

**WLAN+BT module adapter**  
**Model number: WL23C**  
**User Manual**

**GENERAL**

This device is a 2x2 Wi-Fi+Bluetooth® adapter.

**Integration to the end product**

1. WL23C module is mounted on the main board.
2. Insert Antenna Unit into Antenna Connectors of WL23C module.

**Technical Specification**

- |                            |                          |
|----------------------------|--------------------------|
| a) Dimensions (W x L x H): | 16mm x 12mm x 1.7mm      |
| b) Weight:                 | Approx. 0.67g            |
| c) IEEE WLAN Standard:     | IEEE 802.11a/b/g/n/ac/ax |
| d) Bluetooth:              | BDR, EDR, Low energy     |
| e) Host interface:         | M.2: CNVio2              |

## Regulatory Information

### Federal Communications Commission Radio Frequency Interference 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.

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

This device meets all the other requirements specified in Part 15E, Section 15.407 of the FCC Rules.

#### **FOR MOBILE DEVICE USAGE (>20cm/low power)**

##### **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.

#### **For U-NII 6 GHz**

Operation of transmitters in the 5.925-7.125 GHz band is prohibited for control of or communications with unmanned aircraft systems.

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

#### **KDB 996369 D03 OEM Manual rule sections:**

##### 2.2 List of applicable FCC rules

This module has been tested for compliance to FCC Part 15

##### 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) or being used in a portable condition will need a separate reassessment through a class II permissive change application or new certification.

##### 2.4 Limited module procedures

Not applicable.

##### 2.5 Trace antenna designs

Not applicable.

##### 2.6 RF exposure considerations

This equipment complies with FCC mobile 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. If the module is installed in a portable host, a separate SAR evaluation is required to confirm compliance with relevant FCC portable RF exposure rules.

##### 2.7 Antennas

The following antennas have been certified for use with this module; antennas of the same type with equal or lower gain may also be used with this module. The antenna must be installed such that 20 cm can be maintained between the antenna and users.

Antenna Type		PIFA	
Antenna Gain	2400-2483MHz	3.24 dBi	
	5150-5250MHz	3.64 dBi	
	5250-5350MHz	3.73 dBi	
	5470-5725MHz	4.77 dBi	
	5725-5850MHz	4.97 dBi	
	5925-6425MHz	4.83 dBi	
	6425-6525MHz	4.30 dBi	
	6525-6875MHz	5.37 dBi	
	6875-7125MHz	5.59 dBi	
Antenna connector	MHF4L		

2.8 Label and compliance information

The final end product must be labeled in a visible area with the following: “Contains FCC ID: ACJ9TGWL23C”. 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 transmitter(s) or portable use will require a separate 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 to this portion of rule requirements if applicable.

As long as all conditions above are met, further transmitter test 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 can not 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 can not 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.

### **Manual Information To the End User**

The OEM integrator 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.

### **OEM/Host manufacturer responsibilities**

We recommend to use "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.

OEM/Host manufacturers are ultimately responsible for the compliance of the Host and Module. The final product must be reassessed against all the essential requirements of the FCC rule such as FCC Part 15 Subpart B before it can be placed on the US market. This includes reassessing the transmitter module for compliance with the Radio and EMF essential requirements of the FCC rules. This module must not be incorporated into any other device or system without retesting for compliance as multi-radio and combined equipment.

### **Innovation, Science and Economic Development Canada (ISED)**

This product complies with ISED's licence-exempt RSSs. 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.

Le présent appareil est conforme aux CNR ISED 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'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

### **Wireless LAN use**

This product (local network devices) for the band 5150-5250 MHz is only indoor usage to reduce potential for harmful interference to co-channel Mobile Satellite systems.

High power radars are allocated as primary users (meaning they have priority) of 5250-5350 MHz and 5650- 5850 MHz and these radars could cause interference and/or damage to LELAN devices.

Cet appareil (pour réseaux locaux radioélectriques) dans les bandes de fréquences 5150-5250 MHz est réervéà une utilisation à l'intérieur afin de réduire le risque d'interférence avec les systèmes satellites mobiles bicanaux. Les radars forte puissance sont désignés comme étant les premiers utilisateurs (c'est-à-dire qu'ils ont la priorité) des bandes de fréquences 5250-5350 MHz et 5650-5850 MHz. Ces stations radars peuvent provoquer des interférences et/ou des dommages à ce périphérique.

Devices shall not be used for control of or communications with unmanned aircraft systems.

Les dispositifs ne doivent pas être utilisés pour commander des systèmes d'aéronef sans pilote ni pour communiquer avec de tels systèmes.

Antennas

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	6525-6875MHz	5.37 dBi	
6875-7125MHz	5.59 dBi		
Antenna connector	MHF4L		

RF exposure considerations

This equipment complies with ISED mobile radiation exposure limits set forth for an uncontrolled

**Panasonic** FCC ID: ACJ9TGWL23C, IC: 216H-CFWL23C

environment. This equipment should be installed and operated with a minimum distance of 20cm between the radiator and the body of the user/or bystander. If the module is installed in a portable host, a separate SAR evaluation is required to confirm compliance with relevant ISED portable RF exposure rules.

#### Instructions to OEM Integrators

A User manual provided to the end user must indicate the operating requirements and conditions that must be observed to ensure compliance with the above-mentioned ISED RF Exposure guideline.

If this module is intended for use in a portable device, integrators are responsible for separate evaluation and/or approval to satisfy ISED RF Exposure requirements.

If other radio devices are to be integrated with this module, an additional evaluation and ISED submission may be required. Integrators are responsible for such additional evaluation and ISED submission.

The following information must be indicated on the host device of this module;

Contains/Contient IC : 216H-CFWL23C