



Encore's G.729AB

Processor

Motorola DSP5630x Series.

Technology

G.729 Annex A with Annex B (G.729AB) is a low bit rate speech coder standard from International Telecommunication Union–Telecommunication standardization sector (ITU-T), for compressing toll quality speech (8000 samples/second). G.729AB is algorithmically simpler to G.729. The coders G.729 and G.729A are inter-operable, i.e., G.729 packet can be decoded by G.729A decoder and vice versa. The typical applications of this speech coder are in telephony over packet networks, like Voice-over-Internet-Protocol (VoIP). This is a very robust speech coder, with very good speech quality comparable to 32 Kbps ADPCM coder.

This coder works at bit rate of 8000 bits/second. Like G.729 Codec, G.729AB is also based on the principle of Complementary Symmetry - Algebraic Code Excited Linear Prediction (CS-ACELP). The coder works on a frame of 80 speech samples (10 msec). Besides, there is a look ahead of 40 samples (5 msec). So the total algorithmic delay for the coder is 15 msec.

Features

- Fully compatible/bit-exact with the ITU-T G.729A Annex A standard with Annex B, version 1.3, with discontinuous transmission (DTX) support, using Voice Activity Detection (VAD) and Comfort Noise Generation (CNG).
- DTX (VAD/CNG) enabling or disabling can be done on a frame basis.
- Full duplex multi-channel capability.
- Flexible interface with 'C' callability, with a single archive file for all functions.
- Built-in scratch memory management to avoid run-time overloading of system stack memory.
- Relocatable program and data spaces. Static (state) and scratch data spaces are dynamically relocatable. Program and table data spaces can be fragmented.
- The code is interruptible and full re-entrant. It can be used in systems with multi threaded software architecture.

Performance

Resource Requirements

(Internal Code Version 2.0)

Memory (KWords)

Program Memory	X Data Memory			Y Data Memory			L Data Memory		
	Tables	Variables		Tables	Variables		Variables		
		Static	Scratch		Static	Scratch	Static	Scratch	
Code	12.89	0.66	0.57	1.06	2.32	0.69	0.97	0	0.054

MIPS

MIPS measurements on **DSP56307 EVM** target platform, with following memory configuration.

- Program Internal
- Data – Static and Data – Scratch Internal, Data-Tables Internal

	Maximum
VAD/CNG Enabled	
Encoder	11.43
Decoder	3.55
Full Duplex	14.98
VAD/CNG Disabled	
Encoder	11.42
Decoder	2.39
Full Duplex	13.81

MIPS measurements on **DSP56301 ADM** target platform, with following memory configuration.

- Program External, Cache Enabled
- Data – Static and Data – Scratch Internal, Data-Tables External
- 1 Wait State for SRAM and 1/4 Wait States for DRAM

	Maximum
VAD/CNG Enabled	
Encoder	13.12
Decoder	3.90
Full Duplex	17.02
VAD/CNG Disabled	
Encoder	13.11
Decoder	2.77
Full Duplex	15.88

Tools Version

- Motorola GNU C Compiler 1.37.1
- Motorola CLAS Assembler DSP56300 6.3.0
- Motorola CLAS Linker DSP56300 6.3.5
- Motorola DSP5630x ADS Debugger 6.3.4

Availability

Now.

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