



INTERNATIONAL TELECOMMUNICATION UNION

**ITU-T**

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

**G.743**

**GENERAL ASPECTS OF DIGITAL TRANSMISSION  
SYSTEMS**

**TERMINAL EQUIPMENTS**

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**SECOND ORDER DIGITAL MULTIPLEX  
EQUIPMENT OPERATING AT 6312 kbit/s AND  
USING POSITIVE JUSTIFICATION**

**ITU-T Recommendation G.743**

(Extract from the *Blue Book*)

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## NOTES

1 ITU-T Recommendation G.743 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.

## **Recommendation G.743**

### **SECOND ORDER DIGITAL MULTIPLEX EQUIPMENT OPERATING AT 6312 kbit/s AND USING POSITIVE JUSTIFICATION**

*(Geneva, 1972; further amended)*

#### **1 General**

The second order digital multiplex equipment using positive justification described below, is intended for use on digital paths between countries using 1544 kbit/s primary multiplex equipments.

#### **2 Bit rate**

The nominal bit rate should be 6312 kbit/s.

The tolerance on that rate should be  $\pm 30$  parts per million (ppm).

#### **3 Frame structure**

Table 1/G.743 gives:

- the tributary bit rate and the number of tributaries;
- the number of bits per frame;
- the bit numbering scheme;
- the bit assignment;
- the distributed frame and multiframe alignment signals.

#### **4 Loss and recovery of frame and multiframe alignment and consequent action**

The frame alignment recovery time should not exceed 16 ms. The signal to be applied to the tributaries during the out-of-frame-alignment time should be studied.

Once frame alignment is established, multiframe alignment should be recovered in less than 420 microseconds.

#### **5 Multiplexing method**

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

The justification control signal should be distributed and use the  $C_{jn}$ -bits ( $n = 1, 2, 3$ , see Table 1/G.743).

Positive justification should be indicated by the signal 111, no justification by the signal 000. Majority decision is recommended.

Table 1/G.743 gives the maximum justification rate per tributary and the nominal justification ratio.

#### **6 Jitter**

##### *6.1 Specifications at the input ports*

The digital signal presented at the input ports shall be as defined in Recommendation G.703 modified by the