INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Series G

Supplement 17
(10/1984)

SERIES G: INTERNATIONAL ANALOGUE CARRIER SYSTEMS

Transmission media – Characteristics

Group-delay distortion performance of terminal equipment

ITU-T G-series Recommendations – Supplement 17

Originally published in Red Book (1984) - Fascicle III.2

NOTES

1 Supplement 17 to the G-series Recommendations was approved in Málaga-Torremolinos (1984) and published in Fascicle III.2 of the *Red Book*. This file is an extract from the *Red Book*. While the presentation and layout of the text might be slightly different from the *Red Book* version, the contents of the file are identical to the *Red Book* version and copyright conditions remain unchanged (see below).

2 In this Supplement, the expression "Administration" is used for conciseness to indicate both a telecommunication administration and a recognized operating agency.

GROUP-DELAY DISTORTION PERFORMANCE OF TERMINAL EQUIPMENT

(Geneva, 1980; referred to in Recommendations G.233 and G.242)

During the Study Period 1977-1980, Study Group XV has collected information on the group-delay distortions of group and supergroup translating equipment as well as through-group and supergroup filters with a view to preparing relevant Recommendations. (See Recommendations G.233 and G.242.)

This Supplement contains a summary of the information made available, representing performance figures of modern type equipment.

It was not clear whether there is a necessity to extend the specified frequency range to 62 and 106 kHz respectively on group band circuits.

For information, the following maximum values, based on results of measurements, have been noted:

at 62 kHz: 25 μs for group translating equipment
350 μs for through-group filters

at 106 kHz: 15 μs for group translating equipment
350 μs for through-group filters.

It must be pointed out that the group-delay performance at these frequencies is extremely sensitive to component tolerances, temperature variation effects, etc.

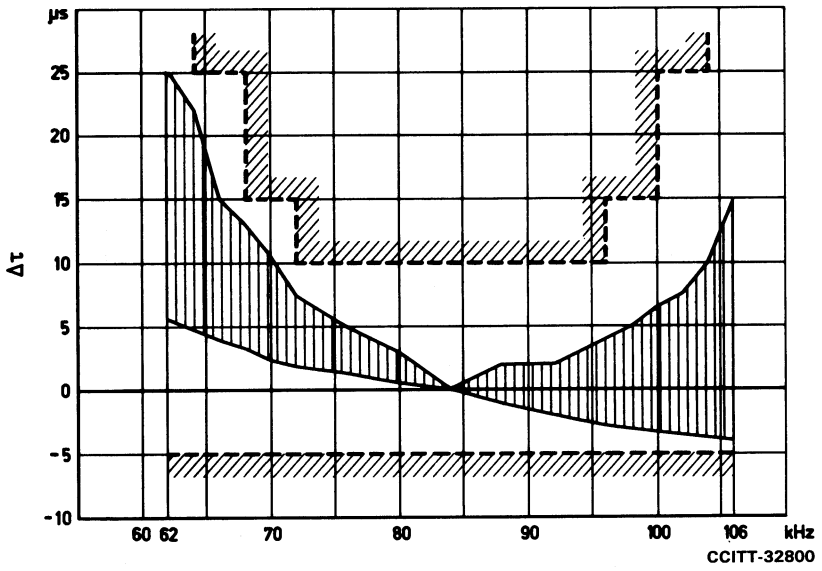

FIGURE 1

Spread of limiting values of the group-delay distortion of the group translating equipment (from the contributions received)

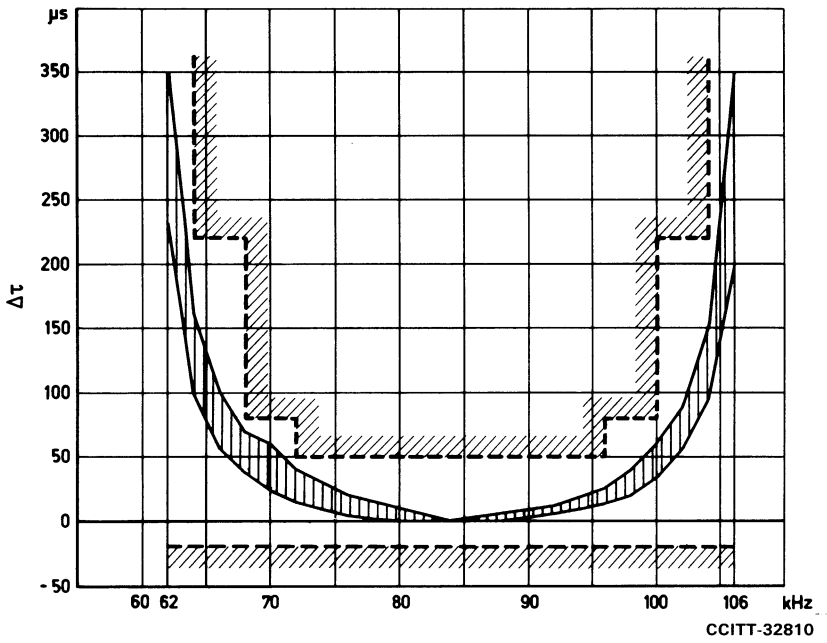

FIGURE 2

Spread of limiting values of the group-delay distortion of through-group filters (from the contributions received)

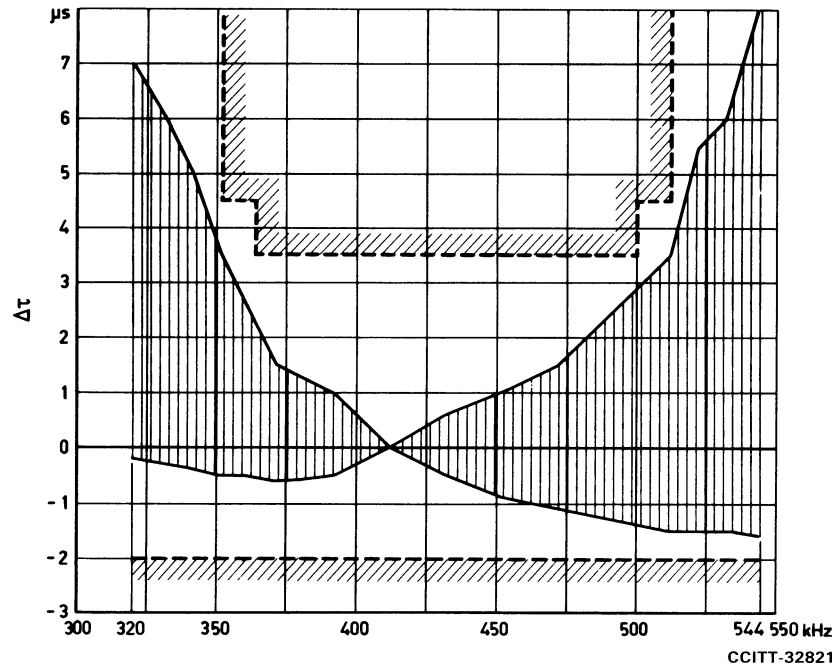

FIGURE 3

Spread of limiting values of the group-delay distortion of the supergroup translating equipment (from the contributions received)

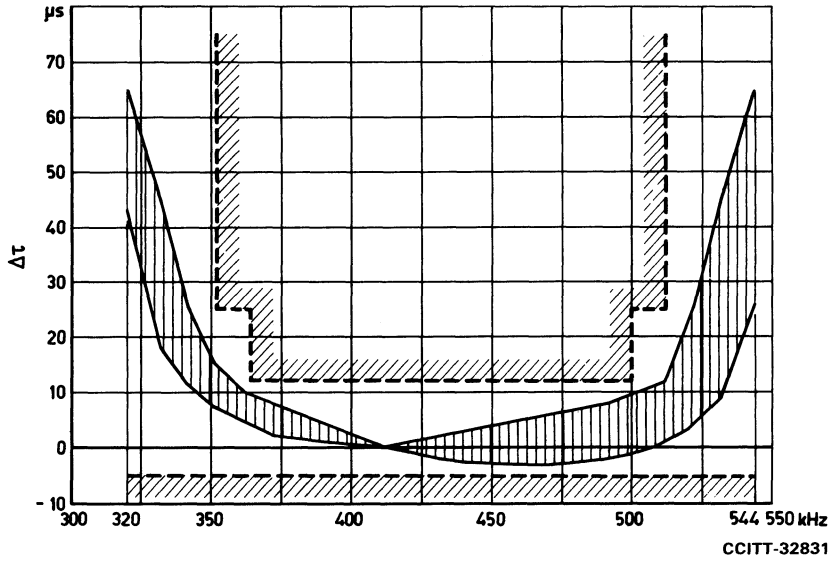

FIGURE 4

Spread of limiting values of the group-delay distortion of through-supergroup filters (from contributions received)

Geneva, 2004