

## Bluetooth® 2.0, Class I Module – BTLR

### OVERVIEW

- ▶ Highly integration BT 2.0 module, CSR BC04-EXT + Flash Memory + Balun + Filter + X'Tal. +PCB antenna
- ▶ Wireless communications module conforming to Bluetooth Version 2.0, Class I.
- ▶ UART interfaces available to various applications.
  
- ▶ BT Chipset : CSR BC04 External Flash.
- ▶ Standards : Bluetooth, Class I, Serial Port Profile.
- ▶ Frequency : 2402 ~ 2480 MHz
- ▶ TX Output Power : 0dBm (Min.), 6dBm (Max)
- ▶ RX Sensitivity : -80dBm (typ)
- ▶ Range : > 10m (open space line of site)
- ▶ Flash Size : 8Mbits
- ▶ Operation Voltage : 3.3V
- ▶ Dimension : 50.0 x 17.7 mm<sup>3</sup>
- ▶ Environmental Range : Operation Temperature : -10~+50°C, Relative humidity : 0~95%

## I/O PIN LISTING

Pin No.	Pin Name	Type	Description
1	VCC	P	3.3V power supply
2	GND	P	Ground
3	RESET_	P	System reset input pin, active low
4	UART_TX	O	UART data output, with weak internal pull-up
5	UART_CTS	I	UART clear to send active low, with weak internal pull-down
6	UART_RX	I	UART data input, with weak internal pull-down
7	UART_RTS	O	UART request to send active low, with weak internal pull-up

## Electrical Characteristics

### Absolute Maximum Ratings :

	Min.	Typ.	Max.	Unit
Supply Voltage	-	-	3.6	V
Storage Temperature	-40	-	85	°C

### Recommend Operation Conditions :

	Min.	Typ.	Max.	Unit
Supply Voltage	3.1	3.3	3.5	V
Storage Temperature	0	-	70	°C

### Input/Output Terminal Characteristics :

	Min.	Typ.	Max.	Unit
Digital (UART, PIO)				
V <sub>IL</sub> Input Voltage Low	-0.4	-	+0.8	V
V <sub>IH</sub> Input Voltage High	2.3	-	3.7	V
V <sub>OL</sub> Output Voltage Low, (I <sub>O</sub> is 4mA)	-	-	0.2	V
V <sub>OH</sub> Output Voltage High, (I <sub>O</sub> is -4mA)	3.1	-	-	V

**Radio Characteristics**

	Min	Typ	Max	Bluetooth Spec.	Unit
Maximum RF transmit power	0	2	5	0~ +20	dBm
Sensitivity, 0.1% BER	2.402 GHz	-82	-78	≤ -70	dBm
	2.411 GHz	-82	-78		dBm
	2.480 GHz	-82	-78		dBm
RF Power control range		28		≥ 16	dBm
RF Power control resolution	3.6		4.6		dB
Δ f1avg Max. modulation	162	163	164	40 < Δ f1avg < 175	KHz
Δ f2max Min.. modulation	146	153	155	115	KHz
Δ f1avg / Δ f2avg	0.98			≥ 0.80	
Initial Center Frequency	0		10	±75	KHz
Frequency Drift (single slot packet)	-8	5	+16	≤ ±25	KHz
Frequency Drift (five slot packet)	-10	-8	+20	≤ ±40	KHz

## FCC 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, and
  - (2) This device must accept any interference received, including interference that may cause undesired operation.
2. This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.
3. Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.
4. This device is for OEM installation only, the End User manual shall not contain information about how to install the module.
5. This compliance to FCC radiation exposure limits for an uncontrolled environment, and minimum of 20 cm separation between antenna and body.
6. Only the type of antenna tested may be used.
7. The end product must carry a label stating "Contains TX FCC ID:CTW-BTLR" & " IC: 4524A-BTLR " .

## Information for OEM integrator:

The OEM integrator has to be aware not to provide information to the end user regarding how to install or remove this RF module in the users manual of the end product which integrate this module.

The users manual for OEM integrators end users must include the following information in a prominent location

**IMPORTANT NOTE:** To comply with FCC RF exposure compliance requirements, the antenna used for this transmitter must be installed to provide a separation distance of at least 20 cm from all persons and must not be co-located or operating in conjunction with any other antenna or transmitter.

## IC Statement

In addition to the requirements of Section 7.1.5 in RSS-Gen, the device's shall also contain the following or equivalent statement: "Privacy of communications may not be ensured when using this telephone".

If privacy is provided as a standard feature, the privacy notice may be omitted provided that full justification accompanies the equipment certification application for evaluation by Industry Canada.