DOCKET FILE COPY ORIGINAL

ORIGINAL

Before the
Federal Communications Commission
Washington, DC 20554

RECEIVED

JUN 23 1997

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Implementation of Section 304 of the Telecommunications Act of 1996	)	CS Docket No. 97-80
	)	
	)	
Commercial Availability of Navigation Devices	)	
	)	

REPLY COMMENTS

THE WIRELESS CABLE ASSOCIATION INTERNATIONAL, INC.

Paul J. Sinderbrand
Robert D. Primosch
Wilkinson, Barker, Knauer & Quinn
1735 New York Avenue, N.W.
Washington, D.C. 20006
(202) 783-4141

Its Attorneys

June 23, 1997

TABLE OF CONTENTS

EXECUTIVE SUMMARY

In adopting Section 629 of the Telecommunications Act of 1996, Congress stated that the Commission should not design its rules for commercial availability of navigation devices in a manner which stifles the development of new technologies. As the Commission is aware, the wireless cable industry is on the verge of launching digital wireless cable systems in major markets across the United States, and has asked the Commission to modify its rules to enhance the ability of wireless cable operators to provide two-way services over MDS and ITFS frequencies. In effect, wireless cable is in the process of reinventing itself for the digital age, and thus for all practical purposes remains an industry that is still in its embryonic stages of development when compared to incumbent wired cable systems. Accordingly, WCA urges the Commission to adopt a regulatory approach that relies on marketplace forces rather government intervention to ensure commercial availability of navigation devices.

In particular, WCA believes that the established benefits of marketplace competition (as exemplified by the recent experience of the DBS industry) militate strongly in favor of a sunset of the Commission's Section 629 rules (or, at the very least, the Commission's proposed "anti-subsidy" rule) for any MVPD that is subject to "effective competition." Furthermore, the Commission should avoid imposing any equipment standardization requirements on the wireless cable industry, especially those which relate to portability and/or interoperability of navigation devices. Apart from the fact that such requirements are technically and economically unrealistic, the imposition of such requirements would be flatly inconsistent with the Commission's long standing refusal to require wireless cable operators to abide by any particular technical standard. The Commission's sensible, market-based approach to technical standards has been very beneficial to the wireless cable industry, and there is no reason for the Commission to pursue a different course now.

Finally, WCA requests that the Commission (1) exclude wireless cable antennas and downconverters from the equipment covered by its Section 629 rules; (2) temper its "right to attach" concept to accommodate signal piracy and signal leakage considerations; and (3) protect proprietary rights in technology and preserve contractual relationships that provide incentives for innovation in the design and manufacture of navigation devices.

Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
Implementation of Section 304 of the Telecommunications Act of 1996	)	CS Docket No. 97-80
	)	
	)	
Commercial Availability of Navigation Devices	)	
	)	

To: The Commission

REPLY COMMENTS

The Wireless Cable Association International, Inc. ("WCA"), by its attorneys, hereby submits its reply to certain of the initial comments filed with respect to the Commission's *Notice of Proposed Rulemaking* ("*NPRM*") in the above-captioned proceeding.[1/]

I. INTRODUCTION.

As noted in numerous trade press articles and by WCA itself in recent filings before the Commission, the wireless cable industry is approaching a critical juncture in its ongoing attempt to provide American consumers with additional choices of multichannel video and ancillary services to

---

[1/] WCA is the principal trade association of the wireless cable industry. Its membership includes virtually every wireless cable operator in the United States; the licensees of many of the Multipoint Distribution Service ("MDS") stations and Instructional Television Fixed Service ("ITFS") stations that lease transmission capacity to wireless cable operators; producers of video programming; and manufacturers of wireless cable transmission and reception equipment. As noted by the Commission, it appears that wireless cable systems would qualify as "multichannel video programming systems" under Section 629 of the Telecommunications Act of 1996 (the "1996 Act") and thus are subject to Act's provisions with respect to commercial availability of navigation devices. *NPRM* at ¶ 14. As discussed in greater detail herein, Section 629 raises a variety of issues that will bear directly on the wireless cable industry's ability to compete effectively with incumbent cable and DBS operators. Accordingly, WCA has a direct and substantial interest in the outcome of this proceeding.

the home. Less than a year ago the Commission released its watershed decision authorizing wireless cable operators to expand their channel capacity significantly through deployment of digital compression technology.[2/] By the end of this year, the Commission can expect to see a flurry of digital wireless cable system launches in major markets across the United States.[3/] More recently, the industry recently filed a Petition for Rulemaking requesting that the Commission modify its rules in a manner that will promote the ability of wireless cable operators to use MDS and ITFS channels to provide two-way services.[4/] If granted, the Petition will enable wireless cable operators to supplement their digital multichannel video service with a broad variety of two-way and interactive services, including Internet access and high-speed data transmission. In effect, wireless cable is in the process of reinventing itself for the digital age, and thus for all practical purposes remains an industry that is still in its embryonic stages of development when compared to incumbent wired cable systems.

Against this backdrop, WCA must emphasize that Congress clearly did not intend to have the Commission design its rules for commercial availability of navigation devices (the "Section 629 rules") in a manner which stifles the development of new technologies. Implicit in Congress' approach is the basic idea that reliance on the marketplace, not regulation, is the most efficient and effective way to ensure that multichannel video programming distributors ("MVPDs") adopt policies

---

[2/] Request for Declaratory Ruling on the Use of Digital Modulation by Multipoint Distribution Service and Instructional Television Fixed Service Stations, Declaratory Ruling and Order, FCC 96-304, DA 95-1854, at 2-3 (rel. July 10, 1996) [the "*Digital Declaratory Ruling*"].

[3/] *See, e.g.*, Gibbons, "PCTV's Story: Waiting for Digital," *Multichannel News*, at 54 (Dec. 9, 1996); Barthold, "A Foggy Road Ahead," *Cable World*, at 21 (Jan. 27, 1997); Barthold, "Going Digital," *Cable World*, at 22 (Jan. 27, 1997); Breznick, "BellSouth Eyes Atlanta, New Orleans, Miami for '98 MMDS Launches," *Cable World*, at 12 (Dec. 2, 1996).

[4/] Petition for Rulemaking, File No. RM-9060 (filed Mar. 14, 1997).

that best serve the interests of consumers. Accordingly, WCA urges the Commission to sunset all of its Section 629 rules (or, at the very least, its "anti-subsidy" rule) with respect to any MVPD that is subject to "effective competition."

In addition, WCA strongly opposes any suggestion that the Commission should impose equipment standardization requirements on the wireless cable industry. Contrary to what has been suggested by certain programmers and equipment retailers in this proceeding, as a practical matter it is virtually impossible to design a navigational device that will work with every single wireless cable system, let alone every wired cable, DBS and LMDS system in the United States. Moreover, even if it were possible to design such a navigational device through voluntary industry standards, the enormous time delays, manufacturing and design costs and the resulting need to replace the existing installed base of noncompliant navigational devices would effectively break the wireless cable industry.

Finally, for the reasons set forth herein, WCA requests that the Commission exclude wireless cable antennas and downconverters from the scope of its Section 629 rules, and that the Commission adopt rules that minimize signal piracy and signal leakage and which promote innovation in the design and manufacture of navigation devices.

II. DISCUSSION.

A. The Commission Should Sunset Its Section 629 Rules with Respect to Any Individual MVPD That Faces Effective Competition.

It is clear that the Commission has come to rely, with good reason, on the marketplace rather than regulation to foster the growth of wireless services. As the Commission recently noted with respect to LMDS:

> [N]ew advances in wireless technology have made possible a greater variety of interactive telecommunications and video services. Moreover, the 1996 Act embodies a national telecommunications policy which requires that we promote competition in telecommunications markets through removing regulatory barriers to entry, encouraging technological developments, and ensuring that consumer demand is met.[5/]

WCA submits that the Commission should apply the same principle here and recognize that the competitive marketplace ultimately will motivate new service providers to act in the best interests of subscribers. Indeed, as noted in the comments filed in this proceeding by CellularVision USA, Inc. ("CellularVision"), the legislative history of the Telecommunications Act of 1996 (the "1996 Act") reflects that Congress itself wanted the Commission to take the marketplace into account when applying its Section 629 rules to new technologies and services:

> The conferees intend that the Commission avoid actions which could have the effect of freezing or chilling the development of new technologies and services. . . . Thus, in implementing this section, the Commission should take cognizance of the current state of the marketplace and consider the results of private standards setting activities.[6/]

The "current state of the marketplace" is undisputed: the wired cable industry is and will continue to be the dominant provider of multichannel video programming service in the United States for the foreseeable future.[7/] Thus, when wireless cable operators begin launching digital systems later

---

[5/] *Rulemaking to Amend Parts 1, 2, 21, and 25 of the Commission's Rules to Redesignate The 27.5-29.5 GHz Frequency Band, To Reallocate the 29.5-30.0 GHz Frequency Band, To Establish Rules and Policies for Local Multipoint Distribution Service And For Fixed Satellite Service*, CC Docket No. 92-297, FCC 97-82 at ¶ 205 (rel. Mar. 13, 1997).

[6/] Comments of CellularVision USA, Inc., CS Docket No. 97-80 at 7 (filed May 16, 1997), *quoting* H.R. Conf. Rep. No. 104-458, 104th Cong., 2d Sess. 181 (1996). *See also*, Comments of Corporate Media Partners d/b/a/ *americast*™, CS Docket No. 97-80, at 3 (filed May 16, 1997).

[7/] According to a recent report by Strategis Group, cable's subscriber base will grow to nearly 68 million by 2002, whereas wireless cable is projected to achieve a subscriber base of 3.7 million within

this year and in 1998, they will be doing so in direct competition with incumbent cable operators. As a result, wireless cable operators will have every incentive to offer packages of services and equipment that are attractive to subscribers, for if they fail to do so those same subscribers will turn to incumbent cable systems and other competing MVPDs. The comments of General Instrument, a major supplier of digital set-top boxes to the wireless cable industry, are instructive on this point:

> When consumers have access to *multiple* service providers, . . ., the benefits of commercial availability are obtained even if each service provider is the only source of consumer equipment that can be used on its system. In this case, competition among MVPDs will lower equipment prices and spur innovation in the same way that having independent outlets does when there is a single MVPD . . . . Here, competition among delivery systems provides the same benefits as does competition in the sale of equipment for any particular system.[8/]

As noted in the comments of Primestar Partners, L.P. ("Primestar"), the DBS industry is an excellent example of this phenomenon. Like many wireless cable systems, most DBS providers use a different digital technology, each requiring a different type of consumer reception unit.[9/] However, because each DBS provider must compete against incumbent cable, wireless cable and other DBS providers, the DBS industry has initiated a variety of equipment sales and lease arrangements that give consumers a variety of choices when selecting a package of DBS services and equipment.[10/] As a result, DBS CPE has become widely available under terms and conditions that are beneficial to the

---

that same time period. *Communications Daily*, at 7 (June 2, 1997).

[8/] Comments of General Instrument Corporation, CS Docket No. 97-80, at 92 (filed May 16, 1997) [emphasis in original] [the "General Instrument Comments"].

[9/] Comments of Primestar Partners, L.P., CS Docket No. 97-80, at 8 (filed May 16, 1997).

[10/] *Id.*

consumer, *without regulations that mandate the commercial availability of navigation devices.*[11/] Since all MVPDs in a competitive environment have incentives to give consumers maximum flexibility when purchasing services and equipment, there is every reason to expect that the intense competition between wireless cable, wired cable and DBS providers will replicate the results achieved under the DBS model alone. WCA thus submits that the DBS model strongly suggests that a market-based approach to regulation of commercial availability of navigation devices will more effectively achieve the consumer benefits envisioned by Congress.[12/]

Accordingly, WCA requests that the Commission sunset all of its commercial availability rules with respect to any MVPD that faces "effective competition" within its service area.[13/] As demonstrated in the comments filed by General Instrument and Primestar, the inseparable link

---

[11/] *Id.* at 9. *See also*, Joint Comments of DirecTV, Inc. and Hughes Network Systems, Inc., CS Docket No. 97-80, at 3-5 (filed May 16, 1997).

[12/] *See*, Comments of The Business Software Alliance, CS Docket No. 97-80, at 5 (filed May 16, 1997).

[13/] For this purpose, WCA recommends that the Commission use the "effective competition" standard set forth in the 1992 Cable Act, as amended by the 1996 Act. As applied to wireless cable, "effective competition" would exist where (1) the wireless cable system serves fewer than 30% of the households within its service area; (2) the wireless cable system's service area (i) is served by at least two unaffiliated multichannel video programming distributors each of which offers comparable video programming to at least 50% of the households in that area and (ii) the number of households subscribing to programming services offered by MVPDs other than the wireless cable system exceeds 15% of the households therein; (3) an MVPD operated by the franchising authority for the wireless cable system's service area offers video programming to at least 50% of the households in that area; or (4) a local exchange carrier or its affiliate (or any MVPD using the facilities of such carrier or its affiliate) offers comparable video programming services within the wireless cable system's service area. *See* 47 U.S.C. §543(l)(1)(A)-(D). For purposes of this rule, a wireless cable system's "service area" should be its *actual* service area. Reliance on the actual service area would be consistent with how the Commission evaluates whether effective competition exists between cable and wireless cable operators (47 C.F.R. § 76.905(e)(1)-(2)) and would eliminate any confusion stemming from the fact that the *protected* service areas of MDS facilities differ depending on whether the MDS authorization was acquired before or during the MDS BTA auction. 47 C.F.R. §§ 21.902(d)(1), 21.933(a).

between MVPD services and equipment means that competition with respect to one invariably yields competition with respect to the other, and that an "effective competition" exception would therefore satisfy the three statutory criteria for sunset of the Commission's Section 629 rules.[14/]

WCA further submits that even if the Commission determines otherwise, it should at the very least sunset its "anti-subsidy" rule for any MVPD subject to effective competition.[15/] As noted in the legislative history of Section 629, where services are not rate regulated, any cross subsidy cannot be sustained and Section 629's prohibition on such subsidies is no longer necessary.[16/] The Commission thus has already suggested that no anti-subsidy prohibition should apply to cable systems subject to effective competition.[17/] For the reasons set forth above, a similar exception to the anti-subsidy rule should apply with equal force to other MVPDs as well.

B. The Commission Should Not Impose Any Equipment Standardization Requirements on the Wireless Cable Industry.

The Commission has requested comment on whether it should impose portability and interoperability requirements for navigation devices as a means of enhancing their commercial

---

[14/] Comments of the National Cable Television Association, CS Docket 97-80, at 42-44 (filed May 16, 1997) [the "NCTA Comments"]; General Instrument Comments at 91-94; Comments of GTE Service Corporation, CS Docket No. 97-80, at 9-10 (filed May 16, 1997). The three statutory criteria for sunset of the Commission's Section 629 rules are (1) the market for multichannel video programming distributors is fully competitive; (2) the market for converter boxes, and interactive communications equipment used in conjunction with that service is fully competitive; and (3) elimination of the regulations would promote competition and the public interest. 47 U.S.C. § 549(e).

[15/] See Comments of Pacific Bell Video Services, CS Docket No. 97-80, at 5-6 (filed May 16, 1997).

[16/] *NPRM* at ¶ 40, *quoting* 142 Cong. Rec. S700 (Feb. 1, 1996).

[17/] *Id.*

availability.[18] In response, certain programmers and retailers have urged the Commission to do exactly that, apparently with a view toward developing a set-top box that can be taken anywhere and used with any type of MVPD regardless of transmission technology.[19] For the reasons set forth below, WCA strongly opposes any such equipment standardization requirements for the wireless cable industry.

At the outset, it should be emphasized that in the past the Commission has fostered technical innovation in the wireless cable industry by refusing to impose technical standards or require wireless cable systems to use any particular type of technology. For instance, in its *Declaratory Ruling and Order* authorizing wireless cable operators to deploy digital technology, the Commission refused to adopt one or more "standard" digital technologies, thereby allowing the simultaneous deployment of different authorized digital technologies in the same market by different licensees.[20] The resulting benefits to the industry have been substantial: in large measure due to the Commission's "hands off" approach, wireless cable technology has developed to the point where digital, two-way multichannel video and ancillary services via wireless frequencies will soon become a reality in many areas of the

---

[18] *NPRM* at ¶ 65.

[19] *See, e.g.*, Comments of Viacom Inc., CS Docket No. 97-80, at 6-9 (filed May 16, 1997); Comments of Tandy Corporation, CS Docket No. 97-80, at 9-10 (filed May 16, 1997); Comments of the Consumer Electronics Retailers Coalition, CS Docket No. 97-80, at 15-26 (filed May 16, 1997).

[20] *Digital Declaratory Ruling* at ¶¶ 14-15 (rel. Jul. 10, 1997). *See also, Amendment of Parts 21, 43, 74, 78, and 94 of the Commission's Rules Governing Use of the Frequencies in the 2.1 and 2.5 GHz bands Affecting: Private Operational-Fixed Microwave Service, Multipoint Distribution Service, Multichannel Multipoint Distribution Service, Instructional Television Fixed Service, and Cable Television Relay Service*, 5 FCC Rcd 6410, 6417 (1990) ["It was not and is not the Commission's intention to require the use of Comband transmission technology . . . . [W]e do intend, when possible, to accommodate the widest possible voluntary usage of this or any other technology that can achieve spectrum efficiencies."].

United States. For this reason alone, the Commission should not reverse field and now impose constraining standards on wireless cable operators in the name of promoting CPE portability and interoperability.

Furthermore, aside from the fact that neither Section 629 nor its legislative history requires the Commission to adopt portability or interoperability requirements,[21] as a practical matter it would be virtually impossible to develop a cost-efficient design for a navigation device that could be used to receive the services of any MVPD at any place at any time.[22] At the heart of the problem is the unavoidable reality that different MVPDs use incompatible transmission and encoding technologies to deliver programming to subscribers. For example, as pointed out by Motorola, variations in operating characteristics and conditional access schemes even within the same service effectively preclude widespread portability of navigation devices.[23] This is certainly true with respect to the wireless cable industry, where operators use a variety of operating characteristics and conditional access schemes that are not compatible with one another. And, that gulf will only widen as digital

---

[21] *See, e.g.,* General Instrument Comments at 29-30.

[22] *Id.* at 36 ["GI estimates that the incremental cost to create a consumer terminal that would accommodate the full range of transmission schemes and operating environments . . . would be significantly more (approximately double) the cost of comparable terminals designed to support a single network architecture."].

[23] Comments of Motorola, Inc., CS Docket No. 97-80 at 17 (filed May 16, 1997) "[A] given cable set-top box is not necessarily portable across the areas served by different operators so a consumer who moves may need a different set-top box, even if they were available at the retail level."][the "Motorola Comments"]; General Instrument Comments at 35 ["[C]able navigation devices are not portable today *not* because cable operators had or have any interest in preserving for themselves the monthly lease revenues for this equipment. Rather, it is simply because as each of the currently 11,000+ cable systems were established and upgraded, they contracted for and implemented a variety of technologies to secure and manage their respective networks and to respond to the particular functionality demands of their local communities."] [emphasis in original].

technology is deployed and interactive services are expanded. The different transmission formats and modulation schemes used by wireless cable and other platforms similarly preclude the design of a navigational device that is interoperable between MVPDs in the same or different services.[24/]

Moreover, even if it were possible for industry standards to develop, it is no solution to suggest that the Commission should adopt portability or interoperability requirements based on industry standards.[25/] The wireless cable industry is on the verge of launching competitive digital systems, and thus cannot afford to wait for industry standard-setting groups to complete what is sure to be, even if successful, a long and involved process for developing portable and interoperable navigational devices. As suggested by General Instrument, the better course of action is to rely on marketplace forces and voluntary industry efforts that already are achieving substantial strides in this area.[26/]

C. *The Commission Should Exclude Wireless Cable Antennas and Downconverters From the Types of Equipment Covered by its Section 629 Rules, and Should Otherwise Adopt Rules That Minimize Opportunities for Signal Piracy, Prevent Signal Leakage and Preserve Contractual Relationships With Manufacturers That Promote Innovation.*

WCA generally supports the comments of other MVPDs insofar as they argue that the Commission should exclude from its Section 629 rules inside wiring and network interface or other similar devices that perform security or access control functions but are physically located at the point

---

[24/] *See, e.g.,* Comments of the Telecommunications Industry Association, CS Docket No. 97-80, at 16 (filed May 16, 1997) ["Most of the new MMDS or wireless cable systems are not portable or interoperable. Thus, efforts to standardize or make more uniform the definitions of portability and interoperability will probably be unfair to new entrants."]; Motorola Comments at 17-18.

[25/] *See, e.g.,* Comments of the Consumer Electronics Retailers Coalition, CS Docket No. 97-80, at 24-26 (filed May 16, 1997).

[26/] General Instrument Comments at 36-38.

of entry (either outside or inside) the consumer's residence.[27] In this regard, WCA notes that NCTA has asked the Commission to specifically exclude the drop cables from the cable taps to the home.[28] WCA supports this position, and for similar reasons requests that the Commission also exclude from the scope of Section 629 any wireless cable antennas and downconverters used by subscribers to receive wireless cable service. Wireless cable service cannot be received without the aid of a special antenna capable of receiving microwave signals in the 2 GHz band and a downconverter capable of lowering those microwave frequencies to a level receivable by a standard television set. The antenna and downconverter are, in effect, the "local drop" that enables a subscriber to become connected to a wireless cable operator's network, and the courts have clearly established that the use of both to receive wireless cable service without authorization is "signal piracy" in violation of Section 705 of the Communications Act of 1934, as amended.[29] Accordingly, were wireless cable antennas and downconverters to become commercially available in conjunction with navigational devices, theft of wireless cable service would become rampant, which is precisely what Congress wanted to avoid in adopting Section 629.[30]

---

[27] NCTA Comments at 18-19.

[28] *Id.* at 19.

[29] *California Satellite Systems v. Seimon*, 767 F.2d 1364 (9th Cir. 1985).

[30] As noted by the Commission, Section 629 "specifically recognizes that cable and other telecommunications system operators have a valid interest, which the Commission should continue to protect, in system or signal security and in preventing theft of service . . . and does not authorize the Commission to adopt regulations which would jeopardize the security of a telecommunications system." *NPRM* at ¶ 4, *quoting* H.R. Rep. No. 104-204, 104th Cong., 1st Sess. 112 (1995). For this reason, WCA also agrees that the commercial availability requirements should apply to non-security functions of customer CPE only, and that under all circumstances MVPDs should retain control over the security functions of that equipment. However, MVPDs should retain the flexibility to supply boxes that offer security and non-security boxes on an integrated basis if they choose to do so.

In addition, WCA agrees that any "right to attach" customer CPE must be tempered by signal piracy and signal leakage considerations. As noted by a number of commenting parties, the "right to attach" that developed under the telephone model is inappropriate for the MVPD model given the fundamental differences in the ways subscribers access a telephone versus an MVPD network. Accordingly, the "do no harm" concept set forth in the *Carterfone* decision and its progeny must be expanded in this proceeding to include not only actual damage to the network but increased risks of signal piracy and signal leakage that seriously undermine an MVPD's business. Given the prior success the Commission has had with allowing the wireless cable industry to develop its technology without government interference, the Commission should allow wireless cable operators to establish and enforce their own standards as to what may be attached to their systems and how those attachments are accomplished.

Finally, WCA believes the Commission is correct in observing that its Section 629 rules must protect proprietary rights in technology and must not prohibit contractual relationships between manufacturers and MVPDs that produce new, innovative services to the public.[31/] That type of innovation thrives where those who develop the technology retain their intellectual property rights therein and the right to freely select the entities to whom they will license their products. WCA therefore submits that the Commission should not incorporate any mandatory technology licensing requirement into its Section 629 rules, nor should it ban exclusive contracts between manufactures and MVPDs or include any type of manufacture/MVPD contract within its Section 629 definition of "affiliate."

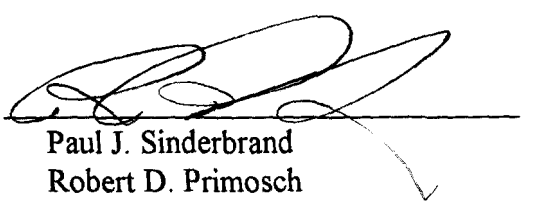
[31/] *NPRM* at ¶¶ 69-70.

III. CONCLUSION.

WCA reiterates that the Commission should not view Section 629 as an invitation to eschew the sound market-based regulatory policies that have fostered the growth of the wireless cable industry and other alternative MVPDs. Certainly where the wireless cable industry is concerned, the marketplace provides more than enough incentive to develop and package new services and equipment in the most customer friendly manner possible. The imposition of extensive commercial availability requirements at this critical juncture of the industry's existence will only serve to stifle the technical innovation and investment that ultimately will produce the same and probably better results than Congress envisioned in adopting Section 629. Therefore, WCA respectfully requests that the Commission adopt its rules implementing Section 629 in conformity with the market-based recommendations set forth above.

Respectfully submitted,

THE WIRELESS CABLE ASSOCIATION
INTERNATIONAL, INC.

By: 

Paul J. Sinderbrand
Robert D. Primosch

WILKINSON, BARKER, KNAUER & QUINN
1735 New York Avenue, N.W.
Washington, D.C. 20006
(202) 783-4141

Its Attorneys

June 23, 1997

CERTIFICATE OF SERVICE

I, Sheryle Price, hereby certify that on this 23rd day of June, 1997, I caused copies of the foregoing Reply Comments to be served by U.S. Mail on the following:

Aaron I. Fleishman
Arthur H. Harding
Howard S. Shapiro
Craig A. Gilley
Fleischman and Walsh, L.L.P.
1400 Sixteenth Street, N.W., Suite 600
Washington, D.C. 20036

John I. Taylor
Vice President, Public Affairs
Zenith Electronics Corporation
1000 N. Milwaukee Avenue
Glenview, IL 60025

David Alan Nall
Squire, Sanders & Dempsey
P. O. Box 407
1201 Pennsylvania Avenue, N.W.
Washington, D.C. 20044

Allan P. Bierman
Belden Wire & Cable Company
P. O. Box 1980
Richmond, IN 47375-1980

Margaret E. Garber
1275 Pennsylvania Avenue, N.W.
Washington, D.C. 20004

Daniel L. Brenner
Neal M. Goldberg
Loretta P. Polk
1724 Massachusetts Avenue, N.W.
Washington, D.C. 20554
Counsel to the National Cable
Television Association, Inc.

Becca Gould
Vice President, Public Policy
J.D. Marple
Manager, Legislative Policy
Business Software Alliance
1150 18th Street, N.W.
Suite 700
Washington, D.C. 20036

Jonathan D. Blake
Kurt A. Wimmer
Erin M. Egan
Covington & Burling
1201 Pennsylvania Avenue, N.W.
Washington, D.C. 20004-7566

Craig A. Newman
Senior Vice President and
General Counsel
Bruce D. Gellman
Associate General Counsel
Corporate Media Partners
10880 Wilshire Boulevard, Suite 1750
Los Angeles, CA 90024

Barrett L. Brick
Cable Services Bureau
2033 M Street, N.W.
Room 703B
Washington, D.C. 20554

International Transcription Service, Inc.
2100 M Street, N.W.
Suite 140
Washington, D.C. 20037

John M. Boehm, #15550
811 South 13th Street
Lincoln, NE 68508

Marlin D. Ard
Sarah R. Thomas
Pacific Bell Video Services
140 New Montgomery Street
1522A
San Francisco, CA 94105

James F. Rogers
James H. Barker
Nandan M. Joshi
Latham & Watkins
1001 Pennsylvania Avenue, N.W.
1300
Washington, D.C. 2004-2505

Fiona J. Branton
Director, Government Relations
and Regulatory Counsel
Information Technology Industry Council
1250 Eye St., N.W., Suite 200
Washington, D.C. 20005

Colleen Boothby
Kevin DiLallo
Levine, Blaszak, Block & Boothby
1300 Connecticut Avenue, N.W.
Suite 500
Washington, D.C. 20036-1703

Quincy Rodgers
Christine G. Crafton
Faye Morrison
General Instrument Corporation
1133 21st Street, N.W.
Suite 405
Washington, D.C. 20036-3384

Bruce N. Hahn
Director of Public Policy
Computing Technology Industry Association
6776 Little Falls Road
Arlington, VA 22213

Andrew R. Paul
Senior Vice President
Satellite Broadcasting and
Communications Association
225 Reinekers Lane
Suite 600
Alexandria, VA 22314

Leslie A. Vial
1320 North Courthouse Road
Eighth Floor
Arlington, VA 22201

Richard G. Warren
Room 3831
1095 Avenue of the Americas
New York, NY 10036

Michael R. Gardner, P.C.
1150 Connecticut Avenue, N.W.
Suite 710
Washington, D.C. 20036

Stuart E. Overby
Assistant Director
Spectrum Planning
Motorola, Inc.
1350 I Street, N.W., Suite 400
Washington, D.C. 20005

Phillip L. Verveer
Francis M. Buono
Willkie, Farr & Gallagher
1155 21st Street, N.W.
Suite 600
Washington, D.C. 20036-3384

Benjamin L. Griffin
Robert L. Galbreath
Reed Smith Shaw & McClay
1301 K Street, N.W.
Suite 1100 - East Tower
Washington, D.C. 20005

Marvin Rosenberg
David Vaughan
Holland & Knight LLP
2100 Pennsylvania Avenue, N.W.
Suite 400
Washington, D.C. 20037-3202

John F. Raposa, HQE03J27
GTE Service Corporation
P. O. Box 152092
Irving, TX 75015-2092

Andre J. Lachance
GTE Service Corporation
1850 M Street, N.W., Suite 1200
Washington, D.C. 20036

Robert Sachs
Margaret A. Sofio
John S. Fouhy
The Pilot House
Lewis Wharf
Boston, MA 02110

Brenda L. Fox
Gregory L. Cannon
Suite 700
1020 19th Street, N.W.
Washington, D.C. 20036

Deborah H. Morris
George D. Callard
300 S. Riverside Plaza
Suite 1800 North
Chicago, IL 60606

John W. Pettit
Richard J. Arsenault
Drinker Biddle & Reath LLP
901 Fifteenth Street, N.W.
Washington, D.C. 20005
Counsel for Tandy Corporation

Edward Schor
Anne Lucey
Viacom Inc.
1515 Broadway
New York, NY 10036

Bill Loughrey
Director of Government Affairs
Corporate Communications Department
Scientific-Atlanta, Inc.
One Technology Parkway, South
Norcross, GA 30092-2967

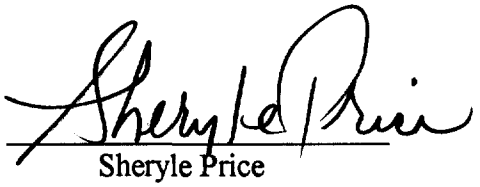
Gregg P. Shall
Pepper & Corazzini, L.L.B.
1776 K Street, N.W.
Suite 200
Washington, D.C. 20006

Glenn B. Manishin
Blumenfeld & Cohen
1615 M Street, N.W., Suite 700
Washington, D.C. 20036

John D. Heubusch
Vice President, Government Affairs
Gateway 2000, Inc.
707 D Street, N.W.
Washington, D.C. 20004

Robert S. Schwartz
Joni Lupovitz
McDermott, Will & Emery
Suite 450
1850 K Street, N.W.
Washington, D.C. 20006
Counsel to Consumer Electronics
Retailers Coalition

Grant E. Seiffert
Director of Government Relations
Telecomunications Industry Association
1201 Pennsylvania Avenue, N.W.
Suite 315
Washington, D.C. 20004-2401



Sheryle Price