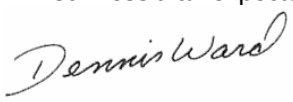
October 18, 2004

RE: FCC ID: PHX-OSU2400A_ATCB001810
Attention: Tim Blom

I have a few comments on this Application. Please note that further comments may arise in response to answers provided to the questions below.

1. Please note that the frequency stated on the 731 for a part 15 device must be the operating frequency range of that device. Please note that means that you must clearly identify the lowest and highest operating frequency of the device for Part 15. Please provide a 731 that clearly identifies these frequencies.
2. FYI - Please note that the power listed on the grant and thus approved for this device is the power actually measured during testing, not the 27.16dBm listed at the top of page 9 of the report. Consequently, the 731 is incorrect and should state 494mW as the 15.247 power and not 520mW. It is this 494mW that will be listed on the grant.
3. Please note that the Block diagram indicates that the device operates over the full range of 2400 to 2686MHz. Please note that this is not possible. Please provide a block diagram specifically addressing the part 15 device and one specifically addressing the part 21 device. Alternately, please address the specific frequency ranges for the individual rule parts specified. While they may be in the same document, you must clearly identify the transmitter and operating frequencies for the specific rule parts.
4. Please note that this device appears more than sufficiently large to contain the required 2 condition statement of part 15.19. Consequently, this statement must be on the product not in the manual. Please provide a sample label with this required statement. Alternately, please explain how the exemption of section 15.19(a)(5) applies to this transmitter. Please note that size would not appear to be a valid reason.
5. Please note that the operational description would indicate that the device could transmit over the full range of 2400 to 2686MHz. Please provide evidence that the device only transmits in the allowed bands for the rule parts for which certification is being applied and that it does not operate in the restricted band between 2483.5 and 2500MHz. Please explain how the device is restricted from operating in the disallowed frequency bands. Please also justify the use of this device in under Part 74 (i.e. how or for what purpose is the device used under Subpart I of part 74?).
6. Please note that Public Notice DA-02-2138 is a test procedure specifically for UNII devices under 15.407. Please note that DTS transmitters under 15.247 should use FCC publication 558074 “New Guidance on Measurements for Digital Transmission Systems in Section 15.247”. While the test methods are very similar for peak power measurements, the correct reference for 15.247 devices should be maintained.
7. Please note that while digital device radiated emissions may be measured using CISPR limits and test methods, radiated spurious emissions in the restricted bands for 15.247 devices is not a digital device measurement and cannot be performed in accordance with CSIPR22 limits. They must necessarily be performed to 15.209 limits. Reference to the proper limits applicable for specific rule parts needs to be consistent. Of primary concern is the fact that these radiated emissions are not confused with digital device emissions and that the transmitter characteristics and test methods are not confused or intermixed with digital device test methods. Please confirm that CISPR 22 test methods were not inappropriately used to measure intentional radiator spurious emissions in the restricted bands and that proper DTS intentional radiated test methods (not digital device test methods) were properly followed.
8. Please note that ANSI C63.4 1992 is not the appropriate test method. Please note that it has bee more than a year since the FCC has mandated ANCI C63.4 2001 and the latest revision of C63.4 (2003) is now expected. Please provide evidence that ANSI C63.4 2001 has been properly incorporated in the testing of the part 15.247 device.

9. Please note that 15.247 devices are Frequency Hopping SS or digitally modulated. Your report and documentation mentions the use of 'other modulation' techniques. Please verify that only the approved technology specified in the 15.247 frequency range is used.
10. Please note that your specified separation distance in the manual is listed as 20cm. The safe distance calculated in your MPE report is 25.29cm. Measured MPE at 20 cm was also performed to show that the 20 cm separation distance was sufficient. However, the MPE test procedure does not explain much about the actual test performed. The procedure simply states that the probe was set 20cm away from the EUT. While some assumptions can be made about projected exposure, nothing was provided to address the probe positioning in the field. Was the probe moved within the field to establish if the worse case MPE was measured? What steps were taken to insure that the worse case MPE was determined? What steps were taken to insure that proximity of the probe to the EUT was not a factor causing lower readings than actually generated? Please explain.
11. Please note that the table on page 3 of the part 21/74 report states that the conducted power of the device is 1.932W. The test procedure mentions the use of an analyzer, attenuators and a switch. However, nothing was mentioned about any cable loss that may have been in the measurement system. For example, if a cable with 1dB loss was used, the device fails the maximum 2Watt limit. Please provide the cable loss information in the test setup, and please verify that the inclusion of the cable loss does not cause the device to exceed the limit.
12. Please note that the EIRP/ERP of a licensed device needs to be measured using the antenna substitution method in accordance with the acceptable test procedures and should not be calculated. While the calculated EIRP shows that the expected measured EIRP would still be below the limits, it is the measured EIRP that is to be considered. Please provide information on how the EIRP of the device was measured using the proper antenna substitution method as prescribed by the FCC.
13. Please note that you have incorrectly used ANSI C63.4 as a test method for measuring radiated spurious emissions of a licensed device (see page 41 ' details of test procedures' of exhibit 6B). Please explain and please provide evidence that proper licensed device test methodology has been used (i.e. antenna substitution for EIRP values).
14. Please note that the test procedures for radiated emissions described on page 41 of the exhibit 6B is not correct for licensed devices (i.e. it lists QP values below 1GHz and average values above 1GHz, etc). Please provide acceptable licensed device test procedures for radiated spurious emission including antenna substitution procedures and substitution antenna gain information.
15. In relation to item 14, please also note that the section in this procedure dealing with antenna substitution states that you used dipoles below 1GHz, but test data shown on page 39 of exhibit 6B states the gain is -6.2dBi. The typical gain of a dipole is 2.14dBi. Please explain why this dipole is 8dB less than expected.



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The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information may result in application termination. Correspondence should be considered part of the permanent submission and may be viewed from the Internet after a Grant of Equipment Authorization is issued.

Please do not respond to this correspondence using the email reply button. In order for your response to be processed expeditiously, you must submit your documents through the AmericanTCB.com website. 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 sender.