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National Telecommunications & Information Administration
1401 Constitution Avenue, N.W.
Washington, D.C. 20230

Re: Coupon Program for Digital-to-Analog Converter Boxes
Notice of Ex Parte Filing

Docket No.: 06051212129-6179-01

Dear Mr. Brown:

THAT Corporation (“THAT”) by this letter responds to the November 17, 2006 ex parte filing submitted by Funai Corporation (“Funai”) in the above-captioned proceeding. In its letter, Funai raises several issues regarding the inclusion of BTSC in the digital-to-analog converter box. Specifically, Funai states that the inclusion of BTSC or SAP “would require the addition of integrated circuits – some of which carry licensing fees – that ultimately would increase the cost to consumers.” As NTIA is well aware, any functions that are required within the DTV converter box will require the inclusion of circuitry, frequently realized in the form of integrated circuits. In particular, the addition of an RF output as specified in the NPRM – whether capable of delivering BTSC stereo or merely monaural (NTSC) audio – requires more than just the addition of integrated circuits; such a function is generally accomplished at least in part by a “can modulator” which generates the required radio-frequency output signal. Such an RF output is a necessary element for the millions of Americans who currently connect their televisions through an RF input to an antenna, to a VCR, or to a cable TV converter box.

The critical question for NTIA is whether the increased functionality is worth the incremental cost. Today, almost all televisions in the US include stereo audio capability based on BTSC. As THAT has outlined in this proceeding, the most efficient and economical means to replicate this capability in the converter box is to incorporate stereo BTSC into the RF output. Without such capability, many consumers will need to purchase and install wires and other equipment to be able to maintain stereo audio functionality after the digital switchover.

In evaluating the question of cost to the consumer with respect to the set top box coupon program, the Agency should consider the total cost to the consumer to maintain, at a minimum, the same signal quality that is currently available prior to the transition. The cost to the consumer post-transition will not be limited to the cost of the boxes themselves if the boxes fall short of including enough functionality to prevent degradation of the picture and audio portions of the broadcast signal. Indeed, any minimum functionality requirements the Agency imposes for eligible set top boxes under the coupon program will contribute to the cost of the box. But, that cost must be weighed against the ultimate cost to the consumer if certain functionalities are not present in the converter box. Thus, the additional cost to the box to ensure that BTSC audio stereo is available in the RF output is far less than the likely cost to the consumer that will have to purchase additional equipment and wiring in order to restore the signal quality that will be lost if such minimal functionality is not included in the box.

As Funai is aware, licenses to BTSC technology are available today on fair and reasonable terms to interested parties, and bear a small but reasonable per-use royalty. The benefit of such a license is that the integrated circuit maker can include BTSC encoding in a purely digital integrated circuit, thus saving cost and improving performance compared with analog implementations of the same function. THAT believes that analog implementations of BTSC encoding are free of any license requirements whatsoever, so manufacturers are able to implement such analog implementations without payment of royalties. Given the simplicity and low cost of THAT's solution, the incorporation of BTSC in the RF output is clearly the best solution for consumers seeking to maintain video and audio capabilities of their existing television sets when using a converter box.

THAT believes that Funai's statement that "the typical stereo separation offered by integrated circuits is only about 21 dB at midband frequencies" is misleading at best. While certain devices may offer only about 21 dB separation at midband frequencies, such separation is entirely sufficient to present a fully formed stereo experience to viewers. In fact, the BTSC standard, as documented in the FCC's OET-60, specifies a minimum of only 30 dB midband separation in professional transmitters (*see* FCC OET Bulletin No. 60, Revision A, February 1986 at 8), while most BTSC VCRs and TV sets achieve significantly less separation in the midband frequencies. Moreover, THAT's licensed consumer BTSC encoder technology offers well over 25 dB separation in the midband. When such a digital BTSC stereo encoder is incorporated in a DTV converter box, the TV set is likely to be the

limiting factor in separation, frequency response, distortion, and other audio performance measures.

THAT does not disputes Funai's view that greater separation will be available at the left and right audio output jacks of the DTV converter as defined in the NRPM, but believes that this is a specious argument. It is possible that better sound might be available, as defined by wider frequency response, lower distortion, and the like, were customers to purchase external power amplifiers and speakers, and connect them through the L/R audio output jacks of the DTV converter box. However, this issue is not germane to the current situation. NTIA has been vested with the responsibility to determine how best to maintain delivery of the current viewing/listening experience to consumers who will otherwise be disenfranchised by the coming transition. Many of these consumers will use the RF output, not the separate L/R and video outputs, to connect to their current TV sets. Including BTSC stereo in the RF output of the converter box is the *only* means to preserve the existing television picture and audio experience.

If you have any questions about this matter, please contact the undersigned counsel for THAT Corporation.

Respectfully submitted,

/s/ Robert A. Mazer

Robert A. Mazer

Counsel for THAT Corporation

cc: William Cooperman
David Murray
Charles Mellone
Jeffrey Wepman