

 MOTOROLA	 ACCREDITED Certificate Number: 1449-01
FCC ID: ABZ99FT4081 DECLARATION OF COMPLIANCE MPE ASSESSMENT	
Government & Enterprise Mobility Solutions EME Test Laboratory 8000 West Sunrise Blvd Fort Lauderdale, FL. 33322	Date of Report: May 22, 2006 Report Revision: Rev. O Report ID: FCC MPE rpt_PMUE2342A_UHF R1_ Rev O_060522_SR24052
Responsible Engineer: Kim Uong (EME Engineer) Date/s Tested: 5/12/06 - 5/15/06 Manufacturer/Location: Motorola, Penang Date submitted for test: 5/2/06 DUT Description: UHF Range 1, 403-470 MHz, 1-25W Test TX mode(s): CW Max. Power output: 30W, 50% Duty cycle TX Frequency Bands: 403-470 MHz Signaling type: CW using FM and 2:1 TDMA using 4FSK Model(s) Tested: PMUE2342A Model(s) Certified: PMUE2342A Serial Number(s): MB5EM08U Classification: Occupational Controlled (Operator); General Population/Uncontrolled (Passengers/Bystanders) Rule Part(s): 2.1091 Approved Accessories: Antenna(s): HAE4002A (403-430 MHz, 1/4 Wave, 0 dBd gain); HAE4003A (450-470 MHz, 1/4 Wave, 0 dBd gain); HAE4010A (406-420 MHz, 5/8 Wave, 3.5 dBd gain), HAE4011A (450-470 MHz, 5/8 Wave, 3.5 dBd gain), RAE4004ARB (445-470 MHz, 5/8 Wave, 5 dBd gain).  Final RF Exposure Results: Mobile max calculated power density = 0.27mW/cm²	
Based on the information and the testing results provided herein, the undersigned certifies that when used as stated in the operating instructions supplied, said product complies with the national and international reference standards and guidelines listed in section 3.0 of this report. This report shall not be reproduced without written approval from an officially designated representative of the Motorola EME Laboratory.	
Signature on file -Stephen Whalen for Ken Enger Ken Enger - GEMS EME Lab Senior Resource Manager, Laboratory Director, Approval Date: 5/22/06	Certification Date: 5/22/06 Certification No.: L1060521P

TABLE OF CONTENTS

1.0	Product and System Description
2.0	Additional Options and Accessories
3.0	Measurement and Limit Standards
4.0	Data Collection Consideration
5.0	Measurement System Uncertainty Levels
6.0	Method of Measurement
6.1	EME measurements made with trunk mounted antenna
6.1.1	External vehicle EME measurement
6.1.2	Internal vehicle EME measurement
6.2	EME measurements made with roof mounted antenna
6.2.1	External vehicle EME measurements
6.2.2	Internal vehicle EME measurement
7.0	Test Site
8.0	Measurement System/Equipment
9.0	Test Unit Description
10.0	Test Set-Up Description
11.0	Test Results Summary
APPENDIX A:	Illustration of antenna location and test distances
APPENDIX B:	Meter/Probe Calibration Certificates
APPENDIX C:	Photos of Assessed Antennas
APPENDIX D:	Detail MPE Measurement Data

REVISION HISTORY

Date	Revision	Comments
5/22/06	O	Original release

1.0 Product and System Description

FCC ID: ABZ99FT4081, model PMUE2342A is a mobile transceiver that utilizes both analog and digital two-way radio communications and also includes GPS capability. The modulation scheme used for analog is narrowband Frequency Modulation (FM). The modulation scheme used for digital is 4 Level Frequency Shift Keying (4FSK) and Time Division Multiple Access (TDMA). TDMA is used to allocate portions of the RF signal by dividing time into two slots. Transmission from a unit or base station is accommodated in time-slot lengths of 30 milliseconds and frame lengths of 60 milliseconds.

The intended use of the radio is Push-To-Talk (PTT) while the device is properly installed in a vehicle with an external antenna mounted at the center of the roof or trunk.

This device will be marketed to and used by employees solely for work-related operations, such as public safety agencies, e.g. police, fire and emergency medical. User training is the responsibility of these agencies which can be expected to employ the usage instructions, safety information and operational cautions set forth in the user's manual, instructional sessions or other means.

Accordingly this product is classified as Occupational/Controlled Exposure. However, In accordance with FCC requirements, the passengers inside the vehicle and the bystanders external to the vehicle are evaluated to the General Population/Uncontrolled Exposure Limits.

(Note that "By-standers" as used herein mean people other than operator)

2.0 Additional Options and Accessories

NA

3.0 Measurement and Limit Standards

Measurements were performed according to the recommended guidelines in IEEE/ANSI C95.3-2002 and compared to FCC Limits Per 47 CFR 2.1091 (d) for General Population/Uncontrolled RF Exposure.

For test frequencies ranging from 403 - 470 MHz the MPE (Maximum Permissible Exposure) limit to electromagnetic energy in equivalent plane wave free-space power density is $0.27 - 0.31 \text{ mW/cm}^2$ and calculated using the formula $f/1500$.

4.0 Data Collection Consideration

Power density testing was performed with DUT installed in a 1991 Ford Taurus (4-door). Measurement data was taken with the vehicle running at idle and the vehicle battery measuring 14.0 volts.

5.0 Measurement System Uncertainty Levels

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

Uncertainty Budget for Near Field Probe Measurements

	Tol. ($\pm$ %)	Prob. Dist.	Divisor	u_i ($\pm$ %)
Measurement System				
Survey Meter Calibration	3.0	N	1.00	3.0
Repeatability Accuracy	7.0	N	1.00	7.0
Combined Standard Uncertainty		RSS		7.6
Expanded Uncertainty (95% CONFIDENCE LEVEL)		$k=2$		15

6.0 Method of Measurement

6.1 EME measurements made with trunk mounted antenna(s)

(For reference, see Illustration of antenna location and test distances in APPENDIX A)

6.1.1 External vehicle EME measurement

(Antenna mounted at trunk center)

MPE measurements for by-stander conditions are determined by taking the average of (10) measurements in a 2m vertical line for the test positions indicated in APPENDIX A with 20cm increments at the test distance of 60cm from the antenna under test. The measurement probe sensor is rotated 180° at each of the ten incremental measurements to ensure the highest result is captured. These measurements are representative of persons other than the operator standing next to the vehicle.

Each of the offered antennas mounted at the center of the trunk were assessed at the rear of the vehicle while maintaining a twenty (20) centimeter separation distance between the probe sensor and vehicle body. The worst case antenna was then tested at a 45° radial at the corner of the trunk, and 90° radial at the side of the trunk.

For the current test vehicle, the antenna to probe sensor separation distance is 60cm (directly behind vehicle), 99.5 cm (45 degree radial) and 104 cm (90 degree radial).

Note: the distance from the trunk-mounted antenna to the edge of the vehicle is 26cm and the distance from the edge of the vehicle's trunk to the MPE vertical line assessment is 34cm (trunk to edge of bumper is 10cm). The radial distance measured at 45° from corner of trunk to vertical test line is 99.5cm. The radial distance measured at 90° from the side of the trunk is 104cm.

6.1.2 Internal vehicle EME measurement

(Antenna mounted at trunk center)

While rotating survey meter probe through 180 degrees to ensure that the highest level is found, scans were performed inside of the vehicle, at both front and back seating areas, across the TX band to ascertain the highest level at the head. After the highest level is found, scans were performed vertically making two (2) additional measurements within an area approximately 40cm wide (representing the width of a person) so as to have a total of three (3) measured points, indicated below, that are averaged.

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

6.2 EME measurements made with roof mounted antenna(s)

(For reference, see Illustration of antenna location and test distances in APPENDIX A)

6.2.1 External vehicle EME measurement

(Antenna mounted at roof center)

MPE measurements for by-stander conditions are determined by taking the average of (10) measurements in a 2m vertical line for the test position indicated in APPENDIX A with 20cm increments at the test distance of 60cm from the antenna under test. The measurement probe sensor is rotated 180° at each of the ten incremental measurements to ensure the highest result is captured. These measurements are representative of persons other than the operator standing next to the vehicle.

Note: Actual test distance was 110cm (60cm from antenna to roof edge; 30cm from roof edge to edge of car door; 20cm vertical test line to car door); this is the closest distance that can be achieved to an antenna mounted to the center of the vehicle used for MPE compliance assessment.

6.2.2 Internal vehicle EME measurement

(Antenna mounted at roof center)

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

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

7.0 Test Site

The test site is the Motorola open area test site located at 8000 W. Sunrise Blvd., Plantation, FL. 33322.

8.0 Measurement System/Equipment:

Equipment Type	Model #	SN	Calibration Due Date
Automobile	1991 Ford Taurus, 4-Door		
Survey Meter	NARDA Model 8718	01122	4/20/07
Probe - E-Field (Electric Field)	NARDA Model 8722B	13001	2/28/07

9.0 Test Unit Description

Power density measurements were performed on PMUE2342A with serial numbers MB5EM08U. The tested frequencies and associated power outputs are presented below.

Frequency (MHz)	Po (W)
403	29.9
406	29.8
413	29.8
416.5	29.9
430	29.8
445	29.6
450	30.0
457.5	29.4
460	29.6
470	29.4

10.0 Test Set-Up Description

The following are the mobile antenna test configurations used for this product.
(for reference, see Illustration of antenna location and test distances in the appendix A)

a) The $\frac{1}{4}$ wave 0dBd gain antennas (HAE4002A and HAE4003A), $\frac{5}{8}$ wave 3.5dBd and gain antennas (HAE4010A and HAE4011A) and $\frac{5}{8}$ wave 5.0dBd gain antenna (RAE4004A) were assessed while mounted at the center of the roof of the test vehicle.

b) The ¼ wave 0dBd gain antennas (HAE4002A and HAE4003A), 5/8 wave 3.5dBd and gain antennas (HAE4010A and HAE4011A) and 5/8 wave 5.0dBd gain antenna (RAE4004A) were assessed while mounted at the center of the trunk of the test vehicle.

Assessments were made internal and external to the test vehicle at the specified distances and test locations indicated in sections 6.0, 11.0, and appendix A.

11.0 Test Results Summary

APPENDIX D presents detailed MPE measurement information for each test configuration; person external or internal to the vehicle, TX frequency, antenna (location, model and gain), distance from antenna to probe sensor, E/H field measurements, calibration factor, MPE average over body, initial power, power density calc, power density max calc, IEEE/FCC controlled and uncontrolled limits, and maximum output power.

The Average over Body test methodology is consistent with IEEE/ANSI C95.3-2002 guidelines

MPE results are based on a 50% duty cycle which is in accordance with the User Manual instructions.

Below is an explanation of how the MPE results are calculated.

External to vehicle - 10 measurements are averaged over the body (*Body_Avg*).

Internal to vehicle - 3 measurements are averaged over the body (*Body_Avg*).

Narda Survey Meter measures in percent of the controlled limit. Therefore the averages over the body used in the calculations below reflect percentages.

MPE results are based on a Push-To-Talk (PTT) 50% duty cycle in CW mode.

Therefore;

$$\text{Average_over_Body} = \text{Body_Avg} * \text{Controlled_Limit}$$

$$\text{Pwr_Density_Calc} = \text{Average_over_Body} * \text{Duty_Cycle}$$

$$\text{Pwr_Density_Max_Calc} = \text{Pwr_Density_Calc} * \frac{\text{Max_Output_Power}}{\text{Initial_Output_Power}}$$

Note; For $\text{Initial Output Power} > \text{Max_Output_Power}$, $\text{Max_Output_Power} / \text{Initial Output Power} = 1$

The tables below summarize the E field test configurations for the PMUE2342A mobile radio. See APPENDICES A and D respectively for the indicated test positions and detailed MPE measurement data.

Table 1: MPE assessment at the center of the trunk

Tables	Antenna Model	Antenna Location	Test Frequency (MHz)	E/H Field	Passenger / By-stander	Max Calc Pwr Density (mW/cm ²)	% of Uncontrolled Limit
Trunk							
1	HAE4002A	Trunk	403	E	By-stander	0.13	48%
2	HAE4002A	Trunk	403	E	Passenger	0.14	52%
3	HAE4002A	Trunk	416.5	E	By-stander	0.13	47%
4	HAE4002A	Trunk	416.5	E	Passenger	0.15	54%
5	HAE4002A	Trunk	430	E	By-stander	0.12	42%
6	HAE4002A	Trunk	430	E	Passenger	0.18	63%
7	HAE4003A	Trunk	450	E	By-stander	0.17	57%
8	HAE4003A	Trunk	450	E	Passenger	0.25	83%
9	HAE4003A	Trunk	460	E	By-stander	0.15	49%
10	HAE4003A	Trunk	460	E	Passenger	0.27	88%
11	HAE4003A	Trunk	470	E	By-stander	0.16	51%
12	HAE4003A	Trunk	470	E	Passenger	0.19	61%
13	HAE4010A	Trunk	406	E	By-stander	0.14	52%
14	HAE4010A	Trunk	406	E	Passenger	0.07	26%
15	HAE4010A	Trunk	413	E	By-stander	0.13	47%
16	HAE4010A	Trunk	413	E	Passenger	0.08	29%
17	HAE4010A	Trunk	416.5	E	By-stander	0.13	47%
18	HAE4010A	Trunk	416.5	E	Passenger	0.08	29%
19	HAE4011A	Trunk	450	E	By-stander	0.16	53%
20	HAE4011A	Trunk	450	E	Passenger	0.10	33%
21	HAE4011A	Trunk	460	E	By-stander	0.16	52%
22	HAE4011A	Trunk	460	E	Passenger	0.09	29%
23	HAE4011A	Trunk	470	E	By-stander	0.12	38%
24	HAE4011A	Trunk	470	E	Passenger	0.06	19%
25	RAE4004A	Trunk	445	E	By-stander	0.11	37%
26	RAE4004A	Trunk	445	E	Passenger	0.02	7%

Table 1(con't): MPE assessment at the center of the trunk

Tables	Antenna Model	Antenna Location	Test Frequency (MHz)	E/H Field	Passenger / By-stander	Max Calc Pwr Density (mW/cm ²)	% of Uncontrolled Limit
Trunk							
27	RAE4004A	Trunk	457.5	E	By-stander	0.14	46%
28	RAE4004A	Trunk	457.5	E	Passenger	0.06	20%
29	RAE4004A	Trunk	470	E	By-stander	0.13	41%
30	RAE4004A	Trunk	470	E	Passenger	0.06	19%
45 Degree From Trunk							
31	HAE4003A	Trunk	450	E	By-stander	0.13	43%
90 Degree From Trunk							
32	HAE4003A	Trunk	450	E	By-stander	0.09	30%

Table 2: MPE assessment at the center of the roof

Tables	Antenna Model	Antenna Location	Test Frequency (MHz)	E/H Field	Passenger / By-stander	Max Calc Pwr Density (mW/cm ²)	% of Uncontrolled Limit
Roof							
35	HAE4002A	Roof	403	E	By-stander	0.08	30%
36	HAE4002A	Roof	403	E	Passenger	0.03	11%
37	HAE4002A	Roof	416.5	E	By-stander	0.07	25%
38	HAE4002A	Roof	416.5	E	Passenger	0.04	14%
39	HAE4002A	Roof	430	E	By-stander	0.06	21%
40	HAE4002A	Roof	430	E	Passenger	0.04	14%
41	HAE4003A	Roof	450	E	By-stander	0.08	27%
42	HAE4003A	Roof	450	E	Passenger	0.04	13%
43	HAE4003A	Roof	460	E	By-stander	0.08	26%
44	HAE4003A	Roof	460	E	Passenger	0.04	13%
45	HAE4003A	Roof	470	E	By-stander	0.07	22%
46	HAE4003A	Roof	470	E	Passenger	0.03	10%

Table 2 (con't): MPE assessment at the center of the roof

Tables	Antenna Model	Antenna Location	Test Frequency (MHz)	E/H Field	Passenger / By-stander	Max Calc Pwr Density (mW/cm ²)	% of Uncontrolled Limit
Roof							
47	HAE4010A	Roof	406	E	By-stander	0.05	18%
48	HAE4010A	Roof	406	E	Passenger	0.01	4%
49	HAE4010A	Roof	413	E	By-stander	0.05	18%
50	HAE4010A	Roof	413	E	Passenger	0.01	4%
51	HAE4010A	Roof	416.5	E	By-stander	0.04	14%
52	HAE4010A	Roof	416.5	E	Passenger	0.01	4%
53	HAE4011A	Roof	450	E	By-stander	0.05	17%
54	HAE4011A	Roof	450	E	Passenger	0.01	3%
55	HAE4011A	Roof	460	E	By-stander	0.05	16%
56	HAE4011A	Roof	460	E	Passenger	0.01	3%
57	HAE4011A	Roof	470	E	By-stander	0.04	13%
58	HAE4011A	Roof	470	E	Passenger	0.01	3%
59	RAE4004A	Roof	445	E	By-stander	0.04	13%
60	RAE4004A	Roof	445	E	Passenger	0.01	3%
61	RAE4004A	Roof	457.5	E	By-stander	0.05	16%
62	RAE4004A	Roof	457.5	E	Passenger	0.01	3%
63	RAE4004A	Roof	470	E	By-stander	0.04	13%
64	RAE4004A	Roof	470	E	Passenger	0.01	3%

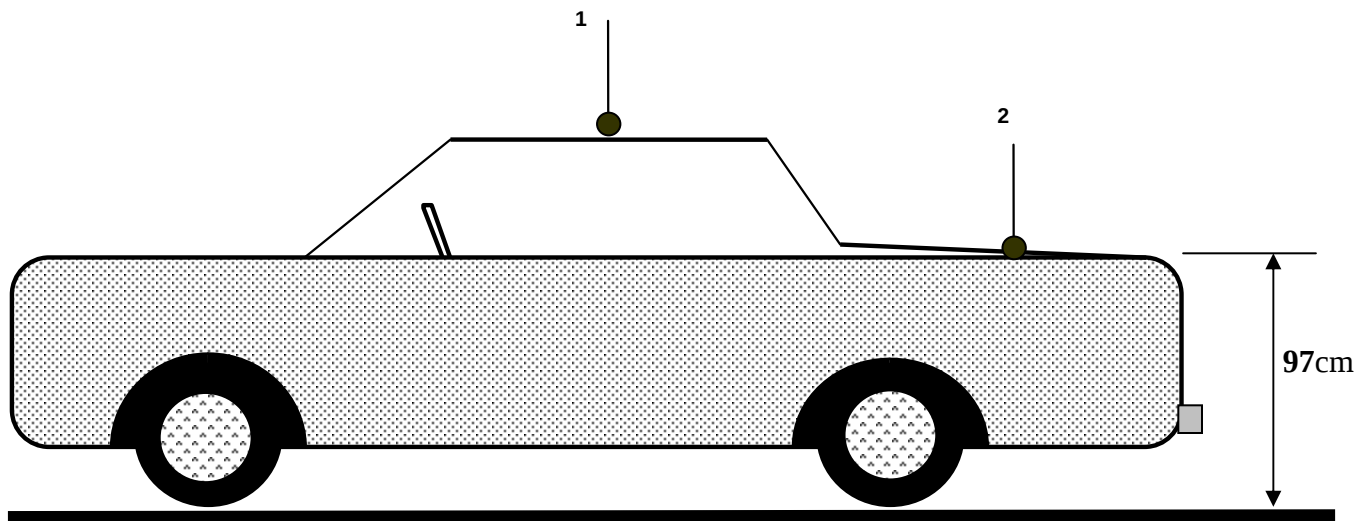
12.0 Conclusion

Depending on the test frequency, the PMUE2342A mobile assessments were performed with an output power range of 29.4 – 30.0W. The highest power density results for the mobile device scaled to the maximum allowable power output is $0.27\text{mW}/\text{cm}^2$ (at 460MHz) internal to the vehicle and $0.17\text{mW}/\text{cm}^2$ (at 450MHz) external to the vehicle.

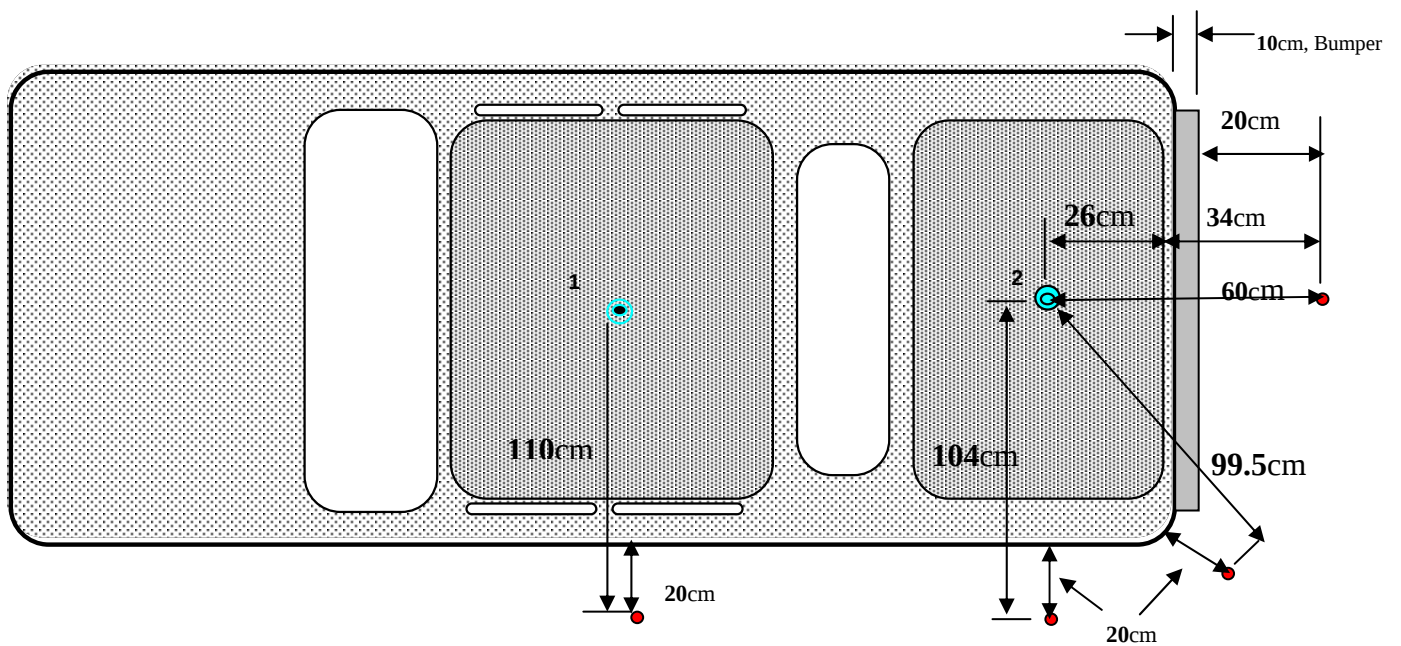
The MPE results presented herein demonstrate compliance to the applicable FCC/IEEE General population/Uncontrolled exposure limits of $f/1500$ for the frequency range of 300-1500MHz for both passengers and by-standers.

APPENDIX A

Illustration of antenna locations and test distances



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



Note: • Test Locations

APPENDIX B

Meter/Probe Calibration Certificates



Certificate of Calibration

L-3 Communications, Narda Microwave-East, hereby certifies that the referenced RF Radiation Hazard monitoring equipment has been calibrated in accordance with MIL-STD-45662A, ANSI Z540, ISO 10012 and ISO 9001: 2000.

The measured values were determined by comparison with our standards, which are traceable to the National Institute of Standards and Technology to the extent allowed by NIST's calibration facilities.

Customer: MOTOROLA
SCHAUMBURG, IL 60168-0429

Certificate #: 64777 1

Model #: 8718-10

Serial #: 01122

Description: METER W/CABLE

PO #: NP2398645

Date Calibrated: 04/20/2006

R.O. #: 64777


Vince Donovan
Manufacturing


Ken Peck
Quality Assurance

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Certificate of Calibration

L-3 Communications, Narda Microwave-East, hereby certifies that the referenced RF Radiation Hazard monitoring equipment has been calibrated in accordance with MIL-STD-45662A, ANSI Z540, ISO 10012 and ISO 9001:2000.

The measured values were determined by comparison with our standards, which are traceable to the National Institute of Standards and Technology to the extent allowed by NIST's calibration facilities.

Customer: MOTOROLA
PLANTATION, FL 33322

Certificate #: 63648 1

Model #: 8722B

Serial #: 13001

Description: PROBE

PO #: NP2316554

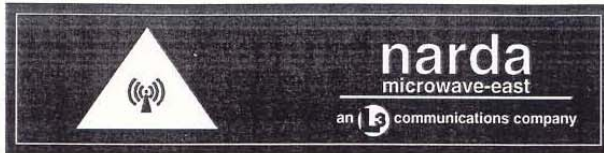
Date Calibrated: 02-28-06

R.O. #: 63648


Vince Donovan
Manufacturing


Ken Peck
Quality Assurance

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DATE 28-Feb-2006
REL HUMIDITY 25%

RELEASE # R63648
TEMP 20 DEG. C

NARDA MICROWAVE - EAST

MODEL # 8722B
SERIAL # 13001

Recal Probe - Date of Previous Probe Data = 07/21/2005

FREQ MHZ	PRE-CAL DATA	FINAL CAL DATA	ELLIPSE RATIO, dB	FINAL CORR. FACTOR	DEVIATION DELTA DB	PREVIOUS FINAL CORR.
.30	0.95	0.83	+/- 0.69	1.20	+1.06	1.34
3.00	1.74	1.53	+/- 0.91	0.65	+1.26	0.77
10.00	0.98	0.86	+/- 0.72	1.16	+0.04	1.03
30.00	0.75	0.65	+/- 0.68	1.53	-0.13	1.30
100.00	1.20	1.05	+/- 0.36	0.95	-0.16	0.80
300.00	0.75	0.66	+/- 0.47	1.52	-0.74	1.13
750.00	1.35	1.19	+/- 0.16	0.84	+0.89	0.91
1000.00	1.16	1.02	+/- 0.38	0.98	-0.32	0.80
1700.00	0.79	0.69	+/- 0.39	1.44	-0.44	1.14
2450.00	1.13	1.19	+/- 0.29	0.84	-0.43	0.81
4000.00	0.81	0.86	+/- 0.32	1.16	-0.37	1.13
8200.00	1.00	1.06	+/- 0.55	0.95	-0.33	0.93
10000.00	0.99	1.05	+/- 0.49	0.95	-0.17	0.97
18000.00	1.11	1.18	+/- 0.75	0.85	-0.34	0.83
26500.00	1.03	1.09	+/- 0.93	0.92	-0.10	0.95
40000.00	0.79	0.84	+/- 0.67	1.19	-0.08	1.24

LOW FREQUENCY MULTIPLIER = 0.878

HIGH FREQUENCY MULTIPLIER = 1.061

FREQ. DEV. (3-40000 MHZ) = 3.684 DB

FREQ. DEV. (0.3-40000 MHZ) = 3.68 DB

MAX. ELLIPSE RATIO (0.3-40000 MHZ) = +/- 0.93 DB

PRE-CAL DATA REFLECTS THE MEAN ELLIPSE RATIO OF PROBE AS RECEIVED BY NARDA CALIBRATION DEPARTMENT, OR IS THE INITIAL, UN-ADJUSTED RATIO.

(PRE-CAL x OLD CORR. FACTOR) - 1 = DEVIATION FROM PREVIOUS (OLD)

CALIBRATION DATA. NOTE: NOT APPLICABLE FOR NEW PROBES.

FINAL CAL DATA IS THE RATIO OF THE DISPLAYED TO THE APPLIED FIELD STRENGTH.

FINAL CORR. FACTOR IS THE RECIPROCAL OF FINAL CAL DATA.

FINAL CORR. FACTOR MULTIPLIED BY THE DISPLAYED FIELD STRENGTH READING GIVES THE ACTUAL ("CORRECTED") FIELD STRENGTH.

ELLIPSE RATIO IS EXPRESSED IN dB DEVIATION FROM THE MEAN DATA

RMS Uncertainty = +/- 0.5db. ATP # = 502120 REV

TESTER

C.V.

Q.A. APPROVAL



APPENDIX C
Photos of Assessed Antennas



Antenna kit numbers, from left to right; HAE4002A, HAE4003A, HAE4010A, HAE4011A, RAE4004A

APPENDIX D

Detailed MPE Measurement Data

Table 1

External Vehicle MPE Assessment @ 403 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4002A	2.15	60	E	1.36	0.257	29.9	0.129	0.13
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	5.1%	6	120	33.9%	1.34		0.27	
2	40	4.8%	7	140	24.5%				
3	60	16.6%	8	160	17.7%				
4	80	23.8%	9	180	16.9%				
5	100	33.7%	10	200	14.5%				
								RF Po (*Max)	
								30.0	

Table 2

Internal Vehicle MPE Assessment @ 403 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Trunk (cnt)	HAE4002A	2.15	Highest Reading	E	1.36	0.289	0.086	29.9	0.144	0.14
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.34
Back Seat		30.0%		16.7%		17.8%		IEEE Uncontrolled Limit:		0.27
Front Seat		9.0%		6.2%		4.1%		RF Po (*Max):		30.0

Table 3

External Vehicle MPE Assessment @ 416.5 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4002A	2.15	60	E	1.34	0.255	29.9	0.128	0.13
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	5.5%	6	120	31.7%	1.39		0.28	
2	40	5.1%	7	140	31.3%				
3	60	11.8%	8	160	19.3%				
4	80	19.9%	9	180	16.5%				
5	100	30.0%	10	200	12.6%				
								RF Po (*Max)	
								30.0	

Table 4

Internal Vehicle MPE Assessment @ 416.5 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Trunk (cnt)	HAE4002A	2.15	Highest Reading	E	1.34	0.307	0.107	29.9	0.153	0.15
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.39
Back Seat		35.2%		17.8%		13.3%		IEEE Uncontrolled Limit:		0.28
Front Seat		13.4%		4.6%		5.1%		RF Po (*Max):		30.0

Table 5

External Vehicle MPE Assessment @ 430 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4002A	2.15	60	E	1.32	0.230	29.8	0.115	0.12
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	4.2%	6	120	29.0%	1.43		0.29	
2	40	4.4%	7	140	24.8%				
3	60	10.0%	8	160	17.3%				
4	80	16.9%	9	180	13.7%				
5	100	28.1%	10	200	11.9%				
								RF Po (*Max)	
								30.0	

Table 6

Internal Vehicle MPE Assessment @ 430 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Trunk (cnt)	HAE4002A	2.15	Highest Reading	E	1.32	0.351	0.100	29.8	0.176	0.18
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.43
Back Seat		43.4%		17.2%		12.9%		IEEE Uncontrolled Limit:		0.29
Front Seat		9.4%		4.2%		7.4%		RF Po (*Max):		30.0

Table 7

External Vehicle MPE Assessment @ 450 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4003A	2.15	60	E	1.29	0.338	30.0	0.169	0.17
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	3.0%	6	120	54.8%	1.50		0.30	
2	40	4.9%	7	140	38.1%			RF Po (*Max)	
3	60	10.3%	8	160	22.6%				
4	80	27.8%	9	180	12.3%				
5	100	42.7%	10	200	8.6%				
								30.0	

Table 8

Internal Vehicle MPE Assessment @ 450 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Trunk (cnt)	HAE4003A	2.15	Highest Reading	E	1.29	0.493	0.271	30.0	0.246	0.25
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.50
Back Seat		48.5%		25.3%		24.7%		IEEE Uncontrolled Limit:		0.30
Front Seat		23.9%		10.7%		19.5%		RF Po (*Max):		30.0

Table 9

External Vehicle MPE Assessment @ 460 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4003A	2.15	60	E	1.28	0.300	29.6	0.150	0.15
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	2.5%	6	120	48.0%	1.53		0.31	
2	40	5.4%	7	140	30.5%	RF Po (*Max) 30.0			
3	60	10.6%	8	160	15.8%				
4	80	26.9%	9	180	8.6%				
5	100	40.7%	10	200	6.7%				

Table 10

Internal Vehicle MPE Assessment @ 460 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Trunk (cnt)	HAE4003A	2.15	Highest Reading	E	1.28	0.527	0.304	29.6	0.264	0.27
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.53
Back Seat		58.6%		21.7%		22.9%		IEEE Uncontrolled Limit:		0.31
Front Seat		18.5%		13.3%		27.6%		RF Po (*Max):		30.0

Table 11

External Vehicle MPE Assessment @ 470 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4003A	2.15	60	E	1.26	0.307	29.4	0.153	0.16
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	3.9%	6	120	54.3%	1.57		0.31	
2	40	6.8%	7	140	31.0%				
3	60	10.6%	8	160	12.4%				
4	80	23.4%	9	180	5.9%				
5	100	42.9%	10	200	4.7%				
								RF Po (*Max)	
								30.0	

Table 12

Internal Vehicle MPE Assessment @ 470 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Trunk (cnt)	HAE4003A	2.15	Highest Reading	E	1.26	0.380	0.236	29.4	0.190	0.19
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.57
Back Seat		30.4%		27.0%		15.4%		IEEE Uncontrolled Limit:		0.31
Front Seat		19.8%		7.1%		18.2%		RF Po (*Max):		30.0

Table 13

External Vehicle MPE Assessment @ 406 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4010A	1.35 (3.5dBd)	60	E	1.36	0.274	29.8	0.137	0.14
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	5.1%	6	120	33.7%	1.35		0.27	
2	40	4.6%	7	140	40.5%	RF Po (*Max)			
3	60	8.4%	8	160	30.9%				
4	80	10.3%	9	180	23.8%				
5	100	14.1%	10	200	30.8%				
								30.0	

Table 14

Internal Vehicle MPE Assessment @ 406 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Trunk (cnt)	HAE4010A	1.35 (3.5dBd)	Highest Reading	E	1.36	0.140	0.042	29.8	0.070	0.07
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.35
Back Seat		17.5%		6.7%		6.8%		IEEE Uncontrolled Limit:		0.27
Front Seat		3.3%		3.4%		2.5%		RF Po (*Max):		30.0

Table 15

External Vehicle MPE Assessment @ 413 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4010A	1.35 (3.5dBd)	60	E	1.35	0.255	29.8	0.128	0.13
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	5.2%	6	120	29.6%	1.38		0.28	
2	40	5.1%	7	140	36.0%				
3	60	8.0%	8	160	27.7%				
4	80	10.9%	9	180	22.5%				
5	100	15.7%	10	200	24.6%				
								RF Po (*Max)	
								30.0	

Table 16

Internal Vehicle MPE Assessment @ 413 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm^2)		Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
						Back	Front			
Trunk (cnt)	HAE4010A	1.35 (3.5dBd)	Highest Reading	E	1.35	0.157	0.053	29.8	0.078	0.08
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.38
Back Seat		20.1%		5.2%		8.9%		IEEE Uncontrolled Limit:		0.28
Front Seat		5.4%		3.3%		2.9%			RF Po (*Max):	30.0

Table 17

External Vehicle MPE Assessment @ 416.5 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4010A	1.35 (3.5dBd)	60	E	1.34	0.250	29.9	0.125	0.13
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	3.4%	6	120	35.4%	1.39		0.28	
2	40	3.0%	7	140	36.4%				
3	60	6.7%	8	160	24.2%				
4	80	11.0%	9	180	16.5%				
5	100	20.2%	10	200	23.3%				
								RF Po (*Max)	
								30.0	

Table 18

Internal Vehicle MPE Assessment @ 416.5 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm^2)		Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
						Back	Front			
Trunk (cnt)	HAE4010A	1.35 (3.5dBd)	Highest Reading	E	1.34	0.151	0.042	29.9	0.076	0.08
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.39
Back Seat		17.9%		5.4%		9.4%		IEEE Uncontrolled Limit:		0.28
Front Seat		5.1%		1.7%		2.2%			RF Po (*Max):	30.0

Table 19

External Vehicle MPE Assessment @ 450 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4011A	1.35 (3.5dBd)	60	E	1.29	0.321	30.0	0.160	0.16
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	1.2%	6	120	55.5%			1.50	0.30
2	40	1.7%	7	140	56.7%				
3	60	3.5%	8	160	24.3%				
4	80	6.2%	9	180	20.1%				
5	100	21.3%	10	200	23.2%				
								RF Po (*Max)	
								30.0	

Table 20

Internal Vehicle MPE Assessment @ 450 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm^2)		Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
						Back	Front			
Trunk (cnt)	HAE4011A	1.35 (3.5dBd)	Highest Reading	E	1.29	0.202	0.075	30.0	0.101	0.10
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.50
Back Seat		16.8%		10.0%		13.6%		IEEE Uncontrolled Limit:		0.30
Front Seat		5.6%		3.4%		6.0%			RF Po (*Max):	30.0

Table 21

External Vehicle MPE Assessment @ 460 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4011A	1.35 (3.5dBd)	60	E	1.28	0.313	29.6	0.156	0.16
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	2.3%	6	120	49.1%	1.53		0.31	
2	40	3.0%	7	140	49.1%				
3	60	5.3%	8	160	22.7%				
4	80	9.5%	9	180	21.0%				
5	100	18.8%	10	200	23.2%				
								RF Po (*Max)	
								30.0	

Table 22

Internal Vehicle MPE Assessment @ 460 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm^2)		Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
						Back	Front			
Trunk (cnt)	HAE4011A	1.35 (3.5dBd)	Highest Reading	E	1.28	0.187	0.106	29.6	0.094	0.09
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.53
Back Seat		13.8%		11.3%		11.5%		IEEE Uncontrolled Limit:		0.31
Front Seat		4.5%		5.5%		10.8%			RF Po (*Max):	30.0

Table 23

External Vehicle MPE Assessment @ 470 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4011A	1.35 (3.5dBd)	60	E	1.26	0.241	29.4	0.120	0.12
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	2.4%	6	120	39.7%	1.57		0.31	
2	40	3.0%	7	140	35.7%			RF Po (*Max)	
3	60	5.2%	8	160	16.4%				
4	80	8.5%	9	180	12.8%				
5	100	15.5%	10	200	14.6%				
								30.0	

Table 24

Internal Vehicle MPE Assessment @ 470 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm^2)		Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
						Back	Front			
Trunk (cnt)	HAE4011A	1.35 (3.5dBd)	Highest Reading	E	1.26	0.124	0.097	29.4	0.062	0.06
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.57
Back Seat		9.7%		8.7%		5.4%		IEEE Uncontrolled Limit:		0.31
Front Seat		6.0%		3.1%		9.4%			RF Po (*Max):	30.0

Table 25

External Vehicle MPE Assessment @ 445 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	RAE4004A	2.85 (5dBd)	60	E	1.30	0.216	29.6	0.108	0.11
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	1.9%	6	120	12.5%	1.48		0.30	
2	40	1.0%	7	140	30.1%				
3	60	2.6%	8	160	34.7%				
4	80	4.9%	9	180	26.7%				
5	100	4.8%	10	200	26.6%				
								RF Po (*Max)	
								30.0	

Table 26

Internal Vehicle MPE Assessment @ 445 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm^2)		Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
						Back	Front			
Trunk (cnt)	RAE4004A	2.85 (5dBd)	Highest Reading	E	1.30	0.037	0.023	29.6	0.018	0.02
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.48
Back Seat		4.5%		2.4%		0.5%		IEEE Uncontrolled Limit:		0.30
Front Seat		2.2%		1.1%		1.3%			RF Po (*Max):	30.0

Table 27

External Vehicle MPE Assessment @ 457.5 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	RAE4004A	2.85 (5dBd)	60	E	1.28	0.268	29.4	0.134	0.14
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	2.1%	6	120	24.0%	1.53		0.31	
2	40	2.1%	7	140	38.7%			RF Po (*Max)	
3	60	4.0%	8	160	37.5%				
4	80	8.1%	9	180	27.2%				
5	100	10.0%	10	200	22.0%				
								30.0	

Table 28

Internal Vehicle MPE Assessment @ 457.5 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm^2)		Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
						Back	Front			
Trunk (cnt)	RAE4004A	2.85 (5dBd)	Highest Reading	E	1.28	0.116	0.099	29.4	0.058	0.06
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.53
Back Seat		13.2%		4.4%		5.3%		IEEE Uncontrolled Limit:		0.31
Front Seat		4.9%		6.4%		8.1%			RF Po (*Max):	30.0

Table 29

External Vehicle MPE Assessment @ 470 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	RAE4004A	2.85 (5dBd)	60	E	1.26	0.251	29.4	0.126	0.13
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	2.0%	6	120	27.2%	1.57		0.31	
2	40	3.7%	7	140	42.0%			RF Po (*Max)	
3	60	5.6%	8	160	34.2%				
4	80	10.5%	9	180	12.7%				
5	100	12.8%	10	200	9.6%				

Table 30

Internal Vehicle MPE Assessment @ 470 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Trunk (cnt)	RAE4004A	2.85 (5dBd)	Highest Reading	E	1.26	0.117	0.096	29.4	0.058	0.06
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.57
Back Seat		9.8%		7.8%		4.8%		IEEE Uncontrolled Limit:		0.31
Front Seat		5.7%		2.8%		9.8%		RF Po (*Max):		30.0

Table 31: **45 degree - Use worst case 1/4 wave antenna from above (By-stander only)

External Vehicle MPE Assessment @ 450 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4003A	2.15	60	E	1.29	0.267	30.0	0.134	0.13
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	5.3%	6	120	32.8%	1.50		0.30	
2	40	5.7%	7	140	30.0%			RF Po (*Max)	
3	60	11.0%	8	160	22.4%				
4	80	19.6%	9	180	12.3%				
5	100	29.4%	10	200	9.6%				

Table 32: **90 degree - Use worst case 1/4 wave antenna from above (By-stander only)

External Vehicle MPE Assessment @ 450 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4003A	2.15	60	E	1.29	0.182	30.0	0.091	0.09
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	6.3%	6	120	21.0%	1.50		0.30	
2	40	4.4%	7	140	21.5%				
3	60	7.3%	8	160	16.9%				
4	80	10.3%	9	180	10.3%				
5	100	16.1%	10	200	7.2%				
								RF Po (*Max)	
								30.0	

Table 33: **45 degree - Use worst case gain antenna from above (By-stander only)

External Vehicle MPE Assessment @ 450 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4011A	1.35 (3.5dBd)	60	E	1.29	0.179	30.0	0.089	0.09
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	1.1%	6	120	29.7%	1.50		0.30	
2	40	1.0%	7	140	32.0%				
3	60	2.6%	8	160	21.0%				
4	80	7.5%	9	180	6.2%				
5	100	13.6%	10	200	4.6%				
								RF Po (*Max)	
								30.0	

Table 34: **90 degree - Use worst case gain antenna from above (By-stander only)

External Vehicle MPE Assessment @ 450 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Trunk (cnt)	HAE4011A	1.35 (3.5dBd)	60	E	1.29	0.153	30.0	0.077	0.08
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	4.0%	6	120	21.3%	1.50		0.30	
2	40	3.2%	7	140	24.6%			RF Po (*Max)	
3	60	4.7%	8	160	17.5%				
4	80	6.7%	9	180	6.6%				
5	100	9.0%	10	200	4.7%				
								30.0	

Table 35

External Vehicle MPE Assessment @ 403 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm ²)	Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
Roof (cnt)	HAE4002A	2.15	60	E	1.36	0.152	29.9	0.076	0.08
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	1.9%	6	120	7.6%	1.34		0.27	
2	40	2.9%	7	140	16.3%	RF Po (*Max)		30.0	
3	60	4.0%	8	160	22.4%				
4	80	6.4%	9	180	22.9%				
5	100	8.0%	10	200	21.0%				

Table 36

Internal Vehicle MPE Assessment @ 403 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	HAE4002A	2.15	Highest Reading	E	1.36	0.061	0.040	29.9	0.030	0.03
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.34
Back Seat		6.9%		3.2%		3.5%		IEEE Uncontrolled Limit:		0.27
Front Seat		2.9%		2.8%		3.3%		RF Po (*Max):		30.0

Table 37

External Vehicle MPE Assessment @ 416.5 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm ²)	Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
Roof (cnt)	HAE4002A	2.15	60	E	1.34	0.138	29.9	0.069	0.07
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	2.6%	6	120	8.1%	1.39		0.28	
2	40	2.1%	7	140	13.1%	RF Po (*Max)		30.0	
3	60	3.3%	8	160	18.2%				
4	80	6.0%	9	180	21.0%				
5	100	6.2%	10	200	18.5%				

Table 38

Internal Vehicle MPE Assessment @ 416.5 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	HAE4002A	2.15	Highest Reading	E	1.34	0.074	0.050	29.9	0.037	0.04
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.39
Back Seat		9.6%		4.4%		2.0%		IEEE Uncontrolled Limit:		0.28
Front Seat		4.0%		2.4%		4.3%		RF Po (*Max):		30.0

Table 39

External Vehicle MPE Assessment @ 430 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Roof (cnt)	HAE4002A	2.15	60	E	1.32	0.128	29.8	0.064	0.06
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	1.6%	6	120	9.4%	1.43		0.29	
2	40	1.7%	7	140	13.5%			RF Po (*Max)	
3	60	2.3%	8	160	18.4%				
4	80	4.9%	9	180	16.7%				
5	100	6.1%	10	200	14.8%				

Table 40

Internal Vehicle MPE Assessment @ 430 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	HAE4002A	2.15	Highest Reading	E	1.32	0.078	0.047	29.8	0.039	0.04
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.43
Back Seat		9.0%		4.0%		3.4%		IEEE Uncontrolled Limit:		0.29
Front Seat		2.3%		3.4%		4.1%		RF Po (*Max):		30.0

Table 41

External Vehicle MPE Assessment @ 450 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Roof (cnt)	HAE4003A	2.15	60	E	1.29	0.160	30.0	0.080	0.08
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	1.6%	6	120	7.7%	1.50		0.30	
2	40	3.1%	7	140	14.9%			RF Po (*Max)	
3	60	5.0%	8	160	22.5%				
4	80	5.5%	9	180	20.6%				
5	100	6.5%	10	200	19.5%				
								30.0	

Table 42

Internal Vehicle MPE Assessment @ 450 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	HAE4003A	2.15	Highest Reading	E	1.29	0.062	0.079	30.0	0.039	0.04
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.50
Back Seat		3.0%		4.8%		4.6%		IEEE Uncontrolled Limit:		0.30
Front Seat		3.0%		5.5%		7.2%		RF Po (*Max):		30.0

Table 43

External Vehicle MPE Assessment @ 460 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm ²)	Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
Roof (cnt)	HAE4003A	2.15	60	E	1.28	0.154	29.6	0.077	0.08
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	Control	IEEE Controlled Limit	IEEE Uncontrolled Limit	
1	20	2.0%	6	120	8.1%		1.53	0.31	
2	40	2.7%	7	140	14.8%				
3	60	3.6%	8	160	22.7%				
4	80	4.5%	9	180	19.3%				
5	100	5.2%	10	200	17.5%				
								RF Po (*Max)	30.0

Table 44

Internal Vehicle MPE Assessment @ 460 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	HAE4003A	2.15	Highest Reading	E	1.28	0.071	0.080	29.6	0.040	0.04
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.53
Back Seat		3.3%		6.1%		4.5%		IEEE Uncontrolled Limit:		0.31
Front Seat		2.9%		5.6%		7.1%		RF Po (*Max):		30.0

Table 45

External Vehicle MPE Assessment @ 470 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm ²)	Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
Roof (cnt)	HAE4003A	2.15	60	E	1.26	0.146	29.4	0.073	0.07
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	Control	IEEE Controlled Limit	IEEE Uncontrolled Limit	
1	20	2.2%	6	120	10.3%		1.57	0.31	
2	40	2.3%	7	140	15.4%				
3	60	2.9%	8	160	19.3%				
4	80	3.7%	9	180	18.0%				
5	100	4.8%	10	200	14.6%				
								RF Po (*Max)	30.0

Table 46

Internal Vehicle MPE Assessment @ 470 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	HAE4003A	2.15	Highest Reading	E	1.26	0.063	0.061	29.4	0.032	0.03
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.57
Back Seat		4.0%		5.6%		2.5%		IEEE Uncontrolled Limit:		0.31
Front Seat		2.1%		3.4%		6.1%		RF Po (*Max):		30.0

Table 47

External Vehicle MPE Assessment @ 406 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Roof (cnt)	HAE4010A	1.35 (3.5dBd)	60	E	1.36	0.091	29.8	0.046	0.05
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	1.5%	6	120	2.4%	1.35		0.27	
2	40	1.1%	7	140	7.3%				
3	60	1.2%	8	160	14.4%				
4	80	1.9%	9	180	19.2%				
5	100	2.2%	10	200	16.2%				
								RF Po (*Max)	
								30.0	

Table 48

Internal Vehicle MPE Assessment @ 406 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	HAE4010A	1.35 (3.5dBd)	Highest Reading	E	1.36	0.018	0.020	29.8	0.010	0.01
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.35
Back Seat		1.5%		1.2%		1.4%		IEEE Uncontrolled Limit:		0.27
Front Seat		1.8%		1.2%		1.5%		RF Po (*Max):		30.0

Table 49

External Vehicle MPE Assessment @ 413 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Roof (cnt)	HAE4010A	1.35 (3.5dBd)	60	E	1.35	0.093	29.8	0.046	0.05
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	2.2%	6	120	2.7%	1.38		0.28	
2	40	2.2%	7	140	5.8%	RF Po (*Max)			
3	60	2.0%	8	160	13.8%				
4	80	3.2%	9	180	17.7%				
5	100	3.4%	10	200	14.5%				
								30.0	

Table 50

Internal Vehicle MPE Assessment @ 413 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	HAE4010A	1.35 (3.5dBd)	Highest Reading	E	1.35	0.023	0.017	29.8	0.011	0.01
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.38
Back Seat		1.8%		1.6%		1.6%		IEEE Uncontrolled Limit:		0.28
Front Seat		1.6%		1.0%		1.1%		RF Po (*Max):		30.0

Table 51

External Vehicle MPE Assessment @ 416.5 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Roof (cnt)	HAE4010A	1.35 (3.5dBd)	60	E	1.34	0.078	29.9	0.039	0.04
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	1.0%	6	120	2.3%	1.39		0.28	
2	40	0.9%	7	140	5.5%				
3	60	1.0%	8	160	13.1%				
4	80	0.9%	9	180	16.3%				
5	100	1.5%	10	200	13.8%				
								RF Po (*Max)	
								30.0	

Table 52

Internal Vehicle MPE Assessment @ 416.5 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm^2)		Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
						Back	Front			
Roof (cnt)	HAE4010A	1.35 (3.5dBd)	Highest Reading	E	1.34	0.022	0.017	29.9	0.011	0.01
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.39
Back Seat		1.9%		1.4%		1.4%		IEEE Uncontrolled Limit:		0.28
Front Seat		1.6%		1.0%		1.1%			RF Po (*Max):	30.0

Table 53

External Vehicle MPE Assessment @ 450 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Roof (cnt)	HAE4011A	1.35 (3.5dBd)	60	E	1.29	0.102	30.0	0.051	0.05
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	0.5%	6	120	2.8%	1.50		0.30	
2	40	0.6%	7	140	6.7%	RF Po (*Max)			
3	60	1.0%	8	160	18.9%				
4	80	0.9%	9	180	20.2%				
5	100	1.0%	10	200	15.2%				
								30.0	

Table 54

Internal Vehicle MPE Assessment @ 450 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	HAE4011A	1.35 (3.5dBd)	Highest Reading	E	1.29	0.018	0.023	30.0	0.012	0.01
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.50
Back Seat		1.1%		1.2%		1.3%		IEEE Uncontrolled Limit:		0.30
Front Seat		1.0%		1.8%		1.8%		RF Po (*Max):		30.0

Table 55

External Vehicle MPE Assessment @ 460 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Roof (cnt)	HAE4011A	1.35 (3.5dBd)	60	E	1.28	0.099	29.6	0.050	0.05
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	0.7%	6	120	2.2%	1.53		0.31	
2	40	0.9%	7	140	7.5%				
3	60	1.0%	8	160	17.6%				
4	80	1.2%	9	180	19.5%				
5	100	1.5%	10	200	12.7%				
								RF Po (*Max)	
								30.0	

Table 56

Internal Vehicle MPE Assessment @ 460 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	HAE4011A	1.35 (3.5dBd)	Highest Reading	E	1.28	0.025	0.024	29.6	0.012	0.01
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.53
Back Seat		1.6%		1.7%		1.5%		IEEE Uncontrolled Limit:		0.31
Front Seat		1.0%		1.4%		2.2%		RF Po (*Max):		30.0

Table 57

External Vehicle MPE Assessment @ 470 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Roof (cnt)	HAE4011A	1.35 (3.5dBd)	60	E	1.26	0.074	29.4	0.037	0.04
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit			IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	0.7%	6	120	1.6%			1.57	0.31
2	40	0.6%	7	140	5.5%				RF Po (*Max)
3	60	0.7%	8	160	11.6%				
4	80	1.0%	9	180	14.6%				
5	100	1.3%	10	200	9.4%				

Table 58

Internal Vehicle MPE Assessment @ 470 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	HAE4011A	1.35 (3.5dBd)	Highest Reading	E	1.26	0.019	0.018	29.4	0.010	0.01
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.57
Back Seat		1.4%		1.3%		1.0%		IEEE Uncontrolled Limit:		0.31
Front Seat		0.8%		1.0%		1.6%		RF Po (*Max):		30.0

Table 59

External Vehicle MPE Assessment @ 445 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Roof (cnt)	RAE4004A	2.85 (5dBd)	60	E	1.30	0.072	29.6	0.036	0.04
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	0.8%	6	120	2.0%	1.48		0.30	
2	40	0.8%	7	140	2.1%	RF Po (*Max)			
3	60	0.8%	8	160	8.6%				
4	80	1.0%	9	180	14.6%				
5	100	1.5%	10	200	16.3%				
								30.0	

Table 60

Internal Vehicle MPE Assessment @ 445 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm ²)		Initial Power (W)	Pwr. Density Calc. (mW/cm ²)	Pwr. Density Max Calc. (mW/cm ²)
						Back	Front			
Roof (cnt)	RAE4004A	2.85 (5dBd)	Highest Reading	E	1.30	0.013	0.014	29.6	0.007	0.01
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.48
Back Seat		0.8%		0.9%		1.0%		IEEE Uncontrolled Limit:		0.30
Front Seat		1.0%		0.9%		1.0%		RF Po (*Max):		30.0

Table 61

External Vehicle MPE Assessment @ 457.5 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Roof (cnt)	RAE4004A	2.85 (5dBd)	60	E	1.28	0.089	29.4	0.045	0.05
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	0.6%	6	120	1.2%			1.53	
2	40	0.6%	7	140	4.4%			0.31	
3	60	0.7%	8	160	13.7%				
4	80	0.8%	9	180	18.8%				
5	100	1.0%	10	200	16.8%				
								RF Po (*Max)	
								30.0	

Table 62

Internal Vehicle MPE Assessment @ 457.5 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm^2)		Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
						Back	Front			
Roof (cnt)	RAE4004A	2.85 (5dBd)	Highest Reading	E	1.28	0.020	0.024	29.4	0.012	0.01
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.53
Back Seat		1.0%		1.5%		1.4%		IEEE Uncontrolled Limit:		0.31
Front Seat		1.2%		1.6%		1.9%			RF Po (*Max):	30.0

Table 63

External Vehicle MPE Assessment @ 470 MHz									
Antenna Location	Antenna Model	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Body (mW/cm^2)	Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
Roof (cnt)	RAE4004A	2.85 (5dBd)	60	E	1.26	0.087	29.4	0.044	0.04
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit		IEEE Uncontrolled Limit	
1	20	0.8%	6	120	2.0%	1.57		0.31	
2	40	0.7%	7	140	5.6%			RF Po (*Max)	
3	60	0.7%	8	160	12.8%				
4	80	0.7%	9	180	17.1%				
5	100	1.2%	10	200	14.1%				
								30.0	

Table 64

Internal Vehicle MPE Assessment @ 470 MHz										
Antenna Location	Antenna	Gain (dBi)	Meas. Distance (cm)	E/H Field	Calibration Factor	Average over Head, Chest, Lower Trunk Back/Front seats (mW/cm^2)		Initial Power (W)	Pwr. Density Calc. (mW/cm^2)	Pwr. Density Max Calc. (mW/cm^2)
						Back	Front			
Roof (cnt)	RAE4004A	2.85 (5dBd)	Highest Reading	E	1.26	0.022	0.020	29.4	0.011	0.01
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.57
Back Seat		1.5%		1.8%		1.0%		IEEE Uncontrolled Limit:		0.31
Front Seat		0.9%		1.2%		1.8%			RF Po (*Max):	30.0