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October 31, 2008

**EX PARTE**

Ms. Marlene H. Dortch  
Secretary  
Federal Communications Commission  
445 12<sup>th</sup> Street, S.W.  
Washington, D.C. 20554

**Re: ET Docket Nos. 04-186 and 02-380**

Dear Ms. Dortch:

The National Cable & Telecommunications Association (“NCTA”) hereby submits an amended copy of an *ex parte* filed October 28, 2008 in the above-captioned proceeding. The *ex parte* summarized the technical parameters for fixed and personal/portable “white spaces” devices that will be necessary to mitigate direct pickup (DPU) interference to cable services in customers’ homes and to avoid interference to cable headend reception of distant broadcast signals in rural and other communities. This version corrects several inadvertent errors and more fully describes the necessary technical parameters.

Thank you.

Sincerely,

**/s/ Loretta P. Polk**

Loretta P. Polk

## NCTA Technical Parameters for White Space Devices

NCTA submits the following summary of the technical parameters for unlicensed fixed and portable white spaces devices to help ameliorate interference to cable systems. We also urge the Commission to adopt appropriate measures to protect the functionality of wireless microphones which are used extensively by cable program providers.

- Reduce the maximum output power of portable white space devices to significantly less than 100 mW.

As experience is gained from devices in the field, the Commission may permit increases in the power output and other technical modifications.

- Restrict the operation of white spaces devices, including fixed devices, to UHF channels 21-51.

White space devices operating on VHF channels will increase the probability for interference, due to poorer RF shielding in TV receivers at VHF compared to UHF. Furthermore, because of reduced path loss at VHF, the required distances between fixed white space devices and cable headends, even when not in the primary beamwidth of receiving antennas, will be very long, making it very difficult to protect reception or coordinate with fixed, unlicensed transmitters.

At a minimum, prohibit operation on VHF channel 2.

- Require that personal/portable white space devices have a permanently attached antenna. Antenna gain should not exceed 0 dBi, and the devices should not have an antenna connector for attaching an external antenna.

To avoid compromising the technical integrity of portable white space devices, such devices should not include an antenna connector that could facilitate adding a higher gain external antenna, thus increasing the EIRP of the white space device and defeating its power limitations.

- White space devices should employ TPC (Transmit Power Control) techniques whenever possible to ensure that the minimum power required is used for reliable transmission between the transmitter and the receiver.
- Require spectrum coordination before operation of white space devices on or adjacent to broadcast channels being received at headends.

Analysis shows that white space devices, even personal portable devices, operated on channels on or adjacent to those received at cable headends have the potential to cause interference for a considerable distance, and thus their operation should be restricted within the Grade B contour. Outside that contour, an auto location feature combined with a database (discussed below) can include suitable prohibition distances to protect headend reception.

- Require the use of auto location combined with a database for all white space devices. Of the suggested methods by which a fixed or portable devices might automatically determine channel availability, it appears that auto-location (GPS or equivalent), combined with regular access to a reliable database containing geographically-indexed lists of available channels, has the potential to provide the flexibility and reliability required to protect headend reception (without unnecessarily restricting the operation of white space devices).

Interference to reception of over-the-air television broadcast signals at cable headends by white space devices would deprive entire communities of access to television programming. A database which protects both the primary service area of over-the-air television stations and cable television operators' headend receiving locations is an efficient tool that could be extended to protect other entities, as well.

- Restrict white spaces transmitter power levels if bandwidths less than 6-MHz are allowed.

The interference from white spaces transmissions will likely be noise-like in their effects on reception, whether it is in the form of direct pick up (DPU) at customers' television receivers or over-the-air signal reception at headends. If such devices are permitted to use bandwidths less than 6 MHz, it raises the possibility of multiple devices simultaneously operating within the same television channel and affecting the same receiving device. To avoid that possibility, the power output level of any white space device utilizing less than a full television channel should be reduced proportionally to its occupied bandwidth.

- Restrict the operation of fixed white space devices to a maximum of 1 Watt and a maximum antenna gain of 6 dBi. Fixed devices should be professionally installed and restricted to at least 400 feet from the external walls of any structure where a television receiver is likely to be located (absent a special showing that greater external wall signal attenuation justifies closer spacing) or demonstrate that the field strength at the exterior wall of the structure does not exceed 99 dB $\mu$ V/m, assuming UHF-only operation.

This distance requirement is necessary to avoid DPU interference from the more powerful fixed devices at UHF frequencies. Greater distances would be required if VHF transmissions were allowed.

- Adopt measures in the rules to protect wireless microphone users from harmful interference, including authorizing adequate spectrum and interference mitigation techniques.

Wireless microphones are used extensively by cable programmers in support of electronic newsgathering and coverage of live sports and entertainment productions. They are essential to electronic journalists covering breaking news events, especially on-the-scene coverage of emergency situations. It is essential to have an adequate number of channels set aside for exclusive use in program production, such as sports programming, and for important local itinerant uses, such as electronic news gathering.