



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

G.744

GENERAL ASPECTS OF DIGITAL TRANSMISSION SYSTEMS

TERMINAL EQUIPMENTS

SECOND ORDER PCM MULTIPLEX EQUIPMENT OPERATING AT 8448 kbit/s

Recommendation G.744

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation G.744 was published in Fascicle III.4 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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SECOND ORDER PCM MULTIPLEX EQUIPMENT OPERATING AT 8448 kbit/s

(Geneva, 1976; amended at Geneva, 1980 and at Melbourne, 1988)

1 General characteristics

1.1 Fundamental characteristics

The encoding law used is the A-law as specified in Recommendation G.711. The sampling rate, load capacity and the code are also specified in that Recommendation.

The number of quantized values is 256.

Note - The inversion of bits 2, 4, 6 and 8 is covered by the encoding law and is applicable only to voice-channel time slots.

1.2 Bit rate

The nominal bit rate is 8448 kbit/s. The tolerance on this rate is ± 30 parts per million (ppm).

1.3 Timing signal

It should be possible to derive the transmitting timing signal of a PCM multiplex equipment from an internal source, from the incoming digital signal and also from an external source.

Note - Further study is required on the effect of jitter of the incoming signal on the timing signal, and on the measures to be taken in case of loss of the incoming signal or the external source.

2 Frame structure

Refer to §§ 3.4.1 and 3.4.2 of Recommendation G.704 for frame structure and use of derived channel time slots.

3 Loss and recovery of frame alignment

Loss of frame alignment should be assumed to have taken place when four consecutive frame alignment signals have been incorrectly received in their predicted positions.

When frame alignment is assumed to be lost, the frame alignment device should decide that such alignment has effectively been recovered when it detects the presence of three consecutive frame alignment signals.

The frame alignment device having detected the appearance of a single correct frame alignment signal, should begin a new search for the frame alignment signal when it detects the absence of the frame alignment signal in one of the two following frames.

4 Fault conditions and consequent actions

4.1 Fault conditions

The PCM multiplex equipment should detect the following fault conditions.

4.1.1 Failure of power supply.