INTERNATIONAL TELECOMMUNICATION UNION

ITU-T G.722 – Annex A

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

(03/93)

GENERAL ASPECTS OF DIGITAL TRANSMISSION SYSTEM

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7 kHz AUDIO-CODING WITHIN 64 kbit/s

Annex A: Testing signal-to-total distortion ratio for 7 kHz audio-codecs at 64 kbit/s Recommendation G.722 connected back-to-back

ITU-T Recommendation G.722 – Annex A

(Previously "CCITT Recommendation")

FOREWORD

The ITU Telecommunication Standardization Sector (ITU-T) is a permanent organ of the International Telecommunication Union. The ITU-T is responsible for studying technical, operating and tariff questions and issuing Recommendations on them with a view to standardizing telecommunications on a worldwide basis.

The World Telecommunication Standardization Conference (WTSC), which meets every four years, established the topics for study by the ITU-T Study Groups which, in their turn, produce Recommendations on these topics.

ITU-T Recommendation G.722 was revised by the ITU-T Study Group XV (1988-1993) and was approved by the WTSC (Helsinki, March 1-12, 1993).

NOTES

1 As a consequence of a reform process within the International Telecommunication Union (ITU), the CCITT ceased to exist as of 28 February 1993. In its place, the ITU Telecommunication Standardization Sector (ITU-T) was created as of 1 March 1993. Similarly, in this reform process, the CCIR and the IFRB have been replaced by the Radiocommunication Sector.

In order not to delay publication of this Recommendation, no change has been made in the text to references containing the acronyms "CCITT, CCIR or IFRB" or their associated entities such as Plenary Assembly, Secretariat, etc. Future editions of this Recommendation will contain the proper terminology related to the new ITU structure.

2 In this Recommendation, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

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7 kHz AUDIO-CODING WITHIN 64 kbit/s

(Melbourne, 1988; revised Helsinki, 1993)

Annex A[1)]

(to Recommendation G.722)

Testing signal-to-total distortion ratio for 7 kHz audio-codecs at 64 kbit/s Recommendation G.722 connected back-to-back

The proposals described below are specifically not intended to supplant any requirements of this Recommendation, but rather to suggest the needs of acceptance testing for production quantities of equipments using G.722 codes. They concern the measure of the signal-to-total distortion ratio in a loop with SB-ADPCM.

Thus, these specifications do not aim at taking the place of the test digital sequences of the G.722 algorithm, but rather to ensure, once these sequences have been checked on a first model, that the quality of the equipments using these codecs is maintained.

The codecs should therefore first of all conform to this Recommendation as a whole; in particular, they should have successfully undergone the digital test sequences of the algorithm and conform to the linear signal-to-total distortion ratio masks through the audio parts (see Figures 14 and 15).

The measuring principle is illustrated in Figure A.3.

The three masks proposed below have been defined to be approximately 2 dB below the results obtained through computer simulation and on reference models.

The first two (see Figure A.1) are given for two frequencies: 1020 Hz and 6010 Hz.

The third mask (see Figure A.2) is given for two frequencies (3900 Hz and 4100 Hz) and enables us to ascertain the quality of the quadrature mirror filters, as there are no provisions for QMF tests in this Recommendation.

These three masks allow making simpler the evaluation of the mass-produced equipment using G.722 codecs, and make easier checks carried out during installation.

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1) This annex completes the *Blue Book* version of Recommendation G.722, which remains in force.

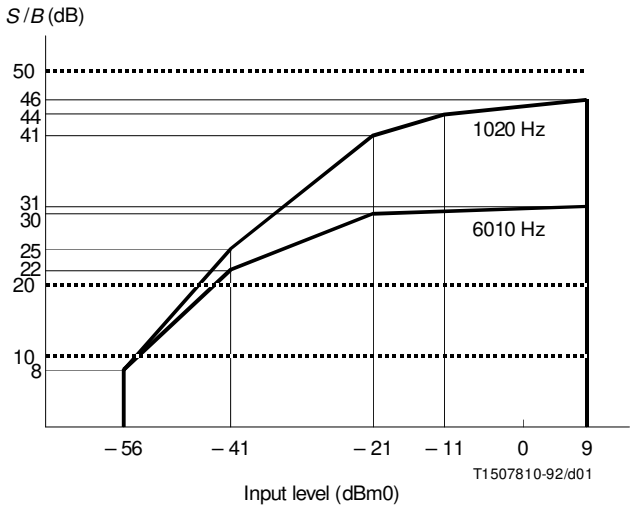

FIGURE A.1/G.722

Mask for 1020 Hz and 6010 Hz frequences

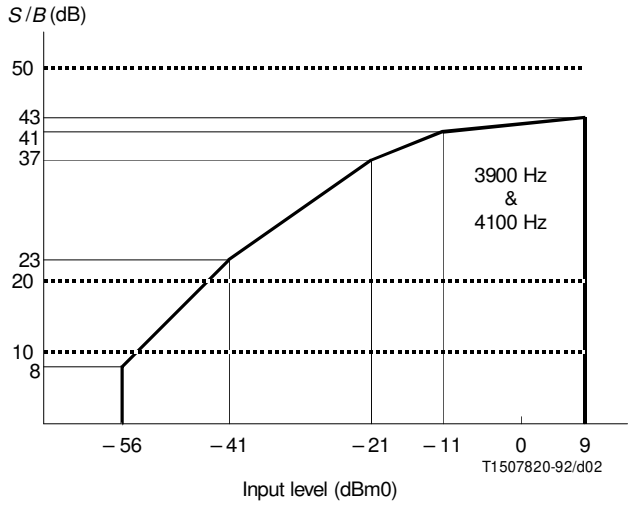

FIGURE A.2/G.722

Mask for the evaluation of the quadrature mirror filters

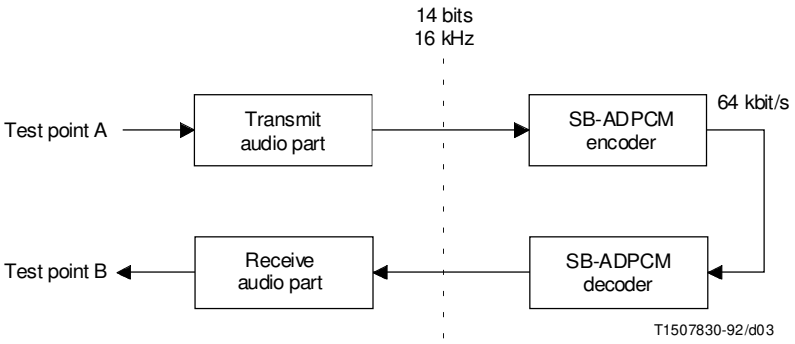

FIGURE A.3/G.722

Measuring principle