

# ANSI/CEA Standard

## Coax Cable Physical Layer & Medium Specification

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

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## **1. Introduction**

This document is the preliminary specification for the CEBus Coax (CX) Physical Layer and Medium. Its purpose is to present all the information necessary for the development of a CX physical network and devices to communicate and share information over the network in an orderly manner. This is one of a series of documents covering the various media that comprise the CEBus standard.

This document covers the complete Physical layer (OSI layer 1) including the interface to the Medium Access Control (MAC) Layer and the interface to the medium. The document also provides a set of physical and electrical specifications for the coaxial medium environment.

### **1.1 Scope**

This specification contains all the information necessary to facilitate the exchange of data and control information over the coax medium within a home. The document is divided into six Sections (1 - 6):

1 - An introduction to the CX standard.

2 - A general description of the CX network design.

3 - The specifications of CX topology and configuration rules - this section covers network components, allowed configuration of the cabling, and attachment of devices.

4 - A specification of the CX physical medium - this section covers frequency allocation of the media, channelization, the physical and electrical specification of the medium, connectors, environmental requirements, and installation considerations.

5 - The Physical layer specification of a CX device - covers the interface to the higher ISO layers, control channel signal characteristics, data channel signal criteria, encoding, transmitter and receiver characteristics, and device failure modes.

6 - The Node 0 requirements for support of the CX network - covers the Node 0 components and requirements for successful network operation including signal distribution, frequency conversion, external service interface, and signal bridging criteria.

The standard establishes a minimal set of rules for compliance. It does not rule out extended services to be provided, as long as the rules are adhered to within the system. It is the intention of the standard to permit extended services (defined by users) to coexist.

Certain aspects of the standard are defined in other documents. These documents will be referenced when relevant. Where a referenced standard conflicts with this document, this document will prevail.

### **1.2 Definitions and Abbreviations**

The following definitions are specific to the CX medium specification and supplement the definitions and abbreviations found in EIA-600.10.