

PART 300—MANUAL OF REGULATIONS AND PROCEDURES FOR FEDERAL RADIO FREQUENCY MANAGEMENT

AUTHORITY: 47 U.S.C. 901 *et seq.*, Executive Order 12046 (March 27, 1978), 43 FR 13349, 3 CFR 1978 Comp., p. 158.

§ 300.1 Incorporation by reference of the Manual of Regulations and Procedures for Federal Radio Frequency Management.

(a) The Manual of Regulations and Procedures for Federal Radio Frequency Management (hereinafter referred to as the NTIA Manual) is issued by the Assistant Secretary of Commerce for Communications and Information, and is specifically designed to cover the Assistant Secretary's frequency management responsibilities pursuant to delegated authority under 47 U.S.C. 901 *et seq.* and Executive Order 12046 (March 27, 1978).

(b) The Federal agencies shall comply with the requirements set forth in the May 1992 edition of the NTIA Manual, as revised through June 1993, which is incorporated by reference with approval of the Director, Office of the Federal Register in accordance with 5 U.S.C. 552(a) and 1 CFR part 51.

(c) The NTIA Manual is scheduled for revision in January, May, and September of each year and notices of these changes are printed in the FEDERAL REGISTER. The complete NTIA Manual can be obtained from the Superintendent of Documents, U.S. Government Printing Office, Washington, DC 20402, by referring to Catalog Number 903-008-00000-8. A reference copy of the NTIA Manual, including all revisions in effect, is available for use in the office of the Program Manager, Spectrum Openness Program, Room 4092, 14th St. and Pennsylvania Ave., Washington, DC 20230. The NTIA Manual is on file at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, call 202-741-6030, or go to: http://www.archives.gov/federal_register/

[code_of_federal_regulations/ibr_locations.html](#).

[58 FR 44136, Aug. 19, 1993, as amended at 69 FR 18803, Apr. 9, 2004]

PART 301—DIGITAL-TO-ANALOG CONVERTER BOX COUPON PROGRAM

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AUTHORITY: Title III of the Deficit Reduction Act of 2005, Pub. L. No. 109-171, 120 Stat. 4, 21 (Feb. 8, 2006) (the "Act").

SOURCE: 72 FR 12116, Mar. 15, 2007, unless otherwise noted.

§ 301.1 Program purposes.

Pursuant to section 3005 of the Act, (The Deficit Reduction Act of 2005), the purpose of the Digital-to-Analog Converter Box Coupon Program is to provide \$40 coupons that can be applied towards the purchase price of eligible digital-to-analog converter boxes. After February 17, 2009, the Federal Communications Commission will require that all full-power television stations in the United States broadcast using digital television technology. Consumers who wish to continue to receive local broadcast television programming over-the-air using analog televisions not connected to cable or satellite service may wish to purchase digital-to-analog converter boxes in order to do so.

§ 301.2 Definitions.

Act means Title III of the Deficit Reduction Act of 2005, Pub. L. No. 109-171, 120 Stat. 4, 21 (Feb. 8, 2006).

Agency means the National Telecommunications and Information Administration of the United States Department of Commerce or its contractor.

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Certified Retailer means a seller of Coupon-Eligible Converter Boxes directly to consumers that has met the requirements for certification and has been identified by NTIA as certified to redeem coupons.

Contingent Funds means those funds referenced in Section 3005 (c)(3) of the Act.

Coupon means a voucher provided by the Agency to Eligible Households which only may be used to purchase a Coupon-Eligible Converter Box from a Certified Retailer.

Coupon-Eligible Converter Box (CECB) means 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 a television receiver designed to receive and display signals only in the analog television service. CECBs may also include remote control devices. CECBs must have the features required by, and meet the technical performance specifications listed in Technical Appendix 1.

Department means the United States Department of Commerce.

Eligible Household means those Households in the United States and its territories that make a valid request for a coupon pursuant to Rule 301.3 within the time period specified by NTIA, but no later than March 31, 2009.

FCC means the Federal Communications Commission.

State includes each of the fifty states, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, American Samoa, and the Northern Mariana Islands.

Household consists of all persons who currently occupy a house, apartment, mobile home, group of rooms, or single room that is occupied as separate living quarters and has a separate U.S. Postal address. A household does not mean a Post Office Box.

EFFECTIVE DATE NOTE: At 73 FR 54333, Sept. 19, 2008, §301.2 was amended by adding new definitions in alphabetical order, effective Oct. 20, 2008. For the convenience of the user, the added text is set forth as follows:

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§ 301.2 Definitions.

* * * * *

Assisted living facility means a public facility, proprietary facility, or facility of a private nonprofit corporation that: is licensed by the State and makes available to residents supportive services to assist the residents in carrying out activities of daily living, such as bathing, dressing, eating, getting in and out of bed or chairs, walking, going outdoors, using the toilet, laundry, home management, preparing meals, shopping for personal items, obtaining and taking medication, managing money, using the telephone, or performing light or heavy housework, and which may make available to residents home health care services, such as nursing and therapy; and provides separate dwelling units for residents, each of which may contain a full kitchen and bathroom, and which includes common rooms and other facilities appropriate for the provision of supportive services to the residents of the facility.

* * * * *

Intermediate care facility means a proprietary facility or facility of a private nonprofit corporation or association licensed by the State for the accommodation of persons who, because of incapacitating infirmities, require minimum but continuous care but are not in need of continuous medical or nursing services.

Nursing Home means a public facility, proprietary facility or facility of a private nonprofit corporation or association, licensed by the State for the accommodation of convalescents or other persons who are not acutely ill and not in need of hospital care but who require skilled nursing care and related medical services, in which such nursing care and medical services are prescribed by, or are performed under the general direction of, persons licensed to provide such care or services in accordance with the laws of the State where the facility is located.

Nursing Home Resident means an individual who lives on a permanent basis at a Nursing Home, Intermediate Care Facility, or Assisted Living Facility. A Nursing Home Resident does not have a permanent address that is separate from the Nursing Home, Intermediate Care Facility, or the Assisted Living Facility.

§ 301.3 Household eligibility and application process.

(a) To apply for and receive a coupon, an Eligible Household must:

(1) provide the name of the person submitting the request

(2) provide a United States Postal Service mailing address

(A) a Post Office Box will not be considered a valid mailing address unless (2)(B) applies

(B) residents of Indian reservations, Alaskan Native Villages and other rural areas without home postal delivery may be requested to supply additional information to identify the physical location of the household, as required.

(3) indicate the number of coupons requested, but no more than two coupons.

(b) As of January 1, 2008, requests for coupons may be submitted by mail, telephone or the Internet on forms provided by the Agency.

(c) Requests for coupons must be submitted to the Agency no later than March 31, 2009.

(d) Once Contingent Funds are available for the Coupon Program, only over-the-air households will be eligible. During the period in which Contingent Funds are available, households must certify that they do not receive cable, satellite, or other pay television service.

(e) If an applicant does not meet the above eligibility requirements, the request will be denied.

EFFECTIVE DATE NOTE: At 73 FR 54333, Sept. 19, 2008, § 301.3 was amended by revising paragraph (a)(2), effective Oct. 20, 2008. For the convenience of the user, the revised text is set forth as follows:

§ 301.3 Household eligibility and application process.

(a)* * *

(2) A Post Office Box will not be considered a valid mailing address unless the applicant supplies information to identify the physical location of the household, as required.

* * * * *

§ 301.4 Coupons.

(a) The coupon value will be \$40 or the price of the CECB, whichever is less.

(b) Each Eligible Household will be limited to a total of two coupons.

(c) Two coupons may not be used in combination toward the purchase of a single CECB.

(d) Coupons will be sent to Eligible Households via the United States Postal Service.

(e) Coupons will expire 90 days after the issuance date. Issuance date means the date upon which the coupon is placed with the United States Postal Service.

(f) Consumers may not return a CECB to a retailer for a cash refund for the coupon amount or make an exchange for another item unless it is another CECB.

(g) The coupon has no cash value. It shall be illegal to sell, duplicate or tamper with the coupon.

§ 301.5 Manufacturers' technical approval process.

(a) Manufacturers wishing to participate in the coupon program must submit a notice of intent to NTIA at least three months prior to submitting test results and sample models of converter boxes. Notices should be sent to DTV Converter Coupon Program, NTIA/OTIA, U.S. Department of Commerce, Room 4809, Washington, DC 20230, Fax Number 202-482-4626 and provide the name, title, address, and phone number of an individual responsible for the manufacturer's submission. The notice shall also include a brief description of the proposed converter box, including permitted as well as required features, and the date which the proposed converter box is expected to be available for testing.

(b) NTIA shall treat the notices of intent received as business confidential and proprietary information and will not release information from the notices of intent to the public unless otherwise required by law.

(c) The manufacturer will supply two production sample converter boxes to NTIA. NTIA will provide the manufacturer with mailing information in a letter of acknowledgment after NTIA receives the notice of intent.

(d) Each model proposed to be a CECB shall meet the performance specification and features set forth in Technical Appendix 1 of this Section. Each model proposed may also include "permitted" features set forth in Technical Appendix 2, but shall not include "disqualifying" features set forth therein.

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(e) NTIA may issue other guidance or test-bed conditions and it is the manufacturer's responsibility to conduct tests pursuant to any guidance so provided. A manufacturer shall conduct its own tests or have a qualified independent third party conduct the tests.

(f) Reports of test conditions and test results must be clear and comprehensive so that they can be easily interpreted by NTIA and others reviewing them. The FCC may test converter boxes, if requested by NTIA.

(g) Test results shall be submitted to NTIA along with a certification of the testing supervisor as to their authenticity, completeness and accuracy based on personal knowledge.

(h) NTIA will provide prompt notice to the individual submitting test results whether the model has met technical approval and is or is not a CECB. NTIA will base its decision whether to approve each converter box upon consultation with the FCC.

(i) A list of CECBs, including make and model number, will be maintained by NTIA and regularly distributed to participating retailers for use in electronic Point-of-Sale (POS) systems.

(j) It is the responsibility of the manufacturers to resolve any performance or product defect issues with consumers and retailers.

(k) NTIA shall not warrant the performance, suitability, or usefulness of any CECB for any use.

§ 301.6 Retailer participation.

Retailer participation is voluntary. NTIA encourages retailers to participate in the Coupon Program and to cooperate with NTIA and its contractor in the administration of an effective and efficient program resulting in high customer satisfaction with a minimum of waste, fraud and abuse.

(a) Retailer Obligations: Certified Retailers are required to redeem valid coupons toward the purchase of CECBs, and

(1) Must have systems in place that are capable of electronically processing coupons for redemption and payment, tracking each and every transaction, and generating reports that are easily auditable.

(2) Must train employees on the purpose and operation of the Coupon Program. NTIA or its contractor will provide training material.

(3) Will not be responsible for checking consumer or household eligibility but shall report to NTIA suspicious patterns of customer behavior.

(4) Use commercially reasonable methods to order and manage inventory to meet customer demand for CECBs.

(5) Must provide transaction reports based on NTIA's requirements. Reports must be maintained by the retailer for at least one year. Business confidential and proprietary information shall not be disclosed to the public unless otherwise required by law.

(b) Retailer Certification:

(1) Retailers seeking to participate in the Coupon Program must apply for certification by contacting NTIA between June 1, 2007 and March 31, 2008.

(2) Retailers must complete the form provided by the Agency which requires the retailers to self certify that they:

(A) Have been engaged in the consumer electronics retail business for at least one year unless waived for good cause by NTIA. Good cause will be determined upon a showing by the retailer that participation would be in the best interest of the program. NTIA will issue a written determination as to whether a retailer has made a sufficient showing of good cause to waive this requirement;

(B) Have completed a Central Contractor Registration (www.ccr.gov);

(C) Have in place systems or procedures that can be easily audited as well as systems that can provide adequate data to minimize fraud and abuse in retail redemption and government payment for coupons;

(D) Agree to have coupon box sales audited at any time during the term of participation in the coupon program by the U.S. Government or an independent auditor at no expense to the retailer;

(E) Will provide NTIA electronically with redemption information and payment receipts related to coupons used in the purchase of converter boxes, specifically tracking each serialized coupon by number with a corresponding CECB purchase; and

(F) Agree only to accept coupons for, and receive payment resulting from authorized purchases made for CECBs.

(3) Retailer Certification may be revoked by NTIA if a Certified Retailer fails to comply with these regulations, with the terms of any agreement made between the Certified Retailer and NTIA, or for other actions inconsistent with the Coupon Program.

(4) NTIA will not revoke retailer certification for unintentional non-compliance or error.

(5) Retailers may contact NTIA for late application or dispute resolution for problems such as denial or revocation of certification. Such issues will be resolved on a case-by-case basis.

§ 301.7 Waiver of household eligibility.

(a) A resident of a Nursing Home, Intermediate Care Facility or Assisted Living Facility may apply for a limited waiver of the household eligibility requirement for the Coupon Program and be eligible for one coupon. Anyone may apply for a coupon on behalf of the Resident including the Resident, a family member, an employee of the Nursing Home, Intermediate Care Facility or Assisted Living Facility.

(b) The application must be in the name of the Nursing Home Resident and must include the resident's name, the name of the facility and the street address. The Nursing Home Resident must also certify that their television set is over-the-air-reliant or whether they subscribe to satellite, cable or other pay television service.

(c) Applications will be accepted by mail only on pre-printed form. In the alternative, a letter will be accepted as an application if all of the required information for the waiver is contained therein.

(d) A Nursing Home Resident seeking a waiver is entitled to only one coupon.

(e) Coupons for approved applications will be mailed individually to each Nursing Home Resident, addressed and mailed "in care of" to the Nursing Home Resident at the address of the Nursing Home, Intermediate Care Facility, or Assisted Living Facility.

[73 FR 54333, Sept. 19, 2008]

EFFECTIVE DATE NOTE: At 73 FR 54333, Sept. 19, 2008, § 301.7 was added, effective Oct. 20, 2008.

TECHNICAL APPENDIX 1

NTIA COUPON-ELIGIBLE CONVERTER BOX (CECB)

REQUIRED MINIMUM PERFORMANCE SPECIFICATIONS AND FEATURES

REFERENCE DOCUMENTS

- ATSC A/74, Receiver Performance Guidelines, June 2004
- ATSC A/53E, ATSC Digital Television Standard, Revision E with Amendments No. 1 and No. 2, September 2006
- ATSC A/65C, Program and System Information Protocol for Terrestrial Broadcast and Cable (Revision C) With Amendment No. 1, May 2006
- Recommendation ITU-R BT.500-11, Methodology for the subjective assessment of the quality of television pictures
- ATSC A/69, PSIP Implementation Guidelines for Broadcasters, June 2002

ELIGIBLE CONVERTER BOXES SHALL COMPLY WITH THE FOLLOWING MINIMUM PERFORMANCE SPECIFICATIONS AND FEATURES:

1. Decoder

Equipment shall be capable of receiving and presenting for display program material that has been encoded in any and all of the video formats contained in Table A3 of ATSC A/53E. The image presented for display need not preserve the original spatial resolution or frame rate of the transmitted video format.

2. Output Formats

Equipment shall support 4:3 center cut-out of 16:9 transmitted image, letterbox output of 16:9 letterbox transmitted image, and a full or partially zoomed output of unknown transmitted image.

3. PSIP Processing

Equipment shall process and display ATSC A/65C Program and System Information Protocol (PSIP) data to provide the user with tuned channel and program information. See ATSC A/69 for further guidance.

4. Tuning Range

Equipment shall be capable of receiving RF channels 2 through 69 inclusive.

5. RF Input

Equipment shall include a female 75 ohm F Type connector for VHF/UHF antenna input.

6. RF Output

Equipment shall include a female 75 ohm F Type connector with user-selectable channel 3 or 4 NTSC RF output.

7. Composite Output

Equipment shall include female RCA connectors for stereo left and right audio (white and red) and a female RCA connector for composite video (yellow). Output shall produce video with ITU-R BT.500-11 quality scale of Grade 4 or higher.

8. RF Dynamic Range (Sensitivity)

Equipment shall achieve a bit error rate (BER) in the transport stream of no worse than 3×10^{-6} for input RF signal levels directly to the tuner from -83 dBm to -5 dBm over the tuning range. Subjective video/audio assessment methodologies could be used to comply with the bit error rate requirement.¹

Test conditions are for a single RF channel input with no noise or channel impairment. Refer to ATSC A/74 Section 4.1 for further guidance. (Note the upper limit specified here is different than that in A/74 4.1).

9. Phase Noise

Equipment shall achieve a bit error rate in the transport stream of no worse than 3×10^{-6} for a single channel RF input signal with phase noise of -80 dBc/Hz at 20 kHz offset. The input signal level shall be -28 dBm. Subjective video/audio assessment methodologies described above could be used to comply with the bit error rate requirement. Refer to ATSC A/74 Section 4.3 for further guidance.

10. Co-Channel Rejection

The receiver shall not exceed the thresholds indicated in **Table 1** for rejection of co-

¹Subjective evaluation methodologies use the human visual and auditory systems as the primary measuring “instrument.” These methods may incorporate viewing active video and audio segments to evaluate the performance as perceived by a human observer. For subjective measurement, the use of an expert viewer is recommended. The viewer shall observe the video and listen to the audio for at least 20 seconds in order to determine Threshold of Visibility (TOV) and Threshold of Audibility (TOA). Subjective evaluation of TOV should correspond with achievement of transport stream error rate not greater than a BER of 3×10^{-6} . If there is disagreement over TOV performance evaluation, it will be resolved with a measurement of actual BER.

channel interference at the given desired signal levels. Refer to ATSC A/74 Section 4.4.1 for further guidance.

TABLE 1—CO-CHANNEL REJECTION THRESHOLDS.

Type of Interference	Co-Channel D/U Ratio (dB)	
	Weak Desired (-68 dBm)	Moderate Desired (-53 dBm)
DTV interference into DTV ..	+15.5	+15.5
NTSC interference into DTV	+2.5	+2.5

Notes:

NTSC split 75% color bars with pluge bars and picture to sound ratio of 7 dB should be used for video source.

ATSC high definition moving video should be used for video source.

All NTSC values are peak power; all DTV values are average power.

11. First Adjacent Channel Rejection

The receiver shall not exceed the thresholds indicated in **Table 2** for rejection of adjacent channel interference at the given desired signal levels. Refer to ATSC A/74 Section 4.4.2 for further guidance.

TABLE 2—ADJACENT CHANNEL REJECTION THRESHOLDS

Type of Interference	Adjacent Channel D/U Ratio (dB)		
	Weak Desired (-68 dBm)	Moderate Desired (-53 dBm)	Strong Desired (-28 dBm)
Lower DTV interference into DTV.	≥ -33	-33	-20
Upper DTV interference into DTV.	≥ -33	-33	-20
Lower NTSC interference into DTV.	≥ -40	-35	-26
Upper NTSC interference into DTV.	≥ -40	-35	-26

Notes:

NTSC split 75% color bars with pluge bars and picture to sound ratio of 7 dB should be used for video source.

ATSC high definition moving video should be used for video source.

All NTSC values are peak power; all DTV values are average power.

12. Taboo Channel Rejection

The receiver shall not exceed the thresholds indicated in **Table 3** for rejection of taboo channel interference at the given DTV desired and undesired signal levels. Refer to ATSC A/74 Section 4.4.3 for further guidance.

TABLE 3—TABOO CHANNEL REJECTION THRESHOLDS FOR DTV INTERFERENCE INTO DTV

Channel	Taboo Channel D/U Ratio (dB)		
	Weak Desired (-68 dBm)	Moderate Desired (-53 dBm)	Strong Desired (-28 dBm)
N±2	≥ -44	-40	-20
N±3	≥ -48	-40	-20
N±4	≥ -52	-40	-20
N±5	≥ -56	-42	-20
N±6 to N±13	≥ -57	-45	-20
N ±14 and N±15	≥ -46	-45	-20

Notes: ATSC high definition moving video should be used for video source. All DTV values are average power.

13. Burst Noise

Equipment shall tolerate a noise burst of at least 165 μ s duration at a 10 Hz repetition rate without visible errors. The noise burst shall be generated by gating a white noise source with average power -5 dB, measured in the 6 MHz channel under test, referenced to the average power of the DTV signal. The input DTV signal level shall be -28 dBm. Refer to ATSC A/74 Section 4.4.4 for further guidance.

14. Field Ensembles

Equipment shall demonstrate that it can successfully demodulate, with two or fewer errors, 30 of the 50 field ensembles available from ATSC in conjunction with ATSC A/74. Error counts are not expected to include inherent errors associated with the start and end or looping of field ensembles for playback.

Refer to ATSC A/74 Section 4.5.2 for further guidance.

15. Single Static Echo

Equipment shall comply with either **CRITERIA A** or **CRITERIA B**, below.

CRITERIA A: Equipment shall tolerate a single static echo with the magnitude, relative to a desired DTV signal power of -28 dBm, and delay defined in **Table 4**.

CRITERIA B: Equipment may demonstrate compliance by tolerating a single static echo with the magnitude, relative to a desired DTV signal power of -28 dBm, and delay defined in **Table 5**, if the equipment also demonstrates that it can receive 37 of the 50 field ensembles. See **Field Ensembles** requirement.

CRITERIA A:

TABLE 4—MAXIMUM SINGLE STATIC ECHO DELAY

Echo Delay	Desired to Echo Ratio
-50 μ s	16 dB
-40 μ s	12 dB
-20 μ s	6 dB

TABLE 4—MAXIMUM SINGLE STATIC ECHO DELAY—Continued

Echo Delay	Desired to Echo Ratio
-10 μ s	5 dB
-5 μ s	2 dB
0 μ s	1 dB
10 μ s	2 dB
20 μ s	3 dB
40 μ s	10 dB
50 μ s	16 dB

CRITERIA B:

TABLE 5—MINIMUM SINGLE STATIC ECHO DELAY

Echo Delay	Desired to Echo Ratio
-50 μ s	16 dB
-40 μ s	16 dB
-20 μ s	7.5 dB
-10 μ s	5 dB
-5 μ s	2 dB
0 μ s	1 dB
10 μ s	2 dB
20 μ s	3 dB
40 μ s	16 dB
50 μ s	16 dB

16. Channel Display

Equipment must display all channels, including multicast channels, broadcast by a digital television station that can be displayed on an analog TV receiver.

17. Closed Captioning, Emergency Alert System (EAS) and Parental Controls (V-Chip)

Equipment must display (1) EAS message broadcast pursuant to 47 CFR § 11.11 of the FCC Rules; (2) parental control information as required by the FCC Rules in 47 CFR § 15.120 and incorporate the EIA/CEA-766-A standard; and (3) Close Captioning information as required by the FCC Rules in 47 CFR § 15.122 and incorporate the CEA 708/608 standard.

18. Remote Control

A remote control to operate the equipment shall be provided with batteries. Standard

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codes will be used and provided so the consumer can program an existing remote control to, at a minimum, change channels and turn on and off the converter box and the consumer's existing analog television receiver.

19. Audio Outputs

The RF output must be modulated with associated audio program information; the RCA audio connectors must provide stereo left/right, when broadcast.

20. Energy Standards

The equipment shall use no more than two watts of electricity in the "Sleep" state. Sleep state power shall be measured in accordance with industry standard CEA-2013-A. Eligible equipment shall provide the capability to automatically switch from the On state to the Sleep state after a period of time without user input. This capability shall be enabled at the factory as the default setting for the device. The default period of inactivity before the equipment automatically switches to the Sleep state shall be four hours. Eligible equipment may allow the current program to complete before switching to the Sleep state. The default energy related settings shall not be altered during the initial user set-up process and shall persist unless the user chooses at a later date to

manually: (a) disable the "automatic switching to Sleep state" capability, or (b) adjust the default time period from 4 hours to some other value.

21. Owner's manual

An owner's manual shall include information regarding the remote control codes used to permit the consumer to program a universal remote control. The owner's manual will include information regarding the availability of the main audio channel and other associated audio channels on the RF and left/right audio outputs.

22. LED Indicator

The equipment shall contain an LED to indicate when the unit is turned on.

23. RF Cable

The equipment will include at least one RF cable to connect the unit with its associated analog television receiver.

24. Signal Quality Indicator

The equipment will display on the television receiver signal quality indications such as signal strength per ATSC A/74, Section 4.7.

TECHNICAL APPENDIX 2

TECHNICAL APPENDIX 2—NTIA Coupon-Eligible Converter Box (CECB): Permitted and Disqualifying Features

Feature	Permitted Feature	Disqualifying Feature
General Requirements		Any device or capability which provides for more than simply converting a digital over-the-air television signal (ATSC) for display on an analog television receiver (NTSC), including, but not limited to: Integrated video display; Video or Audio recording or playback capability such as VCR, DVD, HDDVD, Blue Ray, etc.
Antenna Inputs	Smart Antenna interface connector (CEA 909 Smart Antenna Control Interface standard). The manufacturer may supply a 300 ohm connector or a matching transformer to connect 300 ohm ribbon leads to the required RF antenna input.	
Antenna Pass-Through	Equipment may pass through a NTSC analog signal from the antenna to the TV receiver. By-pass switch to permit NTSC pass-through.	
Bundling Antenna and Converter Box.	Equipment and Smart Antenna may be sold together at promotional prices.	Equipment cannot be sold conditioned on the purchase of a Smart Antenna or other equipment.
Outputs (General)	S-Video	Digital Video Interface (DVI); Component video (YPbPr); High-Definition Multimedia Interface (HDMI); Computer video (VGA); USB IEEE-1394 (iLink or Firewire) Ethernet (IEEE-802.3) Wireless (IEEE802.11)

TECHNICAL APPENDIX 2—NTIA Coupon-Eligible Converter Box (CECB): Permitted and Disqualifying Features—Continued

Feature	Permitted Feature	Disqualifying Feature
Outputs (Audio)	Equipment may process associated audio services described in Section 6.6 of A/54. RF output may provide monaural audio for the selected audio channel. RF output may provide BTSC stereo for the selected audio channels.	
Automatic Software Repair/Up- grade. Program Information	Equipment is able to receive and process software pursuant to ATSC A-97. Equipment may contain software and hardware modifications necessary to display other program information as determined by the manufacturer.	
Remote Control	Manufacturers may include a programmable universal remote control to operate the equipment and other existing video and audio equipment. Remote control may have dedicated keys to provide direct access to closed captioning and descriptive video functions.	
Other Features	Equipment may be operated on battery power as well as external AC/DC power. Manufacturer may supply additional cables, such as a cable with 3 female RCA connectors for composite video (yellow connector) and stereo left and right audio (white and red connectors). Equipment may display on the television receiver additional signal quality information as determined by the manufacturer.	
Energy Standards	Equipment may comply with standards established by the EPA Energy Star program or state regulatory authorities.	