P.N. 650201062G

Datasheet and User Manual for TX-AUDIO-2.4/AE

Features

1. Non-compression for high sound quality with delay time 0.5 ms.
2. Digital audio with 44.1 KHz sampling rate and 16-bit resolution.
3. FSK digital modulation
4. Wip antenna for high performance
5. 8 selectable channels
6. Low power consumption for mobile application
7. 10dBm RF Output Power
8. Application distance of more than 30 meters when used with RX-AUDIO-2.4 650201005G
9. See **650201004G TX-AUDIO-2.4** for reduced features module.

Specification

Model	TX-AUDIO-2.4/AE
Supply voltage	3.3 ± 0.1 Vdc
Current consumption	68 mA (typ)
Operating temperature	-10 ÷ +60 C
Frequency range	2400 ÷ 2483.5 MHz
Modulation	FSK
Channel number	8
Channel spacing	9 MHz
Frequency stability	± 100 KHz
TX power	+10 dBm ERP
Input impedance	> 10 Kohm
Input level	2 Vpp (max)
* Response	20 Hz ÷ 20 KHz
* Dynamic range	90 dB (typ)
* Separation	70 dB (typ)
* SN ratio	90 dB (typ)

* When used with RX-AUDIO-2.4 650201005G

Board dimensions: (43 Mod. + 30 Ant.) x 16 x 7 mm

Pin description

Pin #	Pin name	Pin description
3	USER_BIT	Input pin for Customer specified data stream (max 5Kbps). Data will be available at corresponding USER_BIT pin at Receiver(s).
4	FORMAT	Internal pull Up – When Down, digitalized audio is scrambled.
5	OB	When forced Down, enables Out-of-Band channel (for testing purposes ONLY, keep Open – Internal pull Up)
6	TACT SW	Internal pull Up – When temporary pulsed to Down, changes transmission channel IF in TACT MODE (see table for channel selection settings)
7	Vcc	3.3 ± 0.1 Vdc
8	ADC_L	Left channel audio input pin (>10Kohm, max. 2Vpp). ADC blocking capacitor (>1microF) should be added.
9	GND	Grounding
10	ADC_R	Right channel audio input pin (>10Kohm, max. 2Vpp). ADC blocking capacitor (>1microF) should be added.
11	SW2	Internal pull Up – When forced Down, IF in DIP MODE (see table for channel selection settings), used to select channel
12	SW1	Internal pull Up – When forced Down, IF in DIP MODE (see table for channel selection settings), used to select channel
13	SW0	Internal pull Up – When forced Down, IF in DIP MODE (see table for channel selection settings), used to select channel
14	ID3	Internal pull Up – When forced Down, used to set ID Selection. Only Receiver(s) with same ID combination will be reproduce transmitted audio.
15	ID2	Internal pull Up – When forced Down, used to set ID Selection. Only Receiver(s) with same ID combination will be reproduce transmitted audio.
16	ID1	Internal pull Up – When forced Down, sets ID Selection. Only Receiver(s) with same ID combination will be reproduce transmitted audio.
17	ID0	Internal pull Up – When forced Down, used to set ID Selection . Only Receiver(s) with same ID combination will be reproduce transmitted audio.
18	CH_MODE	Internal pull Up – Used for channel selection MODE (see table for channel selection settings)

Channel selection table

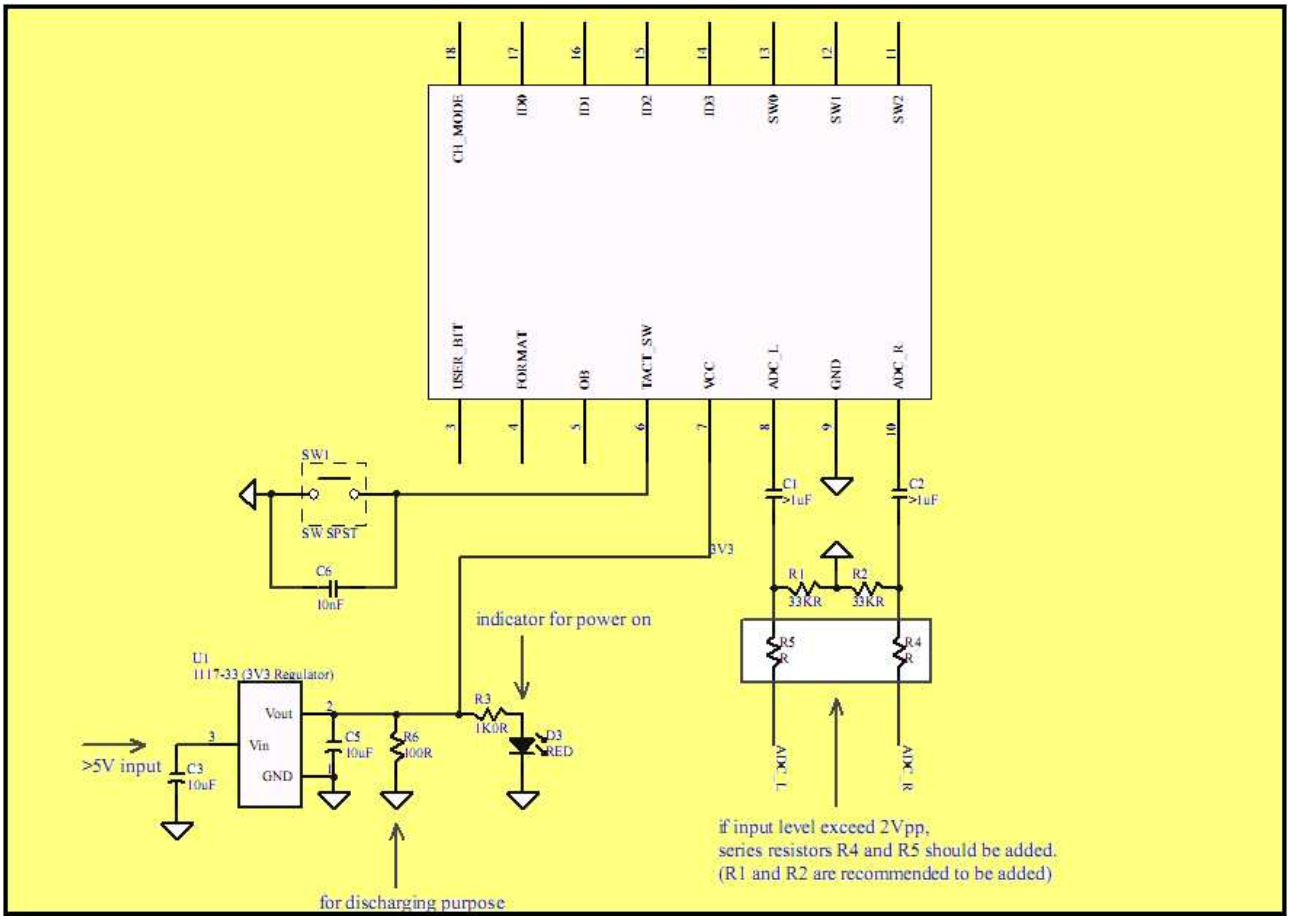
Channel MODE	CH_MODE (pin18) status	Functional description
DIP Mode	Forced Down	Selected channel as per binary setting of lines SW0, SW1 and SW2. SEE NOTE.
TACT Mode	Open or Forced Up	When TACT_SW line (Pin 6) is momentary pulsed Down, a new channel is selected

Note: The channel at lower frequency (about 2410MHz) is with SW0, SW1, SW2 in OPEN Condition (pull up installed)

The higher frequency channel (about 2473MHz) is with SW0, SW1, SW2 in CLOSED to GND Condition.

SW2 is the most significant bit of the Hexadecimal NEGATED combination.

Application circuit



At USER_BIT pin, serialized data stream (max. 5Kbps) can be delivered to corresponding USER_BIT pin at Receiver(s), with no interference on digitalized audio.
Data examples:

a) remote control command,
b) title of musical composition being transmitted, etc…

Application information

When you design the transmitter module in wireless speakers and headphones, pay attention to the following considerations:

1. Do not bend down or up the antenna.
2. Do not let any metal objects too close to antenna.
3. Transmitter module must be kept away from speaker over 3 cm to avoid magnetic interference.
4. Power supply to transmitter module must be independent, different from the power of amplifier.
5. Avoid to put any cable or circuit nearby antenna (1-2 cm).