

## 1. Description

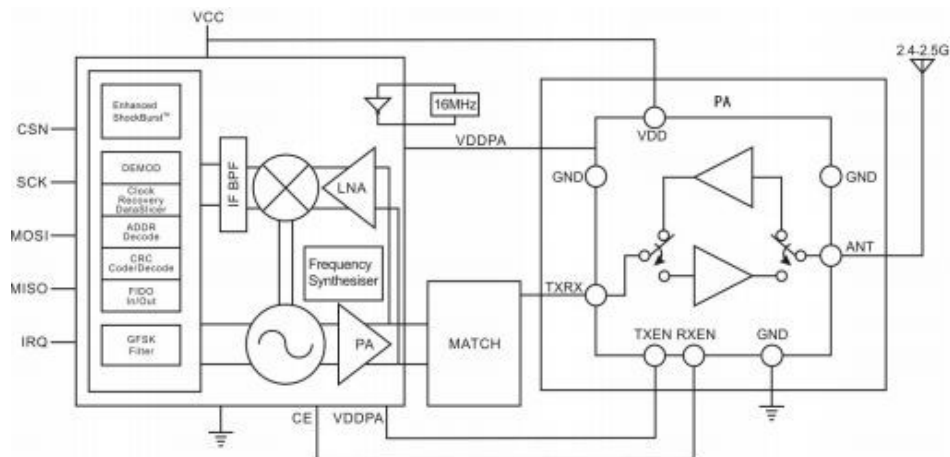
- RF24L01F20 Module is a high integrated wireless module, which works in 2.4GHz of ISM band. RF24L01F20 adopts Nordic's RF chip nRF24L01+ and high efficiency RF amplifier. The feature of high data rate (maximum 2Mbps), good sensitivity (-102 dBm) but low harmonic and low unexpected radiation extend the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



## 4. Electrical characteristics :

Parameter	Min.	Type	Max.	Unit	Conditions
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### Operational conditions

Operating voltage_range	1.9	3.3	3.6	V	
Operating temperature range	-40		85	C	

### Current consumption

<b>RX Current</b>		23.5	24	mA	
<b>TX Current</b>		135	150	mA	@20Bm
<b>Sleep Current</b>		<1		uA	

### RF parameter

Frequency range	2400		2525	MHz	
Modulation rate	250		2000	Kbps	GFSK
Output power range	4		20	dBm	Power 0=5dBm,3=20dBm
Output power range	18.5	20		dBm	

RX sensitivity	-100	-120		dBm	
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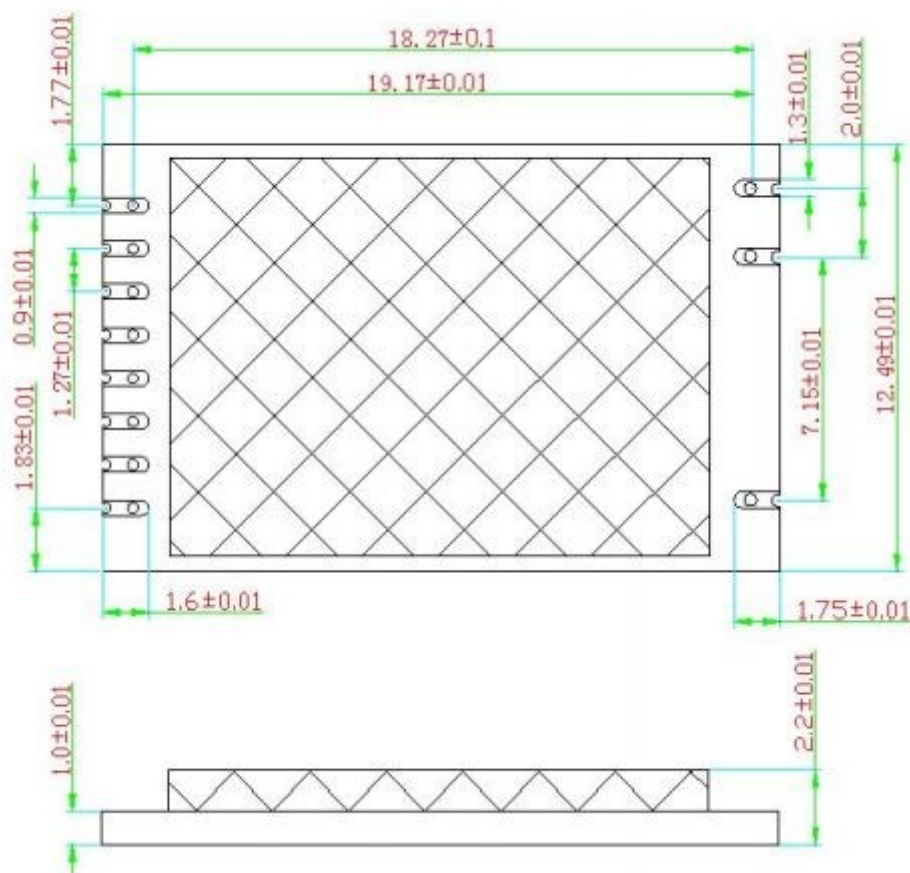
## 5. Typical application circuit :

## 6. 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	CSK	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

## 7. Mechanical dimension :



## Appendix:

Users can set the RF module parameter: working frequency through the receiver.



## Working Mode :

- 1.) **Scan Mode:** Sends 1 packet and waits for acknowledgement. The packet is sent starting from frequency 2406 MHz to 2480 MHz. If a receiver is receiving on one of these channels, the device saves the frequency.
- 2.) **Tx Mode:** Takes an image with the onboard camera and transmits it on a fixed frequency saved during the **Scan Mode**.

## Button Operation :

Press the button to enter Tx Mode. An image is taken with an onboard camera and sent on a fixed channel saved during the **Scan Mode** .

Note: The device doesn't save the parameter setting in non-volatile memory. All the settings are lost on power off and the device goes to Scan Mode on powerup.

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

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

## 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.

A label with “contains FCC ID : 2AUPP-VUAI01” must be placed on the exterior of the host