

# **ANSI/CTA Standard**

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

**ANSI/CTA-852.1-A**

**(Formerly ANSI/CEA-852.1-A)**

**April 2014**



**Consumer  
Technology  
Association**

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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.**

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# 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