



## Features

- 802.11a/b/g/n dual-band radio --- non-simultaneous dual-band operation
- Bluetooth 4.0(HS) with integrated Class 1 PA and Low Energy(BLE) support
- Simultaneous BT/WLAN receive with single antenna
- WLAN host interface options: SDIO v2.0---up to 50MHz clock rate
- BT host digital interface: UART (up to 4 Mbps)

## Introduction

- Clientron would like to announce a low-cost and low-power consumption module which has all of the WiFi, Bluetooth functionalities.
- The highly integrated module makes the possibilities of web browsing, VoIP, Bluetooth headsets functional applications and other applications.
- The wireless module complies with IEEE 802.11 a/b/g/n standard and it can achieve up to a speed of 72.2Mbps with single stream in 802.11n draft, 54Mbps as specified in IEEE 802.11g, or 11Mbps for IEEE 802.11b to connect to the wireless LAN.

### Wi-Fi name: 21D000146-010B

#### Standard

802.11ac/b/g/n

#### Chipset

Mac/BB/RF AP6330

#### Host Interface

MiniPCIE

#### Radio

Antenna

2 x U.FL connectors

2.400 GHz ~ 2.497 (2.4 GHz ISM Band)  
4.900 GHz ~ 5.845 (5.0 GHz ISM Band)

802. 11a : OFDM /64-QAM, 16-QAM, QPSK, BPSK  
802. 11b: DQPSK, DBPSK, CCK

802. 11 g/n : OFDM /64-QAM, 16-QAM, QPSK, BPSK  
802. 11a /54Mbps : 13 dBm ± 1.5 dB @ EVM ≤ -25dB  
802. 11a /MCS7 : 11 dBm ± 1.5 dB @ EVM ≤ -28dB  
802. 11b /11Mbps : 16 dBm ± 1.5 dB @ EVM ≤ -9dB  
802. 11g /54Mbps : 15 dBm ± 1.5 dB @ EVM ≤ -25dB  
802. 11n /MCS7 : 14 dBm ± 1.5 dB @ EVM ≤ -28dB

#### Date rate

802. 11a : 6, 9, 12, 18, 24, 36, 48, 54Mbps

802. 11b : 1, 2, 5.5, 11Mbps

802. 11g : 6, 9, 12, 18, 24, 36, 48, 54Mbps

#### Environmental

Temperature Range 0 ~ 40°C (Operating) -20 ~ 60°C (Storing)

Humidity (Non-Condensing) 0 ~ 90% (Operating) MAX 95% (Storing)

#### Physical Specification

Dimensions 28mm x 30mm

Weight 0.5g

## Bluetooth Specification

Feature	Description
General Specification	
Bluetooth Standard	Bluetooth V4.0 of 1, 2 and 3 Mbps.
Host Interface	UART
Antenna Reference	Small antennas with 0~2 dBi peak gain
Frequency Band	2402 MHz ~ 2480 MHz
Number of Channels	79 channels
Modulation	FHSS, GFSK, DPSK, DQPSK
RF Specification	
	Min.
Output Power (Class 1.5)	10 dBm
Output Power (Class 2)	2 dBm
Sensitivity @ BER=0.1% for GFSK (1Mbps)	-86 dBm
Sensitivity @ BER=0.1% for π/4-DQPSK (2Mbps)	-86 dBm
Sensitivity @ BER=0.01% for 8DPSK (3Mbps)	-80 dBm
Maximum Input Level	GFSK (1Mbps): -20dBm
	π/4-DQPSK (2Mbps) : -20dBm
	8DPSK (3Mbps) : -20dBm

## Installation



1. Unscrew 3 screws and remove the base cover
2. Put Wi-Fi module into socket with 2 screws and connect antenna on Wi-Fi module.

**This device complies with Part 15 of FCC Rules. Operation is Subject to following two conditions:**

**(1) This device may not cause harmful interference, and  
(2) This device must accept any interference received including interference that cause undesired operation.**

This equipment has been tested and found to comply within 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 different circuit from that to which the receiver is connected

• Consult the dealer or an experienced radio/TV technician for help.

The transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

The available scientific evidence does not show that any health problems are associated with using low power wireless devices. There is no proof, however, that these low power wireless devices are absolutely safe. Low power wireless devices emit low levels of radio frequency energy (RF) in the microwave range while being used. Whereas high levels of RF can produce health effects (by heating tissue), exposure to low-level RF that does not produce heating effects causes no known adverse health effects. Many studies of low-level RF exposures have not found any biological effects. Some studies have suggested that some biological effects might occur, but such findings have not been confirmed by additional research.

To satisfy RF exposure requirements, this device and its antenna(s) must operate with a separation distance of at least 20 centimeters from all persons and must not be co-located or operated in conjunction with any other antenna or transmitter. End-users must be provided with specific operating instructions for satisfying RF exposure.

#### FCC WARNING:

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