
# ANSI E1.27-1 - 2006 (R2011) Entertainment Technology Standard for Portable Control Cables for Use with ANSI E1.11 (DMX512-A) and USITT DMX512/1990 Products

CP/2003-1028r5.2
substantively identical to CP/2003-1028r5.1

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Approved as an American National Standard by the ANSI Board of Standards Review on 28 June 2011.

This document is a reaffirmation without substantive changes of ANSI E1.27-1 - 2006.

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**The PLASA Technical Standards Program**

The PLASA Technical Standards Program was created to serve the PLASA membership and the entertainment industry in technical standards related matters. The goal of the Program is to take a leading role regarding technology within the entertainment industry by creating recommended practices and standards, monitoring standards issues around the world on behalf of our members, and improving communications and safety within the industry. PLASA works closely with the technical standards efforts of other organizations within our industry, including USITT and VPLT, as well as representing the interests of PLASA members to ANSI, UL, and the NFPA. The Technical Standards Program is accredited by the American National Standards Institute.

The Technical Standards Council (TSC) was established to oversee and coordinate the Technical Standards Program. Made up of individuals experienced in standards-making work from throughout our industry, the Council approves all projects undertaken and assigns them to the appropriate working group. The Technical Standards Council employs a Technical Standards Manager to coordinate the work of the Council and its working groups as well as maintain a “Standards Watch” on behalf of members. Working groups include: Camera Cranes, Control Protocols, Electrical Power, Floors, Fog and Smoke, Followspot Position, Photometrics, Rigging, and Stage Lifts.

PLASA encourages active participation in the Technical Standards Program. There are several ways to become involved. If you would like to become a member of an existing working group, as have over four hundred people, you must complete an application which is available from the PLASA office. Your application is subject to approval by the working group and you will be required to actively participate in the work of the group. This includes responding to letter ballots and attending meetings. Membership in PLASA is not a requirement. You can also become involved by requesting that the TSC develop a standard or a recommended practice in an area of concern to you.

The Control Protocols Working Group, which authored this Standard, consists of a cross section of entertainment industry professionals representing a diversity of interests. PLASA is committed to developing consensus-based standards and recommended practices in an open setting.

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## Foreword

(This foreword contains no mandatory requirements.)

This standard describes the types of portable cable used to interconnect products which comply with ANSI E1.11, Entertainment Technology – USITT DMX512-A: Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories.

In 2003, The Control Protocols Working Group of ESTA's Technical Standards Program authorized the formation of a DMX512 Cabling Task Group. Writing an American National Standard for the use of portable DMX512-A cables was one of the projects assigned to this Task Group. This document is the result. It was developed under the Policies and Procedures of the ESTA Technical Standards Program, and reaffirmed under the Policies and Procedures of the PLASA Technical Standards Program

**Initial Task Group** (Company affiliations are those during the initial project)

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# 1 General

## 1.1 Scope

This Standard describes the types of portable cable for the transmission of digital data among products which comply with ANSI E1.11, Entertainment Technology – USITT DMX512-A. It covers recommended cable types, connectors and their internal wiring.

This Standard is intended as a guide for:

1. Equipment manufacturers and system specifiers who wish to integrate systems of lighting equipment and accessories, including dimmers, with controllers made by different manufacturers.
2. System specifiers and consultants who wish to gain detailed information about recommended cable types and allowed connectors.

This standard is intended to supplement ANSI E1.11, Entertainment Technology — USITT DMX512-A — Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories. References to ANSI E1.11, and DMX512-A within this standard all refer to this document.

This standard is not intended to replace existing portable digital data cabling standards or recommended practices other than those described in USITT DMX512 and DMX512/1990.

Unless otherwise noted, references to DMX512 in this document refer to DMX512-A.

## 1.2 Overview and Architecture

The means of transport of DMX512-A digital data from one compliant device to another is normally a two-pair cable, with each pair serving as a data link. Single pair cables are allowed when properly marked to differentiate them from two-pair cables. Portable cable shall be shielded to protect the data links from interference (RFI and EMI). The physical connection of portable cables at any device is via a 5-pin XLR connector.

The first pair of wires in any DMX512 portable data cable is used as the primary data link. The second pair is used for a variety of purposes, all of which fall within the scope of DMX512-A.

## 1.3 Compliance

Compliance with this Standard is strictly voluntary and the responsibility of the manufacturer. Disclosures and identification or other claims of compliance do not constitute certification or approval by PLASA. See clause 7 for Disclosure requirements.

# 2 Normative references

ANSI E1.11 *Entertainment Technology — USITT DMX512-A — Asynchronous Serial Digital Data Transmission Standard for Controlling Lighting Equipment and Accessories*

ANSI/TIA/EIA-568-B-2001 *Commercial Building Telecommunications Cabling Standard*

ANSI/TIA/EIA-485-A-1998 *Electrical Characteristics of Generators & Receivers for Use in Balanced Digital Multipoint Systems*
This standard will be referred to as EIA-485-A in this document.