

## EB35W2M Bluetooth Stereo Audio Module

### Product Description

The EB35W2M Bluetooth stereo audio module is based on CSR BC03 chip BC352239. The module has been integrated with most of the peripheral components and fully tuned to obtain best RF and audio performance, thus make it a simple plug and play solution for Bluetooth products design. This mass production proven module helps OEM customers to achieve high yield rate and reduce the time to market.

EB35W2M is compliant with Bluetooth V1.2, and supports A2DP, AVRCP, HS, HF profiles, it mainly targets on Bluetooth stereo applications like Bluetooth speakers, Car-kits, it has been designed with the stereo application specified requirements in mind. The embedded Kalimba DSP enables sound effects as echo cancellation, noise cancellation, SRS sound functions. The module also features a UART connection to let the master MCU to have the full access of the Bluetooth functions.

### Applications

- Stereo Speakers
- Stereo Headsets
- Stereo Car-kits
- Stereo Audio Dongles
- Microphones



### Features

- Complete Stereo Bluetooth Function Module
- Based on CSR BC03 chip BC352239
- Compliant with Bluetooth V1.2
- Highly integrated, small form factor
- Class 2 RF with range up to 15m
- Embedded DSP for sound processing support
- Full Bluetooth functions through UART control
- Integrated 16 bit codec for Stereo input and output
- Flexible design, custom functions supported

**Electrical Specification**

	Description	Min/Typical/Max
<b>General</b>	Supply voltage	3.3V / 4..3V / 5.0V
	Supply current	50mA
	Audio Format	SBC
	Operation temperature	-10 ~ +60°C
<b>RF</b>	RF Frequency	2400 ~ 2483MHZ
	RF Channels	79 Channels
	Bluetooth Spec.	V1.2
	Output Power Class	Class 2
	TX Power	0dBm / +4dBm
	RX Sensitivity	-80dBm
<b>Audio</b>	Input level	1.0Vrms
	Input impedance	10K Ohm
	Output level	1.0Vrms
	Output impedance	1K Ohm
	Frequency response	20Hz ~ 20KHz( -3dB)
	Latency	200ms, Configurable
	Sampling accuracy	44.1KHz, 16bit
	S/N ratio	70dB
	THD	<0.1% @ 1KHz
	Dynamic range	85dB
	Channel separation	65dB

Table [1]: Electrical Specification

### Pin Assignments

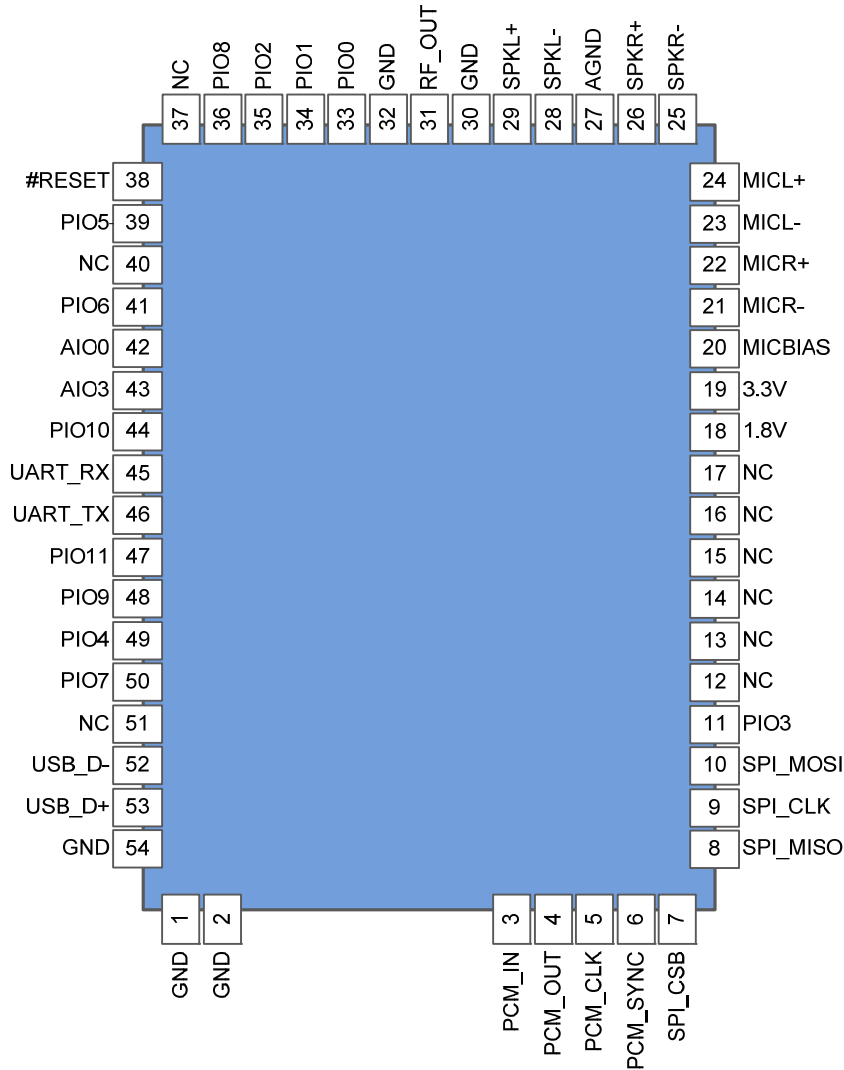


Figure [1]: Pin out

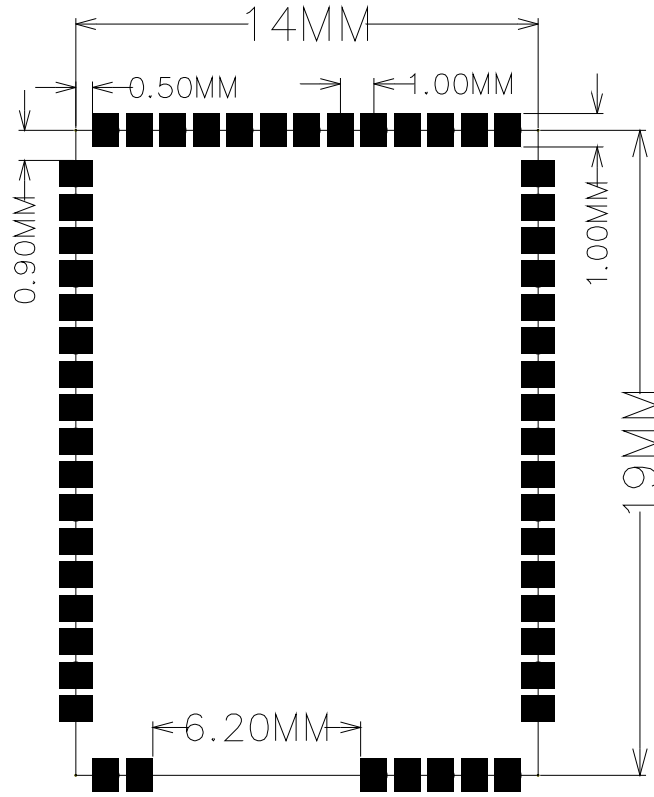
Pin #	Pin name	Type	Description
1	GND	P	Ground power
2	GND	P	Ground power
3	PCM_IN	I	Synchronous data input
4	PCM_OUT	O	Synchronous data output
5	PCM_CLK	I/O	Synchronous data clock
6	PCM_SYNC	I/O	Synchronous data sync
7	SPI_CSB	I/O	Chip select for SPI bus, active low

8	SPI_MISO	I/O	SPI data out
9	SPI_CLK	I/O	SPI clock
10	SPI_MOSI	I/O	SPI data in
11	NC	NC	Not connected
12	NC	NC	Not connected
13	NC	NC	Not connected
14	NC	NC	Not connected
15	NC	NC	Not connected
16	NC	NC	Not connected
17	NC	NC	Not connected
18	1.8V	P	1.8V DC output
19	3.3V	P	3.3V DC input
20	MICBIAS	A	Microphone bias
21	MICR-	A	Microphone input negative, right
22	MICR+	A	Microphone input positive, right
23	MICL-	A	Microphone input negative, left
24	MICL+	A	Microphone input positive, left
25	SPKR-	A	Speaker output negative, right
26	SPKR+	A	Speaker output positive, right
27	AGND	P	Audio GND
28	SPKL-	A	Speaker output negative, left
29	SPKL+	A	Speaker output positive, left
30	GND	P	Ground Power
31	RF_OUT	I/O	RF signal output
32	GND	P	Ground Power
33	PIO0	I/O	General purpose I/O
34	PIO1	I/O	General purpose I/O
35	PIO2	I/O	General purpose I/O
36	PIO3	I/O	General purpose I/O
37	NC	NC	Not connected
38	#RESET	I	Reset, active low
39	PIO5	I/O	General purpose I/O
40	NC	NC	Not connected
41	PIO6	I/O	General purpose I/O
42	AIO0	I/O	Analog programmable I/O
43	AIO3	I/O	Analog programmable I/O
44	PIO10	I/O	General purpose I/O

45	UART_RX	I	UART data input
46	UART_TX	O	UART data output
47	PIO11	I/O	General purpose I/O
48	PIO9	I/O	General purpose I/O
49	PIO4	I/O	General purpose I/O
50	PIO7	I/O	General purpose I/O
51	NC	NC	Not connected
52	USB_D-	I	USB data input negative
53	USB_D+	I	USB data input positive
54	GND	P	Ground Power

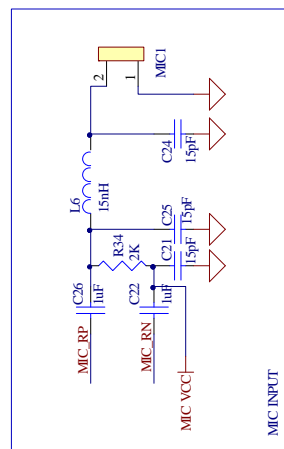
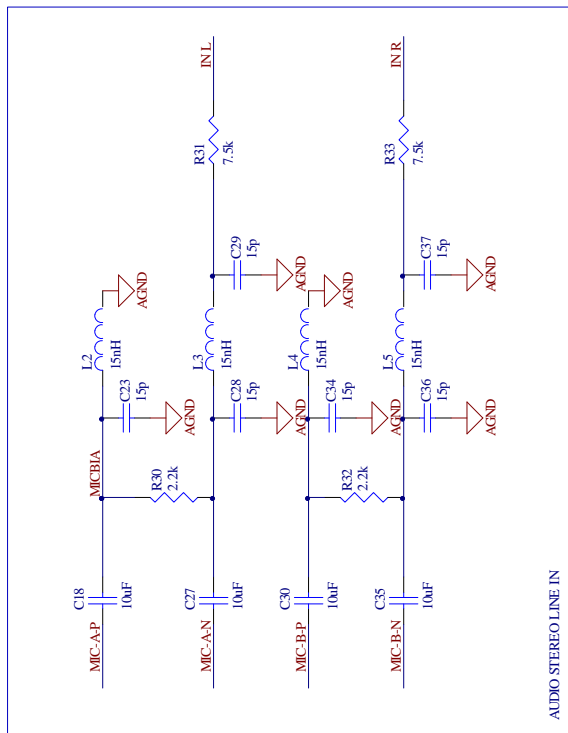
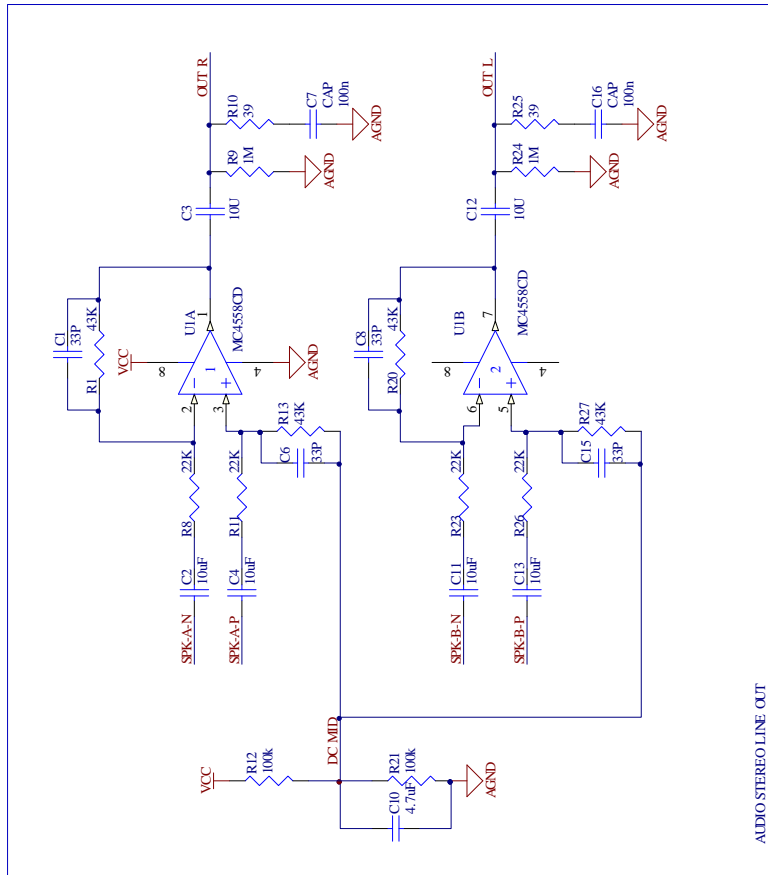
Table [2]: Pin assignments

## Physical Dimension



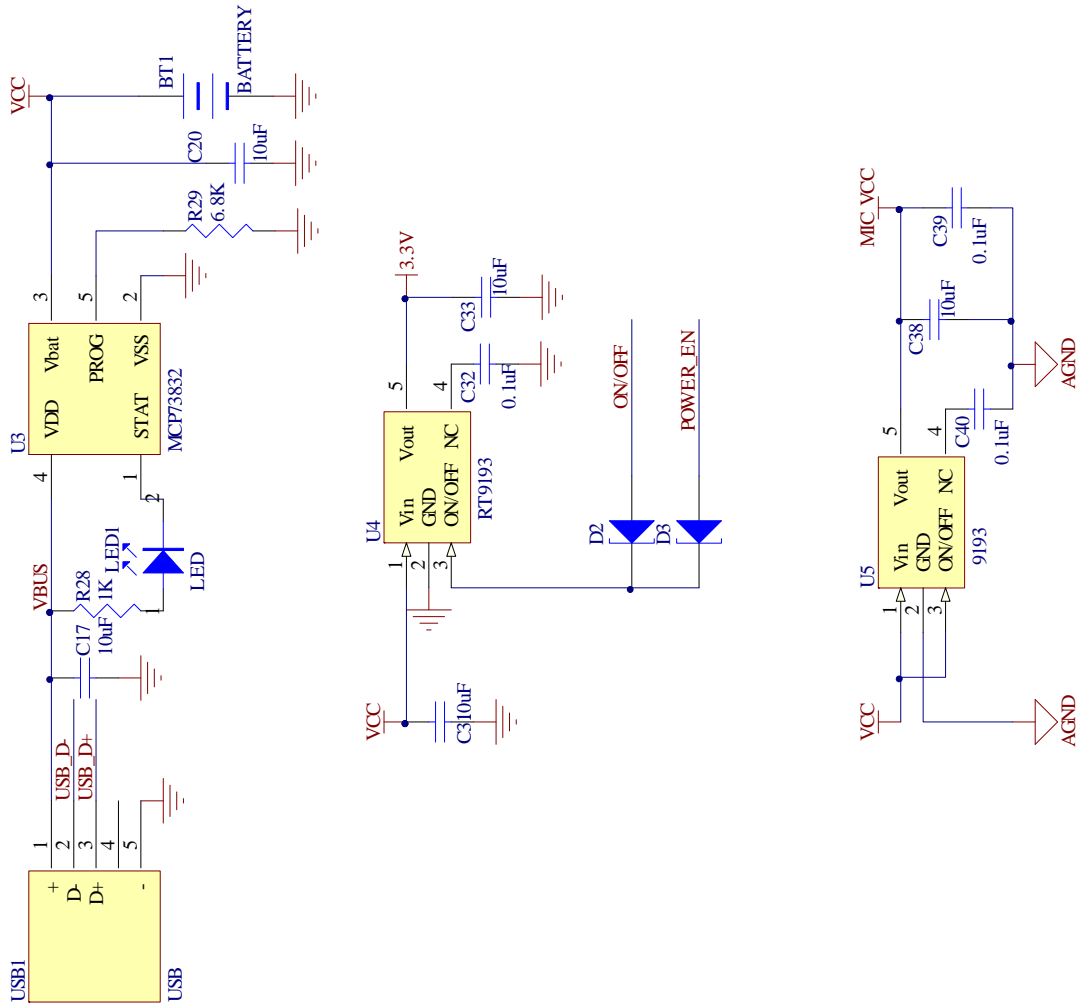
Figure[2]: Dimensions





Figure[4]: Application Schematic





Figure[5]: Application Schematic

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**Ordering Information**

Gigawit ID.	Description
EB35W2M	Bluetooth Stereo based on CSR BC03 chip BC352239AU

**Contact**

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**Revision History**

2007-12-12      Version 1.0, Original version  
2008-9-26      Version 1.01, Update the application schematic