

# The Market for Filtered Connectors in Commercial and Military Applications

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## Abstracts

Bishop and Associates Inc. has just released a new 14 chapter market research report providing a detailed analysis of connectors that feature the capability of mitigating the negative effects of electromagnetic interference (EMI) and/or electrostatic discharge (ESD).

The proliferation of electronic devices in both military as well as in the consumer market has made the management of EMI and ESD issues a key consideration early in the new product design cycle. Filtered connectors are available in circular and rectangular configurations, and utilize a variety of filter technologies including chip capacitors, tubular, and planar.

This new report addresses the most common filtered connector types in use today including a variety of military / aerospace circulars, Mil-C-24308 Subminiature D connectors and ARINC connectors.

Filtered connectors utilized in industrial, medical, telecommunications and consumer products include commercial Subminiature D, RJ45 jacks with integrated magnetics, and filtered IEC power inlets.

High-speed digital signals can be corrupted by both conducted and radiated interference. Design engineers must insure that equipment is protected from electronic noise created by other devices in the area. At the same time, electronic equipment must not become a source of radiated noise that exceeds government emission limits. A combination of higher data rates, increased packaging density, switching power supplies and constant pressure to reduce product cost has increased the challenge to design equipment that achieves electromagnetic compatibility.

A variety of design approaches including shielding and filtering can be utilized to insure system compatibility. Discrete filtering elements located on the printed circuit board can be effective, but consume valuable space and assembly labor. The most effective location for filtering to be implemented is within the input/output interface. Electronic interference is stripped from data and power lines at the wall of the shielded enclosure. The integrated ground plane in a filtered connector insures that there are no apertures through which radiated noise can enter or escape the product.

This new report begins with a tutorial on the basics of electromagnetic theory as well as EMI filtering and ESD protection techniques. Chapters are devoted to discussion of filter performance for each filter type, how products are tested and verified for EMI compatibility, and how global emission standards have influenced the design of new electronic equipment. Other chapters review alternatives to the use of filtered connectors and types of devices used to protect sensitive equipment from static discharge.

Additional chapters review typical military, and commercial applications that utilize filtered and ESD protected connectors and identifies potential growth markets. A detailed review of advances in filter technology as well as recently introduced products is included. Separate chapters provide overviews of the current supplier base for both military and commercial connectors, with listings and photos of their filtered product lines.

A 25-page chapter provides extensive data on the estimated market value of filtered connectors by connector type and region of the world. Additional charts provide market forecast projections to 2014 with a 5-year CAGR percentage. A detailed appendix provides a useful list of terms and definitions used in the report.

This report is an update of a report published by Bishop & Associates in 2004, and details changes in both the technology and products that have influenced the filtered and ESD protected connector market over the past six years.

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