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G.622

TRANSMISSION MEDIA CHARACTERISTICS

CHARACTERISTICS OF 1.2/4.4 mm COAXIAL CABLE PAIRS

ITU-T Recommendation G.622

(Extract from the *Blue Book*)

1.2/4.4 mm COAXIAL CABLE PAIRS

NOTES

1 ITU-T Recommendation G.622 was published in Fascicle III.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 G.622

CHARACTERISTICS OF 1.2/4.4 mm COAXIAL CABLE PAIRS

(former Recommendation G.342; further amended)

The following Recommendation describes the 1.2/4.4 mm coaxial pair recommended by the CCITT for the international service. The use of this pair is defined in Tables 1 and 2 given in the introduction to Subsection 6.2. When the possibility of television or digital transmission has been envisaged, it is expressly mentioned in each provision.

1 Characteristics of the pair

1.1 Electrical characteristics of the coaxial pair

1.1.1 Characteristic impedance

The nominal real part of the characteristic impedance is 75 Ω at 1 MHz.

The tolerance is $\pm 1.5 \Omega$ for telephony or $\pm 1 \Omega$ for pairs that may be used for television transmissions.

For information, the impedance values in Table 1/G.622 were obtained at various frequencies on coaxial pairs manufactured by different processes.

TABLE 1/G.622

Means real part of the characteristic impedance measured at various frequencies

Frequency (MHz)	0.06	0.1	0.2	0.5	1	1.3	4.5	12	18
Impedance (Ω)	79.8	78.9	77.4	75.8	75	74.8	74	73.6	73.5

1.1.2 Attenuation coefficient

The nominal value of the attenuation coefficient of the pair, at 12 MHz and at 10°C, is 18.0 ± 0.4 dB/km.

Table 2/G.622 shows the general trend of the variation of the attenuation coefficient as a function of frequency for all pairs which conform to the present Recommendation.

TABLE 2/G.622

Nominal values of the attenuation coefficient at various frequencies

Frequency (MHz)	0.06	0.1	0.3	0.5	1	1.3	4.5	12	18
Attenuation coefficient (dB/km)	1.5	1.8	2.9	3.7	5.3	6.0	11	18	22

The following equation, in which α is expressed in dB/km and f in MHz, gives an approximation of the attenuation coefficient from 2 MHz onwards:

$$\alpha = 0.07 + 5.15\sqrt{f} + 0.005 f .$$