MPE TEST REPORT

Equipment Under Test	: Private Land Mobile Radio for Vehicle (VHF)
Model No.	: SM2102
Applicant	: MAXON CIC Corp.
Address of Applicant	: Chongho Bldg, #7-61, Yangjae-Dong, Seocho-Gu, Seoul, Korea
Date of Test(s)	: 2008-11-28
Date of Issue	: 2008-12-01

Standards : FCC 47CFR 2.1091(b)

In the configuration tested, the EUT complied with the standards specified above.
Remarks :

This report details the results of the testing carried out on one sample, the results contained in this test report do not relate to other samples of the same product. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.
This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of BWS TECH Inc. or testing done by BWS TECH Inc. in connection with distribution or use of the product described in this report must be approved by BWS TECH Inc. in writing.

Decenber 1, 2008
(Date)

Tested by **Hyunsup, Jin**

December 1, 2008
(Date)

Reviewed by **TaeHyun, Nam**

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1. Description

The SM2102 is a DTMF, SECALL and SMS mobile radio with 208-channel capability. The radio is programmable for output power, channel spacing, and a range of features. The three buttons located on the bottom left-hand side of the radio under the LCD, are described as programmable. These three buttons (P1, P2, and P3) have a short and long press and can be used for various pre-programmed features, Monitor, Power H/L, Scan, DTMF, Key lock, Selcall, Scan, Public Address, Open Close, 1200/2400, SMS and Light.

2. Antenna Information

Whip Antenna for vehicle :148 MHz, 1/4 wave 0 dBi
Whip Antenna for vehicle :161 MHz, 1/4 wave 0 dBi
Whip Antenna for vehicle : 174 MHz, 1/4 wave 0 dBi

3. Test site

BWS TECH Inc.
611-1, Maesan-ri, Mohyeon-myeon, Cheoin-gu, Yongin-si,
Gyeonggi-do 449-853, Korea

4. Measurement System

- Automobile: Daewoo CIELO
- E-Field Survey Meter & Probe – NARDA Model EMC-20 (100KHz~3GHz)
  Calibration due date : 2009-10-04
- Antennas – (1/4 wave 0dBi)

5. Measurement Uncertainty

The information below presents an estimate of the possible errors that are associated with the measurement system.

Description	Error
NARDA Survey Meter	± 3%
Repeatability Accuracy	± 7%

6. Method of measurement

6.1 EME measurements made on trunk mounted antennas

6.1.1 External vehicle EME measurement

(Antenna mounted in trunk center)
With the survey meter and probe, take ten (10) measurements, at the test distance of 60cm to the antenna, from the back of the vehicle in a vertical line and then average the results. These measurements are taken and recorded at every twenty (20) centi
meters over a range starting at twenty (20) centimeters above ground and ending at 2.0 meters.

6.1.2 Internal vehicle EME measurement

(Antenna mounted in trunk center)
While rotating survey meter probe through 180 degrees to ensure that the highest level is found, scan the inside of the vehicle, both front and back seating areas, for
the highest level in each location. After the highest level is found, scan vertically making two (2) additional measurement within an area approximately 40 cm wide (representing the width of a person) so as to have a total of three (3) measured points as indicated below that will be averaged

a) Head area
b) Chest area
c) Lower Trunk area

6.2 EME measurements made on center roof mounted antennas

6.2.1 External vehicle EME measurement

With the survey meter and probe, take ten (10) measurements, at the standard test distance of 110 cm from the vehicle-mounted antenna, in a vertical line and then average the results. These measurements are taken and recorded at every twenty (20) centimeters over a range starting at twenty (20) centimeters above ground and ending at 2.0 meters; this would be representative of a person standing next to a vehicle during a mobile radio transmission.

6.2.2 Internal vehicle EME measurement

While rotating survey meter probe through 180 degrees to ensure that the highest level is found, scan the inside of the vehicle, both front and back seating areas, for the highest level in each location. After the highest level is found, scan vertically making two (2) additional measurements within an area approximately 40 cm wide (representing the width of a person) so as to have a total of three (3) measured points as indicated below that will be averaged.

a) Head area
b) Chest area
c) Lower Trunk area

7. Test Result

Measurement Information			
Measurement Freq.(MHz)	148.025	161.025	173.975
Raw Data Power(W)	21.3	22.8	21.9
Controlled Limit	1.0	1.0	1.0
Uncontrolled Limit	0.2	0.2	0.2
Cal. Factor	1	1	1
Antenna / gain(dBi)	Whip / 0	Whip / 0	Whip / 0
External Vehicle Power Density(50% duty)	Average over body/2		
Internal Vehicle Power Density(50% duty)	Average over (head/Chest/leg)/2		

External Vehicle MPE Assessment at 148.0250 MHz						
Antenna Location	**Antenna/ gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average Over Body**	**Pwr. Density (mW/cm∧2)**
Trunk	Whip / 0	60	E	1	0.1614	0.0807
Measurement grid						
Test Position	**Height (cm)**	**% of controlled limit**	**Test Position**	**Height (cm)**	**% of controlled limit**	
1	20	6	6	120	11	
2	40	8	7	140	20	
3	60	16	8	160	30	
4	80	15	9	180	12	
5	100	25	10	200	18	

External Vehicle MPE Assessment at 161.0250 MHz						
Antenna Location	**Antenna/ gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average Over Body**	**Pwr. Density (mW/cm∧2)**
Trunk	Whip / 0	60	E	1	0.1235	0.06175
Measurement grid						
Test Position	**Height (cm)**	**% of controlled limit**	**Test Position**	**Height (cm)**	**% of controlled limit**	
1	20	8	6	120	20	
2	40	8	7	140	23	
3	60	19	8	160	29	
4	80	20	9	180	16	
5	100	26	10	200	18	

External Vehicle MPE Assessment at 173.9750 MHz						
Antenna Location	**Antenna/ gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average Over Body**	**Pwr. Density (mW/cm^2)**
Trunk	Whip / 0	60	E	1	0.1813	0.09065
Measurement grid						
Test Position	**Height (cm)**	**% of controlled limit**	**Test Position**	**Height (cm)**	**% of controlled limit**	
1	20	7	6	120	21	
2	40	8	7	140	22	
3	60	19	8	160	30	
4	80	19	9	180	17	
5	100	23	10	200	16	

External Vehicle MPE Assessment at 148.0250 MHz						
Antenna Location	**Antenna/ gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average Over Body**	**Pwr. Density (mW/cm^2)**
Roof	Whip / 0	110	E	1	0.031	0.0165
Measurement grid						
Test Position	**Height (cm)**	**% of controlled limit**	**Test Position**	**Height (cm)**	**% of controlled limit**	
1	20	8	6	120	9	
2	40	3	7	140	3	
3	60	1	8	160	1	
4	80	2	9	180	1	
5	100	3	10	200	1	

Internal Vehicle MPE Assessment at 148.0250 MHz						
Antenna Location	**Antenna/ gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average Over Body**	**Pwr. Density (mW/cm^2)**
Trunk	Whip / 0	Highest reading	E	1	0.10/0.08	0.05
Measurement grid						
Test Position	**% of controlled limit Head**		**% of controlled limit Chest**		**% of controlled limit Leg**	
Back	3		22		8	
Front	8		10		6	

Internal Vehicle MPE Assessment at 161.0250 MHz						
Antenna Location	**Antenna/ gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average Over Body**	**Pwr. Density (mW/cm^2)**
Trunk	Whip / 0	Highest reading	E	1	0.11/0.09	0.06
Measurement grid						
Test Position	**% of controlled limit Head**		**% of controlled limit Chest**		**% of controlled limit Leg**	
Back	3		20		9	
Front	10		12		7	

Internal Vehicle MPE Assessment at 173.9750 MHz						
Antenna Location	**Antenna/ gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average Over Body**	**Pwr. Density (mW/cm^2)**
Trunk	Whip / 0	Highest reading	E	1	0.10/0.38	0.05
Measurement grid						
Test Position	**% of controlled limit Head**		**% of controlled limit Chest**		**% of controlled limit Leg**	
Back	5		19		8	
Front	9		10		8	

Internal Vehicle MPE Assessment at 148.0250 MHz						
Antenna Location	**Antenna/ gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average Over Body**	**Pwr. Density (mW/cm^2)**
Roof	Whip / 0	Highest reading	E	1	0.06/0.04	0.03
Measurement grid						
Test Position	**% of controlled limit Head**		**% of controlled limit Chest**		**% of controlled limit Leg**	
Back	6		8		4	
Front	4		5		3	

8. Conclusion

The measurement results complies with the FCC Limit Per 47 CFR 2.1091(b) for the Uncontrolled RF Exposure.