



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

R.30

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

TELEGRAPHY

TELEGRAPH TRANSMISSION

**TRANSMISSION CHARACTERISTIC FOR
INTERNATIONAL VFT LINKS**

ITU-T Recommendation R.30

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation R.30 was published in Fascicle VII.1 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 R.30

TRANSMISSION CHARACTERISTIC FOR INTERNATIONAL VFT LINKS

(Mar del Plata, 1968; amended at Geneva, 1976)

1 Standardized carrier systems with 4-kHz and 3-kHz spacing permit homogeneous voice-frequency telegraph (VFT) systems providing the capacities of telegraph channels given in Table 1/R.30.

TABLE 1/R.30

Bearer bandwidth	50-baud 120-Hz spacing	100-baud 240-Hz spacing	200-baud 360-Hz spacing	200-baud 480-Hz spacing
4 kHz	24	12	8 (not normally used)	6
3 kHz	22	11	7	5

2 Audio-frequency circuits with heavy or semi-heavy loading permit 12-channel 50-baud systems; circuits with lighter loading permit 18 channels at 50 bauds.

3 Four-wire links are to be preferred for voice-frequency telegraphy.

4 The composition of a 4-wire link for voice-frequency telegraphy differs from that of a telephone circuit in that there are no terminating sets, signalling equipment and echo suppressors.

5 With 2-wire links, a duplex arrangement would not be feasible since the links could not be balanced with the necessary precision to avoid mutual interaction. If the low frequencies are used for transmission in one direction and high frequencies for the other direction, a 2-wire link can be used for voice-frequency telegraphy.

6 The conditions of use of international VFT links are described in detail in Recommendation H.22 [1].

7 PCM (pulse code modulation) channels complying with Recommendation G.712 [2] are also suitable as bearers for FMVFT (frequency-modulated voice-frequency telegraph) links. However, the increase in telegraph distortion in relation to the transmission level and the number of tandem-connected PCM channels is the subject of further study.

References

- [1] CCITT Recommendation *Transmission requirements of international voice-frequency telegraph links (at 50, 100 and 200 bauds)*, Rec. H.22.
- [2] CCITT Recommendation *Performance characteristics of PCM channels at audio frequencies*, Rec. G.712.