



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

Q.2

**GENERAL RECOMMENDATIONS ON TELEPHONE
SWITCHING AND SIGNALLING**

**SIGNALLING IN THE INTERNATIONAL MANUAL
SERVICE**

**SIGNAL RECEIVERS FOR AUTOMATIC AND
SEMI-AUTOMATIC WORKING, USED FOR
MANUAL WORKING**

ITU-T Recommendation Q.2

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation Q.2 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.2

SIGNAL RECEIVERS FOR AUTOMATIC AND SEMI-AUTOMATIC WORKING, USED FOR MANUAL WORKING

The directives relating to 500/20-Hz signalling sets are provisional. An Administration intending to purchase new signalling sets for use on international circuits which for the time being are to be operated on a manual basis, may find it advantageous, by agreement with the Administrations interested in the operation of the circuits concerned, to use signal receivers and transmitters conforming to the specifications for international automatic equipment. This will permit a greater technical uniformity of installations and will avoid having to replace the signal receivers when, ultimately, these circuits are operated on an automatic or semi-automatic basis.

The signal receivers must therefore conform with the specifications for the applicable recommended CCITT systems.

Sending of signals

The frequency and power level of the signalling current must be in accordance with the specifications for international automatic equipment. If two-frequency signal receivers are concerned, the two frequencies (compound signal) must be transmitted simultaneously.

The nominal duration of a signal sent to line is fixed at 2 seconds so as to be the same as that specified for 500/20 Hz signalling.

Reception of signals

At the receiving end, provision must be made for a splitting arrangement conforming to the specifications for international automatic equipment. This splitting arrangement can be:

- either an integral part of the signal receivers, or
- placed at the end of the circuit after the signal receiver.

The signalling equipment (at the output of the signal receiver) which causes the lighting of the calling and clearing lamps shall have a signal recognition time of between 100 and 1200 milliseconds:

- the minimum duration of 100 ms has been chosen so as to avoid the recognition of false signals due to imitation by speech currents;
- the maximum duration of 1200 ms has been chosen so as to permit the partial use of 500/20-Hz signal-receiver equipment.

Note 1 - The characteristics of signal receivers of the types used for automatic or semi-automatic working could possibly also be used to provide signals and supplementary facilities for operators if the Administrations concerned consider that the operational advantages to be obtained justify the equipment modifications involved at the international exchanges.

Note 2 - The time quoted in this Recommendation for the signal length and the signal recognition times would also be appropriate for out-band signalling systems using discontinuous signals for a manual service.