



INTERNATIONAL TELECOMMUNICATION UNION

# ITU-T

TELECOMMUNICATION  
STANDARDIZATION SECTOR  
OF ITU

## Q.22

**GENERAL RECOMMENDATIONS ON TELEPHONE  
SWITCHING AND SIGNALLING**

**INTERNATIONAL AUTOMATIC AND  
SEMI-AUTOMATIC WORKING**

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**FREQUENCIES TO BE USED FOR IN-BAND  
SIGNALLING**

**ITU-T Recommendation Q.22**

(Extract from the *Blue Book*)

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## NOTES

1 ITU-T Recommendation Q.22 was published in Fascicle VI.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 Q.22**

### **FREQUENCIES TO BE USED FOR IN-BAND SIGNALLING**

To reduce the risk of signal imitation by speech currents, the frequencies for an in-band signalling system should be chosen from the frequencies in the band in which speech signal power is lowest, i.e. frequencies above 1500 Hz.

The desirability of this was confirmed by tests carried out in London, Paris and Zurich in 1946 and 1948 to choose the signalling frequencies of systems standardized by the CCITT. These tests led to the conclusion that, if relative freedom from false signals was to be obtained other than by undue increase in signal duration, frequencies of at least 2000 Hz would have to be used.