

# ANSI/CEA Standard

Enhanced Protocol for Tunneling  
Component Network Protocols over  
Internet Protocol Channels

ANSI/CEA-852.1-A

April 2014



**CEA**<sup>®</sup>  
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(Formulated under the cognizance of the CEA **R7 Home Networks Committee.**)

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## FOREWORD

**This standard was developed under the auspices of the Consumer Electronics Association (CEA) R7 Home Networks Committee.**

**Unless otherwise indicated, the designator 852.1 refers to the latest revision of CEA-852.1, which at the time of this writing was CEA-852.1-A.**

**Unless otherwise indicated, the designator 709 and 709.1 refers to the latest revision of CEA-709.1, which at the time of this writing was CEA-709.1-D.**

**Unless otherwise indicated, the designator 852, and references to CEA-852-A and CEA-852-B refers to the latest revision of CEA-852, which at the time of this writing was CEA-852-C.**

CEA-852.1-A

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## Table of Contents

<i>Table of Contents</i> .....	<i>iii</i>
<i>Enhanced Protocol for Tunneling Component Network Protocols Over Internet Protocol Channels</i> .....	
<i>1 General</i> .....	<i>1</i>
1.1 Scope.....	1
1.2 Definitions.....	1
1.3 Acronyms .....	5
<i>2 Normative References</i> .....	<i>6</i>
2.1 Reference Acquisition .....	7
<i>3 Introduction</i> .....	<i>7</i>
<i>4 Requirements</i> .....	<i>9</i>
<i>5 852.1 Device and Channel Specification</i> .....	<i>9</i>
5.1 IP Transport Mechanisms.....	13
5.1.1 Informative Considerations .....	14
5.1.2 BOOTP and DHCP.....	14
5.2 Device IDs .....	15
5.3 Device CN Configuration .....	16
5.3.1 CN Packet Formats .....	16
5.3.2 CN Addressing Schemes .....	16
<i>6 Configuration Data &amp; Services</i> .....	<i>18</i>
6.1 DateTime.....	18
6.2 Data Ownership Classes .....	19
6.3 Notification Services .....	20
<i>7 852.1 Packet Exchange</i> .....	<i>20</i>
7.1 Introduction.....	20
7.2 Packet Type Categories .....	22
7.3 Session IDs .....	23
7.3.1 Session IDs for Hybrid Multi-cast and Uni-cast Channels .....	23
7.3.2 Session ID Rules.....	24
7.4 Backward and Forward Compatibility .....	26
7.5 Vendor Specific Messages .....	26
7.6 Message Segmentation.....	27
7.7 Packet Aggregation.....	28

CEA-852.1-A

<b>7.8</b>	<b>Authentication .....</b>	<b>28</b>
7.8.1	Introduction .....	28
7.8.2	Authentication Procedure .....	29
<b>7.9</b>	<b>NAT Support .....</b>	<b>31</b>
7.9.1	Introduction .....	31
7.9.2	Description .....	32
7.9.3	Standard NAT Extended Headers .....	32
7.9.4	Algorithm .....	34
<b>7.10</b>	<b>Dynamic IP Support .....</b>	<b>36</b>
7.10.1	Dynamic IP Resolution using DNS .....	37
7.10.2	Probing Method .....	38
7.10.3	Probe Interval and Dynamic NAT Addresses .....	41
7.10.4	Triggering IP probes .....	41
<b>8</b>	<b><i>CN Data Packet Exchange .....</i></b>	<b>42</b>
<b>8.1</b>	<b>Out of Order Packets .....</b>	<b>42</b>
<b>8.2</b>	<b>Duplicate Packet Detection .....</b>	<b>44</b>
<b>8.3</b>	<b>Stale Packet Detection .....</b>	<b>44</b>
<b>8.4</b>	<b>Selective Forwarding .....</b>	<b>45</b>
<b>8.5</b>	<b>Send List .....</b>	<b>48</b>
<b>9</b>	<b><i>852.1 Transactions .....</i></b>	<b>49</b>
<b>9.1</b>	<b>852.1 Transaction Description &amp; Theory .....</b>	<b>49</b>
<b>9.2</b>	<b>Transaction Timeout .....</b>	<b>52</b>
<b>9.3</b>	<b>Retries .....</b>	<b>52</b>
<b>9.4</b>	<b>Transaction Rules .....</b>	<b>53</b>
<b>9.5</b>	<b>Packet Assignment .....</b>	<b>55</b>
9.5.1	Assignment Rules .....	55
<b>9.6</b>	<b>Duplicate Configuration Data Detection .....</b>	<b>56</b>
<b>9.7</b>	<b>Duplicate Configuration Transaction Packets .....</b>	<b>56</b>
<b>9.8</b>	<b>Configuration Packet Exchange Rules .....</b>	<b>57</b>
9.8.1	Solicited Packets .....	57
9.8.2	Unsolicited Packets .....	62
<b>10</b>	<b><i>Configuration and Operation Modes .....</i></b>	<b>66</b>
<b>10.1</b>	<b>Channel Formation .....</b>	<b>66</b>
<b>10.2</b>	<b>Updating Dynamic Device Specific Information .....</b>	<b>67</b>
<b>10.3</b>	<b>Configuration Server Presence .....</b>	<b>68</b>
<b>10.4</b>	<b>Multiple Channel Configuration Servers .....</b>	<b>69</b>
<b>10.5</b>	<b>Channel Operation Modes .....</b>	<b>69</b>
10.5.1	Manual Mode .....	69
10.5.2	Server Mode .....	69
10.5.3	Peer Mode .....	69
10.5.4	Peer Notify Mode .....	70

10.5.5	Auto Mode .....	70
<b>10.6</b>	<b>Device Operation Modes .....</b>	<b>70</b>
<b>10.7</b>	<b>Responsibilities to Answer Messages and Update Information .....</b>	<b>71</b>
<b>10.8</b>	<b>Device and Configuration Server Interactions.....</b>	<b>72</b>
10.8.1	General Device Interaction .....	72
10.8.2	Device Registration.....	73
10.8.3	Channel Membership.....	73
<b>11</b>	<b><i>Packet Types and Headers</i>.....</b>	<b>74</b>
<b>11.1</b>	<b>Packet Type and Message Categories .....</b>	<b>74</b>
<b>11.2</b>	<b>Packet Headers.....</b>	<b>76</b>
<b>11.3</b>	<b>Common Sub-header Definition .....</b>	<b>77</b>
<b>11.4</b>	<b>CN Data Packet Header Specific Fields.....</b>	<b>80</b>
<b>11.5</b>	<b>Configuration Data Packet Header Specific Fields.....</b>	<b>80</b>
11.5.1	Transaction Sub-Header.....	82
<b>11.6</b>	<b>Stacked Extended Packet Headers .....</b>	<b>85</b>
11.6.1	Standard NAT Extended Headers .....	86
11.6.2	Authentication Extended Header .....	87
<b>12</b>	<b><i>Configuration Data Message Sections</i>.....</b>	<b>88</b>
<b>12.1</b>	<b>Configuration Data and Diagnostic Section Types .....</b>	<b>88</b>
<b>12.2</b>	<b>Configuration Request Section .....</b>	<b>89</b>
<b>12.3</b>	<b>Configuration Acknowledgement Section.....</b>	<b>90</b>
<b>12.4</b>	<b>Configuration Data Section Header .....</b>	<b>91</b>
<b>12.5</b>	<b>Configuration Data Sections .....</b>	<b>91</b>
12.5.1	Channel Parameters Section .....	92
12.5.2	CS Self ID Section .....	93
12.5.3	CS IP Uni-cast Section.....	94
12.5.4	CS IP Node Name Section .....	94
12.5.5	Channel Membership Section .....	95
12.5.6	Channel Send List Section .....	98
12.5.7	Channel State Section .....	99
12.5.8	Device ID and Mode Section.....	99
12.5.9	Device DNS Server Section.....	101
12.5.10	Device Time Server Section .....	102
12.5.11	Device IP Probe Target Section .....	102
12.5.12	Device Self ID Section.....	103
12.5.13	Device IP Node Name Section.....	104
12.5.14	Protocol Revision Section .....	104
12.5.15	Device IP Uni-cast Section .....	106
12.5.16	Device IP Multi-cast Section .....	106
12.5.17	Device Channel Routing Section .....	107
12.5.18	Device State Section .....	111
<b>12.6</b>	<b>Diagnostic Packet Configuration Sections.....</b>	<b>111</b>
12.6.1	IP Probe Request Section.....	111
12.6.2	IP Probe Response Section .....	112
12.6.3	Device Status Section .....	113

CEA-852.1-A

12.6.4	Device IP Uni-cast Hint Section .....	116
<b>13.</b>	<b><i>Optional Special Features</i></b> .....	<b>116</b>
<b>13.1</b>	<b>Hybrid Channel Bootstrap</b> .....	<b>116</b>
13.1.1	Introduction .....	116
13.1.2	Device Behavior .....	117
13.1.3	Configuration Server Behavior .....	118
<b>Annex A</b>	<b><i>Specifications for CEA-709.1-D (Normative)</i></b> .....	<b>120</b>
<b>Annex B</b>	<b><i>Specifications for CEA-709.1-D (Informative)</i></b> .....	<b>122</b>
<b>Annex C</b>	<b><i>Specifications for CEA-600 (Normative)</i></b> .....	<b>122</b>
<b>Annex D</b>	<b><i>Specifications for CEA-600 (Informative)</i></b> .....	<b>122</b>
<b>Annex F</b>	<b><i>Example Channel and Device Configuration Using Sectioned Configuration Messages (Informative)</i></b> .....	<b>122</b>
	<b>CS adds a device to the channel</b> .....	<b>123</b>
	<b>Device registers in a new channel</b> .....	<b>124</b>
	<b>Remove a device from the channel</b> .....	<b>126</b>
<b>Annex F</b>	<b><i>Example Diagnostics (Informative)</i></b> .....	<b>126</b>
	NAT Address Discovery .....	126
	Firewall/NAT Diagnosis .....	127



# Enhanced Protocol for Tunneling Component Network Protocols over Internet Protocol Channels

## 1 General

### 1.1 Scope

The CEA-852.1 standard specifies a communications method that allows networked data acquisition and control devices to communicate with each other over the internet. The purpose of such devices are widely varying and include functions such as appliance monitoring, meter reading, and HVAC and lighting control to name a few. CEA-852.1 does not replace existing device communications protocols, but instead allows those protocols to use the internet as a communications medium. CEA-852.1 currently supports the existing device protocols CEA-600 (CEBus) [1] and CEA-709.1 (LonTalk®) [2] and was designed to allow the support of others.

### 1.2 Definitions

The key words "MUST", "MUST NOT", "REQUIRED", "SHALL", "SHALL NOT", "SHOULD", "SHOULD NOT", "RECOMMENDED", "MAY", and "OPTIONAL" in this document are to be interpreted as described in RFC 2119 [3].

A Component Network (CN) is a network of nodes (devices) that are capable of computing, sensing, and actuating. Typically these devices are used for control and telemetry purposes including applications such as HVAC, security, energy management, machine control, etc. These devices are typically not used for data processing or general purpose computing purposes. Some of the characteristics of CNs that set them apart from traditional data networks include:

- Typically lower bandwidth requirements.
- Small packet/message sizes.
- Tighter constraints on message reliability and delivery latencies.

A number of existing standards apply to networks of this type including CEA-709.1 [2] and CEA-600 [1].

Tunneling refers to the encapsulation of one protocol's packet within the payload of another protocol's packets.

The Internet Protocol (IP) is a packet switched protocol that allows networks to be built that consists of a loose confederation of hosts that can communicate over a wide range of physical media and topologies to exchange data. Refer to RFC 791 [4].

An IP Packet is a contiguous chunk of data transferred over the Internet using standard Internet protocol (IP). Each packet begins with a header containing addressing and system control information. The terms IP packet, IP frame, IP fragment, and IP datagram