



► **TOPIC: The U.S. Government Converter Coupon Program and the NTIA's Requirements for Converter Box Eligibility**

Jim Fontaine shares his comments and answers questions on the digital TV transition.

Q: What is the NTIA's Converter Box Coupon Program?

A: When the U.S. Congress mandated the transition to digital television (DTV), it included a converter set-top box subsidy on the order of \$1 billion. The set-top box will receive the digital TV signal and convert it to analog, enabling viewers to watch off-air digital TV on an existing analog TV set.

The U.S. government will provide a converter set-top box to any household that contains a TV that cannot receive a digital TV signal. In fact, all households in the U.S. and its territories are eligible, on a first-come, first-served basis, to obtain coupons that can be redeemed for converter boxes.

Q: How do consumers obtain a coupon for a converter box?

A: The NTIA expects the program, called officially the 'coupon-eligible converter box' (CECB) program, to be up and running January 1, 2008 – March 31, 2009. At this time, the government will begin taking requests for coupons, with a maximum of two coupons per household.

The government will provide convenient ways for consumers to apply for their coupons, including a toll-free number and website. Among the U.S. government plans:

- Coupons are expected to be redeemed at retailers (including on-line retailers) where TVs and other consumer electronics products are sold. The government will provide a list of participating retailers that are expected to have coupon-eligible converter boxes beginning in January, 2008.
- Coupons are expected to be redeemed only for eligible converter boxes. The government will provide a list of those converter boxes that can be purchased with a government coupon. Coupons will be electronically coded to be redeemable only for purchase of eligible converters.
- Coupons are expected to be presented at the point of sale and must be redeemed at the time converters are purchased. Coupons will expire 90 days after they are issued.

Q: What makes a converter box eligible for the program?

A: The U.S. government will determine which converter boxes are eligible for the program.

To build a converter box eligible for the CECB program, manufacturers must adhere to rigid technical specifications and features adopted by the National Telecommunications and Information Administration (NTIA), the government agency charged with administering the coupon-based converter program.

The NTIA's Final Rule (301.5) specified that subsidized converter boxes must meet a number of digital TV performance standards, including the majority of items specified under the ATSC Receiver Performance Guidelines, commonly referred to as the "A/74 guidelines".

Q: Why is conformance to the ATSC A/74 standard important?

A: By making converter boxes comply with the ATSC A/74 guidelines and other minimum specifications, the NTIA has taken a decisive step to ensure that these devices convert high-quality off-air digital signals into analog signals for those consumers who rely on analog TV. Conformance to the A/74 standard ensures reliable, stable, error-free TV viewing for the consumer.

Q: What is the process for manufacturers who wish to participate in the program?

A: Manufacturers that wish to provide converter boxes for CECB program are required to follow a defined technical approval process. Manufacturers participating in the program must submit sample converter boxes, present test results and certify that the boxes meet the ATSC A/74 and other NTIA requirements. The NTIA, working with the FCC, may test converter boxes for A/74 and other standards compliance.

The NTIA will notify the manufacturer whether the model meets the NTIA specifications and is (or is not) eligible for the program.

Q: Are all digital television products required to meet the same A/74 standard of performance?

A: No, minimum receiver performance standards, which also includes tuner performance, are only mandated for coupon-eligible converter boxes.

The mainstream media is picking up on the fact that the prices of the latest TV displays are coming down, and, with the impending switch to DTV in the U.S., more consumers are likely to purchase new TVs going forward. Unfortunately, they may be very disappointed with the quality of their TV experience. Many consumers do not realize that the display alone does not determine the quality of the digital TV picture. A great display will deliver only as good a picture as the receiver (tuner) can deliver.

Some consumer electronics manufacturers are making their best efforts to deliver a quality receiver, but in the majority of DTV sets, the receiver ports still do not meet minimum ATSC A/74 specifications. These products include not only digital and high-definition television sets, but also the whole range of DVD recorders, digital video recorders, satellite set-top boxes or other TV peripherals that contain receivers to deliver off-air digital broadcasts.

As an added disadvantage, consumers have no way on a retail show floor to make well-informed decisions about DTV equipment purchases based on a clear understanding of the capabilities of receivers to meet the ATSC recommended performance guidelines.

In March of this year, the FCC tested a number of digital television receivers (documented in report: FCC/OET -7-TR-1003) and found that none of the tested receivers could fully achieve the ATSC's recommended performance guidelines. Ironically, a \$40 digital converter set-top box, which is required by the NTIA to meet these defined performance specifications, may deliver more stable receiver performance than a \$4,000 HDTV.

Q: How is Microtune® technology helping to enable the DTV transition?

A: At Microtune, we took it upon ourselves to develop a DTV tuner, called the MicroTuner™ MT2131, engineered to exceed the industry A/74 performance standards.

We set out to engineer the ideal DTV transition product that exceeded industry standards for DTV and supported legacy analog and cable standards, as well. The result was a single tuner that supports DTV, analog TV, off-air, and cable TV signals.

Q: Why is it important that the tuner exceeds performance requirements?

A: A poor tuner leads to a pixilated or frozen picture, or worse, a blank screen. By exceeding industry performance specifications, the Microtune tuner can achieve high levels of performance in DTV sets or converter set-top boxes, helping to ensure a quality TV experience for the consumer. Because it also handles analog signals, the MicroTuner MT2131, in particular, is a flexible single-chip tuner to take TVs through the transition to digital.

Q: What is Microtune's view of the DTV transition?

A: One of the greatest risks to a successful transition, and to a good consumer opinion of DTV, is poor tuners. The quality of the tuner will dictate consumers' TV viewing experiences, determining, for example, whether or not they will receive signal coverage in the area in which they live, or whether they can use an indoor antenna or must mount one on the roof.

With analog TV, consumers could receive "marginal" quality TV signals, with fuzzy edges and shadows. DTV is an 'all or nothing' signal. If the tuner cannot pick up a signal within the house, then there will be no picture. There is also some risk to picture quality based on the specifications of the demodulator. But by far, the greatest risk to a quality consumer TV experience is the grade of the tuner.

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