SDMC CDW-N37663U-02 Wi-Fi BT Module

SDMC CDW-N37663U-02 Wi-Fi BT Module User Manual

Contents

SDMC CDW-N37663U-02 Wi-Fi BT Module

Overview:

The CDW-N37663U-02 is a highly integrated single chip Module which has built in a 2×2 dual-band wireless LAN radio and Bluetooth radio. It supports IEEE 802.11a/b/g/n/ac standard and provides the highest PHY rate up to 867Mbps, offering feature-rich wireless connectivity and reliable throughput from an extended distance. It includes Bluetooth EDR and LE radio which complies with Bluetooth v5.1.

General Specification

- Major Chipset MT7663BU
- Standard 802.11a/b/g/n/ac
- Modulation Method BPSK/ QPSK/ 16-QAM/ 64-QAM/256-QAM
- Frequency Band 2.4GHz and 5GHz
- Operating Temperature -20° C ~ 70° C
- Storage Temperature -40° C ~ 85°C
- Humidity 5% to 90% maximum
- Dimension 27.00×17.70x 2.54±0.2mm (LxWxH)
- Rating 3.3VDC

Module photo:

TOP VIEW BOTTOM VIEW

Manufacturer: Shenzhen SDMC Technology Co., Ltd.
Factory: CHINA DRAGON TECHNOLOGY LIMITED

FCC Statements

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.
   NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursua nt to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful inte rference in a residential installation. This equipment generates uses and can radiate radio frequency energy a nd, if not installed and used in accordance with the instructions, may cause harmful interference to radio com munications. 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 turn ing 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 important announcement
- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

FCC Radiation Exposure Statement
The modular can be installed or integrated in mobile or fix devices only. This modular cannot be installed in any portable device, for example, USB dongle like transmitters is forbidden. 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: 2AW68-N37663U Or Contains FCC ID: 2AW68-N37663U"

When the module is installed inside another device, the user manual of this device 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, and
    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. The host product manufacturer is responsible for compliance to any other FCC rules that apply to the host not covered by the modular transmitter grant of certification. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed. The end user manual shall include all required regulatory information/warning as shown in this manual, include: This product must be installed and operated with a minimum distance of 20 cm between the radiator and user body.

Requirement per KDB996369 D03

List of applicable FCC rules
CFR 47 FCC PART 15 SUBPART C has been investigated. It is applicable to the modular transmitter.

Summarize the specific operational use conditions
This module is stand-alone modular. If the end product will involve the Multiple simultaneously transmitting condition or different operational conditions for a stand-alone modular transmitter in a host, host manufacturer have to consult with module manufacturer for the installation method in end system. This radio transmitter 2AW68-N37663U have been approved by Federal Communications Commission to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device. The concrete contents to check are the following three points.

1. Must use an antenna such as PCB Antenna with a gain not exceeding 5.9 dBi for WIFI and 4.7 dBi for BT;
2. Should be installed so that the end user cannot modify the antenna;
3. Feed line should be designed in 50ohm

Fine-tuning of return loss etc. can be performed using a matching network. The antenna shall not be accessible for modification or change by the end user. A modification to the antenna is required FCC/ISED Class II permissive change. This device has been approved as mobile device in accordance with FCC and ISED Canada RF exposure requirements. This means that a restricted minimum separation distance of 20cm between the antenna and any person. A change in use that involves a separation distance ≤20cm (Portable usage) between the Module's antenna and any persons is a change in the RF exposure of the module and, hence, is subject to a FCC Class 2 Permissive Change and a ISED Canada Class 4 Permissive Change policy in accordance with FCC KDB 996396 D01 and ISED Canada RSP-100.

Limited module procedures
The module is a single module, not applicable.

Trace antenna designs
The module has no tracking antenna be used, not applicable.

RF exposure considerations
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. The host product shall show the same or similar statement to the end users in the endproduct manuals. If the module is installed to a host / end product with a used distance <20cm, additional SAR evaluation or measurement must be followed according to FCC KDB 447498 and RSS- 102. If the module is installed to a host / end product with multiple transmitters, additional RF exposure evaluation must be performed for the simultaneous transmission condition per

FCC KDB 447498 and RSS-102. A Formula is also showed below:
The procedure rules are provided in 2.3 in this document. As the module manufacturer is still taking responsibility for the compliance of this module, if you have any changes mentioned above, you must advise and get the help from us with the contact information as shown below 2.12.

Antennas
This radio transmitter has been approved by Federal Communications Commission to operate with the antenna types listed below, with the maximum permissible gain indicated.

FCC ID: 2AW68-N37663U
Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Radios	**YJ**			**YX**		
	YJ-BT-24-13 **PCB Ant**	**YJ-W0-24-13** **FPC Ant**	**YJ-W1-24-13** **FPC Ant**	**YX-PH1020-BT-V1.0** **FPC Ant**	**YX-PH1020-WIFI0-V1.0** **FPC Ant**	**YX-PH1020-WIFI1-V1.0** **FPC Ant**
Bluetooth	4.70	/	/	1.91	/	/
2.4G WiFi	/	3.80	3.20	/	3.56	3.67
5G WiFi	/	4.60	4.50	/	5.90	5.08

Label and compliance information
The final end product must be labeled in a visible area with the following" Contains FCC ID: 2AW68-N37663U

Information on test modes and additional testing requirements
Host manufacturer is strongly recommended to confirm compliance with FCC requirements for the transmitter when the module is installed in the host.

Additional testing, Part 15 Subpart B disclaimer
Host manufacturer is responsible for compliance of the host system with module installed with all other applicable requirements for the system such as Part 15 B.

Note EMI Considerations
EMI consideration for transmitting simultaneously: This module is stand-alone modular. If the end product has multiple certified modules integrated in a host and transmitting simultaneously: When after radiated emission testing, if there are no additional emissions generated due to simultaneous-transmission operations compared to single transmitter operations testing, it is not necessary to file the additional simultaneous transmission test data. FCC class II permissive changes is no necessary. However, RF exposure for transmitting simultaneously also needed, please refer to 2.6 in this document.

To obtain better engineer design while installing this module:
It is recommended to place the module as close as possible to the edge of the baseplate. If conditions permit, make the antenna feed point closest to the edge of the baseplate. Please ensure that the module is not covered by any metal shell. Do not lay copper, wire, or place components in the antenna area of the module PCB.

How to make changes
Only the module grantee is permitted to make permissive changes. If the host integrator is expected to install the module in a way different from this manual or want to change the module, please contact:

Company: Shenzhen SDMC Technology Co., Ltd
Address: Room 1022, Floor 10, Building A, Customs Building, No. 2, Xin'an 3rd Road, Dalang Community, Xin'an Street, Bao'an District, Shenzhen
Email: ryan_yan@sdmctech.com

IC 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.

Radiation Exposure Statement:
The device meets the exemption from the routine evaluation limits in section 2.5 of RSS 102 and compliance with RSS-102 RF exposure, users can obtain Canadian information on RF exposure and compliance. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter. This equipment should be installed and operated with a minimum distance of 20 centimeters between the radiator and your body. 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;This device complies with RSS 247 of Industry Canada. This Class B device meets all the requirements of the Canadian interference-causing equipment regulations.

ISED Modular Usage Statement

NOTE 1: When the ISED certification 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 the wording ” Contains transmitter module IC: 20522-N37663U” or “Contains IC: 20522-N37663U”.

This radio transmitter (ISED certification number: 20522-N37663U) has been approved by Industry Canada to operate with the antenna types listed with the maximum permissible gain indicated. Antenna types not included in this list, having again greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Frequency band:

- Bluetooth: 2402MHz–2480MHz
- 2.4G WIFI: 2412MHz–2472MHz
- 5GWIFI: 5180MHz–5240MHz;5260MHz-5320MHz;5500MHz-5720MHz;5745MHz–5825MHz,
- RF Effective Isotropic Radiated Power, EIRP:
- 2.4GWIFI: EIRP<20dBm
- Bluetooth: EIRP<20dBm
- 5GWIFI 5180MHz-5240MHz: EIRP<23dBm
- 5260MHz–5320MHz: EIRP<20dBm
- 5500MHz-5720MHz: EIRP 20dBm
- 5745MHz-5825MHz:EIRP 13.98dBm

“This device complies with relevant RF radiation exposure limits when positioned at least 20cm away from your body.” The WLAN function for this device is restricted to indoor use only when operating in the 5150 to 5350 MHz frequency range.

Documents / Resources

	SDMC CDW-N37663U-02 Wi-Fi BT Module [pdf] User Manual N37663U, 2AW68-N37663U, 2AW68N37663U, CDW-N37663U-02 Wi-Fi BT Module, CDW-N37663U-02, CDW-N37663U-02 BT Module, Wi-Fi BT Module, BT Module, Wi-Fi Module, Module

References

- User Manual