



FCC Releases White Spaces Report and Order

Last week, the FCC released its long awaited decision that revised the rules governing how unlicensed devices will operate in the TV white spaces—*Second Memorandum Opinion and Order in ET-docket 04-186 (“MO&O”)*. White spaces are TV channels that are vacant in a particular market. The FCC refers to these unlicensed devices as “TV Band Devices” or TVBDs. The FCC released previous Report and Orders in 2006 and 2008, but received 17 petitions for reconsideration on the 2008 rules. This most recent *Second Memorandum Report and Order* released on September 23, 2010 addresses issues raised in the petitions for reconsideration and makes a number of significant modifications to the 2008 rules.

The FCC order affirmed the basic requirements for TVBDs in the November 2008 *Second Report and Order* in this proceeding, which established Fixed and Personal/Portable unlicensed devices. Fixed TVBDs must remain stationary, are allowed to operate at up to 4 watts EIRP on any channel between 2 and 51, except channels 3, 4 and 37, and could not operate co-channel or on the first adjacent channel in a station’s protected contour. Personal/portable TVBDs are restricted to operating on any unoccupied channel between 21 and 51, except channel 37, and may use up to 100 mW EIRP, except that operation on the first adjacent channels to TV stations is limited to 40 mW EIRP. There are two types of personal portable devices, Mode I (operates only on channels identified by either a Fixed or Mode II Personal/portable device) and Mode II devices (relies on geo-location and database access to determine available channels at its location). All devices (Fixed and Personal/portable) were required to include adaptive power control so that they use the minimum power necessary to accomplish communications. The new rules add a power spectral density requirement for TVBDs which is that the conducted power from the TVBD to its antenna, as measured in any 100 kHz band can not exceed:

- 12.2 dBm for Fixed devices;
- -1.8 dBm for Personal/portable devices operating adjacent to occupied TV channels;
- -0.8 dBm Sensing-only devices;
- 2.2 dBm All other personal/portable devices.

One significant change in the new rules is the elimination of the requirement that TVBDs employ spectrum sensing technology. Specifically, a TVBD that relies on geo-location (*i.e.* the device knows its own location) and database access to determine what channels are safe to use, is no longer required to listen (sense) for the presence of a TV station, wireless mic or other low power auxiliary station before that TVBD starts transmitting on a specific channel. The Commission stated that “...*the geo-location and database access method and other provisions of the rules will provide adequate and reliable protection for television and low power broadcast auxiliary services, so that spectrum sensing is not necessary.*” The new rules do include a provision for a sensing-only TVBD, but they will be subject to rigorous testing by the FCC lab before they can be put on the market.

The new rules also significantly change protections for licensed and unlicensed wireless microphones. The Commission has reserved two vacant UHF channels for wireless microphones (licensed and unlicensed) and other low power auxiliary service devices in all areas of the country. These are the first channel above and the first channel below TV channel 37 (608–614 MHz) that are available, *i.e.*, not occupied by an authorized service. If a channel is not available both above and below channel 37, then the first two channels nearest to channel 37 can be used. TVBDs cannot operate on these channels. In addition, a venue, which is an event where at least 6–8 microphones (or other low power auxiliary devices) per channel are being used, may register in the spectrum databases as a protected site. Parties wishing to register a venue must apply to the FCC 30 days in advance and the FCC will provide the information to database administrators.

This *MO&O* contains a number of other rule changes, including:

- Restricts Fixed TVBDs from operating on locations where the ground level is more than 76 meters above the average terrain level in the area;

- Modifies the rules governing measurement of adjacent channel emissions and sets an out-of-band emission limit of 72.8 dB below the highest average power in the TV channel in which the device is operating;
- Requires that communications between TV bands devices and TV bands databases, and between multiple databases, are secure, and
- Requires that all information that is required by the Commission's rules to be in the TV bands databases be publicly available.

The new rules will take effect 30 days after the *MO&O* is published in the Federal Register except for certain rule sections which contain new information collection requirements that require approval by the Office of Management and Budget (OMB). A copy of the *MO&O* is available on the FCC's webpage at http://hraunfoss.fcc.gov/edocs_public/attachmatch/FCC-10-174A1.pdf.

A Few Spaces Left for NAB's 2010 Satellite Uplink Operators Training Seminar

October 4-7, 2010
Washington, D.C.



Sidney Skjei of Skjei Telecom conducts the seminar for NAB. Mr. Skjei has more than 30 years of experience in engineering and is highly knowledgeable in all major satellite communications market areas.

In just four days, NAB will teach you the skills necessary for the proper operation of the satellite uplinks. Now certified by the Satellite Users Interference Reduction Group (SUIRG), this course offers expert training for you and your staff. Interference is an industry-wide problem. One solution is well-trained

operators. The seminar includes: in-depth information about the theory of satellite communications, a satellite newsgathering truck demonstration and a half-day field trip to SES Americom Operations Center. Space is limited so register now. There is additional information on NAB's [website](#) or contact [Cheryl Coleridge](#) at 202 429 5346.

ATSC Digital Television Transmission System Seminar The Future of Terrestrial & Mobile Television

KNME-DT, Albuquerque, N.M.
Wednesday, October 27, 2010
8:30 a.m. to 5:30 p.m.

An updated one-day seminar will be presented on the ATSC's digital television vestigial sideband (VSB) transmission system. The seminar will cover the fundamentals of the new mobile DTV transmission standard and its relationship to the legacy 8-VSB system. It will also cover practical broadcaster recommendations for improved DTV service and viewer education as learned from last year's post June 12 field tests. The seminar is conducted by Gary Sgrignoli, DTV transmission engineer with [Meintel, Sgrignoli & Wallace](#). This seminar is for broadcasters, broadcast consultants, equipment manufacturers, translator/LPTV operators and cable operators. For more information at KNME-DT contact [Jim Gale](#) at 505 277 2049 or [Dan Zillich](#) at 505 277 1251. You may also contact the instructor [Gary Sgrignoli](#) at 847 259-3352.

The Advanced Television Systems Committee (ATSC) Announces Upcoming Events

ATSC Fall 2010 Mobile DTV Seminar

Thursday October 7, 2010 – 9:00 a.m. to 4:30 p.m.
Washington, D.C.

More information, including [registration](#) and a newly updated [preliminary agenda](#), are available online.

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2010 NAB Satellite Uplink Operators Training Seminar

Instructor:
Sidney Skjei, Skjei Telecom

October 4-7, 2010
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ATSC Symposium on Next Generation Broadcast Television

Tuesday October 19, 2010 – 9:00 a.m. to 5:00 p.m.

The Westin Alexandria Hotel – Alexandria, Va.

More information, including [registration](#) and a newly updated [preliminary agenda](#), are available online.

Plan to Attend

The IEEE Broadcast Technology Society

60th Annual IEEE Broadcast Symposium

October 20–22, 2010

The Westin Alexandria • Alexandria, Va.

Keynote speakers for this year's symposium include James Martin, director, ISR programs for the U.S. Department of Defense and James O'Neal, technology editor, *TV Technology, USA*. Additional details on the technical program and how to register are available on the IEEE Broadcast Technology Symposium website. The advance registration deadline is October 1!

Submit Your Proposal Now for 2011 NAB Broadcast Engineering Conference

Las Vegas Convention Center, Las Vegas, Nevada

Conferences April 9–14, 2011/Exhibits April 11–14, 2011

Deadline for [submissions](#) is October 22, 2010.

The 2011 NAB Show will host the 65th NAB Broadcast Engineering Conference. This world-class conference addresses the most recent developments in broadcast technology and focuses on the opportunities and challenges that face broadcast engineering professionals. Each year hundreds of broadcast professionals from around the world attend the conference. They include practicing broadcast engineers and technicians, engineering consultants, contract engineers, broadcast equipment manufacturers, distributors, R&D engineers plus anyone specifically interested in the latest broadcast technologies.

In order to be considered, proposals must explain what attendees can expect to learn from the paper, must not be a sales pitch and should be no more than 200 words in length.

Papers accepted for presentation at the 2011 NAB Broadcast Engineering Conference will be eligible for the [NAB Best Paper Award](#). Established in 2010, the Best Paper Award honors the author(s) of a paper of exceptional merit published in the *NAB Broadcast Engineering Conference Proceedings*. The yearly proceedings, published as both a book and a CD-ROM is a compendium of these technical papers, and an important archive of the leading edge of broadcast engineering issues.

Technical paper proposals submitted for the 65th annual [Broadcast Engineering Conference](#) will be accepted until the October 22 deadline. If you have any questions, contact [John Marino](#), VP NAB Science and Technology at (202) 429-5346.