Product Specification

W649b

WiFi6 module

W649a is a highly integrated Wi-Fi 11ax module that complies with IEEE 802.11ax and backward compatible with IEEE 802.11a/n/ac standard, offering feature-rich wireless connectivity at high standard, and delivering reliable, cost-effective throughput from an extended distance. This module is based on MT7915AN and MT7975AN; four antenna ports are available for flexible use of external antennas for the appliances in consideration.

1. Product Features

- IEEE 802.11a/n/ac/ax 4 streams radio
- Security support for WFA WPA/WPA2/WPA3 personal, WPS2.0, WAPI
- Host interfaces: PCIE 2.1

2. General Specification

Product Specification					
Model Name	W649b				
Solution(HDK version)	MT7915AN+MT7975AN				
Form factor	PCIE module				
Moisture sensitivity level	MSL:3 (follow IC specification)				
WLAN Standard	IEEE 802.11 ax/ac/a				
Host interface	PCIE				
Antenna configuration	4 antennas				
Dimensions		Minimum	Typical	Maximum	Unit
	Length	51.15	51.45	51.75	mm
	Width	76.7	77	77.3	mm
	Height				mm
	Weight				g
Antenna Connector	Ipex 3x3mm RF connector				
Electrical Specification					
Frequency range	U-NII Upper (5.725-5.825GHz)				
Electrostatic discharge					
Human Body Model	±2000V, all pins		Standard: ANSI/ESDA/JEDEC JS-001-2012		
Charged Device Model	±500V, all pins		Standard: JESD22-C101		

Operating Condition					
		Minimum	Typical	Maximum	Unit
Operation voltage	DC	3.15	3.3	3.45	V
		4.5	5.0	5.5	V
Operation temperature	C-temp	0		50	°C
Operation temperature (Full load)	I-temp	-40		75	°C
Operation temperature (Low rate≤ 10Mbps, IOT)	I-temp	-40		85	°C
Humidity Non-Operating		10		90	%

3. Quick Start Guide

I. Make sure host is power off before assembly module.

II. Insert module into PCIe socket on host and fixed by screw.

III. Power on host.

IV. Waiting for a ping success. (192.168.1.1)

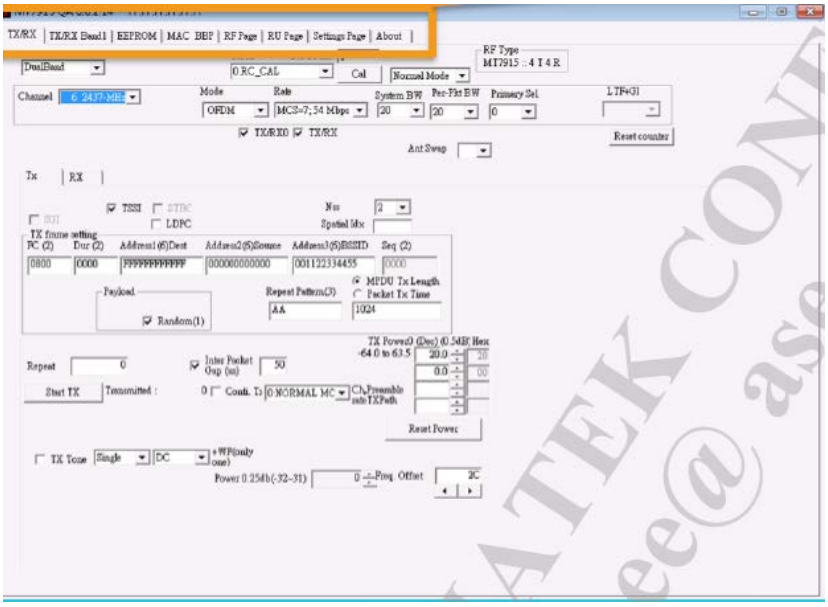
V. Enter commend from telnet:ated –i ra0 –u

VI. Open “QATool_Dbg.exe”

VII. Select APSOC

VIII. Select network adapter:

IX. Control from UI



FCC Statement

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 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.

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.

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. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

This device is restricted to indoor use.

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

ISED Statement

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada’s licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.

2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique 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;
2. L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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.

Les dispositifs fonctionnant dans la bande 5150-5250 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.

IC Radiation Exposure Statement:

This equipment complies with IC RSS-102 radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance **20cm** between the radiator & your body.

Cet équipement est conforme aux limites d'exposition aux rayonnements IC établies pour un environnement non contrôlé. Cet équipement doit être installé et utilisé avec un minimum de 20cm de distance entre la source de rayonnement et votre corps.

The transmitter module may not be co-located with any other transmitter or antenna.

Le module émetteur peut ne pas être coïmplanté avec un autre émetteur ou antenne.

CAN ICES-003 (B)/NMB-003(B)

This module is intended for OEM integrators under the following conditions:

1. This module is certified pursuant to Part 15 rule section (15.407) and RSS-247.
2. This module has been approved to operate with the antenna types listed below, with the maximum permissible gain indicated.

Frequency Band	Antenna Type	Gain(dBi)
5725-5850MHz	PCB	3.99dBi 3.99dBi 2.12 dBi 2.12 dBi

3. Label and compliance information

Label of the end product:

FCC:

The host product must be labeled in a visible area with the following " Contains FCC ID: **HDC-649B**".

The end product shall bear the following 15.19 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.

If the labelling area is considered too small and therefore it is impractical (smaller than the palm of the hand) to display the compliance statement, then the statement may be placed in the user manual or product packaging.

ISED:

This transmitter module is authorized only for use in device where the antenna may be installed such that 20 cm may be maintained between the antenna and users. The final end product must be labeled in a visible area with the following: “Contains transmitter module IC: 2250A-649B”.

Contient le module d'émission IC: 2250A-649B

The Host Model Number (HMN) must be indicated at any location on the exterior of the end product or product packaging or product literature which shall be available with the end product or online.

4. Information on test modes and additional testing requirements

This module is restricted to integration into hosts for indoor use only.

This module has been approved under stand-alone configuration.

The separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093, RSS-102 and different antenna configurations

The information on how to configure test modes for host product evaluation for different operational conditions for a stand-alone modular transmitter in a host, versus with multiple, simultaneously transmitting modules or other transmitters in a host can be found at KDB Publication 996369 D04.

5. Additional testing, Part 15 Subpart B disclaimer

Appropriate measurements (e.g. FCC 15 B and ISED compliance) and if applicable additional equipment authorizations (e.g. SDoC) of the host product to be addressed by the integrator/manufacturer.

This module is only FCC authorized for the specific rule part 15.407, RSS-247 listed on the grant, and the host product manufacturer is responsible for compliance to any other FCC rules that apply to the host product as being Part 15 Subpart B and ISED compliant.

6. The user manual of the end product should include:

FCC:

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

The antenna(s) used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons.

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.

This device is restricted to indoor use.

The antenna(s) used for this transmitter must not transmit simultaneously with any other antenna or transmitter.

ISED:

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:

1. This device may not cause interference.
2. This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

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CAN ICES-003 (B)/NMB-003(B)