

FM Radio Receiver module uses the instructions

1 Introduction:

FM Stereo radio Module is a high sensitivity, low power, ultra-small size of the FM stereo radio module. All-digital single-chip integrated circuits. High receiver sensitivity, IF IF selectivity, generic I2C bus control, find sets fast, built-in amplifier circuit, external components, the minimum noise figure. With small size, low power, low cost, a simple, using a wide range of advantages.

2 Features:

FM radio module With the TEA5767, SP3767 chips, software and hardware circuits are completely compatible.

High sensitivity, low noise, interference with ability to engage in strong, very few external electronic components. (8 * 8MM Max), the use of extremely simple.

I2C serial data bus interface communication.

the use of advanced hardware-search platform SEEK mode, full-band search just 4 ~ 5Sec.

built-in LDO voltage regulators, low power, ultra-wide-voltage use of (2.7 ~ 5.5VDC).

built-in noise reduction, soft mute, bass boost circuits.

FM and MPX stereo with DSP processors.

3 Electrical characteristics:

a) working conditions: (Ta = 25 °C)

Name	Symbol	Value	Unit	
Supply voltage	Vcc	3.0 Type)	V	2.7-5.5V(Range)
Maximum Current	I-dd	≤26 (MAX)	mA	
Operating Temperature	AT	25°C	°C	-20—85°C(Range)
Input frequency range	Ffm	70-108	MHz	
Audio Output Voltage	Vaudio	160	mV	
Frequency-selective way	—	—	—	°C
Reference clock (reference clock frequency)	Fref	32.768	KHz	
Power	Pd	≤750	mW	

b) Working range (Extreme Conditions):

Name	Symbol	Value	Unit	
Supply voltage range	Vcc	2.7—5.5	VDC	
Operating Current Range	I	/	mA	Not tested
Operating temperature range	Top	-20 to +85	°C	

Storage temperature range	Tstg	-55 to +150	°C
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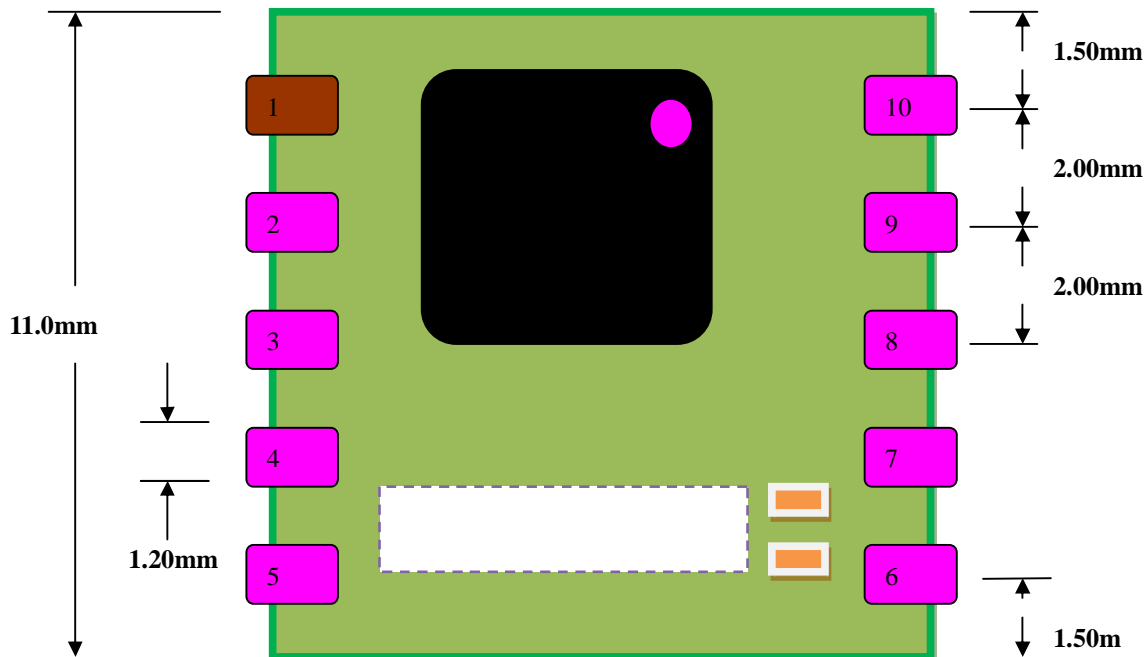
c) electrical properties, characterization: (Vcc=3V; Ta=25°C)

Electrical characteristics	symbol	Test Value			Unit	Test Conditions	Note
		MIN	TYP	MAX			
Sensitivity	Sen	/	10	/	dBuV	Fdev=22.5KHz Fmod=1KHz Sinad=26dB L=R	EMF
Stereo separation (L-R/R-L)	Sep	23	30	33	dB	VRF=60dBuV Fdev=22.5KHz Fmod=1KHz L-R/R-L 10%Pilot	
THD	THD	—	0.05	0.1	%	VRF=60dBuV Fdev=75KHz Fmod=1KHz	
SNR	S/N:	47	49	51	dB	VRF=60dBuV Fdev=22.5KHz Fmod=1KHz	
Audio channel unbalance	GV	/	0.1	/	dB	Vin= 60dBuV L+R	
Audio Output Level (V-out)	Vaudio	/	160	/	mV		
Audio channel selectivity	ACS	/	40	/	dB	Δf=200KHz	
Input frequency range	f RF	70	/	108	MHz		

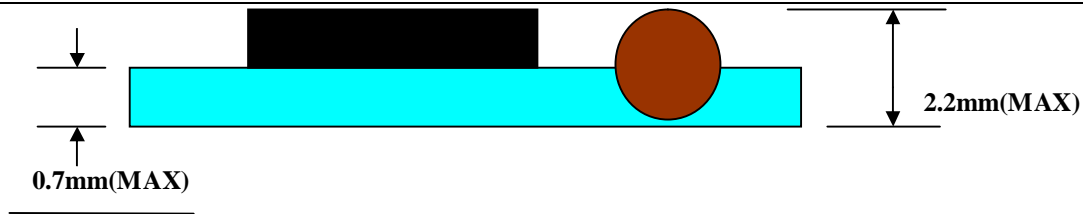
4, Module specifications and typical applications:

A, size and pin function description:

FM Receiver MODULE

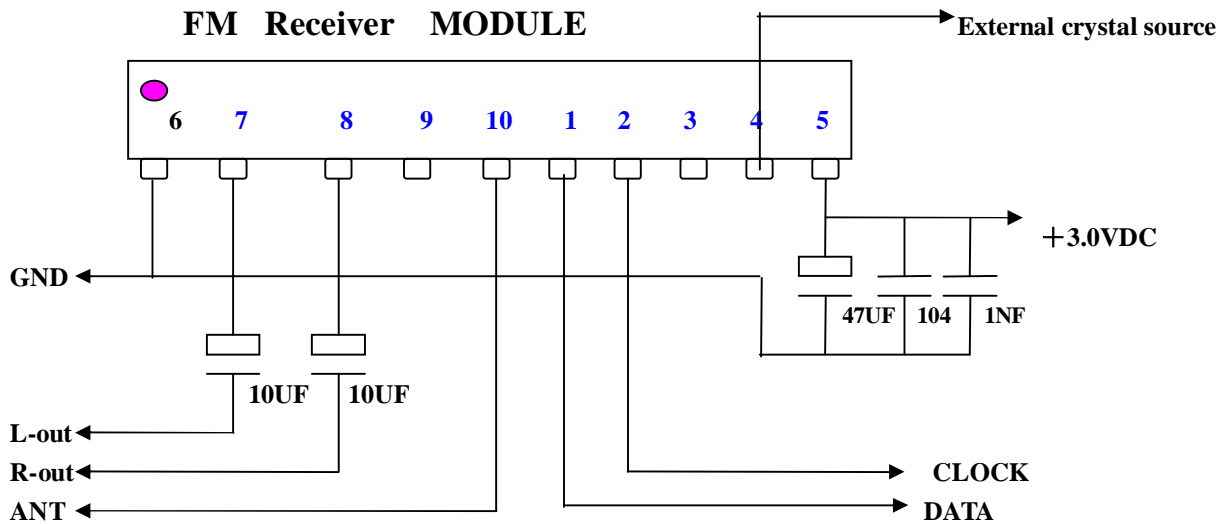


Module height (side view): Unit: MM



Pin Number	Pin Function Description	Pin Number	Pin Function Description
1	DATA (I/O data input and output)	6	GND
2	SCLK (I/O CLK input and output)	7	LOUT(Left channel audio output)
3	I/O-1 (Extended I/O port)	8	ROUT(Right channel audio output)
4	Y(External crystal source)	9	NC
5	VCC (+3.0VDC Power input)	10	ANT (FM antenna input)

B, Typical Application Circuit:



- Notes:
- 1、 This module uses the I2C bus.
 - 2、 The antenna input matching of the proposed increase in a 68PF capacitor in order to improve the antenna input characteristics.
 - 3、 The 4 Pin if it is an external crystal source, then the module will increase the resistance of a jumper, and saved the crystal module.

4, Module use:

- i. Power supply filter capacitor is designed to be as close to the module power supply input pin.
- ii. I2C bus DATA, CLOCK control the side pull-up resistor is recommended 47KΩ, the proposed series resistance in order to prevent the data voltage spikes.
- iii. FM antenna signal coupling, such as the use of headphones ground, the general must add a

600ohm/100MHz bead to ground.

- iv. FM module should generally be greater than the supply voltage above 2.8V.**
- v. This module has been integrated within the LDO, the power input can use a simple LC filter network can supply.**
- vi. This module is designed has set aside two I/O ports can be expanded more user-friendly features.**