

# ITU-T G.167 Acoustic Echo Canceller for Analog Devices Blackfin DSP



## G.167 Acoustic Echo Canceller

Our implementation of a G.167 Acoustic Echo Canceller is designed to cancel acoustic feedback between a loudspeaker and a microphone in loud-speaking 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.

### Features:

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

### Specifications:

- 13 MIPS per channel (32 msec tail, NLP & howling control active)
- 2.1K words program memory
- max. 300 msec tail @ 100 MIPS
- $38 + 16 * T$  words data memory (T = tail in msec)
- Single Talk Attenuation > 45db
- Double Talk Attenuation > 30db
- Convergence ~ 20dB/sec
- Runs on all Blackfin devices
- ITU G.167 compliant

The algorithm was designed to be independent of the hardware interface, ie. 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.

### Support:

Available under NDA as a compiled library

Customization/Integration support available

Code portable to other platforms (DSP, non-DSP)

Demo for BF533/BF535-EzLite on request

**Please contact us for implementation on other DSP platforms**

### Bayer DSP Solutions

was founded in 1995 and offers tools, hardware, software, algorithm and integration services around digital signal processing applications.

A major focus is on telecommunications applications. Bayer DSP Solutions has developed a number of proprietary algorithms for use in private branch exchanges (PBX) for most popular DSP platforms.

Our product range includes Internet radio, secure telephony, medical and industrial control systems, MP3 players and more.

Supported DSP families include Analog Devices ADSP218x, SHARC and Blackfin, TI's C54x, C55x, C3x, C6x, Motorola DSP56K and DSP568xx, ARM as well as DSPs from other vendors.

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



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