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G.611

TRANSMISSION MEDIA CHARACTERISTICS

CHARACTERISTICS OF SYMMETRIC CABLE PAIRS FOR ANALOGUE TRANSMISSION

ITU-T Recommendation G.611

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation G.611 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.611

CHARACTERISTICS OF SYMMETRIC CABLE PAIRS FOR ANALOGUE TRANSMISSION

(former Recommendation G.321, Geneva, 1974; amended at Geneva, 1980)

1 Cable specification - Examples of the electric characteristics of a star-quad cable designed to provide 12, 24, 36, 48, 60 or 120 carrier telephone channels on each quad pair

1.1 Types of cable

Administrations which decide to equip their symmetric pair cable network should, wherever possible, choose those which conform to the types of cable defined below.

New cables laid in the European and North-African international telephone network include unloaded symmetric pairs, designed to be used for 12, 24, 36, 48, 60 or 120 carrier telephone channels on each pair. These pairs are laid up in star quads and all unloaded pairs of the same cable are one of the types whose nominal characteristics are shown in Table 1/G.611.

It is essential that a repeater section crossing a frontier should be of a uniform type throughout its length. When a frontier section is between a large and a small country, the Administration of the larger country should do everything possible to use whichever of the three types has been adopted by the smaller country, so as not to oblige the Administrations of small countries to use sections of international cable of a different type from that of their national cables.

Note 1 - Some Administrations, by paying special attention to crosstalk balance and adopting appropriate repeater spacing, have been able to set up systems with 2 supergroups, in accordance with Recommendation G.322, on paper-insulated symmetric pairs conforming with this present specification.

Note 2 - It is also possible to set up 2 supergroup systems that conform with Recommendation G.322 on pairs of type II *bis* and type III *bis*. Type II *bis* pairs are insulated by polythene and type III *bis* pairs by styroflex.

TABLE 1/G.611

	Type I	Type II	Type II bis	Type III	Type III bis
Diameter of conductors (mm)	0.9	1.2	1.2	1.3	1.3
Effective capacity (nF/km)	33	26.5	21	28	22
Characteristic impedance (Ω)					
to 60 kHz	153	178	206	170	196
to 120 kHz	148	174	203	165	193
to 240 kHz	—	172	200	163	190
to 550 kHz	—	—	198	—	188
Attenuation per unit length at 10° C in dB/km					
to 60 kHz	2.3	—	—	—	—
to 120 kHz	3.1	2.0	1.5	1.8	1.4
to 240 kHz	—	2.9	2.1	2.7	2.0
to 552 kHz	—	4.8	3.1	4.4	3.0