This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

ANSI E1.37-7
Additional Message Sets for ANSI E1.20 (RDM) - Gateway & Splitter Configuration Messages

Revision 22 06/27/2019
CP/2016-1026r3

Approved by the ANSI Board of Standards Review on 23 May 2019

© 2019 Entertainment Services and Technology Association (ESTA)
All rights reserved.

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

NOTICE and DISCLAIMER

ESTA does not approve, inspect, or certify any installations, procedures, equipment or materials for compliance with codes, recommended practices or standards. Compliance with a ESTA standard or an American National Standard developed by ESTA is the sole and exclusive responsibility of the manufacturer or provider and is entirely within their control and discretion. Any markings, identification or other claims of compliance do not constitute certification or approval of any type or nature whatsoever by ESTA.

ESTA neither guarantees nor warrants the accuracy or completeness of any information published herein and disclaims liability for any personal injury, property or other damage or injury of any nature whatsoever, whether special, indirect, consequential or compensatory, directly or indirectly resulting from the publication, use of, or reliance on this document. In issuing and distributing this document.

In issuing this document, ESTA does not either (a) undertake to render professional or other services for or on behalf of any person or entity, or (b) undertake any duty to any person or entity with respect to this document or its contents. Anyone using this document should rely on his or her own independent judgment or, as appropriate, seek the advice of a competent professional in determining the exercise of reasonable care in any given circumstance.

Published by:
Entertainment Services and Technology Association (ESTA)
630 Ninth Avenue, Suite 609
New York, NY 10036
USA
Phone: 1-212-244-1505
Fax: 1-212-244-1502
standards@esta.org

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

The ESTA Technical Standards Program

The ESTA Technical Standards Program was created to serve the ESTA 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. ESTA works closely with the technical standards efforts of other organizations within our industry, including USITT and VPLT, as well as representing the interests of ESTA 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: Control Protocols, Electrical Power, Event Safety, Floors, Fog and Smoke, Followspot Position, Photometrics, Rigging, and Stage Machinery.

ESTA 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 ESTA 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 ESTA 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, steward for this standard, consists of a cross section of entertainment industry professionals representing a diversity of interests. ESTA is committed to developing consensus-based standards and recommended practices in an open setting.

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

Investors in Innovation, supporters of ESTA's Technical Standards Program

VISIONARY LEADERS ($50,000 & up)

ETC
PLASA
ProSight Specialty Insurance

VISIONARY ($10,000 & up; >100 employees/members)

Chauvet Professional
Cisco
Columbus McKinnon Entertainment Technology
Robe
Walt Disney Parks and Resorts

VISIONARY ($5,000 & up; 20–100 employees/members)

Altman Lighting, Inc.
German Light Products
JR Clancy
McLaren Engineering Group
Rose Brand
Stage Rigging
TMB
Tyler Truss Systems, Inc.

VISIONARY ($500 & up; <20 employees/members)

About the Stage
B-Hive Industries, Inc.
Scott Blair
Boston Illumination Group
Louis Bradfield
Candela Controls Inc.
Clark Reder Engineering
Tracey Cosgrove & Mark McKinney
Doug Fleenor Design
EGI Event Production Services
Entertainment Project Services
Neil Huff
Hughston Engineering Inc.
Interactive Technologies
Lankey & Limey Ltd.
Jules Lauve
Brian Lawlor
Michael Lay
Limelight Productions, Inc.
Link
John T. McGraw
Mike Garl Consulting
Mike Wood Consulting
Power Gems
Reed Rigging
Reliable Design Services
Alan Rowe
Sapsis Rigging Inc.
Stageworks
Dana Taylor
Steve Terry
Theatre Projects
Theatre Safety Programs
Vertigo
Steve A. Walker & Associates
Westview Productions
WNP Services

INVESTOR ($3,000–$9,999; >100 employees/members)

Actors' Equity Association
Barbizon Lighting Company
Golden Sea Professional Lighting Provider
IATSE Local 728
IATSE Local 891
Lex
NAMM
Rosco Laboratories
Texas Scenic Company

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

INVESTOR ($1,500–$4,999; 20–100 employees/members)

American Society of Theatre Consultants
Area Four Industries
BMI Supply
City Theatrical Inc.
H&H Specialties, Inc.
InterAmerica Stage, Inc.
Lycian Stage Lighting
Morpheus Lights
Niscon Inc.
Syracuse Scenery and Stage Lighting
Tomcat
XSF Xtreme Structures and Fabrication

INVESTOR ($200–$499; <20 employees/members)

Benjamin Cohen
Bright Ideas Custom Electronics Inc.
Bruce Darden
Guangzhou Ming Jing Lighting Equipment Co.
Indianapolis Stage Sales & Rentals, Inc.
K5600, Inc.
Nanyi Audio & Lighting Enterprise Co., Ltd.
Qdot Lighting Ltd.
Robert Scales
Stephen Vanciel
Suga Koubou Co., Ltd.
VU-Industry Vision Technology
Xpro Light

SUPPORTER (<$3,000; >100 employees/members)

Ian Foulds, IATSE Local 873
Harlequin Floors
Thern Stage Equipment
USAI Lighting

SUPPORTER (<$1,500; 20–100 employees/members)

ARM Automation, Inc.
Blizzard Lighting, LLC
Geiger Engineers
Guangzhou YaFeng Optoelectronic Equipment Co.
High Output
InCord
Intella Systems Co., Ltd.
iWeiss
LA ProPoint, Inc.
Nanshi Lighting
Oasis Stage Werks
Stage Equipment & Lighting
Stagemaker
Taurus Light Co. Ltd.
Thermotex Industries, Inc.
Vincent Lighting Systems
Zhuhai Shengchang Electronics Co.

SUPPORTER (<$200; <20 employees/members)

Roy Bickel
DMX Pro Sales
Tony Giovannetti
Pat Grenfell
Mitch Hefter
John Huntington
Beverly and Tom Inglesby
Eddie Kramer
Jason Kyle
LuxBalance Lighting
Tyrone Mellon, Jr.
Lizz Pittsley
Showman Systems
Michael Skinner
Skjonberg Controls Inc.
Stage Labor of the Ozarks
Tracy Underhill
Charlie Weiner

Planned Giving donor: Ken Vannice

All donations to the Technical Standards Program support the TSP in general, and are not directed to, or for, the benefit of any particular technical standard project, or any Working Group working on any particular standard or project.

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

Contact Information

Technical Standards Manager
Karl G. Ruling
ESTA
630 Ninth Avenue, Suite 609
New York, NY 10036
Phone: 1-212-244-1505
FAX: 1-212-244-1502
standards@ESTA.org

Assistant Technical Standards Manager
Richard J. Nix
ESTA
630 Ninth Ave., Suite 609
New York, NY 10036
Phone: 1-212-244-1505
FAX: 1-212-244-1502
standards@ESTA.org

Technical Standards Council Co-Chairs

Mike Garl
Mike Garl Consulting LLC
Phone: 1-432-694-7070
mike@mikegarlconsulting.com

Mike Wood
Mike Wood Consulting LLC
Phone: 1-512-288-4916
mike@mikewoodconsulting.com

Control Protocols Working Group Chairpersons

Milton Davis
Doug Fleenor Design, Inc
Phone: 1-805-481-9599
milton@dfd.com

Michael Lay
Signify
Phone: 1-352-433-2479
michael.lay@signify.com

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

Acknowledgments

The Control Protocol Working Group members, when this document was approved by the working group on 02 April 2019, are shown below.

Voting members:

Matthew Ardine; I.A.T.S.E. Local 728; U
Paul Beasley; Walt Disney Company; U
Robert Bellcuity Brands Inc.; MP
Andrew Berry; X-Laser; MP
Scott M. Blair; Megapixel; CP
Eric Bloom; Westview Productions; DR
Brent Boulnois; Candela Controls, Inc.; DE
Ian Campbell; Doug Fleenor Design, Inc.; MP
Milton Davis; Doug Fleenor Design, Inc.; MP
Bill Ellis; Candela Controls, Inc.; DE
Andrew Frazer; Stellascapes; MP
Robert Goddard; Goddard Design Co.; MP
Robert Haycock; UC Berkeley; U
Mitch Hefter; USITT; U
Julian Hoare; Tait Towers Manufacturing LLC; MP
Jon Hole; Eaton; MP
Maurits van der Hoorn; Acuity Brands Inc.; MP
Wayne David Howell; Artistic Licence Holdings; DE
John Huntington; I.A.T.S.E. Local 1; U
Leroy “Tripp” Oliver, III; Mainstage Theatrical Supply, Inc.; DR
John Valus_Jr.; Lex TM3; CP
David Kane; I.A.T.S.E. Local 728; U
Sam Kearney; Electronic Theatre Controls, Inc.; MP
Paul Kleissler; City Theatrical, Inc.; MP
Edwin S. Kramer; I.A.T.S.E. Local 1; U
Christian Krueger; Blizzard Lighting LLC; MP
Ulrich Kunkel; E3 Engineering & Education for Entertainment GmbH; U
Roger Lattin; I.A.T.S.E. Local 728; U
Michael Lay; Signify; MP
Kevin Loewen; Acuity Brands Inc.; MP
Jim Love; Tait Towers Manufacturing LLC; MP
Bill McIntyre; Show Distribution Group, Inc.; CP
Daniel Murfin; Royal National Theatre; U
Simon Newton; Open Lighting Project; G
Maya Nigrosh; Sonos; MP
Jim Ohrberg; Candela Controls, Inc.; DE
Jason Potterf; Cisco; MP
Mark Primrose; Kino Flo, Inc.; CP
Eric Rasmussen; Electronic Theatre Controls, Inc.; MP
Alan M. Rowe; I.A.T.S.E. Local 728; U
Larry Schoeneman; DesignLab Chicago, Inc.; DR
Steve Terry; Electronic Theatre Controls, Inc.; MP
Peter Willis; Howard Eaton Lighting Ltd.; CP

Non-voting members:

Christian Allabauer; Christian Allabauer; G
Tim Bachman; Altman Stage Lighting; MP
Nick Ballhorn-Wagner; Electronic Theatre Controls, Inc.; MP
Robert Barbagallo; Solotech Inc.; U

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

Marcus Bengtsson; disguise; MP
Javid Butler; Integrated Theatre, Inc.; CP
Justyn Butler; JBOTS; CP
Jean-Francois Canuel; A.C. Lighting Ltd.; CP
Steve Carlson; High Speed Design, Inc.; MP
Yongzhi Chen; Guangzhou Haoyang Electronic Co., Ltd.; CP
Anthony Chiappone; Chauvet Lighting; MP
Martin Chisnall; Martin Chisnall; U
Jon Chuchla; Audio Visual Systems, Inc.; G
Edward R. Condit; Edward R. Condit; G
Gareth Conner; Creative Conners, Inc.; MP
Fraser Connolly; Obsidian Controls; DE
Jeremy Day; Lumenpulse Lighting Inc.; MP
Larry Dew; W.A. Benjamin Electric Co.; DE
Rich Dionne; Purdue University; DE
Hamish Dumbreck; James Embedded Systems Engineering; MP
James Eade; ABTT; G
Paul K. Ericson; Stantec; DE
Trevor Forrest; Helvar Lighting Control; MP
David Gooch; Chauvet Lighting; MP
Sean Goossen; LiteGear, Inc.; MP
Jerry Gorrell; Theatre Safety Programs; G
Sean Harding; Port Lighting Systems; G
Nick Harper; Nick Harper; G
Bill Hewlett; ImageCue LLC; MP
Jim Holladay; Luxence; G
Eric Johnson; Eric Johnson; G
Rob Johnston; Interactive Technologies, Inc.; MP
Michael Karlsson; LumenRadio AB; MP
Jonathan Kemble; Electronic Theatre Controls, Inc. ; MP
Christopher Kennedy; Chauvet Lighting; MP
Lucas Korytkowski; Insight Lighting; MP
Jason Kyle; JPK Systems Ltd.; MP
Hans Leiter; Electronic Theatre Controls, Inc.; MP
Jon Lenard; Applied Electronics; MP
Rob Love; Insight Lighting; MP
John Mehltretter; Lehigh Electric Products Co.; MP
John Musarra; John Musarra; U
Mit Patel; disguise; MP
Jaxon Patterson; Insight Lighting; MP
Soren Sterdorff Peglau; Brother, Brother and Sons; MP
Gary Pritchard; LSC Lighting Systems PTY Ltd; MP
Charles Reese; Production Resource Group; DR
Yngve Sandboe; Sand Network Systems, Inc.; MP
Nicolai Gubi Schmidt; Nicolai Gubi Schmidt; U
Ford Sellers; Chauvet Lighting; MP
Christopher B. Tilton; About the Stage, LLC; DE
Robert Timmerman; Signify; MP
James Tomlinson; Team Tomlinson; G
Tracy Underhill; Triple C Lighting & Controls; G
Carlo Venturati; Clay Paky S.P.A.; MP
Will Wagner; Carallon Ltd.; MP
Colin Waters; TMB; DR
Ralph Weber; ENDL Texas; G
Loren Wilton; Showman Systems; CP
David Yellin; Sumolight GmbH; MP

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

Jeong Sik Yoo; Ghost LX; DE

Interest category codes:
CP = Custom-market producer
DE = Designer/engineer
DR = Dealer or rental company
G = General interest
MP = Mass-market producer
U = User

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

Table of Contents

NOTICE and DISCLAIMER ..... *i*
The ESTA Technical Standards Program ..... *ii*
Investors in Innovation, supporters of ESTA's Technical Standards Program ..... *iii*
Contact Information ..... *v*
Acknowledgments ..... *vi*
Table of Contents ..... *ix*
List of Tables *1*
1 Introduction *2*
1.1 Overview & Scope 2
1.2 E1.20 (RDM) Basic Features 2
1.3 E1.33 (RDMnet) Basic Features 2
2 Normative References *3*
3 General *5*
3.1 Overview 5
3.2 Sub-Device Handling 5
3.3 Text Field Handling 5
3.4 Byte Ordering 5
4 RDMnet Devices and Gateways *6*
4.1 General 6
4.2 RDMnet Endpoints 6
5 Splitters & Proxies *7*
5.1 General 7
5.2 RDM Endpoints 7
5.3 Splitter / Proxy Discovery 7
5.4 Endpoint Routing 8
6 RDM Parameter Messages for Endpoint Management *9*
6.1 Get Endpoint List (ENDPOINT_LIST) 9
6.2 Get Endpoint List Change (ENDPOINT_LIST_CHANGE) 10
6.3 Get/Set Identify Endpoint (IDENTIFY_ENDPOINT) 11

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

6.4 Get/Set Endpoint to Universe (ENDPOINT_TO_UNIVERSE) 12

6.5 Get/Set Endpoint Mode (ENDPOINT_MODE) 14

6.6 Get/Set Endpoint Label (ENDPOINT_LABEL) 16

6.7 Get/Set Enable RDM Traffic on Endpoint (RDM_TRAFFIC_ENABLE) 17

6.8 Get/Set Discovery State (DISCOVERY_STATE) 19

6.9 Get/Set Background Discovery (BACKGROUND_DISCOVERY) 21

6.10 Get/Set Endpoint Timing (ENDPOINT_TIMING) 23

6.11 Get Endpoint Timing Description (ENDPOINT_TIMING_DESCRIPTION) 25

6.12 Get Endpoint Responders (ENDPOINT_RESPONDERS) 26

6.13 Get Endpoint Responder List Change (ENDPOINT_RESPONDER_LIST_CHANGE) 28

6.14 Get Binding and Control Fields (BINDING_CONTROL_FIELDS) 29

7 RDM Parameter Messages for Distributed Queued/Status Management . 31

7.1 Get/Set Background Queued/Status Message Collection Policy (BACKGROUND_QUEUED_STATUS_POLICY) 31

7.2 Get Background Queued/Status Message Policy Description (BACKGROUND_QUEUED_STATUS_POLICY_DESCRIPTION) 33

Appendix A: Defined Parameters (Normative) 34

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

List of Tables

Table 7-1: Policy Setting Types 32
Table 7-2: Policy Descriptions 33
Table A-1: RDM Parameter ID Defines 34
Table A-2: Discovery State Defines 35
Table A-3: Discovery Status Defines 35
Table A-4: Endpoint Mode Defines 35
Table A-5: Endpoint Types 35
Table A-6: Additional Response NACK Reason Codes 36

This is a preview of "ANSI E1.37-7-2019". Click here to purchase the full version from the ANSI store.

1 Introduction

1.1 Overview & Scope

This document provides additional Get/Set Parameter Messages for use with the ANSI E1.20 Remote Device Management protocol [RDM] and ANSI E1.33 RDMnet protocol [RDMnet].

This document contains messages relating to configuring managed splitters, proxy devices, and RDMnet Devices.

1.2 E1.20 (RDM) Basic Features

The ANSI E1.20 Remote Device Management protocol (RDM) [RDM] permits intelligent bi-directional communication between devices from multiple manufacturers using a modified DMX512 data link. RDM is an EF1.0 implementation of ANSI E1.11, see Annex B in [DMX].

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 intelligent control of devices on a DMX512 network.

1.3 E1.33 (RDMnet) Basic Features

The ANSI E1.33 [RDMnet] protocol extends the capabilities of RDM to operate on RDMnet Devices natively on an IP network by encapsulating the E1.20 packet information into E1.33 packets. Significantly different from E1.20 is that E1.33 allows for multi-controller networks.