

Fujitsu Limited, FCC ID: EJE-WB0060, Assessment NO.: AN08T8092, Notice#1 Inbox X Priority X

from tim.dwyer@ccsemc.com
to chieu@emctech.com.au
cc tim.dwyer@ccsemc.com
date Tue, Jul 8, 2008 at 10:21 PM
subject Fujitsu Limited, FCC ID: EJE-WB0060, Assessment NO.: AN08T8092, Notice#1

[hide details](#) Jul 8 (3 days ago) | [Reply](#) |

Hello Chieu,

Please reply to the following issues for this NII application.

Q1: The block diagram shows only two antennas in 1x2 MISO configuration. The antenna detail document shows three antennas. Please explain or revise.

Q2: The RF Exposure exhibit for this NII application states the highest SAR is 0.108 mW/g. The highest reported SAR in the 5.2/5.5 GHz bands in exhibit M080506_Cert_512AN _SAR_5.6 FCC is 0.047 mW/g. Please explain or revise.

Q3: The FCC grant for PD9512ANH states that 2.4GHz and 5GHz transmitters are capable of simultaneous transmission. Please clarify whether simultaneous transmission is possible in the configuration documented for this filing.

The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 30 days of the original e-mail date may result in application dismissal and forfeiture of the filing fee. Also, please note that partial responses increase processing time and should not be submitted. Any questions about the content of this correspondence should be directed to the e-mail address listed below the name of the sender.

Best regards,

Tim Dwyer
Technical Reviewer

Fujitsu Limited, FCC ID: EJE-WB0060, Assessment NO.: AN08T8092, Notice#1 Inbox X Priority X

[hide details](#) Jul 10 (1 day ago) | [Reply](#)

from Donna <donna@emctech.com.au>
reply-to donna@emctech.com.au
to tim.dwyer@ccsemc.com
cc chieu@emctech.com.au
date Thu, Jul 10, 2008 at 2:29 AM
subject Fujitsu Limited, FCC ID: EJE-WB0060, Assessment NO.: AN08T8092, Notice#1

Subject: Fujitsu Limited, FCC ID: EJE-WB0060, Assessment NO.: AN08T8092, Notice#1

Please reply to the following issues for this NII application.

Q1: The block diagram shows only two antennas in 1x2 MISO configuration. The antenna detail document shows three antennas. Please explain or revise.

A1. The Antenna detail document is common for 2 of Intel's similar WLAN modules, SP 512_AN (1x2 - MISO) and SP 533_AN (3x3 - MIMO) as shown on the cover page of this document. Please ignore Tx 3 Antenna (Antenna 3) in this document for this application. Also refer attached Tx010 Ant Positions document.

Q2. The RF Exposure exhibit for this NII application states the highest SAR is 0.108 mW/g. The highest reported SAR in the 5.2/5.5 GHz bands in exhibit M080506_Cert_512AN_SAR_5.6 FCC is 0.047 mW/g. Please explain or revise.

A2. Please refer to revised test RF Exposure Exhibit - stating the highest SAR value for NII application as 0.047 mW/g.

Q3: The FCC grant for PD9512ANH states that 2.4GHz and 5GHz transmitters are capable of simultaneous transmission. Please clarify whether simultaneous transmission is possible in the configuration documented for this filing.

A3. This is exactly the same module as certified under PD9512ANH. Hence, same conditions (the last statement on Intel grant - "Both transmitters may operate simultaneously with respect to 1.1307 and 2.1091" is unclear.

Best regards,

Donna Lennon
Per Chieu Huynh
EMC Technologies Pty Ltd

3 attachments — [Download all attachments](#)

 **Tx010_Ant_Positions for SP 1x2.xls**
107K [View as HTML](#) [Open as a Google spreadsheet](#) [Download](#)

 **Tx010_Ant_Positions for SP 3x3.xls**
107K [View as HTML](#) [Open as a Google spreadsheet](#) [Download](#)

 **Attachment1_RF Exposure Information.pdf**
14K [View as HTML](#) [Download](#)

FW: Intel Cliffside Technology implementation on Shirley Peak 1x2 and 3x3 FCC approved modules

Mike Kuo

show details 7:36 PM (21 hours ago) Reply

to Timothy, Chris

Hi Tim and Chris:

Below is the reply from Intel in explaining the Cliffside operation.

Best Regards

Mike Kuo

Compliance Certification Services

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From: Paxman, Robert [mailto:Robert.Paxman@intel.com]

Sent: Thursday, July 10, 2008 2:39 PM

To: Mike Kuo

Cc: Christine Vu

Subject: RE: Intel Cliffside Technology implementation on Shirley Peak 1x2 and 3x3 FCC approved modules

Hi Mike,

Here is the following concerning Cliffside operation:

Does not operate in 5GHz due to the fact we do not have radar detection and we would be considered a master device due to the ability to initiate networks other than the initial association with AP.

In the case of the 1x2 it is a single transmit and dual receive so there is no co-location as there is only 1 transmit chain. It would switch between data transfer between the AP and cliffside device.

In the case of the 3x3 please see the RF exposure sheets where the 3 chain Tx mode was calculated for MPE.

Cliffside and data transfer with an AP does not happen at the same time through a single transmit chain.

Please let me know if more information is still needed.

Thanks

Robert

From: Mike Kuo [mailto:mike.kuo@ccsemc.com]

Sent: Thursday, July 10, 2008 2:28 PM

To: Paxman, Robert

Cc: Christine Vu

Subject: Intel Cliffside Technology implementation on Shirley Peak 1x2 and 3x3 FCC approved modules

Hi Robert:

During TCB review process, one of our technical reviewer is questioning the Cliffside technology which will allow Shirley peak 1x2 and 3x3 to transmit simultaneously on different frequencies band, and different networks at the same time via single common antenna.

We have reviewed the Elliott test report and could not find any co-located simultaneously RF conducted spurious emission and radiated spurious emission tests were performed. Below are the questions from CCS technical reviewer which are related to above issues:

2. In the applications pending at CCS, the Operation description (CONFIDENTIAL) describes a hardware architecture which appears to allow simultaneous 2.4 & 5GHz transmitter operation with a single antenna. It also mentions "Cliffside" operation in "different channel" and "same channel" modes. The different channel mode appears to allow simultaneous transmitter operation in different

bands with shared antenna.

3. FCC KDB 616217 clause 8) Simultaneous-transmission EMC / radio parameter evaluation is required when transmitters share a common antenna or coordinate transmissions.

4. Grants PD9512ANH (1x2) and PD9533ANH (3x3) were Modular Approvals for mobile category. These do not appear to include any special evaluation (MPE/EMC/Radio) for simultaneous transmitters with shared antenna.

Request:

1. Is Cliffside technology implemented in Shirley Peak 1x2 and 3x3 ?
2. Did co-located EMC tests performed during final tests?

Best Regards

Mike Kuo

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