

SPiRiT GSM-EFR Codec

SPiRiT GSM Enhanced Full Rate (GSM-EFR) has improved speech quality in comparison with GSM Full Rate speech codec. Based on code excited linear predictive (ACELP) model this codec operates at 12.2 bit rate. SPiRiT GSM EFR is fully compliant to the ETSI GSM 06.90 specification.

Features

- Input bitrate 12.2 kbit/sec
- Encoder input in the form of 20 ms frames (160 samples per frame, sampled at 8 kHz)
- Decoder output in the form of 20 ms frames (160 samples per frame)
- Substitution and muting of lost frames
- Discontinuous Transmission (DTX) support
- Voice Activity Detection (VAD) support
- Comfort Noise Generation (CNG) support
- Simple application interface
- Code is reentrant, supports multithreading and dynamic memory allocation

Benefits

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

Applications

- Voice over Wi-Fi
- VoIP clients
- Mobile phones
- Media gateways
- Audio/video conferencing

Availability

- eXpressDSP compliant object code for TMS320C64xx
- Fully functional evaluation object code (available upon request)
- DLL for MS Windows
- TI OMAP3

Resource Requirements

SPiRiT provides porting services to multiple DSP (Motorola, Analog Devices, etc), RISC and general-purpose processors.

PLATFORM	TI C64xx		
	Encoder	Encoder	Encoder
Peak MIPS*	7.86	1.61	9.47
Program Memory, KB	120		
Constant Memory, KB	31		
Dynamic Memory, KB	4.4		
Scratch Memory, KB	6.1		

*Including VAD

PLATFORM	TI C64xx		
	Encoder	Encoder	Encoder
Peak MIPS	24	4	28
Program Memory, KB	~ 70		
Constant Memory, KB	~ 32		
Dynamic Memory, KB	~ 5.7		
Scratch Memory, KB	~ 7		

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