



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

J.19

TELEVISION AND SOUND TRANSMISSION

**A CONVENTIONAL TEST SIGNAL
SIMULATING SOUND - PROGRAMME SIGNALS
FOR MEASURING INTERFERENCE IN OTHER
CHANNELS**

ITU-T Recommendation J.19

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation J.19 was published in Fascicle III.6 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.

Recommendation J.19¹⁾

A CONVENTIONAL TEST SIGNAL SIMULATING SOUND-PROGRAMME SIGNALS FOR MEASURING INTERFERENCE IN OTHER CHANNELS²⁾

(Geneva, 1980)

The CCITT,

considering

(a) that on FDM systems non-linear crosstalk may cause mutual interference between the several types of transmission channels;

(b) that the interference depends on the total loading of the FDM system;

(c) that the interference in a channel can be measured as a noticeable deterioration of the signal-to-noise ratio;

(d) that for setting realistic performance limits of interference, a conventional test signal imitating the sound-programme channel loading is desirable,

unanimously recommends

that for simulating sound-programme signals a conventional test signal with the following parameters should be used:

(1) a uniform spectrum energizing signal covering the frequency band up to at least 15 kHz shall be shaped according to the nominal insertion loss/frequency shown in Table 1/J.19 and Figure 1/J.19;

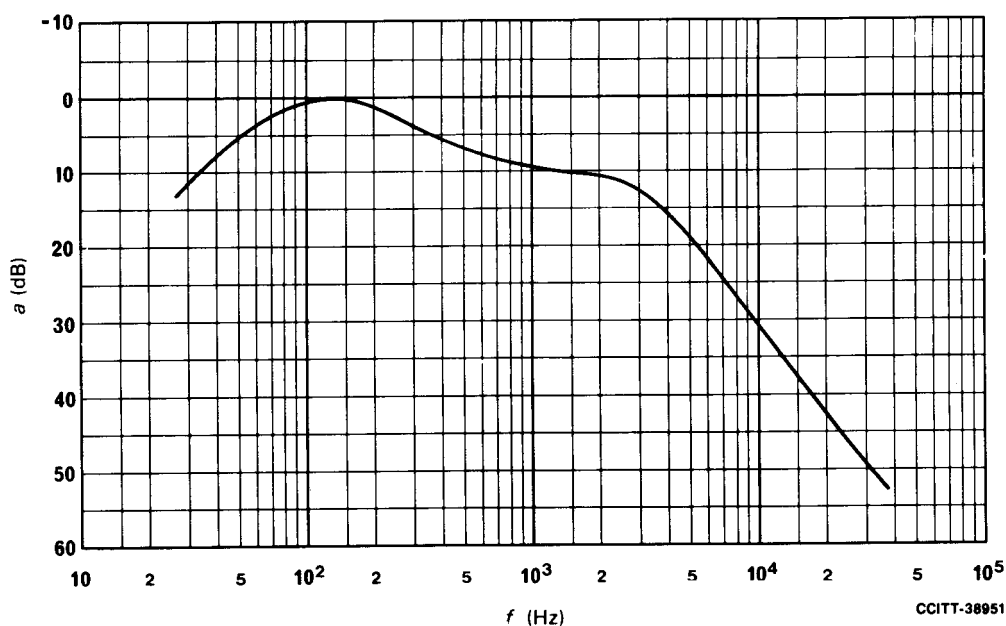


FIGURE 1/J.19
Insertion local frequency

(2) the conventional test signal can be produced from a Gaussian white noise generator associated with a shaping network conforming with Figure 2/J.19;

¹⁾ This Recommendation corresponds to CCIR Recommendation 571.

²⁾ For the definitions of absolute power, relative power and noise levels, see CCIR Recommendation 574

(3) the total test signal power applied to a sound-programme circuit under test shall be cyclically changed in level according to Table 2/J.19.

Note – This Recommendation is derived from studies given in Report 497.

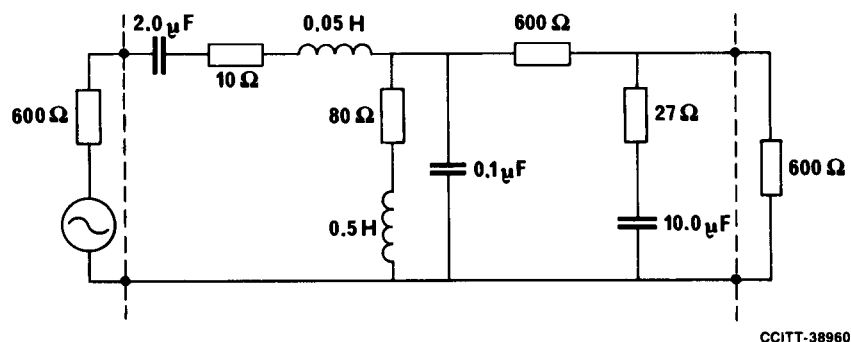


FIGURE 2/J.19

TABLE 1/J.19

Frequency (Hz)	Relative insertion-loss (dB)	Tolerance (± dB)
31.5	10.9	0.5
63	3.4	0.3
100	0.4	0.2
(122)	(0.0)	(0)
200	1.5	0.2
400	5.7	0.3
800	8.7	0.3
1 000	9.2	0.3
2 000	10.6	0.5
3 150	13.0	0.5
4 000	15.7	0.5
5 000	18.8	0.5
6 300	22.5	0.5
7 100	24.6	0.5
8 000	26.6	0.5
9 000	28.6	0.5
10 000	30.4	1.0
12 500	34.3	1.0
14 000	36.3	1.0
16 000	38.6	1.0
20 000	42.5	1.0
31 500	50.4	1.0

TABLE 2/J.19

Step	Level	Time for which signal is applied
1	– 4 dBm0s	4 s
2	+ 3 dBm0s	2 s
3	no signal	2 s

ANNEX A

(to Recommendation J.19)

Study Group XV of the CCITT had put some questions as regards CCIR Recommendation 571 and the CMTT has worked out their answers. As those questions and the answers may be helpful for anyone who applies the conventional test signal for carrying out measurements of any kind, they are given below:

Question

- a) For the measurement of crosstalk from a sound-programme circuit to a telephone circuit, could the signal described in CCIR Recommendation 571 be used, considering the different bandwidth and possible frequency shift?

Reply:

- The intelligible crosstalk ratio is based on selective measurements in the telephone circuit when the sinusoidal signals are transmitted in the sound-programme circuit within the frequency range of 0.3 to 3.4 kHz. In Recommendation J.21 a minimum ratio of 65 dB is defined.
- The unintelligible crosstalk ratio should be ascertained by measuring the increase of noise in the telephone circuit by loading the disturbing sound-programme with the simulated test signal defined in CCIR Recommendation 571. As for this increase no tolerable values are recommended up to now, the CMTT proposes such values based on a maximum noise contribution produced by interference of –65 dBm0p. Depending on the basic noise level in the telephone circuit the following increased values can be tolerated:

TABLE A-1/J.19

Basic noise level (dBm0p)	– 75	– 70	– 65	– 60	– 55	– 50
Tolerable increase of noise level (dB)	10.4	6.2	3	1.2	0.4	0.1

Question

- b) What is the equivalent value for 65 dB ratio (given in Recommendations J.21, J.22 and J.23) using sinusoidal tones, when measuring with the recommended new test signal?

Reply:

The answer to this question is included in the proposal for the measurement of the ratio for the total crosstalk caused by intermodulation given in the answer to Question a).

Question

- c) Can the signal defined in Table 2/J.19, from the point of view of the mean loading it would impose on transmission systems and in the light of Recommendations N.12 and N.13, be regarded as acceptable for unrestricted use over complete sound-programme circuits of any constitution?

Reply:

The conventional test signal simulating sound-programme signals defined in CCIR Recommendation 571/Recommendation J.19 in all aspects can be regarded as acceptable for unrestricted use over sound-programme circuits of any constitution.