

# P0004 - TBPI Audio Module Datasheet

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TBPI Audio module is Audio sound card expansion for TeddyBearPi compute module. Module is plug-and-play, powered from TBPI, without need for external power supply. Unit is high-performance, low-power audio codec with an enhanced hybrid Automatic Level Control (ALC) and a powerful speaker driver targeting embedded applications.

It integrates an enhanced hybrid ALC that offers faster reaction times and finer gain resolution to maintain a consistent audio quality level when recording.

## FEATURES

- 100 dB SNR stereo audio playback
- Low-power PLL provides system clocking and audio sample rate flexibility
- I2S/PCM Digital Audio Interface (DAI) supports sample rates between 8 kHz and 96 kHz
- Built-in 5-band equalizer, ALC and noise-gate functions
- Ultra-Low Power Always-On mode 650µW
- Built-in beep generator
- Integrated system controller to eliminate pops and clicks
- Wall/Desk or DIN rail mounting

## TECHNICAL SPECIFICATION

Enclosure dimensions (DxWxH mm)	90 x 53 x 58 mm
Enclosure material	UL94-V0 flame retardant polycarbonate
Color	Light grey
Mount type	35mm DIN-Rail or Wall/Desk mounting
Weight	75g
IP protection	IP20
Working Temperature	-20°C to 40°C
Power supply	Powered from TBPI Module
Max. power consumption	50mA

## AUDIO INPUT PARAMETRIC SPECIFICATIONS (ADC)

Vmax Full-scale input signal	5,28V @ Digital output level = 0 dBFS
SNR Signal to noise ratio	90 dB A-weighted no input selected
THD+N Total harmonic distortion plus noise	-85 dB 44.1 kHz slave mode
Group delay mismatch between channels	2 $\mu$ s

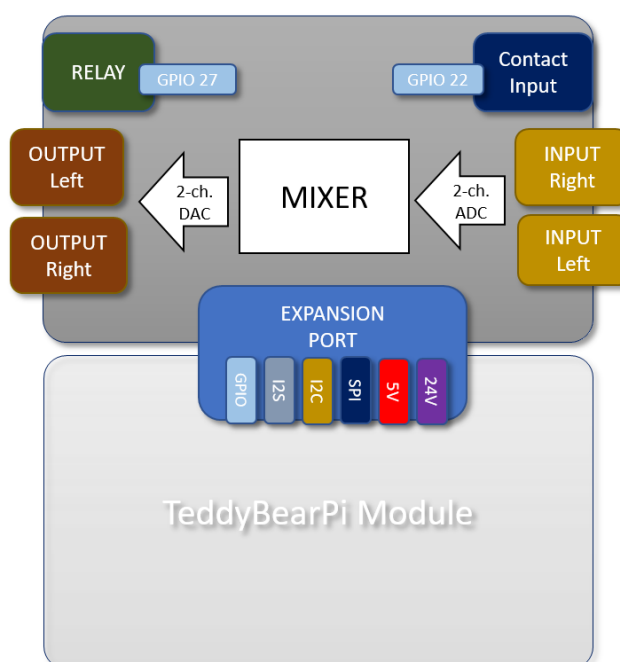
## AUDIO OUTPUT PARAMETRIC SPECIFICATIONS (DAC)

Vmax Full-scale input signal	5,28V @ Digital output level = 0 dBFS
SNR Signal to noise ratio	100 dB A-weighted no input selected
THD+N Total harmonic distortion plus noise	-90 dB 44.1 kHz slave mode
Group delay mismatch between channels	2 $\mu$ s

## CONNECTORS / INTERFACES

Audio input	Left / Right Cinch (RCA) connector
Terminal Input	2-pole terminal for Dry contact input
Audio Output	Left / Right Cinch (RCA) connector
Relay	3-pole terminal NO/COM/NC Relay

## BLOCK DIAGRAM



## ORDERING INFORMATION

Product Number	Name	Package dim.	Package weight
P0004	TBPI Audio Module	15x15x11 cm	150g

## MECHANICAL

