



Wireless Module

Model Number: WXT3BM1613

Product Description

The WXT3BM1613 is a complete 2.4GHz/5GHz/6GHz module. This module includes WIFI/BT/ZIGBEE/ Low Power Wide band Radio in 5GHz (5.8G) functions. The WLAN operation supports 20MHz, 40MHz, 80MHz, 160MHz channels for data rates up to 1201Mbps. It fully complies with IEEE 802.11 a/b/g/n/ac/ax feature rich wireless connectivity at high standards, and supports BT and Zigbee transmission in the 2.4G frequency band, as well as Low Power Wide band Radio in 5GHz (5.8G) transmission

Product Features

- ◆ Complies with IEEE 802.11b/g/n/ax for 2.4GHz and IEEE 802.11a/n/ac/ax 5GHz/6GHz Wireless LAN.
- ◆ Support Bluetooth v5.4.
- ◆ Support Zigbee.
- ◆ Support Low Power Wide band Radio in 5GHz (5.8G).
- ◆ One transmit and One receive path(1T1R).
- ◆ Works with all existing network infrastructure.
- ◆ Capable of up to 128-Bit WEP Encryption.
- ◆ Freedom to roam while staying connected.
- ◆ UP to 1201 Mbps High-Speed Transfer Rate in 802.11ax mode of operation.
- ◆ Operating Systems: Linux, Windows.
- ◆ Low power consumption.
- ◆ Easy to install and configure.
- ◆ ROHS compliant.

Product Specification

Model	Wireless Module
Product Name	WXT3BM1613
Interface	USB
Data Transfer Rate	Up to 1201Mbps
Modulation Method	OQPSK (zigbee) GFSK, n/4-DQPSK, 8DPSK (bluetooth) DQPSK, DBPSK, CCK (802.11b) QPSK, BPSK, 16QAM, 64QAM with OFDM (802.11g) QPSK, BPSK, 16QAM, 64QAM with OFDM (802.11n) QPSK, BPSK, 16QAM, 64QAM with OFDM (802.11a) QPSK, BPSK, 16QAM, 64QAM, 256QAM with OFDM (802.11ac) QPSK, BPSK, 16QAM, 64QAM, 256QAM, 1024QAM with OFDM (802.11ax)
Frequency Band	Zigbee 2405~2480 MHz BT 2402~2480 MHz WIFI 2.4G: 2412~2462 MHz 5G: 5150~5350MHz, 5470~5725MHz, 5725~5850MHz 6G: 5925~7125MHz Low Power Wide band Radio in 5GHz (5.8G) 5800MHz
Operation Mode	Infrastructure
Security	WEP, TKIP, AES, WPA, WPA2
Operating Voltage	3.3V±10%
Current Consumption	<1000mA
Antenna Type	PCB/FPC
Operating Temperature	-10 ~ 70°C ambient temperature
Storage Temperature	-40 ~ 80°C ambient temperature



Humidity	5 to 95 % maximum (non-condensing)
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NOTICE:

- ◆ please keep this product and accessories attached to the places which children can't touch;
- ◆ do not splash water or other liquid onto this product, otherwise it may cause damage;
- ◆ do not put this product near the heat source or direct sunlight, otherwise it may cause deformation or malfunction;
- ◆ please keep this product away from flammable or naked flame;
- ◆ please do not repair this product by yourself. Only qualified personnel can be repaired.

FCC Statement**FCC 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 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 equipment 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.
- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

This module is intended for OEM integrators only. Per FCC KDB 996369 D03 OEM Manual v01r01 guidance, the following conditions must be strictly followed when using this certified module:

KDB 996369 D03 OEM Manual v01r01 rule sections:**2.2 List of applicable FCC rules**

This module has been tested for compliance with CFR 47 FCC Part 15 B, CFR 47 FCC Part 15 C (15.247, DTS and DSS) and CFR 47 FCC Part 15 E (NII). It is applicable to the modular transmitter

2.3 Summarize the specific operational use conditions

The module is tested for standalone mobile RF exposure use condition. Any other usage conditions such as co-location with other transmitter(s) will need a separate reassessment through a class II permissive change application or new certification.

Further operation restrictions on the host product include:

- *Prohibited for control of or Communications with unmanned aircraft systems.



This radio transmitter FCC ID: 2AC23-WXT3B has been approved by Federal Communications Commission to operate with the integrated PCB antenna. Use of any other antenna is strictly prohibited without filing an application for a new system-specific FCC ID.

This radio transmitter FCC ID: 2AC23-WXT3B has been approved by Federal Communications Commission to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

The concrete contents to check are the following three points.

1) Must use an antenna such as PIFA Antenna with a gain not exceeding 7 dBi for Low Power Wide band Radio in 5GHz (5.8G), 5.5 dBi for ZigBee/BT/BLE/2.4G WIFI, 4.8 dBi for 5G WIFI/6G WIFI;

2) Should be installed so that the end user cannot modify the antenna;

3) Feed line should be designed in 50ohm

Fine-tuning of return loss etc. can be performed using a matching network.

The antenna shall not be accessible for modification or change by the end user

2.4 Limited module procedures Not applicable for FCC, required for ISED Canada

The module complies with FCC Part 15.247 / Part 15.407 and applies for Single module approval.

2.5 Trace antenna designs Not applicable.

Trace antenna designs: Not applicable – the antenna is integrated into the module and cannot be modified. See section 2.3, trace antennas not used, only externally connected PIFA antennas are allowed.

2.6 RF exposure considerations

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator & your body. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

2.7 Antennas

Note 1: Use of other antenna types or the same type of antenna with higher gain than listed above must perform additional testing and appropriate permissive change approval.

Note 2: Additional testing/submission (C2PC) will be required if the device does not meet the antenna and RF exposure requirements.

Note 3: Contact GSD for additional guidance, if choose to use different antenna types or higher/lower gain antennas in the end system.

IMPORTANT: The final host product must have an integral antenna that is not removable by the end user.

Antenna type and antenna gain:

Low Power Wide band Radio in 5GHz (5.8G) Antennas:

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
4 (Main antenna)	5800	PCB antenna (External)	5.5
5(AUX Antenna)	5800	PCB antenna (External)	7

ZigBee Antennas:

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2405-2480	PCB Antenna	5.5
2	2405-2480	External FPC Antenna	5.5



BT Antennas:

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
1	2402-2480	PCB Antenna	5.5
2	2402-2480	External FPC Antenna	5.5

WIFI Antennas:

2.4G WIFI:

Condition 1:

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
3	2412-2462	PCB antenna	5.7

Condition 2:

Antenna	Frequency (MHz)	Antenna Type	MAX Antenna Gain (dBi)
3	2412-2462	FPC antenna	5.5

5G WIFI:

Condition 1:

Antenna No.	Frequency Band	Antenna Type	Max Antenna Gain (dBi)
3	5150-5850	PCB antenna	5.8

Condition 2:

Antenna No.	Frequency Band	Antenna Type	Max Antenna Gain (dBi)
3	5150-5850	FPC antenna	4.8

6G WIFI:

Condition 1:

Antenna No.	Frequency Band	Antenna Type	Max Antenna Gain (dBi)
3	5925 ~ 7125	PCB antenna	5.8

Condition 2:

Antenna No.	Frequency Band	Antenna Type	Max Antenna Gain (dBi)
3	5925 ~ 7125	FPC antenna	4.8

2.8 Label and compliance information

The final end product must be labeled in a visible area with the following: “Contains FCC ID: 2AC23-WXT3B”. The grantee's FCC ID can be used only when all FCC compliance requirements are met.

2.9 Information on test modes and additional testing requirements

This transmitter is tested in a standalone mobile RF exposure condition and any co-located or simultaneous transmission with other transmitters need class II permissive change re-evaluation or new certification.

2.10 Additional testing, Part 15 Subpart B disclaimer

This transmitter module is tested as a subsystem and its certification does not cover the FCC Part 15 Subpart B (unintentional radiator) rule requirement applicable to the final host. The final host will still need to be reassessed for compliance with this portion of rule requirements if applicable.



If all conditions above are met, further transmitter tests will not be required. However, the OEM integrator is still responsible for testing their end product for any additional compliance requirements required with this module installed.

IMPORTANT NOTE: In the event that these conditions cannot be met (for example certain laptop configurations or co-location with another transmitter), then the FCC authorization is no longer considered valid and the FCC ID cannot be used on the final product. In these circumstances, the OEM integrator will be responsible for re-evaluating the end product (including the transmitter) and obtaining a separate FCC authorization.

2.11 Note EMI Considerations

The host manufacture is recommended to use D04 Module Integration Guide recommending as "best practice" RF design engineering testing and evaluation in case non-linear interactions generate additional non-compliant limits due to module placement to host components or properties.

2.12 How to make changes

This module is stand-alone modular. If the end product will involve the Multiple simultaneously transmitting condition or different operational conditions for a stand-alone modular transmitter in a host, host manufacturer have to consult with module manufacturer for the installation method in end system.

FCC Wi-Fi 6E statement

1. FCC regulations restrict the operation of this device to indoor use only.
2. The operation of this device is prohibited on oil platforms, cars, trains, boats, and aircraft, except that operation of this device is permitted in large aircraft while flying above 10,000 feet.
3. Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.

The user manual complies with 996369 D04 Module Integration Guide v02.

This module cannot be installed in a weatherized enclosure and cannot operate from battery but only power sources.

The host device must be connected to a power source as it has no battery.

Notice to OEM integrator

Must use the device only in host devices that meet the FCC/ISED RF exposure category of mobile, which means the device is installed and used at distances of at least 20cm from persons.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

The end user manual shall include FCC Part 15 /ISED RSS GEN compliance statements related to the transmitter as

show in this manual(FCC/ICanada statement).

Host manufacturer is responsible for compliance of the host system with module installed with all other applicable requirements for the system such as Part 15 B, ICES 003.

Host manufacturer is strongly recommended to confirm compliance with FCC/ISED requirements for the transmitter when the module is installed in the host.



The use condition limitations extend to professional users, then instructions must state that this information also extends to the host manufacturer's instruction manual.

This module is stand-alone modular. If the end product will involve the Multiple simultaneously transmitting condition or different operational conditions for a stand-alone modular transmitter in a host, host manufacturer have to consult with module manufacturer for the installation method in end system.

Any company of the host device which install this modular should perform the test of radiated & conducted emission and spurious emission etc. according to FCC Part 15C: 15.247 and 15.209 & 15.207, 15B class B requirement, only if the test result comply with FCC part 15C: 15.247 and 15.209 & 15.207, 15B class B requirement. Then the host can be sold legally. This modular transmitter is only FCC authorized for the specific rule parts (47CFR Part 15.247 and 15.407) listed on the grant, 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.

Host manufacturer is strongly recommended to confirm compliance with FCC/ISED requirements for the transmitter when the module is installed in the host.

Must have on the host device a label showing Contains FCC ID: 2AC23-WXT3B or IC: 12290A-WXT3B.

Both FCC ID and IC ID are not to be placed on the host at the same time and only hosts going into the US can use the FCC ID and only hosts going into Canada can use the IC ID.

Installer should put it in the manual:

The device for 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

L'hôte doit utiliser l'instrument uniquement dans des dispositifs qui répondent à la fcc / (catégorie d'exposition rf mobile, ce qui signifie le dispositif est installé et utilisé à une distance d'au moins 20 cm de personnes.

le manuel de l'utilisateur final doit inclure la partie 15 / (fac rss gen déclarations de conformité relatives à l'émetteur que de montrer dans ce manuel.

le fabricant est responsable de la conformité de l'hôte, le système d'accueil avec le module installé avec toutes les autres exigences applicables du système comme la partie 15 b, ices - 003.

accueillir le fabricant est fortement recommandé de confirmer la conformité avec les exigences de la fcc / (émetteur lorsque le module est installé dans l'hôte.

le dispositif d'accueil doivent avoir une étiquette indiquant contient FCC ID: 2AC23-WXT3B, IC: 12290A-WXT3B

Les personnes chargées de l'installation devraient figurer dans le manuel:

Les dispositifs fonctionnant dans la bande de 5 150 à 5 250 MHz sont réservés uniquement pour une utilisation à l'intérieur afin de réduire les risques de brouillage préjudiciable aux systèmes de satellites mobiles utilisant les mêmes canaux.

Doit avoir sur l'appareil hôte une étiquette indiquant Contient l'ID FCC: 2AC23-WXT3B ou IC : 12290A-WXT3B L'ID FCC et l'ID IC ne doivent pas être placés sur l'hôte en même temps et seuls les hôtes se rendant aux États-Unis peuvent utiliser l'ID FCC et seuls les hôtes se rendant au Canada peuvent utiliser l'ID IC.