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Before the  
Federal Communications Commission  
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION  
OFFICE OF THE SECRETARY

In the Matter of	)	
	)	
Notice of Proposed Rulemaking:	)	ET Docket No. 98-80
Conducted Emissions Limits Below	)	
30 MHz for Equipment Regulated under	)	
Parts 15 and 18 of the Commission's Rules	)	
	)	

**REPLY COMMENTS OF THE  
NATIONAL ASSOCIATION OF BROADCASTERS**

The National Association of Broadcasters<sup>1</sup> submits this brief reply to certain comments on the Commission's *Notice of Proposed Rulemaking* in this proceeding. *Notice of Proposed Rulemaking* in ET Docket No. 98-80, FCC 99-296 (1999) (hereinafter "*NPRM*"). In the *NPRM*, the Commission requested comment on its proposal to amend Parts 15 and 18 of its rules in order to protect against interference to radio services operating below 30 MHz. See 47 C.F.R. §§ 15.107, 15.207 and 18.307 for the conducted emission limits. For the reasons stated below, NAB specifically addresses certain comments with respect to the issues of (1) measuring emissions, (2) controlling interference from home and office cabling systems, and (3) RF noise emissions.

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<sup>1</sup> NAB is a nonprofit, incorporated association which serves and represents America's radio and television broadcast stations and networks.

## **Conducted Emission Measurements are not a Substitute for Radiated Emission Measurements**

We disagree with Microsoft Corporation's ("Microsoft") suggestion that a conducted emission measurement can be used in lieu of radiated emission measurements to accurately predict the interference potential of an intentional radiator. The length and orientation of the power cables connected to these intentional radiators varies widely, and thus do their efficiencies as antennas. We do not believe it is appropriate to assume, as Microsoft has done, that the absolute worst case situation in this regard would be a power gain of 3.27. Comments of Microsoft Corporation, filed January 31, 2000, at Technical Appendix, at 1. At 27 MHz, one-quarter wave is 9.1 feet, and a half-wave is 18.2 feet. It is very likely, for example, that in a typical home two wires carrying a 27 MHz signal could be spaced one-quarter wave apart. Parallel wires could be inside walls on opposite sides of a room or hallway. The power cable connected to an intentional radiator could be 9.1 feet away, or 18.2 feet from a power line inside a wall. A 25-, 50-, 100-foot, etc. extension cord could be connected to the intentional radiator and configured in such a way as to create quarter-wave or half-wave spacing. In all of these situations it is possible, indeed likely, that the AC power wiring would form a type of directional antenna that would have excessive gain in one or more directions. Thus, it is critically important that the Commission require, as it proposed, that radiated emissions testing be conducted. *See NPRM* at ¶ 26. Furthermore, this radiated emissions testing must establish that the device under test can comply with the Commission's radiated emission limits under worst-case, not just "typical," configurations.

## **The Commission Needs Effective Regulations that Control Interference from Cabling Systems**

We also echo the concerns of The National Association for Amateur Radio (“ARRL”) concerning the potential for abuse that exists with the rather vague requirement that certain radiated emissions tests be performed, as the Commission proposed, “at a minimum of three installations that are representative of typical installation sites.” *Id.* at ¶ 26; *see* Comments of ARRL, filed January 31, 2000, at 5. This is clearly a problem that the Commission should address. We note that Adaptive Networks, Inc. (“Adaptive”) indicates that it has been working to develop an open field test procedure for testing not only AC power line carrier current systems, but all wired systems that have the potential to interfere with licensed radio communications. Comments of Adaptive Networks, Inc., filed January 31, 2000, at 1 and 4.

We strongly agree that the Commission needs effective regulations that control interference from the cabling systems used to route audio, video and data throughout homes and businesses. There are, however, aspects of Adaptive’s proposed measurement procedure that concern us. Most notably among these is the apparent assumption that AM-band frequencies can be measured at a distance of three meters, and the data extrapolated to the 30-meter limit using an inverse distance squared conversion factor. *Id.* at 4. Three meters is well within the near field of an AM-band antenna, and thus the  $1/d^2$  assumption is not appropriate. The Commission should continue to require radiated emissions measurements for AM-band carrier current systems at the distances specified in Section 15.221. 47 C.F.R. § 15.221.

## **RF Noise**

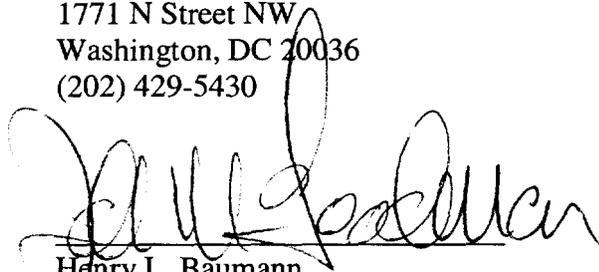
We support ARRL's suggestion that the Commission should conduct empirical studies, over time, of the RF noise created by unlicensed devices. Comments of ALLR at 4. One thing that the Commission's Part 15 and Part 18 emission limits are not effective in controlling is the cumulative interference caused by multiple unlicensed devices operating in the same vicinity. This is because there is no limit on the number of such devices that can be used in a particular place. It is therefore critically important that the Commission have reliable data about the cumulative interference from these devices in the real world. Such data would enable the Commission to better identify where tighter regulations are needed.

**Conclusion**

For the reasons stated above, the Commission should require radiated emissions testing, reexamine their proposed requirements of radiated emissions tests, and implement effective regulations with respect to cabling systems of both residential and commercial environments. Furthermore, the NAB requests that the Commission conduct a study of RF noise of multiple unlicensed devices to determine the number and the configurations that interfere with licensed radio communications.

Respectfully submitted,

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