INTERNATIONAL TELECOMMUNICATION UNION

ITU-T G.141

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

TRANSMISSION SYSTEMS AND MEDIA

GENERAL CHARACTERISTICS OF THE 4-WIRE CHAIN OF INTERNATIONAL CIRCUITS; INTERNATIONAL TRANSIT

ATTENUATION DISTORTION

ITU-T Recommendation G.141

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation G.141 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.141

ATTENUATION DISTORTION

(Geneva, 1964; amended at Mar del Plata, 1968 and Geneva, 1972 and 1980)

1 Attenuation distortion

1.1 All-analogue conditions

The design objectives recommended for carrier terminal equipment by the Recommendation cited in [1] are such that for a chain of six circuits, each equipped with a single pair of channel translating equipments in accordance with that Recommendation, the network performance objective for the attenuation distortion given by Figure 1/G.132 will in most cases be met. The distortion contributed by the seven international centres is thereby included.

Note - To assess the attenuation distortion of the international chain, the limits indicated for international circuits in Recommendation G.151, § 1 must not be added to the limits for international centres mentioned in Recommendation Q.45 [2] In fact, on the one hand, some exchange equipment would be counted twice if this addition were made; on the other, the specification limits of Recommendation Q.45 [2] apply to the worst possible connection through an international exchange, while the maintenance limits of Recommendation G.151, § 1 apply to the poorest international circuit. The specifications of the various equipments are such that the mean performance will be appreciably better than could be estimated by the above-mentioned addition.

1.2 Mixed analogue/digital conditions

In the mixed analogue/digital period, it is expected that the attenuation/frequency characteristics of the analogue carrier terminal equipment that is to be used in international telephone connections will continue to be governed by existing Recommendations that are relevant to this type of circuit.

Where unintegrated PCM digital processes are to be included in international telephone connections, it is recommended that the attenuation/frequency characteristic of the bandpass filters associated with such processes should comply with the more stringent version of Figure 1/G.712 [3]. The latter Recommendation applies specifically to cases where integrated PCM digital processes are associated with trunk junctions (toll connecting trunks), trunk circuits (intertoll trunks), and international circuits.

With regard to the incorporation of unintegrated PCM digital processes in local telephone networks, the required attenuation/frequency characteristics of the bandpass filters involved are still under study.

References

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

[2] CCITT Recommendation *Transmission characteristics of an international exchange,* Vol. VI, Rec. Q.45.

[3] CCITT Recommendation *Performance characteristics of PCM channels between 4-wire interfaces at voice frequencies*, Vol. III, Rec. G.712, Figure 1/G.712.