

Difference Description

Cypress Modules CYBLE-413136-01 and CYBLE-473142-01 have the same PCB, peripheral parts and the same encapsulation of the main chip.

Modules **CYBLE-413149-01/ CYBLE-473148-01** have the same PCB, RF IC and peripheral parts as CYBLE-413136-01/CYBLE-473142-01, with the lone exception of removal of the Apple Authentication Chip. The Apple Authentication Chip is an isolated circuit on the board and only interacts with the I2C connection of the main IC on the module solution.

| Module | RF IC | Apple Authentication IC | RAM Size (KB) | Flash Size (KB) | Package | Supported Bluetooth Standard | Supported Bluetooth version |
|------------------------|-------------------|-------------------------|---------------|-----------------|---------|------------------------------|-----------------------------|
| CYBLE-413136-01 | CYW20719B0 | YES | 512k | 1M | QFN40 | BLE Only | LE 4.2 Qualified |
| CYBLE-473142-01 | CYW20719B1 | YES | 512k | 1M | QFN40 | BLE Only | LE 4.2 Qualified |
| CYBLE-413149-01 | CYW20719B0 | NO | 512k | 1M | QFN40 | BLE Only | LE 4.2 Qualified |
| CYBLE-473148-01 | CYW20719B1 | NO | 512k | 1M | QFN40 | BLE Only | LE 4.2 Qualified |

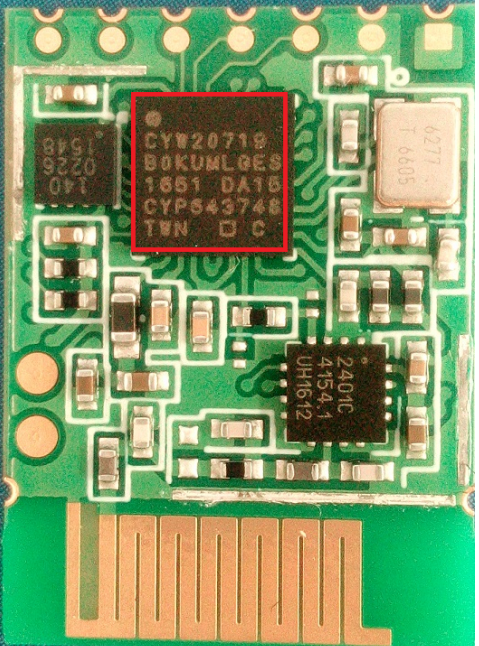
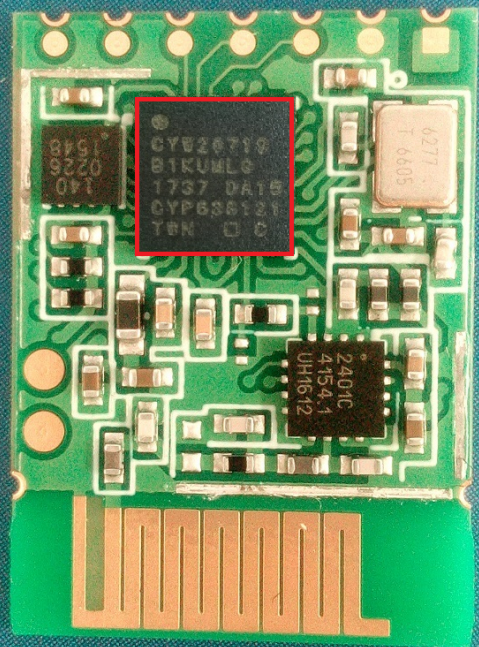
The ROM firmware in the CYW20719B0 and CYW20719B1 has differences related to Bluetooth Classic (EDR/BR) operation. NOTE that the module solutions stated above are qualified and certified for Bluetooth Low Energy (BLE) operation only. Bluetooth Classic (BR/EDR) support is not supported for these modules. RF characteristics for the Bluetooth Low Energy operation of the CYW20719B0 and CYW20719B0 silicon devices are identical.

The Apple Authentication Chip is used for Apple HomeKit authentication during operation. This chip will be replaced with a FW Authentication scheme recently announced by Apple.

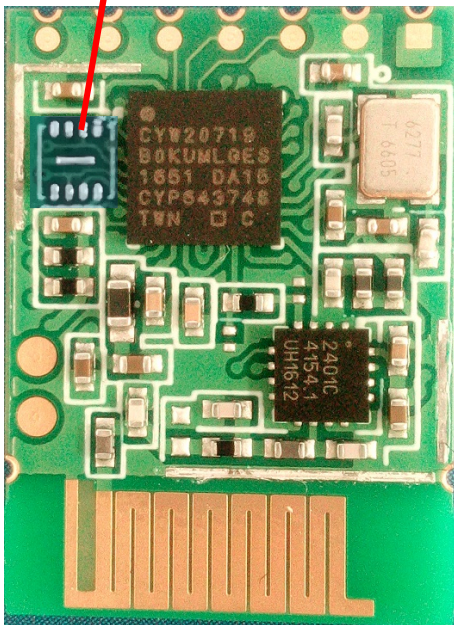
The RF characteristics of these four modules are the same.

| | |
|----------------------|--------------------------------|
| Operation Frequency | 2402 MHz – 2480 MHz |
| No. of Channel | 40 |
| Channel Spacing | 2 MHz |
| Modulation | GFSK |
| Transmit power (ERP) | 7.5 dBm (5.6mW) |
| Data Rate | 1 Mbps |
| Antenna Type | PCB Trace Antenna |
| No. of Antenna(s) | One |
| Antenna Gain | -0.5 dBi |
| Supply Voltage | 3.0V to 3.6V (test under 3.3V) |
| Dimension | 17.7mm*20mm |
| Working Environment | -30 °C to +105 °C |

Picture of modules are as below:

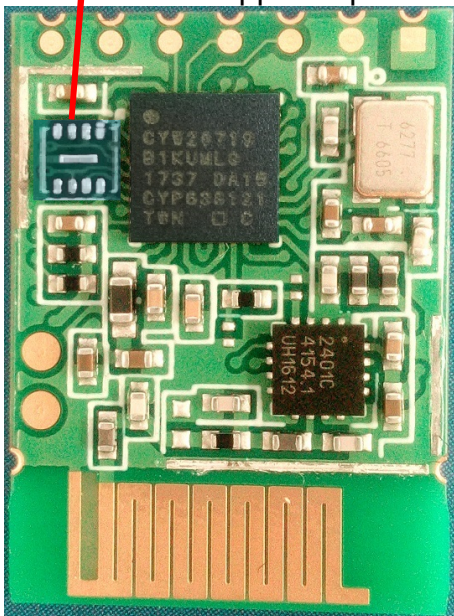
| | |
|--|------------------------|
|  A photograph of a green printed circuit board (PCB) for the CYBLE-413136-01 module. The board features a central black integrated circuit (IC) with a red rectangular border. The IC is labeled with 'CYW20719', 'B0KUMLGES', '1661 DA16', 'CYP643748', and 'TWN □ C'. Other components include a silver capacitor labeled '4277 1 6605', a black IC labeled '2401C 4154.1 UH1612', and a small black IC labeled '8191 1648 9220 041'. The board has gold-plated pins at the bottom. | <p>CYBLE-413136-01</p> |
|  A photograph of a green printed circuit board (PCB) for the CYBLE-473142-01 module. The board features a central black integrated circuit (IC) with a red rectangular border. The IC is labeled with 'CYW20719', 'B1KUMLG', '1737 DA16', 'CYP638121', and 'TWN □ C'. Other components include a silver capacitor labeled '4277 1 6605', a black IC labeled '2401C 4154.1 UH1612', and a small black IC labeled '8191 1648 9220 041'. The board has gold-plated pins at the bottom. | <p>CYBLE-473142-01</p> |

Remove apple chip



CYBLE-413149-01

Remove apple chip



CYBLE-473148-01

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