MOTOROLA

December 7, 2007

Marlene H. Dortch, Secretary
Federal Communications Commission
Office of the Secretary
445 12th Street, SW
Washington, DC 20554

Re: *Ex Parte* Presentation
ET Docket No. 04-186

Dear Ms. Dortch:

Pursuant to section 1.1206(b)(2) of the Rules, this is to notify you that on December 6, 2007, Tom du Breuil, Dave Gurney, Yuri Fridman, and the undersigned, of Motorola, met with the following engineers from the Office of Engineering and Technology (OET) in Columbia, Maryland: Rashmi Doshi, Steve Jones and Steve Martin. Joining the meeting via videoconference were OET staff: Ira Keltz, Alan Stillwell, Bruce Romano, Mark Settle, Ron Chase, Ahmed Lahjouji, Saurbh Chhabra, Hung Le, Harry Wong and Hugh Van Tuyl.

During the meeting Motorola discussed the attached whitepaper entitled "Motorola Whitepaper: Shielding Effectiveness of In-Home Cable TV Wiring and Splitters" and the attached reference manual regarding the Motorola Cognitive Radio White Space Device that Motorola delivered to the Commission on November 15, 2007.

Motorola is a strong supporter of the FCC's proposals to make available spectrum allocated for television broadcast service for low power devices. It is imperative, however, that such ancillary use of the TV "white space" (TVWS) spectrum protect broadcast licensees and other incumbent services so that service quality is not materially diminished. Motorola's research and experimentation supports the premise that with appropriate restrictions, cognitive radio techniques can be successfully utilized to allow low power devices to utilize TVWS without causing harmful interference.

Motorola previously submitted a set of recommendations that, if adopted by the Commission, would establish the framework for both useful TVWS opportunities and protection of incumbent services. While much of the focus of Motorola's recommendations has been the protection of "over-the-air" incumbent operations, it is also important to address potential interference to CATV incumbent operations via ingress of co-channel signals from TVWS devices operating in the home environment into home cabling and reception devices through direct pickup.

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During the meeting Motorola discussed the attached whitepaper which details our evaluation of the shielding effectiveness of consumer cables in order to understand and characterize the ability of typical consumer CATV cable, connectors and terminations to reject incident, co-channel electromagnetic fields, or Shielding Effectiveness (SE). Devices attached to this cabling and connections will exhibit interference commonly referred to as Direct Pickup or DPU in cases where the electromagnetic field from TVWS devices exceeds the SE of the cabling network. DPU interference is directly related to the full system performance including the shielding effectiveness of the cable, splitters, connectors and unterminated connectors in the home as well as the shielding performance of the tuner of the device attached, such as a DTV. For the purpose of this investigation, only the cabling, splitters and connections were examined.

As fully described in the attached whitepaper we find that high quality well terminated cables exhibit sufficient shielding effectiveness to prevent interference in fields of greater than 10 Volts per meter [V/m]. However, when cables end in open barrels such as unterminated wall outlets and consumer grade splitters are used, the interference threshold may fall to 0.3 V/m and some test cases including older home cabling and poor quality connection thresholds may be as low as 0.1 V/m.

In a prior Motorola whitepaper, *Recommendations on Cognitive Radio (CR) Operations in TV White Spaces (TVWS)*, Motorola recommended a consumer TVWS device power limit of 10mW (10 dBm EIRP) for in-home use (termed Class B in the aforementioned white paper). This power level was arrived at as a recommended balance to enable a new class of unlicensed consumer devices while minimizing the potential for interference to the existing cable TV service. This test data shows that TVWS devices operating at power levels much greater than 10 mW in the consumer environment significantly increase the potential to cause DPU interference directly into the home cable TV wiring and that mitigation in such cases is much more difficult than for a 10 mW devices. While limited potential exists for DPU interference in some situations even with consumer TVWS devices operating at 10 mW, Motorola believes that potential interference is solvable at little to no cost and effort by actions that consumers can take.

Motorola recommends that Class B consumer devices be limited to 10 mW to minimize the potential for in-home interference. We also recommend that devices outside the home environment be allowed to operate at power levels up to 4 W EIRP, along with requirements for geolocation, sensing and support for a beacon. (Designated as Class A devices in the prior white paper.) This multi-tiered classification provides for high power devices needed when deploying broadband to rural areas and responding to the growing broadband mobile or portable needs of professional users. Use of a geolocation database in combination with registration requirements will help ensure that these applications are for professional or outdoor uses, and provide additional mechanisms to ensure interference is not caused. The lower powered device will satisfy the need for limited

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range consumer devices typically deployed in homes which meet the need for local area consumer broadband networking at a much lower power level.

We urge the FCC to consider as part of the next round of TVWS testing some tests of the co-channel interference potential to in-home television equipment and cabling system. We believe these additional tests would be helpful in understanding the variability of interference to embedded cable systems due to home cabling, connection quality, unterminated wall outlets and splitter quality. Motorola would be happy to assist the Commission in defining such tests.

Pursuant to the Commission's Rules, one copy of this notice is being filed electronically with the Commission. If you require any additional information please contact the undersigned at (202) 371-6940.

Sincerely,

/s/ Robert D. Kubik

Robert D. Kubik, Ph. D.
Director, Telecom Relations Global

Attachments:

1. Motorola Cognitive Radio White Space Device Reference Manual
2. Motorola Whitepaper: Shielding Effectiveness of In-Home Cable TV Wiring and Splitters

Cc: FCC staff listed above

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