

SPIRIT G.723.1 Codec

SPIRIT G.723.1 dual rate vocoder conforms to ITU-T G.723.1 recommendation. It can be used in a wide range of applications such as multimedia devices, visual telephony, wireless telephony, and videoconferencing products.

Features

- Fully bit exact with ITU-T G.723.1 and G.723.1A
- 5.3 and 6.3 Kbps encoded bit stream rates
- Discontinuous transmission support (DTX) using Voice Activity Detection (VAD) and Comfort Noise Generation (CNG)
- Input/output samples format: Linear PCM, 8 kHz, 16 bits. Block based processing supported
- Very simple application interface
- eXpressDSP compliant. Code is reentrant, supports multithreading and dynamic memory allocation

Specifications

The product is supplied with test environment and integration example code.

Detailed Product Annotation and User Guide documents describing testing procedures, interface and integration of this product, as well demo are available for evaluation upon request.

Resource Requirements

PLATFORM	TI C54xx					
	Encoder		Decoder		Encoder+ Decoder	
	6.3 kbps	5.3 kbps	6.3 kbps	5.3 kbps	6.3 kbps	5.3 kbps
Peak MIPS	19.2	19.9	2.3	2.3	21.5	22.2
Program Memory, KWords	-	-	-	-	11.5	11.5
Constant Memory, KWords	-	-	-	-	9.5	9.5
Dynamic Memory, KWords	-	-	-	-	0.95	0.95
Scratch Memory, KWords	-	-	-	-	1.28	1.28

PLATFORM	TI C55xx					
	Encoder		Decoder		Encoder+ Decoder	
	6.3 kbps	5.3 kbps	6.3 kbps	5.3 kbps	6.3 kbps	5.3 kbps
Peak MIPS	15.4	15.47	1.66	1.72	17.06	17.19
Program Memory, KWords	9.0	9.0	9.0	9.0	9.0	9.0
Constant Memory, KWords	9.5	9.5	9.5	9.5	9.5	9.5
Dynamic Memory, KWords	0.95	0.95	0.95	0.95	0.95	0.95
Scratch Memory, KWords	1.28	1.28	1.28	1.28	1.28	1.28

Benefits

- Highly optimized code ideal for resource constrained applications
- Easy integration and fast time-to-market

Applications

- VoIP gateways
- Communication devices
- IP-PBX
- VoIP clients

Availability

- TI OMAP3
- Tensilica HiFi2
- MS320C54xx
- TMS320C55xx
- TMS320C62xx
- Object code for ARM9/9E
- Object code for MIPS32;
- Fully functional evaluation object code (available upon request)
- DLL for MS Windows

PLATFORM	TI C64xx / TI C64+				
	Encoder		Decoder	Encoder + Decoder	
	6.3 kbps	5.3 kbps	6.3 or 5.3 kbps	6.3 kbps	5.3 kbps
Peak MIPS	6.8 / 6.3	6.5 / 5.9	0.8 / 0.7	7.6 / 7.0	7.3 / 6.6
Program Memory, KB	74	74	74	74	74
Constant Memory, KB	19	19	19	19	19
Dynamic Memory, KB	2.0	2.0	0.4	2.4	2.4
Scratch Memory, KB	0	0	0	0	0
Stack, KB	3.7	3.7	2.6	3.7	3.7

PLATFORM	ARM9	ARM9E	Tensilica HiFi2
	Encoder+Decoder (5.3 kbps)		
Peak MIPS, MHz	45.8	23.5	18
Code Size, KB	34.6	33.6	32
Constant Memory, KB	18.6	18.6	19
Dynamic Memory, KB	2.5	2.4	6.8
Stack, KB	2.8	2.8	-

PLATFORM	MIPS4000		
	Encoder	Decoder	Encoder+Decoder
Peak MIPS	39.4	4.9	44.2
Program Memory, KB	-	-	~47.9
Constant Memory, KB	-	-	~23.9
Dynamic Memory, KB	-	-	~5.8
Scratch Memory, KB	-	-	~2.1

PLATFORM	PC, SSE optimization		PC, MMX optimization	
	Encoder/Decoder	Encoder + Decoder	Encoder/Decoder	Encoder + Decoder
Peak MIPS	26/6	32	34/3	37
Program Memory, KB	-	90	-	47
Constant Memory, KB	-	51	-	20
Dynamic Memory, KB	2.9/0.9	3.8	1.5/0.5	2
Scratch Memory, KB	15/12	27	8/6	14

Note: SSE-optimized version requires Intel Pentium III or better to run.

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