



**成都亿佰特电子科技有限公司**  
Chengdu Ebyte Electronic Technology Co.,Ltd.

## 1. Introduction

E01



E01 is the iconic product of EBYTE. This nRF24L01+PA+LNA RF module operates at 2.4 GHz, with SPI interface and stable production, which make the module suitable for various applications.

E01 is based on original imported nRF24L01P from Nordic in Norway. And equipped with 20dBm power amplifier chip imported from USA, which makes the transmitting power achieves 100mW (20dBm) while the receiving sensitivity enhanced by 10dB. Those features

make the transmitting distance 10 times longer than nRF24L01P itself. The anti-interference shielding cover on the module makes the anti-interference performance better.

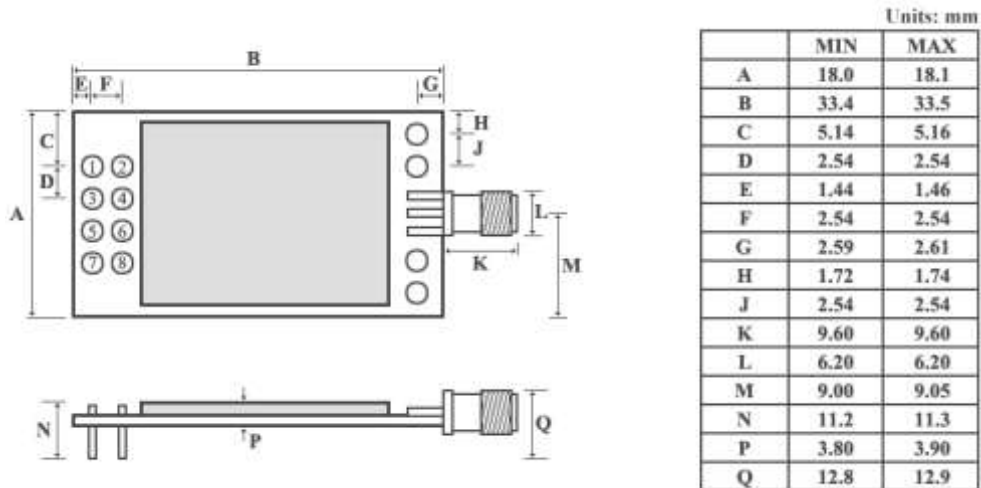
## 2. Electrical parameter

E01

No.	Parameter item	Parameter details	Description
1	RF IC	nRF24L01P	Nordic
2	Size	18 * 33.4 mm	-
3	Weight	4.9g	Average weight
4	PCB	SMT	Lead-free
5	Connector	2 * 4 * 2.54 mm	Plug-in
6	Supply voltage	2.0 ~ 3.6V DC	Notes: the voltage higher than 3.6V is forbidden
7	Frequency	2400 ~ 2525MHz	Adjustable
8	Communication level	0.7VCC ~ 3.6V	VCC refers to the supply voltage
9	Operation Range	2000m	Test condition: Clear and open area, 20dBm , antenna gain: 2dBi , height: 2m , Air data rate: 250Kbps
10	Transmitting Power	Maximum 20dBm	100mW
11	Air data rate	250kbps~2Mbps	250kbps, 1Mbps, 2Mbps
12	Sleep current	1.0uA	nRF24L01P sets as power-down, CE low level
13	Transmitting current	130mA@20dBm	≥300mA
14	Receiving current	21mA	CE=1
15	Communication interface	SPI	Data rate: up to 10Mbps
16	Transmitting length	3 level FIFO.	32 bytes (maximum) for one package
17	Receiving length	3 level FIFO.	32 bytes (maximum) for one package
18	Antenna type	SMA-K	50 ohm characteristic impedance
19	Sensitivity	-106dBm@250kbps	Please see more in IC datasheet
20	Operating temperature	-40 ~ +85°C	-
21	Operating humidity	10% ~ 90%	Relative humidity, no condensation
22	Storage temperature	-40 ~ +125°C	-

## 3. Pin definition

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Pin No.	Pin item	Pin direction	Pin application
1	GND		Ground
2	VCC		Power supply 2.0V ~ 3.6V DC
3	CE	Input	Chip Enable
4	CSN	Input	SPI Chip select
5	SCK	Input	SPI clock
6	MOSI	Input	SPI master output slave input
7	MISO	Output	SPI master input slave output
8	IRQ	Output	Interrupt request.

#### 4. Note

E01

No.	Item	Attention
1	Static electricity	Please try not to touch the electronic components with bare hands.
2	Welding	When welding, soldering iron needs grounding. The producer needs to wear cable electrostatic bracelet which is grounding when mass production.
3	Power supply	Power quality has a great impact on the performance of the module, please make sure the power supply has small ripple and avoid the frequent and large jitter. $\pi$ filter is recommended(Ceramic capacitor // tantalum capacitor + inductance).
4	Ground	Single-point grounding is recommended. 0 ohm resistor or 10mH inductance are recommended.
5	Antenna	How to install antenna has a great impact on the performance of the module, please make sure the antenna is exposed and vertical upward. It will lead to the transmitting distance greatly weakened if the antenna installs in the interior of housing. When the module is installed in the interior of the housing, high-quality antenna extension line can be used to extend the antenna to the outside of the housing.
6	Interference	If there are different modules work in other frequency band in the same product, the user need to plan rationally and take measures to shield, in case the harmonic interference and intermodulation interference exist.

#### FCC Statement

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

#### FCC Radiation Exposure Statement

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: “Contains Transmitter Module FCC ID: 2ALPH-E01 Or Contains FCC ID: 2ALPH-E01”

When the module is installed inside another device, the user manual of the host must contain below warning statements;

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(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

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

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.