



Funai Corporation, Inc.
201 Route 17 North, Suite 903
Rutherford, NJ 07070

September 25, 2006

ELECTRONICALLY FILED

Milton Brown
Office of the Chief Counsel
National Telecommunications and Information Administration
1401 Constitution Avenue, Room 4713
Washington, DC 20230

Re: Request for Comment and Notice of Proposed Rules to Implement and Administer a Coupon Program for Digital-to-Analog Converter Boxes, NTIA Docket No. 060512129-6129-01.

Dear Sir:

On behalf of Funai Corporation, we respectfully submit comments to the above-mentioned proceeding. Funai is a leader in nearly all areas of digital television consumer electronic technology, and is carrying out plans for the rollout of the highest quality, state-of-the-art DTV products. Our attached comments represent issues that we believe are crucial to the successful deployment of DTA converters.

Funai is continuing to work with interested parties to ensure a seamless transition to digital transmission and new services for all consumers, including those who depend on over-the-air video programming services.

Respectfully submitted,

A handwritten signature in blue ink that reads 'A. Hayashi'.

Akira Hayashi
Vice President
Funai Corporation

**Before the
UNITED STATES DEPARTMENT OF COMMERCE
NATIONAL TELECOMMUNICATIONS AND INFORMATION ADMINISTRATION
Washington, D.C.**

In the Matter of)	
)	
The Digital Television Transition)	Docket No. 060512129-6129-01
and Public Safety Act of 2005:)	
Digital to Analog Converter Program)	
)	

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**COMMENTS OF
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I. INTRODUCTION

Funai Corporation (“Funai”) respectfully submits these Comments in response to the National Telecommunications and Information Administration’s (“NTIA” or “Administration”) *Notice of Proposed Rulemaking* (“NPRM”) in the above-captioned proceeding.¹

Funai commends the Administration for its efforts to carry out the directives of Congress, as set forth in Title III of the Deficit Reduction Act of 2005² (the “Act”), to implement and administer a program through which households in the United States may obtain coupons that can be applied toward the purchase of digital-to-analog (“DTA”) converter boxes (the “Coupon Program”). Funai also praises Congress for allocating the funds to implement this program and to subsidize the purchase of DTA converters (the “Subsidy” or “Subsidy Program”) by consumers in the United States.

¹ *Request for Comment and Notice of Proposed Rules to Implement and Administer a Coupon Program for Digital-to-Analog Converter Boxes*, NTIA Docket Number: 060512129–6129–01, Notice of Proposed Rulemaking, July 25, 2006.

² *Deficit Reduction Act of 2005*, Public Law 109–171, 109th Congress.

II. STATEMENT OF INTEREST IN THIS PROCEEDING

Funai is a leader in nearly all areas of digital television (DTV) technology, offering innovative products that span the entire chain of the digital television service and exploit digital television technologies to transform consumers' traditional television experience. Funai Corporation, Inc., established in 1977, has offices in Rutherford, New Jersey and Torrance, California, and is the North American sales and marketing company for consumer electronic products manufactured by parent company Funai Electric Co., Ltd., of Japan, under the brand names of Sylvania, Symphonic, Emerson, and Funai.

Funai Electric Co., Ltd., established in 1961, is headquartered in Osaka, Japan and is listed in the Tokyo Securities Exchange First Section (6839). In addition to the consumer electronic product brands sold by Funai Corporation and the products sold by other Funai sales and marketing companies in Asia, Europe, and South America, Funai Electric Company, Ltd. is a major original equipment manufacturer (OEM) supplier to appliance, consumer electronic, computer, and computer peripheral companies on a global basis.

Consistent with its involvement in the development of DTV technology for the United States, Funai is busily engaged in carrying out plans for the rollout of the highest quality, state-of-the-art, digital-to-analog converters and DTV receivers. Funai also is leading the way in offering products that exploit other digital entertainment and information technologies, including a growing presence in the North American DVD market, having established a position as a leading supplier of DVD consumer electronic products.

The breadth of Funai's DTV products, particularly with regard to the availability of digital set-top boxes, reflects Funai's view that the DTV transition will be greatly facilitated by the availability of equipment that will offer consumers a wide array of digital services from various service providers and manufacturers. Funai intends to work

with all stakeholders – broadcasters, consumer electronics dealers, and consumers alike – to make devices available that exploit the best potential applications possible under the ATSC terrestrial digital television standard, and that encourage broad consumer interest and participation in the DTV transition.

As part of this commitment, Funai is currently developing, and plans to market, DTA converters for consumer use in the DTV transition. In order to best serve the public, we believe it is important to produce units that meet the objectives of the Subsidy Program. This can only be assured if manufacturers have confidence that the units they produce and market are covered by the Subsidy. As pointed out by the Government Accounting Office in a 2005 report,³ manufacturers need certainty about what items are approved for the Subsidy. Consequently, we believe there are several issues and technical parameters that must be clearly defined in order to carry out the mission of the Coupon Program.

III. ELIGIBILITY FOR THE SUBSIDY SHOULD NOT EXCLUDE VIEWERS WHO DEPEND ON OVER-THE-AIR TELEVISION FOR LOCAL NEWS AND INFORMATION

The NPRM restates that the Act does not define “eligible household.” Regarding *Universal Service*, the Telecommunications Act of 1996 (the “1996 Act”) directs regulators to base policies such that “Access to advanced telecommunications and information services should be provided in all regions of the Nation.”⁴ While dealing predominantly with the infrastructure of “common carriers” and the cable and satellite

³ Testimony Before the Subcommittee on Telecommunications and the Internet, Committee on Energy and Commerce, House of Representatives, *Digital Broadcast Television Transition – Several Challenges Could Arise in Administering a Subsidy Program for DTV Equipment*, United States Government Accountability Office, GAO-05-623T, May 26, 2005.

⁴ *Telecommunications Act of 1996*, Public Law 104–104, 104th Congress.

operators (Multichannel Video Programming Distribution operators or “MVPDs”), we believe that the intent of the 1996 Act for “Universal Service” applies equally to the availability of DTA converters, as these are simply alternate means of program delivery.

A recently released report by the Federal Communications Commission (FCC) Media Bureau suggests that local ownership of television stations adds a significant amount of local coverage to news programs.⁵ Such increased coverage in these cases is of direct benefit to households that depend on local television for local information, including those that may additionally subscribe to cable or satellite service. The current “must-carry” regulations⁶ do not require cable or satellite operators to carry the sub-channels of a DTV transmission, and it remains unclear whether this situation will soon change. Thus, for the foreseeable future, viewers relying on local television for this programming must depend on DTV broadcasting for access to the full array of free programming choices now being deployed by broadcast operators.

In its twelfth annual report to Congress on video program delivery competition (the “MVPD Report”), the FCC notes that 15.4 million U.S. TV households do not subscribe to an MVPD service and thus rely solely on over-the-air broadcast television for their video programming – a figure representing 14 percent of all U.S. TV households.⁷ We also note that several commenters referenced in the MVPD Report believe that the figure may be considerably higher.

⁵ *Do Local Owners Deliver More Localism? Some Evidence From Local Broadcast News*, Working Paper, Federal Communications Commission, June 17, 2004.

⁶ *Cable Television Consumer Protection and Competition Act of 1992*, Public Law 102-385, and *Report and Order and Further Notice of Proposed Rulemaking (FCC 01-22)*, January 18, 2001.

⁷ *Annual Assessment of the Status of Competition in the Market for the Delivery of Video Programming*, FCC 06-11, MB Docket No. 05-255, February 10, 2006. We note that the text at Section 17 appears to have an error, in that the “14 percent” figure applies to the number of “OTA-only” households, and not, as it may appear, to the households with both OTA and MVPD service. This is clarified in Section 96.

In addition, millions of households that subscribe to an MVPD service also rely on over-the-air signals to receive broadcast programming on some of their television sets, according an earlier report by the FCC Media Bureau.⁸ The number of these additional households, while uncertain, is estimated by some to be as high as 30 million.

Therefore, we believe it to be in the public interest that all households that receive over-the-air television signals using analog television receivers should be eligible to participate in the Coupon Program. We note, however, that in the NPRM, the NTIA proposes to limit eligibility to “those households that only receive over-the-air television signals using analog-only television receivers,” and that “households that receive cable or satellite television service would not be eligible.”

In this respect, we disagree with this specific NTIA proposal for the reasons stated above, and counter propose a rule through which an eligible U.S. television household is one that can certify that it receives over-the-air television signals using an analog-only (NTSC) television receiver, and that they receive over-the-air transmissions in analog format.

IV. THE SUBSIDY SHOULD ONLY APPLY TO DTA CONVERTERS THAT MEET OR EXCEED A MINIMUM PERFORMANCE REQUIREMENT

We agree with the NTIA proposal that certain standards should be defined for DTA converters that will be eligible under the Subsidy. There is precedent in a similar transition in Europe that appears to be proceeding successfully due to a number of

⁸ *FCC Media Bureau Staff Report Concerning Over-the-Air Broadcast Television Viewers*, MB Docket 04-210, Feb. 28, 2005.

different factors, including the performance of the receiving equipment.⁹ There, certain difficulties in equipment deployment had already been expected in the planning stage:

- the equipment could only be tested after it had been brought into the market;
- the reception sensitivity of receivers could only be tested once the technology and the sets had been introduced; and
- reception varied in quality, depending on the various types of receiver.

Consequently, we agree that steps should be taken to ease the digital transition for the consumer, and to maximize the likelihood of good signal reception. One such step is to avoid the proliferation of “sub-standard” DTA converters that may not perform well under the varied conditions found in terrestrial broadcast service. To that end, we support the establishment of a set of minimum capabilities for converters eligible under the Subsidy. In the aforementioned Berlin transition, such a set of minimum capabilities was defined,¹⁰ contributing in part to the successful transition.

Therefore, we agree with the NTIA Proposal that all eligible converters should:

- (a) appropriately process all ATSC radio frequency (RF) signals provided to the antenna input;
- (b) provide output signals in standard definition video format for display on an NTSC television receiver/monitor;
- (c) tune to all RF television channels 2-69;
- (d) deliver NTSC composite video and stereo audio;
- (e) deliver Channel 3 or 4 switchable (NTSC) RF output for television receivers; and
- (f) be operable by, and include, a remote control.

The NTIA also proposes compliance with the FCC requirements for Closed Captions. We believe that this requirement is met, for instance, by the conversion of the

⁹ *Berlin goes digital, Experiences and Perspectives*, DVB-T: DasUberall Fernsehen. August 2003.

¹⁰ “DVB-T Minimum Requirements and Guideline for DVB-T Receivers, Version 1.1, 08/15/2003.”

so-called DTV Closed Captions (i.e., those generated per CEA-708-C) to the so-called “NTSC line 21 captions” (i.e., CEA-608-B).

We note that, while the NTIA proposes compliance with the FCC requirements for the Emergency Alert System (EAS), there have been no specific EAS requirements imposed on television receivers at this time.¹¹ As ordered by the FCC, broadcasters and service providers must fulfill the requirements of EAS, which include the transmission of alert tones carried in the program audio and messages in the program video. Therefore, we do not believe there to be any specific FCC requirement that must be met by DTA converters in order to fulfill the current requirements for EAS.

- Furthermore, Funai agrees with the NTIA proposal that the converters should:
- (a) meet the performance requirements of ATSC Recommended Practice A/74, *Receiver Performance Guidelines*; and
 - (b) be inexpensive and provide ease of installation and operation.

We also believe that, in order to be eligible under the Subsidy, a DTA box should comply with the FCC requirements described in 47CFR15, Radio Frequency Devices, specifically §15.117, TV broadcast receivers.

We also believe that, in order to be eligible under the Subsidy, a DTA box should provide access to all “sub-channels” of a DTV transmission, i.e., the so-called “major and minor” channels that may be transmitted as a “multicast” by the broadcast operator. The Act defines, in part, the DTA converter as “a standalone device that does not contain features or functions except those necessary to enable a consumer to convert *any channel* [emphasis added] broadcast in the digital television service into a format that the

¹¹ See, *In the Matter of Review of the Emergency Alert System*, First Report and Order and Further Notice of Proposed Rulemaking, FCC 05-191, Nov. 3, 2005.

consumer can display on television receivers...” Thus, we interpret “any channel” to include all sub-channels transmitted by the broadcaster.

We also note that the 1996 Act seeks to “promulgate regulations to prohibit restrictions that impair a viewer's ability to receive video programming services through devices designed for over-the-air reception of television broadcast signals...” Writing independently, broadcasting executive Andrew D. Cotlar¹² notes, “The European [DTV transition] experience ... demonstrates that a simple replacement of analog technology with digital technology will not be successful without giving consumers something more than what they had previously...”¹³

Accordingly, we believe it is not in the public interest to promote and subsidize the distribution of DTV reception devices that do not supply access to all of each broadcaster’s free, over-the-air programming. Therefore, Funai strongly believes that, in order to be eligible for the Subsidy, DTA converters should be able to receive and display any sub-channel transmitted by the broadcaster.

V. THE SUBSIDY SHOULD ALSO APPLY TO DTA CONVERTERS WITH CERTAIN OPTIONAL FEATURES

Funai believes that there are features that can further aid customers in acclimating to the new digital television environment, including dealing with problematic reception conditions and interfacing with existing equipment. One such feature is the so-called

¹² Assistant General Counsel, Association of Public Television Stations (APTS).

¹³ *The Road to Analog Switch-Off: How the United States Can Turn Off Analog Television Without Significant Service Disruption*, Andrew D. Cotlar, Columbus School of Law, Journal of Communications Law and Policy, Volume 13, Issue 2, Spring 2005.

“Smart Antenna,” which automatically optimizes DTV reception. Another optional feature is Baseband Output.

Smart Antenna

As is well known, terrestrial television reception – both analog and digital – is subject to many transmission path impairments, including that of multipath, where multiple “echoes” of the transmitted signal arrive at the receiving location. Whereas this impairment resulted in “ghosts” upon display of an analog television broadcast, the digital consequence is an increase in the received error rate of the signal. This can, in moderate-to-severe multipath situations, lead to an impaired signal – with compromised video and audio presentation – or, in the worst case, no reception at all. While this can be improved by careful aiming of the receiving antenna, this adjustment will not be ideal for all received stations, due to their different transmission powers, frequencies, and locations, and can therefore be problematic under poor reception conditions.¹⁴

For this reason, self-adjusting antennas have been developed to resolve this difficulty, sometimes called *Smart Antennas*. By providing an automatic mechanism to adjust the antenna, the direction and gain (amplification) of the antenna can be *electronically* changed, with no need for user intervention or physical adjustment of the antenna. One such antenna functions by changing the relative gain and phase (delay) of internal elements, i.e., there is no physical movement or change in such an antenna. The user can simply plug in this antenna – to a suitably-equipped DTV receiver – and the receiver will automatically adjust the antenna for optimal reception of each DTV station.

¹⁴ See: *The Multipath to Clarity – Receiving HDTV over the air takes luck and lots of patience*, Philip Yam, Scientific American, June 2005.

While such an antenna can be an option to the consumer, it will only function if the appropriate interface is available at the receiver. Such an interface has been developed and standardized by the Consumer Electronics Association in CEA-909, entitled “Antenna Control Interface.” This standard allows any compliant receiver to operate with any compliant antenna, regardless of manufacturer. The standard also defines the data algorithms used, connection standards, and other requirements. The antenna configuration is neither specified nor implied, leaving specific antenna design considerations to the manufacturer.

Therefore, Funai strongly believes that DTA converters with a CEA-909 interface, when provided, should be eligible for the Subsidy. In addition, the “bundling” of such an antenna with a DTA box should not preclude eligibility for the Subsidy.

Baseband Outputs

Many analog television receivers manufactured in the last ten years were built to accept baseband video and audio inputs from various sources, including VCRs, DVD players, and game consoles. These analog inputs allow the user to bypass the source’s RF modulator and the TV’s tuner, providing a higher-quality standard-resolution signal to their video display, and a cleaner signal to their television speaker. Such a connection requires nothing more than a set of three inexpensive “RCA” cables to enjoy this improvement in video and audio quality. In addition, as these signals are inherently available within the electronics of the source, the addition of such outputs results in little cost increase, as the added components are essentially the connectors and the cables alone.

Therefore, Funai strongly believes that DTA converters with composite video outputs and/or left and right audio outputs, when provided, should be eligible for the Subsidy.

VI. THE SUBSIDY SHOULD NOT APPLY TO DTA CONVERTERS HAVING CERTAIN UNNECESSARY CHARACTERISTICS

As restated earlier, the Act partly defines the DTA converter as “a standalone 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...” In the interest of promoting industry competition to provide the best possible low-cost DTA converter, we believe it is sensible to limit the functionality of the devices as described herein, as the inclusion of certain other features would by necessity add complexity and cost to the devices.

As the intent of the Act is to maintain the existing base of terrestrial broadcast viewers, we feel it is inappropriate to extend Coupon Program eligibility to devices that support high-definition television (HDTV) viewing, i.e., a display with higher-than standard-definition video resolution. In order to provide HDTV video rendition, devices must either be integrated with a display, or must provide digital video or component video outputs. The former would of course represent a considerable cost increase to the consumer. The latter is customarily realized by means of one (or more) various connectors, such as the digital DVI (Digital Visual Interface) and HDMI (high-definition multimedia interface), or analog component video (also referred to as YPbPr), or sometimes “computer video” (VGA). In addition, some form of either the transmitted bitstream or compressed video can be made available by the use of either USB, IEEE-

1394 (sometimes trademarked as i.Link or Firewire), or even Ethernet (IEEE-802.3) or wireless (IEEE-802.11). We believe that none of these approaches meets the intent of the Act, as they are intended for the purpose of delivering video at higher than NTSC quality.

Therefore, Funai strongly believes that DTA converters with any of the interfaces described in this immediate section should not be eligible for the Subsidy. We also believe that any device that includes an integrated display intended for use as the primary video presentation should be ineligible for the Subsidy.

VII. MANUFACTURERS SHOULD BE ALLOWED SELF-CERTIFICATION

The NTIA proposes to require manufacturers to self-certify that the converter boxes meet the standards outlined in the rules. Funai strongly feels that such a process is in the best interests of all involved parties, and that it will meet the requirements of the Subsidy Program. The establishment of an independent authority to conduct such tests would be costly to both manufacturers and the Administration, and would create undue delays and an unneeded bureaucracy. Self-certification, on the other hand, will streamline the process of delivering DTA converters in an expeditious and economical manner.

In its 1996 action to deregulate digital device authorization requirements, the FCC adopted a new "Declaration of Conformity" (DoC) procedure¹⁵ that permits those devices to be authorized based on a manufacturer's or supplier's declaration that the product conforms with all FCC requirements. We feel that the FCC action presents reasonable

¹⁵ FCC Report and Order 96-208, *Amendment of Parts 2 and 15 of the Commission's Rules to Deregulate the Equipment Authorization Requirements for Digital Devices*, ET Docket No. 95-19, May 9, 1996.

arguments in support of such a program, and represents a sensible model on which to base a similar process for the Coupon Program.

Consequently, Funai strongly believes that manufacturers should be allowed to self-certify that the DTA converters meet the standards outlined in the rules for eligibility in the Coupon Program.

VIII. CONCLUSION

Funai again commends the Administration for its active involvement in working with industries to help implement the digital television transition. For its part, Funai intends to continue its work with interested parties to ensure a seamless transition to digital transmission and new services for all consumers, and to increase and expand DTV access to all Americans, particularly the vast number who rely on over-the-air video programming services.

Respectfully submitted,

FUNAI CORPORATION

Akira Hayashi
Vice President and Sr. Executive Director

Funai Corporation, Inc.
201 Route 17 North, Suite 903
Rutherford, New Jersey 07070

www.funai.com
(201) 727-4514

Aldo G. Cugnini
(Consultant to Funai Corporation)

AGC Systems LLC
94 E. Springtown Rd.
Long Valley, NJ 07853

www.agcsystems.com
(908) 872-5155

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