

HWiFi6-1 user manual

一、Module Introduction

HWiFi6-1 is a highly integrated dual-band WLAN module that contains a WLAN AP module (BL-M7621AX7) and a WLAN WiFi module (BL-M8832AU1).

The BL-M7621AX7 module is built from MT7621DA, MT7905 and MT7975. It combines the 2T2R dual-band WLAN subsystem. The module integrates dual-core MIPS1004Kc (880MHz), HNAT/HQoS/Samba/VPN accelerator, 1-port GbE switch and 1 UART port for debugging. The module is compatible with IEEE 802.11a /b/g/n/ac/ax standard. A WLAN 2.4G RF link with 40MHz bandwidth can support a physical rate of 573Mbps. A WLAN 5.8G RF link with 80MHz bandwidth can support a physical rate of 1201Mbps.

The BL-M8832AU1 incorporates the 2T2R dual-band WLAN subsystem. Compatible with IEEE 802.11a /b/g/n/ac/ax standards, the module provides physical layer rates of up to 1200Mbps, delivers feature-rich wireless connectivity to a high standard, and delivers reliable, cost-effective high throughput from long distances.

Functions of BL-M7621AX7 module:

Operating frequency: 2.4 ~ 2.4835GHz or 5.15 ~ 5.85GHz (reserved 5.926 ~ 7.125Ghz WLAN band)

WLAN functions:

Dual-band 2T2R mode with 20/40/80Mhz bandwidth is supported

Supports MU-MIMO receiving and MU-OFDMA sending/receiving

Transmit/receive beamformers are supported

Support DBDC (Dual frequency dual concurrent)

Embedded MIPS1004Kc (880MHz, dual-core) with 32KB I cache and 32KB D cache per core

Functions of BL-M8832AU1 module:

Operating frequency: 2.4 ~ 2.4835GHz or 5.15 ~ 5.85GHz

Host interface: Compatible with USB3.0 and USB2.0 for WLAN

IEEE standard: IEEE 802.11a/b/g/n/ac/ax

Wireless data rates are up to 573.5Mbps or 1201Mbps

二、Detailed Specification:

Module	KTC-WIFI6 1800Mbps WLAN Module
IC	MT7621DA,MT7905DAN,MT7975DN,RTL8832AU-VF1-CG
WLAN standard	IEEE 802.11 a/b/g/n/ac/ax
port	Gigabit PHY/USB3.0 compatible with USB2.0/UART
antenna	IPEX connector for external WLAN PCB antenna Antenna size:160*16*1.0mm

PCB module size	139*73*16.1mm (L*W*H)
WiFi6 module size	167.8*80*28.2
Power source	DC 12V±0.5V(power range 5~14V) @ 1500 mA (Peak for 12V)
Working temperature	-10°C to +40°C
Working humidness	10% to 95% RH (Non-Condensing)

三、PIN Description:

No.	Pin Name	Type	Level	Module Pin Description
1	RESET	I		BL-M8832AU1 module shut down signal active low
2	GND	P		Ground
3	SSUSB_RXN	I	3.3V	USB 3.0 differential pair RXN signal
4	SSUSB_RXP	I	3.3V	USB 3.0 differential pair RXP signal
5	GND	P		Ground
6	SSUSB_TXN	O	3.3V	USB 3.0 differential pair TXN signal
7	SSUSB_TXP	O	3.3V	USB 3.0 differential pair TXP signal
8	GND	P		Ground
9	USB_DM	I	3.3V	USB 3.0 compatible USB 2.0 differential pair D- signal
10	USB_DP	O	3.3V	USB 3.0 compatible USB 2.0 differential pair D+ signal
11	VIN	P		12V Main power supply and the power range is:5~16V
12	VIN	P		12V Main power supply and the power range is:5~16V
13	GND	P		Ground
14	P4_A-	I/O	3.3V	Differential pair A- signal of LAN port4
15	P4_A+	I/O	3.3V	Differential pair A+ signal of LAN port4
16	GND	P		Ground
17	P4_B+	I/O	3.3V	Differential pair B+ signal of LAN port4
18	P4_B-	I/O	3.3V	Differential pair B- signal of LAN port4
19	RXD1	I		UART1 input signal
20	TXD1	O		UART1 output signal
21	NC	NC		NC
22	GND	P		Ground
23	GND	P		Ground
24	GND	P		Ground

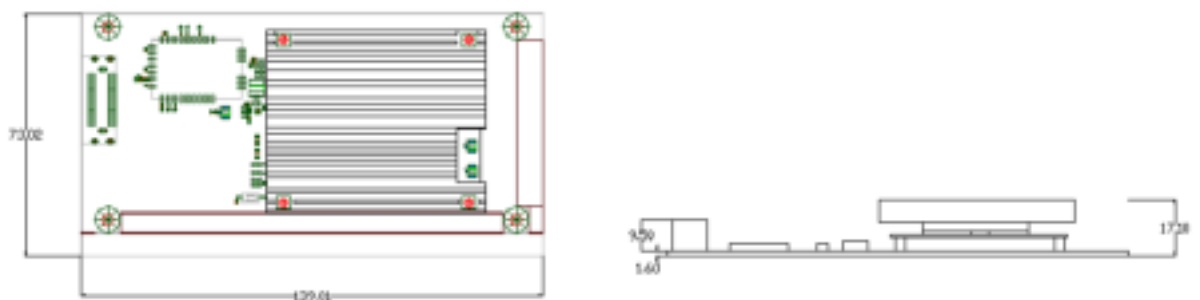
25	GND	P		Ground
26	GND	P		Ground
27	GND	P		Ground
28	GND	P		Ground
29	GND	P		Ground
30	GND	P		Ground
31	VIN	P		12V Main power supply and the power range is:5~16V
32	VIN	P		12V Main power supply and the power range is:5~16V
33	GND	P		Ground
34	P4_D+	I/O	3.3V	Differential pair D+ signal of LAN port4
35	P4_D-	I/O	3.3V	Differential pair D- signal of LAN port4
36	GND	P		Ground
37	P4_C+	I/O	3.3V	Differential pair C+ signal of LAN port4
38	P4_C-	I/O	3.3V	Differential pair C- signal of LAN port4
39	GND	P		Ground
40	GPIO0	I/O		General purpose GPIO

P: Power or Ground; I/O: In/Output; I: Input; A I/O: Analog In/Output; AI: Analog Input;

AO: Analog Output; RF: Analog RF Port or RF Ground;

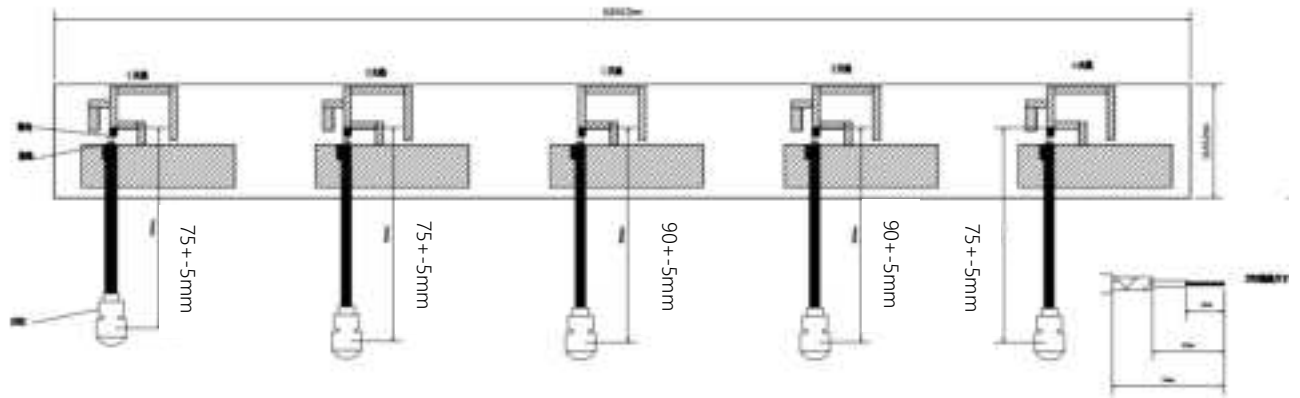
四、Structurion & PCBA Size

1、PCBA size

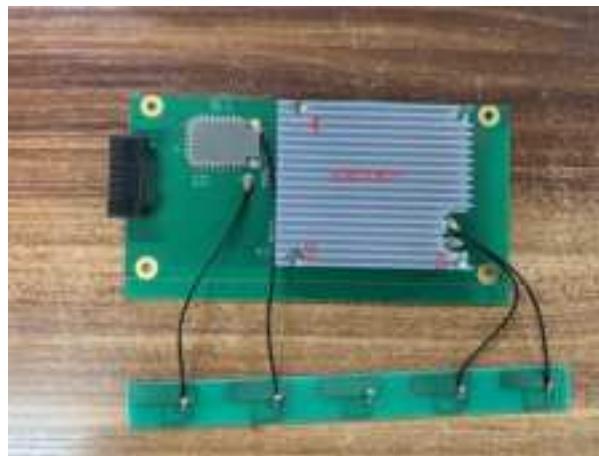


PCB size: 139*73*16.1mm(L*W*H; Tolerance: ± 1 mm)

IPEX / MHF-1 port size: 2.6*3.0*1.2mm (L*W*H, $\varnothing 2.0$ mm)



Antenna size: 160*16*1mm(L*W*H; Tolerance: $\pm 0.2\text{mm}$)



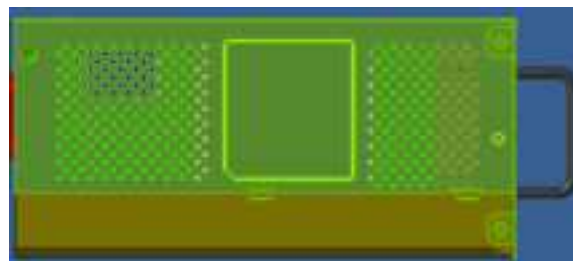
PCBA Sample

2、WiFi6 module size:



Head

Back





五、Software feature

1、Screen sharing: WiFi6 module, can create LAN, realize ISO device or Android device or PC device screen sharing, sharing content including but not limited to video, pictures, files, etc.;



2、Wireless: WiFi6 module, It can realize the interconnection of the conference panel network without wiring, and use the network function.



3、Mobile hotspot: WiFi6 module, can function as a router, to achieve the conference tablet connected to the network, other network equipment connected to the machine hot spot function to be able to access the network;



Warning:

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

FCC warning:

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

Note: 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 or more 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.

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.

This equipment complies with RF radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body

IC warning:

This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions: (1) This device may not cause interference, and (2)

This device must accept any interference, including interference that may cause undesired operation of the device.

L' émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d' Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L' exploitation est autorisée aux deux conditions suivantes :

- 1) L' appareil ne doit pas produire de brouillage;
- 2) L' appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d' en compromettre le fonctionnement.

This equipment complies with IC RF radiation exposure limits set forth for an uncontrolled environment.

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

ce matériel est conforme aux limites d'exposition aux rayonnements rfde ic énoncés dans un autre environnement. ce matériel doit être installé et exploité à une distance minimale de 20 cm entrele radiateur et votre corps.