SLOVENSKI STANDARD
SIST TBR 015 E1:2004

01-oktober-2004

Poslovne telekomunikacije (BTC) - Analogni 2-žični zakupljeni vodi z govorno pasovno širino ter navadno in posebno kakovostjo (A2O in A2S) - Priključitvene zahteve za vmesnik terminalske opreme

Business TeleCommunications (BTC); Ordinary and Special quality voice bandwidth 2-wire analogue leased lines (A2O and A2S); Attachment requirements for terminal equipment interface

Ta slovenski standard je istoveten z: **TBR 015 Edition 1**

ICS:

33.040.50	Vodi, zveze in tokokrogi	Lines, connections and circuits

SIST TBR 015 E1:2004 **en**

TECHNICAL BASIS for REGULATION

TBR 15

January 1997

Source: ETSI TC-BTC

Reference: DTBR/BTC-02039

ICS: 33.020

Key words: ONP, leased line, A2O, A2S

Business TeleCommunications (BTC); Ordinary and Special quality voice bandwidth 2-wire analogue leased lines (A2O and A2S); Attachment requirements for terminal equipment interface

ETSI

European Telecommunications Standards Institute

ETSI Secretariat

Postal address: F-06921 Sophia Antipolis CEDEX - FRANCE
Office address: 650 Route des Lucioles - Sophia Antipolis - Valbonne - FRANCE
X.400: c=fr, a=atlas, p=etsi, s=secretariat - **Internet:** secretariat@etsi.fr

Tel.: +33 4 92 94 42 00 - Fax: +33 4 93 65 47 16

Contents

Blank page

Foreword

This Technical Basis for Regulation (TBR) has been produced by the Business TeleCommunications (BTC) Technical Committee of the European Telecommunications Standards Institute (ETSI).

This TBR resulted from a mandate from the Commission of the European Community (CEC) to provide harmonized standards for the support of the Second Phase Directive (91/263/EEC).

This TBR is based on information from ITU-T Recommendations and ETSI publications and the relevant documents are quoted where appropriate.

Introduction

The Council Directive on the application of Open Network Provision (ONP) to leased lines (92/44/EEC) concerns the harmonization of conditions for open and efficient access to, and use of, the leased lines provided over public telecommunication networks, and the availability throughout the European Union (EU) of a minimum set of leased lines with harmonized technical characteristics.

The consequence of the Directive is that telecommunications organizations within the EU shall make available a set of leased lines within and between points in these countries with specified connection characteristics and specified interfaces.

Two classes of standard will be used for the interfaces of terminal equipment designed for connection to the ONP leased lines. European Telecommunication Standards (ETSs), which are voluntary, give the full technical specifications for these interfaces, whereas Technical Basis for Regulations (TBRs) give the essential requirements under the Second Phase Directive (91/263/EEC) for attachment to the leased lines. This TBR is a subset of the corresponding ETS 300 450.

CCITT Recommendations M.1020 (1988) and M.1040 (1988) are used as the basis for the leased line standards to which this terminal attachment requirement TBR relates.

Blank page

1 Scope

This Technical Basis for Regulation (TBR) specifies the attachment requirements and corresponding test principles for a terminal equipment interface intended for connection to the network termination points of Open Network Provision (ONP) ordinary quality or special quality voice bandwidth 2-wire analogue leased lines defined by ETS 300 448 and ETS 300 449.

The term "attachment requirements" in the context of this TBR describes the essential requirements for access which have to be fulfilled under articles 4(c) to 4(f) of the Second Phase Directive (91/263/EEC). Conformance to these requirements does not guarantee end-to-end interoperability.

This TBR is applicable to all interfaces designed for connection to the ONP ordinary quality or special quality voice bandwidth 2-wire analogue leased lines. It covers the essential requirements for the physical and electrical characteristics of the terminal equipment interface.

Customer premises wiring and installation between the terminal equipment and the Network Termination Point (NTP) are outside the scope of this TBR.

2 Normative references

This TBR incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this TBR only when incorporated in it by amendment or revision. For undated references, the latest edition of the publication referred to applies.

[1] EN 28877 (1989): "Information processing systems - Interface connector and contact assignments for ISDN basic access interface located at reference points S and T".

[2] ITU-T Recommendation P.56 (1993): "Objective measurement of active speech level".

[3] ITU-T Recommendation P.64 (1993): "Determination of sensitivity/ frequency characteristics of local telephone systems to permit calculation of their loudness ratings".

NOTE: This TBR also contains a number of informative references which have been included to indicate the sources from which material has been derived, hence they do not have an associated normative reference number. Details of these publications are given in annex C. In some cases, the same publication may have been referenced in both a normative and an informative manner.

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this TBR, the following definitions apply:

leased lines: The telecommunications facilities provided by a public telecommunication network that provide defined transmission characteristics between network termination points and that do not include switching functions that the user can control, (e.g. on-demand switching).

Network Termination Point (NTP): All physical connections and their technical access specifications which form part of the public telecommunication network and are necessary for access to and efficient communication through that public network.

reference impedance Z_R: This is a complex impedance made up of a resistance of 270 Ω in series with a parallel combination of 750 Ω and 150 nF. See also subclause A.1.3.

terminal equipment : Equipment intended to be connected to the public telecommunication network; i.e.:

- to be connected directly to the termination of a public telecommunication network; or

- to interwork with a public telecommunication network being connected directly or indirectly to the termination of a public telecommunication network,

in order to send, process, or receive information.

voice bandwidth: The band of frequencies over the range 300 Hz to 3 400 Hz.

3.2 Abbreviations

For the purposes of this TBR, the following abbreviations apply:

ac	alternating current
dc	direct current
DTMF	Dual Tone Multi-Frequency
EMC	ElectroMagnetic Compatibility
NTP	Network Termination Point
ONP	Open Network Provision
p_m	Sound pressure at the mouth reference point (used in the calculation of SLR)
rms	root mean square
SLR	Sending Loudness Rating
S_{mJ}	Sending sensitivity (used in the calculation of SLR)
S_{mJn}	Sending sensitivity at frequency f_n (used in the calculation of SLR)
TNV	Telecommunication Network Voltage (see EN 60950 subclause 3.4.)
W_{sn}	Sending weighting factor (used in the calculation of SLR)
Z_R	Reference impedance
Z_T	Termination impedance

4 Requirements

4.1 Physical characteristics

Justification: Without a means of connection, it is impossible for the terminal equipment to connect to the network, therefore this is included in order for the terminal equipment to interwork with the network (article 4f).

Requirement: The terminal equipment shall provide one or more of the following connection methods:

a) an 8-contact plug of the type specified in EN 28877 [1] with contact assignments as specified in table 1;

b) a set of connection contacts (e.g. an insulation displacement connector or screw terminal block) to which solid conductors with diameters in the range 0,4 mm to 0,6 mm may be connected;

c) a wiring arrangement connected by any means to the terminal equipment, with unterminated solid wire conductors with diameters in the range 0,4 mm to 0,6 mm at the distant end from the terminal equipment.

Where a) and c) are provided, these may be detachable by the user such that only one is connected to the terminal equipment at any one time.

NOTE: The normal presentation of the leased line is by means of a socket.

Table 1: Contact assignments

Contact number	Terminal equipment
1	Unused
2	Unused
3	Unused
4 & 5	Pair
6	Unused
7	Unused
8	Unused

Test: There shall be a visual inspection that one or more of the connection methods are provided. The contact assignments and connection methods are tested indirectly through the tests in annex A.

4.2 Electrical characteristics

The requirements of subclause 4.2 apply only in the intended operating state of the terminal equipment.

4.2.1 Longitudinal conversion loss

Justification: Certain networks may have high longitudinal signal levels (e.g. 65 volts rms). A longitudinal conversion loss is specified in order to prevent these longitudinal signals being converted into transverse signals which may cause harm to the network, article 4(d).

Requirement: The longitudinal conversion loss of the terminal equipment interface shall be greater than or equal to the values given in table 2 and figure 1.

NOTE: The longitudinal conversion loss specifies the unwanted transverse signal detected by the terminal equipment when a longitudinal signal is applied equally to the terminals of the interface.

Table 2: Longitudinal conversion loss, minimum values

Frequency range	Minimum value
300 Hz to 600 Hz	40 dB
600 Hz to 3 400 Hz	46 dB

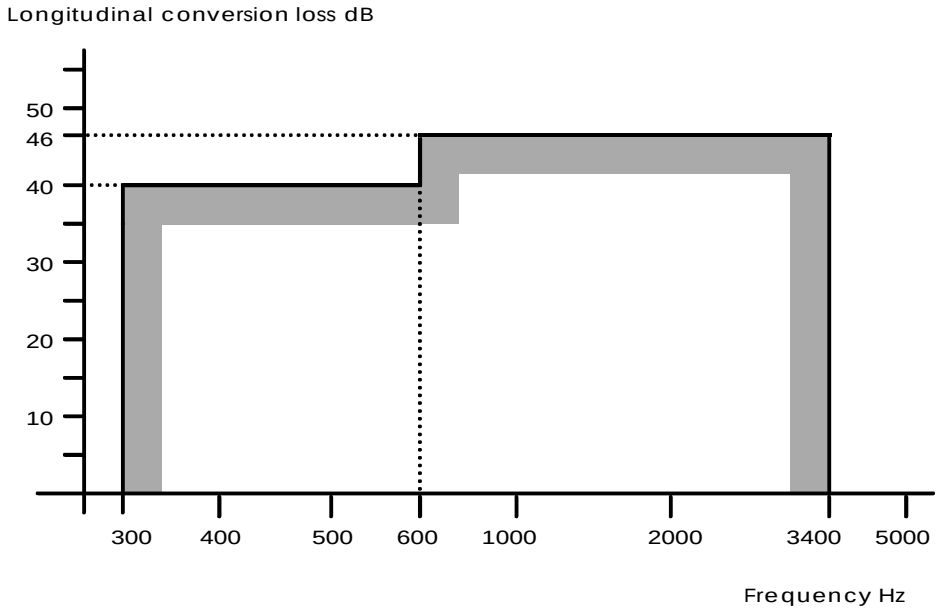

Figure 1: Longitudinal conversion loss, minimum values