

User Manual

MITSUMI Wireless LAN Bluetooth Combo Module MODEL DWM-W091

The purpose of this manual is to explain correct way how to integrate module DWM-W091 to the end product. It includes procedures that shall assist you to avoid unforeseen problems. This manual presents information that shows how module and OEM product, where module integrated, complies with regulations in certain regions. Any modifications, not expressly approved by the manufacturer could void the authority to operate in these regions.

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1. General

This MITSUMI Wireless LAN Bluetooth Combo Module, model DWM-W091 has to be installed and used in accordance with the technical description/installation instructions provided by the manufacturer.

For detail information concerning type approval of this module (e.g. where this module is already pre-approved) please contact the authorized local distributor or manufacturer.

The system may only be implemented in the configuration that was authorized. Note that any changes or modifications to this equipment not expressly approved by the manufacturer could void the user's authority to operate this equipment.

2. Product Information

DWM-W091 is a Wireless LAN Bluetooth Combo Module and 1×1 SISO method is supported. The specification is shown in the following.

Power Supply		DC 3.1V to 4.2V(3.3V Typ) DC 1.62V to 1.92V(1.8V Typ)
WLAN(2.4GHz)	Carrier Frequency	USA/Canada 2.412GHz to 2.62GHz Europe 2.412GHz to 2.472GHz
	Output Power	16dBm (average)
	Number of Channel	USA 11ch Europe 13 ch
	Modulation Method	DSSS, OFDM
	Data rate	DS: 1Mbps/2Mbps/5.5Mbps/11Mbps
		OFDM: 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps
		MCS0:6.5Mbps/MCS1:13Mbps/MCS2:19.5Mbps/MCS3:26Mbps
MCS4:39Mbps/MCS5:52Mbps/MCS6:58.5Mbps/MCS7:65Mbps		
Host interface	SDIO / HSIC	
WLAN(5GHz)	Carrier Frequency	USA/Canada 5.18 – 5.32, 5.470-5.6, 5.65-5.725, 5.745-5.825 GHz Europe 5.18-5.7GHz
	Output Power	11.5dBm
	Number of Channel	USA 23ch Europe 19ch
	Modulation Method	OFDM
	Data rate	OFDM: 6Mbps/9Mbps/12Mbps/18Mbps/24Mbps/36Mbps/48Mbps/54Mbps
		MCS0:6.5Mbps/MCS1:13Mbps/MCS2:19.5Mbps/MCS3:26Mbps
		MCS4:39Mbps/MCS5:52Mbps/MCS6:58.5Mbps/MCS7:65Mbps
Host interface	SDIO / HSIC	
Bluetooth	Version	Bluetooth V4.0 BDR/EDR+LE
	Carrier Frequency	2.402GHz to 2.480GHz
	Output Power	+8dBm (Class 1)
	Hopping	1600hops/sec
	Modulation Method	GFSK, PI/4-DQPSK, 8DPSK
	Data rate	GFSK: 1Mbps
		PI/4-DQPSK: 2Mbps
8DPSK: 3Mbps		
Host interface	UART / PCM(for Audio)	

3. USA-Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits, 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.

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

Labelling.

MITSUMI Wireless LAN Bluetooth Combo Module DWM-W091 labelled as below.

FCC ID: EW4DWMW091

The proposed with FCC ID label format is to be placed on the module. If FCC ID is not visible when the module is installed into the system, "Contains FCC ID: EW4DWMW091" shall be placed on the outside of final host system.

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.

Caution: Exposure to Radio Frequency Radiation.

To comply with FCC RF exposure compliance requirements, 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.

4. Canada-Industry Canada (IC)

This device complies with Industry Canada licence-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 this device.

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) il ne doit pas produire de brouillage et
- (2) l' utilisateur du dispositif doit être prêt à accepter tout brouillage radioélectrique reçu, même si ce brouillage est susceptible de compromettre le fonctionnement du dispositif.

Labelling.

MITSUMI Wireless LAN Bluetooth Combo Module DWM-W081 labelled as below.

IC: 4250A-DWMW091

The proposed with IC ID label format is to be placed on the module. If IC ID is not visible when the module is installed into the system, "Contains IC: 4250A-DWMW091" shall be placed on the outside of final host system.

Caution:

Users should also be advised that

- (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; and
 - (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 (i.e. priority users) of the bands 5250-5350 MHz and 5650-5850 MHz and that these radars could cause interference and/or damage to LE-LAN devices.

Les utilisateurs devraient aussi être avisés que

- (i) les dispositifs fonctionnant dans la bande 5 150-5 250 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;
- (ii) le gain maximal d'antenne permis pour les dispositifs utilisant les bandes 5 250-5 350 MHz et 5 470-5 725 MHz doit se conformer à la limite de p.i.r.e.;

(iii) le gain maximal d'antenne permis (pour les dispositifs utilisant la bande 5 725-5 825 MHz) doit se conformer à la limite de p.i.r.e. spécifiée pour l'exploitation point à point et non point à point, selon le cas.

De plus, les utilisateurs de radars de haute puissance sont désignés utilisateurs principaux (c.-à-d., qu'ils ont la priorité) pour les bandes 5 250-5 350 MHz et 5 650-5 850 MHz et que ces radars pourraient causer du brouillage et/ou des dommages aux dispositifs LAN-EL.

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.

En vertu de la réglementation de l'industrie du Canada, cet émetteur de radio ne peuvent fonctionner en utilisant une antenne d'un type et maximum (ou moins) Gain approuvé pour l'émetteur par Industrie Canada. pour réduire risque d'interférence aux autres utilisateurs, le type d'antenne et son gain doivent être choisis de sorte que la puissance isotrope rayonnée équivalente (PIRE) ne dépasse pas ce qui est nécessaire pour la réussite de communication.

Exposure to Radio Frequency Radiation.

To comply with IC RF exposure compliance requirements, 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.

Pour se conformer aux exigences en matière d'exposition RF IC, 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 un autre émetteur.

5. Taiwan NCC

5.25-5.35 稀赫頻帶內操作之無線資訊傳輸設備，限於室內使用。

Labelling.

MITSUMI Wireless LAN Bluetooth Combo Module DWM-W091 labelled as below.

“Contains NCC ID:  CCXXXXYYYYZZW”


根據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，指依電信法規定作業之無線電通信。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。

5. Europe-EU Declaration of Conformity and Restrictions

Hereby, MITSUMI declares that this Mitsumi 802.11n WLAN module DWM-W081 is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC.

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

This indicates compliance with the R&TTE Directive 1999/5/EC and meets the relevant parts of following technical specifications:

EN 301 893, Broadband Radio Access Networks (BRAN) — 5 GHz high performance RLAN — Harmonized EN covering essential requirements of Article 3(2) of the R&TTE Directive

EN 301 489-17, Electromagnetic Compatibility and Radio spectrum Matters (ERM); Electromagnetic Compatibility (EMC) standard for radio equipment and services; Part 17: Specific Conditions for Wideband Data and HYPERLAN Equipment.

EN 60950-1, Safety of Information Technology Equipment.

EN 62311, Assessment of electronic and electrical equipment related to human exposure restrictions for electromagnetic fields (0 Hz-300 GHz).

Marking by the symbol  indicates that usage restrictions apply.

Restrictions:

- This product is for indoor use only when using channels 36, 40, 44, or 48 (5150–5250MHz).
- To ensure compliance with local regulations, be sure to select the country in which the access point is installed.

Caution: Exposure to Radio Frequency Radiation.

This device must not be co-located or operating in conjunction with any other antenna or transmitter, without further RF Exposure evaluation.

Remark:

This module is for a fixed application only. The OEM integrator will need to conduct full EMC testing in accordance with EN301 489-17 in the final use configuration.