Comments on Draft KDB for VLP

Intel Corp., Broadcom Inc. and Qualcomm Inc. have reviewed the *Draft 6 GHz KDB*[1] Office of Engineering and Technology's (OET's) Laboratory Division, published on April 4, 2024, and would like to provide the following comments for the FCC's consideration:

Section: Introduction

Comment 1: Add Transmit Power Control (TPC) as follows:

- 987594 D02 U-NII 6 GHz EMC Measurement v03, test report, exhibits, and RF Measurement Procedures for demonstrating EIRP, Bandwidth, Channel Mask, Band Emissions, Contention Based Protocol (Listen Before Talk), Transmit Power Control (TPC) and Automatic Power Control (APC) as applicable to 6 GHz devices.

Section: Attachment 987594 D01 U-NII 6GHz General Requirements v03

Comment 2: Modify Section 5, Page 16 to include prohibition for unmanned aircrafts as it is missing from the prohibitions.

> The device user manual must contain the following information. The user manual must be filed as an exhibit in the application filing.
> - The operation of this device is prohibited on oil platforms and aircraft, except that operation of this device in 5.925-6.425 GHz is permitted in large aircraft while flying above 10,000 feet.
> - Installation on outdoor fixed infrastructure is prohibited.
> - Control of or communications with unmanned aircraft systems is prohibited.

Comment 3: Modify Section 9 Table 6 to add a new column as "Transmit Power Control (TPC)" and mark as Yes only for VLP row and N/A for all other rows. It is important to not to confuse TPC with APC and differentiate between the two.

Comment 4: In Appendix A, Table 8, add X to Row [14] for VLP as VLP devices are Prohibited for control of or communications with unmanned aircraft systems.

Comment 5: In Appendix B, modify the VLP item as follows.

> **Very Low Power 6VL:**
> 1. Device Protocol Attestation Statement:
>   a. Statement that this device will prioritize spectrum above 6.105 GHz (provide details on how this is implemented).
>   b. Statement that this device will use Transmit Power Control (TPC). Provide details on mechanisms ~~that trigger TPC (for example, environment, performance, bandwidth, etc.).~~for implementing the TPC 6 dB range below PSD level of -5 dBm including supporting setups and configurations such as channel bandwidth.

[1] https://apps.fcc.gov/eas/comments/GetPublishedDocument.html?id=517&tn=151880

2. Statement acknowledging device restrictions:
   a. Operation is prohibited on oil platforms and aircraft, except that operation of this device in 5.925-6.425 GHz is permitted in large aircraft flying above 10,000 feet.
   ~~a.~~b. Control of or communications with unmanned aircraft systems is prohibited.

Change in 1.b is to clearly state the 6dB range below max PSD level of -5 dBm/MHz.
Change in 2.b is to add missing prohibition.

Section: Attachment 987594 D02 U-NII 6 GHz EMC Measurement v03

Comment 6: In Section M, modify Attestation Requirements as follows:

Attestation Requirements:

1. An attestation from the manufacturer will declare that their device meets the requirements of § 15.407 (d)(10).
2. ~~The attestation shall also declare that the TPC mechanism of the device is not user-configurable.~~
3.2. In addition, the attestation will describe in detail how the TPC is implemented, including but not limited to how the TPC for implementing the TPC 6 dB~~m~~ range below PSD level of -5 dBm including supporting setups and configurations such as channel bandwidth.~~mechanism is triggered (for example, environment, performance, and air interface)~~. This information may be kept confidential if necessary to protect trade secrets.

Item 2 is recommended to be deleted as the rule doesn't prohibit configurability. The same vocabulary is used in 5GHz for TPC-DFS section. A manual TPC mechanism is also allowed.
Item 3 (now Item 2) is changed is to clearly state the 6dB range below max PSD level of -5 dBm/MHz.

Section: Attachment 987594 D03 U-NII 6 GHz QA v03

Comment 7: The APC and TPC is confused in this question. Consistent with earlier comments in this document, this question should be split into two. Modify Q5 as follows:

Q5. Is ~~Transmit~~ Automatic Power Control (A~~T~~PC) required for client devices?
A5. A~~T~~PC is required for all client devices connected to Standard Power Access Points, excluding Fixed Client devices. The A~~T~~PC mechanism shall limit client power to 6 dB below its associated Standard Power APs authorized transmit power level. A~~T~~PC is not required for client devices connected to Low-Power indoor Access Points and Subordinate devices. A~~T~~PC is ~~also~~ not required for VLP devices as maximum transmit power for all VLP devices is at the same.

Q19. Is Transmit Power Control (TPC) required for client devices?
A19. TPC is required for VLP devices. VLP devices should have capability to operate 6 dB below the -5 dBm/MHz PSD level.

Comment 8: 6VL devices can connect to SP or LPI APs as Figure 1. Therefore, it is suggested to add the following item.

Q7.1. Can a VLP device connect to an LPI or SP AP?
A7.1. Yes

Comment 9: Add the following question to clarify on LPI client interoperability with a composite LPI/SP AP (indoor).

> Q20. Can a LPI client connect to a composite LPI/SP AP (indoor)?
> A20. Yes, at LPI client power level.

Section: Attachment 987594 D04 UN6GHZ Pre-Approval Guidance Checklist v03

Comment 10: Consistent with earlier comments in this document, it is needed to modify Client Devices Limitations 3.4 as follows differentiate between APC and TPC:

> 3.4 ~~Transmit Power Control (TPC)~~ Automatic Power Control (APC) is required for client devices connected to Standard Power Access Points, excluding Fixed Client devices and Very Low Power devices.