Resolving incompatibility problems through cable converter boxes is no solution at all. (These converter boxes, which make incompatible ATV systems compatible, are to be distinguished from digital converter devices which will enable consumers with NTSC televisions to receive ATV signals.) Given the Commission's authority to prescribe transmission standards, such converter boxes should be unnecessary. Moreover, converter boxes will needlessly add to the expense of subscribing to ATV[19] and, if they resemble today's set-top boxes, they may impede the use of VCRs and the features and functions of television receivers, such as picture-in-picture, to the detriment of the viewing public.

EIA and the Committee hope that broadcasters, cable operators and equipment manufacturers can address the compatibility issues presented by cable systems through voluntary industry standards. Two issues, however, require prompt attention. The first, identified by the *Notice*, is the need to establish a digital line 21 equivalent.[20] The second, and far more significant, is the need to refine and define more precisely the QAM technology expected to be used by digital cable systems.[21] Although consumer electronics manufacturers can readily -- and economically -- manufacture television receivers capable of receiving both QAM and VSB (which will be used by over-the-air ATV) signals,[22] they can only do so if QAM is as well

---

[19] If there are multiple standards, manufacturers will need to produce multiple varieties of converter boxes. As a consequence, they will not be able to achieve, and pass along to consumers, the savings made possible by economies of scale.

[20] *Notice* ¶ 83.

[21] "QAM" is the acronym for Quadrature Amplitude Modulation.

[22] "VSB" is the acronym for Vestigial Side Band.

defined as VSB. At present, there is no single agreed-upon specification for QAM. This must be remedied if consumers are to benefit from the availability of robust ATV receivers.

IV. THE COMMISSION SHOULD NOT PRESCRIBE TECHNICAL REQUIREMENTS FOR ATV RECEIVERS

Of all the imponderables in this proceeding, perhaps the greatest is the reaction of the American public to ATV. Ninety-eight percent of American households own at least one NTSC television receiver; 87 percent own NTSC-compatible VCRs; and substantial numbers own camcorders and universal remote controls designed to work with their existing NTSC television equipment.[23] In fact, NTSC television receivers have the highest penetration rate of all consumer electronics products.[24] Given this large installed base of NTSC equipment and peripherals, the Commission would be well advised to allow marketplace forces, rather than government fiat, to guide the American public's transition to ATV.

In this regard, the Commission should resist the temptation to adopt rules that prescribe the capabilities of ATV receivers. In the past, the Commission correctly recognized the difficulty of projecting consumer wants and needs, and therefore declined to mandate the manufacture of dual-mode (ATV and NTSC) receivers.[25] The Commission, at that time, expressed concern that (1) it lacked sufficient information about the costs of dual-mode

---

[23] EIA Market Research Department (June 1995 figures).

[24] *Id.* Only radio receivers have a similar penetration rate. Television penetration even surpasses telephone penetration by two percent. *Id.*

[25] *See Notice* ¶ 77 (citing *Advanced Television Systems and Their Impact Upon the Existing Television Broadcast Service*, Memorandum Opinion and Order, Third Report and Order, Third Further Notice of Proposed Rule Making, 7 FCC Rcd 6924, 6984 (1992) [hereinafter "*Third Report and Order*"]).

receivers, and (2) that, without such information, it feared imposing unnecessary costs on consumers.[26]

In the *Notice*, the Commission has inquired whether changed circumstances warrant revisiting these conclusions. Citing its authority under the All-Channel Receiver Act to require television receivers to "be capable of adequately receiving all frequencies allocated by the Commission to television broadcasting,"[27] the Commission also asks whether it should require all-format receivers, limit the sale of single-format (*e.g.*, NTSC) receivers, or require NTSC equipment made after a certain date to be capable of accommodating a digital converter.[28]

Although EIA and the Committee share the Commission's concern that consumers not purchase television receivers that will be eclipsed by the transition to ATV, a properly functioning competitive marketplace is far superior to government regulation in anticipating and addressing consumer needs. Consumer electronics manufacturers stand ready to produce television sets capable of receiving multiple combinations of NTSC, SDTV and HDTV programming. Indeed, the success of consumer electronics manufacturers in this highly competitive industry is dependent on providing consumers with the products they want at affordable prices. Thus, manufacturers can be expected to target a broad spectrum of consumer interests, ranging from "early adopters" willing to pay a premium to obtain new products to those whose only desire is to display rented home videos and watch an occasional news program.

---

[26] *See Third Report and Order*, 7 FCC Rcd at 6984.

[27] 47 U.S.C. § 303(s).

[28] *Notice* ¶¶ 77-78.

Manufacturers can also be expected to enhance their products with features and functions that consumers are likely to find attractive.[29] As is true today, the market can safely be relied upon to respond to the tastes and pocketbooks of American consumers.

During this transition, EIA and the Committee fully anticipate that ATV receivers will incorporate an NTSC reception capability.[30] This will be especially true during the earlier stages of the transition, when NTSC remains the predominant medium for program origination and for program reception and display. ATV receivers are also likely to support both SDTV and HDTV reception. Digital televisions are also likely to emerge that are capable of receiving ATV signals, but that display them as lower resolution SDTV pictures rather than in true HDTV fashion. These televisions will find a marketplace niche between inexpensive NTSC receivers and higher-priced HDTV-quality ATV receivers. In short, the transition to ATV will be characterized by a marketplace in which consumers can choose from a wide variety of television receivers at an equally wide variety of prices.

The marketplace will also ensure that consumers know their equipment options. Informational programs and consumer education are critical components of the manufacturer-consumer relationship. The consumer electronics industry long ago learned the best way to maintain enthusiasm for a new product is to ensure that it meets consumer expectations.

---

[29] For example, 49 percent of U.S. households have television receivers with stereo capability, even though there is no regulatory requirement for such a feature. EIA Market Research Department (June 1995 figures).

[30] To require an ATV reception capability in an NTSC receiver would be senseless. There is no reason whatsoever for such a requirement. Moreover, such a requirement would substantially increase the price of NTSC receivers, especially in relation to the low cost of these products.

Manufacturers will therefore be certain to educate consumers regarding their equipment options during the transition to ATV.

Government intervention into receiver design is therefore unnecessary. It is also unwarranted. Plainly, the Commission should not compel consumers to purchase ATV capabilities that they do not want or -- more important -- that they cannot afford. Nor should the Commission deny consumers the opportunity to purchase lower-priced equipment that meets their viewing needs. In particular, the Commission should not prohibit or restrict the sale of NTSC receivers. An enormous embedded base of video cassette recorders, laser disc players, and other video equipment use NTSC receivers for non-broadcast purposes. To deny consumers continued access to this technology could immeasurably harm those who can least afford to convert, at an early stage, to digital television. In this regard, the Commission should be aware that digital converters will be useable in connection with any *present* or *future* NTSC receivers. As a consequence, all consumers should have a readily available and economical means of accessing digital service.[31]

The Commission should also reject the suggestion that it dictate how ATV signals should be displayed, *i.e.*, in true HDTV fashion or as a lower resolution SDTV picture.[32] Again, the Commission's goal should be to maximize consumer choice by affording manufacturers wide latitude in their design choices. If television receivers can be produced less

---

[31] Indeed, the use of such decoders may prove to be the vehicle of choice for many consumers, given the extended useful life of most television receivers.

[32] *See Notice* ¶ 78.

expensively using less expensive or sophisticated technology, consumers should be able to buy them, particularly if these receivers meet their needs.

Moreover, the Commission lacks the authority under the All-Channel Receiver Act ("ACRA") to require ATV signals to be displayed in a particular format. The U.S. Court of Appeals for the District of Columbia Circuit has previously determined that the Commission's authority under ACRA is limited to ensuring "*adequate* or *effective*" reception of all channels; the statute does *not* authorize the Commission to establish minimum performance standards.[33] Any specification that ATV receivers be required to receive HDTV as HDTV would contravene the letter and intent of the statute.[34] The Commission therefore should, as it has traditionally done, continue to rely on the marketplace to influence receiver design and satisfy consumer demand.

A related equipment issue raised by the *Notice* is whether broadcasters should be encouraged or directed to assist consumers in leasing or acquiring ATV receivers.[35] EIA and the Committee strongly believe that this is an area into which the Commission should not delve.

---

[33] *Electronic Industries Association Consumer Electronics Group v. FCC*, 636 F.2d 689, 696 (D.C. Cir. 1980) (noting that Congress declined to adopt language that would have allowed the Commission to prescribe minimum performance standards) (emphasis in original).

[34] The Commission also should not require the use of visible warning labels for NTSC receivers. *See Notice* ¶ 78. To begin with, as explained below, it would be imprudent to establish a date-certain for the termination of NTSC service. *See infra* § VI. Indeed, to require a warning label at this time would create more confusion than clarity. Second, and equally important, the Commission can rely on the marketplace to advise consumers of the benefits of ATV receivers and the limitations of NTSC-only products.

[35] *See Notice* ¶ 54.

To invite collective action by broadcasters in the consumer electronics marketplace could restrict the healthy competition which now exists. If broadcasters were allowed to choose equipment for consumers, their selection might be driven by their own economic self-interest rather than by the best interests of consumers. The public clearly would not benefit from such an environment. Moreover, to the extent such collective broadcaster involvement in the acquisition, sale or lease of equipment would involve subsidies, it would disserve the public interest. Given the Commission's efforts to eliminate or minimize subsidies in other fields subject to its jurisdiction, it simply makes no economic sense to institutionalize or sanction such subsidies where an otherwise competitive consumer electronics marketplace exists.

Collective broadcaster involvement in the acquisition, sale or lease of consumer electronics equipment would also raise the prospect of bundling. Plainly, the bundling of equipment and service is contrary to the public interest. The unbundled availability of consumer electronics equipment, separate and apart from broadcast services, is one of the principal reasons the United States has such an extraordinarily competitive equipment market. This competition is responsible for the cornucopia of equipment from which consumers are able to choose. By contrast, the one U.S. video service market in which service and equipment are bundled has historically been characterized by high prices and limited consumer choice.[36] The Commission should therefore be reluctant to promote concerted broadcaster action. Rather, it should continue

---

[36] Moreover, the bundled set-top boxes required by cable television systems have historically had the added disadvantage of interfering with the features and functions of competitively supplied equipment. *See Implementation of Section 17 of the Cable Television Consumer Protection and Competition Act of 1992, Compatibility Between Cable Systems and Consumer Electronics Products*, First Report and Order, 9 FCC Rcd 1981 (1994).

to rely on the intensely competitive consumer electronics marketplace to satisfy the needs of consumers during the transition to ATV.

V. INITIAL ELIGIBILITY TO OBTAIN ATV CHANNELS SHOULD BE LIMITED TO EXISTING BROADCASTERS, SUBJECT TO CERTAIN CONDITIONS

EIA and the Committee continue to support the allocation of 6 MHz for each ATV channel.[37] Six MHz is the minimum spectrum required for HDTV today and will provide a high technological ceiling for future enhancements. EIA and the Committee also continue to support the allocation of ATV channels to existing broadcasters without cost, but subject to the conditions set forth below.[38]

If there is one ATV-related issue as to which all agree, it is that the transition to ATV -- while uncertain in its course -- should protect and promote the continued availability of free, over-the-air broadcasting. Because 98 percent of American households have at least one television, and many have two or more,[39] the role which free, over-the-air television has played -- and should continue to play -- in our society is difficult to overstate. By limiting initial eligibility for ATV licenses to existing broadcasters, the Commission will ensure that free television thrives during the transition to the new ATV environment. It will also preserve competition in local video service markets.

---

[37] *See Notice* ¶ 21.

[38] *See id.* ¶¶ 27, 31.

[39] EIA Market Research Department (June 1995 figures).

The Commission certainly should not consider auctioning this spectrum.[40] As a legal matter, the Commission can only auction ATV spectrum if it finds that the spectrum will principally be used to provide subscription video services.[41] Such a conclusion, however, would be at odds with the Commission's commitment to, and would signal the death knell of, free over-the-air broadcasting. The Commission should also recognize that in the transition to ATV, broadcasters will make strategic investments in new studios, transmission facilities, and programming. Adding the cost of a successful auction bid to this list of investments would jeopardize the ability of many broadcasters to make such a transition. At a minimum, it would strain their ability to introduce this new technology promptly and develop HDTV programming.

None of this is to say that broadcasters should be given *carte blanche* to use their ATV spectrum as they see fit. If broadcasters use their ATV spectrum for services other than free, over-the-air television programming, *i.e.*, if they use it to provide revenue-producing ancillary data services or subscription video services, the Commission should assess these broadcasters spectrum fees (to the extent it has the authority to do so). There is no public policy reason why broadcasters should be permitted to use valuable spectrum, without charge, to provide subscription services, particularly when licensees providing similar competing services are now required to pay for their spectrum.

The Commission should also make clear its willingness and intent to reassign ATV spectrum if a broadcaster is either uninterested or unable to make the transition to ATV,

---

[40] *See Notice* ¶ 31.

[41] *See* 47 U.S.C. § 309(j).

or if it fails to satisfy its HDTV programming obligations. In this regard, EIA and the Committee support the use of date-certain application and construction deadlines. Such deadlines are necessary to ensure continued progress towards the widespread availability of terrestrial ATV broadcasting. Simply stated, broadcasters should not be permitted to tarry in making the transition to ATV. The time periods suggested by the *Notice* appear to represent a carefully crafted balance between the need to move promptly towards ATV deployment and the broadcasters' need to develop and implement individual transition plans.[42]

EIA and the Committee recognize and are sympathetic to the fact that some broadcasters operating in small markets may find it difficult to meet the same deployment schedule as broadcasters operating in larger markets. EIA and the Committee submit that the Commission should address the circumstances of individual broadcasters on a case-by-case basis.[43] We also believe that special consideration should be given to non-commercial broadcasters. In particular, the Commission's ATV rules should be flexible enough to ensure that these broadcasters retain their current non-commercial character. If non-commercial stations were required or permitted to use commercial mechanisms to fund their transition to ATV, the character of these non-commercial broadcasters would change and the public would suffer accordingly.

---

[42] *See Notice* ¶ 63.

[43] Not all broadcasters that operate in small markets will have difficulty meeting the Commission's application and construction deadlines, particularly if they obtain HDTV programming from the networks and use NTSC for local programming.

VI. THE COMMISSION SHOULD NOT DECIDE NOW WHEN TO TERMINATE NTSC BROADCASTING

In the *Notice*, the Commission has questioned whether a fixed date for terminating NTSC broadcasting remains the best mechanism for speeding the transition to ATV.[44] In this regard, the *Notice* asks whether objective benchmarks such as the number of households that rely on NTSC broadcasting or the availability of inexpensive consumer equipment should be used to determine the length of the ATV transition period.[45]

EIA and the Committee submit that it is premature for the Commission to project *now* when or how NTSC broadcasting should be terminated *in the future*. As a general principle, the Commission should terminate NTSC only when there is no longer a substantial number of households which depend exclusively on NTSC for access to free, over-the-air broadcasting services. The Commission should not underestimate the role -- which is rivaled only by radio -- that television plays in providing news, information, and entertainment to the American public. More specifically, and perhaps more directly, the Commission should not put ATV at risk by prematurely terminating NTSC and creating an enormous societal and political backlash against ATV.

Although EIA and the Committee anticipate that ATV receivers will be very popular at a very early stage of the transition process, ATV will take time to establish itself in the marketplace. Even after ATV broadcasting is widespread and substantial numbers of consumers own ATV receivers, there will remain a large embedded base of NTSC products.

---

[44] *See id.* ¶ 54.

[45] *See id.* ¶ 53.

In this regard, three points merit the Commission's serious consideration. First, consumer electronics products have a long useful life. Consumers expect to use them for an extended period of time. Second, many consumers own multiple TVs, VCRs, and peripheral video devices. Not all of these devices will be replaced at the same time or with the acquisition of the first ATV receiver. Third, low income households, least able to afford new consumer products, arguably depend the most on the longevity of the products they buy. The public interest would not be served by disenfranchising these households.

The possible emergence of low-cost converter devices should ameliorate the impact of terminating NTSC, but any prediction as to when these devices will become ubiquitous is subject to substantial uncertainties.[46] Indeed, at this point, the Commission cannot reasonably assume whether or when such devices will resolve any of these transitional issues. The industry's experience with another technological development, the compact disc ("CD") player, should be instructive on this point. No one would dispute that the arrival of high-quality CD sound, together with user friendly CD players and discs, have quickly introduced home audio to a new dimension. CDs have caught on; they have displaced other technologies; and they have done so quickly. Yet, ten years ago, no one knew -- or could have accurately predicted -- how quickly CD technology would be adopted by the American public.

The Commission, however, can profitably address today the kinds of factors that it will consider at a later date, such as availability of low-cost digital converters and the amount

---

[46] One factor that will affect the cost and availability of these devices is the development of a single standard for over-the-air broadcasting and cable transmission of ATV signals. A single standard will produce economies of scale for manufacturers, and thus reduce the cost of converter devices for consumers.

of ATV programming then available.[47] In this regard, the Commission's primary consideration should be the number of households which remain dependent on NTSC service. In other words, the Commission's decision to turn off NTSC should be based not on the number of homes that have ATV equipment, but rather on the number of homes that rely exclusively on over-the-air NTSC broadcasting.[48]

The Commission can also productively consider whether a national cutover to ATV or a market-by-market approach would best serve the public interest. A market-by-market approach has the advantage of accelerating the termination of NTSC in locations where its continuation no longer serves any economic or public purpose. Such an approach, however, could create significant distribution problems for manufacturers and retailers of consumer electronics equipment, and thus availability problems for consumers. It would also create problems for consumers who move from an NTSC-ATV market to an ATV-only market. A market-by-market approach would also deny consumers the benefits of the economies of scale which manufacturers would enjoy if there were a national cutover to ATV.

---

[47] If the Commission does adopt specific measures for terminating NTSC transmission, the Commission should acknowledge that it is doing so on the basis of very little concrete information and that these measures will be reexamined when more information becomes available.

[48] *See Notice* ¶ 53; *see also* Reply Comments of EIA/ATV Committee, MM Docket No. 87-268, at 9 (Jan. 31, 1992).

VII. THE COMMISSION SHOULD PROMPTLY RECOVER AS MUCH CONTIGUOUS TELEVISION SPECTRUM AS POSSIBLE

In the *Notice*, the Commission has posed a number of questions regarding the recovery of spectrum used for NTSC, whether and how ATV licensees should be "repacked" once NTSC has been terminated, and how much contiguous spectrum might be recoverable.[49] These questions highlight the trade-off between the costs of transitioning to ATV and the value of the spectrum that will be recovered at the end of the transition. As a general principle, EIA and the Committee support the recovery of NTSC channels once the transition to ATV is complete, as well as the Commission's efforts to create contiguous blocks of recovered spectrum. Undoubtedly, many of the commenters -- including some of the Committee's members -- have already developed proposals regarding the use of this recovered spectrum for new and innovative services.

To facilitate the recovery of contiguous spectrum, the Commission should make clear to broadcast licensees that their NTSC spectrum is on "loan," pending their transition to ATV, and that their rights to this spectrum are limited. The Commission should also consider a number of economic incentives, as well as regulatory mechanisms, to speed the recovery of this spectrum. The relocation of 2 GHz microwave licensees to make way for Personal Communications Services ("PCS") should be instructive in this regard. There, a number of mechanisms are being employed. In the unlicensed PCS band, a consortium of device manufacturers plans to provide incumbents with comparable replacement facilities. In the licensed PCS band, new licensees have begun negotiations with incumbents to do the same. As

---

[49] *See Notice* ¶¶ 57-60, 86-87.

a further inducement, the Commission has made its tax certificate program available to incumbents that relocate early in the process. If the Commission has the requisite authority, it may also wish to consider, as a further inducement to expedite the transition to ATV, requiring "rent" in the form of spectrum fees from broadcasters that continue to use NTSC spectrum beyond a certain point in the transition period.

EIA and the Committee urge the Commission, as it considers these issues, to keep in mind that a beneficial byproduct of the successful deployment of robust, HDTV-driven ATV service is the rapid recovery and use of NTSC spectrum for new and innovative services. Like ATV, these new services will become essential components of the National Information Infrastructure. EIA and the Committee therefore urge the Commission to recover as much continguous spectrum as promptly as possible upon the completion of the transition to ATV.

VIII. CONCLUSION

For all of the reasons set forth above and in their prior pleadings in this proceeding, EIA and the Committee urge the Commission to adopt rules that will promote the

ubiquitous availability of HDTV-driven ATV, relying to the maximum extent feasible on consumer choice and competitive marketplace forces.

Respectfully submitted.

ELECTRONIC INDUSTRIES ASSOCIATION
ADVANCED TELEVISION COMMITTEE

By: _____
Peter F. McCloskey
President
Electronic Industries Association

By: _____
F. Jack Pluckhahn
Chairman
Advanced Television Committee

2500 Wilson Boulevard
Arlington, Virginia 22201
(703) 907-7600

Of Counsel:

Joseph P. Markoski
Marc Berejka
Squire, Sanders & Dempsey
1201 Pennsylvania Avenue, N.W.
Post Office Box 407
Washington, D.C. 20044
(202) 626-6600

November 20, 1995

EIA/ATV Committee Company Participants

Advanced Television Test Center
Alpha Industries, Inc.
AMP Inc.
AT&T
AVX Corporation
Belden
Bellcore
BMC Mask Operations
Bowman, Inc.
Cable Television Labs
Chaseman Enterprises International
Corning, Inc.
Echelon Corporation
Emerson Radio Corporation
Faxcast USA Inc.
Fiber Options, Inc.
G.P.S. Standard USA
General Electric Co.
General Instrument Corp.
Great! American Oak
GTE Corporation
Harris Corp.
HDTV Newsletter
Hitachi Home Electronics
Hughes Network Systems, Inc.
IBM Corporation
ITT Corporation
Joseph Audio
Link International
Magnascreen Corp.
Matsushita Electric Corp.
Mitsubishi Consumer Electronics America
Mobile Video Products
Motorola, Inc.
NEC Technologies, Inc.
NHK Enterprises America, Inc.
Panasonic Company
Philips Consumer Electronics
Philips Electronics N.A. Corp.
Polaroid Corp.
Protelcon Inc.
Regal Tech.
RF Link Technology, Inc.
Scientific-Atlanta, Inc.
Sharp Electronics Corp.
Sony Electronics, Inc.
Thomas Electronics, Inc.
Thomson Consumer Electronics
Toshiba America Consumer Products
TRW, Inc.
University of Houston
Vidikron of America, Inc.
Watkins-Johnson Company
Wireworld by David Salz, Inc.
XLO Electric Company
Zenith Electronics Corporation