BlueTooth Module

HSBT075

Datasheet

HANSONG (NANJING) TECHNOLOGY CO. , LTD.

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Features

Product Features:

- Main Chipset : CSR8675CIBBHR
- Bluetooth Spec V5.0 Compliant hardware
- Class 2,Class 1   type Output Power
- Support Firmware Upgrade
- USB 1.1 and UART Host Interface
- Multi-Configurable I2S, PCM or SPDIF Interface
- Integrated Switched-Mode Regulator
- Integrated Battery Charger
- Integrated Microphone bias
- Integrated LED Driver
- Built in 16-bit Stereo Codec- 95dB SNR for DAC
- Factory configurable to either 1.8V or 3.3V supply.
- 16Mb internal flash memory (64-bit wide, 45ns);
- optional support for 64Mb of external SPI flash
- Support for 802.11 Co-existence
- SBC, MP3, AAC, APTX decoder support.
- HSP v1.2/ HFP v1.6/ A2DP v1.2/ AVRCP v1.4
- Two antenna type(Ext. or PCB antenna)
- RoHS compliant.
- Size   18.5 x38 .5x3.0mm
- Ant. can be selected PCB and Ext. Antenna base on product request.
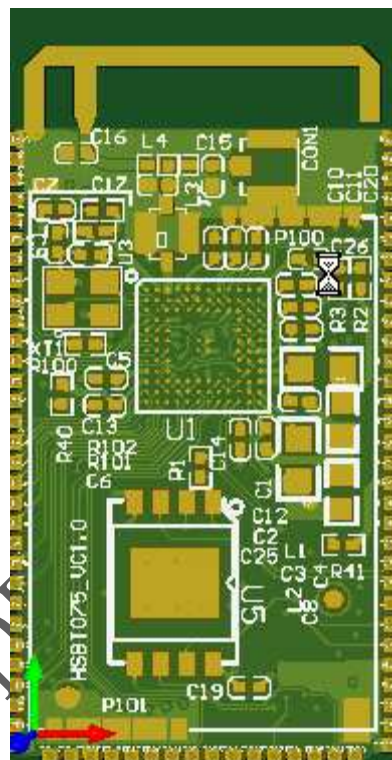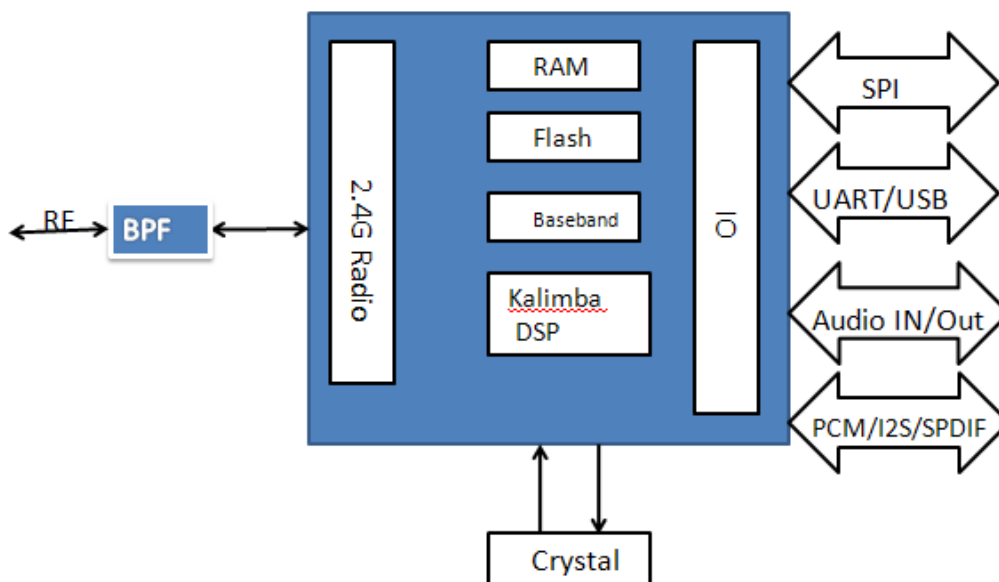
HSBT075-EA: Ext. antenna
HSBT075-IA: PCB antenna
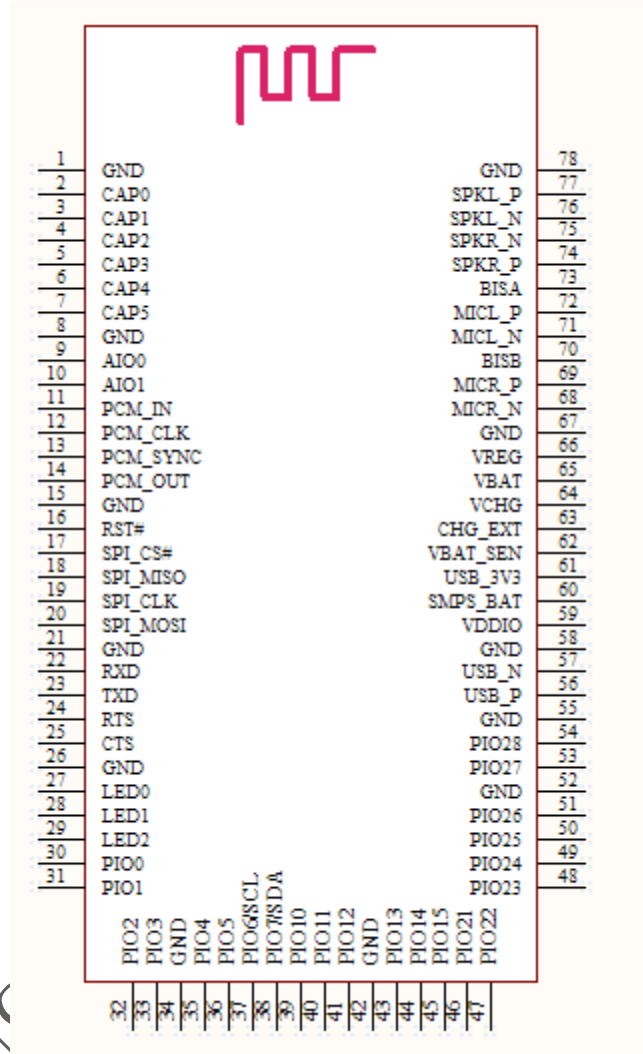
HSBT075   Module

Applications

- Stereo Wireless Headsets.
- Wired stereo headsets and headphones.
- Portable stereo speakers.
- Analog and USB Mulitmedia Dongle.
- Home Audio System.

System Architecture

Pin Assignment

Terminal	Pin Name	Pin Type	Description
1.	GND	GND	Common Ground
2.	CAP0	Analogue input	Capacitive touch sensor input
3.	CAP1	Analogue input	Capacitive touch sensor input
4.	CAP2	Analogue input	Capacitive touch sensor input
5.	CAP3	Analogue input	Capacitive touch sensor input
6.	CAP4	Analogue input	Capacitive touch sensor input
7.	CAP5	Analogue input	Capacitive touch sensor input
8.	GND	GND	Common Ground
9.	AIO0	Bidirectional	Analogue programmable input / output Line

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10.	AIO1	Bidirectional	Analogue programmable input / output line
11.	PCM_IN	Bidirectional with weak pull-down	Synchronous data input. Alternative function PIO[17].
12.	PCM_CLK	Bidirectional with weak pull-down	Synchronous data clock. Alternative function PIO[20].
13.	PCM_SYNC	Bidirectional with weak pull-down	Synchronous data sync. Alternative function PIO[19].
14.	PCM_OUT	Bidirectional with weak pull-down	Synchronous data output. Alternative function PIO[18].
15.	GND	GND	Common Ground
16	RST#	Input with strong pull-up	Reset if low. Input debounced so must be low for >5ms to cause a reset.
17	SPI_CS#	Input with strong pull-up	Chip select for SPI, active low
18.	SPI_MISO	Output with weak pulldown	SPI data output
19	SPI_CLK	Input with weak pulldown	SPI clock
20	SPI_MOSI	Input with weak pulldown	SPI data input
21	GND	GND	Common Ground
22	RXD	Bidirectional with strong pull-up	UART data input.
23	TXD	Bidirectional with weak pull-up	UART data output.
24	RTS	Bidirectional with weak pull-up	UART request to send, active low. Alternative function PIO[16].
25	CTS	Bidirectional with weak pull-down	UART clear to send, active low.
26	GND	GND	Common Ground
27	LED0	Open drain	LED driver. Alternative function PO[29].
28	LED1	Open drain	LED driver. Alternative function PO[30].
29	LED2	Open drain	LED driver. Alternative function PO[31].
30	PIO0	Bidirectional with weak pull-down	Programmable input / output line
31	PIO1	Bidirectional with weak pull-down	Programmable input / output line

32	PIO2	Bidirectional with weak pull-down	Programmable input / output line
33	PIO3	Bidirectional with weak pull-down	Programmable input / output line
34	GND	GND	Common Ground
35.	PIO4	Bidirectional with weak pull-down	Programmable input / output line
36.	PIO5	Bidirectional with weak pull-down	Programmable input / output line
37.	PIO6/SCL	Bidirectional with weak pull-down	Programmable input / output line
38.	PIO7/SDA	Bidirectional with weak pull-down	Programmable input / output line
39	PIO10	Bidirectional with weak pull-down	Programmable input / output line
40	PIO11	Bidirectional with weak pull-down	Programmable input / output line
41	PIO12	Bidirectional with weak pull-down	Programmable input / output line
42	GND	GND	Common Ground
43	PIO13	Bidirectional with weak pull-down	Programmable input / output line
44	PIO14	Bidirectional with weak pull-down	Programmable input / output line
45	PIO15	Bidirectional with weak pull-down	Programmable input / output line
46	PIO21	Bidirectional with strong pull-down	SPI flash clock. Alternative function PIO[21].
47	PIO22	Bidirectional with strong pull-down	SPI RAM clock. Alternative function PIO[22].
48	PIO23	Bidirectional with strong pull-up	SPI flash chip select. Alternative function PIO[23]
49	PIO24	Bidirectional with strong pull-up	SPI RAM chip select. Alternative function PIO[24].
50	PIO25	Bidirectional with strong pull-down	Serial quad I/O flash data bit 0. Alternative function PIO[25].
51	PIO26	Bidirectional with strong pull-down	Serial quad I/O flash data bit 1. Alternative function PIO[26].
52	GND	GND	Common Ground
53	PIO27	Bidirectional with strong pull-down	Serial quad I/O flash data bit 2. Alternative function PIO[27]
54	PIO28	Bidirectional with strong	Serial quad I/O flash data bit 3.

		pull-down	Alternative function PIO[28].
55	GND	GND	Common Ground
56	USB_P	Bidirectional	USB Data
57	USB_N	Bidirectional	USB Data
58	GND	GND	Common Ground
59	VDDIO	Power	GPIO Level setting,VDDIO=1.8V,GPIO Level will be1.8V. VDDIO=3.3V,GPIO Level will be 3.3V.
60	SMPS_BAT	Power	1.8V and 1.35V switch-mode power supply regulator inputs. Must be at the same potential as VBAT.
61	USB_3V3	Power	Positive supply for USB ports
62	VBAT_SEN	Power Control	Battery charger sense input
63	CHG_EXT	Power Control	External battery charger control
64	VCHG	Power	Battery charger input
65	VBAT	Power	Battery positive terminal
66	VREG	Power Switch	Regulator enable input
67	GND	GND	Common Ground
68	MICR_N	Analogue in	Microphone input positive, Right
69	MICR_P	Analogue in	Microphone input negative, Right
70	BISB	Analogue out	Microphone bias B
71	MICL_N	Analogue in	Microphone input negative, Left
72	MICL_P	Analogue in	Microphone input positive, Left
73	BISA	Analogue out	Microphone bias A
74	SPKR_P	Analogue out	Speaker output positive, right
75	SPKR_N	Analogue out	Speaker output negative, right
76	SPKL_N	Analogue out	Speaker output negative, Left
77	SPKL_P	Analogue out	Speaker output positive, Left
78	GND	GND	Common Ground

General Specifications

Recommended Operation Codiction	Min	Max
Operating Temperature Range	-20°C	+70°C
Supply Voltage, (VBAT)	2.5V	4.2V
Supply Voltage, (VCHG)	4.5V	5.75V

RF Characteristics

Receiver	Units	Min	Typ	Max	Bluetooth Spec
Sensitivity at 0.1% BER	dBm	-	-90	-86	≤-70
Maximum Receiver Signal	dBm	-20	-10	-	≥ -20
C/I Co-Channel	dB	-	6	11	≤11
Adjacent Channel Selectivity C/I -1MHz	dB	-	-6	0	≤0
2nd Adjacent Channel Selectivity C/I -2MHz	dB	-	-38	-30	≤-30
3rd Adjacent Channel Selectivity C/I -3MHz	dB	-	-45	-40	≤-40
Image Rejection C/I	dB	-	-16	-9	≤-9

VBAT = 4.2V; f = 2.4441GHz; T=20°C

Transmitter	Units	Min	Typ	Max	Bluetooth Spec
RF Output Power	dBm	0	9	-	0 to +10
RF Power Control Range	dB	16	24	-	> 16
RF Power Range Control Resolution	dB	-	0.5	-	-
20dB Bandwidth for Modulated Carrier	KHz	-	940	1000	<1000
2nd Adjacent Channel Power (+/- 2MHz)	dBm	-	-36	-20	≤-20
3rd Adjacent Channel Power (+/- 3MHz)	dBm	-	-45	-40	≤-40

VBAT = 4.2V; f = 2.4441GHz; T=20°C All specifications including pinouts and electrical specifications may be changed without prior notice

Dimension
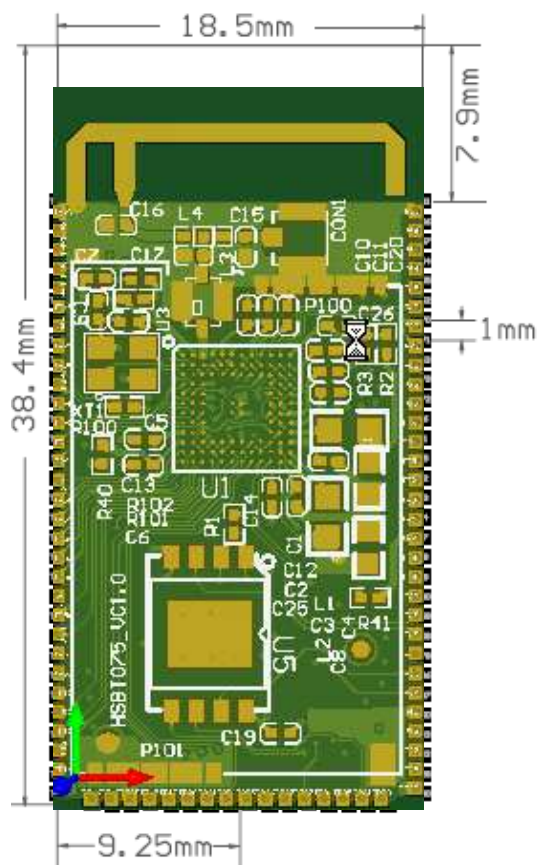
This device complies with Part 15 of the FCC Rules / Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

This device contains licence-exempt transmitter(s)/receiver(s) that comply with Innovation, Science and Economic Development Canada's licence-exempt RSS(s). Operation is subject to the following two conditions:
(1) This device may not cause interference.
(2) This device must accept any interference, including interference that may cause undesired operation of the device.

L'émetteur/récepteur exempt de licence contenu dans le présent appareil est conforme aux CNR d'Innovation, Sciences et Développement économique Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :
1) L'appareil ne doit pas produire de brouillage;
2) L'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

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.

To satisfy FCC / IC RF exposure requirements, a separation distance of 20 cm or more should be maintained between the antenna of this device and persons during device operation.
To ensure compliance, operations at closer than this distance is not recommended.

Les antennes installées doivent être situées de facon à ce que la population ne puisse

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y être exposée à une distance de moin de 20 cm. Installer les antennes de facon à ce que le personnel ne puisse approcher à 20 cm ou moins de la position centrale de l' antenne.

La FCC des éltats-unis stipule que cet appareil doit être en tout temps éloigné d'au moins 20 cm des personnes pendant son functionnement.

This device is intended for OEM integrators only. Please see the full grant of equipment document for restrictions.

If the FCC ID of this module is not visible when it is installed inside another device, then the outside of the device into which the module is installed must be label with

"Contains FCC ID: XCO-HSBT075 and Contains IC: 7756A-HSBT075".

This radio transmitter (Model: HSBT075, FCC ID: XCO-HSBT075, IC: 7756A-HSBT075) has been approved by Industry Canada to operate with the antenna types listed below with the maximum permissible gain and required antenna impedance for each antenna type indicated. Antenna types not included in this list, having a gain greater than the maximum gain indicated for that type, are strictly prohibited for use with this device.

Gain of antenna: 4.2 dBi max.
Type of antenna: 50ohm, external Omni-directional, PIFA and internal PCB Antenna.

Le présent émetteur radio (Model: HSBT075, FCC ID: XCO-HSBT075, IC: 7756A-HSBT075) a été approuvé par Industrie Canada pour fonctionner avec les types d'antenne énumérés ci-dessous et ayant un gain admissible maximal et l'impédance requise pour chaque type d'antenne.

Les types d'antenne non inclus dans cette liste, ou dont le gain est supérieur au gain maximal indiqué, sont strictement interdits pour l'exploitation de l'émetteur.

Gain d'antenne: 4.2 dBi maximal

Type d'antenne: 50-ohm, external Omni-directional, PIFA and internal PCB Antenna.

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Revision control

Revision	Author/Date	Check by	Approve by	Remarks
V1.0	Dany/2018-03-08			