

# User Manual

**Model : C8723RHPS-H**

Before using this product, Please read this user's manual just make sure to save it for later.

# 1. General information

## 1.1. Mechanical Information

|        |            |    |
|--------|------------|----|
| Length | 14.00±0.20 | mm |
| Width  | 14.00±0.20 | mm |
| Height | 2.50±0.20  | mm |
| Weight | 0.85       | g  |

## 1.2. Temperature Information

|                       |               |
|-----------------------|---------------|
| Operating temperature | +0°C ~ +70°C  |
| Storage temperature   | -40°C ~ +85°C |

## 1.3. Connection Information

- Interface : SDIO
- 46 Pin Solder pads used (SMT Type)
- All Pin need to protect against RF radiation or conduction noise.

## 1.4. DC Characteristics



### Recommended Operating Conditions

| Symbol         | Conditions | Min. | Nom. | MAX. | Unit |
|----------------|------------|------|------|------|------|
| DC 3.3V Module | -          | 3.0  | 3.3  | 3.6  | V    |

## 1.5. Operating Frequency Range

| Parameter                 | Conditions | Min. | Nom. | MAX. | Unit |
|---------------------------|------------|------|------|------|------|
| Operating Frequency Range | CE         | 2412 | -    | 2472 | MHz  |
|                           | FCC        | 2412 | -    | 2462 | MHz  |

## 1.6. Product Image

| C8723RHPS-H   |   |
|---|---|
| Front Side - Top View   | Bottom Side - Bottom View   |
|  |  |

## 2. Product Operation

2.1. Connect a serial cable between the PC and the Wi-Fi Module

2.2 Wi-Fi module Power On.

```
Starting logging: OK
Starting ndev...
Initializing random number generator... done.
Starting system message bus: Unknown group "lp" in message bus configuration file
done
Starting network...
Starting connman ... done.
Starting dropbear sshd: OK
Mounting mango210
```

2.3 Additional modules . Find the kernel directory and add the module.

# insmod /mnt/realtek/8723bs\_v4.3.16.9\_pv03.ko

```
[ 40.291146] RTL871X: module init start
[ 40.291190] RTL871X: rtl8723bs v4.3.16_17244.20161028_beta
[ 40.295140] RTL871X: build time: Dec 16 2016 19:36:57
[ 40.299872] RTL871X: rtl8723bs BT-Coex version = BTCOEX20140110-4940
[ 40.306489] RTL871X: register rtu_netdev_ops to netdev_ops
[ 40.311935] RTL871X: rtu_hal_config_rftype RF_Type is 3 TotalTxPath is 1
[ 40.318406] RTL871X: Chip Version Info: CHIP_8723B_Normal_Chip_TSMC_F_CUT_1T1R_RonVer(0)
```

```
[ 40.736152] RTL871X: _rtu_drv_register_netdev, MAC Address (if1) = 04:32:f4:45:e8:f9
[ 40.739467] RTL871X: rtu_ndev_init(wlan1)
[ 40.747038] RTL871X: _rtu_drv_register_netdev, MAC Address (if2) = 06:32:f4:45:e8:f9
[ 40.751613] RTL871X: module init ret=0
[ 40.755017] RTL871X: cmd_Success
```

2.4 Activates the Wi-Fi module function.

# ifconfig wlan0 up

```
[ 164.398747] RTL871X: MAC Address = 04:32:f4:45:e8:f9
[ 164.403998] RTL871X: start rtl8723bs_xmit_thread(wlan0)
[ 164.408964] RTL871X: +871x_drv - if2_open, bup=0
[ 164.413810] RTL871X: start rtl8723bs_xmit_thread(wlan1)
[ 164.418776] RTL871X: -871x_drv - if2_open, bup=1
[ 164.423272] RTL871X: -871x_drv - drv_open, bup=1
[ 164.427884] RTL871X: cmd_Success
[ 164.431600] ADDRCONF(NETDEV_UP): wlan0: link is not ready
```

2.5 If you want to use other functions, you can use the Linux commands.

### 3. Test Command Examples

#### B mode Test Command

-----

```
rtwpriv wlan0 mp_channel 1
rtwpriv wlan0 mp_bandwidth 40M=0,shortGI=0
rtwpriv wlan0 mp_ant_tx a
rtwpriv wlan0 mp_rate 22
rtwpriv wlan0 mp_get_txpower 0
rtwpriv wlan0 mp_ctx background,pkt
rtwpriv wlan0 mp_ctx stop
```

```
rtwpriv wlan0 mp_channel 7
rtwpriv wlan0 mp_bandwidth 40M=0,shortGI=0
rtwpriv wlan0 mp_ant_tx a
rtwpriv wlan0 mp_rate 22
rtwpriv wlan0 mp_get_txpower 0
rtwpriv wlan0 mp_ctx background,pkt
rtwpriv wlan0 mp_ctx stop
```

```
rtwpriv wlan0 mp_channel 13
rtwpriv wlan0 mp_bandwidth 40M=0,shortGI=0
rtwpriv wlan0 mp_ant_tx a
rtwpriv wlan0 mp_rate 22
rtwpriv wlan0 mp_get_txpower 0
rtwpriv wlan0 mp_ctx background,pkt
rtwpriv wlan0 mp_ctx stop
```

## G Mode Test Command

-----  
rtwpriv wlan0 mp\_channel 1  
rtwpriv wlan0 mp\_bandwidth 40M=0,shortGI=0  
rtwpriv wlan0 mp\_ant\_tx a  
rtwpriv wlan0 mp\_rate 108  
rtwpriv wlan0 mp\_get\_txpower 0  
rtwpriv wlan0 mp\_ctx background,pkt  
rtwpriv wlan0 mp\_ctx stop

rtwpriv wlan0 mp\_channel 7  
rtwpriv wlan0 mp\_bandwidth 40M=0,shortGI=0  
rtwpriv wlan0 mp\_ant\_tx a  
rtwpriv wlan0 mp\_rate 108  
rtwpriv wlan0 mp\_get\_txpower 0  
rtwpriv wlan0 mp\_ctx background,pkt  
rtwpriv wlan0 mp\_ctx stop

rtwpriv wlan0 mp\_channel 13  
rtwpriv wlan0 mp\_bandwidth 40M=0,shortGI=0  
rtwpriv wlan0 mp\_ant\_tx a  
rtwpriv wlan0 mp\_rate 108  
rtwpriv wlan0 mp\_get\_txpower 0  
rtwpriv wlan0 mp\_ctx background,pkt  
rtwpriv wlan0 mp\_ctx stop

## 4. Antenna Design

C8723RHPS-H Module use external pcb antenna below.



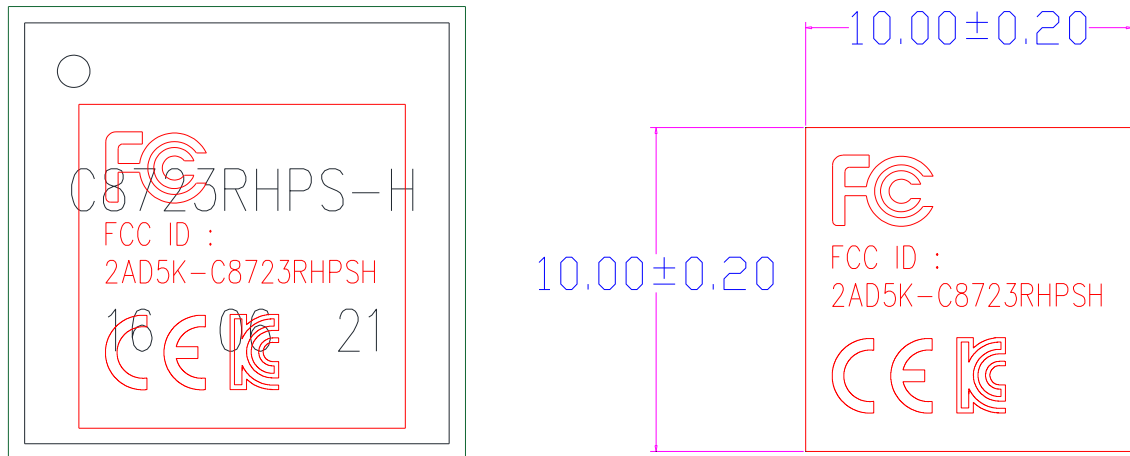
- Module Designed to use external antenna.  
(There is only antenna Pad to connect external antenna.)



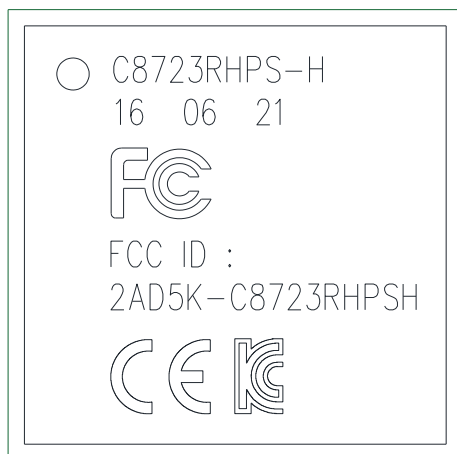
## 5. Label Design

There are two methods of labeling.

### 1. Label attach



### 2. Laser Marking



## 6. FCC compliance information

### Applicable FCC Rules

**FCC PART 15 Subpart C (15.247) , ANSI C 63.10(2013) , KDB 558074 D01v05r02**

THIS MODULE COMPLIES WITH PART 15 OF THE FCC RULES.

Operation is subject to the following two conditions:

- (1) This Module may not cause harmful interference, and
- (2) This Module 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, 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 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.

Modifications not expressly approved by the manufacturer could void the user's authority to operate the equipment under FCC rules.



### Limited module procedures

C8723RHPS-H is a general product and can be used for any application. And also used at the front-end of wireless products using Wireless Lan B, G Mode.

### RF exposure considerations

This appliance and its antenna must not be co-located or operation in conjunction with any other antenna or transmitter.

A minimum separation distance of 20 cm must be maintained between the antenna and the person for this appliance to satisfy the RF exposure requirements.

## 7. EU Declaration of conformity(CE)

This product is CE marked according to the provisions of the Radio Equipment Directive 2014/53/EU

Partron Co., Ltd. hereby declares that this product is in compliance with the essential requirements and other relevant provisions of Directive 2014/53/EU.

Transmit Power{Wireless Lan(WiFi)} : **19.6dBm**,

## 8. Modular Transmitter Instruction Manuals

| Section of 996369 KDB D03  |   |
|--|---|
| 2.2 List of applicable FCC rules                                       | This module has been approved under FCC part 15C (15.247)   |
| 2.3 Summarize the specific operational use conditions                  | The module is limited to customer ONLY.<br>Customer is responsible for ensuring that the end-user has no manual instruction to remove or install module.  |
| 2.4 Limited module procedures  | <p>The module is for use with external antenna only.<br/>The certified antennas include:</p> <p>(1) 2.4G Single-band PCB Antenna(RF Cable with U.FL conn.) with maximum gain 2.0dBi</p> <p>This module has been approved by FCC to operate with the antenna types above with the maximum gain at at the antenna feed.</p> <p>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.</p> <p>Specially, if an antenna other than the model documented in the filing is used, a Class 2 Permissive Change must be filed with the FCC.</p> |
| 2.5 Trace antenna designs  | Not Applicable (No PCB antenna trace possible)  |
| 2.6 RF exposure considerations<br>(1) To the host product manufacturer | <p>IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must not be colocated or operating in conjunction with any other antenna or transmitter.</p> <p>This equipment should be installed and operated with a minimum distance 20cm</p>   |

|   |  |
|---|--|
|   | between the radiator and your body.  |
| 2.6 RF exposure considerations<br>(2) To end users in their end product manuals | <p><u>End Product User's Manual:</u></p> <p>The user manual for end users must include the following information in a prominent location</p> <p>"IMPORTANT NOTE: To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must not be colocated or operating in conjunction with any other antenna or transmitter. The equipment should be installed and operated with a minimum distance of 20cm between the radiator and the body."</p> |
| 2.7 Antennas  | <p>See 2.4 for the list of approved antennas.</p> <p>Additional information:</p> <p>If the end host product is equipped with an external connector, then a unique (non-standard) antenna connector must be used on the transmitter.</p> <p>A list of acceptable non-standard connectors is available upon request to Partron.</p>  |
| 2.8 Label and compliance information  | <p><u>End Product Labeling:</u></p> <p>When the FCC ID 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 be use wording "Contains transmitter module FCC ID: 2AD5K-C8723RHPSH" or "Contains FCC ID: 2AD5K-C8723RHPSH"</p>   |
| 2.9 Information on test modes and additional testing requirements               | If testing of the host product with this transmitter installed and operating is necessary (to verify that the host product meets all the applicable FCC rules), a test mode for this specific module is  |

|  |  |
|--|--|
|  | available upon request to Partron.   |
| 2.10 Additional testing, Part 15<br>Subpart B disclaimer | <p>This module has been approved under FCC part 15C (15.247).</p> <p>This modular transmitter is only FCC authorized for this specific rule part.</p> <p>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. (For example, Part 15 Subpart B)</p> |