

# **433MHz Band Bi-directional signal amplification module**

## **Technical Specification**

**Model : AB-IOT-433**

### **Introduction**

The AB-IOT-433 Series Bi-directional signal amplification module is suitable for micro-power wireless products in the frequency range of 420MHz-480MHz. The module is only the size of a single coin, with simple peripheral circuits and stable operation, and can be applied in scenarios such as 433.92MHz/470MHz wireless data acquisition systems.

### **Main characteristics**

1. Built-in TX/RX automatic switching circuit, TX/RX status can be switched independently without external control signal.
2. It works in RX status by default, and enhances the receiving signal. When the transmitting signal of the superior device is detected, the module instantly switches to the TX status.
3. The TX gain is adjustable, which is convenient to be compatible with wireless devices with different transmission powers.
4. Compatible with various modulation methods such as LORA and FSK/ASK/OOK/MSK/GFSK.

## Specifications

|                             |   |
|-----------------------------|---|
| Working frequency :         | 420MHz – 480MHz   |
| RX gain :                   | 11dB±2dB  |
| NF :                        | ≤2.0dB  |
| TX gain :                   | 5dB – 11dB (±2dB)Adjustable   |
| TX/RX switching threshold : | -2dBm   |
| TX input power range :      | 1dBm - 20dBm  |
| Maximum transmit power :    | 31.5dBm (1.4w) at 3.7V supply voltage<br>33.5dBm (2.3w) at 5.0V supply voltage<br>34.5dBm (2.8w) at 6.0V supply voltage |
| Status indication :         | RX status : Green light is on, Blue light is off  |
|                             | RX status : Blue light is on, Green light is off  |
| Operating Voltage :         | 供电电压介于 3.6V-6.0V 之间均可。<br>最大发射功率随供电电压升高而增加。   |
| Working current :           | RX status : 10mA ( ±3mA )   |
|                             | TX status : ≤720mA  |
| Overall dimension :         | 38.2mm*26.2mm*4.5mm(L*W*H)  |

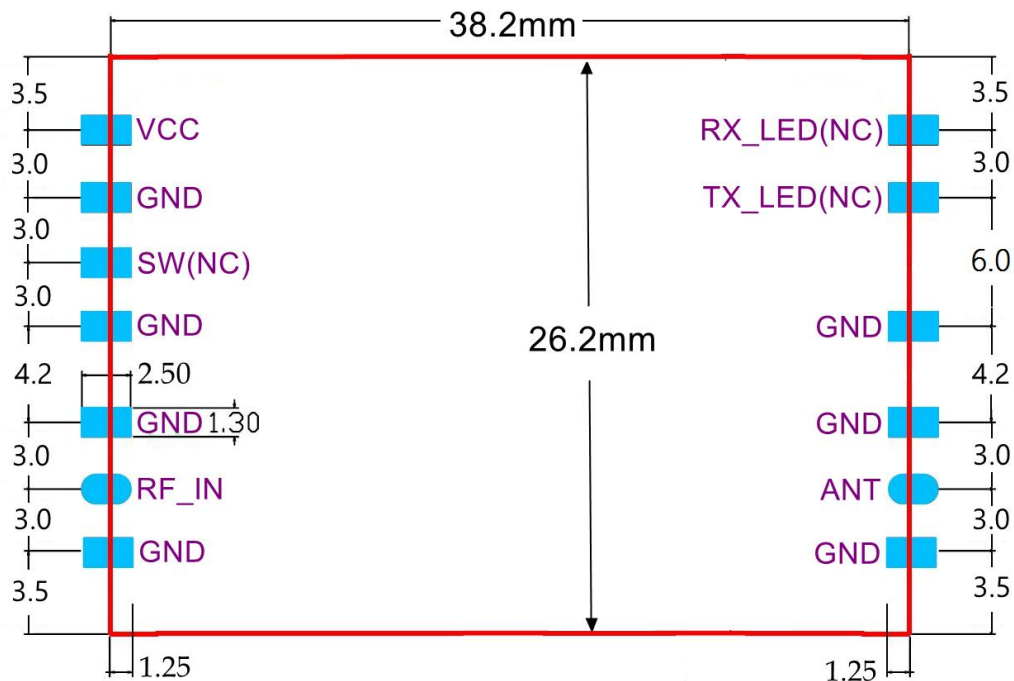
**Tips: The output power of the upper-level device must be at least 3dB higher than the switching threshold, which means that the output power of the upper-level device cannot be lower than 1dBm, otherwise it may cause unstable operation.**

## Chang the TX Gain

When the potentiometer is turned counterclockwise to the limit, the gain is 5dB ;

When the potentiometer is turned clockwise to the limit, the gain is 11dB.

## Overall dimension and Pin description



- 1 . The RF\_IN pin is connected to the upper-level device RF signal output port.
- 2 . The ANT pin is connected to the Antenna.
- 3 . When the module outputs at maximum power, the current can reach 720mA , It is recommended to connect a large-capacity capacitor in parallel with the VCC pin, the capacity is not less than 220uF.
- 4 . All pins marked with NC are used in specific occasions, please ignore them for general applications.

5 . This module supports the switching state of the transceiver is controlled by the MCU

IO port.

## Reference design

If you need an external MCU to control the transceiver switching status, please remove this resistor and connect the SW pin to the IO port. The control logic is: TX status when SW=3.3V, RX status when SW=0V

