Preliminary
Technical Brief

Development Kit for the Bluetooth Platform Solution from Motorola

With the development kit for the Bluetooth Platform Solution from Motorola, Motorola is launching a unique demonstration and development tool for its platform.

The development kit contains all of the hardware, software, and documentation needed to evaluate the functionality of Motorola's MC71000, MC13180, MRFIC2408, and MC13181 ICs as well as develop software and hardware solutions around the platform chipset. The development kit makes it possible to easily and quickly set up and start demonstrating a Class 1 and a Class 2 Bluetooth solution, and it provides an efficient layout for the baseband and RF on an FR4 PCB substrate.

The primary applications of the development kit are:

- Evaluation of the platform chipset and its features
- Porting of a Bluetooth stack to the platform hardware
- Prototyping of a Bluetooth-enabled host device
- Reference design for quick layout of a Bluetooth solution based on the MC71000 and MC13181 chipset

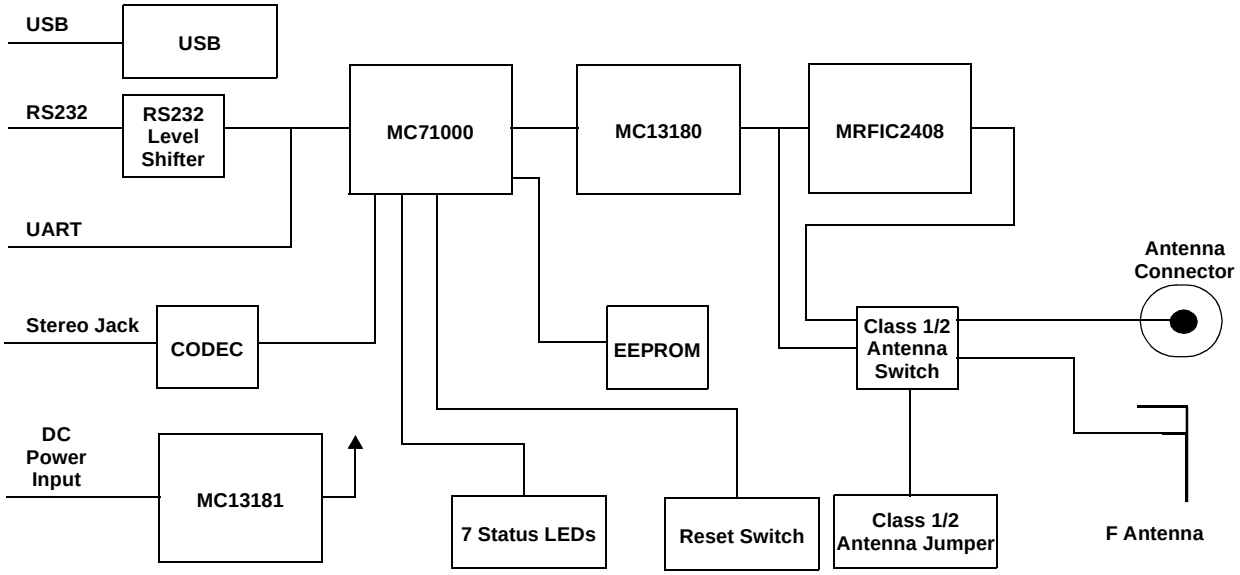
The development kit is Bluetooth 1.1 qualified.

For detailed information on the individual chips making up the platform chipset, refer to the documentation for each IC.

Contents

1 Block Diagram

Figure 1. Block Diagram



2 Signal and Connection Descriptions

The development kit contains the following connections, switches, and indicators:

- Power supply input
- 2.5 mm stereo jack for mono-audio speaker and microphone (headset application)
- RS232 interface
- UART interface
- USB interface
- Antenna connector
- JTAG for ARM CPU
- Reset switch
- Four control buttons for the headset application
- On/off switch
- Seven status LEDs

The power supplied for the development kit is DC with the ratings stated in the specifications.

An analog audio signal to be transmitted over the Bluetooth connection can be fed into the development kit via the stereo jack, where it will be converted to digital data and transmitted through the Bluetooth link. A digital audio signal received from a connected Bluetooth device will be converted to an analog audio signal and available at the stereo jack.

The RS232 interface and the UART interface are similar since the RS232 consists of the UART and a level shifter, making the levels on the D-sub connector RS232-compatible. This interface can be used to connect the development kit to a PC or other devices with PC-compatible RS232 connections.

The UART interface has the same signaling as the RS232 interface. However, the signal voltage levels are different. The RS232/UART interfaces can be used to transfer data between a host and the Bluetooth device. The firmware of the development kit can be upgraded through the RS232/ UART interface.

The USB interface is a standard HCI USB interface. This interface, which is not BUS powered, can be used to connect the development kit to a PC or other devices with PC-compatible USB connections.

The antenna connector is an SMA 50 ohm connection.

The reset switch can be activated to re-initialize the entire system.

Four buttons are provided for the headset application

including volume up, volume down, function (connection, etc.), and earhook left/right.

Seven status LEDs are provided:

- 2 RDK-specific
- Class 1/Class 2
- 24 MHz/32 kHz
- Diversity
- RX/TX
- Power on

3 Specifications

The specifications of the development kit are as follows:

- Input power supply requirements: 4.4 VDC, maximum voltage TBD.
- Audio input: 65m Vpp
  Audio output: 1.6 Vpp, 2.5 mm stereo jack
- RS232 interface: Programmable baud rate from 1200 baud to 1843.2 kbaud, compatible with PCs.

  Note: The UART functions are not available when using the RS232 interface.
- UART interface: 5-pin header with RxD, CTS, RTS, and GND, 3.3 V signaling, programmable baud rate from 1200 baud to 1843.2 kbaud, HCI UART transport layer.

  Note: The UART interface is shared with the RS232 interface (both cannot operate simultaneously with different data).
- USB interface: Full speed (12 Mbit/s) USB node device, USB 1.1 compliant, HCI USB transport layer, 3.3 V operation, self-powered, National USBN9604 USB controller.
- Antenna connector: SMA 50 ohm
- Firmware upgradeable through RS232 or USB connection via a Windows PC.

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