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# AIFA TECHNOLOGY CORP.

## WiFi-04

### Module Specification

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## FCC Statement

### Federal Communication Commission Interference Statement

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 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.

FCC Caution: To assure continued compliance, any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment. (Example - use only shielded interface cables when connecting to computer or peripheral devices).

### End Product Labeling

This transmitter module is authorized only for use in devices where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in visible area with the following: "Contains FCC ID: 2ABUR-WIFI-04"

## FCC Statement

### End Product Manual Information

The user manual for end users must include the following information in a prominent location “IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20cm from all persons and must not be colocated or operating in conjunction with any other antenna or transmitter.” 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.

**IMPORTANT NOTE:** In the event that these conditions can not be met (for example certain laptop configurations or colocation with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID can not be used on the final product. In these circumstances, the OEM integrator will be responsible for reevaluating the end product (including the transmitter) and obtaining a separate FCC authorization. This device is intended only for OEM integrators under the following conditions: The antenna must be installed such that 20 cm is maintained between the antenna and users. As long as a condition above is met, further transmitter test will not be required. However, the OEM integrator is still responsible for testing their end product for any additional compliance requirements required with this module installed (for example, digital device emissions, PC peripheral requirements, etc.).

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### 1. Introduction :

AIFA TECHNOLOGY WiFi-04 is designed to function as a Wi-Fi module, containing a powerful processing unit, a storage capacity of Wi-Fi chips, and added PCB antenna design, oscillator and memory, for use in networking-related products, Wi-Fi technology-related applications.

#### ● Product Features:

- Small size, easy to install on each product
- I / O port ready, easy to design even more product features
- Built-in A / D conversion, PWM output function
- Built-in antenna, no need to purchase another antenna or match with another product
- Built-in 4Mbits FLASH ROM (expandable)
- Supports 802.11 b / g / n
- SDIO 2.0, SPI, UART
- Standby power consumption is less than 1.0mW (DTIM3)

### 2. Applications:

- Air conditioning Wi-Fi remote control
- Smart home IR appliance controller
- Smart plug
- Smart home appliances
- Industrial wireless control
- Network camera
- Wi-Fi sensor
- Wearable Electronics
- Other IoT Related Products

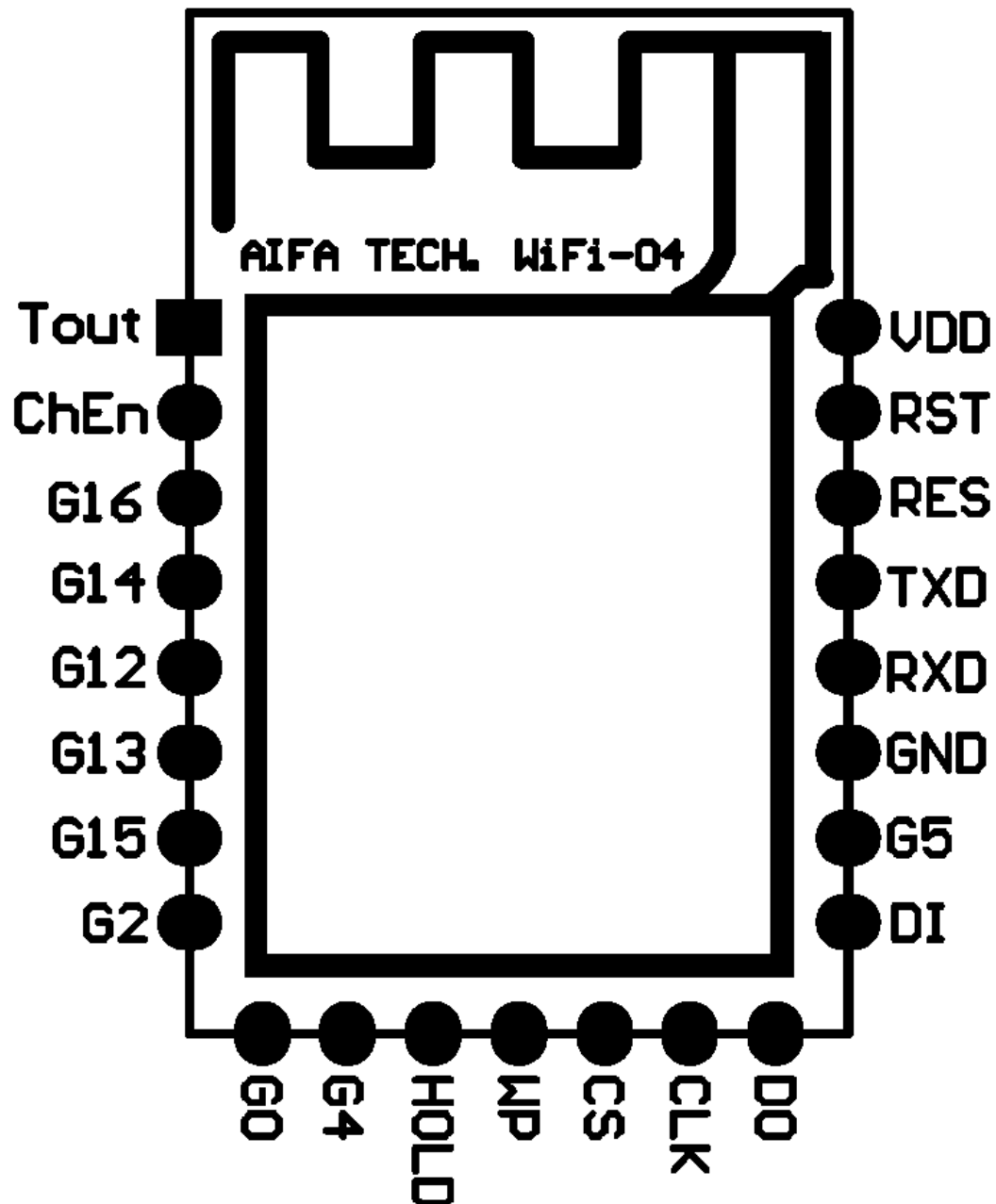
3. Product Specifications :

a. Software / hardware specifications :

Operating Voltage	3.0V~3.6V
Working current (Steady-state mode)	Mean: <12mA Peak: 300mA Standby: <200μA
Working current (Continuous emission signal)	Mean: <70mA Peak: 300mA
IC operating temperature	-40°C~125°C
Environment	Temperature: <40°C Relative humidity: <90%R.H.
Network type	STA/AP/STA+AP
Encryption mode	WEP/WPA-PSK/WPA2-PSK
Encryption Type	WEP64/WEP128/TKIP/AES
Network protocol	IPv4, TCP/UDP/FTP/HTTP



b. I / O port pin layout:

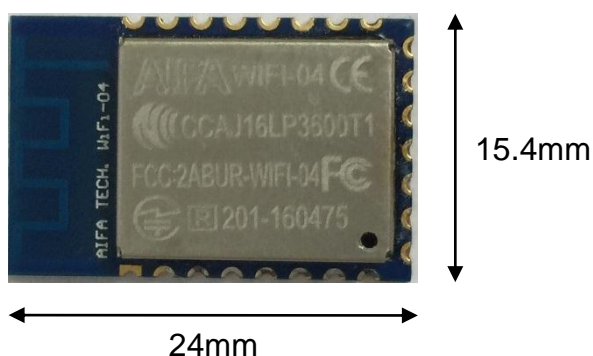


I / O port pin definition table:

PIN	Pin Name	Pin assignment	PIN	Pin Name	Pin assignment
1	Tout	10 bits 0v-1.1v Analog input pin	13	CS	SPI mode
2	ChEn	Enable pin. High=on, Low = off	14	CLK	SPI mode
3	GPIO 16	I/O port	15	DO	SPI mode
4	GPIO 14	I/O port	16	DI	SPI mode
5	GPIO 12	I/O port(PWM)	17	GPIO 5	I/O port
6	GPIO 13	I/O port(PWM)	18	GND	Ground(0V)
7	GPIO 15	I/O port(PWM)	19	RXD	UART data input
8	GPIO 2	I/O port	20	TXD	UART data output
9	GPIO 0	I/O port	21	RES	Don't care
10	GPIO 4	I/O port	22	RST	Reset
11	HOLD	SPI mode	23	VDD	Power(+ 3.3V)
12	WP	SPI mode			

### c. WiFi-04 Dimensions :

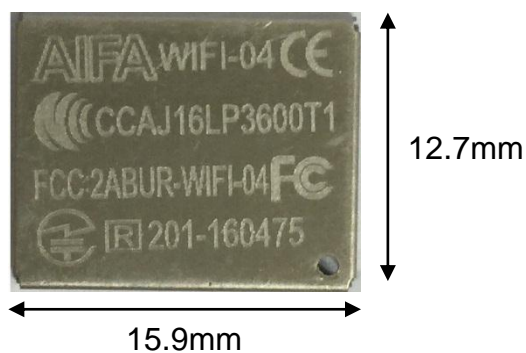
#### 1: PCB Size:



#### 2: PCB Depth (Including Insulating protective cover) :



#### 3: Insulating protective cover Size:



d. Power :

The following data was measured with 3.3V power consumption and at an ambient temperature of 25°C.

Mode	Normal value	Unit
802.11b/n/g transmitted signal	135~215	mA
802.11b/n/g reception signal	60~62	mA
System Standby mode	0.9	mA
Deep Sleep Mode	10	μA
Saving mode DTIM1	1.2	mA
Saving mode DTIM3	0.86	mA
Shutdown	0.5	μA

e. RF Specifications:

The following data was measured at room temperature with a voltage of 3.3V and 1.1V respectively.

Description	Min	Normal value	Maximum	Unit
Input Frequency	2412		2484	MHz
Input impedance		50		Ω
Input reflection			-10	dB
72.2Mbps down , PA output power	14	15	16	dBm
11b mode , PA output power	17.5	18.5	19.5	dBm

Description	Normal value	Unit
Sensitivity		
CCK,1Mbps	-98	dBm
CCK,11Mbps	-91	dBm
6Mbps(1/2BPSK)	-93	dBm
54Mbps(3/4 64-QAM)	-75	dBm
HT20, MCS7(65Mbps, 72.2Mbps)	-71	dBm
Adjacent channel interference		
OFDM, 6Mbps	37	dB
OFDM, 54Mbps	21	dB
HT20, MCS0	37	dB
HT20, MCS7	20	dB

#### 4. Contact Information

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