

GERMAN ADVISORY NOTE

German Advisory Note Number: DE 08

Subject: Lower limit of voltage in DC characteristics

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:

- Because of the design of the installed line-cards of the PSTN in Germany a minimum voltage in loop state is required.
- TE not showing this minimum voltage in loop state to the network will not allow a correct inter-working with the PSTN.

The German Regulatory Authority advises the following:

The voltage/current characteristics of TE in the loop state shall provide a minimum voltage as described in Appendix A of this Advisory note.

To ensure inter-working 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 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 (Sept 1997) 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 4.7.1 and the associated tests in Clause A.4.7.1. The changes introduced by this Advisory Note replaces the minimum voltage-values of 0 V by 5,4 V at the complete range of more than 20 mA current.

A.3.1.1 DC characteristics (Requirement - based on CTR 21: Clause 4.7.1)

Justification: 91/263/EEC, Article 4(f); Interworking with the European PSTN, some of which having different DC characteristics, is assured by requiring the TE to present a sufficiently low DC resistance in loop state.

Requirement: The DC voltage/current characteristics of the TE within the operating range as stated in clause 4.7 shall not exceed the limits given in table 5 and shown in figure 5.

Table 5: TE voltage/current characteristics

Point	Voltage (V)	Current (mA)
A	9,0	0
B	9,0	20,0
C	14,5	42,0
D	40,0	50,0
E	40,0	60,0
F	5,4	60,0
G	5,4	20,0
H	0	0
NOTE:	Limits for intermediate currents can be found by drawing a straight line between the break points on a linear voltage/current scale.	

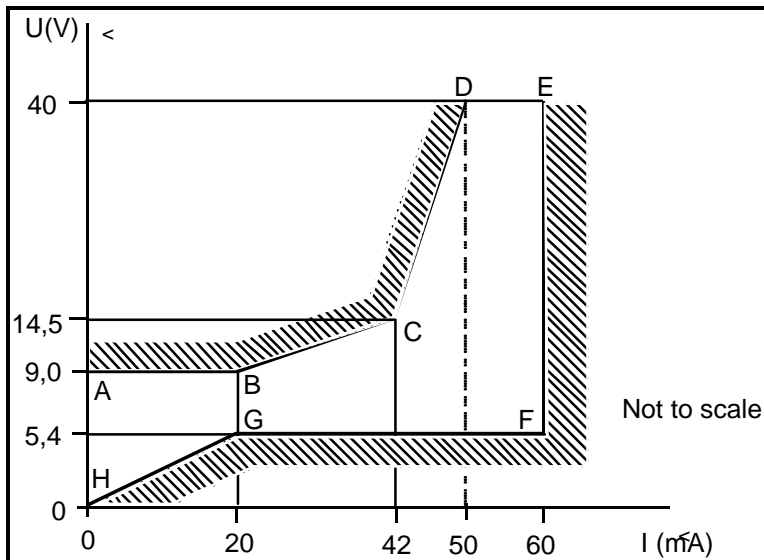


Figure 5: TE voltage/current characteristics

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

A.3.1.2 DC characteristics (Test - based on CTR 21: Clause A.4.7.1)

Requirement: Subclause A.3.1.1

Purpose: To verify that the steady-state DC loop characteristics are within the limits given in table 5, and shown in figure 5. The test only applies to TE which are capable of reaching the loop state.

Measurement principle:

Preamble: Set the TE in quiescent state.

Test state: Loop state.

Test configuration:

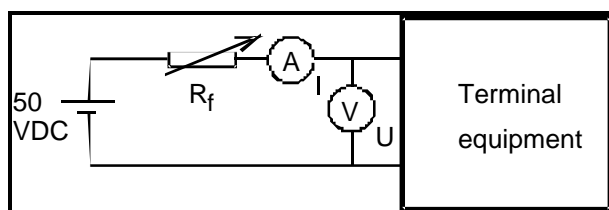


Figure A.11

DC feeding arrangement:

Feed voltage: 50 V;

Feed resistance: each of the following: 230 W, 850 W, 2 050 W and 3 200 W; Polarity shall be switched between each feed resistance.

Measurement execution:

In sequence, select a feed resistance value according to the DC feeding arrangement and then cause the TE to enter the loop state after making sure that the TE has been held at least one minute in quiescent state. When the terminal has been in the loop state for at least 1,2 s, measure the DC current drawn by the TE and the DC voltage across the TE for each of the feed conditions. Allow sufficient settling time, to a maximum of 3 s, to ensure that the measured value is stable to within $\pm 0,5$ % for at least 0,2 s. Then repeat the sequence for other measurement points, repeating each time a transition from quiescent state to loop state.

Formal processing: None.

Verdict: If the DC voltage/current characteristics are within the limits as given in table 5, and shown in figure 5 then Pass; else Fail.

Guidance: Allowing "sufficient settling time" is useful to ensure test repeatability and reproducibility. Nevertheless if the stated stability cannot be found, the settling time shall be limited to 3 s. In this latter case a measurement accuracy improvement may be obtained by averaging several measurement readings made during the settling time.

A.3.1.3 Requirements Table (CTR-RT)

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