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Line 21 Data Services

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FOREWORD

This standard was developed under the auspices of the Consumer Electronics Association (CEA) Technology & Standards R4.3 Television Data Systems Subcommittee.

eXtended Data Services (XDS) are additional services provided in Line 21 Field 2 data. New services may have been standardized by CEA since the publication of this standard. No attempt is made to list XDS Private Data Services, although it is requested that users of such services notify CEA of Private Data packet assignments. XDS services, whether Private Data or not, may not be meant for transmission to the television receiver.

CEA-608-E supersedes CEA-608-D.

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LINE 21 DATA SERVICES

1 Purpose and Scope

This section describes the purpose and scope of the entire standard.

1.1 Purpose

CEA-608-D is a technical standard and guide for using or providing Closed Captioning services or other data services embedded in line 21 of the vertical blanking interval of the NTSC video signal. This includes provision for encoding equipment and/or decoding equipment to produce such material as well as manufacturers of television receivers which are required to include such decoders in their equipment as a matter of regulation (see Annex F). It is also a usage guide for producing material using such equipment, and for distributing such material.

This standard describes the specifications for creation, transmission, reception, and display of caption data, plus the relationship of Caption Mode data to other line 21 data. A comparison of decoders meeting Federal Communications Commission (FCC) rules to all decoders designed prior to the drafting of those rules and a timetable for the implementation of features which are unique to the different generations of decoders are retained from the prior version.

ATSC DTV Closed Captioning, as well as a method of carrying the CEA-608-E data stream in ATSC DTV is documented in CEA-708-C.

Guidance on digital transmission of CEA-608-E signals is provided in SMPTE 334 and SMPTE EG-43.

1.2 Scope

Where recommendations or requirements are made for service providers, they apply to anyone who creates, transmits, or modifies data, i.e., someone other than an equipment manufacturer. For example, a "caption service provider" could be the agency which creates the captions for a program, the distribution system (e.g. network) which carries the captions on line 21, or the local affiliate which uses its own data encoder to insert Text Mode or XDS between the captions. In a few cases specific categories of service providers are called out.

It is recommended that regardless of the function to be performed, the reader should become familiar at least with all the introductions to sections of this standard to avoid unintentionally degrading other services, and then concentrate on the sections which are appropriate to the activity being undertaken.

While there is no legal requirement to abide by this standard or its recommended practices, except for those portions labeled regulatory, it is strongly recommended that this advice be followed by line 21 data service providers and manufacturers of equipment used to transmit and receive these data services. Failure to follow these practices is likely to result in a degraded and inferior service and a non-uniform, unpredictable display of captions, text or operation of XDS features on the consumer's receiver.

It is necessary to abide by this Standard to be CEA-608-E compliant, however while methods described in this standard for the inclusion of a service shall be followed, unless otherwise stated no service is mandatory.

1.3 Other Vertical Interval Lines

Nothing in this standard shall preclude the use of the methods described in this standard for transmission of data on other lines of the Vertical Interval or when allowed the video portion of the NTSC television signal.

1.4 Antecedent Documents

CEA-608-E not only is an updated version, but it also includes and supersedes those documents listed in Section 2.4.