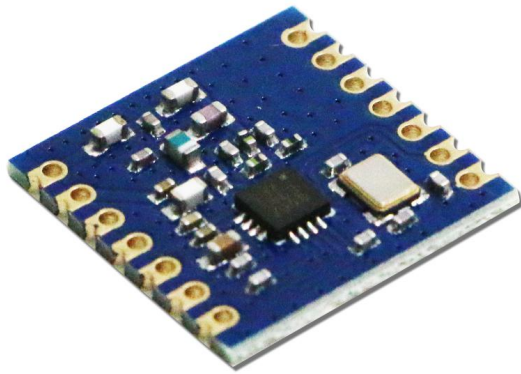


High-performance FSK Wireless Transceiver Module

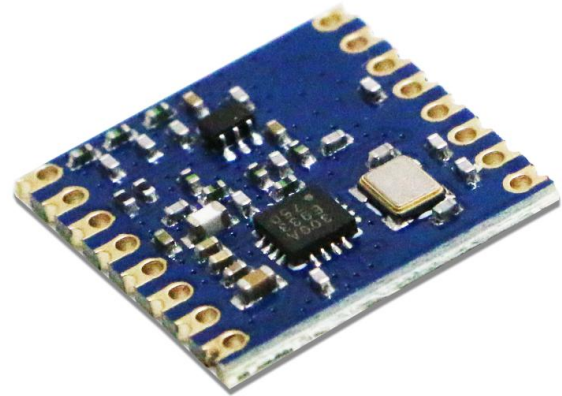
# SPECIFICATION

Model No.: DL-RTM300&300H

Version: V1.1



DL-RTM300



DL-RTM300H

## Brief Introduction

DL-RTM300&300H was designed base on a high-performance wireless transceiver chip. It is a compact, low-power, long-distance wireless transceiver module. It is mainly set to 433MHz, 868MHz, 915MHz and other special frequency bands of the national networks. The sensitivity can reach -120dbm, the maximum transmission rate can reach 300Kbps. The module integrates all RF-related functions. Users do not need to have a deep understanding of RF circuit design; they can use this module to easily develop wireless products with stable performance and high reliability, shortening the product development cycle.

## Applications

- ISM band data communication
- Smart home Security
- Wireless remote control
- Wireless sensor network
- RKE ( Remote Keyless Entry )
- Intelligent buildings
- AMR
- Building automation
- Energy control and management
- Thermal energy collection, meter measurement

## Features

- Compact size, adopt SMD stamp side half hole package mode
- Working frequency: 433Mhz, 868Mhz, 915 MHz;
- Transmission distance: 1.8KM in open ground;
- Support FSK, GFSK, OOK modulation, can be controlled programmatically
- Baud Rate: 1.2Kbps~300Kbps, can be configured programmatically
- Max. output power: 20dBm, -120dBm@1.2Kbps high receiving sensitivities
- Low power consumption, receiving current<7mA;
- Supplying Voltage: 1.9~3.6V DC
- Size: 16\*16\*1.8mm

## Technical parameters

### Maximum

Parameter	Minimum	Maximum	Unit
Positive Power Supply	-0.3	+3.6	V
Voltage On Digital Control Inputs	-0.3	VDD+0.3	V
Voltage On Analog Inputs	-0.3	VDD+0.3	V
RX Input Power	-	+10	dBm
Storage Temperature	-55	+125	°C
Soldering Temperature ( 10s )	-	+255	°C
ESD Rating ( Human Boy Model )	-2	2	KV

### Recommended working range

Parameter	Minimum	Maximum	Unit
Positive Power Supply	+1.8	+3.6	V
Working Temperature	-20	+70	°C
Supply Voltage Slew Rate	1	-	mV/us

### DC characteristic

Parameter	Conditions	Minimum	Typical	Maximum	Unit
RFM300H TX WorkingCurrent	433MHz	-	75	95	mA
	band.Pout=+20dBm	-	80	90	
	868MHz	-	85	95	
	band.Pout=+20dBm	-	-	-	
RFM300 TX Working Current	433MHz band ,	-	75	95	mA
	Pout=+20dBm	-	-	-	
		-	-	-	
RFM300H/RFM300 RX Working Current	433MHz band ,	-	7	10	mA
	868MHz band ,	-	7.5	10.5	
	915MHz band ,	-	7.5	10.5	
RFM300H/RFM300 Sleep Current	All band	-	-	1	uA

## Transmitter AC characteristic

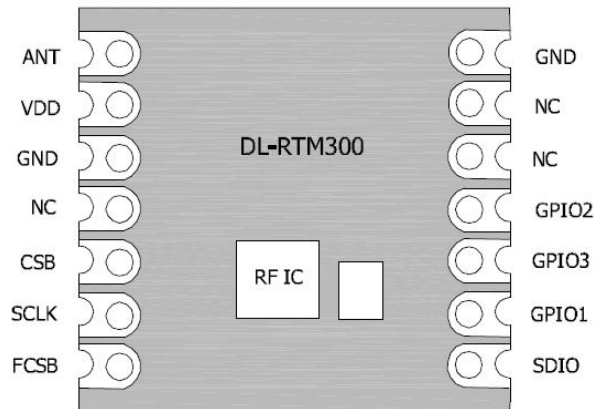
Parameter	Conditions	Minimum	Typical	Maximum	Unit
TX Frequency Range Programmable	433MHz band.	413	-	453	MHz
	868MHz band.	848	-	888	
	915MHz band.	895	-	935	
RFM300H Output Power	433/868/915MHz band	-	+20	-	dBm
RFM300 Output Power	433MHz band	-	+20	-	dBm
Symbol Rate,FSK Mode	programmable	0.1	-	300	kbps
Symbol Rate,OOK Mode	programmable	0.1	-	40	kbps
Frequency Deviation,FSK	programmable	1	-	200	KHz
Frequency Resolution		-	24.8	-	Hz

## Receiver AC characteristic

Parameter	Conditions	Minimum	Typical	Maximum	Unit
PX Frequency Range Programmable	433MHz band.	413	-	453	MHz
	868MHz band.	848	-	888	
	915MHz band.	895	-	935	
RX Sensitivity OOK ModeSR=1.2kbps,	433MHz	-	-120	-	dBm
	868MHz	-	-118	-	
	915MHz	-	-118	-	
RX Sensitivity FSK ModeFoev=19.2kHz,SR =1.2kbps,	433MHz	-	-118	-	dBm
	868MHz	-	-116	-	
	915MHz	-	-116	-	
Receiver Bandwidth		50		500	KHz
Blocking Immunity	+/-1MHz offset	-	52	-	dB
	+/-2MHz offset	-	74	-	
	+/-10MHz offset	-	75	-	
Image Rejection Ratio	IF=280KHz	-	35	-	dB

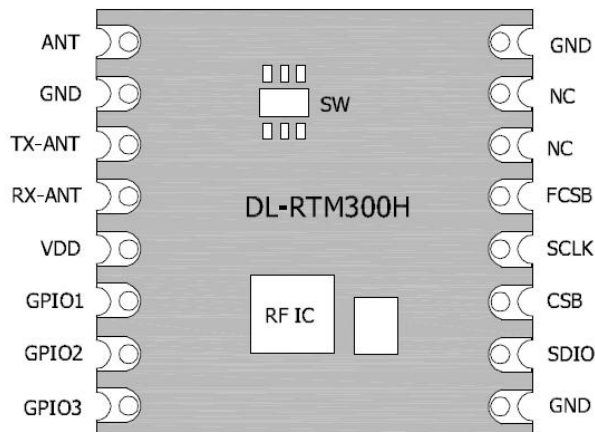
## Pins Definition:

### DL-RTM300 Pins Definition



Number	Definition	Type	Function
1	ANT	AI/AO	RF signal input/output.
2	3.3V(VDD)	PI	Power supply input,1.8-3.6V.
3	GND	G	Ground.
4	NC		No Connect.
5	CSB	I	SPI Chip select input, active low.
6	SCK	I	SPI Clock input.
7	FCSB	I	SPI FIFO select input, active low.
8	SDIO	I/O	SPI Data input and output.
9	GPIO1	I/O	General Purpose Digital I/O that may be configured through the registers to perform various functions
10	GPIO3		
11	GPIO2		
12	NC		No Connect.
13	NC		No Connect.
14	GND	G	Ground.

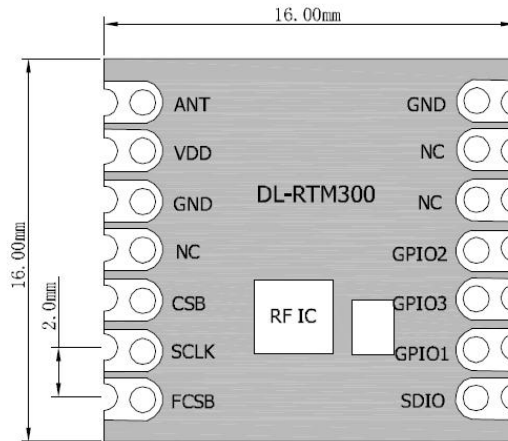
## DL-RTM300H Pins Definition



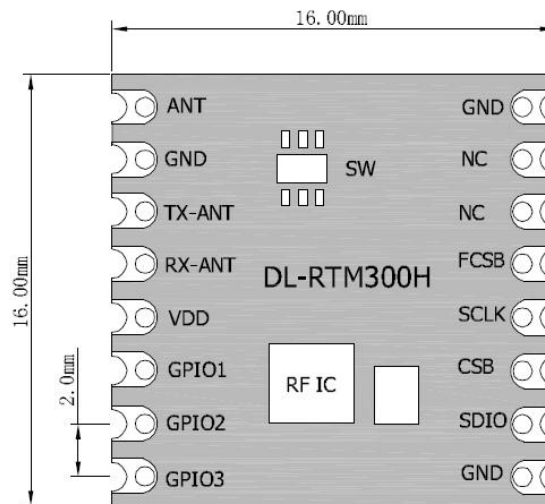
Number	Definition	Type	Function
1	ANT	AI/AO	RF signal input/output.
2	GND	G	Ground.
3	TX-ANT	I/O	Tx Antenna select input pin, when 300H is TX state, TX_ANT should be = 0, RX_ANT should be = 1
4	RX-ANT	I/O	Rx Antenna select input pin, when 300H is RX state, RX_ANT should be = 0, TX_ANT should be = 1
5	3.3V(VDD)	PI	Power supply input,1.8-3.6V.
6	GPIO1	I/O	General Purpose Digital I/O that may be configured through the registers to perform various functions
7	GPIO2		
8	GPIO3		
9	GND	G	Ground.
10	SDIO	I/O	SPI Data input and output.
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12	SCK	I	SPI Clock input.
13	FCSB	I	SPI FIFO select input, active low.
14	NC		No Connect.
15	NC		No Connect.
16	GND	G	Ground.

## Product size and Application Diagram

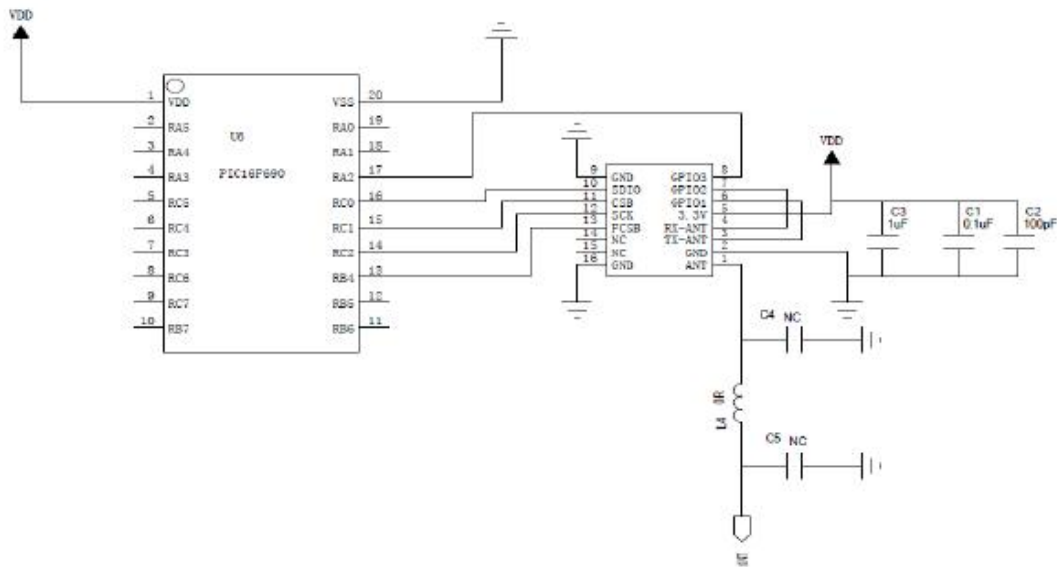
### Product size of DL-RTM300



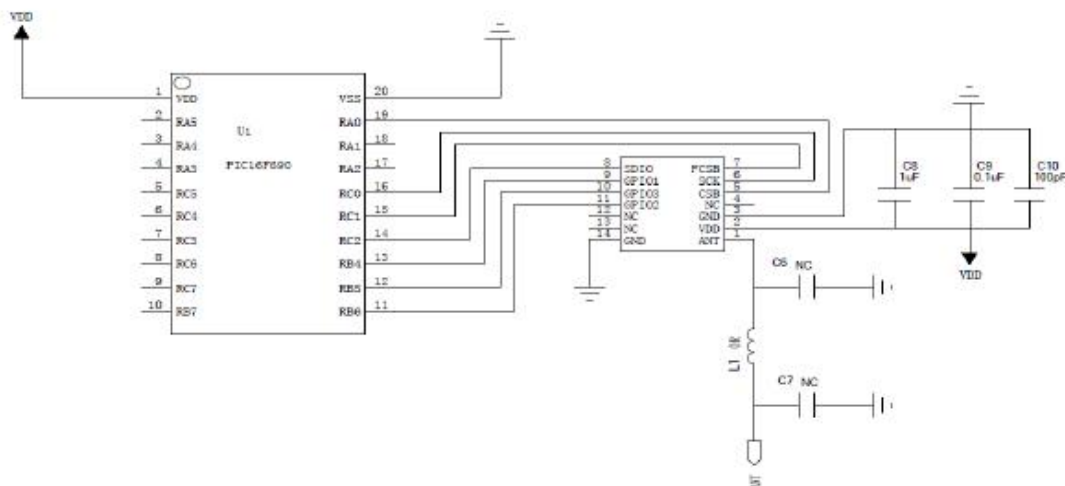
### Product size of DL-RTM300H



**Application Diagram of DL-RTM300**



**Application Diagram of DL-RTM300H**



This module adopts original CMT chip (CMT2300). Please follow the CMT2300 chip manual to read and write the register. See the CMT2300 chip manual for detail



## Model Selection

Model No.	Carrier Frequency (MHz)	Chip	Packaging	Size (mm)	Power (dBm)	Distance (Km)	Antenna
DL-RTM300	433.92M	CMT2 300	SMT	16*16* 1.8	20	1.8	External antenna
DL-RTM300H	433.92/868/915Mhz	CMT2 300	SMT	16*16* 1.8	20	1.8	External antenna

☆ The above models can communicate with each other ☆

## 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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