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UL 3992

**Outline of Investigation for Patch Cords Terminating in Eight-Position
Modular Plug Connectors – Performance**

Issue Number: 1

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Summary of Topics

This first issue of the Outline of Investigation for Patch Cords Terminating in Eight-Position Modular Plug Connectors – Performance, UL 3992, covers the performance of patch cords utilizing RJ45 style 8-pin modular plug connectors. It also covers the 8-position modular plug connectors used in the construction of these cable assemblies.

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INTRODUCTION

1 Scope

1.1 This Outline of Investigation covers the signal transmission, environmental and/or mechanical performance characteristics of Patch Cords terminating in eight-position modular plug connectors. It also covers the eight-position modular plug connectors used in the construction of these cable assemblies.

2 Reference Publications

Any undated reference to a code or standard appearing in the requirements of this Outline shall be interpreted as referring to the latest edition of that code or standard.

ANSI/EIA

EIA-364-53B

Nitric Acid Vapor Test, Gold Finish Test Procedure for Electrical Connectors and Sockets

ANSI/TIA

ANSI/TIA-1096-A

Telecommunications Telephone Terminal Equipment Connector Requirements for Connection of Terminal Equipment to the Telephone Network

ANSI/TIA-568-C.2-2009

Balanced Twisted-Pair Telecommunications Cabling and Components Standards

ASTM

ASTM E384-05a

Standard Test Method for Microindentation Hardness of Materials

IEC

IEC 60603-7:2008

Connectors for electronic equipment – Part 7: Detail specification for 8-way, unshielded, free and fixed connectors

IEC 61935-2:2010

Specification for the testing of balanced and coaxial information technology cabling – Part 2: Cords as specified in ISO/IEC 11801 and related standards

UL (Underwriters Laboratories Inc.)

UL 94

Tests for Flammability of Plastic Materials for Parts in Devices and Appliances

UL 444

Communications Cables

UL 746C

Standard for Polymeric Materials – Use in Electrical Equipment Evaluations

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3 Units of Measurement

3.1 The unit of measure shall be SI. If a value for measurement is followed by a value in other units in parentheses, the second value represents a direct conversion or an alternative value.

4 Definitions

4.1 For the purpose of this Outline, the following definitions apply.

4.2 **PATCH CABLE** – A cable used in the construction of a patch cord.

4.3 **PATCH CORD** – A cable assembly consisting of a length of cable and its accompanying connectors intended to be used for a specific purpose. (Also known as work area cord, equipment cord, and jumper cable.)

CONSTRUCTION

5 Mechanical and Dimensional Requirements for Connectors

5.1 General

5.1.1 Each patch cord shall be terminated in an eight-position modular plug connector complying with the mechanical and contact specifications in ANSI/TIA-1096-A as follows:

- a) Figure 4-10: 8-Position Unkeyed Plug Mechanical Specification
- b) Figure 4-11: 8-Position Unkeyed Plug, Mechanical Specification (continued)
- c) Figure 4-12: 8-Position Unkeyed Plug, Plug/Jack Contact Specification
- d) Figure 4-13: 8-Position Unkeyed Plug, Minimum Plug Size (No-Go Gauge)
- e) Figure 4-14: 8-Position Unkeyed Plug, Maximum Plug Size (Go Gauge)

5.2 Connector contacts

5.2.1 Contact finish in the region of contact shall comply with either 5.2.2 or 5.2.3.

5.2.2 Contact finish in the region of contact shall be hard gold and shall have a minimum gold thickness of 1.2700 μm (50 μin). The hard gold finish shall comply with the gold surface layer and nickel barrier layer requirements in Section 5.1, Hard Gold Contacts of ANSI/TIA-1096-A.

5.2.3 Other material is permitted to be used provided the material is compatible with hard gold contacts as specified in Section 5.1 of ANSI/TIA-1096-A and comply with the performance requirements specified in Section 5.2 of ANSI/TIA-1096-A.