Overview

G.722 – is a wideband (50…7000 Hz) voice codec conforming the ITU-T G.722 recommendation. The coding system uses sub-band adaptive differential pulse code modulation (SB-ADPCM) within a bit rate of 64 kbit/s. In the SB-ADPCM technique used, the frequency band is split into two sub-bands (higher and lower) and the signals in each sub-band are encoded using ADPCM. The system has three basic modes of operation corresponding to the bit rates used for 7 kHz audio coding: 64, 56 and 48 kbit/s. The latter two modes allow an auxiliary data channel of 8 and 16 kbit/s respectively to be provided within the 64 kbit/s by making use of bits from the lower sub-band. It can be used in a wide range of applications such as multimedia devices, visual telephony, wireless telephony, and videoconferencing products. The module also conforms to the Appendix IV of Recommendation G.722, which appends the original G.722 decoder with a low-complexity packet loss concealment (PLC) algorithm. The proposed algorithm requires the bitstream and audio stream to be cut into 10 ms or 20 ms frames.

Features

- coding rates 48, 56 or 64 kbps
- frame rate 10 msec
- sampling rate 16 kHz
- low CPU usage
- ITU-T G.722 compliant
- very low stack usage
- Linux/Windows Kernel Mode compatible

Applications

- VoIP
- Telephony
- Conferencing

Specifications

PLATFORM	MIPS consumption	Data Memory
Texas Instruments C64xx/C674x		
Encoder	1.4	
Decoder	1.0	
Encoder + Decoder	2.4	
ARM9E		
Encoder 64k	9.6	0.9
Decoder 64k	7.6	2.6
Encoder + Decoder 64k	17.2	3.5
ARM11		
Encoder 64k	6.4	0.9
Decoder 64k	5.1	2.6
Encoder + Decoder 64k	11.5	3.5

Bit exactness proved by ITE

G.722 is delivered with fully automated IntegrIT Testing Environment (ITE) for target platform based on reference ITU-T vectors set along with extended IntegrIT proprietary vectors and methods.

Availability

This software component is available in binary/source code written on fully portable C-language for:

- Texas Instruments C64, C64+, C67, DaVinci
- Marvell Sheeva, Marvell Kirkwood, Marvell ARMADA
- ARM9E, ARM11
- x86, Windows/Linux Object Library

Porting on other platforms is upon request

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