



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

N.15

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

**MAINTENANCE OF INTERNATIONAL
SOUND - PROGRAMME AND TELEVISION
TRANSMISSION CIRCUITS**

**MAXIMUM PERMISSIBLE POWER
DURING AN INTERNATIONAL
SOUND - PROGRAMME TRANSMISSION**

ITU-T Recommendation N.15

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation N.15 was published in Fascicle IV.3 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 N.15

MAXIMUM PERMISSIBLE POWER DURING AN INTERNATIONAL SOUND-PROGRAMME TRANSMISSION

General

To check that the maximum power transmitted during a sound-programme transmission does not exceed the limits allowed by Administrations, it is recommended that broadcasting organizations and the terminal ISPCs of the international sound-programme connection should use volume-meters or peak programme meters, the same type of meter being used for preference by both the telephone Administration and the broadcasting organization of a country.

Since the international sound-programme connection is accurately adjusted before it is made available to the broadcasting organizations, there will be no danger of overloading the amplifiers during the sound-programme transmission if care is taken not to exceed the permissible limit at the sending end of the international sound-programme connection.

Hence, this check can be done only by the broadcasting organization and the ISPC of the transmitting country, and a check made further down the line would not seem to be very effective.

If so desired, monitoring equipment (volume-meters, peak-indicators) can be connected at the receiving end of the international sound-programme link and of the international sound-programme connection to obtain information about the general nature of the transmission. In this case, monitoring equipment at the two locations in the incoming country will have to be of the same type, but there is no need for the same kind of monitoring equipment to be used in both outgoing country and incoming country.

1 Maximum level permitted on sound-programme circuits

The peak power permitted on a sound-programme circuit should not exceed +9 dBm at a point of zero relative level on the sound-programme circuit.

(This corresponds to a peak voltage of 3.1 volts when measured as a 600-ohm through-level at a zero through relative level point. The r.m.s. value of the sinusoidal signal with this peak value is 2.2 volts).

If a transmission system overload is identified as being due to sound-programme transmission on 6.4 kHz or 10 kHz sound-programme circuits, the level at the zero relative point should be reduced by 3 dB to achieve an accompanying reduction in peak power, in accordance with Recommendation J.22, § A.2 [1].

2 Maximum level permitted on an international telephone circuit used to carry a sound-programme transmission

The power permitted on the international telephone circuit carrying a sound-programme transmission should not exceed +3 dBm at a point of zero relative level on the international telephone circuit. To allow the +9 dBm₀ peak level permitted on a sound-programme circuit a 6 dB loss should be introduced at a point before the international telephone circuit enters a carrier system. At the receiving side a corresponding amplification of 6 dB at the end of the telephone circuit should be provided.

This reduction is necessary to avoid overloading on the carrier's system. Reasons for the possible overload are:

- a) Commentary circuits are used in one direction only in comparison to a normal telephone connection. This leads to an increase of the mean power level.
- b) In most cases the broadcasting authorities use better quality microphones compared with normal telephone sets.

Experience has shown that an attenuation of 6 dB is the most suitable value for this purpose.

Reference

- [1] CCITT Recommendation *Performance characteristics of 10 kHz type sound-programme circuits*, Red Book, Vol. III, Rec. J.22, ITU, Geneva, 1984.