THE ZIPPERTUBING CO.
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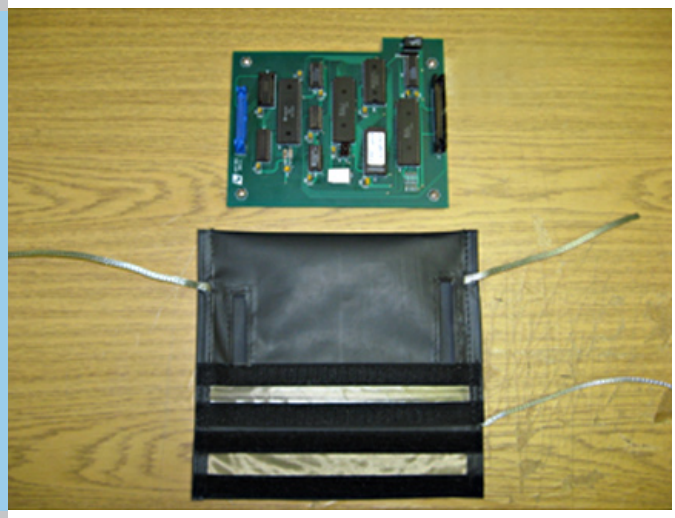
EMI Shield



Product:

Printed Circuit Board EMI Shield Pouch

Problem:

A US Homeland Security agency required EMI hardening of a classified electronic system and had discovered after shielding all interconnect cables that the source of the EMI leakage problem emanated from the main printed circuit board.

Solution:

The system was portable and required periodic disassembly so a soft sided, removable EMI shielded pouch was created. The pouch utilized a soft, pliable EMI shielding fabric laminated between two layers of flexible high dielectric Polyurethane film. The inner layer insured that the I.C. chips or solder joints were all electrically isolated. The pouch flap was closed using hook and loop and incorporated an EMI bulb seal that electrically closed the flap. The pouch design provided two cable connector penetration openings, four circuit board mounting holes with exposed shield cloth to allow grounding and three drain wire pigtails to tie the cable shields together with the pouch. Testing confirmed that when the pouch was added to the system with shielded cabling the system performed as required.

Material:

The shielded assembly consisted of an inner and outer jacket of Zippertubing's **PFR-18** fire retardant Polyurethane material surrounding a sandwiched layer of **Z-3250-CN**, Nickel/Copper plated Polyester EMI shielding cloth. An additional layer of tough, abrasion resistant **VNH-23** material was added inside the pouch facing the circuit board solder legs to insure that these sharp circuit board components did not punch through the Polyurethane film and create a short circuit condition. The pouch flap bulb seal was created by wrapping the **Z-3250-CN** shielding cloth around an extruded foam sponge gasket material while the flap closure was sealed with standard Polyester hook and loop material. Zippertubing's Polyurethane **ZT-Tape-8235** was used to create a cosmetically appealing piping edge around all sandwiched material layers.

Conclusion:

Various other EMI shielded pouch designs have been created for other circuit board and instrument packages and all have follow this basic design. Repeated EMI testing by various customers and agencies has shown that this material combination and design to work very well.