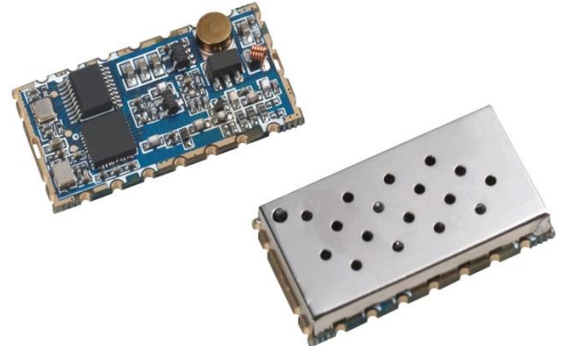


SA818 high-integrated Embedded walkie talkie module

1. Descriptions:

SA818 is a low cost and high performance integrated walkie talkie module. This module is the 2nd generation of the walkie talkie module and the upgraded version of SA808. SA818 comes with built-in high performance microcontroller, narrow band rf transceiver and standard UART interface. It is easy to use. Users only need to add external audio amplifier, microphone and speaker, then it becomes a professional walkie talkie with 1W output. In open area, it can easily achieve 3.5-5Km communication distance. Simplified interface and ultra small size make this module widely used in various applications and conveniently embedded into various handheld devices.



There are two frequency bands of SA818: SA818-U and SA818-V. The only difference is the frequency range. The others are same, including module size, interface, software protocol, etc. The two modules' frequency ranges are:

SA818-U: U band, 400 -- 480MHz,

SA818-V: V band , 134 -- 174MHz

2. Features:

- Frequency range:
- SA818-U: 400 ~ 480 MHz (UHF)
- SA818-V : 134~174MHZ (VHF)
- Tx and Rx frequency, Tx and Rx CTCSS, CDCSS can be set alone.
- Band width 12.5/25KHz
- Output power up to 1 w
- Transmission distance up to 3.5 to 5 kminOpen area
- sensitivity: - 124 DBM
- small size
- Built-in EEPROM, data kept unchanged even powered off
- 38 CTCSS
- 166 CDCSS
- 8 level squelch
- 8 adjustable volume
- high/ low power is optional (500 mw)-1w
- wide range of working voltage 3.3 to 5.5 V
- 1 ppm KDS TCXO crystal,

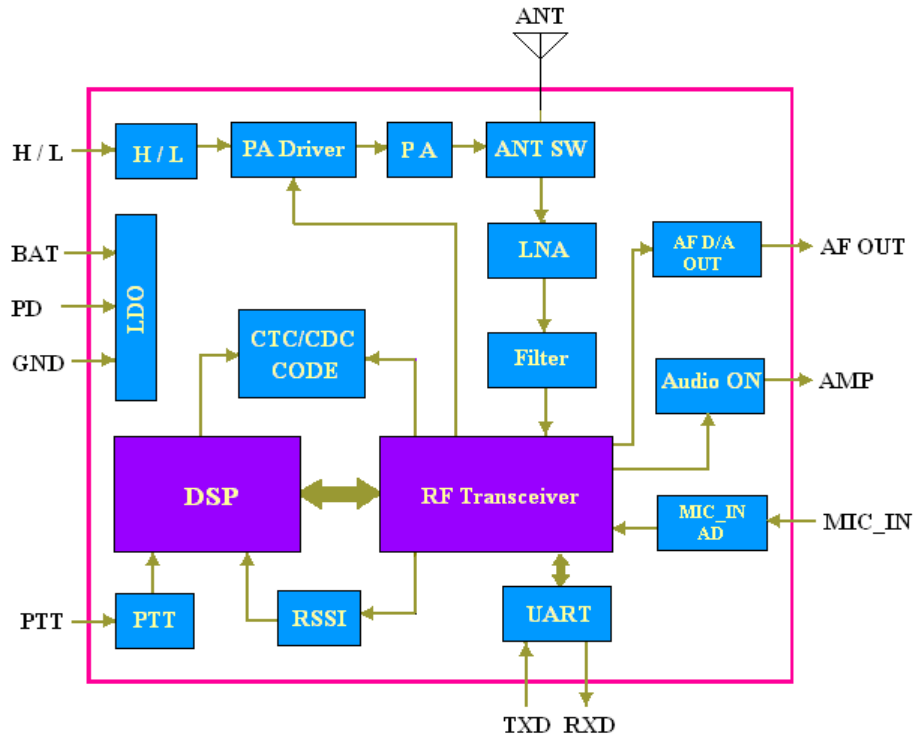
3. Application:

- small walkie talkie
- Invisible intercom system
- Sport products
- building community security system
- audio surveillance system

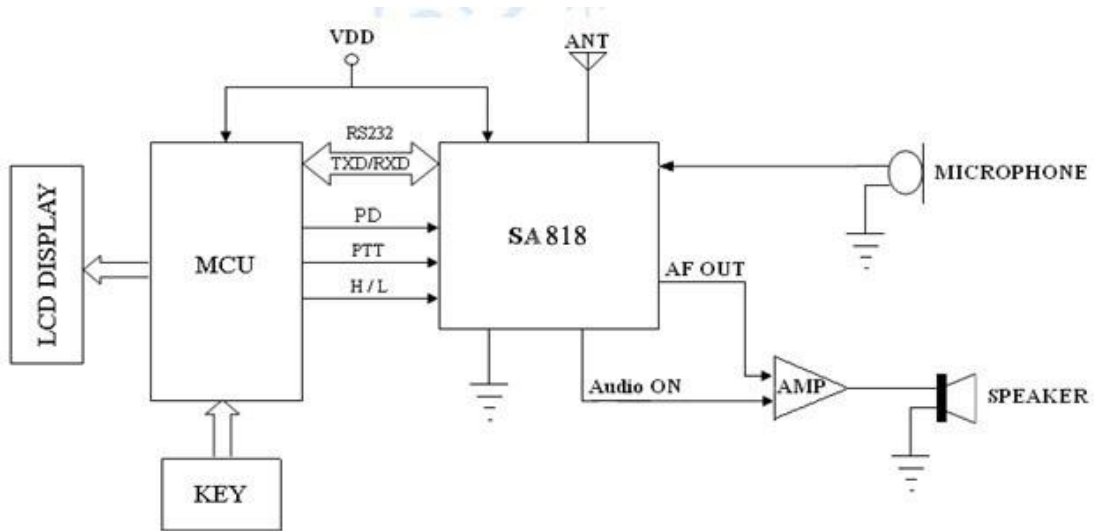
4. Specification:

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	UHF	400		480	MHZ
Frequency range	VHF	134		174	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	%
SignaltoNoiseRatio	@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

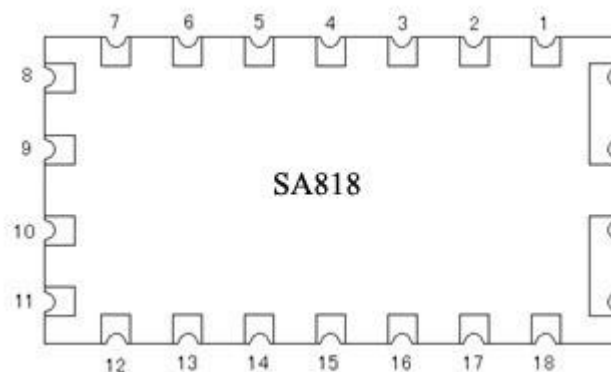
5. Internal block diagram



6. Schematic

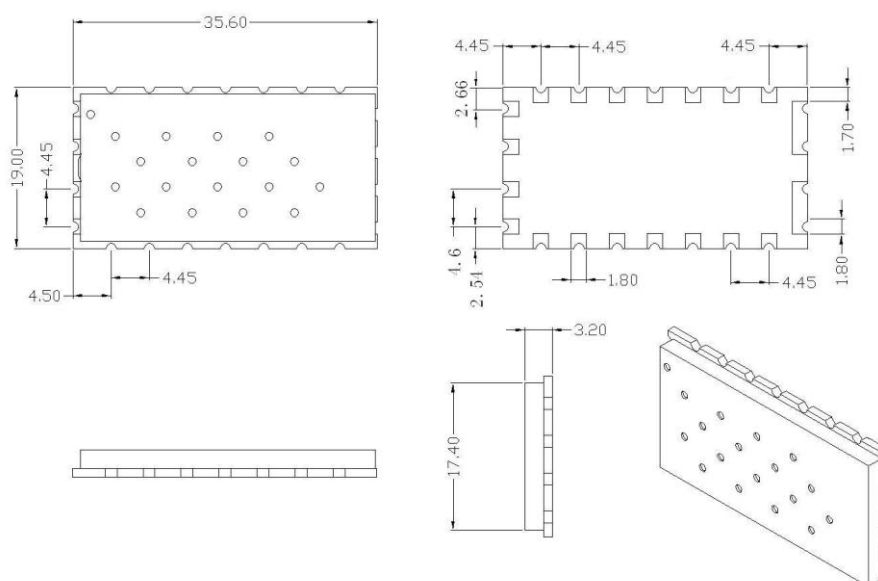


7. Pinout:



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, "0" force the module to enter TX state; and "1" to Rx state
6	PD	I	Power Down control, "0" for power down mode; "1" for the normal work
7	H/L	I	high/low output power control; Leave open for 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		connect 50 ohm antenna
13,14,15	NC		Not conncted
16	RXD	I	RXD of the module and connect to external TXD
17	TXD	O	TXD of the module and connect to external RXD
18	MIC_IN		Microphone or line in

8. Machanism Dimension:

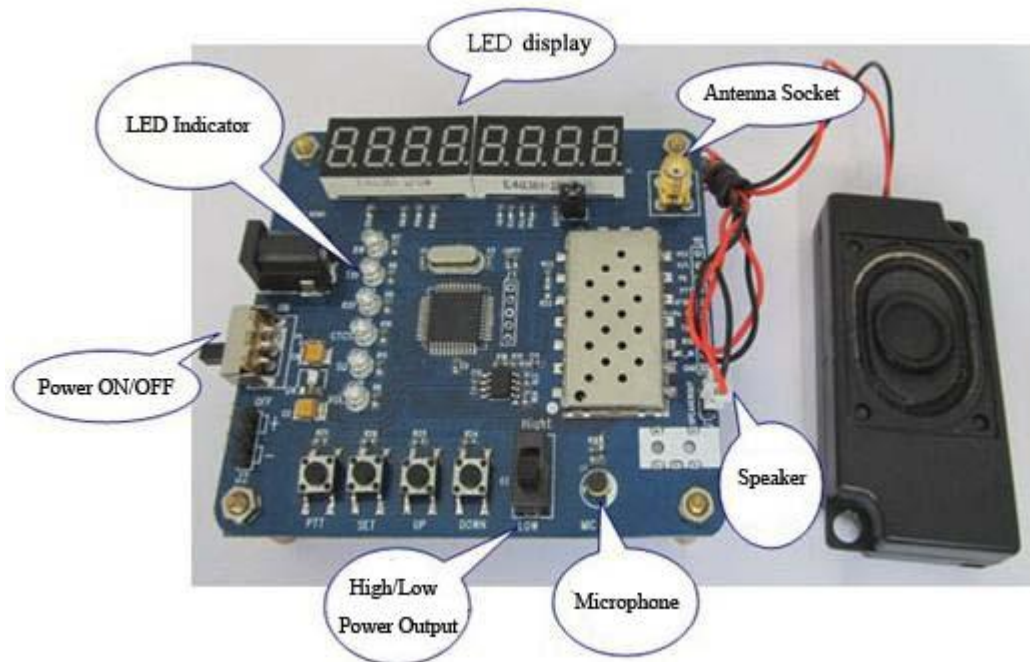


9. Communication Protocol:

SA818 module provides a standard Uart interface for users to configure the parameters. It is very easy to use. For detail protocol, please contact the corresponding sales engineer for help.

10. Appendix:

In additional, we provided DEMO Board for customers to debug the software program, test all the function and measure the distance. The figure shows as below:



11. User can set related parameters through the buttons:

Tx frequency: 400 ~ 480 MHz

Rx frequency: 400 ~ 480 MHz

Channel Bandwidth: 12.5 KHz / 25KHz

CTCSS: 0 ~ 38

CDCSS: 0--166

Squelch: 0 ~ 8

Volume: 1 ~ 8

Button Operation:

[SET] button

Press to enter setting mode.

[UP /Down] button

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

[PTT] button

If Not in setting mode, Press to talk,(Listen state when released)

[High/Low] slide switch

Switch to high/low output power

Note: With data FLASH inside, all the setting parameters are saved and keep unchanged even power off.