



HexNet RF module of smart device

Focus on creating value for clients



HexNet RF module is used in G3 collector of Hexing at present, with the function of wireless communication for G3 collector. RF module has the following characteristics : Auto Networking, Self-maintenance, Auto Joining Network, Remote Distance, Low Power Consumption, Safe and Reliable, and so on. It's suitable for electricity meter AMR/AMI information acquisition system, resolved the need of local wireless communications.

■ 1、 Main Functions

- Work in ISM frequency band for free; Supporting 433.36MHz.
- Star network; Auto Networking.
- Low Power Consumption.
- Master station can display a PAN network topology; Convenient in construction and maintenance.
- Upgrade OTA; It can upgrade the wireless module, and also can upgrade the G3 collector.
- High Link Budget (~160dB); Remote Distance.
- Wireless transmits Safely and reliably.

■ 2、Technical Parameters

Name	Parameter			Unit
	Min. value	Typical value	Max. value	
Electrical performance（25℃）				
Supply voltage		5.0		V
Emission current		98		mA
Receiving current		16		mA
Resting current		/		mA
Wireless performance（25℃）				
Frequency	433.36MHz			MHz
				dBm
Receiving sensitivity		-120	（BER=1%） Data Rate=1.2kbps	dBm
Channel		1		
NLOS（Point to Point）	200		500	m
Generic performance（25℃）				
Interface rate		9600		bps
Working temperature	-30	+25	+75	℃
Storage temperature	-45	+25	+85	℃

■ 3、Serial Ports Description

RF module communicates with meter by serial ports:

- Signal level range: 3.3V TTL
- Baud rate of the local serial ports:9600bps
- Data bits: 8
- Odd-even check: none
- Stop bit: 1

■ 4、RF Antenna

Antenna Type	External	Internal	
External RF network antenna connector	IPEX connector	/	
Antenna Type	rod antenna	/	
Antenna Gain	≥ 2	/	dBi

■ 5、 Caution

- The module should be installed in door or inside of cluster.
- Static against.

OEM Guidance

1. Applicable FCC rules

This module is granted by Single Modular Approval. It complies to the requirements of FCC part 15C, section 15.231 rules.

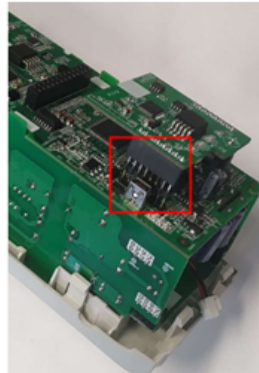
2. The specific operational use conditions

This module can be used in IoT devices. The input voltage to the module is nominally 5V DC. The operational ambient temperature of the module is -30 to 75 degree C.

1. Fix the SMA head of the GRS and RF antenna transfer cable to the structure cover;
2. Press the IPEX head of the GRS and RF antenna adapter cable to the corresponding interface position of the RF module;
3. The notch of the RF module faces outside edge of main board, and the female header corresponds exactly to the pins of the main board;
4. Install the structural cover.

Attention:

1. The notch of the RF module faces upwards, do not put it backwards.
2. Do not insert the female socket and pins of the module incorrectly.



3. Limited module procedures

N/A

4. Trace antenna design

N/A

5. RF exposure considerations.

The module transmitter comply with any applicable RF exposure requirements in its final configuration.

6. Antenna

Antenna type: Rod antenna; Peak gain: 2.0dBi

7. Label and compliance information

An exterior label on OEM's end product can use wording such as the following: "Contains Transmitter Module FCC ID: 2AIUZMJP00" or "Contains FCC ID: 2AIUZMJP00."

8. Information on test modes and additional testing requirements

a) The modular transmitter has been fully tested by the module grantee on the required number of channels, modulation types, and modes, it should not be necessary for the host installer to re-test all the available transmitter modes or settings. It is recommended that the host product manufacturer, installing the modular transmitter, perform some investigative measurements to confirm that the resulting composite system does not exceed the spurious emissions limits or band edge limits (e.g., where a different antenna may be causing additional emissions).

b) The testing should check for emissions that may occur due to the intermixing of emissions with the other transmitters, digital circuitry, or due to physical properties of the host product (enclosure). This investigation is especially important when integrating multiple modular transmitters where the certification is based on testing each of them in a stand-alone configuration. It is important to note that host product manufacturers should not assume that because the modular transmitter is certified that they do not have any responsibility for final product compliance.

c) If the investigation indicates a compliance concern the host product manufacturer is obligated to mitigate the issue. Host products using a modular transmitter are subject to all the applicable individual technical rules as well as to the general conditions of operation in Sections 15.5, 15.15, and 15.29 to not cause interference. The operator of the host product will be obligated to stop operating the device until the interference has been corrected.

9. Additional testing, Part 15 Sub part B disclaimer The final host / module combination need to be evaluated against the FCC Part 15B criteria for unintentional radiators in order to be properly authorized for operation as a Part 15 digital device.

The host integrator installing this module into their product must ensure that the final composite product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operation and should refer to guidance in KDB 996369. For host products with certified modular transmitter, the frequency range of investigation of the composite system is specified by rule in Sections 15.33(a)(1) through (a)(3), or the range applicable to the digital device, as shown in Section 15.33(b)(1), whichever is the higher frequency range of investigation. When testing the host product, all the transmitters must be operating. The transmitters can be enabled by using publicly-available drivers and turned on, so the transmitters are active. In certain conditions it might be appropriate to use a technology-specific call box (test set) where accessory 50 devices or drivers are not available. When testing for emissions from the unintentional radiator, the transmitter shall be placed in the receive mode or idle mode, if possible. If receive mode only is not possible then, the radio shall be passive (preferred) and/or active scanning. In these cases, this would need to enable activity on the communication BUS (i.e., PCIe, SDIO, USB) to ensure the unintentional radiator circuitry is enabled. Testing laboratories may need to add attenuation or filters depending on the signal strength of any active beacons (if applicable) from the enabled radio(s). See ANSI C63.4, ANSI C63.10 and ANSI C63.26 for further general testing details.

The product under test is set into a link/association with a partnering device, as per the normal intended use of the product. To ease testing, the product under test is set to transmit at a high duty cycle, such as by sending a file or streaming some media content.

FCC Warning :

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) this device must accept any interference received, including interference that may cause undesired operation.