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version description

Version	Update content	Update time	Update person
Ver1.0	Released	/	/
Ver2.0	Unified specification format (including the header/footer, fonts, spacing, etc.)	2014.4.11	杨兰珍
Ver2.1	Updated IC package	2014.07.21	温锦铎

1. Overview

CPR9851S is designed based on RDA5851SX chipset, a high integrated, low cost and low power consumption with stereo function BT module. Which support communication by telephone, TF card, FM, and Line in functions. Meet Bluetooth 2.1+EDR specification. To provide low cost high efficient stereo transmission solution for customer.

2. Application

This module used to transmit music in short distance, which directly link with PC, phone, PDA, and digital products though BT. Moreover, it integrated with FM and support autoplay music from MMC card.

1 Single chip solution, integrated with Line in, FM, IR control, TF/SD card and USB audio card.

2 Stereo BT headset

3 Wireless music transmission

4. BT card reader, BT dialer, BT companion, BT speaker, ect.

3. Function structure

3.1 Diagram



3.2 Function description

- 1) support MP3,WMA,WAV,SBC format
- 2) wireless stereo audio transmission, bluetooth phone
- 3) FM
- 4) BT card reader ,as it support USB host function ,so it can read

data from SD or MMC.

- 5) stereo audio line-in input
- 6) remote control
- 7) left for ADC button and power on button pins
- 8) UART port for serial communication, and can customize AT communication protocol
- 9) integrated power management circuit
- 10) high rate UART interface for debug or update software
- 11) abundant IO port for application extend
- 12) support USB audio
- 13) support SPP data transmission

4. performance parameter

BT version	Bluetooth V2.1+EDR
Modulation system	GFSK, $\pi/4$ -DQPSK 和 8DPSK
support	HFP/HSP, OPP, A2DP/AVRCP, PBAP profiles
sensitivity(0.1% BER)	-82dBm
TX power	Meet class2 and class3 send requirement
Power supply	3.2V~4.2V
Current consumption	Regular work 45mA , pause 32mA
SNR	70dB
Work temperature	-20 ~ +50 °C
Module size	20.7mm x 15mm x 2.0mm

5. Pins function description (Appendix C)

pins	name	Function description
1	BT_ANT	BT antenna
2	GND	Ground connection
3	USB_DP	D-
4	USB_DM	D+
5	GPIO_3	GPIO port/IR receive port, pause button
6	GPIO_1	GPIO port, default TF card detective
7	UART2_RXD/GPIO_8	UART2 serial port also used for GPIO, no pause function
8	UART2_TXD/GPIO_13	UART2 no interrupt function
9	V_MMC	TF card power
10	V_PAD	2.98V output
11	SDAT1	TF data line
12	SDAT0	TF data line
13	SSD_CLK	TF clock
14	SSD_CMD	TF write or read control
15	SDAT3	TF data line
16	SDAT2	TF data line
17	RESETB_EXT	Reset port
18	PWRKEY_INT	software switch,high efficiency
19	GND	Ground connect
20	GND	Ground connect
21	VBAT	Power for module 3.4-4.2V
22	KEY_P	ADC press button
23	KEYIN_SENSE	ADC press button
24	CHG_IN	internal power charging (ask for extend external circuit)
25	GPIO_7	GPIO, fault LINE DECT , support external suspend function
26	GPIO_17	GPIO, no external suspend function
27	AU_RCV_P	Audio positive output pole
28	AU_RCV_N	audio differential output pole
29	LINE_IN_L	AUX left line in
30	LINE_IN_R	AUX right line in
31	AU_HPL	left single-ended sound channel output
32	AU_HPR	right single-ended sound channel output
33	AU_MIC_N	MIC differential negative output pole
34	AU_MIC_P	MIC differential positive output pole
35	AGND	Analog ground

36	FM_ANT	FM antenna
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6. Work mode

- 1) power on with 3.7 to 4.2V DC directly or USB charger for 5V source.
- 2) Short press PWR button ,when the LED1 and LED2 flick alternately,it means match correctly.
- 3) match successfully last time, it will automatically match when BT module power on.
- 4) Close the BT connection last time, BT module can connect with other devices when BT module work.
- 5) After it connect with BT device, it can transmit music through BT device, and control next or last music, increase or decrease volume, pause or continue play, press mode button to enter TF FM line.To sum up,all button functions can configure through software.
- 6) It matchs with phone via BT, short press PWR button to connect or hang up the call when you get the phonecall.

7.Attentions

- 1) PCB layout: Layground or rounting is not allowed under the BT

module' s antenna.

2) Module' s antenna need put the side of motherboard, not allowed to put near or overlap with metal material. Such as battery, other chip.

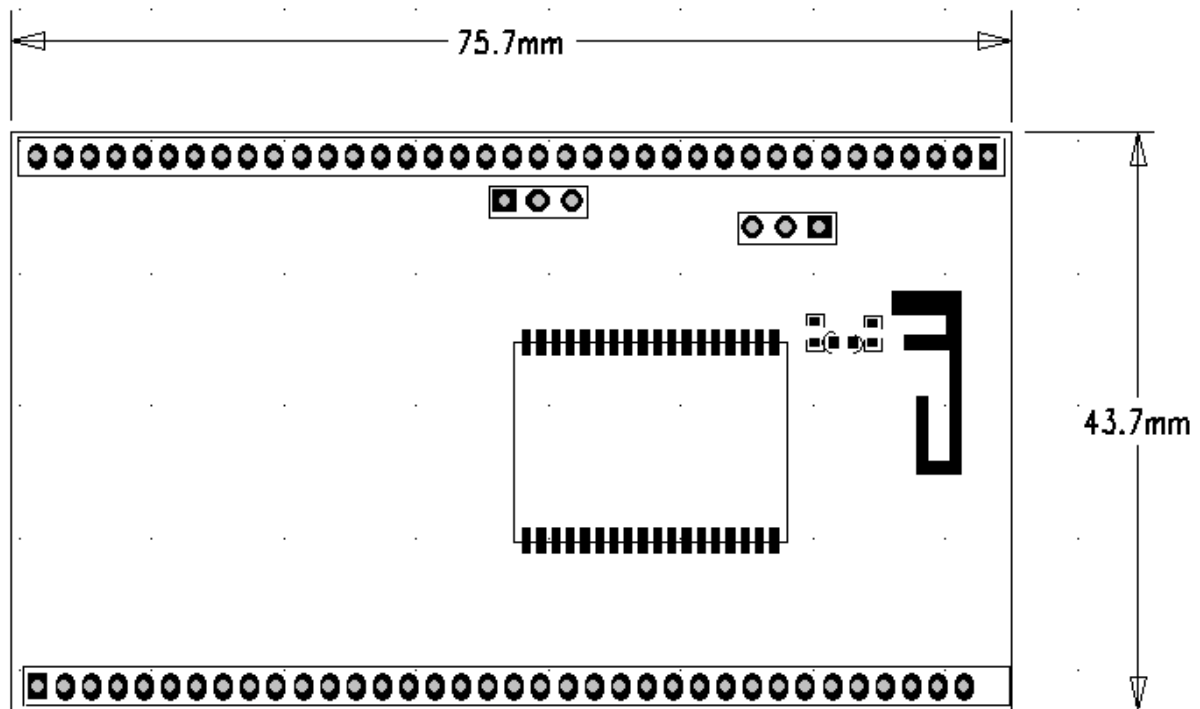
3) BT wireless application is easily affected by execrable environment, because obstacle as wood or metal will obsorb wireless signal, the data transmit distance will be affected during application.

4) Do not embed in the metal shield,because wireless RF signal will be shielded by metal cover.

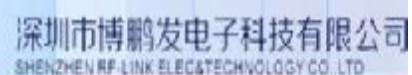
5) SIG membership and BQB certification: Authorize SIG and BQB if use Bluetooth trademark.

Appendix A: module size

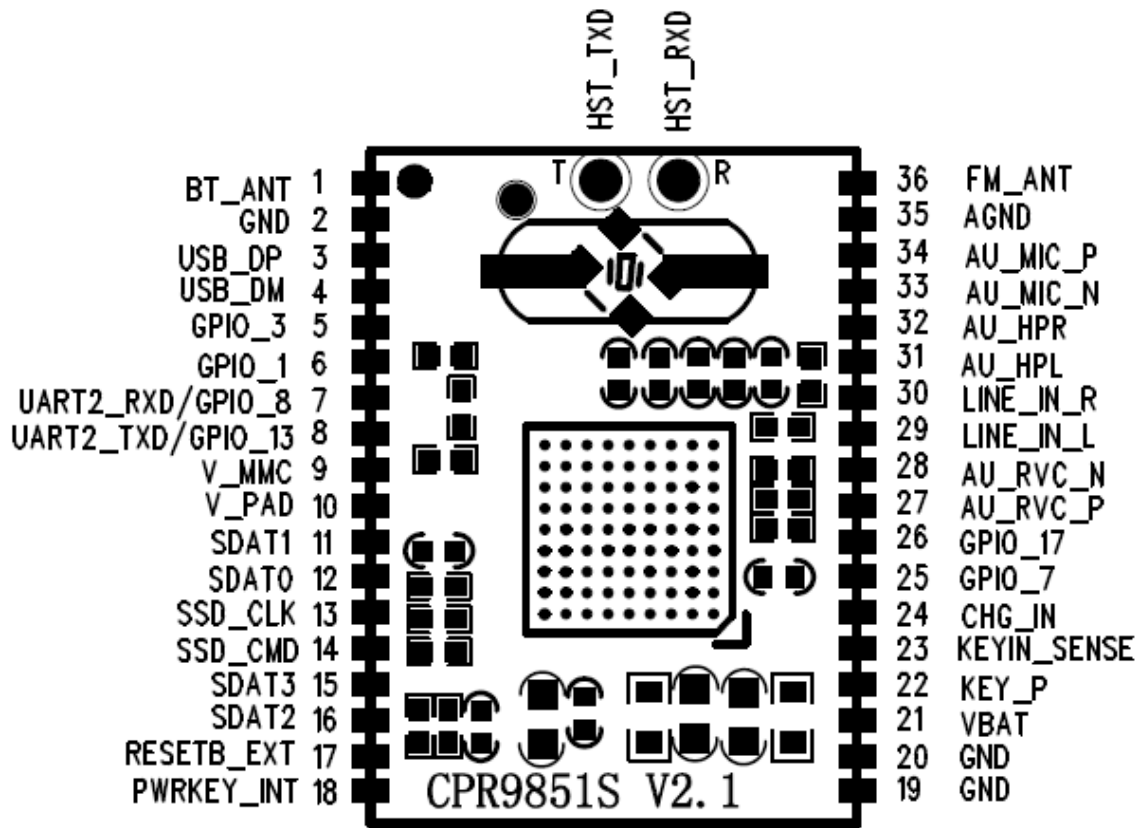
Dimension & footprint



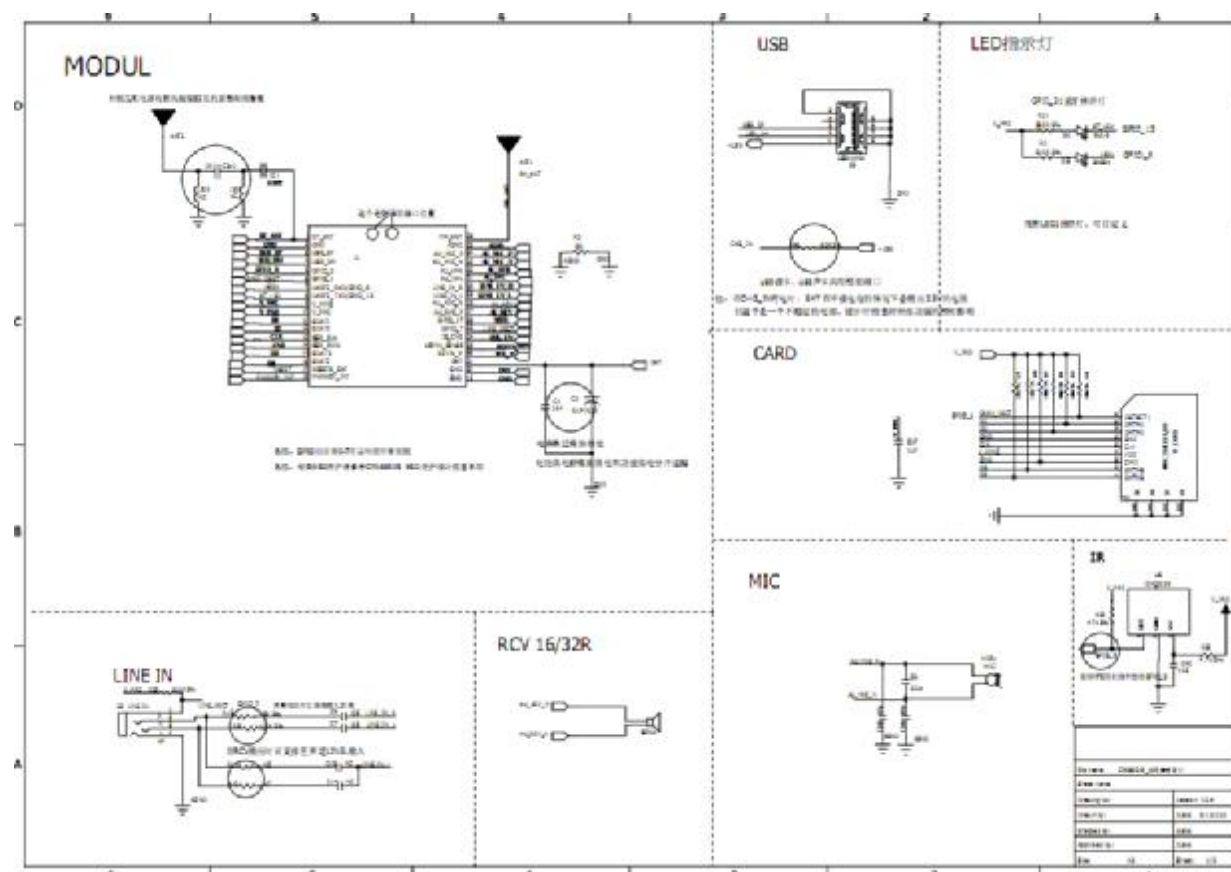
Appendix B: module pic

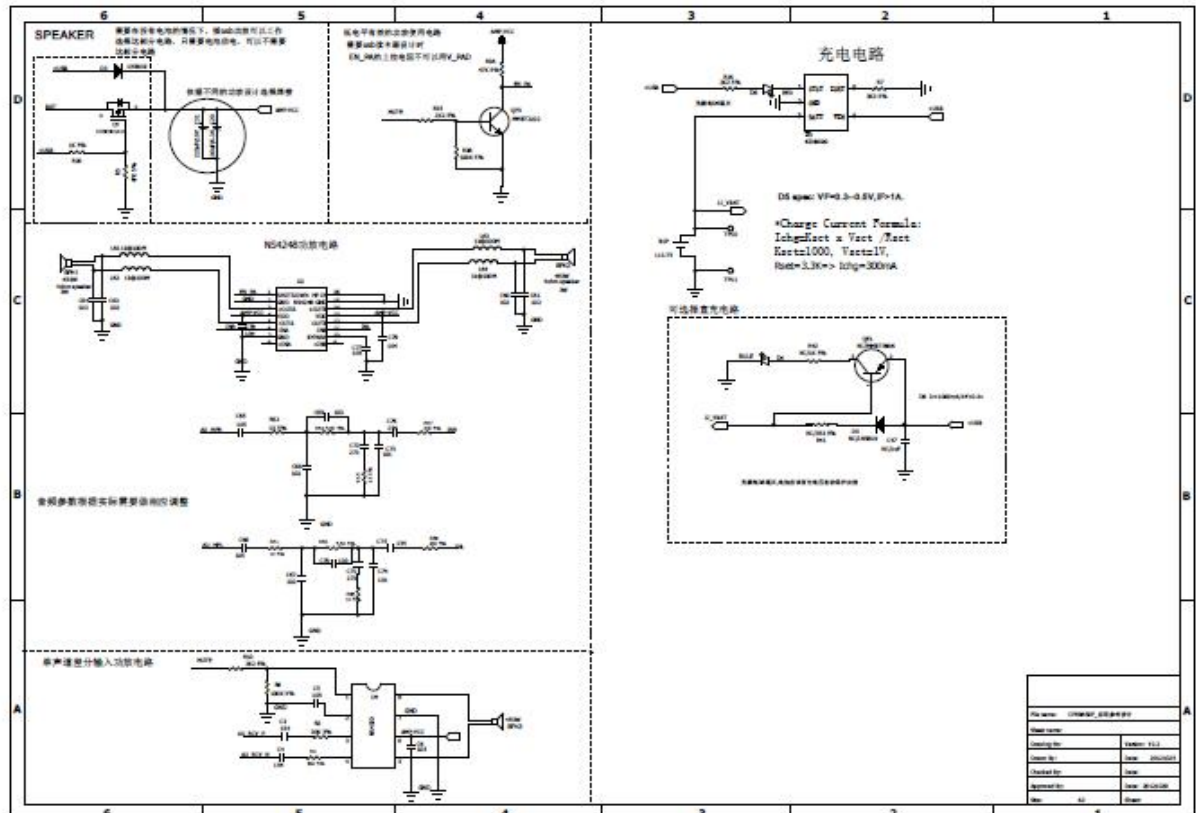
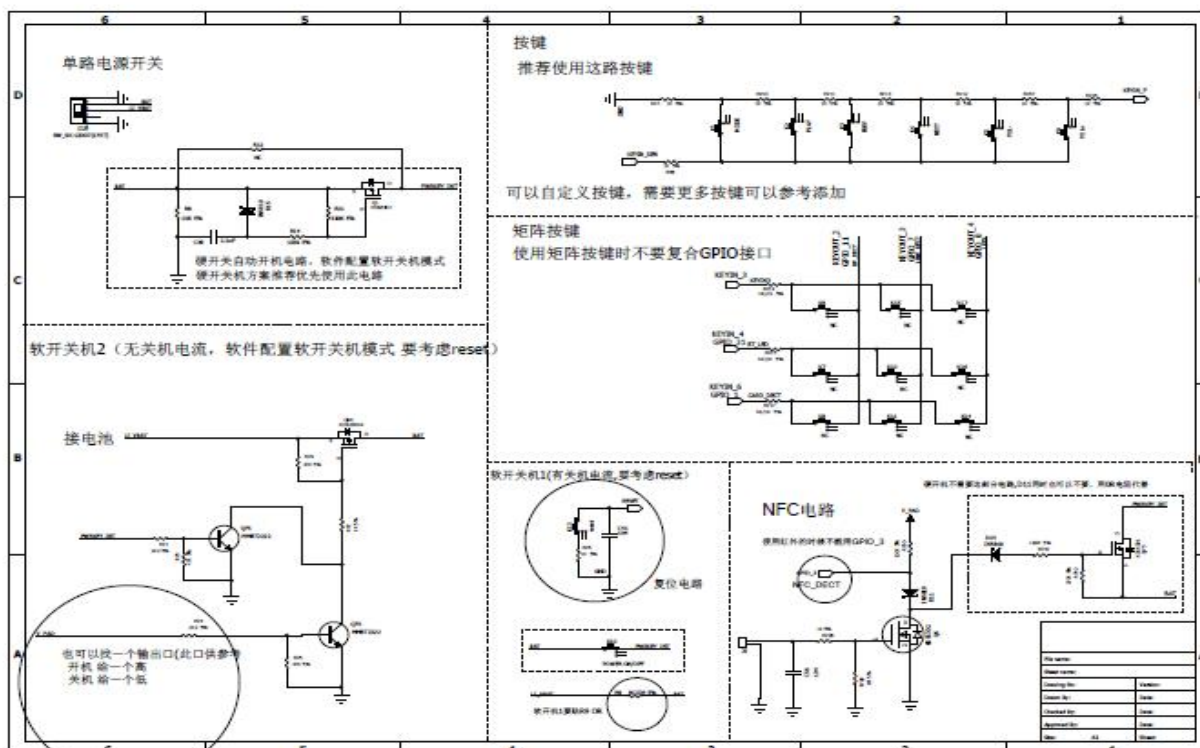


Appendix C: pins arrangement



Appendix D: reference design





This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following

measures:

- Reorient or relocate the receiving antenna.*
- Increase the separation between the equipment and receiver.*
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- Consult the dealer or an experienced radio/TV technician for help.*

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment. This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

If the FCC identification number is not visible when the module is installed inside another device, then the outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following: "Contains Transmitter Module FCC ID:A5LCPR9851S Or Contains FCC ID:A5LCPR9851S"

when the module is installed inside another device, the user manual of this device must contain below warning statements;

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference.

(2) This device must accept any interference received, including interference that may cause undesired operation.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The devices must be installed and used in strict accordance with the manufacturer's instructions as described in the user documentation that comes with the product