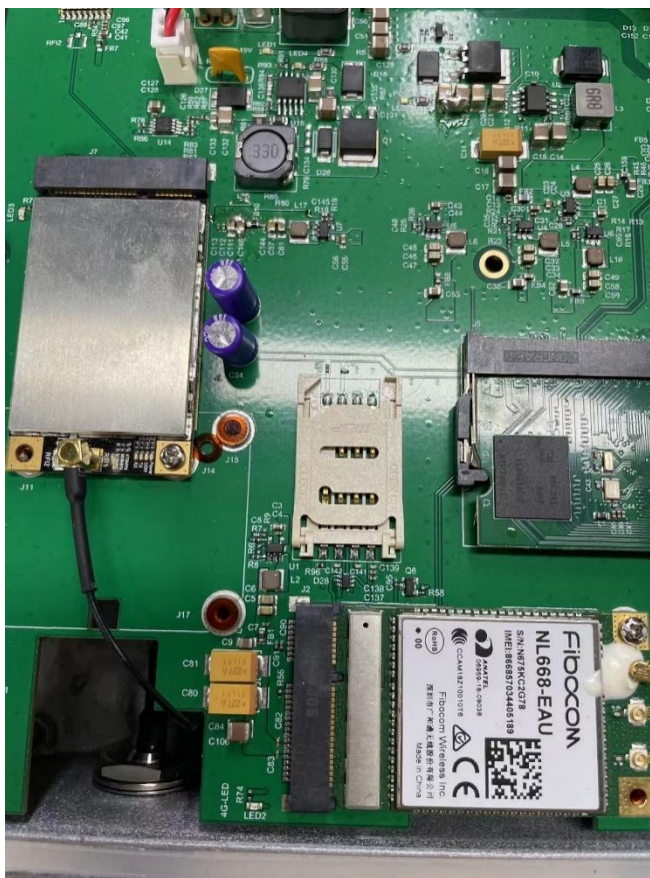


Figure 6 SIM Card installation operation method

4.2.2 Install the gateway

Install the gateway equipment to the bracket, using the mounting holes shown as below,



Figure 7 install the bracket

And then install the power adapter onto the bracket, make sure that the power input/output cable is Downward.



Figure 8 power adapter installation

There are four interface at one side of the gateway, Wi-Fi antenna, power interface, Ethernet interface and GPS antenna;

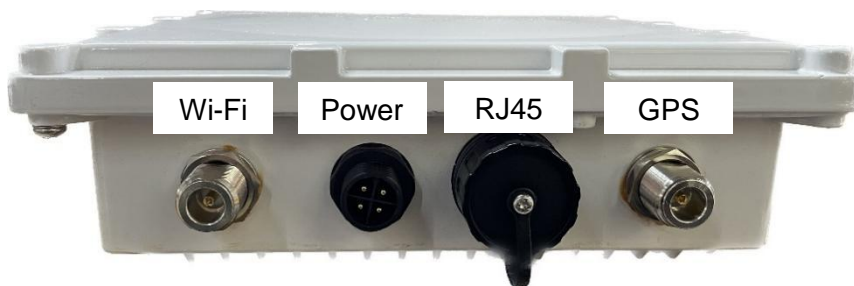


Figure 9 Gateway interface of one side

Open the protection cap of the power interface, there is a Fool-proofing structure to avoid error plug;

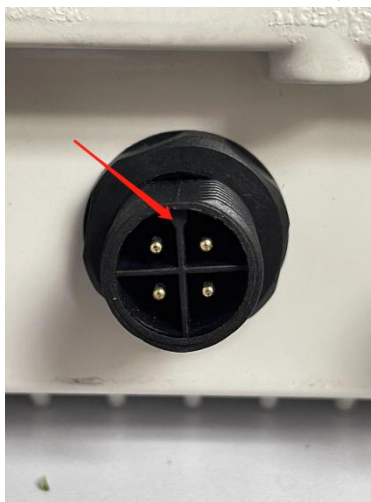


Figure 10 Power interface at the bottom of the gateway

Plug in the power connector of adapter to this power interface, make sure tighten the cap clockwise to lock it. (Tighten cap shown in picture below, when need to plug out the connector, please first loosen the cap anticlockwise to unlock it).

The installation effect of the power supply is shown below;

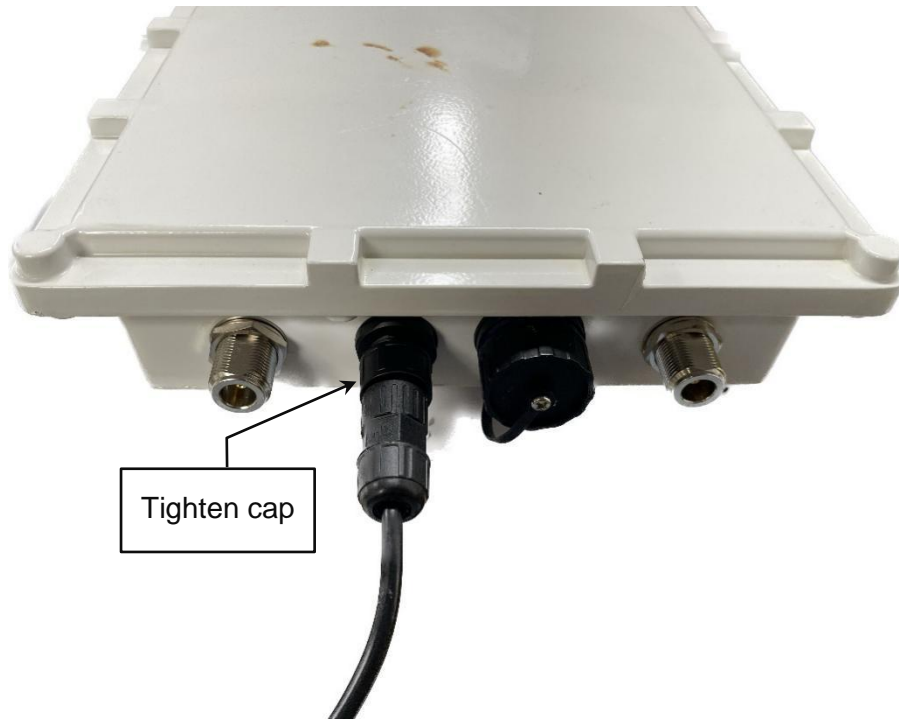


Figure 11 Power supply plug

Install the antenna surge protector and LoRa antenna



Figure 12 Install surge protector and LoRa antenna

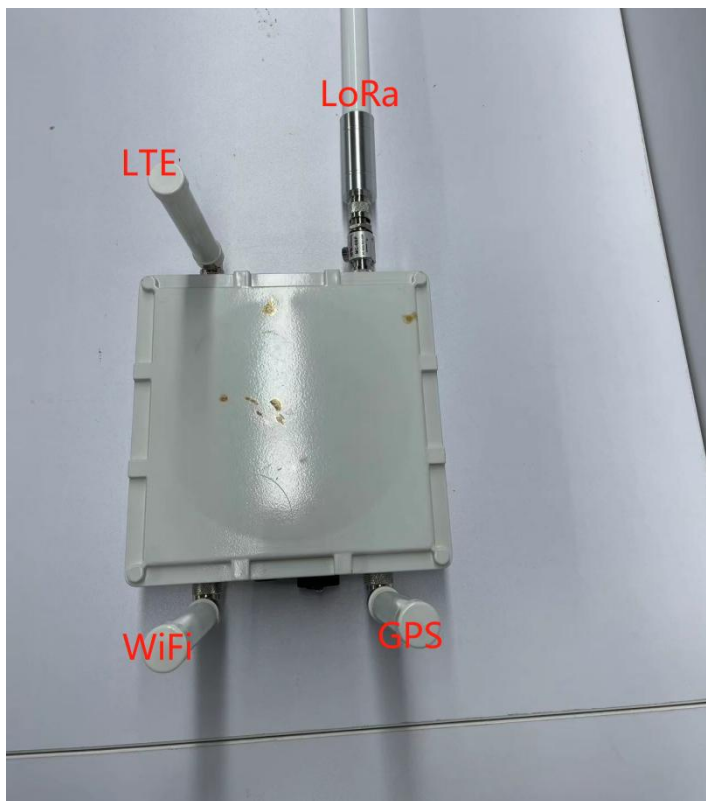


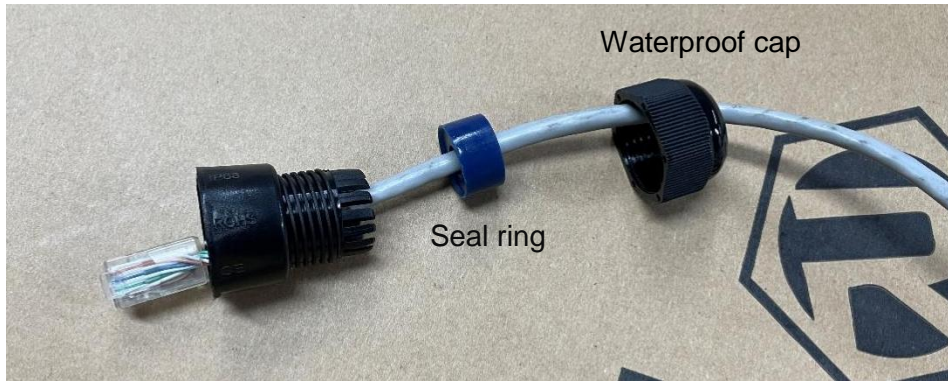
Figure 13 install all the antenna

Install the waterproof joints for the Ethernet cable

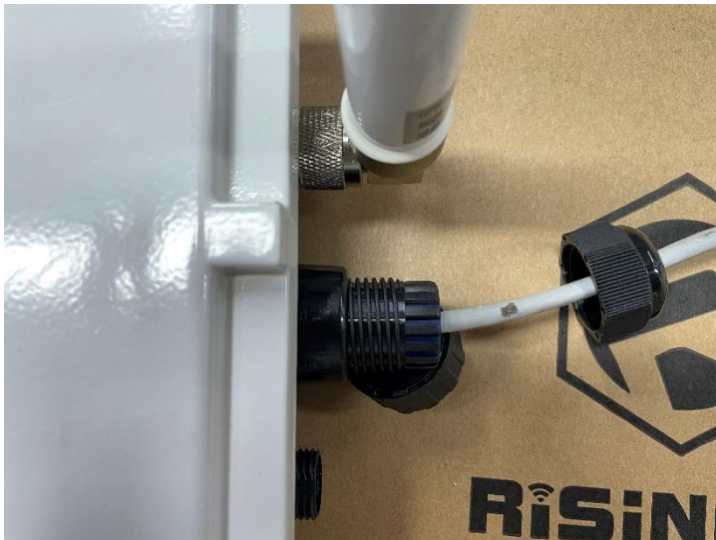
(a) Open the waterproof joint



(b) Pass the cable through the waterproof joint. (there will be no RJ45 terminal before the cable pass through the waterproof joint, please do it after cable through waterproof joint)



(c) Tighten the Waterproof cap and seal ring



(d) Finish install the Ethernet cable



4.2.3 Install the holding hoop

RHF2S209 Support wall-mount or holding poles installation.

When using the wall-mount installation, Please direct use the four installation holes at the bottom of the gateway with screws.

If user want to do holding poles installation, there are holding hoops and its accessories in the package, the diameter of poles that can be installed is less than 60mm.



Figure 14 holding hoop and its accessories



Figure 15 Effect of holding poles installation

4.2.4 Install surge protector

There is a surge protector in the packing box (surge protector is optional, it is offered according to your order). Unscrew the small screw on the side of the surge protector (Note that there is a wash under the screw), connect a suitable grounding cable with it, and the other end connecting to the earth or the grounding point of lightning bar.



Figure 16 Surge protector



Figure 17 Grounding cable for the Surge protector

5 Warning and attention for installation

5.1 Lightning protection

Lightning protection is generally classified as direct lightning protection and induction lightning protection. Please consider appropriate protection to ensure the safety and normal operation of the gateway.

Items listed below are helpful for Lightning protection, good grounding is very important and should consider as first priority, make full use of the lightning bar and other grounding network of the building.

1. The safety of the residents should be considered when install equipment on civil buildings.
2. Lightning-rod shall be installed above the tower, building top or other platform where device is installed, the device and antenna shall be within the protection coverage of the lightning rod.
3. If no extra protection coverage by a lightning rod of a building or platform, a surge protector shall be installed on the antenna and the surge protector shall be grounded.
4. Small lightning rod suggest use round steel or steel pipe, round steel diameter should be not less than 16mm; steel pipe diameter should be not less than 25mm and thickness not less than 2.5mm. The lightning rod height should be 1m above the top of the device and antenna.
5. The grounding cable of the lightning rod suggest use galvanized round steel with diameter not less than 8mm, or use Stranded copper wire with cross-sectional area not less than 48mm².
6. When gateway device is close to the lightning bar, the gateway should be installed under the lightning bar.
7. Any cable shall not be hung on the lightning bar or lightning protection network.
8. The mounting bracket must be grounded.

5.2 Waterproof treatment (for outdoor installation only)

For device installed outdoors, waterproof treatment is required for all the interface connectors. The suggest follow waterproof treatment step as below:

- (1) First, connect the connector and clean up the surface;
- (2) Tie 1 layer of PVC insulation tape around the connector;
- (3) And then wrap up 1 layer of 3M waterproof cement;
- (4) Then wrap up 1 layer of PVC insulation tape;

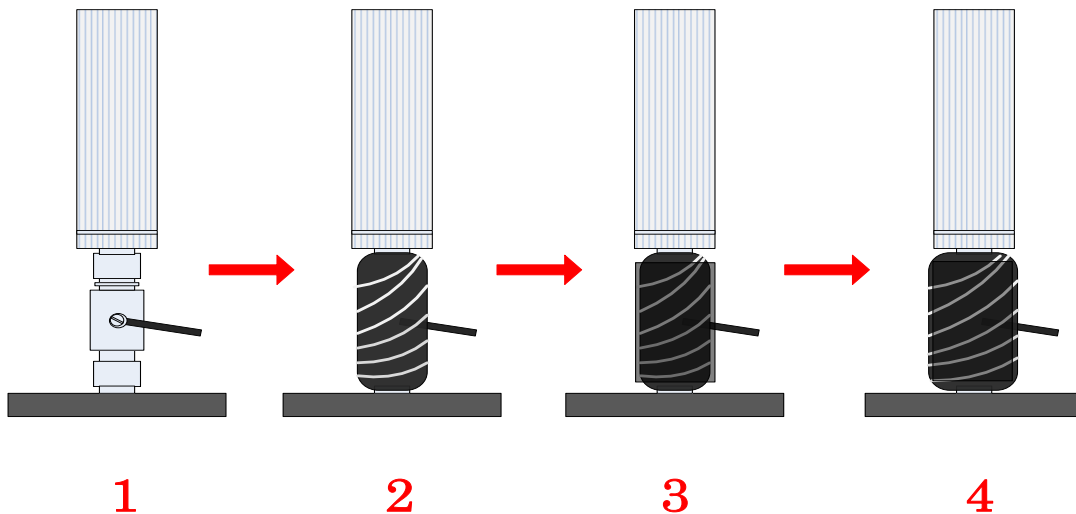


Figure 18 antenna interface waterproof treatment

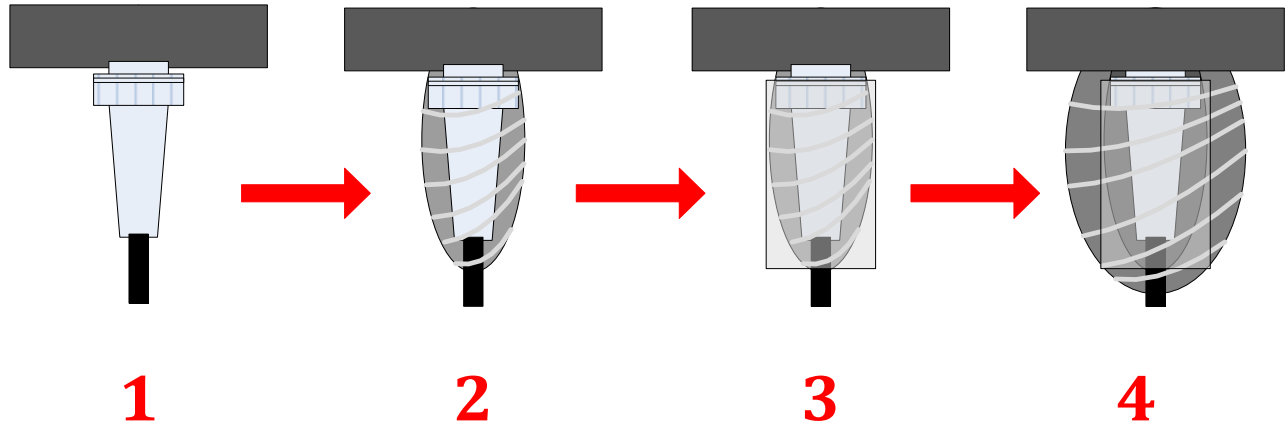


Figure 19 Power supply interface waterproof treatment

Release version

V1.0 2023-03-02
+ first draft;

Please Read Carefully:

Information in this document is provided solely in connection with RisingHF products. RisingHF reserve the right to make changes, corrections, modifications or improvements, to this document, and the products and services described herein at any time, without notice.

All RisingHF products are sold pursuant to RisingHF's terms and conditions of sale.

Purchasers are solely responsible for the choice, selection and use of the RisingHF products and services described herein, and RisingHF assumes no liability whatsoever relating to the choice, selection or use of the RisingHF products and services described herein.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted under this document. If any part of this document refers to any third party products or services it shall not be deemed a license grant by RisingHF for the use of such third party products or services, or any intellectual property contained therein or considered as a warranty covering the use in any manner whatsoever of such third party products or services or any intellectual property contained therein.

UNLESS OTHERWISE SET FORTH IN RISINGHF'S TERMS AND CONDITIONS OF SALE RisingHF DISCLAIMS ANY EXPRESS OR IMPLIED WARRANTY WITH RESPECT TO THE USE AND/OR SALE OF RisingHF PRODUCTS INCLUDING WITHOUT LIMITATION IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE (AND THEIR EQUIVALENTS UNDER THE LAWS OF ANY JURISDICTION), OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT.

RISINGHF PRODUCTS ARE NOT DESIGNED OR AUTHORIZED FOR USE IN: (A) SAFETY CRITICAL APPLICATIONS SUCH AS LIFE SUPPORTING, ACTIVE IMPLANTED DEVICES OR SYSTEMS WITH PRODUCT FUNCTIONAL SAFETY REQUIREMENTS; (B) AERONAUTIC APPLICATIONS; (C) AUTOMOTIVE APPLICATIONS OR ENVIRONMENTS, AND/OR (D) AEROSPACE APPLICATIONS OR ENVIRONMENTS. WHERE RISINGHF PRODUCTS ARE NOT DESIGNED FOR SUCH USE, THE PURCHASER SHALL USE PRODUCTS AT PURCHASER'S SOLE RISK, EVEN IF RISINGHF HAS BEEN INFORMED IN WRITING OF SUCH USAGE, UNLESS A PRODUCT IS EXPRESSLY DESIGNATED BY RISINGHF AS BEING INTENDED FOR "AUTOMOTIVE, AUTOMOTIVE SAFETY OR MEDICAL" INDUSTRY DOMAINS ACCORDING TO RISINGHF PRODUCT DESIGN SPECIFICATIONS. PRODUCTS FORMALLY ESCC, QML OR JAN QUALIFIED ARE DEEMED SUITABLE FOR USE IN AEROSPACE BY THE CORRESPONDING GOVERNMENTAL AGENCY.

Resale of RisingHF products with provisions different from the statements and/or technical features set forth in this document shall immediately void any warranty granted by RisingHF for the RisingHF product or service described herein and shall not create or extend in any manner whatsoever, any liability of RisingHF.

RisingHF and the RisingHF logo are trademarks or registered trademarks of RisingHF in various countries.

Information in this document supersedes and replaces all information previously supplied.

The RisingHF logo is a registered trademark of RisingHF. All other names are the property of their respective owners.

© 2015 RISINGHF - All rights reserved

<http://www.risinghf.com>