ATAAB ADVISORY NOTE

TRAC Analogue Type Approval Advisory Board

ATAAB Advisory Note Number: AN 13R00

Date: 1998-06-02

Subject: Additional test method details for existing requirements in TBR 21 when applied to voice TE

APPLICABILITY

This note is generally applicable (in all countries that are members of TRAC except Portugal) for testing voice TE within the scope of TBR 21 where a test requires voice stimulation to reproduce the normal use of the device under test.

☒ **"CTR 21" (When published).**

NOTE: Until CTR 21 is available, reference should be made to ETSI document TBR 21.

In principle this will affect the following clauses in TBR 21, annex A:

A.4.7.3.1	Mean sending level
A.4.7.3.2	Instantaneous voltage
A.4.7.3.3	Voltage level in a 10 Hz bandwidth
A.4.7.3.4.2	Sending level above 4,3 kHz during communication
A.4.7.4.1	Longitudinal Conversion Loss
A.4.7.4.2	Output Signal Balance
A.4.8.2.3	Unwanted frequency components

Appendix to this Advisory Note:

A: Additional information for the application of the existing requirements and test methods of TBR 21 to voice stimulated TE.

In consideration of the following:

- When TBR 21 is applied to voice TE detailed information on some tests is not included in the TBR itself but is left to the competence of the laboratory carrying out the tests.

- It is important to achieve reproducibility of test results.

ATAAB advises the following:

When testing voice TE within the scope of TBR 21 and where the activation of the circuits of the device under test that transmit voice-band signals to the PSTN requires an external electrical or acoustic voice stimulus reproducing the normal use of the TE, test houses are recommended to use technical information specified in this Advisory Note.

NOTE: The Portuguese Regulatory Authority and Notified Body have indicated that the tests of this Advisory Note will not be accepted as adequately demonstrating compliance with the relevant requirements.

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Appendix A

to

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Date: 1998-06-02

Subject: Additional information for the application of the existing requirements and test methods of TBR 21 to voice stimulated TE

A.1 INTRODUCTION

There is a risk that Voice Terminal Equipment to be approved to TBR 21 could yield different test results from test house to test house if some more detailed guidance is not provided in respect of certain tests. This annex specifies additional test method details, which, if used, should minimize this risk.

This document is based on technical studies being carried out by ETSI project ATA. The present annex contains examples of relevant test methods taken from existing ATA documents, including TBR 37, that provide additional details to support testing of voice equipment against the access requirements of TBR 21.

A.2 NORMATIVE REFERENCES

[1] TBR 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".

A.3 VOICE SIGNAL TO BE USED DURING TESTS

A.3.1 Type

Pink Noise: For the purpose of this document the pink noise test signal, adjusted at the relevant Reference Point, shall be band limited to the frequency range 200 Hz to 3 800 Hz.

There are two recommended methods of achieving this, the choice of which depends upon the filtering technique used.

a) Where analogue filters are used the slopes of the band limiting filter shall be at least 24 dB/ octave and the out-of-band attenuation shall be at least 25 dB (see figure 1). The third octave spectrum of electrically generated pink noise shall be equalized to within ± 1 dB, while acoustically generated pink noise shall be equalized (in free field) to within ± 3 dB.

NOTE 1: When measured with 1/3 octave bandwidth at standard frequencies, an ideal filtered pink noise signal will be attenuated 1,1 dB at 200 Hz and 0,9 dB at 4 kHz compared to a non-filtered pink noise signal.

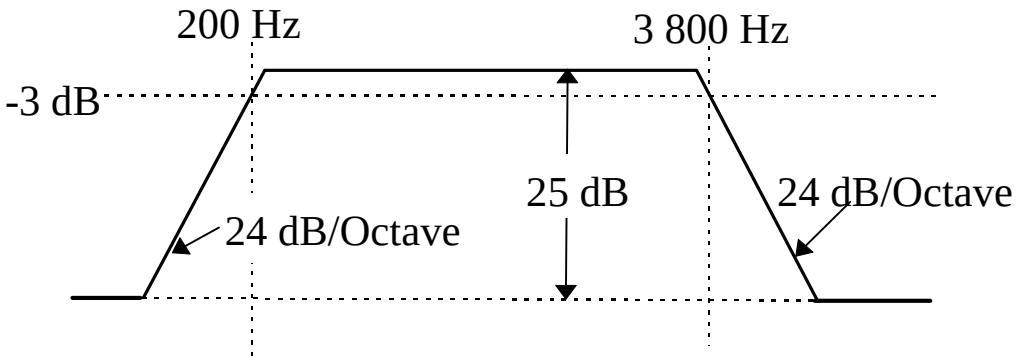

Figure AN 13.1: Response for the band-limiting filter

b) Where digital filters are used the detail of a) above applies, but with the 3 dB attenuation points set at 225 Hz and 3 563 Hz instead of 200 Hz and 3 800 Hz.

Speech Test Signal: This shall be band-limited pink noise (see definition above) that is continuously modulated to be ON for a period of 250 ms ± 5 ms and OFF for a period of 150 ms ± 5 ms. The signal level specified refers to the level of the signal during the ON period.

Pseudo Speech Signal: This shall be a speech test signal (see definition above) with 11 cycles and then followed by a period of 5,6 seconds ± 20 ms OFF giving an activity ratio of approximately 28 %.

NOTE 2: The total OFF time after the 11th ON burst will be 5,75 seconds.

NOTE 3: The timing tolerances given above will result in a tolerance for the r.m.s. level of ± 0,1 dB.

This Pseudo Speech Signal is repeated for as long as is necessary for any measurements to be made.

Where the Supplier declares that the Pseudo Speech Signal is not appropriate for the intended use of the TE, an alternative test signal may be specified by the Supplier providing that the overall activity ratio during a one minute period shall be within the range of 23 % to 33 %. Any alternative signal shall be adjusted to give the same r.m.s. level over a one minute period as the level for the pseudo speech signal.

NOTE 4: The activity factor of 27,6 % can be found in ITU Recommendation P.59 Artificial Conversational Speech.

A.3.2 Levels

Table AN 13.1: Input signal levels (ON)

		except for A.4.7.3.2	**A.4.7.3.2 only**
Stimulating point:	Stimulated point:	nominal	5 Vpp
analogue NTP simulator	TCP	-12 dBVemf	-7 dBVemf
digital (NTP or TCP or other)	TCP or ICP or other	-12,5 dBm0	-7,5 dBm0
analogue TCP simulator	ICP	-4 dBVemf	+1 dBVemf
MRP of a handset or headset	microphone	-4,7 dBPa	+0 dBPa
HFRP of a handsfree	microphone	-28,7 dBPa	-24 dBPa

NOTE: Analogue interfaces (PSTN-TCP and ICP) shall be stimulated with generators presenting a source impedance of Zref defined in TBR 21. Equalization and level calibration of the pink noise signal shall be done with the generator disconnected from the load.

A.4 ELECTRO-ACOUSTIC INTERFACES

A.4.1 Handset

Mouth Reference Point (MRP): Generally the appropriate Mouth Reference Point from ITU Recommendations P.34, P.56 etc., shall be used. Where a supplier has declared that the ITU MRP would be inappropriate for the intended use of the TE, then the microphone positioning described by the supplier shall be applied.

A.4.2 Hands-free

Hands-Free Reference Point (HFRP): A point located on the axis of the artificial mouth, at 50 cm from the lip ring, where the level calibration is made in free field. It corresponds to the measurement point n° 11, as defined in ITU-T Recommendation P.51.

A.4.3 Headset

For headsets the same measuring methods apply as for handsets. If the microphone positioning for testing is not defined by the manufacturer, it will correspond to the "corner of the mouth" position as defined in the ITU-T Recommendation P.38, clause 1, Note.

A.4.4 Other interfaces

TE with other transducers arrangements will be tested in accordance with the manufacturer's instructions.

A.5 ELECTRICAL INTERFACES SIMULATIONS

A.5.1 Analogue 2-wire NTP (Network Termination Points)

The analogue 2-wire NTP simulation is the one used for the tests in TBR 21.

A.5.2 Analogue 2-wire TCP (TCP of TE behind TCE)

The analogue 2-wire TCP simulation is derived from TBR 21. For test purposes it will have an equivalent DC-resistance of 400 Ù and an impedance of Zref as defined in TBR 21 (270 Ù + [750 Ù // 150 nF]).

A.5.3 Other harmonized interfaces

Should be simulated according the corresponding standards.

A.5.4 Non harmonized interfaces

Should be simulated according the manufacturers instructions.

A.6 Requirements Table (TBR-RT)

The requirements table of TBR 21, annex B is still applicable.