

# GLOSSARY OF AUDIO TERMS

for T&D 371 Sound for the Stage

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1/4" plug/receptacle--

the name of the plug and receptacle used in audio typically for patch cables, comes in Stereo (TRS) or Mono (TS)

20 Hz- 20kHz--

the range of frequencies the human ear is capable of hearing

44.1 kHz--

the sample rate for which most professional CD players and recorders sample at; also the sample rate of digital interfaces for computer software playback

A/D converter--

Analog-to-Digital converter used in converting analog signals into a digital signals (MIDI, AIFF or other digital data format)

ADSR--

Attack/Decay/Sustain/Release- the abbreviation for the four parts of an audio envelope

AES/EBU--

Audio Engineering Society/European Broadcasters Union they develop protocols and standards for audio engineering in the US and for Europe

alternating current (AC)--

voltage that alternates its polarity usually with a fixed rate of alternation

amplifier--

the component of the sound system used to amplify the audio signal into something useful for the loudspeakers to use; amplification is done through the use of a small amount of voltage (and/or current) to control a larger voltage (and/or current)

amperes--

amps; the unit of measurement for electrical current

amplitude--

the strength of the compression and rarefaction in an audio signal-the intensity

analog--

information which is continuously variable in nature

aperiodic--

not having regular periodic occurrences;  
not oscillatory

artifact--

left over bits and pieces found in edited sound effects, often sounding like a "click" or "pop" in the effect

attenuation--

the lessening of the amount, force, magnitude, or value of

balanced--

circuits that the source voltage is divided, half to the positive side and half to the negative side

binaural--

the ability to listen with two ears

bit depth--

the amount of sampling a digital recorder or player uses in recording or playback to accurately represent the analog signal; the greater the depth the more accurate the sample and the better the quality. Most equipment does 16 bits but newer pro audio gear samples at 24.

bridging--

in power amplifiers, both amplifier channels are fed by the same signal (usually from the left input) but the signal polarity of one channel, the right, is reversed relative to the other channel. Both halves of the stereo amp then process the same signal, and the load is connected so as to draw power from both channels (sides). The output voltage is effectively doubled however the allowable load impedance is typically doubled the minimum impedance for a single channel.

capacitance--

the property of an electric nonconductor that permits the storage of energy as a result of the separation of charge that occurs when opposite surfaces of the nonconductor are maintained at a difference of potential measured in Farads

cardioid--

heart-shaped; referring to the most common and most popular type of microphone pick up pattern used in sound reinforcement

chorus--

an effect used to make one instrument sound like two or more instruments being played together

circuit--

in electricity, the complete, unbroken pathway consisting of a source, pathway, and load(s)

cochlea--

the snail-shaped, bony labyrinth of the inner ear responsible for converting the mechanical energy from the ossicles into nerve impulses

condenser microphone--

a type of microphone that uses a condenser (another name for capacitor) as its pickup element which when coupled with a preamplifier that is powered with phantom power (+48DCv) makes the mic more sensitive and useful for area micing

crossover--

in a multi-way loudspeaker system, the equipment that divides the low and high frequencies and directs each only to their respective appropriate driver

current--

the amount of electrons flowing through a circuit or conductor per second; measured in amperes

D/A converter--

Digital-to-Analog converter used to convert digital data into an analog representation

decibel (dB)--

the ratio of two levels of power where the numerator is the change and the denominator is the reference level

examples of various decibels:

dBm:	dBv or dBu:	dB SPL:
power	voltage	acoustic power

delay--

an audio effect that simulates (by either analog or digital means) the effect of sound when reflecting off hard surfaces creating one or more distinct sound images (echoes)

diegetic sounds--

sounds that are happening within the story or play

digital--

a stream of numbers, typically 1's and 0's that represent encoded samples of the acoustic waveform

direct current (DC)--  
electric current that flows in a single direction

directionality--  
one of six controllable properties in sound referring to where sound is coming from and its distance to the listener's position

dither--  
in digital audio, a means of eliminating unwanted hiss through the introduction of phase-cancelling noise

duration--  
a controllable property of sound which refers to the period of time through which sound persists, roughly the sustain period of ADSR

dynamic microphone--  
a microphone that uses a flexibly-mounted diaphragm coupled to a coil of fine wire that is used to convert acoustic energy to electrical energy by means and is analogous to the amount of coil movement in the air gap of a magnetic field

dynamic range--  
the difference, in decibels, between the loudest and quietest portion of a program

envelope--  
the variation of the amplitude of the sound energy plotted against the duration of the sound

equalization (EQ)--  
the boosting or cutting of various frequencies in the spectrum of sound

frequency--  
the controllable property of sound often referred to pitch and essentially means number of cycles that occur during one second

gain--  
increase in output signal over input signal

graphic--

refers to equalizers that boosts/cut frequencies on either octave or third-octave centers in a graphed representation

ground--

the pathway of the circuit that returns a circuit to earth thus knocking down the voltage level to zero

harmonics--

a component frequency of a complex wave (as of electromagnetic energy) that is an integral multiple of the fundamental frequency

hertz--

the unit of measurement for frequency equal to the number of complete cycles in one second

I/O--

Inputs/Outputs

impedance--

the absolute opposition to current flow consisting of both resistance and reactance

inductance--

a property of an electric circuit by which an electromotive force is induced in it by a variation of current either in the circuit itself or in a neighboring circuit and measured in Henries

insert--

a jack permitting a piece of outboard equipment to be inserted into the signal path of mixing board

intelligibility--

a quality of sound describing how well the spoken word or vocals are being reproduced

intensity--

a controllable property of sound that refers to the perceived loudness of the sound

line level--

output voltage of mixing consoles, CD and MD players and any other device with a preamplifier in-line of its output signal path that typically meters at -10dBu or +4dBu

MIDI--

Musical Instrument Digital Interface; the digital protocol used successfully to transfer, synchronize, sample and play audio data

mic level--

output voltage of a microphone's audio signal that is typically metered between -40dBu to -70dBu

mono--

of or relating to sound transmission, recording, or reproduction involving a single transmission path

neutral--

in an electrical circuit, the return path of the circuit that is a point of zero voltage

noise--

in sound, the highly complex, nonperiodic, irregular waveforms that are typically undesirable

nyquist frequency--

the frequency that music is being digitally sampled with a frequency at least double the frequency of the waveform being sampled

octave--

the interval between frequencies having a two-one ratio

ohm--

the unit of measurement of electrical resistance; in audio it is also the unit of measurement for impedance

omnidirectional--

the pickup pattern of a microphone where sound is picked up uniformly in all 360°

ossicles--

hammer, anvil and stirrup; the three bones of the middle ear that convert acoustic energy into mechanical energy

parallel--

an electrical circuit with many "branches" through its pathway

parametric--

refers to a type of equalizer that boosts/cuts frequencies in a very wide band, the given parameter

periodic--

occurring or recurring at regular intervals

phantom power--

a method of providing power to a condenser microphone through standard mic cable, usually at +48 volts

pinna/pinnae--

the most visible part of ears, it is the part of the outer that funnels acoustic energy into the auditory canal

pitch--

the listener's perceived interpolation of an acoustic waveform's frequency

polarity--

having a positive and negative pole as in a magnet

power--

the amount of work being done, usually in electricity the measurement is in watts

reactance--

a quality of inductive and capacitive components in which they react to frequency

resistance--

in an electrical circuit, it is the current limiting property and is measured in ohms

reverb--

an audio effect that simulates (by either analog or digital means) the effect of sound when reflecting off hard surfaces creating multiple, blended sound images

S/PDIF--

Sony/Philips Digital Interface Format; the most successful of the interface formats for digital recording and playback

series--

a circuit where all its elements are strung together and current flows equally through all parts of the circuit

sibilance--

having, containing, or producing the sound of or a sound resembling that of the "s" or the "sh" in sash

signal--

acoustic energy that is converted to electrical energy with specific controllable attributes

snake--

a multi-cable used for sending audio signals to and from the stage a input box on one end (head) and a fanned out breakout (tail) on the other

soundscape--

the entire aural picture for a play consisting of dialogue, effects and music

speaker level--

audio signal at +20dBu (or more) used for speaker output

stereo--

of, relating to, or constituting sound reproduction involving the use of separated microphones and two transmission channels to achieve the sound separation of a live hearing

system exclusive message (SysEx)--  
MIDI message used to communicate with a  
device made by a specific manufacturer

timbre--  
the controllable property of sound that distinguishes  
one sound from another

tip/sleeve (TS)--  
the unbalanced (or mono) 1/4" connector used in audio

tip/ring/sleeve (TRS)--  
the balanced (or stereo) 1/4" connector used in audio

transducer--  
a device that can convert acoustic energy to  
electrical energy or vice versa

unbalanced--  
circuits (and their cables, connectors) that are not  
divided by a center-neutral

unidirectional--  
microphones having elements that pick sound in only  
one direction; for example- Cardioid

volt--  
the unit of measure for electromotive force (EMF)

VU meter--  
Volume Unit meter, visual readout of the measurement  
of output

watt--  
the unit of measure for electrical power (the work being done)

XLR--  
the connector widely used for balanced cable runs  
in mic lines and patch cords