

SHANGHAI HONGYAN RETURNABLE TRANSIT PACKAGINGS CO., LTD.

IOT Module

IBC-FC330

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IC : 24663-IBCFC330

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## 1 Summary

IOT Module is a wireless positioning module with high stability, high cost performance and low power consumption. This module is composed of GSM module and wireless ad hoc network module. Compared with general positioning module, it has low power consumption. The module adopts wireless ad hoc network algorithm and can work for at least three years under battery power supply. It has a wide range of applications in logistics packaging containers.

**Note:** This equipment is fixed on large containers and is more than 25CM away from human body in normal use.

## Warning:

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.

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

NOTE: 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.

NOTE: This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter

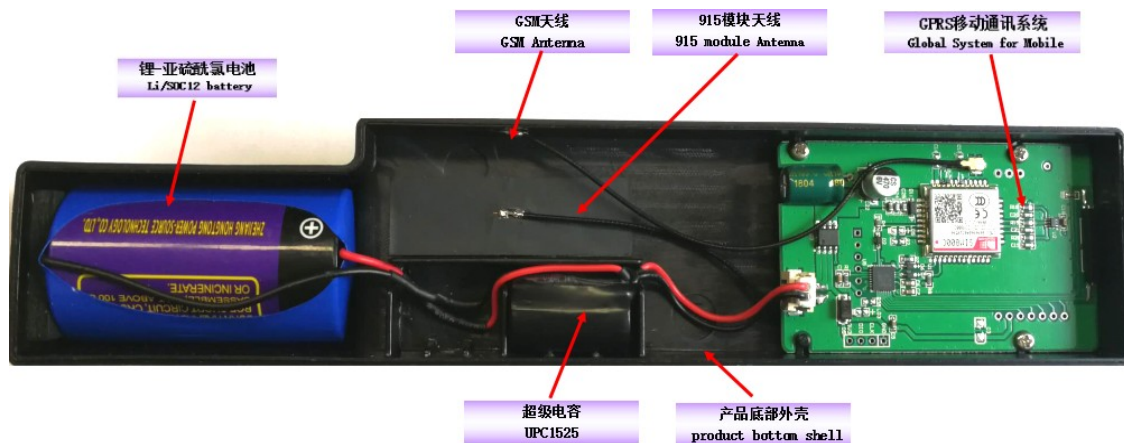
### RF Exposure Statement

To maintain compliance with FCC's RF Exposure guidelines, This equipment should be installed and operated with minimum distance of 20cm the radiator your body. This device and its antenna(s) must not be co-located or operation in conjunction with any other antenna or transmitter



### 1.1 Product assembly drawings :

The main products are PCBA, 915M antenna, GSM antenna, disposable lithium-ion batteries, supercapacitors and enclosures. The assembly is shown below. :



### 1.2 Technical parameters of products :

GPRS mobile communication System product parameters GPRS移动通信系统产品参数	
特性Characteristic	说明Explain
供电power supply	单电源single power: 3.3v~3.6v
省电save power	睡眠电流sleep current:100uA 平均电流Average current:400uA
GSM类型GSM type	小型移动台Minitype mobile station
发射功率 Emissive power	1.CLASS4(2W) EGSM900/EGSM850 2.CLASS1(1W) DCS1800/DCS1900
信号发射间隔 Signal transmission interval	4 hours
GPRS数据特性 GPRS Characteristic	GPRS数据下行传输: 最大68.5Kbps Downlink transmission:max 68.5Kbps
	编码格式: Encoding formats:CS-1, CS-2, CS-3, CS-4
	内嵌TCP/IP协议 Embedded TCP/IP protocol
SIM卡接口 Sim card interface	1.8v
机械尺寸 Mechanical size	72mm*45mm*1.6mm

## GSM

parameter	Minimum value	Maximum	unit
Operating Voltage	3.3	5.5	V
Operating temperature	-40	85	°C
Working humidity	10%	90%	-
working frequency	915	915	MHz
Maximum output power	0	20	dBm
Receiving sensitivity	-105	-120	dBm
Emission current (10dBm)	35	45	mA
Receiving current	25	30	mA
Sleep current	3	5	uA
Modulation	1.2	250	Kbps

rate			
Serial transmission rate	1200	115200	bps

915MHz

## 2 Modular working mode

Both GSM module and 915m self-organizing network module work in active reporting mode.

### 3.1 GSM module working mode:

In order to achieve low power consumption, the GSM module is usually in a completely dormant state, and only when the timing time arrives, will it actively link the server to send data. The default active reporting time is 2 hours, and the sending interval can be set.

### 3.2 915M module working mode:

915M module is usually in a wake-up state. It can listen to the signals of the surrounding nodes, save in its neighbor table, and send data to the GSM module when it needs to send, so that the GSM module can send the information of the neighbor table to the back-end server.