

Wireless Audio Link IC

BH1415F

The BH1415F is a FM stereo transmitter IC that transmits simple configuration. The IC consists of a stereo modulator for generating stereo composite signals and a FM transmitter for broadcasting a FM signal on the air. The stereo modulator generates a composite signal which consists of the MAIN, SUB, and pilot signal from a 38kHz oscillator. The FM transmitter radiates FM wave on the air by modulating the carrier signal with a composite signal.

●Applications

CD changer, Car TV, Car navigation, Wireless speakers, Personal computer (sound board), Game machine

●Features

- 1) It is possible to improve the timbre because it has the pre-emphasis circuit, limiter circuit, and the low-pass filter circuit.
- 2) Built-in pilot-tone system FM stereo modulator circuit.
- 3) The transmission frequency is stable because it has a PLL system FM transmitter circuit.
- 4) PLL data input (CE, CK, DA) by serial input.

●Absolute maximum ratings (Ta = 25°C, In measurement circuit.)

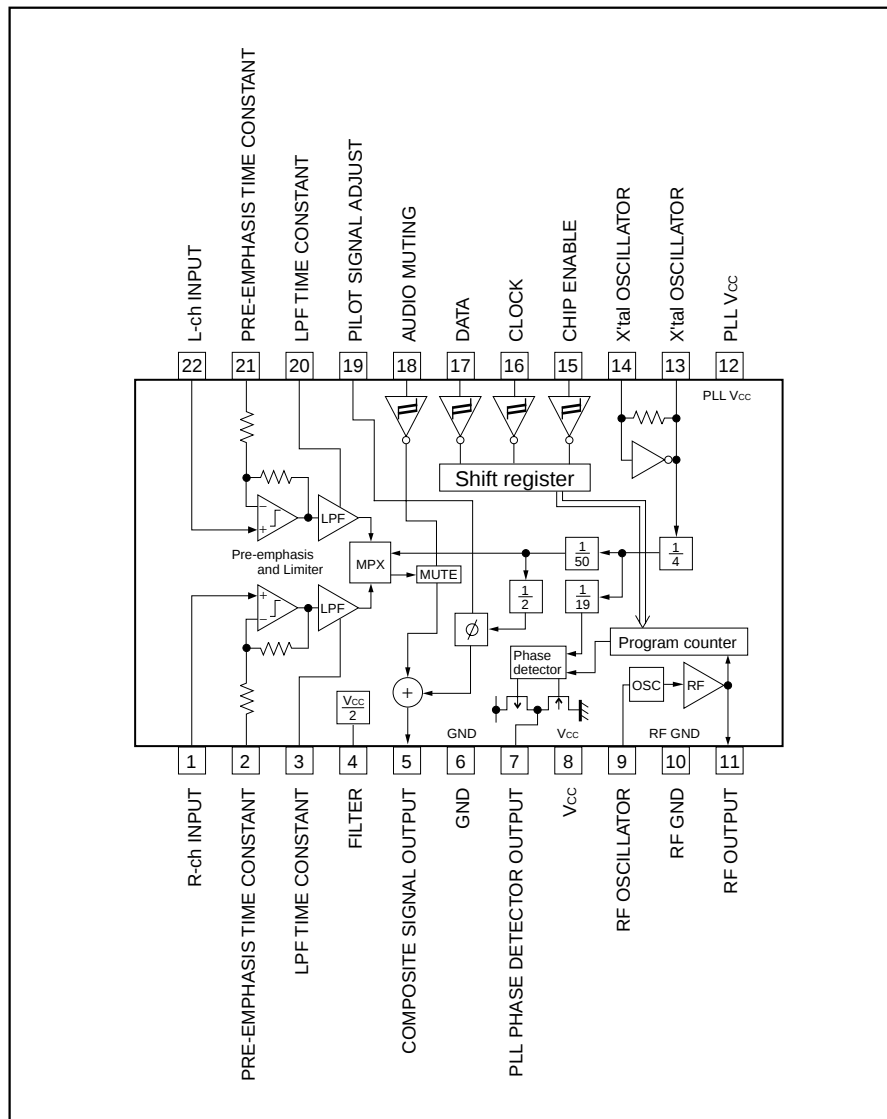
Parameter	Symbol	Limits	Unit	Conditions
Supply voltage	V _{CC}	+7.0	V	Pin8,12
Data input voltage	V _{IN-D}	-0.3 to V _{CC} +0.3	V	Pin15,16,17,18
Phase comparator output voltage	V _{OUT-P}	-0.3 to V _{CC} +0.3	V	Pin7
Power dissipation	P _d	450*	mW	
Storage temperature	T _{stg}	-55 to +125	°C	

* Derating : 4.5mW/°C for operation above Ta=25°C.

●Recommended operating conditions (Ta = 25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Operating supply voltage	V _{CC}	4.0	—	6.0	V	Pin8,12
Operating temperature	T _{opr}	-40	—	+85	°C	
Audio input level	V _{IN-A}	—	—	-10	dBV	Pin1,22
Audio input frequency band	f _{IN-A}	20	—	15k	Hz	Pin1,22
Pre-emphasis time constant set up range	t _{PRE}	—	—	155	μsec	Pin2,21
Transmission frequency	f _{TX}	70	—	120	MHz	Pin9,11
Control terminal "H" level input voltage	V _{IH}	0.8V _{CC}	—	V _{CC}	V	Pin15,16,17,18
Control terminal "L" level input voltage	V _{IL}	GND	—	0.2V _{CC}	V	Pin15,16,17,18

●Block diagram



Audio ICs

No.	Control unit / Data	Contents															
(2)	MULTIPLEXER MONO	It changes a stereo and monaural operation. <table><tr><th>MONO</th><th>Condition of the composite signal</th></tr><tr><td>0</td><td>Monaural operation L+R , Pilot OFF</td></tr><tr><td>1</td><td>Stereo operation L+R+(L-R),sinωst+Psin$\frac{\omega s}{2}$ t</td></tr></table>	MONO	Condition of the composite signal	0	Monaural operation L+R , Pilot OFF	1	Stereo operation L+R+(L-R),sinωst+Psin $\frac{\omega s}{2}$ t									
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(2)	PHASE DETECTOR PD ₀ , PD ₁	It controls charge pump output by the phase comparator compulsorily. <table><tr><th>PD₀</th><th>PD₁</th><th>Charge pump output</th></tr><tr><td>0</td><td>0</td><td>Usual operation</td></tr><tr><td>0</td><td>1</td><td>Compulsion by Low</td></tr><tr><td>1</td><td>0</td><td>Compulsion by High</td></tr><tr><td>1</td><td>1</td><td>High impedance</td></tr></table>	PD ₀	PD ₁	Charge pump output	0	0	Usual operation	0	1	Compulsion by Low	1	0	Compulsion by High	1	1	High impedance
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0	0	Usual operation															
0	1	Compulsion by Low															
1	0	Compulsion by High															
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(3)	TEST MODE T ₀ , T ₁	- It is data for the LSI test. - Always in T₀ Input "1". - Always in T₁ Input "0".															

●External dimensions (Units : mm)

