

TECH TIPS – EMI/RFI Absorbers

Application Challenge

EMI noise in equipment can cause operational problems and also make it difficult to obtain FCC certification of new products. EMI can be generated by numerous electronic devices due to the speed and complexity of modern electronics. Many EMI problems show up when the finalized new product is close to introduction, leaving little time for complex redesign. How can this noise be eliminated or reduced without using complex shielding schemes or redesigning a circuit layout?

Have You Thought of This?

[3M EMI absorbers](#) are near field absorbers that are specifically designed to eliminate noise from a few hundred megahertz to multiple gigahertz frequencies. They work by absorbing the EMI field generated by today's high speed electronics, eliminating emissions, crosstalk and oscillations. They are flexible polymer sheets that are loaded with specific magnetic flake particles. They are nonconductive so they can be directly applied to circuitry and noisy traces without fear of shorting out traces and IC pins. They come in sheet or roll form for easy converting into custom shapes, and once cut can be placed in tape and reel format for automatic insertion. They are UL94V-0 flame retardant and come in varying thicknesses up to 1 mm.

[3M absorbers](#) are currently being used in millions of products around the world including laptops, cell phones, routers, mobile radios, cameras, PDA's and many other electronic devices.

When shielding is impractical or not quite effective enough consider using 3M absorbers for the following and similar applications

- Apply directly to a noisy IC body to eliminate the production of noise
- Use on a ribbon cable or flex tape to reduce and eliminate cross talk between traces and signal lines.
- Use on noisy cables to dampen EMI emissions.
- Use between an IC and a heat sink to prevent IC noise from radiating out of the heat sink.
- Use under shield can lids to dampen noise inside the shielded area. This is particularly helpful when enclosing circuitry in a shielded can causes unwanted oscillations.
- Use in products with LCD displays to prevent color shifts due to EMI inside product enclosures.
- AB6000 series combines an absorber laminated to shielding material to provide both functions in an integrated product.