

**CURTISS -  
WRIGHT**

# Electromagnetic Compatibility





## Technical Data

### ACHIEVING (EMC) "ELECTROMAGNETIC COMPATIBILITY"

5000

As a multitude of electronic equipment becomes available to the marketplace, and the more sophisticated they become, they are increasingly susceptible to interference from outside or stray electronic waves known as EMI/RFI. Most of this electronic equipment is being produced out of plastic materials. These plastic materials are most often injection or structural foam molded engineering thermoplastics such as ABS (Cycolac), polyphenylene oxide (Noryl), polyphenylene ether (Prevex), polycarbonate (Lexan, Merlon), polystyrenes (Fyrid, Styron) and a variety of other resins. These plastic materials are non-conductive in nature and therefore, are transparent to electromagnetic and radio frequency emanation.

These emanations are of concern to electronic design engineers because they could effectively disrupt the performance of the equipment being designed or used. The concern also extends beyond electronics engineers to the FCC and governmental regulations which consider this energy as "noise pollution" and have imposed some limits on the amount of energy which can be allowed to radiate from an electronic device. It is, therefore, necessary for the design engineer to be aware of these regulations and possibly more stringent rulings to come. For those designers and marketing people who are contemplating overseas (European) markets, regulations, under the guidance of VDE<sup>1</sup> (West Germany), have already been established and are much more stringent than present U. S. standards. The FCC may adopt some of the VDE standards in future EMI/RFI rulings. DPE/OE<sup>2</sup> and ISM<sup>3</sup> manufacturers are presently studying ways to protect their electronic equipment by applying conductive shielding materials.

EMI is, as pointed out, a major concern to present design engineers of electronic components. Electrostatic discharge (ESD) is also a concern but can be solved without government regulation. Plastic housings on components tend to accumulate static electricity until the energy level is high enough to bridge an air gap to the nearest conductor. People too can build up enough voltage to cause problems, such as destroying expensive semiconductors and/or programs and also give rise to electromagnetic radiation which can affect other equipment. Electronic equipment is highly vulnerable to ESD and the EMI which results from it. Designing for EMC should thus consider EMI and ESD.

(OVER)



E/M Corporation's Evershield<sup>®</sup> coatings and coating expertise can be effective in solving both EMI and ESD problems. We offer a wide range of conductive thermoplastic coatings which can solve the more stringent specs of VDE for overseas sales or the simplest controls of bleeding off static charge.

E/M Corporation has major coating facilities located throughout the U.S.A. These locations offer all the Evershield coatings and can furnish decorative coating upon request for low cost. We can effectively and conveniently service any manufacturer of electronic components throughout the U.S. with our locations and our well-trained technical representatives. If we can be of assistance in solving your EMI/RFI problems through our coating facilities, please contact E/M Corporation at the facility located conveniently in your area.

1. VDE                    Verbal Deutscher Elektrochniker is the Association of German Electrical Engineers, which control regulations for VDE standards.
2. DPE/OE                Data Processing Equipment/Office Equipment.
3. ISM                    Industrial, Scientific, Medical manufacturers as subject to FCC rulings, parts 15 & 18 of FCC docket #20718 - governing of ISM manufacturers.