

BAM Technical Description

The BAM for the iRobot Create is a Class 1 Bluetooth device. It provides a wireless connection between a host computer and the iRobot Create robot. The BAM connects to the Create's cargo bay port and provides a virtual serial port connection between the Bluetooth host and Create robot. A PC can communicate with Create in the same way it would as if the Create were attached with a serial cable.

The BAM utilizes the CSR BlueCore4 External Bluetooth controller IC. The BlueCore4 is a single chip radio and baseband IC for a Bluetooth 2.4 GHz system. It includes an internal DSP and MCU which handle Bluetooth communications. An external FLASH memory holds the program code. The BlueCore4 is programmed to be Bluetooth compliant and supports the SPP (Serial Port Profile) Bluetooth profile. A multilayer chip antenna is mounted on the BAM's PCB.

The BlueCore4 IC connects to the iRobot Create Robot via an asynchronous serial communication data link which operates at 57,600 bps. When connected to a PC host, the BAM provides a virtual serial port connection between the host and the Create Robot. The BAM is powered by the Create's cargo bay port 5.0 Vdc supply. A linear voltage regulator converts the 5Vdc output to the 3.3Vdc which the BlueCore4 IC requires. A signal level converter circuit transforms the BAM's 5.0Vdc logic level signals to the 3.3V signal levels required by the BlueCore4 IC.