



## EVRC-B Vocoder

Enhanced Variable Rate Codec B

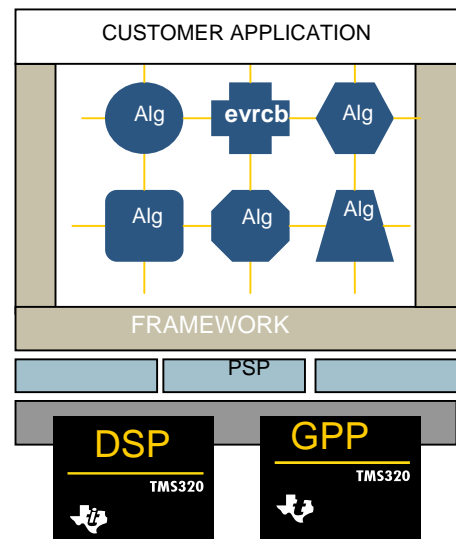
### PRODUCT DESCRIPTION

**Enhanced Variable Rate Codec B (EVRC-B)** is a speech codec used by CDMA (Code Division Multiple Access) networks. EVRC-B is an extension to EVRC and compresses each 20 millisecond FRAMES of 8000 Hz, 16-bit sampled speech input into output frames of one of the four different sizes: Rate 1 - 171 bits, Rate 1/2 - 80 bits, Rate 1/4 - 40 bits, Rate 1/8 - 16 bits. One significant enhancement in EVRC-B is the use of 1/4-rate frames that were not used in EVRC.

The EVRC-B operates at the bit rates 8.3, 7.57, 6.64, 6.18, 5.82, 5.45, 5.08, 4.0kbps (Source encoding rates). The EVRC-B makes use of the intermediate coding rates through increased awareness of the nature of the individual speech samples. This provides lower average data rates compared to EVRC, for a given voice quality.

### FEATURES

- Functions are C-callable.
- Multi-channel capable
- Can be integrated with echo cancellers, and tone detection/regeneration.
- Encodes frames of 20 ms sampled at 8KHz (160 samples) using above algorithms.
- The implementation is **xDAIS/xDM1.0** compliant.
- Mixed C and C55x assembly code implementation
- Bit-exact with all EVRCB 3GPP2 test sequences
- The implementation support run time table relocation
- Fully interruptible Code
- Efficient scratch memory management with reduced stack requirements



### AVAILABILITY

ADT EVRC-B is available on the TMS3205000™ DSP Family C55x™ DSP Generation



### SPECIFICATIONS

#### C55x

Configuration	ID
Encoder with 20ms framesize	EVRCB_001
Decoder with 20ms frame size	EVRCB_002
Full Duplex	EVRCB_003

**Cycles Information** – Spectrum Digital C5510 DSK

Configuration ID	Performance Statistics (IN MEGACYCLES /SEC) <sup>1</sup>	
	Average	Peak
EVRCB_001	NA	<b>23.10</b>
EVRCB_002	NA	<b>8.10</b>
EVRCB_003	NA	<b>31.20</b>

<sup>1</sup> Measured with all program, constant tables, instance and CDP in SARAM, scratch in DARAM. All performance statistics with DTMF and TTY flags turned off.

**Memory Statistics -**

Configuration	Memory Statistics <sup>2</sup>					Total
	Program MEMORY	Data Memory			Stack	
		Internal	External	SP		
EVRCB_001	83.94	45.81	0	0.51	0.51	130.77
EVRCB_002	53.09	44.46	0	0.4	0.4	98.35
EVRCB_003	118.7	48.19	0	0.51	0.51	167.91

<sup>2</sup> All memory requirements are expressed in kilobytes (1 kilobyte = 1024 8-bit bytes).

**FUNCTIONS***API function call summary*

InitializeEVRC_BencoderChannel (. . .)	Initializes the EVRC-B encoder
InitializeEVRC_BdecoderChannel (. . .)	Initializes the EVRC-B decoder
EncodeEVRC_B (. . .)	Executes the EVRC-B encoder
DecodeEVRC_B (. . .)	Executes the EVRC-B decoder

Adaptive Digital is a member of the Texas Instruments Developer Network, and ARM Connected Community.

## CONTACT INFORMATION

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