INTERNATIONAL TELECOMMUNICATION UNION

ITU-T G.132

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

TRANSMISSION SYSTEMS AND MEDIA

GENERAL CHARACTERISTICS OF THE 4-WIRE CHAIN FORMED BY THE INTERNATIONAL CIRCUITS AND NATIONAL EXTENSION CIRCUITS

ATTENUATION DISTORTION

ITU-T Recommendation G.132

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation G.132 was published in Fascicle III.1 of the *Blue Book*. This file is an extract from the *Blue Book.* While the presentation and layout of the text might be slightly different from the *Blue Book* version, the contents of the file are identical to the *Blue Book* version and copyright conditions remain unchanged (see below).

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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Recommendation G.132

ATTENUATION DISTORTION

(Geneva, 1964; Mar del Plata, 1968; Geneva, 1972 and Melbourne, 1988)

The network performance objectives for the variation with frequency of transmission loss in terminal condition of a worldwide 4-wire chain of 12 circuits (international plus national extensions), each one routed over a single group link, are shown in Figure 1/G.132, which assumes that no use is made of high-frequency radio circuits or 3-kHz channel equipment.

Note 1 - The design objectives contained in the Recommendation cited in [1], for carrier terminal equipments are such that for a chain of 6 circuits (international and national extensions) in tandem, each circuit being equipped with one pair of channel translating equipments, the attenuation distortion would in most cases be less than 9 dB between 300 and 3400 Hz. For the case of 12 circuits in tandem it can be expected that in most cases the attenuation distortion will not exceed 9 dB between about 400 and 3000 Hz. As far as the international chain is concerned, see Recommendation G.141, § 1.

Note 2 - It is only in a small proportion of international connections that the 4-wire chain will in fact comprise 12 circuits.

Note 3 - Limits given in Figure 1/G.132 should be met also for mixed connections using the analogue-digital equipments. Probably, the number of analogue-digital equipment (pair codecs) for the mixed connections with 12 circuits does not exceed 6 (see Recommendation G.103, Annex B).

It should be recognized that a connection containing six coder-decoder pairs where each pair just meets the attenuation distortion requirements found in Recommendation G.712 will not meet the attenuation distortion requirement found in Recommendation G.132 for 3400 Hz.

However, it is likely that real coder-decoder pairs will have attenuation distortion performance better than in Recommendation G.712, so for practical purposes the likelihood of not complying with Recommendation G.132 is very small.

Note 4 - Studies are being carried out by Study Group IV and Study Group XII about how well this objective is being met in practice, about the expectation with which it should be met in future taking account of Note 2 and Note 3 and about any possible consequential need for notifications to Recommendations referring to equipments.

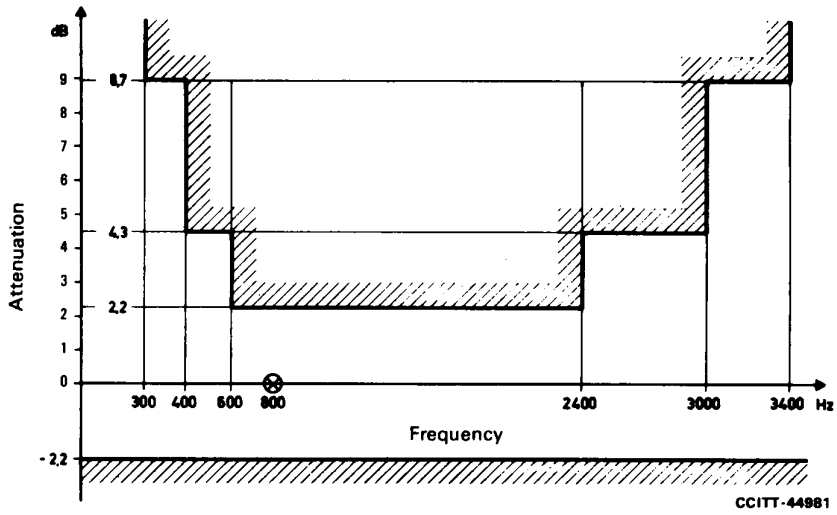

FIGURE 1/G.132

Permissible attenuation variation with respect to its value measured at 800 Hz (objective for worldwide 4-wire chain of 12 circuits in terminal service)

Reference

[1] CCITT Recommendation *12-channel terminal equipments,* Vol. III, Rec. G.232, § 1.