NTIA SEEKS COMMENT ON DTV SET-TOP BOX COUPON PROGRAM

On July 24, 2006 the National Telecommunications and Information Administration (NTIA) released a Notice of Proposed Rule Making (NPRM) calling for public comment on its proposed rules to establish a national coupon program for digital converter boxes.

Congress mandated the program in the Deficit Reduction Act of 2005. The Act imposed a deadline of February 18, 2009 for completion of the conversion to digital television (NTSC shut-off) and established a new Treasury Fund with auction proceeds from the return of analog TV spectrum. It also authorizes NTIA to establish a digital-to-analog converter box assistance program under which U.S. households may obtain a maximum of two coupons of $40 each toward the purchase of a digital converter box.

The NPRM on the proposed rules invites comment on such issues as which U.S. households should receive the coupons to help purchase a digital converter box and restrictions for the coupons; the application process; coupon expiration; manufacturing standards for the converter box; and a coupon distribution system that will avoid waste and fraud.

With respect to the characteristics of the box itself, the Act defines the term “digital-to-analog converter box” (converter box) as “a stand-alone device that does not contain features or functions except those necessary to enable a consumer to convert any channel broadcast in the digital television service into a format that the consumer can display on television receivers designed to receive and display signals only in the analog television service, but may also include a remote control device.”

The NPRM states that ideally, a converter box should be able to receive digital broadcast signals in the same receiving configuration (e.g., same household antenna, same location) as used for the existing analog reception. NTIA proposes certain standards for a minimum-capabilities converter box that simply converts an ATSC terrestrial digital broadcasting signal to analog NTSC format. They state that the converter box should be capable of receiving, decoding and presenting video and audio from digital television transmissions as specified in FCC Part 73 and ATSC Standards A/52A, A/53C, and A/65B and further suggest that the box be inexpensive but meet the ATSC Recommended Practice: Receiver Performance Guidelines Standard (A/74) as well as be easy to install and operate. Specifically, NTIA proposes the following characteristics in certifying a converter box:

(a) appropriately processes all ATSC radio frequency (RF) signals provided to the antenna-only input and then provides output signals in standard definition video for display on an NTSC television receiver/monitor;

(b) delivers NTSC composite video and stereo audio to drive NTSC monitors;

(c) delivers Channel 3 or 4 switchable (NTSC) RF output for television receivers;

(d) complies with FCC requirements for Closed Captioned, Emergency Alert System (EAS) and the required parental controls;

(e) operable by and includes a remote control; and

(f) tunes to all television channels 2-69.

NTIA proposes to accept certification for converter boxes that are capable of only receiving over-the-air broadcast signals for display over analog-only (NTSC) receivers/monitors to firmly control the nature of
the input and output signals and connectors on the box. The only input of the converter box shall be for an external antenna. The outputs shall be channel 3 or 4 (NTSC modulated signals), composite video (NTSC baseband), and audio (stereo). The NPRM says that the NTIA does not intend to accept certifications for converter boxes that have features beyond those necessary to convert an ATSC digital signal to an analog NTSC format (such as a digital cable box.)

Comments on the NPRM are due to the NTIA no later that 5 pm EDT on September 25, 2006. A copy of all NPRM and other relevant documents are available on the NTIA’s Web site at www.ntia.doc.gov.

EPA EXAMINES ENERGY STAR RATINGS FOR DTV SET-TOP BOXES

In a related matter, the Environmental Protection Agency (EPA) is working on power consumption “recommendations” for what the EPA refers to as Digital Terrestrial Adaptors - DTAs (NTIA calls them “Converter Boxes”). On July 21, 2006, the EPA held an open ENERGY STAR DTA workshop in Washington, DC to gather data from stakeholders on this subject. There were 36 attendees representing manufacturers, industry associations, state regulators (CA and NY), and federal regulators from the U.S. and Canada (NTIA, EPA, NRCan).

The meeting opened with an overview of the voluntary ENERGY STAR program. Normally this program seeks to encourage low power consumption by labeling products that use less than a target amount of power, which is set by assessing and predicting what the current most efficient products can achieve. The target is set with an expectation that only 25% of a product category will be able to obtain that level and qualify for the label. The target is then updated if significantly more products reach the target level.

The EPA representative asserted that the EPA, states and others are interested in having an energy efficiency element added to the NTIA’s converter box coupon program. The DTA ENERGY STAR program would be different from the norm because DTAs will be shipping in large volume for only a two or three year period. Accordingly they wish to set a power use target that will apply to all boxes, not the top 25%. Of course, the target level would become almost a mandatory requirement, if the NTIA coupon could only be applied to those boxes meeting the target.

The meeting presenters provided various estimates of power used today by set-top boxes and made predictions of energy savings at various levels. Because, as of yet, there are no converter boxes on the market that receive 8VSB and just output NTSC, data from cable, satellite and DVB products was used. Some power data for modern chips that might be used in DTAs was also provided.

The EPA presented first, and their assessment was that “typical” DTAs today consume about 17 watts in the On Mode and 8 watts in Standby/Passive mode. They showed the potential savings if the products were to meet the limits being discussed by the California Energy Commission of 8W active/1W standby, assuming there would be 33 million DTAs in operation and auto-power down cycling. With these assumptions, consumers would save $6 per year per box, and nationwide 67 kWh would be saved.

The EPA’s time line is to produce a Draft 1 specification in September, discuss comments on that draft in an October meeting, issue Draft 2 for final comments in November and the final specification in December 2006.

One presentation from Digital CEnergy Australia contained data with measurements of STBs on the market in Australia since 2003 which use COFDM and HD decoding. It was interesting to see that the active power dropped from 21.4W in early 2003 to 13.2W in late-2005/early 2006; while the passive power rose from 7.2W to 9.5W for the same periods. The reason for this was not known. Australia has set limits for several classes of STBs, including SD Free-to-air units in several modes. The maximum power was 15W and the minimum was 1W. For DTAs with HD capability the maximum rose to 22W. It was noted that one manufacturer has achieved a maximum power to 9W.

Other presentations covered the differences in complexity between processing HD into SD as compared to the SD-only STBs available in other parts of the world, the state of the art in low power video
decoding with programmable DSP chips, the reality of cost impact as power supplies become more efficient (e.g. costs rise sharply past 70% and a hard theoretical maximum of 84% was posited), and an STB design positing a hypothetical digital system by a consultant. The Consumer Electronics Association briefed the group on the overall broadcast transmitter power savings from conversion from analog to digital as compared to the potential receiver power savings.

There was also a presentation about an approach to auto switch the set-top box to a standby mode based on lack of remote control commands and number of program changes on the selected channel. There was no supporting survey data to show that the algorithm reflected U.S. viewing habits. Basically, the proposal would be for the DTA to turn off the output after two programs were shown with no remote control command being sent.

During the Q&A portion of the meeting, the need to also meet the FCC receiver requirements (such as Closed Captioning and Parental Advisory) and to support that which the broadcasters must transmit (PSIP and Closed Captioning) was asserted by NAB representatives. The EPA staff expressed their appreciation for this new input.

For more information about these presentations contact Katharine Kaplan Osdoba, U.S. EPA Osdoba.Katharine@epa.gov.

ONLY A FEW SPOTS LEFT FOR THE 2006 NAB SATELLITE UPLINK OPERATORS TRAINING SEMINAR
You have one opportunity left this year to attend NAB's Satellite Uplink Operators Training Seminar on October 2–5, 2006. For additional details and to register go to 2006 October Satellite Seminar or call NAB Science & Technology at 202.429.5346.

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A 1½-day seminar will be presented on the ATSC’s digital television (DTV) vestigial sideband (VSB) transmission system fundamental concepts & measurement methodologies. This seminar, a combination of the original VSB Fundamentals Seminar and the new VSB Measurements Seminar will help you develop a basic understanding of 8-VSB transmission system basics as well as measurement techniques in the laboratory, at a transmitter site, and at remote field test sites. The seminar will be presented by Gary Sgrignoli of Meintel, Sgrignoli & Wallace. For more information contact Gary Sgrignoli at (847) 259-3352, gary.sgrignoli@ieee.org or check out the Meintel, Sgrignoli and Wallace Web site.

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