



ATSC RECOMMENDED PRACTICE FOR CONVERSION OF ATSC SIGNALS FOR DISTRIBUTION TO NTSC VIEWERS

When high power analog broadcasting ends in February 2009 (or earlier for some stations), cable and satellite operators will need to replace the local station off-air NTSC program feeds used for standard definition multichannel distribution. The arrangements for doing this will typically be subject to negotiations between the broadcast station and the cable or satellite operator, but will usually entail converting DTV ATSC signals to an analog NTSC or baseband digital video signal. To help ensure consistent of quality for this conversion, the Advanced Television System Committee (ATSC) has produced a recommended practice (RP) with guidance on how the conversion should be carried out. This RP is currently in Working Draft form and is not yet approved for final publication but has been made available now for industry comment.

The RP is available on the ATSC Web site at <http://www.atsc.org/standards/TSG-814r0.pdf>. If you have input regarding the document, please contact the ATSC at atsc@atsc.org. The text below is extracted from the document Scope and describes the content and application of the RP.



“This Recommended Practice provides guidance to broadcasters and other creators of ATSC high-definition (HD) or standard-definition (SD) content and to the operators of Multichannel Video Programming Distribution (MVPD) systems (such as cable or direct to home satellite). It recommends the equipment capabilities needed to provide the highest quality programming to viewers who only receive NTSC services.

In case of any uncertainty about whether ATSC Transport Streams conform to the relevant standards or to the recommendations in this document, then local coordination should occur to resolve any ambiguous or omitted signaling.

This Recommended Practice covers professional equipment and excludes any recommendations for design or implementation of consumer equipment. Delivery to the home is not addressed by this Recommendation.

Introduction and Background

In preparation for the 2009 digital transition, broadcasters, cable systems and satellite providers will need to arrange for distribution of broadcast channels to their standard definition viewers. Many markets will not have direct access to NTSC or serial digital interface (SDI) SD versions of broadcast services, but will be limited to direct reception of ATSC digital television (DTV) signals. These DTV signals may contain HD or SD formats. This recommendation provides guidance for the creation of the replacement NTSC signal. Two cases are explicitly covered and one case is implicitly covered. The first case is direct delivery via NTSC on a RF channel. The second case is for head-end facilities that have SDI interconnections from the receive rack to the transmit rack (which may hold NTSC modulators or other suitable transmission equipment), which requires different techniques than those used for direct conversion to NTSC. These guidelines cover equipment capabilities needed to support both scenarios. The implicit case is for systems that do not have the ability to deliver an analog signal (except at the output of the consumer's STB), such as IPTV or DBS, which are treated as a "black box" with this recommendation only addressing how to replicate the NTSC input to the IPTV or DBS head-end.

This document provides basic technical recommendations and guidelines for equipment capabilities supporting distribution of HD originated broadcasts, SD 16:9, and all other ATSC standard coding formats with provisions for either direct down-conversion to analog, or an intermediary down-conversion to SDI which then is converted to analog for rendering on consumers' NTSC sets. Employing these capabilities will make it possible to ensure

that DTV broadcast formats are properly formatted and delivered for analog/digital SD viewers. This recommendation does not include processing of ATSC signals for delivery to SCTE 54 or SCTE 128 compliant receivers.

When generating an NTSC or SDI signal, with associated audio and data, from the ATSC transmitted format, the following capabilities should be considered:

1. Format conversion under control of AFD
2. Extraction of CEA-608 data
3. Preservation and distribution of content advisories
4. Preservation and distribution of ANSI/SCTE 127 data
5. Identification and proper AC-3 5.1 down-mix to Lt/Rt for main audio
6. Identification and proper AC-3 5.1 down-mix for second audio program

These guidelines do not address how to convert an ATSC signal to a QAM multiplex for delivery to digital devices, as the SCTE Standards for QAM signals, and the associated reception/decode for display via many combinations of equipment are well documented.”

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ATSC Digital Television Transmission System 8-VSB Fundamentals Seminar

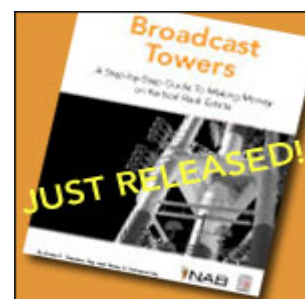
Wednesday, September 24, 2008 – KNME, Albuquerque, N.M.

The 1-day 8-VSB Fundamentals seminar, conducted by Gary Sgrignoli, will help you develop a fundamental understanding of the digital VSB transmission system and its performance attributes as well as current practical application information. The seminar includes an optional site visit to KNME's DTV Tx site on Sandia Crest. For additional information contact the instructor Gary Sgrignoli, Meintel, Sgrignoli & Wallace at 847 259 3352 or Gary.Sgrignoli@IEEE.org or Jim Gale, KNME-DT, 505 277 2049, jgale@knme.org.

The AFD Ready Initiative



AFD Ready is an initiative created by television broadcasters to insure uniform and optimum program delivery of television broadcasts after the analog shutdown on February 17, 2009. Through this initiative, participants will work to increase awareness of AFD and promote its use throughout the television industry.



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