



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

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 base-band 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

Block Diagram

