

# Product introduction

EC-UHF-A-2 is a two-channel module, which supports ISO18000-6C/EPC C1G2 protocol. Users can communicate with their own devices through RS232-TTL pins on its interface. Its wide power supply range (DC 3.6 V ~ 5.5 V) and configurable GPIO interface can provide users with more choices. Due to its low power consumption and small size, the module is very suitable for embedded in hand-held mobile devices and short-distance applications, such as short-distance handheld devices, embedded devices, card issuer, etc. .

## 1. Product features

- Support ISO18000 -6 c/EPC C 1G 2 standard protocol;
- The standby current is less than 10uA;
- Provide AIP, library functions and demo packages;

## 2. Scope of application

It can be used in hand-held mobile devices, goods and logistics management, warehousing management, animal management, goods anti-counterfeiting, product tracing, electronic goods monitoring and manufacturing, production automation and other wireless RFID applications.

## 3. Product appearance

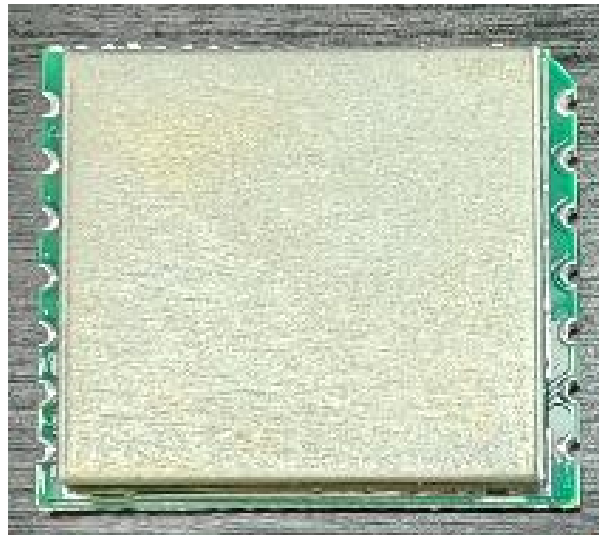
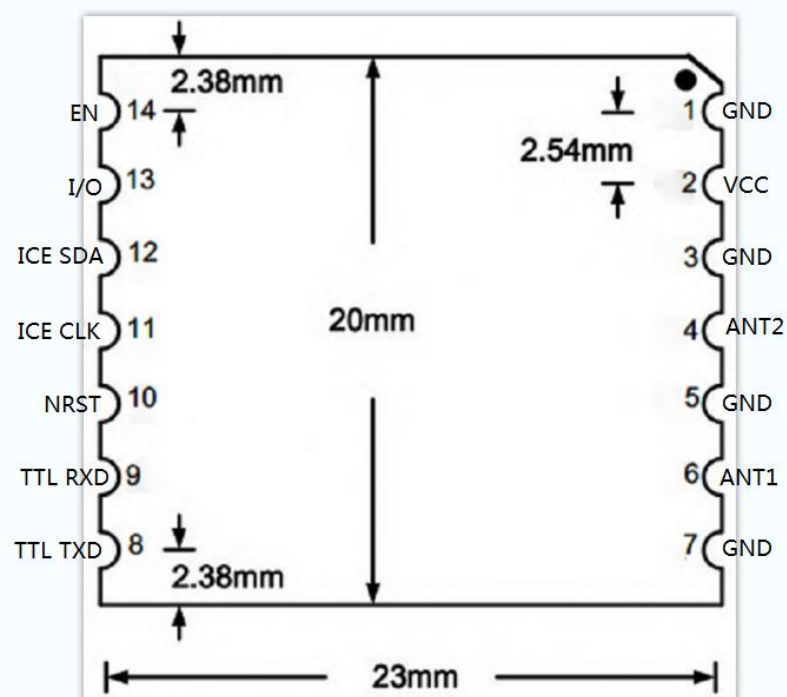
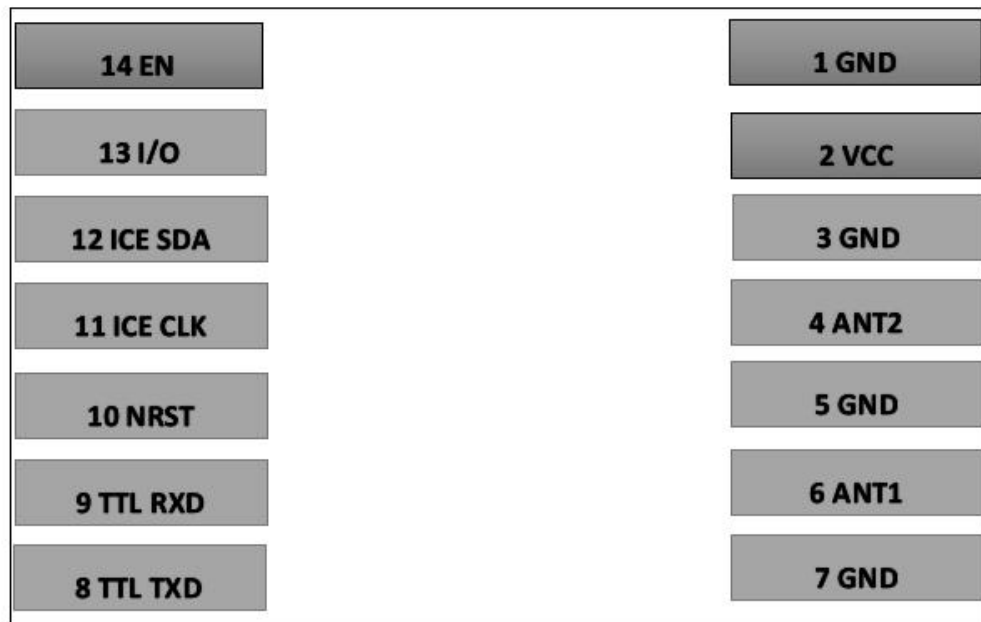


Figure 1: ec-uhf-a-2 module image

#### 4. Description of module interface



PIN serial number	Name	Functional description
1	GND	Module ground.
2	VCC	Modular power supply. Support 3.6 v-5.5 V power supply.
3	GND	Module ground.
4	ANT2	Module RF output, connected to the antenna.
5	GND	Module ground.
6	ANT	Module RF output, connected to the antenna.
7	GND	Module ground.
8	TTL_TXD	Module UART serial transmission pin, TTL3.3 v, communication rate of 115200bps.
9	TTL_RXD	Module UART serial receiving pin, TTL3.3 v, communication rate of 115200bps.
10	NRST	Module reset pin, low level reset port defaults to high level 3.3 V.
11	ICE_CLK	MCU record pin, 3.3 V
12	ICE_DAT	MCU record pin, 3.3 V
13	I/O	Module Universal IO pin, TTL3.3V.
14	EN	Module enable pin. Module internal 10 Kohhm pull-down resistor. When the EN pin voltage is higher than 1.1 V, the module starts to work.



Note: The above is the module EC-UHF-A-2 interface description.

## 5. Technical specifications

- Operating frequency: 840~960MHZ;
- Support protocols: ISO 18000-6C/EPC C1G2;

- Operating voltage: +3.6V ~ +5.5V ;

- Standby current: Standby Current < 10uA;

- RF channel: 2-way;

- Working Current: 5V Power Supply;

EC-UHF-A-2: The working peak current is about 160mA when transmitting 20dBm

- Size size:

EC-UHF-A-2 20 x 23 x 2.5 (Unit: mm) ;

- Transmit Power:

EC-UHF-A-2 12.5~20dBm, Software adjustable, 1.5 dBm step;

- Communication distance:

EC-UHF-A-2 1M (outdoor open space, 25mm × 25mm ceramic antenna);

- Communication interface: TTL-RS232(baud rate: 115200bps, data bit: 8, stop bit: 1, parity bit: none, flow control bit: None) ;

- Operating temperature: -25°C ~ +80°C;

- Storage temperature: -35°C ~ +85°C;

## **caution:**

This device must be professionally installed

This equipment does not allow any antenna to work with the transmitter; the permitted antenna type must be specified external antennas, for example (antenna name:Planar RFID antenna,Model:EC-UHF-ANT-NF0011)

device is generally for industrial/commercial use. it must be sold to authorized dealers or installers only,cannot be sold via retail to the general public or by mail order.

The equipment is an RFID technology RF product, and must be installed by electrical and electronic professionals with a professional certificate

### **Labelling Instruction for Host Product Integrator**

Please notice that if the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains FCC ID: 2A83H -ECUHFA2" any similar wording that expresses the same meaning may be used. Installation Notice to Host Product Manufacturer .

The OEM integrator is responsible for ensuring that the end-user has no manual instruction to remove or install module. The module is limited to installation in mobile application, a separate approval is required for all other operating configurations, including portable configurations with respect to §2.1093 and difference antenna configurations.

Antenna Change Notice to Host manufacturer If you desire to increase antenna gain and either change antenna type or use same antenna type certified, a Class II permissive change application is required to be filed by us, or you (host manufacturer) can take responsibility through the change in FCC ID (new application) procedure followed by a Class II permissive change application. FCC other Parts, Part 15B Compliance Requirements for Host product manufacturer This modular transmitter is only FCC authorized for the specific rule parts listed on our grant, host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. Host manufacturer in any case shall ensure host product which is installed and operating with the module is in compliant with Part 15B requirements.

### **FCC Caution**

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.

Any 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.

**RF warning for Mobile device:**

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

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**IC Caution.**

**CAN ICES-003(B) / NMB-003(B)**

RSS-Gen Issue 3 December 2010"&"CNR-Gen 3e éditionDécembre 2010:

- English:

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) This device may not cause interference, and (2) This device must accept any interference, including interference that may cause undesired operation of the device.

- French:

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.