



Encore's G.723.1



Processor

TMS320C62x Series.

Technology

This coder has two bit rates, 5.3 and 6.3 Kbps. Both bit rates share the same short-term analysis techniques for processing the speech. For long-term analysis of speech, the algorithms used are different. For 5.3 Kbps coder, Algebraic Code Excited Linear Prediction (ACELP) principles are used where as in 6.3 Kbps coder, Multi Pulse-Maximum Likelihood Quantization (MP-MLQ) techniques are used.

The coder works on a frame of 240 speech samples (30 msec). Besides, there is a look ahead of 60 samples (7.5 msec). So the total algorithmic delay for the coder is 37.5 msec.

Features

- Fully compatible/bit-exact with the ITU-T G.723.1 standard with Annex A, version 5.1, with discontinuous transmission (DTX) support, using Voice Activity Detection (VAD) and Comfort Noise Generation (CNG).
- Texas Instruments eXpressDSP™ compatible software architecture.
- Works in little endian mode. The system should be configured for little endian mode.
- Front-end high pass filter in encoder and post filter in decoder can be enabled or disabled at the time of channel initialization.
- Coder bit rate selection (6.3 or 5.3 Kbps) and 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 re-entrant. It can be used in systems with multi threaded software architecture.

Performance

Resource Requirements

(Internal Code Version 4.0, CCS Version 2.21)

Memory (KBytes)

Program Memory	Data Memory		
	Tables	Static/Channel	Scratch
71	18.54	1.74	3.27

MCPS

MCPS measurements on **TMS320C6202** target platform, with following memory configuration.

Program Memory	Internal
Data Memory	Internal

	Maximum
Rate: 6.3 Kbps	
Encoder (High pass filter enabled/VAD-CNG enabled)	10.25
Decoder (Post filter enabled)	1.17
Full duplex (High pass filter enabled/VAD-CNG enabled/Post filter enabled)	11.42
Rate: 5.3 Kbps	
Encoder (High pass filter enabled/VAD-CNG enabled)	10.61
Decoder (Post filter enabled)	1.17
Full duplex (High pass filter enabled/VAD-CNG enabled/Post filter enabled)	11.78

MCPS measurements on **TMS320C6201 EVM** target platform, with following memory configuration.

Program Memory	External (Cache Enabled)
Data Memory	Internal

	Maximum
Rate: 6.3 Kbps	
Encoder (High pass filter enabled/VAD-CNG enabled)	10.71
Decoder (Post filter enabled)	1.41
Full duplex (High pass filter enabled/VAD-CNG enabled/Post filter enabled)	12.12
Rate: 5.3 Kbps	
Encoder (High pass filter enabled/VAD-CNG enabled)	11.39
Decoder (Post filter enabled)	1.41
Full duplex (High pass filter enabled/VAD-CNG enabled/Post filter enabled)	12.80

Availability

Now.

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