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Contents

Foreword

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Introduction

The present document specifies minimum performance requirements for the acoustic characteristics of 3G and LTE terminals when used to provide narrowband, wideband, super-wideband or fullband telephony.

The objective for narrowband services is to reach a quality as close as possible to ITU-T standards for PSTN circuits. However, due to technical and economic factors, there cannot be full compliance with the general characteristics of international telephone connections and circuits recommended by the ITU-T.

The performance requirements are specified in the main body of the text; the test methods and considerations are described in TS 26.132.

1 Scope

The present document is applicable to any terminal capable of supporting narrowband, wideband, super-wideband or fullband telephony, either as a stand-alone service or as the telephony component of a multimedia service. The present document specifies minimum performance requirements for the acoustic characteristics of 3G and LTE terminals when used to provide narrowband, wideband, super-wideband or fullband telephony.

The set of minimum performance requirements enables a guaranteed level of speech quality while taking possible physical limits of the terminal design into account. Some performance objectives are also defined, if such design limits can be overcome. Care must be taken in applying performance objectives in isolation, not to degrade overall end-user speech quality.

2 References

The following documents contain provisions which, through reference in this text, constitute provisions of the present document.

- References are either specific (identified by date of publication, edition number, version number, etc.) or non-specific.
- For a specific reference, subsequent revisions do not apply.
- For a non-specific reference, the latest version applies. In the case of a reference to a 3GPP document (including a GSM document), a non-specific reference implicitly refers to the latest version of that document *in the same Release as the present document*.

[1] 3GPP TS 26.132: "Speech and video telephony terminal acoustic test specification".

[2] ITU-T Recommendation B.12 (1988): "Use of the decibel and the neper in telecommunications"

[3] ITU-T Recommendation G.103 (1998): "Hypothetical reference connections".

[4] ITU-T Recommendation G.111 (1993): "Loudness ratings (LRs) in an international connection".

[5] ITU-T Recommendation G.121 (1993): "Loudness ratings (LRs) of national systems".

[6] ITU-T Recommendation G.122 (1993): "Influence of national systems on stability and talker echo in international connections".

[7] Void

[8] ITU-T Recommendation P.11 (1993): "Effect of transmission impairments".

[9] ITU-T Recommendation P. 380 (2003): "Electro-acoustic measurements on headsets".

[10] ITU-T Recommendation P.50 (1993): "Artificial voices".

[11] ITU-T Recommendation P.79 (11/07) with Annex G (2001): "Calculation of loudness ratings for telephone sets".

[12] ITU-T Recommendation G.223 (11/88): "Assumptions for the calculation of noise on hypothetical reference circuits for telephony".

[13] ITU-T Recommendation P.340 (05/00): "Transmission characteristics and speech quality parameters of hands-free terminals".

[14] ITU-T Recommendation P.501 (01/12): "Test signals for use in telephonometry".

[15] ITU-T Recommendation P.502 (05/00): "Objective test methods for speech communication systems using complex test signals".