Yealink YL43456 WiFi and Bluetooth Module Instruction Manual

**Wi-Fi&Bluetooth Module
YL43456**

Contents

YL43456 WiFi and Bluetooth Module

Parameters:

| Model name	YL43456
Product type	Wi-Fi&Bluetooth Module
WiFi standards	IEEE 802.11 a/b/g/n/ac
BT standards	Bluetooth 2.1+ Bluetooth 3.0+Enhanced Data Rate (EDR)+ Bluetooth 5.0
Chip	BCM43456
Host interface	Wi-Fi : SDIO, BT :UART
Size	12mm • 12mm • 2.0mm
Wi-Fi VID/PID	TBD
BT VID/PID	TBD
Weight	TBD
Environment	
Voltage	3.6V
Temperature	-40°C-85°C
Storage temperature	-45°C-135°C
RF character	
Frequency	MAN: 2.4 GI-Iz : 2412-2462 MHz 5 GHz: 5150-5350 MHz, 5470-5725 MHz, 5725-5850 MI-Iz BT & BLE: 2402-2480 MHz
Modulation	WLAN: MSS, OFDM, BT: GFSK, fl/4 DQPSK,8DPSK BLE: GFSK
Max Output power	WLAN: 802.118: 20.71 dBm 802.11a @5GHz: 16.28 dBm 802.11n @5GHz: 15.84 dBm (N20) 802.11n @5GHz: 15.48dBm (N40) 802.11ac @5GHz: 15.91 dBm (VHT20) 802.11ac @5GHz: 15.52 dBm (VHT40) 802.11ac @5GHz: 14.73 dBm (VHT80) BT: BDR: 7.95 dBm BLE: 3.53 dBm
Security	◆WAPI ◆ WEP 64-bit and 128-bit encryption with H/W TKIP processing ◆ WPA/WPA2 Personal (Wi-Fi Protected Access) ◆WMM/WMM-SA/WMM-PS (U-APSD) ◆AES-CCMP hardware implementation as part of 802.11i security standard

Pin Definition

Pin Description

Top View

Pin No.	Definition	Basic Description Type	Type
1	GND	GROUND	GND
2	WL BT ANT	Wi-Fi/BT RF signal	I/O
3	GND	GROUND	GND
4	NC	Floating Pin, No connect to anything.	Floating
5	NC	Floating Pin, No connect to anything.	Floating
6	Host_Wakeup_BT/GPI034	Host wakeup BT device	IN
7	BT_wakeup_Host	BT Device wakeup Host	I/O
8	TMS	Reserve for EJTAG	I/O
9	VDD	DC power supply +3.3V input	VCC
10	NC	Floating Pin, No connect to anything.	Floating
11	NC	Floating Pin, No connect to anything.	Floating
12	WL EN	GPIO pin to on/off the Wi-Fi function by software. Active high. Reserve pull high 100K resistor and shunt 100pF capacitor to GND on platform.	IN
13	WL_wakeup_Host/GPI035	WLAN device wakeup host	OUT
14	SDIO DATA2	SDIO Data Line 2	I/O

15	SDIO DATA3	SDIO Data Line 3	I/O
16	SDIO_CMD	SDIO Command Input	I/O
17	SDIO_CLK	SDIO Clock Input	IN
18	SDIO_DATAO	SDIO Data Une 0	I/O
19	SDIO_DATA1	S010 Data Une 1	I/O
20	GND	GROUND	GND
21	CLK_REQ/GPI011	Clock request output	DO
22	VDDIO	1.8V-3.3V VDDIO supply for WIAN and BT	VCC
23	NC	Floating Pin, No connect to anything.	Floating
24	LPO	External low-power 32.768KHz clock input.	IN
25	PCM_OUT	PCM synchronous data output, connected to PCM_IN on the host.	OUT
26	PCM_CLK	PCM Clock	I/O
27	PCM_IN	PCM synchronous data input, connected to PCM_OUT on the host.	IN
28	PCM_SYNC	PCM synchronous data SYNC	I/O
29	TDI	Reserve for EJTAG	IN
30	TDO	Reserve for EJTAG	OUT
31	GND	GROUND	GND
32	TCK	Reserve for EJTAG	GND
33	GND	GROUND	GND
A	BT_EN	GPIO pin to on/off the BT function by software. Active high. Reserve pull high 100K resistor and shunt 100pF capacitor to GND on host.	IN
35	NC	Floating Pin, No connect to anything.	Floating
36	GND	GROUND	GND
37	NC	Floating Pin, No connect to anything.	Floating
38	NC	Floating Pin, No connect to anything.	Floating
39	Debug_UART_ThD	TXD for Wi-Fi Uart_debug only, connected to RXD of the host.	OUT
40	DebuLUART_RXD	RXD for Wi-Fi Uart_debug only, connected to TXD of the host.	IN

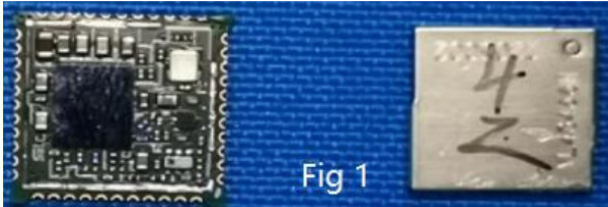| 41	UART_RTS	UART Ready To Send, connected to as on the host.	OUT
42	UART_TXD	UART Transmit Data, connected to RXD on the host.	OUT
43	UART_RXD	UART Receive Data, connected to TXD on the host.	IN
44	UART CTS	UART Clear To Send, connected to RTS on the host.	IN

Enclosure information
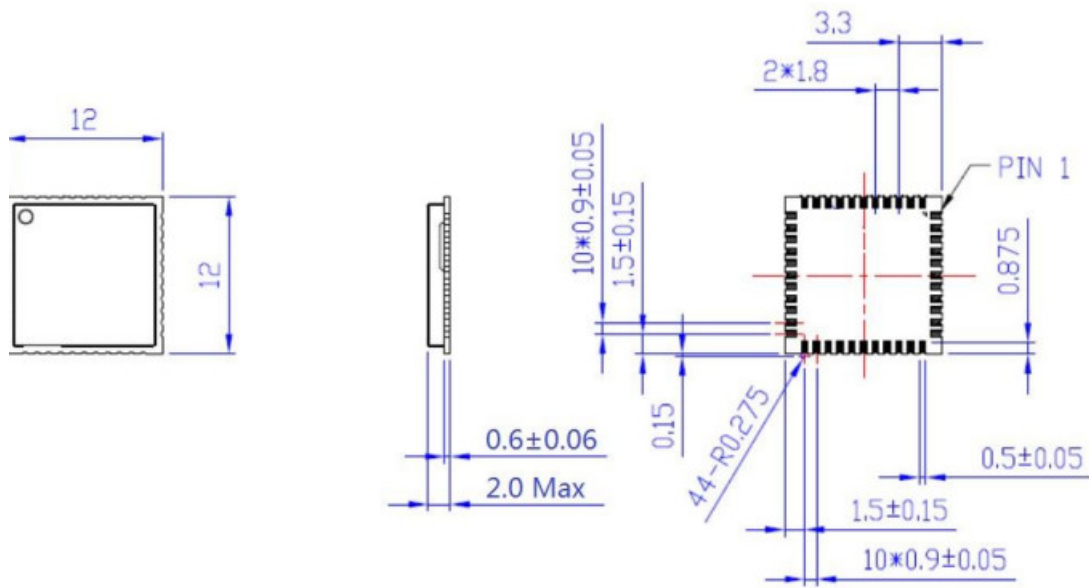
Tolerances unless otherwise specified : ±0.15mm

Module installation:

The Wi-Fi&Bluetooth wireless module is installed in the lower left corner of the Whole mainboard by the factory operator during the production process.

After assembly, the Wi-Fi&Bluetooth wireless module is built-in by welding in the whole mac hine, which is not removable and will not be used alone, and does not require additional ope ration by users and other personnel.

The procedure and installation position of Wi-Fi&Bluetooth wireless module production and assembly are shown as below:

Wi-Fi&Bluetooth	1		
Module	1	Fig 1 is the Wi-Fi&Bluetooth ModuleAssembly the Wi-Fi&Bluetooth Module in the lower left corner ofthe whole mainboard, as Fig 2	Fig 1

Fig 2
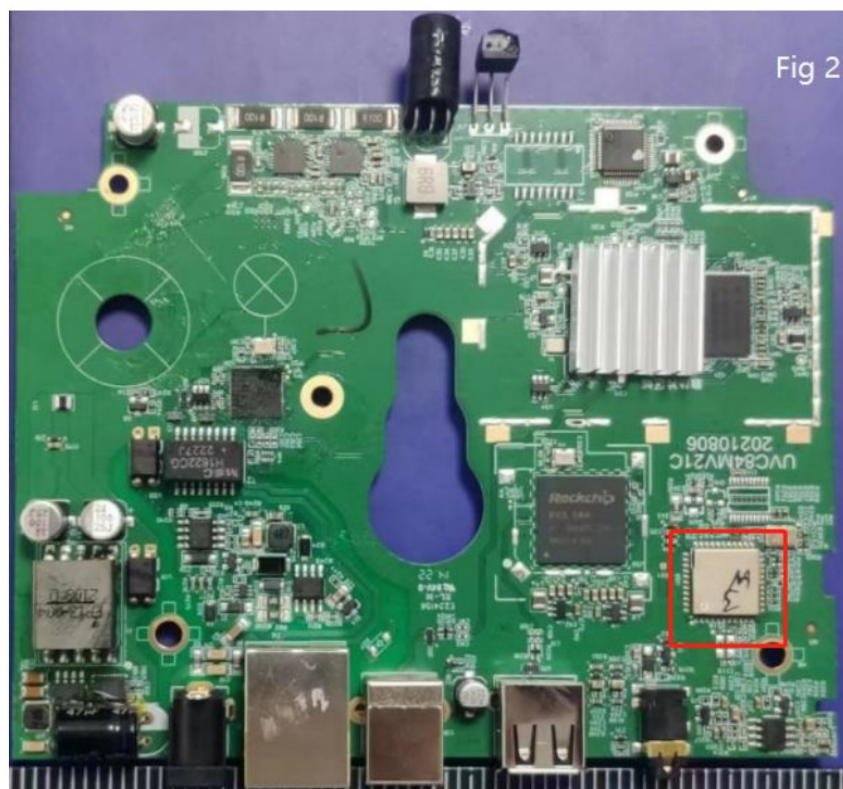
Host installation:

The host will be assembled by the factory operator during the production process, and the consumer can mount the host either on the conference table, or mount it on the top of TV, on the wall, on the ceiling, onto a TV stand or a tripod with great flexibility according to your needs.

FCC regulatory compliance statement

§15.19 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.

§15.21 Information to user

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

- **Limited module procedures**

   This module is a limited module.

- **RF exposure considerations**

   This Module complies with FCC radiation exposure limits set forth for an uncontrolled environment. This

equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

- **Label and compliance information**

  Please notice that 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 FCC ID: T2C-YL43456" any similar wording that expresses the same meaning may be used.

  § 15.19 Labelling requirements shall be complied on end user device.

  Labelling rules for special device, please refer to §2.925, § 15.19 (a)(5) and relevant KDB publications. For E-label, please refer to §2.935.

- **NII:**

  According to FCC Part 15.407 (g), Yealink is responsible for U-NII device to ensure frequency stability in order to keep the transmission within the operating band under all normal operating conditions as specified in the user manual.

- ISED compliance statement

  This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

  (1) This device may not cause interference.

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

- **ISED Radiation Exposure statement**

  This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment.

  This equipment should be installed and operated with minimum distance 20cm between the radiator and your body.

- **End Device Labelling**

  Please notice that if the IC 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 IC: 10741A-YL43456" any similar wording that expresses the same meaning may be used.

- **5G Wi-Fi Use Notice**

  1. the device for operation in the band 5150-5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems;

  2. the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall comply with the e.i.r.p. limit; and

  3. the maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate.

  4. Users should also be advised that high-power radars are allocated as primary users (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

- **Antennas information for FCC & IC**

  ♦The module itself does not have an antenna. During the test, the host provides a FPC antenna with a maximum gain of 3dBi.

  ♦The module is limited to Yealink installation only

  ♦ Yealink integrators is responsible for ensuring that the end-user has no manual instructions to remove or install module

♦For FCC only: The module is limited to installation in mobile or fixed applications, that separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations

♦ Antenna installation requirements: refer to Pin Definition, while installing the module, the antenna also has been installed in the host;

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Documents / Resources

Wi-Fi&Bluetooth Module **YL43456** (specification table)	[**Yealink YL43456 WiFi and Bluetooth Module**](#) [pdf] Instruction Manual T2C-YL43456, T2CYL43456, YL43456 WiFi and Bluetooth Module, WiFi and Bluetooth Module, Bluetooth Module, Module