



INTERNATIONAL TELECOMMUNICATION UNION

ITU-T

TELECOMMUNICATION
STANDARDIZATION SECTOR
OF ITU

V.27

DATA COMMUNICATION OVER THE TELEPHONE NETWORK

4800 BITS PER SECOND MODEM WITH MANUAL EQUALIZER STANDARDIZED FOR USE ON LEASED TELEPHONE-TYPE CIRCUITS

ITU-T Recommendation V.27

(Extract from the *Blue Book*)

NOTES

1 ITU-T Recommendation V.27 was published in Fascicle VIII.1 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 V.27

4800 BITS PER SECOND MODEM WITH MANUAL EQUALIZER STANDARDIZED FOR USE ON LEASED TELEPHONE-TYPE CIRCUITS

*(Geneva, 1972; amended at Geneva, 1976 and 1980,
Malaga-Torremolinos, 1984)*

1 Introduction

This modem is intended to be used primarily on Recommendation M.1020 [1] circuits but this does not preclude the use of this modem over circuits of lower quality at the discretion of the Administration concerned.

On leased circuits, considering that there exist and will come into being many modems with features designed to meet the requirements of the Administrations and users, this Recommendation in no way restricts the use of any other modems.

The principal characteristics for this recommended modem for transmitting data at 4800 bits per second on leased circuits are as follows:

- a) it is capable of operating in a full-duplex mode or half-duplex mode;
- b) differential eight-phase modulation with synchronous mode of operation;
- c) possibility of a backward (supervisory) channel at modulation rates up to 75 bauds in each direction of transmission, the use of these channels being optional;
- d) inclusion of a manually adjustable equalizer.

2 Line signals

2.1 The carrier frequency is to be 1800 ± 1 Hz. No separate pilot frequencies are provided. The power levels used will conform to Recommendation V.2.

2.2 *Division of power between the forward and backward channels*

If simultaneous transmission of the forward and backward channels occurs in the same direction, a backward channel should be 6 dB lower in power level than the forward (data) channel.

2.3 The data stream to be transmitted is divided into groups of three consecutive bits (tribits). Each tribit is encoded as a phase change relative to the phase of the immediately preceding signal element (see Table 1/V.27). At the receiver the tribits are decoded and the bits are reassembled in correct order. The left-hand digit of the tribit is the one occurring first in the data stream as it enters the modulator portion of the modem after the scrambler.

3 Data signalling and modulation rates

The data signalling rate shall be 4800 bits per second $\pm 0.01\%$, i.e. the modulation rate is 1600 bauds $\pm 0.01\%$.

4 Received signal frequency tolerance

The carrier frequency tolerance allowance at the transmitter is ± 1 Hz and assuming a maximum frequency drift of ± 6 Hz in the connection between the modems, then the receiver must be able to accept errors of at least ± 7 Hz in the received frequencies.