

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, DC 20554

In the Matter of)
)
Revision of Part 15 of the Commission’s Rules to) ET Docket No. 13-49
Permit Unlicensed National Information)
Infrastructure (U-NII) Devices in the 5 GHz Band)

PETITION FOR RECONSIDERATION OF ECHOSTAR TECHNOLOGIES L.L.C.

EchoStar Technologies L.L.C. (“ETC”), a wholly-owned subsidiary of EchoStar Corporation, hereby petitions for reconsideration of the Commission’s *First Report and Order* in the above-referenced proceeding (the “*First R&O*”).¹ Specifically, ETC asks the Commission to clarify that set-top boxes that serve as client devices for indoor wireless access points may operate in the U-NII-1 band (5.15-5.25 GHz) at the maximum power level afforded under new Section 15.407(a)(1)(ii) (*i.e.*, 1 Watt).²

ETC designs and manufactures DBS receivers, antennae and other digital equipment that support the reception of satellite services and the distribution of those services to consumers. Most relevant for purposes of this proceeding, ETC has integrated WiFi technologies into its set-top boxes and systems to facilitate the distribution of programming within a customer location, at

¹ 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 Rcd 4127 (2014).

² *See id.* at 4175, new Section 15.407(a)(1)(ii), which states as follows: “For an indoor access point operating in the band 5.15 – 5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.”

speeds faster than those achievable via in-home cable connections. For example, ETC has designed a home video distribution system that includes an indoor access point and set-top boxes that serve as client devices, utilizing 802.11 technology to decode HD video content from the customer's Ethernet connection and wirelessly transmitting that content to HD-enabled monitors. By including an access point as part of the customer's installation, the system effectively creates a private 802.11 WiFi network in the home. Accordingly, ETC has a direct interest in the *First R&O* and its potential impact on indoor WiFi-based services in the unlicensed 5 GHz spectrum.³

As with any indoor wireless device, the quality of any signal transmitted from ETC's WiFi-enabled set-top boxes is affected by physical factors in the immediate environment that may block or attenuate the signal and thus significantly reduce its power level (*e.g.*, walls, doors, carpets etc.). In the case of ETC's set-top boxes, this signal loss impairs the device's ability to communicate with the access point and any television sets in the home to which the device is connected. In turn, the user of the device may experience poor picture quality or no picture at all, which obviously is the exact result ETC wants to avoid. Therefore, where ETC's WiFi-enabled set-top boxes are using unlicensed spectrum, it is essential that they be permitted to operate at the same maximum power levels that Part 15 affords to access points or other indoor devices that operate in an entirely stationary mode. There is no indication in the *Notice of Proposed Rulemaking* for this proceeding that the Commission intended to suggest otherwise.

Nonetheless, there must be regulatory certainty on this issue, as ETC is making substantial investments in developing and marketing the equipment described above.

³ ETC did not file comments on the *Notice of Proposed Rulemaking* that led to the *First R&O*, as the need for the clarification requested herein did not arise until the *First R&O* was released. In any event, given the existing and potential consumer adoption of WiFi-based systems as a means of distributing HD video throughout the home, ETC submits that consideration of this Petition would clearly serve the public interest as required under Section 1.429(b)(3) of the Commission's Rules.

Uncertainty arguably is created by paragraph 45 of the *First R&O*, which could be read to suggest that ETC's set-top boxes must operate at the lower power levels assigned to mobile or portable client devices in the U-NII-1 band.⁴ Also, new Section 15.407(a)(1)(ii) assigns the higher maximum power level of 1 Watt to "indoor access point[s]," without explicitly acknowledging indoor client devices that operate in an equally stationary mode and are neither "mobile" or "portable" in the manner of, for example, a smartphone or a tablet.⁵

ETC's WiFi-enabled set-top box is precisely such a device. While it normally is not physically attached to anything, the box can only operate when sitting still and, unlike the case with a tablet or similarly portable device, generally cannot be moved throughout the home without risking a degradation or loss of video service. As such, the box is functionally identical to an indoor access point, and the interference considerations are the same for both.⁶ Thus, there is no reason not to afford both types of devices a maximum power level of 1 Watt when operating in the U-NII-1 band.

⁴ *First R&O*, 29 FCC Rcd at 4141 ¶ 45 ("We permit *any* client device which operates under control of an access point in the U-NII-1 band to operate at conducted power levels up to 250 mW and a PSD of 11 dBm/MHz with a 6 dBi gain antenna without distinction [as] to whether [the] devices are located indoor or outdoor . . .") (emphasis added); *see also id.* at 4176 (new Section 15.407(a)(1)(iv)).

⁵ Notably, Section 15.202 of the Commission's Rules does not define "client device" in terms of whether the device is fixed, mobile, portable or something else. *See* 47 C.F.R. § 15.202 ("A client device is defined as a device operating in a mode in which the transmissions of the device are under control of the master. A device in client mode is not able to initiate a network.").

⁶ *See First R&O*, 29 FCC Rcd at 4140 ¶ 44 (noting with respect to indoor access points: "These types of consumer-oriented devices should not contribute to interference concerns, as the building materials used in indoor environments should sufficiently attenuate energy transmitted from indoor devices to prevent any significant contribution to any noise rise seen by Globalstar's satellite.").

Accordingly, for the reasons set forth above, EchoStar Technologies L.L.C. asks the Commission to clarify the *First R&O* to confirm that set-top boxes that serve as client devices for indoor wireless access points may operate in the U-NII-1 band at the maximum power level afforded under new Section 15.407(a)(1)(ii) (*i.e.*, 1 Watt).

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June 2, 2014