

UAC 3553B USB Audio DAC



The UAC 3553B is the DAC version of Micronas' UAC 3554B/UAC 3556B USB codec family.

Apart from the standard audio processing such as volume, bass, and treble, the UAC 3553B offers a programmable 5-band parametric equalizer for correcting the frequency response of the applied speaker.

The DAC functionality of the UAC 3553B is extended by additional interfaces, like I²S I/O, allowing all kinds of digital audio processing systems to be connected to the USB.

General-purpose inputs and outputs connect the UAC 3553B to peripheral hardware such as buttons, keyboards, LEDs etc. Via I²C, more complex peripherals like LCD displays can be controlled; and the UAC 3553B itself can be remote-controlled via I²C in non-USB environments.

All in all, the IC is designed as the ideal connecting matrix between USB, audio devices, home stereo, and all kinds of human interface devices. Many functions are adjustable to the customer's needs.

Moreover, complete plug-in download functionality of the on-chip microcontroller turns the UAC 3553B into a customer-specific IC. Micronas provides the standard DAC firmware.

Typical applications are USB speakers and home stereo equipment.

Features

- ◆ Single-chip USB 2.0 full-speed compliant stereo audio D/A converter
- ◆ Supports 16-bit mono/stereo and 24-bit stereo for playback
- ◆ Vendor identification and device configuration stored in external EEPROM
- ◆ Device can be operated in bus-powered or self-powered mode

- ◆ Remote wake-up
- ◆ 8 general-purpose I/O pins with HID support
- ◆ Sample rates from 6.4 to 48 kHz for USB playback
- ◆ Audio baseband control: bass, treble, loudness, volume, balance, and mute
- ◆ Dynamic bass management (Micronas Dynamic Bass=MDB)
- ◆ Digital speaker equalizer (5-band parametric equalizer)
- ◆ THD better than -85 dB and SNR of typical 96 dB for D/A converters
- ◆ Integrated high-power stereo headphone amplifier
- ◆ I²C interface (master/slave)
- ◆ Customized firmware extensions possible via plug-ins
- ◆ On-chip analog filters for out-of-band noise suppression
- ◆ 44-pin PMQFP package

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Applications

The high-performance audio DAC makes the UAC 3553B the ideal solution for all kinds of USB DAC applications. Integrated headphone amplifiers allow direct headphone connection.

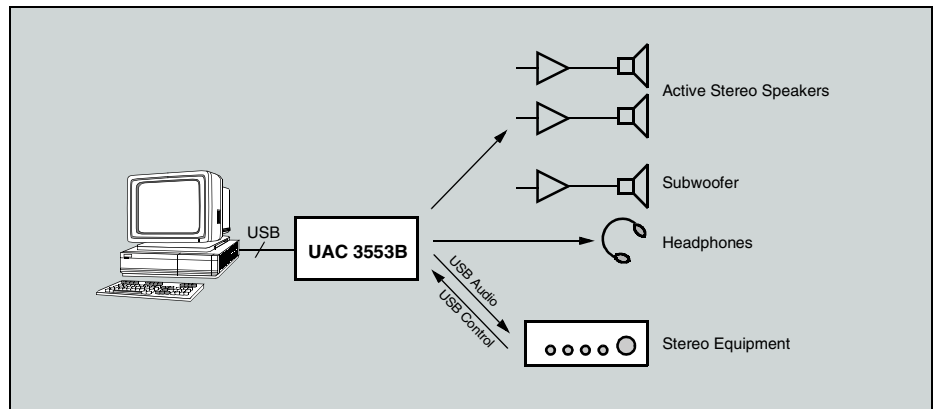


Fig. 1: Typical applications for the UAC 3553B

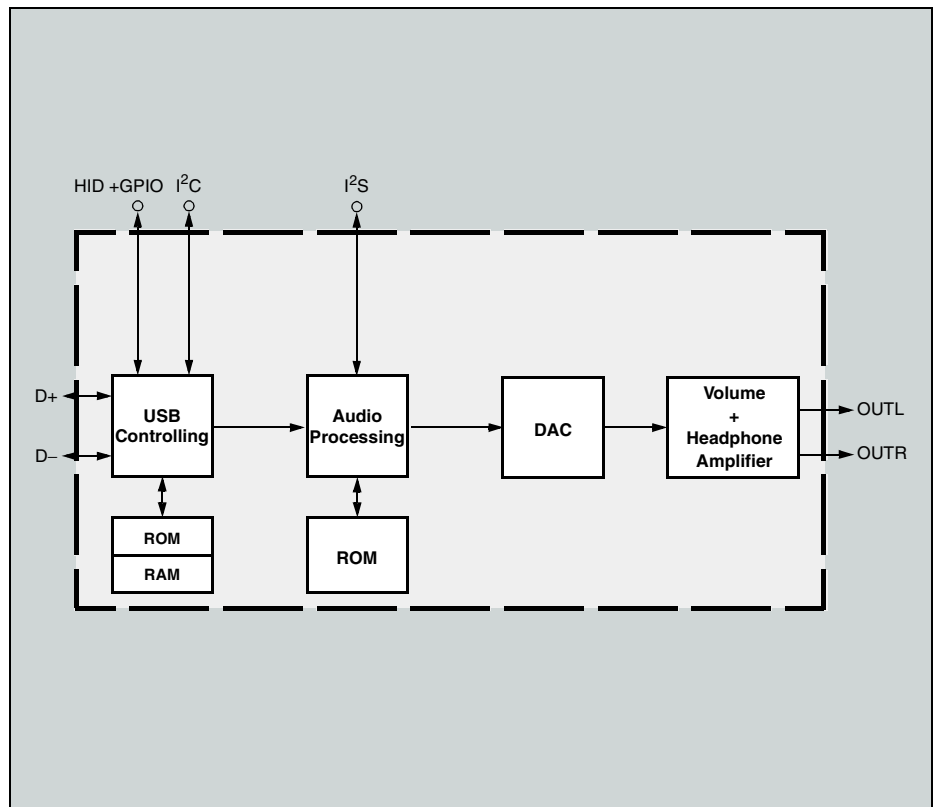


Fig. 2: Block diagram of the UAC 3553B

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