

Installation guide and user manual for IOT Card, Wi-Fi+BT, 2.4/5GHz

Model:6001223

FCC ID:2ARZI-IWB6001223

IC:24585-IWB6001223

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1. Product Description

This Wi-Fi BT IOT add-on card is a network connectivity module that can be plugged into an IOT host. The edge connector pinouts are as per IOT card specifications i.e., a total of 38 pin gold fingers with each side having 19 pins as per standard signal pinouts for IOT host interfacing.

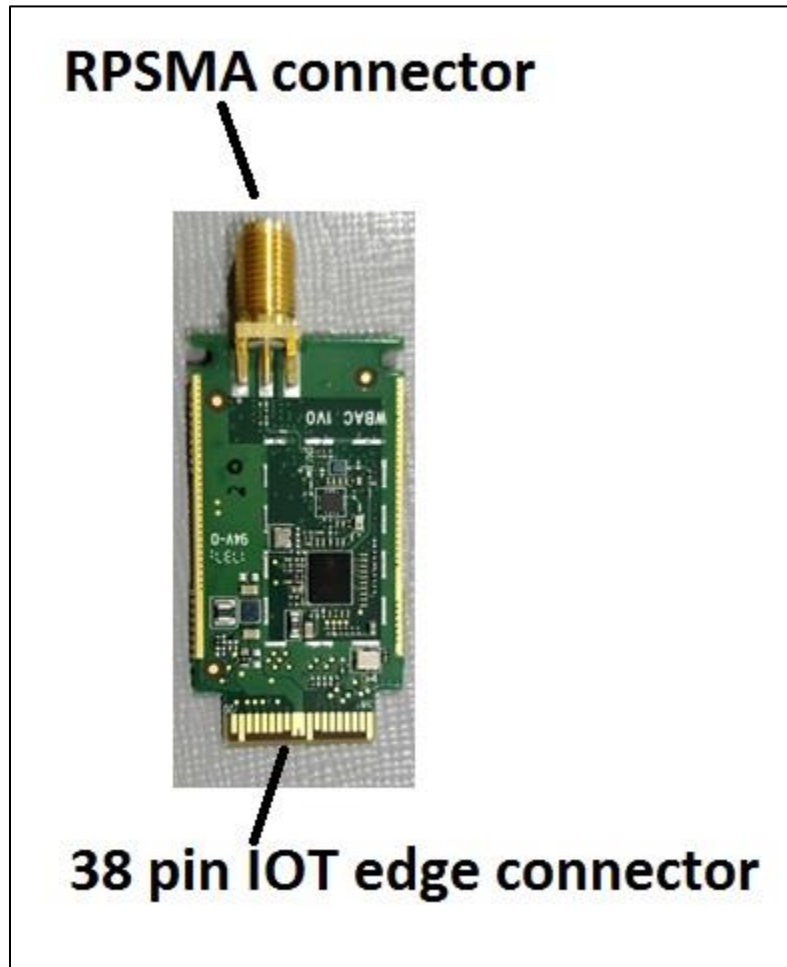
This module is built on Qualcomm's QCA9377-3 which is a single-die wireless local area network (WLAN) and Bluetooth (BT) combination solution to support 1 × 1 IEEE 802.11a/b/g/n/ac WLAN standards and BT 4.2 + HS, enabling seamless integration of WLAN/BT and low energy technology. The design supports a low-power SDIO 3.0 interface for WLAN and a UART/PCM interface for BT.

A RP-SMA connector is provided for connecting antenna for WIFI and BT operations. A 48MHz crystal is connected to QCA9377 for clock generation. The QCA9377 has inbuilt PA/LNA for 2.4GHz and external PA/LNA for 5GHz. The card works with 3.3V (core power) and 1.8V (IO power) received from the IOT gateway. There is an on-board 3.3V regulator to make sure the power source is clean and stable to QCA9377.

2. Technical Specifications

Item	Description
Product Name	IOT Card, WiFi+BT, 2.4/5GHz
Product part number	6001223
Chipset	Qualcomm QCA9377-3
Wi-Fi	Wi-Fi Certified- a/b/g/n/ac, WPA, WPA2
Bluetooth	BT4.2 (BDR+EDR) and BLE
IOT edge connector Interfaces	As per 38 pin IOT card specification (uses 3.3V for power, 1.8V for IO, SDIO & UART for communication). RPSMA female type for antenna connection.
Operating voltage	3.3V (at 859mA max) input from IOT gateway (host). No battery support. No direct adaptor support.
Antenna make (external)	Pulse - W1043
Dimensions (H x W x D)	22.3 x 57 x 6.6 mm
Weight (Only Card)	5g (only card) and 22g (with antenna)
Operating Temperature	-30 Deg. to 75 Deg.
Applications	IoT solutions in Health Care, Smart Energy, Asset Tracking, Vehicle Telematics, Remote Telemetry, Monitoring and Control.

3. Card descriptions



4. Installation /Setup guide (using FX30 as an example IOT host gateway)

Step 1: Open the cover plate of the FX30 module.

Step 2: Insert the WBAC card in the IoT slot as shown in figure1:



Figure 1: Module Insertion

Step 3: Close the cover plate as shown in figure 2. And put the screws.



Figure 2: Fixing Cover Plate

Step 4: Insert washer and nut to the WBAC SMA connector as shown in figure 3.



Figure 3: Washer & Nut threading

Step 5: Fix the antenna as shown in the figure 4.



Figure 4: Module with Antenna

Step 6: Power on the Fx30 module and connect the USB cable to the FX30 module.

Step 7: Open putty, set SSH mode, type 192.168.2.2 and port as 22 and login. Next when putty console opens, type login as 'root' and leave the password empty. Press enter.

5. Enabling Wi-Fi

5.1. Station/client mode:

After step 7 mentioned above,

- ./13
- ./42

To set the router name and password to which this device has to connect, type :

- vi /etc/wpa_supplicant.conf
'a' for edit, 'esc' for coming out of editing mode and ':wq' for save and exit.
- ./wifi.sh client
- Ping the address of the detected router.

5.2. For AP/router Mode, type the following commands in putty:

After step 7 mentioned above,

- ./13
- ./42
- vi /etc/hostapd.conf

Here you need to set the channel number (1 or 36), hw_mode (a or g). Also type 'a' for edit, '/textname' for searching, 'n' for next, 'esc' for coming out of editing mode and ':wq' for save and exit.

- ./wifi.sh ap

See the wifi ap as 'test' in your laptop. Connect to it from your laptop over wifi and ping its address as 192.168.43.1.

6. Enabling Bluetooth

Type the following commands for Bluetooth After step 7 mentioned above,

- ./13
- ./42
- btproperty &
- btapp
- gap_menu
- enable

Now you can enable Bluetooth on your testing phone and check for 'MDM_Flouride' and connect to it.

Type 'yes' in putty console when asked whether to connection requested can be accepted.

7. Enabling BLE

Type the following commands for BLE After step 7 mentioned above,

- ./13
- ./42
- btproperty &
- btapp
- gap_menu
- enable
- rsp_menu
- rsp_init
- rsp_start
- gattctest
- init
- gattctest_start_scan

8. Revision history

Rev	Date	Description	Author	Approval
v0p1	21-Aug-2018	Initial draft version	Sudeendra	Ganesan
V0p2	07-Dec-2018	Updated version with more details added on the product specification table and instruction added for BLE. Card description diagram added. Tablet of content added Document format updated. Revision history table, Introduction added.	Prajwal	Ganesan
V0p3	14-Jan-2019	Regulatory declaration and logo added	Prajwal	Ganesan
v0p4	16-Jan-2019	Added the additional regulatory warning as advised by lab	Prajwal	Ganesan

9. Regulatory declarations

FCC

Product name: **IOT Card, WiFi+BT, 2.4/5GHz**

Model name: **6001223**

FCC ID: **2ARZI-IWB6001223**

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 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.

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

The modular can be installed or integrated in mobile or fix devices only. This modular cannot be installed in any portable device.

FCC Radiation Exposure Statement

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

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID:2ARZI - IWB6001223 Or Contains FCC ID: 2ARZI -IWB6001223"

When the module is installed inside another device, the user manual of the host must contain below warning statements;

1. 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.

(2) This device must accept any interference received, including interference that may cause undesired operation.

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

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

Any company of the host device which install this modular with Single modular approval should perform the test of radiated emission and spurious emission according to FCC part 15C: 15.247, 15.209 and FCC PART 15E:15.407 requirement, Only if the test result comply with FCC part 15C : 15.247, 15.209 and FCC PART 15E:15.407 requirement, then the host can be sold legally.

IC

PMN: IOT Card, WiFi+BT, 2.4/5GHz

HVIN: 6001223

IC: 24585-6001223

IC Warning

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.

The modular can be installed or integrated in mobile or fix devices only. This modular cannot be installed in any portable device.

IC Radiation Exposure Statement

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

For a host manufacture's using a certified modular, if (1) the module's IC number is not visible when installed in the host, or (2) if the host is marketed so that end users do not have straight forward commonly used methods for access to remove the module so that the IC number of the module is visible; then an additional permanent label referring to the enclosed module: "Contains Transmitter Module IC:24585-IWB6001223 " or "Contains IC: 24585-IWB6001223" must be used.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux

appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes:

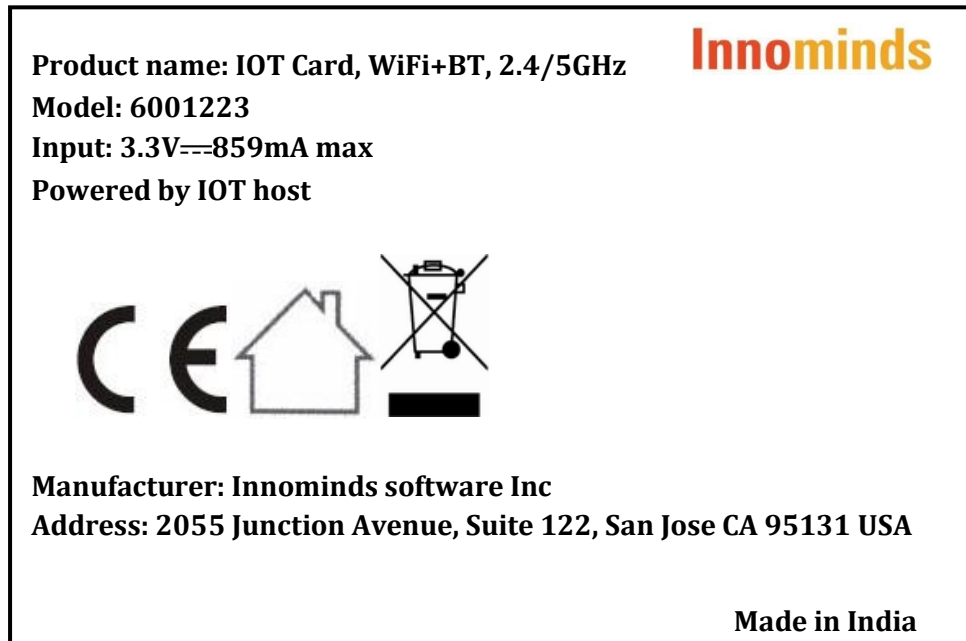
- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement

Le modular peut être installé ou intégré dans un mobile ou réparer une seule chose installation dans n'importe quel appareil portable.

Déclaration de rayonnement IC

Ce modular complies avec des radiations émettrices de rayonnement Environnement. Ceci ne doit pas être co-localisé ou opérer avec des autres Ce modular doit être installé et obtenu avec une distance minimale de 20 cm entre les radiateurs et le corps de l'utilisateur.

Pour un hôte, on utilise un modular, si (1) le numéro de module est non visible Quand on est installé dans le serveur, or (2) si le propriétaire est commercialisé Straightforward commonly used for the access to remove travail so that the number IC en vue Le module est visible;Ensuite, le label permanent a été attribué au module: "Contient le Module IC:" 24585-IWB6001223" ou "contenu IC: 24585-IWB6001223" doit" be used.

CE**CE Maintenance**

1. EUT Operating temperature range: -30° C to 75° C.
2. Ratings : Input 1.8V and 3.3V (Powered by IOT host)
3. The device complies with RF specifications when the device used at 20mm from your body.

CE Declaration of Conformity

Innominds Software Inc hereby declares that this IOT Card, WiFi+BT, 2.4/5GHz is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU. In accordance with Article 10(2) and Article 10(10). This product is allowed to be used in all EU member states.