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EIA INTERIM STANDARD OMNIBUS SPECIFICATION

Local Area Network Twisted Pair Data Communications Cable

Adopted for Use in the U.S. National Electronic Components
Quality Assessment System (NECQ-System)

NQ-EIA/IS-43

September 1987

ELECTRONIC INDUSTRIES ASSOCIATION
ENGINEERING DEPARTMENT



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INTRODUCTION

This Standard was formulated for the purpose of:

1. Promoting uniformity of Local Area Network cable constructions.
2. Eliminating misunderstandings or confusion between manufacturers and buyers with respect to product performance requirements.

1.0 SECTION ONE - SCOPE

This Omnibus Specification relates to Local Area Network Twisted Pair Cable constructed of insulated copper conductor pairs in a single PVC or fluorocarbon jacket. The cable is intended for use with local area networks such as token ring networks and other systems employing similar technology as a total building wiring system.

The purpose of this standard is to:

1. Establish uniform requirements and test methods for characterizing geometric, mechanical, environmental, and transmission properties of Local Area Network Cable.
2. Prescribe preferred ratings and characteristics and to select from this standard the appropriate test and measurement methods to provide a fixed sample Component Qualification Approval test schedule.

Individual cables shall be described in relevant Detail Specifications that will reference this Omnibus Specification.



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2.0 SECTION TWO - GENERAL

2.1 RELATED DOCUMENTS

The following documents in effect form a part of this specification to the extent specified herein.

2.1.1 EIA

Electronic Industries Association (EIA)
2001 Eye Street, N.W.
Washington, D.C. 20006

RS-230 - Color Markings of Thermoplastic Covered Wire (December 1959; Reaffirmed July, 1981)

RS-336 - Color Coding for Chassis Wiring (April, 1967; Reaffirmed May, 1973, December, 1978)

EIA-359A - EIA Standard Colors for Color Identification and Coding (January, 1985)

EIA-476 - EIA Standard for Source and Date Code Markings.

2.1.2 ANSI

American National Standards Institute (ANSI)
1430 Broadway
New York, N.Y. 10018

ANSI/ASQC Z1.4-1981 - Sampling Procedures and Tables for Inspection by Attributes (ANSI/MIL-STD_105), (IEC Publication 410)

ANSI/IEEE-100-1977 - Standard Dictionary of Electrical and Electronic Terms

2.1.3 ASTM

American Society for Testing and Materials
1916 Race Street
Philadelphia, PA 19103

ASTM B3 - "Soft or Annealed Copper Wire"

2.1.4 IEEE

The Institute of Electrical and Electronics Engineers
345 East 47th Street
New York, N.Y. 10017

IEEE 802.5 - Token Ring Access Method and Physical Layer
Specifications

2.1.5 FCC

Federal Communications Commission
Superintendent of Documents
U. S. Government Printing Office
Washington, D.C. 20402

47 Code of Federal Regulations, Section 15 - Radio Frequency
Devices

47 Code of Federal Regulations, Section 68 - Connection of Terminal
Equipment to the Telephone Network

2.1.6 MILITARY SPECIFICATIONS AND STANDARDS

Military Specifications and Standards
United States Department of Defense
Washington 25, DC

MIL-C-915E - General Specifications for Electrical Cable and Cord
for Shipboard Use

2.1.7 NFPA

National Fire Protection Association
Batterymarch Park
Quincy, Mass 02269

NFPA-70 - National Electrical Code

2.2 UNITS AND SYMBOLS

Units, graphic symbols, and letter symbols shall, whenever possible, be
taken from the following publications:

ANSI/IEEE 100-1977 Standard Dictionary of Electrical and Electronic Terms

ANSI/IEEE 260-1968 Letter Symbols for SI Units and Certain Other Units of Measurement

2.3 TERMINOLOGY

Inspection - The process of measuring, examining, testing, or otherwise comparing the unit of product with the requirements.

Units of Product - The entity inspected in order to determine its classification as defective or nondefective or to count the number of defects. It may be a single article, a pair, a set, a length, an area, an operation, a volume, a component of an end product, or the end product itself. The product may or may not be the same as the unit of purchase, supply, or shipment.

Lot - The term lot shall mean "inspection lot," i.e., a collection of units of product from which a sample is to be drawn and inspected to determine conformance with the acceptable criteria, and may differ from a collection of units designated as a lot for other purposes (e.g., production, shipment, etc.).

Acceptance Sampling - The process of evaluating a portion of the product in a lot for the purpose of accepting or rejecting the entire lot as conforming or not conforming to a quality specification. When applied consistently to a series of lots, acceptance sampling will control the risk of accepting lots of a given quality.

AOQL - Average Outgoing Quality Limit. The worst percent defective outgoing material expected when using a given sampling plan.

AQL - Acceptable Quality Level. The worst percent defective material that is still considered satisfactory as a process average for the purposes of acceptance sampling.

Defect - A condition in which a product, material, or service does not conform to requirements.

Failure - A condition in which a product, material, or service does not perform its intended function.

Quality - The extent to which a product, material, or service conforms to requirements. Fitness for use.

Reliability - The probability that a product, material, or service will conform to requirements during a given period of time



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2.3.1 ABBREVIATIONS

CU	=	Copper
DGM	=	Data Grade Media
FCC	=	Federal Communications Commission
FP	=	Flat-Parallel Pair
VGM	=	Voice Grade Media
NEC	=	National Electrical Code
NP	=	Nonplenum
NPO	=	Nonplenum Office
OD	=	Outdoor
P	=	Plenum
ST	=	Stranded
TP	=	Twisted Pair
UC	=	Undercarpet
UL	=	Underwriters Laboratories

2.4 INFORMATION TO BE GIVEN IN A DETAIL SPECIFICATION

Detail Specifications shall not specify requirements inferior to those of this Specification. When more severe requirements are included, they shall be listed in the Detail Specification and indicated in the test schedule, for example, by an asterisk.

Note: The information given below may for convenience, be presented in tabular form.

2.4.1 ILLUSTRATIONS AND DIMENSIONS

There may be an illustration of the Local Area Network Cable as an aide to easy recognition and for comparison with other cables. All dimensions shall preferably be stated in millimeters (mm); however, in case the original dimensions are given in inches, the converted metric dimensions in mm shall be added.

2.5 MARKING

2.5.1 JACKET

Each Local Area Network Cable shall be permanently and legibly identified (61 cm max interval) with the information specified in paragraph 2.5.1.1 by means of surface printing on the outer jacket or on label tape under transparent jackets. When appropriate, each cable shall be marked as required by Paragraph 2.5.1.2. Numbers, symbols, trademarks and other like markings shall be similar in appearance and