MPE TEST REPORT

OF

FCC Per 47 CFR 2.1091(b)

FCC ID: R72IM101

Equipment Under Test	**:**	**Private Land Mobile Radio for Vehicle(VHF)**
Model Name	**:**	**IM101**
Serial No.	**:**	**N/A**
Applicant	**:**	**E-Tech Co., Ltd.**
Manufacturer	**:**	**E-Tech Co., Ltd.**
Date of Test(s)	**:**	**2007-01-26**
Date of Issue	**:**	**2007-02-02**

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

Tested By:  **Date** **2007-02-02**

Feel Jeong

Approved By  **Date** **2007-02-02**

Albert Lim

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1. General Information

1.1. Testing Laboratory

SGS Testing Korea Co., Ltd.
Wireless Div. 2F, 18-34, Sanbon-dong, Gunpo-city, Gyeonggi-do, Korea 435-040
www.electrolab.kr.sgs.com
Telephone : +82 +31 428 5740
FAX : +82 +31 427 2371

1.2. Details of Applicant

Applicant : E-Tech Co., Ltd.
Address : #403-901, Techno Park Complex, 193, Yakdae-dong, Wonmi-gu, Bucheon-city, Kyunggi-do, 420-734, Korea
Contact Person : Jong-woon Kim
Phone No. : 82-32-328-0611
Fax No. : 82-32-328-0612

1.3. Description of EUT

Kind of Product	Private Land Mobile Radio for Vehicle(VHF)
Model Name	IM101
Serial Number	N/A
Power Supply	DC 13.6 V
Frequency Range	136 MHz ~ 174 MHz
Modulation Technique	FM
Frequency Generation	PLL
Number of Channels	255 Channels
Operating Conditions	-30 ~ 60 deg C
Antenna Type	External Antenna

1.4. Details of modification

-N/A

1.5. Antenna Information

Whip Antenna for vehicle : 136 ~ 174 MHz, 1/4 wave 0 dBi

1.6. Measurement System

- Automobile: Hyundai Elantra(1995)
  E-Field Survey Meter & Probe - NARDA Model EMC 20 (100 kHz ~ 3 GHz)
  Calibration due date: 2007-10-16
- Antennas - (1/4 wave 0 dBi)

2. 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%**

3. Method of measurement

3.1 EME measurements made on trunk mounted antennas

3.1.1 External vehicle EME measurement

(Antenna mounted in trunk center)
With the survey meter and probe, take ten (10) measurements, at the standard test distance of 60 cm 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) centimeters over a range starting at twenty (20) centimeters above ground and ending at 2.0 meters.

3.1.2 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 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

3.2 EME measurements made on center roof mounted antennas

3.2.1 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.

3.2.2 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

4. Test result

Measurement Information			
Measurement Freq.(MHz)	136.000	155.000	174.000
Raw Data Power(W)	40.79	39.60	40.35
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 136.000 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	0.148	0.074
Measurement grid						
Test position	**Height (cm)**	**% of controlled limit**	**Test position**	**Height(cm)**	**% of controlled limit**	
1	20	6	6	120	26	
2	40	10	7	140	31	
3	60	9	8	160	24	
4	80	5	9	180	12	
5	100	11	10	200	14	

External Vehicle MPE Assessment at 155.000 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	0.243	0.122
Measurement grid						
Test position	**Height (cm)**	**% of controlled limit**	**Test position**	**Height(cm)**	**% of controlled limit**	
1	20	21	6	120	27	
2	40	47	7	140	34	
3	60	38	8	160	25	
4	80	12	9	180	15	
5	100	13	10	200	11	

External Vehicle MPE Assessment at 174.000 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	0.116	0.050
Measurement grid						
Test position	Height (cm)	% of controlled limit	Test position	Height(cm)	% of controlled limit	
1	20	15	6	120	18	
2	40	20	7	140	16	
3	60	8	8	160	10	
4	80	6	9	180	8	
5	100	11	10	200	4	

External Vehicle MPE Assessment at 155.000 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	0.060	0.030
Measurement grid						
Test position	Height (cm)	% of controlled limit	Test position	Height(cm)	% of controlled limit	
1	20	5	6	120	7	
2	40	5	7	140	4	
3	60	5	8	160	3	
4	80	7	9	180	4	
5	100	8	10	200	12	

Internal Vehicle MPE Assessment at 136.000 MHz						
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head,Chest,Leg Back/Front Seats (mW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)
Trunk	Whip / 0	Highest Reading	E	1	0.050/0.010	0.025/0.005
Measurement grid						
Test position	% of controlled limit Head		% of controlled limit Chest		% of controlled limit Leg	
Back Seat	9		5		1	
Front Seat	1		1		1	

Internal Vehicle MPE Assessment at 155.000 MHz						
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head,Chest,Leg Back/Front Seats (mW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)
Trunk	Whip / 0	Highest Reading	E	1	0.020/0.023	0.010/0.012

Measurement grid			
Test position	% of controlled limit Head	% of controlled limit Chest	% of controlled limit Leg
Back Seat	2	3	1
Front Seat	3	3	1

Internal Vehicle MPE Assessment at 174.000 MHz						
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head,Chest,Leg Back/Front Seats (mW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)
Trunk	Whip / 0	Highest Reading	E	1	0.100/0.080	0.050/0.040

Measurement grid			
Test position	% of controlled limit Head	% of controlled limit Chest	% of controlled limit Leg
Back Seat	10	12	8
Front Seat	8	10	5

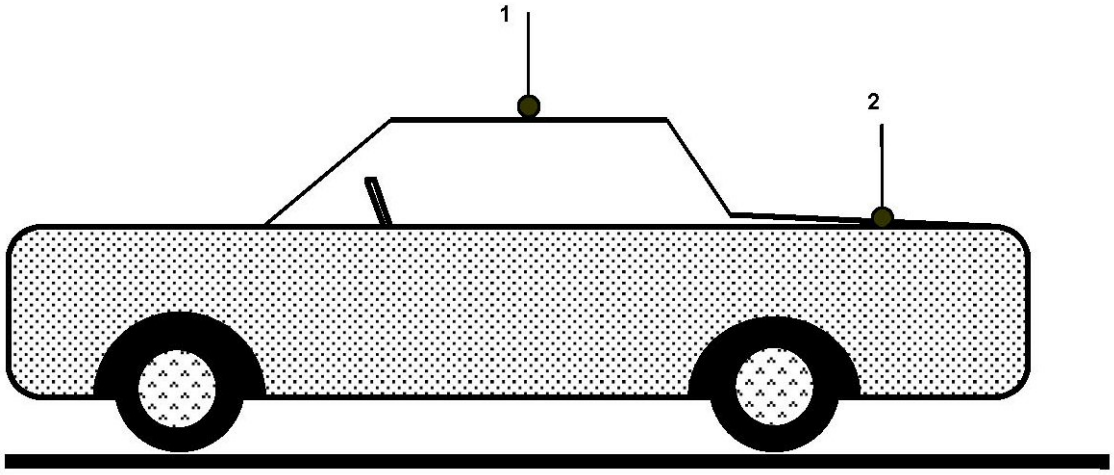
Internal Vehicle MPE Assessment at 174.000 MHz						
Antenna Location	Antenna/ gain	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head,Chest,Leg Back/Front Seats (mW/cm^2)	Pwr. Density of Higher Level (mW/cm^2)
Roof	Whip / 0	Highest Reading	E	1	0.030/0.006	0.015/0.003

Measurement grid			
Test position	% of controlled limit Head	% of controlled limit Chest	% of controlled limit Leg
Back Seat	1	3	5
Front Seat	0	1	1

5. Conclusion

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

6. Appendix. Antenna Location Drawing



1 - Roof (center)
2 - Trunk (center)