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OF ITU

G.333

INTERNATIONAL ANALOGUE CARRIER SYSTEMS INDIVIDUAL CHARACTERISTICS OF INTERNATIONAL CARRIER TELEPHONE SYSTEMS ON METALLIC LINES

60 MHz SYSTEMS ON STANDARDIZED 2.6/9.5 mm COAXIAL CABLE PAIRS

ITU-T Recommendation G.333

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation G.333 was published in Fascicle III.2 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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60 MHz SYSTEMS ON STANDARDIZED 2.6/9.5 mm COAXIAL CABLE PAIRS

Introduction

This Recommendation defines a coaxial cable pair system providing 10 800 telephone channels in the frequency band of approximately 4 to 60 MHz. The system may be used for the transmission of six television signals without any telephone signal or for a mixed transmission of telephone and television signals. The nominal repeater spacing is approximately 1.5 km and can be obtained by dividing the repeater spacing of 12 MHz systems by three.

1 Line frequencies

The allocation of line frequencies for telephony should be in conformity with one of the two plans given below.

1.1 Plan 1 - Line-frequency allocation and modulation stages for 60-MHz systems (Figure 1/G.333)

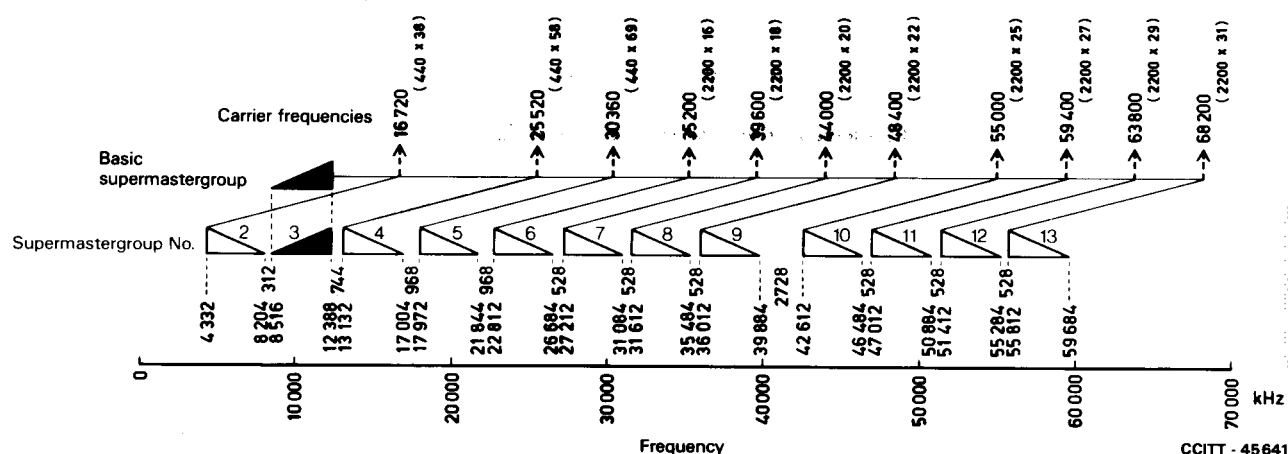


FIGURE 1/G.333

Line-frequency allocation recommended for 60 MHz systems on 2.6/9.5 mm coaxial cable pairs using Plan 1

In this plan, the basic block for interconnection is the supermastergroup of 8516 to 12 388 kHz recommended by the CCITT in Recommendation G.211. It thus contains the three mastergroups constituting the basic supermastergroup, but the same frequency band could contain a 15-supergroup assembly (see Plan 2).

All modulation and demodulation between the basic supermastergroup and the line-frequency band is carried out in one modulation step. The carrier frequencies for this modulation are shown in Figure 1/G.333. They are all low multiples of 440 kHz, or multiples of 2200 kHz. These two fundamental frequencies are both closely related to frequencies normally used in the 12-MHz systems.

The extraction of blocks directly from the line-frequency band can be carried out individually for the four lowest supermastergroups. Higher supermastergroups can only be extracted in the form of an assembly of four supermastergroups. This method is chosen to save frequency bandwidth.

The two lowest supermastergroups are identical with supermastergroups Nos. 2 and 3 shown in Figure 1/G.332.

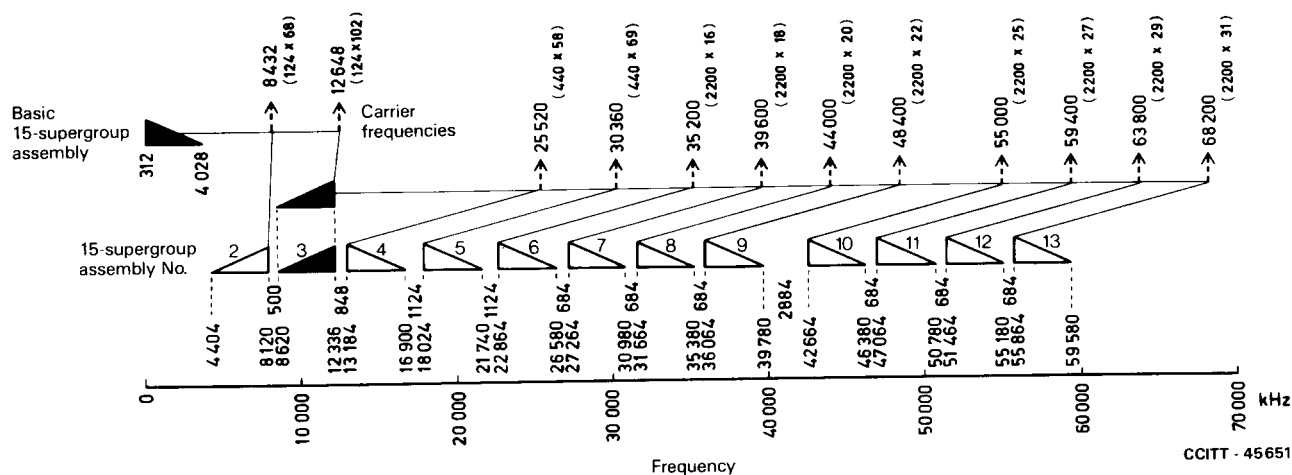


FIGURE 2/G.333

**Line-frequency allocation recommended for 60 MHz systems
on 2.6/9.5 mm coaxial cable pairs using Plan 2**

According to Plan 2, eleven assemblies of 15 supergroups are translated into the frequency band 8620 to 12 336 kHz which lies within the frequency band of the basic supermastergroup.

The 15-super group assemblies transmitted to line and numbered 3 to 13, are obtained in the same way as the corresponding supermastergroups of Plan 1 above. The assembly of 15 supergroups numbered 2 is obtained by modulation of a 15-super group assembly in the band 312-4028 kHz, the carrier frequency being $68 \times 124 = 8432$ kHz.

The facilities for extracting blocks directly from the basic-frequency band are identical to those of Plan 1.

The two lowest 15-super group assemblies are identical with the second and third 15-super group assemblies in Figure 4/G.332.

Note - It is understood that Plan 1 would be chosen in those countries whose national networks are based upon the use of basic mastergroup and supermastergroups, whereas Plan 2 could be adopted in those countries whose national networks are based on the use of supergroup assemblies only.

In international connections between countries using the same plan in their national networks, i.e. both using Plan 1 or both using Plan 2, the plan common to these two countries would naturally be used.

However, in international connections between countries which use different plans in their national networks and in the absence of any special agreement, between the interested Administrations, including Administrations of transit countries, use of Plan 1 is recommended.

2 Pilots and additional measuring frequencies

2.1 Line-regulating pilots

The CCITT recommends that 61 160 kHz should be used for the main line-regulating pilot on all regulated-line sections crossing a frontier. The main line-regulating pilot is used for automatic temperature correction of the cable attenuation.

In any regulated-line section crossing a frontier, it is recommended that in both directions of transmission the Administration on the transmitting side should permanently transmit so as to provide, for example, for additional regulation, one or more auxiliary line-regulating pilots chosen by the Administration on the receiving side from the following list:

4287 kHz, 12 435 kHz, 22 372 kHz and 40 920 kHz.