



FEATURES

- Frequency Range:
- 315MHz/433.92MHz
- OOK Modulation
- Output Power: +10-13 dBm
- Supply Voltage: 1.8 to 5 V
- Current Consumption: 17mA|13dBm_433M;18mA|13dBm_315M
- Sleep Current: < 100 nA
- Module Size:10.14*12.19mm

Descriptions

The WFM4455 TX module is ultra low-cost, highly flexible, high performance, single-chip OOK transmitters for various 315/433.92 MHz wireless applications. The device modulates and transmits the data which is sent from the host MCU. The WFM4455 transmitter together with the RX480 receiver enables an ultra low cost RF link.

APPLICATIONS

- Low-Cost Consumer Electronics Applications
- Home and Building Automation
- Remote Fan Controllers
- Infrared Transmitter Replacements
- Industrial Monitoring and Controls
- Remote Lighting Control
- Wireless Alarm and Security Systems
- Remote Keyless Entry (RKE)

Electrical Characteristics

VDD = 3.3 V, TOP = 25 °C, FRF = 433.92 MHz, output power is +13 dBm(Max) terminated in a matched 50 Ω impedance, unless otherwise noted.



Recommended Operating Conditions

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Operation Voltage Supply	VDD		1.8		5	V
Operation Temperature	TOP		-40		85	°C
Supply Voltage Slew Rate			1			mV/us

Absolute Maximum Ratings

Parameter	Symbol	Conditions	Min	Max	Unit
Supply Voltage	VDD		-0.3	6	V
Interface Voltage	VIN		-0.3	VDD+0.3	V
Junction Temperature	TJ		-40	125	°C
Storage Temperature	TSTG		-50	150	°C
Soldering Temperature	TSDR	Lasts at least 30 seconds		255	°C
ESD Rating		Human Body Model (HBM)	-2	+2	KV

Note:

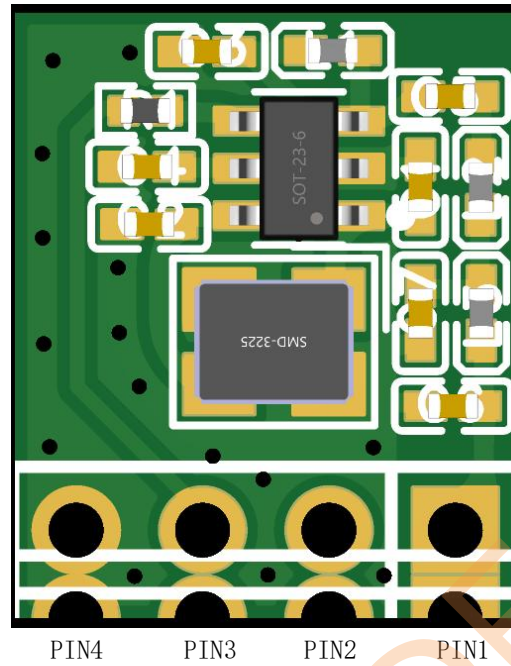
[1]. Stresses above those listed as “absolute maximum ratings” may cause permanent damage to the device. This is a stress rating only and functional operation of the device under these conditions is not implied. Exposure to maximum rating conditions for extended periods may affect device reliability.



Transmitter Specifications

Parameter	Symbol	Condition	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V_{DD}	315MHz/433.92MHz	1.8	3	5.5	V
Supply Current	3V I_{DD}	$F_{req}=433M P_{out}=14dBm$		7		mA
	5V I_{DD}	$F_{req}=433M P_{out}=17dBm$		10		mA
Peak Current	3V I_{PP}	$F_{req}=433M P_{out}=14dBm$		22		mA
	5V I_{PP}	$F_{req}=433M P_{out}=17dBm$		27		mA
SDT POWER	I_{STD}	DIN=0; $T_{delay}>40ms$		0		uA
Data Rate	D_RATE		1	20		
Transmitted Power	Pout	$F_{req}=433.92M 3V$		14		dBm
		$F_{req}=433.92M 5V$		17		dBm
		$F_{req}=315M 3V$		14		dBm
		$F_{req}=315M 5V$		17		dBm
RF power switch ratio	$P_{on/off}$			60		dB
phase noise	Freq=433M	10KHz		-93		dBc/Hz
		100KHz		-91		dBc/Hz
		400KHz		-89		dBc/Hz
		1MHz		-94		dBc/Hz
harmonic suppression	Second harmonic	Freq=433M Pout=15dBm		-49		dBm
	third harmonic	Freq=433M Pout=15dBm		-51		dBm
	Second harmonic	Freq=315M Pout=15dBm		-55		dBm
	third harmonic	Freq=315M Pout=15dBm		-52		dBm
Crystal multiple frequency stray		Freq=433M		-40		dBm
		Freq=315M		-40		dBm
oscillator frequency	F_{XTAL}	Freq=433M		13.56		MHz
				9.84375		MHz
Start-up Time	T_{on}	Freq=433M		1.4		ms
		Freq=315M		2		ms

Pin Descriptions



Pin Number	Name	Descriptions
1	ANT	Transmitter RF Output
2	VDD	Power Supply 1.8V to 5V
3	DATA	Data input to be transmitted
4	GND	Ground