SPECIFICATION

IEEE802.11 b/g/n 2.4GHZ 1T1R WiFi

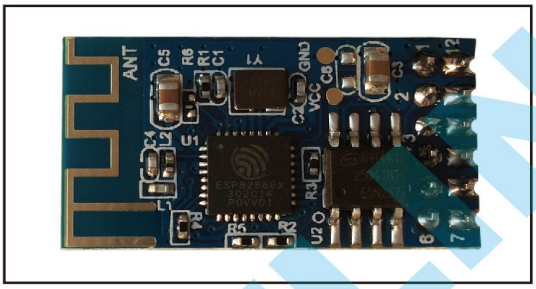
ZJT-LM03-V1.4 (ESP8266)

Stamp Hole/Needle WiFi Module

Version 1.4

CASTD Building 1 413,Road 1,Nanshan District science and Technology Park,ShenZhen

ESP8266 LMO3 WIFI Module



FULL IO, the most connection
type in the history of ESP8266 WIFI Module

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Product features:

1. WIFI 802.11 b/g/n, include TCP/IP HTTP JSON protocol
2. three work mode: station, soft-AP, station + soft-AP
3. Support I2C/UART/PWM/GPIO, 12 GPIO
4. Built-in low power 32 bit CPU, provides RAM space, MCU programmer
   Built-in AT command set, Main CPU can send AT command
5. Built-in TR switch, balun, LNA, power amplifier and
   matching network, power management
6. Standby mode, consumed power less than 1.0mW (DTIM3)
7. 802.11b mode, output power +19.5dBm
8. 2 ms wake up, connect and send data packet

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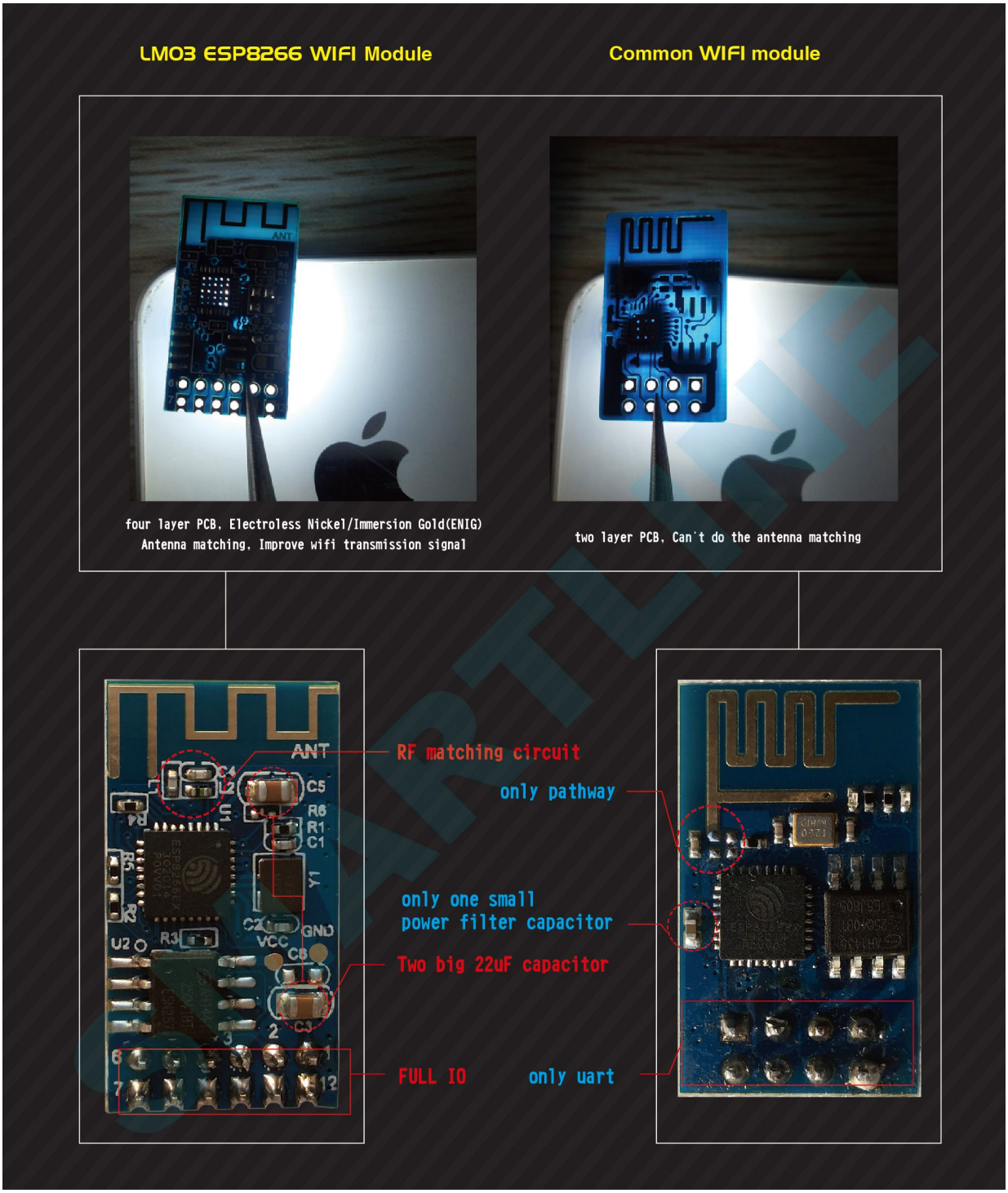
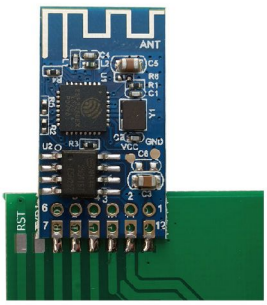
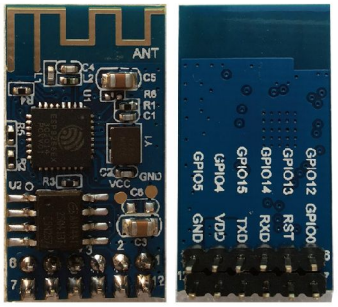

LM03 ESP8266 WIFI Module
Common WIFI module
four layer PCB, Electroless Nickel/Immersion Gold(ENIG)
Antenna matching, Improve wifi transmission signal
two layer PCB, Can't do the antenna matching
ANT
RF matching circuit
only pathway
only one small
power filter capacitor
Two big 22uF capacitor
FULL IO
only uart

Three connection mode



stamp hole

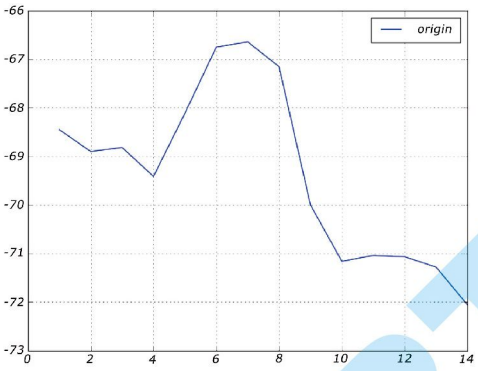


Double row pin loader

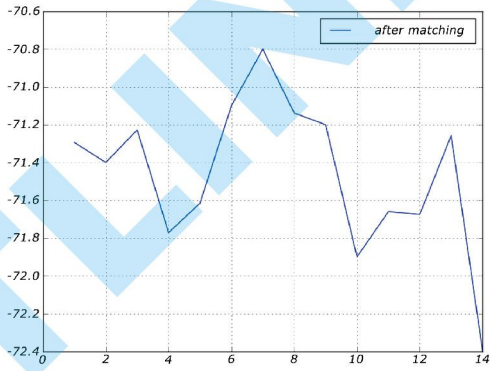
Single row needles

Antenna matching comparison diagram

Origin



After matching



signal improved a lot after antenna matching

The following data is the espressif official testing data

Origin

VBAT@3.3V,25° C in normal condition							
Items	Min.	Typ.	Max.	Unit	Channel	EVM	POWER
802.11n OFDM(MCS7)	-	-	-28	dBm	1	-21.36	14.08
					6	-21.65	15.61
					11	-21.83	17.07
802.11n OFDM(MCS6)	-	-	-25	dBm	1	-19.15	15.88
					6	-19.25	17.45
					11	-19.39	18.99
802.11n OFDM(MCS5)	-	-	-22	dBm	1	-18.57	16.72
					6	-18.49	18.34
					11	-18.42	19.97
802.11n OFDM(MCS4)	-	-	-19	dBm	1	-14.92	18.28
					6	-14.6	19.82
					11	-15.45	21.16
802.11n OFDM(MCS3)	-	-	-16	dBm	1	-14.19	18.96
					6	-14.43	20.27
					11	-14.57	21.88
802.11n OFDM(MCS2)	-	-	-13	dBm	1	-14.18	19.08
					6	-15.07	20.26
					11	14.78	21.83

After matching

VBAT@3.3V,25° C in normal condition							
Items	Min.	Typ.	Max.	Unit	Channel	EVM	POWER
802.11n OFDM(MCS7)	-	-	-28	dBm	1	-28.44	12.77
					6	-28.57	13.35
					11	-28.62	14.33
802.11n OFDM(MCS6)	-	-	-25	dBm	1	-26.66	14.87
					6	-27.27	15.24
					11	-27.47	16.37
802.11n OFDM(MCS5)	-	-	-22	dBm	1	-24.62	15.5
					6	-25.86	16.16
					11	-25.62	17.26
802.11n OFDM(MCS4)	-	-	-19	dBm	1	-22.8	16.73
					6	-23.13	17.49
					11	-23.21	18.59
802.11n OFDM(MCS3)	-	-	-16	dBm	1	-19.01	17.41
					6	-20.12	18.17
					11	-20.06	19.2
802.11n OFDM(MCS2)	-	-	-13	dBm	1	-18.94	17.23
					6	-20.44	17.95
					11	20.59	18.86

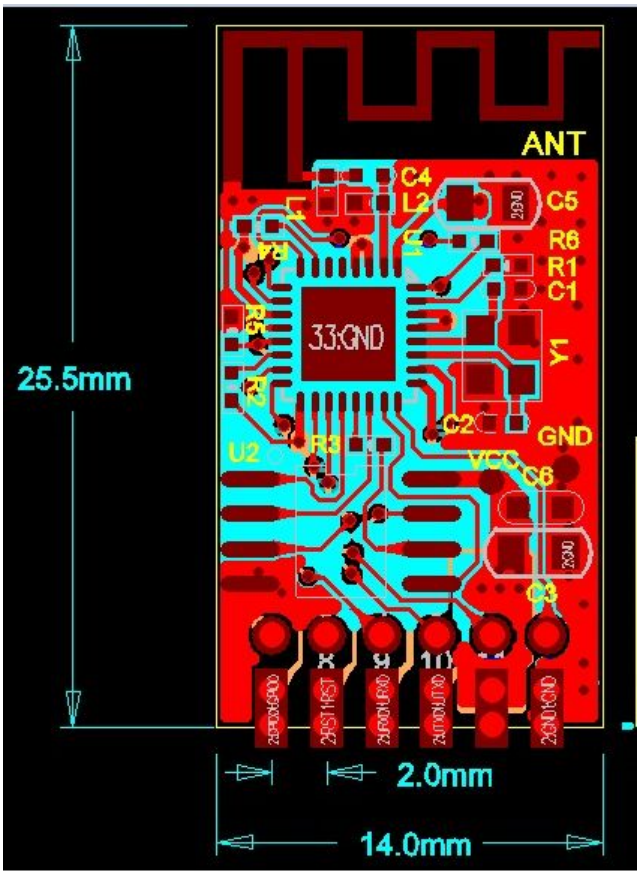
signal improved a lot after antenna matching

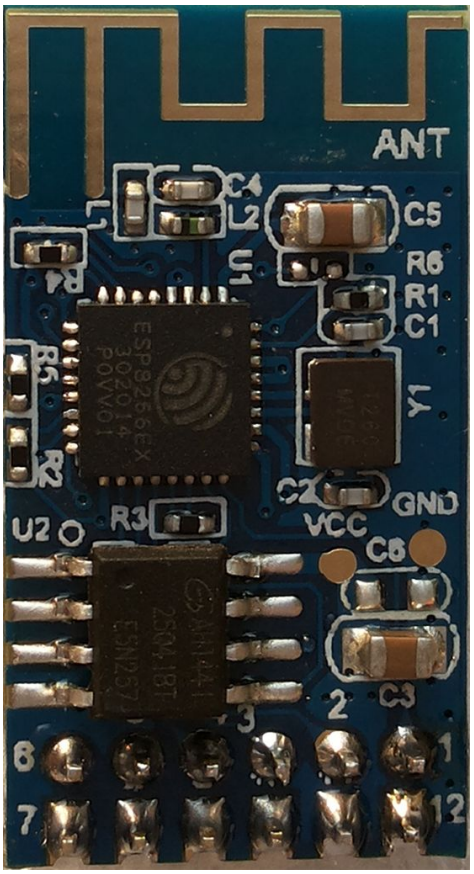
3.Electrical Characteristics

Module Type	Voltage	Current	Temperature
LM03	3.0--3.6V	Ideal=15mA,work=200mA	-20 -- 100 Degree

4.Size

Length	Width	High	PIN Dist
25.5 mm	14 mm	3.0 mm	2.0 mm





5.Module Pin define

PIN	Function	Description
1	GPIO5	GPIO5/PWM
2	GPIO4	GPIO4
3	GPIO15	MTDO/GPIO15/PWM/SPI SDO
4	GPIO14	MTMS/GPIO14/I2C_SCL/SPI SCS
5	GPIO13	GPIO13/PWM/SPI SCLK
6	GPIO12	MTDI/GPIO12/PWM/SPI SDI
7	GPIO0	GPIO0
8	RST	Deep sleep connect to GPIO16 in module
9	uRXD	Module serial Receive/GPIO3
10	uTXD	Module serial send/GPIO1
11	VDD33	Module VCC, 3.3V
12	GND	Module GND

Remark：1. Double Needle all IO

2.Single Needle Serial Function

3.Single Stamp Hole Serial Function

6.Program Mode

GPIO0	GPIO2	GPIO15
Low voltage （1K Resistance connect to GND）	High Voltage	Low voltage （1K Resistance connect to GND）

7.Work Mode

GPIO0	GPIO2	GPIO15
High Voltage	High Voltage	Low voltage （1K Resistance connect to GND）