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## Jaffas CBM002 Bluetooth Dual Module User Guide

July 2021

# Introduction and Key Feature

- **Jaffas CBM002 Key Feature**

- Dual mode embedded Bluetooth module(BR/EDR and LE) had been implemented with Telink SoC TSR9515A.
- Embedded with BLE RF transceiver, working in worldwide 2.4GHz ISM band, ANT mode.
- Output power compliant to class 1. Typical emitted power of 4dBm, and typical RF operating range of 10 M.
- Qualified for Bluetooth SIG Core.
- Transparent UART mode for Seamless Serial Data over Bluetooth Classic using Serial Port Profile (SPP), and Bluetooth Low Energy (BLE).
- Supports Apple® iPod® Accessory Protocol (iAP2)
- Operating Voltage: 3.3V.
- Mechanical and form fit function compatible to Microchip RN4678APL-V/RM122.
- To be used as BT RF transceiver for Cricut product of cutting machine which may include Joy, Maker3, Explorer 3 etc.
- For internal product use only and not off-the-shelf product for any other parties.

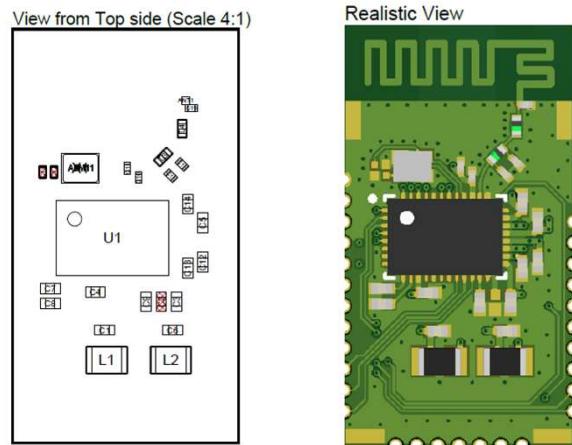
- **Photo**



# Schematic

CONFIDENTIAL

# PCB Specific Drawing



Specification	Requirement	Standard
RoHS compliance	Yes	Directive 2011/65/EU (RoHS 2)
Full electrical testing	Yes	IPC-D-356
Minimum track width	0.1 mm	
Minimum track spacing	0.1 mm	
Minimum hole size	0.2 mm	
PCB material	FR-4	IPC-4104/24 or better
PCB test procedures		IPC-650-TM
PCB layer specification	Extended Gerber	EIA RS-274-X
Controlled impedance	No	IPC-2141
TDR impedance analysis	No	IPC-2141
Impedance test coupon	No	IPC-2141

Layer Stack Legend

Material	Layer	Thickness	Dielectric Material	Type	Gerber
Top Overlay				Legend	GTO
Surface Material	Top Solder	0.01mm	Solder Resist	Solder Mask	GTS
Copper	Top Layer	0.04mm		Signal	GTL
Prepreg		0.06mm	FR-4	Dielectric	
CF-004	Ground Plane	0.04mm		Internal Plane	GP1
Core		0.31mm	FR-4	Dielectric	
CF-004	Power	0.04mm		Signal	G1
Prepreg		0.06mm	FR-4	Dielectric	
Copper	Bottom Layer	0.04mm		Signal	GBL
Surface Material	Bottom Solder	0.01mm	Solder Resist	Solder Mask	GBS
	Bottom Overlay			Legend	GBO
Total thickness: 0.58mm					

# FCC Statement

FCC standards: FCC CFR Title 47 Part 15 Subpart C Section 15.247

PCB antenna , Antenna gain 0dBi

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.

Any Changes or modifications 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.
- 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.

## FCC Radiation Exposure Statement

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

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: 2AYX6-JAFA Or Contains FCC ID: 2AYX6-JAFA "

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

1. 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;
- (2) This device 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.

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

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product.

Any company of the host device which install this modular with modular approval should perform the test of radiated & conducted emission and spurious emission, etc. according to FCC part 15C : 15.247 and 15.209 & 15.207 ,15B Class B requirement, Only if the test result comply with FCC part 15C : 15.247 and 15.209 & 15.207 ,15B Class B requirement, then the host can be sold legally.