

Description of Operation Principle

I. Bluetooth Technology:

The term “Bluetooth” refers to a worldwide standard for the wireless transfers of audio between two devices. In order to transfers audio, two Bluetooth devices must establish a connection. Before a connection is established, one device must request a connection with another. The second device accepts (or rejects) the connection.

The originator of the request is known as the client. The device that accepts (or rejects) the request is known as the server. Many Bluetooth devices can act as both client and server.

A client Bluetooth device runs a software program that requests a connection to another device as part of its normal operation. For example, the

program may request a connection to a remote computer, a mobilephone, or a server. Becoming a Bluetooth client normally requires an action by the device operator, such as an attempt to transfer audio from a remote computer, or a mobilephone to a server. Every Bluetooth device that provides a service must be prepared to respond to a connection request. Bluetooth software is always running in the background on the server, ready to respond to connection requests.

II. bluetooth carkit:

The Class 2 bluetooth carkit is a fully Bluetooth V1.1/v1.2 compliant product that can be connected to a PC or mobilephone to wirelessly connect and synchronize with other Bluetooth-enabled devices. (Version 1.2 devices will be backwards compatible with Version 1.1 devices) The device is designed to communicate with PC or other mobilephone equipments, and

propagates microwave of Bluetooth signals from a remote computer or mobilephone device through the antenna on the PCB.

The Bluetooth signals traveling in the air are received by the antenna of the and delivered to the bluetooth module. The bluetooth module includes band-pass filter which filters the noises out of the operation frequency,

and balun which transfers single signal to the balance ones. Then the received signals pass to the bluetooth chip, down-convert to the frequency compatible with the base-band. Finally, the singles are transferred to Bluetooth module by base-band controller and through A/D transform digital signals to analog signals through audio amplifier.

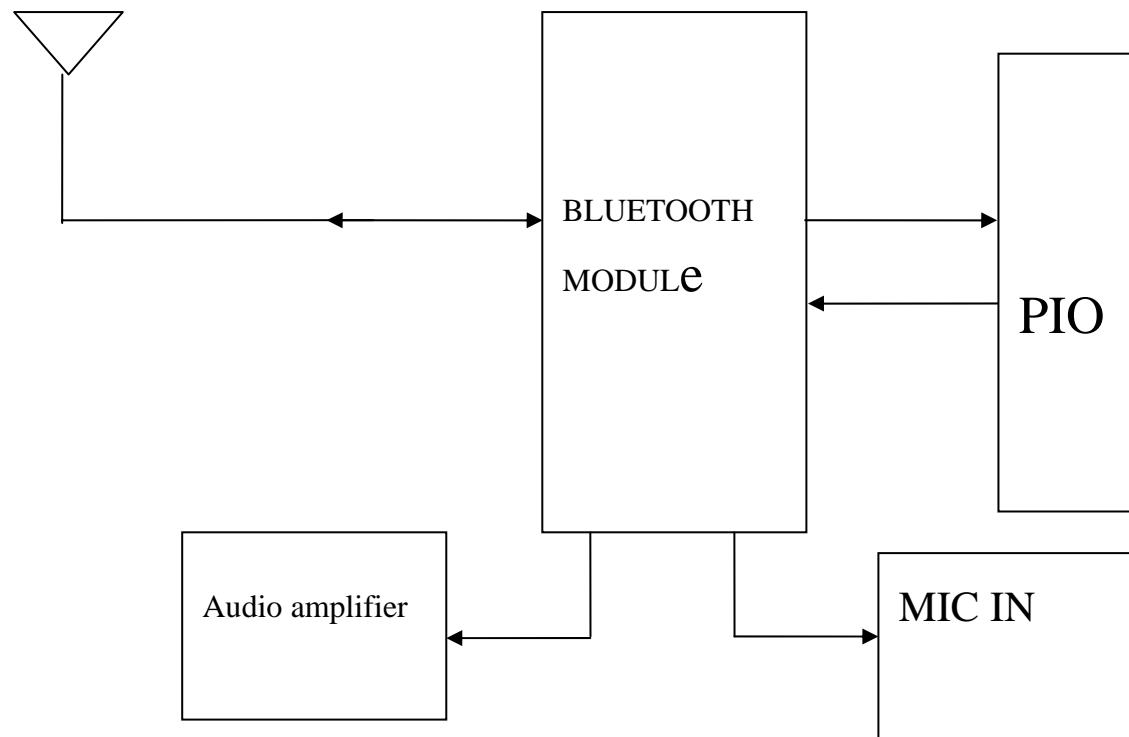
Transmitting the microphone signals enter bluetooth module through digital signals are converted into analog I,Q signals by the

baseband circuit, then modulated and up-converted to 2.4GHz RF signals by the RF transceiver. Finally , the RF signals transmitted into the air through the antenna.

There is no external ground connection. the ground is only that of the printed circuit board.

The input voltage of this DC5V supplied

II :Block Diagram:



Module Electrical Characteristics

Absolute Maximum Rating	Min	Max
Storage Temperature	-40 °C	85 °C
Supply Voltage,(VDD,VPA)	-0.30V	+3.60V

Recommended Operating Conditions	Min	Max
Operating Temperature Range	-25 °C	75 °C
Supply Voltage,(VCC)	3.0V	3.6V
Supply Voltage,(VDD)	1.7V	1.9V

Power Consumption	Units	Average
SCO Connection HV3(30ms interval sniff mode)	mA	21
SCO Connection HV1	mA	42
ACL Data Transfer 115.2Kbs URAT no traffic(Master)	mA	5
ACL Data Transfer 115.2Kbs URAT no traffic(Slave)	mA	22
ACL Data Transfer 721Kbps USB	mA	45
Standby	mA	0.15
CODEC		
Microphone inputs and ADC/channel	mA	0.85
DAC and loudspeaker driver, no signal/channel	mA	1.4
Digital audio processing subsystem	mA	5

VDD=3.3V; f=2.45GHz; T=20°C

Module RF Characteristics

Receiver	Units	Min	Typ	Max	Bluetooth Spec
Sensitivity at 0.1%BER	dBm	-	-80	-78	-70
Maximum Receiver Signal	dBm	-	-	-8	-20
C/I Co-Channel	dB	-	9	-	11
Adjacent Channel Selectivity C/I 1Mhz	dB	-	-	0	0
2 nd Adjacent Channel Selectivity C/I 2Mhz	dB	-	-	-30	-30
3rd Adjacent Channel Selectivity C/I 2Mhz	dB	-	-	-40	-40
Image Rejection C/I	dB	-	-	-9	-9

VDD=3.3V; f=2.45GHz; T=20°C

Transmitter	Units	Min	Typ	Max	Bluetooth Spec
RF Output Power	dBm	-	3	-	-6 to +4
RF Power Control Range	dB	-	30	-	> 16
RF Power Range Control Resolution	dB	2	-	6-	-
20dB bandwidth for Modulated Carrier	KHz	-	850	-	< 1000
2 nd Adjacent channel Power (+/-2MHz)	dBc	-	-	-	-20
3 rd Adjacent channel Power (+/-2MHz)	dBc	-	-	-	-40

VDD=3.3V; f=2.45GHz; T=20°C

All Specifications including pinouts and electrical specifications may be changed without prior notice

Features

- Bluetooth Spec. V1.2 Compliant
- Class 2 type Output Power
- Support Firmware Upgrade
- Support Piconet, up to 7Slaves
- Full Speed Bluetooth , 723K/57.6Kbps
- USB1.1and UART Host Interface
- Digital Audio Interface : PCM, I2S,SPDIF
- Built in 16-bit Stereo Codes
- Factory configurable to either 1.8V or 3.3VSupply
- He Blseparated into two banks with 4mB each and control by external bank switching pin) or 16MB(16MB is separated into two banks with 8MB each and control by external bank switching pin)
- Surface-mount, Size; 25MMX 12.5mm X2.35mm
- **Weight:**

Product Description

The Module is a Class 2 Bluetooth Sub-system using Blue Core3-Multimedia External chipset from leading Bluetooth chipset supplier Cambridge Silicon Radio.

The Module interfaces to 8Mbit of external Flash memory . When used with the CSR Bluetooth software stack , it provides a fully compliant Bluetooth system to 1.2 of the specification for data and voice communications

The module and device firmware is fully compliant with the Bluetooth specification v 1.2

Specifications

Operating Frequency Band	2.4GHz ~ 2.48GHz unlicensed ISM band
Bluetooth Specification	V1.2
Output Power Class	Class 2
Operating Voltage	1.8V/3.3V
Host Interface	USB 1.1 or UART
Audio Interface	PCM, I2S, SPDIF
Flash Memory Size	4M 8M (with and without bank switching), 16MBit (with bank switching)
Dimension	25mm(L) × 12.5mm(W) × 2.35mm(H)

Specifications are subject to change without prior notice

Block Diagram

