

Acoustic Echo Canceller for Analog Devices Blackfin



Acoustic Echo Canceller

Our implementation of an Acoustic Echo Canceller (AEC) is designed to cancel acoustic feedback between a loudspeaker and a microphone in loudspeaking audio systems.

The tail length of the echo suppression can be adjusted to system requirements.

The algorithm is required in speaker phones, teleconferencing devices, voice-control systems or alike.

Performance:

- Software controlled Coefficient Adaptation
- Software controlled Leakage
- Software controlled Non-linear Processor
- Software controlled Howling Control
- Double Talk Detector with Adaptation Control
- Programmable Tail Length
- Field proven technology
- Low MIPS per channel

Our implementation of an AEC is available for Blackfin platforms and can be demonstrated on BF533-EZLite or simulated on PC platforms.

The algorithm was implemented to be independent of the hardware interface, i.e. the user specifies input and output channels and must handle buffers in his framework.

The algorithm is fully re-entrant and can easily be integrated in a "C"-environment.

Specifications:



- 13 MIPS per channel (32msec tail, NLP and howling control active)
- 2.1 kBytes program memory
- $72 + 32 \cdot T$ Bytes data memory (T = tail in msec)
- Max. 300msec tail @ 100 MIPS
- Single Talk Attenuation > 45db
- Double Talk Attenuation > 30db
- Runs on all Blackfin devices

Support

- Demo for BF533-EZLite available under NDA
- Fully documented library
- Customization/Integration support available
- Code portable to other platforms (DSP, non-DSP)

Ingenieurbüro Bayer DSP Solutions

Ingenieurbüro Bayer DSP Solutions was founded more than a decade ago by Andreas Bayer, a first hour DSP specialist.

Originally specializing in the telecommunication field, the company has grown its DSP expertise to provide comprehensive services around Digital Signal Processing applications by using DSP chips from Analog Devices, Texas Instruments, NEC, Freescale and other renowned DSP vendors.

Our goal is to provide comprehensive coverage of all Digital Signal Processing topics, including hardware design, FPGA design, DSP algorithms, software integration, tools and complete products.

Today we support many DSP families including Texas Instruments C54x, C55x, C3x, C6x, Analog Devices ADSP218x, SHARC and Blackfin, Motorola DSP56K as well as DSPs from other vendors.

Ingenieurbüro Bayer DSP Solutions is a registered and active Third Party of Analog Devices, Texas Instruments and other silicon vendors.



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