



MOTOROLA



Certificate Number: 1449-01

**FCC ID: LO6-DVRS800
DECLARATION OF COMPLIANCE MPE ASSESSMENT**

Government & Enterprise Mobility Solutions

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

Date of Report: June 6, 2006
Report Revision: Rev. O
Report ID: FCC MPE rpt_DVRS 800/VHF1/4
Rev O_060606_SR3629

Responsible Engineer: Stephen Whalen (SR Staff EME Eng.)
Date/s Tested: 3/9/2006, 10/21/05, 11/2/05-11/7/05, 11/9/05, 11/10/05, 11/11/05
Manufacturer/Location: Futurecom Systems Group Inc., Concord, Ontario, Canada
Date submitted for test: 2/16/06 (DVR)
DUT Description: 800MHz DVRS
Test TX mode(s): CW
Max. Power output: 10W, 100% Duty Cycle
TX Frequency Bands: 806-825 and 851-870MHz
Signaling type: FM; APCO 25
Model(s) Tested: DQPM DVRS8000P
Model(s) Certified: DQPM DVRS8000P
Serial Number(s): 05091244
Classification: Occupational Controlled (Operator); General Population/Uncontrolled (Passengers/Bystanders)
Rule Part(s): 2.1091 (d)



Approved Accessories:
Antenna(s): HAF4016A (764-870MHz ¼ wave trunk mount antenna; 0dBd gain)

Companion Mobiles and Antennas:

FCC ID	Mobile Description	Antenna(s)
AZ492FT3806	Motorola XTL5000 Model M20KSS9PW1AN, VHF 147-174MHz Mobile, Transmit conducted power up to 57W, 50% transmit duty cycle.	HAD4007A (144-150.8MHz; ¼ wave Roof mount; 0dBd gain); HAD4008A (150.8-162MHz; ¼ wave Roof mount; 0dBd gain); HAD4009A (162-174MHz; ¼ wave Roof mount; 0dBd gain);
AZ492FT3808	Motorola XTL5000 Model M20KTS9PW1AN, VHF 147-174MHz Mobile, Transmit conducted power up to 57W, 50% transmit duty cycle.	HAD4007A (144-150.8MHz; ¼ wave Roof mount; 0dBd gain); HAD4008A (150.8-162MHz; ¼ wave Roof mount; 0dBd gain); HAD4009A (162-174MHz; ¼ wave Roof mount; 0dBd gain);

**Final RF Exposure Results:
Combined DVR and VHF Mobile max calculated power density % of limit = 96.7%**

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
Ken Enger GEMS EME Lab Senior Resource Manager,
Laboratory Director,

Approval Date: 06/06/06

Certification Date:

Certification No.:

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REVISION HISTORY

Date	Revision	Comments
06/06/06	O	Original release

1.0 Product and System Description

FCC ID: LO6-DVRS800 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 806-825 and 851-870MHz 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 800MHz 10 watts DVR interfaced with, and transmitting simultaneously with, either companion VHF mobile radios with transmit powers up to 57 watts and with both units, installed in a typical vehicle.

The DVR transmit frequency ranges are 806-825 and 851-870MHz at transmit duty cycle up to 100%. The VHF mobile transmit frequency range is 147-174MHz at transmit duty cycle up to 50%. The DVR antenna is limited to $\frac{1}{4} \lambda$ (0dBd gain) mounted at the center of the trunk, and the VHF mobile antennas are limited to $\frac{1}{4} \lambda$ (0dBd 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 806-870MHz the MPE (Maximum Permissible Exposure) limit to electromagnetic energy in equivalent plane wave free-space power density is $0.54 - 0.58\text{mW/cm}^2$ and calculated using the formula $f/1500$. For test frequencies ranging from 146-174MHz the MPE limit is 0.2mW/cm^2

4.0 Data Collection Consideration

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

5.0 Measurement System Uncertainty Levels

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

Uncertainty Budget for Near Field Probe Measurements

	Tol. (± %)	Prob Dist.	Divisor	u_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		$k=2$		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 each mobile radio were obtained by summing the highest percent of limit results from each transmitter.

6.1 DVR800 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 positions 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 antenna mounted at the center of the trunk was 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 VHF 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 positions 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 VHF antenna mounted at the center of the roof was 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	01108	5/17/06
Probe - E-Field (Electric Field)	NARDA Model 8722B	13001	2/28/07
*Probe - E-Field (Electric Field)	NARDA Model 8722B	13001	7/21/06
*Probe - H-Field (Magnetic Field)	NARDA Model 8732	06007	6/28/06

* Equipment probes used during XTL5000 VHF (test dates 10/21/2005 – 11/11/2005)

9.0 Test Unit Description

Power density measurements were performed on a representative sample of the DVR with serial number 05091244. The test frequencies were 806, 815, 824, 851, 860 and 869MHz.

Power density measurements were performed on the following representative sample of the Motorola XTL5000 VHF 57 watt mobile radios:

Model #	Serial #	Test Frequencies (MHz)
M20KSS9PW1AN	112	147.0125, 155.0125, 173.9875
M20KTS9PW1AN	VHF P1 EME#46	147.4000, 155.0000, 173.9875

Note Model M20KTS9PW1AN FCC ID AZ492FT3808 maximum power is 120W however the maximum power for use with ¼ wave antennas while interfaced with DQPM DVR8000P is 57W as stated in the DVRS Product Safety and RF Energy Exposure Booklet.

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

DVR	
Frequency (MHz)	Po (W)
806	10.0
815	9.98
824	9.95
851	10.0
860	9.98
869	10.0

Mobile VHF Radios			
M20KSS9PW1AN		M20KTS9PW1AN	
Frequency (MHz)	Po (W)	Frequency (MHz)	Po (W)
147.0125	55.6	147.4	55.8
155.0125	55.8	155	55.6
173.9875	55.6	173.9875	55.8

10.0 Test Set-Up Description

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

- a) The ¼ wave 0dBd gain antennas (HAD4007A, HAD4008A, HAD4009A) were assessed while mounted at the center of the roof of the test vehicle.
- b) The ¼ wave 0dBd gain antenna (HAF4016A) was 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/H field measurements, calibration factor, MPE average over body, initial power, power density calc, power density max calc, IEEE/FCC controlled and uncontrolled limits, and maximum output power.

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

MPE results are based on a DVR 100% duty cycle and VHF 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 and H test configurations for the VHF mobiles, DVR, and combined assessments. See APPENDICES A and E respectively for the indicated test positions and detailed MPE measurement data.

Table 1 - M20KSS9PW1AN VHF Mobile 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 2	HAD4007A	Roof	147.0125	E	Passenger	0.16	80.0%
Table 23	HAD4009A	Roof	173.9875	H	By-Stander Pos. #1	0.04	20.0%
Table 7	HAD4007A	Roof	147.0125	E	By-Stander Pos. #2	0.07	35.0%
Table 12	HAD4009A	Roof	173.9875	E	By-Stander Pos. #3	0.06	30.0%
Table 32	HAD4008A	Roof	155.0125	E	By-Stander Pos. #4	0.04	20.0%
Table 17	HAD4008A	Roof	155.0125	E	By-Stander Pos. #5	0.04	20.0%

Table 2 - M20KTS9PW1AN VHF Mobile 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 2	HAD4007A	Roof	147.4000	E	Passenger	0.16	80.0%
Table 3	HAD4008A	Roof	155.0000	E	By-Stander Pos. #1	0.04	20.0%
Table 8	HAD4008A	Roof	155.0000	E	By-Stander Pos. #2	0.07	35.0%
Table 29	HAD4008A	Roof	155.0000	H	By-Stander Pos. #3	0.06	30.0%
Table 31	HAD4007A	Roof	147.4000	H	By-Stander Pos. #4	0.06	30.0%
Table 35	HAD4008A	Roof	155.0000	H	By-Stander Pos. #5	0.06	30.0%

Table 3 – DQPMDVR8000P – DVR800 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 2	HAF4016A	Trunk	806	E	Passenger	0.09	16.7
Table 5	HAF4016A	Trunk	824	E	By-Stander Pos. #1	0.03	5.5
Table 14	HAF4016A	Trunk	815	E	By-Stander Pos. #2	0.04	7.4
Table 20	HAF4016A	Trunk	815	E	By-Stander Pos. #3	0.04	7.4
Table 26	HAF4016A	Trunk	815	E	By-Stander Pos. #4	0.04	7.4
Table 35	HAF4016A	Trunk	860	E	By-Stander Pos. #5	0.06	10.5

Table 4 - Combined VHF Mobile M20KSS9PW1AN and DVR DQPMDVR8000P (Calculated % of limit performance)

Test Position	Percentage of Limit		
	M20KSS9PW1AN (147-174MHz)	DVR800 (806-824 and 851-870MHz)	Combined Percentages
Passenger	80.0%	16.7%	96.7%
By-Stander #1	20.0%	5.5%	25.5%
By-Stander #2	35.0%	7.4%	42.4%
By-Stander #3	30.0%	7.4%	37.4%
By-Stander #4	20.0%	7.4%	27.4%
By-Stander #5	20.0%	10.5%	30.5%

**Table 5 - Combined VHF Mobile M20KTS9PW1AN and DVR DQPM DVR8000P
(Calculated % of limit performance)**

Test Position	Percentage of Limit		
	M20KTS9PW1AN (147-174MHz)	DVR VHF (806-824 and 851-870MHz)	Combined Percentages
Passenger	80.0%	16.7%	96.7%
By-Stander #1	20.0%	5.5%	25.5%
By-Stander #2	35.0%	7.4%	42.4%
By-Stander #3	30.0%	7.4%	37.4%
By-Stander #4	30.0%	7.4%	37.4%
By-Stander #5	30.0%	10.5%	40.5%

Table 6 – Highest combined passenger (backseat) MPE percent of limit

		XTL5000 VHF 57W Roof Mount			
		HAD4007A 147.0125MHz	HAD4008A 155.0125MHz	HAD4009A 173.9875MHz	
		Measured Results (%)	80.0%	60.0%	55.0%
DVR800 10W Trunk Mount	HAF4016A 806MHz	16.7%	96.7%	76.7%	71.7%
	HAF4016A 815MHz	11.1%	91.1%	71.1%	66.1%
	HAF4016A 824MHz	9.1%	89.1%	69.1%	64.1%
	HAF4016A 851MHz	7.0%	87.0%	67.0%	62.0%
	HAF4016A 860MHz	8.8%	88.8%	68.8%	63.8%
	HAF4016A 869MHz	6.9%	86.9%	66.9%	61.9%

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, both VHF mobile assessments were performed with an output power range of 55.6W – 55.8W. The DVR output power across the TX band is 9.95W – 10.00W. The highest power density results for the XTL5000 VHF mobile devices scaled to the maximum allowable power output is 0.16mW/cm² internal to the vehicle and 0.07mW/cm² external to the vehicle. The highest power density results for the DVR device scaled to the maximum allowable power output is 0.09mW/cm² internal to the vehicle and 0.06mW/cm² external to the vehicle. The highest combined power density performance is 96.7% of the FCC/IEEE MPE limits using the methodology and formula below.

Therefore:

Passenger	$T = \frac{0.16}{0.2} + \frac{0.09}{0.54} = 0.967 < 1$	(compliant)
By-stander	$T = \frac{0.07}{0.2} + \frac{0.06}{0.54} = 0.424 < 1$	(compliant)

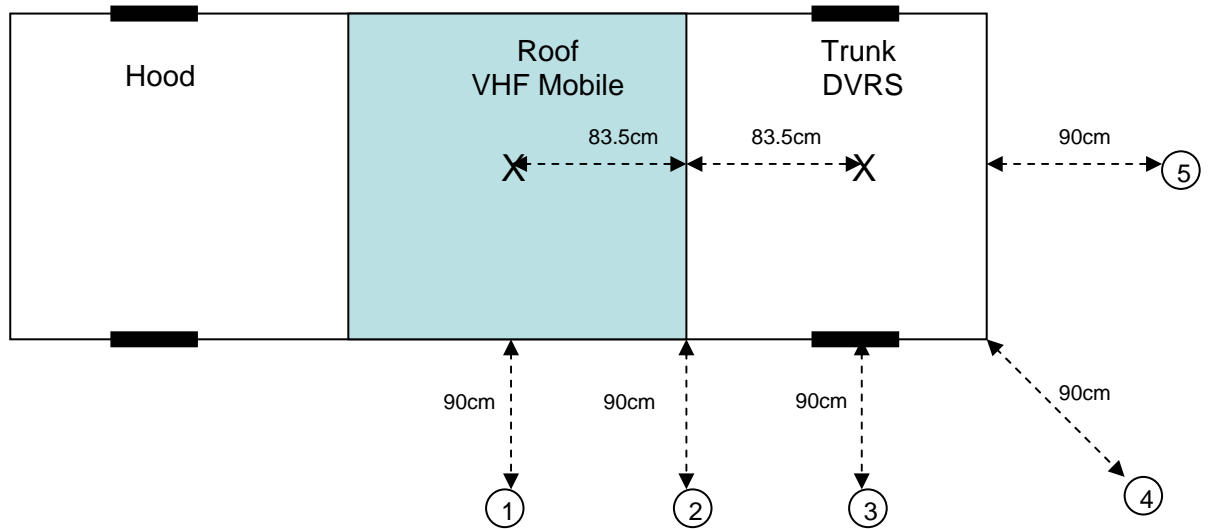
The MPE results presented herein demonstrate compliance to the applicable FCC/IEEE Occupational/Controlled exposure limit of 1.0mW/cm² for the frequency range of 30-300MHz and f/300 for the frequency range of 300-1500MHz.

Compliance to the FCC/IEEE General population/Uncontrolled exposure limits of 0.2mW/cm² for the frequency range of 30-300MHz and f/1500 for the frequency range of 300-1500MHz is also demonstrated herein for both passengers and by-standers.

APPENDIX A

Illustration of Antenna Locations and Test Distances

MPE By-stander Test Positions



X Antenna position
(centered on roof & trunk)

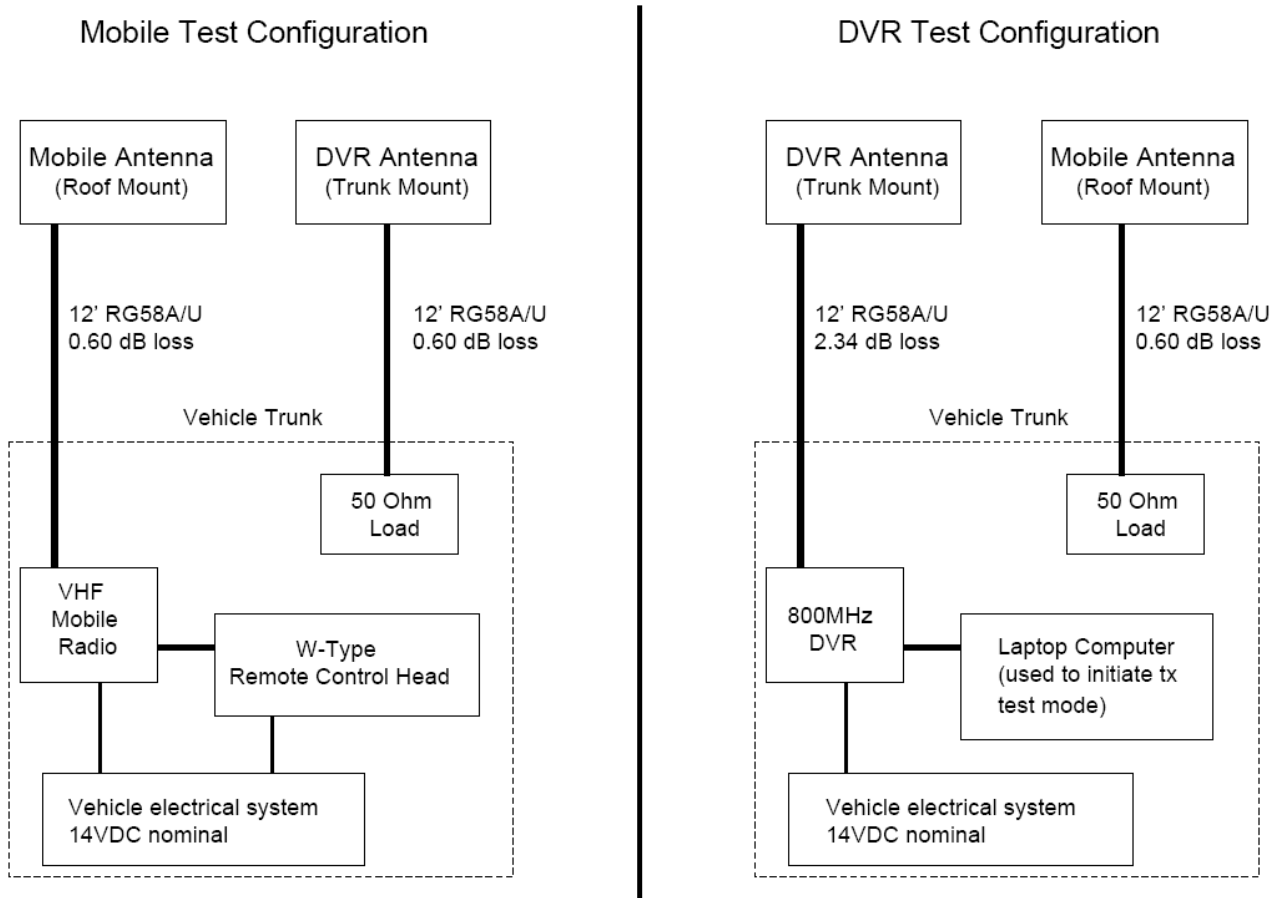
○ By-stander (BS) positions for DVR and Companion Mobile (90cm from vehicle body)
Note:

- 1) Assessments were performed at each test position for each offered antenna.
- 2) Position 2 is located at the mid point between the two antennas which is by 83.5cm.
- 3) Total distance between by-stander position 1 and roof mount antenna is 180cm.
- 4) Total distance between by-stander position 5 and trunk mount antenna is 119.5cm.

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 #: 56219 1

Model #: 8718-10
Description: METER W/CABLE
Date Calibrated: 05/17/2005
Serial #: 01108
PO #: NP1819669
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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The measured values were determined by comparison with our standards, which are traceable to the National Institute of Standards and Technology to the extent allowed by NIST's calibration facilities.

Customer: MOTOROLA
PLANTATION, FL 33322

Certificate #: 63648 1

Model #: 8722B

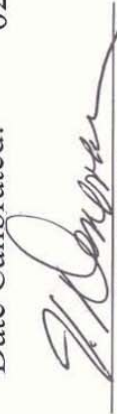
Serial #: 13001

Description: PROBE

PO #: NP2316554

Date Calibrated: 02-28-06

R.O. #: 63648


Vince Donavan
Manufacturing


Ken Peck
Quality Assurance

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DATE 28-Feb-2006
REL HUMIDITY 25%

RELEASE # R63648
TEMP 20 DEG. C

NARDA MICROWAVE - EAST

MODEL # 8722B
SERIAL # 13001

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

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

LOW FREQUENCY MULTIPLIER = 0.878 HIGH FREQUENCY MULTIPLIER = 1.061

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

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

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

PRE-CAL DATA REFLECTS THE MEAN ELLIPSE RATIO OF PROBE AS RECEIVED BY

NARDA CALIBRATION DEPARTMENT, OR IS THE INITIAL, UN-ADJUSTED RATIO.

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

CALIBRATION DATA. NOTE: NOT APPLICABLE FOR NEW PROBES.

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

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

FINAL CORR. FACTOR MULTIPLIED BY THE DISPLAYED FIELD STRENGTH READING

GIVES THE ACTUAL ("CORRECTED") FIELD STRENGTH.

ELLIPSE RATIO IS EXPRESSED IN dB DEVIATION FROM THE MEAN DATA

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

TESTER

C.V.

Q.A. APPROVAL





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 #: 57518 1

Model #: 8722B
Description: PROBE
Date Calibrated: 07/21/2005

Serial #: 13001
PO #: NP1900854
R.O. #: 57518


Vince Donovan
Manager of Instruments Assembly and Test


John C. Stine
Director of Quality Assurance

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DATE 21-Jul-2005
REL HUMIDITY 40%

RELEASE # R57518
TEMP 21 DEG. C

NARDA MICROWAVE - EAST

MODEL # 8722B
SERIAL # 13001

Recal Probe - Date of Previous Probe Data = 06/10/2004

FREQ MHZ	PRE-CAL DATA	FINAL CAL DATA	ELLIPSE RATIO, dB	FINAL CORR. FACTOR	DEVIATION DELTA DB	PREVIOUS FINAL COF
.30	0.78	0.74	+/- 0.71	1.34	-0.29	1.21
3.00	1.36	1.30	+/- 0.47	0.77	-0.12	0.72
10.00	1.01	0.97	+/- 0.48	1.03	+0.43	1.09
30.00	0.80	0.77	+/- 0.44	1.30	+0.47	1.39
100.00	1.30	1.24	+/- 0.32	0.80	+0.18	0.81
300.00	0.93	0.89	+/- 0.16	1.13	+0.25	1.14
750.00	1.15	1.10	+/- 0.13	0.91	+0.95	1.09
1000.00	1.30	1.25	+/- 0.30	0.80	+1.09	0.99
1700.00	0.91	0.87	+/- 0.38	1.14	+1.03	1.39
2450.00	1.23	1.24	+/- 0.34	0.81	+1.07	1.04
4000.00	0.87	0.88	+/- 0.35	1.13	0.00	1.15
8200.00	1.06	1.07	+/- 0.45	0.93	0.00	0.94
10000.00	1.02	1.03	+/- 0.54	0.97	+0.05	1.00
18000.00	1.19	1.20	+/- 0.76	0.83	-0.22	0.80
26500.00	1.04	1.05	+/- 0.87	0.95	-0.17	0.93
40000.00	0.80	0.81	+/- 0.75	1.24	-0.04	1.25

LOW FREQUENCY MULTIPLIER = 0.96 HIGH FREQUENCY MULTIPLIER = 1.013

FREQ. DEV. (3-40000 MHZ) = 2.288 DB

FREQ. DEV. (0.3-40000 MHZ) = 2.43 DB

MAX. ELLIPSE RATIO (0.3-40000 MHZ) = +/- 0.87 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 5

TESTER V. M.

Q.A. APPROVAL [Stamp]





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 #: 57518 2

Model #: 8732
 Description: PROBE
 Date Calibrated: 06/28/2005

Serial #: 06007
 PO #: NP1900854
 R.O. #: 57518

Vince Donovan
 Vince Donovan
 Manager of Instruments Assembly and Test

John C. Stine
 John C. Stine
 Director of Quality Assurance

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DATE 28-Jun-2005
REL HUMIDITY 47%

RELEASE # R57518
TEMP 21 DEG. C

NARDA MICROWAVE - EAST

MODEL # 8732
SERIAL # 06007

Recal Probe - Date of Previous Probe Data = 06/11/2004

FREQ MHZ	PRE-CAL DATA	FINAL CAL DATA	ELLIPSE RATIO, dB	FINAL CORR. FACTOR	DEVIATION DELTA DB	PREVIOUS FINAL CORR.
.30	0.73	0.71	+/- 0.18	1.40	-0.27	1.29
1.00	0.76	0.74	+/- 0.14	1.36	-0.01	1.32
3.00	0.78	0.76	+/- 0.14	1.32	-0.01	1.29
10.00	0.79	0.77	+/- 0.14	1.30	-0.21	1.21
30.00	0.88	0.85	+/- 0.07	1.17	-0.18	1.10
100.00	1.44	1.40	+/- 0.05	0.71	+0.36	0.76
200.00	1.00	0.97	+/- 0.07	1.03	-0.26	0.95

MULTIPLIER = 0.977

FREQ. DEV. (0.3-200 MHZ) = 2.935 DB

FREQ. DEV. (0.3-200 MHZ) = 2.94 DB

MAX. ELLIPSE RATIO (0.3-200 MHZ) = +/- 0.18 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.

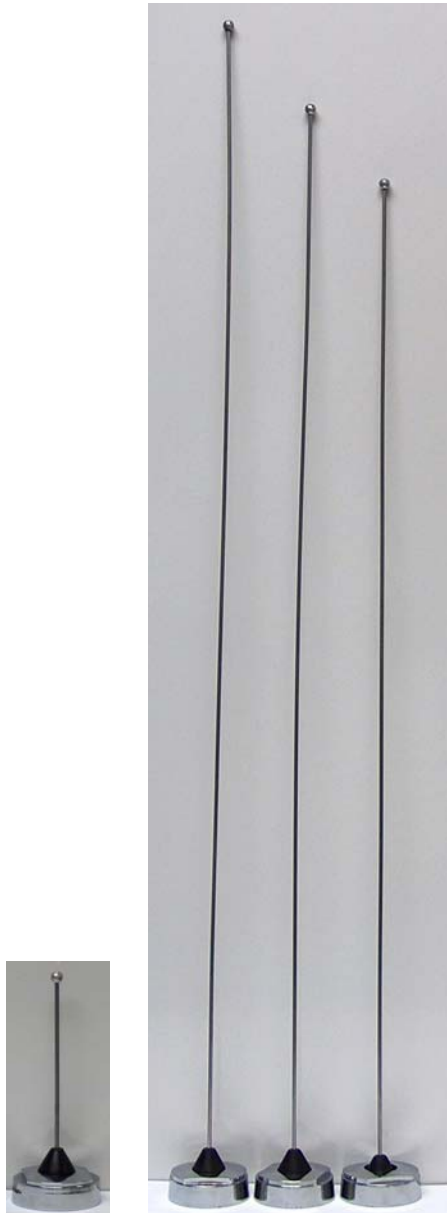
ELLIPSE RATIO IS EXPRESSED IN dB DEVIATION FROM THE MEAN DATA
RMS Uncertainty = +/- 0.5db. ATP # = 503747 REV E

TESTER V. V.

Q.A. APPROVAL 

APPENDIX D

Photos of Assessed Antennas



Antenna kit numbers, from left to right; HAF4016A, HAD4007A, HAD4008A, HAD4009A

APPENDIX E

Detailed MPE Measurement Data

VHF Mobile M20KSS9PW1AN MPE measurement data

BS Position 1

Table 1

External Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	90	E	0.88	0.071	55.6	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	3.7%		6	120	6.7%		1.00	0.20
2	40	5.9%		7	140	7.7%			
3	60	5.2%		8	160	10.2%			
4	80	4.9%		9	180	10.5%			
5	100	5.8%		10	200	10.2%			
								RF Po (*Max)	57.0

P Position 1

Table 2

Internal Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	Highest Reading	E	0.88	0.322	0.145	55.6	0.161	0.16
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.00
Back Seat		60.0%		26.1%		10.4%		IEEE Uncontrolled Limit:		0.20
Front Seat		9.5%		20.7%		13.3%		RF Po (*Max):		57.0

BS Position 1

Table 3

External Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	90	E	0.89	0.076	55.8	0.038	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	3.8%		6	120	8.0%		1.00	0.20
2	40	5.4%		7	140	9.2%			
3	60	4.8%		8	160	11.3%			
4	80	5.4%		9	180	10.6%			
5	100	6.9%		10	200	10.8%			
								RF Po (*Max)	57.0

VHF Mobile M20KSS9PW1AN MPE measurement data

P Position 1

Table 4

Internal Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	Highest Reading	E	0.89	0.236	0.103	55.8	0.118	0.12
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk			IEEE Controlled Limit:		1.00	
Back Seat		36.6%	20.4%	13.7%			IEEE Uncontrolled Limit:		0.20	
Front Seat		8.9%	10.4%	11.6%			RF Po (*Max):		57.0	

BS Position 1

Table 5

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	E	0.92	0.076	55.6	0.038	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	4.2%		6	120	9.1%		1.00	0.20	
2	40	4.7%		7	140	10.2%				
3	60	3.4%		8	160	8.9%				
4	80	4.6%		9	180	10.9%				
5	100	7.9%		10	200	12.0%				
								RF Po (*Max):		57.0

P Position 1

Table 6

Internal Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	Highest Reading	E	0.92	0.206	0.057	55.6	0.103	0.11
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk			IEEE Controlled Limit:		1.00	
Back Seat		29.0%	18.9%	13.8%			IEEE Uncontrolled Limit:		0.20	
Front Seat		6.0%	5.5%	5.5%			RF Po (*Max):		57.0	

VHF Mobile M20KSS9PW1AN MPE measurement data

BS Position 2

Table 7

External Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	90	E	0.88	0.128	55.6	0.064	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	4.1%		6	120	16.4%		1.00	0.20
2	40	6.2%		7	140	19.1%			
3	60	7.1%		8	160	19.2%			
4	80	9.2%		9	180	17.6%			
5	100	13.4%		10	200	15.6%			
								RF Po (*Max)	
								57.0	

BS Position 2

Table 8

External Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	90	E	0.89	0.117	55.8	0.058	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	4.6%		6	120	14.3%		1.00	0.20
2	40	6.2%		7	140	16.1%			
3	60	6.5%		8	160	17.6%			
4	80	8.5%		9	180	16.9%			
5	100	11.7%		10	200	14.5%			
								RF Po (*Max)	
								57.0	

BS Position 2

Table 9

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	E	0.92	0.117	55.6	0.059	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	5.6%		6	120	15.0%		1.00	0.20
2	40	7.8%		7	140	14.9%			
3	60	6.5%		8	160	16.6%			
4	80	8.9%		9	180	15.6%			
5	100	12.7%		10	200	13.8%			
								RF Po (*Max)	
								57.0	

VHF Mobile M20KSS9PW1AN MPE measurement data

BS Position 3

Table 10

External Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	90	E	0.88	0.095	55.6	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	3.1%		6	120	11.6%		1.00	0.20
2	40	4.7%		7	140	13.3%			
3	60	5.4%		8	160	14.7%			
4	80	6.3%		9	180	14.2%			
5	100	8.8%		10	200	12.7%			
								RF Po (*Max)	57.0

BS Position 3

Table 11

External Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	90	E	0.89	0.106	55.8	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	5.3%		6	120	13.4%		1.00	0.20
2	40	6.5%		7	140	14.5%			
3	60	6.4%		8	160	14.8%			
4	80	8.5%		9	180	14.0%			
5	100	11.1%		10	200	11.7%			
								RF Po (*Max)	57.0

BS Position 3

Table 12

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	E	0.92	0.123	55.6	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	5.6%		6	120	14.5%		1.00	0.20
2	40	7.5%		7	140	16.7%			
3	60	7.7%		8	160	17.4%			
4	80	9.5%		9	180	16.5%			
5	100	13.5%		10	200	13.8%			
								RF Po (*Max)	57.0

VHF Mobile M20KSS9PW1AN MPE measurement data

BS Position 4

Table 13

External Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	90	E	0.88	0.065	55.6	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	2.1%		6	120	8.1%		1.00	0.20
2	40	3.2%		7	140	10.4%			
3	60	2.8%		8	160	11.1%			
4	80	3.7%		9	180	10.1%			
5	100	5.3%		10	200	8.5%			
								RF Po (*Max)	57.0

BS Position 4

Table 14

External Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	90	E	0.89	0.071	55.8	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	2.3%		6	120	9.4%		1.00	0.20
2	40	4.0%		7	140	11.3%			
3	60	4.2%		8	160	10.5%			
4	80	4.5%		9	180	8.9%			
5	100	7.2%		10	200	8.3%			
								RF Po (*Max)	57.0

BS Position 4

Table 15

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	E	0.92	0.073	55.6	0.037	0.04
Measurement Grid									
Test Position	Height (cm)	% of Control Limit		Test Position	Height (cm)	% of Control Limit		IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	4.1%		6	120	10.1%		1.00	0.20
2	40	6.3%		7	140	10.2%			
3	60	5.0%		8	160	8.6%			
4	80	5.6%		9	180	8.2%			
5	100	7.1%		10	200	7.8%			
								RF Po (*Max)	57.0

VHF Mobile M20KSS9PW1AN MPE measurement data

BS Position 5

Table 16

External Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	90	E	0.88	0.062	55.6	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	4.5%			6	120	6.3%			1.00	0.20
2	40	7.0%			7	140	7.2%				
3	60	6.3%			8	160	6.7%				
4	80	5.6%			9	180	6.3%				
5	100	6.0%			10	200	5.8%				
										RF Po (*Max)	57.0

BS Position 5

Table 17

External Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	90	E	0.89	0.074	55.8	0.037	0.04		
Measurement Grid											
Test Position	Height (cm)	% of Control Limit			Test Position	Height (cm)	% of Control Limit			IEEE Controlled Limit	IEEE Uncontrolled Limit
1	20	5.3%			6	120	7.9%			1.00	0.20
2	40	7.3%			7	140	8.5%				
3	60	7.1%			8	160	8.1%				
4	80	7.7%			9	180	8.5%				
5	100	7.0%			10	200	6.9%				
										RF Po (*Max)	57.0

BS Position 5

Table 18

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	E	0.92	0.053	55.6	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	4.0%			6	120	4.9%			1.00	0.20
2	40	4.9%			7	140	7.0%				
3	60	4.7%			8	160	6.8%				
4	80	4.0%			9	180	7.2%				
5	100	4.0%			10	200	5.8%				
										RF Po (*Max)	57.0

VHF Mobile M20KSS9PW1AN MPE measurement data

BS Position 1

Table 19

External Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	90	H	0.86	0.047	55.6	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	1.3%		6	120	4.6%		1.00	0.20
2	40	1.7%		7	140	5.6%			
3	60	4.8%		8	160	5.8%			
4	80	3.8%		9	180	6.3%			
5	100	6.0%		10	200	7.1%			
								RF Po (*Max)	
								57.0	

P Position 1

Table 20

Internal Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	Highest Reading	H	0.86	0.137	0.109	55.6	0.068	0.07
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.00		
Back Seat		27.2%	6.5%	7.3%		IEEE Uncontrolled Limit:		0.20		
Front Seat		14.2%	12.0%	6.6%		RF Po (*Max):		57.0		

BS Position 1

Table 21

External Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	90	H	0.89	0.083	55.6	0.042	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	3.4%		6	120	9.9%		1.00	0.20
2	40	4.9%		7	140	10.5%			
3	60	6.5%		8	160	9.7%			
4	80	10.2%		9	180	10.3%			
5	100	9.1%		10	200	8.7%			
								RF Po (*Max)	
								57.0	

VHF Mobile M20KSS9PW1AN MPE measurement data

P Position 1

Table 22

Internal Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	Highest Reading	H	0.89	0.095	0.094	55.6	0.048	0.05
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk		IEEE Controlled Limit:			1.00	
Back Seat		15.6%	7.4%	5.6%		IEEE Uncontrolled Limit:			0.20	
Front Seat		13.3%	9.5%	5.3%		RF Po (*Max):			57.0	

BS Position 1

Table 23

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	H	0.95	0.087	55.6	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	3.9%		6	120	13.0%		1.00	0.20
2	40	3.5%		7	140	12.5%		RF Po (*Max):	57.0
3	60	4.8%		8	160	10.3%			
4	80	7.2%		9	180	11.0%			
5	100	11.0%		10	200	9.6%			

P Position 1

Table 24

Internal Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	Highest Reading	H	0.95	0.086	0.130	55.6	0.065	0.07
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk		IEEE Controlled Limit:			1.00	
Back Seat		13.0%	7.8%	4.9%		IEEE Uncontrolled Limit:			0.20	
Front Seat		18.0%	12.2%	8.9%		RF Po (*Max):			57.0	

VHF Mobile M20KSS9PW1AN MPE measurement data

BS Position 2

Table 25

External Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	90	H	0.86	0.100	55.6	0.050	0.05
Measurement Grid									
Test Position	Height (cm)	% of Control Limit			Test Position	Height (cm)	% of Control Limit		
1	20	5.6%			6	120	13.3%		
2	40	6.5%			7	140	13.4%		
3	60	7.2%			8	160	9.6%		
4	80	12.8%			9	180	9.2%		
5	100	11.9%			10	200	10.6%		
								IEEE Controlled Limit	IEEE Uncontrolled Limit
								1.00	0.20
								RF Po (*Max)	
								57.0	

BS Position 2

Table 26

External Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	90	H	0.89	0.099	55.6	0.049	0.05
Measurement Grid									
Test Position	Height (cm)	% of Control Limit			Test Position	Height (cm)	% of Control Limit		
1	20	5.0%			6	120	12.6%		
2	40	5.1%			7	140	12.6%		
3	60	8.6%			8	160	13.2%		
4	80	11.0%			9	180	9.3%		
5	100	11.1%			10	200	10.0%		
								IEEE Controlled Limit	IEEE Uncontrolled Limit
								1.00	0.20
								RF Po (*Max)	
								57.0	

BS Position 2

Table 27

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	H	0.94	0.095	55.6	0.047	0.05
Measurement Grid									
Test Position	Height (cm)	% of Control Limit			Test Position	Height (cm)	% of Control Limit		
1	20	5.3%			6	120	14.7%		
2	40	4.3%			7	140	13.3%		
3	60	4.3%			8	160	11.7%		
4	80	8.2%			9	180	11.5%		
5	100	11.5%			10	200	9.8%		
								IEEE Controlled Limit	IEEE Uncontrolled Limit
								1.00	0.20
								RF Po (*Max)	
								57.0	

VHF Mobile M20KSS9PW1AN MPE measurement data

BS Position 3

Table 28

External Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	90	H	0.86	0.080	55.6	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	3.6%		6	120	11.3%		1.00	0.20
2	40	4.2%		7	140	11.0%			
3	60	5.8%		8	160	8.7%			
4	80	10.6%		9	180	7.8%			
5	100	10.5%		10	200	6.9%			
								RF Po (*Max)	
								57.0	

BS Position 3

Table 29

External Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	90	H	0.89	0.108	55.6	0.054	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	4.7%		6	120	14.9%		1.00	0.20
2	40	7.3%		7	140	16.5%			
3	60	8.9%		8	160	14.7%			
4	80	13.0%		9	180	7.2%			
5	100	13.6%		10	200	7.0%			
								RF Po (*Max)	
								57.0	

BS Position 3

Table 30

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	H	0.95	0.093	55.6	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	5.0%		6	120	12.2%		1.00	0.20
2	40	6.6%		7	140	10.5%			
3	60	8.9%		8	160	10.3%			
4	80	10.3%		9	180	10.6%			
5	100	11.8%		10	200	7.1%			
								RF Po (*Max)	
								57.0	

VHF Mobile M20KSS9PW1AN MPE measurement data

BS Position 4

Table 31

External Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	90	H	0.86	0.081	55.6	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	4.6%	6	120	11.5%	1.00		0.20		
2	40	6.0%	7	140	12.2%					
3	60	5.5%	8	160	7.3%					
4	80	10.5%	9	180	7.1%					
5	100	11.4%	10	200	4.4%					
								RF Po (*Max)		57.0

BS Position 4

Table 32

External Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	90	H	0.89	0.083	55.6	0.042	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	5.4%	6	120	11.6%	1.00		0.20		
2	40	5.9%	7	140	11.4%					
3	60	6.0%	8	160	9.2%					
4	80	10.8%	9	180	6.5%					
5	100	11.5%	10	200	4.7%					
								RF Po (*Max)		57.0

BS Position 4

Table 33

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	H	0.95	0.066	55.6	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	2.4%	6	120	7.6%	1.00		0.20		
2	40	2.8%	7	140	7.8%					
3	60	5.6%	8	160	9.6%					
4	80	5.4%	9	180	8.7%					
5	100	7.9%	10	200	8.6%					
								RF Po (*Max)		57.0

VHF Mobile M20KSS9PW1AN MPE measurement data

BS Position 5

Table 34

External Vehicle MPE Assessment @ 147.0125 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)	HAD4007A	2.15	90	H	0.86	0.055	55.6	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	3.5%		6	120	5.2%		1.00	0.20
2	40	4.8%		7	140	6.3%			
3	60	7.1%		8	160	4.7%			
4	80	7.3%		9	180	4.5%			
5	100	8.8%		10	200	2.5%			
								RF Po (*Max)	
								57.0	

BS Position 5

Table 35

External Vehicle MPE Assessment @ 155.0125 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)	HAD4008A	2.15	90	H	0.89	0.066	55.6	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	4.8%		6	120	7.8%		1.00	0.20
2	40	3.2%		7	140	9.2%			
3	60	4.1%		8	160	8.9%			
4	80	7.2%		9	180	9.2%			
5	100	7.3%		10	200	4.7%			
								RF Po (*Max)	
								57.0	

BS Position 5

Table 36

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	H	0.95	0.039	55.6	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	1.6%		6	120	4.9%		1.00	0.20
2	40	1.2%		7	140	4.2%			
3	60	3.7%		8	160	4.9%			
4	80	4.5%		9	180	4.3%			
5	100	4.7%		10	200	5.2%			
								RF Po (*Max)	
								57.0	

VHF Mobile M20KTS9PW1AN MPE measurement data

BS Position 1

Table 1

External Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	90	E	0.88	0.077	55.8	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	3.6%		6	120	8.4%		1.00	0.20
2	40	4.9%		7	140	8.9%			
3	60	4.8%		8	160	10.6%			
4	80	4.9%		9	180	11.8%			
5	100	6.5%		10	200	12.7%			
								RF Po (*Max)	57.0

P Position 1

Table 2

Internal Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	Highest Reading	E	0.88	0.319	0.120	55.8	0.160	0.16
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk		IEEE Controlled Limit:			1.00	
Back Seat		61.4%	24.1%	10.2%		IEEE Uncontrolled Limit:			0.20	
Front Seat		8.4%	18.3%	9.3%		RF Po (*Max):			57.0	

BS Position 1

Table 3

External Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	90	E	0.89	0.086	55.6	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	4.1%		6	120	9.4%		1.00	0.20
2	40	6.0%		7	140	12.5%			
3	60	5.8%		8	160	11.9%			
4	80	5.4%		9	180	12.2%			
5	100	6.0%		10	200	12.5%			
								RF Po (*Max)	57.0

VHF Mobile M20KTS9PW1AN MPE measurement data

P Position 1

Table 4

Internal Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	Highest Reading	E	0.89	0.254	0.115	55.6	0.127	0.13
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk	IEEE Controlled Limit:		1.00			
Back Seat		40.6%	22.6%	12.9%	IEEE Uncontrolled Limit:		0.20			
Front Seat		9.6%	11.7%	13.2%			RF Po (*Max):	57.0		

BS Position 1

Table 5

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	E	0.92	0.044	55.8	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	3.3%	6	120	4.4%	1.00	0.20			
2	40	4.0%	7	140	5.7%					
3	60	6.0%	8	160	5.0%					
4	80	5.1%	9	180	3.6%					
5	100	3.9%	10	200	2.8%					
								RF Po (*Max):	57.0	

P Position 1

Table 6

Internal Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	Highest Reading	E	0.92	0.065	0.028	55.8	0.032	0.03
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk	IEEE Controlled Limit:		1.00			
Back Seat		9.2%	4.3%	5.9%	IEEE Uncontrolled Limit:		0.20			
Front Seat		4.1%	2.5%	1.7%			RF Po (*Max):	57.0		

VHF Mobile M20KTS9PW1AN MPE measurement data

BS Position 2

Table 7

External Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	90	E	0.88	0.136	55.8	0.068	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	4.4%		6	120	15.1%		1.00	0.20
2	40	6.7%		7	140	18.1%			
3	60	12.3%		8	160	19.8%			
4	80	9.1%		9	180	20.7%			
5	100	12.3%		10	200	17.9%			
								RF Po (*Max)	57.0

BS Position 2

Table 8

External Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	90	E	0.89	0.137	55.6	0.068	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	5.5%		6	120	16.4%		1.00	0.20
2	40	7.9%		7	140	19.5%			
3	60	9.5%		8	160	20.5%			
4	80	9.7%		9	180	18.3%			
5	100	12.3%		10	200	16.9%			
								RF Po (*Max)	57.0

BS Position 2

Table 9

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	E	0.92	0.049	55.8	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	2.5%		6	120	6.0%		1.00	0.20
2	40	3.5%		7	140	8.0%			
3	60	3.5%		8	160	7.7%			
4	80	3.4%		9	180	5.3%			
5	100	4.8%		10	200	4.0%			
								RF Po (*Max)	57.0

VHF Mobile M20KTS9PW1AN MPE measurement data

BS Position 3

Table 10

External Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	90	E	0.88	0.106	55.6	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	4.3%		6	120	11.7%		1.00	0.20
2	40	5.1%		7	140	15.6%			
3	60	5.8%		8	160	15.9%			
4	80	6.9%		9	180	17.1%			
5	100	9.9%		10	200	13.5%			
								RF Po (*Max)	57.0

BS Position 3

Table 11

External Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	90	E	0.89	0.098	55.6	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	3.4%		6	120	12.8%		1.00	0.20
2	40	5.4%		7	140	13.9%			
3	60	8.3%		8	160	12.9%			
4	80	7.6%		9	180	12.4%			
5	100	10.2%		10	200	10.9%			
								RF Po (*Max)	57.0

BS Position 3

Table 12

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	E	0.92	0.045	55.8	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	5.9%		1.00	0.20
2	40	4.0%		7	140	6.0%			
3	60	4.3%		8	160	5.6%			
4	80	4.3%		9	180	4.3%			
5	100	5.6%		10	200	3.2%			
								RF Po (*Max)	57.0

VHF Mobile M20KTS9PW1AN MPE measurement data

BS Position 4

Table 13

External Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	90	E	0.88	0.081	55.8	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	2.3%		6	120	9.8%		1.00	0.20
2	40	3.4%		7	140	12.3%			
3	60	4.8%		8	160	13.0%			
4	80	7.1%		9	180	11.3%			
5	100	7.9%		10	200	9.1%			
								RF Po (*Max)	57.0

BS Position 4

Table 14

External Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	90	E	0.89	0.091	55.6	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	3.8%		6	120	9.8%		1.00	0.20
2	40	5.4%		7	140	13.1%			
3	60	6.8%		8	160	13.5%			
4	80	7.9%		9	180	11.4%			
5	100	10.0%		10	200	8.9%			
								RF Po (*Max)	57.0

BS Position 4

Table 15

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	E	0.92	0.038	55.8	0.019	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	4.3%		1.00	0.20
2	40	2.9%		7	140	5.4%			
3	60	3.9%		8	160	4.5%			
4	80	3.5%		9	180	4.5%			
5	100	3.7%		10	200	3.0%			
								RF Po (*Max)	57.0

VHF Mobile M20KTS9PW1AN MPE measurement data

BS Position 5

Table 16

External Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	90	E	0.88	0.058	55.8	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	3.2%		6	120	5.5%		1.00	0.20
2	40	6.2%		7	140	6.6%			
3	60	6.5%		8	160	7.7%			
4	80	5.5%		9	180	6.1%			
5	100	5.3%		10	200	5.7%			
								RF Po (*Max)	57.0

BS Position 5

Table 17

External Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	90	E	0.89	0.070	55.6	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	5.5%		6	120	6.9%		1.00	0.20
2	40	6.3%		7	140	7.8%			
3	60	7.8%		8	160	8.6%			
4	80	6.0%		9	180	7.5%			
5	100	7.6%		10	200	6.4%			
								RF Po (*Max)	57.0

BS Position 5

Table 18

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	E	0.92	0.044	55.8	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	2.7%		6	120	4.4%		1.00	0.20
2	40	3.3%		7	140	6.6%			
3	60	5.1%		8	160	4.6%			
4	80	4.6%		9	180	3.7%			
5	100	5.9%		10	200	2.7%			
								RF Po (*Max)	57.0

VHF Mobile M20KTS9PW1AN MPE measurement data

BS Position 1

Table 19

External Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	90	H	0.86	0.046	55.8	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	1.3%		6	120	7.1%		1.00	0.20
2	40	0.8%		7	140	7.7%			
3	60	1.7%		8	160	7.0%			
4	80	2.1%		9	180	7.4%			
5	100	4.6%		10	200	6.7%			
								RF Po (*Max)	57.0

P Position 1

Table 20

Internal Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	Highest Reading	H	0.86	0.142	0.146	55.8	0.073	0.07
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		1.00
Back Seat		26.7%		6.8%		9.2%		IEEE Uncontrolled Limit:		0.20
Front Seat		21.3%		15.5%		6.9%		RF Po (*Max):		57.0

BS Position 1

Table 21

External Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	90	H	0.89	0.053	55.6	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	2.6%		6	120	7.6%		1.00	0.20
2	40	1.1%		7	140	7.4%			
3	60	1.5%		8	160	7.3%			
4	80	3.2%		9	180	8.2%			
5	100	5.7%		10	200	8.0%			
								RF Po (*Max)	57.0

VHF Mobile M20KTS9PW1AN MPE measurement data

P Position 1

Table 22

Internal Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	Highest Reading	H	0.89	0.116	0.116	55.6	0.058	0.06
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk		IEEE Controlled Limit:			1.00	
Back Seat		22.2%	7.0%	5.6%		IEEE Uncontrolled Limit:			0.20	
Front Seat		21.1%	11.5%	2.2%		RF Po (*Max):			57.0	

BS Position 1

Table 23

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	H	0.95	0.054	55.8	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	2.9%		6	120	5.7%		IEEE Uncontrolled Limit: RF Po (*Max): 57.0	0.20
2	40	3.6%		7	140	7.2%			
3	60	6.6%		8	160	5.2%			
4	80	7.3%		9	180	5.6%			
5	100	6.8%		10	200	3.4%			

P Position 1

Table 24

Internal Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	Highest Reading	H	0.95	0.085	0.041	55.8	0.042	0.04
Measurement Grid										
Test Position		% of Control Limit Head	% of Control Limit Chest	% of Control Limit Lower Trunk		IEEE Controlled Limit:			1.00	
Back Seat		9.1%	8.8%	7.5%		IEEE Uncontrolled Limit:			0.20	
Front Seat		6.7%	3.7%	1.9%		RF Po (*Max):			57.0	

VHF Mobile M20KTS9PW1AN MPE measurement data

BS Position 2

Table 25

External Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	90	H	0.86	0.094	55.8	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	5.4%		6	120	13.1%		1.00	0.20
2	40	6.1%		7	140	12.5%			
3	60	6.6%		8	160	12.4%			
4	80	7.7%		9	180	11.0%			
5	100	11.1%		10	200	8.1%			
								RF Po (*Max)	
								57.0	

BS Position 2

Table 26

External Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	90	H	0.89	0.084	55.6	0.042	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	6.0%		6	120	11.6%		1.00	0.20
2	40	5.3%		7	140	10.0%			
3	60	6.6%		8	160	9.7%			
4	80	7.3%		9	180	9.1%			
5	100	10.6%		10	200	7.4%			
								RF Po (*Max)	
								57.0	

BS Position 2

Table 27

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	H	0.95	0.064	55.8	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	5.7%		6	120	6.9%		1.00	0.20
2	40	6.2%		7	140	6.2%			
3	60	7.0%		8	160	6.6%			
4	80	8.1%		9	180	5.4%			
5	100	8.0%		10	200	4.0%			
								RF Po (*Max)	
								57.0	

VHF Mobile M20KTS9PW1AN MPE measurement data

BS Position 3

Table 28

External Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	90	H	0.86	0.105	55.8	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	5.1%		6	120	13.6%		1.00	0.20
2	40	5.4%		7	140	15.6%			
3	60	9.1%		8	160	14.6%			
4	80	9.6%		9	180	11.5%			
5	100	11.8%		10	200	9.1%			
								RF Po (*Max)	
								57.0	

BS Position 3

Table 29

External Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	90	H	0.89	0.121	55.6	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	8.2%		6	120	16.9%		1.00	0.20
2	40	9.0%		7	140	16.8%			
3	60	11.7%		8	160	13.1%			
4	80	13.1%		9	180	9.5%			
5	100	15.8%		10	200	6.8%			
								RF Po (*Max)	
								57.0	

BS Position 3

Table 30

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	H	0.95	0.080	55.8	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	5.2%		6	120	9.4%		1.00	0.20
2	40	7.3%		7	140	9.3%			
3	60	7.1%		8	160	10.2%			
4	80	8.2%		9	180	7.2%			
5	100	9.8%		10	200	6.3%			
								RF Po (*Max)	
								57.0	

VHF Mobile M20KTS9PW1AN MPE measurement data

BS Position 4

Table 31

External Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	90	H	0.86	0.117	55.8	0.059	0.06
Measurement Grid									
Test Position	Height (cm)	% of Control Limit			Test Position	Height (cm)	% of Control Limit		
1	20	7.5%			6	120	16.9%		
2	40	10.3%			7	140	16.2%		
3	60	10.5%			8	160	12.4%		
4	80	12.4%			9	180	11.5%		
5	100	13.2%			10	200	6.3%		
								IEEE Controlled Limit	1.00
								IEEE Uncontrolled Limit	0.20
								RF Po (*Max)	57.0

BS Position 4

Table 32

External Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	90	H	0.89	0.093	55.6	0.047	0.05
Measurement Grid									
Test Position	Height (cm)	% of Control Limit			Test Position	Height (cm)	% of Control Limit		
1	20	5.2%			6	120	12.5%		
2	40	5.8%			7	140	12.0%		
3	60	9.1%			8	160	11.1%		
4	80	9.8%			9	180	9.6%		
5	100	12.2%			10	200	6.1%		
								IEEE Controlled Limit	1.00
								IEEE Uncontrolled Limit	0.20
								RF Po (*Max)	57.0

BS Position 4

Table 33

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	H	0.95	0.064	55.8	0.032	0.03
Measurement Grid									
Test Position	Height (cm)	% of Control Limit			Test Position	Height (cm)	% of Control Limit		
1	20	4.8%			6	120	7.9%		
2	40	5.4%			7	140	8.2%		
3	60	5.9%			8	160	8.8%		
4	80	6.3%			9	180	4.2%		
5	100	8.7%			10	200	3.6%		
								IEEE Controlled Limit	1.00
								IEEE Uncontrolled Limit	0.20
								RF Po (*Max)	57.0

VHF Mobile M20KTS9PW1AN MPE measurement data

BS Position 5

Table 34

External Vehicle MPE Assessment @ 147.4 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)	HAD4007A	2.15	90	H	0.86	0.081	55.8	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	6.1%		6	120	9.7%		1.00	0.20
2	40	6.2%		7	140	9.9%			
3	60	8.7%		8	160	9.2%			
4	80	9.3%		9	180	5.8%			
5	100	9.6%		10	200	6.5%			
								RF Po (*Max)	57.0

BS Position 5

Table 35

External Vehicle MPE Assessment @ 155 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)	HAD4008A	2.15	90	H	0.89	0.108	55.6	0.054	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	7.3%		6	120	15.5%		1.00	0.20
2	40	7.7%		7	140	14.2%			
3	60	9.6%		8	160	12.3%			
4	80	12.5%		9	180	8.2%			
5	100	13.1%		10	200	7.5%			
								RF Po (*Max)	57.0

BS Position 5

Table 36

External Vehicle MPE Assessment @ 173.9875 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)	HAD4009A	2.15	90	H	0.95	0.103	55.8	0.052	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	9.1%		6	120	12.4%		1.00	0.20
2	40	8.7%		7	140	13.6%			
3	60	11.3%		8	160	13.5%			
4	80	10.7%		9	180	7.2%			
5	100	12.0%		10	200	4.8%			
								RF Po (*Max)	57.0

DVR DQPM DVR8000P MPE measurement data

BS-Position 1

Table 1

External Vehicle MPE Assessment @ 806 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)	HAF4016A	2.15	90	E	0.87	0.024	10.0	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	0.6%	6	120	1.3%			2.69	0.54
2	40	0.6%	7	140	1.1%				
3	60	0.7%	8	160	1.0%				
4	80	0.6%	9	180	1.0%				
5	100	1.0%	10	200	0.9%				

Table 2

Internal Vehicle MPE Assessment @ 806 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)	HAF4016A	2.15	Highest Reading	E	0.87	0.089	0.031	10.0	0.089	0.09
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		2.69
Back Seat		3.9%		3.3%		2.7%		IEEE Uncontrolled Limit:		0.54
Front Seat		1.4%		0.8%		1.3%		RF Po (*Max):		10.0

BS-Position 1

Table 3

External Vehicle MPE Assessment @ 815 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)	HAF4016A	2.15	90	E	0.88	0.023	9.98	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	0.8%	6	120	1.1%			2.72	0.54
2	40	0.6%	7	140	1.1%				
3	60	0.8%	8	160	1.1%				
4	80	0.8%	9	180	0.8%				
5	100	0.8%	10	200	0.7%				

DVR DQPM DVR8000P MPE measurement data

Table 4

Internal Vehicle MPE Assessment @ 815 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)	HAF4016A	2.15	Highest Reading	E	0.88	0.062	0.054	9.98	0.062	0.06
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		2.72
Back Seat		3.2%		1.8%		1.9%		IEEE Uncontrolled Limit:		0.54
Front Seat		2.9%		1.5%		1.6%		RF Po (*Max):		10.0

BS-Position 1

Table 5

External Vehicle MPE Assessment @ 824 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)	HAF4016A	2.15	90	E	0.88	0.029	9.95	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	1.0%		6	120	1.2%		2.75	0.55	
2	40	1.0%		7	140	1.1%		RF Po (*Max)	10.0	
3	60	1.0%		8	160	1.1%				
4	80	1.0%		9	180	1.0%				
5	100	1.2%		10	200	1.0%				

Table 6

Internal Vehicle MPE Assessment @ 824 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)	HAF4016A	2.15	Highest Reading	E	0.88	0.050	0.036	9.95	0.050	0.05
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		2.75
Back Seat		2.2%		1.5%		1.8%		IEEE Uncontrolled Limit:		0.55
Front Seat		1.3%		1.3%		1.3%		RF Po (*Max):		10.0

DVR DQPM DVR8000P MPE measurement data

BS-Position 1

Table 7

External Vehicle MPE Assessment @ 851 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)	HAF4016A	2.15	90	E	0.9	0.026	10.0	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	0.8%		6	120	1.3%		2.84	0.57
2	40	0.7%		7	140	1.0%			RF Po (*Max)
3	60	0.8%		8	160	0.9%			
4	80	0.7%		9	180	1.0%			
5	100	1.1%		10	200	1.0%			

Table 8

Internal Vehicle MPE Assessment @ 851 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)	HAF4016A	2.15	Highest Reading	E	0.9	0.042	0.032	10.0	0.042	0.04
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		2.84
Back Seat		1.2%		1.5%		1.7%		IEEE Uncontrolled Limit:		0.57
Front Seat		1.8%		0.8%		0.8%		RF Po (*Max):		10.0

BS-Position 1

Table 9

External Vehicle MPE Assessment @ 860 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)	HAF4016A	2.15	90	E	0.9	0.026	9.98	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	0.8%		6	120	1.1%		2.87	0.57
2	40	0.8%		7	140	1.0%			RF Po (*Max)
3	60	0.8%		8	160	0.9%			
4	80	0.9%		9	180	0.9%			
5	100	1.1%		10	200	0.9%			

DVR DQPM DVR8000P MPE measurement data

Table 10

Internal Vehicle MPE Assessment @ 860 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)	HAF4016A	2.15	Highest Reading	E	0.9	0.049	0.047	9.98	0.049	0.05
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		2.87
Back Seat		2.1%		1.6%		1.4%		IEEE Uncontrolled Limit:		0.57
Front Seat		3.4%		0.8%		0.7%		RF Po (*Max):		10.0

BS-Position 1

Table 11

External Vehicle MPE Assessment @ 869 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)	HAF4016A	2.15	90	E	0.91	0.026	10.0	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	0.8%		6	120	1.1%		2.90	0.58	
2	40	0.8%		7	140	0.9%		RF Po (*Max)	10.0	
3	60	1.0%		8	160	0.8%				
4	80	1.1%		9	180	0.8%				
5	100	1.1%		10	200	0.7%				

Table 12

Internal Vehicle MPE Assessment @ 869 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)	HAF4016A	2.15	Highest Reading	E	0.91	0.042	0.027	10.0	0.042	0.04
Measurement Grid										
Test Position		% of Control Limit Head		% of Control Limit Chest		% of Control Limit Lower Trunk		IEEE Controlled Limit:		2.90
Back Seat		2.0%		1.4%		0.9%		IEEE Uncontrolled Limit:		0.58
Front Seat		1.7%		0.6%		0.5%		RF Po (*Max):		10.0

DVR DQPM DVR8000P MPE measurement data

BS-Position 2

Table 13

External Vehicle MPE Assessment @ 806 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)	HAF4016A	2.15	90	E	0.87	0.029	10.0	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	0.8%	6	120	1.1%	2.69	10.0		
2	40	0.9%	7	140	1.3%				
3	60	0.7%	8	160	1.4%				
4	80	0.9%	9	180	1.5%				
5	100	1.0%	10	200	1.3%				
							RF Po (*Max)		
									10.0

BS-Position 2

Table 14

External Vehicle MPE Assessment @ 815 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)	HAF4016A	2.15	90	E	0.88	0.035	9.98	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	0.8%	6	120	1.8%	2.72	10.0		
2	40	0.7%	7	140	1.6%				
3	60	1.1%	8	160	1.6%				
4	80	1.0%	9	180	1.8%				
5	100	1.2%	10	200	1.4%				
							RF Po (*Max)		
									10.0

BS-Position 2

Table 15

External Vehicle MPE Assessment @ 824 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)	HAF4016A	2.15	90	E	0.88	0.031	9.95	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	0.9%	6	120	1.4%	2.75	10.0		
2	40	0.7%	7	140	1.4%				
3	60	0.9%	8	160	1.4%				
4	80	0.9%	9	180	1.3%				
5	100	1.1%	10	200	1.2%				
							RF Po (*Max)		
									10.0

DVR DQPM DVR8000P MPE measurement data

BS-Position 2

Table 16

External Vehicle MPE Assessment @ 851 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)	HAF4016A	2.15	90	E	0.9	0.029	10.0	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	0.6%	6	120	1.3%	2.84		RF Po (*Max)	
2	40	0.8%	7	140	1.3%				
3	60	0.8%	8	160	1.1%				
4	80	0.8%	9	180	1.4%				
5	100	1.0%	10	200	1.1%			10.0	

BS-Position 2

Table 17

External Vehicle MPE Assessment @ 860 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)	HAF4016A	2.15	90	E	0.9	0.032	9.98	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	1.3%	2.87		RF Po (*Max)	
2	40	0.5%	7	140	1.3%				
3	60	1.0%	8	160	1.3%				
4	80	1.1%	9	180	1.3%				
5	100	1.4%	10	200	1.2%			10.0	

BS-Position 2

Table 18

External Vehicle MPE Assessment @ 869 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)	HAF4016A	2.15	90	E	0.91	0.030	10.0	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	0.6%	6	120	1.2%	2.90		RF Po (*Max)	
2	40	0.6%	7	140	1.2%				
3	60	1.0%	8	160	1.3%				
4	80	1.0%	9	180	1.2%				
5	100	1.0%	10	200	1.2%			10.0	

DVR DQPM DVR8000P MPE measurement data

BS-Position 3

Table 19

External Vehicle MPE Assessment @ 806 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)	HAF4016A	2.15	90	E	0.87	0.029	10.0	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	0.9%	6	120	1.3%	2.69	10.0		
2	40	1.0%	7	140	1.2%				
3	60	0.9%	8	160	1.2%				
4	80	0.8%	9	180	1.2%				
5	100	1.2%	10	200	1.0%				
								RF Po (*Max)	10.0

BS-Position 3

Table 20

External Vehicle MPE Assessment @ 815 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)	HAF4016A	2.15	90	E	0.88	0.038	9.98	0.038	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	1.6%	2.72	10.0		
2	40	0.9%	7	140	1.7%				
3	60	0.9%	8	160	1.8%				
4	80	1.4%	9	180	1.9%				
5	100	1.4%	10	200	1.4%				
								RF Po (*Max)	10.0

BS-Position 3

Table 21

External Vehicle MPE Assessment @ 824 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)	HAF4016A	2.15	90	E	0.88	0.033	9.95	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	0.9%	6	120	1.5%	2.75	10.0		
2	40	1.0%	7	140	1.4%				
3	60	1.0%	8	160	1.5%				
4	80	0.8%	9	180	1.4%				
5	100	1.3%	10	200	1.2%				
								RF Po (*Max)	10.0

DVR DQPM DVR8000P MPE measurement data

BS-Position 3

Table 22

External Vehicle MPE Assessment @ 851 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)	HAF4016A	2.15	90	E	0.9	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	0.8%	6	120	1.3%	2.84		RF Po (*Max)	
2	40	0.7%	7	140	1.6%				
3	60	1.0%	8	160	1.5%				
4	80	1.3%	9	180	1.3%				
5	100	1.3%	10	200	1.1%			10.0	

BS-Position 3

Table 23

External Vehicle MPE Assessment @ 860 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)	HAF4016A	2.15	90	E	0.9	0.034	9.98	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	0.7%	6	120	1.5%	2.87		RF Po (*Max)	
2	40	0.8%	7	140	1.6%				
3	60	0.9%	8	160	1.6%				
4	80	1.0%	9	180	1.3%				
5	100	1.1%	10	200	1.2%			10.0	

BS-Position 3

Table 24

External Vehicle MPE Assessment @ 869 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)	HAF4016A	2.15	90	E	0.91	0.031	10.0	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	0.7%	6	120	1.3%	2.90		RF Po (*Max)	
2	40	0.7%	7	140	1.3%				
3	60	0.8%	8	160	1.7%				
4	80	0.9%	9	180	1.3%				
5	100	0.9%	10	200	1.0%			10.0	

DVR DQPM DVR8000P MPE measurement data

BS-Position 4

Table 25

External Vehicle MPE Assessment @ 806 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)	HAF4016A	2.15	90	E	0.87	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	1.2%	6	120	1.6%			2.69	0.54
2	40	0.8%	7	140	1.4%				
3	60	0.9%	8	160	1.2%				
4	80	1.3%	9	180	1.2%				
5	100	1.4%	10	200	1.1%				

BS-Position 4

Table 26

External Vehicle MPE Assessment @ 815 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)	HAF4016A	2.15	90	E	0.88	0.038	9.98	0.038	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	2.0%			2.72	0.54
2	40	0.8%	7	140	1.8%				
3	60	1.0%	8	160	1.5%				
4	80	1.5%	9	180	1.4%				
5	100	1.6%	10	200	1.5%				

BS-Position 4

Table 27

External Vehicle MPE Assessment @ 824 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)	HAF4016A	2.15	90	E	0.88	0.033	9.95	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	0.9%	6	120	1.5%			2.75	0.55
2	40	0.8%	7	140	1.4%				
3	60	1.1%	8	160	1.3%				
4	80	1.2%	9	180	1.2%				
5	100	1.3%	10	200	1.3%				

DVR DQPM DVR8000P MPE measurement data

BS-Position 4

Table 28

External Vehicle MPE Assessment @ 851 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)	HAF4016A	2.15	90	E	0.9	0.035	10.0	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	1.6%	2.84			
2	40	0.7%	7	140	1.6%				
3	60	1.0%	8	160	1.6%				
4	80	1.0%	9	180	1.5%			RF Po (*Max)	
5	100	1.5%	10	200	1.2%			10.0	

BS-Position 4

Table 29

External Vehicle MPE Assessment @ 860 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)	HAF4016A	2.15	90	E	0.9	0.042	9.98	0.042	0.04
Measurement Grid									
Test Position	Height (cm)	% of Control Limit	Test Position	Height (cm)	% of Control Limit	IEEE Controlled Limit	IEEE Uncontrolled Limit		
1	20	0.7%	6	120	1.9%	2.87			
2	40	0.8%	7	140	2.0%				
3	60	1.0%	8	160	2.1%				
4	80	1.1%	9	180	1.7%			RF Po (*Max)	
5	100	1.8%	10	200	1.4%			10.0	

BS-Position 4

Table 30

External Vehicle MPE Assessment @ 869 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)	HAF4016A	2.15	90	E	0.91	0.038	10.0	0.038	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	1.8%	2.90			
2	40	1.0%	7	140	1.6%				
3	60	1.0%	8	160	1.5%				
4	80	1.3%	9	180	1.3%			RF Po (*Max)	
5	100	1.6%	10	200	1.1%			10.0	

DVR DQPM DVR8000P MPE measurement data

BS-Position 5

Table 31

External Vehicle MPE Assessment @ 806 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)	HAF4016A	2.15	90	E	0.87	0.038	10.0	0.038	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	1.9%	2.69		RF Po (*Max)	
2	40	0.9%	7	140	1.7%				
3	60	1.1%	8	160	1.6%				
4	80	1.5%	9	180	1.5%				
5	100	2.2%	10	200	1.3%			10.0	

BS-Position 5

Table 32

External Vehicle MPE Assessment @ 815 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)	HAF4016A	2.15	90	E	0.88	0.054	9.98	0.054	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	1.0%	6	120	3.3%	2.72		RF Po (*Max)	
2	40	1.3%	7	140	2.4%				
3	60	1.4%	8	160	1.9%				
4	80	2.1%	9	180	1.8%				
5	100	3.1%	10	200	1.4%			10.0	

BS-Position 5

Table 33

External Vehicle MPE Assessment @ 824 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)	HAF4016A	2.15	90	E	0.88	0.051	9.95	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	2.8%	2.75		RF Po (*Max)	
2	40	0.9%	7	140	2.5%				
3	60	1.7%	8	160	2.0%				
4	80	2.0%	9	180	1.6%				
5	100	2.9%	10	200	1.5%			10.0	

DVR DQPM DVR8000P MPE measurement data

BS-Position 5

Table 34

External Vehicle MPE Assessment @ 851 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)	HAF4016A	2.15	90	E	0.9	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	0.7%	6	120	1.9%	2.84		RF Po (*Max)	
2	40	1.0%	7	140	1.9%				
3	60	1.1%	8	160	1.8%				
4	80	1.6%	9	180	1.5%				
5	100	1.8%	10	200	1.3%			10.0	

BS-Position 5

Table 35

External Vehicle MPE Assessment @ 860 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)	HAF4016A	2.15	90	E	0.9	0.057	9.98	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	0.9%	6	120	2.9%	2.87		RF Po (*Max)	
2	40	0.8%	7	140	2.7%				
3	60	1.5%	8	160	2.6%				
4	80	2.2%	9	180	2.0%				
5	100	2.7%	10	200	1.5%			10.0	

BS-Position 5

Table 36

External Vehicle MPE Assessment @ 869 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)	HAF4016A	2.15	90	E	0.91	0.042	10.0	0.042	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	2.1%	2.90		RF Po (*Max)	
2	40	0.9%	7	140	1.9%				
3	60	1.3%	8	160	1.9%				
4	80	1.4%	9	180	1.3%				
5	100	1.8%	10	200	1.0%			10.0	