

IEEE

No. 151

FEB. 1965

(Revision of 58 IRE 3 S1)

Standard
Definitions of Terms for
AUDIO AND ELECTROACOUSTICS

(Effective February 10, 1965)

IEEE No. 151



PUBLISHED BY

THE INSTITUTE OF ELECTRICAL AND ELECTRONICS ENGINEERS, Inc.
345 EAST 47 STREET, NEW YORK, N. Y. 10017



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Full document details: IEEE 151-1965

INTRODUCTION

This Standard is issued to supersede 58 IRE 3. S1, "IRE Standards on Audio Techniques: Definitions of Terms, 1958," to include the definitions of the 1958 Standards and to add definitions of terms for which it was felt a need exists for establishment of precise and concise meanings. Some of the previous standard definitions have been modified to accommodate changes in usage.

The definitions included in this Standard all refer specifically to the use of the terms in audio techniques. Many of these terms are used in other fields with different meanings, and it is assumed that definitions for these terms in those fields are or will be included in Standards issued by other committees. Therefore, in general, the modifying phrase "In Audio Techniques" has been omitted except in certain cases where it appears to be particularly necessary to avoid confusion.

ACKNOWLEDGMENT

The Institute wishes to acknowledge its indebtedness to those who have so freely given of their time and knowledge, and have conducted experimental work on which many of the IEEE publications are based.

This publication was prepared by the Audio Definitions Subcommittee of the IEEE Audio and Electroacoustics Committee, whose membership during the period of preparing this document was:

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Definitions of Terms for AUDIO AND ELECTROACOUSTICS

Amplification

An increase in signal magnitude from one point to another, or the process causing this increase.

Amplification, Current

Either

(1) an increase in signal current magnitude in transmission from one point to another, or the process thereof, or

(2) of a transducer, the scalar ratio of the signal output current to the signal input current.

Note: The ratio in (2) is sometimes expressed in decibels by multiplying its common logarithm by 20. This leads to ambiguity if the currents being considered flow into unequal impedances, in which case the numerical result should be qualified by the statement, "dB current amplification." See "Decibel," IEEE No. 145 (48 IRE 2, 11, 15. S1).

Amplification, Voltage

Either

(1) an increase in signal voltage magnitude in transmission from one point to another, or the process thereof, or

(2) of a transducer, the scalar ratio of the signal output voltage to the signal input voltage.

Note: The ratio in (2) is sometimes expressed in decibels by multiplying its common logarithm by 20. This leads to ambiguity if the voltages being considered are across unequal impedances, in which case the numerical result should be qualified by the statement "dB voltage amplification." See "Decibel," IEEE No. 145 (48 IRE 2, 11, 15. S1).

Amplifier

A device which enables an input signal to control power from a source independent of the signal and thus be capable of delivering an output which bears some relationship to, and is generally greater than, the input signal.

Amplifier, Balanced

An amplifier in which there are two identical signal branches connected so as to operate in phase opposition and with input and output connections each balanced to ground.

Amplifier, Bridging

An amplifier with an input impedance sufficiently high so that its input may be bridged across a circuit without substantially affecting the signal level of the circuit across which it is bridged.

Amplifier, Clipper

An amplifier designed to limit the instantaneous value of its output to a predetermined maximum.

Amplifier, Distribution

A power amplifier designed to energize a speech or music distribution system and having sufficiently low output impedance so that changes in load do not appreciably affect the output voltage.

Amplifier, Isolation

An amplifier employed to minimize the effects of a following circuit on the preceding circuit.

Amplifier, Line

An amplifier which supplies a transmission line or system with a signal at a stipulated level.

Amplifier, Monitoring

A power amplifier used primarily for evaluation and supervision of a program.

Amplifier, Peak Limiting

See Peak Limiter.

Amplifier, Power

An amplifier which drives a utilization device such as a loudspeaker.

Amplifier, Program

See Amplifier, Line.

Amplitude Distortion

See Distortion, Harmonic and Distortion, Inter-modulation.

Amplitude-Frequency Distortion

See Distortion, Amplitude-Frequency.

Amplitude-Frequency Response

The variation of gain, loss, amplification, or attenuation as a function of frequency.

Note: This response is usually measured in the region of operation in which the transfer characteristic of the system or transducer is essentially linear.

Amplitude Range

The ratio, usually expressed in decibels, of the upper and lower limits of program amplitudes which contain all significant energy contributions.

Attack Time

The interval required, after a sudden increase in input signal amplitude to a system or transducer, to attain a stated percentage (usually 63 percent) of the ultimate change in amplification or attenuation due to this increase.

Attenuation

A decrease in signal magnitude from one point to another, or the process causing this decrease.

Attenuation, Current

Either

(1) a decrease in signal current magnitude, in transmission from one point to another, or the process thereof, or

(2) of a transducer, the scalar ratio of the signal input current to the signal output current.

Note: The ratio in (2) is sometimes expressed in decibels by multiplying its common logarithm by 20. This leads to ambiguity if the currents being considered flow into unequal impedances, in which case the numerical result should be qualified by the statement, "dB current attenuation." See "Decibel," IEEE No. 145 (48 IRE 2, 11, 15. S1).

Attenuation, Voltage

Either

(1) a decrease in signal voltage magnitude in transmission from one point to another, or the process thereof, or

(2) of a transducer, the scalar ratio of the signal input voltage to the signal output voltage.

Note: The ratio in (2) is sometimes expressed in decibels by multiplying its common logarithm by 20. This leads to ambiguity if the voltages being considered are across unequal impedances, in which case the numerical result should be qualified by the statement, "dB voltage attenuation." See "Decibel," IEEE No. 145 (48 IRE 2, 11, 15. S1).

Attenuator

An adjustable passive network which reduces the power level of a signal without introducing appreciable distortion.

Audio Frequency

Any frequency corresponding to a normally audible sound wave.

Note: Audio frequencies range roughly from 15 to 20,000 cycles per second.

Audio-Frequency Noise

See Noise, Audio-Frequency.

Audio-Frequency Oscillator

(Audio Oscillator)

A nonrotating device for producing an audio-frequency sinusoidal electric wave, whose frequency is determined by the characteristics of the device.

Audio-Frequency Response

See Amplitude-Frequency Response.

Audio-Frequency Spectrum

(Audio Spectrum)

The continuous range of frequencies extending from the lowest to the highest audio frequency.

Automatic Gain Control (AGC)

A process or means by which gain is automatically adjusted as a function of input or other parameter.

Automatic Volume Control (AVC)

A process or means by which a substantially constant output volume is automatically maintained in a system or transducer.

Available Power

The maximum power obtainable from a given source by suitable adjustment of the load.

Note: For a source that is equivalent to a constant sinusoidal electromotive force in series with an impedance independent of amplitude, the available power is the mean square value of the electromotive force divided by four times the resistive part of the impedance of the source.

Babble

The aggregate crosstalk from a large number of interfering channels.

Balanced

In communication practice, the term usually signifies

(1) electrically alike and symmetrical with respect to a common reference point, usually ground, or

(2) arranged to provide conjugacy between certain sets of terminals.

Note: The term balanced may also be employed to signify a proper relationship between two or more entities, such as stereophonic channels.

Balanced Amplifier

See Amplifier, Balanced.

Band-Elimination Filter

See Filter, Band-Elimination.

Band-Pass Filter

See Filter, Band-Pass.

Bass Boost

An accentuation of the lower audio frequencies in the amplitude-frequency response of a system or transducer.

Bridging

The shunting of one signal circuit by one or more circuits usually for the purpose of deriving one or more circuit branches.

Note: A bridging circuit often has an input impedance of such a high value that it does not substantially affect the circuit bridged.

Bridging Amplifier

See Amplifier, Bridging.