

American National Standard Guide on the Application and Evaluation of EMI Power-Line Filters for Commercial Use

Accredited Standards Committee On Electromagnetic Compatibility, C63

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American National Standards Institute

Secretariat

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Abstract: A basic understanding of the application, evaluation, and safety considerations of electromagnetic interference (EMI) power-line filters used in both ac and dc applications is provided. The construction of an EMI power-line filter and its functions in providing suppression of conducted noise are described. The functions and performance of the filter components, particularly the capacitors and inductors, are discussed. It is explained why seemingly identical filters may not give the same performance in a particular application. No-load insertion-loss test methods are presented. Proper installation of the filters in equipment is discussed. Safety regulations are briefly addressed.

Keywords: capacitors, common-mode noise currents, differential-mode noise currents, electromagnetic interference power-line filters, inductors, no-load insertion loss

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Foreword

(This Foreword is not a part of ANSI C63.13-1991, American National Standard Guide on the Application and Evaluation of EMI Power-Line Filters for Commercial Use, but is included for information only.)

Many individuals have expressed the need for a document that provides a guide to the basic understanding of EMI power-line filters.

This guide is intended to assist users and designers of electronic equipment in the proper design, construction, installation, and evaluation of power-line filters. Safety considerations are also discussed.

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