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February 14, 1994

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VIA FEDERAL EXPRESS

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Mr. William F. Caton, Secretary
Office of the Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, DC 20554

Re: Reply Comments of Zenith Electronics Corporation
Implementation of Section 17 of the Cable Television
Consumer Protection and Competition Act of 1992;
Compatibility Between Cable Systems and Consumer
Electronics Equipment (ET Docket No. 93-7)

Dear Mr. Canton:

Enclosed please find an original and nine (9) copies of
the Reply Comments of Zenith Electronics Corporation
regarding the above captioned matter, submitted pursuant to
the Notice of Proposed Rule Making dated December 1, 1993.

Sincerely,


Stephen K. Weber

SKW/pd
Enclosure

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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the matter of)
)
Implementation of Section 17)
Cable Television Consumer Protection)
and Competition Act of 1992)
)
Compatibility Between Cable System)
and Consumer Electronics Equipment)

ET Docket No. 93-7

REPLY COMMENTS OF ZENITH ELECTRONICS CORPORATION

Zenith Electronics Corporation submits the following Reply Comments in response to initial comments in the above-captioned inquiry. As noted in our original comment, Zenith believes that the company brings a unique perspective to the proceedings because of its history of manufacturing and marketing both consumer electronics and cable equipment, as well as its extensive participation in the effort to establish standards for digital high-definition television. Applying this perspective, we believe it is clear that the recommendations of the Cable - Consumer Electronics Compatibility Advisory Group should be followed by the Commission.

1. A number of comments suggest that the Commission has the authority to, and should, forbid the marketing of any television which tunes other than VHF/UHF

channels unless it meets all of the new cable ready specifications in the Advisory Group proposal. It seems clear that the statute was intended only to establish standards for TVs and VCRs which are marketed as "cable ready," not to effectuate a comprehensive mandate for the entire video equipment market.

Moreover, it should also be clear that such a mandate would be bad policy. The market for video equipment is not neatly divided into broadcast-only and cable-only segments. People move -- with their TVs and VCRs -- from one cable area to another, and people move on and off the local cable system or different levels of service, some scrambled, some not. Most TV manufacturers today offer few, if any, VHF/UHF-only products in their lines, with even low-end products now incorporating multi-channel tuning. Multi-channel tuning will continue into the foreseeable future to serve millions of consumers who wish to receive only an unscrambled, basic tier of cable channels, or who have even premium channels unscrambled before they enter the home.

The market-forcing prohibition which some commenters propose would mandate that consumers without the new cable-ready equipment rent set-top boxes even to subscribe to basic cable. This clearly is not what Congress had in mind. On the contrary, rather than a federal mandate, the marketplace must decide the future of products

which will tune cable channels but will not be marketed as cable ready.

2. We believe comments promoting a 1 GHz tuning range in the new cable-ready standard are misplaced. It should be reiterated that both the cable companies that stand behind the Advisory Group recommendations and consumer equipment manufacturers have agreed that such a tuning range (and the attendant increase in cost to the consumer) is not necessary in light of new digital compression and transmission technologies.

There was solid reasoning behind the Advisory Group recommendation. It makes no sense to require consumer equipment to tune to 1 GHz when there is no such requirement for cable plants, no operator today which is building beyond 750 MHz, and little prospect that such additional capacity will be used to carry video information. It simply cannot be cost justified.

3. The Advisory Group recommendation for 100 millivolt standard for direct pick-up (DPU) was also grounded in careful analysis of needs and costs. After extensive discussion and review, this standard, itself a technical and cost challenge for the industry, was deemed the most cost effective specification for maximizing consumer benefit. In fact, 250-millivolt specification may not even be technically feasible, and in any event, is far

beyond what is economically justifiable in light of any potential advantage for consumers.

4. A suggestion in at least one comment that consumer equipment tune below 42 MHz is also impractical. The cable spectrum below Channel 2, the so called back channel, is not used for downstream subscriber video delivery. It is primarily used for intra-cable plant communications between the cable subscriber and the cable system headend. This return path is a vehicle for subscriber transactions for pay-per-view. The typical upstream transaction message is a short burst of data with a duration in the order of milliseconds. This portion of the terrestrial and cable spectrum is very crowded and noisy. It is occupied by short-wave radio communications and many commercial and industrial applications using RF energy. Because of these applications, there is a large amount of undesired signal energy and interference that is picked up by the cable plant.

Even though cable systems are using an increasing amount of fiber optic cable, which is more immune to extraneous pickup, 60% of cable plant wiring is coaxial cable, which is subject to ingress of undesired signal energy. To protect tuners in both set-top terminals and television receivers, a filter is placed in front of the tuners to attenuate signals in this portion of the spectrum.

The filters typically reject signals below Channel 2. For theoretical and practical reasons, these filters do not have a sharp cut-off and are placed sufficiently far from Channel 2 to avoid distortion of the signals at and above Channel 2. This is why the typical upstream range is 5 to 30 MHz. The other ingress problem involves interference with IF (Intermediate Frequency) operation of the receiver. A signal of +40dbmv would wreak havoc with the IF signal in the TV receiver.

Any attempt to use this spectrum for other than short **upstream** data bursts will create reception problems in set-tops and receivers. The use of spectrum above 30 MHz -- some have requested use to 42 MHz -- would present serious performance problems with television receivers in two areas: (1) distortion on Channel 2 because of filter performance at the lower edge of Channel 2; and (2) interference with IF (Intermediate Frequency) operation of the television receiver signal processing from signals in the 42 MHz region. Based upon our experience in this area, we would not recommend that downstream video be placed in this portion of the spectrum.

* * * * *

The Advisory Group was open to opinions and comments of anyone who wished to contribute. It has developed a realistic proposal for dealing with an extremely complex subject in a constant state of flux. It carefully balances all legitimate interests and is consistent with the letter and spirit of the statute. The kind of tinkering suggested by some of the comments will only generate lawsuits, cause a storm of fully justified consumer protest, and cause the whole carefully-wrought balance to unravel. It must be resisted if the public is to be served by these proceedings.

Respectfully submitted,

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