

AUDIO OUTPUT

I2S DAC → PAM8403 Class-D Amplifier → 28mm 8ohm Speaker

I2S Bus (directly from ESP32-S3):

`I2S_BCLK` GPIO15 – Bit Clock (1.411 MHz @ 44.1kHz)

`I2S_LRCK` GPIO16 – L/R Word Select (44.1kHz)

`I2S_DOUT` GPIO17 – Serial Data Out → PAM8403



Design Notes:

- PAM8403: filterless Class-D stereo amplifier (3W per channel max)
- Only one channel used for mono audio
- No external DAC needed: ESP32-S3 has built-in I2S with DMA
- Powered from +5V rail for max headroom (3.3V limits volume)
- DMA-driven audio streaming for low CPU overhead

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ESP32 Emu Turbo – Handheld Retro Console

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