

SINGLE CHIP FM STEREO RADIO TUNER

PRODUCT DESCRIPTION

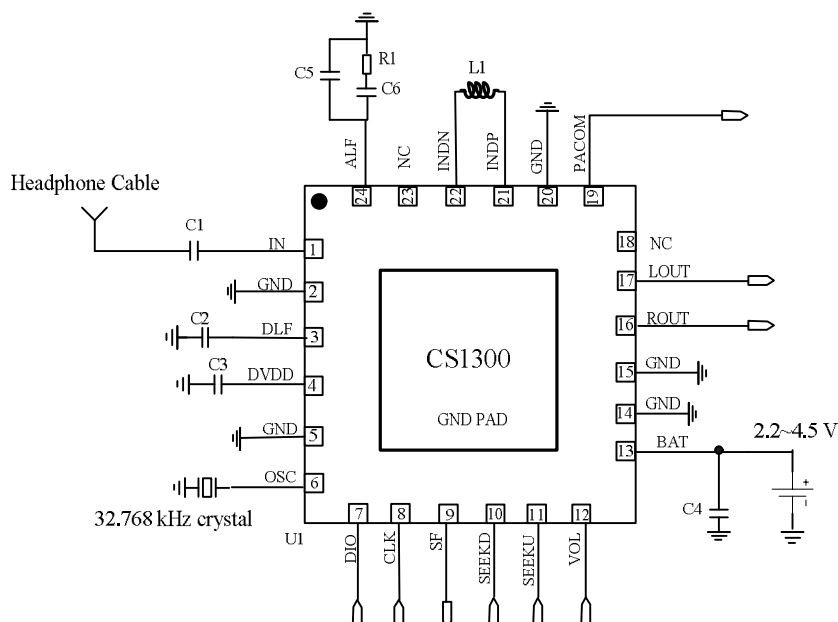
The CS1300 integrates the complete tuner function from antenna input to stereo audio output for FM broadcast radio reception. The tuner is completely adjustment-free and only requires a minimum of small and low cost external components. The tuner can support the worldwide FM bands.

APPLICATIONS

Portable radios
Electronic gifts
Consumer electronics

FEATURES

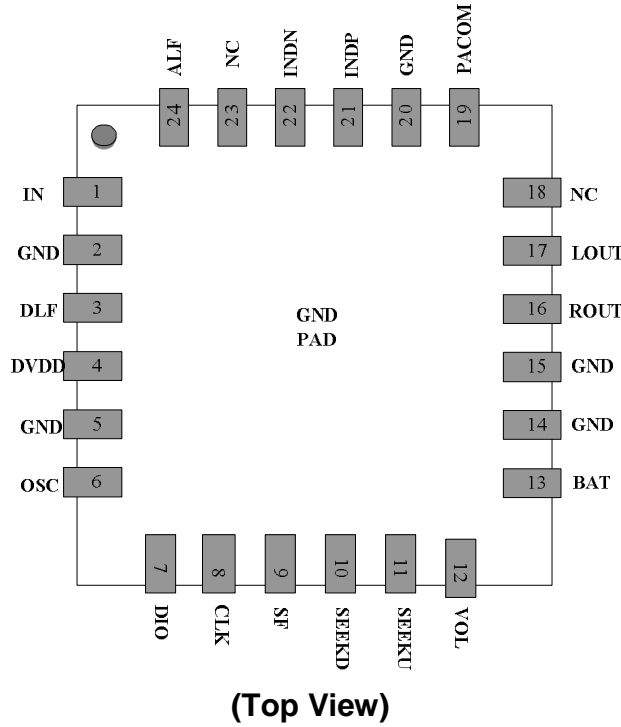
- u Single chip radio, no need MCU control
- u Electronic Volume Control
- u SeekUp/SeekDown Function
- u Worldwide FM bands (from 60 MHz to 108 MHz)
- u 32.768KHz reference clock
- u Integrated audio power amplifier
- u Direct earphone (32ohm) driving capability
- u Frequency synthesizer with integrated VCO
- u Automatic frequency control (AFC)
- u Automatic gain control (AGC)
- u DSP FM demodulator
- u DSP MPX stereo decoder
- u Autonomous search tuning function
- u Adaptive noise cancellation
- u High cut
- u Soft mute
- u Bass boost
- u Integrated LDO regulator
- u Supply voltage ranges from 2.2 V to 5 V



Selected Electrical Specifications

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
Input Frequency	f_{FM}		60	-	108	MHz
Sensitivity	S_{en}	(S+N)/N=26dB	-	8	-	dBuV EMF
Input IIP3	IIP3 _{in}	$ f_2-f_1 >1\text{MHz}$, $f_0=2*f_1-f_2$, AGC disable	-	88	-	dBuV EMF
AM Suppression	AM _{sp}	$m=0.3$	50	-	-	dB
Adjacent Channel Selectivity	ACS ₂₀₀	$\Delta f=\pm 200\text{kHz}$	40	-	-	dB
Alternate Channel Selectivity	ACS ₄₀₀	$\Delta f=\pm 400\text{kHz}$	45	-	-	dB
Spurious Response Rejection	SRR	$\Delta f>\pm 1\text{MHz}$	60	-	-	dB
Audio Output Voltage	V_{audio}		-	70	-	mVRMS
Audio Output L/R Imbalance	V_{AIMB}		-	0.1	-	dB
Audio Stereo Separation	ASS		-	30	-	dB
Audio S/N	SNR		-	58	-	dB
Audio THD	THD		-	0.05		%
Audio Output Loading Resistance	R_L		-	5K	-	Ω
Reference Clock Stability requirement	Ref	32.768kHz crystal	-150	0	+150	ppm
Seek/Tune Time	T_{seek}		-	-	60	ms/channel
SCLK Frequency	fclk	I2C operation	-	-	400	kHz
Powerup Time	$T_{powerup}$	From power down	-	-	1	sec

Pin Assignments



PIN Description

PIN NO.	Name	Description
1	IN	FM RF single-end input
2	GND	Ground
3	DLF	Decoupling cap
4	DVDD	Internal LDO
5	GND	Ground
6	OSC	Crystal single-end connection/external reference OSC input
7	DIO	I2C data input/output
8	CLK	I2C clock input
9	SF	Seek Fail Indicator
10	SEEKD	Seek Down Control
11	SEEKU	Seek Up Control
12	VOL	Electronic Volume Control
13	BAT	Power Supply Voltage
14	GND	Ground
15	GND	Ground
16	ROUT	Right audio output
17	LOUT	Left audio output
18	NC	NOT connected
19	PACOM	Audio PA Common Voltage
20	GND	Ground

21	INDP	Positive port for external inductor
22	INDN	Negative port for external inductor
23	NC	NOT connected
24	ALF	PLL tuning voltage control

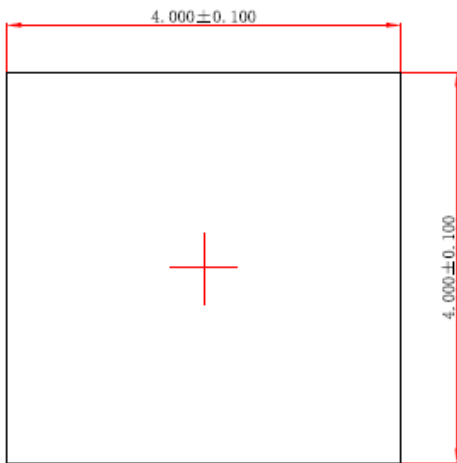
Package Information

Package: QFN24, 4X4

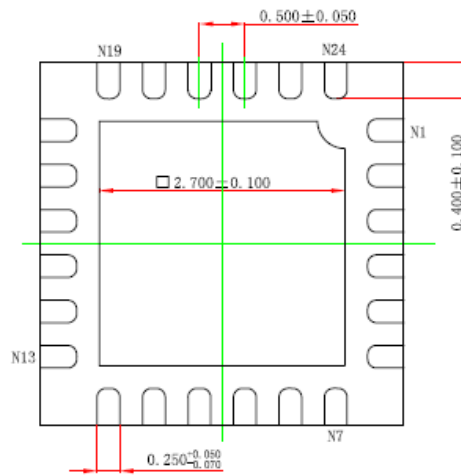
Exposed PAD 2.7x2.7

Dimensions in mm

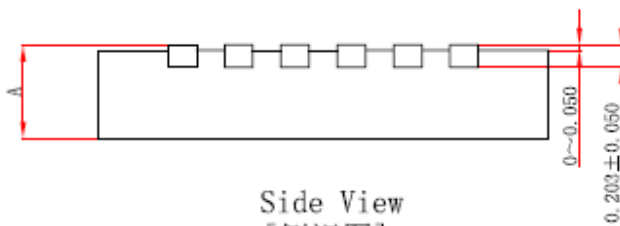
Not indicated tolerances +/-0.05



Top View



Bottom View



Side View
[侧视图]

	MIN.	NORM.	MAX.
A	0.700	0.750	0.800
	0.800	0.850	0.900