Before the
Federal Communications Commission
Washington, D.C. 20554

In the Matter of	)	
	)	
Compatibility Between Cable Systems	)	
And Consumer Electronics Equipment	)	**PP Docket No. 00-67**
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NOTICE OF PROPOSED RULEMAKING

Adopted: April 13, 2000 **Released: April 14, 2000**

Comment Date: May 24, 2000
Reply Comment Date: June 8, 2000

By the Commission:

I. INTRODUCTION

1. In this *Notice of Proposed Rulemaking*, we seek comment on rules to resolve outstanding issues regarding the compatibility of cable television systems, digital television receivers, set-top boxes, and other equipment used by consumers to receive and enjoy the ever-increasing array of programming and other services available over cable television systems. Each of these devices plays a vital role in transmitting and converting signals that eventually are transformed into the audio, video, textual, and other products and services that consumers can receive over cable. Like a chain that is only as strong as its weakest link, the combination of devices needed to provide the full array of cable services depends**,** in the digital age, upon the compatibility of each device with the others.

2. While cable television has always depended upon this type of equipment compatibility, the technological advances which accompany the transition from analog to digital have made compatibility issues more complex. All of the industries with an interest in ensuring compatibility - - including primarily cable operators and manufacturers of television sets and set-top boxes - - are planning, developing, or rolling out new technologies and services, largely based on digital technology. The introduction and development of digital technology directly implicates compatibility issues, as new digital products must be made compatible with each other, as well as with existing analog technology that will remain in households and on the market for some time to come. Many of these new technologies and services contemplate much greater interaction by the viewer. The transformation of the cable business from a largely one-way form of transmission (from the cable operator to the viewer) to a two-way interactive model (with the viewer sending messages, requests, and other data "upstream") requires profound changes in equipment design.

3. Because both the cable and the consumer electronics industries stand to benefit from compatibility, it is not surprising that negotiations between them have produced consensus on a wide range of issues. The Commission has encouraged and facilitated these discussions, in the hope and belief that

comprehensive market-driven solutions were attainable and would be superior to a regulatory approach. The February 2000 agreements between the Consumer Electronics Association and the National Cable Television Association have resolved two of four major outstanding compatibility issues.[1] The two critical unresolved matters are requirements for a DTV receiver to be labeled "cable-compatible"(specifically whether these receivers should be required to include an IEEE 1394 connector) and licensing terms for copy protection technology.[2] We are concerned that further delay in resolving these issues could begin to have deleterious effects on the deployment of a universe of products and services that will benefit the American public and, indeed, delay the implementation of DTV. Since the industries have not resolved these issues yet, we reluctantly initiate this rulemaking proceeding.

II. BACKGROUND

4. Congress and the Commission have both long been concerned with compatibility between cable systems and consumer electronics equipment such as television receivers. In 1992, Congress added Section 624A[3] to the Communications Act of 1934, as amended ("Communications Act"), directing the Commission to report on "means of assuring compatibility between televisions and video cassette recorders and cable systems, consistent with the need to prevent theft of cable services" and then to "issue such regulations as are necessary to assure such compatibility." More specifically, Section 624A(b)(2)(A) directed the Commission to "specify the technical requirements with which a television receiver or video cassette recorder must comply in order to be sold as 'cable compatible' or 'cable ready.'"[4]

5. In the rulemaking that followed, the Commission imposed certain standards and requirements for analog cable transmissions,[5] and recognized the desirability of "standards for cable digital transmissions."[6] The Commission concluded that "standards for cable digital transmissions are necessary to avoid future compatibility problems when cable systems use digital transmission methods, and to allow the mass production of economical consumer equipment that is compatible with cable digital services."[7] Commenting parties expressed the opinion that industry standards could be developed by 1995, and we

[1] *See* Letter from Robert Sachs, President and CEO, NCTA and Gary Shapiro, President and CEO, CEA to William Kennard, Chairman FCC (Feb. 22, 2000). The letter and its two appendices detail agreements on technical requirements for direct connection of digital television receivers to digital cable systems and on provision of tuning and program schedule information to support the navigation function, including on-screen program guides.

[2] We note that cable operators are required to pass through closed captions to consumers. Standards for closed captioning for digital receivers are the subject of a pending Notice of Proposed Rulemaking. *See* Notice of Proposed Rulemaking in ET Docket No. 99-254. 64 FR 41897 (Aug. 2, 1999).

[3] 47 U.S.C.§ 544a.

[4] 47 U.S.C. § 544A(b)(2)(A).

[5] *See Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992*, First Report and Order, 9 FCC Rcd 1981(1994*) ("Equipment Compatibility First Report and Order*").

[6] *See Equipment Compatibility First Report and Order*, at 2004.

[7] *Id*. at 2005.

declined to adopt standards at that time.[8] Since then industry representatives have engaged in numerous discussions on compatibility issues.[9]

6. Section 624A(d) instructs the Commission to review and modify its compatibility regulations "to reflect improvements and changes in cable systems, television receivers, video cassette recorders, and similar technology." [10] Section 624A thus provides authority for the Commission to set cable transmission standards so that cable subscribers will be able to enjoy the full benefits of both the programming available on cable systems and the functions available on the television receiver. [11] The 1996 Act amended Section 624A of the Communications Act to include the finding that "compatibility among televisions, video cassette recorders, and cable systems can be assured with narrow technical standards that mandate a minimum degree of common design and operation, leaving all features, functions, protocols, and other product and service options for selection through open competition in the market."[12] The 1996 Act also added Section 624A(c)(2)(D), which requires that compatibility regulations adopted by the Commission shall "not affect features, functions, protocols, and other product and service options other than those specified in paragraph (1)(B), including telecommunications interface equipment, home automation communications, and computer network services."[13] The referenced paragraph, Section 624A(c)(1)(B), requires the Commission, in fashioning regulations, to consider "the costs and benefits to consumers of imposing compatibility requirements on cable operators and television manufacturers in a manner that, while providing effective protection against theft of unauthorized reception of cable service, will minimize interference with or nullification of the special functions of subscribers' television receivers or video cassette recorders, including functions that permit the subscriber -- (i) to watch a program on one channel while simultaneously using a video cassette recorder to tape a program on another channel: (ii) to use a video cassette recorder to tape two consecutive programs that appear on different channels; and (iii) to use advanced television picture generation and display features. . . "[14]

7. The 1996 Act also added Section 629 to the Communications Act, directing the Commission to adopt rules to assure commercial availability of "navigation devices" used to access programming and other services from cable operators and other multichannel video programming distributors ("MVPDs").[15] Navigation devices include television receivers, set-top boxes, and other equipment. This provision sought to increase competition by, for example, allowing consumers to purchase set-top boxes from retail electronics stores rather than having to lease boxes from one source- their cable

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[8] *Id*. at 2004-5.

[9] *See*, e.g., Letter from Decker Anstrom, President and CEO, National Cable Television Association and Gary Shapiro, President, Consumer Electronics Manufacturers Association to William Kennard, Chairman FCC (Oct. 30, 1998). *See also* para. 12, *infra***.**

[10] 47 U.S.C. § 544A(d).

[11] *See Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992*, Notice of Proposed Rulemaking, 8 FCC Rcd 8495 (1993).

[12] 47 U.S.C. §544A(a)(4).

[13] 47 U.S.C. §544A(c)(2)(D).

[14] 47 U.S.C. §544A(c)(1)(B).

[15] 47 U.S.C. §549.

operator.[16] Set-top boxes are becoming increasingly sophisticated in terms of both the types of services available over them and the technology needed to supply those services. For third parties to manufacture set-top boxes compatible with cable systems, however, they would need to know various technical features of those systems. In light of cable operators' concerns that disclosure of this information could jeopardize the integrity of cable systems, section 629 instructs the Commission to ensure commercial availability of navigation devices without jeopardizing signal security.

8. In the *Implementation of Section 304 of the Telecommunications Act of 1996, Commercial Availability of Navigation Devices*, Report and Order in CS Docket 97-80 *("Navigation Devices Order")*, the Commission adopted rules to implement section 629 and facilitate the retail sale and competitive development of devices used to receive cable television and other MVPD service.[17] These devices will be available for use and attachment through commonly used interfaces or an interface that conforms to appropriate technical standards promulgated by a national standards organization. The Order provides for the separation of security from navigation functions, thus allowing cable operators to protect the integrity of their networks while allowing others to develop and market competitive means by which consumers can navigate through the various cable offerings. By July 1, 2000, consumers should be able to purchase at retail television sets and set-top boxes that are compatible with cable "security modules" sold or leased by the cable company. To this end, the cable industry has been developing specifications for a "POD (Point of Deployment) module" and a "POD Interface," so that consumer electronics manufacturers can build equipment to interoperate with cable operator supplied security modules.[18]

9. Although many cable systems are already offering tiers of digital cable service, the transition to digital television *broadcasting* has heightened the importance of developing digital consumer electronics equipment that is compatible with cable transmissions. Incumbent television broadcasters have begun broadcasting in a digital format, and additional broadcasters will begin doing so over the next few years, in accordance with a specified timetable.[19] Broadcasters will have both digital and analog signals for some period of time, after which the analog frequencies must be relinquished and the conversion to a fully digital broadcast television environment will be complete.[20] Both during and after this transition, however, it is important that digital television receivers be able to display the digital broadcast signals (and other programming) that cable systems offer and that consumers have a clear understanding of the capabilities of the digital television receivers that they purchase. Without resolution of outstanding compatibility issues, the transition from analog to digital broadcasting will be slowed, and the reclamation and reallocation of a portion of the spectrum now allocated for analog television service will be delayed. Even the development of nonbroadcast cable services that require digital display devices will be inhibited.

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[16] H.R. Rep.No. 104-458, 104th Cong., 2d Sess. (181) 1996.

[17] *See Navigation Devices Order*, 13 FCC Rcd 14775 (1998). *See also* 47 C.F.R. §§76.1200-10.

[18] *See* National Cable Television Association et al., "Status Report" in CS Docket No. 97-80 (filed January 7, 2000). The POD interface is the interface between a host device such as a television receiver or set-top box and the separate POD security module that cable operators must make available by July 1, 2000, pursuant to the Commission's *Navigation Devices Order*. The cable industry specifications are being developed through CableLabs, whose membership includes cable television system operators serving over 85 percent of United States cable subscribers. See http://www.cablelabs.com.

[19] *See Fifth Report and Order* in MM Docket 87-268, 12 FCC Rcd 12809, 12844 (1997).

[20] *Id.*, at 12848-51. *See also* 47 U.S.C. §309(j)(14) for Congressional instructions on the transition added by Section 3003 of the Balanced Budget Act of 1997, Pub. L. No. 105-33, 11 Stat 251 (1997).

10. In a separate proceeding, we have sought comment on whether broadcasters may compel cable carriage of digital broadcast signals under the must-carry provisions of the Communications Act and our rules.[21] We specifically sought comment regarding compatibility between digital television receivers and cable systems, both where a television set connects directly to a cable system and where the connection is through a set-top box.[22] We asked for comment regarding the need for set-top boxes to process the various kinds of digital television signals.[23] We suggested that some of the digital compatibility issues could be addressed through the use of a bus or an interface,[24] such as IEEE-1394, a standard interface that, among other things, provides for two-way communications and, hence, greater subscriber interaction.[25] We asked whether digital television receivers will be digital "cable ready," meaning a separate set-top box will not be required to receive digital signals over cable.[26] We also sought comment on whether the matters at issue in this proceeding suggest the need for an industry receiver standard.[27]

11. A related concern, also addressed in the *Must Carry Notice*, involves copy protection, particularly in the context of the interface between digital television receivers and set-top boxes.[28] In general, if digital content passes across an interface—whether between a television receiver and a set top box, a POD security module and a host device (e.g., a set top box or a television receiver), or some other interface—that content is susceptible to copying if the interface is unprotected. With a digital source, high quality copies can be made and further reproduced with virtually no degradation in quality**.** This has prompted content owners to express strong concerns about unauthorized reproduction of copyrighted material. In the *Must Carry Notice*, we cited industry efforts aimed at protecting the digital video and audio content riding on and between personal computers, digital receivers, set-top boxes, digital video cassette recorders and digital video disk players.[29] We asked whether copy protection is a matter that the Commission should explore in further detail in this proceeding, as that issue relates to the subject of equipment compatibility.[30]

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[21] *Carriage of the Transmissions of Digital Television Broadcast Stations*, CS Docket No. 98-120, 13 FCC Rcd 15092 (1998) (*"Must Carry Notice")*.

[22] 13 FCC Rcd 15103-110.

[23] *Id.* at 15106-09. We continue to believe that a competitive marketplace will spur innovation in set-top box features and functions, including compatibility with digital television receivers. To this end, we note that the Commission's navigation devices rules were enacted to ensure that such equipment, including set-top boxes, is available for retail purchase. Section 629 of the Act requires the Commission to "assure the commercial availability" of navigation devices. 47 U.S.C. §549. *See* 47 C.F.R. §§76.1200-10.

[24] A bus is a circuit or group of circuits that provide an electronic pathway between two or more central processing units or input/output devices.

[25] 13 FCC Rcd at 15108.

[26] *Id.*

[27] *Id.*

[28] *Id.* at 15109.

[29] *Id.*

[30] *Equipment Compatibility First Report and Order*, 9 FCC Rcd at 2005.

12. With the advent of digital television broadcasting and the appearance of a growing number of digital television receivers in the marketplace, completing the standards setting process becomes an increasingly important priority, in order to protect consumers. As we noted in 1994, "standardization is needed to ensure the establishment and effective operation of a competitive market in consumer hardware and software products for connection to digital cable service."[31] The cable and consumer electronics industries have made substantial progress towards development of compatibility standards, particularly since their July 1999 commitment to the Commission to resolve outstanding issues by October 31, 1999.[32] The February 22, 2000 letter from the Presidents of the NCTA and CEA is the latest in a series of reports on industry agreements.[33] The letter and its two appendices detail agreements on technical requirements for direct connection of digital television receivers to digital cable systems and on provision of tuning and program schedule information to support the navigation function, including on-screen program guides.

13. These agreements leave two important unresolved issues regarding "cable-compatible" DTV receivers. First, the parties disagree on whether every receiver designated "cable ready" should have a 1394 connector, and, more generally, on how to label DTV receivers with different features .[34] Second, there is not yet agreement on licensing terms for copy protection technology. If this matter were to have an effect on DTV hardware design, then it could delay the introduction of cable ready DTV receivers. Accordingly, we seek comment below on whether Commission-adopted hardware standards could avoid this potential problem. Because virtually all of the major issues have already been resolved through industry cooperation, we are confident that this proceeding can be completed promptly and in a manner that, consistent with our statutory directive, will not "impair the development of new cable technologies and services and of appropriate interfaces between such technologies and services and of appropriate interfaces between such technologies and services with other media."[35]

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[31] *Id.*

[32] In May 1999, the Commission's Office of Engineering and Technology, in cooperation with the Office of Plans and Policy, hosted a roundtable to discuss technical issues and progress toward the development of standards for compatibility between digital television services and consumer electronics equipment. *See Commission's Office of Engineering and Technology Announces Panelists and Topics for Roundtable on DTV Receiver Compatibility With Cable Television Service,* Public Notice (May 13, 1999). Since that time**,** NCTA**,** CEA, and FCC staff have held informal discussions on these issues. *See* Entertainment, Technology Industries Reply to Chairman Kennard's Request to Report by July 1 on DTV Receiver Compatibility Timetables, Press Release (July 2, 1999).

[33] *See* Letter from Robert Sachs, President and CEO, NCTA and Gary Shapiro, President and CEO, CEA to William Kennard, Chairman FCC (Feb. 22, 2000). *See also* Letter from Gary Shapiro, President and CEO, CEA to William Kennard, Chairman, FCC (Nov. 9, 1999), Letter from Robert Sachs, President and CEO, CEA to William Kennard, Chairman, FCC (Nov. 1, 1999).

[34] We are not wedded to the phrases "cable ready" or "cable compatible." Receivers with and without the 1394 connector will be capable of accessing different arrays of cable service. In practical terms, the issue is how to best indicate to consumers the capability of television receivers to operate with cable television systems. In ¶18, *infra,* we seek comment on a possible "alternative designation for a digital television receiver."

[35] *Id.*

III. SCOPE OF COMPATIBILITY STANDARDS

14. It is useful to begin by reviewing the compatibility standards that we adopted in the analog domain.[36] First, we required cable systems and consumer electronics equipment to utilize a standard channel plan for NTSC transmissions.[37] Second, we prohibited cable systems from scrambling channels on the basic service tier. Third, we specified standards for labeling a television receiver as "cable-ready." Fourth, we required cable operators to offer subscribers "supplemental equipment" to enable them to use special features and functions of their television equipment with cable service, e.g., picture-in-picture, recording from one channel while watching another. In particular, we require cable operators to offer subscribers equipment providing direct reception of all unscrambled signals and simultaneous reception of any two scrambled signals transmitted.[38] In addition to adopting rules addressing these matters, the Commission expressed support for an industry-developed standard "decoder interface" to separate security functions from other functions, for standards for cable digital transmissions, and for open entry into the business of supplying cable home equipment. Our equipment compatibility rules also place certain requirements on television receiving equipment that is marketed as cable ready or cable compatible.[39] In essence, then, our compatibility rules and scrambling limitations were designed to ensure that consumers could access a range of cable services using a "cable-ready" television receiver without obtaining additional equipment from the cable operator.

15. The CEA-NCTA agreement on "the technical requirements for the network interface specifications that permit direct connection of consumer digital receivers to cable television systems" supports provision of several "baseline" cable television services, including reception of analog television signals and digital television programs transmitted in-the-clear, some scrambled digital television programs (provided the receiver is equipped with a Point of Deployment, or "POD" module from the cable operator), and some event information to support the receiver's navigation function.[40] In essence, the technical requirements agreement follows the analog model in our compatibility regulations. The separate "Carriage of PSIP over Cable Plants" agreement appears to indicate the cable industry's intention to scramble digital cable programs (but not retransmitted terrestrial broadcast signals).[41] Hence the range of services available without equipment supplied by the cable operator (i.e., a POD module) will apparently be more limited in the digital domain than in the analog domain, where basic cable programming services are not scrambled.

16. We seek comment on what digital services consumers will be able to access with a television receiver that meets the standards specified in the CEA-NCTA agreement and no additional operator-supplied equipment. Will these include anything other than retransmitted local broadcast signals?

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[36] *See Equipment Compatibility First Report and Order*, at 1981-82.

[37] Each television broadcaster is assigned 6 Mhz of capacity which corresponds to a specific channel on a television set.

[38] *See* 47 C.F.R. §76.630(c).

[39] *See* 47 C.F.R. §§15.117(h), 15.118.

[40] *See* Letter from Robert Sachs, President and CEO, NCTA and Gary Shapiro, President and CEO, CEA to William Kennard, Chairman FCC (Feb. 22, 2000), Appendix 1 Technical Agreement Between CEA and NCTA.

[41] *Id.*, Appendix 2 Carriage of PSIP over Cable Plants. The agreement makes no mention of requirements on television receiving equipment. We assume that the consumer electronics industry has concluded that the receiver standards currently in place are adequate in the digital environment. *See* id.

Will a POD security module be needed in order to receive packages of non-premium digital services as well as premium services offered on a per-channel or per-program basis?

17. We observe that our decision to prohibit analog basic service tier scrambling (subject to a waiver procedure), while primarily justified as "appropriate as a means to promote compatibility between cable service and consumer electronics equipment," was also based in part on the fact that cable operators had previously generally not scrambled these signals.[42] What is the current practice regarding digital cable services? Are these services even provided on the basic service tier, or are they generally provided via cable programming service tiers?[43] Should we permit scrambling of nonbroadcast digital channels on the basic service tier, either by general rule or liberal waiver? Would prohibition of such scrambling induce cable operators to remove digital cable services from the basic tier and move them to CPS tiers? Does the answer to this question depend on resolution of the question, now pending in the digital must-carry proceeding, of whether retransmitted local digital broadcast signals must be provided on the same basic service tier that includes local analog broadcast signals? We also seek comment on whether the transition to digital necessitates any amendment to our requirements for cable operators to offer supplemental equipment to subscribers, to enable them to use special features of their digital television receivers.[44]

18. With respect to the question of labeling television receivers generally, we observe as a preliminary matter that consumer electronics manufacturers are certainly free to build television receivers with or without 1394 connectors. Here we seek comment on whether a receiver without a 1394 connector should be labeled as "cable ready." It is our understanding that OpenCable[45] standards include availability of a 1394 connection. We seek comment on whether this is correct or whether OpenCable requires a 1394 connection only on certain devices.[46] In particular, does OpenCable require a 1394 connection on set-top boxes and, if so, what are the implications for equipment labeling? Cable operators generally believe that the interactivity afforded by a 1394 connection will become an integral feature of cable service, and hence that no receiver that lacks such a connection should be deemed "cable ready." Does the Congressional finding that "compatibility among televisions, video cassette recorders, and cable systems can be assured with narrow technical standards that mandate a minimum degree of common design and operation" authorize or require us to designate a "simple" television receiver as "cable ready?"[47] More generally, how does this Congressional finding and also Section 624A(c)(2)(D) (the instruction to ensure that compatibility regulations "do not affect features, functions, protocols, and other product and service options" other than certain specified functions of television receivers or video cassette recorders) affect our authority to prescribe compatibility requirements in general and to require 1394 connectors on "cable ready" sets in particular?[48] We also seek comment on whether there is an alternative designation for a digital television

[42] See E*quipment Compatibility First Report and Order,* at 1991.

[43] The basic service tier consists, at a minimum, of retransmitted local broadcast signals plus PEG channels. *See* 47 CFR 76.901(a).

[44] *See* 47 C.F.R. §76.630(c) and ¶ 14, *supra*.

[45] OpenCable is an industry initiative aimed at developing a new generation of interoperable set-top boxes that will facilitate the provision of an expanded range of interactive services to cable customers. See http://www.opencable.com.

[46] *See, e.g.*, "OpenCable POD Copy Protection System," IS-POD-CP-INT01-000107, at 2.

[47] *See* 47 U.S.C. §544a(a)(4).

[48] *See* 47 U.S.C. 544a(c) 2)(D). *See also* H.R. Rep.No. 104-458, 104th Cong., 2d Sess. (170-71) 1996.

receiver without a 1394 connector but with basic cable functionality that would be informative and useful to consumers and acceptable to both the cable and consumer electronics industries.

19. We note that one of the OpenCable specifications, "OpenCable POD Copy Protection System," IS-POD-CP-INT01-000107, addresses copy protection. The focus of our inquiry is on hardware and compatibility standards generally, and we seek comment on the hardware implications of copy protection. In particular, is there any reason to believe that any unresolved copy protection licensing or other copy protection issues create uncertainty with respect to the physical configuration of POD security modules or host devices? In other words, is it possible that POD modules and host devices built based on information now available would be unable to support the copy protection technology or protocols now under discussion? Commenters should also address the scope of our jurisdiction in this area.

20. Additionally, it appears that any firm wishing to manufacture digital navigation devices, including television receivers, designed to interoperate with digital cable would need a license from OpenCable to utilize the POD intellectual property. Because our navigation devices rules do place some limits on the licensing terms that MVPDs can impose on manufacturers of navigation devices, we seek comment on whether there are any unresolved POD technology licensing issues related to copy protection.[49] A recent *ex parte* presentation by Circuit City Stores raises questions in this area.[50] Circuit City asserts that the draft CableLabs license for utilization of "DFAST" scrambling technology in POD modules imposes certain obligations on the competitive host device (e.g., a consumer television receiver or set-top box purchased at retail) that should be imposed only on the POD module itself. Moreover, Circuit City argues, the license imposes certain obligations relating to copy protection and control. In Circuit City's view, 47 C.F.R. §1204(c) prohibits licensors from imposing requirements unrelated to protection against threats to system security and conditional access. Circuit City appears to consider copy control and protection unrelated to system security and conditional access. CableLabs has filed a response to the Circuit City submission,[51] which states that the draft license in question is an "evaluation license" that allows prospective manufacturers access to DFAST technology for developmental purposes, that the July 1, 2000 Commission deadline for cable operator provision of POD modules makes it important that the development process proceed even before finalizing the terms of a license for commercial production of POD equipment, and that CableLabs is consulting with interested parties on revision of the draft license. Substantively, CableLabs asserts that, in general, the terms of the draft license "address encryption technology by which cable operators will be able to prevent access to programming by anyone other than legitimate paying customers"[52] and that these terms are consistent with relevant Commission rules. We seek comment on these issues and on the appropriate regulatory action, if any, with respect to copy protection technology licensing.

21. Based on industry representations to date, we believe that labeling and copy protection are the only significant outstanding compatibility issues.[53] If there are other important compatibility issues that

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[49] *See, e.g.*, 47 C.F.R. §§76.1202, 1204.

[50] *See* Letter from Robert S. Schwartz to Magalie R. Salas, Federal Communications Commission, Office of the Secretary (Feb. 2, 2000), in CS Docket No. 97-80.

[51] ***See*** Letter from Richard R. Green to Magalie R. Salas, Federal Communications Commission, Office of the Secretary (Feb. 16, 2000), in CS Docket No. 97-80.

[52] Id.

[53] We note that this *Notice* only addresses cable transmissions. Nothing under consideration herein would change or affect industry standards for digital television signals transmitted over-the-air by television broadcast (continued….)

have not been reported to the Commission, we invite comment on those issues now. We are hopeful that interested parties will submit ample documentation on outstanding cable compatibility issues that will allow us to formally adopt regulations that will serve the public interest.[54] Any decisions made regarding compatibility should be consistent with efforts to implement a standard for closed captioning for digital receivers.[55] We seek comment on how compatibility decisions could enhance implementation of closed captioning standards. We also seek comment on whether the compatibility choices made here will have an effect on compliance with Section 255 of the Communications Act, which requires that telecommunications equipment and services be accessible to persons with disabilities.[56] For example, in certain instances, some services provided by set-top boxes may fall within the rules adopted to implement Section 255.[57] We seek comment on how any cable compatibility solutions put forth can accommodate the need of equipment manufacturers and service providers to comply, where applicable, with the accessibility requirements of those rules.[58]

22. Our purpose in this *Notice* is to finalize a process that the cable and consumer electronics industries have largely completed. In order to avoid consumer confusion, promote the transition to digital television, and comply with our statutory responsibility to provide for compatibility between cable and consumer electronics equipment, we wish to ensure the availability of relevant cable transmission standards and specifications for "cable ready" digital television receivers. Many years of joint discussions among industry parties have brought us close to our objective of compatibility standards. We have no wish to constrain or delay future innovations in service nor to blunt industry incentives to invest in new services. We do want to ensure that consumers will have a choice of services offered via cable (as well as other distribution media) and of equipment that will be compatible with cable systems. To that end we seek comment on the specific set of regulations and/or standards that we should adopt in order to complete the process that the cable and consumer electronics industries have begun and, indeed, almost completed themselves. We also seek comment on how our processes do and should interact with private sector standards approval procedures. We encourage commenters to concentrate on the limited number of issues on which industry has not yet reached overall consensus and to avoid reopening topics on which such consensus has been reached. Should the interested parties reach a consensus during the pendency of this rulemaking, thus eliminating extant compatibility problems, regulation by the Commission may well become unnecessary.

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stations."

[54] The Commission's recent periodic review of the conversion to digital television also contains questions about cable compatibility and copy protection issues. *See* Notice of Proposed Rulemaking in MM Docket No. 00-39, (released March 8, 2000) at ¶¶9-10. Commenters may wish to incorporate their comments in that proceeding by reference into this proceeding.

[55] *See* Notice of Proposed Rulemaking in ET Docket No. 99-254. 64 FR 41897 (Aug. 2, 1999).

[56] 47 U.S.C. §255.

[57] *See* Report and Order and Further Notice of Proposed Rulemaking in WT Docket No. 96-98, 64 FR 63235 (Nov. 19, 1999).

[58] *See* 47 C.F.R., Parts 6 and 7.

IV. ADMINISTRATIVE MATTERS

A. Initial Regulatory Flexibility Analysis

23. The Initial Regulatory Flexibility Analysis is attached to this order as Appendix A. As required by the Regulatory Flexibility Act, *see* 5 U.S.C. § 603, the Commission has prepared an Initial Regulatory Flexibility Analysis of the possible economic impact on small entities of the proposals contained in this *Notice*.

B. Initial Paperwork Reduction Act of 1995 Analysis

24. This NPRM contains either a proposed or modified information collection. As part of its continuing effort to reduce paperwork burdens, we invite the general public and the Office of Management and Budget (OMB) to take this opportunity to comment on the information collections contained in this *Notice*, as required by the Paperwork Reduction Act of 1995, Public Law 104-13. Public and agency comments are due at the same time as other comments on this *Notice*; OMB comments are due 60 days from date of publication of this *Notice* in the Federal Register. Comments should address: (a) whether the proposed collection of information is necessary for the proper performance of the functions of the Commission, including whether the information shall have practical utility; (b) the accuracy of the Commission's burden estimates; (c) ways to enhance the quality, utility, and clarity of the information collected; and (d) ways to minimize the burden of the collection of information on the respondents, including the use of automated collection techniques or other forms of information technology.

C. *Ex Parte* Rules

25. This proceeding will be treated as a "permit-but-disclose" proceeding subject to the "permit-but-disclose" requirements under Section 1.1206(b) of the rules. 47 C.F.R. 1.1206(b), as revised. *Ex parte* presentations are permissible if disclosed in accordance with Commission rules, except during the Sunshine Agenda period when presentations, *ex parte* or otherwise, are generally prohibited. Persons making oral *ex parte* presentations are reminded that a memorandum summarizing a presentation must contain a summary of the substance of the presentation and not merely a listing of the subjects discussed. More than a one or two sentence description of the views and arguments presented is generally required. *See* 47 C.F.R. 1.1206(b)(2), as revised. Additional rules pertaining to oral and written presentations are set forth in Section 1.1206(b).

D. Filing of Comments and Reply Comments

26. Pursuant to applicable procedures set forth in Sections 1.415 and 1.419 of the Commission's Rules, 47 C.F.R. §§ 1.415 and 1.419, interested parties may file comments in response to this *Notice* on or before May 24, 2000 and reply comments on or before June 8, 2000. Comments may be

filed using the Commission's Electronic Comment Filing System ("ECFS") or by filing paper copies.[59] Comments filed through the ECFS can be sent as an electronic file via the Internet to <http://www.fcc/e-file/ecfs.html>. Generally, only one copy of an electronic submission must be filed. If multiple docket or rulemaking numbers appear in the caption of this proceeding, however, commenters must transmit one electronic copy of the comments to each docket or rulemaking number referenced in the caption. In completing the transmittal screen, commenters should include their full name, Postal service mailing address, and the applicable docket or rulemaking number. Parties may also submit an electronic comment by Internet e-mail. To get filing instructions for e-mail comments, commenters should send an e-mail to ecfs@fcc.gov, and should include the following words in the body of the message, "get form<your e-mail address." A sample form and directions will be sent in reply.

27. Parties who choose to file by paper must file an original and four copies of each filing. If participants want each Commissioner to receive a personal copy of their comments, an original plus nine copies must be filed. If more than one docket or rulemaking number appears in the caption of this proceeding commenters must submit two additional copies for each additional docket or rulemaking number. All filings must be sent to the Commission's Secretary, Magalie Roman Salas, Office of the Secretary, Federal Communications Commission, 445 12th Street, S.W., Washington, D.C. 20554. The Office of Plans and Policy contact for this proceeding is Jonathan Levy at (202) 418-2030, or at jlevy@fcc.gov.

28. Parties who choose to file by paper should also submit their comments on diskette. Parties should submit diskettes to Jonathan Levy, Office of Plans and Policy, 445 12th Street N.W., Room 7-C362, Washington, D.C. 20554. Such a submission should be on a 3.5-inch diskette formatted in an IBM compatible form using MS DOS 5.0 and Microsoft Word, or compatible software. The diskette should be accompanied by a cover letter and should be submitted in "read only" mode. The diskette should be clearly labeled with the party's name, proceeding (including the lead docket number in this case PP Docket No. 00-67), type of pleading (comments or reply comments), date of submission, and the name of the electronic file on the diskette. The label should also include the following phrase "Disk Copy - Not an Original." Each diskette should contain only one party's pleadings, referable in a single electronic file. In addition, commenters must send diskette copies to the Commission's copy contractor, International Transcription Service, 1231 20th Street, N.W., Washington, D.C. 20036.

29. Written comments by the public on the proposed and/or modified information collections are due May 24, 2000**.** Written comments must be submitted by the Office of Management and Budget (OMB) on the proposed and/or modified information collections on or before **[60 days after date of publication in the Federal Register.]** In addition to filing comments with the Secretary, a copy of any comments on the information collection(s) contained herein should be submitted to Judy Boley, Federal Communications Commission, Room 1-C804, 445 12th Street, SW, Washington, DC 20554, or via the Internet to jboley@fcc.gov and to Edward Springer, OMB Desk Officer, Room 10236 NEOB, 725 17th Street, N.W., Washington, DC 20503 or via the Internet to edward.springer@omb.eop.gov.

V. ORDERING CLAUSES

30. *Ordering Clauses.* **IT IS ORDERED** that, pursuant to Sections 1, 4(i) and (j), 336, and 624A of the Communications Act of 1934, as amended, 47 U.S.C. §§ 151, 154(i) and (j), 336, and 544a, **NOTICE IS HEREBY GIVEN** of proposed amendments to Part 76, in accordance with the proposals,

[59] *See In re Electronic Filing of Documents in Rulemaking Proceedings*, 13 FCC Rcd. 11322 (1998) (amending Parts 0 and 1 of the Commission's rules to allow electronic filing of comments and other pleadings).

discussions and statements of issues in this *Notice of Proposed Rulemaking*, and that **COMMENT IS SOUGHT** regarding such proposals, discussions and statements of issues.

31. **IT IS FURTHER ORDERED** that the Consumer Information Bureau, Reference Information Center, **SHALL SEND** shall send a copy of this Notice of Proposed Rulemaking, including the Initial Regulatory Flexibility Analysis, to the Chief Counsel for Advocacy of the Small Business Administration.

Federal Communications Commission

Magalie Roman Salas
Secretary

APPENDIX A

INITIAL REGULATORY FLEXIBILITY ANALYSIS

1. As required by the Regulatory Flexibility Act (RFA),[1] the Commission has prepared this present Initial Regulatory Flexibility Analysis (IRFA) of the possible significant economic impact on small entities by the policies and rules proposed in this *Notice of Proposed Rulemaking*. Written public comments are requested on this IRFA. Comments must be identified as responses to the IRFA and must be filed in accordance with the same filing deadlines as comments on the rest of the *Notice*. The Commission will send a copy of the *Notice of Proposed Rulemaking*, including this IRFA, to the Chief Counsel for Advocacy of the Small Business Administration. *See* 5 U.S.C. § 603(a). In addition, the *Notice of Proposed Rulemaking* and IRFA (or summaries thereof) will be published in the Federal Register. *See id*.

2. *Need for and Objectives of the Proposed Rules:* This *Notice* is designed to help ensure that digital television receivers and cable television systems will function smoothly together and to promote the implementation of digital television ("DTV") service. In order to provide consumers with information about how digital television receivers will operate with cable television systems and thereby avoid consumer confusion, the *Notice* seeks comment on labeling of digital television receivers. In order to encourage the provision of valuable digital content and to ensure that copy protection technology licensing issues do not stand in the way of designing DTV receivers that operate with cable television systems, the *Notice* seeks comment on some outstanding copy protection technology licensing issues as well.

3. *Legal Basis:* Authority for this proposed rulemaking is contained in Sections 4(i), 4(j), 336, and 624A of the Communications Act of 1934, as amended, 47 U.S.C. §§ 154(i), 154(j), 336, and 544a.

4. *Description and Estimate of Small Entities to Which the Proposed Rules Will Apply:* The RFA directs agencies to provide a description of, and, where feasible, an estimate of the number of small entities that may be affected by the proposed rules, if adopted.[2] The Regulatory Flexibility Act defines the term "small entity" as having the same meaning as the terms "small business," "small organization," and "small business concern" under section 3 of the Small Business Act.[3] A small business concern is one which: (1) is independently owned and operated; (2) is not dominant in its field of operation; and (3) satisfies any additional criteria established by the SBA.[4]

5. Rules adopted in this proceeding could apply to manufacturers of DTV equipment, including television receivers, set-top boxes and "point of deployment" modules. Distributors of this equipment, including retailers of consumer electronics equipment and, in the case of "point of deployment" modules,

[1] *See* 5 U.S.C. § 603. The RFA, *see* 5 U.S.C. § 601 *et. seq.*, has been amended by the Contract With America Advancement Act of 1996, Pub. L. No. 104-121, 110 Stat. 847 (1996) (CWAAA). Title II of the CWAAA is the Small Business Regulatory Enforcement Fairness Act of 1996 (SBREFA).

[2] 5 U.S.C. § 603(b)(3).

[3] *Id*. § 601(3).

[4] *Id*. § 632.

cable operators, would also be affected. Labeling rules would require all manufacturers, small and large, to adhere to certain terminology in the descriptive labels that they attach to the receivers that they produce. Regulations relating to copy protection licensing technology could affect the terms and conditions under which manufacturers, small and large, acquire copy protection technology licenses. However, with or without Commission regulations, all those entities would need a license for proprietary technology that they utilize. Cable operators will also be affected by any new requirements to offer supplementary equipment to subscribers to enable them to use special features of their DTV receivers. This proceeding seeks comment on whether the burden, if any, of compliance with rules adopted pursuant to this *Notice* could be mitigated for small entities.

6. *Cable Systems:* SBA has developed a definition of small entity for cable and other pay television services, which includes all such companies generating less than $11 million in revenue annually. This definition includes cable systems operators, closed circuit television services, direct broadcast satellite services, multipoint distribution systems, satellite master antenna systems and subscription television services. According to the Census Bureau, there were 1,323 such cable and other pay television services generating less than $11 million in revenue that were in operation for at least one year at the end of 1992.[5]

7. The Commission has developed its own definition of a small cable system operator for the purposes of rate regulation. Under the Commission's rules, a "small cable company," is one serving fewer than 400,000 subscribers nationwide.[6] Based on our most recent information, we estimate that there were 1,439 cable operators that qualified as small cable system operators at the end of 1995.[7] Since then, some of those companies may have grown to serve over 400,000 subscribers, and others may have been involved in transactions that caused them to be combined with other cable operators. Consequently, we estimate that there are fewer than 1,439 small entity cable system operators that may be affected by the decisions and rules proposed in this Notice.

8. The Communications Act also contains a definition of a small cable system operator, which is "a cable operator that, directly or through an affiliate, serves in the aggregate fewer than 1% of all subscribers in the United States and is not affiliated with any entity or entities whose gross annual revenues in the aggregate exceed $250,000,000."[8] The Commission has determined that there are 61,700,000 subscribers in the United States. Therefore, we found that an operator serving fewer than 617,000 subscribers shall be deemed a small operator, if its annual revenues, when combined with the total annual revenues of all of its affiliates, do not exceed $250 million in the aggregate.[9] Based on available data, we

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[5] U.S. Census Bureau, 1992 Economic Census, 1992 Census of Transportation, Communications and Utilities at Firm Size 1-123.

[6] 47 C.F.R. §76.901(e). The Commission developed this definition based on its determinations that a small cable system operator is one with annual revenues of $100 million or less. *Implementation of Sections of the 1992 Cable Act: Rate Regulation*, Sixth Report and Order and Eleventh Order on Reconsideration, 10 FCC Rcd 7393 (1995).

[7] Paul Kagan Associates, Inc., *Cable TV Investor*, Feb. 29, 1996 (based on figures for Dec. 30, 1995).

[8] 47 U.S.C. §543(m)(2).

[9] 47 C.F.R. §76.1403(b).

find that the number of cable operators serving 617,000 subscribers or less totals 1,450.[10] Although it seems certain that some of these cable system operators are affiliated with entities whose gross annual revenues exceed $250,000,000, we are unable at this time to estimate with greater precision the number of cable system operators that would qualify as small cable operators under the definition in the Communications Act.

9. *Small Manufacturers*: The SBA has developed definitions of small entity for manufacturers of household audio and video equipment (SIC 3651) and for radio and television broadcasting and communications equipment (SIC 3663). In each case, the definition includes all such companies employing 750 or fewer employees.

10. *Electronic Equipment Manufacturers*: The Commission has not developed a definition of small entities applicable to manufacturers of electronic equipment. Therefore, we will utilize the SBA definition of manufacturers of Radio and Television Broadcasting and Communications Equipment.[11] According to the SBA's regulations, a TV equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern.[12] Census Bureau data indicates that there are 858 U.S. firms that manufacture radio and television broadcasting and communications equipment, and that 778 of these firms have fewer than 750 employees and would be classified as small entities.[13] The Census Bureau category is very broad, and specific figures are not available as to how many of these firms are exclusive manufacturers of television equipment or how many are independently owned and operated. We conclude that there are approximately 778 small manufacturers of radio and television equipment.

11. *Electronic Household/Consumer Equipment*: The Commission has not developed a definition of small entities applicable to manufacturers of electronic equipment used by consumers, as compared to industrial use by television licensees and related businesses. Therefore, we will utilize the SBA definition applicable to manufacturers of Household Audio and Visual Equipment. According to the SBA's regulations, a household audio and visual equipment manufacturer must have 750 or fewer employees in order to qualify as a small business concern.[14] Census Bureau data indicates that there are 410 U.S. firms that manufacture radio and television broadcasting and communications equipment, and that 386 of these firms have fewer than 500 employees and would be classified as small entities.[15] The remaining 24 firms

[10] Paul Kagan Associates, Inc., *Cable TV Investor*, Feb. 29, 1996 (based on figures for Dec. 30, 1995).

[11] This category excludes establishments primarily engaged in the manufacturing of household audio and visual equipment which is categorized as SIC 3651. *See infra* for SIC 3651 data.

[12] 13 C.F.R. §121.201, (SIC) Code 3663.

[13] U.S. Dept. of Commerce, 1992 Census of Transportation, Communications and Utilities, Table 1D, (issued May 1995), SIC category 3663.

[14] 13 C.F.R. §121.201, (SIC) Code 3651.

[15] U.S. Small Business Administration 1995 Economic Census Industry and Enterprise Report, Table 3, SIC Code 3651, (Bureau of the Census data adapted by the Office of Advocacy of the U.S. Small Business Administration).

have 500 or more employees; however, we are unable to determine how many of those have fewer than 750 employees and therefore, also qualify as small entities under the SBA definition. Furthermore, the Census Bureau category is very broad, and specific figures are not available as to how many of these firms are exclusive manufacturers of television equipment for consumers or how many are independently owned and operated. We conclude that there are approximately 386 small manufacturers of television equipment for consumer/household use.

12. *Computer Manufacturers*: The Commission has not developed a definition of small entities applicable to computer manufacturers. Therefore, we will utilize the SBA definition of Electronic Computers. According to SBA regulations, a computer manufacturer must have 1,000 or fewer employees in order to qualify as a small entity.[16] Census Bureau data indicates that there are 716 firms that manufacture electronic computers and of those, 659 have fewer than 500 employees and qualify as small entities.[17] The remaining 57 firms have 500 or more employees; however, we are unable to determine how many of those have fewer than 1,000 employees and therefore also qualify as small entities under the SBA definition. We conclude that there are approximately 659 small computer manufacturers.

13. *Small Retailers*: The Commission has not developed a definition of small entities applicable to retail sellers of navigation devices. Therefore, we will utilize the SBA definition. The 1992 Bureau of the Census data indicate: there were 9,663 U.S. firms classified as Radio, Television, and Consumer Electronic Stores (SIC 5731), and that 9,385 of these firms had $4.999 million or less in annual receipts and 9,473 of these firms had $7.499 million or less in annual receipts.[18] Consequently, we tentatively conclude that there are approximately 9,663 such small retailers that may be affected by the decisions and rules proposed in this *Notice*.

14. *Reporting, Recordkeeping, and Other Compliance Requirements:* The proposed actions may require manufacturers of DTV equipment to adhere to some labeling standards. Moreover, the proposed actions may affect the terms under which manufacturers acquire licenses to utilize certain copy protection technology in their products. We believe that the impact of any rules that might be adopted pursuant to this *Notice* would be minimal. We seek comment on this.

15. *Steps Taken to Minimize Significant Economic Impact on Small Entities, and Significant Alternatives Considered:* The RFA, *see* 5 U.S.C. § 603, requires an agency to describe any significant

[16] 13 C.F.R. §121.201, (SIC) Code 3571.

[17] U.S. Small Business Administration 1995 Economic Census Industry and Enterprise Report, Table 3, SIC Code 3571, (Bureau of the Census data adapted by the Office of Advocacy of the U.S. Small Business Administration).

[18] U.S. Small Business Administration 1992 Economic Census Industry and Enterprise Report, Table 2D, SIC 7812, (Bureau of the Census data adapted by the Office of Advocacy of the U.S. Small Business Administration)(SBA 1992 Census Report). The Census data does not include a category for $6.5 million therefore, we have reported the closest increment below and above the $6.5 million threshold. There is a difference of 88 firms between the $4.999 and $7.499 million annual receipt categories. It is possible that these 88 firms could have annual receipts of $6.5 million or less and therefore, would be classified as small businesses.

alternatives that it has considered in reaching its proposed approach, which may include the following four alternatives: (1) the establishment of differing compliance or reporting requirements or timetables that take into account the resources available to small entities; (2) the clarification, consolidation, or simplification of compliance or reporting requirements under the rule for small entities; (3) the use of performance, rather than design, standards; and (4) an exemption from coverage of the rule, or any part thereof, for small entities.

16. We believe that our proposals would have the positive result of providing consumers with clear information about the capabilities of DTV equipment and promote the implementation of DTV service. We believe that labeling requirements would have a minimal impact on manufacturers and retailers and that not applying requirements adapted to all manufacturers would defeat the basic purpose of the requirements. Given that manufacturers would need to license copy protection technology that they incorporate in their equipment regardless of our rules, the potential impact of any rules appears to be minimal.[19] We do not believe that different treatment of small and large entities with respect to their technology licensing is warranted. Any supplementary equipment that cable operators might be required to offer to subscribers is likely to be standardized and manufactured in large enough quantities that the cost to small cable operators is unlikely to be substantial.[20] Moreover, cable operators are entitled to recover from subscribers the cost of supplementary equipment offered. Should commenters disagree with any of our conclusions, we welcome comments suggesting ways in which any perceived burden upon small entities could be mitigated.

17. Federal Rules that May Duplicate, Overlap, or Conflict With the Proposed Rules: None.

[19] *See Notice* at paras. 18-20.

[20] *Id.* at paras. 14, 17.