EV6550DHAT

Raspberry Pi HAT for CMX655D

The EV6550DHAT brings together the Raspberry Pi and the CMX655D Ultra-low Power Voice Codec in a convenient and inexpensive way, enabling easy demonstration of the CMX655D and providing improved low power audio capabilities to the Raspberry Pi. This is achieved using common hardware and open-source software, creating a platform that is easy to use and that simplifies product development.

Features

- Two top-ported digital MEMS mics
- Easy screw connection for external speaker
- Flexibility to use local or off-board power for the PA
- Accessible GPIO and test pads to allow further options (e.g. external MEMS)
- User-modifiable prototype space
- Option to add line out phono connector
- Simple GUI with open-sourced drivers
- On-board reset button or reset via the GUI

Applications

- Demonstrates CMX655D functionality
- Product development with the Raspberry Pi

Key Advantages

- Small, compact design
- Conforms to HAT definition
- Huge range of open source compatible software available
- Low cost solution

One of the major benefits of the hugely-popular Raspberry Pi is its low power, flexibility and accessible GPIOs which encourage developers to expand on its basic functionality. The multiway GPIO header on the latest versions of the board consists of 40 mixed-function pins, 26 of which support general purpose input/output connections.

The Raspberry Pi HAT (Hardware Attached on Top) is a hardware standard defining an add-on board that mounts directly onto the Raspberry Pi and attaches to the GPIO header. The EV6550DHAT conforms to this standard and integrates the functionality of the CMX655D Ultra-low Power Voice Codec into the Raspberry Pi environment.

The EV6550DHAT enables the CMX655D's feature set (two matched channels supporting a wide variety of digital MEMS microphones, signal processing and a 1W high-efficiency Class D speaker amplifier) to be easily demonstrated. The most immediate benefit is an improvement to the standard low power audio capabilities of the Raspberry Pi.

Control and demonstration of the CMX655D is via the EV6550DHAT GUI that is pre-loaded into EEPROM. The GUI allows for recording of wav files at 8 / 16 / 32 or 48ksps with adjustment of input audio gain from −12dB to +3dB. Control of playback volume from −90dB to 0dB, muting and "smoothing" is also provided. There is a facility to play back 4 pre-recorded samples at different rates to compare sample rate vs audio quality.
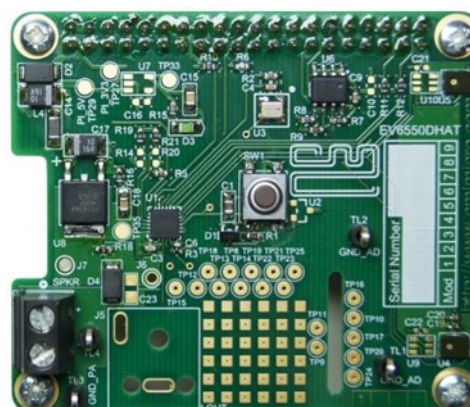
EV6550DHAT

65mm x 56.5mm

CMX655D Block Diagram
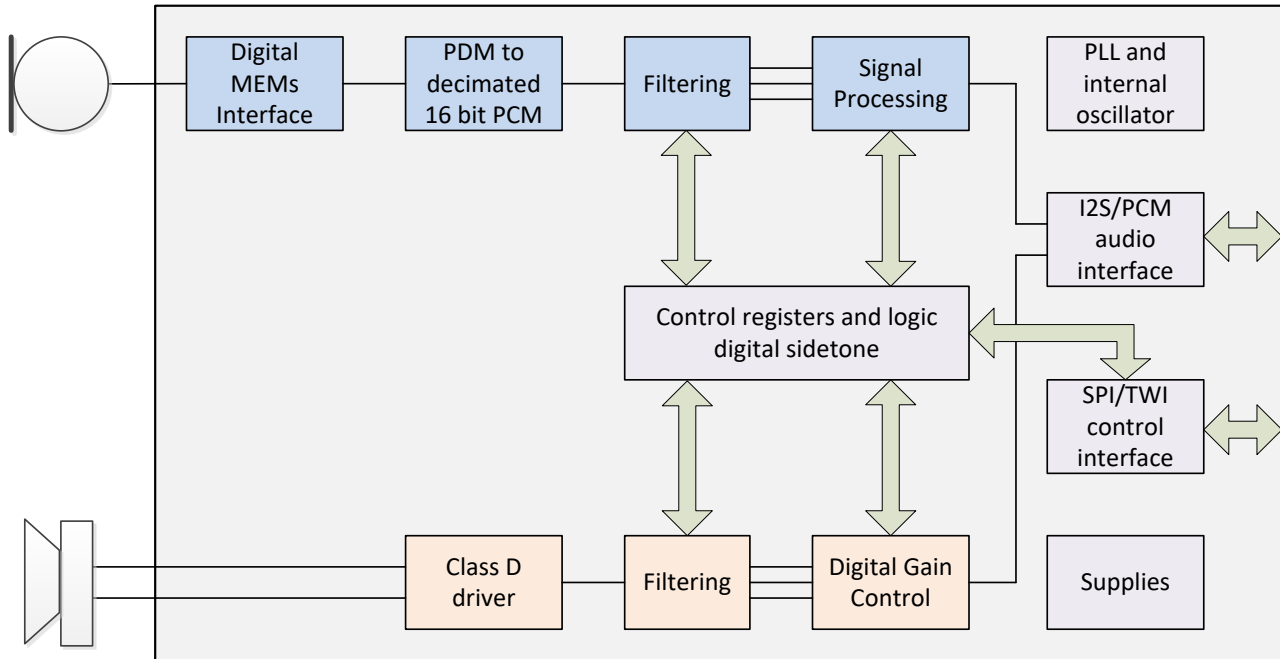
Ordering Information

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