Chris Harvey

From: □□□ [klmnb2002@hanmail.net]
Sent: Friday, May 22, 2009 1:17 AM
To: charvey-tcb@ccsemc.com
Subject: SJ system, FCC ID: XBWSC-100T, Assessment NO.: AN09T9189, Notice#1
Attachments: [SC-100T] Block diagram.pdf; [SC-100T] Op discription.pdf; [SC-100T] rfexposure.pdf; [SC-100T] Test report.pdf; [SC-100T] Tune UP Procedure.pdf

Hi Chris Harvey

1. Please confirm that this device is operating as a Mobile paging device in the allotted frequency band 450-470 MHz (actual operating frequency 450 - 467.85MHz).
-Test Report Attached

2. The operational description and Block Diagram exhibits state that this device is used in transportation and machinery applications, but this device appears to be a paging transmitter. Please confirm and update as needed.
-operational description and Block Diagram Attached

3. The test report states an emission designator of 10K2F1D, but does not explain the necessary bandwidth of 10.2 kHz and does not explain how the emission type F1D has been selected. The measured bandwidth is 17.8 kHz and the authorized bandwidth is listed as 20 kHz. Have you used the 2M + 2D rule? Please describe/justify the emission designator in more detail. Please indicate the channel separation of this device (RF Exposure exhibit indicates 13 channels, but not the channel separation).
-**Test Report Attached**

Please note that the bandwidth table in test report 2.1.3 has typos in the FCC 90.200 reference (likely should be 90.209) and the notes "1,3" inside the table should use superscript text so that the bandwidth listed does not appear to be 1,320.

4. The Frequency stability test data in test report section 2.1.4 seems to show frequency deviation greater than 2.5 ppm from the reference frequency of 457.575 MHz, even though the table implies a measured stability of -2.49ppm at every point. Please confirm the Frequency Stability limit for this device per 90.213. Please include a calculation of the limit in Hz or MHz and confirm whether this device meets the correct frequency stability limit.
-Test Report Attached
5. The unwanted emissions of test report section 2.1.5 states FCC 90.210(g)(3), but this rule section does not exist in the current rules. Please use the most current FCC Rules and correct this reference. Please state why Emission mask G has been selected.
Test Report Attached
6. There is a statement that the Unwanted Emissions test was performed per TIA/EIA 603, but there is no description of the measurement, setup or the version of the standard used. Please provide more details of the measurement procedure and reference the version of TIA/EIA 603 used. The calculation of the limit also seems to be incorrect.

Test Report Attached

7. The Emission Mask G stated in the test report does not match the requirements of Emission Mask G from FCC 90.210 (g). Please confirm that Emission Mask G is the appropriate mask for this device. FCC 90.210(g) is copied here for your reference:
90.210 g) Emission Mask G. For transmitters that are not equipped with an audio low-pass filter, the power of any emission must be attenuated below the unmodulated carrier power (P) as follows: (1) On any frequency removed from the center of the authorized bandwidth by a displacement frequency (fd in kHz) of more than 10 kHz, but no more than 250 percent of the authorized bandwidth: At least 116 log (fd / 6.1) dB, or 50 + 10 log (P) dB, or 70 dB, whichever is the lesser attenuation;
(2) On any frequency removed from the center of the authorized bandwidth by more than 250 percent of the authorized bandwidth: At least 43 + 10 log (P) dB.
Test Report Attached

8. Please describe the Transient Frequency Behavior test setup and measurement procedures used for this test. A test setup diagram should be used as part of the test description.
Test Report Attached

9. The FCC power Limit for Mobile devices is 2W ERP. The test report documents a conducted power measurement of 1.923 W, a peak gain of 3.5dBi (which is equivalent to 1.35dBd), but does not document the ERP measurements. Is the antenna provided with this device? If not, what guidance is provided to the installer/user to connect a proper antenna (antenna type, installation location, gain, etc.)? The manual states that the antenna must be separated by 20cm to the body.
Test Report and MPE Attached

You have submitted an RF Exposure MPE Calculation exhibit in this application. FCC 2.1091, RF Exposure Evaluation for Mobile devices indicates that Part 90 devices operating below 1.5GHz and above 1.5 Watts ERP are subject to routine RF Exposure testing (MPE Measurement). The RF Exposure limit of a 468MHz device using the f/1500 limit specified in FCC 1.1310 is approximately 0.3119mW/cm2 (not 1mW/cm2 as stated in the report). Please submit the RF Exposure documentation in accordance with FCC 2.1091 and 1.1310.

10. The antenna gain plot seems to show a gain of greater than 0dBi but the text seems to indicate 0dBi. The RF Exposure MPE calculation states a gain of 3.5dBi.
MPE Attached

11. Please include a description of how the EUT was operated during the tests.
-continus TX

12. The Tune-Up procedure indicates that the RF Power level is 30dBm, but the conducted measurements show almost 33dBm.
The items indicated above must be submitted before processing can continue on the above referenced application. Failure to provide the requested information within 30 days of the original e-mail date may result in application dismissal and forfeiture of the filing fee. 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 e-mail address listed below the name of the sender.
Tune-Up procedureAttached

Must take advantage of certificate today certainly
Request fast Review

Thanks