

Comments submitted by:

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Subject:

FCC Office of Engineering and Technology, Laboratory Division draft report "RF Lighting Products Must Meet All FCC Standards to Mitigate Potential Harmful Interference to Radio Services" posted 08/27/2014 on Knowledge Database, Draft Laboratory Division Publications webpage (640677 D01 RF LIGHTING DR01-41878)

Protecting wireless network base stations is the most important consideration here. These base stations can be anywhere, use high gain receiving antennas, have very sensitive receivers, and are frequently line-of-sight to large lighting product installations. They use advanced techniques to minimize the noise created by each mobile device and thereby maximize the total network capacity available to all mobile devices. Protecting the very low noise floors of these receivers from external interference is a necessity. The Part 15 and Part 18 levels may no longer be adequate to protect these modern receivers and should be reviewed and updated.

Verizon Wireless has experienced an interference case near 1725 MHz from a lighting product. The 1000 MHz limit may be too low. To cover the base station receive spectrum in all current wireless bands, the radiation emission testing should be performed up to 1920 MHz.

Bandwidth of interference is not addressed. The permitted levels should be specified over the bandwidth of a single Long Term Evolution ("LTE") resource block, i.e. 180 kHz.

Aggregate interference is also not addressed. A single installation can include hundreds or thousands of lighting products. Manufacturers should consider this issue carefully in light of these rules:

"Since the operators of part 15 devices are required to cease operation should harmful interference occur to authorized users of the radio frequency spectrum, the parties responsible for equipment compliance are encouraged ... to provide greater attenuation of unwanted emissions than required by these regulations..." (from Part 15.15(c)).

"... irrespective of whether the equipment otherwise complies with the rules in this part, the operator of ISM equipment that causes harmful interference to any authorized radio service shall promptly take whatever steps may be necessary to eliminate the interference." (from Part 18.111(b)).

The draft report specifically mentions RF ballasts used with fluorescent fixtures, compact fluorescent bulbs, and LED lighting products. This list covers the types of lighting products from which Verizon

Wireless has experienced interference in recent years. As even newer lighting product technologies are developed, manufacturers should proactively address the RF interference issue.

Lighting products do not have FCC licenses to transmit RF signals. Verizon Wireless has exclusive FCC licenses to transmit RF signals and to protect them from external interference. If lighting product users would immediately cease operating products that interfere with the Verizon Wireless network, we could cope with loose rules regarding the design and testing of lighting products. Owners of new display lighting in retail stores and new LED scoreboards in stadiums rarely do so, however, and Verizon Wireless is left to suffer the interference, sometimes for many months. This is not fair to Verizon Wireless. As a result, we have no choice but to support stringent Part 15 and Part 18 limits and firm testing and compliance requirements.