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Integrated Services Digital Network (ISDN); Audio characteristics of terminals designed to support conference services in the ISDN

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ICS:

33.080	Digitalno omrežje z integriranimi storitvami (ISDN)	Integrated Services Digital Network (ISDN)
35.180	Terminalska in druga periferna oprema IT	IT Terminal and other peripheral equipment

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Contents

Foreword	7
1 Scope	9
2 Normative References	9
3 Definitions and abbreviations	11
3.1 Definitions	11
3.2 Abbreviations	11
4 System description	12
4.1 Audio facilities	13
4.2 Audio encoding	13
4.2.1 CCITT Recommendation G.711 encoding	13
4.2.1.1 A-law	13
4.2.1.2 μ -law	13
4.2.2 CCITT Recommendation G.722 encoding	14
4.2.3 CCITT Recommendation G.728 encoding	14
4.3 Audio decoding	14
4.3.1 CCITT Recommendation G.711 decoding	14
4.3.1.1 A-law	14
4.3.1.2 μ -law	14
4.3.2 CCITT Recommendation G.722 decoding	14
4.3.3 CCITT Recommendation G.728 decoding	14
4.4 Relative level	15
5 Speech transmission characteristics	15
5.1 Handset mode	15
5.2 Headset mode	15
5.3 Hands-free mode (single user)	15
5.4 Hands-free mode (multiple users)	15
5.4.1 Receiving volume control and sensitivity adjustments	16
5.4.1.1 Sending sensitivity adjustment	16
5.4.1.2 Receiving sensitivity adjustment	16
5.4.1.3 Receiving volume control	16
5.4.1.4 Adaptive gain control (optional)	16
5.4.2 Sensitivity-frequency response	16
5.4.2.1 Sending	16
5.4.2.2 Receiving	17
5.4.3 Loudness rating	18
5.4.3.1 Sending	18
5.4.3.2 Receiving	18
5.4.4 Terminal coupling loss	19
5.4.4.1 TCL_W	19
5.4.4.2 Stability loss	19
5.4.5 Distortion	19
5.4.5.1 Sending	19
5.4.5.2 Receiving	20
5.4.6 Out-of-band signals	20
5.4.6.1 Discrimination against out-of-band input signals (sending)	20
5.4.6.2 Spurious out-of-band (receiving)	20
5.4.7 Noise	21
5.4.7.1 Sending	21
5.4.7.2 Receiving	21
5.4.8 Delay	21
Annex A (normative): Test methods	22

A.1	General conditions for testing	22
A.1.1	Testing environment.....	22
A.1.1.1	Test room	22
A.1.1.2	Testing arrangements.....	22
A.1.1.2.1	Sending	23
A.1.1.2.2	Receiving	23
A.1.1.2.3	Terminal coupling loss	24
A.1.2	Test equipment interface.....	24
A.1.3	Test equipment requirements	24
A.1.3.1	Electroacoustic equipment.....	24
A.1.3.2	Test signals and spectrum measurements.....	24
A.1.3.2.1	Standard test signals.....	24
A.1.3.2.2	Composite source signal.....	25
A.1.3.3	Test signals levels	25
A.1.3.3.1	Sending	25
A.1.3.3.2	Receiving	25
A.1.3.4	Test equipment for the digital interface	25
A.1.3.4.1	Codec specifications	25
A.1.3.4.2	Analogue interface	26
A.1.3.4.3	Definition of 0 dBr point.....	26
A.1.4	Accuracy of calibrations	26
A.2	Testing of transmission requirements	26
A.2.1	Sensitivity-frequency response	26
A.2.1.1	Sending.....	26
A.2.1.2	Receiving	27
A.2.2	Loudness rating.....	27
A.2.2.1	Sending Loudness Rating.....	27
A.2.2.2	Receiving Loudness Rating.....	28
A.2.3	Terminal Coupling Loss	28
A.2.3.1	Weighted Terminal Coupling Loss.....	28
A.2.3.2	Stability loss	28
A.2.4	Distortion	28
A.2.4.1	Sending	28
A.2.4.2	Receiving	29
A.2.5	Out-of-band signals	29
A.2.5.1	Discrimination against out-of-band input signals (sending)	29
A.2.5.2	Spurious out-of-band (receiving)	29
A.2.6	Noise	29
A.2.6.1	Sending.....	29
A.2.6.2	Receiving	29
A.2.7	CCITT Recommendation G.725 encoding.....	29
Annex B (informative):	Test Methods for Delay measurement.....	30
B.1	Introduction	30
B.2	Cross-correlation method	30
B.2.1	Sending	30
B.2.2	Receiving.....	31
B.2.3	Total delay.....	31
B.3	Method based on group delay	31
B.3.1	Sending	31
B.3.2	Receiving.....	32
B.3.3	Total delay.....	32
Annex C (informative):	Audio alignment and practical installation guides	33
C.1	Introduction	33
C.2	Audio alignment and sensitivity-frequency characteristics	33
C.2.1	Sending	33

	C.2.1.1	Sensitivity adjustment(s)	33
	C.2.1.2	In-site frequency response	34
C.2.2	Receiving		34
	C.2.2.1	Sensitivity adjustment.....	34
	C.2.2.2	In-site frequency response	34
C.3	Practical installation criteria		34
	C.3.1	Maximum talker to microphone distance	34
		C.3.1.1 Background noise level constraints.....	34
		C.3.1.2 Reverberation constraints	35
		C.3.1.3 Preferred maximum talker to microphone distance	36
	C.3.2	Sound insulation	36
Annex D (informative):	Bibliography		37
History.....			38

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[SIST ETS 300 807 E1:2003](https://standards.iteh.ai/catalog/standards/sist/233e5898-2b24-4f7a-97b0-f0e5961fab33/sist-ets-300-807-e1-2003)

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Foreword

This European Telecommunication Standard (ETS) has been produced by the Terminal Equipment (TE) Technical Committee and later the Multimedia Terminals and Applications (MTA) Project of the European Telecommunications Standards Institute (ETSI).

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1 Scope

This European Telecommunication Standard (ETS) specifies the audio characteristics of terminals designed to support the audiographic conference teleservice as specified in ETS 300 675 [1]. The same audio requirements of this ETS are also applicable to terminals supporting the Integrated Services Digital Network (ISDN) videoconference teleservice.

This ETS does not specify the terminal procedures, both with respect to in-band signalling and to ISDN signalling on the D channel. Also the procedures and protocols for data exchange and conference control are outside the scope of this ETS.

2 Normative References

This ETS incorporates by dated and undated reference, provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this ETS only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

- [1] ETS 300 675: "Integrated Services Digital Network (ISDN); Audiographic conference teleservice; Service description".
- [2] I-ETS 300 245-2 (1996): "Integrated Services Digital Network (ISDN); Technical Characteristics of Telephony Terminals, Part 2: PCM A-law, handset telephony".
- [3] I-ETS 300 245-3 (1995): "Integrated Services Digital Network (ISDN); Technical Characteristics of Telephony Terminals, Part 3: Pulse Code Modulation (PCM) A-law, Loudspeaking and Handsfree telephony".
- [4] I-ETS 300 245-5 (1996): "Integrated Services Digital Network (ISDN); Technical Characteristics of Telephony Terminals, Part 5: Wideband (7 kHz) Handset Telephony".
- [5] I-ETS 300 245-6 (1996): "Integrated Services Digital Network (ISDN); Technical Characteristics of Telephony Terminals, Part 6: Wideband (7 kHz) Loudspeaking and Handsfree telephony".
- [6] I-ETS 300 245-8 (1996): "Integrated Services Digital Network (ISDN); Technical Characteristics of Telephony Terminals, Part 8: Speech transmission characteristics when using Low Delay Code-Excited Linear Prediction (LD-CELP) coding at 16 kbit/s".
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- [9] I-ETS 300 302-3 (1996): "Integrated Services Digital Network (ISDN); Videotelephony teleservice; Part 3 Audio aspects-Wideband and Handset".
- [10] I-ETS 300 144 (1996): "Integrated Services Digital Network (ISDN); Audiovisual services, Frame structure for a 64 to 1 920 kbit/s channel and associated syntax for in-band signalling".
- [11] I-ETS 300 143 (1994): "Integrated Services Digital Network (ISDN); Audiovisual services, In-band signalling procedures for audiovisual terminals using digital channels up to 2 048 kbit/s".

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- [16] ITU-T Recommendation P.57 (1996): "Artificial Ears".
- [17] ITU-T Recommendation P.10 (1993): "Vocabulary of terms on telephone transmission quality and telephone sets".
- [18] ITU-T Recommendation G.701 (1993): "Vocabulary of digital transmission and multiplexing and pulse code modulation (PCM) terms".
- [19] ITU-T Recommendation P.51 (1996): "Artificial Mouths".
- [20] ITU-T Recommendation P.79 (1993): "Calculation of loudness ratings for telephone sets".
- [21] ITU-T Recommendation P.64 (1993): "Determination of sensitivity/frequency characteristics of local telephone systems".
- [22] CCITT Recommendation P.76 (1988): "Determination of loudness rating; fundamental principles".
- [23] TBR 3 (1995): "Integrated Services Digital Network (ISDN); Attachment requirements for terminal equipment to connect to an ISDN using ISDN basic access".
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- [24] ISO 3 (1973): "Preferred numbers-Series of preferred numbers".
- [25] ITU-T Recommendation P.340 (1996): "Transmission characteristics of hands free telephones".
- [26] ITU-T Recommendation G.122 (1993): "Influence of national systems on stability talker echo in international connections".
- [27] IEC Publication 651 (1979): "Sound level meters".
- [28] ITU-T Recommendation P.310 (1996): "Transmission characteristics for telephone band (300-3400 Hz) digital telephones".
- [29] ITU-T Recommendation P.50 (1993): "Artificial Voices".
- [30] ITU-T Recommendation G.101 (1996): "The transmission plan".

3 Definitions and abbreviations

3.1 Definitions

For the purposes of this ETS, the definitions provided in the referenced standards and the following definitions apply:

Acoustic Reference Level (ARL): Acoustic level which gives -10 dBm₀ at the digital interface.

audiographic terminal: Terminal supporting the audiographic teleconference service.

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 [19].

reference sphere: Sphere of radius 1 metre where the anechoic conditions of the acoustic testing environment are verified.

lip synchronization delay: The delay introduced in the sending and receiving audio paths in order to align the audio signals with the moving pictures respectively transmitted and received by the terminal.

digital interface: For the purposes of this ETS, the digital interface refers to the B channels available at the coincident S and T reference points at an ISDN basic access.

3.2 Abbreviations

For the purposes of this ETS, the abbreviations used in ITU-T Recommendations G.701 [18], P.10 [17], P.51 [19], P.57 [16], P.64 [21], P.76 [22] and P.79 [20] and the following abbreviations apply:

ARL	Acoustic Reference Level
ERP	Ear Reference Point
F_r	Correction factor for receiving measurements (annex A, subclause A.1.1.2.2)
F_s	Correction factor for sending measurements (annex A, subclause A.1.1.2.1)
F_{tcl}	Correction factor for terminal coupling loss measurements (annex A, subclause A.1.1.2.3)
HFRP	HandsFree Reference Point
ISDN	Integrated Services Digital Network
LD-CELP	Low Delay-Code Excited Linear Prediction
MRP	Mouth Reference Point
PCM	Pulse Code Modulation
PSTN	Public Switched Telephone Network
RLR	Receiving Loudness Rating
rms	root mean square
S/D	Signal to Distortion
SB-ADPCM	Sub Band-Adaptive Differential Pulse Code Modulation
SLR	Sending Loudness Rating
TCL	Terminal Coupling Loss
TCLw	Weighted Terminal Coupling Loss
TEUT	Telephone Equipment Under Test