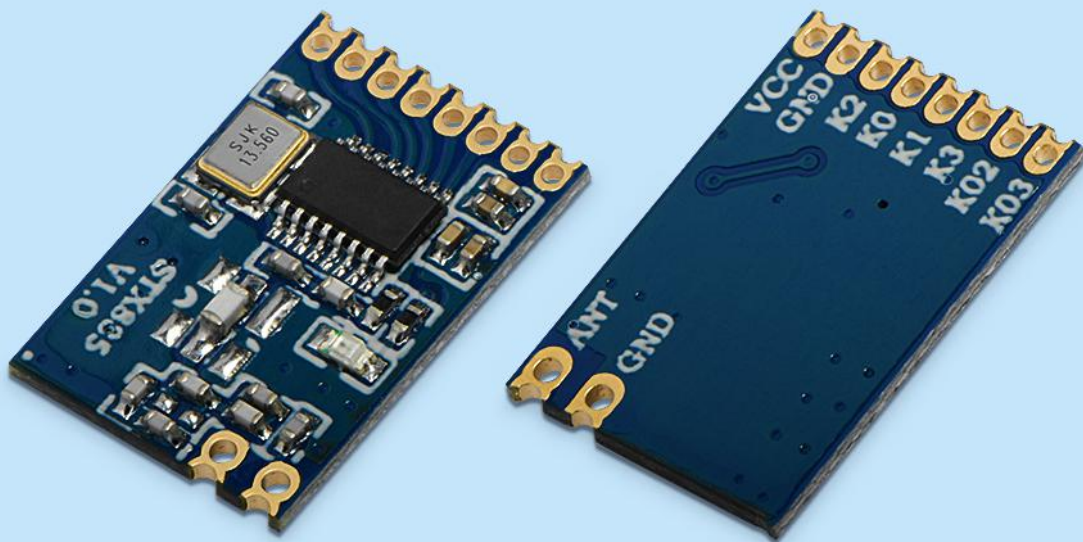


ASK with coded transmitting module

Product Specification



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Note: Revision History

Revision	Date	Comments
V1.0	2019.11.4	Initial Release
V1.1	2021.1.4	Update DEMO application circuit

1. Product description

STX885 is a highly integrated, low-cost ASK coded transmit module that integrates the ev1527 digital encoding circuit, high-precision oscillating circuit and power amplifier. The module's operating frequency is available in 315MHz and 433MHz. Its integrated high-precision oscillator, which can provide accurate pulse width accuracy for the system. The OOK modulation rate can reach 10kb/s. The design of the two encoding formats reduces the re-code rate and can generate multi-key composite codes to avoid Misoperation of special buttons. The STX885 features small size, low harmonics and is high stability for a wide range of wireless remote control systems.

STX885 is manufactured and tested strictly using lead-free process and complies with RoHS and Reach standards.

2. Product Features

- Operating frequency: 433MHz
- Integrated ev1527 digital encoding circuit, 20-bit internal code, with 2 million encoding capabilities
- Sleep and fast wake-up function, zero standby power consumption
- Meet various international testing standards
- OOK modulation mode, speed up to 10kb/s
- Ultra-high power long distance, reliable and stable frequency, super strong against power interference

3. Application areas

- Remote control door
- Wireless security alarm
- Wireless industrial control
- Wireless data transmission

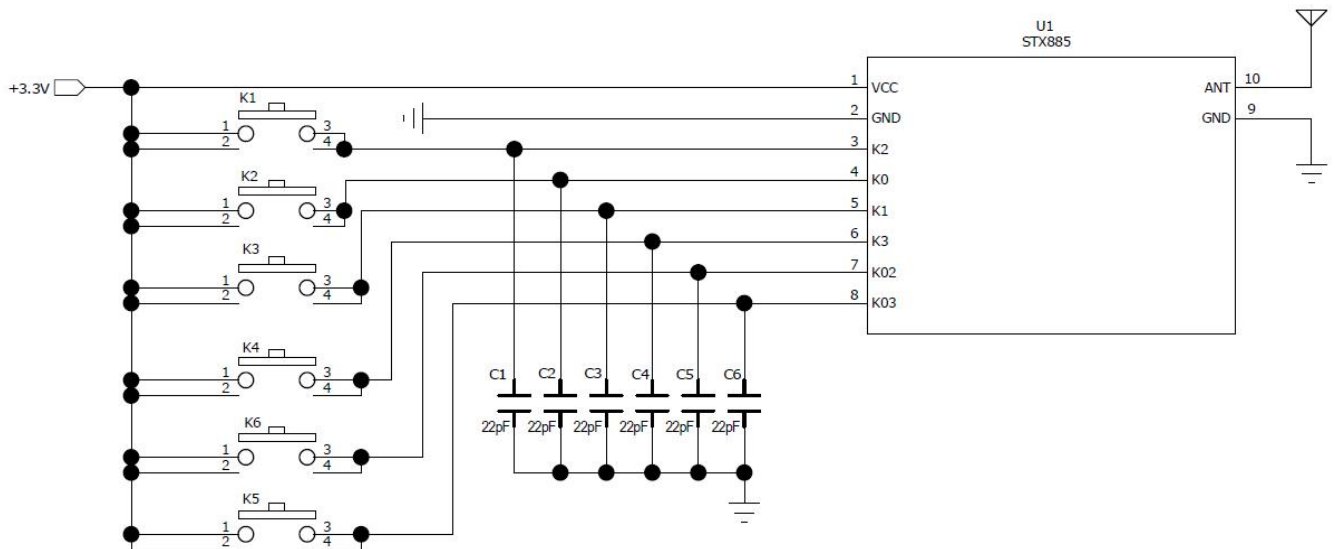
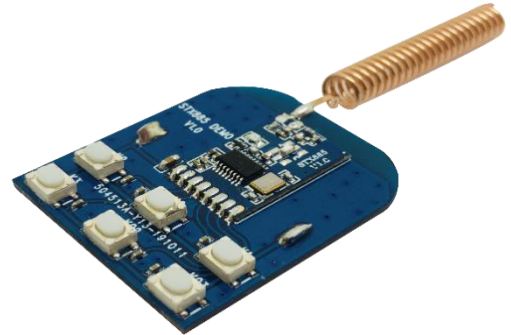
4. Performance parameter

Parameter	Min.	Typ.	Max.	Unit	Condition
Operating Conditions					
Operating voltage range	2	3.0	3.6	V	
range of working temperature	-20	25	70	°C	
Current Consumption					
TX current		20	25	mA	@3.3V,15dBm
Sleep current			1	uA	
Radio Frequency Parameter					

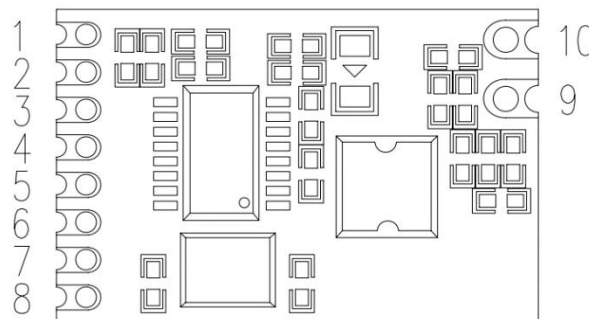
Frequency Range	433.82	433.92	434.02	MHz	@433MHz
Output power		15		dBm	@3.3V
Modulation rate	0.1		10	Kbps	

5. DEMO application circuit

The peripheral circuit of this module is very simple. In order to facilitate the customer's pre-test and selection, our company also made a demo module DEMO board for the corresponding function of the module, as shown on the right: the corresponding reference circuit diagram is as follows:



6. Pin definition



Pin number	Pin definition	Description
1	VCC	Positive Power supply, range 2.0V-3.6V
2、9	GND	Power ground
3	K2	Key input, built-in pull-down resistor, high level TX

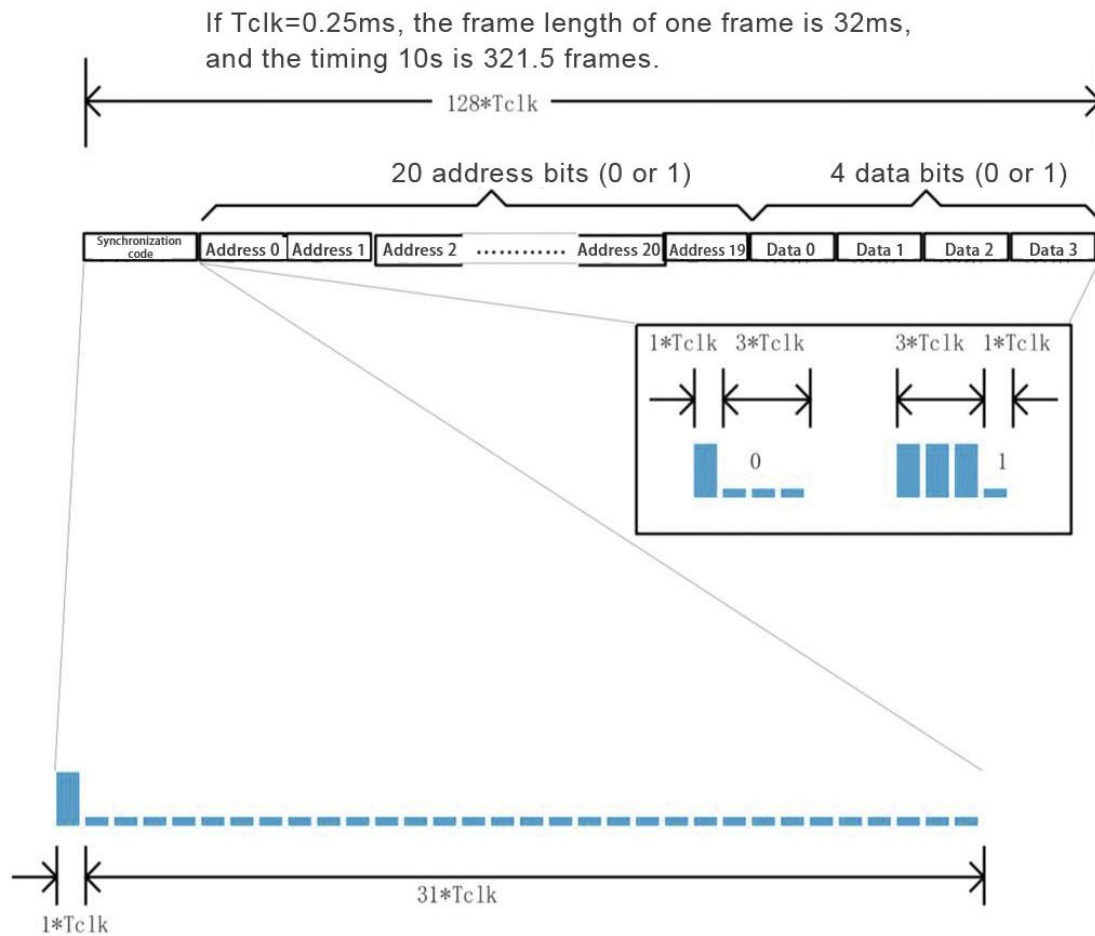
4	K0	Key input, built-in pull-down resistor, high level TX
5	K1	Key input, built-in pull-down resistor, high level TX
6	K3	Key input, built-in pull-down resistor, high level TX
7	K02	Key input, built-in pull-down resistor, high level TX
8	K03	Key input, built-in pull-down resistor, high level TX
10	ANT	Connect 50 ohm antenna

7. Key and corresponding code

Key input										Data out			
K23	K13	K12	K03	K02	K01	K3	K2	K1	K0	D3	D2	D1	D0
0	0	0	0	0	0	0	0	0	1	0	0	0	1
0	0	0	0	0	0	0	0	1	0	0	0	1	0
0	0	0	0	0	0	0	1	0	0	0	1	0	0
0	0	0	0	0	0	1	0	0	0	1	0	0	0
0	0	0	0	0	1	0	0	0	0	0	0	1	1
0	0	0	0	1	0	0	0	0	0	0	1	0	1
0	0	0	1	0	0	0	0	0	0	1	0	0	1
0	0	1	0	0	0	0	0	0	0	0	1	1	0
0	1	0	0	0	0	0	0	0	0	1	0	1	0
1	0	0	0	0	0	0	0	0	0	1	1	0	0

Note: For example, K23 is the combination of button 2 and button 3.

8. Output encoding format



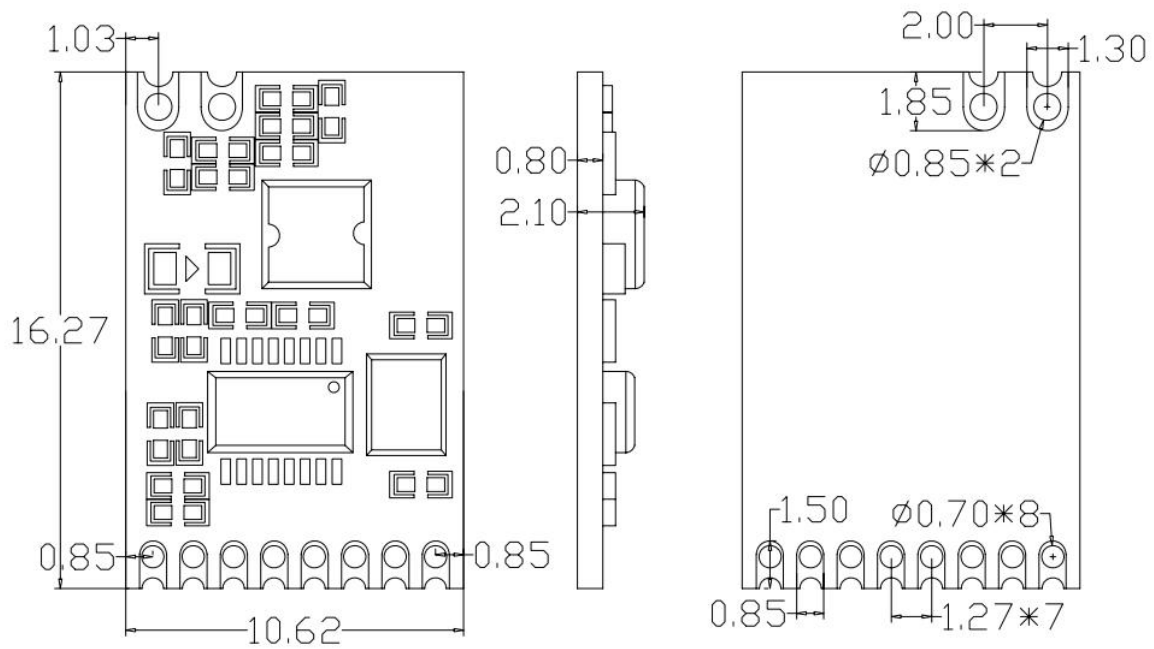
9. Communication antenna

The antenna is an important part of the communication system. Its performance directly affects the indicators of the communication system. The antenna impedance required by the module is 50 ohms. The universal built-in antenna has a spring antenna, and can also be used to connect the antenna such as straight head/elbow/folding rod and small sucker through SMA. Users can purchase the antenna according to their own application environment. In order to make the module in the best working condition, it is recommended to use the antenna provided by NiceRF.

Note: The following principles should be followed during antenna use to ensure the best communication distance of the module.:

- Try not to be close to the ground surface of the antenna, and it is best to stay away from obstacles.;
- If the suction cup antenna is purchased, the lead wire should be straightened as much as possible, and the suction cup base should be attached to the metal object.;

10. Mechanical size(unit:mm)



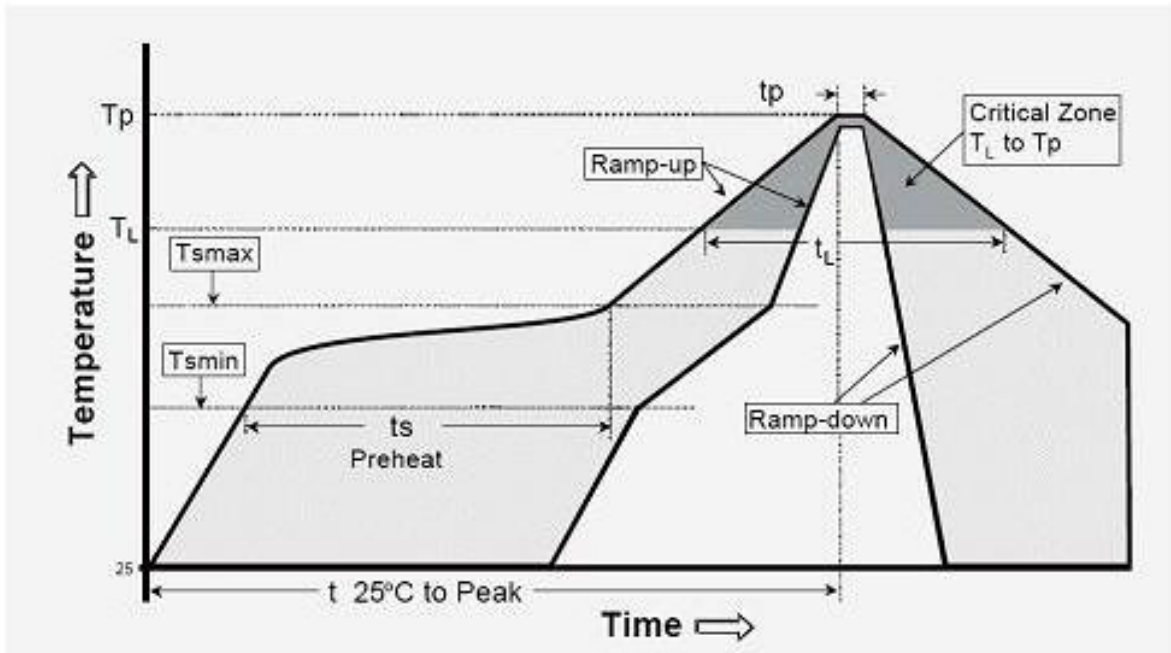
11. Product Ordering Information

For example, the customer needs a module in the 433MHz band, and the order model is: STX885-433

Currently STX885 products have the following models:

Order model	product type
STX885-315	Product operating frequency band is 315 MHz
STX885-433	Product operating frequency band is 433 MHz

Appendix: furnace temperature curve



IPC/JEDEC J-STD-020B the condition for lead-free reflow soldering	big size components (thickness >=2.5mm)
The ramp-up rate (Tl to Tp)	3°C/s (max.)
preheat temperature	
- Temperature minimum (T _{sm} in)	150°C
- Temperature maximum (T _{sm} ax)	200°C
- preheat time (t _s)	60~180s
Average ramp-up rate(T _{sm} ax to T _p)	3°C/s (Max.)
- Liquidous temperature(T _L)	217°C
- Time at liquidous(t _L)	60~150 second
peak temperature(T _p)	245+/-5°C