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ITU-T

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G.755

GENERAL ASPECTS OF DIGITAL TRANSMISSION SYSTEMS

TERMINAL EQUIPMENTS

DIGITAL MULTIPLEX EQUIPMENT OPERATING AT 139 264 kbit/s AND MULTIPLEXING THREE TRIBUTARIES AT 44 736 kbit/s

ITU-T Recommendation G.755

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation G.755 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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Recommendation G.755

DIGITAL MULTIPLEX EQUIPMENT OPERATING AT 139 264 KBIT/S AND MULTIPLEXING THREE TRIBUTARIES AT 44 736 KBIT/S

(Melbourne, 1988)

1 General

The digital multiplex equipment described in this Recommendation is intended for use between networks using different digital hierarchies as specified in Recommendations G.702 and G.802.

2 Bit rate

The bit rates of the tributary and multiplex signals should be 44 736 kbit/s $\pm$ 20 ppm and 139 264 kbit/s $\pm$ 15 ppm, respectively, as specified in Recommendation G.703.

3 Frame structure

Table 1/G.755 gives the recommended 139 264 kbit/s multiplexing frame structure.

4 Loss and recovery of frame alignment and consequent action

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 correct 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.

Note - As it is not strictly necessary to specify the detailed frame alignment strategy, any suitable frame alignment strategy may be used provided the performance achieved is at least as efficient in all respects as that obtained by the above frame alignment strategy.

5 Multiplexing and justification methods

Cyclic bit interleaving in the tributary numbering order and positive justification are recommended.

The justification control signal should be distributed and use the C_{ji} -bits ($j = 1, 2, 3; i = 1, 2, 3, 4, 5$) (see Note 6 to Table 1/G.755).

Positive justification should be indicated by the justification control signal 11111 and no justification by the signal 00000. Majority decision is recommended.

Table 1/G.755 gives the maximum justification rate per tributary and the nominal justification ratio.

6 Jitter

6.1 Demultiplexer tributary jitter transfer characteristic

The demultiplexer 44 736 kbit/s tributary jitter transfer characteristic should meet the gain/frequency limits given in Figure 1/G.755. The equivalent binary content of the test signal used should result in a tributary output signal of 1000.