ETSI TS 126 115 V14.0.0 (2017-04)

Universal Mobile Telecommunications System (UMTS);
LTE;
Echo control for speech and multimedia services
(3GPP TS 26.115 version 14.0.0 Release 14)

Reference
RTS/TSGS-0426115ve00

Keywords
LTE,UMTS

ETSI

650 Route des Lucioles
F-06921 Sophia Antipolis Cedex - FRANCE

Tel.: +33 4 92 94 42 00 Fax: +33 4 93 65 47 16

Siret N° 348 623 562 00017 - NAF 742 C
Association à but non lucratif enregistrée à la
Sous-Préfecture de Grasse (06) N° 7803/88

Intellectual Property Rights

IPRs essential or potentially essential to the present document may have been declared to ETSI. The information pertaining to these essential IPRs, if any, is publicly available for **ETSI members and non-members**, and can be found in ETSI SR 000 314: *"Intellectual Property Rights (IPRs); Essential, or potentially Essential, IPRs notified to ETSI in respect of ETSI standards"*, which is available from the ETSI Secretariat. Latest updates are available on the ETSI Web server (https://ipr.etsi.org/).

Pursuant to the ETSI IPR Policy, no investigation, including IPR searches, has been carried out by ETSI. No guarantee can be given as to the existence of other IPRs not referenced in ETSI SR 000 314 (or the updates on the ETSI Web server) which are, or may be, or may become, essential to the present document.

Foreword

This Technical Specification (TS) has been produced by ETSI 3rd Generation Partnership Project (3GPP).

The present document may refer to technical specifications or reports using their 3GPP identities, UMTS identities or GSM identities. These should be interpreted as being references to the corresponding ETSI deliverables.

The cross reference between GSM, UMTS, 3GPP and ETSI identities can be found under http://webapp.etsi.org/key/queryform.asp.

Modal verbs terminology

In the present document "**shall**", "**shall not**", "**should**", "**should not**", "**may**", "**need not**", "**will**", "**will not**", "**can**" and "**cannot**" are to be interpreted as described in clause 3.2 of the ETSI Drafting Rules (Verbal forms for the expression of provisions).

"**must**" and "**must not**" are **NOT** allowed in ETSI deliverables except when used in direct citation.

Contents

Foreword

This Technical Specification has been produced by the 3rd Generation Partnership Project (3GPP).

The contents of the present document are subject to continuing work within the TSG and may change following formal TSG approval. Should the TSG modify the contents of the present document, it will be re-released by the TSG with an identifying change of release date and an increase in version number as follows:

Version x.y.z

where:

x the first digit:

1 presented to TSG for information;

2 presented to TSG for approval;

3 or greater indicates TSG approved document under change control.

y the second digit is incremented for all changes of substance, i.e. technical enhancements, corrections, updates, etc.

z the third digit is incremented when editorial only changes have been incorporated in the document.

Introduction

The present document specifies minimum performance requirements for the transmission planning aspects of 3G speech and multi-media services.

The objective 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 the main body of the text; the test methods and considerations are described in [tbd].

1 Scope

The present document specifies minimum performance requirements for the gateway echo control of 3G speech and multi-media services. The present document is applicable to any narrow band speech telephony or multimedia service.

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] ITU-T Recommendation G.114 (2000): "One-way transmission time".

[2] ITU-T Recommendation G.168 (2000): "Digital network echo cancellers".

[3] ITU-T Recommendation G.131 (1996): "Control of talker echo".

[4] ITU-T Recommendation G.703 (1998): "Physical/electrical characteristics of hierarchical digital interfaces".

[5] ITU-T Recommendation G.711 (1988): "Pulse code modulation (PCM) of voice frequencies".

3 Abbreviations

For the purposes of the present document, the following abbreviations apply:

ADC	Analogue to Digital Converter
DAC	Digital to Analogue Converter
DTX	Discontinuous Transmission
EC	Echo Canceller
EEC	Electrical Echo Control
EL	Echo Loss
ERL	Echo Return Loss
ERLE	Echo Return Loss Enhancement
PCM	Pulse Code Modulation
POI	Point of Interconnection (with PSTN)
PSTN	Public Switched Telephone Network
TCL	Terminal Coupling Loss
TX	Transmission

4 Interfaces

The POI with the public switched telephone network (PSTN) will generally be at the 2 048 kbits/ level at an interface in accordance with ITU-T Recommendation G.703 [4]/G.704 or STM1 155Mbit/s. At this point, which is considered to have a relative level of 0 dBr, the analogue signals will be represented by 8-bit A-law or μ-law according to ITU-T Recommendation G.711 [5]. Analogue measurements may be made at this point using a standard send and receive side, as defined in ITU-T Recommendations.