



# NF-04-MI Specification

Version V1.0  
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### Note

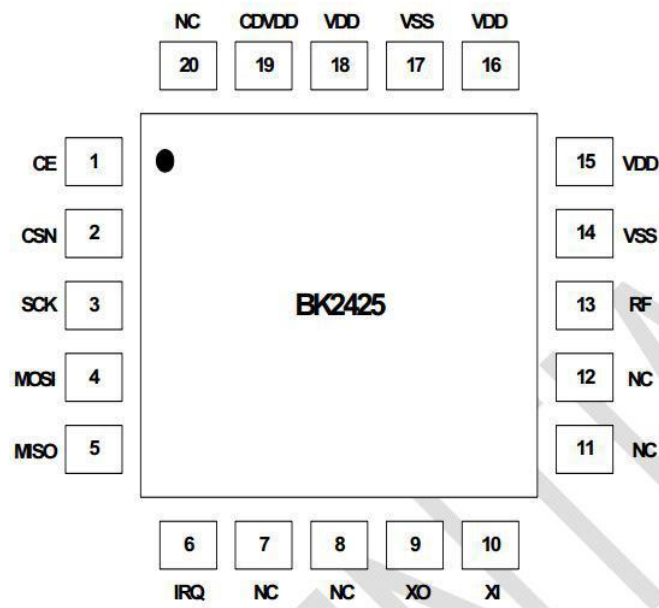
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## Overview

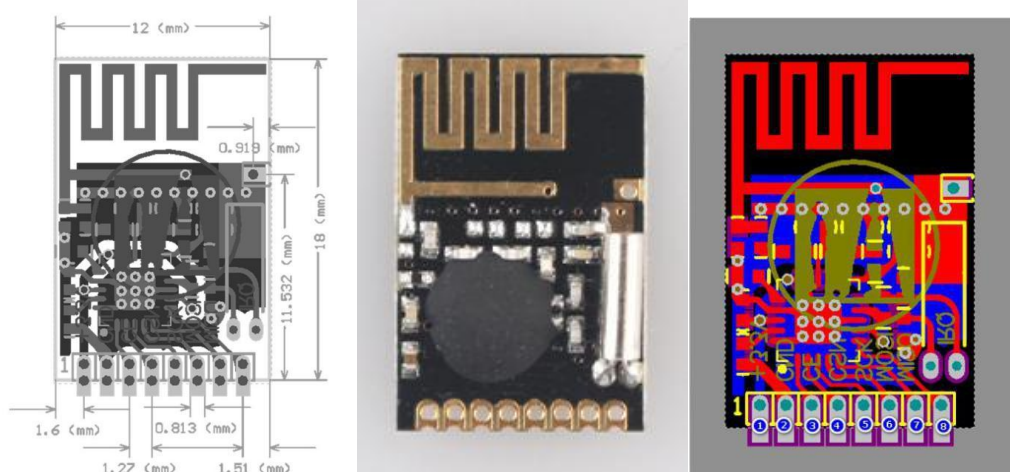
NF-04-MI is a 2.5 mW power wireless transceiver integrated 2.4G module, embedded BK2425 RF chip; DIP-8 packages that can be quickly docked to existing products ;-altitude medium rate (up to 2 Mbps), using SPI interface, high stability, high performance-price ratio. NF-04-MI suitable for a variety of Internet of things occasions, widely used in wireless mouse, wireless remote control, somatosensory devices, active RFID,NFC, low-power ad hoc wireless sensor nodes are Internet of things applications Ideal product.

## Appearance dimensions

Chip image



## NF-04-MI Module image

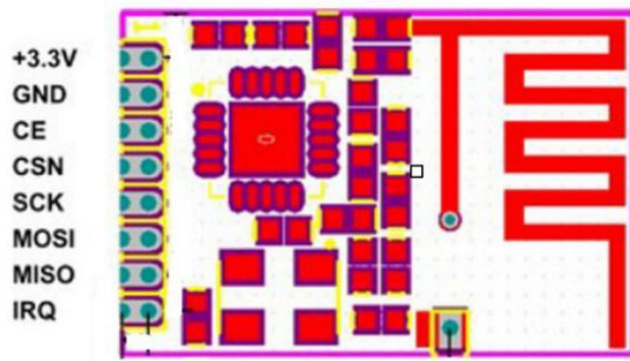


| No. | Parameter Name        | Parameters                    | Note  |
|-----|-----------------------|-------------------------------|---|
| 01  | RF chip               | BK2425                        |   |
| 02  | module size           | 18.0*12.0 unit:mm             | ±0.2mm  |
| 03  | Modulation mode       | GFSK modulation mode          | Gaussian frequency shift keying               |
| 04  | Package               | SMD-8                         |   |
| 05  | Interface             | Adopt four-wire SPI interface | SPI port Maximum rate not greater than 10 M   |
| 06  | Transmission power    | Maximum is 4 dBm              | Others refer to chip datasheet                |
| 07  | RSSI support          | Not Support                   | Simple packet loss count is supported only    |
| 08  | Operating frequency   | 2.4GHz ~ 2.525GHz             | Adjustable, 1MHz                              |
| 09  | Voltage range         | 1.9 ~ 3.6V, typical value 3.3 | Excessive voltage would damage the module     |
| 10  | Data rate             | support 2Mbps/1Mbps/250Kbps   | More details refer to chip datasheet          |
| 11  | Channel               | 128 RF Channel                | Each channel is separated 1MHz                |
| 12  | Test range            | 120m                          | Sunny, no barrier, maximum transmit power     |
| 13  | Receiving sensitivity | -96dBm@250Kbps                | other details refer to chip datasheet         |
| 14  | Antenna interface     | On-board pcb antenna          | 500 Characteristic impedance                  |
| 15  | Emission length       | Single packet 1~32 byte       | 3class FIFO                                   |
| 16  | Received length       | Single packet 1~32 byte       | 3class FIFO                                   |
| 17  | Operating temperature | -20 ~ + 70 °C                 | excessive temperature would damage the module |
| 18  | Storage temperature   | -40 ~ +125 °C                 | excessive temperature would damage the module |
| 19  | Standby current       | 50μA                          | other details are chip manual                 |
| 20  | Receive current       | 16.5 mA (2Mbps)               | for other details see Chip Manual             |
| 21  | Emission current      | 18 mA (4 dBm)                 | for other details see the chip manual         |

## Pin definition

| Name | Direction | Purpose  |
|------|-----------|--|
| VCC  | -         | power supply must be between 1.9~3.6 V                       |
| GND  | -         | ground wire, connected to power reference ground             |
| CSN  | input     | module chip select pin for starting a SPI communication      |
| CE   | input     | module enables control foot, CE low level is in standby mode |
| MOSI | input     | module SPI data input pin                                    |
| SCK  | input     | module SPI bus clock   |
| IRQ  | output    | module interrupt signal output, low level effective          |
| MISO | output    | module SPI data output pin                                   |

Pin definition image



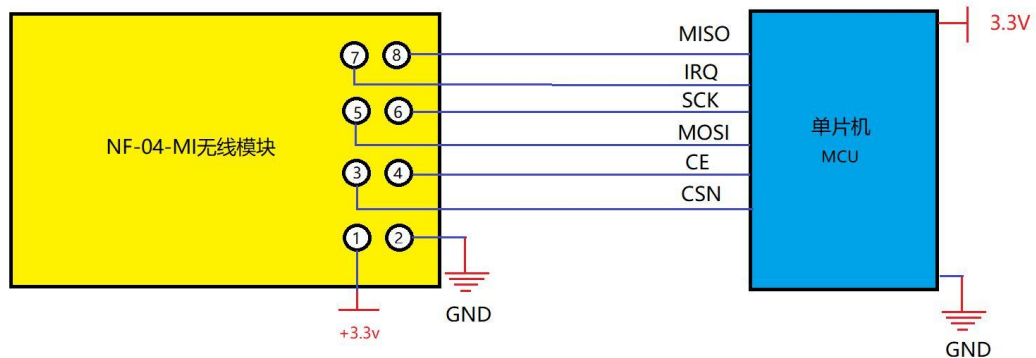
## Noted

01. Electrostatic----- high frequency analog devices are electrostatic sensitive, please avoid contact with electronic components on the module as far as possible
02. Power-----supply to ensure that the power supply must have a small ripple, to avoid a large run out of the power supply voltage value, it is recommended to use  $\pi$  type. Filter (Ceramic Capacitor/Tam Capacitor Inductor)
03. Ground wire-----module ground wire using single point grounding mode, recommended to use 0 oh resistance, or 0 mH inductance, other parts of the electricity refer separated
04. Antenna-----If the antenna is covered by a metal shell, some components will affect the performance of the antenna, such as relays. Make sure the antenna is exposed, preferably vertically up
05. Interference-----If there are other wireless modules in the same product, it is necessary to plan the

frequency reasonably and adopt shielding measures,

06. Crystal oscillator----- Reduce the effect of harmonic interference and intermodulation interference. If there is a crystal oscillator near the circuit board of the module, please increase the straight line distance between the crystal oscillator and the module.

## Typical circuit



*schematic diagram of the connection between MCU and NF-04-MI*

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