

ATAAB ADVISORY NOTE

TRAC Analogue Type Approval Advisory Board

ATAAB Advisory Note Number: AN 09

Subject: Testing Instantaneous voltage in a wider frequency range

APPLICABILITY

This note is applicable for Terminal Equipment intended for connection to the German Public Switched Telephone Networks, in addition to:

" CTR 21" (When published)

NOTE: Until CTR 21 is available, reference should be made to ETSI document prTBR 21 (Sept 1997) or, when it is available, to TBR 21.

Appendix to this Advisory Note:

A: Additional requirements and tests for attachment to the German PSTN

In consideration of the following:

- Great values of instantaneous voltage will saturate the DTMF-receiver and therefore the network is unable to analyze the dialling-information.
- Because of the complete change of this requirement during the Resolution Meeting, this requirement could not have been considered during the public enquiry.
- Instantaneous voltage in frequency ranges, which are not tested in the current version of CTR21, may cause the loss of dialing information.
- The very low frequency ranges of instantaneous voltage from 200 Hz down to 5 Hz can be caused by internal switches in TEs, when switching from normal operation to DTMF-signaling. This can cause misinterpretation of the first digit by the DTMF-Receiver of the network.
- Higher frequency instantaneous voltage from 3800 Hz up to 4300 Hz can also effect the DTMF-Receiver because of the not ideal characteristic of the input filter of the DTMF-Receiver of the network.
- Not improving this requirement will cause wrong dialing in the German Network.

ATAAB advises the following:

The frequency range for testing instantaneous voltage should be extended to a range from 5 Hz to 4 300 Hz.

To ensure interworking with the German Public Switched Telephone Network, the TE shall, in addition to the requirements of CTR 21, comply with the requirements found in Appendix A of this Advisory Note.

It is the responsibility of the supplier to provide information for users as to whether the Terminal Equipment complies with the additional requirements for the German Public Switched Telephone Network specified in this Advisory Note.

Appendix A also specifies the method to assess compliance with the additional requirement, including reference to the additional tests to be performed to dynamically assess compliance with the additional requirements.

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Appendix A

to

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A.1 INTRODUCTION

Terminal equipment approved to CTR 21 may not interwork properly with the German Public Switched Telephone Network.

This Appendix specifies requirements to which a TE shall comply, in addition to the requirements of CTR 21 to ensure interwork with the German Public Switched Telephone Network. It also specifies the method to assess compliance with these additional requirements, including reference to additional tests to be performed to dynamically assess compliance with the additional requirements.

A.2 NORMATIVE REFERENCES

- [1] CTR 21; Terminal Equipment (TE). Attachment requirements for pan-European approval for connection to the analogue Public Switched Telephone Networks (PSTNs) of TE (excluding TE supporting the voice Telephony Service) in which network addressing, if provided, is by means of Dual Tone Multi-Frequency (DTMF) signalling.

NOTE: This document makes reference to CTR 21. Until CTR 21 is available, reference should be made to the base ETSI documents prTBR 21 (June 1996) or, when it is available, to TBR 21.

A.3 REQUIREMENTS and ASSOCIATED TESTS

A.3.1 General loop steady state requirements

NOTE: The following requirements are in addition to the requirements of CTR 21 Clause 4.7.3.2 and the associated tests in Clause A.4.7.3.2. The changes introduced by this Advisory Note extend the frequency range from 5 Hz to 4300 Hz.

A.3.1.1 Instantaneous voltage (Requirement - based on CTR 21: Clause 4.7.3.2)

Justification: 91/263/EEC, Article 4(d); Protection of the PSTN from harm is assured by limiting the signal sent into the PSTN by the TE so that the interfering effects of the signal can be predicted and avoided.

Requirement: The peak to peak voltage in the frequency range 5 Hz to 4300 Hz shall not exceed 5,0 V when the TE interface is terminated with the reference impedance Z_R .

Test: The test shall be conducted according to A.3.1.2.

A.3.1.2 Instantaneous voltage (Test - based on CTR 21: Clause A.4.7.3.2)

Requirement: Subclause A.3.1.1

Purpose: To check that the peak to peak voltage of the TE complies with subclause 4.7.3.2.

Measurement principle:

Preamble: Set the TE in loop state.

Test state: The TE shall be in loop state and sending representative signals.

Test configuration:

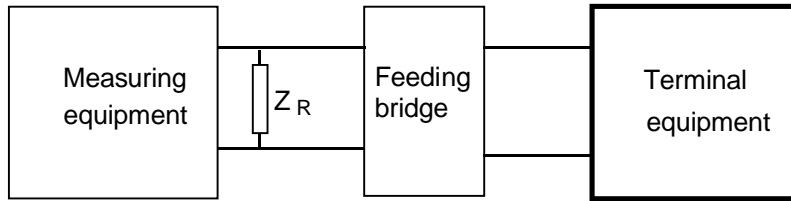


Figure A.14

DC feeding arrangement: Feed voltage: 50 V. Feed resistance: each of the following: 230 Ω and 3800 Ω . Polarity shall be switched between each feed resistance.

AC termination of TE: Z_R

Measurement points: The TE is exercised to send to the line:

- a) representative combinations of its declared output capabilities
- b) DTMF signals

Measurement execution:

The TE shall be set in the loop state, transmitting representative signals. The peak to peak voltage transmitted across the termination points of the TE, shall be measured.

Formal processing: None

Verdict: If the peak to peak voltage is not higher than 5,0 V in the frequency range 5 Hz to 4 300 Hz then Pass; else Fail.

Guidance: TE with adjustable output level is set up in accordance with supplier's instructions to send at its maximum intended level.

A.3.1.3 Requirements Table (CTR-RT)

The requirements table of CTR 21, Annex B is still applicable.