

September 7, 2000

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Ms. Magalie Roman Salas
Office of the Secretary
Federal Communications Commission
The Portals, 445 Twelfth Street, S.W.
Washington, DC 20554

FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF THE SECRETARY

RE: *Ex-Parte* Presentation - In the Matter of Implementation of Section 304 of the Telecommunications Act of 1996, the Commercial Availability of Navigation Devices, **CS Docket No. 97-80**; In the Matter of Compatibility Between Cable Systems and Consumer Electronics Equipment, **PP Docket No. 00-67**.

Dear Ms. Salas:

EchoStar Satellite Corporation ("EchoStar") hereby submits the following letter memorializing the September 6, 2000 meeting between Karen Watson, Director of Government Relations and David Kummer, Vice President of Engineering of EchoStar, and Federal Communications Commission representatives Amy Nathan of the Office of Plans and Policy, William Johnson and John Wong of the Bureau of Cable Services, and Alan Stillwell of the Office of Engineering and Technology in connection with the above-referenced proceeding.

EchoStar protests using 1394CP as the only mandated input in high definition television ("HDTV") sets because of the trick mode support limitations, its low graphics resolution for the user interface ("UI"), its inability to use shrunk video for the UI, the short-term obsolescence of the HDTV display device, and the complexity of the interface.

1. Trick Mode Support. The current 1394CP specification provides for an encrypted transport stream of compressed video from a device to the HDTV set. Since this is a transport stream it can only carry a broadcast model of audio/video to the HDTV set. A device such as a digital video disc ("DVD") or Set-Top-box with a hard drive providing personal television ("PTV") functions such as Fast Forward, Rewind, Record, Pause would be very difficult to implement over this interface. This is because a transport stream is designed to provide pictures in the forward direction only; and pictures are time stamped to provide audio/video synchronization. To provide Reverse playback, which today's consumers expect from DVDs and PTV devices, would be much more difficult and expensive over 1394CP.

Two methods have been proposed to do this over 1394CP. The first is to send the "I frames" followed by a "P frame" with no changes for the appropriate number of frames. This suffers from several problems. First the decoders would have to be able to accept the resultant stream which may occur at bit rates higher than allowed under the HP@HL profile. Secondly

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the PTS and PCR time stamps would have to be modified in the stream to create a valid transport stream. The device may also have to create P frames which describe no changes to the I frame in order to hold the picture for several frames to be able to provide the correct timing (2X, 15X, 60X etc rewind). Audio will need to be muted so a valid synthetic quiet audio stream will also have to be injected into the stream and time stamped correctly so that the decoder thinks that it is providing valid audio/video synchronization.

The second method is more brute force. The DVD or PTV device could decode the compressed stream and create the reverse playback. This reconstructed video could then be re-encoded to provide a valid transport stream for the decoder in the TV.

Both of these methods are difficult, complex, and add costs for the consumer.

2. Lower Graphics Resolution. The EIA775 specification only allows for a maximum graphics resolution of 640 X 480 at 16 bits-per-pixel. This is much lower resolution than the TV set can provide at 1920 X 1080. Also sending and updating these pixels over a 400mbps link limits the refresh time for these images. Therefore even if it is proposed to increase the resolution and/or color space the time to update this information may become unacceptable. This will limit devices such as Web browsers and Game machines to this lower graphics resolution. Echostar would like the interface to the TV to be able to provide all the capabilities that the TV has to offer. This is not the case with 1394CP and EIA775.

3. No Shrunk Video for the UI. EIA775 and 1394CP do not currently allow for the video to be decoded and then shrunk and placed in a defined area of the screen. This would eliminate some of our more popular UI interfaces that allow the user to watch TV while looking at the Electronic Program Guide ("EPG").

4. Obsolescence of the HDTV. In 1992 I bought a 486-33MHz computer and a 14" PC monitor. In 1993 I replaced the processor with a 486-66Mhz using the same monitor. In 1995 I replaced the computer again with a Pentium 75Mhz still using the same monitor. In 1997 I replaced the computer again with a Pentium 133 MHz and still used the same monitor. In 1999 I replaced both the monitor and the computer. If the computer was built into the monitor I would have had the expense of replacing the monitor at about \$500 each time.

This is the same as putting the MPEG decoder in the TV set. MPEG decoders have changed drastically in the last few years. We are now making models with hard drives, better graphics, higher speed CPU's than before. We are on our 4th generation of STB's since 1996. By putting this decoder into the expensive TV set, this will obsolete this equipment much sooner than it needs to be, and force consumers to upgrade the largest and most visible component in their home. Not to mention the problem with filling up landfills with these large TV with caustic materials.

See attached document dated July 12, 2000 entitled "Echostar Position on the FCCS NPRM Regarding Cable Compatibility Standards, 1394CP VERSUS DVI-CP " for more information regarding the obsolescence of 1394CP and decoder in the HDTV set.

5. Complexity of the Interface. The complexity of the interface also drives incompatibility between devices. The more complex the interface, the more likely the two devices will have compatibility problems between each other.

Consumers don't worry about compatibility issues with today's TVs because they have grown accustomed to using their TV with a variety of devices such as DVD players, PTV devices, game consoles, cameras, etc. The composite video input in today's TVs use a simple interface that allow the full capability of the TV to be used. By contrast, interfaces such as computer PCI buses, 1394 buses, and USB buses are prone to compatibility problems because of their complexity, and consumers now expect these problems.

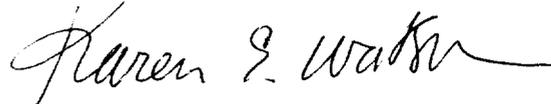
The same is true for 1394CP. MPEG and ATSC are very complex interfaces and subject to the interpretations of the designers. This causes some incompatibilities between the decoders in the TV and the devices providing the source material. The 1394 also adds some complexity as well in the areas of the commands and graphics.

HDCP by contrast is a much simpler interface. Once it works on one HDTV set there is very little chance that it won't work on all HDTV sets. You either get the encryption/decryption circuitry right or not, there is nothing in between.

Echostar doesn't mind having 1394CP as one of the interfaces to the HDTV. Echostar would like to have another input that allows for the full capability of the HDTV to be utilized and will not render the HDTV obsolete in a few years time. We believe that this will be the best solution for consumers allowing for the widest possibility of device to connect to the HDTV set. This may include Web device, games, computers, STB, PTV devices, and future HDTV versions of DVD's. By providing this input it also will allow for future compression methods such as MPEG4 or yet to be invented standards to still connect to the HDTV set.

In accordance with Section 1.1206 of the Federal Communications Commission rules, this original and one copy are provided to your office for each proceeding.

Sincerely,



Karen E. Watson
Director of Government Relations
EchoStar Communications Corporation