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SERIES G: TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

Digital terminal equipments – Coding of analogue signals by methods other than PCM

Low-complexity coding at 24 and 32 kbit/s for hands-free operation in systems with low frame loss

ITU-T Recommendation G.722.1

ITU-T G-SERIES RECOMMENDATIONS

TRANSMISSION SYSTEMS AND MEDIA, DIGITAL SYSTEMS AND NETWORKS

INTERNATIONAL TELEPHONE CONNECTIONS AND CIRCUITS	G.100–G.199
GENERAL CHARACTERISTICS COMMON TO ALL ANALOGUE CARRIER-TRANSMISSION SYSTEMS	G.200–G.299
INDIVIDUAL CHARACTERISTICS OF INTERNATIONAL CARRIER TELEPHONE SYSTEMS ON METALLIC LINES	G.300–G.399
GENERAL CHARACTERISTICS OF INTERNATIONAL CARRIER TELEPHONE SYSTEMS ON RADIO-RELAY OR SATELLITE LINKS AND INTERCONNECTION WITH METALLIC LINES	G.400–G.449
COORDINATION OF RADIOTELEPHONY AND LINE TELEPHONY	G.450–G.499
TRANSMISSION MEDIA CHARACTERISTICS	G.600–G.699
DIGITAL TERMINAL EQUIPMENTS	G.700–G.799
General	G.700–G.709
Coding of analogue signals by pulse code modulation	G.710–G.719
Coding of analogue signals by methods other than PCM	**G.720–G.729**
Principal characteristics of primary multiplex equipment	G.730–G.739
Principal characteristics of second order multiplex equipment	G.740–G.749
Principal characteristics of higher order multiplex equipment	G.750–G.759
Principal characteristics of transcoder and digital multiplication equipment	G.760–G.769
Operations, administration and maintenance features of transmission equipment	G.770–G.779
Principal characteristics of multiplexing equipment for the synchronous digital hierarchy	G.780–G.789
Other terminal equipment	G.790–G.799
DIGITAL NETWORKS	G.800–G.899
DIGITAL SECTIONS AND DIGITAL LINE SYSTEM	G.900–G.999
QUALITY OF SERVICE AND PERFORMANCE – GENERIC AND USER-RELATED ASPECTS	G.1000–G.1999
TRANSMISSION MEDIA CHARACTERISTICS	G.6000–G.6999
DATA OVER TRANSPORT – GENERIC ASPECTS	G.7000–G.7999
ETHERNET OVER TRANSPORT ASPECTS	G.8000–G.8999
ACCESS NETWORKS	G.9000–G.9999

For further details, please refer to the list of ITU-T Recommendations.

ITU-T Recommendation G.722.1

Low complexity coding at 24 and 32 kbit/s for hands-free operation in systems with low frame loss

Summary

This Recommendation describes a low complexity encoder and decoder that may be used for 7-kHz bandwidth audio signals working at 24 kbit/s or 32 kbit/s. Further, this algorithm is recommended for use in hands-free applications such as conferencing where there is a low probability of frame loss. It may be used with speech or music inputs. The bit rate may be changed at any 20-ms frame boundary. New Annex C contains the description of a low-complexity extension mode to G.722.1, which doubles the algorithm to permit 14-kHz audio bandwidth using a 32-kHz audio sample rate, at 24, 32, and 48 kbit/s. This mode is suitable for use in video conferencing, teleconferencing, and Internet streaming applications, and uses the same 20-ms frame length, 40-ms algorithmic delay, and same algorithmic steps as the 7-kHz mode. Less than 5.5 WMOPS are required for encoding and decoding in the baseline 7-kHz mode, and less than 11 WMOPS are required for encoding and decoding in the 14-kHz mode of Annex C.

This Recommendation includes a software package which contains the encoder and decoder source code and a set of test vectors for developers. These vectors are a tool providing an indication of success in implementing this code. The fixed-point code implements both the 7-kHz mode (main body) and the 14-kHz mode (Annex C). The floating point implements only the 7-kHz mode.

Source

ITU-T Recommendation G.722.1 was approved on 14 May 2005 by ITU-T Study Group 16 (2005-2008) under the ITU-T Recommendation A.8 procedure.