



Coolwave Communication

CWBT05

Ultra Low Power System-on-Chip

Bluetooth 4.2 Module

General Description

CWBT05 is a high performance, low power radio transmit and receive system module use Realtek BLE 4.2 RTL8752CGF as the controller chips. It has the smallest volume package in the industry, and size is 17*24.7mm, suitable for most applications which pay more attention to the size. This module has integrated the complete standard low energy Bluetooth 4.2 protocol. Customer's MCU could connect to the module by UART port, and it will automatically send a broadcast code after the module starts. As the master, APP device can scan and search the broadcast from module in order to establish the connection. After success, it can conduct two-way communication link with mobile device APP by serial port. Through UART interface, the user can exchange data or control the communication parameters of module. The meaning of data is defined by the upper application user. The mobile device can operate to the module through APP, and the data will receive by the module and pushed through UART MCU. After the module received a data packet from the client MCU serial port, it will be automatically forwarded to the mobile device.



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Features

General description

- Supports Bluetooth 4.2 core specification
- Additional Adv channel
- Integrated MCU to execute Bluetooth protocol stack
- Supports multiple level Low Energy states
- Supports LE L2CAP Connection Oriented Channel Support
- Supports LE low duty directed advertising
- Supports LE data length extension feature
- Supports OTA (Over-the-Air) programming mechanism for firmware upgrade
- Supports GAP, ATT/GATT, SMP, L2CAP
- Generic Applications for GAP Central, Peripheral, Observer and Broadcaster Roles

Platform

- ARM Cortex-M4 Max Frequency 20MHz
- Total 160KB SRAM
- Serial Flash Controller (One and Quad-bits mode)with 16KB 4-way cache
- Supports AES128/192/256 encrypt/decrypt engine
- Embedded 2Mbit flash

Bluetooth Transceiver

- Tx Power: 0/4dBm adjustable
- Rx Sensitivity : -97dBm BLE
- Fast AGC control to improve receiving dynamic range
- Supports Bluetooth Low Energy PHY

Peripheral Interfaces

- Flexible GPIO
- Hardware Keyscan and Quad-decoder
- Embedded IR transceiver
- Real-Time Counters (RTC)
- SPI master/slave x 2; Timers x 8; I2C x 2; PWM x 8; UART x 2
- 400ksps, 12bit, 8channel AUXADC

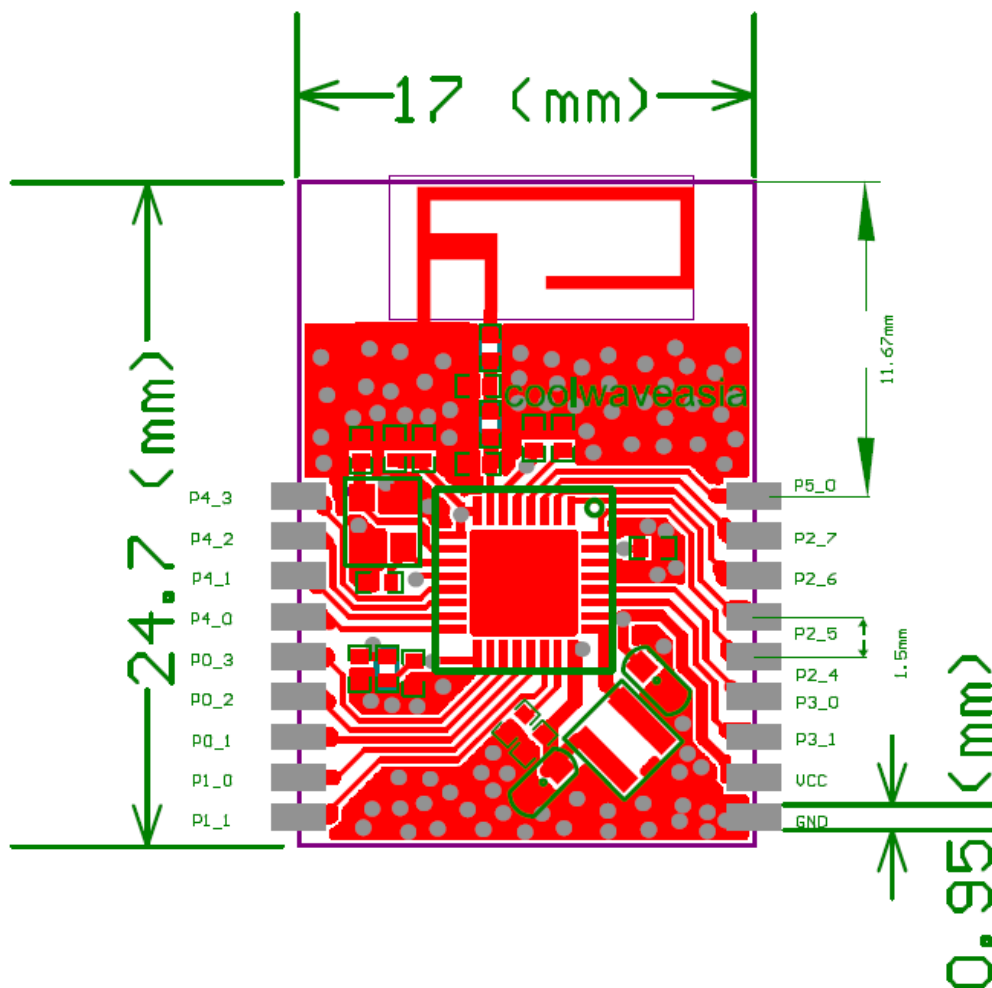
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- Internal 32K RCOSC to keep BLE link
- Embedded PGA and audio ADC with 5-band EQ

Applications

- TV Remote Controller
- LE HID
- Beacon
- Home Automation
- Key Fob
- Wristband
- Wearable Device
- Toy

Dimension





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

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.



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- 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

The device must not be co-located or operating in conjunction with any other antenna or transmitter

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.

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This device complies with Part 15, Part 15.247 of the FCC Rules. The FCC ID for this device is 2AWD9-BT05-COOLWAVE

If the FCC ID is not visible with the module is installed inside another device , then it must be still responsible for the FCC compliance requirement of the end product which referring to the enclosed module and it also must display a label, such as the following:

Contains Transmitter module FCC ID: 2AWD9-BT05-COOLWAVE or contains FCC ID: 2AWD9-BT05-COOLWAVE

The Module can be installed in portable devices and used close with human's body (within 20cm), like cell phone, Notebook, toy etc.

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. The final host product still requires Part 15 Subpart B compliance testing with the modular transmitter installed.

This device complies with FCC's radiation exposure limits set forth in an uncontrolled environment.