

User Guidance for Module AXE-Y1

FCC ID: UFEAXE-Y1; IC: 6652A-AXEY1

1. Introduction

Module Model Name: AXE-Y1

This module AXE-Y1 is the dual-band 2.4GHz and 5GHz bands Wi-Fi module which is compliant with IEEE802.11a/b/g/n specification.

Bluetooth (BT) compliant with the BT specification version 4.2 (BLE).

2. Electrical

Chipset: The module main chipset: APQ8009, PM8916, WCN3660B

Supply: The module source all required power from a 4.2V +/- 0.3V input supply.

3. Environmental

Operating Temperature: The module operate across the temperature range of -10°to 55°Celsius

4. Conditions on using module AXE-Y1:

- Customer must ensure that its product (the “Customer Product”) is electrically identical to module AXE-Y1. Customer acknowledges that any modifications to module AXE-Y1 may invalidate regulatory approvals in relation to the Customer Product, or may necessitate notifications to the relevant regulatory authorities.
- OEM must inform us of any changes which may require the Class I or Class II permissive changes for the FCC. Any substituted antenna and RF cable assemblies must be approved in order to maintain compliance FCC rules.

5. Tested antenna information:

Antenna No.	Brand	Model	Gain(dBi)	Antenna Type	Frequency range (GHz to GHz)
1(Internal)	iRobot	AXE-Y1	3.04	PCB internal antenna	2.4-2.4835
1(Internal)	iRobot	AXE-Y1	1.57	PCB internal antenna	5.15-5.25
1(Internal)	iRobot	AXE-Y1	1.97	PCB internal antenna	5.25-5.35
1(Internal)	iRobot	AXE-Y1	2.96	PCB internal antenna	5.47-5.725
1(Internal)	iRobot	AXE-Y1	1.94	PCB internal antenna	5.725-5.85

6. Regulation information:

- **6.1 USA—Federal Communications Commission (FCC)**

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.

INFORMATION TO USER:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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. If not installed and used in accordance with the instructions, it 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 tuning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
 - Increase the distance between the equipment and the receiver.
 - Connect the equipment to outlet on a circuit different from that to which the receiver is connected.
 - Consult the dealer or an experienced radio/TV technician for help.
- Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

CAUTION: (this only applicable to 5GHz device)

High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage this device.

System integrators must include the FCC ID on the end product.

FCC Radio-Frequency Exposure & Approval Conditions:

1. The antenna(s) used for this transmitter must not be collocated or operating in conjunction with any other antenna or transmitter within a host device, except in accordance with FCC multi-transmitter product procedures.
2. Only those antennas with same type and lesser gain filed under this FCC ID number can be used with this device.
3. To comply with RF exposure compliance requirements, for mobile configurations, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.
4. The regulatory label on the final system must include the statement: "Contains FCC ID: UFEAXE-Y1 " or using electronic labeling method as documented in KDB 784748.
5. The final system integrator must ensure there is no instruction provided in the user manual or customer documentation indicating how to install or remove the transmitter module except such device has implemented two-ways authentication between module and the host system.

6. The final host manual shall include the following regulatory statement:

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of 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. If not installed and used in accordance with the instructions, it 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 tuning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the distance between the equipment and the receiver.
- Connect the equipment to 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.

• **6.2 Canada - Industry Canada (IC)**

This device complies with Industry 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.

Under Industry Canada regulations, this radio transmitter may only operate using an antenna of a type and maximum (or lesser) gain approved for the transmitter by Industry Canada. To reduce potential radio interference to other users, the antenna type and its gain should be so chosen that the equivalent isotropically radiated power (e.i.r.p.) is not more than that necessary for successful communication.

Caution: (this only applicable to UNII device)

- (i) 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;
- (ii) the maximum antenna gain permitted for devices in the bands 5250-5350 MHz and 5470-5725 MHz shall comply with the e.i.r.p. limit;
- (iii) the maximum antenna gain permitted for devices in the band 5725-5825 MHz shall comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate.

High power radars are allocated as primary users of the 5.25 to 5.35 GHz and 5.65 to 5.85 GHz bands. These radar stations can cause interference with and/or damage this

device.

Caution: Exposure to Radio Frequency Radiation.

To comply with RSS 102 RF exposure compliance requirements, for mobile configurations, a separation distance of at least 20 cm must be maintained between the antenna of this device and all persons. This device must not be co-located or operating in conjunction with any other antenna or transmitter.

System integrators must include a label with “Contains IC: 6652A-AXEY1” on the end product. Industry Canada user statements should be provided in both English and French, at the time each product is offered for sale or lease in Canada.

French:

Cet appareil est conforme avec Industrie Canada exempts de licence standard RSS (s) l'opération est soumise aux deux conditions suivantes: . (1) ce dispositif ne doit pas causer d'interférences et (2) cet appareil doit accepter toute interférence , y compris les interférences qui peuvent provoquer un mauvais fonctionnement de l'appareil.

Conformément à la réglementation d'Industrie Canada, cet émetteur radio ne peut fonctionner à l'aide d'une antenne d'un type et maximum (ou moins) Gain approuvé pour l'émetteur par Industrie Canada. Afin de réduire le risque d'interférence avec d'autres utilisateurs, le type d'antenne et son gain doivent être choisis que la puissance isotrope rayonnée équivalente (PIRE) ne dépasse pas ce qui est nécessaire pour une communication réussie .

Attention: (ceci ne s'applique à un appareil UNII)

(I) l'appareil pour fonctionner dans la bande 5150-5250 MHz est réservé à une utilisation en intérieur afin de réduire les risques d'interférence nuisible aux systèmes mobiles par satellite co- canal;

(ii) le gain d'antenne maximal autorisé pour les dispositifs dans les bandes 5250-5350 MHz et 5470-5725 MHz doivent respecter la limite de pire , et

(iii) le gain d'antenne maximal autorisé pour les dispositifs fonctionnant dans la bande 5725-5825 MHz doivent respecter les limites de pire spécifiées pour le point -à-point et l'exploitation non point à point , le cas échéant .

Les radars à haute puissance sont désignés comme utilisateurs principaux de 5,25 à 5,35GHz et 5,65 à 5,85 GHz . Ces stations radars peuvent causer des interférences et / ou endommager cet appareil .

Attention: Exposition aux radiations de fréquences radio.

Pour se conformer aux normes RSS 102 exigences de conformité d'exposition aux radiofréquences , pour les configurations mobiles , une distance de séparation d'au moins 20 cm doit être maintenue entre l' antenne de cet appareil et toutes les personnes . Cet appareil ne doit pas être co- localisées ou opérant en conjonction avec une autre antenne ou transmetteur .

Les intégrateurs de systèmes doivent comporter une étiquette avec «Contient IC:

6652A-AXEY1" . Sur le produit final comptes d'utilisateur d'Industrie Canada devraient être fournis en anglais et en français , au moment où chaque produit est offert à la vente ou la location au Canada.

• 6.3 Europe - EU Restrictions

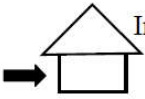


This equipment needs to be marked with the symbol and can be used throughout the European community.

Information to be supplied to the users:

802.11a Restrictions:

- The band 5150–5350 MHz is for indoor use only.
- This product can be used as shown in the table below:

5 GHz wireless LAN IEEE 802.11a	 Indoor Use Only	A, AND, B, CH, D, CY, CZ, DK, ES, EST, F, FIN, FL, FR, GB, GR, H, I, IRL, IS, L, LT, M, MC, N, NL, P, PL, RSM, S, SK, SLO, V
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Caution: Exposure to Radio Frequency Radiation.

To comply with RF exposure compliance requirements, for mobile configurations, a separation distance of at least 20cm must be maintained between the antenna of this device and all persons.

The module 5725~5850MHz bands comply with receiver category 1.

Note for system integrators:

- The module is tested to comply with Directive 2014/53/EU. System integrators are responsible for compliance of the final device with the RED Directive.
- Packaging: CE Marking must also be on the outer packaging of the product. The outer packaging must also provide an indication as to where the device is intended to be used and OR conversely, where there may be restrictions for use.

• 6.4 Japan – MIC

Radio devices using 5.15-5.35GHz bands are restricted to indoor use only.

登録局との通信を除く

• 6.5 Taiwan - NCC Statement to be included in the user guide

Statement- For general products

低功率電波輻射性電機管理辦法

第十二條經型式認證合格之低功率射頻電機，非經許可，公司、商號或使用者均不得擅自變更頻率、加大功率或變更原設計之特性及功能。

第十四條低功率射頻電機之使用不得影響飛航安全及干擾合法通信；經發現有干

擾現象時，應立即停用，並改善至無干擾時方得繼續使用。前項合法通信，指依電信規定作業之無線電信。低功率射頻電機須忍受合法通信或工業、科學及醫療用電波輻射性電機設備之干擾。

Additional Statement - For 5G Band products

在 5.25G ~5.35G 頻帶內操作之無線資訊傳輸設備僅適於室內使用

Translation:

Measures for the management of low - power radio - fired radiators

Article 12

Without permission, any company, firm or user shall not alter the frequency, increase the power, or change the characteristics and functions of the original design of the certified lower power frequency electric machinery.

Article 14

The application of low power frequency electric machineries shall not affect the navigation safety nor interfere a legal communication, if an interference is found, the service will be suspended until improvement is made and the interference no longer exists. The foregoing legal communication refers to the wireless telecommunication operated according to the telecommunications laws and regulations. The low power frequency electric machinery should be able to tolerate the interference of the electric wave radiation electric machineries and equipments for legal communications or industrial and scientific applications.

Additional Statement - For 5G Band products

Radio devices using 5.25-5.35GHz bands are restricted to indoor use only.

- **6.6 Argentina**

It may be necessary to obtain regulatory approval in the name of the local distributor or importer.

We suggest manufacturers check with their local distributors and importers in Argentina.

- **6.7 Brazil**

Interference statement to be included in the Users Guide

Este equipamento opera em caráter secundário, isto é, não tem direito a proteção contra interferência prejudicial, mesmo de estações do mesmo tipo, e não pode causar interferência a sistema operando em caráter primário. (Note The above statement followed by the ANATEL logo with the Homologation Number and the Resolution 506 Statement)

Translation:

This equipment operates in a secondary capacity, that is, it does not have any right of protection against harmful interference, even from same type of equipment and cannot cause any interference for systems operating in a primary capacity. (Note The above statement followed by the ANATEL logo with the Homologation Number and the Resolution

506 Statement)

- **6.8 Mexico**

The User Manual must feature the following mandatory statement:

Para su uso en México, la operación de este equipo está sujeta a las siguientes dos condiciones: (1) es posible que este equipo o dispositivo no cause interferencia perjudicial y (2) este equipo o dispositivo debe aceptar cualquier interferencia, incluyendo la que pueda causar su operación no deseada.

Translation:

For use in Mexico, the operation of this equipment is subject to these two conditions: (1) this equipment or device does not cause harmful interference, and (2) this equipment must accept any interference, including any that may cause its malfunction.