



## Encore's VAD/CNG

### Processor

TMS320C64xx Series.

### Technology

Voice Activity Detector and Comfort Noise Generator (VAD/CNG) is used in discontinuous transmission (DTX) enabled systems, where average bit rate of the codec is to be reduced. Average bit rate reduction is achieved by sending less or no bits during silence periods in long speech signals. VAD algorithm is used just before the speech codec. If voice activity is detected, signal would be coded with the speech codec. If there is no voice activity, the signal frame would be classified as either Silence Insertion Description (SID) frame or no transmission (NOTX) frame. Parameters of the SID frame are computed and packed in compliance with the standard ITU-T G.711 Appendix II. In the decoder, if a silence frame is available, the system would activate CNG.

*Encore's* VAD/CNG contains a voice activity detection algorithm, generation of SID packets during the silence period and generation of comfort noise. The format of the SID packet is in compliance with ITU-T G.711 Appendix II.

This VAD/CNG mechanism can be used with any speech codec, without built in VAD/CNG algorithm, like ITU-T G.711, G.726, G.727, G.728 etc.

### Features

- SID frame packet is compliant to G.711 Appendix II.
- Texas Instruments eXpressDSP™ compatible software architecture.
- Frame based design. Frame is 80 samples (10 msec).
- Flexible interface with 'C' callability, with a single archive file for all functions.
- Relocatable program and data spaces. Static (state) and scratch data memory are dynamically relocatable. Program and table data spaces can be fragmented.
- The code is interruptible and full re-entrant. This code can be used in systems with multi threaded software architecture.

## Performance

### Resource Requirements

(Internal Code Version 1.0, CCS Version 2.12.01)

### Memory (KBytes)

Program Memory	Data Memory		
	Tables	Static/Channel	Scratch
19.136	1.728	0.964	0.640

### MCPS

MCPS measurements are taken on **TMS320C6416** based **TEB hardware** platform, with all program, data and stack in **L2 memory**.

	Maximum
VAD	0.97
SID Generation	0.37
CNG	0.89

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