



CBM002 v2 Bluetooth Dual Module User Guide

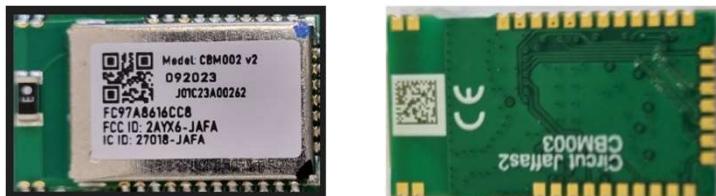
March 2023

Introduction and Key Feature

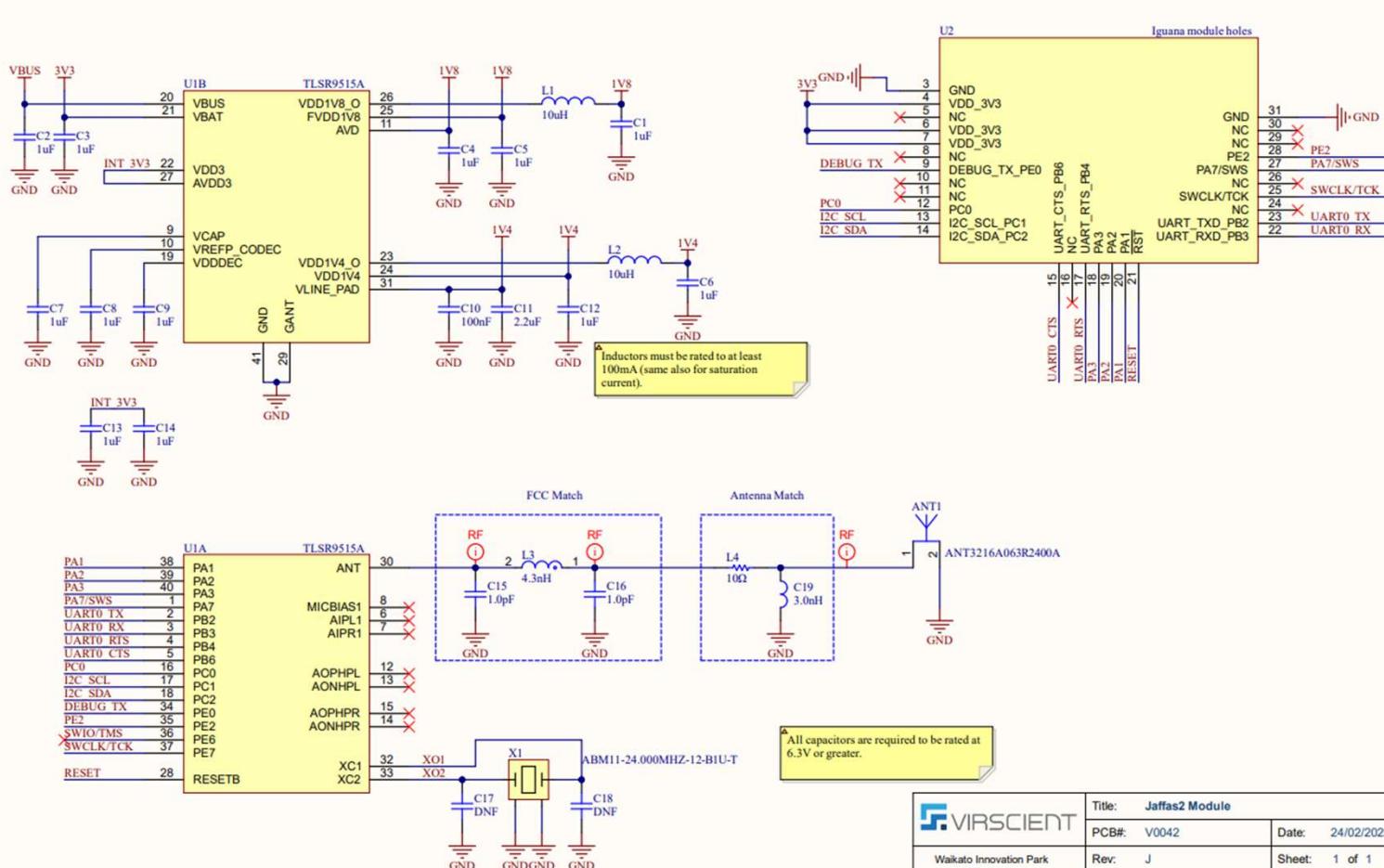
- CBM002 v2 Key Feature

- Dual mode embedded Bluetooth module(BR/EDR and LE) had been implemented with Telink SoC TSLR9515A.
- Embedded with BLE/802.15.4/2.4GHz 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, Morpheus and etc.
- For internal product use only and not off-of-shelf product for any other parties.

- Photo

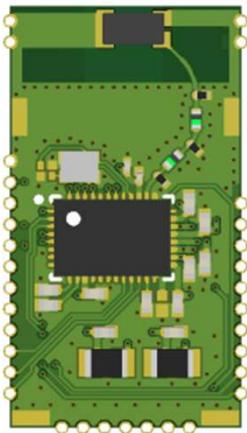
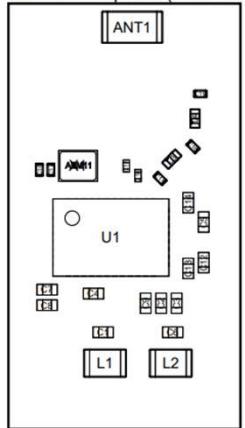


Schematic



PCB Specific Drawing

View from Top side (Scale 4:1)



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
Surface Material	Top Overlay	0.01mm	Solder Resist	Legend	GTO
Copper	Top Solder	0.04mm		Solder Mask	GTS
Prepreg	Top Layer	0.06mm	FR-4	Signal	GTL
CF-004	Ground Plane	0.04mm		Dielectric	
Core		0.31mm	FR-4	Internal Plane	GP1
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

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.

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) (2) this device must accept any interference received, including interference that may cause undesired operation.

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

*RF warning for Mobile device:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment.

This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

The OEM must certify the final end product to comply with unintentional radiators (FCC Sections 15.107 and 15.109) before declaring compliance of the final product to Part 15 of the FCC rules and regulations. Integration into devices that are directly or indirectly connected to AC lines must add with Class II Permissive Change.

The OEM must comply with the FCC labeling requirements. If the module's label is not visible when installed, then an additional permanent label must be applied on the outside of the finished product which states: "Contains transmitter module FCC ID: 2AYX6-JAFA".

Additionally, the following statement should be included on the label and in the final product's user manual:

"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 interferences, and
- (2) this device must accept any interference received, including interference that may cause undesired

operation." The module is limited to installation in applications. Separate approval is required for all other operating configurations, including portable configuration with respect to Part 2.1093 and different antenna configurations. A module or modules can only be used without additional authorizations if they have been tested and granted under the same intended end use operational conditions, including simultaneous transmission operations. When they have not been tested and granted in this manner, additional testing and/or FCC application filing may be required. The most straightforward approach to address additional testing conditions is to have the grantee responsible for the certification of at least one of the modules submit a permissive change application. When having a module grantee file a permissive change is not practical or feasible, the following guidance provides some additional options for host manufacturers. Integrations using modules where additional testing and/or FCC application filing(s) may be required are: (A) a module used in devices requiring additional RF exposure compliance information (e.g., MPE evaluation or SAR testing); (B) limited and/or split modules not meeting all of the module requirements; and (C) simultaneous transmissions for independent collocated transmitters not previously granted together. This Module is full modular approval, it is limited to OEM installation ONLY. Integration into devices that are directly or indirectly connected to AC lines must add with Class II Permissive Change. (OEM) Integrator has to assure compliance of the entire end product include the integrated Module

Additional measurements (15B) and/or equipment authorizations (e.g. Verification) may need to be addressed depending on co-location or simultaneous transmission issues if applicable. (OEM) Integrator is reminded to assure that these installation instructions will not be made available to the end user

The EUT is In door use only