ITU-T G.726 ADPCM Codec for Blackfin DSP

G.726 ADPCM Speech Codec

ITU-T G.726 specifies an adaptive differential pulse code modulation scheme (ADPCM) for bitrates of 16, 24, 32 and 40 kbps.

The algorithm is widely used in DECT telephony, speech archiving, channel duplication in ISDN systems, intercoms and announcement systems.

The algorithm processes A-Law, μ-Law and linear speech samples on a sample-by-sample basis thereby avoiding algorithm latency known from other speech coding technologies.

Our implementation of a G.726 is available for Blackfin platforms and can be demonstrated on BF533-EZLite or be 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.

Bayer DSP Solutions

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

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

Supported DSP families include TI's C54x, C55x, C3x, C6x, Analog Devices ADSP218x, SHARC and Blackfin, Motorola DSP56K and DSP568xx 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.

Specifications:

- < 9 MIPS per encoder channel average (partially ASM optimized)
- < 10 MIPS per decoder channel average (almost independent on bitrate, partially ASM optimized)
- < 6 KBytes program memory
- <2.5 KBytes common data memory
- 49 Bytes data memory channel
- ITU G.726 compliant for all bitrates

Support

Available under NDA as a compiled library

Customization/Integration support available

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

Demo for BF533-EZLite available

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