MOTOROLA

ACCREDITED

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

MPE Compliance Test Report

Date of Report:	September 2, 2003
Report Revision(s):	Rev. O
Device Manufacturer:	Motorola
Device Description:	45W 4 channel Mobile Radio 146-174MHz
Classification:	Occupational/Controlled Exposure
FCC ID:	ABZ99FT3047
Device Model:	PMUD1875A

Test Period:	6/23/03
Test Engineer:	Jim Fortier (Principle Staff Engineer)
Author:	Michael Sailsman (Global EME Regulatory Affairs Liaison)

Note: 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 all applicable national and international reference standards and guidelines.

Signature on File — 9/2/03

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Date Approved

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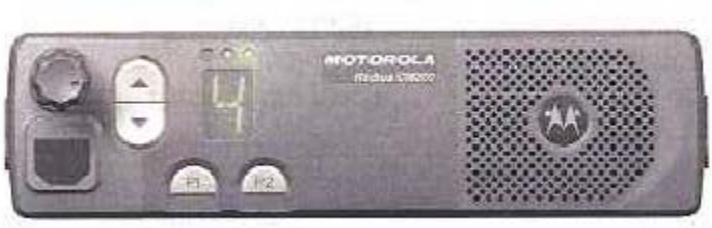
REVISION HISTORY

Date	Revision	Comments
9/2/03	O	Initial release Prototype results

1.0 Product Description



FCC ID: ABZ99FT3047, model PMUD1875A is a mobile transceiver that utilizes frequency modulation (FM) half duplex transmission technology. The intended use of the radio is Push-To-Talk (PTT) while the device is properly installed in a vehicle with the offered external antennas mounted at the center of the roof or trunk.
This device will be marketed to and used by employees solely for work-related operations, such as public safety agencies, e.g. police, fire and emergency medical. User training is the responsibility of these agencies, who 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. Motorola also makes available to its customers training classes on the proper use of two-way radios and wireless data devices. This device 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: All currently offered antennas can be installed on the vehicle's roof. However, only the 3.0dBd antenna model RAD4000A can be installed on the trunk.
The transmit frequency band is 146-174 MHz. The rated power of the device is 45 watts with a maximum conducted power output of 54 watts.

2.0 Offered Options and Accessories

Antenna

HAD4007A 144-150.8 MHz ¼ wave 0dBd antenna; 49 cm
HAD4008A 150.8-162 MHz ¼ wave 0dBd antenna; 46 cm
HAD4009A 162-174 MHz ¼ wave 0dBd antenna; 43 cm
RAD4000A 136-174 MHz 3dBd gain antenna; 140 cm un-trimmed
Note: The ¼ wave 0dBd antennas are identical except for the length which is frequency dependant.
The RAD4000A is a 3 dBd gain Spectrum Series base loaded antennas trimmed for frequency of use at time of installation

3.0 Measurement Standards

Measurements were performed according to FCC Limits Per 47 CFR 2.1091 (b) for General Population/Uncontrolled RF Exposure. For frequencies ranging from 146-

174 MHz the MPE (Maximum Permissible Exposure) limit to electromagnetic energy equivalent plane wave free-space power density is 0.20 mW/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.

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

6.0 Method of Measurement

6.1 EME measurements made on trunk mounted antennas

(for reference, see Antenna Location Layout drawings in Appendix)

6.1.1 External vehicle EME measurement

(Antenna mounted at trunk center)

With the survey meter and probe, take ten (10) measurements, at the standard test distance of 90 cm to the antenna, from the back of the vehicle in a vertical line and then average the results. These measurements are taken and recorded at every twenty (20) centimeters over a range starting at twenty (20) centimeters above ground and ending at 2.0 meters; this would be representative of a person standing behind a vehicle during a mobile radio transmission.

Note: the distance from the trunk-mounted antenna to the edge of the vehicle is 26cm and the distance from the edge of the vehicle's trunk to the MPE vertical line assessment is 64cm.

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

a) Head area

b) Chest area

c) Lower Trunk area

6.2 EME measurements made on center roof mounted antennas

(for reference, see Antenna Location Layout drawings in Appendix)

6.2.1 External vehicle EME measurement

With the survey meter and probe, take ten (10) measurements, at the standard test distance of 90 cm from the vehicle-mounted antenna, in a vertical line and then average the results. These measurements are taken and recorded at every twenty (20) centimeters over a range starting at twenty (20) centimeters above ground and ending at 2.0 meters; this would be representative of a person standing next to a vehicle during a mobile radio transmission.

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

6.2.2 Internal vehicle EME measurement

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

a) Head area

b) Chest area

c) Lower Trunk area

7.0 Test Site

The test site is the Motorola Commercial Government Industrial Solution Sector (CGISS) world wide electromagnetic exposure (EME) open area test site located at 8000 W. Sunrise Blvd., Plantation, FL. 33322.

8.0 Measurement System/Equipment

The minimum equipment required will mainly consist of a test vehicle, radio frequency radiation test set consisting of an Electromagnetic Radiation Survey Meter, E/H-Field Test Probes, and typical antenna configurations.
Below are the test equipment used to assess compliance:

a) Automobile: 1991 Ford Taurus, 4-Door

b) E-Field Survey Meter - NARDA Model 8718 (01108); Calibration date: 4/14/03

c) E-Field (Electric Field) Probe - NARDA Model 8722B (13001);

Calibration date: 5/6/03

d) H-Field (Magnetic Field) Probe - NARDA Model 8731 (03006);

Calibration date: 3/21/03

e) Antennas - (1/4 wave 0dBd and 3.0dBd)

9.0 Test Unit Description

Power density measurements were performed on a 45 watts mobile radio; model number PMUD1875A serial number 019PROTO01. The frequency band of the mobile was 146-174 MHz; the test frequencies were 146.000, 155.320, 164.670, and 174.000 MHz. The applicable 0dBd ¼ wave, and 3.0dBd mobile antennas listed in section 2.0 were used to assess MPE compliance.

10.0 Test Set-Up Description

Following are the standard mobile antenna test configurations used for this product. (for reference, see Antenna Location Layout drawings in Appendix)

a) 3.0dBd gain antenna model RAD4000A mounted on the center of the trunk.
b) ¼ wave antenna models HAD4007A, HAD4008A, HAD4009A, as well as the 3.0dBd gain antenna model RAD4000A mounted on the center of the roof.

11.0 Test Results

Measurements were taken with the antenna located in two areas: the roof center, and trunk center. Below is the raw MPE data for all measured grid points. Results are based on a 50% duty cycle with the radio operating in accordance with the User Manual instructions. The bolded power density results represents the highest MPE results observed.

Raw MPE Data; Test Frequencies and measured Po (W):
146.000 MHz (Po=53.2), 155.320 MHz (Po=56.4), 164.670 MHz (Po=56.5), 174.000 MHz (Po = 52.5)
Meter reads in % of controlled limit; controlled limit = 1.00 mW/cm^2 for 30-300 MHz
(Cal factors presented herein are automatically accounted for in the meter used for assessments)
General Population MPE limits = 0.20 mW/cm^2 / 1.6mW/g (Bystanders & Passengers)
External Vehicle Power Density (Pwr. Den. (cal.)) = average over body/2
Internal Vehicle Power Density (Pwr. Den. (cal.)) = average over (head/chest/leg)/2

Note: The average over the body test methodology is consistent with IEEE/ANSI C95.1-1999 guidelines

Table 1

External Vehicle MPE Assessment @ 146.000MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	90	E	0.82	0.178	0.09

Measurement grid					
Test position	**Height (cm)**	**% of control limit**	**Test position**	**Height (cm)**	**% of control limit**
1	20	3.50	6	120	19.00
2	40	5.00	7	140	27.00
3	60	6.00	8	160	33.00
4	80	7.50	9	180	33.00
5	100	12.00	10	200	32.00

Table 2

External Vehicle MPE Assessment @ 155.320 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	90	E	0.83	0.319	0.16

Measurement grid					
Test position	**Height (cm)**	**% of control limit**	**Test position**	**Height (cm)**	**% of control limit**
1	20	2.80	6	120	39.00
2	40	5.00	7	140	59.00
3	60	6.50	8	160	65.00
4	80	11.00	9	180	59.00
5	100	22.00	10	200	50.00

Table 3

External Vehicle MPE Assessment @ 164.670 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	90	E	0.84	0.104	0.05

Measurement grid					
Test position	**Height (cm)**	**% of control limit**	**Test position**	**Height (cm)**	**% of control limit**
1	20	1.50	6	120	11.50
2	40	2.50	7	140	16.50
3	60	4.00	8	160	19.00
4	80	5.00	9	180	19.00
5	100	7.00	10	200	17.50

Table 4

External Vehicle MPE Assessment @ 174.000 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	90	E	0.86	0.283	0.14
Measurement grid						
Test position	**Height (cm)**	**% of control limit**	**Test position**	**Height (cm)**	**% of control limit**	
1	20	4.10	6	120	35.00	
2	40	7.20	7	140	49.00	
3	60	10.50	8	160	53.00	
4	80	12.50	9	180	50.00	
5	100	19.00	10	200	43.00	

Table 5

External Vehicle MPE Assessment @ 146.000 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	90	H	0.98	0.165	0.08
Measurement grid						
Test position	**Height (cm)**	**Pwr. Density (mW/cm^2)**	**Test position**	**Height (cm)**	**Pwr. Density (mW/cm^2)**	
1	20	0.00	6	120	0.03	
2	40	0.01	7	140	0.16	
3	60	0.01	8	160	0.40	
4	80	0.02	9	180	0.48	
5	100	0.02	10	200	0.52	

Table 6

External Vehicle MPE Assessment @ 155.320 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	90	H	0.98	0.245	0.12
Measurement grid						
Test position	**Height (cm)**	**Pwr. Density (mW/cm^2)**	**Test position**	**Height (cm)**	**Pwr. Density (mW/cm^2)**	
1	20	0.01	6	120	0.14	
2	40	0.01	7	140	0.37	
3	60	0.01	8	160	0.62	
4	80	0.02	9	180	0.62	
5	100	0.05	10	200	0.60	

Table 7

External Vehicle MPE Assessment @ 164.670 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	90	H	0.97	0.144	0.07
Measurement grid						
Test position	**Height (cm)**	**Pwr. Density (mW/cm^2)**	**Test position**	**Height (cm)**	**Pwr. Density (mW/cm^2)**	
1	20	0.01	6	120	0.06	
2	40	0.02	7	140	0.20	
3	60	0.02	8	160	0.34	
4	80	0.02	9	180	0.36	
5	100	0.02	10	200	0.04	

Table 8

External Vehicle MPE Assessment @ 174.000 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	90	H	0.97	0.187	0.09
Measurement grid						
Test position	**Height (cm)**	**Pwr. Density (mW/cm^2)**	**Test position**	**Height (cm)**	**Pwr. Density (mW/cm^2)**	
1	20	0.01	6	120	0.07	
2	40	0.02	7	140	0.25	
3	60	0.01	8	160	0.51	
4	80	0.02	9	180	0.50	
5	100	0.03	10	200	0.45	

Table 9

External Vehicle MPE Assessment @ 146.000 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4007A/0dB	110	E	0.82	0.132	0.07
Measurement grid						
Test position	**Height (cm)**	**% of control limit**	**Test position**	**Height (cm)**	**% of control limit**	
1	20	6.00	6	120	13.00	
2	40	8.50	7	140	18.80	
3	60	6.60	8	160	22.00	
4	80	6.30	9	180	22.50	
5	100	9.80	10	200	19.00	

Table 10

External Vehicle MPE Assessment @ 155.320 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4008A/0dB	110	E	0.83	0.107	0.05
Measurement grid						
Test position	**Height (cm)**	**% of control limit**	**Test position**	**Height (cm)**	**% of control limit**	
1	20	3.00	6	120	12.00	
2	40	2.00	7	140	19.00	
3	60	3.00	8	160	22.00	
4	80	2.00	9	180	22.00	
5	100	5.00	10	200	17.00	

Table 11

External Vehicle MPE Assessment @ 164.670 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4009A/0dB	110	E	0.84	0.160	0.08
Measurement grid						
Test position	**Height (cm)**	**% of control limit**	**Test position**	**Height (cm)**	**% of control limit**	
1	20	2.50	6	120	19.00	
2	40	2.00	7	140	31.00	
3	60	0.50	8	160	34.00	
4	80	4.00	9	180	32.00	
5	100	10.00	10	200	25.00	

Table 12

External Vehicle MPE Assessment @ 174.000 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4009A/0dB	110	E	0.86	0.159	0.08
Measurement grid						
Test position	**Height (cm)**	**% of control limit**	**Test position**	**Height (cm)**	**% of control limit**	
1	20	1.50	6	120	18.00	
2	40	1.00	7	140	32.00	
3	60	0.20	8	160	32.00	
4	80	11.00	9	180	35.00	
5	100	11.00	10	200	17.00	

Table 13

External Vehicle MPE Assessment @ 155.320 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	RAD4000A/3dB	110	E	0.83	0.09	0.05

Measurement grid					
Test position	**Height (cm)**	**% of control limit**	**Test position**	**Height (cm)**	**% of control limit**
1	20	2.00	6	120	4.20
2	40	2.50	7	140	10.00
3	60	1.50	8	160	17.00
4	80	1.00	9	180	23.00
5	100	1.50	10	200	28.00

Table 14

External Vehicle MPE Assessment @ 146.000 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4007A/0dB	110	H	0.98	0.119	0.06

Measurement grid					
Test position	**Height (cm)**	**Pwr. Density (mW/cm^2)**	**Test position**	**Height (cm)**	**Pwr. Density (mW/cm^2)**
1	20	0.00	6	120	0.16
2	40	0.00	7	140	0.20
3	60	0.00	8	160	0.25
4	80	0.04	9	180	0.22
5	100	0.13	10	200	0.19

Table 15

External Vehicle MPE Assessment @ 155.320 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4008A/0dB	110	H	0.98	0.185	0.09

Measurement grid					
Test position	**Height (cm)**	**Pwr. Density (mW/cm^2)**	**Test position**	**Height (cm)**	**Pwr. Density (mW/cm^2)**
1	20	0.03	6	120	0.15
2	40	0.02	7	140	0.24
3	60	0.04	8	160	0.37
4	80	0.06	9	180	0.40
5	100	0.10	10	200	0.44

Table 16

External Vehicle MPE Assessment @ 164.670 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4009A/0dB	110	H	0.97	0.232	0.12
Measurement grid						
Test position	**Height (cm)**	**Pwr. Density (mW/cm^2)**	**Test position**	**Height (cm)**	**Pwr. Density (mW/cm^2)**	
1	20	0.02	6	120	0.20	
2	40	0.02	7	140	0.36	
3	60	0.06	8	160	0.51	
4	80	0.08	9	180	0.47	
5	100	0.12	10	200	0.48	

Table 17

External Vehicle MPE Assessment @ 174.000 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4009A/0dB	110	H	0.97	0.217	0.11
Measurement grid						
Test position	**Height (cm)**	**Pwr. Density (mW/cm^2)**	**Test position**	**Height (cm)**	**Pwr. Density (mW/cm^2)**	
1	20	0.01	6	120	0.19	
2	40	0.02	7	140	0.35	
3	60	0.03	8	160	0.46	
4	80	0.04	9	180	0.49	
5	100	0.10	10	200	0.49	

Table 18

External Vehicle MPE Assessment @ 155.320 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Body (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	RAD4000A/3dB	110	H	0.98	0.136	0.07
Measurement grid						
Test position	**Height (cm)**	**Pwr. Density (mW/cm^2)**	**Test position**	**Height (cm)**	**Pwr. Density (mW/cm^2)**	
1	20	0.02	6	120	0.05	
2	40	0.02	7	140	0.17	
3	60	0.02	8	160	0.26	
4	80	0.02	9	180	0.39	
5	100	0.02	10	200	0.40	

Table 19

Internal Vehicle MPE Assessment @ 146.000 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	Highest reading	E	0.82	0.048/0.013	0.02
Measurement grid						
Test position	**% of control limit Head**		**% of control limit Chest**		**% of control limit Leg**	
Back seat	10.0		2.7		1.7	
Front seat	1.4		1.3		1.1	

Table 20

Internal Vehicle MPE Assessment @ 155.320 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	Highest reading	E	0.83	0.197/0.037	0.10
Measurement grid						
Test position	**% of control limit Head**		**% of control limit Chest**		**% of control limit Leg**	
Back seat	42.0		12.0		5.0	
Front seat	5.5		3.0		2.5	

Table 21

Internal Vehicle MPE Assessment @ 164.670MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	HAD4000/3dB	Highest reading	E	0.84	0.067/0.040	0.03
Measurement grid						
Test position	**% of control limit Head**		**% of control limit Chest**		**% of control limit Leg**	
Back seat	11.0		5.0		4.0	
Front seat	6.0		2.0		4.0	

Table 22

Internal Vehicle MPE Assessment @ 174.000MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	Highest reading	E	0.86	0.230/0.043	0.12
Measurement grid						
Test position	**% of control limit Head**		**% of control limit Chest**		**% of control limit Leg**	
Back seat	37.0		22.0		10.0	
Front seat	3.7		3.7		5.5	

Table 23

Internal Vehicle MPE Assessment @ 146.000 MHz						
Antenna Location	**Antenna/gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	Highest reading	H	0.98	0.010/0.000	0.01
Measurement grid						
Test position	**Pwr. Density (mW/cm^2) Head**		**Pwr. Density (mW/cm^2) Chest**		**Pwr. Density (mW/cm^2) Leg**	
Back seat	0.03		0.0		0.0	
Front seat	0.0		0.0		0.0	

Table 24

Internal Vehicle MPE Assessment @ 155.320 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	Highest reading	H	0.98	0.050/0.000	0.03
Measurement grid						
Test position	**Pwr. Density (mW/cm^2) Head**		**Pwr. Density (mW/cm^2) Chest**		**Pwr. Density (mW/cm^2) Leg**	
Back seat	0.15		0.0		0.0	
Front seat	0.0		0.0		0.0	

Table 25

Internal Vehicle MPE Assessment @ 164.670 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	Highest reading	H	0.97	0.007/0.000	0.00
Measurement grid						
Test position	**Pwr. Density (mW/cm^2) Head**	**Pwr. Density (mW/cm^2) Chest**		**Pwr. Density (mW/cm^2) Leg**		
Back seat	0.0	0.01		0.01		
Front seat	0.0	0.0		0.0		

Table 26

Internal Vehicle MPE Assessment @ 174.000MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Trunk	RAD4000A/3dB	Highest reading	H	0.97	0.050/0.038	0.03
Measurement grid						
Test position	**Pwr. Density (mW/cm^2) Head**	**Pwr. Density (mW/cm^2) Chest**		**Pwr. Density (mW/cm^2) Leg**		
Back seat	0.10	0.03		0.02		
Front seat	0.08	0.02		0.02		

Table 27

Internal Vehicle MPE Assessment @ 146.000 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4007A/0dB	Highest reading	E	0.82	0.340/0.100	**0.17**
Measurement grid						
Test position	**% of control limit Head**	**% of control limit Chest**		**% of control limit Leg**		
Back seat	75.0	18.0		9.0		
Front seat	6.0	13.0		11.0		

Table 28

Internal Vehicle MPE Assessment @ 155.320 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4008A/0dB	Highest reading	E	0.83	0.210/0.130	0.11
Measurement grid						
Test position	**% of control limit Head**		**% of control limit Chest**		**% of control limit Leg**	
Back seat	40.0		15.0		9.0	
Front seat	13.0		20.0		6.0	

Table 29

Internal Vehicle MPE Assessment @ 164.670 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4009A/0dB	Highest reading	E	0.84	0.227/0.140	0.11
Measurement grid						
Test position	**% of control limit Head**		**% of control limit Chest**		**% of control limit Leg**	
Back seat	42.0		15.0		11.0	
Front seat	21.0		12.0		10.0	

Table 30

Internal Vehicle MPE Assessment @ 174.000 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4009A/0dB	Highest reading	E	0.86	0.100/0.147	0.07
Measurement grid						
Test position	**% of control limit Head**		**% of control limit Chest**		**% of control limit Leg**	
Back seat	16.0		5.0		10.0	
Front seat	21.0		15.0		8.0	

Table 31

Internal Vehicle MPE Assessment @ 155.320 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	RAD4000A/3dB	Highest reading	E	0.83	0.050/0.020	0.03
Measurement grid						
Test position	**% of control limit Head**		**% of control limit Chest**		**% of control limit Leg**	
Back seat	9.0		4.0		2.0	
Front seat	2.0		1.5		2.5	

Table 32

Internal Vehicle MPE Assessment @ 146.000MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4007A/0dB	Highest reading	H	0.98	0.170/0.090	0.09
Measurement grid						
Test position	**Pwr. Density (mW/cm^2) Head**		**Pwr. Density (mW/cm^2) Chest**		**Pwr. Density (mW/cm^2) Leg**	
Back seat	0.43		0.03		0.05	
Front seat	0.18		0.06		0.03	

Table 33

Internal Vehicle MPE Assessment @ 155.320MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4008A/0dB	Highest reading	H	0.98	0.070/0.080	0.04
Measurement grid						
Test position	**Pwr. Density (mW/cm^2) Head**		**Pwr. Density (mW/cm^2) Chest**		**Pwr. Density (mW/cm^2) Leg**	
Back seat	0.15		0.05		0.01	
Front seat	0.16		0.08		0.00	

Table 34

Internal Vehicle MPE Assessment @ 164.670MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	RAD4009A/0dB	Highest reading	H	0.97	0.090/0.067	0.05
Measurement grid						
Test position	**Pwr. Density (mW/cm^2) Head**	**Pwr. Density (mW/cm^2) Chest**		**Pwr. Density (mW/cm^2) Leg**		
Back seat	0.12	0.06		0.09		
Front seat	0.06	0.10		0.04		

Table 35

Internal Vehicle MPE Assessment @ 174.000 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Pwr. Density (mW/cm^2)**
Roof	HAD4009A/0dB	Highest reading	H	0.97	0.037/0.110	0.06
Measurement grid						
Test position	**Pwr. Density (mW/cm^2) Head**	**Pwr. Density (mW/cm^2) Chest**		**Pwr. Density (mW/cm^2) Leg**		
Back seat	0.05	0.01		0.05		
Front seat	0.12	0.15		0.06		

Table 36

Internal Vehicle MPE Assessment @ 155.320 MHz						
Antenna Location	**Antenna /gain**	**Meas. Distance (cm)**	**E/H Field**	**Calibration Factor**	**Average over Head, Chest, Leg Back/Front seats (mW/cm^2)**	**Density (mW/cm^2)**
Roof	RAD4000A/3dB	Highest reading	H	0.97	0.017/0.010	0.01
Measurement grid						
Test position	**Pwr. Density (mW/cm^2) Head**	**Pwr. Density (mW/cm^2) Chest**		**Pwr. Density (mW/cm^2) Leg**		
Back seat	0.05	0.00		0.00		
Front seat	0.02	0.01		0.00		

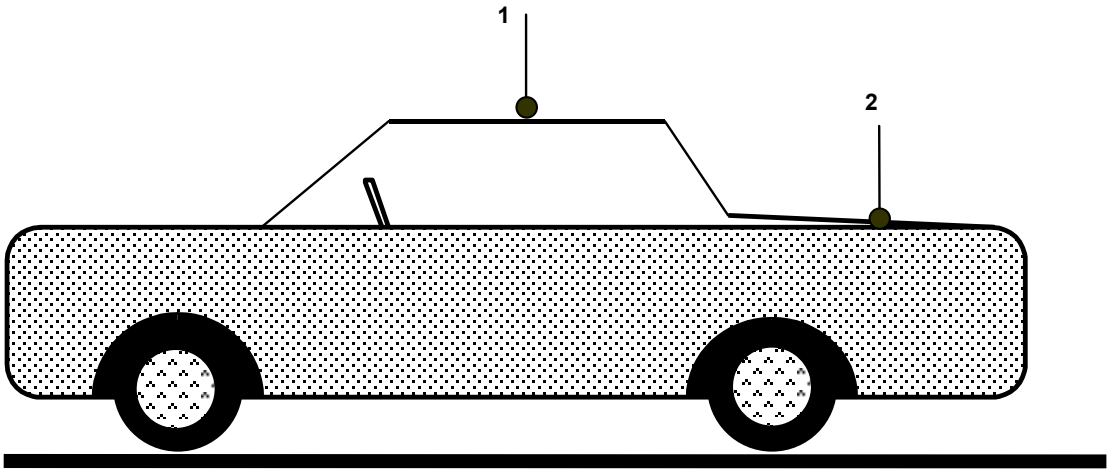
12.0 Conclusion

Depending on the test frequency, compliance assessments were performed with an output power range of 52.5W to 56.5W. The maximum RF power allowable will be equal to the upper limit of the final test factory transmit power specification of 54W. The highest power density result scaled to the maximum allowable power output is 0.17 mW/cm^2.

The measurement results clearly demonstrate compliance with the FCC limits (0.20 mW/cm^2 for the frequency band of 30-300 MHz) Per 47 CFR 2.1091(d) for General Population/Uncontrolled RF Exposure

APPENDIX A

ANTENNA LOCATION DRAWING



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