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Currently Displaying Inquiry Tracking Number: **484595**

Contact Information:

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Inquiry Details on 11/20/2019:

First category: RF Exposure *
 Second category: Test Procedures (RF Exposure)
 Third category:

Subject: Virtual Sensor to Replace Proximity Sensor

Inquiry: A common solution for OEMs to reduce SAR without impacting the consumer's experience in a typical 2 in 1 or tablet type PC is to employ a dedicated short-range proximity sensor to sense whether human body is in close proximity to device and dynamically control the TX power accordingly.

Intel has developed a virtual sensor solution designed for smart or dynamic SAR control by utilizing the feedback of the human touch and device context to optimize the Wi-Fi transmission power. The virtual sensor will be used to trigger any smart or dynamic SAR power control feature (ex: BIOS SAR) when the device is in a mode that a user will not, or cannot, be in the path of transmission and optimize this Wi-Fi power accordingly.

ISH FW will add support for this new virtual sensor for dynamic SAR control which uses the platform lid mode, device motion status and antenna placement and then outputs the index value which will be used by Wi-Fi driver to select the power policy (stored in BIOS) and set the TX power.

Because ISH sensing is the trigger functionality for the final host dynamic SAR control the validation for the ISH side will cover, 1) simulate the device is in specific modes (tent, stand, clamshell, tablet) and validate the detection accuracy, 2) validate that the trigger has been correctly sent to host BIOS when device is in pre-defined mode.

Attached is a full operational description of this virtual sensor feature. We request your review for any comments, concerns, questions or special testing conditions to consider when determining SAR compliance prior to our implementation of this feature.

FCC Response on 03/02/2020:

Initial remarks in attached.

Inquiry html text includes:

Because ISH sensing is the trigger functionality for the final host dynamic SAR control the validation for the ISH side will cover,

- 1) simulate the device is in specific modes (tent, stand, clamshell, tablet) and validate the detection accuracy,
- 2) validate that the trigger has been correctly sent to host BIOS when device is in pre-defined mode.

In general it appears more details are needed about in-practice operations and compliance-demonstration validations and verifications.

---Reply from Customer on 05/20/2021---

Apologies for the long inactivity but internal resources and priorities caused much delay. Attached is a more complete assessment of the ISH sensing feature at the host level. We are now referring to this feature as the Virtual Smart Switch. Please take a look and provide your comments or questions. We look forward to your response and as always we remain at your disposal for additional information.

FCC Response on 08/06/2021:

1) It could better facilitate FCC review please to have some WRITTEN details explaining and showing test setup, test method, etc to go along with the what is only tabular data in the May20 Intel reply.

2) With March 2020 response attachment FCC had requested some clarifications and revisions of the "op. desc." exhibit.

That March 2020 tech./clarification info. requests generally remains; a comment-balloons-expanded version of the March 2020 FCC document is attached with this response.

---Reply from Customer on 09/15/2021---

Please find attached the revised Virtual Sensor Operational Description along with test results demonstrated in an actual host platform.

FCC Response on 02/07/2022:

Thanks for context info about associated / precursor kdb963147.

No specific comments or concerns from us at this time, such that deployment could proceed.

For completeness, as feasible it could be useful to know via reply hereunder sometime what are FCC ID(s) (and TC #s as appropriate) for example recent and/or near-term host product(s) implementing this. In addition, what if any were associated Intel KDB #s covering any "Platform Lid Mode" and "Device Movement Detection" considerations or details or testing.

---Reply from Customer on 04/04/2022---

Hi OET Lab,

The first host that will use the feature has been already certified. here is the reference:

HP model HSN-C05C-4 with PD9AX201D2 certified on 06/02/2020.

No HW changes have been made. Only ISH driver will be enabled to support the virtual sensor for dynamic SAR control. Can you please advise if we can submit a C2PC application directly to our TCB with no PAG required?

Thanks for your time.

Regards,

Benjamin

---Reply from Customer on 04/06/2022---

Hi OET Lab,

Folowing up on this. We are waiting your confirmation to proceed on the first Host application with our TCB.

Thanks for your time.

Regards,
Benjamin

---Reply from Customer on 04/14/2022---

Hi OET Lab,

Sorry for the close folow-up. A feedback will be greatly apreciated to provide plan with the OEM.

Thanks for your time.

Regards,
Intel Team

FCC Response on 05/04/2022:

Thanks for patience.

PAG not required for referenced C2pc with host product HSN-C05C-4 based on 06/02/2020 grant-date FCC ID PD9AX201D2.

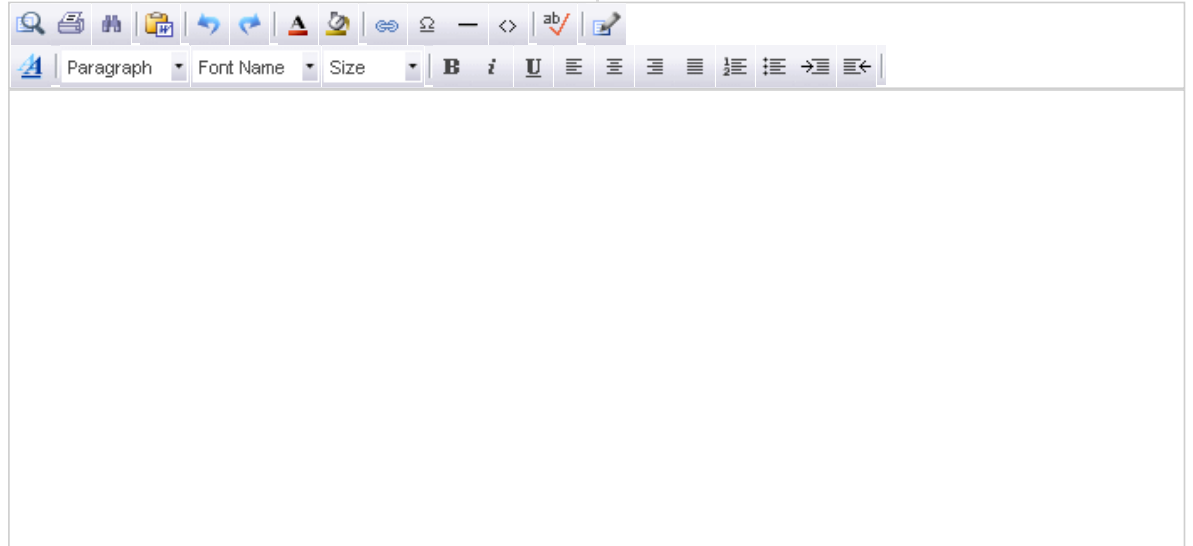
With said C2pc also please ensure filing includes host product user manual (i.e. generally for purposes of supporting information of operating configurations covered by SAR tests).

Attachment List:

[963147_2017-05-05_bios-based-etc_pow-ctrl_dynamic-sar_INTERNAL-ONLY_RE-SEND_cmts-Mar2020_V_Sens_Op_Desc-2019Nov20,confid_exhibit](#)
[Virtual Switch Operational Description](#)
[Virtual Switch Test Results with host platform](#)
[kdb484595_cmts_V_Sens_Op_Desc-2019Nov20,confidential_exhibit](#)

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*(This is a text only field. Users will be able to upload attachments after clicking on the "Proceed" button below)



A rich text editor interface is shown, consisting of a toolbar at the top and a large empty text area below it. The toolbar includes icons for search, print, insert, undo, redo, bold, italic, underline, bulleted list, numbered list, indent, and outdent. Below the toolbar are dropdown menus for Paragraph, Font Name, and Size, followed by buttons for Bold (B), Italic (i), Underline (U), and alignment options (left, center, right, justified).