

KVG Laboratories Glossary

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Acoustic Suspension, a loudspeaker that relies on the compressibility of the air within a sealed loudspeaker cabinet to provide some of the motional control of the diaphragm. In essence, the “springiness” of the air becomes part of the loudspeaker’s mechanical suspension.

AES Equalization, one of several standardized playback equalization characteristic required for the proper playback of analog 78-rpm records adopted in the United States.

Air Motion Transformer, or AMT, a loudspeaker made from a folded ribbon that has a laminated conductor; this ribbon is suspended between the pole pieces of an intricate magnetic assembly. The pleats squeeze the air out from between the folds, and are very efficient and exhibit superlative impulse response. AMTs have an impedance between 4 Ohms and 8 Ohms.

Amp, (1.) colloquialism for amplifier; (2.) colloquialism for Ampere or Amperage.

Amperage, the magnitude of the flow of electrical current. The unit of measurement is the Ampere.

Amplifier, an apparatus that uses an external electrical current to control the flow of an internal supply of electrical current resulting in a change in the magnitude of current, electromagnetic force, or both.

ASIC, acronym for Application Specific Integrated Circuit.

Audio Signal, an alternating current within the frequency spectrum of human hearing and that contains sound intelligence.

Baffle, a constituent panel of a cabinet that directs airflow or that provides access to the interior of the cabinet for the purpose of electrical connection or maintenance.

Bandpass Filter, an audio filter that reduces the signal level above and below a defined range of frequencies, typically used for the midrange driver of a loudspeaker.

Bass Bin, a woofer installed in an individual cabinet. Bass bins are usually part of large sound reinforcement systems.

Bass Cab, synonym for Bass Bins.

Bass Reflex, a loudspeaker cabinet that uses vents, ducts, or apertures to delay the sound from the rear of a speaker so that the sound reinforces the low frequency output of the speaker.

Bassmid, a loudspeaker driver designed to reproduce a range of frequencies spanning bass through midrange frequencies. Most bassmids vary in advertised sizes between approximately 4” to 8”.

Batten, a structural member of a cabinet that runs along the inside surface of a panel or baffle to stiffen same.

Brace, a structural member within a cabinet that spans the interior space to add rigidity to the cabinet overall.

Cab, abbreviation for cabinet.

Cabinet, a furniture-like structure that houses a loudspeaker driver or multiple loudspeaker drivers along with associated components.

Capacitance, the property of electrical components and electronic circuits to momentarily store electric fields.

Capacitor, an electrical component that stores energy in the form of an electric field. Capacitors are used to store direct current, filter alternating current, block the flow of direct current, and isolate one part of a circuit from another.

Choke, a synonym for inductor.

Class A, the tube or transistor conducts the entire waveform cycle. Because of marketing trends over the decades, Class A has the reputation for the best audio quality; therefore, the term tends to be very much overused.

Class B, the tube or transistor conducts half the waveform cycle. They are more efficient than Class A. Note that Class AB combines the sound quality of Class A and efficiency of Class B; this is the most common form of a traditional high fidelity amplifier

Class C, the tube or transistor conducts only the peaks of the waveform cycle. These are never used in audio circuits, they are used only in a radio transmitter.

Class D, the tube or transistor is turned fully on or off during each pulse of a pulse-width modulation stream. Classes E and F are enhanced Class D, optimized modulation schemes. Class D Amplifiers are the most efficient, especially with regard to energy use; they're very common in any battery powered mobile device, and most modern surround sound receivers.

Class G is a Class B amplifier enhancement that uses power supply rail switching between two or more power supply levels to reduce waste power consumption.

Class H is a Class B amplifier enhancement that uses a continuously variable power supply rail to reduce waste power consumption.

Class T, a Class D amplifier that is made using the Tripath integrated circuit. These are now extinct following the bankruptcy of Tripath.

Cleat, a structural member of a cabinet located near or at the front or rear of a cabinet and used to attach a baffle.

Coil, a synonym for inductor.

Compression, the reduction of the loudest sounds and simultaneous increase in the quietest sounds to reduce the dynamic range of an audio recording or transmission. Compression is most commonly used to prevent signal overload, to allow every sound to be heard in a noisy environment, or for aesthetic reasons.

Concertina, the simplest form of phase splitter, typically made from a triode.

Condenser, a synonym for capacitor. The term is older and is deprecated except when designating a type of microphone.

Condenser Microphone, an audio device that converts sound into alternating current by means of using the changing capacitance of a diaphragm assembly to modulate a bias voltage,

Crossover, a series of filters in a loudspeaker that divides the incoming signals into the frequency ranges required by each driver.

Current, the flow of electric fields. See Amperage and Electricity.

Dhorm, a trademark of Heppner, Inc, for a tweeter that combines a dome diaphragm with a short horn. Heppner is out of business and Dhorm is now a generic name.

Dividing Network, synonym for Crossover.

Dynamic, an electromechanical device that operates by placing an alternating magnetic field in a static magnetic field formed by a permanent magnet to produce reciprocal motion.

Dynamics, the changes in levels of audio signals or the loudnesses in sounds. See Audio Signal.

Dynamic Microphone, an audio device that converts sounds into electric current by means of induction; specifically diaphragm vibrates a coil of wire suspended in a magnetic field, which induces an electric current, which becomes the audio signal.

Dynamic Range, the difference between the quietest sounds and the loudest sounds. Expressed in decibels.

Dynamic Range Expander, an audio signal processor that “undoes” the reduction of loud sounds in a recording (compression) to create a more natural sound.

Electret, a condenser microphone that uses a permanent static electric charge to provide the requisite bias.

Electricity, a physical phenomenon caused by the movement of electromagnetic fields conducted along free electrons. Electricity has two aspects, Current and Electromotive Force.

Electrodynamic, an electromechanical device that operates by placing an alternating magnetic field in a static magnetic field formed by a DC electromagnet to produce reciprocal motion.

Electromotive Force, the pressure exerted by an electric current onto a load. The unit of measure is the Volt.

Electrostatic, a loudspeaker that uses the difference between electrostatic charges across a flexible membrane and a perforated metal panel to produce sound.

Enclosure, synonym for Cabinet.

Entrance, the point of electrical connection from a cable connected to an amplifier along with the requisite electrical connectors, safety devices, and nomenclature placards.

Equalizer, an audio filter or set of filters used to alter the frequency distribution of a complex audio signal for many purposes, such as correction of technical faults, or to compensate for acoustic environments, or to achieve a specific frequency distribution, or for musical aesthetics and effects.

Full-range, also fullrange; a loudspeaker driver designed to emit sound spanning most of the audio spectrum. Most are cones, but a few take other shapes. Also used to designate an entire loudspeaker system that is used in sound reenforcement systems.

High Fidelity, (1.) audio equipment (and attendant processes) that records then subsequently reproduces sound without alteration, degradation, or the addition of noise, distortion, or sounds not present in the original sound. (2.) a design philosophy advocating any approach that achieves high fidelity sound. (3). a marketing buzzword.

High Pass Filter, an audio filter that reduces the signal level below a defined range of frequencies, typically used for the tweeter of a loudspeaker. It cuts bass.

IEC Equalization, the standardized recording and playback equalization characteristics required for the proper recording and playback of analog magnetic tape recordings adopted in Europe and Asia (excluding Japan).

Impedance, opposition to the flow of alternating current. Low impedance circuits require more current than voltage, high impedance circuits require more voltage than current.

In-Phase, a situation that occurs when the timing of two or more audio signal waveforms are perfectly aligned. In-phase signals that have similar waveforms will reinforce each other, causing a louder, more pronounced sound.

Inductor, an electronic component designed to use magnetic fields to oppose the flow of electric current. It's usually made from a coil of wire, and it stores energy in the form of a magnetic field.

Infinite Baffle, a sealed loudspeaker cabinet that does not affect the motional control of the loudspeaker because of its large internal volume.

Lead Out, the flexible electrically conductive braid that connects a loudspeaker driver's Voice Coil to the driver terminals.

Line Level, an audio signal that varies between the noise floor and voltages of up to approximately 12 volts AC. Most line level signals range between 1/10 volts and 2 volts with the most common level being 1/2-volt or 500 millivolts.

Loudspeaker, an audio device that converts alternating currents into sound: (1.) a portmanteau of Loud-speaking Receiver. See "Receiver." (2.) A loudspeaker system.

Loudspeaker System, the completed combination of a loudspeaker driver or multiple loudspeaker drivers, a cabinet, crossover, electrical wiring, livery, bafflework, and dress components.

Low Pass Filter, an audio filter that reduces the signal level above a defined range of frequencies, typically used for the woofer of a loudspeaker. It cuts treble.

Magneplanar, a trademarked and patented panel speaker made by Magnepan. It is essentially a large, orthodynamic, full-range loudspeaker.

Microphone, an audio device that converts sound into alternating current.

Midbass, synonym for Bassmid.

Midrange, a loudspeaker driver intended to radiate the critical middle range of frequencies encompassing all or most of the vocal sounds.

Midwoofer, a loudspeaker driver that radiates a narrow range of frequencies typically between 200 Hz and 700 Hz. A midwoofer is used between a large woofer and a midrange driver in loudspeaker designs where the woofer cannot radiate frequencies high enough to match the midrange without losing quality.

Motorboard, a baffle onto which loudspeaker drivers are mounted.

NAB Equalization, the standardized recording and playback equalization characteristics required for the proper recording and playback of analog magnetic tape recordings adopted in the United States and several other countries.

NARTB Equalization, (1.) an obsolete standardized recording and playback equalization characteristics required for the proper recording and playback of early analog magnetic tape recordings adopted in the United States. (2.) one of several standardized playback equalization characteristic required for the proper playback of analog 78-rpm records adopted in the United States.

Orthodynamic, referring to a loudspeaker that has a flat membrane driven by a spiral voice coil etched or laminated onto the membrane; the assembly suspended between two arrays of magnets or two magnetized screens. Most often used as headphones or as a tweeter or midrange driver.

Out-of-Phase, a situation that occurs as the timing of two or more audio signals are misaligned. Out-of-phase signals cancel each other out when combined, resulting in reduced overall levels or even complete silence.

Pan Pot, colloquial for Panoramic Potentiometer, the control of a mixing console that is used by the recordist from left to right between the stereo speakers.

Panel, the principal structural member of a cabinet, comprised usually of a sheet of material to form the top, bottom, and sides of the cabinet.

Paraphase, circuitry that divides an audio waveform into a positive half (in-phase) and a negative half (inverse phase). Colloquially known as push-pull.

Passive Radiator, a mechanically compliant membrane or diaphragm having a low resonance frequency that delays the sound from the rear of a speaker so that the sound reinforces the low frequency output of the speaker when installed in a loudspeaker cabinet. Most passive radiators resemble an unfinished woofer lacking the magnet and voice coil.

Phase, a measurement, stated in degrees from 0 to 360, that indicates a point in time within a given sound wave. Audio signals are typically depicted as waveforms, which visualize their variations in air pressure over time.

Phase Coherence, the consistency of phase relationships among audio channels. In a stereophonic system maintaining phase coherence improves spatial resolution.

Phase Coupler, a specialized loudspeaker driver that covers a narrow range of bass frequencies to fill in the null between a woofer and midwoofer that is caused by phase

cancelation. The crossover in many multi-Way loudspeaker systems can cause gaps in the frequency response; phase couplers fill the gap.

Phase Inverter, (1.) circuitry that creates Paraphase signals by passing a signal through two stages of amplification; typically the first stage creates the inverse phase signal portion and the second stage inverts that output to create the in-phase signal. (2.) any loudspeaker design that delays the sound emanating from the rear of the speaker driver so that the sound reinforces the low frequency output of the speaker.

Phase Relationship, describes the situation where the timing of multiple audio signals differ relative to each other. Phase relationship describes whether these waveforms are in sync (in-phase), partially out of sync (phase-shifted), or completely out of sync (out of phase).

Phase Shift, is an intentional adjustment of the timing or phase of an audio signal to align signals in a mix or to apply specific audio effects. Phase shift is measured in degrees. A 180-degree phase shift is the same as being completely out-of-phase.

Phase Splitter, circuitry that creates Paraphase signals with a single stage of amplification that has in-phase and inverse phase outputs simultaneously.

Phono Cartridge, the audio device installed on a turntable tonearm that plays the record and generates the audio signal outputted by the turntable.

Pickup, (1.) European term for Phono Cartridge, (2.) on older British term for microphone.

Planar Speaker, a marketing term for a variety of loudspeakers that have a flat or pleated diaphragm and that do not use a conventional solenoidal (voice coil) motor.

Power Amplifier, an audio amplifier having a very low output impedance that increases the wattage to power loudspeakers.

Preamplifier, an audio amplifier that increases the voltage of the source audio signals principally to be further amplified by a Power Amplifier. Preamplifiers typically include source switching, level control, tone controls, and related functions.

Primary Wire, a single conductor that is covered by a conformal insulator.

Receiver, the formal name for an apparatus that converts alternating electrical currents into sound.

Retard Coil, a synonym for inductor.

Ribbon Driver, a loudspeaker made from a pleated aluminum ribbon suspended between the poles of a magnet. The audio signal is applied to the ribbon, which has an impedance of less than 0.5 Ohm. Therefore, an impedance matching transformer must be used to avoid shorting out an amplifier.

RIAA Equalization, the standardized playback equalization characteristic required for the proper playback of analog vinyl records.

Spatial Accuracy, the ability of a loudspeaker to reproduce the position of a sound in the stereo panorama accurately, replicating the position of the original sound.

Spatial Resolution, the degree of the accuracy of a loudspeaker's Spatial Accuracy and its ability to reproduce the smallest changes in the Stereo Panorama.

Stereophonic Sound, a multi-channel audio system, usually comprising two discrete channels, designed to create an auditory illusion that replicates the positions of the various sounds in the recording from left-to-right, vertically, and laterally from front-to back. The resulting illusion should be a convincing lifelike, tangible, three dimensional presentation.

Stereo Panorama, the placement by the recordist of the various sounds in the recording in virtual three dimensions.

Subwoofer, a high fidelity loudspeaker driver designed to reproduce the gravest tones, typically the frequency range between 16 Hz and 70 Hz. The term subwoofer has become overused by marketers to refer to a bass cabinet, or the LFE loudspeaker in a home theater system. A true subwoofer is rare.

Supertweeter, a loudspeaker driver that emanates very high frequencies, typically those above 5000 Hz, or more commonly above 10,000 Hz.

Tapered Quarter Wavelength Tube, TQWT; a form of Transmission Line. See Transmission Line.

Tone Control, a simple design of variable equalizer used in audio equipment to control the amount of bass and treble.

Transmission Line, a loudspeaker cabinet that uses a long, often labyrinthine plenum to delay the sound from the rear of a speaker so that the sound reinforces the low frequency output of the speaker.

Tweeter, a loudspeaker driver designed to reproduce high frequencies, typically those above 1000 Hz.

Voice Coil, the armature, usually in the form of a solenoid, of the dynamic motor of a typical loudspeaker driver.

Voltage, an expression of, or measurement of, the electromotive force exerted by an electrical current. The formal unit of measurement is the Volt.

Wattage, the magnitude of electrical power, measured in Watts. Wattage expresses the ability of an apparatus to do work. In audio, the work is the movement of a loudspeaker diaphragm.

Waveguide, a marketing buzzword for a horn, typically a low-aspect horn.

Woofers, a loudspeaker driver designed to reproduce bass frequencies. Most true woofers range in advertised sizes between 8" and 31.5".

Zobel, a combination of a resistor and a capacitor connected across a loudspeaker's terminals to counteract its inherent rise in impedance. The Zobel flattens the loudspeaker's complex impedance curve which improves the accuracy of a crossover network and presents a more ideal load to a power amplifier, allowing the amplifier to operate at peak performance.