



## LoRa Radio Module - 433MHz

SKU:TEL0116

### *INTRODUCTION*

LoRa Radio Module is a type of long range low data rate data radio modem based on Sx1276 from Semtech. It is a low-cost sub-1 GHz transceiver module designed for operations in the unlicensed ISM (Industrial Scientific Medical) and LPRD bands. Frequency spectrum modulation/demodulation, multi-channel operation, high bandwidth efficiency and anti-blocking performance make LoRa modules easy to realize the robust and reliable wireless link.

The module can work in two different modes: Standard mode and Star network mode. In the standard mode It acts as transparent data radio modem which it communicates with the host at the preset data format without encoding / decoding needed. In start network mode, one module will be the configured to the central node and other modules are set to node modules. The communication between the central module and node module are bidirectional but the node modules can not talk with each other. Please note that the module doesn't contain lorawan protocol. Therefore the star network feature of this module is used with itself protocol so it is not compatible with lorawan.

Recommend USB to TTL Converter to set the module parameter, and Gravity IO Expansion Shield can directly work with the Lora modules.

## *FEATURES*

- LoRa Frequency Spectrum
- 433/490Mhz ISM frequency band
- -137 dBm receive sensitivity
- 20 dBm Max. output power
- Serial port wake-up
- Wireless wake-up
- Star networking ability
- Supply voltage 3.4~5.5V

## *SPECIFICATION*

- Operating voltage: 2.1 ~ 3.6V (battery-powered) or 4.5 ~ 5.5V
- Working frequency band: 433MHz
- Modulation: LoRa spread spectrum
- Output power:  $\leq 20\text{dBm}$
- Receiving sensitivity:  $-148\text{dBm}$
- Emission current:  $\leq 120\text{mA}$
- Receiving current:  $\leq 15.2\text{mA}$
- Sleep current:  $\leq 3.9\mu\text{A}$
- Sleep time: Optional 2S, 4S, 6S, 8S, 10S
- Breathing time: optional 2ms, 4ms, 8ms, 16ms, 32ms, 64ms
- Wake-up time: wake up immediately
- Communication Interface: TTL serial communication
- Serial baud rate: 1200 ~ 57600,9600bps (default)
- Serial port verification: 8E1,8O1,8N1 (optional)
- Operating temperature:  $-40^{\circ}\text{C} - + 80^{\circ}\text{C}$
- Product Size: 34.2 \* 18.4 mm /1.35\*0.72 inches

### *SHIPPING LIST*

- LoRa Radio Module - 433MHz x2
- 433MHz antenna (2m SMA-Male connector) x2

