

# ITU-T G.726 ADPCM Audio Codec for Texas Instruments C5000



## G.726 Speech Codec

ITU-T G.726 specifies an adaptive differential pulse code modulation scheme (ADPCM) for bitrates of 16, 24, 32 and 40 kbps.

The algorithm is widely used in DECT telephony, speech archiving, channel duplication in ISDN systems, intercoms and announcement systems.

The algorithm processes A-Law,  $\mu$ -Law and linear speech samples on a sample-by-sample basis thereby avoiding algorithm latency known from other speech coding technologies.

The 32kbps version, formally known as G.721, is available for Blackfin platforms in order to obtain a smaller footprint.

Our implementation of a G.726 is available for C5x platforms and is compliant with TMS320 DSP Algorithm Standard (XDAIS).

The algorithm was implemented to be independent of the hardware interface, i.e. the user specifies input and output channels and must handle buffers in his framework.

The algorithm is fully re-entrant and can easily be integrated in a "C"-environment.

## Specifications:

- 19 MIPS per encoder channel average (almost independent on bitrate, partially ASM optimized)
- 20 MIPS per decoder channel average (almost independent on bitrate, partially ASM optimized)
- < 6 kBytes program memory
- ~ 1.6 kBytes data memory
- 64 Bytes data memory/encoder channel
- 64 Bytes data memory/decoder channel
- ITU G.726 compliant for all bitrates
- XDAIS compliant

## Support

- Demo for C54/C55 DSK available under NDA
- Fully documented separate libraries for encoder and decoder
- XDAIS validated code
- Customization/Integration support available
- Code portable to other platforms (DSP, non-DSP)

## Ingenieurbüro Bayer DSP Solutions

Ingenieurbüro Bayer DSP Solutions was founded more than a decade ago by Andreas Bayer, a first hour DSP specialist.

Originally specializing in the telecommunication field, the company has grown its DSP expertise to provide comprehensive services around Digital Signal Processing applications by using DSP chips from Analog Devices, Texas Instruments, NEC, Freescale and other renowned DSP vendors.

Our goal is to provide comprehensive coverage of all Digital Signal Processing topics, including hardware design, FPGA design, DSP algorithms, software integration, tools and complete products.

Today we support many DSP families including Texas Instruments C54x, C55x, C3x, C6x, Analog Devices ADSP218x, SHARC and Blackfin, Motorola DSP56K as well as DSPs from other vendors.

Ingenieurbüro Bayer DSP Solutions is a registered and active Third Party of Analog Devices, Texas Instruments and other silicon vendors.



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