版本号： V1.0
编写：
确认：

specification

product name：J045RF 2.4G receiving module

1. Product description

The IRF receiving module is a wireless transceiver module that works on the 2.4G common frequency band. RF uses GFSK modulation/demodulation to support multiple rate Settings and multiple power Settings. The module features high sensitivity (-87dBm@1Mbps code rate), low power performance, and a high dynamic range (greater than 60dB). The module adopts a highly integrated chip, built-in front-end low noise amplifier, mixer, filter, frequency synthesizer and other circuits, which can optimize the signal to the maximum extent, and contains a high-performance MCU chip.

2. Product characteristics

Ø Support GFSK modulation mode, receiving sensitivity reaches -87dBm@1Mbps;

Ø Open distance communication distance up to 20-30 meters;

Ø Operating frequency: 2.4GHz;

Power supply voltage input range: 3.3V-5.0V;

Ø Working current less than 18mA;

Good selectivity and stray radiation suppression ability, easy to pass CE/Fcc international certification;

Ø Module comes with frequency hopping algorithm, can avoid the same frequency band interference;

Ø Module with rolling ID, can be compatible with one-to-one, many-to-one and one-to-many communication mode (according to customer requirements);

Ø Temperature range: -40-85℃ can work normally even under harsh ambient temperature;

Ø Ultra-small size 32×16×1 (mm)

3. Product description

A. Scope of application

intelligent luminaire receiving end

Smart home products

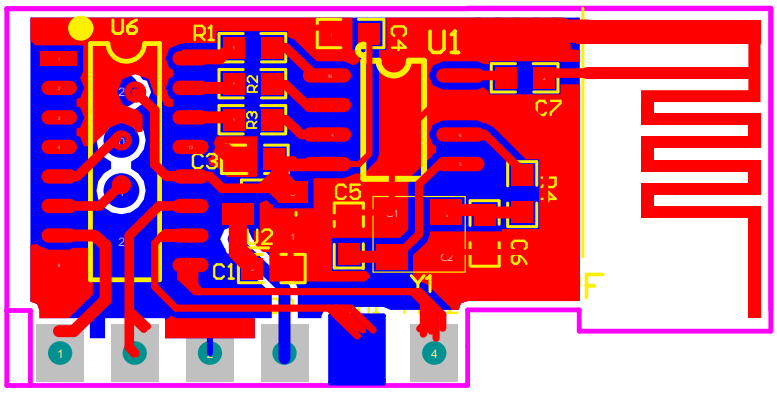
C. Function description

The signal.

module can also achieve one-to-one, one-to-many, many-to-one functions according to customer requirements. If you need to achieve one-to-one/multi-to-one function, you need to have a matching remote control with memory, and complete the code matching operation.

The remote control (or remote control without memory) can communicate with the module after completing the code alignment.

4、 picture of real products



5、electrical specification

项目	条件	MIN	TYPE	MAX	UNIT
工作电压		3.3	4.5	10	V
模块电流	无通信状态	17	17.5	18	mA
	通信状态	15.5	16	16.5	mA
工作温度		-40	25	85	℃
RF电器特性					
RF频率范围	2.4GHz	2400		2483	MHz
接收灵敏度	1KHz调制信	-90	-86	-83	dBm
接收带宽			1.5		MHz
通信码率			1.0		Mbps
接收距离	空旷无干忧	15	20		m

6. Precautions

(1) The product is a CMOS device, and attention should be paid to anti-static electricity during storage, transportation and use.

(2) The grounding of the device should be good when used.

FCC Statement

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.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual v01r01

2.2 List of applicable FCC rules

CFR 47 FCC Part 15 Subpart C and Subpart F has been investigated. It is applicable to the modular transmitter

2.3 Specific Operational Use Conditions - Antenna Placement Within the Host Platform

The module is tested for standalone mobile RF exposure use condition.

- The transmitter module may not be co-located with any other transmitter or antenna.

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

2.4 Limited Module Procedures

Not applicable

2.5 Trace Antenna Designs

Not applicable

2.6 RF Exposure Considerations

This device complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment can be used as portable exposure without any restriction.

2.7 Antenna Type and Gain

The module only used PCB antenna and maximum antenna gain is 2.07dBi.
Only antennas of the same type with equal or lower gain may also be used with this module. Other types of antennas and/or higher gain antennas may require the additional authorization for operation.

2.8 End Product Labelling Compliance Information

When the module is installed in the host device, the FCC ID label must be visible through a window on the final device or it must be visible when an access panel, door or cover is easily removed. If not, a second label must be placed on the outside of the final device that contains the following text: “Contains FCC ID: **QOB-UCL60RT**”. The FCC ID can be used only when all FCC compliance requirements are met.

2.9 Information on Test Modes and Additional Testing Requirements

This transmitter is tested in a standalone mobile RF exposure condition and any co-located or simultaneous transmission with other transmitter(s) class II permissive change re-evaluation or new FCC authorization.
Host manufacturer installed this modular with single modular approval should perform the test of radiated emission and spurious emission according to FCC part 15C, 15.209, 15.207 requirement, only if the test result comply with FCC part 15C, 15.209, 15.207 requirement, then the host can be sold legally.

2.10 Additional testing, Part 15 Subpart B Disclaimer

This transmitter modular us tested as a subsystem and its certification does not cover the FCC Part 15 Subpart B rules requirement applicable to the final host. The final host will still need to be reassessed for compliance to this portion of rules requirements if applicable.
As long as all conditions above are met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end-product for any additional compliance requirements required with this modular installed.

2.11 Manual Information to The End User

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user’s manual of the end product which integrates this module.
The host integrator must follow the integration instructions provided in this document and ensure that the composite system end product complies with the requirements by a

technical assessment or evaluation to the rules and to KDB Publication 996369.
The host integrator installing this module into their product must ensure that the final composite product complies with the requirements by a technical assessment or evaluation to the rules, including the transmitter operation and should refer to guidance in KDB Publication 996369.

OEM/Host Manufacturer Responsibilities

OEM/Host manufacturers are ultimately responsible for the compliance of the Host and Module. The final product must be reassessed against all the essential requirements of the FCC rule such as FCC Part 15 Subpart B before it can be placed on the US market. This includes reassessing the transmitter module for compliance with the Radio and RF Exposure essential requirements of the FCC rules.

2.12 How to Make Changes - Important Note

In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.