# Non-Conformities FCC ID: Q6G-XP3E6W (CKC CS Ref # E09-000112-FCC-01)

The items listed below represent requests for information following review of this application for certification under United States (FCC) regulations. Further question may arise pending review of responses to these items.

| OK | ID | # | Non-Conformity or Comment | Submitted Response | Respondent / Date of Response |
|---|---|---|---|---|---|
| √ | C | 1 | Requests for internal photos must be reviewed by the FCC. Either submit more explanations on why you desire to hold confidential the internal photos or supply another letter of confidentiality removing the need to hold confidential the internal photos. The conditions to which the FCC has approved these requests is that the device has tamper proof screws and simply can't be opened by the consumer. It is not a simple justification. In general, consumer products to not qualify.<br><br>**CKC Cert will use the former letter of confidentiality- 9/10/09 C Kendall** | Our product does not use any special process or mechanism to prevent viewing the internals. We do have security screws because they have been previously required by Japan to ensure no one can access the wireless module to remove or change it. In our previous submittals, we have not restricted the internal photos and I don't believe we have any concerns about them this time either. If it would be easiest to go with the original letter, that is also our preference. Therefore, please withdraw the 2nd letter that I sent. The original letter of confidentiality will be the one that we use for this submittal. Letter attached. | George Stults 8/27/09 |
| X | TL | 2 | Intetek's test report # 3160445MPK-001, dated 30Sep08. On page 34, they stated that, "The measurements were performed only on the Tx output 2 – in 2.4 GHz band and Tx output 3 – in 5.8 GHz band, where the highest power levels were obtained (see sec. 4.1.3). Considering the worst case as the PSD on all three transmitters equals the PSD on the output 2 or 3 respectively, for 802.11n mode the correction factor of 4.8 dB was added." This is also true for Intetek's 3160445MPK-002.<br><br>According to TCB training guidelines for smart antenna systems, dated Oct 2007, this is not a procedure that can be used. They must be individually measured and added just as the output power is added. | We understand that the TCB training guidelines state that the results should be summed across all antenna elements. Our justification for using a 4.8 dB correction factor to determine power spectral density is that, on a dBm scale, an addition of 4.8 dB, corresponds to 3 times the original number in linear terms.<br><br>X dBm = 10*LOG(Y mW) so | Ollie Moyrong Intertek 9/8/09 |

| | | | | | |
|---|---|---|---|---|---|
| | | | **The procedure that the test lab describes is interesting but not one allowed for a TCB to use. Please either re-measure each of the outputs and add them linearly as per procedure or ask us to obtain permission from the FCC to use this alternate procedure. As a TCB we must follow the test procedures that the FCC requires. We are not allowed to accept alternate procedures. C Kendall 9/10/09**<br><br>9/22/09: EW : PSD of all three RF output port was measured and summed. Revised test report 3160445MPK-001, FCC 15C.pdf, 3160445MPK-002, FCC 15C.pdf | therefore<br>10*LOG(3*Y mW) = 10*LOG(3) + 10*LOG(Y mW) = 4.77 dB + X dBm<br><br>This means that by adding 4.8 dB to the highest reading measured, we are effectively assuming that all 3 antenna ports had an equal, worst-case power spectral density result. The test report shows that the conducted output power was measured for each of the antenna ports. The port that had the highest power was selected for the power spectral density test.<br><br>Since PSD is a direct function of output power, we have actually overestimated the PSD by adding 4.8 dB. We have shown that it is not possible to get a higher PSD reading on the other antenna ports than what was measured.<br><br>Updated Test Reports Sent. | Ollie Moyrong<br>Intertek<br>9/20/09 |
| √ | TL | 3 | Intetek's test report # 3160445MPK-001, dated 30Sep08 states on page 4, Section 1 that Out-of-Band Radiated Emissions were only performed in the restricted bands because conducted emissions performed on the antenna port passed. However, this reasoning does not excuse this testing. Please have the test lab perform this emission testing.<br><br>**This is correct – my bad. C Kendall 9/10/09** | 15.247 (d) states that out-of-band emissions can be based on either an RF conducted or a radiated measurement.<br><br>The rule states that it is not required to make radiated measurements outside the restricted bands unless the | Ollie Moyrong<br>Intertek<br>9/8/09 |

| | | | | | |
|---|---|---|---|---|---|
| | | | | antenna is integral.<br><br>Both the public notice DA 00-705 for FHSS and the DTS measurement guidance (attached) state that the radiated test is only required in restricted bands. | |
| √ | TL | 4 | In accordance with 15.31(e) Voltage variations were not performed according to the test report because the power was regulated. The purpose of testing the device over the voltage variations is to prove the voltage regulation is working.<br><br>**This will be accepted, but future submissions should measure the output when varying the input voltages as per procedure. We are measuring the power output during this procedure and not the regulator functioning. C Kendall 9/10/09** | ~~The EUT is supplied with an AC Adaptor which supplies 3.3VDC to the device. The test report states that the input voltage to the AC Adaptor was varied from 90V - 264V while the output DC voltage to the device was measured. It was observed that the DC voltage remained constant at 3.268V during the AC input variation demonstrating that the voltage regulation is functioning.~~<br>The EUT is supplied with an AC Adaptor which supplies 12VDC to the main motherboard of the device. The motherboard supplies 3.3VDC to the radio module. The test report states that the input voltage to the AC Adaptor was varied from 90V - 264V while the output DC voltage supplied to the radio module from the motherboard was measured. It was observed that the DC voltage to the radio module remained constant at 3.268V during the AC input variation from 90V - 264V, demonstrating that the voltage regulation to the radio module is functioning. | Ollie Moyrong<br>Intertek<br>9/8/09<br><br>George Stults<br>9/10/09 |

| | | | | | |
|---|---|---|---|---|---|
| X | C | 5 | Please provide an updated users manual incorporating the statement required by 15.21 that requires a notice to the user about changes or modifications to this product.<br><br>**Still needed C Kendall 9/10/09**<br><br>EW. 9/22/09 The revised user manual, XTM_2Series_HG_V2.pdf states "Warning: Modifying antenna gain to exceed 2.0 dBi voids the FCC certification ". However this statement only addresses modifying the antenna gain. Please rephrase the 15.21 statement to caution the user that changes or modifications to **ANY PART OF THE DEVICE** not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment | Updated Users Manual provided.<br><br>9/30/09: update user manual. | George Stults<br>9/16/09 |
| √ | TL | 6 | Please provide a copy of the test set up photos. | Test setup photos are attached.<br>**Acceptable. C Kendall 9/10/09** | Ollie Moyrong<br>Intertek<br>9/8/09 |

The items indicated above must be submitted before processing can continue on the referenced application. Failure to provide the requested information within 60 days may result in application dismissal pursuant to Section 2.917(c) and forfeiture of the filing fee pursuant to Section 1.1106.

***How to read the table:***
**OK** column indicates closure by CKC CS.
**ID** column is for use with Agents to assist in identifying the probable source for closure.
- A – Application issue
- TL – Test lab issue
- C – Client issue
- R – Retesting may be necessary

**#** column indicates unique or separate non-conformity items (note some items may be related).
**Non-Conformity or Comment** column indicates the evaluators specific question or comment.
**Submitted response** column indicates the response or a summary of the response provided.
**Respondent / Date of Response** column indicates the responding party or agent and the date of the response was either received or logged.