



June 14, 2005

FCC-ID: JRRWES

1) The internal TX appears to be capable of transmitting on 2.4 GHz and 5150 – 5250 MHz bands. Please explain how the device is compliant to 15.15 of the rules given this capability.

**Response: Only the 5250 MHz to 5350 MHz and 5825 MHz to 5850 MHz bands can be used by the user. This is because the 10 position switch only allows the user to select these bands. Please see the label attached. Also, each channel has been verified with an EMI Receiver to insure that none of the positions on the switch cause the unit to transmit in the 2.4 GHz or the 5150 MHz to 5250 MHz band. Also, the software will not support frequency selection outside of the band that were tested.**

2) Regarding your response to item 12 & 13, please explain if the users are provided any information on how to change jumper settings, and if the manufacturer expects the end user to be able to adjust these settings.

**Response: The manufacturer does NOT expect the end user to be able to adjust these settings. The jumper is set depending on what type of antenna the customer wants. So if the customer purchases a unit with a small antenna, both jumper positions will be open. If the customer purchases a unit with a patch antenna, the “17.7 dBi” (per the PCB layout on the unit) jumper will be shorted. If the customer purchases a unit with a dish antenna, the “25.5 dBi” (per the PCB layout on the unit) jumper will be shorted. The jumpers are NOT readily accessible nor are intended to be accessible to the user. The unit is sealed and the label covers the mounting screws.**

3) Your response to item 7 mentions you investigated again to insure the emissions did not go higher than class A with the radio turned on. The concern here is that the limits for TX spurious are equivalent to Class B levels. In the < 1 GHz band, how is compliance to Class B levels for TX spurious determined given the digital devices emissions exceeded Class B levels. Note that the FCC does not simply accept that a Class A digital device + TX spurious are < Class A levels. Any levels exceeding class B thresholds must be determined not to be from the TX portion of the device. This sometimes creates rather complicated or difficult test methods in order to insure proper compliance of TX spurious. Please explain how this was done in this case.

**Response: The EUT was re-verified with the transmitter on. Any reading that was over the Class B limit was then re-checked by turning off the transmitter. The transmitter portion of the EUT is then turned off by disconnecting the accessory unit that is used to generate throughput with the EUT. This then causes the green LED “signal level” to turn off on the EUT. An EMI Receiver is then used to verify that the transmitter has stopped transmitting. Next, the readings that were over the Class B limit with the transmitter still on were re-verified again to see they did not go lower or disappear with the transmitter off (which would indicate those emissions came or where being contributed to by the transmitter portion). Then, those readings were measured to the Class A limits.**



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4) Regarding item 8, the test report and/or application should adequately document the power levels utilized for each antenna, especially when power reductions are necessary for various configurations. This also goes for channel selection as well. Please provide a table/matrix as necessary to adequately document each antenna configuration, and channel/power settings for each configuration as well. Additionally, the manual states the system must be professionally installed. Does it need to be professionally installed for channel or power setting reasons? Does the user have access to power settings after installation? Please provide information as necessary to explain compliance to 15.15 given power selections. Additionally, how is compliance to 15.15 ensured for the final device given the different power levels necessary for each antenna.

**Response:** The customer is given a unit based on what type of antenna he or she wants. In other words, the customer will not be able to change the antenna. The power levels are controlled by what jumper is shorted. For the small antenna, no jumpers are shorted, for the patch antenna, the “17.7 dBi” jumper is shorted, for the dish antenna, the “25.5 dBi” jumper is shorted. Again, the customer will not have any access to the jumpers.

**Please note that the power level changes are only for the 5250 MHz to 5350 MHz band and not for the upper 5 GHz band. The upper 5 GHz band has only 1 power setting used for all antennas (in other words the jumper settings do not cause the power to change in the upper 5 GHz band).**



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5) Regarding your response to 12 & 13, is this explained to the user? The label on the back of the device suggests they can change the channel to other listed on the label.

**Response:** The user can change the channel using the rotary switch on the unit. Please note that if the user tries to use the 5150 MHz to 5250 MHz band for the dish antenna, the software will not allow this and will automatically set the unit for 5745 MHz. Also, positions 0, 1, and 2 on the switch will cause the unit to go to 5280 MHz for the small and dish antennas. Let us know if we need to explain in the owner's manual that if a user goes to a frequency in the 5150 MHz to 5250 MHz band for the dish antenna, that the unit will default to 5745 MHz.

6) If the installer is capable of adjusting power for certain antenna installations, does the installer manual adequately explain this to the installer. If so, then a copy of the installer manual should also be provided.

**Response:** The installer is NOT capable of adjusting the power. The power is pre determined according to what jumper is shorted, if any. The correct jumper will be preset by the manufacturer for the appropriate antenna when the customer purchases the unit.



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7) If professional installation is being justified in this application, then please provide a cover letter requesting and justifying how the applicant ensures professional installation to be provided. The letter should address the following 3 items:

a) Marketing

example: The device cannot be sold retail, to the general public or by mail order. It must be sold to dealers or have strict marketing control.

b) Requires professional installation;

examples:

- installation must be controlled.

- installed by licensed professionals ( EUT sold to dealer who hire installers)

- installation requires special training ( special programming, access to keypad, field strength measurements made) What is unique, sophisticated, complex, or specialized about your equipment which REQUIRES it to be installed by a professional installer?

c) Application

example:

-The intended use is generally not for the general public. It is generally for industry/commercial use.

**Response: The Cover Letter has been uploaded addressing these items for Professional Installation.**

8) Regarding the response to item 8, since different power levels occur and also different channel set selections occur for different antennas, the 731 form should be updated for each of these. We will review and determine if it is necessary to list multiple line entries on the final grant.

**Response: The 731 form for the UNII portion reflects the maximum power for the Small Antenna. Another 731 form for the UNII portion for the Panel Antenna will be uploaded showing the maximum power for the Panel Antenna. Please note the 5725 MHz to 5850 MHz band (DTS portion) has only 1 power level, which has not been changed.**

9) FYI....Given the antenna gains and measured output powers (conducted of 146 mW and 270 mW), the ERP powers listed in the users manual appear incorrect. Please consider updating the manual to include accurate information.

**Response: Noted.**

10) FYI....In the future, please try and utilize the attached procedure for IC bandwidth tests under RSS-210 for 99% bandwidth.

**Response: Noted.**