

# ANSI/CTA Standard

**Control Networking Protocol  
Specification Part 5: Implementation  
Application Layer Guidelines**

**ANSI/CTA-709.5**

**(Formerly ANSI/CEA-709.5)**

**September 2015**



**Consumer  
Technology  
Association**

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(Formulated under the cognizance of the CTA **R7 Home Networks Committee**.)

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## **FOREWORD**

This standard was developed by the Consumer Electronics Association under the auspices of the R7 Consumer Electronics Networking Committee.

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## Introduction

This standard is prepared based upon work provided to the Consumer Electronics Association (CEA) R7 Consumer Electronics Networking Committee by LonMark International, a non-profit standards development association. This work has been modified from its original creation to update it to the latest revision. Similar documents have been used in other international standards bodies.

This standard is part of a series of standards for open data transmission in building automation, home automation and control, and in building management systems. The content of this standard covers the data communications used for management, automation/control and field functions.

The CEA-709.5 is part of a series of ANSI/CEA-709 Standards under the general title *Control Network Protocol (CNP)*, which comprises the following parts:

- Part 1: *Protocol Stack Specification*
- Part 2: *Power Line Channel Specification*
- Part 3: *Twisted-Pair Communication*
- Part 4: *Fiber-Optic Specification*
- Part 5: *Implementation*
- Part 6: *Application Elements*

At present this document exists only in English.

## Tags

Descriptors: system management, open systems interconnection, interoperability, device communications, network interconnection, buildings, heating, ventilation, air conditioning, data bus, data transmission, protocols, device profiles, building automation, controls, building management

## Overview

This standard specifies the Layered Implementation Guidelines (LIG) for the Control Network Protocol (CNP) Specification: ANSI/CEA-709.1-D. The CNP specification model is based on the ISO Open Systems Interconnection Reference Model. There are also important extensions to the 7-layer OSI Reference Model. Figure 1 shows the scope of this specification in reference to the CNP and companion specifications for handling various data-transport media at the lower ISO protocol layers. A dashed line is used to show that the scope of this standard is not as redundancy to the other specifications covering their respective layers but as a complement to those specifications in implementing them in an interoperable fashion.

In this standard, the guidelines for implementing a device based on CNP are specified to increase the ability for devices to interoperate—regardless of installer or manufacturer of the devices. Anything outside this boundary is covered in other parts of the standard. Similar specifications exist for CNP data-transport media.