

Product Description

This scheme is a class II Bluetooth sub-system using Bluecore3-Multimedia external chipset from leading Bluetooth chipset supplier Cambridge Silicon Radio.

This device and Bluetooth module firmware is fully compliant with the Bluetooth Specification V1.2.

Bluetooth Module Brief

Dimensions



NO	PIN NAME	NO	PIN NAME
1	EXT_CLK	29	PCM_SYNC
2	GND	30	PCM_CLK
3	VDD	31	PCM_OUT
4	GND	32	PIO7
5	AUDIO_OUT_P_LT	33	PIO6
6	AUDIO_OUT_N_LT	34	PIO5
7	AUDIO_OUT_N_RT	35	PIO4
8	AUDIO_OUT_P_RT	36	GND
9	VCC	37	SPI_CSB
10	GND	38	SPI_CLK
11	AUDIO_IN_P_LT	39	SPI_MOSI
12	AUDIO_IN_N_LT	40	SPI_MISO
13	AUDIO_IN_N_RT	41	GND
14	AUDIO_IN_P_RT	42	RESET_B
15	GND	43	RESET
16	B_SW	44	GND
17	AIO0	45	PIO3
18	AIO1	46	PIO2
19	AIO3	47	PIO1
20	GND	48	PIO0
21	USB_DP	49	GND
22	USB_DN	50	PIO11
23	UART_RTS	51	PIO10
24	UART_CTS	52	PIO9
25	UART_RX	53	PIO8
26	UART_TX	54	GND
27	GND	55	RF-IN
28	PCM_IN	56	GND

Pin Configurations

Pin NO.	NAME	TYPE	FUNCTION	RE-MARK
1	EXT_CLK	Analogue	External Clock Input (For built in crystal)	For external clock input
2	GND	GND		
3*	VDD	POWER	+1.8v Supply	
	N.C.			
4	GND	GND	Ground	
5	AUDIO_OUT_P_LT	Analogue	Audio Line Out Positive (Left Side)	
6	AUDIO_OUT_N_LT	Analogue	Audio Line Out Negative(Left Side)	
7	AUDIO_OUT_N_RT	Analogue	Audio Line Out Negative (Right Side)	
8	AUDIO_OUT_P_RT	Analogue	Audio Line Out Positive (Right Side)	
9*	VCC	POWER	+3.3V Supply	
	VDD	POWER	+1.8V Supply	
10	GND	GND	Ground	



Joybee ET50 Specification

Zhuhai Sunda Technology Co., Ltd

11	AUDIO_IN_P_LT	Analogue	Audio Line In Positive (Left Side)	
12	AUDIO_IN_N_LT	Analogue	Audio Line In Negative (Left Side)	
13	AUDIO_IN_N_RT	Analogue	Audio Line In Negative (Right Side)	
14	AUDIO_IN_P_RT	Analogue	Audio Line In Positive (Right Side)	
15	GND	GND	Ground	
16	B_SW	CMOS input	Bank Switching Selection	
17	AIO0	Bi-directional	Programmable input/output line	
18	AIO1	Bi-directional	Programmable input/output line	
19	AIO3	Bi-directional	Programmable input/output line	
20	GND	GND	Ground	
21	USB_DP	Bi-directional	USB Data Plus	
22	USB_DN	Bi-directional	USB Data Plus	
23	UART_RTS	CMOS output	UART Request To Send (Active Low)	
24	UART_CTS	CMOS input	UART Clear To Send (Active Low)	
25	UART_RX	CMOS input	UART Data Input (Active Low)	
26	UART_TX	CMOS output	UART Data Output (Active Low)	
27	GND	GND	Ground	
28	PCM_IN	CMOS Input	Synchronous Data Input	
29	PCM_SYNC	Bi-directional	Synchronous Data Sync	
30	PCM_CLK	Bi-directional	Synchronous Data Clock	
31	PCM_OUT	CMOS Output	Synchronous Data Output	
32	PIO7	Bi-directional	Programmable Input/Output Line	
33	PIO6	Bi-directional	Programmable Input/Output Line	
34	PIO5	Bi-directional	Programmable Input/Output Line	
35	PIO4	Bi-directional	Programmable Input/Output Line	
36	GND	GND	Ground	
37	SPI_CSB	CMOS Input	Chip Select For Synchronors Serial Interface(Active Low)	
38	SPI_CLK	CMOS Input	Serial Peripheral Interface Clock	
39	SPI_MOSI	CMOS Input	Serial Peripheral Interface Data Input	
40	SPI_MISO	CMOS Output	Serial Peripheral Interface Output	
41	GND	GND	Ground	
42	RESET_B	CMOS Input	Reset if Low	
43	RESET	CMOS Input	Reset if High	
44	GND	GND	Ground	
45	PIO3	Bi-directional	Programmable Input/Output Line	
46	PIO2	Bi-directional	Programmable Input/Output Line	
47	PIO1	Bi-directional	Programmable Input/Output Line	
48	PIO0	Bi-directional	Programmable Input/Output Line	
49	GND	GND	Ground	
50	PIO11	Bi-directional	Programmable Input/Output Line	

51	PIO10	Bi-directional	Programmable Input/Output Line	
52	PIO9	Bi-directional	Programmable Input/Output Line	
53	PIO8	Bi-directional	Programmable Input/Output Line	
54	GND	GND	Ground	
55	RF-IN	RF	RF Interface	
56	GND	GND	Ground	

* This project supplies 1.8V voltage

Joybee ET50 Circuit elements brief

Microphone Input Stage

A low noise variable gain amplifier amplifies the signal difference between inputs MIC-N-L, MIC-N-R and MIC-P-L, MIC-P-R. The input signal maybe from either a microphone or line. The amplified signal is then digitized by a ADC .

This device transmits and receives signal with A2DP. Firstly the microphone sampling voice and transform thin electrical signal and coupling it to Bluetooth module amplifier circuit. C9、C10、C11 and C12 should be 0.1Uf. R17 sets the microphone load impedance is normally 2.2k.Vbias should be chosen to suit the microphone and have sufficient low noise. It may be filtering the output of a PIO line. The microphone should be biased as shown in figure1.1.

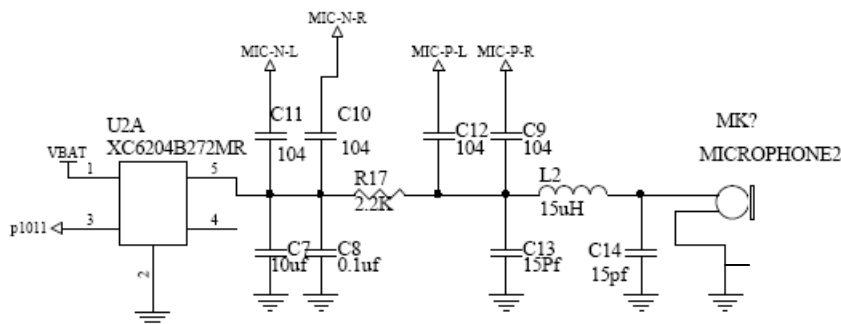


Figure 1.1

Speak Output Stage

The digital data is converted to an analogue value by a DAC, then it is filtered prior to amplification by the output amplifier and it is available as a differential signal between SPK_R and SPK_L. The out amplifier is capable of driving a speaker directly if its impedance is greater than or equal to 8w.

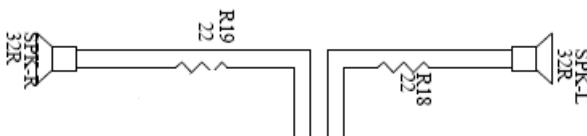


Figure 1.2

Charging Stage

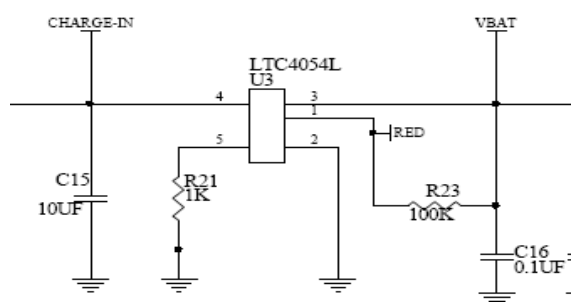


Figure 1.3