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# ANSI/CEA Standard

## Tunneling Device Area Network Protocols Over Internet Protocol Channels

ANSI/CEA-852-B

August 2010



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(Formulated under the cognizance of the CEA's **R7.1 Home Control Systems Subcommittee**.)

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CEA-852-B

## **FOREWORD**

This standard was developed under the auspices of the CEA R-7.1 Home Control Systems Subcommittee.

CEA-852-B supersedes CEA-852 and CEA-852-A.

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

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## Tunneling Device Area Network Protocols Over Internet Protocol Channels

### 1 General

#### 1.1 Scope

The CEA-852 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 does not replace existing device communications protocols, but instead allows those protocols to use the internet as a communications medium. CEA-852 currently supports the existing device protocols CEA-600 (CEBus) and CEA-709 (LonTalk®) and was designed to allow the support of others.

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

#### 1.2 Revision History

Since the original CEA-852 standard specification was released in 2001, several vendors have released implementations of the standard and more are in development. Unfortunately, as is the case with almost any new specification, experience in its use and interoperation between different implementations has brought to light several errors, omissions, unforeseen limitations and poorly defined requirements. Moreover, the CEA-852 specification is being adopted by other International standards bodies. As part of an ongoing effort to refine the standard, revisions to the original CEA-852 specification have been developed.

##### 1.2.1 CEA-852 Revision B

Because CEA-852 Revision A was limited to modifications that would maintain a high degree of backwards compatibility with the installed base of 852 devices, it did not address all of the limitations that have been discovered in the original specification. As a result, CEA-852 Revision B has been developed.

The major change between CEA-852-A and CEA-852-B is the addition of a new flag. This flag is called the Protocol Escape Bit. When set, the Protocol Escape Bit indicates that the device or configuration server sending the 852-B packet, supports and is allowed to operate using a different protocol such as the CEA-852.1 [13.] protocol. An 852 device or configuration server that supports both CEA-852 and another related protocol is called *Bilingual*. This protocol escape bit allows Bilingual configuration servers to correctly form channels with devices that support CEA-852, another protocol, or are Bilingual. (For reference see the Hybrid Channel Bootstrap Algorithm in the CEA-852.1 [13.] specification).

The description of packet authentication in CEA-852-A is ambiguous especially with regard to segmented packets and aggregated packets. This ambiguity is removed in CEA-852-B. Other typos and minor clarifications were also added in CEA-852-B:

- Defined Bit 6 in the protocol flags field of the common header as the Protocol Escape Bit.
- Clarified the description of packet authentication especially with regard to segmented packets and aggregated packets.