

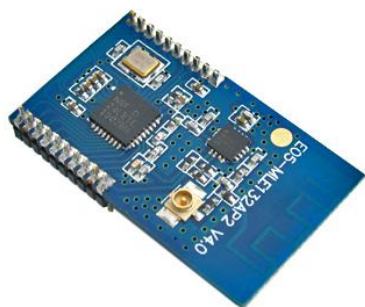


成都亿佰特电子科技有限公司
Chengdu Ebyte Electronic Technology Co.,Ltd.

E05-MLE132AP2 Datasheet V1.0

1. Introduction

E05-MLE132AP2



E05-MLE132AP2 is a 100mW wireless transceiver module, operates at 2.4 GHz with small-size. High-performance PCB antenna and IPEX RF interface is optional. And with stable batch production, the module is suitable for various applications.

E05-MLE132AP2 is based on original imported RF chip nRF24LE1 from Nordic in Norway, and equipped with 20dBm power amplifier chip imported from USA. QFN32, imported industrial components, lead-free process, embedded 51 microcontroller, stable performance, high communication speed, small-size by professional hardware design. All those features are all convenient for all kinds of

embedded development.

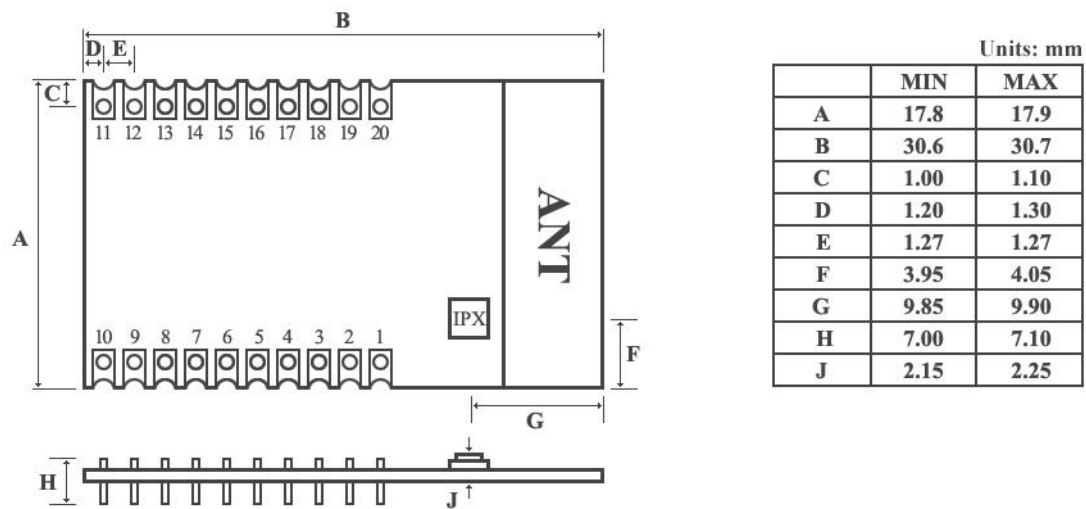
2. Electrical parameter

E05-MLE132AP2

No.	Parameter item	Parameter details	Description
1	RF IC	nRF24LE1	Nordic
2	Size	17.8 * 30.6mm	Without antenna & SMA
3	Production process	Machine	Lead-free
4	Connector	2 * 10 * 1.27mm	Plug-in/SMD
5	Supply voltage	2.0 ~ 3.6V DC	Notes: the voltage higher than 3.6V is forbidden
6	Frequency Band	2400 ~ 2525MHz	Adjustable
7	Communication level	0.7VCC ~ 3.6V DC	VCC refers to the supply voltage
8	Operation Range	About 1100m	Test condition: Clear and open area, 20dBm , antenna gain: 5dBi , height: 2m , Air date rate: 250Kbps
9	Transmitting power	Maximum 20dbm	About 100mW
10	Air data rate	250kbps ~ 2Mbps	Can be configured to 250k , 1M , 2Mbps
11	Sleep current	1.0uA	MCU and wireless is disabled, VCC=3.0V
12	Transmitting current	130mA@20dBm	The largest emission current
13	Receiving current	20mA	Receives an average current
14	Communication interface	I/O	QFN32
15	Transmitting length	3 level FIFO.	1-32 bytes for one package
16	Receiving length	3 level FIFO.	1-32 bytes for one package
17	RSSI support	N/A	Support simple data packet loss statistics
18	Antenna type	PCB/IPEX	Default:PCB (50 ohm characteristic impedance)
19	Sensitivity	-102dBm	250kbps
20	Operating temperature	-40 ~ +85°C	Industrial-grade
21	Operating humidity	10% ~ 90%	Relative humidity, without condensation
22	Storage temperature	-40 ~ +125°C	Industrial-grade

3. Pin definition

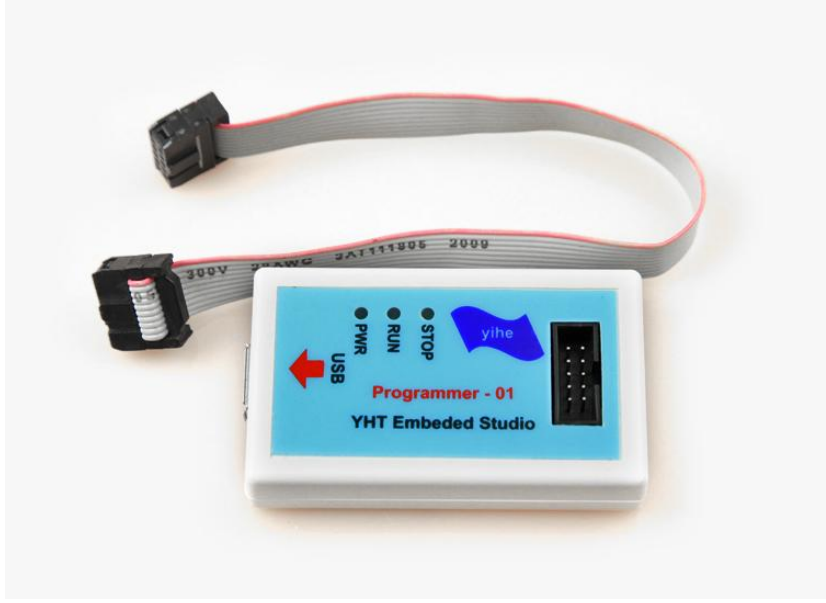

E05-MLE132AP2



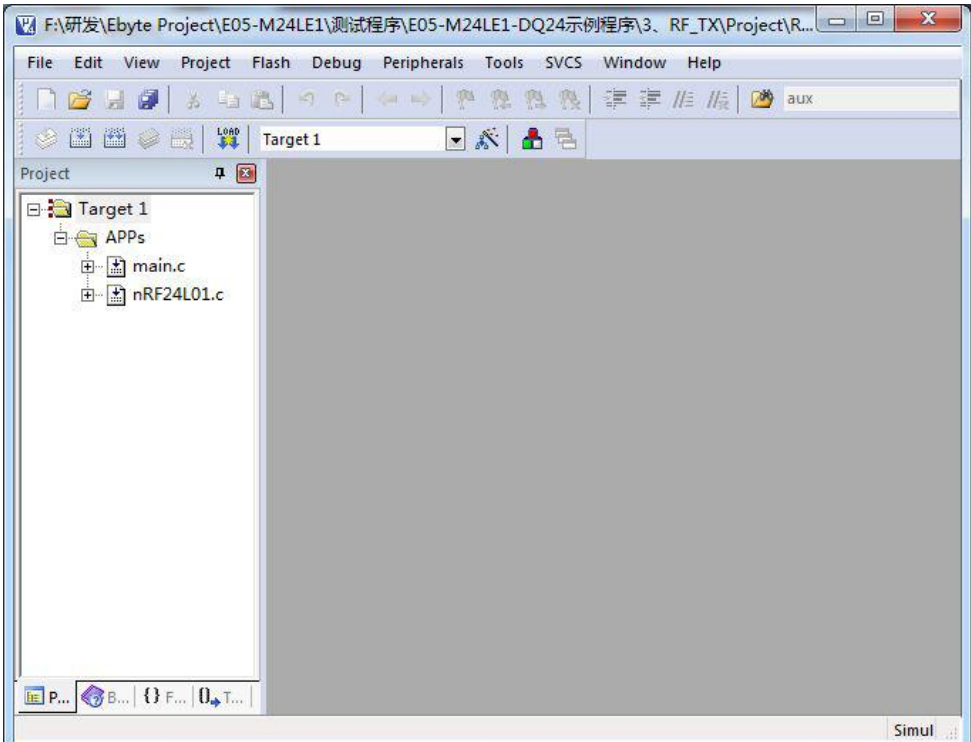
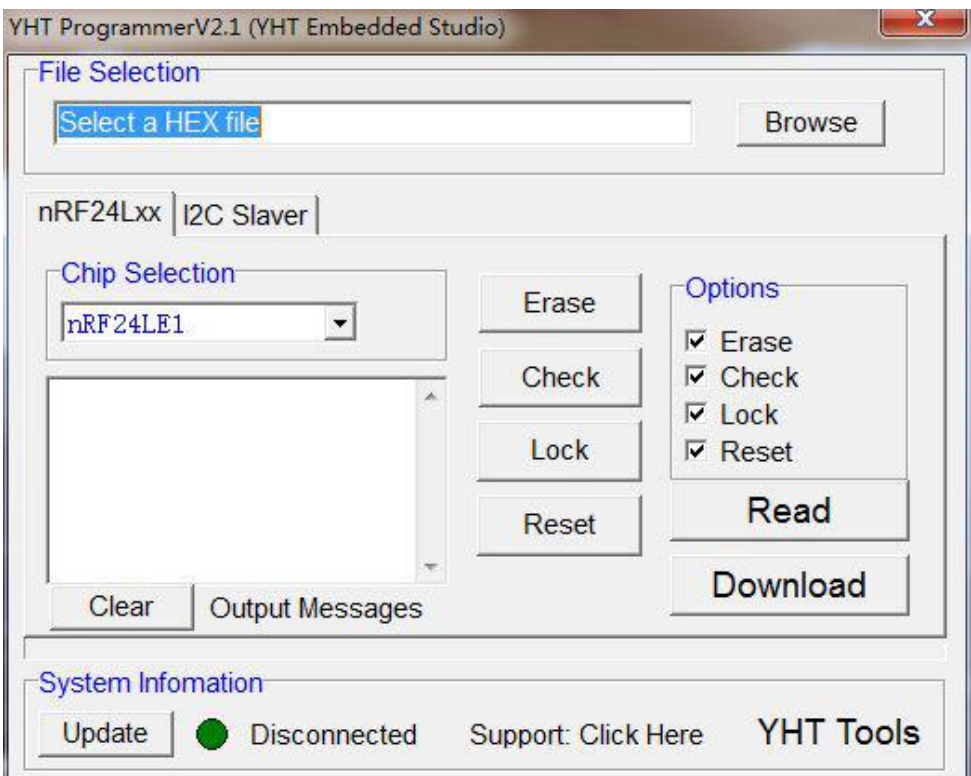
Pin No.	Pin item	Pin direction	Pin application
1	RXEN	Input	Switch for the receiving LNA function. Opened when high level, disabled when low level. The receiving sensitivity is greatly improved when it is on.
2	RST	Input	Low level reset pin
3	P1.4	Input /Output	MCU GPIO
4	P1.3	Input /Output	MCU GPIO
5	P1.2	Input /Output	MCU GPIO
6	P1.1	Input /Output	MCU GPIO
7	P1.0	Input /Output	MCU GPIO
8	P0.7	Input /Output	MCU GPIO
9	P0.6	Input /Output	MCU GPIO
10	P0.5	Input /Output	MCU GPIO
11	P0.4	Input /Output	MCU GPIO
12	P0.3	Input /Output	MCU GPIO
13	PROG	Input	For programming (floating is allowed)
14	P0.2	Input /Output	MCU GPIO
15	P0.1	Input /Output	MCU GPIO
16	P0.0	Input /Output	MCU GPIO
17	P1.6	Input /Output	MCU GPIO
18	P1.5	Input /Output	MCU GPIO
19	VCC		Power supply 2.0V-3.6V DC
20	GND		Ground

★ Please see more details in < nRF24LE1 Datasheet >, ★
★ such as pin definition, software drivers, communication protocol. ★

4. USAGE**E05-MLE132AP2**

No.	Keyword	Note
1	Download firmware	<p>Embedded 51 MCU, KEIL C51 can be used for software development.</p> <p>Program-download can only use our specified downloader YHT01-PROG, URAT or any other tools like JTAG、ISP、ICP cannot be used for download.</p> <p>Demo program can be provided for user as reference.</p> <p>User can download the compiled HEX file directly, or modify on the basis of primary code to achieve their needs.</p> <p>Due to the GPIO of program downloaded and some function reuse of base board, Please unplug the programmer after download to avoid dysfunction of GPIO reuse.</p> 
2	Testing base board	<p>We advise to use our specialized base board E05-MLE132-T for software development (click the Model-No can open the link), the module can be inserted on the base board directly.</p> <p>This base board leads to all GPIO of the module, and provides USB-TTL UART, LED, the user key, programmer interface etc., Easy for users to develop the product.</p> 

5. Softwarinstallation**E05-MLE132AP2**

No.	Note
1	<p>We advise to use UV4 and above version for KEILC51, Please check KEIL (help menu)</p> 
2	<p>Programming software YHT Programmer.exe, doesn' t need to install, can be used directly. The user can choose chip or HEX file to do the operations of download, read, erase and encryption. The interface is as follows:</p> 

6. Series of products**E05-MLE132AP2**

Model	RF IC	Package	Power	Range	Antenna Type
E05-MLE124A	nRF24LE1	Plug-in	0dBm	100m	PCB
E05-MLE124AP2	nRF24LE1	Plug-in	20dBm	1100m	SMA-K
E05-MLE132A	nRF24LE1	Plug-in	0dBm	100m	PCB
E05-MLE132AP2	nRF24LE1	Plug-in/SMD	20dBm	1100m	PCB/IPEX

7. FAQ**E05-MLE132AP2**

★ Operation Range is too short to reach the ideal distance		
1	Barrier	2.4G frequency features with poor penetration due to its physical properties, it has deep influence on the operation range when there are barriers.
2	Interference resource	Temperature, humidity, same frequency interference can increase the packet loss rate of the communication
3	Metal	Metal objects around the antenna, antenna placed inside metal case, which cause the signal attenuation badly.
4	Parameter values	Wrong parameter setting. Setting the air data rate too high, which lead to the shorter distance.

8. About us**E05-MLE132AP2**

Chengdu Ebyte Electronic Technology Co., Ltd is a high-tech company, focus on wireless transmission. Our company owns a number of independent research & development products and obtain unanimously approved customers. With powerful R&D team, our company can provide customers with perfect After-sales service and technical assistance.



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

【Website】: www.cdebyte.com

【Alibaba】: <http://cdebyte.en.alibaba.com>

【Address】: Innovation Center D347,4# XI-XIN road, High-tech district(West),Chengdu, Sichuan, China

【Contact person】: chenfang@cdebyte.com Elaine

【Contact person】: fanjuan@cdebyte.com Maggie

【Technical support】: support@cdebyte.com