



SLOVENSKI STANDARD
SIST I-ETS 300 480 E1:2003
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Javno komutirano telefonsko omrežje (PSTN) – Specifikacija preskušanja za telefonijo z analognimi pogovorkami

Public Switched Telephone Network (PSTN); Testing specification for analogue handset telephony

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Foreword

This European Telecommunication Standard (ETS) was produced by the Terminal Equipment (TE) Technical Committee (TE) of the European Telecommunications Standards Institute (ETSI).

An ETSI standard may be given I-ETS status either because it is regarded as a provisional solution ahead of a more advanced standard, or because it is immature and requires a "trial period". The life of an I-ETS is limited to three years after which it can be converted into an ETS, have its life extended for a further two years, be replaced by a new version, or be withdrawn.

This I-ETS is compiled as a separate, but complementary I-ETS to the requirements given in I-ETS 300 677.

Proposed announcement date	
Date of adoption of this I-ETS:	12 January 1996
Date of latest announcement of this I-ETS (doa):	30 April 1996

Introduction

This I-ETS provides a set of common test methods suitable for deriving the electro-acoustic requirements of an analogue telephony terminal as described in clause 1 (Scope). These test methods do not exactly simulate actual network components (e.g. local line sections, exchange feeding bridges) which are different in each country, but provide a common basis for comparing the performance of different telephony terminals.

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1 Scope

This I-ETS specifies test methods for the conformance testing of electro-acoustic characteristics of analogue handset telephony terminals communicating across the European Public Switched Telephone Networks (PSTNs).

NOTE: Tests for access requirements are contained in another standard e.g. ETS 300 001 [1].

2 Normative references

This I-ETS 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 I-ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 001 (NET 4): "Attachments to the Public Switched Telephone Network (PSTN); General technical requirements for equipment connected to an analogue subscriber interface in the PSTN".
- [2] ITU-T Recommendation P.64 (1993): "Determination of sensitivity/frequency characteristics of local telephone systems".
- [3] ITU-T Recommendation P.51 (1993): "Artificial mouth".
- [4] ITU-T Recommendation P.57 (1993): "Artificial ears".
- [5] IEC 651: "Sound level meters".
- [6] CCITT Handbook on Telephonometry, ITU, Geneva (1992).
- [7] ISO 3 (1973): "Preferred numbers - Series of preferred numbers".
- [8] ITU-T Recommendation P.79 (1993): "Calculation of loudness ratings for telephone sets".
- [9] CCITT Recommendation O.41 (1988): "Psophometer for use on telephone-type circuits".
- [10] ITU-T Recommendation G.122 (1993): "Influence of national systems on stability talker echo in international connections".

3 Abbreviations

For the purposes of this I-ETS, the abbreviations in ITU-T Recommendation P.10 apply along with the following:

ERL	Echo Return Loss
LRGP	Loudness Rating Guard-ring Position
MRP	Mouth Reference Point
RL	Return Loss
RLR	Receiving Loudness Rating
SLR	Sending Loudness Rating
STMR	Sidetone Masking Rating
TE	Terminal Equipment

4 Speech transmission compliance tests

4.1 General conditions for testing

4.1.1 Environment for tests

The environmental conditions which shall apply for the testing laboratory are specified in subclause 1.6 of ETS 300 001 (NET 4) [1].

4.1.2 Accuracy of measurements and test equipment setting

Unless specified otherwise, the accuracy of measurements made by test equipment shall be equal to or better than:

Item	Accuracy
Electrical signal level	$\pm 0,2$ dB for levels $\geq - 50$ dBm $\pm 0,4$ dB for levels $< - 50$ dBm
Sound pressure	$\pm 0,7$ dB
Frequency	$\pm 0,2$ %

Unless specified otherwise, the accuracy of the signals generated by the test equipment shall be better than:

Quantity	Accuracy
Sound pressure level at Mouth Reference Point (MRP)	± 3 dB for frequencies from 100 Hz to 200 Hz ± 1 dB for frequencies from 200 Hz to 4 000 Hz ± 3 dB for frequencies from 4 000 Hz to 8 000 Hz
Electrical excitation levels	$\pm 0,4$ dB across the whole frequency range.
Frequency generation	± 2 % (see note)
Specified component values	± 1 %
NOTE:	This tolerance may be used to avoid measurements at critical frequencies, e.g. those due to sampling operations within the terminal under test.

4.1.3 Order of tests

Tests are made in any order except where otherwise specified.

Where testing involves taking measurements using different feeding resistances, measurements shall be made with the largest loop resistance, then at lesser values of resistance, decreasing sequentially to the minimum, in order to avoid a heating effect in the test arrangement.

4.1.4 Acoustic environment

Acoustic tests shall be carried out in an environment where the ambient noise is insufficient to influence the acoustic measurements being made.

Tests for noise and Echo Return Loss (ERL) shall be carried out in an environment where the ambient noise is less than $- 64$ dBPa(A).

4.1.5 Handset mounting

Unless otherwise stated in a particular test, where the mouthpiece of the TE is fixed relative to the earcap, the handset shall be placed in the Loudness Rating Guard-ring Position (LRGP) as described in annex C of ITU-T Recommendation P.64 [2].

In the case of a moveable microphone part, measurements are to be carried at the setting for normal usage as defined by the manufacturer.

Where the mouthpiece of the TE is separate from the earpiece, the front plane of the mouthpiece shall be mounted 15 mm in front of the lip ring and coaxial with the artificial mouth.

The earcap shall be applied to the artificial ear.

4.1.6 Test levels

4.1.6.1 Sending

Unless otherwise stated in this I-ETS or in a relevant terminal standard, a pure tone signal with a sound pressure level of - 4,7 dBPa shall be applied at the Mouth Reference Point (MRP) as described in ITU-T Recommendation P.64 [2].

4.1.6.2 Receiving

Unless otherwise stated in this I-ETS or in a relevant terminal standard, a pure tone signal with an e.m.f of - 12 dBV from a 600 Ω resistive source shall be connected between the terminals A and B shown in figure 1.

4.1.6.3 Sidetone

Unless otherwise stated in this I-ETS or in a relevant terminal standard, a pure tone signal with a sound pressure level of - 4,7 dBPa shall be applied at the MRP as described in ITU-T Recommendation P.64 [2].

4.1.7 Volume control

Where a user-controlled volume control is provided, compliance tests shall be carried out at a setting of the volume control as specified in the appropriate requirement.

4.1.8 Test equipment requirements

Artificial mouth: the artificial mouth shall conform to ITU-T Recommendation P.51 [3].

Artificial ear: the ITU-T Recommendation P.57 [4] Type 1 shall be used unless another artificial ear described in that Recommendation is requested by the terminal supplier.

Where a Type 1 ear is not used:

- a) the sound pressure measurements shall be referred to the Ear Reference Point (ERP) by the correction characteristics specified in ITU-T Recommendation P.57 [4];
- b) no leakage correction shall be made in the calculations of Receiving Loudness Rating (RLR) (i.e. $L_E=0$).

Sound level measuring equipment: the sound level measuring equipment shall conform to IEC publication 651 [5], type 1.

The d.c. feeding circuit shall be based upon subclause 1.2.3 of the Handbook on Telephonometry [6]. The feed resistance values are specified in subclause 4.2 of this I-ETS.

4.1.9 Alternative test methods

The requirements of this test specification were written on the basis of the standard test methods described in this I-ETS. For some parameters it is recognised that alternative test methods may exist. It is the responsibility of the test house to ensure that any alternative method used is equivalent to that described in this I-ETS.

4.1.10 Testing arrangements

All tests for transmission performance shall be carried out with the TE connected to the test arrangement shown in figure 1.