

October 2, 2006

RE: XM Satellite Radio, Inc.

FCC ID: RS2X2G100 (*changed from RS2X2G-100B*)

After a review of the submitted information, I have a few comments on the above referenced Application. Depending on your responses, kindly understand there may be additional comments.

- 1) Is there any specific communication with the FCC regarding this device? If so, please provide correspondence as appropriate to document this filing.

*Answer – Methodology has been discussed in meetings and verbally approved by the FCC. Written communication has been between FCC and ATCB.*

- 2) Please update the 731 form for an equipment code of DXX.

*Answer – A new 731 form will be submitted.*

- 3) Please provide appropriate labeling information (both sample label and label location photograph or diagram). This has not yet been provided. Note that the labeling exhibit may not be covered by confidentiality.

*Answer - An FCC label document , 'BunaX\_FCC\_Label.pdf' is now provided.*

- 4) Test photographs showing the general test site setup (receive antenna and vehicle) for the in vehicle tests should also be provide as part of the test setup photographs.

*Answer - Photographs showing the general test site setup have been added to the test setup photos document, 'BunaX\_Test\_Setups\_Rev2.pdf'.*

- 5) This device appears to be capable of USB connection to a PC and is therefore also considered a PC peripheral device (in addition to the TX requirements, i.e. Part 15.239, etc.) and is subject to either a Certification or DoC as a PC peripheral. Therefore the application must clarify if you are asking for:

- a) Certification of the device as a TX, and a DoC has been performed by an appropriately accredited test lab for a PC peripheral b) Certification as a TX + PC peripheral.

Note 1: The option b) would be considered as a composite application and 2 certificates (one for the TX, one for the PC peripheral portion) would be issued. Note that there are additional review costs associated with this additional certification.

Note 2: To qualify to perform DoC applications, the test lab must be accredited (i.e. NVLAP or A2LA) to perform testing under the DoC procedure.

Note 3: Note that for DoC tests, the device is configured with a minimum test configuration as specified by ANSI C63.4 which includes complete computer + 2 I/O devices attached (one may be the EUT) during this particular test. Test photos appear to currently show only a USB cable was connected and not correctly tested as a PC peripheral device. However

some information in the report suggests testing of USB transfer but it is uncertain as to if the final configuration met with C63.4.

Note 4: Each path (DoC or Certification) has particular labeling requirements that must be followed. For DoC authorizations, the label should also include specific DoC labeling information and also the users manual should include information regarding Part 2.1077. If the device is Certified, the FCC ID and current labeling requirements for the TX will cover the labeling requirements. However, additional grants are generated and review costs are higher. Currently labeling and users manual do not appear to support a DoC.

The manufacturer does have a choice of DoC or Certification, however the device labeling and manual information must match the appropriate methods used.

Answer : We have chosen the Certification approach, and will submit a separate report of measurements for this separate certification.

- 6) Please provide information (testing, not simply users manual or operational description information) to explain the absolute lowest and highest TX frequencies for each band available in the device. Note that currently the FCC is asking that the test lab report the minimum/maximum channels that the tuning controls were manually capable of moving to verify maximum tuning range and not simply a manufacturer explanation. Please have report updated for this.

Answer - The Report of Measurements has been updated with these test results from the test lab, 'BunaX\_Report\_of\_Measurements\_Rev2.pdf'.

- 7) It is uncertain if cables were manipulated in effort to obtain worse case data. Has cable placement been explored? This is required by ANSI C63.4.

Answer - Cable placement was randomly peaked at each test frequency tested.

- 8) Generally the FCC expects all inputs and outputs to be filled during testing and following published requirements of ANSI C63.4. For radiated tests, please define what ports were utilized and justify as appropriate why certain ports may not be filled (i.e. there is a concern with the audio ports) Please explain, justify, or correct.

Answer – For all radiated tests, a USB cable was inserted into the USB port of the device. For tests performed in portabale mode, an audio cable (earbuds) were connected to the headphone jack of the EUT. For tests performed in the home cradle, a set of speakers were also attached to the audio port of the device. Since the insertion of an audio cable disables the FM modulator, it was not used during the radiated tests performed in a car cradle.

- 9) For in vehicle testing, the test report shows that the lowest and highest channels do not appear to be used for testing (88.7 vs 88.1 MHz and 107.1 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.

Answer – High level ambient signals present at the OATS made testing of 88.1 and 107.9 impractical. Available frequencies were selected as close to the low, mid, and high end of the usable frequency range as possible. For occupied BW, 88.1 MHz and 107.9 MHz were used, as required.

- 10) It is uncertain what type of glass antennas were present in each vehicle tested and their location. Please provide photographs or information as appropriate to document this.

Answer - The Toyota Camry and Nissan Maxima were used, which have glass antennas in the rear glass. The Chrysler Pacifica was chosen due to the FM antenna in the side window glass.

- 11) Test equipment for AC conducted emissions do not appear to be provided. Please update.

Answer – Model, serial number and applicable calibration dates for this equipment can be found in the test report in section 4.8 under the sub section titled, 'FAU EMI Lab' and in section 4.2.1 titled 'Test Set up – Conducted Emissions.'

- 12) The manual mentions Audio Level adjustment (page 68). Please comment on how this was adjusted to ensure maximum levels during testing (drive levels, etc.). Please ensure both radiated and occupied bandwidth tests have been performed utilizing maximum user controllable drive levels.

Answer - In all cases, the audio levels were set to maximum.

- 13) For tests in mobile modes, the device should be positioned in each of 3 axis in effort to obtain worse case positioning per ANSI C63.4 for portable devices. Please explain.

Answer - Additional data was taken by FAU in all 3 axis to verify that worst-case position data is shown. This is now stated in the report of measurements.

- 14) FYI.....Regarding short term confidentiality, you are responsible for the following:

a) Note that any documents held under the short-term confidentiality will automatically become public after 45 days. A manufacturer may extend this period up to an additional 45 days. This requires an additional cover letter requesting this extension must be submitted to ATCB a minimum of 7 days prior to the expiration of the original 45 day temporary grant of confidentiality

b) If the manufacturer engages in public marketing activities or otherwise publicizes the device prior to the expiration of the short-term confidentiality period, the applicant must immediately notify ATCB so the exhibits can be made publicly available.

- 15) FYI..... Although we are processing this application, as of September 12, 2006 we are also required to work with the FCC to pre-review 15.239 applications and also for FCC to authorize us to release the grants. Please note that we must rely on the FCC to release locked FCC ID's in order to do this. Please note that depending on when reviews are actually completed, there may be a delay during which the grants are generated dependent on the FCC.

For the following information, in effort to treat effectively under short-term confidentiality requested, please answer the following items separately as cited below.

16) The block diagram appears to suggest 2 different forms of FM couplers (one labeled "Sure Connect", one labeled "FM Direct Adapter"). Please explain the differences between these various modes/configurations as necessary (i.e. are they leaky coax, what type of coupling is utilized, is the signal attenuated, length of cable, etc.). Please ensure this includes a description of operation/function of each.

Answer : Please see separate document, '[BunaX\\_Short\\_Term\\_Confidential\\_Responses.doc](#)'

17) Please provide a technical description of operation/function of the FM coupler. Please upload this information as a separate exhibit (operational description) to ensure proper treatment of confidentiality.

Answer : Please see separate document, '[BunaX\\_Short\\_Term\\_Confidential\\_Responses.doc](#)'

18) Please provide an appropriate installation manual for the coupler and/or direct configurations if this exists.

Answer : Please see separate document, '[BunaX\\_Short\\_Term\\_Confidential\\_Responses.doc](#)'

19) Regarding the FM coupler, please explain what happens if the XM antenna is directly connected to the docking port and therefore bypasses the coupling module. Would this yield a leaky coax connection? Is it possible to bypass the coupling module this way?

Answer : Please see separate document, '[BunaX\\_Short\\_Term\\_Confidential\\_Responses.doc](#)'