

October 22, 2015

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

Re: *Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, ET Docket No. 13-49
Notice of Oral Ex Parte Presentation

Dear Ms. Dortch:

On October 20, 2015, the representatives of the wireless and critical infrastructure industries listed on Exhibit 1 hereto met with Office of Engineering and Technology ("OET") staff listed on Exhibit 1 to discuss proposed changes to Part 15 of the Commission's rules for the 5.15-5.25 GHz and 5.725-5.85 GHz U-NII bands.¹

With respect to the 5.725-5.85 GHz U-NII-3 band, the discussion centered on Alternative 3 from a proposal submitted to the Commission by Ubiquiti Networks, Inc. ("Ubiquiti") in its July 2, 2015 ex parte notice.² Industry representatives proposed a modification to Alternative 3 that would allow increased emissions in the 25 megahertz of spectrum closest to the band edge to thereby enable an increase in output power and a resulting increase in link distance. This modification and further explanation are shown in Exhibit 2 hereto.

With respect to the 5.15-5.25 GHz U-NII-1 band, the industry participants pointed out that, based on actual equipment design and testing, the current out-of-band emission limit at the lower band edge imposed excessive filtering requirements that allow one full power channel of the 100 megahertz band to be usable.

In light of the upcoming December 2, 2015 deadline requiring new 5.725-5.85 GHz devices to be certified only under Section 15.407 and the June 2, 2016 deadline prohibiting the marketing, shipping and deployment of 5.725-5.85 GHz devices certified under Section 15.247, the meeting participants discussed the possible extension of those deadlines.

¹ See *Revision of Part 15 of the Commission's Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, First Report and Order, 29 FCC Red 4127 (2014).

² See Letter from Catherine Wang and Timothy Bransford, Counsel to Ubiquiti, to Marlene H. Dortch, FCC Secretary, ET Docket No. 13-49 (filed July 2, 2015), Slide 17.

Pursuant to Section 1.1206 of the Commission's Rules, this letter is being filed electronically via the Electronic Comment Filing System in the above-captioned proceeding.

Respectfully submitted,

Alcatel-Lucent
American Petroleum Institute
Cambium Networks, Ltd.
Fastback Networks
JAB Wireless, Inc.
Mimosa Networks, Inc.
Ubiquiti Networks, Inc.
Zebra Technologies
Wireless Internet Service Providers Association

Enclosures

cc: Julius Knapp
Mark Settle
Karen Rackley
Aole Wilkins

Exhibit 1

Industry Attendees

Doug Davies
Alcatel-Lucent

James Crandall
American Petroleum Institute

Jonathan Allen (by telephone)
Rini O'Neil, PC for Cambium Networks, Ltd.

Jeff Fischer
Fastback Networks

Henry Goldberg
Goldberg, Godles, Wiener & Wright for Fastback Networks

Robert Koppel
Lukas, Nace, Gutierrez and Sachs for Mimosa Networks

Mustafa Rangwala (by telephone)
Mimosa Networks

Greg Bedian
Ubiquiti Networks, Inc.

Hayley M. Nivelles
Ubiquiti Networks, Inc.

Catherine Wang
Morgan, Lewis & Bockius LLP for Ubiquiti Networks, Inc.

Mark Luksich
Zebra Technologies (formerly Motorola Solutions)

Mark Radabaugh
Wireless Internet Service Providers Association

Jack Unger
Wireless Internet Service Providers Association

Steve Coran
Lerman Senter for Wireless Internet Service Providers Association and JAB Wireless

OET Attendees

Julius Knapp
Mark Settle
Karen Rackley
Aole Wilkins

Exhibit 2

Revised Industry Proposal

Modification to the Ubiquiti Proposal 3 for 15.407 Rules

For long distance communications links in the 5.8 GHz band, high gain antennas are typically utilized. High gain antennas are also sometimes used to limit interference cases, as the higher gain antennas have narrower beamwidths and a much more directional radiated pattern. Systems which employ high gain antennas (39 to 43.5 dBi typically) in the 5.8 GHz band will not be able to make the mask requirements of the 15.407 rules in the frequencies immediately adjacent to the 5.8 GHz band edge (either 5725 MHz or 5850 MHz). Operation of higher gain, highly directional antennas in the 5.8 GHz band will require some increase in the allowable OOB in the first 25 MHz from the 5.8 GHz band edge.

Under the 15.247 rules, the OOB in any 100 kHz band outside of the 5.8 GHz channel had to be 30 dB below the highest level of desired power of the intentional radiator within the band, in a 100 kHz bandwidth, if the system was based on RMS averaging and if it complied with the conducted power limits. This limit was 20 dB below the highest level if peak power was used.

To compare the 15.247 rules to the 15.407 rules, the allowable OOB at the 5.8 GHz band edge would be more stringent under 15.407 by approximately the amount of antenna gain.

The current Ubiquiti proposal has a value of +17 dBm/MHz at the edge of the 5.8 GHz band. The limit will not allow the higher antenna gains, so we propose allowing a dB for dB increase for every dB that the antenna gain of a 5.8 GHz system exceeds 32 dBi. The result will be that lower gain systems meet the +17 dBm/MHz spec, and the limit will be increased only where systems with antenna gain over 32 dBi are employed. The mask for higher gain antennas will follow a straight line joining the Ubiquiti Proposal 3 at 25 MHz from the band edge. As an example, a system with a 35 dBi antenna and a +15 dBm/MHz average output power would have an EIRP of 50 dBm/MHz. If the OOB was 30 dB below this value, the limit would be +20 dBm/MHz (3 dB over +17). The antenna gain was also 3 dB over the +32 dBi limit, so a dB increase for every dB over +32 has been maintained. In peak power terms, the OOB limit would be 20 dB below the 5.8 GHz intentional radiator, but the output power should be 10 dB more for the difference between peak and average, so the net effect should be the same, a dB for dB increase in OOB for antenna gains over +32 dBi.

The proposed mask is shown below:

Modification to the Ubiquiti Proposal 3 for 15.407 Rules

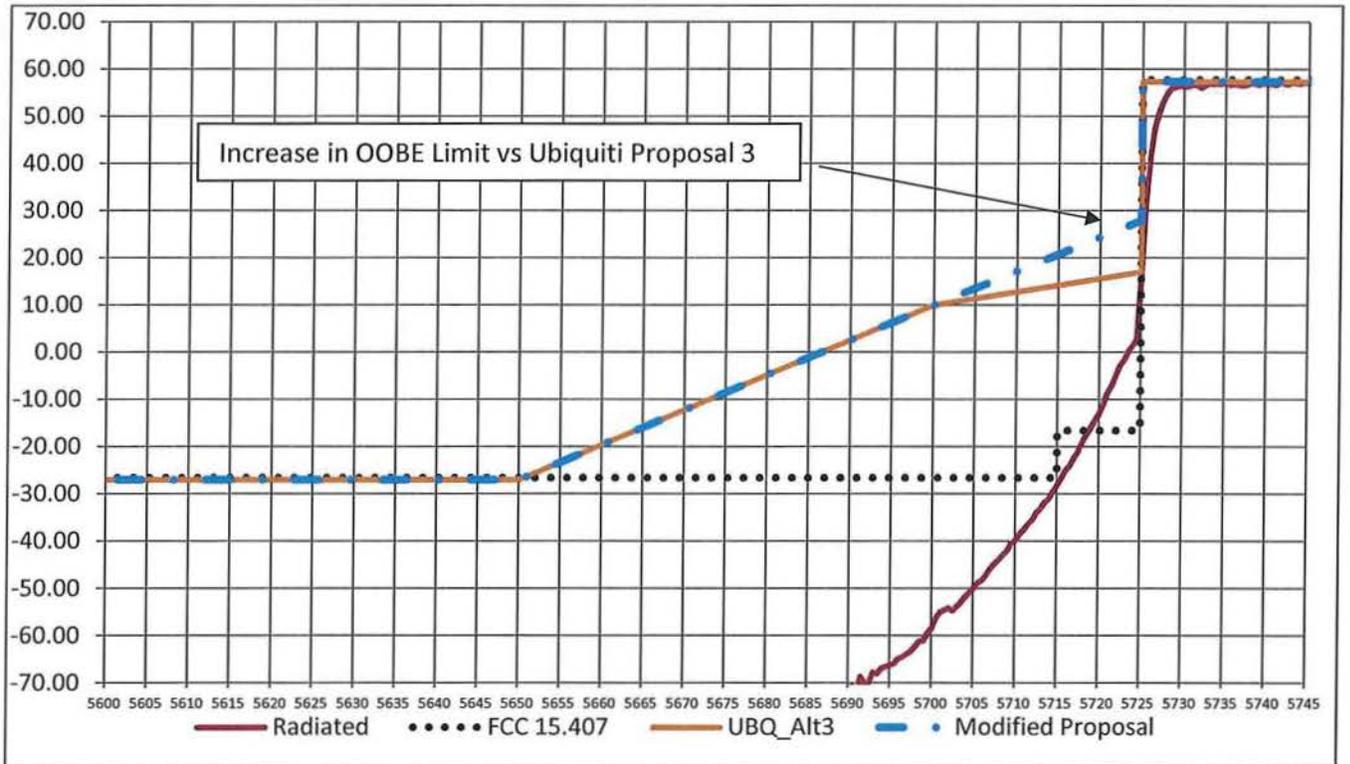


Figure 1 Modification to Ubiquiti Proposal 3