

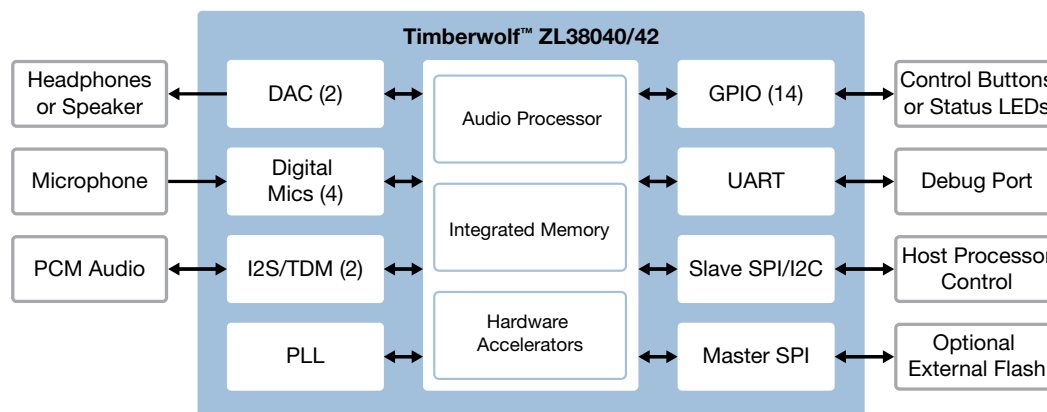
Microsemi Timberwolf™ Audio Processor

HD Voice Audio for IP Phone

New High-performance Audio Processors Enable the Streamlined Development of IP Phones and Enterprise Hands-free Communication

Designed for IP phones and conference phone applications, Microsemi's new audio processors ZL38040 and ZL38042 feature the company's innovative AcuEdge™ acoustic technology, which

is a set of highly-complex and integrated algorithms that allow the user to extract intelligible information from the audio environment from which they are communicating.



ZL38040/42 Block Diagram

Features and Benefits

- Super Wideband, Wideband and Narrowband AEC up to 3 microphone paths (ZL38042)
- Up to 15 microphones using multiple ZL38042 devices
- Wideband and Narrowband AEC (ZL38040)
- 3 to 5 meters voice pick up, full duplex operation
- Long echo tail cancellation
 - Up to 256ms for Narrowband and Wideband
 - Up to 170 ms for Super Wideband
- Advanced Noise Reduction to reduces background noise from the near-end speech signal
- Howling cancellation - prevents oscillation in echo canceller audio path

Features and Benefits (Cont.)

- 48kHz Stereo Music Playback with Voice
- Field upgradable
- Embedded class AB amp to drive 16ohm load (headset/handset)

Typical Applications

- Super Wideband conference phone with satellite microphones
- Full duplex speaker-phone for digital telephone
- Echo cancellation for video conferences

Getting Started

Use the following resources to explore:

ZLK38000 Eval Board

IP Phone Reference Design

- IP Phone Reference Design Information
- ZLE38640 IP Phone Reference Design User's Guide

Microsemi AcuEdge™ Technology

- ZL38040 Advanced Audio Processor
- ZL38042 Advanced Multi-Channel Super Wideband Audio Processor

MiTuner™ Automatic Tuning Kit

- MiTuner™ Information
- MiTuner™ GUI Software Guide
- ZLS38508 MiTuner™ GUI

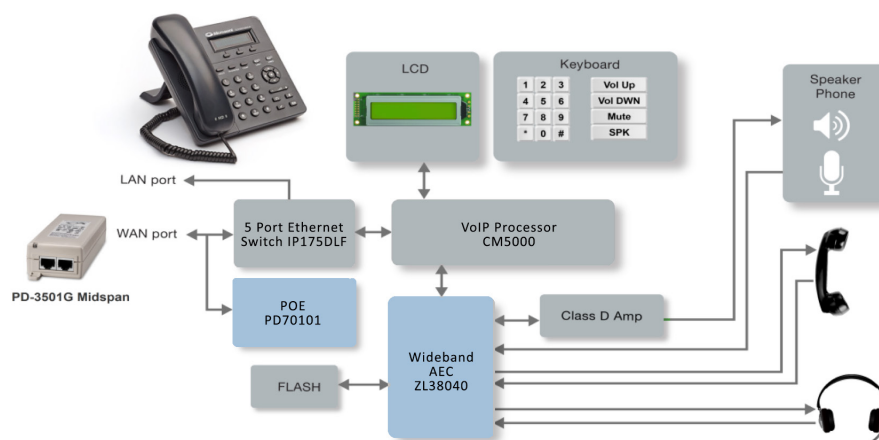
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IP Phone Reference Design (ZLE38640)

The IP Phone Reference Design board has the following feature set:

- Microsemi ZL38040 Advanced Audio Processor
- High-fidelity 16 kHz sampling
- Acoustic Echo Canceller (AEC)
- Speakerphone, Wideband Handset, and Headset interfaces
- Microsemi Power over Ethernet or 5V power operation



IP Phone Reference Design

Microsemi Auto Tuning Tool (ZLE38470)

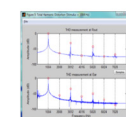
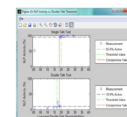
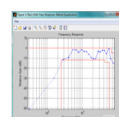
Microsemi's MiTuner™ Kit eases the system tuning complexity and speed up design cycle for quick development. MiTuner™ kit provides hardware, software and support for the automatic tuning of Timberwolf family of audio processors.

Calibration



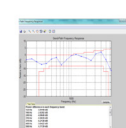
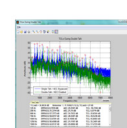
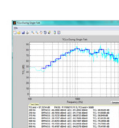
Tuning Results provides good starting point for subjective tuning

Tuning



Results based off TIA920/P.1100

Testing



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