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LoRa Radio Module - 433MHz

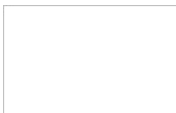
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* Model: 433MHz MESH 433MHz 868MHz MESH 868MHz

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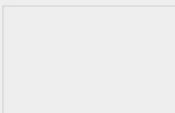
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LoRa Radio Module - 433MHz

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Gravity: IO Exp... V7.1

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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

Downloaded from [Arrow.com](#)

- Operating voltage: 2.1 ~ 3.6V (battery-powered) or 4.5 ~ 5.5V
- Working frequency band: 433MHz
- Modulation: LoRa spread spectrum
- Output power: ≤ 20dBm
- Receiving sensitivity: -148dBm
- Emission current: ≤120mA
- Receiving current: ≤15.2mA
- Sleep current: ≤ 3.9uA
- 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: 8E1,801,8N1 (optional)
- Operating temperature: -40 ° C - + 80 ° 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

REVIEW

FAQ

14 Comments

DFRobot

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n the discussion...



solomon-hopewell kembo • 2 years ago

I bought the LoRa modules and connected them to two arduino uno boards using for wires based on the usb to ttl converter pins. i created a simple arduino to test sending of data but nothing is happening in serial monitor. can you help?

^

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DFRobot Support Mod → solomon-hopewell kembo • 2 years ago

Hey Solomon,

I am sorry you are having some difficulties. Currently we would need more information to better assist you. I suggest emailing techsupport@dfrobot.com with more specific information regarding the connections and code you are using, in this case pictures of your setup would help!

^

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박영남 • 3 years ago

Hello what is maximum node and speed(200m) on star network mode?

^

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DFRobot Support Mod → 박영남 • 3 years ago

You can add hundreds of nodes and because it is radio frequency module, the speed should be close to the speed of light.

^

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Joan Fons • 3 years ago • edited

How can this module be directly connected to the Gravity IO Expansion shield (as you suggest)? The APC/BT interface seems appropriate, but there is a difference between the DTR (Gravity IO Shield) and the EN pin (LoRa module). The DTR should be connected to GND (eventually) to make the LoRa module awake and start transmission (STANDARD mode). But this DTR seems to be connected to RESET, and not to any Arduino digital pin ...

^

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DFRobot Support Mod → Joan Fons • 3 years ago

What do you want to use LoRa for? this EN pin is not required to be connected for transmission. You just need to connect GND, VCC and TX/RX for communication.

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Joan Fons → DFRobot Support • 3 years ago

I'm building a mesh/ad-hoc network with LoRa. In a STANDAR communication mode for this module, if I do not set the EN pin to GND, the node does not work/communicate (tried!). So, I need to know how to deal with the DTR pin to set LOW (to enable communications) and HIGH to disable the LoRa module.

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DFRobot Support Mod → Joan Fons • 3 years ago

DTR is connected to RST, we can't change it. maybe you can remove the capacitor between DTR and RST, then wire the DTR socket to the pin you want to use as EN pin.

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Joan Fons → DFRobot Support • 3 years ago

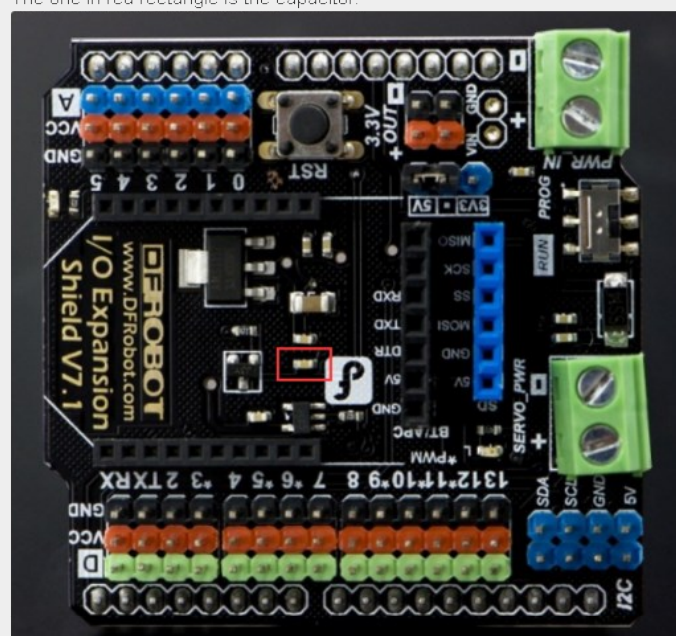
Very smart! I like it. Please, could you confirm with capacitor should I remove? I'm trying to follow the printed circuit, but I'm not confident where should I cut ... Thanks in advance

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DFRobot Support Mod → Joan Fons • 3 years ago

The one in red rectangle is the capacitor.



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Joan Fons → DFRobot Support • 3 years ago • edited

Great! Thank you very much, you're awesome. That solution could come integrated in a V7.2 ... a small switch (as the one for RUN/PROG) to select 'BT mode' vs 'RxTx mode', and you can use the BT/APC also for using those LoRa modules (interfaces). But it seems not easy to put new stuff to this master piece ...

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Andres Betancur Cañola • 3 years ago

hello, what is the maximum transmission distance?

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Larry → Andres Betancur Cañola • 6 months ago

I achieved 11km with one mounted to the roof of my house

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DFRobot Support Mod → Andres Betancur Cañola • 3 years ago

In an open land, the transmission distance is about 3~5 Km.

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