Chris Harvey

From: landy.huang@ccsrf.com
Sent: Friday, February 22, 2013 10:59 PM
To: Chris Harvey
Cc: Angel.Hu@ccsrf.com; application@ccsrf.com; Harvey, Christopher; Hoque, Claire; Briggs, Mark
Subject: RE: RE: TRENDNET, Inc., //XU8TEW732BR //AN13T0043 Notice #4
Attachments: TEW-732BR-Test Report-20130223.pdf; TEW-732BR-Theroy of operation-20130223.pdf

Dear Chris

Please see my reply as below (Remark Red), thank you.
Landy, thank you for your reply. I am afraid that my requests to you to provide additional information are not very clear as you are not providing the level of information needed to properly document the capabilities of this device and the compliance of those capabilities. Please provide the details about this Trendnet AP and not just the chipset or module inside of this device. The Test Report and Operational description need to be consistent otherwise we cannot tell if the correct tests were done or not.

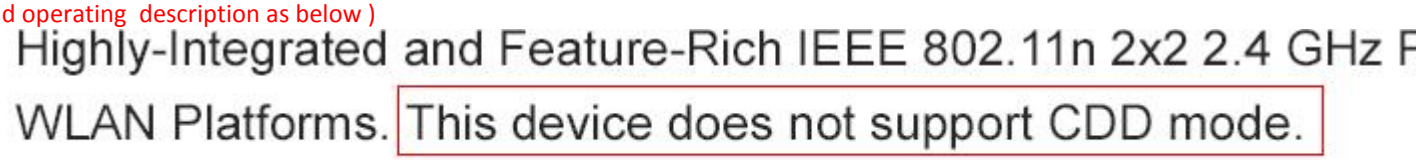
In your reply to me, please provide answers to each question right after the question so you are sure to answer all questions being asked.

1. Please provide a full Technical description for this Access Point device (not just the module information).
The operational description needs to explain which modes support 2x2 and which do not.
For the operational description we need something to explain how the device works and the relationship between the specification sheet for the module and the device.
Include any other information about the interfaces offered on this device.

You have provided a detailed Technical Description of the Atheros Chip, but this chip apparently has capabilities that have not been used in the final Access Point device. It is only acceptable to provide the Chip Technical Description if the exhibit also indicates which specific capabilities of the chip have been used and which specific capabilities have not been used.
Please provide a full Technical description for this Access Point device.

{please enter answer #1 here and make sure the Operational Description exhibit is updated with this information}
---> Operational description is updated. This device is a 2x2 spatial multiplexing MIMO without CDD.
2. Does this device use Spatial Multiplexing MIMO? If yes, please make sure this is detailed in the updated Technical Description exhibit. (please note that the Operational Description exhibit still lists Beam Forming capability)

{please enter answer #2 here and make sure the Operational Description exhibit is updated with this information}
---> Operational description is updated. This device is a 2x2 spatial multiplexing MIMO without CDD. (Modifies the report at page.8 and operating description as below)



100-ohm STP (100 m)

Modulation Schemes DBPSK/DQPSK/CCK/OFDM

Spatial Multiplexing MIMO

3. As this is a MIMO device for 802.11n modes the report should reference the MIMO KDB. Was FCC KDB 662911 D01 v01r02 guidance followed for the testing of this MIMO device? If yes, please update the Test Report to indicate which portions of this KDB were used and make specific reference to the KDB and section numbers. If not, please indicate why.

{please enter answer #3 here and provide updated Report}
--->Please refer to Page 25.46.57.64.58.73.76. of test report

4. In the test report the antenna specifications are listed and the MIMO antenna gain is calculated. but there is no indication of where this MIMO antenna gain is used. The latest MIMO test guidance from the FCC indicates that correlated signals for 802.11 modes supporting CDD (so MCS0-7 for the 802.11n modes) are only correlated over narrow bandwidths within the transmitted spectrum and array gain only needs to be considered for the power density measurements.

{please enter answer #4 here and provide updated Report}
--->EUT is not support CDD. Please refer to page 8 of test report.

Best regards,


~感謝你~

****

黃雅鈞/Landy Huang
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Compliance Certification Services Inc.
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Fax: 886-3-324-7460
E-Mail: Landy.huang@ccsrf.com

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----- 轉寄者 Landy.Huang/ccsrf 於 2013/02/23 上午 11:00 -----

寄件者: "Chris Harvey" <charveyemc@gmail.com>
收件者: <landy.huang@ccsrf.com>
副本抄送: <application@ccsrf.com>, '"Harvey, Christopher"' <Chris.Harvey@ul.com>, '"Hoque, Claire"' <Claire.Hoque@ul.com>, '"Briggs, Mark"' <Mark.Briggs@ul.com>, <Angel.Hu@ccsrf.com>
日期: 2013/02/22 上午 02:53
主旨: RE: RE: TRENDNET, Inc., //XU8TEW732BR //AN13T0043 Notice #4

Landy, thank you for your reply. I am afraid that my requests to you to provide additional information are not very clear as you are not providing the level of information needed to properly document the capabilities of this device and the compliance of those capabilities. Please provide the details about this Trendnet AP and not just the chipset or module inside of this device. The Test Report and Operational description need to be consistent otherwise we cannot tell if the correct tests were done or not.

In your reply to me, please provide answers to each question right after the question so you are sure to answer all questions being asked.

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For the operational description we need something to explain how the device works and the relationship between the specification sheet for the module and the device.
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Please provide a full Technical description for this Access Point device.

{please enter answer #1 here and make sure the Operational Description exhibit is updated with this information}

2. Does this device use Spatial Multiplexing MIMO? If yes, please make sure this is detailed in the updated Technical Description exhibit. (please note that the Operational Description exhibit still lists Beam Forming capability)

{please enter answer #2 here and make sure the Operational Description exhibit is updated with this information}

3. As this is a MIMO device for 802.11n modes the report should reference the MIMO KDB. Was FCC KDB 662911 D01 v01r02 guidance followed for the testing of this MIMO device? If yes, please update the Test Report to indicate which portions of this KDB were used and make specific reference to the KDB and section numbers. If not, please indicate why.

{please enter answer #3 here and provide updated Report}

4. In the test report the antenna specifications are listed and the MIMO antenna gain is calculated. but there is no indication of where this MIMO antenna gain is used. The latest MIMO test guidance from the FCC indicates that correlated signals for 802.11 modes supporting CDD (so MCS0-7 for the 802.11n modes) are only correlated over narrow bandwidths within the transmitted spectrum and array gain only needs to be considered for the power density measurements.

{please enter answer #4 here and provide updated Report}

Best regards,

Chris Harvey

From: landy.huang@ccsrf.com [mailto:landy.huang@ccsrf.com]
Sent: Tuesday, February 19, 2013 10:44 PM
To: Chris Harvey
Cc: application@ccsrf.com; Harvey, Christopher; Hoque, Claire; Briggs, Mark; Angel.Hu@ccsrf.com
Subject: 回覆: RE: TRENDNET, Inc., //XU8TEW732BR //AN13T0043 Notice #3

Dear Chris

The new operating description and test report is list below.Thank you~

Best regards,


~感謝你~

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黃雅鈞/Landy Huang
程智科技股份有限公司
Compliance Certification Services Inc.
Tel: 886-3-324-0332#57
Fax: 886-3-324-7460
E-Mail: Landy.huang@ccsrf.com

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寄件者: "Chris Harvey" <charveyemc@gmail.com>
收件者: "'Harvey, Christopher'" <Chris.Harvey@ul.com>, <application@ccsrf.com>, <landy.huang@ccsrf.com>
副本抄送: "'Hoque, Claire'" <Claire.Hoque@ul.com>, "Mark Briggs" <Mark.Briggs@ul.com>
日期: 2013/02/12 下午 09:00
主旨: RE: TRENDNET, Inc., //XU8TEW732BR //AN13T0043 Notice #3

Landy, we have had some additional internal discussions and the following may provide some clarification and be helpful (please address these issues too):

1. For the operational description we need something to explain how the device works and the relationship between the specification sheet for the module and the device. For example we can assume the following based on the test report, but this needs to be confirmed. Please confirm the 2x2 operation is not supported for the 802.11 legacy modes. The description should also explain if 802.11n 1x modes are supported and, if so, what is the output power for those modes (same power per chain as the MIMO mode or same total power?). If the same total power is used for a 1Tx mode then spurious need to be repeated at that power:
The TEW-732BR is a five-port Ethernet 802.11abg 2x2 Router built around the Atheros AR1321 System-on-a-Chip. The specification sheet for this SoC is provided as a separate exhibit to this application.

The device is configured to support 802.11bg legacy modes on channels 1 to 11 using SISO (1x1) operation. Support for 802.11n includes 20MHz channels (channels 1 - 11) and 40MHz channels (channels 3-9) using 2x2 MIMO.

Specifications for the antennas are included in the submittal documents.

Include any other information about the interfaces offered on this device .

2. In the test report the antenna specifications are listed and the MIMO antenna gain is calculated . but there is no indication of where this MIMO antenna gain is used. The latest MIMO test guidance from the FCC indicates that correlated signals for 802.11 modes supporting CDD (so MCS0-7 for the 802.11n modes) are only correlated over narrow bandwidths within the transmitted spectrum and array gain only needs to be considered for the power density measurements.

3. As this is a MIMO device for 802.11n modes (please see comment above and confirm 2x2 is not supported for 802.11bg modes) the report should reference the MIMO KDB.

4. In the test report the plots for antenna port measurements do not clearly indicate which plot is for which channel. The intended signal is marked as 2.46GHz on all plots due the wide span of the plots so we cannot tell from the plots that low, middle and high channels were tested.

Thank you,

Chris

-----Original Message-----
From: Harvey, Christopher [mailto:Chris.Harvey@ul.com]
Sent: Monday, February 11, 2013 8:44 AM
To: application@ccsrf.com; landy.huang@ccsrf.com
Cc: Harvey, Christopher; Hoque, Claire
Subject: TRENDNET, Inc., //XU8TEW732BR //AN13T0043 Notice #3

Landy, thank you for correcting the Antenna Gain information in the MPE and test report. You still have only provided partial response/information to the other questions.

To assist you in providing complete answers I will separate the request into several sections. Please address all questions:

1. Please provide a full Technical description for this Access Point device. You have provided a detailed Technical Description of the Atheros Chip, but this chip apparently has capabilities that have not been used in the final Access Point device. It is only acceptable to provide the Chip Technical Description if the exhibit also indicates which specific capabilities of the chip have been used and which specific capabilities have not been used. Please provide a full Technical description for this Access Point device.

2. Does this device use Spatial Multiplexing MIMO? If yes, please make sure this is detailed in the updated Technical Description exhibit.

3. Was FCC KDB 662911 D01 v01r02 guidance followed for the testing of this device? If yes, please update the Test Report to indicate which portions of this KDB were used and make specific reference to the KDB and section numbers. If not, please indicate why.

Best regards,

Chris Harvey

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. Revised documentation should not be emailed, but instead should be submitted through "Add Attachment" function at the UL-CCS website. Please have your Assessment Number and FCC ID/IC Certification number handy. You may use the following link: https://cert.ccsemc.com/filing/
