



MOTOROLA



TESTING CERT: 2518.01

**FCC ID: LO6-DVRSUHF
DECLARATION OF COMPLIANCE MPE ASSESSMENT**

Networks & Enterprise
EME Test Laboratory
 8000 West Sunrise Blvd
 Fort Lauderdale, FL. 33322

Date of Report: February 5, 2007
Report Revision: Rev. O
Report ID: FCC MPE rpt_DVR UHF R4 XTL
 UHF R2 Rev O_070205_SR4230

Responsible Engineer: Stephen Whalen (EME Principle Staff Eng.)
Date/s Tested: 07/10/2006 & 05/08/2006
Manufacturer/Location: Futurecom Systems Group Inc., Concord, Ontario, Canada
Date submitted for test: 07/05/06 (DVR)
DUT Description: 470-512MHz DVRS
Test TX mode(s): CW
Max. Power output: 10W (conducted into antenna), 100% Duty Cycle
TX Frequency Bands: 470-512MHz
Signaling type: FM; APCO 25
Model(s) Tested: DQPM DVR6000P
Model(s) Certified: DQPM DVR6000P
Serial Number(s): 06041701
Classification: Occupational Controlled (Operator); General Population/Uncontrolled (Passengers/Bystanders)
Rule Part(s): 2.1091 (d)



Approved Accessories:

Antenna(s):
 HAE4004A (470-512MHz ¼ wave trunk mount antenna; 0dBd gain)
 HAE6016A (450-512MHz ¼ wave trunk mount antenna; 0dBd gain)

Companion Mobiles and Antennas:

FCC ID	Mobile Description	Antenna(s)
AZ492FT4867	Motorola XTL5000 Model M20SSS9PW1AN, 450-512MHz Mobile, Transmit conducted power up to 54W, 50% transmit duty cycle.	HAE6016A (450-512MHz; ¼ wave Roof mount; 0dBd gain) HAE4003A (450-470MHz; ¼ wave Roof mount; 0dBd gain) HAE4011A (445-470MHz; ½ wave Roof mount; 3.5dBd gain) HAE4012A (470-495MHz; ¼ wave Roof mount; 3.5dBd gain) HAE4013A (494-512MHz; ¼ wave Roof mount; 3.5dBd gain) HAE4004A (470-512MHz; ¼ wave Roof mount; 0dBd gain)

**Final RF Exposure Results:
 Combined UHF DVR and UHF Mobile max calculated power density % of limit = 94.9%**

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
 Deanna Zakharia NE EME Lab Senior Resource Manager,
 Laboratory Director,

Approval Date: 2/6/2007

Certification Date:

Certification No.:

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REVISION HISTORY

Date	Revision	Comments
02/05/07	O	Original release

1.0 Product and System Description

FCC ID: LO6-DVRSUHF is a MOBEXCOM Digital Vehicular Repeater (DVR) manufactured by FUTURECOM Systems Group. The DVR, in addition to standalone operation, is capable of interfacing to a companion mobile radio using serial data protocol for audio and control. The full duplex DVR provides local area coverage for portable to portable communication in the 470-512MHz band while the companion mobile radio provides wide-area coverage extension.

The system can operate in the following modes: Mobile mode - where the vehicular repeat function is off but receives emergency and mode change commands from portable devices; Local mode - with portable to portable repeat and network monitoring capabilities; and System mode - with portable to portable repeat functions with full network interconnect. Furthermore, the DVRS offers a busy lockout feature where a simulcast prevention algorithm is used for seamless multi-vehicle operation on the same channel. Moreover, the system supports emergency calls in the MDC1200 signaling format. Other system features include field programmability, seamless interface to a mobile radio through the control head bus, controllability via a mobile radio control head, as well as remotely by a dispatcher or portable user. The DVR supports up to 64 channels and 255 talk groups, MDC1200, DTMF, EIA, CCIR signaling as well as PL and DPL. The DVR supports programmability of leading and/or trailing tones, and audio and TX priorities per mode as well as talk group steering.

This test report covers the RF Exposure performance of the 470-512MHz 10 watts DVR interfaced with, and transmitting simultaneously with, companion UHF(450-512) mobile radio with transmit powers up to 54 watts (450-500MHz) and 48 watts (500-512MHz) and with both units, installed in a typical vehicle.

The DVR transmit frequency range is 470-512MHz at transmit duty cycle up to 100%. The UHF mobile transmit frequency range is 450-512MHz at transmit duty cycle up to 50%. The DVR antennas are limited to $\frac{1}{4}\lambda$ (0dBd gain) mounted at the center of the trunk, and the UHF mobile antennas are limited to $\frac{1}{4}\lambda$ and $\frac{1}{2}\lambda$ (0dBd and 3.5dBd gain) mounted at the center of the roof. The maximum conducted power delivered to the DVR antenna is 10 watts.

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 470-512MHz and 450-512MHz the MPE (Maximum Permissible Exposure) limit to electromagnetic energy in equivalent plane wave free-space power density is 0.31-0.34 mW/cm² and 0.30–0.34mW/cm² respectively 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 vehicles’ electrical system powered by an equivalent source equal to the car running at idle and the vehicle battery measuring 13.8 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. (± %)	Prob Dist.	Divisor	<i>u_i</i> (±%)
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		<i>k</i> =2		15

6.0 Method of Measurement

MPE measurements were conducted for each transmitter individually per the procedures described in the following sections. Percent of Limit was calculated for each transmitter individually for each position. Final results representing the maximum combined exposure of DVR and mobile radio were obtained by summing the highest percent of limit results from each transmitter.

6.1 DVR UHF 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 each of the (5) test locations indicated in APPENDIX A with 20cm increments at the test distance of 90cm from the test vehicle's body, as stated in the user manual. 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.

The DVR antennas mounted at the center of the trunk were assessed across the TX band for the (5) by-stander conditions presented in APPENDIX A.

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 Mobile UHF 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 each of the (5) test locations indicated in APPENDIX A with 20cm increments at the test distance of 90cm from the test vehicle's body, as stated in the user manual. 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.

The mobile antennas mounted at the center of the roof were assessed across the TX band for the (5) by-stander conditions presented in APPENDIX A.

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	12023	4/20/07
**Survey Meter	NARDA Model 8718	01108	5/17/06
**Probe - E-Field (Electric Field)	NARDA Model 8722B	13001	2/28/07

* Equipment used during DVR UHF (test date 7/10/2006)
 ** Equipment used during UHF mobile (test date 5/8/2006)

9.0 Test Unit Description

Power density measurements were performed on a representative sample of the DVR UHF 470-512MHz 10 watt radio with serial number 06041701.

Power density measurements were performed on the following representative sample of the Motorola XTL5000 UHF 54 watts (450-500MHz) and 48 watts (500-512MHz) radio with serial number X09240157

Presented below is a summary of the tested frequencies and associated power outputs for each DUT.

DVR DQPM DVR6000P	
Frequency (MHz)	Po (W)
470	10.0
491	10.0
512	10.0

Mobile M20SSS9PW1AN	
Frequency (MHz)	Po (W)
450.0250	53.1
460.0250	53.5
470.0250	53.7
481.0250	53.7
494.0250	53.9
511.9875	47.6

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)

Mobile - The ¼ and ½ wave antennas (HAE6016A 0dBd, HAE4003A 0dBd, HAE4011A 3.5dBd, HAE4012A 3.5dBd, HAE4013A 3.5dBd and HAE4004A 0dBd) were assessed while mounted at the center of the roof of the test vehicle.

DVR - The ¼ wave antennas (HAE4004A 0dBd and HAE6016A 0dBd) were assessed while mounted at the trunk.

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 the APPENDIX A.

11.0 Test Results Summary

APPENDIX E 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 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 DVR 100% duty cycle and Mobile 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.

Therefore;

$$Average_over_Body = Body_Avg * Controlled_Limit$$

$$Pwr_Density_Calc = Average_over_Body * Duty_Cycle$$

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

Note; For Initial Output Power > Max_Output_Power, Max_Output_Power / Initial Output Power = 1

The tables below summarize the highest MPE results of the E field test configurations for the UHF mobile, DVR UHF, and combined assessments. See APPENDICES A and E respectively for the indicated test locations and detailed MPE measurement data.

Table 1 – UHF mobile M20SSS9PW1AN Assessments – Highest MPE result per test position

Tables	Antenna Model	Antenna Location	Test Frequency (MHz)	E/H Field	Passenger/ By-Stander Pos.	Max Calc Pwr Density (mW/cm ²)	% of Uncontrolled limit
Table 6	HAE4004A	Roof	481.025	E	Passenger	0.11	34.3%
Table 9	HAE4011A	Roof	450.025	E	By-Stander Pos. #1	0.06	20.0%
Table 31	HAE4011A	Roof	450.025	E	By-Stander Pos. #2	0.04	13.3%
Table 41	HAE4003A	Roof	460.025	E	By-Stander Pos. #3	0.05	16.3%
Table 57	HAE4011A	Roof	450.025	E	By-Stander Pos. #4	0.03	10.0%
Table 70	HAE4011A	Roof	450.025	E	By-Stander Pos. #5	0.03	10.0%

Table 2 – DVR UHF DQPM DVR6000P Assessments - Highest MPE result per test position

Tables	Antenna Model	Antenna Location	Test Frequency (MHz)	E/H Field	Passenger/ By-Stander Pos.	Max Calc Pwr Density (mW/cm ²)	% of Uncontrolled limit
Table 4	HAE6016A	Trunk	491.0	E	Passenger	0.20	60.6%
Table 7	HAE4004A	Trunk	470.0	E	By-Stander Pos. #1	0.03	9.7%
Table 13	HAE6016A	Trunk	470.0	E	By-Stander Pos. #2	0.02	6.5%
Table 22	HAE4004A	Trunk	470.0	E	By-Stander Pos. #3	0.04	12.9%
Table 26	HAE6016A	Trunk	491.0	E	By-Stander Pos. #4	0.07	21.2%
Table 32	HAE6016A	Trunk	491.0	E	By-Stander Pos. #5	0.06	18.2%

**Table 3 - Combined UHF R2Mobile M20SSS9PW1AN and DVR UHF DQPMDVR6000P
(Calculated % of limit performance)**

Test Position	Percentage of Limit		
	UHF Mobile (450-512MHz)	DVR UHF (470-512MHz)	Combined Percentages
Passenger	34.3%	60.6%	94.9%
By-Stander #1	20.0%	9.7%	29.7%
By-Stander #2	13.3%	6.5%	19.8%
By-Stander #3	16.3%	12.9%	29.2%
By-Stander #4	10.0%	21.2%	31.2%
By-Stander #5	10.0%	18.2%	28.2%

12.0 Conclusion

Because the signals emitted by each individual transmitter are statistically uncorrelated, the collective compliance of the transmitters is determined by summing the individual ratios between actual (S) and maximum allowed MPE exposure. Compliance is achieved if the total exposure level (T) is less than one:

Formula:

$$T = \frac{S_1}{MPE_1} + \frac{S_2}{MPE_2} + \dots < 1$$

Depending on the test frequency, the mobile assessments were performed with an output power range of 47.6W – 53.9W. The DVR output power across the TX band is 10.0W. The highest power density results for the XTL5000 UHF mobile device scaled to the maximum allowable power output is 0.11mW/cm² internal to the vehicle and 0.06mW/cm² external to the vehicle. The highest power density results for the DVR UHF device scaled to the maximum allowable power output is 0.20mW/cm² internal to the vehicle and 0.07mW/cm² external to the vehicle. The highest combined passenger power density performance is 94.9% and highest combined by-stander power density performance is 31.2% (refer to table 3 test position 4) of the FCC/IEEE MPE limits using the methodology and formula below.

Therefore:

Passenger $T = \frac{0.20}{0.33} + \frac{0.11}{0.32} = 0.949 < 1$ (compliant)

By-stander $T = \frac{0.07}{0.33} + \frac{0.03}{0.30} = 0.312 < 1$ (compliant)

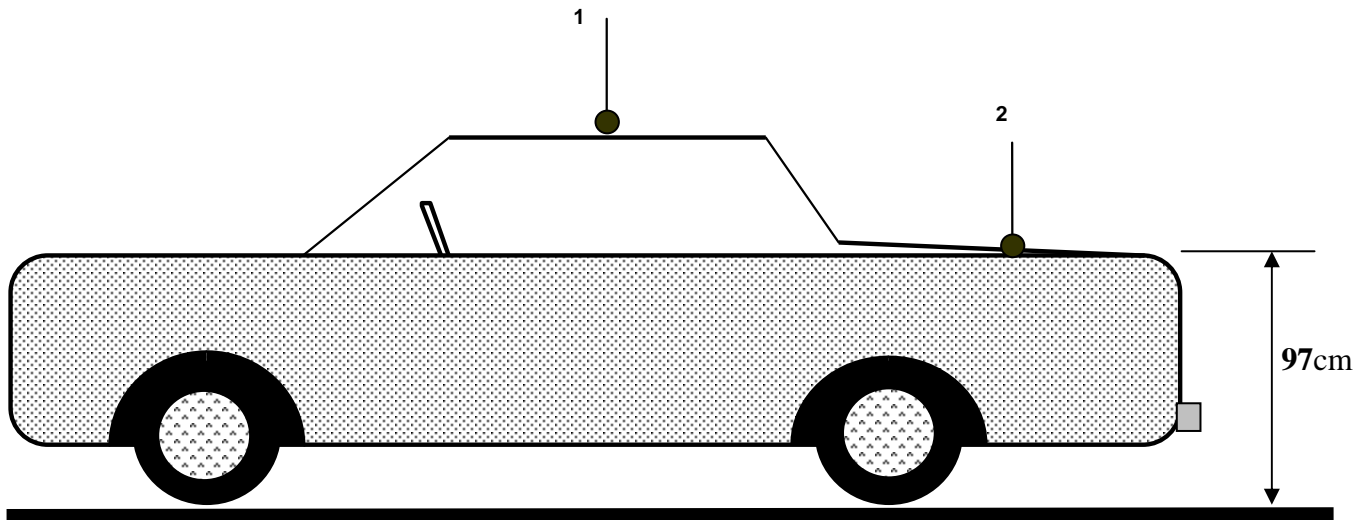
The MPE results presented herein demonstrate compliance to the applicable FCC/IEEE Occupational/Controlled exposure limit of 1.57-1.71mW/cm² for the 470-512MHz frequency range and 1.5-1.71mW/cm² for the 450-512MHz frequency range. FCC/IEEE Occupational/Controlled exposure limits are calculated by f/300 for the frequency range of 300-1500MHz.

Compliance to the FCC/IEEE General population/Uncontrolled exposure limits of 0.31-0.34mW/cm² for the frequency range of 470-512MHz and 0.30-0.34mW/cm² for frequency range of 450-512MHz, using formula $f/1500$, is demonstrated herein for both passengers and bystanders.

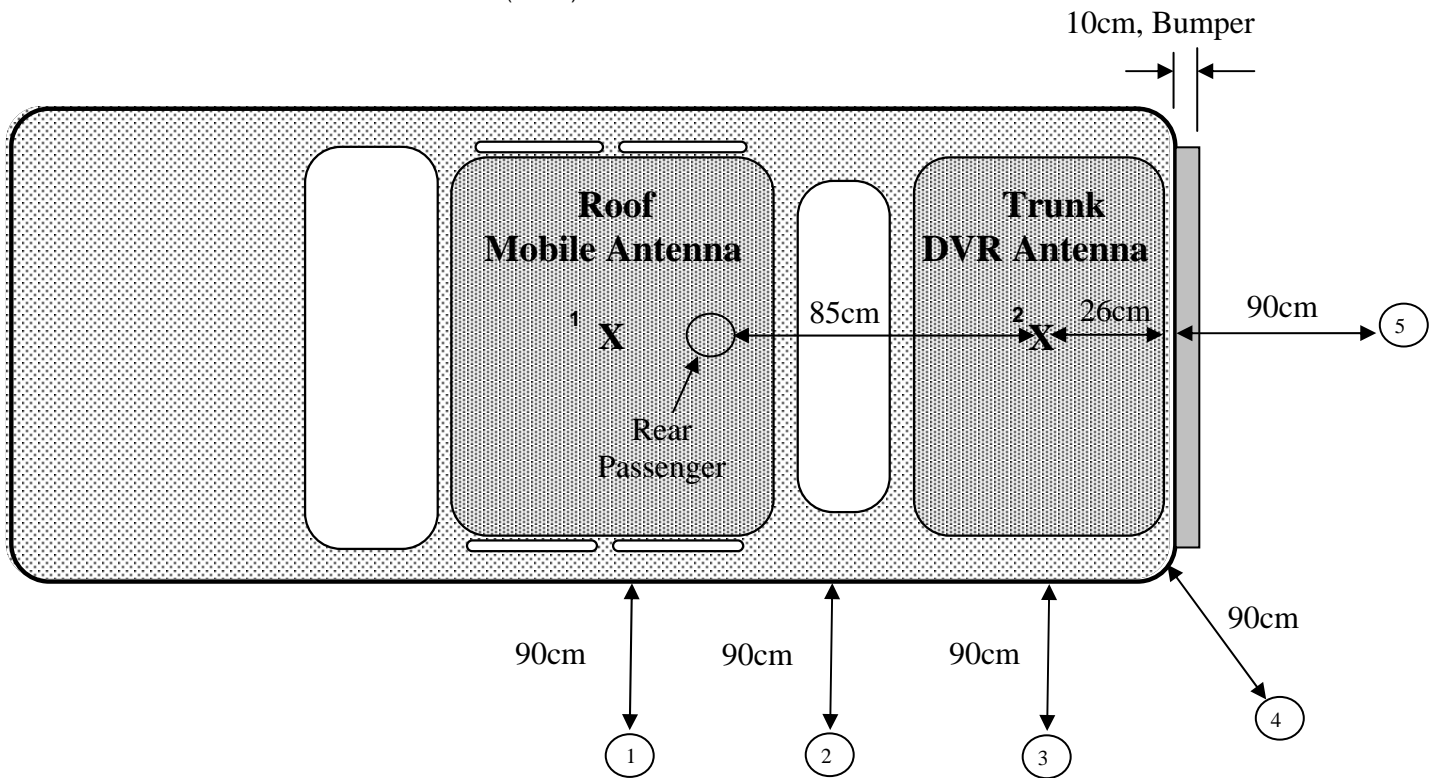
APPENDIX A

Illustration of Antenna Locations and Test Distances

Illustration of Antenna Locations and Test Distances



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



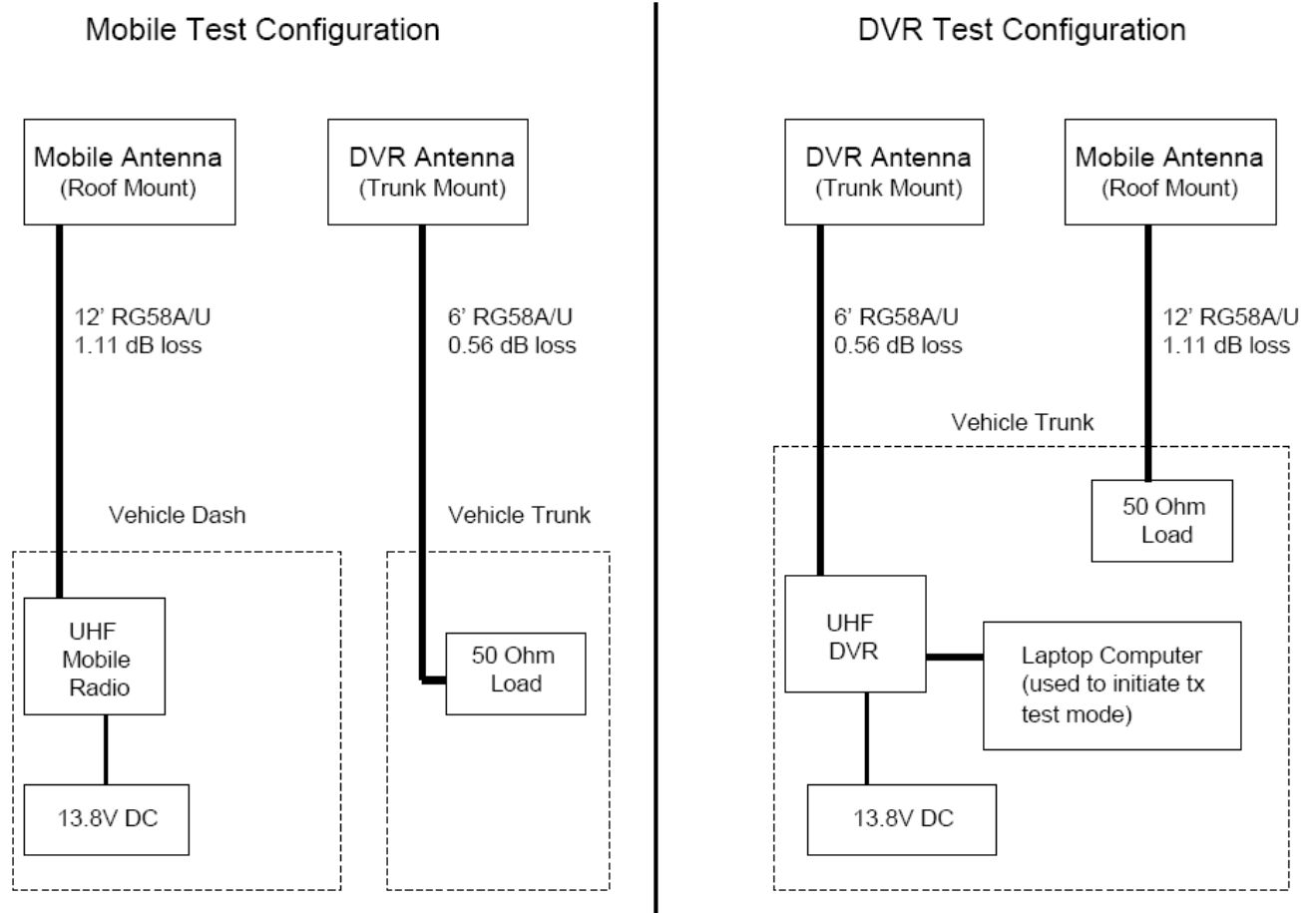
Notes

- 1) Assessments were performed at each test position for each offered antenna
- 2) By-stander positions (1-5) are 90cm from the vehicle body
- 3) By-stander position 2 is located at the mid point between the two antennas
- 4) Total distance between by-stander position 1 and roof mount antenna is 180cm
- 5) Total distance between by-stander position 5 and trunk mount antenna is 119.5cm
- 6) Total distance between trunk mount antenna and rear passenger is 85cm

APPENDIX B

Block Diagram of MPE Test Configuration

MPE Test Configuration



APPENDIX C

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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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 2

Model #: 8722B

Serial #: 12023

Description: PROBE

PO #: NP2398645

Date Calibrated: 04/20/2006

R.O. #: 64777


 Vince Donovan
 Manufacturing


 Ken Peck
 Quality Assurance

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NARDA MICROWAVE-EAST
 CALIBRATED IN ACCORDANCE
 WITH ANSI Z540
 CAL DATE 5-17-05 BY R
 CAL DUE 5-17-06
 MOD 8718-10 SN 01108

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 #: 56219 1

Model #: 8718-10
 Serial #: 01108

Description: METER W/CABLE
 PO #: NP1819669

Date Calibrated: 05/17/2005
 R.O. #: 56219

Vince Donovan
 Vince Donovan
 Manager of Instruments Assembly and Test

John C. Stine
 John C. Stine
 Director of 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

A handwritten signature in black ink, appearing to read 'V. Donovan'.

Vince Donovan
Manufacturing

A handwritten signature in black ink, appearing to read 'Ken Peck'.

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 J

TESTER

C.V.

Q.A. APPROVAL

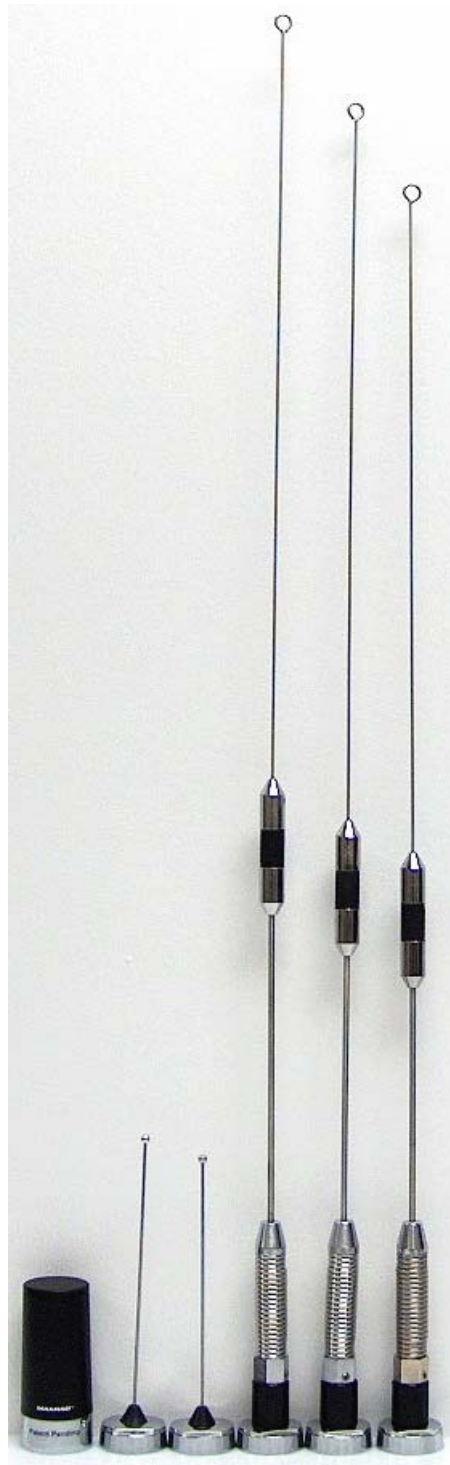


APPENDIX D

Photos of Assessed Antennas



DVR



XTL5000

**Antenna kit numbers, from left to right;
DVR HAE4004A, HAE6016A, XTL5000 HAE6016A, HAE4003A, HAE4004A, HAE4011A, HAE4012A,
HAE4013A**

APPENDIX E

Detailed MPE Measurement Data

UHF DVR DQPM DVR6000P

BS-Position 1

Table 1

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)	HAE6016A	2.15	90	E	1.01	0.025	10.0	0.025	0.03
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	1.8%		1.57	0.31
2	40	0.9%		7	140	1.9%			
3	60	1.3%		8	160	1.7%			
4	80	1.2%		9	180	2.4%			
5	100	1.4%		10	200	2.9%			
								RF Po (*Max)	10.0

P-Position 1

Table 2

Internal Vehicle MPE Assessment @ 470 MHz										
Antenna Location	Antenna Model	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)	HAE6016A	2.15	Highest Reading	E	1.01	0.148	0.087	10.0	0.148	0.15
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.57
Back Seat		14.3%		8.2%		5.8%		IEEE Uncontrolled Limit:		0.31
Front Seat		5.5%		2.9%		8.3%		RF Po (*Max):		10.0

BS-Position 1

Table 3

External Vehicle MPE Assessment @ 491 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)	HAE6016A	2.15	90	E	0.99	0.035	10.0	0.035	0.03
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%		1.64	0.33
2	40	1.2%		7	140	2.7%			
3	60	1.2%		8	160	2.5%			
4	80	1.6%		9	180	2.9%			
5	100	2.2%		10	200	3.5%			
								RF Po (*Max)	10.0

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P-Position 1

Table 4

Internal Vehicle MPE Assessment @ 491 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)	HAE6016A	2.15	Highest Reading	E	0.99	0.196	0.071	10.0	0.196	0.20
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk		IEEE Controlled Limit:			1.64	
Back Seat		16.3%	13.1%	6.6%		IEEE Uncontrolled Limit:			0.33	
Front Seat		5.8%	3.8%	3.4%		RF Po (*Max):			10.0	

BS-Position 1

Table 5

External Vehicle MPE Assessment @ 512 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)	HAE6016A	2.15	90	E	0.98	0.025	10.0	0.025	0.03	
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	1.4%		1.71	0.34	
2	40	1.0%		7	140	1.5%				
3	60	1.1%		8	160	1.8%				
4	80	1.2%		9	180	2.0%				
5	100	1.3%		10	200	2.4%				
								RF Po (*Max)		10.0

P-Position 1

Table 6

Internal Vehicle MPE Assessment @ 512 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)	HAE6016A	2.15	Highest Reading	E	0.98	0.135	0.062	10.0	0.135	0.13
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk		IEEE Controlled Limit:			1.71	
Back Seat		12.3%	8.4%	3.0%		IEEE Uncontrolled Limit:			0.34	
Front Seat		4.8%	3.3%	2.8%		RF Po (*Max):			10.0	

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Table 7

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)	HAE4004A	2.15	90	E	1.01	0.032	10.0	0.032	0.03
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%		1.57	0.31
2	40	1.2%		7	140	2.4%		RF Po (*Max)	10.0
3	60	1.4%		8	160	2.7%			
4	80	1.6%		9	180	2.6%			
5	100	2.0%		10	200	3.0%			

P-Position 1

Table 8

Internal Vehicle MPE Assessment @ 470 MHz										
Antenna Location	Antenna Model	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)	HAE4004A	2.15	Highest Reading	E	1.01	0.143	0.095	10.0	0.143	0.14
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.57
Back Seat		13.7%		8.0%		5.7%		IEEE Uncontrolled Limit:		0.31
Front Seat		5.7%		3.6%		8.8%		RF Po (*Max):		10.0

BS-Position 1

Table 9

External Vehicle MPE Assessment @ 491 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)	HAE4004A	2.15	90	E	0.99	0.034	10.0	0.034	0.03
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	2.0%		1.64	0.33
2	40	1.1%		7	140	2.2%		RF Po (*Max)	10.0
3	60	1.5%		8	160	2.5%			
4	80	1.8%		9	180	3.1%			
5	100	1.8%		10	200	3.7%			

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P-Position 1

Table 10

Internal Vehicle MPE Assessment @ 491 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)	HAE4004A	2.15	Highest Reading	E	0.99	0.163	0.057	10.0	0.163	0.16
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.64
Back Seat		14.1%		10.4%		5.3%		IEEE Uncontrolled Limit:		0.33
Front Seat		4.4%		3.4%		2.7%		RF Po (*Max):		10.0

BS-Position 1

Table 11

External Vehicle MPE Assessment @ 512 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)
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	1.6%		1.71	0.34	
2	40	1.1%		7	140	2.0%				
3	60	1.2%		8	160	2.0%				
4	80	1.4%		9	180	2.3%				
5	100	1.4%		10	200	2.4%				
								RF Po (*Max)		10.0

P-Position 1

Table 12

Internal Vehicle MPE Assessment @ 512 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)	HAE4004A	2.15	Highest Reading	E	0.98	0.193	0.077	10.0	0.193	0.19
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.71
Back Seat		15.4%		13.7%		4.8%		IEEE Uncontrolled Limit:		0.34
Front Seat		6.9%		3.3%		3.4%		RF Po (*Max):		10.0

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BS-Position 2

Table 13

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)	HAE6016A	2.15	90	E	1.01	0.020	10.0	0.020	0.02
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	0.3%		6	120	1.0%		1.57	0.31
2	40	0.2%		7	140	1.7%			
3	60	0.3%		8	160	1.9%			
4	80	0.4%		9	180	2.8%			
5	100	0.7%		10	200	3.4%			
								RF Po (*Max)	10.0

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Table 14

External Vehicle MPE Assessment @ 491 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)	HAE6016A	2.15	90	E	0.99	0.020	10.0	0.020	0.02
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	0.3%		6	120	1.0%		1.64	0.33
2	40	0.2%		7	140	1.7%			
3	60	0.3%		8	160	2.2%			
4	80	0.5%		9	180	2.5%			
5	100	0.8%		10	200	2.5%			
								RF Po (*Max)	10.0

BS-Position 2

Table 15

External Vehicle MPE Assessment @ 512 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)	HAE6016A	2.15	90	E	0.98	0.016	10.0	0.016	0.02
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	0.9%		1.71	0.34
2	40	0.4%		7	140	1.0%			
3	60	0.5%		8	160	1.4%			
4	80	0.5%		9	180	1.4%			
5	100	0.6%		10	200	2.3%			
								RF Po (*Max)	10.0

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Table 16

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)	HAE4004A	2.15	90	E	1.01	0.017	10.0	0.017	0.02
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	0.2%		6	120	1.0%		1.57	0.31
2	40	0.1%		7	140	1.3%			
3	60	0.2%		8	160	2.2%			
4	80	0.4%		9	180	2.4%			
5	100	0.5%		10	200	2.6%			
								RF Po (*Max)	10.0

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Table 17

External Vehicle MPE Assessment @ 491 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)	HAE4004A	2.15	90	E	0.99	0.021	10.0	0.021	0.02
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	0.1%		6	120	1.4%		1.64	0.33
2	40	0.2%		7	140	1.7%			
3	60	0.4%		8	160	1.8%			
4	80	0.7%		9	180	2.6%			
5	100	0.9%		10	200	3.0%			
								RF Po (*Max)	10.0

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Table 18

External Vehicle MPE Assessment @ 512 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)	HAE4004A	2.15	90	E	0.98	0.025	10.0	0.025	0.02
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	0.4%		6	120	1.7%		1.71	0.34
2	40	0.6%		7	140	1.8%			
3	60	0.7%		8	160	2.0%			
4	80	1.0%		9	180	2.1%			
5	100	1.3%		10	200	2.9%			
								RF Po (*Max)	10.0

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Table 19

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)	HAE6016A	2.15	90	E	1.01	0.034	10.0	0.034	0.03
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	2.3%		1.57	0.31
2	40	0.8%		7	140	3.3%			
3	60	1.1%		8	160	3.4%			
4	80	1.6%		9	180	2.9%			
5	100	2.2%		10	200	2.8%			
								RF Po (*Max)	10.0

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Table 20

External Vehicle MPE Assessment @ 491 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)	HAE6016A	2.15	90	E	0.99	0.041	10.0	0.041	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	2.7%		1.64	0.33
2	40	1.1%		7	140	4.1%			
3	60	1.2%		8	160	4.0%			
4	80	1.9%		9	180	3.6%			
5	100	2.3%		10	200	3.2%			
								RF Po (*Max)	10.0

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Table 21

External Vehicle MPE Assessment @ 512 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)	HAE6016A	2.15	90	E	0.98	0.025	10.0	0.025	0.02
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	0.3%		6	120	1.5%		1.71	0.34
2	40	0.3%		7	140	1.8%			
3	60	0.8%		8	160	2.4%			
4	80	1.2%		9	180	2.5%			
5	100	1.3%		10	200	2.5%			
								RF Po (*Max)	10.0

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Table 22

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)	HAE4004A	2.15	90	E	1.01	0.039	10.0	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	0.9%		6	120	3.5%		1.57	0.31
2	40	1.0%		7	140	3.8%			
3	60	1.6%		8	160	3.6%			
4	80	2.4%		9	180	3.0%			
5	100	2.5%		10	200	2.8%			
								RF Po (*Max)	
								10.0	

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Table 23

External Vehicle MPE Assessment @ 491 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)	HAE4004A	2.15	90	E	0.99	0.039	10.0	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	0.8%		6	120	2.7%		1.64	0.33
2	40	1.1%		7	140	3.1%			
3	60	1.8%		8	160	3.6%			
4	80	2.0%		9	180	3.6%			
5	100	2.3%		10	200	3.1%			
								RF Po (*Max)	
								10.0	

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Table 24

External Vehicle MPE Assessment @ 512 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)	HAE4004A	2.15	90	E	0.98	0.033	10.0	0.033	0.03
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	2.4%		1.71	0.34
2	40	0.5%		7	140	2.8%			
3	60	1.0%		8	160	3.0%			
4	80	1.2%		9	180	3.0%			
5	100	1.8%		10	200	2.9%			
								RF Po (*Max)	
								10.0	

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Table 25

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)	HAE6016A	2.15	90	E	1.01	0.061	10.0	0.061	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	2.5%		6	120	4.7%		1.57	0.31
2	40	2.6%		7	140	4.6%			
3	60	2.9%		8	160	4.6%			
4	80	3.6%		9	180	4.5%			
5	100	4.3%		10	200	4.4%			
								RF Po (*Max)	
								10.0	

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Table 26

External Vehicle MPE Assessment @ 491 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)	HAE6016A	2.15	90	E	0.99	0.069	10.0	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	3.1%		6	120	5.2%		1.64	0.33
2	40	2.5%		7	140	5.5%			
3	60	3.0%		8	160	5.5%			
4	80	3.8%		9	180	4.9%			
5	100	4.2%		10	200	4.5%			
								RF Po (*Max)	
								10.0	

BS-Position 4

Table 27

External Vehicle MPE Assessment @ 512 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)	HAE6016A	2.15	90	E	0.98	0.053	10.0	0.053	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	3.4%		1.71	0.34
2	40	1.5%		7	140	3.5%			
3	60	3.0%		8	160	4.5%			
4	80	3.3%		9	180	4.0%			
5	100	2.9%		10	200	3.5%			
								RF Po (*Max)	
								10.0	

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BS-Position 4

Table 28

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)	HAE4004A	2.15	90	E	1.01	0.044	10.0	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	1.8%		6	120	3.3%		1.57	0.31
2	40	1.5%		7	140	3.7%			
3	60	1.9%		8	160	3.9%			
4	80	2.7%		9	180	3.4%			
5	100	3.1%		10	200	2.8%			
								RF Po (*Max)	10.0

BS-Position 4

Table 29

External Vehicle MPE Assessment @ 491 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)	HAE4004A	2.15	90	E	0.99	0.046	10.0	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	1.2%		6	120	3.4%		1.64	0.33
2	40	1.7%		7	140	3.9%			
3	60	2.0%		8	160	4.2%			
4	80	2.6%		9	180	3.4%			
5	100	3.0%		10	200	2.6%			
								RF Po (*Max)	10.0

BS-Position 4

Table 30

External Vehicle MPE Assessment @ 512 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)	HAE4004A	2.15	90	E	0.98	0.043	10.0	0.043	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	1.4%		6	120	2.8%		1.71	0.34
2	40	1.5%		7	140	3.0%			
3	60	1.9%		8	160	3.4%			
4	80	2.2%		9	180	3.6%			
5	100	2.5%		10	200	3.1%			
								RF Po (*Max)	10.0

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BS-Position 5

Table 31

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)	HAE6016A	2.15	90	E	1.01	0.048	10.0	0.048	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	1.4%		6	120	3.7%		1.57	0.31
2	40	2.0%		7	140	4.8%			
3	60	2.1%		8	160	4.2%			
4	80	2.8%		9	180	3.6%			
5	100	3.1%		10	200	2.7%			
								RF Po (*Max)	10.0

BS-Position 5

Table 32

External Vehicle MPE Assessment @ 491 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)	HAE6016A	2.15	90	E	0.99	0.057	10.0	0.057	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	1.9%		6	120	4.6%		1.64	0.33
2	40	2.3%		7	140	5.3%			
3	60	2.6%		8	160	4.6%			
4	80	3.0%		9	180	3.4%			
5	100	4.2%		10	200	2.8%			
								RF Po (*Max)	10.0

BS-Position 5

Table 33

External Vehicle MPE Assessment @ 512 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)	HAE6016A	2.15	90	E	0.98	0.051	10.0	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	1.2%		6	120	4.0%		1.71	0.34
2	40	1.4%		7	140	4.3%			
3	60	2.3%		8	160	4.5%			
4	80	3.0%		9	180	3.4%			
5	100	3.2%		10	200	2.8%			
								RF Po (*Max)	10.0

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BS-Position 5

Table 34

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)	HAE4004A	2.15	90	E	1.01	0.046	10.0	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	1.4%		6	120	4.5%		1.57	0.31
2	40	1.8%		7	140	4.4%			
3	60	2.6%		8	160	3.7%			
4	80	3.0%		9	180	2.5%			
5	100	3.4%		10	200	2.2%			
								RF Po (*Max)	
								10.0	

BS-Position 5

Table 35

External Vehicle MPE Assessment @ 491 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)	HAE4004A	2.15	90	E	0.99	0.053	10.0	0.053	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	4.3%		1.64	0.33
2	40	2.1%		7	140	4.4%			
3	60	3.2%		8	160	3.8%			
4	80	3.2%		9	180	3.5%			
5	100	3.8%		10	200	2.4%			
								RF Po (*Max)	
								10.0	

BS-Position 5

Table 36

External Vehicle MPE Assessment @ 512 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)	HAE4004A	2.15	90	E	0.98	0.065	10.0	0.065	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	1.9%		6	120	5.5%		1.71	0.34
2	40	2.4%		7	140	5.7%			
3	60	3.3%		8	160	4.9%			
4	80	3.5%		9	180	3.8%			
5	100	4.2%		10	200	2.6%			
								RF Po (*Max)	
								10.0	

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BS-Position 1

Table 1

External Vehicle MPE Assessment @ 450.025 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	90	E	1.29	0.080	53.1	0.040	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	1.8%		6	120	7.7%		1.50	0.30
2	40	2.0%		7	140	9.8%			
3	60	3.1%		8	160	11.9%			
4	80	5.9%		9	180	14.6%			
5	100	6.0%		10	200	17.0%			
								RF Po (*Max)	54.0

P-Position 1

Table 2

Internal Vehicle MPE Assessment @ 450.025 MHz										
Antenna Location	Antenna Model	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	0.112	0.092	53.1	0.056	0.06
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.50
Back Seat		5.0%		7.0%		10.3%		IEEE Uncontrolled Limit:		0.30
Front Seat		5.0%		6.6%		6.7%		RF Po (*Max):		54.0

BS-Position 1

Table 3

External Vehicle MPE Assessment @ 460.025 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	90	E	1.28	0.124	53.5	0.062	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	1.5%		6	120	7.2%		1.53	0.31
2	40	1.9%		7	140	9.8%			
3	60	2.1%		8	160	13.5%			
4	80	3.9%		9	180	17.4%			
5	100	4.8%		10	200	18.9%			
								RF Po (*Max)	54.0

UHF Mobile M20SSS9PW1AN

P-Position 1

Table 4

Internal Vehicle MPE Assessment @ 460.025 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	0.141	0.136	53.5	0.071	0.07
Measurement Grid										
Test Position	% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.53	
Back Seat	9.5%		8.3%		9.8%		IEEE Uncontrolled Limit:		0.31	
Front Seat	6.5%		6.8%		13.4%		RF Po (*Max):		54.0	

BS-Position 1

Table 5

External Vehicle MPE Assessment @ 481.025 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)	HAE4004A	2.15	90	E	1.25	0.125	53.7	0.063	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	7.7%		1.60	0.32	
2	40	2.3%		7	140	10.3%				
3	60	3.9%		8	160	12.9%				
4	80	3.9%		9	180	14.9%				
5	100	4.7%		10	200	16.0%				
								RF Po (*Max):		54.0

P-Position 1

Table 6

Internal Vehicle MPE Assessment @ 481.025 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)	HAE4004A	2.15	Highest Reading	E	1.25	0.220	0.079	53.7	0.110	0.11
Measurement Grid										
Test Position	% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.60	
Back Seat	11.3%		15.3%		14.6%		IEEE Uncontrolled Limit:		0.32	
Front Seat	3.3%		4.8%		6.7%		RF Po (*Max):		54.0	

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BS-Position 1

Table 7

External Vehicle MPE Assessment @ 511.9875 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)	HAE4004A	2.15	90	E	1.20	0.091	47.6	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	1.3%		6	120	6.3%		1.71	0.34
2	40	1.7%		7	140	7.6%			
3	60	1.9%		8	160	9.1%			
4	80	2.5%		9	180	10.4%			
5	100	3.7%		10	200	8.6%			
								RF Po (*Max)	48.0

P-Position 1

Table 8

Internal Vehicle MPE Assessment @ 511.9875 MHz										
Antenna Location	Antenna Model	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)	HAE4004A	2.15	Highest Reading	E	1.20	0.109	0.049	47.6	0.054	0.05
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.71
Back Seat		7.5%		6.5%		5.1%		IEEE Uncontrolled Limit:		0.34
Front Seat		2.5%		2.7%		3.4%		RF Po (*Max):		48.0

BS-Position 1

Table 9

External Vehicle MPE Assessment @ 450.025 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	5.65	90	E	1.29	0.113	53.1	0.056	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	1.3%		6	120	5.8%		1.50	0.30
2	40	1.1%		7	140	11.0%			
3	60	1.7%		8	160	15.5%			
4	80	2.6%		9	180	15.7%			
5	100	3.8%		10	200	16.5%			
								RF Po (*Max)	54.0

UHF Mobile M20SSS9PW1AN

P-Position 1

Table 10

Internal Vehicle MPE Assessment @ 450.025 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	5.65	Highest Reading	E	1.29	0.023	0.022	53.1	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	1.3%		1.2%		2.1%		IEEE Uncontrolled Limit:		0.30	
Front Seat	1.2%		1.4%		1.7%		RF Po (*Max):		54.0	

BS-Position 1

Table 11

External Vehicle MPE Assessment @ 460.025 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	5.65	90	E	1.28	0.113	53.5	0.057	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	0.5%		6	120	6.3%		1.53	0.31
2	40	0.8%		7	140	9.6%		RF Po (*Max):	54.0
3	60	1.4%		8	160	14.2%			
4	80	2.4%		9	180	17.8%			
5	100	3.9%		10	200	16.9%			

P-Position 1

Table 12

Internal Vehicle MPE Assessment @ 460.025 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	5.65	Highest Reading	E	1.28	0.020	0.020	53.5	0.010	0.01
Measurement Grid										
Test Position	% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.53	
Back Seat	1.2%		1.1%		1.6%		IEEE Uncontrolled Limit:		0.31	
Front Seat	0.9%		1.1%		2.0%		RF Po (*Max):		54.0	

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BS-Position 1

Table 13

External Vehicle MPE Assessment @ 470.025 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)	HAE4012A	5.65	90	E	1.26	0.119	53.7	0.060	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	0.8%		6	120	6.6%		1.57	0.31
2	40	1.1%		7	140	12.3%			
3	60	2.2%		8	160	15.3%			
4	80	3.3%		9	180	15.1%			
5	100	4.9%		10	200	14.5%			
								RF Po (*Max)	54.0

P-Position 1

Table 14

Internal Vehicle MPE Assessment @ 470.025 MHz										
Antenna Location	Antenna Model	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)	HAE4012A	5.65	Highest Reading	E	1.26	0.025	0.028	53.7	0.014	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		1.7%		1.6%		1.5%		IEEE Uncontrolled Limit:		0.31
Front Seat		0.4%		1.5%		3.4%		RF Po (*Max):		54.0

BS-Position 1

Table 15

External Vehicle MPE Assessment @ 481.025 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)	HAE4012A	5.65	90	E	1.25	0.101	53.7	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	0.8%		6	120	6.4%		1.60	0.32
2	40	1.1%		7	140	8.9%			
3	60	1.7%		8	160	11.5%			
4	80	2.5%		9	180	13.9%			
5	100	3.8%		10	200	12.5%			
								RF Po (*Max)	54.0

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Table 16

Internal Vehicle MPE Assessment @ 481.025 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)	HAE4012A	5.65	Highest Reading	E	1.25	0.043	0.018	53.7	0.022	0.02
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk		IEEE Controlled Limit:			1.60	
Back Seat		2.7%	2.4%	3.0%		IEEE Uncontrolled Limit:			0.32	
Front Seat		0.9%	0.9%	1.6%		RF Po (*Max):			54.0	

BS-Position 1

Table 17

External Vehicle MPE Assessment @ 494.025 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)	HAE4013A	5.65	90	E	1.23	0.111	53.9	0.056	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	1.0%		6	120	7.7%		1.65	0.33	
2	40	1.3%		7	140	9.8%				
3	60	3.0%		8	160	12.3%				
4	80	3.6%		9	180	12.8%				
5	100	5.2%		10	200	11.0%				
								RF Po (*Max):		54.0

P-Position 1

Table 18

Internal Vehicle MPE Assessment @ 494.025 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)	HAE4013A	5.65	Highest Reading	E	1.23	0.060	0.023	53.9	0.030	0.03
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk		IEEE Controlled Limit:			1.65	
Back Seat		3.0%	4.1%	3.9%		IEEE Uncontrolled Limit:			0.33	
Front Seat		0.8%	1.5%	1.9%		RF Po (*Max):			54.0	

UHF Mobile M20SSS9PW1AN

BS-Position 1

Table 19

External Vehicle MPE Assessment @ 511.9875 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)	HAE4013A	5.65	90	E	1.20	0.082	47.6	0.041	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	1.1%		6	120	5.3%		1.71	0.34
2	40	1.5%		7	140	6.8%			
3	60	1.9%		8	160	8.0%			
4	80	3.0%		9	180	9.0%			
5	100	3.6%		10	200	7.8%			
								RF Po (*Max)	48.0

P-Position 1

Table 20

Internal Vehicle MPE Assessment @ 511.9875 MHz										
Antenna Location	Antenna Model	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)	HAE4013A	5.65	Highest Reading	E	1.20	0.035	0.021	47.6	0.018	0.02
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.71
Back Seat		2.4%		2.1%		1.7%		IEEE Uncontrolled Limit:		0.34
Front Seat		1.5%		1.4%		0.8%		RF Po (*Max):		48.0

BS-Position 1

Table 21

External Vehicle MPE Assessment @ 450.025 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)	HAE6016A	2.15	90	E	1.29	0.098	53.1	0.049	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	1.6%		6	120	6.5%		1.50	0.30
2	40	2.3%		7	140	9.0%			
3	60	3.1%		8	160	10.8%			
4	80	3.9%		9	180	11.4%			
5	100	4.0%		10	200	12.4%			
								RF Po (*Max)	54.0

UHF Mobile M20SSS9PW1AN

P-Position 1

Table 22

Internal Vehicle MPE Assessment @ 450.025 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)	HAE6016A	2.15	Highest Reading	E	1.29	0.087	0.058	53.1	0.044	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	3.7%		6.4%		7.3%		IEEE Uncontrolled Limit:		0.30	
Front Seat	3.9%		3.4%		4.3%		RF Po (*Max):		54.0	

BS-Position 1

Table 23

External Vehicle MPE Assessment @ 481.025 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)	HAE6016A	2.15	90	E	1.25	0.107	53.7	0.053	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	1.2%		6	120	6.4%		1.60	0.32
2	40	2.0%		7	140	9.0%		RF Po (*Max):	54.0
3	60	3.0%		8	160	11.2%			
4	80	3.7%		9	180	13.0%			
5	100	4.4%		10	200	12.8%			

P-Position 1

Table 24

Internal Vehicle MPE Assessment @ 481.025 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)	HAE6016A	2.15	Highest Reading	E	1.25	0.148	0.072	53.7	0.074	0.07
Measurement Grid										
Test Position	% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.60	
Back Seat	6.5%		10.3%		10.9%		IEEE Uncontrolled Limit:		0.32	
Front Seat	4.7%		2.9%		5.8%		RF Po (*Max):		54.0	

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BS-Position 1

Table 25

External Vehicle MPE Assessment @ 511.9875 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)	HAE6016A	2.15	90	E	1.20	0.094	47.6	0.047	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	5.6%		1.71	0.34
2	40	2.1%		7	140	7.3%			
3	60	2.6%		8	160	9.3%			
4	80	3.0%		9	180	9.7%			
5	100	5.1%		10	200	9.6%			
								RF Po (*Max)	48.0

P-Position 1

Table 26

Internal Vehicle MPE Assessment @ 511.9875 MHz										
Antenna Location	Antenna Model	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)	HAE6016A	2.15	Highest Reading	E	1.20	0.095	0.038	47.6	0.048	0.05
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.71
Back Seat		5.6%		5.5%		5.6%		IEEE Uncontrolled Limit:		0.34
Front Seat		1.3%		2.5%		2.8%		RF Po (*Max):		48.0

BS-Position 2

Table 27

External Vehicle MPE Assessment @ 450.025 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	90	E	1.29	0.054	53.1	0.027	0.03
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	5.7%		1.50	0.30
2	40	1.5%		7	140	7.0%			
3	60	2.1%		8	160	8.2%			
4	80	3.4%		9	180	9.0%			
5	100	4.4%		10	200	11.3%			
								RF Po (*Max)	54.0

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BS-Position 2

Table 28

External Vehicle MPE Assessment @ 460.025 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	90	E	1.28	0.079	53.5	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	1.8%		6	120	5.6%		1.53	0.31
2	40	1.9%		7	140	6.3%			
3	60	2.6%		8	160	7.2%			
4	80	3.3%		9	180	8.6%			
5	100	4.0%		10	200	10.0%			
								RF Po (*Max)	
								54.0	

BS-Position 2

Table 29

External Vehicle MPE Assessment @ 481.025 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)	HAE4004A	2.15	90	E	1.25	0.081	53.7	0.041	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	1.5%		6	120	4.8%		1.60	0.32
2	40	1.5%		7	140	6.6%			
3	60	1.9%		8	160	8.2%			
4	80	2.9%		9	180	9.3%			
5	100	3.7%		10	200	10.3%			
								RF Po (*Max)	
								54.0	

BS-Position 2

Table 30

External Vehicle MPE Assessment @ 511.9875 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)	HAE4004A	2.15	90	E	1.20	0.064	47.6	0.032	0.03
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	3.1%		1.71	0.34
2	40	1.6%		7	140	4.4%			
3	60	1.8%		8	160	6.1%			
4	80	1.9%		9	180	6.1%			
5	100	2.8%		10	200	7.9%			
								RF Po (*Max)	
								48.0	

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BS-Position 2

Table 31

External Vehicle MPE Assessment @ 450.025 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	5.65	90	E	1.29	0.085	53.1	0.043	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	0.6%		6	120	5.7%		1.50	0.30
2	40	0.5%		7	140	7.6%			
3	60	0.8%		8	160	10.8%			
4	80	1.0%		9	180	13.9%			
5	100	4.3%		10	200	11.5%			
								RF Po (*Max)	54.0

BS-Position 2

Table 32

External Vehicle MPE Assessment @ 460.025 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	5.65	90	E	1.28	0.070	53.5	0.035	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	3.9%		1.53	0.31
2	40	0.7%		7	140	6.7%			
3	60	0.9%		8	160	8.7%			
4	80	1.2%		9	180	10.2%			
5	100	2.7%		10	200	9.9%			
								RF Po (*Max)	54.0

BS-Position 2

Table 33

External Vehicle MPE Assessment @ 470.025 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)	HAE4012A	5.65	90	E	1.26	0.081	53.7	0.040	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	5.7%		1.57	0.31
2	40	0.9%		7	140	6.9%			
3	60	1.5%		8	160	8.6%			
4	80	1.7%		9	180	10.5%			
5	100	3.5%		10	200	11.3%			
								RF Po (*Max)	54.0

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BS-Position 2

Table 34

External Vehicle MPE Assessment @ 481.025 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)	HAE4012A	5.65	90	E	1.25	0.069	53.7	0.034	0.03
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	3.7%		1.60	0.32
2	40	0.8%		7	140	5.7%			
3	60	1.3%		8	160	7.7%			
4	80	1.8%		9	180	8.7%			
5	100	2.6%		10	200	9.7%			
								RF Po (*Max)	
								54.0	

BS-Position 2

Table 35

External Vehicle MPE Assessment @ 494.025 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)	HAE4013A	5.65	90	E	1.23	0.086	53.9	0.043	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	4.3%		1.65	0.33
2	40	1.3%		7	140	6.3%			
3	60	1.5%		8	160	9.3%			
4	80	2.3%		9	180	11.5%			
5	100	3.3%		10	200	11.7%			
								RF Po (*Max)	
								54.0	

BS-Position 2

Table 36

External Vehicle MPE Assessment @ 511.9875 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)	HAE4013A	5.65	90	E	1.20	0.064	47.6	0.032	0.03
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	3.5%		1.71	0.34
2	40	1.0%		7	140	4.3%			
3	60	1.3%		8	160	7.0%			
4	80	1.5%		9	180	7.7%			
5	100	2.6%		10	200	8.0%			
								RF Po (*Max)	
								48.0	

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BS-Position 2

Table 37

External Vehicle MPE Assessment @ 450.025 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)	HAE6016A	2.15	90	E	1.29	0.077	53.1	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	1.6%		6	120	5.1%		1.50	0.30
2	40	1.3%		7	140	6.2%			
3	60	2.6%		8	160	7.7%			
4	80	3.3%		9	180	9.2%			
5	100	4.4%		10	200	10.0%			
								RF Po (*Max)	
								54.0	

BS-Position 2

Table 38

External Vehicle MPE Assessment @ 481.025 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)	HAE6016A	2.15	90	E	1.25	0.064	53.7	0.032	0.03
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	4.4%		1.60	0.32
2	40	1.4%		7	140	5.2%			
3	60	2.0%		8	160	6.3%			
4	80	2.1%		9	180	6.5%			
5	100	3.3%		10	200	7.5%			
								RF Po (*Max)	
								54.0	

BS-Position 2

Table 39

External Vehicle MPE Assessment @ 511.9875 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)	HAE6016A	2.15	90	E	1.20	0.057	47.6	0.028	0.03
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	3.6%		1.71	0.34
2	40	1.1%		7	140	3.9%			
3	60	1.3%		8	160	5.2%			
4	80	1.3%		9	180	5.4%			
5	100	2.5%		10	200	8.0%			
								RF Po (*Max)	
								48.0	

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BS-Position 3

Table 40

External Vehicle MPE Assessment @ 450.025 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	90	E	1.29	0.062	53.1	0.031	0.03
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	3.3%		6	120	6.8%		1.50	0.30
2	40	4.9%		7	140	6.8%			
3	60	5.4%		8	160	7.5%			
4	80	7.0%		9	180	7.7%			
5	100	6.5%		10	200	6.4%			
								RF Po (*Max)	
								54.0	

BS-Position 3

Table 41

External Vehicle MPE Assessment @ 460.025 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	90	E	1.28	0.100	53.5	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	3.9%		6	120	7.6%		1.53	0.31
2	40	4.5%		7	140	7.2%			
3	60	5.3%		8	160	7.9%			
4	80	6.6%		9	180	8.4%			
5	100	6.6%		10	200	7.4%			
								RF Po (*Max)	
								54.0	

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Table 42

External Vehicle MPE Assessment @ 481.025 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)	HAE4004A	2.15	90	E	1.25	0.097	53.7	0.048	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	3.4%		6	120	5.8%		1.60	0.32
2	40	3.8%		7	140	5.8%			
3	60	6.6%		8	160	7.6%			
4	80	6.6%		9	180	7.1%			
5	100	6.5%		10	200	7.1%			
								RF Po (*Max)	
								54.0	

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Table 43

External Vehicle MPE Assessment @ 511.9875 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)	HAE4004A	2.15	90	E	1.20	0.073	47.6	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	1.5%		6	120	4.5%		1.71	0.34
2	40	1.7%		7	140	4.5%			
3	60	3.3%		8	160	6.2%			
4	80	4.0%		9	180	6.7%			
5	100	3.8%		10	200	6.4%			
								RF Po (*Max)	
								48.0	

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Table 44

External Vehicle MPE Assessment @ 450.025 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	5.65	90	E	1.29	0.067	53.1	0.033	0.03
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	1.3%		6	120	4.3%		1.50	0.30
2	40	1.8%		7	140	5.7%			
3	60	3.6%		8	160	6.9%			
4	80	3.4%		9	180	7.6%			
5	100	4.0%		10	200	5.9%			
								RF Po (*Max)	
								54.0	

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Table 45

External Vehicle MPE Assessment @ 460.025 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	5.65	90	E	1.28	0.067	53.5	0.033	0.03
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	1.3%		6	120	4.9%		1.53	0.31
2	40	1.4%		7	140	5.7%			
3	60	2.6%		8	160	5.9%			
4	80	3.1%		9	180	7.9%			
5	100	3.8%		10	200	7.0%			
								RF Po (*Max)	
								54.0	

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Table 46

External Vehicle MPE Assessment @ 470.025 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)	HAE4012A	5.65	90	E	1.26	0.067	53.7	0.034	0.03
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	4.4%		1.57	0.31
2	40	1.1%		7	140	5.2%			
3	60	1.8%		8	160	6.6%			
4	80	3.5%		9	180	8.0%			
5	100	3.9%		10	200	7.3%			
								RF Po (*Max)	
								54.0	

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Table 47

External Vehicle MPE Assessment @ 481.025 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)	HAE4012A	5.65	90	E	1.25	0.063	53.7	0.032	0.03
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	4.3%		1.60	0.32
2	40	1.5%		7	140	5.9%			
3	60	3.2%		8	160	5.7%			
4	80	2.9%		9	180	6.4%			
5	100	3.2%		10	200	5.3%			
								RF Po (*Max)	
								54.0	

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Table 48

External Vehicle MPE Assessment @ 494.025 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)	HAE4013A	5.65	90	E	1.23	0.070	53.9	0.035	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	1.6%		6	120	4.3%		1.65	0.33
2	40	1.9%		7	140	5.1%			
3	60	3.1%		8	160	7.1%			
4	80	3.5%		9	180	6.3%			
5	100	4.1%		10	200	5.7%			
								RF Po (*Max)	
								54.0	

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Table 49

External Vehicle MPE Assessment @ 511.9875 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)	HAE4013A	5.65	90	E	1.20	0.050	47.6	0.025	0.03
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	2.8%		1.71	0.34
2	40	1.3%		7	140	3.3%			
3	60	1.8%		8	160	4.1%			
4	80	2.1%		9	180	4.7%			
5	100	3.6%		10	200	4.6%			
								RF Po (*Max)	
								48.0	

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Table 50

External Vehicle MPE Assessment @ 450.025 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)	HAE6016A	2.15	90	E	1.29	0.069	53.1	0.034	0.03
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	3.1%		6	120	4.9%		1.50	0.30
2	40	4.0%		7	140	4.7%			
3	60	4.6%		8	160	5.8%			
4	80	4.2%		9	180	5.7%			
5	100	4.4%		10	200	4.4%			
								RF Po (*Max)	
								54.0	

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Table 51

External Vehicle MPE Assessment @ 481.025 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)	HAE6016A	2.15	90	E	1.25	0.065	53.7	0.032	0.03
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	4.1%		1.60	0.32
2	40	2.8%		7	140	4.1%			
3	60	4.3%		8	160	4.5%			
4	80	4.6%		9	180	4.9%			
5	100	3.8%		10	200	4.9%			
								RF Po (*Max)	
								54.0	

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Table 52

External Vehicle MPE Assessment @ 511.9875 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)	HAE6016A	2.15	90	E	1.20	0.053	47.6	0.027	0.03
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	1.8%		6	120	3.4%		1.71	0.34
2	40	1.6%		7	140	3.2%			
3	60	3.0%		8	160	4.1%			
4	80	2.8%		9	180	4.1%			
5	100	2.7%		10	200	4.6%			
								RF Po (*Max)	
								48.0	

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Table 53

External Vehicle MPE Assessment @ 450.025 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	90	E	1.29	0.032	53.1	0.016	0.02
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	3.5%		1.50	0.30
2	40	2.0%		7	140	3.9%			
3	60	2.6%		8	160	3.5%			
4	80	2.9%		9	180	4.2%			
5	100	2.9%		10	200	4.1%			
								RF Po (*Max)	
								54.0	

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Table 54

External Vehicle MPE Assessment @ 460.025 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	90	E	1.28	0.052	53.5	0.026	0.03
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	3.7%		1.53	0.31
2	40	2.3%		7	140	3.5%			
3	60	3.0%		8	160	3.4%			
4	80	4.0%		9	180	4.1%			
5	100	4.3%		10	200	3.8%			
								RF Po (*Max)	
								54.0	

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Table 55

External Vehicle MPE Assessment @ 481.025 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)	HAE4004A	2.15	90	E	1.25	0.048	53.7	0.024	0.02
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	1.8%		6	120	3.3%		1.60	0.32
2	40	1.5%		7	140	3.8%			
3	60	2.3%		8	160	3.4%			
4	80	3.2%		9	180	3.3%			RF Po (*Max)
5	100	3.3%		10	200	3.8%			54.0

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Table 56

External Vehicle MPE Assessment @ 511.9875 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)	HAE4004A	2.15	90	E	1.20	0.031	47.6	0.015	0.02
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	1.4%		1.71	0.34
2	40	1.0%		7	140	1.6%			
3	60	1.5%		8	160	1.8%			
4	80	1.9%		9	180	2.8%			RF Po (*Max)
5	100	1.6%		10	200	2.8%			48.0

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Table 57

External Vehicle MPE Assessment @ 450.025 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	5.65	90	E	1.29	0.051	53.1	0.026	0.03
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	3.9%		1.50	0.30
2	40	1.6%		7	140	3.6%			
3	60	2.5%		8	160	4.4%			
4	80	2.9%		9	180	5.1%			RF Po (*Max)
5	100	3.4%		10	200	5.1%			54.0

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Table 58

External Vehicle MPE Assessment @ 460.025 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	5.65	90	E	1.28	0.046	53.5	0.023	0.02
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	3.5%		1.53	0.31
2	40	1.1%		7	140	3.6%			
3	60	1.5%		8	160	3.9%			
4	80	2.4%		9	180	4.6%			
5	100	3.5%		10	200	5.1%			
								RF Po (*Max)	54.0

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Table 59

External Vehicle MPE Assessment @ 470.025 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)	HAE4012A	5.65	90	E	1.26	0.046	53.7	0.023	0.02
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	3.2%		1.57	0.31
2	40	1.0%		7	140	3.5%			
3	60	1.7%		8	160	3.9%			
4	80	2.6%		9	180	4.5%			
5	100	2.8%		10	200	4.9%			
								RF Po (*Max)	54.0

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Table 60

External Vehicle MPE Assessment @ 481.025 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)	HAE4012A	5.65	90	E	1.25	0.045	53.7	0.022	0.02
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	3.5%		1.60	0.32
2	40	0.9%		7	140	3.5%			
3	60	1.6%		8	160	3.8%			
4	80	2.0%		9	180	3.8%			
5	100	3.2%		10	200	4.7%			
								RF Po (*Max)	54.0

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Table 61

External Vehicle MPE Assessment @ 494.025 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)	HAE4013A	5.65	90	E	1.23	0.051	53.9	0.025	0.03
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	4.0%		1.65	0.33
2	40	1.2%		7	140	3.4%			
3	60	2.0%		8	160	3.9%			
4	80	3.4%		9	180	4.0%			
5	100	3.3%		10	200	4.4%			
								RF Po (*Max)	54.0

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Table 62

External Vehicle MPE Assessment @ 511.9875 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)	HAE4013A	5.65	90	E	1.20	0.035	47.6	0.018	0.02
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	2.5%		1.71	0.34
2	40	1.0%		7	140	2.3%			
3	60	1.2%		8	160	2.5%			
4	80	1.8%		9	180	3.1%			
5	100	2.0%		10	200	3.6%			
								RF Po (*Max)	48.0

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Table 63

External Vehicle MPE Assessment @ 450.025 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)	HAE6016A	2.15	90	E	1.29	0.049	53.1	0.024	0.02
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	3.8%		1.50	0.30
2	40	2.3%		7	140	3.9%			
3	60	2.4%		8	160	3.4%			
4	80	3.5%		9	180	3.5%			
5	100	3.7%		10	200	3.8%			
								RF Po (*Max)	54.0

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Table 64

External Vehicle MPE Assessment @ 481.025 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)	HAE6016A	2.15	90	E	1.25	0.042	53.7	0.021	0.02
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	1.8%		6	120	2.8%		1.60	0.32
2	40	1.6%		7	140	3.2%			
3	60	2.2%		8	160	2.8%			
4	80	2.9%		9	180	2.8%			
5	100	2.6%		10	200	3.7%			RF Po (*Max)

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Table 65

External Vehicle MPE Assessment @ 511.9875 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)	HAE6016A	2.15	90	E	1.20	0.042	47.6	0.021	0.02
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	1.3%		6	120	3.1%		1.71	0.34
2	40	1.3%		7	140	3.0%			
3	60	1.7%		8	160	2.8%			
4	80	2.5%		9	180	3.3%			
5	100	2.3%		10	200	3.2%			RF Po (*Max)

BS-Position 5

Table 66

External Vehicle MPE Assessment @ 450.025 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	90	E	1.29	0.028	53.1	0.014	0.01
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	1.7%		6	120	3.0%		1.50	0.30
2	40	1.9%		7	140	3.2%			
3	60	2.0%		8	160	3.3%			
4	80	2.0%		9	180	3.5%			
5	100	2.8%		10	200	4.1%			RF Po (*Max)

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Table 67

External Vehicle MPE Assessment @ 460.025 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	90	E	1.28	0.051	53.5	0.026	0.03
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	3.5%		1.53	0.31
2	40	2.4%		7	140	3.8%			
3	60	2.6%		8	160	4.0%			
4	80	2.7%		9	180	4.2%			RF Po (*Max)
5	100	3.3%		10	200	4.8%			54.0

BS-Position 5

Table 68

External Vehicle MPE Assessment @ 481.025 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)	HAE4004A	2.15	90	E	1.25	0.053	53.7	0.027	0.03
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	3.5%		1.60	0.32
2	40	2.2%		7	140	4.1%			
3	60	2.4%		8	160	4.2%			
4	80	2.5%		9	180	4.5%			RF Po (*Max)
5	100	2.9%		10	200	4.8%			54.0

BS-Position 5

Table 69

External Vehicle MPE Assessment @ 511.9875 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)	HAE4004A	2.15	90	E	1.20	0.050	47.6	0.025	0.03
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	3.1%		1.71	0.34
2	40	2.1%		7	140	3.2%			
3	60	2.3%		8	160	3.6%			
4	80	2.7%		9	180	3.8%			RF Po (*Max)
5	100	2.8%		10	200	3.8%			48.0

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BS-Position 5

Table 70

External Vehicle MPE Assessment @ 450.025 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	5.65	90	E	1.29	0.057	53.1	0.029	0.03
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	4.1%		1.50	0.30
2	40	2.1%		7	140	4.8%			
3	60	2.5%		8	160	4.5%			
4	80	2.6%		9	180	5.6%			
5	100	3.0%		10	200	6.8%			
								RF Po (*Max)	54.0

BS-Position 5

Table 71

External Vehicle MPE Assessment @ 460.025 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	5.65	90	E	1.28	0.065	53.5	0.033	0.03
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	1.8%		6	120	4.4%		1.53	0.31
2	40	2.3%		7	140	4.8%			
3	60	2.7%		8	160	5.2%			
4	80	3.5%		9	180	6.2%			
5	100	4.0%		10	200	7.7%			
								RF Po (*Max)	54.0

BS-Position 5

Table 72

External Vehicle MPE Assessment @ 470.025 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)	HAE4012A	5.65	90	E	1.26	0.060	53.7	0.030	0.03
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	1.8%		6	120	3.2%		1.57	0.31
2	40	2.2%		7	140	3.7%			
3	60	2.5%		8	160	4.9%			
4	80	2.9%		9	180	6.1%			
5	100	3.1%		10	200	7.8%			
								RF Po (*Max)	54.0

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Table 73

External Vehicle MPE Assessment @ 481.025 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)	HAE4012A	5.65	90	E	1.25	0.058	53.7	0.029	0.03
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	1.8%		6	120	3.9%		1.60	0.32
2	40	2.1%		7	140	4.1%			
3	60	2.2%		8	160	4.5%			
4	80	2.5%		9	180	5.4%			
5	100	2.8%		10	200	6.7%			
								RF Po (*Max)	
								54.0	

BS-Position 5

Table 74

External Vehicle MPE Assessment @ 494.025 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)	HAE4013A	5.65	90	E	1.23	0.069	53.9	0.034	0.03
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	4.6%		1.65	0.33
2	40	2.8%		7	140	4.7%			
3	60	2.9%		8	160	4.9%			
4	80	3.3%		9	180	5.2%			
5	100	3.9%		10	200	7.5%			
								RF Po (*Max)	
								54.0	

BS-Position 5

Table 75

External Vehicle MPE Assessment @ 511.9875 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)	HAE4013A	5.65	90	E	1.20	0.056	47.6	0.028	0.03
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	3.5%		1.71	0.34
2	40	2.2%		7	140	3.5%			
3	60	2.3%		8	160	4.1%			
4	80	2.6%		9	180	4.3%			
5	100	3.2%		10	200	5.4%			
								RF Po (*Max)	
								48.0	

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Table 76

External Vehicle MPE Assessment @ 450.025 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)	HAE6016A	2.15	90	E	1.29	0.047	53.1	0.023	0.02
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	3.1%		1.50	0.30
2	40	2.4%		7	140	3.2%			
3	60	2.7%		8	160	3.6%			
4	80	3.2%		9	180	3.5%			
5	100	3.0%		10	200	4.4%			
								RF Po (*Max)	
								54.0	

BS-Position 5

Table 77

External Vehicle MPE Assessment @ 481.025 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)	HAE6016A	2.15	90	E	1.25	0.052	53.7	0.026	0.03
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	3.6%		1.60	0.32
2	40	2.0%		7	140	4.0%			
3	60	2.5%		8	160	4.0%			
4	80	2.5%		9	180	4.4%			
5	100	2.8%		10	200	4.5%			
								RF Po (*Max)	
								54.0	

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Table 78

External Vehicle MPE Assessment @ 511.9875 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)	HAE6016A	2.15	90	E	1.20	0.048	47.6	0.024	0.02
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	3.2%		1.71	0.34
2	40	2.1%		7	140	3.3%			
3	60	2.3%		8	160	3.1%			
4	80	2.5%		9	180	3.2%			
5	100	2.7%		10	200	3.8%			
								RF Po (*Max)	
								48.0	