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VIA ELECTRONIC FILING

Rashmi Doshi
Chief, Laboratory Division
Office of Engineering and Technology
Federal Communications Commission
7435 Oakland Mills Rd.
Columbia, MD 21046

Re: *Office of Engineering and Technology, Laboratory Division, Draft Guidance on Software or Network Configuration of Non-SDR Devices to Ensure Compliance, Draft Publication No. 594280*

Dear Mr. Doshi:

Wi-Fi Alliance is pleased to provide this feedback in response to the Office of Engineering and Technology ("OET"), Laboratory Division's call for comments on its draft publication titled "Guidance on Software or Network Configuration of Non-SDR Devices to Ensure Compliance," Publication No. 594280 ("Draft Guidance").^{1/} Wi-Fi Alliance appreciates the opportunity to provide this feedback and encourages the FCC to continue to discuss these important issues with it when further refinements to the FCC's policies are contemplated.

Background and Summary

The Draft Guidance addresses several cases – the use of Wi-Fi channels 12 and 13, the use of 5.1 GHz band devices outdoors and the use of the 5.2 and 5.4 GHz bands with dynamic frequency selection ("DFS") capabilities – where the operation of master devices may be limited and suggests means by which both master and client devices can conform to those limits. In other settings, the FCC has suggested a timeline under which it will implement the policies contained in the Draft Guidance. While the Draft Guidance also addresses software control and modular transmitters, Wi-Fi Alliance limits its feedback here to how the Draft Guidance will affect devices and the timeline for implementation of the Draft Guidance.

^{1/} See OFFICE OF ENGINEERING AND TECH., FCC, DRAFT LABORATORY DIVISION PUBLICATIONS REPORT, GUIDANCE ON SOFTWARE OR NETWORK CONFIGURATION OF NON-SDR DEVICES TO ENSURE COMPLIANCE, PUBLICATION 594280 (Jan. 10, 2014) ("Draft Guidance").

Wi-Fi Devices Operating on Channels 12 and 13

As the Draft Guidance notes, Wi-Fi devices operating on channels 12 and 13 of the 2.4 GHz band must, by default, ensure that the maximum transmit power complies with the out-of-band emission requirements applicable in the United States.^{2/} The Draft Guidance provides that, if a Wi-Fi client device has the ability to operate on channels 12 and 13 at different power levels and uses passive scanning, it must possess additional functionality to ensure that the devices do not operate at higher power levels when using channels 12 and 13 in the United States. Specifically, the Draft Guidance provides that the client device must derive supplemental location data from one of the following sources: (1) Global Navigation Satellite System (“GNSS”) sensors; (2) Mobile Country Code (“MCC”) and Mobile Network Code (“MNC”) received directly by a receiver in the device from a Commercial Mobile Radio Service (“CMRS”) carrier; or (3) other suitable geo-location data. As proposed in the Draft Guidance, the device must recheck the geo-location information at least once every hour, when the device is switched on and connections are established or changed.

Wi-Fi Alliance notes that there is little evidence that devices (whether client or master) operate at full power on channels 12 and 13 in the United States (or even operate on channels 12 and 13 at all). Nevertheless, Wi-Fi Alliance appreciates the flexibility that the geo-location options (and potentially others) that the Draft Guidance provides when a client device cannot meet the channel 12 and 13 limits in ways that are already available (by omitting channels 12 and 13 or by only operating on channels 12 and 13 with reduced transmit power). That flexibility may allow operation at full power elsewhere, while still limiting the potential for interference in the United States. As the Draft Guidance recognizes, there may be other ways for manufacturers to demonstrate that they comply with location-sensing capabilities. The Commission should recognize that one way compliance may be demonstrated is through operation under IEEE standard 802.11-2012 (Clause 9.18.2, Operation upon entering a regulatory domain). The Commission should provide further guidance on criteria it will evaluate to determine other technologies that will satisfy the geo-location option and it should accept alternative industry-recommended geo-location techniques. Where geo-location is required, Wi-Fi Alliance proposes that location information only be acquired when a device is turned on – not once an hour. There is limited likelihood that client devices will cross international borders, especially when they are operating.^{3/}

Wi-Fi Devices Operating in the 5.1 GHz Band

The Draft Guidance notes that devices operating in the 5.1 GHz band are required to operate indoors.^{4/} It states that client devices operating under the control of a master – a

^{2/} Draft Guidance at 4.

^{3/} Wi-Fi client devices operating on channels 12 and 13 are different, for example, than so-called “TV White Space” devices, which may operate, while in use, across multiple areas where protection may be required for different television stations and other TV band users.

^{4/} Wi-Fi Alliance notes that this requirement may change as a result of the pending rulemaking proceeding. See *Revision of Part 15 of the Commission’s Rules to Permit Unlicensed National Information Infrastructure (U-NII) Devices in the 5 GHz Band*, Notice of Proposed Rulemaking, 28 FCC Rcd. 1769 (2013). In any case, the prohibition against outdoor operations in the 5.1 GHz band is intended to protect Globalstar’s uplink operations. Because those operations are limited today and

mobile or portable device that supports a “Wi-Fi Hotspot,” for example – must ensure that the master device is operating indoors. This requirement, as written – regardless of whether it relates to the 5.1 GHz band or any future restriction on outdoor use – is unrealistic and potentially unnecessary. Client devices generally have no way of determining today whether master devices are indoors or outdoors and there is no accepted solution that would make client devices capable of meeting this requirement. If the Commission intended to require that *master* devices demonstrate that they will be located indoors (by, for example, showing that they can only operate when tethered to AC power), it should make the Draft Guidance more clear. In any case, the Commission should postpone further consideration of this matter, at least with respect to the 5.1 GHz band, until the pending rulemaking proceeding is complete.

Wi-Fi Devices Operating in the 5.2 and 5.4 GHz Bands

The Draft Guidance also notes that devices in the 5.2 and 5.4 GHz bands operating as masters (including client devices operating as master devices) must contain DFS capabilities. In the 5 GHz rulemaking proceeding, the Commission proposed several ways to ensure that DFS capabilities are not defeated. Wi-Fi Alliance has supported the Commission’s proposals and has encouraged the Commission to make the following group of rule changes: adopt a unified set of equipment authorization rules for the U-NII-2C and expanded U-NII-3 bands; adopt improved security features in order to ensure that U-NII devices operate only in the bands for which they are certified; adopt the improved “Bin 1” testing requirements; and codify the requirements previously announced in KDBs to eliminate users’ abilities to initiate transmissions in a mode that does not include DFS in bands where DFS use is required. The Commission should address the DFS requirements through the rulemaking process and address any residual issues related to DFS in client devices after that, if required.

Compliance

While the Draft Guidance does not propose to change the FCC’s rules, it does represent a modification of policy with respect to Wi-Fi devices. With respect to channels 12 and 13, it introduces the concept of geo-location capabilities and presents several options under which those capabilities can be satisfied (and leaves the door open for additional options). It also appears to impose a new requirement on Wi-Fi client devices operating in the 5.1 GHz band, although Wi-Fi Alliance is hopeful that the FCC will clarify that it does not intend to do so.

Wi-Fi Alliance urges the FCC to postpone compliance with any new policies for at least six (6) additional months from the time it issues its Guidance in final form. Without reasonable extension of the effective date, many device manufacturers and integrators may adopt only interim solutions (*e.g.*, separate FCC models), which would be both costly and disruptive to the entire supply chain process. With respect to the channel 12 and 13 requirements in particular, a delay in compliance implementation will have minimal impact because of the limited number of devices using channels 12 and 13 in any case and the

that situation is not expected to change in the immediate future, there would be no harm to Globalstar if the Commission delays implementing this requirement for the 5.1 GHz band, assuming it is still required, until the pending rulemaking proceeding is completed.

ability of manufacturers to use existing techniques to avoid full power operations on channels 12 and 13.^{5/}

Conclusion

The Draft Guidance proposes to implement changes to its policies governing the approval of Wi-Fi devices operating on channels 12 and 13 and in the 5.1, 5.2 and 5.4 GHz bands. Wi-Fi Alliance urges the FCC to proceed as outlined above and to discuss these matters with Wi-Fi Alliance member companies as it continues to address the important issues raised in the Draft Guidance.

Respectfully submitted,



WI-FI ALLIANCE

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^{5/} As noted above, Wi-Fi Alliance asks the FCC to delay action on new policies that would affect the 5.1, 5.2 and 5.4 GHz bands until after the pending rulemaking proceeding is completed. If the policies discussed in the Draft Guidance are still relevant after that occurs, the FCC should implement those policies six (6) months later.