

## SPiRiT GSM AMR-WB Codec

SPiRiT Adaptive Multi-Rate Wideband (AMR-WB) GSM speech transcoder is a wideband codec with 6.6 – 23.85 kbps bit-rate range. Based on code excited linear predictive (ACELP) model, the codec is fully compliant to the ITU-T G.722.2 specification.

This speech coder is mainly used for toll quality speech compression in the 3rd generation mobile telephony applications.

### Features

- Nine input bit rates available (6.60, 8.85, 12.65, 14.25, 15.85, 18.25, 19.85, 23.05, 23.85 kbit/sec)
- Encoder input in the form of 20 ms frames (320 samples per frame, sampled at 16 kHz)
- Decoder output in the form of 20 ms frames (320 samples per frame)
- Substitution and muting of lost frames
- Discontinuous Transmission (DTX) support
- Voice Activity Detection (VAD) support
- Comfort Noise Generation (CNG) support
- Code is reentrant, supports multithreading and dynamic memory allocation
- Can be easily ported to any DSP or RISC platform

### Benefits

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

### Applications

- VoIP gateways
- IP-PBX
- VoIP clients
- Mobile phones
- Wireless communication

### Availability

- Object code
- Fully functional evaluation object code (available upon request)
- DLL for MS Windows
- ARM 9, ARM 9E
- TI OMAP3
- Tensilica HiFi2
- Cortex-A8 (NEON)

## Resource Requirements

PLATFORM	ARM 9E			Tensilica HiFi2
	Encoder	Decoder	Encoder+ Decoder	Encoder+ Decoder
Peak MIPS*	72	14	87	43
Program Memory, KB			61.5	56
Constant Memory, KB			25.4	27.5
Dynamic Memory, KB	3.6	2.4	6	18.6
Scratch Memory, KB	9.3	3.2	12.4	

PLATFORM	Cortex-A8 (NEON)		
	Encoder	Decoder	Encoder+ Decoder
Peak MIPS*	16.3	3.6	20.0
Program Memory, KB			60.5
Constant Memory, KB			25.8
Dynamic Memory, KB	2.3	1.6	4.0
Scratch Memory, KB	9.3	3.2	12.5

\*MIPS are measured using simulator with 0-WS memory

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