

RTC6721 CMOS Audio Demodulator

Product Description

The RTC6721 is a dual-channel of 6MHz and 6.5MHz FM demodulator for wireless audio and analog FM application. The chip includes PLL based audio demodulator and audio amplifier providing 1Vpp audio output. This device may be connected with RTC6711 as a total solution for wireless AV center application. The device is available in a 24-pin QFN package.

Features

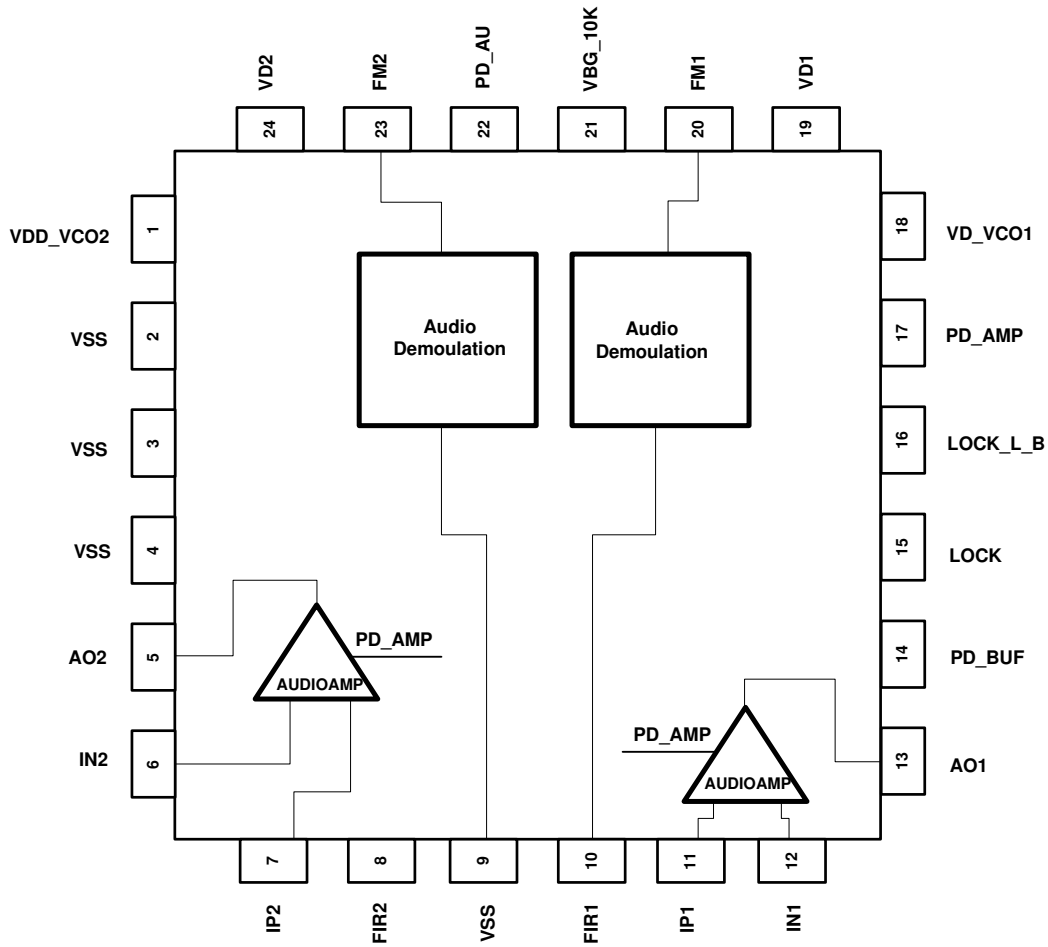
- 3.3V power supply
- 6/6.5 MHz sound FM demodulator
- CMOS technology
- On-chip VCO and PLL
- 24-pin leadless QFN package
- Audio amp embedded

Application

- AV Sender
- Baby Monitor
- Wireless Audio
- Wireless Earphone



Block Diagram



Pin Descriptions

PIN	NAME	I/O	FUNCTION
1	VD_VCO2	Supply In	3.3V VDD for audio demod VCO2
2	VSS	Analog GND	VSS for audio demod2
3	VSS	Analog GND	VSS for audio demod2
4	VSS	Analog GND	VSS for audio demod2
5	AO2	Analog Out	OUTPUT for Audio amp2
6	IN2	Analog In	Negative input for Audio amp2
7	IP2	Analog In	Positive input for Audio amp2
8	FIR2	Analog Out	Audio Demod2 loop filter
9	VSS	Analog GND	VSS for audio demod1
10	FIR1	Analog Out	Audio Demod1 loop filter
11	IP1	Analog In	Positive input for Audio amp1
12	IN1	Analog In	Negative input for Audio amp1
13	AO1	Analog Out	OUTPUT for Audio amp1
14	PD_BUF	Digital IN	Power Down of internal audio buffer 0: power on; 1: power down (internal pull-high)
15	LOCK	Digital Out	NC
16	LOCK_L_B	Digital Out	NC
17	PD_AMP	Digital In	Power Down of Audio amp 0: power on; 1: power down
18	VD_VCO1	Supply In	3.3V VDD for audio demod VCO1
19	VD1	Supply In	3.3V VDD for Audio Demo1
20	FM1	Analog In	Audio1 input
21	VBG_10K	Analog In	10K resistor for bias current generation
22	PD_AU	Digital IN	Power down for audio 0: power on; 1: power down
23	FM2	Analog Out	Audio2 input
24	VD2	Supply In	3.3V VDD for Audio Demo2



ELECTRICAL SPECIFICATIONS
(1) Absolute Maximum Ratings

SYMBOL	PARAMETER	Ratings	UNIT
Tstr	Storage Temperature Range	-65 to +150	°C
Totr	Operating Temperature Range	-40 to +85	°C
Vdd	Supply Voltage	-0.5 to +5	V
Vlog	Logic control signal	-0.5 to +5	V
VRX	RX IF input	-2 to +2	V

The maximum rating must not be exceeded at any time. Do not operate the device under conditions outside the above ratings.

(2) DC Electrical Characteristics

SYMBOL	PARAMETER	CONDITION	MIN.	TYP.	MAX.	UNIT
Tj	Temperature Range		-40	25	85	°C
VDD33	3.3V Supply Voltage		3.1	3.3	3.5	V
I	Power consumption	TT 25C, 3.3V		20		mA
I _{pd}	Power down current leakage	TT 25C, 3.3V		1	10	uA

(3) Demod Specifications

VD_VCO1=VD_VCO2=VC1=VC2=3.3V

SYMBOL	PARAMETER	CONDITION	MIN.	TYP.	MAX.	UNIT
Carrier_Freq	RF Input frequency			6/6.5		MHz
Phase noise	6KM/6.5MHz	1KHz offset		62		dBc/Hz
Output signal level	Signal after video amplifier (output impedance >= 1Kohm)	Fmod: 1KHz tone Frequency deviation: ±25Khz Load: > 1Kohm		1		Vpp
THD	Total harmonic distortion output 1Vpp (1KHz tone)	Fmod: 1KHz tone Frequency deviation: ±25Khz Load: > 1Kohm		0.6		%
S/N	Audio SNR (as reference design, With pre-emphasis/ de-emphasis)	Fmod: 1KHz tone Frequency deviation: ±25Khz Load: > 1Kohm		47		dB



PACKAGE

QFN 4X4, 24 pins

