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MPE Summary Report On

Radio Sound Inc.

Plaudit RS-51237 OEM Radio, AM/FM/WX/XM tuner

OET Bulletin 65 Edition 97-01 (Evaluating Compliance with FCC
Guidelines for Human Exposure to Radiofrequency
Electromagnetic Fields)

Report No. DI1205413 MPE

September 2012



1.1 SERVICES REQUESTED

RF exposure assessment of the Radio Sound Inc. Plaudit RS-51237 OEM Radio, AM/FM/WX/XM tuner using two Bluegiga Bluetooth Audio Module (FCC ID QOQWT32AE and IC number 5132A-BGTWT32AE) Model WT32-A with 0.5dBi integral chip antenna.

1.2 REQUIREMENTS AND METHOD

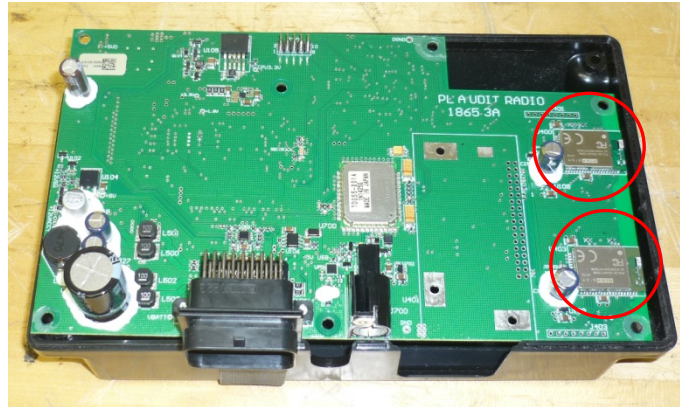
Requirement	EUT Exposure	Limit-Power Density (mW/cm ²)	Compliance
OET Bulletin 65 Edition 97-01 (Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields)	General Population/Uncontrolled Exposure	1.0	Complies
Title 47. Part 2 Subpart J §2.1091 Radiofrequency radiation exposure evaluation: mobile devices	General Population/Uncontrolled Exposure	1.0	Complies
RSS-102 Issue 4 March 2010. Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)	General Public(Uncontrolled Environment)	1.0 or 10 W/m ²	Complies
IEEE C95.3-2002 IEEE Recommended Practice for Measurements and Computations of radio frequency Electromagnetic Fields With Respect to Human Exposure to Such Fields, 100kHz-300 GHz	Uncontrolled Environment	<i>f</i> /1500 or 1.6	Complies

1.3 IDENTIFICATION DATA SUPPLIED BY THE APPLICANT

Applicant	Radio Sound Inc.
Model Name	Plaudit
Model Number	RS-51237
Frequency Range	2402 MHz to 2480 MHz
Description	The EUT is a radio system for motorcycle installation. The base system provides AM/FM/WX/LW/MW/XM radio reception (country dependent), and two (2) speaker outputs. Control of the entertainment system is done via the CAN bus using the nine (9) handlebar buttons. The radio status and setup menus are displayed on the vehicle display. The optional peripherals include a USB interface (for iPod/iPhone or external flash drive), GPS Navigation input, and capability to stream entertainment audio via Bluetooth to commercially available headsets.

1.4 RATIONALE FOR EVALUATION

The EUT uses two Bluegiga Bluetooth Audio Module (FCC ID QQQWT32AE and IC number 5132A-BGTWT32AE) Model WT32:



The applicant is applying for Class II Permissive Change in behalf of Bluegiga Technologies to modify original grant notes for simultaneous transmitters within 45.97mm spacing between each other with a minimum distance of 21cm from the body of the user (motorcycle rider). EMC requirement of the EUT was verified under EN 300 328 V 1.7.1 and EN 301 489-17 V 2.1.1.



1.5 RESULTS OF MPE CALCULATIONS WITH COLLOCATED TRANSMITTERS TRANSMITTING SIMULTANEOUSLY

Prediction of MPE limit at a given distance (single transmitter)

Equation from page 18 of OET Bulletin 65, Edition 97-01

$$S = \frac{PG}{4\pi R^2}$$

where: S = power density



P = power input to the antenna
 G = power gain of the antenna in the direction of interest relative to isotropic
 R = distance to the center of radiation of the antenna

Maximum peak output power at antenna input terminal:	1.67	(dBm)
Maximum peak output power at antenna input terminal:	1.47	(mW)
Antenna gain (typical):	0.5	(dBi)
Maximum antenna gain:	1.122	(numeric)
Prediction distance:	20	(cm)
Source Based Time Average Duty Cycle:	100	(%)
Prediction frequency:	2402	(MHz)
MPE limit for uncontrolled exposure at prediction frequency:	1.000	(mW/cm ²)
Power density at prediction frequency:	0.0003	(mW/cm ²)
Power density at prediction frequency:	0.003	(W/m ²)
Margin of Compliance:	-34.84	(dB)

Calculation of MPE limit at a given distance (collocated transmitters)


Transmitter	Worst Case MPE (mW/cm ²)	Evaluation Distance (cm)	Limit (mW/cm ²)	MPE Ratio (MPE/MPE Limit)
Part 15 (Bluetooth Module #1)	0.0003	20	1	0.0003
Part 15 (Bluetooth Module #2)	0.0003	20	1	0.0003
Sum of the ratios (should be <1.0)				0.0006

The FCC's MPE limits vary with frequency. Therefore, in mixed or broadband RF fields where several sources and frequencies are involved, the fraction of the recommended limit (in terms of power density or square of the electric or magnetic field strength) incurred within each frequency interval should be determined, and the sum of all fractional contributions should not exceed 1.0, or 100% in terms of percentage.

1.6 SUMMARY

Considering the results of analysis and calculations performed, the EUT is in compliance with the specification listed under Section 1.2 REQUIREMENTS AND METHODS.

The results presented in this summary test report apply only to the particular item under evaluation established under Section 1.3 IDENTIFICATION DATA SUPPLIED BY THE APPLICANT of this document, as presented for evaluation by the applicant.



 Name
 Authorized Signatory
 Title: EMC/Wireless Test Engineer