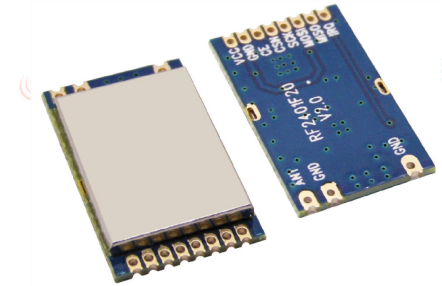


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**RF24L01F20****2.4G RF module with amplifier****1. Description**

RF24L01F20 Module is a high integrated wireless module, which worked in 2.4GHz of ISM band. RF24L01F20 adopts Nordic's RF chip nRF24L01+ and high efficiency RF amplifier. The feature of high data rate (maximum 2Mbps ), good sensitivity (-102 dBm) but low harmonic and low unexpected radiation extend the range and improve the link performance.

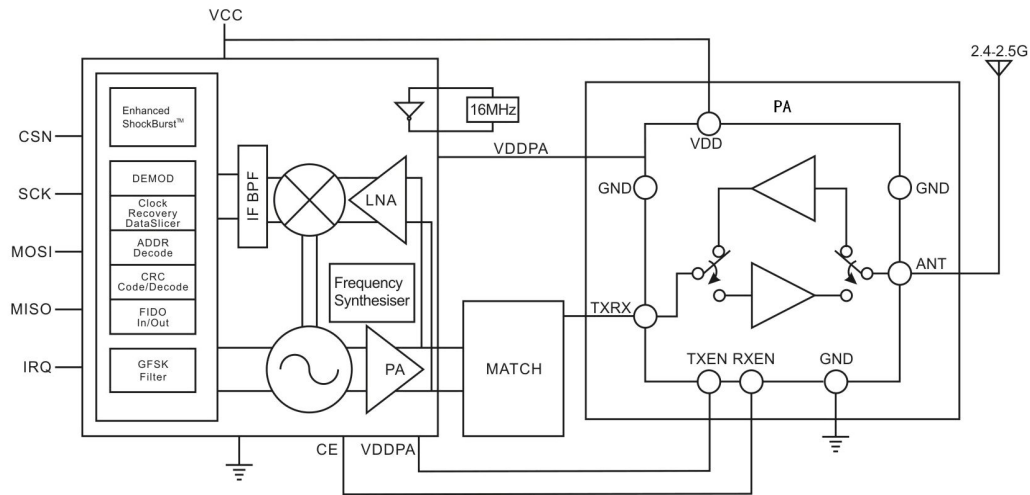
**2. Features**

- Frequency Range: 2400-2480MHZ
- Maximum power output: 20dBm
- Sensitivity up to:-102dBm@250Kpbs
- Data rate: 250K,1Mbps,2Mbps
- GFSK Modulation,
- FIFO: 32bytes
- Ultra low power off mode
- Support functions of frequency hopping
- Internal integrated voltage regulator
- operating voltage range: 1.9-3.6 V
- operating temperature range: -40~+85°C

**3. Application**

- Wireless remote control
- Remote meter reading
- Smart Home
- Personal data records
- Toy control
- Tire Pressure Monitoring
- health monitoring
- Tag reader

## 4.Schematic

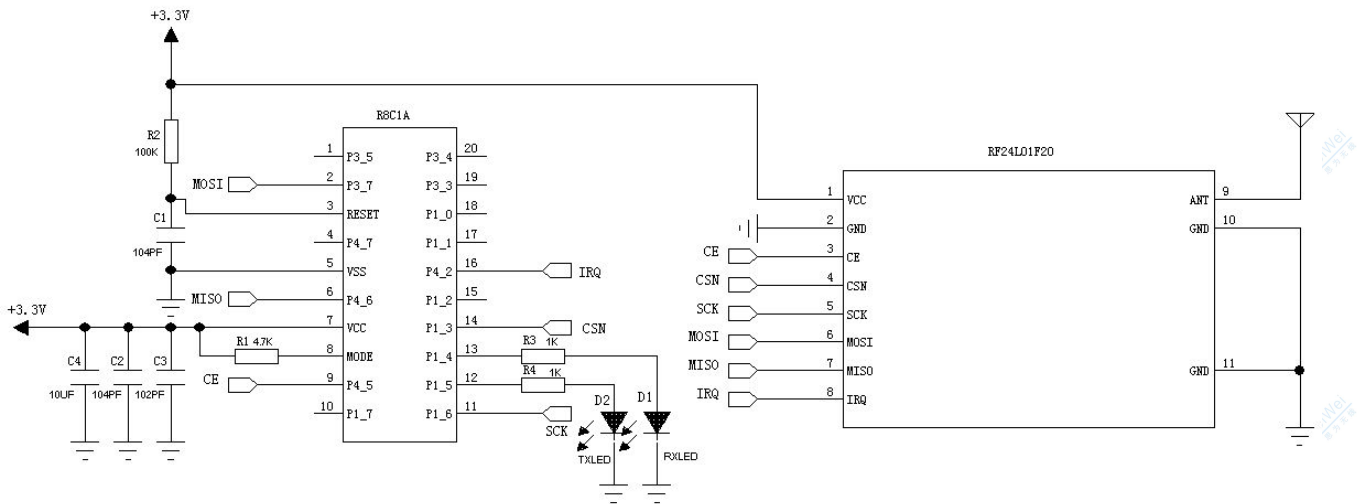


## 5. Electrical Characteristics

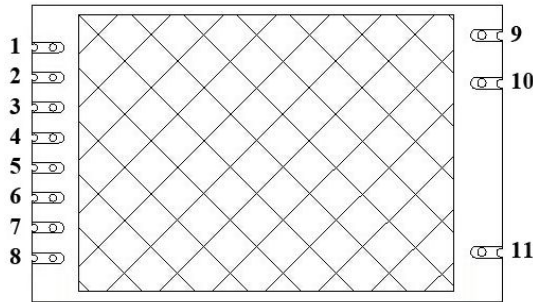
★ Below parameters is measured at 3V.

Parameter	Min.	Type.	Max.	Unit	Conditions
Operation conditions					
Operating voltage range	1.9	3.3	3.6	V	
Operating temperature range	-40		85	°C	
Current consumption					
RX Current		23.5	24	mA	
TX Current		135	150	mA	@20dBm
Sleep Current		<1		uA	
RF parameters					
Frequency range	2400		2525	MHZ	
Modulation rate	250		2000	Kbps	GFSK
Output power range	4		20	dBm	Power 0=5dBm,3=20dBm
Maximum output power	18.5	20		dBm	
RX sensitivity	-100	-102		dBm	@data=250kbps

## 6. Typical application circuit

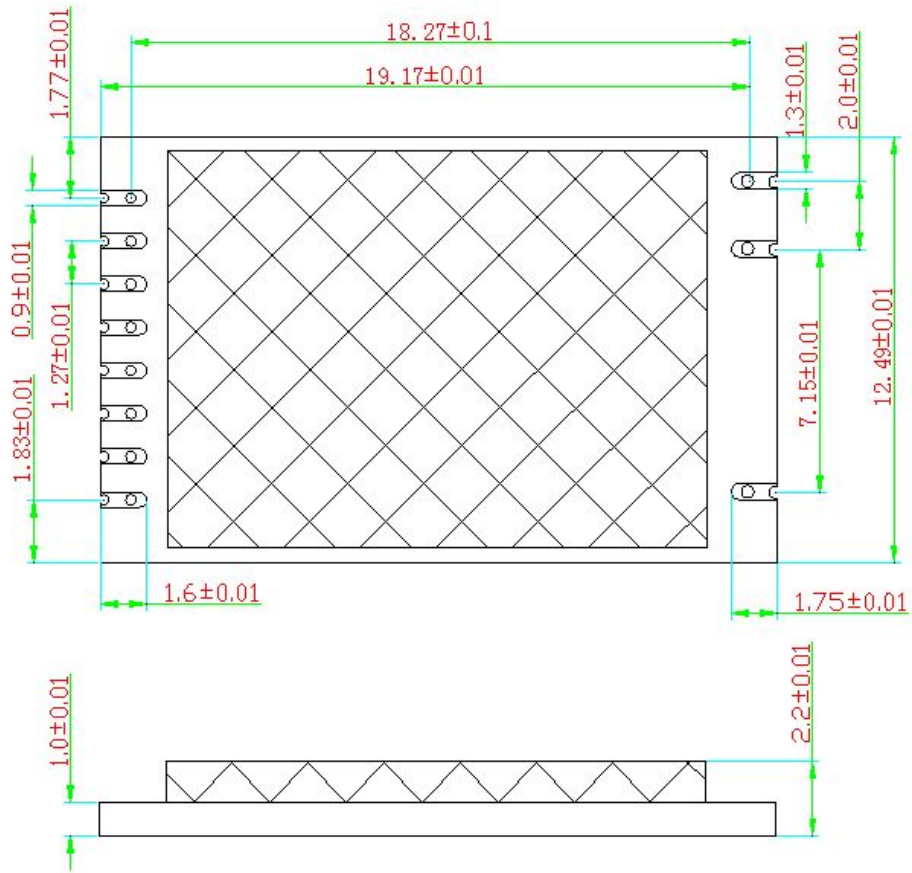


## 7. Pins Configuration



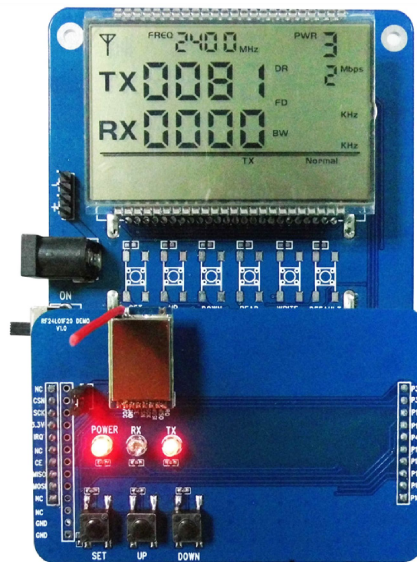
Pin No.	Pin Definitions	Description
1	VCC	Connect to VCC (1.9-3.6V)
2	GND	Connect to ground
3	CE	Chip enable
4	CSN	CSN of SPI interface
5	SCK	SCK or SPI interface
6	MOSI	MOSI of SPI interface
7	MISO	MISO of SPI interface
8	IRQ	Interrupt output, active low
9	ANT	Connect 50ohm coaxial antenna
10	GND	Connect to ground
11	GND	Connect to ground

**8.Mechanical Dimension:**

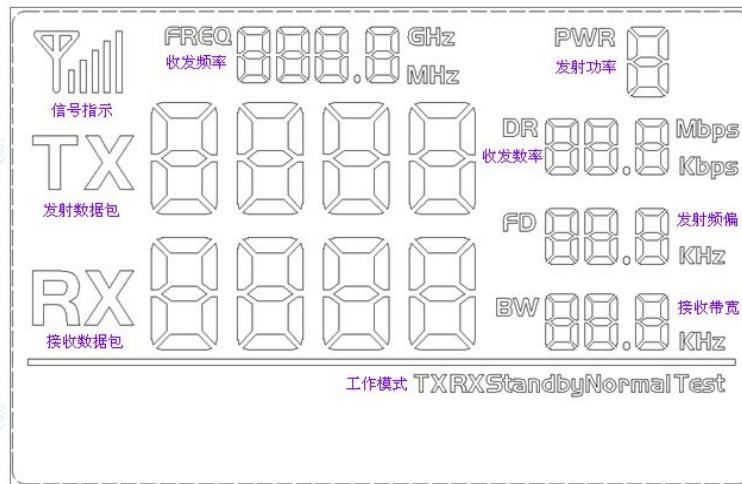


**Appendix:**

The module is equipped with a standard DEMO board for customer to debug the program and test distance. It shows as below:



The LCD Full Segment is as below:



Users can set the parameters of the RF module such as working mode /frequency / transmitter power / transmission data rate through the buttons, and measure the wireless communication distance.

### ➤ Working Mode

- 1) Master Mode: Send 1 packet per second, and waiting for the acknowledge;
- 2) Slave Mode: Stay in Rx mode to wait for the data from the master, it will send back the acknowledged signal after received the data from the master.
- 3) Tx Test Mode: RF module continuously transmit signal;
- 4) Rx Test Mode: RF module is always in Rx mode;
- 5) Standby Mode: RF module is always in standby state.

### ➤ Button Operation

- 1) [SET] Button  
Press the [SET] button to enter into setting mode; Or press the [SET] button to be out of the setting mode upon the last parameter is done.
- 2) [UP/Down] Button  
In setting mode, press the [UP/Down] button to increase/decrease the value of flash icon.

Note: The DEMO board has FLASH memory inside, all the setting parameters will be saved automatically and keep unchanged even power-off.

Note: The antenna(s) used for this transmitter must not be co-located or operating in conjunction with any other antenna or transmitter

Only those antenna(s) tested with the device or similar antenna(s) with equal or lesser gain may be used with this transmitter

The RF2401F20 module is designed to comply with the FCC statement. FCC ID is 2AD66-RF2401F20. The host system using RF2401F20, should have label indicated it contain modular's FCC ID 2AD66-RF2401F20

## FCC Information and Copyright

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.

### 15.19 Labelling requirements.

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.

changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.