

VT-MOB-6275-AX

Hardware Manual

Rev 1.0

2024/01/31



Vantron Technology Co., Ltd.

Revision record

Rev.	Date	Change Description	Editor
1.0	2024-01-31	Initial Version	YR.HOU

VT-MOB-6275-AX

WiFi 11ax+ Bluetooth V5.0

Product Description

The device is Module, model name is VT-MOB-6275-AX

Features:

- . Dual-stream spatial multiplexing up to 1200 Mbps data rate.
 - . 20, 40, 80 MHz channels with optional SGI. (1024 QAM modulation)
 - . IEEE 802.11ax beam forming.
 - . Client MU-MIMO.
 - . Supports 2 antennas with two for shared BT and WLAN port.
 - . Supports PCI express revision 3.0 and power management running at Gen1 speeds.
- BT host digital interface:
- . HCI UART (up to 4 Mbps)
 - . Complies with Bluetooth Core Specification Version 5.0 with provisions for supporting future specifications. With Bluetooth Class 1 or Class2 transmitter operation.
 - . Supports extended synchronous connections (eSCO), for enhanced voice quality by allowing for retransmission of dropped packets.
 - . Adaptive frequency hopping (AFH) for reducing radio frequency interference.

General Specification:

Model name	VT-MOB-6275-AX
Product Description	Support WI-FI/Bluetooth function 2T2R 802.11 ax/ac/a/b/g/n Wi-Fi + BT 5.0 Module
Dimension	L*W*H:30*22*1.5mm
WIFI interface	Support PCIe v3.0 compliant and runs at Gen2 speeds
BT interface	UART/PCM
Operating temperature	-30°C to 85°C
Storage temperature	-40°C to 125°C
Humidity	Operating Humidity 10% to 95% Non-Condensing

Voltages:

Absolute Maximum Ratings

Symbol	Description	Min.	Max.	Unit
VBAT	Input supply Voltage	-0.5	4.5	V
VDDIO	Digital/ Bluetooth/ I/O Voltage	-0.5	2.07	V

Recommended Operating Rating

The module requires two power supplies: VBAT and VDDIO.

Voltage rails	Min.	Typ.	Max.	Unit
VBAT	3.0	3.3	3.8	V
VDDIO	1.68	1.8	1.98	V

VBAT current consumption 1200mA(Peak), when VBAT = 3.3V

FCC compliance statement

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.

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

Exposure to radio frequency energy:

Vantron

The radiated output power of this device meets the limits of FCC radio frequency exposure limits. This device should be operated with a minimum separation distance of 20 cm (8 inches) between the equipment and a person's body.

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.

ISED Canada compliance statement:

This device complies with ISED Canada license-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.

Operation in the band 5150 - 5250 MHz is only for indoor use to reduce the potential for harmful interference to co-channel mobile satellite systems.

Exposure to radio frequency energy:

The radiated output power of this device meets the limits of ISED Canada radio frequency exposure limits. This device should be operated with a minimum separation distance of 20 cm (8 inches) between the equipment and a person's body.

Le présent appareil est conforme aux CNR d' ISDE 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, et
- (2) l' appareil doit accepter tout brouillage radioélectrique subi, même

si le brouillage est susceptible d' en compromettre le fonctionnement. La bande 5150 - 5250 MHz est réservée uniquement pour une utilisation à l' intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

L' exposition à l' énergie radiofréquence.

La puissance de sortie rayonné de cet appareil est conforme aux limites de la ISDE Canada limites d' exposition aux fréquences radio. Cet appareil doit être utilisé avec une distance minimale de séparation de 20 cm entre l' appareil et le corps d' une personne.

Integration instructions for host product manufacturers according to KDB 996369 D03 OEM Manual v01

2.2 List of applicable FCC rules

FCC Part 15 Subpart C 15.247 & 15.209 & 15.407.

2.3 Specific operational use conditions

The module is a WIFI&BT Module with 2.4G&5G function.

WiFi Operation Frequency: 2412~2472MHz; 5180~5240MHz; 5745~5825MHz.

BT Operation Frequency: 2402~2480MHz;

Type: PCB Antenna

The module can be used for mobile applications with a Gain:

ANT1:maximum 0.9dBi@2.4GHz, 2.1dBi@5.1GHz,4.2dBi@5.8GHz antenna gain

ANT2:maximum 0.9dBi@2.4GHz, 2.1dBi@5.1GHz,4.2dBi@5.8GHz antenna gain

The host manufacturer installing this module into their product must ensure that the final product complies with the FCC requirements by a technical assessment or evaluation to the FCC rules, including the transmitter operation. The host manufacturer has to be aware not to provide information to the end user regarding how to install or remove this RF module in the user's manual of the end product which integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

2.4 Limited module procedures

Not applicable The module is a Single module and complies with the requirement of FCC Part 15 212.

2.5 Trace antenna designs

Not applicable The module has its own antenna, and doesn' t need a hosts printed board micro strip trace antenna etc.

2.7 Antennas

Antenna Specification are as follows:

Type: PCB Antenna

Gain:

ANT1:maximum 0.9dBi@2.4GHz, 2.1dBi@5.1GHz,4.2dBi@5.8GHz antenna gain

ANT2:maximum 0.9dBi@2.4GHz, 2.1dBi@5.1GHz,4.2dBi@5.8GHz antenna gain

This device is intended only for host manufacturers under the following conditions:
The transmitter module may not be co-located with any other transmitter or antenna;
The module shall be only used with the internal antenna(s) that has been originally tested and certified with this module. The antenna must be either permanently attached or employ a "unique" antenna coupler. As long as the conditions above are met, further transmitter test will not be required However, the host manufacturer 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).

2.8 Label and compliance information

Host product manufacturers need to provide a physical or e-label stating "Contains FCC ID: 2BEA6AP6275" with their finished product.

2.9 Information on test modes and additional testing requirements

Host manufacturer must perform test of radiated & conducted emission and spurious emission, e.t.c according to the actual test modes for a stand-alone modular transmitter in a host, as well as for multiple simultaneously transmitting modules or other transmitters in a host product. Only when all the test results of test modes comply with FCC requirements, then the end product can be sold legally.

2.10 Additional testing, Part 15 Subpart B disclaimer

The modular transmitter is only FCC authorized for FCC Part 15 Subpart C 15.247 & 15.209 & 15.407 and that the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. If the grantee markets their product as being Part 15 Subpart B compliant (when it also contains unintentional-radiator digital circuitry), then the grantee shall provide a notice stating that the final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

vantron

US Office: Vantron Technology, Inc.

Address: 48434 Milmont Drive Fremont, CA 94538-7324, USA

Email: sales@vantrontech.com

<http://www.vantrontech.us/>