

Mr. Milton Brown
Office of the Chief Counsel
National Telecommunications and Information Administration
U.S. Department of Commerce
1401 Constitution Avenue, N.W.
Room 4713
Washington, D.C. 20230

Dear Mr. Brown:

I am writing to you on behalf of Zoran Corporation. Zoran would like to comment on the NPRM the NTIA released on July 25, 2006. Our comments mostly relate to Section II E on the Digital to Analog Converter Box.

- Zoran supports NTIA's definition of a Digital-to-Analog converter box. Due to the cost sensitivity of the program and the box design it is important that the converter box be of basic functionality only and not support additional features like component out and digital audio. The converter box should have one RF input only for the antenna, video outputs for RF-out, S-Video and Composite along with stereo analog L/R audio outputs. Zoran would not recommend digital outputs of any kind on a basic converter box.
- Several additional features go beyond just physical connectors and also include royalties for the software or usage. An example of this is the Electronic Program Guide. A converter box should be capable of decoding the PSIP information being broadcasted but it is the presentation of this data that adds to the cost of the converter box. There is a software royalty involved in the presentation of the data in a tabular format that consumers have learnt to use on existing cable and

satellite boxes. The tabulated EPG is a burdensome feature on the cost of the box. A much simpler “Info” button approach is an effective way of displaying the currently viewed program information carried in the PSIP data to the consumer.

- Zoran Corporation feels strongly that the only performance criteria for broadcast reception should be A/74. The MSTV/NAB group had specified a standard that goes beyond A/74 and used it in the RFP for their converter box in 2005. According to our studies on bill of materials, these requirements affect the cost of the box significantly. If a broadcaster were to broadcast at their full recommended power levels, then a receiver that meets the ATSC recommendation of A/74 should be suffice to receive the transmission. Exceeding A/74 on a basic set top box calls for over engineering and the use of non-commodity parts that increase cost exponentially. As the NTIA mentioned from a GAO study that, “reception of digital signals may vary based on household geography“, but mandating a set of requirement exceeding A/74 is not the answer. Several demonstrations conducted on Capitol Hill last year by Zoran have shown successful digital reception at locations where analog reception failed. Over the last year Zoran has successfully tested CE products, now in stores, using an A/74 compliant solution at multiple locations nationwide that challenge reception quality due to terrain and geography.
- Zoran only supports the use of a passive antenna or an existing roof top antenna to be used for reception. Several new ATSC optimized passive antennas are now of

a simple design that are available today for less than \$20 and can drop in price significantly with volume. The NAB/MSTV group has recommended the use of Smart Antennas whose designs today are available for almost \$300. This is unacceptable for a converter box program where several teams are working hard to pull together a box solution to minimize the consumer's investment in a converter box beyond the coupon.

- Zoran is sensitive to power efficiency of the converter box and is trying its best to recommend the best practices through its reference design program. For mass manufacturing it is important that there is only one single national standard for power consumption. So far we view the Energy Star effort and CEA-2013 as the only open industry wide efforts to converge on a standard. Zoran has volunteered its support to these organizations to help them converge on a standard. There has been a lot of concern voiced over auto-power-down procedure. Our reference design can support this feature very easily and it can be implemented at a very minimal cost impact and software.

It is very important for Zoran to stress that if power estimates of future products, those still not in production, are used to mandate power requirement the converter box program can be at risk. The NTIA and Energy Star must rely on existing products as a part of any survey or measurements that may be used for a regulation. As a part of its commitment, Zoran will continue searching for alternative power supply design for its reference design program that offer higher efficiency but stay within the cost budget.

- Zoran understands the value of a certification process for a converter box; however, such programs can add significant time to the lead time required for the box to hit the market. Zoran would advise the adoption of a simple program that would be easy to administer and reduce the time it takes for a box to be made available on the shelf.

Zoran is a leading supplier of semiconductors used in Consumer Electronics devices. Its credibility for providing high quality products to support mass market costs and volumes is well known across CE manufacturers. Zoran hopes the NTIA takes its candid comments seriously.

Zoran fully supports the NTIA's effort to drive the converter box program. Zoran recommends the NTIA to publish its final specifications as soon as possible to give box manufacturers a clear target for the requirements. Please feel free to contact us on any of these comments and we will openly provide you with more information.

Regards,

Dave Pederson
VP Corporate Marketing
Zoran Corporation