Building a High Quality Audio Conferencing Device with Alango Speakerphone Audio Processing Module

Revision: 1.1 (August 2007)
Alango has developed a high quality speakerphone module integrating its proprietary speakerphone digital signal processing technologies.

- 3+2 microphones acoustic echo cancellation
- 3+2 microphones noise suppression
- 3+2 automatic gain controls
- Intelligent speech mixer
- Line echo cancellation
- Class-D, 5W power amplifier
- Immunity to GSM noises
- Option for Bluetooth connection
Speakerphone Audio Processing Module

Advanced modular design allows easy modifications and customization

Blackfin core DSP
- Acoustic Echo Cancellation
- Line Echo Cancellation
- Noise Suppression
- Automatic Gain Control
- Intelligent Speech Mixer

Codec

Power amp

Microphones:
- 3 mics in the low cost system
- 5 mics in the high performance system

Optional Bluetooth Interface for interfacing a mobile phone or computer

Codec

Line in

Line out

Control

12V

Microphones:
- 3 mics in the low cost system
- 5 mics in the high performance system

Optional Bluetooth module

FLASH

RAM

PM

Codec

Codec

Codec

Codec

Codec

Codec
SAPM Digital Signal Processing tasks

Signal processing is based on Alango Extended Voice Communication Package

Main DSP tasks

AEC – Acoustic Echo Cancellation  LEC – Line Echo Cancellation
AGC – Automatic Gain Control  AVC – Automatic Volume Control
NS – Noise suppression  ISM – Intelligent Speech Mixer
AFR – Acoustic Feedback Reductions

V 1.1
Availability

Evaluation/prototype module is available. Please contact Alango for more information.

Modifications, customization and software tuning is provided upon request.

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