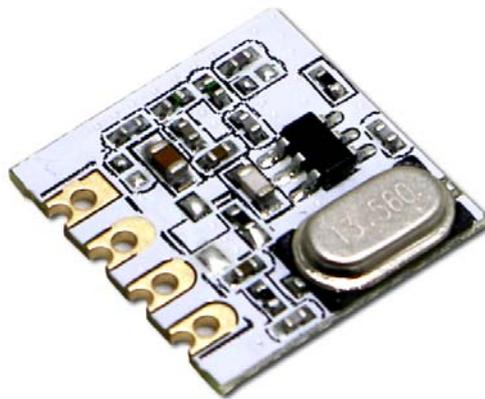


433M/315M High-performance ASK Wireless Transmitter Module

SPECIFICATION

Model No.: DL-TX19

Version: V2.0



Before using this module, please read this document carefully, and pay attention to the following important matters:

This module is an electrostatic sensitive product. Please operate it on an anti-static workbench during installation and testing.

The module uses an external antenna by default. The antenna can be a wire antenna or a standard UHF antenna. You can choose a specific antenna according to the actual situation. If the terminal product uses a metal shell, be sure to install the antenna outside the metal shell. Otherwise, the RF signal will be seriously attenuated, which will affect the effective distance.

Metal objects and wires should be kept away from the antenna as much as possible.

When installing the module, nearby objects should be kept at a sufficient safety distance from the module to prevent short circuit damage.

This module should be used in a dry environment. Please do not make any liquid substance come into this module.

Please use an independent voltage regulator circuit to supply power to this module, and avoid sharing with other circuits. The tolerance of the power supply should not be less than 5%.

Limitations:

This module is intended to be embedded in the customer's terminal product application, and does not provide a casing itself. It is not recommended that the customer directly resell this module as a final product without permission.

This series of modules are in accordance with commonly used international standards. If there is any special certification needed, we can adjust certain indicators according to your needs.

This module cannot be applied to life rescue, life-support systems, or any occasion where personal injury or life threatening may cause by equipment failure. Any organization or individual carrying out the above-mentioned applications shall bear all risks at their own.

We will not be responsible for any direct or indirect damage, injury or loss of profits caused by products that use this module.

DL-TX19 wireless transmitter module is a UHF ASK Transmitting demodulator, which supports the modulation mode of ASK and OOK. This transmission module is integrated with PLL circuit and ASK analog modulation circuit, which has the characteristics of high integration and can be used for short distance wireless communication. The working frequency range is 315MHz / 433MHz, while its transmission power is greater than 12dBm.

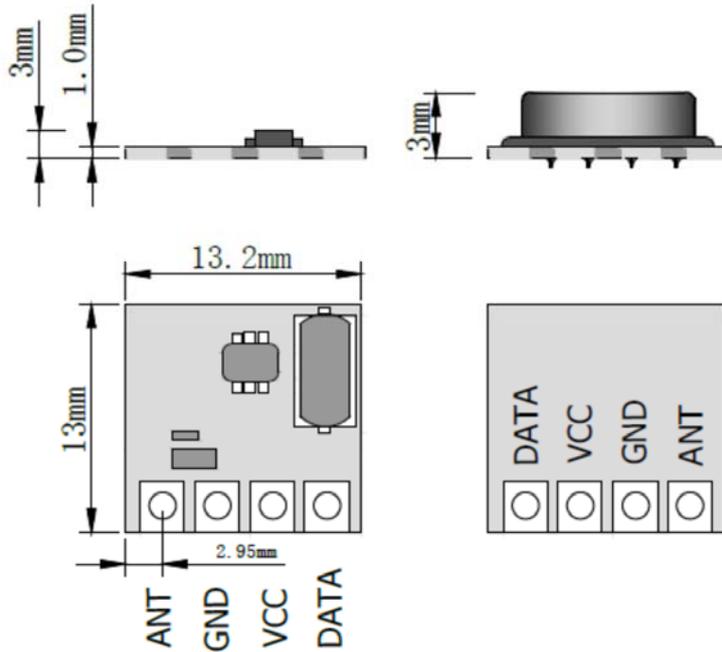
1. Features:

- Frequency range: 300MHz - 440MHz
- TX Power: +12dB dBm @ 315MHz; +12dB dBm @433.92MHz
- Low power consumption: 12mA/3.3V @ 315MHz; 12mA/3.3V @ 433.92MHz
- Quickly startup : $\leq 0.1\mu\text{s}$
- Transmission Rate: $\leq 20\text{kbps}$ (2.4-5kbps is recommended)
- Wide operating voltage: DC2.0V~ 3.3V
- Transmit bandwidth : $\pm 10\text{KHz}$ (local oscillation)
- High ESD protection standard: $\pm 5\text{KV HBM}$
- Independent operation without external MCU control
- No need register configuration
- Size: 13.2*13.0*3.2mm (excluding needle height)

2. Applications:

- Low Cost Consumer Electronics Application
- Remote Fan, Remote Lightings
- Auto Gate Systems, Remote Controlled Toys
- Remote Keyless Entry System (RKE)
- Intelligent Home & Building Monitoring
- Industrial Detection & Control System

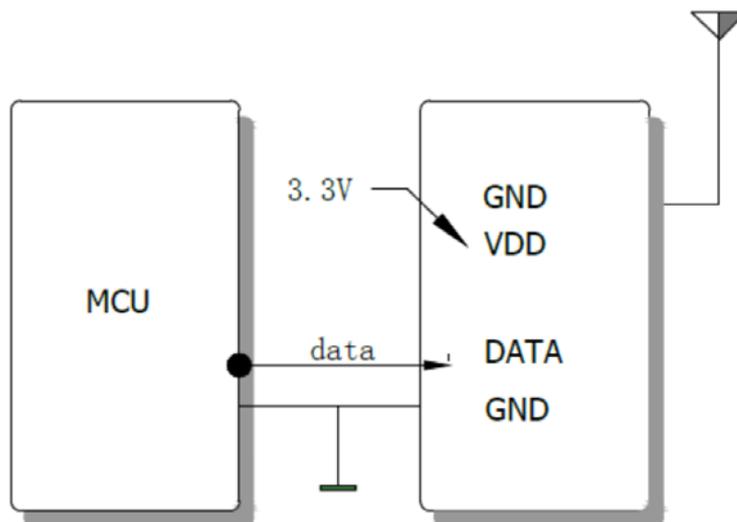
3. Product Size & Pins Definition:



The DL-TX19 module has 4 pins, which are defined in the following table

Pin	Name	Description	Remark
1	ANT	Antenna port, RF signals output	
2	GND	Grounding, common ground with the MCU	
3	VCC	Power supply, DC 3.3V is recommended	2.2V-3.3V
2	DATA	Data output, communicate with decoding unit	

4. Connection Diagram:



5. Technical Parameter

Electric parameter:

Description	Min.	Max.	Unit
Supply voltage	2.2	3.6	V
Working temperature	-20	60	°C
Storage temperature	-20	85	°C
Soldering Temperature		280	°C
Working Humidity	15%	85%	RH
I/O Port voltage	Vss-0.3	Vdd+0.3	V

RF characteristics (Unless otherwise stated, the temperature is 25 °C, and VCC is 3.3V)

Parameter	Condition	Min	Typ	Max	Units
Power Supply					
DL-TX19 Mark Supply Current I_{ON}	@ 315MHz, $P_{OUT} = +13dBm$		17.5		mA
	@ 433.92MHz, $P_{OUT} = +13dBm$		17.5		mA
SPACE supply current, I_{OFF}	@ 315MHz		3		mA
	@ 433.92 MHz		3		mA
Standby Mode (F119)					
Standby supply current, I_{STB}	@ 315MHz			1	uA
	@ 433.92 MHz			1	uA

6. Antenna Matching:

For general applications at 1/4 wavelength, antennas can be directly purchased from the market, specifications are as follows:

433 Antenna:

Antenna core diameter includes skin = 1.0mm, while 0.5mm excludes skin; Welded end wire length 17.5Cm

315 Antenna:

Antenna core diameter includes skin = 1.0mm, while 0.5mm excludes skin; Wire length at welded end 23.5Cm

Spring antenna: dimensions @ 18*5*0.4mm; winding turns 25

7. Notices in module application

Considering the complexity of data transmission over the air, the radio frequency modulation method of the data, and some inherent characteristics of electromagnetic waves, the following issues should be considered during the application process.

1. The electromagnetic interference of the application environment will affect the actual distance of the remote control. Electromagnetic wave interference is divided into mainboard power supply interference, TFT screen data cable interference, Flash data exchange interference; and airborne carrier frequency interference, noise interference, high-power signal source interference, etc.
2. Factors such as product size, internal space, and coating of the shell will cause the attenuation of the wireless signal, which will affect the remote-control distance. Usually the narrow internal space of the product is not conducive to the extension of the antenna. The outer shell should avoid metal or metal plating as much as possible.
3. To choose a proper antenna is very important. The antenna is an important part of the communication system, and its performance directly affects the indicators of the communication system. We must pay attention to its performance (antenna type, antenna electrical performance) when selecting the antenna. Please feel free to contact us for consultation or recommendation, if you need.

8. Contact us

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★ Data collection, Smart home, Internet of Things applications, Wireless remote-control technology, Remote active RFID, Antennas ★

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