

Mobile Audio Hub System IC

Description

This document contains detailed target specifications of the SMA5208 low power mobile audio hub system IC with both receiver path (Rx) and transmitter path (Tx) controls.

Applications

- Mobile phones
- Tablets
- Portable players

Ordering Information

Part	Temp. Range	Pb-Free	Package
SMA5208-001	-25°C to +85°C	Yes	49-WLCSP
SMA5208Q-001	-25°C to +85°C	Yes	48-QFN-0606

Features

Integrated 24-bit hi-fi audio CODEC

- 2 ADC, 96 dB SNR with adaptive gain controls – with typ. 8 kHz to 48 kHz normal sample rate, and 192 kHz low-latency mode
- 2 direct conversion playback (DAC), 105 dB SNR – supports from 8 kHz up to 192 kHz sample rates

Analog audio Inputs

- 3 microphone and 2 line inputs with mux with a low noise mic bias output
- AFE with programmable gain amplifiers (PGA)
- Differential microphone inputs
- Single-ended line inputs

Flexible digital audio interface

- I2S/PCM/IOM-2 interface formats – support 16/24/32-bit data interface
- Auto-detection I2S modes of 32/64 fs
- Supports all standard sample rates from 8 kHz up to 192 kHz

Digital audio processing core

- High-pass filter for ADC



- High resolution volume for Tx
- Digital mixer
- Sample rate converters for Rx
- 5-Band PEQ for Rx
- Bass booster for Rx
- Dynamic range compressor / limiter for Rx
- High resolution volume for Rx
- Adjustable soft-mute and soft-volume

High efficiency class-D speaker output driver

- <-82 dB THD+N at 700 mW, 8 Ω
- 104 dB SNR
- 1.2 W maximum output power at 5 V, 8 Ω, 1% THD+N

Headphone output driver (class-G)

- Stereo cap-less headphone amplifier with internal negative voltage generator
- Pop and click noise reduction circuits
- 30 mW at 32 Ω load, 1% THD+N
- -85 dB THD+N at 20 mW at 32 Ω
- 105 dB SNR at 32 Ω

Receiver output driver (class-D)

- <-85 dB THD+N at 45 mW at 32 Ω
- 102 dB SNR at 32 Ω

Low jitter fractional-N PLL

- -85 dB THD+N at 20 mW, 32 Ω

Integrated charge pumps

I2C interface for register controls

Protection circuits

- Thermal shutdown protection circuit
- Over-current and short-circuit protection circuits

Jack detection circuits

- Jack/Microphone/Push button detection circuits

*Technology by

SMA5208
