

# Retlif Testing Laboratories

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June 8, 2006

RE: XM Satellite Radio, Inc.

FCC ID: RS2SA10177A

Please see comments and attachments below regarding the above referenced Application.

**Q:** 1) It is my understanding that there has been some communication with the FCC regarding this device and the fact that it is tested "in situ". If so, please provide correspondence as appropriate.

**A:** Please refer to 15.31 (d) Measurement Standards which references systems that employ "leaky" RF coaxial cables as an antenna. In addition, please see attached FCC clarification document named RodyXT\_FTSSearch\_Result\_Page#1.htm.

**Q:** 2) External Photographs do not support the ferrites used. Please comment/explain as necessary.

**A:** Please see attached updated Photographs showing the cable/ferrite assemblies named RodyXT\_External\_Photos\_#2.pdf.

**Q:** 3) It appears that a ferrite core(s) were used on some cables. Detail as to the exact position and attachment cables should be provided. Additionally, please note that the FCC expects the ferrites to already be placed on the cables provided to the user in a permanent manner (i.e. molded). The FCC does not want the burden of compliance to rest with the user to ensure compliance. Installation of ferrites is typically only allowed for professional installers and not end users. Please note that the manufacturer is responsible for providing these cables. Please provide further details on how this will be handled.

**A:** The ferrite cores will be attaching at the manufacturing site and will be configured to avoid user tampering. Please refer to the attached photos detailing the assembly named Assembly of Ferrite Bead to CLA#3.pdf and Assembly of Ferrite Bead to XM Roof Mount\_Ant.pdf.

**Q:** 4) Internal photographs show 2 areas that can not be determined if the shields are normally in place or not in the final device. If so, please provide additional photos with the shields intact as well.

**A:** Please see additional internal photographs showing shields in place named RodyXT\_Internal\_Photos\_#4.pdf.

**Q:** 5) Several external photographs show the device, but the FCC ID appears to be missing the "A" in many photos. Please explain.

**A:** The external photographs were only intended to show location. Please note that the FCC ID Label Photo is correct.

- Q:** 6) It appears that the transmit antenna is actually the shield of the XM receive antenna. It is uncertain if this antenna is variable in length or adjusted by any installer or user. If it is adjustable, then this could affect the transmission patterns, field strengths, etc. Please explain. Note that it would also be recommended if it is not adjustable, that further information in the manual should be provided to caution against this (specific to antenna changes). Please explain/comment.
- A:** The XM antenna is a unique structure for enabling the reception of the XM satellite signal and the cable length is not adjustable by the end user. In addition, it is permanently affixed to the antenna on one end, and to a unique RF Connector on the other.
- Q:** 7) Test Report shows that the lowest and highest channels do not appear to be used for testing (88.7 vs 88.1 MHz and 107.3 vs. 107.9). In absence of some compelling argument, the FCC asks that the lowest and highest actually be used – especially for occupied bandwidth tests. Note that 731 form cites 88.1 – 107.9 MHz. Please review.
- A:** Fundamental measurement frequencies were selected based upon ambient conditions (Licensed FM stations). 88.1 and 107.9 MHz were active FM stations, therefore, ambient levels were too high to perform measurements at these frequencies.
- Q:** 8) Please provide information to explain the absolute lowest and highest TX frequencies available in the device.
- A:** The lowest TX frequency is 88.1MHz and the highest TX frequency is 107.9 MHz. This range is provided to allow for the maximum potential that the end user can select a frequency not in use in their location.
- Q:** 9) The manual mentions Audio Level adjustment. Please comment on how this was adjusted to ensure maximum levels during testing (drive levels, etc.).
- A:** The audio level adjustment does control the drive level to the FM modulator and all tests were conducted with this level set to the maximum.
- Q:** 10) Given the devices were tested “in situ”, further photographs, diagrams, or information showing routing of the cables should be provided to adequately document the device as tested. Please provide.
- A:** Please refer to the attached diagram named RodyXT\_XM\_install\_#10.JPG, which shows the XM antenna installation procedure. This, in combination with the installation photographs contained within the Report of Measurements, should explain how the antennas were installed in the test vehicles.
- Q:** 11) Given the “in situ” test procedure, it is uncertain if the harmonics were fully maximized separately from the fundamental. Note that emissions at harmonics are frequency radiated and maximized from different locations than the fundamental. Please explain.
- A:** The Harmonics and Spurious were initially measured at 1 meter in a shielded enclosure. During formal testing, each side of the vehicle was probed to ensure maximum radiated field strength. No emissions were observed within 20 dB of the specified limit.

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**Q:** 12) Measurement at 502 MHz for spurious emissions could be considered not to meet 15.209(c) depending on the channel and vehicle that it was measured at. Please review.

**A:** The emission: 1) Is in compliance  
2) Is actually an ambient. All frequencies noted during pre-scans were evaluated during formal testing. In addition, Bandwidth reductions were made to ensure no EUT emission was present.

**Q:** 13) A users manual was provided. However is an installation manual also available? Given the nature of this device, this should be included if possible.

**A:** Please see attached file named Rody XT\_Vehicle\_Install\_Guide\_#13.pdf for appropriate installation manual.

**Q:** 14) The users manual appears to be missing the information required by 15.105. Please review/correct/ and/or explain as necessary.

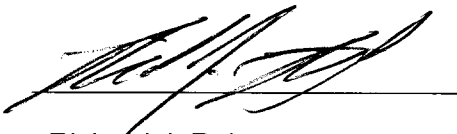
**A:** Please refer to the attached updated manual named RodyXT\_manual 06\_07\_06 KEYS#14.pdf with the language added from 15.105

**Q:** 15) The user manual mentions a home kit for connection of this device. If so, then it appears that AC powerline emission testing for 15.109 and 15.209 would apply for this configuration. Please review.

**A:** XM Satellite Radio, Inc. can provide if needed. However, the FM modulator which is covered by this application, does not function in the home dock.

**Q:** 16) Generally the FCC expects all inputs and outputs to be filled during testing and following published requirements of ANSI C63.4. From the review it is uncertain if the audio input port was filled during testing. Please explain, justify, or correct.

**A:** This product does not have an audio input. The only audio connection is the audio output and when this output is utilized, the FM modulator is automatically disabled, therefore, it could not be filled during the test.



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