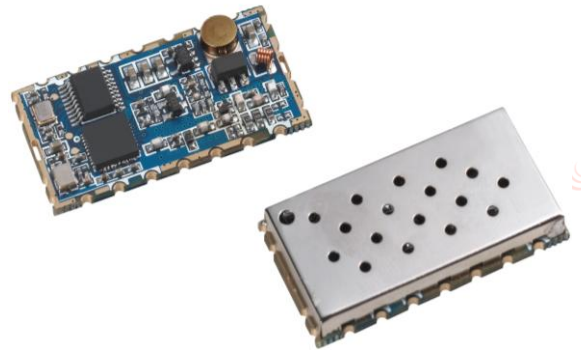


SA808-high performance / Embedded walkie talkie module

Descriptions:

SA808 is a low cost but high performance integrated walkie talkie module. With built-in high performance micro controller, narrow band rf transceiver and standard Uart interface, it can be easily used and succeed in all the walkie talkie function with good quality voice and long distance transmission. Users only need to connect external audio amplifiers, microphone or speaker with this module, then it can work as a small walkie talkie with 1W output, KDS 1PPM TCXO. In open area, it can come to performance of 3.5-5Km communication. Simplified interface and ultra small size make this module into a wide range of applications, also can conveniently embed into various handheld devices, to improve the comprehensive performance of end products.



Features:

- Frequency: 400 ~ 480 MHz
- Tx and Rx frequency, Tx and Rx CTCSS can be set alone.
- Band width 12.5/25KHz
- Output power up to 1 w
- Transmission distance up to 3.5 to 5 km in Open area
- sensitivity: - 124 DBM
- high integration, small size
- 38 level CTCSS code / decode (the CTCSS frequency can be change according to customer's requirement)
- 8 level squelch
- 8 adjustable volume
- high/ low power is optional (500 mw) - 1 w
- wide range of working voltage 3.3 to 5.5 V
- with 1 ppm TCXO crystal, stable performance
- tail elimination

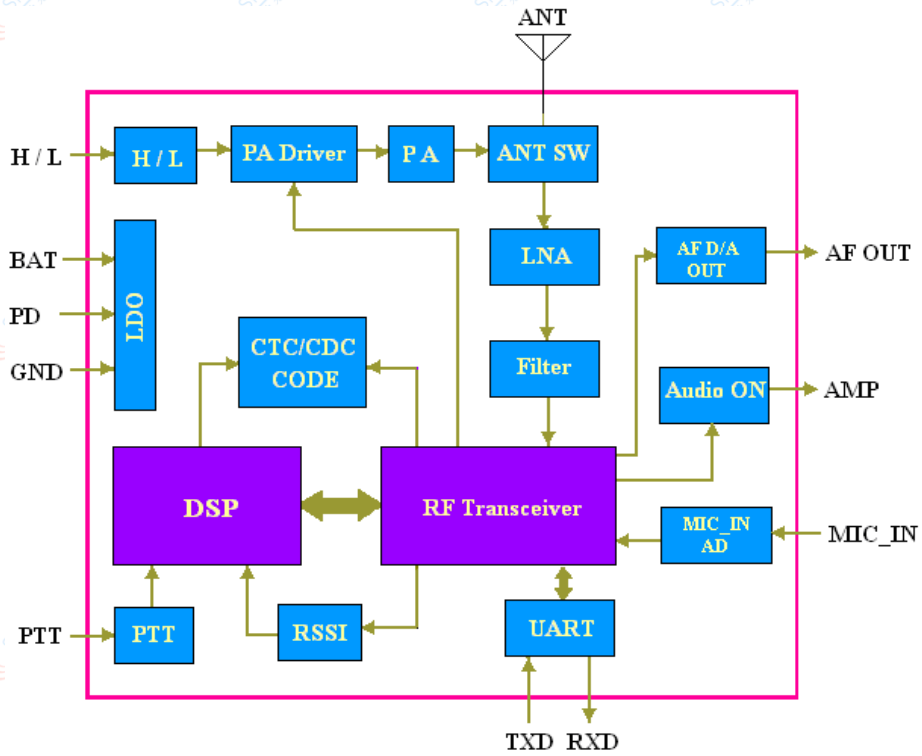
Application:

- small walkie talkie
- mobile phone,
- MP3, MP4 ,
- toys
- building community security system
- outdoor sports products
- audio surveillance system

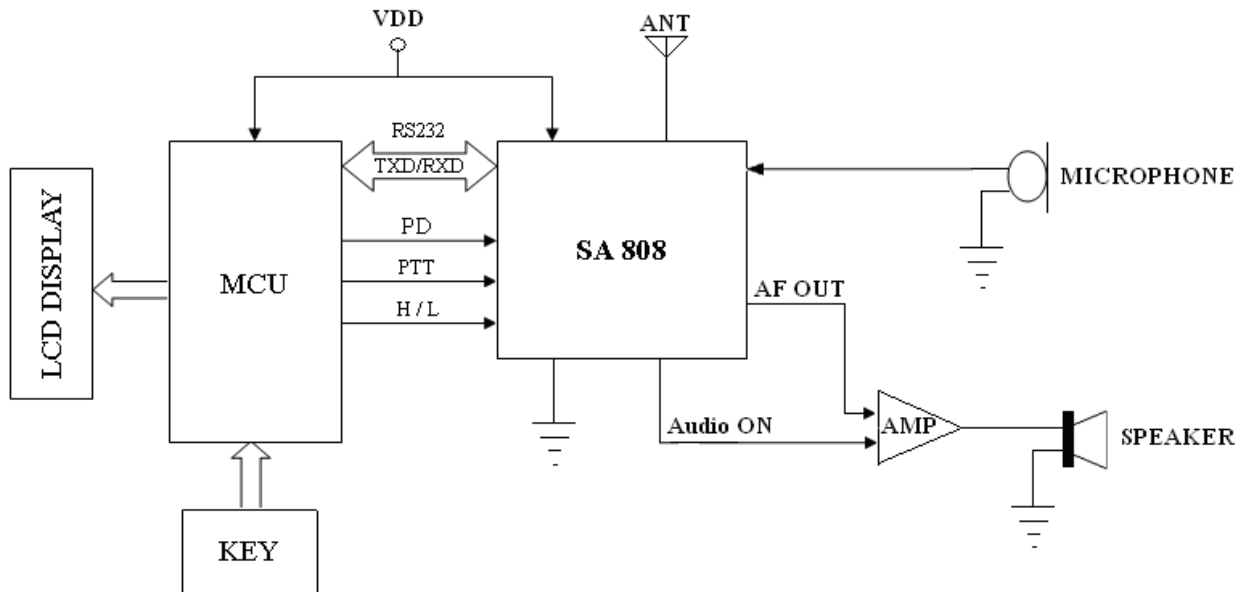
Specification:

Parameter	Test condition	Min	Typ	Max	Unit
Power supply		3.3	4.2	5.5	V
Working Temperature range		-30	25	85	°C
Current consumption					
Sleep current	@PD = 0V		≤1		uA
RX current			60		mA
TX current (High power)			650	750	mA
TX current (low power)			450	550	mA
Transmitting RF parameters					
Frequency range		400		480	MHZ
Out power (High power)	@VCC=4.0V	28	29.5	31	dBm
Out power (low power)		25	26.5	27	dBm
Modulation frequency	@1.5Khz/2.5KHZ frequency deviation		10		mV
Audio modulation distortion	@1.5Khz/2.5KHZ frequency deviation		2	5	%
Signal to Noise Ratio	@1.5Khz/2.5KHZ frequency deviation	38	40	45	dB
adjacent-channel power	@12.5K offset		-60dBc		dBm
CTCSS Modulation frequency		0.35	0.5	0.75	KHZ
Receiving RF parameters					
Receiving sensitivity			-124		dBm
Receiving SNR	@1.5KHZ frequency deviation	45	50		dB
Audio output amplitude			700		mV
Audio Output impedance			200		OHm

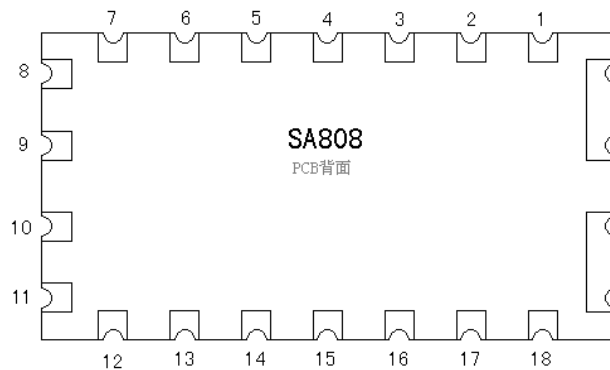
Internal block diagram



Schematic

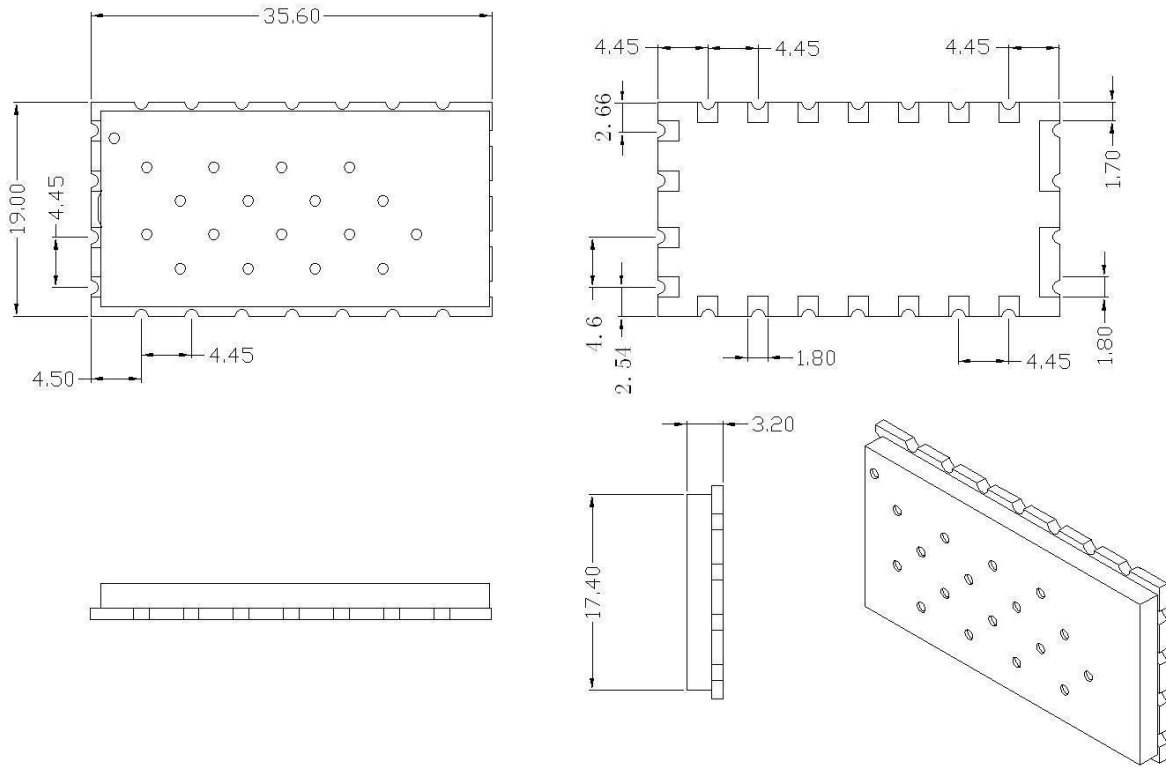


Pinout:



Pin NO.	Pin name	I/O state	Description
1	Audio ON	O	,Connected to audio power amplifier. When the module worked, it can control the extra audio amplifier automatically, it will output low level to turn on the amplifier and high level to turn off the amplifier.
2	NC		Not conncted
3	AF_OUT		Audio output
4	NC		Not conncted
5	PTT	I	Module Input, Transmitting/receiving control feet, "0" force the module enter TX state; and "1" to Rx state
6	PD	I	Module dormancy, "0" or hung up is dormancy; "1" for the normal work
7	H/L	I	Module Input, high/low output power control; floating or high impeadance force to high output power, low level to low output power. (Please kindly note: this pin can NOT be connected to VDD or high level of cmos output)
8	VDD		Connect power positive
9	GND		Grounding
10	GND		Grounding
11	NC		Not conncted
12	ANT		Antenna input/output (connect 50 ohm antenna)
13,14,15	NC		Not conncted
16	RXD	I	serial port receiving data
17	TXD	O	serial port transmitting data
18	MIC_IN		Microphone or line in input

Machine Dimension:

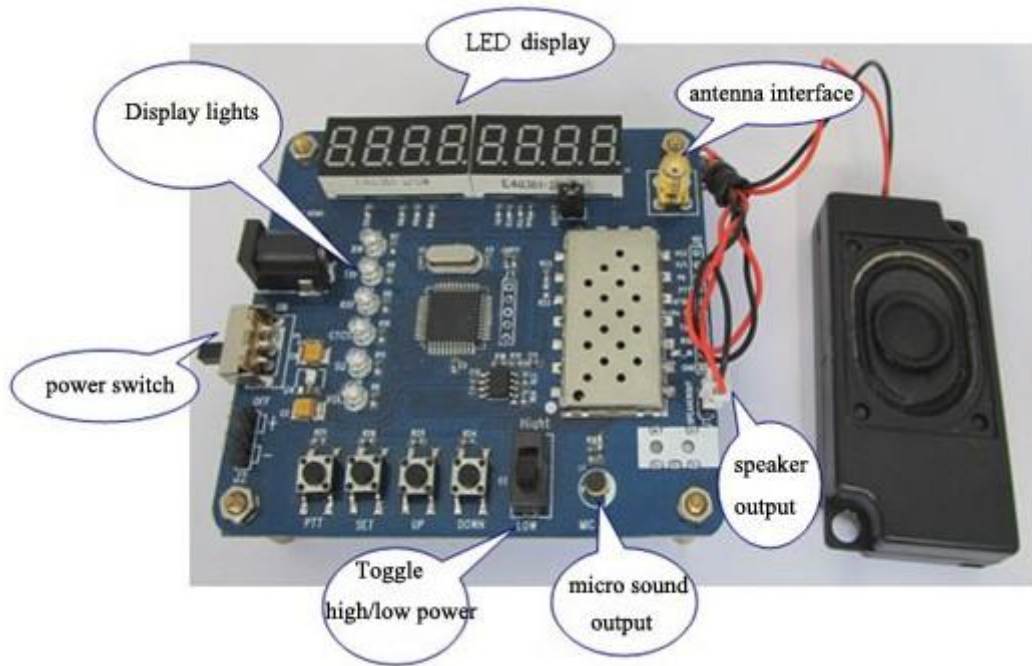


Communication Protocol:

SA808 module provides a standard Uart interface for users to configure the parameters in real time. It is very easy to use. For detail protocol, please check SA808 module programming manual.

Appendix:

In additional, we provided DEMO Board for customers to debug program, test function and distance, as shown in the figure below:



User can set related parameters through the buttons ,as follows

- 1) Tx frequency: 400 ~ 480 MHz
- 2) Rx frequency: 400 ~ 480 MHz
- 3) Channel Bandwidth: 12.5 KHz / 25KHz
- 4) Tx,CTCSS: 0 ~ 38
- 5) Rx CTCSS: 0--38
- 6) Squelch: 0 ~ 8
- 7) Volume: 1 ~ 8

➤ **Button Operation:**

- 1) [SET] button

Press to enter setting mode.

- 2) [UP /Down] button

In setting mode, press to increase/decrease the setting item.

- 3) [PTT] button

If Not in setting mode, Press it to talk,(it is in listen state when released)

- 4) [High/Low] slide switch

Switch to high/low output power

Note: with data FLASH inside, all of the parameters set is saved and keep unchanged even power off.