



CWBP720Q User Manual

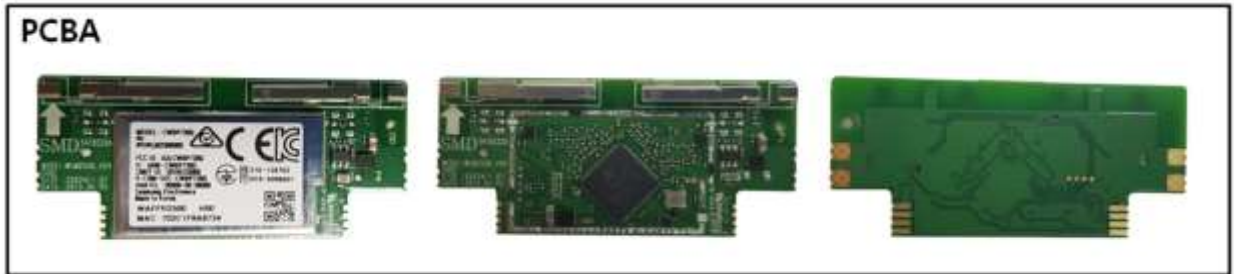
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1. 개요

CWBP720Q Module은 저전력 어플리케이션에 최적화 되어 있는 IEEE802.11a.b.g.n을 지원하는 WIFI 2X2 통신 모듈입니다.

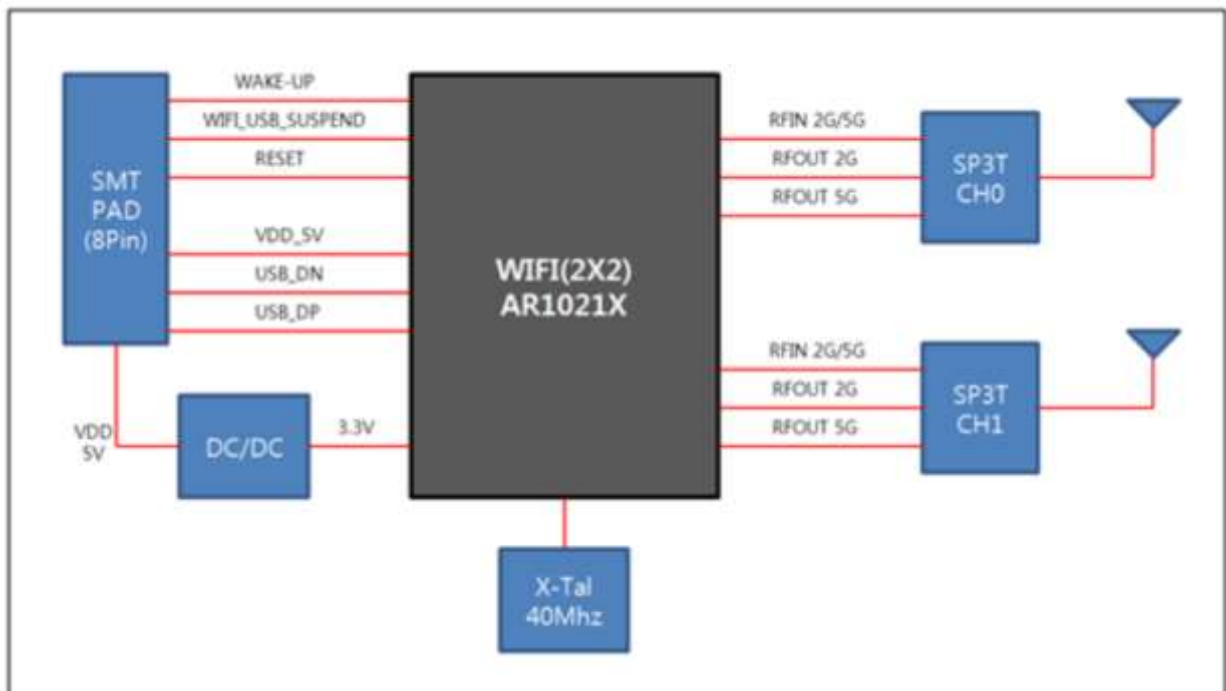


2. 하드웨어

2.1 Chipset 정보

항목	IC제조사	부품명
IEEE802.11 a/b/g/n MAC/Baseband/Radio	Qualcomm	AR1021X-C

2.2 회로 구성도

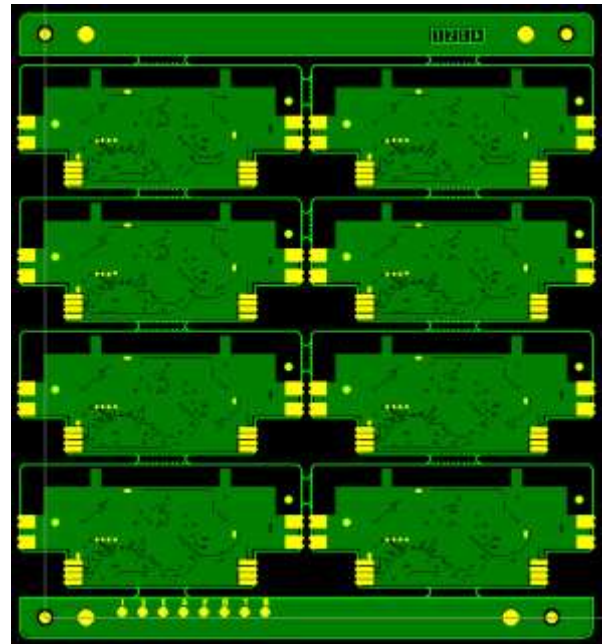
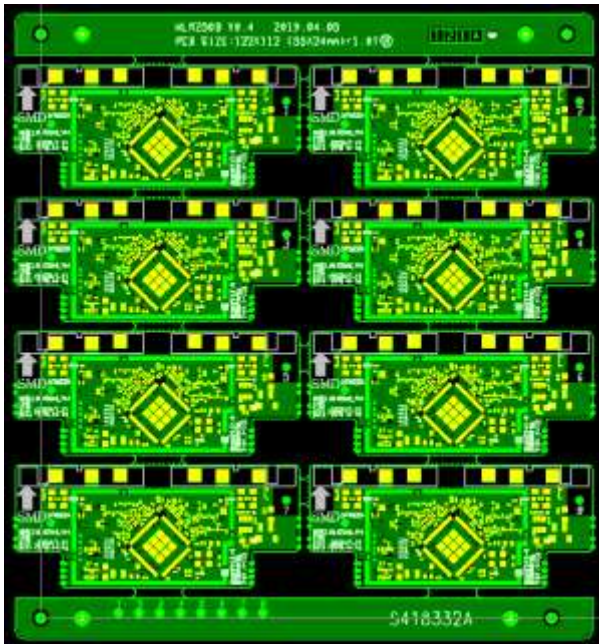


2.3 특징

- 1) Application : 주방가전 WIFI Module
- 2) RF Type : 2TX 2RX
- 3) Antenna : Metal 2 Antenna
- 4) PCB Size : 24.0 X 55.0 X 1.0mm

3. PCB 정보

3.1 PCB Array



- 1) PCB Array size : 122 X 112 mm
- 2) Unit size : 55 X 24 mm
- 3) Thickness : 1.0 mm
- 4) Array : 2 X 4 (8 pcs)

3.2 PCB PIN MAP



Terminal	Name	Interface	I/O	Description
1	GND	Analog	-	Ground
2	WAKE_UP	Digital	I	WiFi host wake up
3	WIFI_USB_SUSPEND	Digital	O	WiFi USB PHY On/Off Ctrl
4	Reset	Digital	I	WiFi/BT Reset
5	VCC	Analog	I	DC +5V Power supply input
6	GND	Analog	-	Ground
7	USB DN	Digital	I/O	BT USB interface negative
8	USB DP	Digital	I/O	BT USB interface positive

4. 전기적 특성

4.1 정격 전압

Symbol	Parameter	Rating	Unit
VCC	Power supply voltage	18.0	V
RFIN	Input RF level	-10	dBm
Temp	Operating	-10 to 60	°C
TSTG	Storage Temperature	-40 to 85	°C

4.2 DC-DC 입/출력 전압

Symbol	Parameter	Min	Typ.	Max	Unit
VCC_IN	Input Power supply	4.5	5.0	5.5	V
VCC_3.3	3.3V DC/DC Output Voltage	3.14	3.3	3.46	V
VCC_1.2	1.2V DC/DC Output Voltage	1.20	1.26	1.32	V

4.3 전기적 특성

Parameter		Min	Typ.	Max	Unit
Normal Condition, 5.0V Operation, at Target Power for TX					
2.4GHz	Tx mode, Cont.Tx@11M(SISO)	-	253	-	mA
	Tx mode, Cont.Tx@54M(SISO)	-	244	-	mA
	Tx mode, Cont.Tx@HT20 MCS7(SISO)	-	235	-	mA
	Rx mode, Cont. Rx@11M(SISO)	-	92	-	mA
	Rx mode, Cont. Rx@54M(SISO)	-	95	-	mA
	Rx mode, Cont. Rx@HT20 MCS7(SISO)	-	95	-	mA
5GHz	Tx mode, Cont.Tx@54M(SISO)	-	261	-	mA
	Tx mode, Cont.Tx@HT20 MCS7(SISO)	-	259	-	mA
	Rx mode, Cont. Rx@54M(SISO)	-	107	-	mA
	Rx mode, Cont. Rx@HT20 MCS7(SISO)	-	107	-	mA

<Specification>

Frequency range and channel	2 412 MHz ~ 2 462 MHz (802.11b/g/n_HT20) : 11 ch	
	5 180 MHz ~ 5 240 MHz (802.11a/n_HT20): 4 ch	
	5 190 MHz ~ 5 230 MHz (802.11n_HT40): 2 ch	
	5 260 MHz ~ 5 320 MHz (802.11a/n_HT20): 4 ch	
	5 270 MHz ~ 5 310 MHz (802.11n_HT40): 2 ch	
	5 500 MHz ~ 5 700 MHz (802.11a/n_HT20): 11 ch	
	5 510 MHz ~ 5 670 MHz (802.11n_HT40): 5 ch	
	5 745 MHz ~ 5 825 MHz (802.11a/n_HT20): 5 ch	
	5 755 MHz ~ 5 795 MHz (802.11n_HT40): 2 ch	
Max. Tune-up Average Power	2.4 GHz WIFI	14 dBm
	5 GHz WIFI (802.11a/n_HT20)	12.5 dBm
	5 GHz WIFI (802.11n_HT40)	10.5 dBm
List of applicable FCC rules	2.4 GHz WIFI	FCC Part 15 Subpart B, 15.247
	5 GHz WIFI	FCC Part 15 Subpart C, 15.407

Federal Communication Commission 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 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.

For product available in the USA/Canada market, only channel 1~11 can be operated and these channel assignments deal with only the 2.4 GHz range.

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

This device is going to be operated in 5.15~5.25GHz frequency range, it is restricted in indoor environment only.

IMPORTANT NOTE:**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.

IMPORTANT NOTE:

This module is intended for OEM integrator. The OEM integrator is still responsible for the FCC compliance requirement of the end product, which integrates this module.

20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the FCC

radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

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

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the FCC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. If the size of the end product is smaller than 8x10cm, then additional FCC part 15.19 statement is required to be available in the users manual: This device complies with Part 15 of 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. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX FCC ID: A3LCWBP720Q ". If the size of the end product is larger than 8x10cm, then the following FCC part 15.19 statement has to also be available on the label: This device complies with Part 15 of 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.

IC Statement

This Class B digital apparatus complies with Canadian ICES-003.

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.

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada.

For product available in the USA/Canada market, only channel 1~11 can be operated and these channel assignments deal with only the 2.4 GHz range.

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

The device could automatically discontinue transmission in case of absence of information to transmit, or operational failure. Note that this is not intended to prohibit transmission of control or signaling information or the use of repetitive codes where required by the technology.

The device for the band 5150-5250 MHz is only for indoor usage to reduce potential for harmful interference to co-channel mobile satellite systems.

The maximum antenna gain permitted (for devices in the bands 5250-5350 MHz and 5470-5725 MHz) to comply with the e.i.r.p. limit.

The maximum antenna gain permitted (for devices in the band 5725-5825 MHz) to comply with the e.i.r.p. limits specified for point-to-point and non point-to-point operation as appropriate, as stated in section A9.2(3).

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

IMPORTANT NOTE:

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.

IMPORTANT NOTE:

This module is intended for OEM integrator. The OEM integrator is still responsible for the IC compliance requirement of the end product, which integrates this module.

20cm minimum distance has to be able to be maintained between the antenna and the users for the host this module is integrated into. Under such configuration, the IC RSS-102 radiation exposure limits set forth for an population/uncontrolled environment can be satisfied.

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

USERS MANUAL OF THE END PRODUCT:

In the users manual of the end product, the end user has to be informed to keep at least 20cm separation with the antenna while this end product is installed and operated. The end user has to be informed that the IC radio-frequency exposure guidelines for an uncontrolled environment can be satisfied. The end user has to also be informed that any changes or modifications not expressly approved by the manufacturer could void the user's authority to operate this equipment. IC statement is required to be available in the users manual: This Class B digital apparatus complies with Canadian ICES-003. 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.

LABEL OF THE END PRODUCT:

The final end product must be labeled in a visible area with the following " Contains TX IC : 649E-CWBP720Q " .