

# GAINSTRONG

## OoliteBox V3.0\_SPEC\_EN

### AX1800 Router

*Version 1.0.0*

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Revision	Date	Contents of Revision Change	Remark
1.0.0	2023-10-26	First release	WSY

Optional Functional table			
RS485(RS232)		Support RS485 ( default )	
BLE5.0		Without ( default )	
Optional Configuration Table			
RAM(DDR3)	SPI Nor Flash		
128MB(default)	16MB (default)		
256MB	32MB		
512MB	64MB		
Optional Accessory Table			
Package	12/2A(US adapter)(default)	2*dual band 5dBi Antenna	Carton+PearlCotton
	12/2A(EU adapter)		
	12/2A(CN adapter)		

# 1 INTRODUCTION

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The Oolite V8.2 module use the MT7621A as main chip, MT7975DN and MT7905DAN WiFi 6 WLAN chip Composition of dual frequency WiFi 6 module solution.

The MT7621A integrates a dual-core MIPS1004Kc (880MHz), HNAT/ HQoS/ Samba/ VPN accelerators, 5-port GbE switch, RGMII, USB3.0, USB2.0, 3xPCIe, SD-XC. The powerful CPU with rich portfolio is suitable for 802.11ac, LTE cat4/5, edge, hotspot, VPN, AC (Access Control). It can also connect to touch-panel, ZigBee/Z-Wave for Internet Service Router and Home Security Gateway.

The MT7975DN is an IEEE 802.11ax 2x2 A-band + 2x2 G-band MIMO and Wi-Fi/BT 2-in-1 chip which contains 2.4 GHz WI-Fi transceiver front-ends, 5 GHz Wi-Fi transceiver front-ends, and a Bluetooth transceiver front-end in a DRQFN package. Dedicated Dynamic Frequency Selection (DFS) and Spectrum Monitor (SM) receivers are included to support coexist with 5GHz radar or other 2.4G WIFI systems.

The MT7905DAN is a highly integrated Wi-Fi A/D chip which supports 573+1201 Mbps PHY rate. It fully complies with IEEE 802.11ax and backward compatible with IEEE 802.11 a/b/g/n/ac standards, offering feature-rich wireless connectivity at high standards, and delivering reliable, cost effective throughput from an extended distance.

For the next generation router, MT7621AT provides several dedicated hardware engines to accelerate the NAT, QoS, Samba and VPN traffic. These accelerators relief the CPU for other upper layer applications.

## Features

- CPU MT7621A Embedded MIPS1004Kc (880 MHz)
- WLAN Chip MT7905DAN+MT7975DN ( AX1800 WiFi6 )

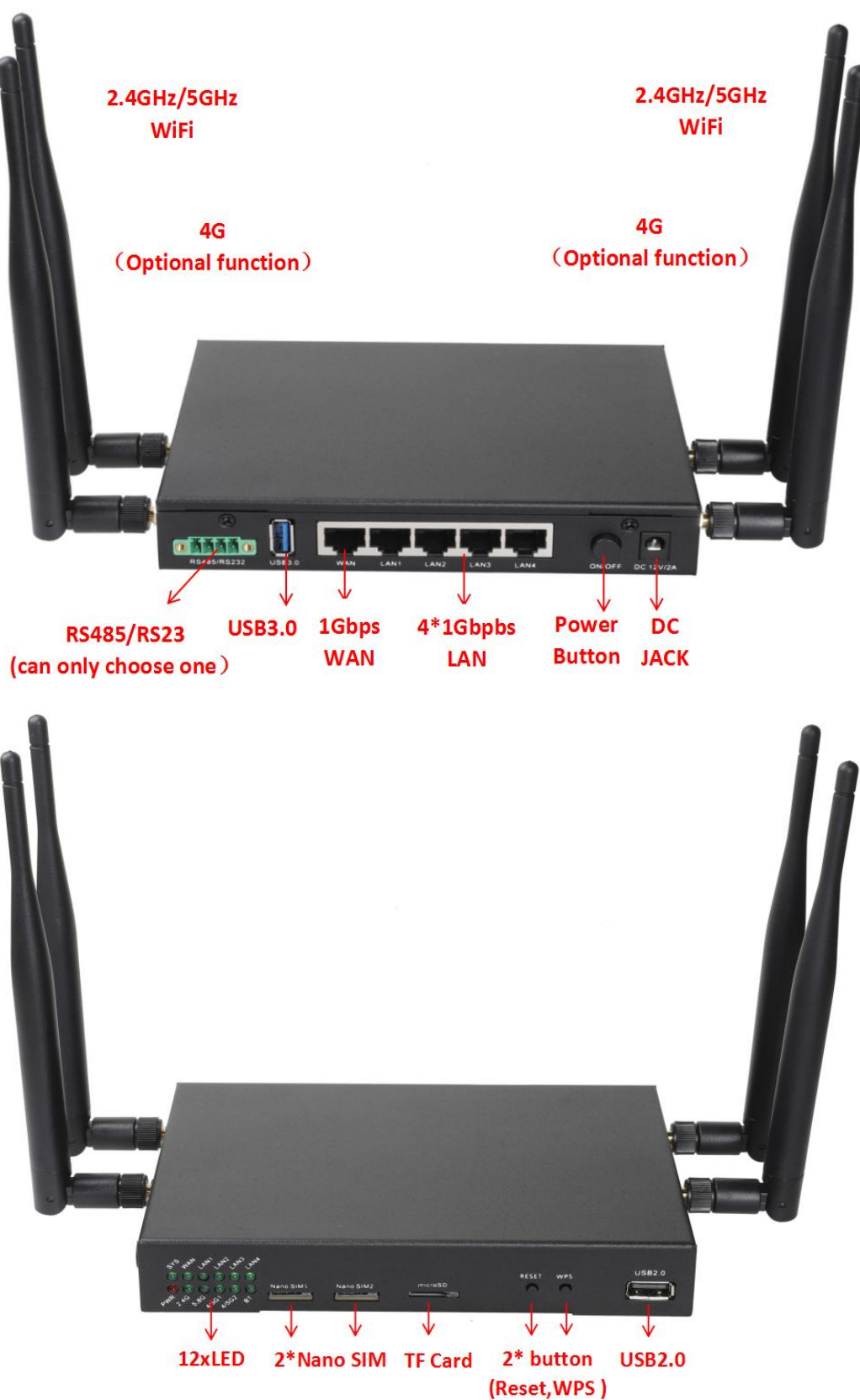
- RAM: 128MByte(256/512MByte optional )
- Flash:16MByte(32/64MByte optional)
- Support 802.11b/g/n/ax 2T2R 2.4GHz 600Mbps, 802.11ac/ax 2T2R 5.8GHz 1200Mbps
- 5\*10/100/1000Mbps Ethernet Port
- 1\*USB3.0 ,1\*USB2.0, 1\*TF Card Slot
- 1\* Switch Button,1\*WPS Button,1\*RESET Button
- LED Indicator : SYS ,POWER, WAN, 4\*LAN, 5GHz WiFi, 2.4GHz WiFi, 2\*4G, BT
- Default Support 1x RS485(RS232, can only choose one )
- Default Support 2 x 4G MiniPCIe Slot (or 1 x 5G M.2 Slot )  
( 4G/5G Module Optional function )
- Device with an external watchdog chip, never crashes
- Power Supply :DC Jack 12V/2A
- Antenna: 2 x IPEX external Antenna(default combine ) or 4 x IPEX external Antenna
- OpenWrt / Linux 5.15 SDK
- Size: 167.0mm x 123.0mm x 28mm

#### Key Applications:

The product 's market position is WiFi6 dual -band Home multipurpose multifunctional router. It' s usage scenarios include:

- 1.Home use: Only have Modem (Cable Modem, DSL Modem, or PON Modem) and need a router for wireless connection.
- 2.Home use : It can not only serve as a high-speed router for internet access, but also be extended to serve as RS485/RS232, Bluetooth, ZigBee, HaLow WiFi gateway. It is a multifunctional router gateway.
- 3.Office use : This router can provide the connection speed of the AX1800Mbps, which can be used for office purposes and can meet the needs of office workers.
4. Home use: Already have a wireless router, but with low wireless connection speed. Users can connect it to the existing router' s ethernet port, the device can provide up to AX3000Mbps Wi-Fi access capabilities.
5. Home use: For extending Wi -Fi coverage, it can serve as a Wi-Fi repeater.

## 2 PRODUCT PICTCTION

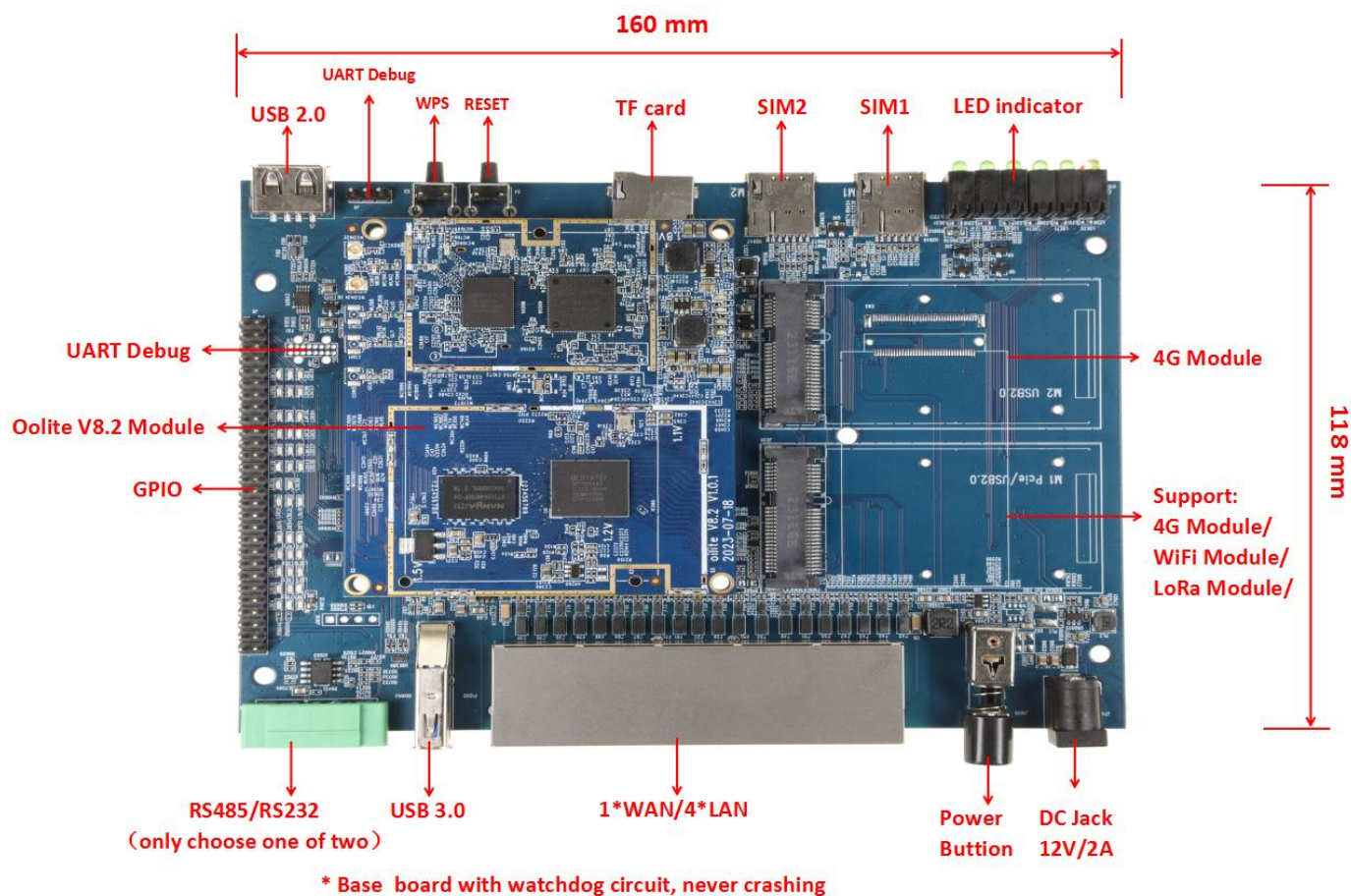


### 3 PRODUCT SIZE

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## 4 PCBA PICTCTION



## 5 ENVIRONAMENT

Operating Temperature	0°C ~45°C
Storage Temperature	-40°C ~ 80°C
Operating Humidity	10%~90% non-condensing
Storage Humidity	5%~90% non-condensing



## 6 PACKAGE LIST

Item	Quantity
Oolitebo V3.0 Router	1
dual band 5dBi Antenna	2
Power adapter	1

\*The plug may vary across countries

## 7 RF PARAMETERS

Item	Specifications
Operating Frequencies	802.11ac/n/a : 5150GHz-5.850GHz 802.11b/g/n : 2.4GHz-2.483GHz
Modulation	OFDM: BPSK@6/9Mbps, QPSK@12/18Mbps, 16-QAM@24Mbps, 64-QAM@48/54Mbps DSSS: DBPSK@1Mbps, DQPSK@2Mbps, CCK@5.5/11Mbps MIMO-OFDM(11n): MCS 0-31 MIMO-OFDM (11ac): MCS 0-9
Modulation Mode	802.11a/g/n: BPSK, QPSK, 16QAM, 64QAM 802.11b: CCK(11 & 5.5 Mbps), DQPSK (2Mbps), DBPSK (1Mbps) 802.11n: PSK/CCK,DBPSK, DQPSK, OFDM 802.11ac: BPSK、QPSK、16-QAM、64-QAM、256-QAM
Maximum Radio Power	2.4GHz: 22dBm 5GHz: 20dBm (Transmit power is multi-chain combined power, no antenna gain is included. The actual transmit power depends on local laws and regulations)