

Analogue Terminals and Access (ATA); Definitions, abbreviations and symbols



Reference

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Keywords

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Foreword

This ETSI Technical Report (TR) has been produced by ETSI Project Analogue Terminals and Access (ATA).

1 Scope

The present document presents a list of the definitions, abbreviations and symbols used in the documents prepared by the ETSI Project Analogue Terminals and Access (ATA).

The purpose of the present document is primarily to give guidance to ATA rapporteurs in the preparation of their documents, and to assist the usability of these documents through the use of consistent terminology. Furthermore it is intended to align, as far as possible, the definitions abbreviations and symbols with the corresponding ones from ITU and make them available within ETSI for other Technical Bodies, membership and clients.

The definitions, abbreviations and symbols given are not intended to be exclusive. Other definitions, abbreviations and symbols different from those given here may be found in some ATA documents. However, the definitions given in the present document are generally to be preferred.

The intended users of the present document include:

Table 1: Intended users and potential benefits

	User	TR used for	Potential Benefit
1	ETSI Project ATA	Provide guidance for ATA rapporteurs	Improved quality of ATA documents through consistency and coherence of definitions, abbreviations and symbols
2	Other ETSI Technical Bodies	Provide guidance on ATA terminology, and on how ATA interpret common terms	Promote harmonized terminology within ETSI
3	User groups	Provide guidance on ETSI Project ATA terminology	Increased awareness in other interested parties of ATA terminology and its applications in documents

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.
- A non-specific reference to an ETS shall also be taken to refer to later versions published as an EN with the same number.

- [1] ITU-T Recommendation P.10: "Vocabulary of terms on telephone transmission quality and telephone sets".
- [2] TR 101 183: "Public Switched Telephone Network (PSTN); Analogue ringing signals".
- [3] 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".
- [4] TR 101 149: "2-wire analogue voice band interfaces; Terminal Equipment transmitting voice signals; Tes simulation for level limitation requirements".
- [5] EG 201 120: "Public Switched Telephone Network (PSTN); Method of rating terminal equipment so that it can be connected in series and/or in parallel to a Network Termination Point (NTP)".

- [6] ITU-T Recommendation G.122: "Influence of national systems on stability and talker echo in international connections".
- [7] ITU-T Recommendation G.117: "Transmissions aspects of unbalance about earth".
- [8] ITU-T Recommendation P.340: "Transmission characteristics of hands-free telephones".
- [9] ITU-T Recommendation P.79: "Calculation of loudness ratings for telephone sets".
- [10] ITU-T Recommendation E.161: "Arrangement of digits, letters and symbols on telephones and other devices that can be used for gaining access to a telephone network".
- [11] ITU-T Recommendation Z.100: "CCITT specification and description language (SDL)".
- [12] ISO 31-0: "Quantities and units -- Part 0: General principles".
- [13] IEC 60050-722 (1993): "International Electrotechnical Vocabulary - Chapter 722: Telephony".
- [14] Council directive 90/387/EEC of 28 June 1990 on the establishment of the internal market for telecommunications services through the implementation of open network provision (ONP).
- [15] ITU-T Recommendation G.100: "Definitions used in Recommendations on general characteristics of international telephone connections and circuits".
- [16] Directive 98/13/EC of the European Parliament and of the Council of 12 February 1998 relating to telecommunications terminal equipment and satellite earth station equipment, including the mutual recognition of their conformity.

3 Definitions and abbreviations

3.1 General definitions

acoustic shock: Any temporary or permanent disturbance of the functioning of the ear, or of the nervous system, which may be caused to the user of a telephone earphone by a sudden sharp rise in the acoustic pressure produced by it [ITU-T Recommendation P.10]

NOTE 1: An acoustic shock usually results from the occurrence, in abnormal circumstances, of short-lived high voltages at the terminals of a telephone set.

activity factor: Ratio of the active time to total timed elapsed during a measurement, usually expressed as a percentage [ITU-T Recommendation P.10]

artificial ear: A device for the calibration of earphones incorporating an acoustic coupler and a calibrated microphone for the measurement of sound pressure and having an overall acoustic impedance similar to that of the average human ear over a given frequency band [ITU-T Recommendation P.10]

Artificial mouth: A device consisting of a loudspeaker mounted in an enclosure and having a directivity and radiation pattern similar to those of the average human mouth [ITU-T Recommendation P.10]

automatic repeat call attempts: An automatic repeat call attempt made by the TE to the same network address as the result of the failure of the previous call attempt and not as a result of an external stimulus to the TE [TBR 21]

call attempt: The process by which the TE seizes the PSTN line and sends signalling characters of the network address with which the TE wishes to communicate [TBR 21]

call completion busy subscriber: A supplementary service where if a call attempt fails due to the called party being busy, the network monitors the called party until it is available and then alerts the original caller [TR 101 183]

call completion no reply: A supplementary service where if a call attempt fails due to the called party not answering, the network monitors the called party until it is available and then alerts the original caller [TR 101 183]

centrex out of group call: TEs on a centrex service alert using different ringing signals to indicate if the call has been originated from within or outside the centrex group [TR 101 183]

crosstalk: The appearance of undesired energy in a channel, owing to the presence of a signal in another channel, caused by, for example induction, conduction or non linearity [IEC 60050-722]

decadic signalling: See Loop Disconnect signalling (LD)

distinctive ringing: Special ringing patterns sent by the network to convey information to the TE about the called number, the calling number or the status of an automatic call request [TR 101 183]

echo return loss: Return loss averaged with $1/f$ power weighting over the frequency band 300 Hz to 3 400 Hz, in accordance with clause 4 of ITU-T Recommendation G.122

frequency band: A continuous set of frequencies lying between two specified limiting frequencies [IEC 60050-722]

NOTE 2: A frequency band is characterized by two values which define its position in the frequency spectrum, for example, its lower and upper limiting frequencies.

handset: A combination of telephone microphone and receiver in a form convenient for holding simultaneously to mouth and ear, which, when in use, retains the microphone in a position fixed in relation to the receiver [TBR 38]

handset telephony: A function provided by terminal equipment whereby two-way real-time speech is supported by means of a handset that forms an integral part of the terminal equipment. The term "real-time speech" is also frequently used to describe "live speech" [TBR 38]

handsfree function: A function whereby telephony transmission and reception is facilitated by the use of microphone(s) and loudspeaker(s) placed at a distance from the user. No handset is required to be used and normally the handset is not active [TBR 38]

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, as defined in ITU-T Recommendation P.340 subclause 5.3

Installation Connection Point (ICP): A point on a user installation, intended to accept the connection of a TE. See figure 1

NOTE 3: The ICP may also be part of a series connected TE.

NOTE 4: The ICP may present to the TE physical characteristics identical to those of the NTP [EG 201 120].

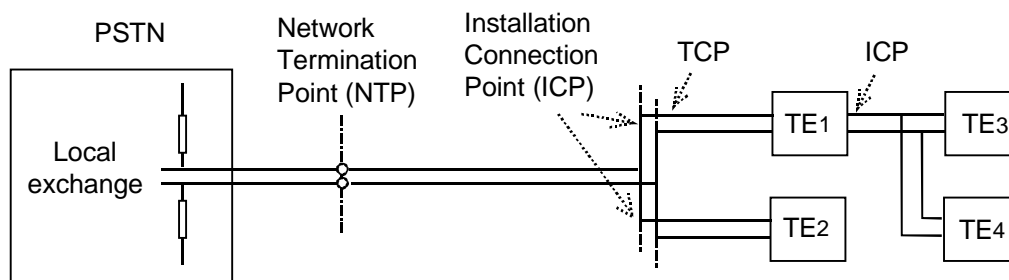


Figure 1: Example of user's installation

Loading Factor (LF): The portion of PSTN resources used by a TE or a set of TE (installation) when connected to a Network Termination Point (NTP) [EG 201 120]

Longitudinal Conversion Loss (LCL): A measure of the degree of an balance about earth. More information is given in ITU-T Recommendation G.117, subclause 4.1.3

Loading Unit (LU): An arbitrary unit to measure (or evaluate) the Loading Factor [EG 201 120]

Loop Disconnect signalling (LD): A signal sent in form of a sequence of identical pulses of a break in the loop current, the number of pulses corresponds to a specific digit to be transmitted. Loop Disconnect signalling is also known as Decadic signalling

loop state: The state where the TE draws sufficient DC current to activate the exchange. The Loop state is also known as the on-line state or the off-hook state [TBR 21]

loop steady state: A loop state excluding the transitions from and to quiescent state [TBR 21]

loudness rating: A measure, expressed in decibels, for characterizing the loudness performance of complete telephone connections or of parts thereof such as sending system, line, receiving system [ITU-T Recommendation P.10]

loudspeaking function: A function of a handset telephone using a loudspeaker associated with an amplifier as a telephone receiver [TBR 38]

Multi-Line Terminal Equipment (MLTE): A TE connected to the PSTN via two or more similar or different TCP's

Mouth Reference Point (MRP): A point 25 mm in front of and on the axis of the lip position of a typical human mouth (or artificial mouth) [ITU-T Recommendation P.10]

multiple subscriber number: A supplementary service which provides the called NTP with a distinctive ringing signal or an enhanced signalling indication for each directory number associated with that NTP [TR 101 183]

Network Termination Point (NTP): The physical point at the boundary of the telephone network intended to accept the connection of a TE. See figure 4

NOTE 5: Directive 90/387/EEC defines NTP as "All physical connections and their technical access specifications which form part of the public telecommunications network and are necessary for access to and efficient communications through that public network" [TBR 21].

normal ringing: The ringing pattern sent by a network to indicate normal delivery of an incoming call to the TE [TR 101 183]

Output Signal Balance (OSB): A measure of the degree of an balance about earth. More information is given in ITU-T Recommendation G.117 subclause 4.3.1

peak to peak voltage: The difference between the maximum and minimum voltage during any specified time window

pink noise (for the purpose of testing analogue voice-band interfaces or terminals): A test signal that has the following characteristics:

- band limited to the frequency range 200 Hz to 3 800 Hz and;
- a) where analogue filters are used the slopes of the band limiting filter is at least 24 dB/ octave and the out-of-band attenuation is at least 25 dB (see figure 2).
- the third octave spectrum of the electrically generated pink noise is equalized to within ± 1 dB, while the acoustically generated pink noise is equalized (in free field) to within ± 3 dB.

NOTE 6: 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.

- b) where digital filters are used the details 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 [TR 101 149].

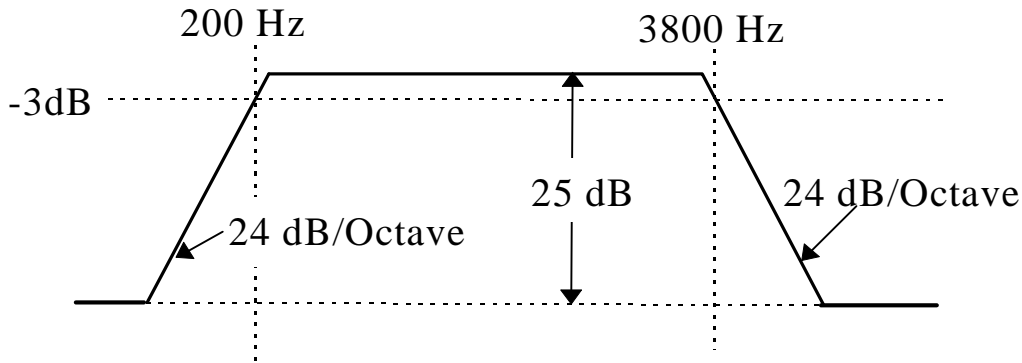


Figure 2: Response for band-limiting filter

pseudo speech signal: A speech test signal with 11 cycles and then followed by a period of 5,6 seconds \pm 20 ms OFF giving an activity ratio of approximately 28 % [TR 101 149]

NOTE 7: The total OFF time after the 11th ON burst will be 5,75 seconds.

NOTE 8: The timing tolerances given above will result in a tolerance for the r.m.s. level of \pm 0,1 dB.

public switched telephone network: The ordinary telephone system including subscriber lines, local exchanges and the complete system of trunks and the exchange hierarchy which makes up the network [TBR 21]

quiescent state: The state where the TE draws insufficient DC current to activate the exchange. The Quiescent state is also known as the idle state, off-line state or the on-hook state [TBR 21]

quiescent steady state: A quiescent state excluding the transitions from and to quiescent state

reference impedance Z_R : An impedance that is used as a common basis for the measurement of telecommunication parameters such as voltages and return loss

NOTE 9: The current recommended reference impedance for use in ETSI standards for voice band measurements is: a complex impedance made up of 270 Ω in series with a parallel combination of 750 Ω and 150 nF. This is shown figure 3.

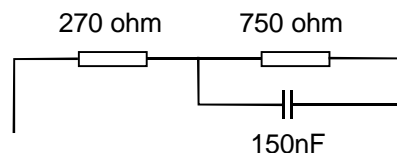


Figure 3: ETSI voice-band reference impedance Z_R

Register Recall signal (RR): A signal sent from the TE to the telephone network during the communication phase of a call requesting the connection of a dialling detector

release: The transition from loop to quiescent state. It includes the time slot from the end of loop steady state to the begin of quiescent steady state

repeat call attempt: A further call attempt to the same network address resulting from a failure to establish connection during the previous call attempt [TBR 21]

repeat call attempt sequence: A series of internally generated automatic repeat call attempts made in response to an initial call attempt

NOTE 10: Additional, but separate, call requests are permitted to initiate separate repeat call attempt sequences, [TBR 21].

return loss: Quantity characterizing the degree of match between two impedance's, Z_1 and Z_2 . It is given by the

$$\text{expression: } L_R = 20 \log_{10} \left| \frac{Z_1 + Z_2}{Z_1 - Z_2} \right| \text{ dB} \quad [\text{ITU-T Recommendation G.100}]$$

ring pattern: One or more ringing pulses separated by short silent periods [TR 101 183]

seize: The transition from quiescent to loop state. It includes the time slot from the end of quiescent steady state to the begin of loop steady state

selective alerting: A supplementary service where a list of numbers is associated with a particular ringing cadence thereby giving the called party an indication of who the caller is [TR 101 183]

series connected terminal equipment: A TE which provides an installation connection point intended to accept the connection of a second TE to be excited by loop current derived from the PSTN via the NTP, or from an external power source [EG 201 120].

SideTone Masking Rating (STMR): The loudness of a telephone sidetone path compared with the loudness of the intermediate reference system (IRS) overall in which the comparison is made incorporating the speech signal heard via the human sidetone path L_{MEHS} as a masking threshold [ITU-T Recommendation P.10]

NOTE 11: Further information about STMR can be found in ITU-T Recommendation P.79.

speech test signal: A band-limited pink noise signal (see definition) that is continuously modulated to be ON for a period of $250 \text{ ms} \pm 5 \text{ ms}$ and OFF for a period of $150 \text{ ms} \pm 5 \text{ ms}$ [TR 101 149]

Terminal Connection Point (TCP): The point of the TE intended to be connected to the PSTN. See figure 4 [TBR 21]

Terminal Coupling Loss (TCL): The (frequency dependent) coupling loss between the receiving port and the sending port of a terminal due to :

- acoustical coupling at the user interface;
- electrical coupling due to crosstalk in the handset cord or within the electrical circuits;
- seismic coupling through the mechanical parts of the terminal, (ITU-T Recommendation P.10).

terminal equipment: Equipment intended to be connected to the public telecommunication network; i.e.:

- a) to be connected directly to the termination of a public telecommunication network; or
- b) to inter-work with a public telecommunication network being connected directly or indirectly to the termination of a public telecommunication network.

In order to send, process or receive information.

The system of connection may be wire, radio, optical or other electromagnetic system.

NOTE 12: This definition is copied from the Directive 98/13/EC.

timed break recall: See register recall

twist: Level difference between different frequency components in a signal

user installation: The means (cables and mechanical adaptors) used to connect between the NTP and one or more Installation Connection Points so as to permit one or more TE to access one NTP [EG 201 120]

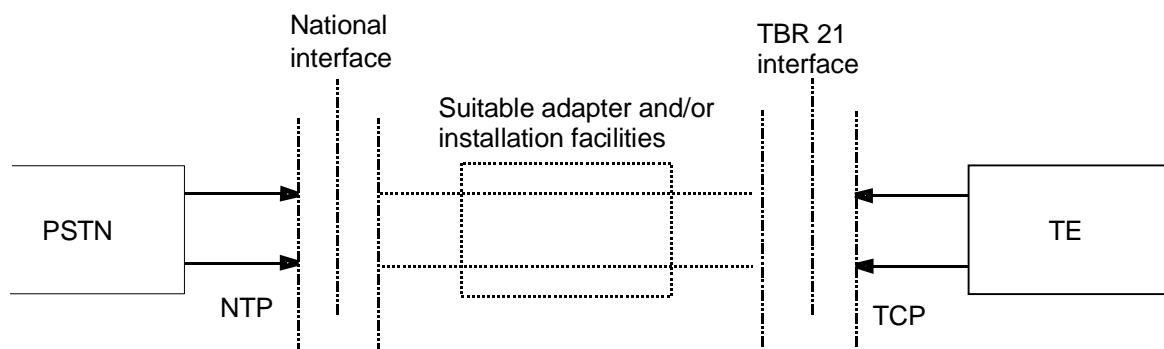


Figure 4: Terminal connection point and Network Termination Point

weighted Terminal Coupling Loss (TCLw): Terminal Coupling Loss using the weighting factors of ITU-T Recommendation G.122.

3.2 CLI related definitions

Dual Tone Alerting Signal (DT-AS): A specific combination of tones used as a TE Alerting Signal (TAS).

idle line signalling state: The state into which the TE when connected to the network, is placed such that it is capable of receiving or sending speechband signalling without entering the loop state.

on-line signalling state: On-line state of the TE when the TE is capable of receiving Frequency-Shift Keying (FSK) data, and the normal transmission functions are suspended.

Ringling Pulse Alerting Signal (RP-AS): A single pulse of ringing current used as a TAS.

TE Alerting Signal (TAS): A signal transmitted from the network to the TE to initiate a change in state of the TE from idle state to the idle line signalling state.

3.3 Abbreviations

a.c.	alternating current
ALASS	Analogue Local Access Signalling Service
AoC	Advice on Charge
CLI	Calling Line Identity
CLIP	Calling Line Identification Presentation
CLIR	Calling Line Identification Restriction
d.c.	direct current
DIT	Data Information Transfer
DT-AS	Dual-Tone Alerting Signal
DTMF	Dual Tone Multi-Frequency
EG	ETSI Guide
EMC	ElectroMagnetic Compatibility
emf	electromotive force
EN	European Norm
ERL	Echo Return Loss
ES	ETSI Standard
ETS	European Telecommunication Standard
ETSI	European Telecommunications Standards Institute
FCC	Federal Communications Commission
FSK	Frequency-Shift Keying
ICP	Installation Connection Point
IRA	International Reference Alphabet
ISDN	Integrated Services Digital Network
ITU-T	International Telecommunications Union-Telecommunications sector
LCL	Longitudinal Conversion Loss
LD	Loop Disconnect signalling

LE	Local Exchange
LF	Loading Factor
LRGP	Loudness Rating Guard-ring Position
LU	Loading Unit
MLTE	Multi line TE
MRP	Mouth Reference Point
NTP	Network Termination Point
OSB	Output Signal Balance
PABX	Private Automatic Branch Exchange
PN	Public Network
PSTN	Public Switched Telephone Network
PTO	Public Telecommunications Operator
RL	Return Loss
RLR	Receiving Loudness Rating
r.m.s.	root mean square
RP-AS	Ringing Pulse Alerting Signal
SAS	Subscriber Alerting Signal
SLR	Sending Loudness Rating
STMR	SideTone Masking Rating
TAS	TE-Alerting Signal
TCP	Terminal Connection Point
TBR	Technical Basis for Regulation
TBR-RT	TBR Requirements Table
TE	Terminal Equipment
TE-ACK	TE Acknowledgement Signal
Vpp	Peak to Peak voltage

4 Symbols

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

*	The Star on the standard 3x4 keypad array, see ITU-T Recommendation E.161. Also known as the asterisk.
#	The Square on the standard 3x4 keypad array, see ITU-T Recommendation E.161. Also known as the hash, sharp, or number sign ("pound" in the USA).
Ω	Ohm, the symbol for resistance.
dBm	Absolute power level expressed in decibels relative to 1 mW.
dBV	Absolute voltage level expressed in decibels relative to 1 volt.

Within ATA's documents the symbols used within Specification and Description Language (SDL) figures or diagrams are defined in ITU-T Recommendation Z.100.

In ATA's documents, similarly to other ETSI documents, the symbols and abbreviations defined by ISO 31-0 for units in the international system of units and measures, SI, are used. They are therefore not included in the above list.

5 Keywords

The following keywords are taken from the ETSI master list of currently available keywords.

Keyword	Explanatory text
2-WIRE	-
3,1 kHz	3,1 kHz audio
ACCESS	-
ACOUSTIC	cf. coupling, etc
ANALOGUE	-
AUDIO	-

BASIC	cf. Call, Service, Access, etc.
CHARACTER	Characters, symbols, graphics, pictograms
CLIP	Calling Line Identification Presentation (supp. service)
CLIR	Calling Line Identification Restriction (supp. service)
CNIP	Calling Name Identification Presentation (supp. service)
CNIR	Calling/Connected Name Identification Restriction (supp. service)
CNOP	Connected Name Identification Presentation (supp. service)
COLP	COConnected Line identification Presentation (supp. service)
COLR	COConnected Line identification Restriction (supp. service)
CONF	Conference (supplementary service)
CONFIDENTIALITY	(security)
CONFIGURATION	-
CONNECTOR	-
CT	Cordless Telephone
CTS	Conformance Test Services
FAX	Facsimile
HANDSFREE	(voice terminal operation)
HOLD	(service)
INBAND	In band (signalling)
INTERFACE	-
INTERWORKING	(between networks, between equipment in general)
IPR	Intellectual Property Right
ISDN	Integrated Services Digital Network
LOUDNESS	(rating)
LOUDSPEAKING	(voice terminal)
MODEM	MOdulator/DEModulator
NETWORK	-
NOISE	-
OUTBAND	Out of band (signalling)
PABX	Private Automatic Branch Exchange
PERFORMANCE	(inc. Quality of Service)
PRIVATE	(network)
PROTOCOL	-
PSTN	Public Switched Telephone Network
SERVICE	-
SPEECH	-
SUBSCRIBER	-
SUPPLEMENTARY S	Supplementary service (also supp. service or ss.)
TELEPHONY	-
TELESERVICE	-
TERMINAL	(as opposed to NETWORK)
TEXT	-
TONE	Information tones on voice terminals/network
TRANSMISSION	-
TYPE APPROVAL	(regulation)
VOCABULARY	Vocabulary, jargon, technical terms, etc
VOICE	Voice band (300 Hz to 3,4 kHz) (Cf SPEECH)

History

Document history		
V1.1.1	July 1998	Publication