

# ANSI/CEA Standard

## IR Physical Layer & Medium Specification

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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 Infrared (IR) Physical Layer and Medium portion of the Physical Layer and Medium specifications of EIA-600. Its purpose is to present all of the information necessary for the development of a IR physical network and devices to communicate and share information over that network to and from IR and other CEBus media in an orderly manner. This is one of a series of documents covering 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 guideline physical and electrical specifications for the infrared medium environment as an aid in developing products for that environment.

### 1.1 Scope

This specification contains all the information necessary to facilitate the exchange of data and control information over the IR medium in the home. The document is divided into five sections (1 - 5):

- 1 - An introduction to the IR standard
- 2 - A general description of the IR network design
- 3 - The specifications of the allowed network topology and configuration rules
- 4 - The specifications for the use of the IR medium including environmental requirements
- 5 - The physical layer specifications of an IR device - covers the interface to the higher ISO layers, control channel signal characteristics, encoding, transmitter and receiver characteristics, and device failure modes.

The standard establishes a minimum 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 in fact 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. In the case where a referenced standard conflicts with this document, this document will prevail.

### 1.2 Definitions and Abbreviations

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

Illuminance (E) - The respective luminous or radiant flux density incidence on a surface; quotient of the flux divided by the area of the illuminated surface.