

FCC Q and A, May 25, 2012

From: Claire Hoque, claire.hoque@ul.com  
To: Jyun-Cheng Chen, JC.Chen@fcc.gov

Re: FCC ID: UK2-SIL-SK63100

Applicant: Silicon Image, Inc.

Correspondence Reference Number: 41850

Form 731 Confirmation Number: EA493665

Date of Original E-mail: 05/21/2012

1. The EUT is applying for a limited modular grant with a limitation that installation is in the display section of laptop host computers only (modular approval request letter). However, the OEM/User instruction (Quick Start Guide) on Page 1 states that "...if desired, to connect other HDMI-compatible sources such as Blu-ray/DVD players, cable/satellite boxes, or gaming consoles..." Since HDMI is a common standard interface, please clarify the restriction and elaborate on how the applicant can effectively maintain control of the end product into which the module is installed. Alternatively, the applicant can simply outline all use conditions for RF Exposure compliance instead of using a specific host type as the use condition.

<answer>This clause was left over from a previous version of the document as applicable to a different device. It is not applicable for this device therefore has been removed, pl see revised OEM Instruction Manual.

2. FCC rule 15.255(a) prohibits the use of 57-64 GHz transmitters on aircraft, satellite, field disturbance sensor, vehicle radar, etc. This warning message should be provided in the manual. Please also explain, for the very likely usage of a laptop host onboard of an aircraft, how the EUT can be completely turn off (no beacon either) automatically. Interference to aviation radars is a serious issue.

<answer> pls see revised OEM Instruction Manual.

3. Page 7 of the manual also places restriction on antenna co-location within a host device. In the case of a laptop host, the display section is commonly populated with antennas for other transmitters (e.g., WWAN, WLAN, Bluetooth, and NFC), making this use condition impractical. The more important message to OEM manufacturers which should be added is what would be the consequence if this condition is not met and that C2PC should be done for each different host.

<answer> Pls see revised OEM Instruction Manual.

4. Page 8 of the manual restricts the distance between the base of the laptop host to the EUT to be at least 3.3 cm. However, most laptops available today are much thinner than 3.3 cm. Please elaborate on the practicality of this use condition. Alternatively the instruction can simply provide the minimum required distance assuming the worst case use position, that is, laptop is rested on the user's lap and the laptop's lid is opened at a reasonable angle (e.g., 15 or 30 degree).

<answer> Pls see revised OEM Instruction Manual. KDB 616217 D01 states on page 8 that the separation distance for antennas mounted in the display section of a laptop computer are determined with the display open at 90 degrees to the keyboard.

5. The Theory of Operation 2 claims that the beam search design could always find a main emission path without a human body. As pointed out in our response to KDB 133189, the reasoning is flawed. The beam search is basically choosing the best phase configuration/direction with the best receive RSSI which inevitably may still pass through (reflect off) a human body. As long as its RSSI is the strongest and the link margin is sufficient to maintain the link, the path would be always chosen. Please reconsider whether it is necessary to present this human-avoidance argument now that MPE analysis does not appear to rely on the assumption anymore.

<answer> the file(Theory of Operation 2) that contained this analysis is not applicable to this device and was supposed to be removed from the filing. We request that it be removed.

6. The revised MPE analysis needs some improvements: milliseconds are all mistaken for microseconds in duty cycle calculations (8.3.2); Configurations #1, #2, and #3 are un-defined; duty cycle should use the worst case 1% for LRP mode and 1.5% for the rest; and the power density computations in Sections 8.3.2 and 8.4.2 can use an example to illustrate how numbers are obtained because it is not clear what is "probe gain" referring to as well as the definition of measurement distance and separation distance. The conducted power and TX antenna gain for each row should be listed too.

<answer> Pls see revised Operational Description MPE Analysis and revised Test Report.

7. The MPE analysis is not readily understandable. The minimum required separation distance for RF exposure compliance is suggested to be listed in the manual.

<answer> Pls see revised Operational Description MPE Analysis and OEM Instruction Manual.

8. What type of interface is used for the Display Minicard (DMC board to host)?

<answer> DMC (Display Mini Card - PCIeR) interface is the interface used between Silicon Image module and the host laptop platform.

9. Please address the issue of compliance to the 1 mW/cm<sup>2</sup> limit after a 2 dB power density scale-up in the MPE analysis report.

<answer> Pls see revised Test Report.