



Encore's G.723.1

Processor

TMS320C55x 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.
- 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

Memory (KBytes)

Program Memory	Data Memory		
	Tables	Static/Channel	Scratch
19.727	18.539	1.746	2.484

MIPS

MIPS measurements are taken on **TMX320VC5510** based target platform with following memory configurations.

Program Memory		SARAM
Data Memory	Tables	DARAM
	Static	DARAM
	Scratch	DARAM

	Maximum	Average
Rate: 6.3 Kbps		
Encoder (High pass filter enabled/VAD-CNG enabled)	10.98	9.67
Decoder (Post filter enabled)	1.23	1.11
Full duplex (High pass filter enabled/VAD-CNG enabled/Post filter enabled)	12.21	10.78
Rate: 5.3 Kbps		
Encoder (High pass filter enabled/VAD-CNG enabled)	11.22	10.00
Decoder (Post filter enabled)	1.20	1.02
Full duplex (High pass filter enabled/VAD-CNG enabled/Post filter enabled)	12.42	11.02

Availability

Now.

For further information please visit our web site, <http://www.ncoretech.com> or email to: ip@ncoretech.com or contact:

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