

1W High Power

Full Duplex Wireless audio & Wireless SMS

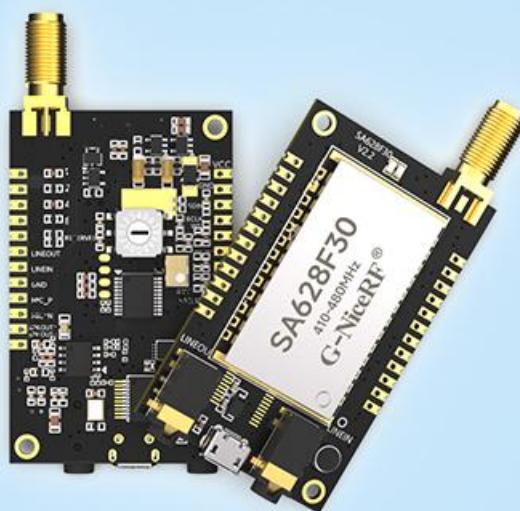
USB + PC software , All in one, easy use

I2S / Analog audio

Mesh Network, concurrent Tx/Rx

OTA & serial upgrade

Product Specification



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Note: Revision History

Revision	Date	Comment
V1.0	2023-8	First release
V1.1	2024-11	Modify Electrical Characteristics
V1.2	2024-12	Update Block Diagram

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1. Product Overview

SA628F30 is a 1W output power full duplex wireless voice module with mesh network. SA628F30 is very easy to use. It start to work by just connecting antenna, power supply and speaker, microphone, Audio amplifier, RF channel switch, volume adjustment are all embedded on board. SA628F30 has USB interface, and specified PC software. It can be configured and SMS Tx/Rx easily by the PC software.

The SA628F30 module has built-in high speed micro -controllers, high quality voice Codec, high-performance RF chips and amplifiers. This wireless module adopts the newest generation LoRa chip, which has the characteristics of low power consumption, long distance, and flexible frequency adjustment. SA628F30 has I2S and analog audio interface for different application. SA628F30 support full duplex SMS communication.

SA628F30 embed very good voice codec, which achieve much better voice quality than walkie talkie in the market.

SA628F30 supports concurrent Tx and concurrent Rx. It support maximum 8 devices transmitting simultaneously. There is no limitation in receiving. Mesh Network is available to extend the range. The mesh function is easy to achieve by setting the modules as Node, Router or Node & Router.

SA628F30 can be upgraded over air (OTA) or by serial communication.

SA628F30 strictly uses lead -free process production and testing, which meets the standards of ROHS and Reach

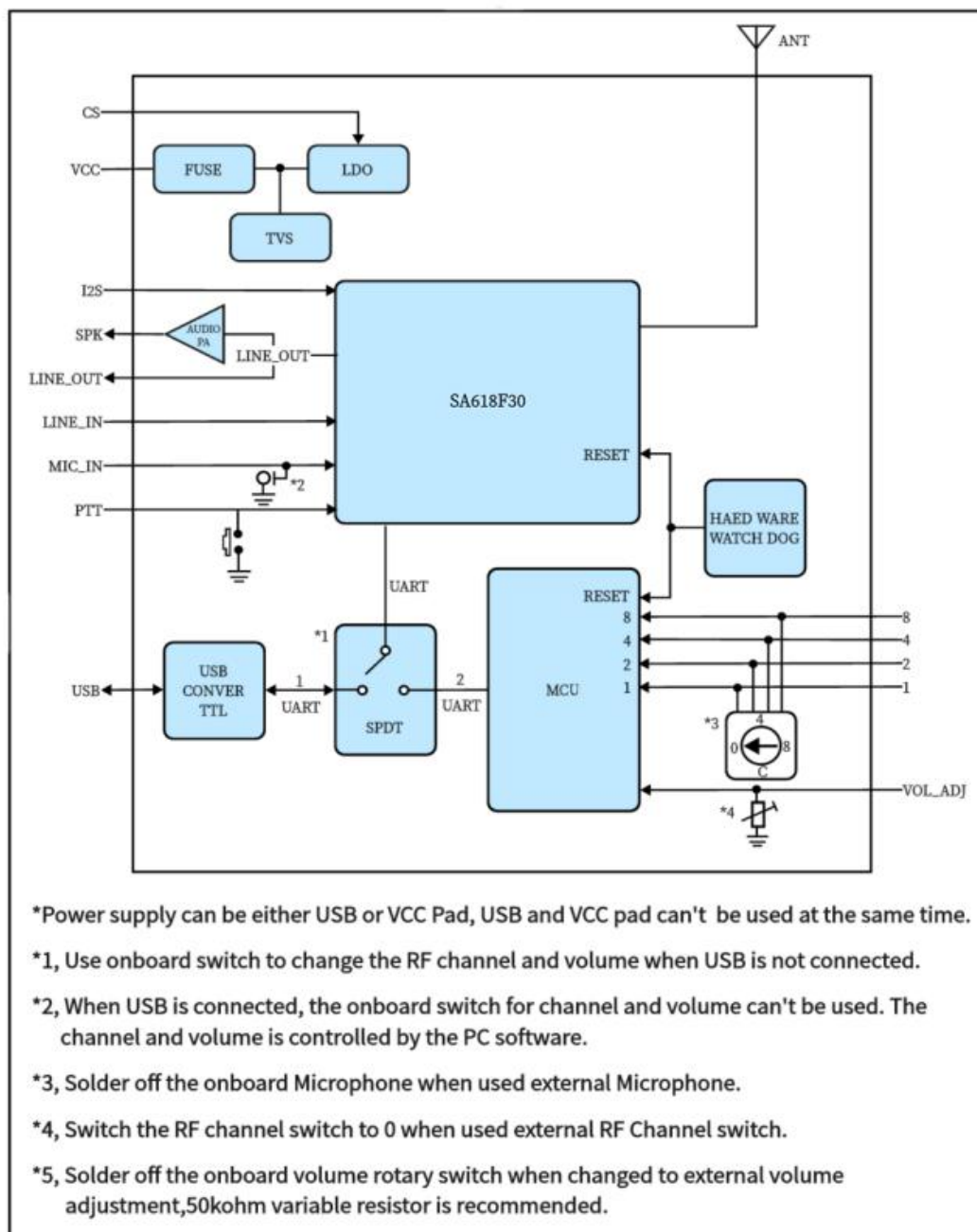
2. Product Features

- Frequency Band: 410~480MHz
(Customizable 150-960 MHz)
- USB Interface
- PC software configuration, easy operation
- 8-Channels Full-Duplex Data/voice
Communication
- Echo cancellation function
- VOX & PTT
- OTA &Serial upgrade
- I2S Digital voice+analog voice
- Line In + Mic input
- Mesh Network, concurrent Tx/Rx
- 3-4KM transmission distance in the open area
- High Receiving sensitivity:-117 dBm
- Low power consumption

3. Product Applications

- Fire emergency communication
- Subway, tunnel communication
- Riding system
- High-quality full duplex walkie talkie
- conference call system
- Building community security system
- Security intercom system for special scenarios
- Headset walkie-talkie
- Special job assignment walkie talkie

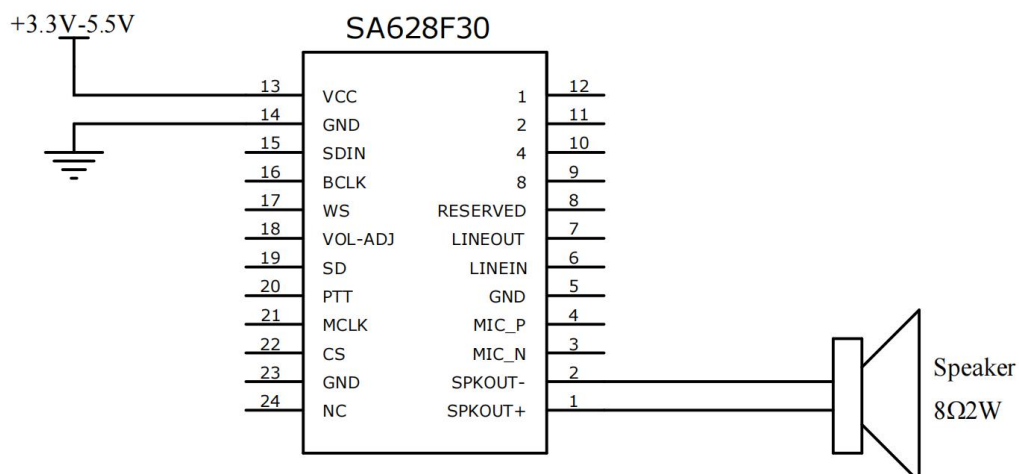
4. Block Diagram



5. Specification Characters

Parameters	Condition	Min.	Typ.	Max.	Unit
Power Supply		3.3	4	5.5	V
Working temperature		-30	25	70	°C
Current consumption					
Sleep current			65		uA
RX Current	@no voice output		75		mA
TX current(High power)	4.2v,@30dBm		450		mA
RF Parameters					
Working Frequency	UHF	410		480	MHz
Customizable frequency		150		960	MHz
Default frequency value for 16 channels	UHF(1MHz interval)	440.125		455.125	MHz
Transmit power	Default:32dBm	15	30	32	dBm
Bandwidth (BW)			500		KHz
Receiving sensitivity			-117		dBm
voice parameters					
Modulation sensitivity			10	100	mV
Receive signal-to-noise ratio(SNR)			90		dB
Frequency response		60		3800	Hz
Voice output (line out)	Load 16Ω			40	mW
Voice output power (SPK+,SPK-)	Load 8Ω			2000	mW
Delay parameters	2channels		80		ms
	3channels		120		ms
	4channels		160		ms
	6channels		240		ms
	8channels		320		ms

6. Typical Schematic Circuit

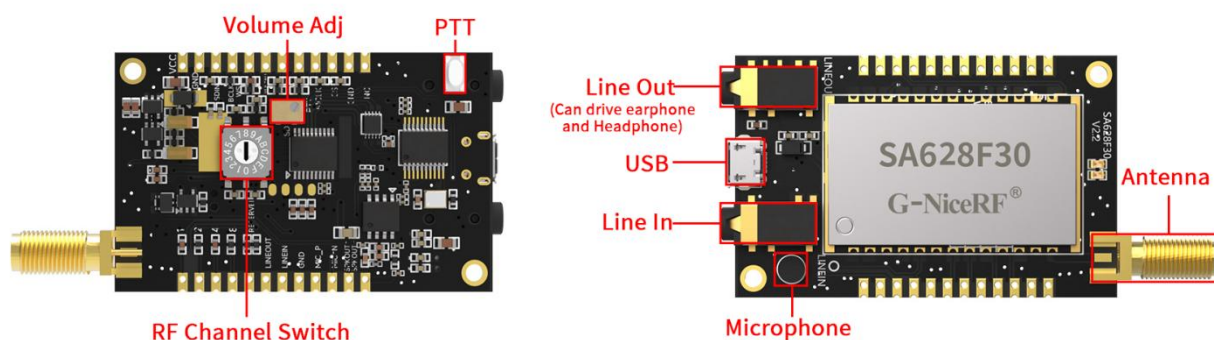


7. Pin Assignment



Pin No.	Pin name	Description
1	SPKOUT+	Connect with 8 ohm 2W speaker
2	SPKOUT-	Connect with 8 ohm 2W speaker
3	MIC_N	Connected with the negative of external microphone
4	MIC_P	Connected with the positive of external microphone
5,14,23	GND	Connect to the negative pole of the power supply
6	LINEIN	Line in ,maximum 1VRMS
7	LINEOUT	Line out , Connected external 16Ω earphone
8	Reserved	NC
9	8	the onboard 16 RF channel switch, eg. When the rotary switch changed to channel 11 th , the output (8, 4, 2, 1) is: 1011: channel 11th
10	4	
11	2	
12	1	
13	VCC	VCC(3.3-5.5V)
15	SDIN	External I2S(0-3.3V)
16	BCLK	External I2S(0-3.3V)
17	WS	External I2S(0-3.3V)
18	VOL-ADJ	50K variable resistor is recommended
19	SD	External I2S (0-3.3V)
20	PTT	Press to talk, 0: RX mode, 1: Tx mode. Pull up internally
21	MCLK	External I2S (0-3.3V)
22	CS	0: sleep, 1: working, Pull up internally.
24	NC	

8. Product Diagram

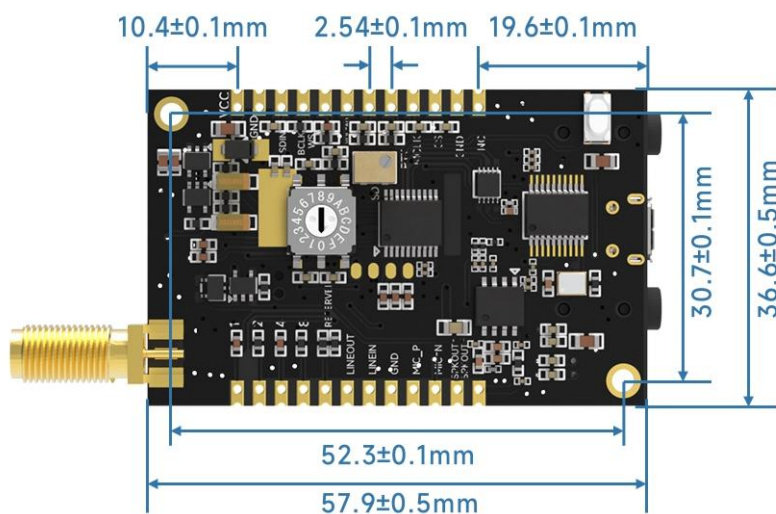


9. PC Software

SA628F30 comes with a PC software, which is convenient for customer to set parameter and SMS operation. For details, please refer to the document "SA618/628 Series PC User Guide". User can download the PC software in our Website freely.



10. Dimension (Unit:mm)



11. Order information

Product Number	Description
SA628F30-U	Working frequency range 410~480MHz
SA628F30-XXX	Customizable 150~960 MHz