



1200 EIGHTEENTH STREET, NW  
WASHINGTON, DC 20036

TEL 202.730.1300 FAX 202.730.1301  
WWW.HARRISWILTSHIRE.COM

ATTORNEYS AT LAW

August 13, 2007

**Via Electronic Filing**

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

*Re: Notice of Ex Parte Communication, ET Docket Nos. 04-186, 02-380*

Dear Ms. Dortch:

On August 9-10, 2007, representatives from Microsoft Corp. met with the Office of Engineering and Technology at the FCC Laboratory to discuss the results of the Prototype A testing set forth in OET's initial evaluation of the performance of prototype TV-band devices.<sup>1</sup>

Specifically, on August 9, Ian Ferrell, Paula Boyd, and Srihari Narlanka of Microsoft; William Brown and John Clark, outside consultants to Microsoft; and Edmond Thomas of Harris, Wiltshire & Grannis LLP met with Julius Knapp, Rashmi Doshi, Steven Jones, Thomas Phillips, Steven Martin, William Hurst, Ira Keltz, Alan Stillwell, and Hugh Van Tuyl of OET and presented results from tests performed by Microsoft on an electronically equivalent version of Prototype A in Microsoft's possession.<sup>2</sup> In addition, Microsoft and FCC engineers tested both the Prototype A device used in the OET DTV signal tests as well as the spare Prototype A previously provided to the FCC Laboratory. The following issues were discussed during the meeting:

- Based on the parties' discussion of test methodology, Microsoft and FCC engineers agreed that the test methodology used by both the FCC and Microsoft to generate laboratory bench test data was appropriate and identical. The Microsoft testing revealed that its electronically equivalent device detected DTV signals at a threshold of -114 dBm in laboratory bench testing with 100% accuracy, performing exactly as expected (see data attached hereto). However, the FCC found in its report that the device it tested did not. All parties concluded that the cause for the test result discrepancy was not due to differences in test methodologies.

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<sup>1</sup> See FCC Office of Engineering and Technology, Initial Evaluation of the Performance of Prototype TV-Band White Space Devices, FCC/OET 07-TR-1006 (Jul. 31, 2007).

<sup>2</sup> The test results presented are attached hereto.

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- In the presence of FCC engineers, Microsoft engineers tested the Prototype A device used by OET for the DTV signal testing. This test revealed that the scanner in the device had been damaged and operated at a severely degraded level. The damaged scanner accounted for the entire discrepancy between the Microsoft and FCC bench test data.
- Microsoft testing conducted in the presence of FCC engineers also revealed that the spare Prototype A device previously provided to the FCC Laboratory (which was in the FCC's possession throughout the testing process) reliably detected occupied television channels at -114 dBm.
- OET staff acknowledged that they did not attempt to contact Microsoft after observing the performance of the damaged Prototype A device tested by OET, nor did OET use the spare/backup Prototype A device provided to it for any portion of its DTV signal testing.

On August 10, Messrs. Narlanka, Brown, and Clark continued to meet with Mr. Phillips to review the performance of the Prototype A device. Further inspection of the device indicated that the performance of the Prototype A device with respect to wireless microphone detection left room for improvement even after accounting for the broken scanner. The parties discussed potential improvements to Prototype A device for wireless microphone detection and, based on these discussions, Microsoft engineers fine-tuned the wireless microphone detection algorithm used by the functioning Prototype A device and conducted some preliminary testing of the device before leaving the FCC Laboratory. During the preliminary testing, the spare Prototype A device detected wireless microphone signals at power levels of -114 dBm, the level at which Microsoft indicated the device would locate wireless microphone signals.

Pursuant to the Commission's rules, a copy of this notice is being filed electronically in the above-referenced dockets. If you require any additional information please contact the undersigned at (202) 730-1305.

Sincerely yours,



Edmond J. Thomas  
Senior Technology Policy Advisor

Enc.

**HARRIS, WILTSHIRE & GRANNIS LLP**

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cc: Julius Knapp  
Rashmi Doshi  
Steven Jones  
Steven Martin  
Thomas Phillips  
William Hurst  
Ira Keltz  
Alan Stillwell  
Hugh Van Tuyl

# WSD Prototype DTV Sensing/Scanning Sensitivity Testing

## Conclusion:

With proper user setting the Microsoft White Space Device (WSD) is capable of detecting integrative channel power levels of -114 dBm over a 6 MHz BW and below. Figure 1 shows the % successful detection outcome over 30 independent trials at UHF TV channels 21,36 and 51. The measurements were done with a WSD detection threshold of 5.

Figure 2. Plots the variance in Detection Success for the Microsoft WSD Serial # LBQ 100 and the FCC WSD Prototype A unit

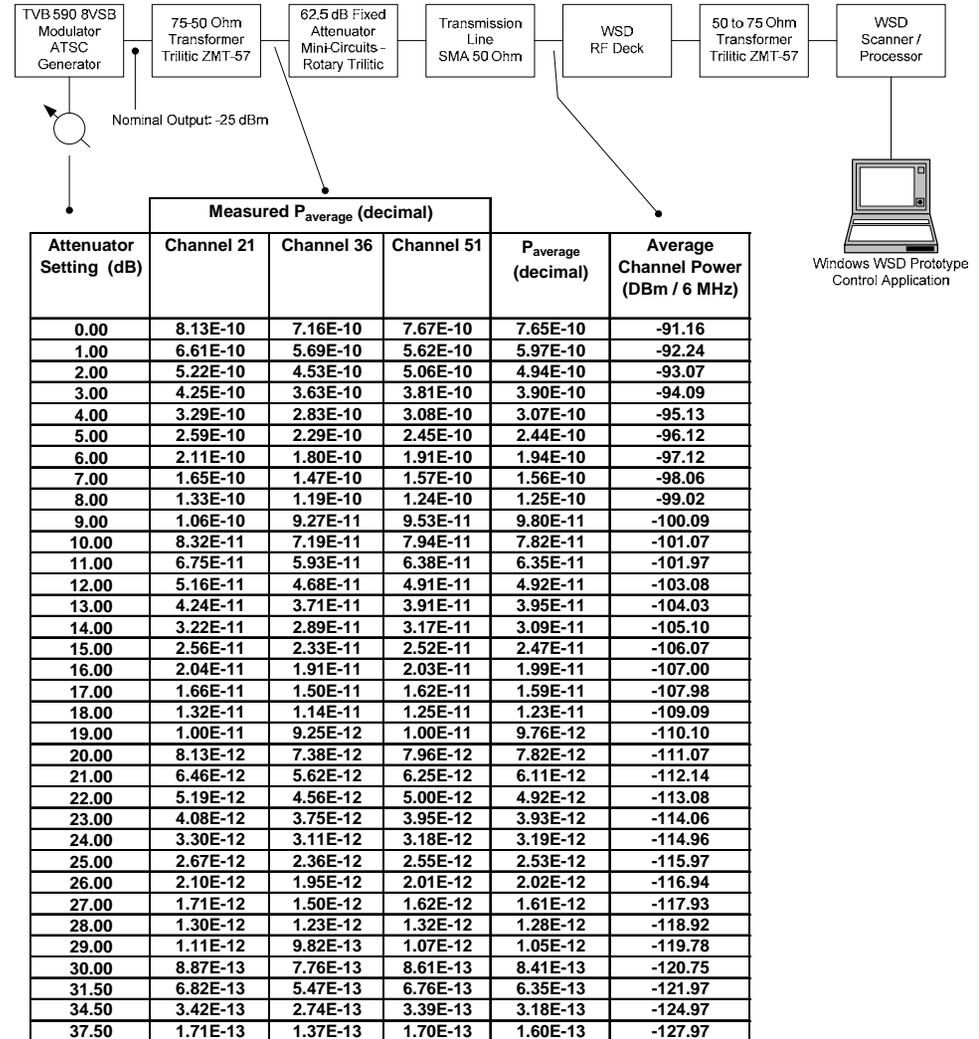
# Microsoft WSD Detection Sensitivity Test Configuration

## Test Setup and Calibration

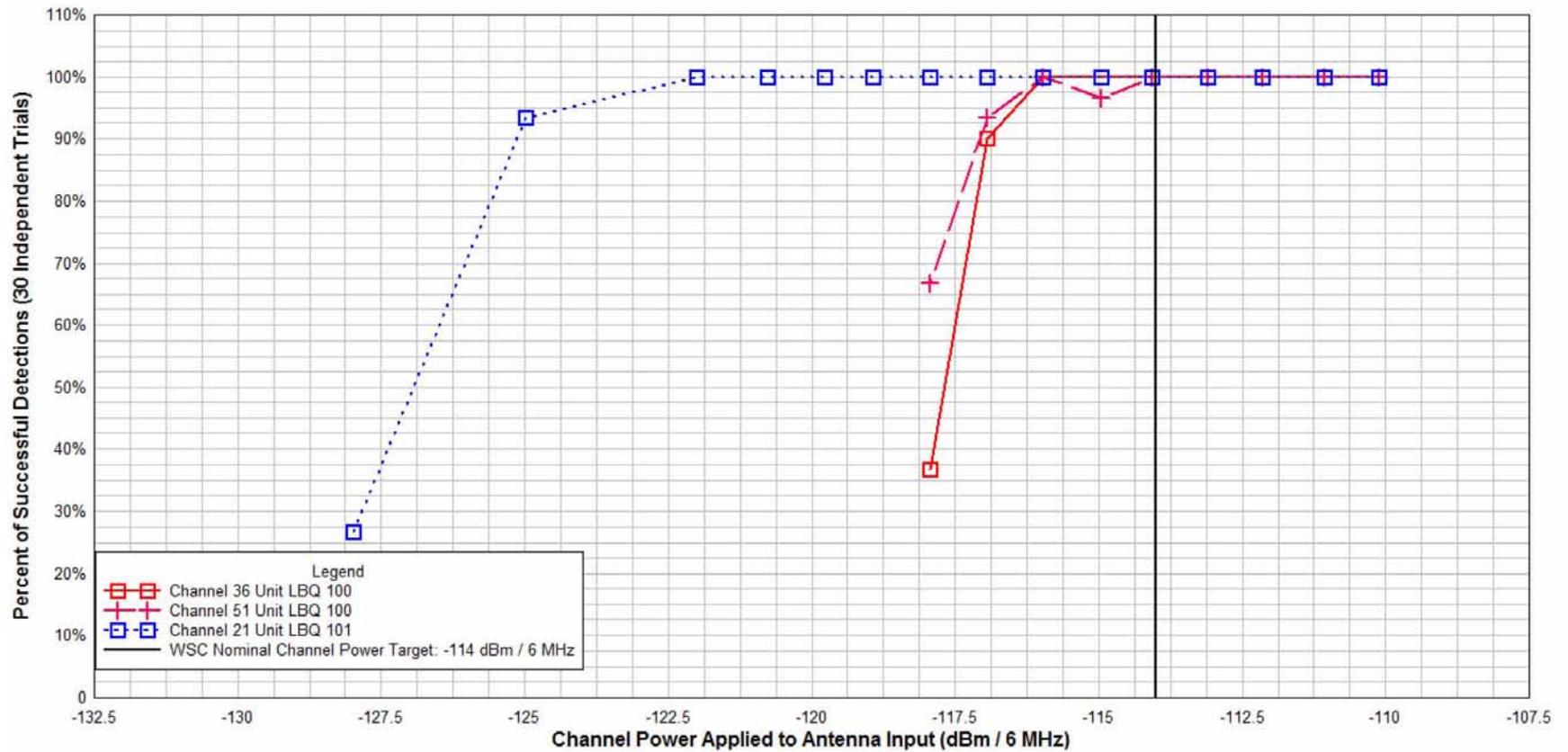


Integrated Channel Output from ATSC Generator

Channel Power Measured over 6 MHz,  $F_c=605$  MHz,  $RBW=10$  KHz

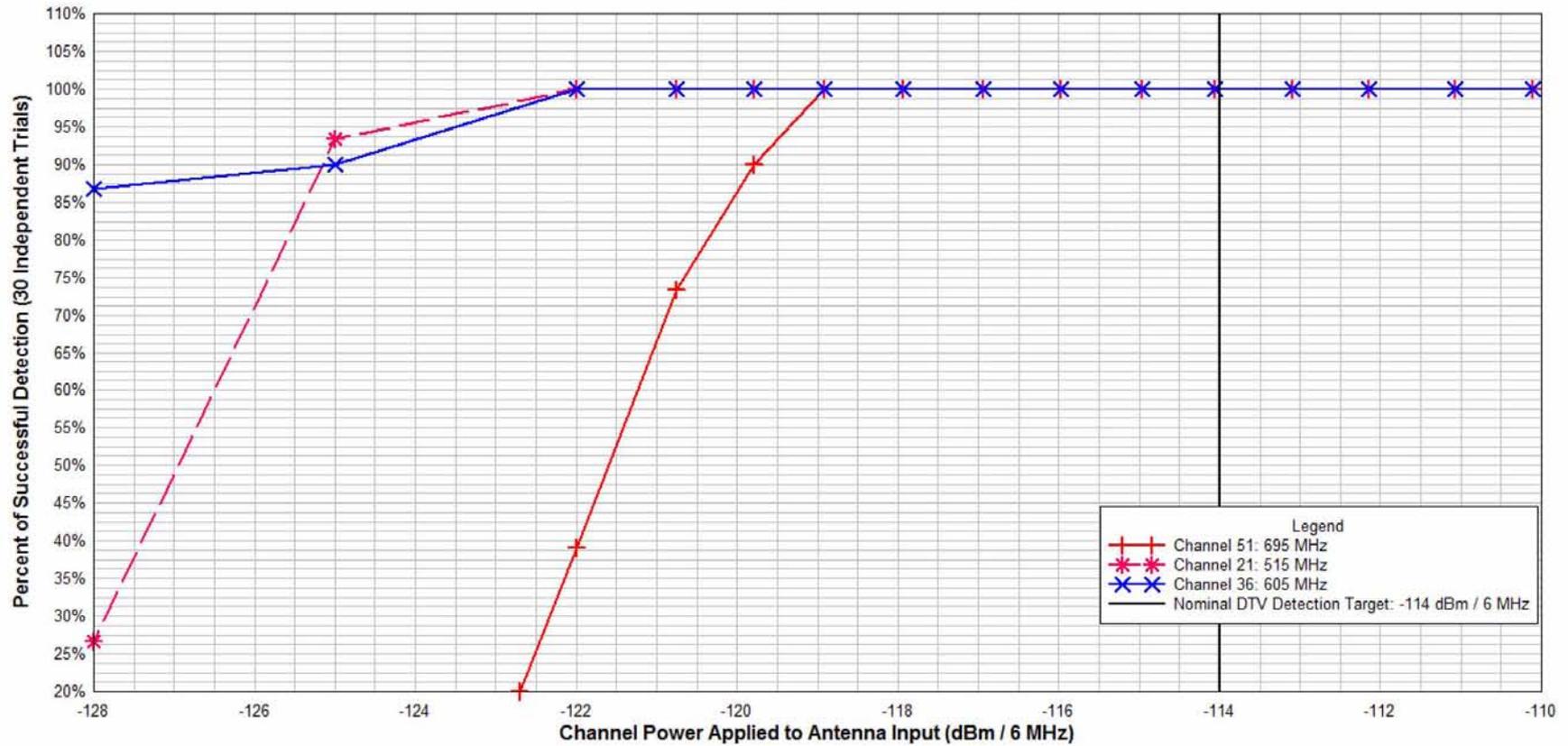


**Figure 1. WSD Prototype DTV Sensing/Scanning Sensitivity**  
UHF TV Channels 21,36 and 51, Threshold Setting=5



**Figure 1. Multi-channel DTV Channel Power Detection Measurement Results**

UHF Channels: 21, 36, 51, WSD Unit LBQ101



## Figure 2. Single Channel Detection Threshold Comparison Test Results

Bench Test Results (Blue) @ Submittal Threshold of 10 and FCC (Red) Test Results Figure 3-8.

ATSC Channel 36, Fc = 605 MHz Lab Serial # LBQ100

