



Technical Documentation

Operational Description

FCC ID	OVL-BL652
IC	3619A-BL652

Publication History

Version	Date	Modification description
01	June 22, 2021	Creation of the document



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Functional Description

The BL652 BLE (Bluetooth Low Energy) module is a self-contained product and requires only power and a user's *smartBASIC* application to implement full BLE functionality. The integrated, high performance antenna combined with the RF and baseband circuitry provides the BLE wireless link, and any of the SIO lines provide the OEM's chosen interface connection to the sensors. The user's *smartBASIC* application binds the sensors to the BLE wireless functionality.

The variety of hardware interfaces and the *smartBASIC* programming language allow the BL652 module to serve a wide range of wireless applications while reducing overall time to market and the learning curve for developing BLE products.

Specification Summary

Categories	Feature	Implementation	
Wireless Specification	Bluetooth®	V5.0 – Single mode	
		Concurrent master and slave	
		Diffie-Hellman based pairing	
	Frequency	2.402 - 2.480 GHz	
	Maximum Transmit Power Setting	+4 dBm	Conducted BL652-SA
	Minimum Transmit Power Setting	-20 dBm (in 4 dB steps) with <i>smartBASIC</i> command	
		-16 dBm, -12 dBm, -8 dBm, -4 dBm, 0 dBm	
	Tx Whisper Mode 1 Transmit Power	-40 dBm (min.) with <i>smartBASIC</i> command	
	Receive Sensitivity (0.1% BER)	-96 dBm typical	
	Link Budget	100 dB (@ 1 Mbps)	
Range		Up to 100 meters in free space	
Tx Whisper Modes		Range reduction feature with Tx Whisper modes via <i>smartBASIC</i> command	
Range (Tx Whisper Mode 1)		<~100 cm	
Raw Data Rates		1 Mbps (over-the-air)	

Antenna specifications

Model	Type	Connector	Peak Gain (dBi)
ACX AT3216-B2R7HAA_	Chip	NA	2400 – 2500 MHz 0.5 dBi

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Block Diagram

