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not be deemed an acceptable excuse for the violation.

[37 FR 3292, Feb. 12, 1972, as amended at 41 FR 29696, July 19, 1976; 50 FR 23422, June 4, 1985]

§ 78.115 Modulation limits.

(a) If amplitude modulation is employed, negative modulation peaks shall not exceed 100 percent modulation.

[37 FR 3292, Feb. 12, 1972, as amended at 45 FR 78696, Nov. 26, 1980]

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[50 FR 38537, Sept. 23, 1985, as amended at 63 FR 36606, July 7, 1998]

PART 79—CLOSED CAPTIONING AND VIDEO DESCRIPTION OF VIDEO PROGRAMMING

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79.102 Closed caption decoder requirements for digital television receivers and converter boxes.

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79.104 Closed caption decoder requirements for recording devices.

AUTHORITY: 47 U.S.C. 151, 152(a), 154(i), 303, 307, 309, 310, 330, 544a, 613, 617.

SOURCE: 62 FR 48493, Sept. 16, 1997, unless otherwise noted.

§ 79.1 Closed captioning of video programming.

(a) *Definitions.* For purposes of this section the following definitions shall apply:

(1) *Video programming.* Programming provided by, or generally considered comparable to programming provided by, a television broadcast station that is distributed and exhibited for residential use. Video programming includes advertisements of more than five minutes in duration but does not include advertisements of five minutes' duration or less.

(2) *Video programming distributor.* Any television broadcast station licensed by the Commission and any multi-channel video programming distributor as defined in § 76.1000(e) of this chapter, and any other distributor of video programming for residential reception that delivers such programming directly to the home and is subject to the jurisdiction of the Commission. An entity contracting for program distribution over a video programming distributor that is itself exempt from captioning that programming pursuant to paragraph (e)(9) of this section shall itself be treated as a video programming distributor for purposes of this section. To the extent such video programming is not otherwise exempt from captioning, the entity that contracts for its distribution shall be required to comply with the closed captioning requirements of this section.

(3) *Video programming provider.* Any video programming distributor and any other entity that provides video programming that is intended for distribution to residential households including, but not limited to broadcast or nonbroadcast television network and the owners of such programming.

(4) *Closed captioning.* The visual display of the audio portion of video pro-

gramming pursuant to the technical specifications set forth in this part.

(5) *New programming.* Video programming that is first published or exhibited on or after January 1, 1998.

(i) Analog video programming that is first published or exhibited on or after January 1, 1998.

(ii) Digital video programming that is first published or exhibited on or after July 1, 2002.

(6) *Pre-rule programming.* (i) Analog video programming that was first published or exhibited before January 1, 1998.

(ii) Digital video programming that was first published or exhibited before July 1, 2002.

(7) *Nonexempt programming.* Video programming that is not exempt under paragraph (d) of this section and, accordingly, is subject to closed captioning requirements set forth in this section.

(b) *Requirements for closed captioning of video programming—(1) Requirements for new English language programming.* Video programming distributors must provide closed captioning for nonexempt video programming that is being distributed and exhibited on each channel during each calendar quarter in accordance with the following requirements:

(i) Between January 1, 2000, and December 31, 2001, a video programming distributor shall provide at least 450 hours of captioned video programming or all of its new nonexempt video programming must be provided with captions, whichever is less;

(ii) Between January 1, 2002, and December 31, 2003, a video programming distributor shall provide at least 900 hours of captioned video programming or all of its new nonexempt video programming must be provided with captions, whichever is less;

(iii) Between January 1, 2004, and December 31, 2005, a video programming distributor shall provide at least an average of 1350 hours of captioned video programming or all of its new nonexempt video programming must be provided with captions, whichever is less; and

(iv) As of January 1, 2006, and thereafter, 100% of the programming distributor's new nonexempt video programming must be provided with captions.

(2) *Requirements for pre-rule English language programming.* (i) After January 1, 2003, 30% of the programming distributor's pre-rule nonexempt video programming being distributed and exhibited on each channel during each calendar quarter must be provided with closed captioning.

(ii) As of January 1, 2008, and thereafter, 75% of the programming distributor's pre-rule nonexempt video programming being distributed and exhibited on each channel during each calendar quarter must be provided with closed captioning.

(3) *Requirements for new Spanish language programming.* Video programming distributors must provide closed captioning for nonexempt Spanish language video programming that is being distributed and exhibited on each channel during each calendar quarter in accordance with the following requirements:

(i) Between January 1, 2001, and December 31, 2003, a video programming distributor shall provide at least 450 hours of captioned Spanish language video programming or all of its new nonexempt Spanish language video programming must be provided with captions, whichever is less;

(ii) Between January 1, 2004, and December 31, 2006, a video programming distributor shall provide at least 900 hours of captioned Spanish language video programming or all of its new nonexempt Spanish language video programming must be provided with captions, whichever is less;

(iii) Between January 1, 2007, and December 31, 2009, a video programming distributor shall provide at least an average of 1350 hours of captioned Spanish language video programming or all of its new nonexempt Spanish language video programming must be provided with captions, whichever is less; and

(iv) As of January 1, 2010, and thereafter, 100% of the programming distributor's new nonexempt Spanish language video programming must be provided with captions.

(4) *Requirements for Spanish language pre-rule programming.* (i) After January 1, 2005, 30% of the programming distributor's pre-rule nonexempt Spanish language video programming being distributed and exhibited on each channel during each calendar quarter must be provided with closed captioning.

(ii) As of January 1, 2012, and thereafter, 75% of the programming distributor's pre-rule nonexempt Spanish language video programming being distributed and exhibited on each channel during each calendar quarter must be provided with closed captioning.

(5) Video programming distributors shall continue to provide captioned video programming at substantially the same level as the average level of captioning that they provided during the first six (6) months of 1997 even if that amount of captioning exceeds the requirements otherwise set forth in this section.

(c) *Obligation to pass through captions of already captioned programs.* All video programming distributors shall deliver all programming received from the video programming owner or other origination source containing closed captioning to receiving television households with the original closed captioning data intact in a format that can be recovered and displayed by decoders meeting the standards of this part unless such programming is recaptioned or the captions are reformatted by the programming distributor.

(d) *Exempt programs and providers.* For purposes of determining compliance with this section, any video programming or video programming provider that meets one or more of the following criteria shall be exempt to the extent specified in this paragraph.

(1) *Programming subject to contractual captioning restrictions.* Video programming that is subject to a contract in effect on or before February 8, 1996, but not any extension or renewal of such contract, for which an obligation to provide closed captioning would constitute a breach of contract.

(2) *Video programming or video programming provider for which the captioning requirement has been waived.* Any

video programming or video programming provider for which the Commission has determined that a requirement for closed captioning is economically burdensome on the basis of a petition for exemption filed in accordance with the procedures specified in paragraph (f) of this section.

(3) *Programming other than English or Spanish language.* All programming for which the audio is in a language other than English or Spanish, except that scripted programming that can be captioned using the “electronic news room” technique is not exempt.

(4) *Primarily textual programming.* Video programming or portions of video programming for which the content of the soundtrack is displayed visually through text or graphics (e.g., program schedule channels or community bulletin boards).

(5) *Programming distributed in the late night hours.* Programming that is being distributed to residential households between 2 a.m. and 6 a.m. local time. Video programming distributors providing a channel that consists of a service that is distributed and exhibited for viewing in more than a single time zone shall be exempt from closed captioning that service for any continuous 4 hour time period they may select, commencing not earlier than 12 a.m. local time and ending not later than 7 a.m. local time in any location where that service is intended for viewing. This exemption is to be determined based on the primary reception locations and remains applicable even if the transmission is accessible and distributed or exhibited in other time zones on a secondary basis. Video programming distributors providing service outside of the 48 contiguous states may treat as exempt programming that is exempt under this paragraph when distributed in the contiguous states.

(6) *Interstitials, promotional announcements and public service announcements.* Interstitial material, promotional announcements, and public service announcements that are 10 minutes or less in duration.

(7) *EBS programming.* Video programming transmitted by an Educational Broadband Service licensee pursuant to part 27 of this chapter.

(8) *Locally produced and distributed non-news programming with no repeat value.* Programming that is locally produced by the video programming distributor, has no repeat value, is of local public interest, is not news programming, and for which the “electronic news room” technique of captioning is unavailable.

(9) *Programming on new networks.* Programming on a video programming network for the first four years after it begins operation, except that programming on a video programming network that was in operation less than four (4) years on January 1, 1998 is exempt until January 1, 2002.

(10) *Primarily non-vocal musical programming.* Programming that consists primarily of non-vocal music.

(11) *Captioning expense in excess of 2 percent of gross revenues.* No video programming provider shall be required to expend any money to caption any video programming if such expenditure would exceed 2 percent of the gross revenues received from that channel during the previous calendar year.

(12) *Channels producing revenues of under \$3,000,000.* No video programming provider shall be required to expend any money to caption any channel of video programming producing annual gross revenues of less than \$3,000,000 during the previous calendar year other than the obligation to pass through video programming already captioned when received pursuant to paragraph (c) of this section.

(13) *Locally produced educational programming.* Instructional programming that is locally produced by public television stations for use in grades K–12 and post secondary schools.

(e) *Responsibility for and determination of compliance.* (1) Compliance shall be calculated on a per channel, calendar quarter basis;

(2) Open captioning or subtitles in the language of the target audience may be used in lieu of closed captioning;

(3) Live programming or repeats of programming originally transmitted live that are captioned using the so-called “electronic newsroom technique” will be considered captioned, except that effective January 1, 2000, and thereafter, the major national

broadcast television networks (*i.e.*, ABC, CBS, Fox and NBC), affiliates of these networks in the top 25 television markets as defined by Nielsen's Designated Market Areas (DMAs) and national nonbroadcast networks serving at least 50% of all homes subscribing to multichannel video programming services shall not count electronic newsroom captioned programming towards compliance with these rules. The live portions of noncommercial broadcasters' fundraising activities that use automated software to create a continuous captioned message will be considered captioned;

(4) Compliance will be required with respect to the type of video programming generally distributed to residential households. Programming produced solely for closed circuit or private distribution is not covered by these rules;

(5) Video programming that is exempt pursuant to paragraph (d) of this section that contains captions, except video programming exempt pursuant to paragraph (d)(5) of this section (late night hours exemption), can count towards the compliance with the requirements for new programming prior to January 1, 2006. Video programming that is exempt pursuant to paragraph (d) of this section that contains captions, except that video programming exempt pursuant to paragraph (d)(5) of this section (late night hours exemption), can count towards compliance with the requirements for pre-rule programming.

(6) For purposes of paragraph (d)(11) of this section, captioning expenses include direct expenditures for captioning as well as allowable costs specifically allocated by a programming supplier through the price of the video programming to that video programming provider. To be an allowable allocated cost, a programming supplier may not allocate more than 100 percent of the costs of captioning to individual video programming providers. A programming supplier may allocate the captioning costs only once and may use any commercially reasonable allocation method;

(7) For purposes of paragraphs (d)(11) and (d)(12) of this section, annual gross revenues shall be calculated for each

channel individually based on revenues received in the preceding calendar year from all sources related to the programming on that channel. Revenue for channels shared between network and local programming shall be separately calculated for network and for non-network programming, with neither the network nor the local video programming provider being required to spend more than 2 percent of its revenues for captioning. Thus, for example, compliance with respect to a network service distributed by a multichannel video service distributor, such as a cable operator, would be calculated based on the revenues received by the network itself (as would the related captioning expenditure). For local service providers such as broadcasters, advertising revenues from station-controlled inventory would be included. For cable operators providing local origination programming, the annual gross revenues received for each channel will be used to determine compliance. Evidence of compliance could include certification from the network supplier that the requirements of the test had been met. Multichannel video programming distributors, in calculating non-network revenues for a channel offered to subscribers as part of a multichannel package or tier, will not include a pro rata share of subscriber revenues, but will include all other revenues from the channel, including advertising and ancillary revenues. Revenues for channels supported by direct sales of products will include only the revenues from the product sales activity (*e.g.*, sales commissions) and not the revenues from the actual products offered to subscribers. Evidence of compliance could include certification from the network supplier that the requirements of this test have been met.

(8) If two or more networks (or sources of programming) share a single channel, that channel shall be considered to be in compliance if each of the sources of video programming are in compliance where they are carried on a full time basis;

(9) Video programming distributors shall not be required to provide closed captioning for video programming that is by law not subject to their editorial

control, including but not limited to the signals of television broadcast stations distributed pursuant to sections 614 and 615 of the Communications Act or pursuant to the compulsory copyright licensing provisions of sections 111 and 119 of the Copyright Act (Title 17 U.S.C. 111 and 119); programming involving candidates for public office covered by sections 315 and 312 of the Communications Act and associated policies; commercial leased access, public access, governmental and educational access programming carried pursuant to sections 611 and 612 of the Communications Act; video programming distributed by direct broadcast satellite (DBS) services in compliance with the noncommercial programming requirement pursuant to section 335(b)(3) of the Communications Act to the extent such video programming is exempt from the editorial control of the video programming provider; and video programming distributed by a common carrier or that is distributed on an open video system pursuant to section 653 of the Communications Act by an entity other than the open video system operator. To the extent such video programming is not otherwise exempt from captioning, the entity that contracts for its distribution shall be required to comply with the closed captioning requirements of this section.

(10) In evaluating whether a video programming provider has complied with the requirement that all new non-exempt video programming must include closed captioning, the Commission will consider showings that any lack of captioning was de minimis and reasonable under the circumstances.

(f) *Procedures for exemptions based on economically burdensome standard.* (1) A video programming provider, video programming producer or video programming owner may petition the Commission for a full or partial exemption from the closed captioning requirements. Exemptions may be granted, in whole or in part, for a channel of video programming, a category or type of video programming, an individual video service, a specific video program or a video programming provider upon a finding that the closed captioning requirements will be economically burdensome.

(2) A petition for an exemption must be supported by sufficient evidence to demonstrate that compliance with the requirements to closed caption video programming would be economically burdensome. The term “economically burdensome” means significant difficulty or expense. Factors to be considered when determining whether the requirements for closed captioning are economically burdensome include:

- (i) The nature and cost of the closed captions for the programming;
- (ii) The impact on the operation of the provider or program owner;
- (iii) The financial resources of the provider or program owner; and
- (iv) The type of operations of the provider or program owner.

(3) In addition to these factors, the petition shall describe any other factors the petitioner deems relevant to the Commission’s final determination and any available alternatives that might constitute a reasonable substitute for the closed captioning requirements including, but not limited to, text or graphic display of the content of the audio portion of the programming. The extent to which the provision of closed captions is economically burdensome shall be evaluated with regard to the individual outlet.

(4) An original and two (2) copies of a petition requesting an exemption based on the economically burdensome standard, and all subsequent pleadings, shall be filed in accordance with § 0.401(a) of this chapter.

(5) The Commission will place the petition on public notice.

(6) Any interested person may file comments or oppositions to the petition within 30 days of the public notice of the petition. Within 20 days of the close of the comment period, the petitioner may reply to any comments or oppositions filed.

(7) Comments or oppositions to the petition shall be served on the petitioner and shall include a certification that the petitioner was served with a copy. Replies to comments or oppositions shall be served on the commenting or opposing party and shall include a certification that the commenter was served with a copy.

(8) Upon a showing of good cause, the Commission may lengthen or shorten any comment period and waive or establish other procedural requirements.

(9) All petitions and responsive pleadings shall contain a detailed, full showing, supported by affidavit, of any facts or considerations relied on.

(10) The Commission may deny or approve, in whole or in part, a petition for an economically burdensome exemption from the closed captioning requirements.

(11) During the pendency of an economically burdensome determination, the video programming subject to the request for exemption shall be considered exempt from the closed captioning requirements.

(g) *Complaint procedures.* (1) Complaints concerning an alleged violation of the closed captioning requirements of this section shall be filed with the Commission or with the video programming distributor responsible for delivery and exhibition of the video programming within sixty (60) days of the problem with captioning. A complaint must be in writing, must state with specificity the alleged Commission rule violated and must include some evidence of the alleged rule violation.

(2) Complaints filed first with the Commission will be forwarded to the appropriate video programming distributor. The video programming distributor must respond in writing to the Commission and the complainant within 30 days of the receipt of the complaint from the Commission.

(3) Complaints sent to a video programming distributor regarding programming by a television broadcast station or other programming for which the video programming distributor is exempt from closed captioning responsibility pursuant to paragraph (e)(9) of this section, shall be forwarded by the video programming distributor within seven (7) days of receipt to the entity responsible for closed captioning of the programming at issue. The video programming distributor must also notify the complainant and the Commission that it has forwarded the complaint. Entities receiving forwarded complaints must respond in writing to the complainant

within 30 days of the forwarding date of the complaint.

(4) If a complaint is first filed with the video programming distributor, the video programming distributor must respond in writing to the complainant within thirty (30) days after receipt of a closed captioning complaint. If a video programming distributor fails to respond to the complainant within thirty (30) days, or the response does not satisfy the consumer, the complainant may file the complaint with the Commission within thirty (30) days after the time allotted for the video programming distributor to respond. If a consumer re-files the complaint with the Commission (after filing with the distributor), the Commission will forward the complaint to the distributor, and the distributor shall respond to the Commission and the complainant within thirty (30) days of receipt of the complaint from the Commission.

(5) In response to a complaint, a video programming distributor is obligated to provide the Commission with sufficient records and documentation to demonstrate that it is in compliance with the Commission's rules.

(6) Certifications from programming suppliers, including programming producers, programming owners, networks, syndicators and other distributors, may be relied on to demonstrate compliance. Distributors will not be held responsible for situations where a program source falsely certifies that programming delivered to the distributor meets our captioning requirements if the distributor is unaware that the certification is false. Video programming providers may rely on the accuracy of certifications. Appropriate action may be taken with respect to deliberate falsifications.

(7) The Commission will review the complaint, including all supporting evidence, and determine whether a violation has occurred. The Commission shall, as needed, request additional information from the video programming provider.

(8) If the Commission finds that a violation has occurred, penalties may be imposed, including a requirement that the video programming distributor deliver video programming containing closed captioning in an

amount exceeding that specified in paragraph (b) of this section in a future time period.

(h) *Private rights of action prohibited.* Nothing in this section shall be construed to authorize any private right of action to enforce any requirement of this section. The Commission shall have exclusive jurisdiction with respect to any complaint under this section.

(i) *Contact information.* (1) Video programming distributors shall make available contact information for the receipt and handling of immediate closed captioning concerns raised by consumers while they are watching a program. Programming distributors must designate a telephone number, fax number, and e-mail address for purposes of receiving and responding immediately to any closed captioning concerns. Distributors shall include this information on their Web sites (if they have a Web site), in telephone directories, and in billing statements (to the extent the distributor issues billing statements). Distributors shall keep this information current and update it to reflect any changes within 10 business days for Web sites, by the next billing cycle for billing statements, and by the next publication of directories. Video programming distributors should ensure that any staff reachable through this contact information has the capability to immediately respond to and address consumers' concerns. To the extent that a distributor has personnel available, either on site or remotely, to address any technical problems that may arise, consumers using this dedicated contact information must be able to reach someone, either directly or indirectly, who can address the consumer's captioning concerns. This provision does not require that distributors alter their hours of operation or the hours during which they have staffing available; at the same time, however, where staff is available to address technical issues that may arise during the course of transmitting programming, they also must be knowledgeable about and be able to address closed captioning concerns. In situations where a distributor is not immediately available, any calls or inquiries received, using this dedicated

contact information, should be returned or otherwise addressed within 24 hours. In those situations where the captioning problem does not reside with the distributor, the staff person receiving the inquiry should refer the matter appropriately for resolution.

(2) Video programming distributors shall make contact information available for the receipt and handling of written closed captioning complaints that do not raise the type of immediate issues that are addressed in paragraph (i)(1) of this section. The contact information required for written complaints shall include the name of a person with primary responsibility for captioning issues and who can ensure compliance with our rules. In addition, this contact information shall include the person's title or office, telephone number, fax number, postal mailing address, and e-mail address. Distributors shall include this information on their Web sites (if they have a Web site), in telephone directories, and in billing statements (to the extent the distributor issues billing statements). Distributors shall keep this information current and update it within 10 business days for Web sites, by the next billing cycle for billing statements, and by the next publication of directories.

(3) *Providing contact information to the Commission.* Video programming distributors shall file the contact information described in this section with the Commission in one of the following ways: through a webform located on the FCC website; with the Chief of the Disability Rights Office, Consumer and Governmental Affairs Bureau; or by sending an e-mail to *CLOSED CAPTIONING_POC@fcc.gov*. Contact information shall be available to consumers on the FCC Web site or by telephone inquiry to the Commission's Consumer Center. Distributors shall notify the Commission each time there is a change in any of this required information within 10 business days.

[62 FR 48493, Sept. 16, 1997, as amended at 63 FR 55962, Oct. 20, 1998; 64 FR 33424, June 23, 1999; 65 FR 58477, Sept. 29, 2000; 69 FR 72047, Dec. 10, 2004; 74 FR 1604, Jan. 13, 2009; 74 FR 46703, Sept. 11, 2009; 75 FR 7369, Feb. 19, 2010; 77 FR 19515, Mar. 30, 2012; 77 FR 48104, Aug. 13, 2012]

§ 79.2

EFFECTIVE DATE NOTE: At 75 FR 7369, Feb. 19, 2010, paragraph (g)(3) was stayed.

§ 79.2 Accessibility of programming providing emergency information.

(a) *Definitions.* (1) For purposes of this section, the definitions in §§ 79.1 and 79.3 apply.

(2) *Emergency information.* Information, about a current emergency, that is intended to further the protection of life, health, safety, and property, *i.e.*, critical details regarding the emergency and how to respond to the emergency. Examples of the types of emergencies covered include tornadoes, hurricanes, floods, tidal waves, earthquakes, icing conditions, heavy snows, widespread fires, discharge of toxic gases, widespread power failures, industrial explosions, civil disorders, school closings and changes in school bus schedules resulting from such conditions, and warnings and watches of impending changes in weather.

NOTE TO PARAGRAPH (a)(2): Critical details include, but are not limited to, specific details regarding the areas that will be affected by the emergency, evacuation orders, detailed descriptions of areas to be evacuated, specific evacuation routes, approved shelters or the way to take shelter in one's home, instructions on how to secure personal property, road closures, and how to obtain relief assistance.

(b) Requirements for accessibility of programming providing emergency information.

(1) Video programming distributors must make emergency information, as defined in paragraph (a) of this section, accessible as follows:

(i) Emergency information that is provided in the audio portion of the programming must be made accessible to persons with hearing disabilities by using a method of closed captioning or by using a method of visual presentation, as described in § 79.1 of this part;

(ii) Emergency information that is provided in the video portion of a regularly scheduled newscast, or newscast that interrupts regular programming, must be made accessible to persons with visual disabilities; and

(iii) Emergency information that is provided in the video portion of programming that is not a regularly scheduled newscast, or a newscast that

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interrupts regular programming, must be accompanied with an aural tone.

(2) This rule applies to emergency information primarily intended for distribution to an audience in the geographic area in which the emergency is occurring.

(3) Video programming distributors must ensure that:

(i) Emergency information should not block any closed captioning and any closed captioning should not block any emergency information provided by means other than closed captioning; and

(ii) Emergency information should not block any video description and any video description provided should not block any emergency information provided by means other than video description.

(c) *Complaint procedures.* A complaint alleging a violation of this section may be transmitted to the Commission by any reasonable means, such as letter, facsimile transmission, telephone (voice/TRS/TTY), Internet e-mail, audio-cassette recording, and Braille, or some other method that would best accommodate the complainant's disability. The complaint should include the name of the video programming distributor against whom the complaint is alleged, the date and time of the omission of emergency information, and the type of emergency. The Commission will notify the video programming distributor of the complaint, and the distributor will reply to the complaint within 30 days.

[65 FR 26762, May 9, 2000, as amended at 65 FR 54811, Sept. 11, 2000]

§ 79.3 Video description of video programming.

(a) *Definitions.* For purposes of this section the following definitions shall apply:

(1) *Designated Market Areas (DMAs).* Unique, county-based geographic areas designated by The Nielsen Company, a television audience measurement service, based on television viewership in the counties that make up each DMA.

(2) *Video programming provider.* Any video programming distributor and any

other entity that provides video programming that is intended for distribution to residential households including, but not limited to, broadcast or nonbroadcast television networks and the owners of such programming.

(3) *Video description/Audio Description.* The insertion of audio narrated descriptions of a television program's key visual elements into natural pauses between the program's dialogue.

(4) *Video programming.* Programming provided by, or generally considered comparable to programming provided by, a television broadcast station, but not including consumer-generated media.

(5) *Video programming distributor.* Any television broadcast station licensed by the Commission and any multichannel video programming distributor (MVPD), and any other distributor of video programming for residential reception that delivers such programming directly to the home and is subject to the jurisdiction of the Commission.

(6) *Prime time.* The period from 8 to 11 p.m. Monday through Saturday, and 7 to 11 p.m. on Sunday local time, except that in the central time zone the relevant period shall be between the hours of 7 and 10 p.m. Monday through Saturday, and 6 and 10 p.m. on Sunday, and in the mountain time zone each station shall elect whether the period shall be 8 to 11 p.m. Monday through Saturday, and 7 to 11 p.m. on Sunday, or 7 to 10 p.m. Monday through Saturday, and 6 to 10 p.m. on Sunday.

(7) *Live or near-live programming.* Programming performed either simultaneously with, or recorded no more than 24 hours prior to, its first transmission by a video programming distributor.

(8) *Children's Programming.* Television programming directed at children 16 years of age and under.

(b) The following video programming distributors must provide programming with video description as follows:

(1) Commercial television broadcast stations that are affiliated with one of the top four commercial television broadcast networks (ABC, CBS, Fox, and NBC), and that are licensed to a community located in the top 25 DMAs, as determined by The Nielsen Company as of January 1, 2011, must provide 50

hours of video description per calendar quarter, either during prime time or on children's programming, on each programming stream on which they carry one of the top four commercial television broadcast networks. If a station in one of these markets becomes affiliated with one of these networks after the effective date of these rules, it must begin compliance with these requirements no later than three months after the affiliation agreement is finalized;

(2) Beginning July 1, 2015, commercial television broadcast stations that are affiliated with one of the top four commercial television broadcast networks (ABC, CBS, Fox, and NBC), and that are licensed to a community located in the top 60 DMAs, as determined by The Nielsen Company as of January 1, 2015, must provide 50 hours of video description per calendar quarter, either during prime time or on children's programming, on each programming stream on which they carry one of the top four commercial television broadcast networks. If a station in one of these markets becomes affiliated with one of these networks after July 1, 2015, it must begin compliance with these requirements no later than three months after the affiliation agreement is finalized;

(3) Television broadcast stations that are affiliated or otherwise associated with any television network must pass through video description when the network provides video description and the broadcast station has the technical capability necessary to pass through the video description, unless it is using the technology used to provide video description for another purpose related to the programming that would conflict with providing the video description;

(4) Multichannel video programming distributor (MVPD) systems that serve 50,000 or more subscribers must provide 50 hours of video description per calendar quarter during prime time or children's programming, on each channel on which they carry one of the top five national nonbroadcast networks, as defined by an average of the national audience share during prime time of nonbroadcast networks that reach 50 percent or more of MVPD

households and have at least 50 hours per quarter of prime time programming that is not live or near-live or otherwise exempt under these rules. Initially, the top five networks are those determined by The Nielsen Company, for the time period October 2009–September 2010, and will update at three year intervals. The first update will be July 1, 2015, based on the ratings for the time period October 2013–September 2014; the second will be July 1, 2018, based on the ratings for the time period October 2016–September 2017; and so on; and

(5) Multichannel video programming distributor (MVPD) systems of any size:

(i) Must pass through video description on each broadcast station they carry, when the broadcast station provides video description, and the channel on which the MVPD distributes the programming of the broadcast station has the technical capability necessary to pass through the video description, unless it is using the technology used to provide video description for another purpose related to the programming that would conflict with providing the video description; and

(ii) Must pass through video description on each nonbroadcast network they carry, when the network provides video description, and the channel on which the MVPD distributes the programming of the network has the technical capability necessary to pass through the video description, unless it is using the technology used to provide video description for another purpose related to the programming that would conflict with providing the video description.

(c) *Responsibility for and determination of compliance.* (1) The Commission will calculate compliance on a per channel, and, for broadcasters, a per stream, calendar quarter basis, beginning with the calendar quarter July 1 through September 30, 2012.

(2) In order to meet its fifty-hour quarterly requirement, a broadcaster or MVPD may count each program it airs with video description no more than a total of two times on each channel on which it airs the program. A broadcaster or MVPD may count the second airing in the same or any one

subsequent quarter. A broadcaster may only count programs aired on its primary broadcasting stream towards its fifty-hour quarterly requirement. A broadcaster carrying one of the top four commercial television broadcast networks on a secondary stream may count programs aired on that stream toward its fifty-hour quarterly requirement for that network only.

(3) Once a commercial television broadcast station as defined under paragraph (b)(1) of this section has aired a particular program with video description, it is required to include video description with all subsequent airings of that program on that same broadcast station, unless it is using the technology used to provide video description for another purpose related to the programming that would conflict with providing the video description.

(4) Once an MVPD as defined under paragraph (b)(3) of this section:

(i) Has aired a particular program with video description on a broadcast station it carries, it is required to include video description with all subsequent airings of that program on that same broadcast station, unless it is using the technology used to provide video description for another purpose related to the programming that would conflict with providing the video description; or

(ii) Has aired a particular program with video description on a nonbroadcast network it carries, it is required to include video description with all subsequent airings of that program on that same nonbroadcast network, unless it is using the technology used to provide video description for another purpose related to the programming that would conflict with providing the video description.

(5) In evaluating whether a video programming distributor has complied with the requirement to provide video programming with video description, the Commission will consider showings that any lack of video description was de minimis and reasonable under the circumstances.

(d) *Procedures for exemptions based on economic burden.* (1) A video programming provider may petition the Commission for a full or partial exemption

from the video description requirements of this section, which the Commission may grant upon a finding that the requirements would be economically burdensome.

(2) The petitioner must support a petition for exemption with sufficient evidence to demonstrate that compliance with the requirements to provide programming with video description would be economically burdensome. The term "economically burdensome" means imposing significant difficulty or expense. The Commission will consider the following factors when determining whether the requirements for video description would be economically burdensome:

- (i) The nature and cost of providing video description of the programming;
- (ii) The impact on the operation of the video programming provider;
- (iii) The financial resources of the video programming provider; and
- (iv) The type of operations of the video programming provider.

(3) In addition to these factors, the petitioner must describe any other factors it deems relevant to the Commission's final determination and any available alternative that might constitute a reasonable substitute for the video description requirements. The Commission will evaluate economic burden with regard to the individual outlet.

(4) The petitioner must file an original and two (2) copies of a petition requesting an exemption based on the economically burdensome standard in this paragraph, and all subsequent pleadings, in accordance with § 0.401(a) of this chapter.

(5) The Commission will place the petition on public notice.

(6) Any interested person may file comments or oppositions to the petition within 30 days of the public notice of the petition. Within 20 days of the close of the comment period, the petitioner may reply to any comments or oppositions filed.

(7) Persons that file comments or oppositions to the petition must serve the petitioner with copies of those comments or oppositions and must include a certification that the petitioner was served with a copy. Parties filing replies to comments or opposi-

tions must serve the commenting or opposing party with copies of such replies and shall include a certification that the party was served with a copy.

(8) Upon a finding of good cause, the Commission may lengthen or shorten any comment period and waive or establish other procedural requirements.

(9) Persons filing petitions and responsive pleadings must include a detailed, full showing, supported by affidavit, of any facts or considerations relied on.

(10) The Commission may deny or approve, in whole or in part, a petition for an economic burden exemption from the video description requirements.

(11) During the pendency of an economic burden determination, the Commission will consider the video programming subject to the request for exemption as exempt from the video description requirements.

(e) *Complaint procedures.* (1) A complainant may file a complaint concerning an alleged violation of the video description requirements of this section by transmitting it to the Consumer and Governmental Affairs Bureau at the Commission by any reasonable means, such as letter, facsimile transmission, telephone (voice/TRS/TTY), e-mail, audio-cassette recording, and Braille, or some other method that would best accommodate the complainant's disability. Complaints should be addressed to: Consumer and Governmental Affairs Bureau, 445 12th Street, SW., Washington, DC 20554. A complaint must include:

(i) The name and address of the complainant;

(ii) The name and address of the broadcast station against whom the complaint is alleged and its call letters and network affiliation, or the name and address of the MVPD against whom the complaint is alleged and the name of the network that provides the programming that is the subject of the complaint;

(iii) A statement of facts sufficient to show that the video programming distributor has violated or is violating the Commission's rules, and, if applicable, the date and time of the alleged violation;

(iv) The specific relief or satisfaction sought by the complainant;

(v) The complainant's preferred format or method of response to the complaint (such as letter, facsimile transmission, telephone (voice/TRS/TTY), Internet email, or some other method that would best accommodate the complainant's disability); and

(vi) A certification that the complainant attempted in good faith to resolve the dispute with the broadcast station or MVPD against whom the complaint is alleged.

(2) The Commission will promptly forward complaints satisfying the above requirements to the video programming distributor involved. The video programming distributor must respond to the complaint within a specified time, generally within 30 days. The Commission may authorize Commission staff either to shorten or lengthen the time required for responding to complaints in particular cases. The answer to a complaint must include a certification that the video programming distributor attempted in good faith to resolve the dispute with the complainant.

(3) The Commission will review all relevant information provided by the complainant and the video programming distributor and will request additional information from either or both parties when needed for a full resolution of the complaint.

(i) The Commission may rely on certifications from programming suppliers, including programming producers, programming owners, networks, syndicators and other distributors, to demonstrate compliance. The Commission will not hold the video programming distributor responsible for situations where a program source falsely certifies that programming that it delivered to the video programming distributor meets our video description requirements if the video programming distributor is unaware that the certification is false. Appropriate action may be taken with respect to deliberate falsifications.

(ii) If the Commission finds that a video programming distributor has violated the video description requirements of this section, it may impose penalties, including a requirement that

the video programming distributor deliver video programming containing video description in excess of its requirements.

(f) *Private rights of action are prohibited.* Nothing in this section shall be construed to authorize any private right of action to enforce any requirement of this section. The Commission shall have exclusive jurisdiction with respect to any complaint under this section.

[76 FR 55604, Sept. 8, 2011, as amended at 76 FR 68118, Nov. 3, 2011]

§ 79.4 Closed captioning of video programming delivered using Internet protocol.

(a) *Definitions.* For purposes of this section the following definitions shall apply:

(1) *Video programming.* Programming provided by, or generally considered comparable to programming provided by, a television broadcast station, but not including consumer-generated media.

(2) *Full-length video programming.* Video programming that appears on television and is distributed to end users, substantially in its entirety, via Internet protocol, excluding video clips or outtakes.

(3) *Video programming distributor or video programming provider.* Any person or entity that makes available directly to the end user video programming through a distribution method that uses Internet protocol.

(4) *Video programming owner.* Any person or entity that either:

(i) Licenses the video programming to a video programming distributor or provider that makes the video programming available directly to the end user through a distribution method that uses Internet protocol; or

(ii) Acts as the video programming distributor or provider, and also possesses the right to license the video programming to a video programming distributor or provider that makes the video programming available directly to the end user through a distribution method that uses Internet protocol.

(5) *Internet protocol.* Includes Transmission Control Protocol and a successor protocol or technology to Internet protocol.

(6) *Closed captioning.* The visual display of the audio portion of video programming pursuant to the technical specifications set forth in this part.

(7) *Live programming.* Video programming that is shown on television substantially simultaneously with its performance.

(8) *Near-live programming.* Video programming that is performed and recorded less than 24 hours prior to the time it was first aired on television.

(9) *Prerecorded programming.* Video programming that is not “live” or “near-live.”

(10) *Edited for Internet distribution.* Video programming for which the television version is substantially edited prior to its Internet distribution.

(11) *Consumer-generated media.* Content created and made available by consumers to online Web sites and services on the Internet, including video, audio, and multimedia content.

(12) *Video clips.* Excerpts of full-length video programming.

(13) *Outtakes.* Content that is not used in an edited version of video programming shown on television.

(14) *Nonexempt programming.* Video programming that is not exempted under paragraph (d) of this section and, accordingly, is subject to closed captioning requirements set forth in this section.

(b) *Requirements for closed captioning of Internet protocol-delivered video programming.* All nonexempt full-length video programming delivered using Internet protocol must be provided with closed captions if the programming is published or exhibited on television in the United States with captions on or after the following dates:

(1) September 30, 2012, for all prerecorded programming that is not edited for Internet distribution, unless it is subject to paragraph (b)(4) of this section.

(2) March 30, 2013, for all live and near-live programming, unless it is subject to paragraph (b)(4) of this section.

(3) September 30, 2013, for all prerecorded programming that is edited for Internet distribution, unless it is subject to paragraph (b)(4) of this section.

(4) All programming that is already in the video programming distributor’s or provider’s library before it is shown on television with captions must be captioned within 45 days after the date it is shown on television with captions on or after March 30, 2014 and before March 30, 2015. Such programming must be captioned within 30 days after the date it is shown on television with captions on or after March 30, 2015 and before March 30, 2016. Such programming must be captioned within 15 days after the date it is shown on television with captions on or after March 30, 2016.

(c) *Obligations of video programming owners, distributors and providers—(1) Obligations of video programming owners.* Each video programming owner must:

(i) Send program files to video programming distributors and providers with captions as required by this section, with at least the same quality as the television captions provided for the same programming. If a video programming owner provides captions to a video programming distributor or provider using the Society of Motion Picture and Television Engineers Timed Text format (SMPTE ST 2052-1:2010, incorporated by reference, see § 79.100), then the VPO has fulfilled its obligation to deliver captions to the video programming distributor or provider in an acceptable format. A video programming owner and a video programming distributor or provider may agree upon an alternative technical format for the delivery of captions to the video programming distributor or provider.

(ii) With each video programming distributor and provider that such owner licenses to distribute video programming directly to the end user through a distribution method that uses Internet protocol, agree upon a mechanism to inform such distributors and providers on an ongoing basis whether video programming is subject to the requirements of this section.

(2) *Obligations of video programming distributors and providers.* Each video programming distributor and provider must:

(i) Enable the rendering or pass through of all required captions to the end user, maintaining the quality of

the captions provided by the video programming owner and transmitting captions in a format reasonably designed to reach the end user in that quality. A video programming distributor or provider that provides applications, plugins, or devices in order to deliver video programming must comply with the requirements of § 79.103(c) and (d).

(ii) With each video programming owner from which such distributor or provider licenses video programming for distribution directly to the end user through a distribution method that uses Internet protocol, agree upon a mechanism to inform such distributor or provider on an ongoing basis whether video programming is subject to the requirements of this section, and make a good faith effort to identify video programming subject to the requirements of this section using the agreed upon mechanism. A video programming distributor or provider may rely in good faith on a certification by a video programming owner that the video programming need not be captioned if:

(A) The certification includes a clear and concise explanation of why captioning is not required; and

(B) The video programming distributor or provider is able to produce the certification to the Commission in the event of a complaint.

(iii) Make contact information available to end users for the receipt and handling of written closed captioning complaints alleging violations of this section. The contact information required for written complaints shall include the name of a person with primary responsibility for Internet protocol captioning issues and who can ensure compliance with these rules. In addition, this contact information shall include the person's title or office, telephone number, fax number, postal mailing address, and email address. Video programming distributors and providers shall keep this information current and update it within 10 business days of any change.

(3) A video programming provider's or owner's *de minimis* failure to comply with this section shall not be treated as a violation of the requirements.

(d) *Procedures for exemptions based on economic burden.* (1) A video programming provider or owner may petition

the Commission for a full or partial exemption from the closed captioning requirements of this section, which the Commission may grant upon a finding that the requirements would be economically burdensome.

(2) The petitioner must support a petition for exemption with sufficient evidence to demonstrate that compliance with the requirements for closed captioning of video programming delivered via Internet protocol would be economically burdensome. The term "economically burdensome" means imposing significant difficulty or expense. The Commission will consider the following factors when determining whether the requirements for closed captioning of Internet protocol-delivered video programming would be economically burdensome:

(i) The nature and cost of the closed captions for the programming;

(ii) The impact on the operation of the video programming provider or owner;

(iii) The financial resources of the video programming provider or owner; and

(iv) The type of operations of the video programming provider or owner.

(3) In addition to these factors, the petitioner must describe any other factors it deems relevant to the Commission's final determination and any available alternatives that might constitute a reasonable substitute for the closed captioning requirements of this section including, but not limited to, text or graphic display of the content of the audio portion of the programming. The Commission will evaluate economic burden with regard to the individual outlet.

(4) The petitioner must electronically file its petition for exemption, and all subsequent pleadings related to the petition, in accordance with § 0.401(a)(1)(iii) of this chapter.

(5) The Commission will place the petition on public notice.

(6) Any interested person may electronically file comments or oppositions to the petition within 30 days after release of the public notice of the petition. Within 20 days after the close of the period for filing comments or oppositions, the petitioner may reply to any comments or oppositions filed.

(7) Persons who file comments or oppositions to the petition must serve the petitioner with copies of those comments or oppositions and must include a certification that the petitioner was served with a copy. Any petitioner filing a reply to comments or oppositions must serve the commenting or opposing party with a copy of the reply and shall include a certification that the party was served with a copy. Comments or oppositions and replies shall be served upon a party, its attorney, or its other duly constituted agent by delivering or mailing a copy to the party's last known address in accordance with § 1.47 of this chapter or by sending a copy to the email address last provided by the party, its attorney, or other duly constituted agent.

(8) Upon a finding of good cause, the Commission may lengthen or shorten any comment period and waive or establish other procedural requirements.

(9) Persons filing petitions and responsive pleadings must include a detailed, full showing, supported by affidavit, of any facts or considerations relied on.

(10) The Commission may deny or approve, in whole or in part, a petition for an economic burden exemption from the closed captioning requirements of this section.

(11) During the pendency of an economic burden determination, the Commission will consider the video programming subject to the request for exemption as exempt from the requirements of this section.

(e) *Complaint procedures.* (1) Complaints concerning an alleged violation of the closed captioning requirements of this section shall be filed in writing with the Commission or with the video programming distributor or provider responsible for enabling the rendering or pass through of the closed captions for the video programming within sixty (60) days after the date the complainant experienced a problem with captioning. A complaint filed with the Commission must be directed to the Consumer and Governmental Affairs Bureau and submitted through the Commission's online informal complaint filing system, U.S. Mail, overnight delivery, or facsimile.

(2) A complaint should include the following information:

(i) The name, postal address, and other contact information of the complainant, such as telephone number or email address;

(ii) The name and postal address, Web site, or email address of the video programming distributor, provider, and/or owner against which the complaint is alleged, and information sufficient to identify the video programming involved;

(iii) Information sufficient to identify the software or device used to view the program;

(iv) A statement of facts sufficient to show that the video programming distributor, provider, and/or owner has violated or is violating the Commission's rules, and the date and time of the alleged violation;

(v) The specific relief or satisfaction sought by the complainant; and

(vi) The complainant's preferred format or method of response to the complaint (such as letter, facsimile transmission, telephone (voice/TRS/TTY), email, or some other method that would best accommodate the complainant).

(3) If a complaint is filed first with the Commission, the Commission will forward complaints satisfying the above requirements to the named video programming distributor, provider, and/or owner, as well as to any other video programming distributor, provider, and/or owner that Commission staff determines may be involved. The video programming distributor, provider, and/or owner must respond in writing to the Commission and the complainant within 30 days after receipt of the complaint from the Commission.

(4) If a complaint is filed first with the video programming distributor or provider, the video programming distributor or provider must respond in writing to the complainant within thirty (30) days after receipt of a closed captioning complaint. If a video programming distributor or provider fails to respond to the complainant within thirty (30) days, or the response does not satisfy the consumer, the complainant may file the complaint with the Commission within thirty (30) days

after the time allotted for the video programming distributor or provider to respond. If a consumer re-files the complaint with the Commission (after filing with the distributor or provider) and the complaint satisfies the above requirements, the Commission will forward the complaint to the named video programming distributor or provider, as well as to any other video programming distributor, provider, and/or owner that Commission staff determines may be involved. The video programming distributor, provider, and/or owner must then respond in writing to the Commission and the complainant within 30 days after receipt of the complaint from the Commission.

(5) In response to a complaint, video programming distributors, providers, and/or owners shall file with the Commission sufficient records and documentation to prove that the responding entity was (and remains) in compliance with the Commission's rules. Conclusory or insufficiently supported assertions of compliance will not carry a video programming distributor's, provider's, or owner's burden of proof. If the responding entity admits that it was not or is not in compliance with the Commission's rules, it shall file with the Commission sufficient records and documentation to explain the reasons for its noncompliance, show what remedial steps it has taken or will take, and show why such steps have been or will be sufficient to remediate the problem.

(6) The Commission will review all relevant information provided by the complainant and the subject video programming distributors, providers, and/or owners, as well as any additional information the Commission deems relevant from its files or public sources. The Commission may request additional information from any relevant entities when, in the estimation of Commission staff, such information is needed to investigate the complaint or adjudicate potential violation(s) of Commission rules. When the Commission requests additional information, parties to which such requests are addressed must provide the requested information in the manner and within the time period the Commission specifies.

(7) If the Commission finds that a video programming distributor, provider, or owner has violated the closed captioning requirements of this section, it may employ the full range of sanctions and remedies available under the Communications Act of 1934, as amended, against any or all of the violators.

(f) *Private rights of action prohibited.* Nothing in this section shall be construed to authorize any private right of action to enforce any requirement of this section. The Commission shall have exclusive jurisdiction with respect to any complaint under this section.

[77 FR 19515, Mar. 30, 2012]

§ 79.100 Incorporation by reference.

(a) The materials listed in this section are incorporated by reference in this part. These incorporations by reference were approved by the Director of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51. These materials are incorporated as they exist on the date of the approval, and notice of any change in these materials will be published in the FEDERAL REGISTER. The materials are available for purchase at the corresponding addresses as noted, and all are available for inspection at the Federal Communications Commission, 445 12th St. SW., Reference Information Center, Room CY-A257, Washington, DC 20554, (202) 418-0270, and at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call (202) 741-6030, or go to: http://www.archives.gov/federal_register/code_of_federal_regulations/ibr_locations.html.

(b) Global Engineering Documents, 15 Inverness Way East, Englewood, CO 80112, (800) 854-7179, or at <http://global.ih.com>:

(1) EIA-708-B: "Digital Television (DTV) Closed Captioning," 1999, IBR approved for § 79.102.

(2) [Reserved]

(c) Society of Motion Picture & Television Engineers (SMPTE), 3 Barker Ave., 5th Floor, White Plains, NY 10601, or at the SMPTE Web site: <http://www.smpte.org/standards/>:

(1) SMPTE ST 2052-1:2010: “Timed Text Format (SMPTE-TT)” 2010, IBR approved for §§ 79.4 and 79.103.

(2) [Reserved]

[77 FR 19518, Mar. 30, 2012]

§ 79.101 Closed caption decoder requirements for analog television receivers.

(a)(1) Effective July 1, 1993, all television broadcast receivers with picture screens 33 cm (13 in) or larger in diameter shipped in interstate commerce, manufactured, assembled, or imported from any foreign country into the United States shall comply with the provisions of this section.

NOTE TO PARAGRAPH (a)(1): This paragraph places no restriction on the shipping or sale of television receivers that were manufactured before July 1, 1993.

(2) Effective January 1, 2014, all television broadcast receivers shipped in interstate commerce, manufactured, assembled, or imported from any foreign country into the United States shall comply with the provisions of this section, if technically feasible, except that television broadcast receivers that use a picture screen less than 13 inches in size must comply with the provisions of this section only if doing so is achievable pursuant to § 79.103(b)(3).

(b) *Transmission format.* Closed-caption information is transmitted on line 21 of field 1 of the vertical blanking interval of television signals, in accordance with § 73.682(a)(22) of this chapter.

(c) *Operating modes.* The television receiver will employ customer-selectable modes of operation for TV and Caption. A third mode of operation, Text, may be included on an optional basis. The Caption and Text Modes may contain data in either of two operating channels, referred to in this document as C1 and C2. The television receiver must decode both C1 and C2 captioning, and must display the captioning for whichever channel the user selects. The TV Mode of operation allows the video to be viewed in its original form. The Caption and Text Modes define one or more areas (called “boxes”) on the screen within which caption or text characters are displayed.

NOTE: For more information regarding Text mode, see “Television Captioning for the Deaf: Signal and Display Specifications”, Engineering Report No. E-7709-C, Public Broadcasting Service, dated May 1980, and “TeleCaption II Decoder Module Performance Specification”, National Captioning Institute, Inc., dated November 1985. These documents are available, respectively, from the Public Broadcasting Service, 1320 Braddock Place, Alexandria, VA 22314 and from the National Captioning Institute, Inc., 5203 Leesburg Pike, Falls Church, VA 22041.

(d) *Screen format.* The display area for captioning and text shall fall approximately within the safe caption area as defined in paragraph (n)(12) of this section. This display area will be further divided into 15 character rows of equal height and 32 columns of equal width, to provide accurate placement of text on the screen. Vertically, the display area begins on line 43 and is 195 lines high, ending on line 237 on an interlaced display. All captioning and text shall fall within these established columns and rows. The characters must be displayed clearly separated from the video over which they are placed. In addition, the user must have the capability to select a black background over which the captioned letters are displaced.

(1) *Caption mode.* In the Caption Mode, text can appear on up to 4 rows simultaneously anywhere on the screen within the defined display area. In addition, a solid space equal to one column width may be placed before the first character and after the last character of each row to enhance legibility. The caption area will be transparent anywhere that either:

(i) No standard space character or other character has been addressed and no accompanying solid space is needed; or,

(ii) An accompanying solid space is used and a “transparent space” special character has been addressed which does not immediately precede or follow a displayed character.

(2) [Reserved]

(e) *Presentation format.* In analyzing the presentation of characters, it is convenient to think in terms of a non-visible cursor which marks the screen position at which the next event in a given mode and data channel will occur. The receiver remembers the

cursor position for each mode even when data are received for a different address in an alternate mode or data channel.

(1) *Screen addressing.* Two kinds of control codes are used to move the cursor to specific screen locations. In Caption Mode, these addressing codes will affect both row and column positioning. In Text Mode, the codes affect only column positioning. In both modes, the addressing codes are optional. Default positions are defined for each mode and style when no addressing code is provided.

(i) The first type of addressing code is the Preamble Address Code (PAC). It assigns a row number and one of eight “indent” figures. Each successive indent moves the cursor four columns to the right (starting from the left margin). Thus, an indent of 0 places the cursor at Column 1, an indent of 4 sets it at Column 5, etc. The PAC indent is non-destructive to displayable characters. It will not affect the display to the left of the new cursor position on the indicated row. Note that Preamble Address Codes also set initial attributes for the displayable characters which follow. See paragraph (h) of this section and the Preamble Address Code table.

(ii) The second type of addressing code is the Tab Offset, which is one of three Miscellaneous Control Codes. Tab Offset will move the cursor one, two, or three columns to the right. The character cells skipped over will be unaffected; displayable characters in these cells, if any, will remain intact while empty cells will remain empty, in the same manner that a PAC indent is non-destructive.

(2) [Reserved]

(f) *Caption Mode.* There are three styles of presenting text in Caption Mode: roll-up, pop-on, and paint-on. Character display varies significantly with the style used, but certain rules of character erasure are common to all styles. A character can be erased by addressing another character to the same screen location or by backspacing over the character from a subsequent location on the same row. The entire displayed memory will be erased instantly by receipt of an Erase Displayed Memory command. Both displayed memory

and non-displayed memory will be entirely erased simultaneously by either: The user switching receiver channels or data channels (C1/C2) or fields (F1/F2) in decoders so equipped; the loss of valid data (see paragraph (j) of this section); or selecting non-captioning receiver functions which use the display memory of the decoder. Receipt of an End of Caption command will cause a displayed caption to become non-displayed (and vice versa) without being erased from memory. Changing the receiver to a non-captioning mode which does not require use of the decoder’s display memory will leave that memory intact, and the decoder will continue to process data as if the caption display were selected.

(1) *Roll-up.* Roll-up style captioning is initiated by receipt of one of three Miscellaneous Control Codes that determine the maximum number of rows displayed simultaneously, either 2, 3 or 4 contiguous rows. These are the three Roll-Up Caption commands.

(i) The bottom row of the display is known as the “base row”. The cursor always remains on the base row. Rows of text roll upwards into the contiguous rows immediately above the base row to create a “window” 2 to 4 rows high.

(ii) The Roll-Up command, in normal practice, will be followed (not necessarily immediately) by a Preamble Address Code indicating the base row and the horizontal indent position. If no Preamble Address Code is received, the base row will default to Row 15 or, if a roll-up caption is currently displayed, to the same base row last received, and the cursor will be placed at Column 1. If the Preamble Address Code received contains a different base row than that of a currently displayed caption, the entire window will move intact (and without erasing) to the new base row immediately.

(iii) Each time a Carriage Return is received, the text in the top row of the window is erased from memory and from the display or scrolled off the top of the window. The remaining rows of text are each rolled up into the next highest row in the window, leaving the base row blank and ready to accept new text. This roll-up must appear smooth to the user, and must take no

more than 0.433 second to complete. The cursor is automatically placed at Column 1 (pending receipt of a Preamble Address Code).

(iv) Increasing or decreasing the number of roll-up rows instantly changes the size of the active display window, appropriately turning on or off the display of the top one or two rows. A row which is turned off should also be erased from memory.

(v) Characters are always displayed immediately when received by the receiver. Once the cursor reaches the 32nd column position on any row, all subsequent characters received prior to a Carriage Return, Preamble Address Code, or Backspace will be displayed in that column replacing any previous character occupying that address.

(vi) The cursor moves automatically one column to the right after each character or Mid-Row Code received. A Backspace will move the cursor one column to the left, erasing the character or Mid-Row Code occupying that location. (A Backspace received when the cursor is in Column 1 will be ignored.)

(vii) The Delete to End of Row command will erase from memory any characters or control codes starting at the current cursor location and in all columns to its right on the same row. If no displayable characters remain on the row after the Delete to End of Row is acted upon, the solid space (if any) for that row should also be erased to conform with the following provisions.

(viii) If a solid space is used for legibility, it should appear when the first displayable character (not a transparent space) or Mid-Row Code is received on a row, not when the Preamble Address Code, if any, is given. A row on which there are no displayable characters or Mid-Row Codes will not display a solid space, even when rolled up between two rows which do display a solid space.

(ix) If the reception of data for a row is interrupted by data for the alternate data channel or for Text Mode, the display of caption text will resume from the same cursor position if a Roll-Up Caption command is received and no Preamble Address Code is given which would move the cursor.

(x) A roll-up caption remains displayed until one of the standard caption erasure techniques is applied. Receipt of a Resume Caption Loading command (for pop-on style) or a Resume Direct Captioning command (for paint-on style) will not affect a roll-up display. Receipt of a Roll-Up Caption command will cause any pop-on or paint-on caption to be erased from displayed memory and non-displayed memory.

(2) *Pop-on.* Pop-on style captioning is initiated by receipt of a Resume Caption Loading command. Subsequent data are loaded into a non-displayed memory and held there until an End of Caption command is received, at which point the non-displayed memory becomes the displayed memory and vice versa. (This process is often referred to as “flipping memories” and does not automatically erase memory.) An End of Caption command forces the receiver into pop-on style if no Resume Caption Loading command has been received which would do so. The display will be capable of 4 full rows, not necessarily contiguous, simultaneous anywhere on the screen.

(i) Preamble Address Codes can be used to move the cursor around the screen in random order to place captions on Rows 1 to 15. Carriage Returns have no effect on cursor location during caption loading.

(ii) The cursor moves automatically one column to the right after each character or Mid-Row Code received. Receipt of a Backspace will move the cursor one column to the left, erasing the character or Mid-Row Code occupying that location. (A Backspace received when the cursor is in Column 1 will be ignored.) Once the cursor reaches the 32nd column position on any row, all subsequent characters received prior to a Backspace, an End of Caption, or a Preamble Address Code, will replace any previous character at that location.

(iii) The Delete to End of Row command will erase from memory any characters or control codes starting at the current cursor location and in all columns to its right on the same row. If no displayable characters remain on a row after the Delete to End of Row is

acted upon, the solid space (if any) for that element should also be erased.

(iv) If data reception is interrupted during caption loading by data for the alternate caption channel or for Text Mode, caption loading will resume at the same cursor position if a Resume Caption Loading command is received and no Preamble Address Code is given that would move the cursor.

(v) Characters remain in non-displayed memory until an End of Caption command flips memories. The caption will be erased without being displayed upon receipt of an Erase Non-Displayed Memory command, a Roll-Up Caption command, or if the user switches receiver channels, data channels or fields, or upon the loss of valid data (see paragraph (j) of this section).

(vi) A pop-on caption, once displayed, remains displayed until one of the standard caption erasure techniques is applied or until a Roll-Up Caption command is received. Characters within a displayed pop-on caption will be replaced by receipt of the Resume Direct Captioning command and paint-on style techniques (see below).

(3) *Paint-on.* Paint-on style captioning is initiated by receipt of a Resume Direct Captioning command. Subsequent data are addressed immediately to displayed memory without need for an End of Caption command.

(i) Preamble Address Codes can be used to move the cursor around the screen in random order to display captions on Rows 1 to 15. Carriage Returns have no affect on cursor location during direct captioning. The cursor moves automatically one column to the right after each character or Mid-Row Code is received. Receipt of a Backspace will move the cursor one column to the left, erasing the character or Mid-Row Code occupying that location. (A Backspace received when the cursor is in Column 1 will be ignored.) Once the cursor reaches the 32nd column position on any row, all subsequent characters received prior to a Preamble Address Code or Backspace will be displayed in that column replacing any previous character occupying that location.

(ii) The Delete to End of Row command will erase from memory any characters or control codes starting at

the current cursor location and in all columns to its right on the same row. If no displayable characters remain on the row after the Delete to End of Row is acted upon, the solid space (if any) for that element should also be erased.

(iii) If the reception of data is interrupted during the direct captioning by data for the alternate caption channel or for Text Mode, the display of caption text will resume at the same cursor position if a Resume Direct Captioning command is received and no Preamble Address Code is given which would move the cursor.

(iv) Characters remain displayed until one of the standard caption erasure techniques is applied or until a Roll-Up Caption command is received. An End of Caption command leaves a paint-on caption fully intact in non-displayed memory. In other words, a paint-on style caption behaves precisely like a pop-on style caption which has been displayed.

(g) *Character format.* Characters are to be displayed on the screen within a character “cell” which is the height and width of a single row and column. The following codes define the displayable character set. Television receivers manufactured prior to January 1, 1996 and having a character resolution of 5x7 dots, or less, may display the allowable alternate characters in the character table. A statement must be in a prominent location on the box or other package in which the receiver is to be marketed, and information must be in the owner’s manual, indicating the receiver displays closed captioning in upper case only.

CHARACTER SET TABLE

Special Characters

These require two bytes for each symbol. Each hex code as shown will be preceded by a 1h for data channel 1 or by a 19h for data channel 2. For example: 19h 37h will place a musical note in data channel 2.

HEX	Example	Alternate	Description
30	®	See note ¹	Registered mark symbol
31	°		Degree sign
32	½		½
33	ℓ	See note ¹	Inverse query
34	™		Trademark symbol
35	¢		Cents sign
36	£		Pounds Sterling sign
37	♪		Music note

HEX	Example	Alternate	Description
38	à	A	Lower-case a with grave accent
39			Transparent space
3A	è	E	Lower-case e with grave accent
3B	â	A	Lower-case a with circumflex
3C	ê	E	Lower-case e with circumflex
3D	î	I	Lower-case i with circumflex
3E	ô	O	Lower-case o with circumflex
3F	û	U	Lower-case u with circumflex

¹ NOTE: The registered and trademark symbols are used to satisfy certain legal requirements. There are various legal ways in which these symbols may be drawn or displayed. For example, the trademark symbol may be drawn with the "TM" next to the "M" or over the "M". It is preferred that the trademark symbol be superscripted, *i.e.*, XYZTM. It is left to each individual manufacturer to interpret these symbols in any way that meets the legal needs of the user.

Standard characters

HEX	Example	Alternate	Description
20			Standard space
21	!		Exclamation mark
22	"		Quotation mark
23	#		Pounds (number) sign
24	\$		Dollar sign
25	%		Percentage sign
26	&		Ampersand
27	'		Apostrophe
28	(		Open parentheses
29	)		Close parentheses
2A	á	A	Lower-case a with acute accent
2B	+		Plus sign
2C	,		Comma
2D	-		Minus (hyphen) sign
2E	.		Period
2F	/		Slash
30	0		Zero
31	1		One
32	2		Two
33	3		Three
34	4		Four
35	5		Five
36	6		Six
37	7		Seven
38	8		Eight
39	9		Nine
3A	:		Colon
3B	;		Semi-colon
3C	<		Less than sign
3D	=		Equal sign
3E	>		Greater than sign
3F	?		Question mark
40	@		At sign
41	A		Upper-case A
42	B		Upper-case B
43	C		Upper-case C
44	D		Upper-case D
45	E		Upper-case E
46	F		Upper-case F
47	G		Upper-case G
48	H		Upper-case H
49	I		Upper-case I
4A	J		Upper-case J
4B	K		Upper-case K
4C	L		Upper-case L
4D	M		Upper-case M
4E	N		Upper-case N
4F	O		Upper-case O
50	P		Upper-case P
51	Q		Upper-case Q

HEX	Example	Alternate	Description
52	R		Upper-case R
53	S		Upper-case S
54	T		Upper-case T
55	U		Upper-case U
56	V		Upper-case V
57	W		Upper-case W
58	X		Upper-case X
59	Y		Upper-case Y
5A	Z		Upper-case Z
5B	[		Open bracket
5C	é	E	Lower-case e with acute accent
5D	]		Close bracket
5E	í	I	Lower-case i with acute accent
5F	ó	O	Lower-case o with acute accent
60	ú	U	Lower-case u with acute accent
61	a	A	Lower-case a
62	b	B	Lower-case b
63	c	C	Lower-case c
64	d	D	Lower-case d
65	e	E	Lower-case e
66	f	F	Lower-case f
67	g	G	Lower-case g
68	h	H	Lower-case h
69	i	I	Lower-case i
6A	j	J	Lower-case j
6B	k	K	Lower-case k
6C	l	L	Lower-case l
6D	m	M	Lower-case m
6E	n	N	Lower-case n
6F	o	O	Lower-case o
70	p	P	Lower-case p
71	q	Q	Lower-case q
72	r	R	Lower-case r
73	s	S	Lower-case s
74	t	T	Lower-case t
75	u	U	Lower-case u
76	v	V	Lower-case v
77	w	W	Lower-case w
78	x	X	Lower-case x
79	y	Y	Lower-case y
7A	z	Z	Lower-case z
7B	ç	C	Lower-case c with cedilla
7C	÷		Division sign
7D	ñ		Upper-case N with tilde
7E	ñ	Ñ	Lower-case n with tilde
7F	■		Solid block

(h) *Character Attributes*—(1) *Transmission of Attributes*. A character may be transmitted with any or all of four attributes: Color, italics, underline, and flash. All of these attributes are set by control codes included in the received data. An attribute will remain in effect until changed by another control code or until the end of the row is reached. Each row begins with a control code which sets the color and underline attributes. (White non-underlined is the default display attribute if no Preamble Address Code is received before the first character on an empty row.) Attributes are not affected by transparent spaces within a row.

(i) All Mid-Row Codes and the Flash On command are spacing attributes

which appear in the display just as if a standard space (20h) had been received. Preamble Address Codes are non-spacing and will not alter any attributes when used to position the cursor in the midst of a row of characters.

(ii) The color attribute has the highest priority and can only be changed by the Mid-Row Code of another color. Italics has the next highest priority. If characters with both color and italics are desired, the italics Mid-Row Code must follow the color assignment. Any color Mid-Row Code will turn off italics. If the least significant bit of a Preamble Address Code or of a color or italics Mid-Row Code is a 1 (high), underlining is turned on. If that bit is a 0 (low), underlining is off.

(iii) The flash attribute is transmitted as a Miscellaneous Control Code. The Flash On command will not alter the status of the color, italics, or underline attributes. However, any color or italics Mid-Row Code will turn off flash.

(iv) Thus, for example, if a red, italicized, underlined, flashing character is desired, the attributes must be received in the following order: a red Mid-Row or Preamble Address Code, an italics Mid-Row Code with underline bit, and the Flash On command. The character will then be preceded by three spaces (two if red was assigned via a Preamble Address Code).

(2) *Display of attributes.* The underline attribute will be displayed by drawing a line beneath the character in the same color as the character. The flash attribute will be displayed by causing the character to blink from the display at least once per second. The italic attribute must be capable of being displayed by either a special italic font, or by the modification of the standard font by slanting. The user may be given the option to select other methods of italic display as well. The support of the color attributes is optional. If the color attributes are supported, they will be displayed in the color they have been assigned. If color attributes are not supported, the display may be in color, but all color changes will be ignored.

(i) *Control codes.* There are three different types of control codes used to identify the format, location, at-

tributes, and display of characters: Preamble Address Codes, Mid-Row Codes, and Miscellaneous Control Codes.

(1) Each control code consists of a pair of bytes which are always transmitted together in a single field of line 21 and which are normally transmitted twice in succession to help insure correct reception of the control instructions. The first of the control code bytes is a non-printing character in the range 10h to 1Fh. The second byte is always a printing character in the range 20h to 7Fh. Any such control code pair received which has not been assigned a function is ignored. If the non-printing character in the pair is in the range 00h to 0Fh, that character alone will be ignored and the second character will be treated normally.

(2) If the second byte of a control code pair does not contain odd parity (see paragraph (j) of this section), then the pair is ignored. The redundant transmission of the pair will be the instruction upon which the receiver acts.

(3) If the first byte of the first transmission of a control code pair fails the parity check, then that byte is inserted into the currently active memory as a solid block character (7Fh) followed by whatever the second byte is. Again, the redundant transmission of the pair will be the controlling instruction.

(4) If the first transmission of a control code pair passes parity, it is acted upon within one video frame. If the next frame contains a perfect repeat of the same pair, the redundant code is ignored. If, however, the next frame contains a different but also valid control code pair, this pair, too, will be acted upon (and the receiver will expect a repeat of this second pair in the next frame). If the first byte of the expected redundant control code pair fails the parity check and the second byte is identical to the second byte in the immediately preceding pair, then the expected redundant code is ignored. If there are printing characters in place of the redundant code, they will be processed normally.

(5) There is provision for decoding a second data channel. The second data channel is encoded with the same control codes and procedures already described. The first byte of every control

code pair indicates the data channel (C1/C2) to which the command applies. Control codes which do not match the data channel selected by the user, and all subsequent data related to that control code, are ignored by the receiver.

MISCELLANEOUS CONTROL CODES

Data channel 1	Data channel 2	Mnemonic	Command description
14 20	1C 20	RCL	Resume caption loading.
14 21	1C 21	BS ...	Backspace.
14 22	1C 22	AOF	Reserved (formerly Alarm Off).
14 23	1C 23	AON	Reserved (formerly Alarm On).
14 24	1C 24	DER	Delete to End of Row.
14 25	1C 25	RU2	Roll-Up Captions–2 Rows.
14 26	1C 26	RU3	Roll-Up Captions–3 Rows.
14 27	1C 27	RU4	Roll-Up Captions–4 Rows.
14 28	1C 28	FON	Flash On.
14 29	1C 29	RDC	Resume Direct Captioning.
14 2A	1C 2A	TR ...	Text Restart.
14 2B	1C 2B	RTD	Resume Text Display.
14 2C	1C 2C	EDM	Erase Displayed Memory.
14 2D	1C 2D	CR ...	Carriage Return.
14 2E	1C 2E	ENM	Erase Non-Displayed Memory.
14 2F	1C 2F	EOC	End of Caption (Flip Memories).
17 21	1F 21	TO1	Tab Offset 1 Column.
17 22	1F 22	TO2	Tab Offset 2 Columns.
17 23	1F 23	TO3	Tab Offset 3 Columns.

MID-ROW CODES

Data channel 1	Data channel 2	Attribute description
11 20	19 20	White.
11 21	19 21	White Underline.
11 22	19 22	Green.
11 23	19 23	Green Underline.
11 24	19 24	Blue.
11 25	19 25	Blue Underline.
11 26	19 26	Cyan.
11 27	19 27	Cyan Underline.
11 28	19 28	Red.
11 29	19 29	Red Underline.
11 2A	19 2A	Yellow.
11 2B	19 2B	Yellow Underline.
11 2C	19 2C	Magenta.
11 2D	19 2D	Magenta Underline.
11 2E	19 2E	Italics.
11 2F	19 2F	Italics Underline.

PREAMBLE ADDRESS CODES

	Row 1	Row 2	Row 3	Row 4	Row 5	Row 6	Row 7	Row 8	Row 9	Row 10	Row 11	Row 12	Row 13	Row 14	Row 15
First byte of code pair:															
Data Channel 1	11	11	12	12	15	15	16	17	17	17	10	13	13	14	14
Data Channel 2	19	19	1A	1A	1D	1D	1E	1E	1F	1F	18	1B	1B	1C	1C
Second byte of code pair:															
White	40	60	40	60	40	60	40	60	40	60	40	40	60	40	60
White Underline	41	61	41	61	41	61	41	61	41	61	41	41	61	41	61
Green	42	62	42	62	42	62	42	62	42	62	42	42	62	42	62
Green Underline	43	63	43	63	43	63	43	63	43	63	43	43	63	43	63
Blue	44	64	44	64	44	64	44	64	44	64	44	44	64	44	64
Blue Underline	45	65	45	65	45	65	45	65	45	65	45	45	65	45	65
Cyan	46	66	46	66	46	66	46	66	46	66	46	46	66	46	66
Cyan Underline	47	67	47	67	47	67	47	67	47	67	47	47	67	47	67
Red	48	68	48	68	48	68	48	68	48	68	48	48	68	48	68
Red Underline	49	69	49	69	49	69	49	69	49	69	49	49	69	49	69
Yellow	4A	6A	4A	6A	4A	6A	4A	6A	4A	6A	4A	4A	6A	4A	6A
Yellow Underline	4B	6B	4B	6B	4B	6B	4B	6B	4B	6B	4B	4B	6B	4B	6B
Magenta	4C	6C	4C	6C	4C	6C	4C	6C	4C	6C	4C	4C	6C	4C	6C
Magenta Underline	4D	6D	4D	6D	4D	6D	4D	6D	4D	6D	4D	4D	6D	4D	6D
White Italics	4E	6E	4E	6E	4E	6E	4E	6E	4E	6E	4E	4E	6E	4E	6E
White Italics Underline	4F	6F	4F	6F	4F	6F	4F	6F	4F	6F	4F	4F	6F	4F	6F
Indent 0	50	70	50	70	50	70	50	70	50	70	50	50	70	50	70
Indent 0 Underline	51	71	51	71	51	71	51	71	51	71	51	51	71	51	71
Indent 4	52	72	52	72	52	72	52	72	52	72	52	52	72	52	72
Indent 4 Underline	53	73	53	73	53	73	53	73	53	73	53	53	73	53	73
Indent 8	54	74	54	74	54	74	54	74	54	74	54	54	74	54	74
Indent 8 Underline	55	75	55	75	55	75	55	75	55	75	55	55	75	55	75
Indent 12	56	76	56	76	56	76	56	76	56	76	56	56	76	56	76
Indent 12 Underline	57	77	57	77	57	77	57	77	57	77	57	57	77	57	77
Indent 16	58	78	58	78	58	78	58	78	58	78	58	58	78	58	78
Indent 16 Underline	59	79	59	79	59	79	59	79	59	79	59	59	79	59	79
Indent 20	5A	7A	5A	7A	5A	7A	5A	7A	5A	7A	5A	5A	7A	5A	7A
Indent 20 Underline	5B	7B	5B	7B	5B	7B	5B	7B	5B	7B	5B	5B	7B	5B	7B
Indent 24	5C	7C	5C	7C	5C	7C	5C	7C	5C	7C	5C	5C	7C	5C	7C
Indent 24 Underline	5D	7D	5D	7D	5D	7D	5D	7D	5D	7D	5D	5D	7D	5D	7D
Indent 28	5E	7E	5E	7E	5E	7E	5E	7E	5E	7E	5E	5E	7E	5E	7E
Indent 28 Underline	5F	7F	5F	7F	5F	7F	5F	7F	5F	7F	5F	5F	7F	5F	7F

NOTE: All indent codes (second byte equals 50h–5fh, 70h–7fh) assign white as the color attribute.

(j) *Data rejection.* The receiver should provide an effective procedure to verify data. A receiver will reject data if the data is invalid, or if the data is directed to the data channel or field not selected by the user. Invalid data is any data that fails to pass a check for odd parity, or which, having passed the parity check, is assigned no function.

(1) If a print character fails to pass a check for parity, a solid block (7Fh) should be displayed in place of the failed character. In addition, valid data can be corrupted in many ways and may not be suitable for display. For example, repeated fields, skipped fields and altered field sequences are all possible from consumer video equipment and might present meaningless captions.

(2) The receiver will ignore data rejected due to being directed to a deselected field or channel. However, this will not cause the display to be disabled.

(k) *Automatic display enable/disable.* The receiver shall provide an automatic enable/disable capability to prevent the display of invalid or incomplete data, when the user selects the Caption Mode. The display should automatically become enable after the receiver verifies the data as described in paragraph (j) of this section. The display will be automatically disabled when there is a sustained detection of invalid data. The display will be re-enabled when the data verification process has been satisfied once again.

(1) *Compatibility with Cable Security Systems.* Certain cable television security techniques, such as signal encryption and copy protection, can alter the television signal so that some methods of finding line 21 will not work. In particular, counting of lines or timing from the start of the vertical blanking interval may cause problems. Caption decoding circuitry must function properly when receiving signals from cable security systems that were designed and marketed prior to April 5, 1991. Further information concerning such systems is available from the National Cable Television Association, Inc., Washington, DC, and from the Electronic Industries Association, Washington, DC.

(m) *Labeling and consumer information requirements.* (1) The box or other package in which the individual television receiver is to be marketed shall carry a statement in a prominent location, visible to the buyer before purchase, which reads as follows:

This television receiver provides display of television closed captioning in accordance with FCC rules.

(2) Receivers that do not support color attributes or text mode, as well as receivers that display only upper-case characters pursuant to paragraph (g) of this section, must include with the statement, and in the owner's manual, language indicating that those features are not supported.

(n) *Glossary of terms.* The following terms are used to describe caption decoder specifications:

(1) *Base row:* The bottom row of a roll-up display. The cursor always remains on the base row. Rows of text roll upwards into the contiguous rows immediately above the base row.

(2) *Box:* The area surrounding the active character display. In Text Mode, the box is the entire screen area defined for display, whether or not displayable characters appear. In Caption Mode, the box is dynamically redefined by each caption and each element of displayable characters within a caption. The box (or boxes, in the case of a multiple-element caption) includes all the cells of the displayed characters, the non-transparent spaces between them, and one cell at the beginning and end of each row within a caption element in those decoders that use a solid space to improve legibility.

(3) *Caption window:* The invisible rectangle which defines the top and bottom limits of a roll-up caption. The window can be 2 to 4 rows high. The lowest row of the window is called the base row.

(4) *Cell:* The discrete screen area in which each displayable character or space may appear. A cell is one row high and one column wide.

(5) *Column:* One of 32 vertical divisions of the screen, each of equal width, extending approximately across the full width of the safe caption area as defined in paragraph (n)(12) of this section. Two additional columns, one at the left of the screen and one at the

right, may be defined for the appearance of a box in those decoders which use a solid space to improve legibility, but no displayable characters may appear in those additional columns. For reference, columns may be numbered 0 to 33, with columns 1 to 32 reserved for displayable characters.

(6) *Displayable character*: Any letter, number or symbol which is defined for on-screen display, plus the 20h space.

(7) *Display disable*: To turn off the display of captions or text (and accompanying background) at the receiver, rather than through codes transmitted on line 21 which unconditionally erase the display. The receiver may disable the display because the user selects an alternate mode, e.g., TV Mode, or because no valid line 21 data is present.

(8) *Display enable*: To allow the display of captions or text when they are transmitted on line 21 and received as valid data. For display to be enabled, the user must have selected Caption Mode or Text Mode, and valid data for the selected mode must be present on line 21.

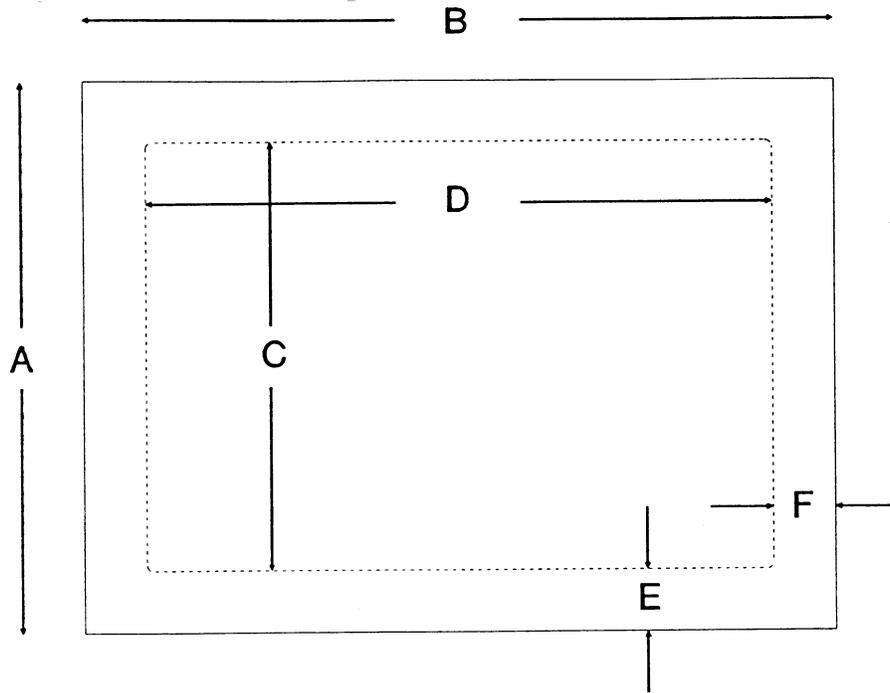
(9) *Element*: In a pop-on or paint-on style caption, each contiguous area of cells containing displayable characters and non-transparent spaces between

those characters. A single caption may have multiple elements. An element is not necessarily a perfect rectangle, but may include rows of differing widths.

(10) *Erase Display*: In Caption Mode, to clear the screen of all characters (and accompanying background) in response to codes transmitted on line 21. (The caption service provider can accomplish the erasure either by sending an Erase Displayed Memory command or by sending an Erase Non-Displayed Memory command followed by an End of Caption command, effectively making a blank caption “appear”). Display can also be erased by the receiver when the caption memory erasure conditions are met, such as the user changing TV channels.

(11) *Row*: One of 15 horizontal divisions of the screen, extending across the full height of the safe caption area as defined in paragraph (n)(12) of this section.

(12) *Safe caption area*: The area of the television picture within which captioning and text shall be displayed to ensure visibility of the information on the majority of home television receivers. The safe caption area is specified as shown in the following figure:



The dimensions of the above figure shall be as follows:

Label	Dimensions	Percent of television picture height
A	Television picture height	100.0
B	Television picture width	133.33
C	Height of safe caption area	80.0
D	Width of safe caption area	106.67
E	Vertical position of safe caption area.	10.0
F	Horizontal position of safe caption area.	13.33

(13) *Special characters*: Displayable characters (except for “transparent space”) which require a two-byte sequence of one non-printing and one printing character. The non-printing byte varies depending on the data channel. Regular characters require unique one-byte codes which are the same in either data channel.

(14) *Text*: When written with an upper-case “T”, refers to the Text Mode. When written with a lower-case “t”, refers to any combination of displayable characters.

(15) *Transparent space*: Transmitted as a special character, it is a one-column-wide space behind which program video is always visible (except when a transparent space immediately precedes or follows a displayable character and solid box is needed to make that character legible).

[56 FR 27201, June 13, 1991, as amended at 57 FR 19094, May 4, 1992; 58 FR 44893, Aug. 25, 1993. Redesignated and amended at 77 FR 19515, 19518, Mar. 30, 2012]

§ 79.102 Closed caption decoder requirements for digital television receivers and converter boxes.

(a)(1) Effective July 1, 2002, all digital television receivers with picture screens in the 4:3 aspect ratio with picture screens measuring 13 inches or larger diagonally, all digital television receivers with picture screens in the 16:9 aspect ratio measuring 7.8 inches or larger vertically and all separately sold DTV tuners shipped in interstate commerce or manufactured in the

Federal Communications Commission

§ 79.102

United States shall comply with the provisions of this section.

NOTE TO PARAGRAPH (a)(1): This paragraph places no restrictions on the shipping or sale of digital television receivers that were manufactured before July 1, 2002.

(2) Effective July 1, 2002, DTV converter boxes that allow digitally transmitted television signals to be displayed on analog receivers shall pass available analog caption information to the attached receiver in a form recognizable by that receiver's built-in caption decoder circuitry.

NOTE TO PARAGRAPH (a)(2): This paragraph places no restrictions on the shipping or sale of DTV converter boxes that were manufactured before July 1, 2002.

(3) Effective January 1, 2014, all digital television receivers and all separately sold DTV tuners shipped in interstate commerce or manufactured in the United States shall comply with the provisions of this section, if technically feasible, except that digital television receivers that use a picture screens less than 13 inches in size must comply with the provisions of this section only if doing so is achievable pursuant to §79.103(b)(3).

(b) Digital television receivers and tuners must be capable of decoding closed captioning information that is delivered pursuant to EIA-708-B: "Digital Television (DTV) Closed Captioning" (incorporated by reference, see §79.100).

(c) *Services.* (1) Decoders must be capable of decoding and processing data for the six standard services, Caption Service #1 through Caption Service #6.

(2) Decoders that rely on Program and System Information Protocol data to implement closed captioning functions must be capable of decoding and processing the Caption Service Directory data. Such decoders must be capable of decoding all Caption Channel Block Headers consisting of Standard Service Headers, Extended Service Block Headers, and Null Block headers. However, decoding of the data is required only for Standard Service Blocks (Service IDs <-6), and then only if the characters for the corresponding language are supported. The decoders must be able to display the directory for services 1 through 6.

(d) *Code space organization.* (1) Decoders must support Code Space C0, G0, C1, and G1 in their entirety.

		C 0		G 0				C 1		G 1							
B7-b4		0	1	2	3	4	5	6	7	8	9	A	B	C	D	E	F
b3-b0	0	NUL	EXT1	SP	0	@	P	`	p	CW0	SPA	NBS	°	À	Ð	à	ð
	1			!	1	A	Q	a	q	CW1	SPC	¡	±	Á	Ñ	á	ñ
	2			"	2	B	R	b	r	CW2	SPL	¢	²	Â	Ò	â	ò
	3	ETX		#	3	C	S	c	s	CW3		£	³	Ã	Ó	ã	ó
	4			\$	4	D	T	d	t	CW4		¤	´	Ä	Ô	ä	ô
	5			%	5	E	U	e	u	CW5		¥	µ	Å	Õ	å	õ
	6			&	6	F	V	f	v	CW6		¦	¶	Æ	Ö	æ	ö
	7			'	7	G	W	g	w	CW7	SWA	§	·	Ç	×	ç	÷
	8	BS	P16	(	8	H	X	h	x	CLW	DF0	¨	,	È	Ø	è	ø
	9			)	9	I	Y	i	y	DSW	DF1	©	¹	É	Ù	é	ù
	A			*	:	J	Z	j	z	HDW	DF2	ª	º	Ê	Ú	ê	ú
	B			+	;	K	|	k	{	TGW	DF3	«	»	Ë	Û	ë	û
	C	FF		,	<	L	\	l	|	DLW	DF4	¬	¼	Ì	Ü	ì	ü
	D	CR		-	=	M	]	m	}	DLY	DF5	-	½	Í	Ý	í	ý
	E	HCR		.	>	N	^	n	~	DLC	DF6	®	¾	Î	Þ	î	þ
	F			/	?	O	_	o	¸	RST	DF7	¸	¿	Ï	ß	ï	ÿ
		C 2		G 2				C 3		G 3							
	0			TSP								␣					
	1			NBTS	‘												
	2			P	’												
	3				“												
	4				”												
	5			...													
	6							1/8									
	7							3/8									
	8							5/8									
	9				TM			7/8									
	A			Š	š			|									
	B							|									
	C			Œ	œ			|									
	D			SM				—									
	E							¸									
	F			ÿ				|									

Table 1 DTVCC Code Set Mapping

(2) The following characters within code space G2 must be supported:

- (i) Transparent space (TSP).
- (ii) Non-breaking transparent space (NBTS).
- (iii) Solid block ().
- (iv) Trademark symbol (TM).
- (v) Latin-1 characters Š, Œ, š, œ, ÿ.

(3) The substitutions in Table 2 are to be made if a decoder does not support the remaining G2 characters.

TABLE 2—G2 CHARACTER SUBSTITUTION TABLE

G2 Character	Substitute with
Open single quote (’), G2 char code 0x31.	G0 single quote (’), char code 0x27
Close single quote (’), G2 char code 0x32.	G0 single quote (’), char code 0x27

TABLE 2—G2 CHARACTER SUBSTITUTION TABLE—Continued

G2 Character	Substitute with
Open double quote (“), G2 char code 0x33.	G0 double quote (“), char code 0x22
Close double quote (”), G2 char code 0x34.	G0 double quote (“), char code 0x22
Bold bullet (•), G2 char code 0x35.	G1 bullet (•), char code 0xB7
Elipsis (. . .), G2 char code 0x25.	G0 underscore (_), char code 0x5F
One-eighth (1/8), G2 char code 0x76.	G0 percent sign (%), char code 0x25
Three-eighths (3/8), G2 char code 0x77.	G0 percent sign (%), char code 0x25
Five-eighths (5/8), G2 char code 0x78.	G0 percent sign (%), char code 0x25
Seven-eighths (7/8), G2 char code 0x79.	G0 percent sign (%), char code 0x25

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TABLE 2—G2 CHARACTER SUBSTITUTION
TABLE—Continued

G2 Character	Substitute with
Vertical border (I), G2 char code 0x7A.	G0 stroke (I), char code 0x7C
Upper-right border (J), G2 char code 0x7B.	G0 dash (-), char code 0x2D
Lower-left border (L), G2 char code 0x7C.	G0 dash (-), char code 0x2D
Horizontal border (—), G2 char code 0x7D.	G0 dash (-), char code 0x2D
Lower-right border (J), G2 char code 0x7E.	G0 dash (-), char code 0x2D

Upper-left border (I), G2 char code 0x7F. G0 dash (-), char code 0x2D

(4) Support for code spaces C2, C3, and G3 is optional. All unsupported graphic symbols in the G3 code space are to be substituted with the G0 underscore character (_), char code 0x5F.
(e) *Screen coordinates.* Table 3 specifies the screen coordinate resolutions and limits for anchor point positioning in 4:3 and 16:9 display formats, and the number of characters per row.

TABLE 3—SCREEN COORDINATE RESOLUTIONS AND LIMITS

Screen aspect ratio	Maximum anchor position resolution	Minimum anchor position resolution	Maximum displayed rows	Maximum characters per row
4:3	75v×160h	15v×32h	4	32
16:9	75v×210h	15v×42h	4	42
Other	75v×(5×H)	15v×H*	4	1

*H = 32 × (the width of the screen in relation to a 4:3 display). For example, the 16:9 format is 1/3 wider than a 4:3 display; thus, H = 32 × 4/3 = 42.667, or 42.

(1) This means that the minimum grid resolution for a 4:3 aspect ratio instrument is 15 vertical positions × 32 horizontal positions. This minimum grid resolution for 16:9 ratio instrument is 15 vertical positions × 42 horizontal positions. These minimum grid sizes are to cover the entire safe-title area of the corresponding screen.

(2) The minimum coordinates equate to a 1/3 reduction in the maximum horizontal and vertical grid resolution coordinates. Caption providers are to use the maximum coordinate system values when specifying anchor point positions. Decoders using the minimum resolution are to divide the provided horizontal and vertical screen coordinates by 5 to derive the equivalent minimum coordinates.

(3) Any caption targeted for both 4:3 and 16:9 instruments is limited to 32 contiguous characters per row. If a caption is received by a 4:3 instrument that is targeted for a 16:9 display only, or requires a window width greater than 32 characters, then the caption may be completely disregarded by the decoder. 16:9 instruments should be able to process and display captions intended for 4:3 displays, providing all other minimum recommendations are met.

(4) If the resulting size of any window is larger than the safe title area for the

corresponding display's aspect ratio, then this window will be completely disregarded.

(f) *Caption windows.* (1) Decoders need to display no more than 4 rows of captions on the screen at any given time, regardless of the number of windows displayed. This implies that no more than 4 windows can be displayed at any given time (with each having only one caption row). However, decoders should maintain storage to support a minimum total of 8 rows of captions. This storage is needed for the worst-case support of a displayed window with 4 rows of captioning and a non-displayed window which is buffering the incoming rows for the next 4-row caption. As implied above, the maximum number of windows that may be displayed at any one time by a minimum decoder implementation is 4. If more than 4 windows are defined in the caption stream, the decoder may disregard the youngest and lowest priority window definition(s). Caption providers must be aware of this limitation, and either restrict the total number of windows used or accept that some windows will not be displayed.

(2) Decoders do not need to support overlapped windows. If a window overlaps another window, the overlapped window need not be displayed by the decoder.

(3) At a minimum, decoders will assume that all windows have rows and columns “locked”. This implies that if a decoder implements the SMALL pen-size, then word-“un”wrapping, when shrinking captions, need not be implemented. Also, if a decoder implements the LARGE pen size, then word wrapping (when enlarging captions) need not be implemented.

(4) Whenever possible, the receiver should render embedded carriage returns as line breaks, since these carriage returns indicate an important aspect of the caption’s formatting as determined by the service provider. However, it may sometimes be necessary for the receiver to ignore embedded line breaks. For example, if a caption is to appear in a larger font, and if its window’s rows and/or columns are unlocked, the rows of text may need to become longer or shorter to fit within the allocated space. Such automatic reformatting of a caption is known as “word wrap.” If decoders support word-wrapping, it must be implemented as follows:

(i) The receiver should follow standard typographic practice when implementing word wrap. Potential breaking points (word-wrapping points) are indicated by the space character (20h) and by the hyphen character (2Dh).

(ii) If a row is to be broken at a space, the receiver should remove the space from the caption display. If a row is to be broken after a hyphen, the hyphen should be retained.

(iii) If an embedded return is to be removed, it should usually be replaced with a space. However, if the character to the left of the embedded return is a hyphen, the embedded return should be removed but NOT replaced with a space.

(iv) This specification does not include optional hyphens, nor does it provide for any form of automatic hyphenation. No non-breaking hyphen is defined. The non-breaking space (A0h in the G1 code set) and the non-breaking transparent space (21h in the G2 code

set) should not be considered as potential line breaks.

(v) If a single word exceeds the length of a row, the word should be placed at the start of a new row, broken at the character following the last character that fits on the row, and continued with further breaks if needed.

(g) *Window text painting.* (1) All decoders should implement “left”, “right”, and “center” caption-text justification. Implementation of “full” justification is optional. If “full” justification is not implemented, fully justified captions should be treated as though they are “left” justified.

(i) For “left” justification, decoders should display any portion of a received row of text when it is received. For “center”, “right”, and “full” justification, decoders may display any portion of a received row of text when it is received, or may delay display of a received row of text until reception of a row completion indicator. A row completion indicator is defined as receipt of a CR, ETX or any other command, except SetPenColor, SetPenAttributes, or SetPenLocation where the pen relocation is within the same row.

(ii) Receipt of a character for a displayed row which already contains text with “center”, “right” or “full” justification will cause the row to be cleared prior to the display of the newly received character and any subsequent characters. Receipt of a justification command which changes the last received justification for a given window will cause the window to be cleared.

(2) At a minimum, decoders must support LEFT_TO_RIGHT printing.

(3) At a minimum, decoders must support BOTTOM_TO_TOP scrolling. For windows sharing the same horizontal scan lines on the display, scrolling may be disabled.

(4) At a minimum, decoders must support the same recommended practices for scroll rate as is provided for NTSC closed-captioning.

(5) At a minimum, decoders must support the same recommended practices for smooth scrolling as is provided for NTSC closed-captioning.

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(6) At a minimum, decoders must implement the “snap” window display effect. If the window “fade” and “wipe” effects are not implemented, then the decoder will “snap” all windows when they are to be displayed, and the “effect speed” parameter is ignored.

(h) *Window colors and borders.* At a minimum, decoders must implement borderless windows with solid, black backgrounds (*i.e.*, border type = NONE, fill color = (0,0,0), fill opacity =

SOLID), and borderless transparent windows (*i.e.*, border type = NONE, fill opacity = TRANSPARENT).

(i) *Predefined window and pen styles.* Predefined Window Style and Pen Style ID's may be provided in the DefineWindow command. At a minimum, decoders should implement Predefined Window Attribute Style 1 and Predefined Pen Attribute Style 1, as shown in Table 4 and Table 5, respectively.

TABLE 4—PREDEFINED WINDOW STYLE ID'S

Style ID #	Justify	Print direction	Scroll direction	Word wrap	Display effect	Effect direction	Effect speed	Fill color	Fill opacity	Border type	Border color	Usage
1	Left	Left-to-right	Bottom-to-top.	No	Snap	n/a	n/a	(0,0,0) Black.	Solid	None	n/a	NTSC Style PopUp Captions
2	Left	Left-to-right	Bottom-to-top.	No	Snap	n/a	n/a	n/a	Transparent.	None	n/a	PopUp Captions w/o Black Back-ground
3	Cntr	Left-to-right	Bottom-to-top.	No	Snap	n/a	n/a	(0,0,0) Black.	Solid	None	n/a	NTSC Style Centered PopUp Captions
4	Left	Left-to-right	Bottom-to-top.	Yes	Snap	n/a	n/a	(0,0,0) Black.	Solid	None	n/a	NTSC Style RollUp Captions
5	Left	Left-to-right	Bottom-to-top.	Yes	Snap	n/a	n/a	n/a	Transparent.	None	n/a	RollUp Captions w/o Black Back-ground
6	Cntr	Left-to-right	Bottom-to-top.	Yes	Snap	n/a	n/a	(0,0,0) Black.	Solid	None	n/a	NTSC Style Centered RollUp Captions
7	Left	Top-to-bottom.	Right-to-left	No	Snap	n/a	n/a	(0,0,0) Black.	Solid	None	n/a	Ticker Tape

TABLE 5—PREDEFINED PEN STYLE ID'S

Predefined style ID	Pen size	Font style	Offset	Italics	Underline	Edge type	Foregrnd color	Foregrnd opacity	Backgrnd color	Backgrnd opacity	Edge color	Usage
1	Strdr	0	Normal	No	No	None	(2,2,2) White.	Solid	(0,0,0) Black.	Solid	n/a	Default NTSC Style*

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2	1	Normal	No	No	(2,2,2) White.	Solid	(0,0,0) White.	Solid	n/a	NTSC Style* Mono w/ Serif
3	2	Normal	No	No	(2,2,2) White.	Solid	(0,0,0) Black.	Solid	n/a	NTSC Style* Prop w/ Serif
4	.....	3	.....	Normal	No	No	(2,2,2) White.	Solid	(0,0,0) Black.	Solid	n/a	NTSC Style* Mono w/ o Serif
5	.....	4	.....	Normal	No	No	(2,2,2) White.	Solid	(0,0,0) Black.	Solid	n/a	NTSC Style* Prop w/o Serif
6	.....	3	.....	Normal	No	No	(2,2,2) White.	Solid	n/a	Transparent	(0,0,0) Black.	Mono w/o Serif, Bordered Text, No BG
7	.....	4	.....	Normal	No	No	(2,2,2) White.	Solid	n/a	Transparent	(0,0,0) Black.	Prop. w/o Serif, Bordered Text, No BG

**NTSC Style*—White Text on Black Background

(j) *Pen size.* (1) Decoders must support the standard, large, and small pen sizes and must allow the caption provider to choose a pen size and allow the viewer to choose an alternative size. The STANDARD pen size should be implemented such that the height of the tallest character in any implemented font is no taller than $\frac{1}{15}$ of the height of the safe-title area, and the width of the widest character is no wider than $\frac{1}{32}$ of the width of the safe-title area for 4:3 displays and $\frac{1}{42}$ of the safe-title area width for 16:9 displays.

(2) The LARGE pen size should be implemented such that the width of the widest character in any implemented font is no wider than $\frac{1}{32}$ of the safe-title area for 16:9 displays. This recommendation allows for captions to grow to a LARGE pen size without having to reformat the caption since no caption will have more than 32 characters per row.

(k) *Font styles.* (1) Decoders must support the eight fonts listed below. Caption providers may specify 1 of these 8 font styles to be used to write caption text. The styles specified in the “font style” parameter of the SetPenAttributes command are numbered from 0 through 7. The following is a list of the 8 required font styles. For information purposes only, each font style references one or more popular fonts which embody the characteristics of the style:

- (i) 0—Default (undefined)
- (ii) 1—Monospaced with serifs (similar to Courier)
- (iii) 2—Proportionally spaced with serifs (similar to Times New Roman)
- (iv) 3—Monospaced without serifs (similar to Helvetica Monospaced)
- (v) 4—Proportionally spaced without serifs (similar to Arial and Swiss)
- (vi) 5—Casual font type (similar to Dom and Impress)
- (vii) 6—Cursive font type (similar to Coronet and Marigold)
- (viii) 7—Small capitals (similar to Engravers Gothic)

(2) Font styles may be implemented in any typeface which the decoder manufacturer deems to be a readable rendition of the font style, and need not be in the exact typefaces given in the example above. Decoders must include the ability for consumers to

choose among the eight fonts. The decoder must display the font chosen by the caption provider unless the viewer chooses a different font.

(1) *Character offsetting.* Decoders need not implement the character offsetting (*i.e.*, subscript and superscript) pen attributes.

(m) *Pen styles.* At a minimum, decoders must implement normal, italic, and underline pen styles.

(n) *Foreground color and opacity.* (1) At a minimum, decoders must implement transparent, translucent, solid and flashing character foreground type attributes.

(2) At a minimum, decoders must implement the following character foreground colors: white, black, red, green, blue, yellow, magenta and cyan.

(3) Caption providers may specify the color/opacity. Decoders must include the ability for consumers to choose among the color/opacity options. The decoder must display the color/opacity chosen by the caption provider unless the viewer chooses otherwise.

(o) *Background color and opacity.* (1) Decoders must implement the following background colors: white, black, red, green, blue, yellow, magenta and cyan. It is recommended that this background is extended beyond the character foreground to a degree that the foreground is separated from the underlying video by a sufficient number of background pixels to insure the foreground is separated from the background.

(2) Decoders must implement transparent, translucent, solid and flashing background type attributes. Caption providers may specify the color/opacity. Decoders must include the ability for consumers to choose among the color/opacity options. The decoder must display the color/opacity chosen by the caption provider unless the viewer chooses otherwise.

(p) *Character edges.* Decoders must implement separate edge color and type attribute control.

(q) *Color representation.* (1) At a minimum, decoders must support the 8 colors listed in Table 6.

TABLE 6—MINIMUM COLOR LIST TABLE

Color	Red	Green	Blue
Black	0	0	0
White	2	2	2
Red	2	0	0
Green	0	2	0
Blue	0	0	2
Yellow	2	2	0
Magenta	2	0	2
Cyan	0	2	2

(2)(i) When a decoder supporting this Minimum Color List receives an RGB value not in the list, it will map the received value to one of the values in the list via the following algorithm:

(A) All one (1) values are to be changed to 0.

(B) All two (2) values are to remain unchanged.

(C) All three (3) values are to be changed to 2.

(ii) For example, the RGB value (1,2,3) will be mapped to (0,2,2), (3,3,3) will be mapped to (2,2,2) and (1,1,1) will be mapped to (0,0,0).

(3) Table 7 is an alternative minimum color list table supporting 22 colors.

TABLE 7—ALTERNATIVE MINIMUM COLOR LIST TABLE

Color	Red	Green	Blue
Black	0	0	0
Gray	1	1	1
White	2	2	2
Bright White	3	3	3
Dark Red	1	0	0
Red	2	0	0
Bright Red	3	0	0
Dark Green	0	1	0
Green	0	2	0
Bright Green	0	3	0
Dark Blue	0	0	1
Blue	0	0	2
Bright Blue	0	0	3
Dark Yellow	1	1	0
Yellow	2	2	0
Bright Yellow	3	3	0
Dark Magenta	1	0	1
Magenta	2	0	2
Bright Magenta	3	0	3
Dark Cyan	0	1	1
Cyan	0	2	2
Bright Cyan	0	3	3

(i) When a decoder supporting the Alternative Minimum Color List in Table 7 receives an RGB value not in the list (i.e., an RGB value whose non-zero elements are not the same value), it will map the received value to one of the values in the list via the following algorithm:

(A) For RGB values with all elements non-zero and different—e.g., (1,2,3), (3,2,1), and (2,1,3), the 1 value will be changed to 0, the 2 value will remain unchanged, and the 3 value will be changed to 2.

(B) For RGB values with all elements non-zero and with two common elements—e.g., (3,1,3), (2,1,2), and (2,2,3), if the common elements are 3 and the uncommon one is 1, then the 1 elements is changed to 0; e.g. (3,1,3) → (3,0,3). If the common elements are 1 and the uncommon element is 3, then the 1 elements are changed to 0, and the 3 element is changed to 2; e.g. (1,3,1) → (0,2,0). In all other cases, the uncommon element is changed to the common value; e.g., (2,2,3) → (2,2,2), (1,2,1) → (1,1,1), and (3,2,3) → (3,3,3).

(ii) All decoders not supporting either one of the two color lists described above, must support the full 64 possible RGB color value combinations.

(r) *Character rendition considerations.* In NTSC Closed Captioning, decoders were required to insert leading and trailing spaces on each caption row. There were two reasons for this requirement:

(1) To provide a buffer so that the first and last characters of a caption row do not fall outside the safe title area, and

(2) To provide a black border on each side of a character so that the “white” leading pixels of the first character on a row and the trailing “white” pixels of the last character on a row do not bleed into the underlying video.

(i) Since caption windows are required to reside in the safe title area of the DTV screen, reason 1 (above) is not applicable to DTVCC captions.

(ii) The attributes available in the SetPenAttributes command for character rendition (e.g., character background and edge attributes) provide unlimited flexibility to the caption provider when describing caption text in an ideal decoder implementation. However, manufacturers need not implement all pen attributes. Thus it is recommended that no matter what the level of implementation, decoder manufacturers should take into account the readability of all caption text against a variety of all video backgrounds, and should implement some

automatic character delineation when the individual control of character foreground, background and edge is not supported.

(s) *Service synchronization.* Service Input Buffers must be at least 128 bytes in size. Caption providers must keep this lower limit in mind when following Delay commands with other commands and window text. In other words, no more than 128 bytes of DTVCC commands and text should be transmitted (encoded) before a pending Delay command's delay interval expires.

(t) *Settings.* Decoders must include an option that permits a viewer to choose a setting that will display captions as intended by the caption provider (a default). Decoders must also include an option that allows a viewer's chosen settings to remain until the viewer chooses to alter these settings, including periods when the television is turned off.

[65 FR 58471, Sept. 29, 2000, as amended at 69 FR 2849, Jan. 21, 2004. Redesignated and amended at 77 FR 19515, 19518, Mar. 30, 2012]

§ 79.103 Closed caption decoder requirements for all apparatus.

(a) Effective January 1, 2014, all digital apparatus designed to receive or play back video programming transmitted simultaneously with sound, if such apparatus is manufactured in the United States or imported for use in the United States and uses a picture screen of any size must be equipped with built-in closed caption decoder circuitry or capability designed to display closed-captioned video programming pursuant to the provisions of this section, if technically feasible, except that apparatus that use a picture screen less than 13 inches in size must comply with the provisions of this section only if doing so is achievable as defined in this section.

NOTE TO PARAGRAPH (a): Apparatus includes the physical device and the video players that manufacturers install into the devices they manufacture before sale, whether in the form of hardware, software, or a combination of both, as well as any video players that manufacturers direct consumers to install after sale.

(b) *Exempt apparatus*—(1) *Display-only monitors.* Apparatus or class of appa-

ratus that are display-only video monitors with no playback capability are not required to comply with the provisions of this section.

(2) *Professional or commercial equipment.* Apparatus or class of apparatus that are professional or commercial equipment not typically used by the public are not required to comply with the provisions of this section.

(3)(i) *Achievable.* Manufacturers of apparatus that use a picture screen of less than 13 inches in size may petition the Commission for a full or partial exemption from the closed captioning requirements of this section pursuant to § 1.41 of this chapter, which the Commission may grant upon a finding that the requirements of this section are not achievable, or may assert that such apparatus is fully or partially exempt as a response to a complaint, which the Commission may dismiss upon a finding that the requirements of this section are not achievable.

(ii) The petitioner or respondent must support a petition for exemption or a response to a complaint with sufficient evidence to demonstrate that compliance with the requirements of this section is not "achievable" where "achievable" means with reasonable effort or expense. The Commission will consider the following factors when determining whether the requirements of this section are not "achievable:"

(A) The nature and cost of the steps needed to meet the requirements of this section with respect to the specific equipment or service in question;

(B) The technical and economic impact on the operation of the manufacturer or provider and on the operation of the specific equipment or service in question, including on the development and deployment of new communications technologies;

(C) The type of operations of the manufacturer or provider; and

(D) The extent to which the service provider or manufacturer in question offers accessible services or equipment containing varying degrees of functionality and features, and offered at differing price points.

(4) *Waiver.* Manufacturers of apparatus may petition the Commission for a full or partial waiver of the closed

captioning requirements of this section, which the Commission may grant, upon a finding that the apparatus meets one of the following provisions:

(i) The apparatus is primarily designed for activities other than receiving or playing back video programming transmitted simultaneously with sound; or

(ii) The apparatus is designed for multiple purposes, capable of receiving or playing back video programming transmitted simultaneously with sound but whose essential utility is derived from other purposes.

(c) *Specific technical capabilities.* All apparatus subject to this section shall implement the following captioning functionality:

(1) *Presentation.* All apparatus shall implement captioning such that the caption text may be displayed within one or separate caption windows and supporting the following modes: text that appears all at once (pop-on), text that scrolls up as new text appears (roll-up), and text where each new letter or word is displayed as it arrives (paint-on).

(2) *Character color.* All apparatus shall implement captioning such that characters may be displayed in the 64 colors defined in CEA-708 and such that users are provided with the ability to override the authored color for characters and select from a palette of at least 8 colors including: white, black, red, green, blue, yellow, magenta, and cyan.

(3) *Character opacity.* All apparatus shall implement captioning such that users are provided with the ability to vary the opacity of captioned text and select between opaque and semi-transparent opacities.

(4) *Character size.* All apparatus shall implement captioning such that users are provided with the ability to vary the size of captioned text and shall provide a range of such sizes from 50% of the default character size to 200% of the default character size.

(5) *Fonts.* All apparatus shall implement captioning such that fonts are available to implement the eight fonts required by CEA-708 and § 79.102(k). Users must be provided with the ability to assign the fonts included on their apparatus as the default font for each

of the eight styles contained in § 79.102(k).

(6) *Caption background color and opacity.* All apparatus shall implement captioning such that the caption background may be displayed in the 64 colors defined in CEA-708 and such that users are provided with the ability to override the authored color for the caption background and select from a palette of at least 8 colors including: white, black, red, green, blue, yellow, magenta, and cyan. All apparatus shall implement captioning such that users are provided with the ability to vary the opacity of the caption background and select between opaque, semi-transparent, and transparent background opacities.

(7) *Character edge attributes.* All apparatus shall implement captioning such that character edge attributes may be displayed and users are provided the ability to select character edge attributes including: no edge attribute, raised edges, depressed edges, uniform edges, and drop shadowed edges.

(8) *Caption window color.* All apparatus shall implement captioning such that the caption window color may be displayed in the 64 colors defined in CEA-708 and such that users are provided with the ability to override the authored color for the caption window and select from a palette of at least 8 colors including: white, black, red, green, blue, yellow, magenta, and cyan. All apparatus shall implement captioning such that users are provided with the ability to vary the opacity of the caption window and select between opaque, semi-transparent, and transparent background opacities.

(9) *Language.* All apparatus must implement the ability to select between caption tracks in additional languages when such tracks are present and provide the ability for the user to select simplified or reduced captions when such captions are available and identify such a caption track as “easy reader.”

(10) *Preview and setting retention.* All apparatus must provide the ability for the user to preview default and user selection of the caption features required by this section, and must retain such settings as the default caption configuration until changed by the user.

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(11) *Safe Harbor*. Apparatus which implement Society of Motion Picture and Television Engineers Timed Text format (SMPTE ST 2052-1:2010 incorporated by reference, *see* § 79.100) with respect to the functionality in paragraphs (c)(1) through (10) of this section shall be deemed in compliance with paragraph (c) of this section.

NOTE TO PARAGRAPH (c): Where video programming providers or distributors subject to § 79.4 of this part display or render captions, they shall implement the functional requirements contained in paragraphs (c)(1) through (10) of this section unless doing so is economically burdensome as defined in § 79.4(d).

(d) *Interconnection*. All video outputs of covered apparatus shall be capable of conveying from the source device to the consumer equipment the information necessary to permit or render the display of closed captions.

[77 FR 19518, Mar. 30, 2012]

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§ 79.104 Closed caption decoder requirements for recording devices.

(a) Effective January 1, 2014, all apparatus designed to record video programming transmitted simultaneously with sound, if such apparatus is manufactured in the United States or imported for use in the United States, must comply with the provisions of this section except that apparatus must only do so if it is achievable as defined in § 79.103(b)(3).

(b) All apparatus subject to this section must enable the rendering or the pass through of closed captions such that viewers are able to activate and de-activate the closed captions as the video programming is played back as described in § 79.103(c).

(c) All apparatus subject to this section must comply with the interconnection mechanism requirements in § 79.103(d).

[77 FR 19520, Mar. 30, 2012]