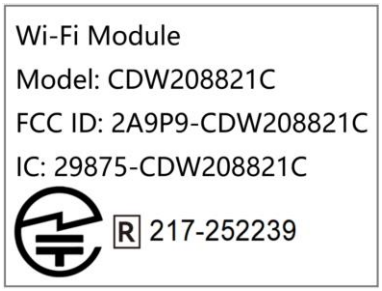
Installations User Manual

1. Overview

The CDW208821C is a single-die wireless local area network (WLAN) solution to support 1 × 1 IEEE 802.11a/b/g/n/ac WLAN standards, enabling seamless integration of WLAN technology.

2. Label



3. Features

- Supports a low-power SDIO 3.0 interface for WLAN
- Provides a highly integrated WLAN system-on-chip (SoC) for 5 GHz 802.11ac, or 2.4 GHz/5 GHz 802.11n WLAN applications
- Support WLAN 2.4GHz and 5GHz band channels
- Supports a single-ended RF port for cleaner and lower cost design
- Supports 20 MHz/40 MHz at 2.4 GHz and supports 20 MHz, 40 MHz, or 80 MHz at 5 GHz
- Supports multiuser MIMO

4. General Specification

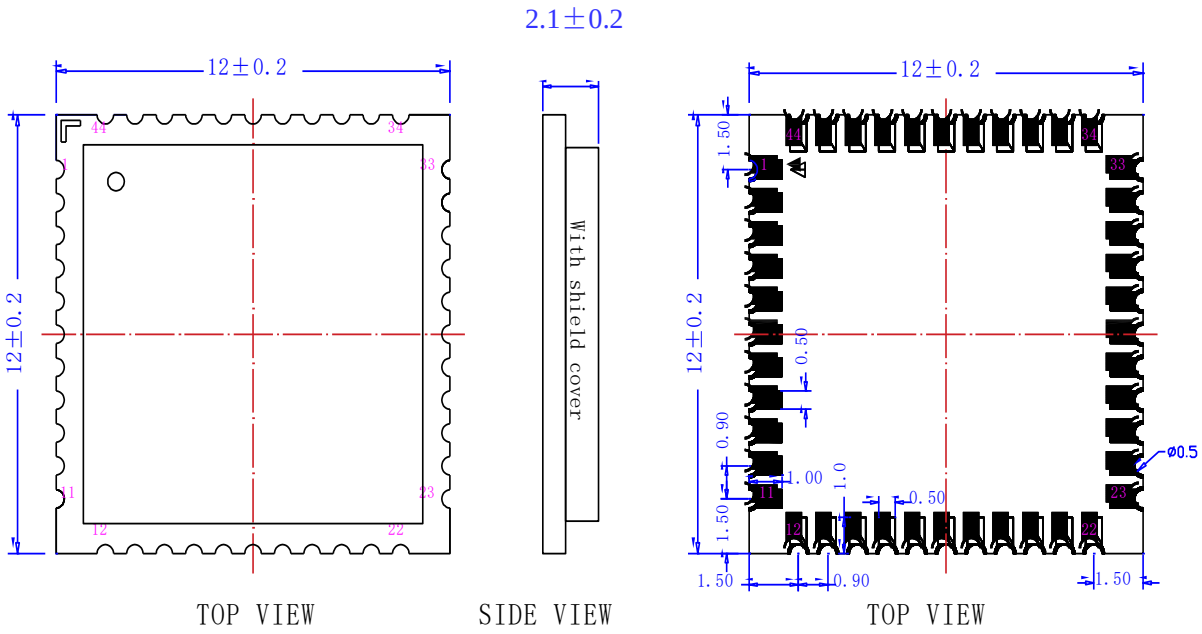
FCC ID:	2A9P9-CDW208821C
IC:	29875-CDW208821C
Poduct Name:	Wi-Fi Module
Model:	CDW208821C
Major Chipset:	RTL8821CS
Standard:	802.11a/b/g/n/ac
Modulation Method:	BPSK/QPSK/16QAM/64QAM/256QAM/DBPSK/DQPSK/CCK
Frequency Band:	2.4GHz and 5GHz ISM Band
WiFi Interface:	SDIO3.0
Operating Temperature:	-20° C ~ 65° C
Storage Temperature:	-40° C ~ 85°C
Humidity:	5% to 90% maximum
Dimension:	12x12x2.1 (LxWxH) mm

5. Electriacl Characteristics

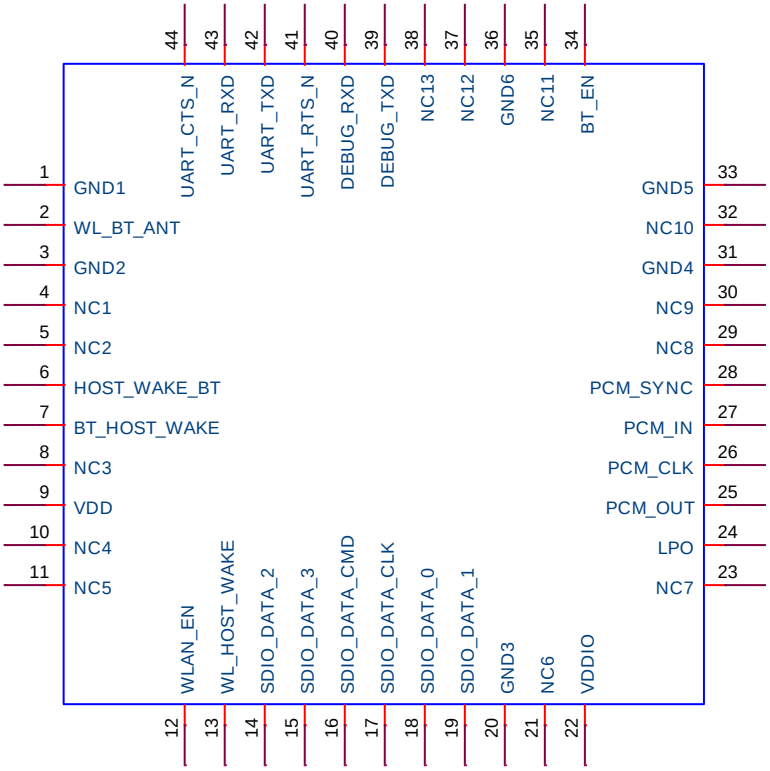
Symbol	Parameter	Minimum	Typical	Maximum	Units
VDD	3.3V supply voltage	3.0	3.3	3.6	V
VDDIO	I/O supply voltage	1.62	1.8 or 3.3	3.46	V
VDD	3.3V rating current	--	--	1000	mA

6. Physical Dimensions

(Unit: mm)



7. Pin Description



NO.	Name	Type	Description
1	GND	—	Ground connections
2	RF	I/O	RF I/O port (2.4G and 5G)
3	GND	—	Ground connections
4	NC	—	No connect
5	NC	—	No connect
6	HOST_WAKE_BT	I	HOST wake up Bluetooth device(GPIO13)
7	BT_WAKE_HOST	O	Bluetooth device to wake Host(GPIO14)
8	NC	—	No connect (SDIO_INT_OOB/TEST_MD_SEL) (GPIO4)
9	VDD	P	3.3V INPUT
10	NC	—	No connect
11	NC	—	No connect
12	WLAN_EN	I	Enable pin for WLAN device(GPIO9)
13	WL_HOST_WAKE	O	WL_WAKE_HOST(GPIO10)
14	SD_DAT2	I/O	SDIO DATA2
15	SD_DAT3	I/O	SDIO DATA3

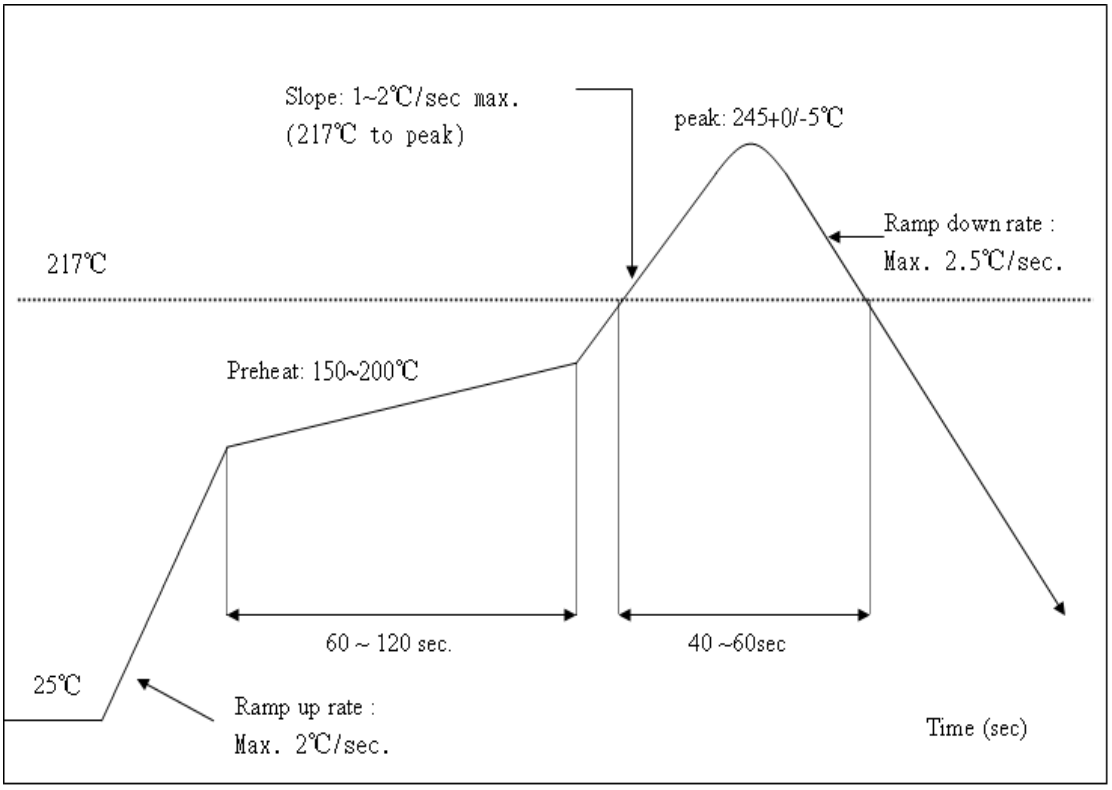
16	SD_CMD	I/O	SDIO command line
17	SD_CLK	I/O	SDIO CLK
18	SD_DAT0	I/O	SDIO DATA0
19	SD_DAT1	I/O	SDIO DATA1
20	GND	—	Ground connections
21	NC	—	No connect
22	VDDIO	P	I/O Voltage supply input 1.8V or 3.3V
23	NC	—	No connect
24	LPO	I	32.768KHz input(EECS)
25	PCM_OUT	O	PCM data output
26	PCM_CLK	I/O	PCM CLK
27	PCM_IN	I	PCM data input
28	PCM_SYNC	I	PCM sync signal
29	NC	—	No connect
30	NC	—	No connect(Share 26MHz_IN)
31	GND	—	Ground connections
32	NC	—	No connect
33	GND	—	Ground connections
34	BT_EN	I	Enable pin for Blutooth device(GPIO11)
35	NC	—	No connect(Share VBAT_EN)
36	GND	—	Ground connections
37	NC	—	No connect
38	NC	—	No connect
39	DEBUG_TXD	—	No connect
40	DEBUG_RXD	—	No connect
41	UART_RTS_N	I	Bluetooth UART interface
42	UART_TXD	O	Bluetooth UART interface
43	UART_RXD	I	Bluetooth UART interface
44	UART_CTS_N	I	Bluetooth UART interface

8. Recommended Reflow Profile

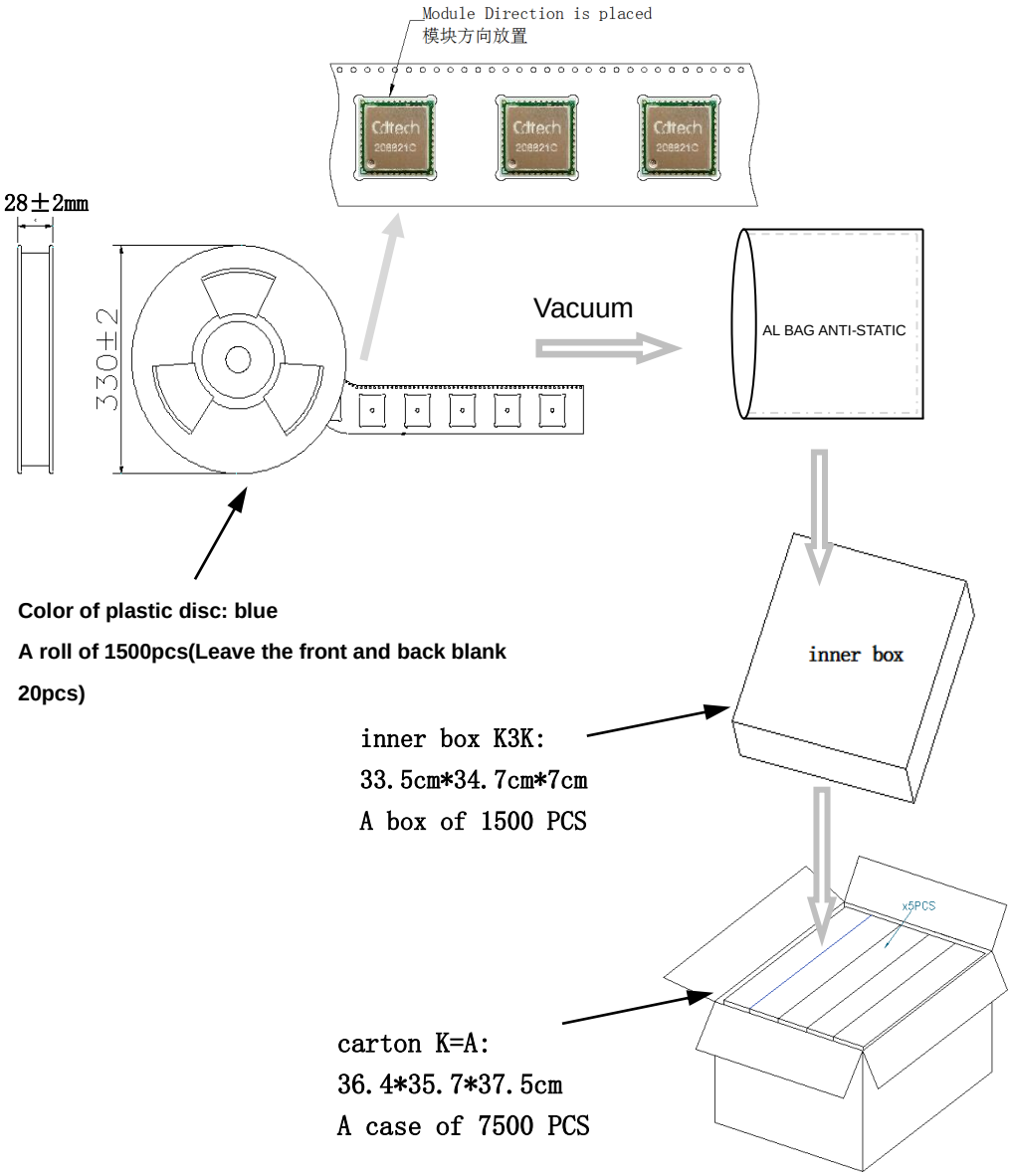
Referred IPC/JEDEC standard.

Peak Temperature: <250°C

Number of Times: ≤2s



9. Packing information



Color of plastic disc: blue

A roll of 1500pcs(Leave the front and back blank 20pcs)

inner box K3K:
33.5cm*34.7cm*7cm
A box of 1500 PCS

carton K=A:
36.4*35.7*37.5cm
A case of 7500 PCS

ESD CAUTION

The CDW208821C is ESD (electrostatic discharge) sensitive device and may be damaged with ESD or spike voltage. Although CDW208821C is with built-in ESD protection circuitry, please handle with care to avoid the permanent malfunction or the performance degradation.

The module is limited to OEM installation only.

This product is mounted inside of the end product only by professional installers OEM. They use this module with changing the power and control signal setting by software of end product within the scope of this application. End user cannot change this setting.

This device is intended only for OEM integrators under the following conditions:

1) The antenna must be installed such 20cm is maintained between the antenna and users, the antenna specification listed below:

Ant. Type	Operation Frequencies (MHz) /Max. Ant. Gain (dBi)				
	2400~2500	5150~5250	5250~5350	5470~5725	5725~5850
Bunghol mushrooms	2.48	1.72	1.81	2.52	1.61

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

As long as these two conditions are met, further transmitter test will not be required. However, integrator is still responsible for testing their end-product for any additional compliance requirements required with this module installed.

The OEM integrator has to be aware no to provide information to the end user regarding how to install or remove this RF module in the user manual of the end product with integrates this module. The end user manual shall include all required regulatory information/warning as show in this manual.

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: 2A9P9-CDW208821C”

When the module is installed inside another device, the user manual of this device must contain below warning statement:

Frederal Communication Commission 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 generate, 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.

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 and your body.

Caution:

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

That separate approval is required for all other operating configurations, including portable configurations with respect to Part 2.1093 and different antenna configurations.

ISED Warning:

If the IC 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 IC: 29875-CDW208821C”

When the module is installed inside another device, the user manual of this device must contain below warning statements:

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.

Le présentappareilestconforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitationestautorisée aux deux conditions suivantes:

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareildoit accepter tout brouillageradioélectriquesubi, mêmesi le brouillageest susceptible d'encompromettre le fonctionnement.

This radio transmitter (identify the device by certification number or model number if Category II) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Le présent émetteur radio (identifier le dispositif par son numéro de certification ou son numéro de modèle s'il fait partie du matériel de catégorie II) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal. Les types d'antenne non inclus dans cette liste, et dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Ant. Type	Operation Frequencies (MHz) /Max. Ant. Gain (dBi)				
	2400~2500	5150~5250	5250~5350	5470~5725	5725~5850
Bunghol mushrooms	2.48	1.72	1.81	2.52	1.61

The device has been evaluated to meet general RF exposure requirement. To maintain compliance with RSS-102 — Radio Frequency (RF) Exposure guidelines, this equipment should be installed and operated with a minimum distance of 20cm between the radiator and your body.
le dispositif de a été évalué à répondre général rf exposition exigence.pour maintenir la conformité avec les directives d'exposition du RSS-102-Radio Fréquence (RF). ce matériel doit être installé et exploité à une distance minimale de 20 cm entre le radiateur et votre corps.

Note:
5.2G band is restricted to indoor use only.
La bande de 5.2G est limitée à l’usage d’intérieur seulement.