

**Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554**

In the Matter of

IEEE-USA Petition for Declaratory Ruling
for Frequencies Above 95 GHz

ET Docket 13-259

Via the ECFS

COMMENTS OF IEEE 802

1. IEEE 802^{1,2} respectfully submits these comments supporting the Petition by IEEE-USA seeking a declaratory ruling that wireless transmission at frequencies above 95 GHz is “new technology” in the context of Section 7 of the Communications Act of 1934, as amended,³ and that FCC deliberations on rules for such system are entitled to the provisions⁴ of that section.
2. IEEE 802, as a leading consensus-based industry standards body, produces standards for wireless networking devices, including wireless local area networks (“WLANs”), wireless personal area networks (“WPANs”), wireless metropolitan area networks (“Wireless MANs”), and wireless regional area networks (“WRANs”). Included in our standards development activity is an emphasis on coexistence, which is the focus of our Wireless Coexistence working group.

¹ The IEEE Local and Metropolitan Area Networks Standards Committee (“IEEE 802” or the “LMSC”).

² This document represents the views of IEEE 802. It does not necessarily represent the views of the IEEE as a whole or the IEEE Standards Association as a whole.

³ 47 U.S.C. 157 <http://www.gpo.gov/fdsys/pkg/USCODE-2011-title47/html/USCODE-2011-title47-chap5-subchapI-sec157.htm>

⁴ “(a) It shall be the policy of the United States to encourage the provision of new technologies and services to the public. Any person or party (other than the Commission) who opposes a new technology or service proposed to be permitted under this chapter shall have the burden to demonstrate that such proposal is inconsistent with the public interest.

(b) The Commission shall determine whether any new technology or service proposed in a petition or application is in the public interest within one year after such petition or application is filed. If the Commission initiates its own proceeding for a new technology or service, such proceeding shall be completed within 12 months after it is initiated. “

INTRODUCTION

3. Earlier this year, IEEE 802 became aware of the IEEE-USA Petition to the FCC for a declaratory ruling on spectrum above 95 GHz to allow transmitters to operate as commercially available technology at these frequencies. IEEE 802 fully supports the petition from IEEE-USA and believes that timely deliberations on appropriate rules for operation above 95 GHz would spur innovation in new wireless technologies.
4. IEEE 802 has been actively exploring innovation at frequencies greater than 95 GHz. In 2008, the IEEE 802.15 Working Group established a Terahertz Interest Group (“THz IG”) which has had significant industry and academic participation.
5. THz IG’s focus is primarily on communications and related network applications operating on frequencies in the range 275-3000 GHz, which we refer to as the THz frequency range.
6. THz communications applications would include indoor and outdoor wireless communications links as follows:
 - Component to component.
 - Circuit board to circuit board.
 - Machine to machine.
 - Human to machine.
 - Human to human.
7. As envisioned in the work done so far, initial deployments of THz communications would employ wireless modulation methods of limited complexity, omni and/or directional antenna systems, and would typically offer very high data transfer rates in multiples of 10 Gb/s, possibly up to 1 Tb/s, providing parity with future fiber optic capacities. THz wireless systems could support transmission distances ranging from the very short (a few centimeters or less) to relatively long distances of several kilometers.
8. Recently, some possible applications and usage scenarios for THz wireless data transmission have been defined by the THz IG which might lead to the development of a standard within IEEE 802. As a first step towards the development of a standard, a study group on “100GbW (100 Gb/s over beam switchable wireless

point-to-point links)” will be established within IEEE 802.15 in 2013 addressing, among other applications, wireless links in data centers.

9. During a July 8, 2013 teleconference, IEEE 802.15 THz IG gave a briefing to the US FCC Spectrum Frontiers WG. IEEE 802 hopes that further contact with the Commission on THz issues will create opportunities inform the Commission of innovations at THz frequencies.

CONCLUSION

10. IEEE 802 encourages the Commission to move ahead with the declaratory ruling that would enable timely deliberations on regulations for wireless transmitters to operate at frequencies above 95 GHz. We believe that technology is being developed which will allow effective commercial applications to be brought to market if appropriate rules are in place.

Respectfully submitted,

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