

HMHS-ATI6USOB

Technical Specifications

V 1.0



1. Overview

This document specifies the hardware features and requirements for Nova Labs HMHS-ATI6USOB 11ax 2x2 indoor AP.

Model	Enclosure	Features
HMHS-ATI6USOB AM2		○ Chipset: IPQ6000; ○ 5G radio: QCN5052 a/n/ac/ax, 2x2, 1.2Gbps; ○ 2.4G radio: QCN5022 b/g/n/ac/ax, 2x2, 574Mbps; ○ 1x BLE5.0: nRF52810; ○ 2x Integrated dual-band antennas; ○ 1x BLE antenna; ○ 16MB SPI NOR Flash; ○ 128MB BGA NAND Flash; ○ 512MB 16bit DDR3L RAM; ○ ** According to QCA, 256MB DDR has the limitation: 4 VAPs/ Radio, 64 STA/ Radio ○ 1x RJ45 GbE WAN, with 802.3at PoE(PD); ○ 1x RJ45 GbE LAN; ○ 1 x Reset button; ○ 1 x DC Jack: 12V@1.5A; ○ 4x LED (5G, 2.4G, WAN, PWR); ○ Ceiling mounting; ○ Operational temperature: -10°C ~ +45°C ○ Size: 158mmx158mmx 28 mm

2. LED and Label

LED can be fully controlled by SW. The GbE RJ-45 is without link/active LED.

LED	Function	LED status	LED Definition
PWR	AP power / ready status	Off	No power to AP
		Green	Device ready
WAN	Ethernet Network Link Status / Activity	Off	Ethernet link unavailable
		Green	Ethernet port linked
		Flashing – Green	Ethernet activity
5G	5GHz Radio Status	Off	5G Hz radio disabled
		Green	5G Hz radio enabled
2.4G	2.4GHz Radio Status	Off	2.4G Hz radio disabled
		Green	2.4G Hz radio enabled

3. Interface Panel

WAN/PoE, LAN, DC Jack, RESET

4. Hardware feature

1-	Interfaces	
1-1	2 x GbE Port	
1-1a	1 x GbE WAN with PoE	1 x RJ-45 for 10/100/1000M Ethernet port; - Supports IEEE 802.3at PoE, as an isolated defined PD; - The Ethernet port shall be compatible with the physical layer interface spec defined in 802.3 series. - Up to 100 meters of CAT5e or above cable.
1-1b	1 x GbE LAN	1 x RJ-45 for 10/100/1000M Ethernet port; - The Ethernet port shall be compatible with the physical layer interface spec defined in 802.3 series. - Up to 100 meters of CAT5e or above cable.
1-2	1 x Reset Button	2mm (diameter) opening on enclosure. The reset button is connected to a GPIO of the CPU. The behavior is controlled by software.
1-3	DC jack	12V@1.5A DC input.

3-	WIFI feature	
3-1	Frequency	
	2.4GHz	2.4000GHz~2.4835GHz
	5GHz	5.150~5.250, 5.250~5.350, 5.470~5.725, 5.725~5.850 GHz
3-2	Antenna	2 x Integrated dual-band antenna. 1 x BLE onboard antenna
3-3	Channel Rate	
	2.4GHz :	
	The device shall support the standard channel rates: 802.11b: 1, 2, 5.5 and 11Mb/s 802.11g: 6, 9, 12, 18, 24, 36, 48 and 54Mb/s 802.11n: any combination of MCS0-MCS7, HT20 and HT40, 800ns and 400ns guard interval 802.11ac: any combination of MCS0-MCS9, HT20 and HT40, 800ns and 400ns guard interval 802.11ax: any combination of MCS0-MCS11, HE20 and HE40, 800ns and 400ns guard interval	
	5GHz	
	802.11a: 6, 9, 12, 18, 24, 36, 48 and 54Mb/s 802.11n: any combination of MCS0-MCS7, HT20 and HT40, 800ns and 400ns guard interval 802.11ac: any combination of MCS0-MCS9; VHT20, VHT40 and VHT80; 800ns and 400ns Guard Interval; 802.11ax: any combination of MCS0-MCS11; HE20, HE40 and HE80; 800ns and 400ns Guard Interval;	

	Power Control Accuracy	The transmission power accuracy at the maxim power is $\pm 2\text{dB}$
3-5	Frequency Tolerance	Frequency Tolerance: 802.11a/b/g/n/ac/ax: $\pm 15\text{ppm}$ (ambient temperature).
3-6	Received maximum input level	Shall meet IEEE requirement, that is, (1) For 11a/g/n/ac: -20dBm of 2.4G and -30dBm of 5G @ antenna interface. (2) For 11b: -10dBm@ antenna interface (3) For 11ax: -10dBm@ antenna interface
3-7	802.11 Features	The AP support concurrent operation of 2.4G and 5G. In the worst case (one band transmission and another band receiving), the impact to sensitivity is less than 3dB.

4-	Power	
4-1	AP can be powered from 802.3 at PoE (PD)	Supports CAT-5e or above 100m For GE port
		Power consumption less than 12W.
		Voltage range: 50V~ 57V
		PoE has the high priority than DC, if both of them are connected.
4-2	AP can be powered from external 12V DC input	The AP support the external AC/DC adapter with following specification: 12 VDC nominal, +/- 5%, 1A FCC/UL/CE certificated
4-3	Power consumption	Max 11W
5-	Environment	
5-1	Operating temperature	-10°C ~ +45°C
5-2	Operating humidity	5% ~ 95% non-condensing
5-3	Storage temperature	-40°C to +70°C
5-4	Elevations	86kPa~106kPa
5-5	Environment	Shall be RoHS 2011/65/EU compliant (RoHS 11 compliant, no Pb); WEEE 2002/96/EC recyclable materials requirements
5-6	Thermal	-10°C ~ +45°C
5-7	Dustproof and Waterproof	IP30
5-8	Surge	GE port with PoE support ± 4 KV common mode/ ± 500 V differential mode surge with 10-700us / 400hm waveform.
5-9	ESD	± 4 KV (Contact Discharge) / ± 8 KV (Air Discharge)
6-	Enclosure	
6-1	Mechanical Enclosure / Housing	
6-2	Size	158mm x 158mm x 28mm
6-3	Weight	454g
6-4	Mounting	Ceiling mounting
6-5	Material	PC+ABS(fireproof)+diecast (bottom shell)
7-	Reliability	
7-1	MTBF	> 300,000 Hours Telcordia SR-332, Reliability Prediction Procedures for Electronic Equipment, Issue 3, Method 1, Case 3, GB/GC (Ground Benign, Controlled) environment, 25°C ambient temperature. Steady state, not including software failure.
7-2	Service life	> 5 years@ 35°C, full load.

Federal Communications Commission (FCC) 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 generate, 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.

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

RF exposure warning

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

This equipment must be installed and operated in accordance with provided instructions and the antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be collocated or operating in conjunction with any other antenna or transmitter.