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.)

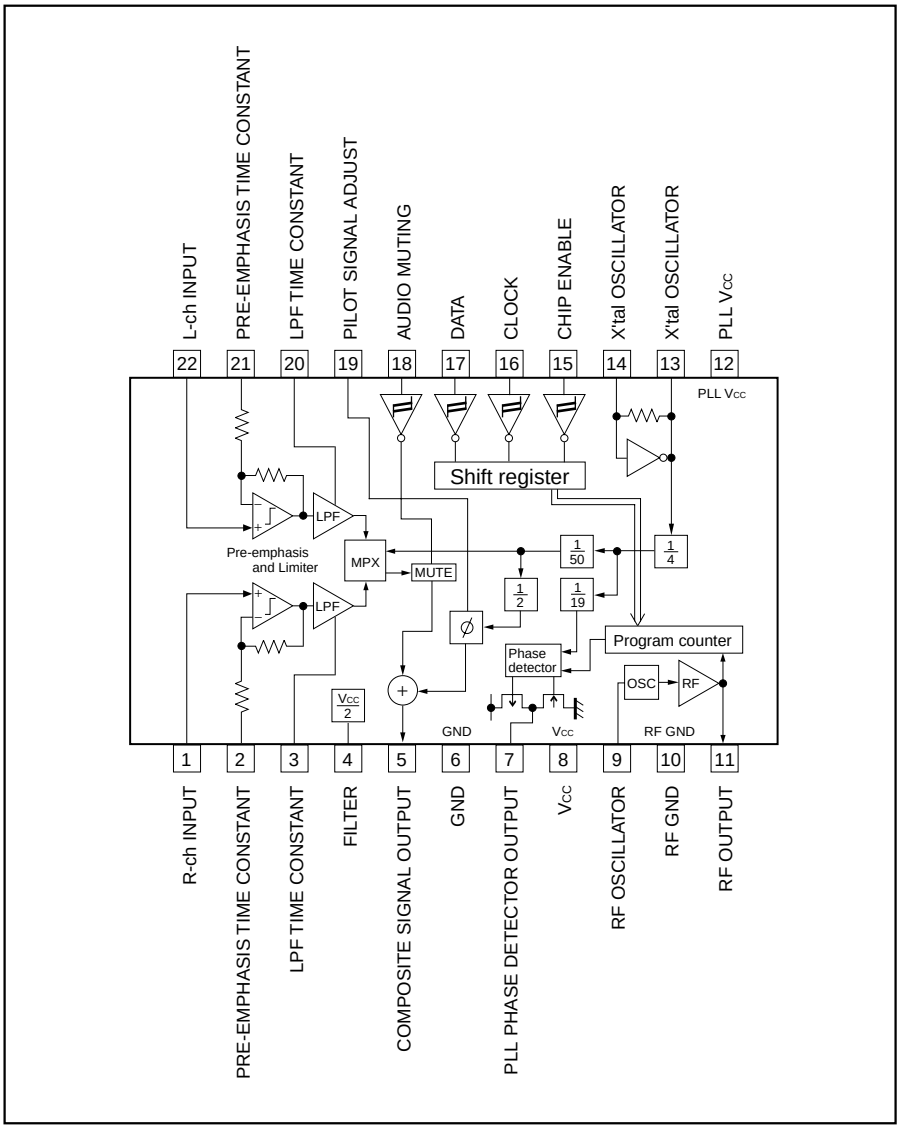
Parameter	Symbol	Limits	Unit	Conditions
Supply voltage	V_{CC}	+7.0	V	Pin8,12
Data input voltage	V_{IN-D}	–0.3 to V_{CC}+0.3	V	Pin15,16,17,18
Phase comparator output voltage	V_{OUT-P}	–0.3 to V_{CC}+0.3	V	Pin7
Power dissipation	Pd	450*	mW	
Storage temperature	Tstg	–55 to +125	°C	

* 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	Topr	–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**



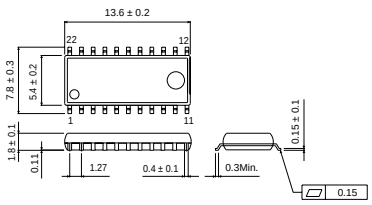
<table>
<tr><th>No.</th><th>Control unit / Data</th><th>Contents</th></tr>
<tr><td>(2)</td><td>MULTIPLEXER

MONO</td><td>• 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),sinω_st+Psin $\frac{\omega_s}{2}$ t</td></tr>
</table></td></tr>
<tr><td>(2)</td><td>PHASE DETECTOR

PD_0, PD_1</td><td>• It controls charge pump output by the phase comparator compulsorily.
<table>
<tr><th>PD_0</th><th>PD_1</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></td></tr>
<tr><td>(3)</td><td>TEST MODE

T_0, T_1</td><td>• It is data for the LSI test.
• Always in T_0 Input "1".
• Always in T_1 Input "0".</td></tr>
</table>

●**External dimensions** (Units : mm)



SOP22

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