

Technical Description

The 5CD Mini System with Bluetooth function contains a pair of stereo speaker, a subwoofer, a AM/FM tuner and a 5 CD changer/player. The system also supports Aux (RCA) input and Line (3.5mm jack) input. The Mini System features Bluetooth wireless audio playback. The audio signal can be sent from Bluetooth devices such as mobile phone, when a Bluetooth device is pairing to the Mini System. A USB port is equipped for charging only (without USB connectivity function). The Mini System is powered by 120AC mains.

Modulation Type: GFSK, $\pi/4$ -PSK and 8-DPSK

Antenna Type: Integral Integral (PCB Trace)

Frequency Range: 2402MHz - 2480MHz, 1MHz channel spacing, 79 channels

The function of main IC is mentioned as below.

1. BlueTooth module:

- 1) BT1 (BM21SPK01) acts as Bluetooth module integrating with audio CODEC.
- 2) L1 acts as antenna matching network.
- 3) X1 provides system clock (oscillation frequency 16MHz).

2. DSP and 5 CD changer module:

- 1) U002 (DSP M5671) and U001 (SDRAM) act as DSP module for the 5 CD changer.
- 2) U006 (AM5766) acts as the servo controller of the 5 CD changer.

3. Display and Key module

- 1) IC701 (PT6315) acts as VFD display (DS701) driver and keyboard control interface.

4. AM/FM module:

- 1) U10 (SI 4730) acts as AM/FM receiver

5. EQ module

- 1) IC401 (TDA7440D) acts as EQ / Volume preamplifier
- 2) IC402 (YD4052) acts as input channel selector.

6. Amplifier

- 1) IC803 (TDA7292) acts as subwoofer power amplifier
- 2) IC501 and IC502 (TDA7296) act as stereo speaker power amplifiers

Channel Frequency Table of CD2965SB BlueTooth

CH. NO.	FRE.	Hex Value	CH. NO.	FRE.	Hex Value	CH. NO	FRE.	Hex Value	CH. NO	FRE.	Hex Value
CH0	2402MHz	0	CH26	2428MHz	1A	CH52	2454MHz	34	CH78	2480MHz	4E
CH1	2403MHz	1	CH27	2429MHz	1B	CH53	2455MHz	35			
CH2	2404MHz	2	CH28	2430MHz	1C	CH54	2456MHz	36			
CH3	2405MHz	3	CH29	2431MHz	1D	CH55	2457MHz	37			
CH4	2406MHz	4	CH30	2432MHz	1E	CH56	2458MHz	38			
CH5	2407MHz	5	CH31	2433MHz	1F	CH57	2459MHz	39			
CH6	2408MHz	6	CH32	2434MHz	20	CH58	2460MHz	3A			
CH7	2409MHz	7	CH33	2435MHz	21	CH59	2461MHz	3B			
CH8	2410MHz	8	CH34	2436MHz	22	CH60	2462MHz	3C			
CH9	2411MHz	9	CH35	2437MHz	23	CH61	2463MHz	3D			
CH10	2412MHz	A	CH36	2438MHz	24	CH62	2464MHz	3E			
CH11	2413MHz	B	CH37	2439MHz	25	CH63	2465MHz	3F			
CH12	2414MHz	C	CH38	2440MHz	26	CH64	2466MHz	40			
CH13	2415MHz	D	CH39	2441MHz	27	CH65	2467MHz	41			
CH14	2416MHz	E	CH40	2442MHz	28	CH66	2468MHz	42			
CH15	2417MHz	F	CH41	2443MHz	29	CH67	2469MHz	43			
CH16	2418MHz	10	CH42	2444MHz	2A	CH68	2470MHz	44			
CH17	2419MHz	11	CH43	2445MHz	2B	CH69	2471MHz	45			
CH18	2420MHz	12	CH44	2446MHz	2C	CH70	2472MHz	46			
CH19	2421MHz	13	CH45	2447MHz	2D	CH71	2473MHz	47			
CH20	2422MHz	14	CH46	2448MHz	2E	CH72	2474MHz	48			
CH21	2423MHz	15	CH47	2449MHz	2F	CH73	2475MHz	49			
CH22	2424MHz	16	CH48	2450MHz	30	CH74	2476MHz	4A			
CH23	2425MHz	17	CH49	2451MHz	31	CH75	2477MHz	4B			
CH24	2426MHz	18	CH50	2452MHz	32	CH76	2478MHz	4C			
CH25	2427MHz	19	CH51	2453MHz	33	CH77	2479MHz	4D			

BM21SPK01

Bluetooth 2.1+EDR Wireless Speaker Module

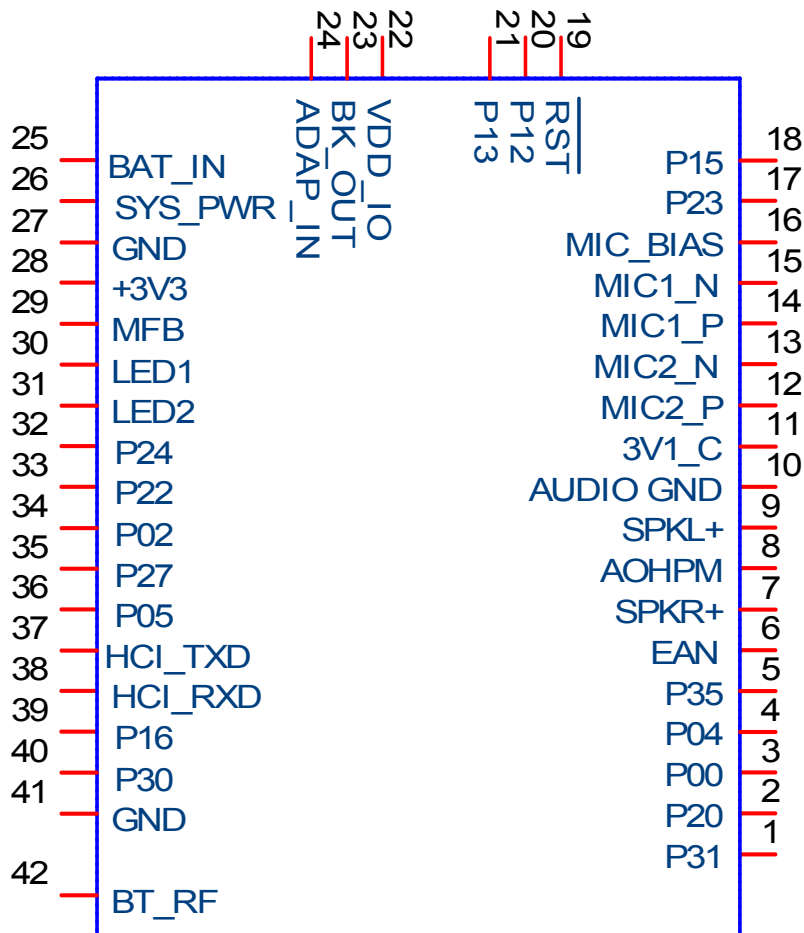
Product Description

The ISSC BM21SPK01 is a highly integrated Bluetooth 2.0/2.1+EDR stereo module, designed for high data rate, short-range wireless communication in the 2.4 GHz ISM band. With ISSC Bluetooth stack and profile, the ISSC BM21SPK01 provides a low power and ultra-low cost Bluetooth 2.1+EDR solution for wireless voice/audio applications.

Features

- Main Chip: ISSC IS1621N
- Bluetooth 2.1+EDR compliant
- Typical +2dBm Class 2 output power
- Receiver Sensitivity: GFSK typical -90dBm, $\pi/4$ PSK typical -90dBm, 8DPSK typical -83dBm
- Piconet and Scatter net support
- HCI UART interface
- CVSD, A-law, μ -law CODEC algorithms for voice applications
- SBC decode for Bluetooth stereo streaming
- Build-in High performance stereo codec
- Cap-less headphone driver
- Audio DAC: 93dB SNR
- HSP, HFP, A2DP, AVRCP profile support
- 3.3V operating voltage
- ROM version: 32Kb EEPROM / Flash version: Build in 4Mb Flash
- Size: 17mm x 23.3mm
- External Antenna
- RoHS compliant

Device Pinout Diagram

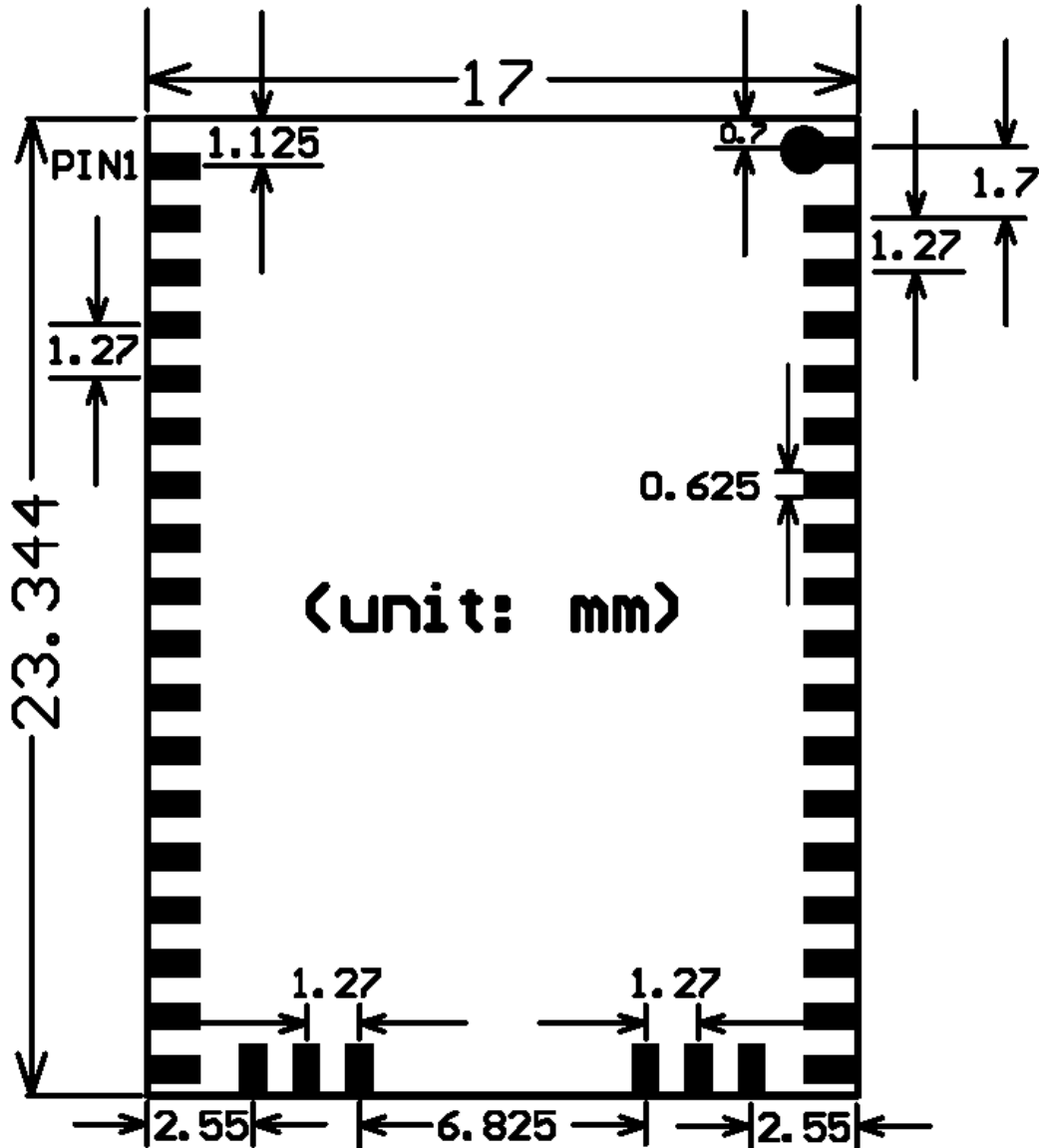


Pin Definition

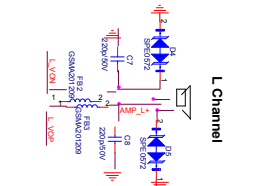
Pin No.	Pin Name	Description
1	P31	Programmable I/O line
2	P20	Programmable I/O line
3	P00	Programmable I/O line
4	P04	Programmable I/O line
5	P35	Programmable I/O line
6	EAN	Embedded ROM/External Flash enable H: Embedded; L: External Flash
7	SPKR+	Speaker output right channel +
8	AOHPM	Virtual ground for SPKR+ and SPKL+
9	SPKL+	Speaker output left channel +
10	AUDIO GND	Audio ground
11	3V1_C	Internal LDO 3.1V output voltage for Audio
12	MIC2_P	MIC 2 input +
13	MIC2_N	MIC 2 input -
14	MIC1_P	MIC 1 input +
15	MIC1_N	MIC 1 input -
16	MIC_BIAS	MIC bias voltage output
17	P23	Programmable I/O line
18	P15	Programmable I/O line
19	RST	Reset
20	P12	Programmable I/O line
21	P13	Programmable I/O line

Pin No.	Pin Name	Description
22	VDD_IO	3V1 IO input
23	BK_OUT	Internal voltage
24	ADAP_IN	5V Adapter input
25	BAT_IN	Li – Battery Input
26	SYS_PWR	System Power Output Voltage
27	GND	GROUND
28	+3V3	3V3 Input Voltage
29	MFB	Multi Function Key
30	LED1	LED output
31	LED2	LED output
32	P24	Programmable I/O line
33	P22	Programmable I/O line
34	P02	Programmable I/O line
35	P27	Programmable I/O line
36	P05	Programmable I/O line
37	HCI_TXD	UART data output
38	HCI_RXD	UART data input
39	P16	Programmable I/O line
40	P30	Programmable I/O line
41	GND	Ground
42	BT_RF	RF port

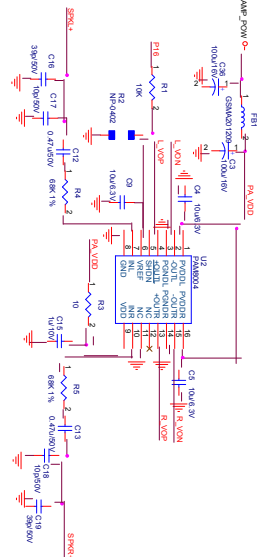
Outline Dimension



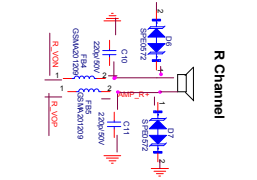
SPEAKER OUTPUT PATH



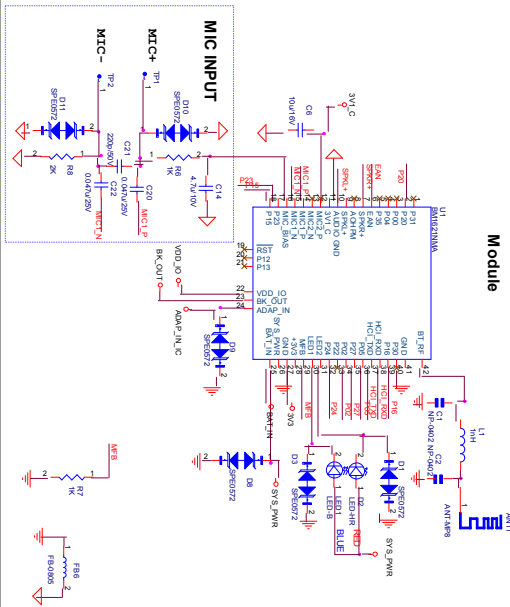
STEREO AMP CIRCUIT



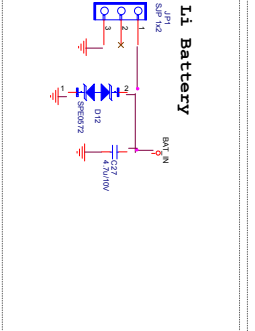
SPEAKER OUTPUT PATH



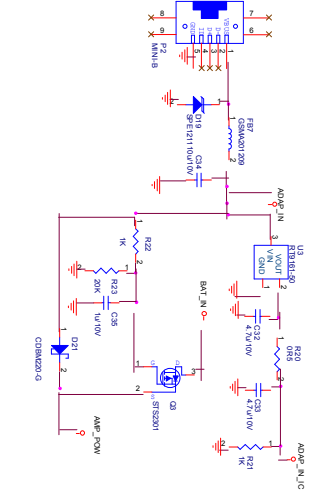
Module



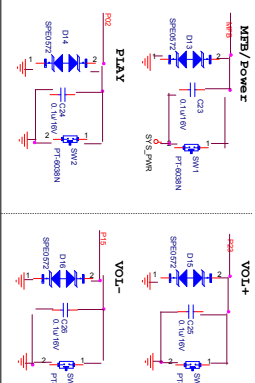
MAIN POWER TREE



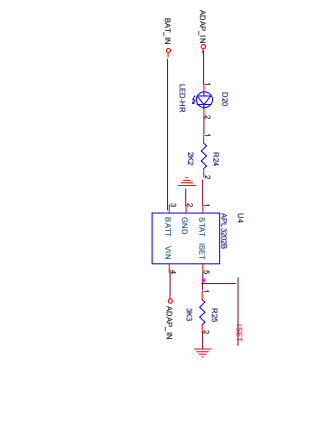
5V Adapter In



PUSH BUTTON

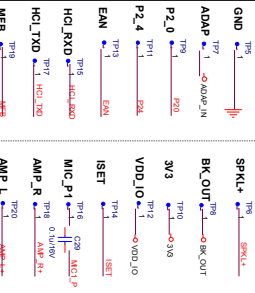


EXTERNAL CHARGER



Charge Current Formula:
 $I_{CHG} = I_{SET} \times V_{SET} / V_{BAT}$
 ISET = 3.3V, VSET = 1.3V, VBAT = 3.0V

TEST POINT



GPIO vs. APPLICATION FUNCTION

GPIO	APPLICATION	GPIO	APPLICATION
P00	Ext. Power On Delay	P22	Ext. Power On Enable
P04	Audio Amp Enable	P02	Play/Pause
P21	Buzzer Driver/Chime/Alert	P03	Forward
P15	Volume +	P05	Reverse
P16	Volume -	P06	Audio Amp Enable
P12	EEPROM_CLK	P10	PA Input detect
P13	EEPROM_DATA		

ISSC Technologies Corp.	
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Board Name	ISSC BT STEREO SPEAKER PHONE APPLICATION
Rev	1.0
File Name	MAIN CIRCUIT
Date	2011.05.26 AM 11:32:20
Drawn By	ISSC