

PRODUCT SPECIFICATION

MODEL	XHM-PB63D31
PRODUCT DESCRIPTION	IEEE 802.11 b/g/a/n/ac 2.4G/5GHz 1T1R WLAN & BT 2.1+EDR/3.0+HS /4.0 USB Combo Module
TYPE	USB Module 10 PIN
DIMENSION	32.1mm*20.3mm*3mm
MAIN CHIPSET	Realtek RTL8821AU

Revision: V0.1

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REVISION HISTORY

Revision	Issue Date	Change Note
0.1	Nov.03, 2016	Preliminary release

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1. INTRODUCTIO

XHM-PB63D31 is a highly integrated WiFi+BT combo USB module. It used RTL8821AU single chip, supporting IEEE802.11b/g/a/n/ac 1T1R up to 433Mbps, and Bluetooth specifications BT2.1+EDR, 3.0+HS, and BT4.0 BLE as well.

XHM-PB63D31 is the module with optional shielding case in case that the EMI/EMC is concerned.

1.1 Model Define

Model	XHM-PB63D31
Main Chip	RTL8821AU
WLAN 802.11 a/b/g/n/ac	YES
BT 2.1+EDR/3.0/3.0+HS/4.0	YES
Shielding case	YES

2. FEATURES

- A cost-effective module with highly integrated WiFi, and WiFi+BT combo.
- Stamp module size 32.1x20.3mm with 10pins for FFC connector.
- Lowest power consumption and high performance.
- USB interface for both WLAN and Bluetooth.
- Operates at 2.4GHz and 5GHz frequency band.
- Fully compliant with IEEE 802.11 b/g/a/n/ac and IEEE 802.11 d/e/h/i.
- Data rates supporting up to 433Mbps downstream and 433Mbps upstream PHY rates using 80MHz at 802.11ac.
- Data rates supporting up to 150Mbps downstream and 150Mbps upstream PHY rates using 40MHz at 802.11n.
- Enterprise level security which can apply WPA/WP2 certification for WiFi.
- Fully qualified for Bluetooth v2.1+EDR, 3.0, 3.0+HS, and BT 4.0.
- Bluetooth 4.0 Dual Mode support- Simultaneous LE(Low Energy) and BR/EDR.
- Enhanced BT/WiFi Coexistence control to improve transmission quality in different profiles.
- Full-speed Bluetooth operation with Piconet and Scatternet support.
- Support Bluetooth adaptive power management mechanism.
- Full-features software utility for easy configuration and management.
- USB 2.0 bus interface 480Mbps high speed.
- ROHS compliance.

3. SPECIFICATIONS

3.1 GENERAL SPECIFICATIONS

Model Name	XHM-PB63D31	
Main Chipset	Realtek RTL8821AU	
Standard	WLAN	IEEE 802.11ac, IEEE 802.11a, IEEE 802.11b, IEEE 802.11g, IEEE 802.11n, IEEE 802.11d, IEEE 802.11e, IEEE 802.11h, IEEE 802.11i
	Bluetooth	BT v2.1+EDR, BT v3.0, BT v3.0+HS, BT v4.0
Bus Interface	WLAN	USB 2.0
	Bluetooth	USB 2.0
Dimensions(L*W*H)	32.1mm*20.3mm*3mm	
Operating voltage	3.3 V ±10%	

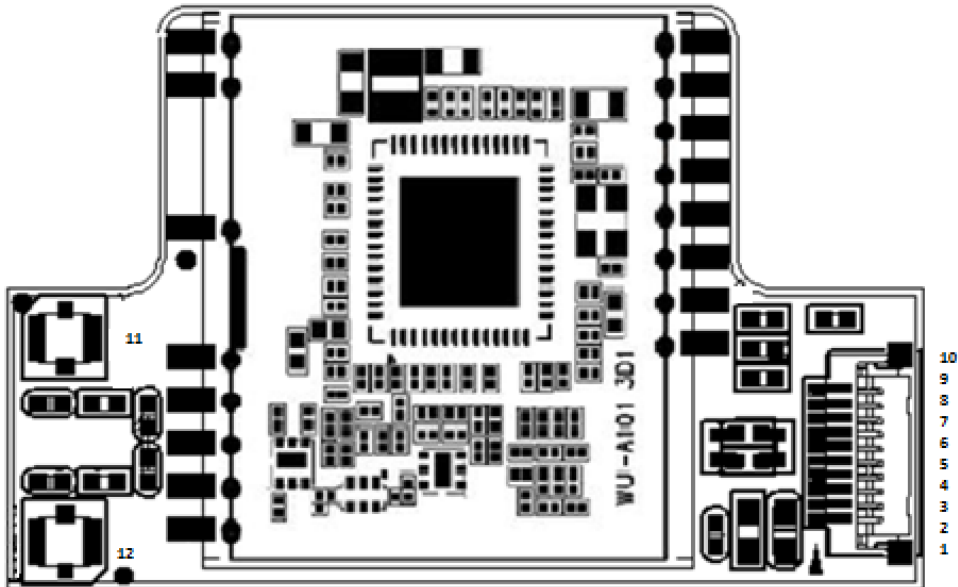
3.2 ELECTRICAL CHARACTERISTICS

Frequency Range	2.4GHz / 5GHz	
Data Transfer Rate	802.11b	11, 5.5, 2, 1 Mbps
	802.11a	54, 48, 36, 24, 18, 12, 9, 6 Mbps
	802.11g	54, 48, 36, 24, 18, 12, 9, 6 Mbps
	802.11n	MCS 0 to 7 for HT20MHz MCS 0 to 7 for HT40MHz
	802.11ac	Up to 433.3Mbps
	BT	1 Mbps for Basic Rate 2, 3 Mbps for Enhanced Data Rate 6, 9, 12, 18, 24, 36, 48, 54 Mbps for High Speed
Media Access Control	WLAN	CSMA/CA with ACK
	BT	AFH, Time Division

Modulation	802.11b	CCK, DQPSK, DBPSK
	802.11a	64 QAM, 16 QAM, QPSK, BPSK
	802.11g	64 QAM, 16 QAM, QPSK, BPSK
	802.11n	64 QAM, 16 QAM, QPSK, BPSK

	802.11ac	OFDM, 256QAM, 64 QAM, 16 QAM, QPSK, BPSK
	BT	8DPSK, $\pi/4$ DQPSK, GFSK
Network Architecture	WLAN	Adhoc mode (Peer-to-Peer) Infrastructure mode Software AP WiFi Direct
	BT	Pico Net Scatter Net
Operating Channel	WLAN 2.4GHz	11: (Ch. 1-11) – United State 13: (Ch. 1-13) – Europe 14: (Ch. 1-14) – Japan
	BT 2.4GHz	Ch. 0-78
Security	WLAN	WPA, WPA-PSK, WPA2, WPA2-PSK, WEP 64bit & 128bit, IEEE 802.11x, IEEE 802.11i
	BT	Sample Pairing

3.3 MODULE PIN ASSIGNMENT

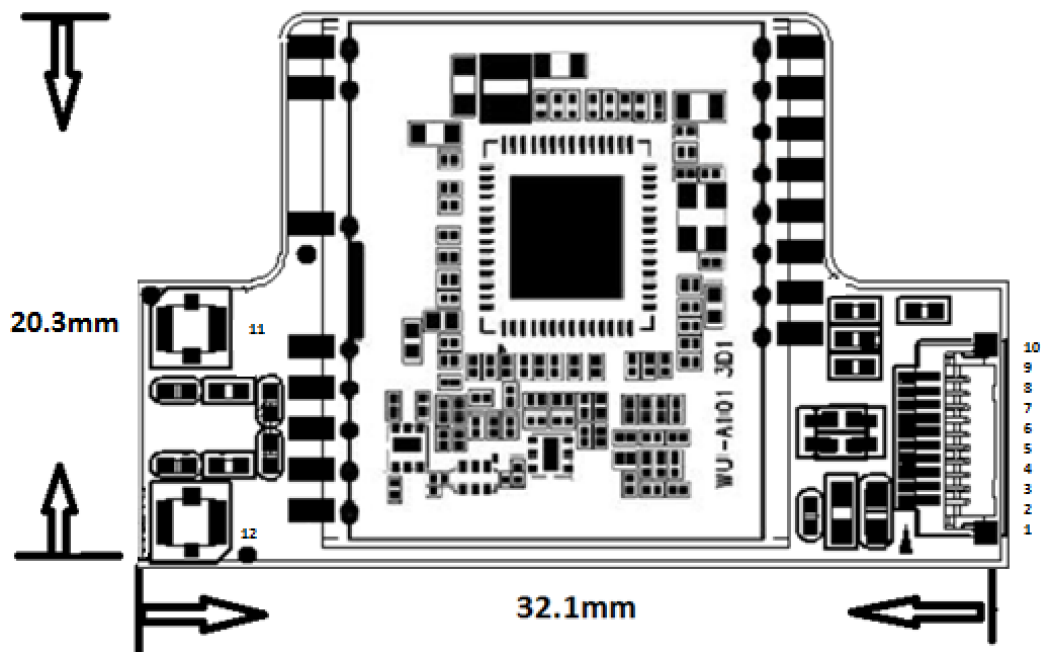


Top Layer (Top View)

PIN	Function	PIN	Function
1	VDD	7	NC
2	VDD	8	NC
3	NC	9	GND
4	NC	10	GND
5	USB_DN	11	ANT_MAIN
6	USB_DP	12	ANT_AUX

3.4 MECHANICAL

3.5.1 Module Dimension



XHM-PB63D31	Length	Width	Height
Module	32.1mm (±1.5%)	20.3mm (±1.5%)	3mm (±1%)

3.5.2 Footprint Dimension

The dimension shown as above is just for reference; please check the details in dxf file which will be provided for engineering design.

3.5 ENVIRONMENTAL

Operating	Operating Temperature: 0°C to +70 °C
Storage	Temperature: -20°C to +80°C (non-operating)

3.6 SOFTWARE

OS supported: MS Windows/ Linux / Android.

4. PACKAGE

12pcs/tray, 2,160pcs/box