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Entertainment Services and
Technology Association

American National Standard
E1.20 - 2006
Entertainment Technology
RDM
Remote Device Management
Over DMX512 Networks

CP/2003-1003r4

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This edition of ANSI E1.20 was approved by American National Standards Institute on March 31, 2006.

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Published By:

Entertainment Services and Technology Association

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Introduction

The Remote Device Management Protocol (RDM) permits intelligent bi-directional communication between devices from multiple manufacturers utilizing a modified DMX512 data link. RDM is an EF 1.0 implementation of ANSI E1.11.

RDM permits a console or other controlling device to discover and then configure, monitor, and manage intermediate and end-devices connected through a DMX512 network. RDM provides for intelligent control of devices on a DMX512 network, which has not been previously available outside of proprietary networks.

This standard specifies: the physical layer and timings, device discovery process and algorithms, message structure and communication.

Overview

This document specifies the physical layer requirements for handling half-duplex bi-directional communication and the timings associated with bi-directional communication.

This document addresses requirements for controllers, end devices, and In-Line devices such as DMX512 splitters/mergers and distribution systems to implement or support RDM communication.

An RDM system functions as a polled system, meaning that no intermediate or end-device will initiate communication. Only the device acting as the controller shall have the capability to initiate a response from any RDM device.

The RDM protocol makes use of an Alternate START Code (ASC) as defined in ANSI E1.11, to establish communication on a conventional DMX512 link. The first step in the RDM process is for a controller to identify all the devices that are connected to the data link. This is accomplished by performing a binary-tree search, or other type of search, to identify the internal Unique ID (UID) of all the connected devices.

Once a device has been discovered, the controller can request status messages, or get and set device parameters such as the DMX512 Address. All messages sent are addressed to the UID of the targeted device or through one of the Broadcast UID addresses.

Devices that primarily act as controllers (and distribution devices that do their own "discovery") shall be referred to as controllers in this document. Devices that typically receive and act on DMX512 data and/or act on RDM messages shall be referred to as responding devices or responders. Controllers send requests and receive responses on their command port. Responders receive commands and send responses on their response port. An in-line device will typically have one response port to receive commands and NULL START CODE packets from the controller, and one or more command ports of their own to forward this data to their responders.

Only one controller can be active on a given DMX512 link at any one time.

During normal operation, it is expected that the Discovery and Parameter messages will be interspersed with normal NULL START Code DMX512 packets.