

Absorption Loss: That part of shielding effectiveness dealing with energy absorption through a metal barrier.

Attenuation: Reduction in the quality or magnitude of an electrical signal. Suppression of EMI noise in the interconnect transmission path.

Aperture Leakage: Compromise in shielding effectiveness from holes, slits, and slots from braid, windows, cooling openings, and joints of metal boxes where EMI can get in or out.

Bandwidth: The frequency interval between the upper and lower 3 dB down response of a receiver.

Broadband EMI: Electrical disturbances whose frequency spectrum cover several octaves or decades in the frequency spectrum or exceed the receiver bandwidth.

Capacitance: The measure or ability of a multilayer ceramic planar array to capture and store electrical energy.

Common Mode (CM): As applied to two or more wires, all currents flowing therein with the same polarity.

Conducted Interference: EMI transmitted along an unshielded conductor or cable.

Coupling Path: The conducted or radiated path by which interfering energy gets from a source to a victim.

Cross Modulation: Energy from one transmitter that causes the modulation to change on a received signal from another transmitter.

Crosstalk: Electromagnetic energy bleed across dielectric materials, for example, in twisted pair cable sets or across adjacent connector contacts, disrupting the electrical signals in each respective circuit.

Differential Mode (DM): Voltages or currents on a wire pair that are of opposite polarity.

Dielectric Withstanding Voltage (DWW): Rating, expressed in volts at a given frequency at ambient temperature defining the maximum voltage a dielectric material can withstand before failing.

Drain: path by which charges absorbed by a conductor move to ground in a properly grounded system.

Electric Field: A radiated wave's potential gradient in volts per meter (V/m).

Electrical Gasket: A compressible bond used between two mating metal members to secure a low-impedance path between them.

EMC: Electromagnetic compatibility, the conditions under which all components of a system do not interfere with each other or with their environment.

EMI: Electromagnetic interference (opposite of EMC). Electromagnetic disturbance that degrades performance of electronic equipment.

EMP: Electromagnetic pulse. A broadband, high-intensity, short-duration burst of electromagnetic energy such as might occur as a result of a nuclear explosion.

ESD: Electrostatic discharge. A momentary (and unwanted) discharge of built-up electrical energy, usually from an electrically insulated object to an object with a different electrical potential.

Emission: Unwanted electromagnetic signal emanating from a piece of equipment.

Ferrite: Powdered magnetic material in form of beads, rods, and rings used to absorb EMI on wires and cables.

Field Strength: Radiated voltage or current per meter corresponding to electric or magnetic fields.

Filter: A device to block the flow of EMI while passing the desired signal frequencies.

Grounding: A conductive path to earth designed to eliminate electrical shock by shunting away dangerous currents.

Impulse Noise: A transient electrical disturbance, usually repetitive.

Inductors: Used with capacitors to form tuned circuits to filter out specific signal frequencies.

Magnetic Field: A radiated wave's current gradient, expressed in amperes per meter (A/m).

Multilayer Planar Array: Multi-layer ceramic EMI filter device housed in a connector. The most widely applied type of EMI filter.

Narrowband : EMI Interference whose emission bandwidth is less than the bandwidth of the EMI measuring receiver or spectrum analyzer.



Introduction to Filter Connectors EMI/EMP Glossary

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Power Conditioning: Reduction of EMI pollution on power mains by inserting filters, isolators, regulators, or an uninterruptible power supply (UPS).

Radiated Interference: EMI or noise transmitted from any electrical system, from power-lines to mobile telephones.

Radio Frequency Interference (RFI): A special class of electromagnetic interference in which radio frequency transmissions cause unintentional problems in equipment operation.

Reflection Loss: Shielding effectiveness due to energy reflection from impedance mismatch between incident field and metal barrier.

Roll-Off: The frequency in an attenuation curve at which a filter begins to reduce the quality or magnitude of an electrical signal.

Shielding Effectiveness (SE): The ratio of field strengths (absorption and reflection losses) before and after installing a shield.

Shot Noise: The noise caused by random fluctuations in the motion of charge carriers such as electrons in a conductor.

Skin Depth: The calculated metal layer thickness through which some 63 percent of the surface current flows.

Surge: A sudden voltage increase on the power mains.

TEMPEST: Transient Electromagnetic Pulse Surveillance Technology.

Transfer Impedance (Z_t): The quality of cable shield performance calculated by the ratio of the coupled voltage to the surface current, in ohms per meter (Ω/m).

Transient: A short-duration voltage surge due to a lightning strike or other dynamic event.

UPS: Uninterruptible power supply.

Waveform: For lightning events, measure of electrical transient exposure level and surge severity.

Filter Module Elements

Multilayer Ceramic Planar Array: Containing a network of capacitors, feedthrus and ground lines.

Inductors: Ferrite Beads to provide inductance and increase insertion loss

Contact Types: Choose from Solder Cup, PC Tail or Piggy-Back Crimp (Consult Factory for PC Tail Length Options).

Contact Material: Gold Plated Copper Alloy.

Pin/Hole Intersection: The business-end of the filter, providing each contact with its capacitance value and grounding.

