

ANSI/CEA Standard

Fiber-Optic Channel Specification

ANSI/CEA-709.4

February 2013

[Note: This standard is the same as EIA-709.4, later renamed CEA-709.4, which was approved as an EIA standard in November 1999, and as an ANSI standard in August 2000. ANSI administratively withdrew it in 2010 due to lack of five year review. CEA re-approved it and resubmitted it to ANSI in 2012.]



CEA
Consumer Electronics Association

Documents
www.CE.org
Document Sharing Hub

NOTICE

Consumer Electronics Association (CEA[®]) Standards, Bulletins and other technical publications are designed to serve the public interest through eliminating misunderstandings between manufacturers and purchasers, facilitating interchangeability and improvement of products, and assisting the purchaser in selecting and obtaining with minimum delay the proper product for his particular need. Existence of such Standards, Bulletins and other technical publications shall not in any respect preclude any member or nonmember of CEA from manufacturing or selling products not conforming to such Standards, Bulletins or other technical publications, nor shall the existence of such Standards, Bulletins and other technical publications preclude their voluntary use by those other than CEA members, whether the standard is to be used either domestically or internationally.

Standards, Bulletins and other technical publications are adopted by CEA in accordance with the American National Standards Institute (ANSI) patent policy. By such action, CEA does not assume any liability to any patent owner, nor does it assume any obligation whatever to parties adopting the Standard, Bulletin or other technical publication.

This document does not purport to address all safety problems associated with its use or all applicable regulatory requirements. It is the responsibility of the user of this document to establish appropriate safety and health practices and to determine the applicability of regulatory limitations before its use.

This document is copyrighted by the Consumer Electronics Association (CEA[®]) and may not be reproduced, in whole or part, without written permission. Federal copyright law prohibits unauthorized reproduction of this document by any means. Organizations may obtain permission to reproduce a limited number of copies by entering into a license agreement. Requests to reproduce text, data, charts, figures or other material should be made to CEA.

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

Published by
©CONSUMER ELECTRONICS ASSOCIATION 2013
Technology & Standards Department
www.CE.org

All rights reserved

Foreword

This standard was developed under the auspices of the Consumer Electronics Association (CEA, formerly CEMA) Technology & Standards R7.1 HCS1 Subcommittee.

(Except for this sentence, this page intentionally left blank.)

Copyright Consumer Technology Association
Provided by IHS Markit under license with CTA
No reproduction or networking permitted without license from IHS
Full document details: CTA CTA-709.4 2013

Contents

1 Introduction	1
1.1 Scope	1
1.2 Relation of Specification to the EIA-709 model	1
2 Normative References	1
2.1 Normative Reference List	1
2.2 Normative Reference Acquisition	1
3 Network Overview	1
4 Channel Specifications	2
4.1 Optical Interconnect	2
4.2 Topology	3
5 Node Specifications	4
5.1 Optical Requirements	4
5.2 Transceiver Requirements	4
5.2.1 Protocol Processor Interface	5
5.2.2 Photo-Optic Emitter/Detector	5
5.2.2.1 Transmit Mode	5
5.2.2.2 Receive Mode	6
5.2.3 Transmit and Receive Control	7
6 Communication Parameters	7
7 Product Variants	7
8 Bibliography	8
Appendix A Environmental Specifications (Informative)	9

Figures

Figure 1 Relation of Specification to EIA-709 Model	2
Figure 2 Point-to-Point (Link)	3
Figure 3 Bus Topology	4
Figure 4 Ring Topology	4
Figure 5 Transceiver Functions	5
Figure 6 Physical Layer Protocol Data Unit	5
Figure 7 Frame Format for EIA-709.4 Compliant Transmitter	6

Tables

Table 1 EIA-709.4 Channel Standard Cable Types	3
Table 2 Fiber Cable Specifications (Informative)	3
Table 3 Communication Parameters for EIA-709.4 Interoperable Transceiver	7
Table 4 Representative Environmental Specifications for Nodes	9
Table 5 Representative Data Cabling Environmental Specifications	9

(Except for this sentence, this page intentionally left blank.)