MOTOROLA SOLUTIONS

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TESTING CERT # 2518.01

DECLARATION OF COMPLIANCE: MPE/SAR ASSESSMENT Part 1 of 2

EME Test Laboratory
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Date of Report: November 17, 2011
Report Revision: A
Report ID: SR9341 MPE Auto rpt APX7500 UHF R1 (HP) & 7/800 Rev A 111117

Responsible Engineer:	Stephen C. Whalen (Principal Staff EME Test Engineer)
Report author:	Stephen C. Whalen (Principal Staff EME Test Engineer)
Date(s) Tested:	UHF R1 test dates - 5/26/2010, 6/2/2010, 6/3/2010; 6/25/2010, 7/14/2010, 8/3/2011 & 8/4/2011
Manufacturer/Location:	Motorola, Schaumburg, IL
Date submitted for test:	07/29/2011
DUT Description:	APX7500 Dual Band UHF R1 100W & 700 band (30W)/800 band (35W)
Test TX mode(s):	CW
Max. Power output:	120W (380-470MHz) and 36W (700MHz band), 42W (800MHz band)
TX Frequency Bands:	380-470MHz & 7/800MHz (Talkaround: 764-776MHz & 851-870MHz, Trunked: 794-824MHz)
Signaling type:	Analog, APCO 25, and TDMA 1:2 (F2)
Model(s) Tested	M30QTS9PW1AN (FCC ID AZ492FT4897)
Model(s) Certified:	M30TXS9PW1AN (MHUS1009A)
Serial Number(s):	123ABC4567
Classification:	Occupational/Controlled Environment
FCC ID:	AZ492FT7048
	Part 22 & 90 UHF (406.1-470MHz) & 7/800MHz (764-775MHz, 794-824MHz & 851-869MHz) Results outside of FCC bands are not applicable for FCC compliance demonstration.

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 Solutions Inc. EME Laboratory.
I attest to the accuracy of the data and assume full responsibility for the completeness of these measurements.
This reporting format is consistent with the suggested guidelines of the TIA TSB-159 April 2006
The results and statements contained in this report pertain only to the device(s) evaluated herein.

Deanna M Zakharia

Deanna Zakharia
EME Lab Senior Resource Manager and Laboratory Director

Approval Date: 11/17/2011

Certification Date: 9/29/2011

Certification No.: L1110904P

Document Revision History

Date	Revision	Comments
09/29/2011	O	Initial release
11/17/2011	A	FCC ID added to tested model on pg 1. Note added under each table in section 15 identifying the highlighted data.

Part 1 of 2: MPE Assessment for 380-470MHz
Part 2 of 2: MPE Assessment for 7/800MHz

Part 1 of 2

Table of Contents

1.0 Introduction

This report details the test setup, test equipment and test results of Maximum Permissible Exposure (MPE) performed at Motorola Solutions' outside test site and Specific Absorption Rate (SAR) simulations for product model M30TXS9PW1AN (MHUS1009A).

2.0 Abbreviations / Definitions

APCO: Association of Public-Safety Communications Officials
BS: Bystander
C4FM: Compatible 4-Level Frequency Modulation
CNR: Calibration Not Required
CQPSK: Compatible Quadrature Phase Shift Keying
CW: Continuous Wave
DUT: Device Under Test
EME: Electromagnetic Energy
F2: 2 slot Time Division Multiple Access
FM: Frequency Modulation
MPE: Maximum Permissible Exposure
NA: Not Applicable
PB: Passenger Backseat
PF: Passenger Front seat
PTT: Push to Talk
SAR: Specific Absorption Rate
TDMA: Time Division Multiple Access

3.0 Referenced Standards and Guidelines

This product is designed to comply with the following applicable national and international standards and guidelines.

- United States Federal Communications Commission, Code of Federal Regulations; Rule Part 47CFR § 1.1310, § 2.1091 (d) and § 2.1093 for RF Exposure, where applicable.
- Federal Communications Commission, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields", OET Bulletin 65, Supplement C (Edition 01-01), FCC, Washington, D.C.: June 2001.
- American National Standards Institute (ANSI) / Institute of Electrical and Electronics Engineers (IEEE) C95. 1-1999
- American National Standards Institute (ANSI) / Institute of Electrical and Electronics Engineers (IEEE) C95. 1-1992. Specific to FCC rules and regulations.
- Institute of Electrical and Electronics Engineers (IEEE) C95.3-2002
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- Ministry of Health (Canada) Safety Code 6 (2009), Limits of Human Exposure to Radio frequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz

4.0 Power Density Limits

Table 1 – Occupational / Controlled Exposure Limits

Frequency Range (MHz)	FCC OET Bulletin 65 Supplement C	ICNIRP	IEEE C95.1 1992/1999	IEEE C95.1 2005	RSS 102 issue 4 - 2010
	mW/cm^2	W/m^2	mW/cm^2	W/m^2	W/m^2
30 - 300	1.0				*10.0
10 - 400		10.0			
100 - 300			1.0	10.0	
300 - 1,500	f/300				f/30
300 - 3,000			f/300	f/30	
400 - 2,000		f/40			
1,500 - 15,000					50.0
1,500 - 100,000	5.0				
2,000 – 300,000		50.0			
3,000 - 300,000			10.0	100.0	

*Power density limit is applicable at frequencies greater than 100MHz

Table 2 – General Population / Uncontrolled Exposure Limits

Frequency Range (MHz)	FCC OET Bulletin 65 Supplement C	ICNIRP	IEEE C95.1 1992/1999	IEEE C95.1 2005	RSS 102 issue 4 – 2010
	mW/cm^2	W/m^2	mW/cm^2	W/m^2	W/m^2
30 – 300	0.2				*2.0
10 – 400		2.0			
100 – 300			0.2		
100 – 400				2.0	
300 – 1,500	f/1,500				f/150
400 – 2,000		f/200		f/200	
300 – 15,000			f/1,500		
1,500 – 15,000					10.0
1,500 – 100,000	1.0				
2,000 – 100,000				10.0	
2,000 – 300,000		10.0			

*Power density limit is applicable at frequencies greater than 100MHz

5.0 N_c Test Channels

The number of test channels are determined by using Equation 1 below. This equation is available in FCC's KDB 447498. The test channels are appropriately spaced across the antenna's frequency range.

Equation 1 – Number of test channels

$N_c = \text{Round } \{[100(f_{high} - f_{low})/f_c]^{0.5} \times (f_c / 100)^{0.2}\}$

where N_c is the number of test channels, f_{high} and f_{low} are the highest and lowest frequencies within the transmission band, f_c is the mid-band frequency, and frequencies are in MHz.

6.0 Measurement Equipment

Table 3 - Equipment

Equipment Type	Model #	SN	Calibration Date	Calibration Due Date
Automobile	2003 Ford Crown Victoria, 4-Door	NA	NA	NA
*Survey Meter *Probe – E-Field	ETS Model HI-2200 ETS Model E100	00086316 00109011	10/22/2009	10/22/2010
**Survey Meter **Probe – E-Field	ETS Model HI-2200 ETS Model E100	00086316 00109011	01/04/2011	01/04/2012

E-field measurements are in mW/cm^2.
*Test dates; 5/26/2010, 6/2/2010, 6/3/2010, 6/25/2010 & 7/14/2010
**Test dates; 8/3/2011 & 84/2011

7.0 Measurement System Uncertainty Levels

Table 4 - Uncertainty Budget for Near Field Probe Measurements

	Tol. (± %)	Prob. Dist.	Divisor	u_i (±%)	v_i
Measurement System					
Probe Calibration	6.0	N	1.00	6.0	∞
Survey Meter Calibration	3.0	N	1.00	3.0	∞
Hemispherical Isotropy	8.0	R	1.73	4.6	∞
Linearity	5.0	R	1.73	2.9	∞
Pulse Response	1.0	R	1.73	0.6	∞
RF Ambient Noise	3.0	R	1.73	1.7	∞
RF Reflections	8.0	R	1.73	4.6	∞
Probe Positioning	10.0	R	1.73	5.8	∞
Test sample Related					
Antenna Positioning	3.0	N	1.00	3.0	∞
Power drift	5.0	R	1.73	2.9	∞
Combined Standard Uncertainty		RSS		12.2	∞
Expanded Uncertainty (95% CONFIDENCE LEVEL)		k=2		24	

8.0 Product and System Description

Model M30TXS9PW1AN (MHUS1009A) is a mobile transceiver that utilizes analog, APCO 25 & F2 digital two-way radio communications. The analog modulation scheme uses Frequency Modulation (FM). APCO 25 & F2 digital modes use C4FM of CQPSK family of modulation (Compatible 4-Level Frequency Modulation of Compatible Quadrature Phase Shift Keying). F2 is a TDMA 1:2 protocol that allocates portions of the RF signal by dividing time into two slots (2 slots TDMA). Transmission from a unit or base station is accommodated in time-slot lengths of 30 milliseconds and frame lengths of 60 milliseconds. This product supports voice in analog mode, and both voice and data modes in digital mode.

The maximum duty cycle for TDMA is 1:2 (50%) and is controlled by software. The FM signal is continuous. However, because of hand shaking or Push-To-Talk (PTT) between users and/or base stations a conservative 50% duty cycle is applied. The TDMA mode was not tested because its duty cycle is inherently 50% and would include an additional 50% duty cycle for PTT.

The intended use of the radio is PTT while the device is properly installed in a vehicle with an external antenna mounted at the roof or trunk.

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

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

(Note that “Bystanders” as used herein are people other than operator)

9.0 Additional Options and Accessories

Refer to Table 5 for complete list of tested antennas.

10.0 Test Set-Up Description

Assessments were performed with mobile radio installed in the test vehicle while engine was at idle, at the specified distances and test locations indicated in sections 11.0, 12.0 and Appendix A.

All antennas described in Table 5 were considered in order to develop the test plan for this product. Antennas were installed and tested per their appropriate mount locations (Roof / Trunk) and defined test channels.

11.0 Method of Measurement with trunk mounted antenna(s)

11.1 External/Bystander vehicle MPE measurements

Antenna is located at the center of the trunk. Refer to Appendix A for antenna location and distance.

MPE measurements for bystander (BS) conditions are determined by taking the average of (10) measurements in a 2 m vertical line for each of the (3) bystander test locations indicated in Appendix A with 20 cm height increments, with antenna to probe sensor separation distances of 90 cm directly behind vehicle, 104 cm (45 degree radial) and 110.5 cm (90 degree radial). The separation distance used for testing is defined from the antenna where as the RF safety booklet defines the same distance from the vehicle body to ensure that the assessment is applicable to other vehicles The measurement probe is positioned orthogonal to antenna (typically parallel to ground with a vertically mounted antenna) and aimed directly at the antenna's axis. These measurements are representative of persons other than the operator standing next to the vehicle.

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

Note: The distance from the centered trunk-mounted antenna to the rear edge of the vehicle is 42cm and the distance from the rear edge of the vehicle to the survey probe sensor is 48cm.

11.2 Internal/Passenger vehicle MPE measurements

Antenna is located toward the center of the trunk at a minimum 85cm from backseat passenger. Users are instructed, per installation manual, to mount antennas on the roof only if a minimum 85cm cannot be achieved. Refer to Appendix A for antenna location and distance.

MPE measurements for passenger front seat (PF) and backseat (PB) conditions are determined by taking the average of the (3) measurements (Head, Chest, and Lower Trunk) inside the vehicle for both the front and back seats.

The backseat is a bench seat and therefore each position (Head, Chest & Lower Trunk) were scanned across (horizontally) the seat starting from the middle of the seat to the edge of the seat stopping 20 cm from the vehicle door. Similar process was used in the front bucket seat.

The probe handle is oriented parallel (horizontal) to the ground and pointed towards the back of the vehicle. The probe handle is not oriented normal to the seat surface. The probe head (incorporating the field sensors) is scanned continuously (using the max-hold function available in the meter) along three test axes which are parallel to the seat angle (intended as the line determined by the intersection of the plane of the seat and the plane of the backrest) and are 20 cm from the seat surface. One test axis is at the Head height, another is at the Chest height, and another is at the Lower Trunk height. The maximum field level value recorded for each test axis is logged. The MPE is determined by averaging these three maximum values regardless of the geometrical location where they were observed. For instance, the locations of the three maxima may lie on different vertical

(relative to ground) lines.

This approach leads to results that are representative of the exposure of vehicle occupants since it is based on an average across the body portions closest to the antenna for both trunk and roof mount positions, and is conservatively biased because the highest results for each test axis are combined, e.g. the highest head exposure could be in the middle of the seat while the highest lower trunk exposure could be closer to the door.

12.0 Method of Measurement with roof mounted antenna(s)

12.1 External/Bystander vehicle MPE measurements

Antenna is located at the center of the roof. Refer to Appendix A for antenna location and distance.

MPE measurements for bystander (BS) conditions are determined by taking the average of (10) measurements in a 2m vertical line for the test location indicated in Appendix A with 20cm increments at the test distance of 117cm from the antenna under test. The measurement probe is positioned orthogonal to antenna (typically parallel to ground with a vertically mounted antenna) and aimed directly at the antenna's axis. These measurements are representative of persons other than the operator standing next to the vehicle.

Note: Actual test distance was approximately 117cm from centered roof-mounted antenna to the probe element (97cm from antenna to edge of car door and 20cm from the edge of the car door to the survey probe sensor); this is the closest distance that can be achieved to a centered roof-mounted antenna used for MPE compliance assessment herein.

12.2 Internal/Passenger vehicle MPE measurements

Antenna is located at the center of the roof. Refer to Appendix A for antenna location and distance.

MPE measurements for passenger front seat (PF) and backseat (PB) conditions are determined by taking the average of the (3) measurements (Head, Chest, and Lower Trunk) inside the vehicle for both the front and back seats.

The backseat is a bench seat and therefore each position (Head, Chest & Lower Trunk) were scanned across (horizontally) the seat starting from the middle of the seat to the edge of the seat stopping 20 cm from the vehicle door. Similar process was used in the front bucket seat.

The probe handle is oriented parallel (horizontal) to the ground and pointed towards the back of the vehicle. The probe handle is not oriented normal to the seat surface. The probe head (incorporating the field sensors) is scanned continuously (using the max-hold function available in the meter) along three test axes which are parallel to the seat angle (intended as the line determined by the intersection of the plane of the seat and the plane of the backrest) and are 20 cm from the seat surface. One test axis is at the Head height, another is at the Chest height, and another is at the Lower Trunk height. The maximum field level value recorded for each test axis is logged. The MPE is determined by averaging these three maximum values regardless of the geometrical location where they were observed. For instance, the locations of the three maxima may lie on different vertical (relative to ground) lines.

This approach leads to results that are representative of the exposure of vehicle occupants since it is based on an average across the body portions closest to the antenna for both trunk and roof mount positions, and is conservatively biased because the highest results for each test axis are combined, e.g. the highest head exposure could be in the middle of the seat while the highest lower trunk exposure could be closer to the door.

13.0 MPE Calculations

The final MPE results for this mobile radio are presented in section 15.0 Tables 6 - 9. These results are based on 50% duty cycle for PTT.

Below is an explanation of how the MPE results are calculated. Refer to Appendix D for MPE measurement results and calculations.

External to vehicle (Bystander) - 10 measurements are averaged over the body (*Avg_over_body*).
Internal to vehicle (Passengers) - 3 measurements are averaged over the body (*Avg_over_body*).

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

Therefore;

Equation 2 – Power Density Calculation *(Calc._P.D.)*

$$Calc.\_P.D. = (Avg\_over\_body) * (probe\_frequency\_cal\_factor) * (duty\_cycle)$$

Note1: The highest "average" cal factors from the calibration certificates were selected for the applicable frequency range. Linear interpretation was used to determine "probe_frequency_cal_factor" for the specific test frequencies.

Note 2: The E-field probe calibration certificate's frequency cal factors were determined by measuring V/m. The survey meter's results were measured in power density (mW/cm^2) and therefore the "probe_frequency_cal_factor" was squared in equation 2 to account for these results.

Note 3: The H-field probe calibration certificate's frequency cal factors were determined by measuring A/m. The survey meter's results were measured in A/m and therefore the "Avg_over_body" A/m results were converted to power density (mW/cm^2) using the equation 3. H-field measurements are only applicable to frequencies below 300MHz.

Equation 3 – Converting A/m to mW/cm^2

$$mW/cm\text{^}2 = (A/m)\text{^}2 * 37.699$$

Equation 4 – Power Density Maximum Calculation

$$Max\_Calc.\_P.D. = P.D.\_calc * \frac{\max\_output\_power}{initial\_output\_power}$$

Note 4: For initial output power> max_output_power; max_output_power / initial output power = 1

14.0 Antenna Summary

Table 5 below summarizes the tested antennas and their descriptions, mount location (roof/trunk), overlap of FCC bands and the minimum number of test channels per FCC KDB 447498. This information was used to determine the test configurations presented in this report.

Table 5

#	Antenna Model	Frequency Range (MHz)	Physical Length (cm)	Gain (dBi)	Remarks	Mount Location (Roof/Trunk)	Overlap FCC Bands	N_c Test Channels (KDB447498)
1	HAE6010A	380-433	63.0	5.65	1/2 wave, trap-loaded	R/T	406.1-433	3
2	HAE6011A	380-433	91.5	7.15	5/8 wave, trap-loaded	R/T	406.1-433	3
3	HAE4011A	450-470	72.5	5.65	1/2 wave, trap-loaded	R/T	450-470	3
4	*RAE4014ARB	445 - 470	92.7 90.5 89.0	7.15	5/8 wave, trap-loaded	R/T	445-470	3
5	HAE6013A	380-470	29.0	4.15	1/2 wave, wire	R/T	406.1-470	5
6	HAE6031A	380 - 520	28.0	4.15	1/2 wave, wire	R/T	406.1-470	5
7	HAE6012A	380-433	18.0	2.15	1/4 wave, wire	R	406.1-433	3
8	HAE4003A	450-470	16.0	2.15	1/4 wave, wire	R	450-470	3

* Antennas trimmed per test frequency.

15.0 Test Results Summary

The following tables below summarize the MPE results for each test configuration: antenna location, test positions (BS-Bystander, PB-Passenger Backseat, PF-Passenger Front seat), E/H field measurements, angle, antenna model & freq. range, maximum output power, initial power, TX frequency, max calculated power density results, applicable FCC/IEEE specification limits and % of the applicable specification limits.

Table 6

Bystander MPE assessment to General Pop. / Uncontrolled Exposure Limits for trunk mounted antennas

Trunk/ Roof	Test Position	E/H field	Angle (Degree)	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/ cm^2)	% of FCC To Spec Limit	% of ICNIRP To Spec Limit	FCC Spec Limit (mW/cm^2)	ICNIRP Spec Limit (mW/cm^2)
Trunk	BS	E	0	HAE6010A, 380-433MHz	120	120	380.0125	0.22	88	*110	0.25	0.20
						117	393.0125	0.23	87	*114	0.26	0.20
						120	406.5000	0.21	79	*105	0.27	0.20
						118	419.5000	0.20	72	96	0.28	0.21
						120	432.9875	0.19	64	86	0.29	0.22
				HAE6011A, 380-433MHz	120	120	380.0125	0.23	90	*113	0.25	0.20
						117	393.0125	0.21	79	*104	0.26	0.20
						120	406.5000	0.18	69	91	0.27	0.20
						118	419.5000	0.09	32	42	0.28	0.21
						120	432.9875	0.06	20	27	0.29	0.22
				HAE4011A, 450-470MHz	120	120	450.0125	0.22	74	98	0.30	0.23
						120	460.0125	0.20	65	87	0.31	0.23
						120	469.9875	0.12	40	52	0.31	0.23
				RAE4014ARB, 445-470MHz	120	120	445.0125	0.16	54	73	0.30	0.22
						120	457.5000	0.13	42	56	0.31	0.23
						120	469.9875	0.04	13	17	0.31	0.23
				HAE6013A, 380-470MHz	120	120	380.0125	0.33	*133	*166	0.25	0.20
						117	393.0125	0.24	93	*122	0.26	0.20
						117	406.5000	0.29	*108	*144	0.27	0.20
						120	425.0125	0.34	*120	*159	0.28	0.21
						117	438.0125	0.32	*108	*144	0.29	0.22
						118	454.0125	0.27	90	*119	0.30	0.23
						120	469.9875	0.22	71	94	0.31	0.23
				HAE6031A, 380-520MHz	120	120	380.0125	0.29	*116	*145	0.25	0.20
						117	393.0125	0.24	91	*120	0.26	0.20
						117	406.5000	0.28	*105	*140	0.27	0.20
						120	425.0125	0.36	*130	*171	0.28	0.21
						117	438.0125	0.36	*124	*165	0.29	0.22
						118	454.0125	0.34	*113	*151	0.30	0.23
						120	469.9875	0.29	95	*125	0.31	0.23
			45	HAE6031A, 380-520MHz	120	120	425.0125	0.26	91	*120	0.28	0.21
			90	HAE6031A, 380-520MHz	120	120	425.0125	0.29	*103	*136	0.28	0.21

Note 1 - Results outside FCC bands are not applicable for compliance demonstration.
Note 2 - * Results required SAR simulations.
Note 3 – Data highlighted was used for FCC ID AZ492FT4849 in November 2010. Remaining data was taken in 2011 with the same radio model from FCC ID AZ492FT4849.

Table 7

Passenger MPE assessment to General Pop. / Uncontrolled Exposure Limits for trunk mounted antennas

Trunk/ Roof	Test Position	E/H field	Angle (Degree)	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/ cm^2)	% of FCC To Spec Limit	% of ICNIRP To Spec Limit	FCC Spec Limit (mW/cm^2)	ICNIRP Spec Limit (mW/cm^2)
Trunk	PB	E	NA	HAE6010A, 380-433MHz	120	120	380.0125	0.53	*212	*266	0.25	0.20
						117	393.0125	0.47	*179	*235	0.26	0.20
						120	406.5000	0.60	*223	*296	0.27	0.20
						118	419.5000	0.31	*109	*146	0.28	0.21
						120	432.9875	0.24	83	*112	0.29	0.22
				HAE6011A, 380-433MHz	120	120	380.0125	0.34	*135	*168	0.25	0.20
						117	393.0125	0.42	*159	*208	0.26	0.20
						120	406.5000	0.38	*140	*186	0.27	0.20
						118	419.5000	0.20	72	96	0.28	0.21
						120	432.9875	0.04	14	18	0.29	0.22
				HAE4011A, 450-470MHz	120	120	450.0125	0.46	*154	*205	0.30	0.23
						120	460.0125	0.45	*145	*195	0.31	0.23
						120	469.9875	0.18	59	78	0.31	0.23
				RAE4014ARB, 445-470MHz	120	120	445.0125	0.16	53	71	0.30	0.22
						120	457.5000	0.06	19	26	0.31	0.23
						120	469.9875	0.00	2	2	0.31	0.23
				HAE6013A, 380-470MHz	120	120	380.0125	0.76	*304	*380	0.25	0.20
						117	393.0125	0.82	*311	*408	0.26	0.20
						117	406.5000	0.93	*344	*459	0.27	0.20
						120	425.0125	0.55	*196	*258	0.28	0.21
						117	438.0125	0.44	*151	*202	0.29	0.22
						118	454.0125	0.76	*250	*334	0.30	0.23
						120	469.9875	0.36	*116	*153	0.31	0.23
				HAE6031A, 380-520MHz	120	120	380.0125	0.81	*322	*403	0.25	0.20
						117	393.0125	0.81	*309	*405	0.26	0.20
						117	406.5000	0.91	*337	*450	0.27	0.20
						120	425.0125	0.53	*191	*251	0.28	0.21
						117	438.0125	0.54	*186	*248	0.29	0.22
						118	454.0125	0.93	*307	*410	0.30	0.23
						120	469.9875	0.50	*161	*213	0.31	0.23

Note 1 - Results outside FCC bands are not applicable for compliance demonstration.
Note 2 - * Results required SAR simulations.
Note 3 – Data highlighted was used for FCC ID AZ492FT4849 in November 2010. Remaining data was taken in 2011 with the same radio model from FCC ID AZ492FT4849.

Table 7 (continued)

Passenger MPE assessment to General Pop. / Uncontrolled Exposure Limits for trunk mounted antennas

Trunk/ Roof	Test Position	E/H field	Angle (Degree)	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/ cm^2)	% of FCC To Spec Limit	% of ICNIRP To Spec Limit	FCC Spec Limit (mW/cm^2)	ICNIRP Spec Limit (mW/cm^2)
Trunk	PF	E	NA	HAE6010A, 380-433MHz	120	120	380.0125	0.13	53	67	0.25	0.20
						117	393.0125	0.12	46	61	0.26	0.20
						120	406.5000	0.13	47	63	0.27	0.20
						118	419.5000	0.11	38	51	0.28	0.21
						120	432.9875	0.05	19	25	0.29	0.22
				HAE6011A, 380-433MHz	120	120	380.0125	0.09	34	43	0.25	0.20
						117	393.0125	0.09	33	43	0.26	0.20
						120	406.5000	0.09	32	42	0.27	0.20
						118	419.5000	0.06	20	27	0.28	0.21
						120	432.9875	0.01	3	4	0.29	0.22
				HAE4011A, 450-470MHz	120	120	450.0125	0.13	44	58	0.30	0.23
						120	460.0125	0.11	35	47	0.31	0.23
						120	469.9875	0.06	19	25	0.31	0.23
				RAE4014ARB, 445-470MHz	120	120	445.0125	0.03	11	15	0.30	0.22
						120	457.5000	0.02	7	9	0.31	0.23
						120	469.9875	0.00	1	1	0.31	0.23
				HAE6013A, 380-470MHz	120	120	380.0125	0.23	92	*115	0.25	0.20
						117	393.0125	0.19	72	94	0.26	0.20
						117	406.5000	0.24	87	*116	0.27	0.20
						120	425.0125	0.16	58	76	0.28	0.21
						117	438.0125	0.14	48	64	0.29	0.22
						118	454.0125	0.20	66	88	0.30	0.23
						120	469.9875	0.21	67	89	0.31	0.23
				HAE6031A, 380-520MHz	120	120	380.0125	0.22	88	*110	0.25	0.20
						117	393.0125	0.17	66	86	0.26	0.20
						117	406.5000	0.26	97	*130	0.27	0.20
						120	425.0125	0.09	31	41	0.28	0.21
						117	438.0125	0.16	54	72	0.29	0.22
						118	454.0125	0.25	83	*110	0.30	0.23
						120	469.9875	0.22	71	94	0.31	0.23

Note 1 - Results outside FCC bands are not applicable for compliance demonstration.
Note 2 - * Results required SAR simulations.
Note 3 – Data highlighted was used for FCC ID AZ492FT4849 in November 2010. Remaining data was taken in 2011 with the same radio model from FCC ID AZ492FT4849.

Table 8

Bystander MPE assessment to General Pop. / Uncontrolled Exposure Limits for roof mounted antennas

Trunk/ Roof	Test Position	E/H field	Angle (Degree)	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/ cm^2)	% of FCC To Spec Limit	% of ICNIRP To Spec Limit	FCC Spec Limit (mW/cm^2)	ICNIRP Spec Limit (mW/cm^2)
Roof	BS	E	NA	HAE6012A, 380-433MHz	120	120	380.0125	0.14	54	68	0.25	0.20
						117	393.0125	0.13	50	66	0.26	0.20
						120	406.5000	0.16	59	79	0.27	0.20
						118	419.5000	0.14	50	67	0.28	0.21
						120	432.9875	0.13	44	59	0.29	0.22
				HAE4003A, 450-470MHz	120	120	450.0125	0.15	50	67	0.30	0.23
						120	460.0125	0.15	49	66	0.31	0.23
						120	469.9875	0.15	48	63	0.31	0.23
				HAE6010A, 380-433MHz	120	120	380.0125	0.06	26	32	0.25	0.20
						117	393.0125	0.07	25	33	0.26	0.20
						120	406.5000	0.09	33	44	0.27	0.20
						118	419.5000	0.08	30	40	0.28	0.21
						120	432.9875	0.07	23	30	0.29	0.22
				HAE6011A, 380-433MHz	120	120	380.0125	0.10	39	48	0.25	0.20
						117	393.0125	0.11	43	57	0.26	0.20
						120	406.5000	0.10	36	48	0.27	0.20
						118	419.5000	0.05	17	23	0.28	0.21
						120	432.9875	0.02	9	11	0.29	0.22
				HAE4011A, 450-470MHz	120	120	450.0125	0.14	45	61	0.30	0.23
						120	460.0125	0.12	38	52	0.31	0.23
						120	469.9875	0.08	25	33	0.31	0.23
				RAE4014ARB, 445-470MHz	120	120	445.0125	0.09	28	38	0.30	0.22
						120	457.5000	0.05	18	24	0.31	0.23
						120	469.9875	0.01	2	3	0.31	0.23
				HAE6013A, 380-470MHz	120	120	380.0125	0.14	56	70	0.25	0.20
						117	393.0125	0.14	55	72	0.26	0.20
						117	406.5000	0.15	56	75	0.27	0.20
						120	425.0125	0.14	51	68	0.28	0.21
						117	438.0125	0.14	47	63	0.29	0.22
						118	454.0125	0.13	42	56	0.30	0.23
						120	469.9875	0.12	40	52	0.31	0.23
				HAE6031A, 380-520MHz	120	120	380.0125	0.12	48	59	0.25	0.20
						117	393.0125	0.14	53	69	0.26	0.20
						117	406.5000	0.15	55	73	0.27	0.20
						120	425.0125	0.15	53	70	0.28	0.21
						117	438.0125	0.16	54	72	0.29	0.22
						118	454.0125	0.16	53	70	0.30	0.23
						120	469.9875	0.16	52	69	0.31	0.23

Note 1 - Results outside FCC bands are not applicable for compliance demonstration.

Note 2 – Data highlighted was used for FCC ID AZ492FT4849 in November 2010. Remaining data was taken in 2011 with the same radio model from FCC ID AZ492FT4849.

Table 9

Passenger MPE assessment to General Pop. / Uncontrolled Exposure Limits for roof mounted antennas

Trunk/ Roof	Test Position	E/H field	Angle (Degree)	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/ cm^2)	% of FCC To Spec Limit	% of ICNIRP To Spec Limit	FCC Spec Limit (mW/cm^2)	ICNIRP Spec Limit (mW/cm^2)
Roof	PB	E	NA	HAE6012A, 380-433MHz	120	120	380.0125	0.12	48	60	0.25	0.20
						117	393.0125	0.15	57	75	0.26	0.20
						120	406.5000	0.26	97	*129	0.27	0.20
						118	419.5000	0.10	36	48	0.28	0.21
						120	432.9875	0.07	24	32	0.29	0.22
				HAE4003A, 450-470MHz	120	120	450.0125	0.09	31	42	0.30	0.23
						120	460.0125	0.06	19	26	0.31	0.23
						120	469.9875	0.06	19	25	0.31	0.23
				HAE6010A, 380-433MHz	120	120	380.0125	0.09	36	45	0.25	0.20
						117	393.0125	0.16	60	79	0.26	0.20
						120	406.5000	0.30	*112	*149	0.27	0.20
						118	419.5000	0.13	45	60	0.28	0.21
						120	432.9875	0.08	27	36	0.29	0.22
				HAE6011A, 380-433MHz	120	120	380.0125	0.01	4	5	0.25	0.20
						117	393.0125	0.02	8	10	0.26	0.20
						120	406.5000	0.04	14	19	0.27	0.20
						118	419.5000	0.01	5	6	0.28	0.21
						120	432.9875	0.04	12	17	0.29	0.22
				HAE4011A, 450-470MHz	120	120	450.0125	0.01	5	6	0.30	0.23
						120	460.0125	0.01	4	5	0.31	0.23
						120	469.9875	0.01	3	3	0.31	0.23
				RAE4014ARB, 445-470MHz	120	120	445.0125	0.01	4	6	0.30	0.22
						120	457.5000	0.00	0	0	0.31	0.23
						120	469.9875	0.00	0	0	0.31	0.23
				HAE6013A, 380-470MHz	120	120	380.0125	0.14	54	68	0.25	0.20
						117	393.0125	0.15	58	76	0.26	0.20
						117	406.5000	0.17	62	83	0.27	0.20
						120	425.0125	0.08	30	39	0.28	0.21
						117	438.0125	0.07	24	31	0.29	0.22
						118	454.0125	0.05	17	23	0.30	0.23
						120	469.9875	0.04	14	18	0.31	0.23
				HAE6031A, 380-520MHz	120	120	380.0125	0.11	46	57	0.25	0.20
						117	393.0125	0.14	54	71	0.26	0.20
						117	406.5000	0.16	61	81	0.27	0.20
						120	425.0125	0.09	31	41	0.28	0.21
						117	438.0125	0.09	29	39	0.29	0.22
						118	454.0125	0.07	22	29	0.30	0.23
						120	469.9875	0.06	20	27	0.31	0.23

Note 1 - Results outside FCC bands are not applicable for compliance demonstration.

Note 2 – Data highlighted was used for FCC ID AZ492FT4849 in November 2010. Remaining data was taken in 2011 with the same radio model from FCC ID AZ492FT4849.

Table 9 (continued)

Passenger MPE assessment to General Pop. / Uncontrolled Exposure Limits for roof mounted antennas

Trunk/ Roof	Test Position	E/H field	Angle (Degree)	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/ cm^2)	% of FCC To Spec Limit	% of ICNIRP To Spec Limit	FCC Spec Limit (mW/cm^2)	ICNIRP Spec Limit (mW/cm^2)
Roof	PF	E	NA	HAE6012A, 380-433MHz	120	120	380.0125	0.04	14	18	0.25	0.20
						117	393.0125	0.05	19	25	0.26	0.20
						120	406.5000	0.07	25	33	0.27	0.20
						118	419.5000	0.06	23	31	0.28	0.21
						120	432.9875	0.04	12	17	0.29	0.22
				HAE4003A, 450-470MHz	120	120	450.0125	0.06	19	25	0.30	0.23
						120	460.0125	0.09	30	41	0.31	0.23
						120	469.9875	0.06	20	26	0.31	0.23
				HAE6010A, 380-433MHz	120	120	380.0125	0.03	14	17	0.25	0.20
						117	393.0125	0.05	18	24	0.26	0.20
						120	406.5000	0.08	29	39	0.27	0.20
						118	419.5000	0.07	24	31	0.28	0.21
						120	432.9875	0.04	13	18	0.29	0.22
				HAE6011A, 380-433MHz	120	120	380.0125	0.00	2	2	0.25	0.20
						117	393.0125	0.01	3	4	0.26	0.20
						120	406.5000	0.00	2	2	0.27	0.20
						118	419.5000	0.01	4	5	0.28	0.21
						120	432.9875	0.00	0	0	0.29	0.22
				HAE4011A, 450-470MHz	120	120	450.0125	0.01	4	6	0.30	0.23
						120	460.0125	0.02	6	8	0.31	0.23
						120	469.9875	0.01	3	3	0.31	0.23
				RAE4014ARB, 445-470MHz	120	120	445.0125	0.00	1	1	0.30	0.22
						120	457.5000	0.00	0	0	0.31	0.23
						120	469.9875	0.00	0	0	0.31	0.23
				HAE6013A, 380-470MHz	120	120	380.0125	0.05	18	23	0.25	0.20
						117	393.0125	0.05	19	25	0.26	0.20
						117	406.5000	0.10	38	51	0.27	0.20
						120	425.0125	0.05	19	25	0.28	0.21
						117	438.0125	0.03	11	15	0.29	0.22
						118	454.0125	0.05	16	21	0.30	0.23
						120	469.9875	0.06	19	25	0.31	0.23
				HAE6031A, 380-520MHz	120	120	380.0125	0.04	14	18	0.25	0.20
						117	393.0125	0.06	21	28	0.26	0.20
						117	406.5000	0.10	36	48	0.27	0.20
						120	425.0125	0.05	19	25	0.28	0.21
						117	438.0125	0.04	14	19	0.29	0.22
						118	454.0125	0.05	18	23	0.30	0.23
						120	469.9875	0.14	44	58	0.31	0.23

Note 1 - Results outside FCC bands are not applicable for compliance demonstration.
Note 2 – Data highlighted was used for FCC ID AZ492FT4849 in November 2010. Remaining data was taken in 2011 with the same radio model from FCC ID AZ492FT4849.

16.0 Conclusion

The assessments for this device were performed with an output power range as indicated in section 15.0 Tables 6 - 9. The maximum allowable output power is equal to the upper limit of the final test factory transmit power specification of 120W (380 - 470MHz). The highest power density results for the mobile device scaled to the maximum allowable power output are indicated in the Tables 10, 11 and 12 for internal/passenger to the vehicle, and external/bystander to the vehicle.

Table 10: RF Exposure Results for FCC Part 90 (406.1-470MHz)

	UHF R2 Band
Passenger - Max Calculated Power Density	*0.93mW/cm²
Bystander - Max Calculated Power Density	*0.36mW/cm²

Table 11: RF Exposure Results for IC (406.1-470MHz)

	UHF R2 Band
Passenger - Max Calculated Power Density	*0.93mW/cm²
Bystander - Max Calculated Power Density	*0.36mW/cm²

Table 12: RF Exposure Results (380-470MHz)

	UHF R2 Band
Passenger - Max Calculated Power Density	*0.93mW/cm²
Bystander - Max Calculated Power Density	*0.36mW/cm²

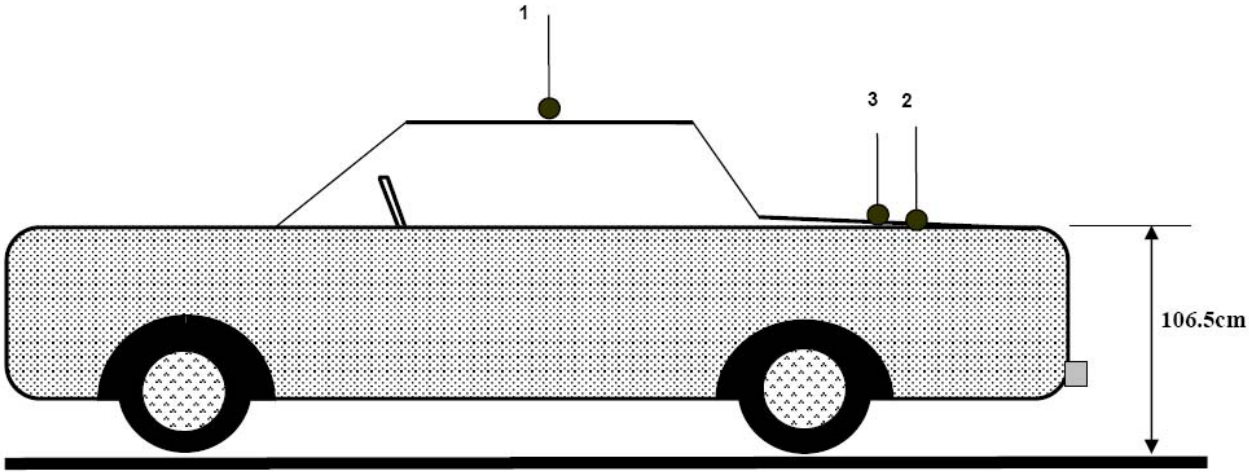
These MPE results herein demonstrate compliance to the FCC/IEEE Occupational/Controlled Exposure limit. FCC rules require compliance for Passengers and Bystanders to the FCC General Population/Uncontrolled limits. Although MPE is a convenient method of demonstrating compliance, SAR is recognized as the "basic restriction". For those configurations exceeding the MPE limit noted * in section 15 Tables 6 thru 9, compliance to the FCC SAR General Population/ Uncontrolled limit of 1.6mW/g is demonstrated in Appendix E via SAR computational analysis.

The computational results show that this device, when used with the offered antennas in accordance with the user manual instructions, exhibits the maximum peak 1-g average SAR values as indicated in the table below.

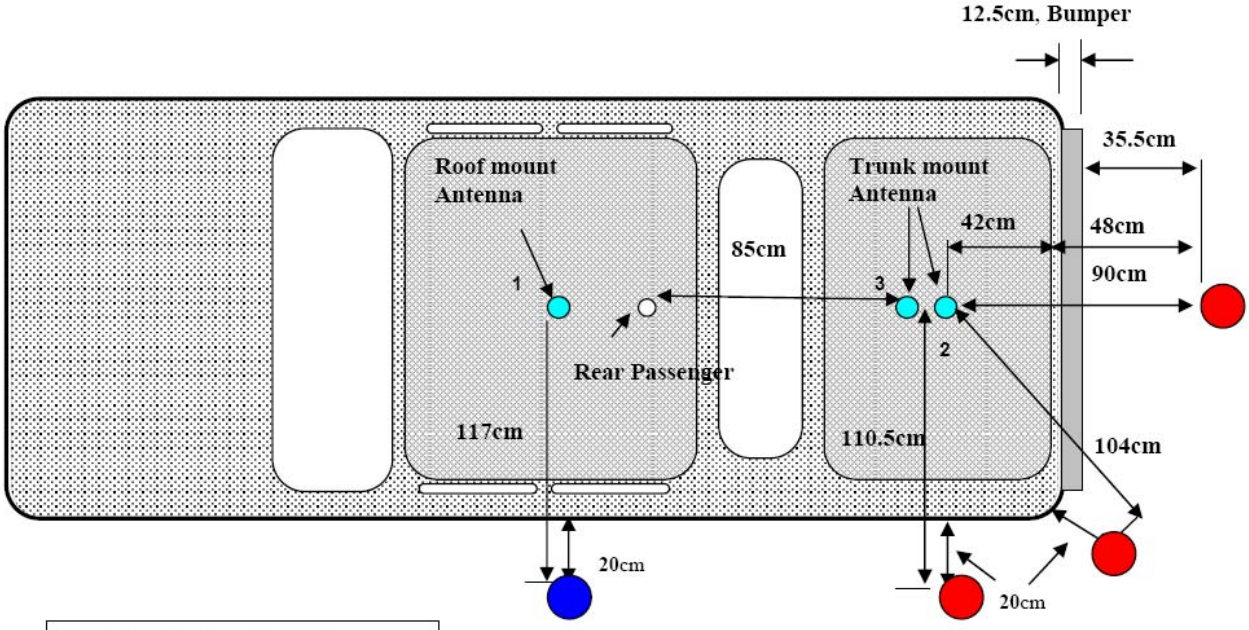
Maximum peak 1g average SAR	
Frequency (MHz)	SAR
406.5	1.44mW/g

Appendix A - Illustration of Antenna Locations and Test Distances

90cm Trunk Distance



1 - Roof (center)
2 - Trunk (center)
3 - Trunk (85cm from back of the back seat)



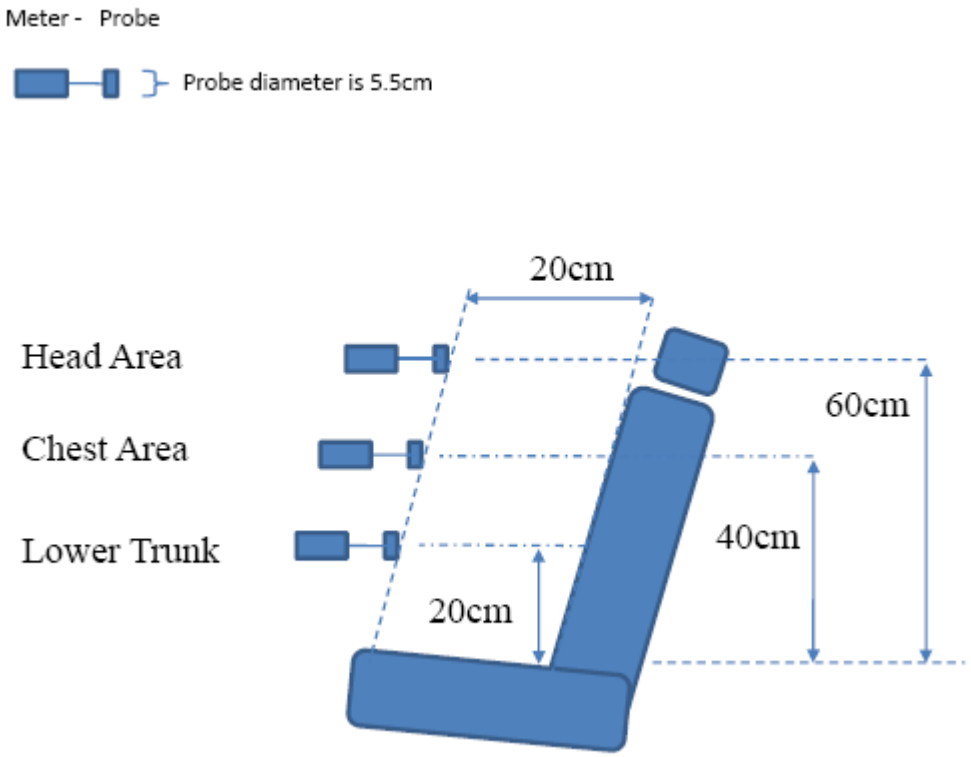
By-Stander Test Locations

Roof Mount

Trunk Mount

Note: The distance from the centered trunk-mounted antenna to the edge of the vehicle is 42cm and the distance from the edge of the vehicle to the survey probe sensor is 48cm.

Seat scan areas
(Applicable to both front and back seats)



Appendix B - Probe Calibration Certificates

Service Test Report
QAF 1126, 06/07
Report ID: 75744

ETS·LINDGREN™
An ESCO Technologies Company
1301 Arrow Point Drive
Cedar Park, Texas 78613
(512) 531-6498

ETS·LINDGREN
An ESCO Technologies Company
Tracking # S000017735
Equipment Check
Attested by JT Date: 22-Oct-09
www.ets-lindgren.com

Certificate of Test Conformance

Reference: S 000017735

Customer: MOTOROLA INC. (FL)

The instrument listed below has been tested and verified to Internal Quality Standards. Test data is Not Applicable. Equipment used during instrument testing is controlled by laboratory compliance with ISO/IEC 17025-2005 using ETS-Lindgren Quality Management System internal procedures.

Manufacturer	ETS-Lindgren
Instrument Type	RF Survey Meter
Model	HI-2200
Serial Number/ID	00086316

Status In
Other

Date Completed
22-Oct-09

Status Out
Compliant with Internal Quality Standards

Remarks
Secured mounting screw on LCD to remove lines - Functional Test Performed.

I would like to take this opportunity to express our appreciation for using ETS-Lindgren for your EMI test equipment services and I am looking forward to continued business with your organization. Please feel free to contact our offices at (512) 531-6400, if you have any questions regarding this report.

Sincerely,

Justin Tarr
Calibration Supervisor

Date Attested: 22-Oct-09

ACCREDITED
Lab ID:1207.01-Calibration

Cert I.D.: 75742

ETS-LINDGREN™
An ESCO Technologies Company
1301 Arrow Point Drive
Cedar Park, Texas 78613
(512) 531-6498

ETS-LINDGREN
An ESCO Technologies Company
Track# S000017735 Ltd Cal ☐
By MR Date 22-Oct-09
Next Cal Due
www.ets-lindgren.com

Certificate of Calibration Conformance

The instrument identifed below has been individually calibrated in compliance with the following standard(s):

IEEE 1309 - 2005, Institute of Electrical and Electronics Engineers, Standard for Calibration of Electromagnetic Field Sensors and Probes, Excluding Antennas from 9 kHz to 40 GHz

Environment: Laboratory MTE is maintained in a temperature controlled environment with ambient conditions from 18 to 28 C, relative humidity less than 90%. The instrument under test has been calibrated in a suitable environment using an EMCO TEM Cell 5101C, GTEM! 5305 and an RF Shielded EMC Chamber which is conducive to maintaining accurate and reliable measurement quality.

Manufacturer:	ETS-Lindgren	**Operating Range:**	100kHz - 5GHz
Model Number:	E100	**Instrument Type:**	Isotropic Probe > 1 GHz
Serial Number/ ID:	*00109011*	**Date Code:**	
Tracking Number:	**S000017735**	**Alternate ID:**	
Date Completed:	22-Oct-09	**Customer:**	MOTOROLA INC. (FL)
Test Type:	Standard Field, Field Strength		

Calibration Uncertainty: Std Field Method 10kHz - 18000 MHz, +/-0.7 dB, 26.5GHz - 40GHz,+/- 0.95 dB
k=2, (95% Confidence Level)

Test Remarks: Special calibration - Additional field levels added.

Calibration Traceability: All Measuring and Test Equipment (M/TE) identified below are traceable to the National Institute for Standards and Technology (NIST). Calibration Laboratory and Quality System controls are compliant with ISO/IEC 17025-2005.

Standards and Equipment Used:
Make / Model / Name / S/N / Recall Date

Rohde & Schwarz	857.8008.0	Power Meter NRVD	828110/019	10-Feb-10
Hewlett Packard	437B	HP Power Meter	3110A03972	09-Jan-10
Fluke	6060B	RF Signal Generator	5690204	11-Jun-10
Marconi	2022	Signal Generator	119019/077	25-Sep-10
Rohde & Schwarz	857.8008.0	Power Meter NRVD	100451	18-Nov-09
Hewlett Packard	83620B	Signal Generator	3722A00541	25-Sep-10

Condition of Instrument Upon Receipt:
In Tolerance to Internal Quality Standards

On Release:
In Tolerance to Internal Quality Standards

Maynard W Reich

Calibration Completed By
Maynard Reich, Calibration Technician

Justin Terr

Attested and Issued on 22-Oct-09
Justin Terr, Calibration Supervisor

ETS·LINDGREN™

Frequency Response Calibration Factors
Model E100 Serial Number 00109011
Date of Calibration 21 Oct 2009

Frequency	Applied	Probe Reading			Correction Factor			
(MHz)	V/m	X	Y	Z	X	Y	Z	Avg
1.00	7.64	7.02	7.79	6.94	1.14	1.04	0.98	1.05
1.00	19.82	16.71	17.11	16.74	1.18	1.16	1.18	1.18
1.00	71.15	57.93	59.53	58.16	1.23	1.19	1.22	1.22
1.00	125.11	100.56	104.03	102.13	1.24	1.20	1.23	1.22
15.00	7.95	8.17	8.28	8.18	0.98	0.96	0.97	0.97
15.00	19.94	19.63	19.98	19.65	1.02	1.00	1.01	1.01
15.00	70.00	67.78	68.81	67.94	1.03	1.02	1.03	1.03
15.00	124.61	120.61	122.69	121.30	1.03	1.02	1.03	1.03
30.00	7.95	8.49	8.59	8.45	0.93	0.93	0.94	0.93
30.00	19.81	19.99	20.29	20.08	1.00	0.97	0.98	0.98
30.00	69.87	69.71	70.67	70.11	1.00	0.99	1.00	1.00
30.00	124.31	124.11	125.93	125.11	1.00	0.99	0.99	0.99
75.00	8.06	8.62	8.75	8.77	0.94	0.93	0.91	0.92
75.00	19.92	20.32	20.71	20.76	0.97	0.96	0.96	0.97
75.00	69.19	71.16	72.25	72.19	0.97	0.96	0.96	0.96
75.00	123.17	126.65	128.70	128.37	0.97	0.96	0.96	0.96
100.00	7.99	8.30	8.54	8.58	0.96	0.95	0.92	0.94
100.00	19.72	20.02	20.31	20.50	0.98	0.97	0.96	0.97
100.00	70.01	70.85	71.90	72.15	0.99	0.97	0.97	0.98
100.00	126.58	128.59	130.29	130.10	0.98	0.97	0.97	0.98
150.00	8.05	8.13	8.26	8.36	0.99	0.98	0.95	0.98
150.00	19.93	20.03	20.39	20.66	0.99	0.98	0.96	0.98
150.00	69.87	70.30	71.46	71.94	0.99	0.98	0.97	0.98
150.00	124.91	126.00	127.53	128.17	0.99	0.98	0.97	0.98
200.00	8.07	8.50	8.67	8.69	0.95	0.94	0.92	0.94
200.00	19.86	20.80	21.21	21.58	0.96	0.94	0.92	0.94
200.00	69.73	73.51	74.90	75.46	0.95	0.93	0.92	0.93
200.00	125.11	132.11	134.58	134.95	0.95	0.93	0.93	0.93
250.00	8.00	8.33	8.42	8.60	0.96	0.95	0.93	0.95
250.00	20.02	20.72	21.00	21.43	0.97	0.95	0.93	0.95
250.00	70.08	72.35	73.13	74.05	0.97	0.96	0.95	0.96
250.00	123.93	128.09	129.47	130.20	0.97	0.96	0.95	0.96
300.00	8.02	8.27	8.40	8.57	0.97	0.95	0.94	0.95
300.00	19.96	20.48	20.79	21.31	0.98	0.96	0.94	0.96
300.00	69.80	71.54	72.40	73.40	0.98	0.96	0.95	0.96
300.00	125.31	129.68	131.16	131.92	0.97	0.96	0.95	0.96
400.00	7.97	8.30	8.34	8.56	0.97	0.95	0.93	0.95
400.00	20.00	20.54	20.92	21.48	0.97	0.96	0.93	0.95
400.00	70.16	71.90	72.88	73.99	0.98	0.96	0.95	0.96
400.00	126.35	129.28	131.06	132.12	0.98	0.96	0.96	0.97
500.00	7.99	8.01	8.18	8.39	1.00	0.98	0.95	0.97
500.00	20.01	20.00	20.41	20.98	1.00	0.98	0.95	0.98
500.00	69.97	69.80	71.05	72.15	1.00	0.98	0.97	0.99
500.00	124.82	125.16	127.11	128.22	1.00	0.98	0.97	0.98
600.00	8.05	8.00	8.13	8.36	1.01	0.99	0.96	0.99
600.00	19.91	19.62	19.99	20.62	1.01	1.00	0.97	0.99
600.00	70.04	68.89	69.92	71.17	1.02	1.00	0.98	1.00
600.00	126.51	124.61	126.45	127.20	1.02	1.00	0.99	1.00

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Frequency Response Calibration Factors
Model E100 Serial Number 00109011
Date of Calibration 21 Oct 2009

Frequency	Applied	Probe Reading			Correction Factor			
(MHz)	V/m	X	Y	Z	X	Y	Z	Avg
700.00	8.00	7.97	8.10	8.33	1.00	0.99	0.96	0.98
700.00	19.96	19.73	20.08	20.70	1.01	0.99	0.96	0.99
700.00	70.92	70.15	71.10	72.40	1.01	1.00	0.98	1.00
700.00	126.17	124.81	126.29	127.81	1.01	1.00	0.99	1.00
800.00	8.03	7.80	7.94	8.18	1.03	1.01	0.98	1.01
800.00	20.00	19.25	19.67	20.30	1.04	1.02	0.99	1.01
800.00	70.11	67.44	68.66	69.87	1.04	1.02	1.01	1.02
800.00	124.80	120.51	122.51	123.68	1.04	1.02	1.01	1.02
900.00	8.00	7.62	7.82	8.04	1.05	1.02	1.00	1.02
900.00	20.12	19.05	19.57	20.18	1.06	1.03	1.00	1.03
900.00	69.94	66.19	67.78	68.96	1.06	1.03	1.01	1.03
900.00	124.54	118.24	120.95	121.59	1.05	1.03	1.02	1.04
1000.00	7.99	8.48	8.65	9.01	0.94	0.92	0.89	0.92
1000.00	19.88	21.08	21.49	22.22	0.94	0.92	0.89	0.92
1000.00	70.09	74.27	75.51	76.80	0.94	0.93	0.91	0.93
1000.00	126.71	134.43	136.66	137.97	0.94	0.93	0.92	0.93
2000.00	20.27	19.59	20.78	20.88	1.03	0.98	0.97	0.99
2450.00	19.89	18.55	19.38	19.12	1.07	1.03	1.04	1.05
3000.00	20.20	19.52	20.35	21.43	1.03	0.99	0.94	0.99
3500.00	19.95	20.73	22.23	21.00	0.96	0.90	0.95	0.94
4000.00	20.49	21.32	21.67	21.70	0.96	0.95	0.94	0.95
5000.00	20.26	16.24	17.62	17.17	1.25	1.15	1.18	1.19
5500.00	19.77	15.77	16.06	14.83	1.25	1.23	1.33	1.27
6000.00	19.99	14.67	16.77	16.40	1.36	1.19	1.22	1.26

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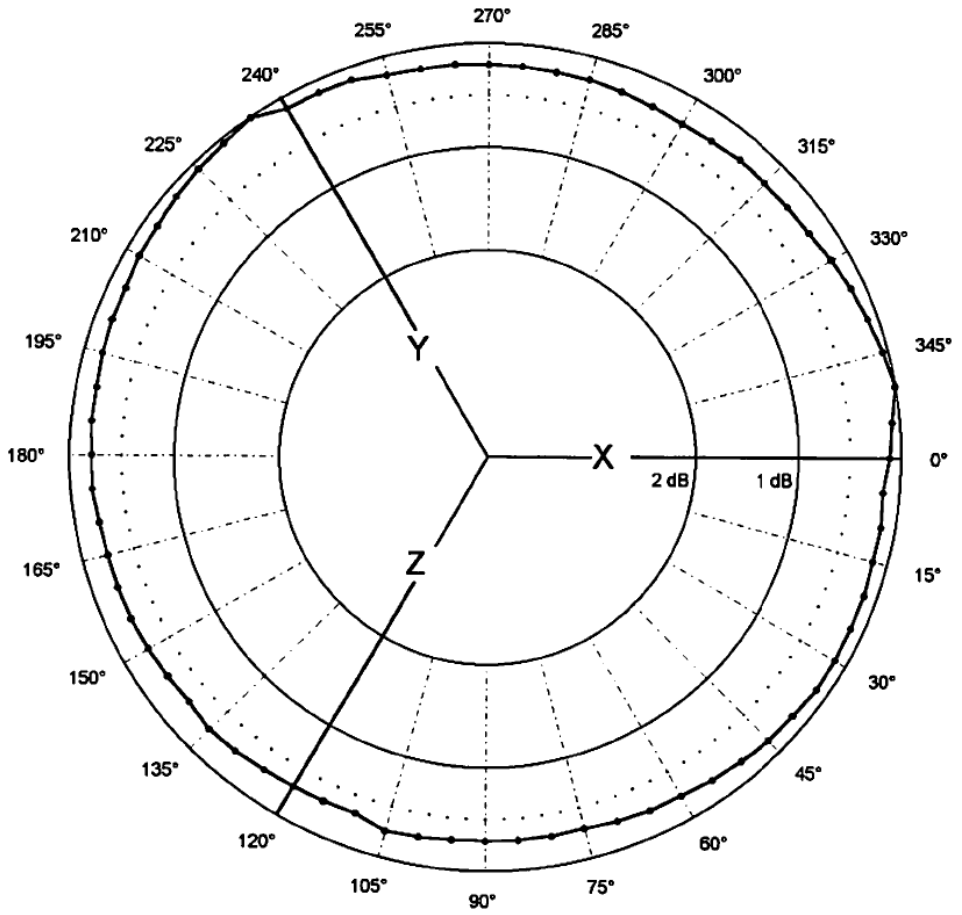
An ESCO Technologies Company

PROBE ROTATIONAL RESPONSE

Model	E100
S/N	00109011
Date	22-Oct-2009
Time	07:40:55
Variation	0.39 dB



• Isotropic response measured in a 20 V/m field at 400 MHz

Page 4 of 4

Service Test Report
QAF 1126, 06/07
Report ID: 82515

ETS·LINDGREN™
An ESCO Technologies Company
1301 Arrow Point Drive
Cedar Park, Texas 78613
(512) 531-6498

ETS·LINDGREN
An ESCO Technologies Company
Tracking # S000021039
Equipment Check
Attested by RG Date: 04-Jan-11
www.ets-lindgren.com

Certificate of Test Conformance

Reference: S 000021039

Customer: AGILENT/MOTOROLA (FL)

The instrument listed below has been tested and verified to Internal Quality Standards. Test data is Not Applicable. Equipment used during instrument testing is controlled by laboratory compliance with ISO/IEC 17025-2005 using ETS-Lindgren Quality Management System internal procedures.

Manufacturer	ETS-Lindgren
Instrument Type	RF Survey Meter
Model	HI-2200
Serial Number/ID	00086316

Status In
In Tolerance
Date Completed
04-Jan-11
Status Out
Compliant with Internal Quality Standards

Remarks
Performed functional test with customer probes.

I would like to take this opportunity to express our appreciation for using ETS-Lindgren for your EMI test equipment services and I am looking forward to continued business with your organization. Please feel free to contact our offices at (512) 531-6400, if you have any questions regarding this report.

Sincerely,

Richard Goodlow
Calibration Supervisor

Date Attested: 04-Jan-11

ACCREDITED Calibration Laboratory Certificate 1207.01

ETS·LINDGREN™
An ESCO Technologies Company
1301 Arrow Point Drive
Cedar Park, Texas 78613
(512) 531-6498

ETS·LINDGREN
An ESCO Technologies Company
Track# S000021039 Ltd Cal ☐
By AS Date 04-Jan-11
Next Cal Due
www.ets-lindgren.com

Cert I.D.: 82513

Certificate of Calibration Conformance

The instrument identifed below has been individually calibrated in compliance with the following standard(s):

IEEE 1309 - 2005, Institute of Electrical and Electronics Engineers, Standard for Calibration of Electromagnetic Field Sensors and Probes, Excluding Antennas from 9 kHz to 40 GHz

Environment: Laboratory MTE is maintained in a temperature controlled environment with ambient conditions from 18 to 28 C, relative humidity less than 90%. The instrument under test has been calibrated in a suitable environment using an EMCO TEM Cell 5101C, GTEM! 5305 and an RF Shielded EMC Chamber which is conducive to maintaining accurate and reliable measurement quality.

Manufacturer:	ETS-Lindgren	**Operating Range:**	100kHz - 5GHz
Model Number:	E100	**Instrument Type:**	Isotropic Probe > 1 GHz
Serial Number/ ID:	*00109011*	**Date Code:**	
Tracking Number:	**S000021039**	**Alternate ID:**	
Date Completed:	04-Jan-11	**Customer:**	AGILENT/MOTOROLA (FL)
Test Type:	Standard Field, Field Strength		

Calibration Uncertainty: Std Field Method 10kHz - 18000 MHz, +/-0.7 dB, 26.5GHz - 40GHz,+/- 0.95 dB
k=2, (95% Confidence Level)

Test Remarks: Provided specific frequencies per customer request.

Calibration Traceability: All Measuring and Test Equipment (M/TE) identified below are traceable to the National Institute for Standards and Technology (NIST). Calibration Laboratory and Quality System controls are compliant with ISO/IEC 17025-2005.

Standards and Equipment Used:
Make / Model / Name / S/N / Recall Date

Hewlett Packard	437B	HP Power Meter	3125U12370	15-Jun-11
Fluke	6060B	RF Signal Generator	5690204	15-Jun-11
Marconi	2022	Signal Generator	119019/077	23-Sep-11
Agilent	E4419B	Power Meter	MY45104171	23-Sep-11
Rohde & Schwarz	857.8008.02	Power Meter NRVD	100451	11-Mar-11
Hewlett Packard	83650L	Synthesized Sweep Gen	3844A00422	29-Jan-11

Condition of Instrument Upon Receipt:
In Tolerance to Internal Quality Standards

On Release:
In Tolerance to Internal Quality Standards

Calibration Completed By
Alan Schifferdecker, Calibration Technician

Attested and Issued on 04-Jan-11
Richard Goodlow, Calibration Supervisor

ETS·LINDGREN™

Frequency Response Calibration Factors
Model E100 Serial Number 00109011
Date of Calibration 4 Jan 2011

Frequency	Applied	Probe Reading			Correction Factor			
(MHz)	V/m	X	Y	Z	X	Y	Z	Avg
1.00	8.01	6.72	6.81	6.79	1.19	1.18	1.19	1.18
1.00	19.91	16.99	17.06	16.81	1.18	1.16	1.18	1.17
1.00	69.94	57.57	58.72	57.39	1.21	1.19	1.22	1.21
1.00	124.57	101.46	104.06	102.37	1.23	1.20	1.22	1.21
15.00	7.96	7.86	7.90	7.83	1.01	1.01	1.02	1.01
15.00	20.05	19.63	19.82	19.48	1.02	1.01	1.03	1.02
15.00	70.00	69.10	69.69	68.73	1.01	1.00	1.02	1.01
15.00	124.88	122.58	123.22	122.40	1.02	1.01	1.02	1.02
30.00	7.98	8.01	8.05	7.96	1.00	0.99	1.00	1.00
30.00	19.92	19.97	19.95	19.75	1.00	1.00	1.01	1.00
30.00	70.27	70.84	71.25	70.61	0.99	0.99	1.00	0.99
30.00	125.59	125.86	126.38	125.94	1.00	0.99	1.00	1.00
75.00	7.98	8.06	8.10	8.14	0.99	0.98	0.98	0.98
75.00	19.98	20.08	20.34	20.37	0.99	0.98	0.98	0.99
75.00	69.66	71.26	71.78	71.67	0.98	0.97	0.97	0.97
75.00	124.36	126.52	127.22	126.98	0.98	0.98	0.98	0.98
100.00	8.00	8.31	8.35	8.32	0.97	0.96	0.95	0.96
100.00	19.94	20.43	20.62	20.69	0.98	0.97	0.96	0.97
100.00	69.60	71.97	72.44	72.45	0.97	0.96	0.96	0.96
100.00	124.78	129.20	129.68	129.76	0.97	0.96	0.96	0.96
150.00	8.03	8.22	8.28	8.36	0.98	0.97	0.96	0.97
150.00	20.04	20.29	20.56	20.74	0.99	0.97	0.97	0.98
150.00	69.71	71.24	71.85	72.06	0.98	0.97	0.97	0.97
150.00	124.96	127.79	128.59	128.81	0.98	0.97	0.97	0.97
200.00	7.96	8.42	8.54	8.67	0.95	0.93	0.92	0.93
200.00	19.94	20.85	21.26	21.50	0.96	0.94	0.93	0.94
200.00	69.91	73.96	75.03	75.43	0.94	0.93	0.93	0.93
200.00	125.22	132.74	134.34	135.14	0.94	0.93	0.93	0.93
250.00	8.01	8.24	8.23	8.39	0.97	0.97	0.96	0.97
250.00	19.97	20.34	20.44	20.74	0.98	0.98	0.96	0.97
250.00	69.73	72.74	71.86	72.46	0.97	0.97	0.96	0.96
250.00	124.77	129.17	128.53	129.40	0.97	0.97	0.97	0.97
300.00	7.99	8.19	8.22	8.40	0.97	0.97	0.95	0.97
300.00	19.98	20.29	20.42	20.78	0.99	0.98	0.96	0.98
300.00	69.98	72.15	72.24	72.93	0.97	0.97	0.96	0.97
300.00	125.38	130.27	130.16	131.02	0.96	0.96	0.96	0.96
400.00	7.98	8.15	8.17	8.34	0.98	0.98	0.95	0.97
400.00	19.89	20.07	20.26	20.67	0.99	0.98	0.96	0.98
400.00	69.66	71.58	71.93	72.74	0.97	0.97	0.96	0.97
400.00	124.82	128.40	128.45	129.35	0.97	0.97	0.96	0.97
500.00	8.01	7.90	8.00	8.20	1.01	1.00	0.98	1.00
500.00	20.01	19.58	19.94	20.36	1.02	1.00	0.98	1.00
500.00	70.01	69.21	70.57	70.91	1.01	1.00	0.98	1.00
500.00	124.92	123.45	124.93	125.25	1.01	1.00	0.99	1.00
600.00	8.00	7.74	7.78	7.97	1.03	1.03	1.00	1.02
600.00	19.99	19.16	19.35	19.81	1.04	1.03	1.01	1.03
600.00	69.71	67.99	68.18	68.96	1.03	1.02	1.01	1.02
600.00	125.01	121.68	121.62	123.11	1.03	1.03	1.02	1.02

ETS·LINDGREN™

Frequency Response Calibration Factors
Model E100 Serial Number 00109011
Date of Calibration 4 Jan 2011

Frequency	Applied	Probe Reading			Correction Factor			
(MHz)	V/m	X	Y	Z	X	Y	Z	Avg
700.00	7.98	7.54	7.55	7.75	1.06	1.06	1.03	1.05
700.00	19.95	18.65	18.77	19.21	1.07	1.06	1.04	1.06
700.00	70.29	66.67	66.74	67.70	1.05	1.05	1.04	1.05
700.00	125.03	118.33	118.33	119.37	1.05	1.06	1.05	1.05
800.00	8.02	7.36	7.46	7.65	1.09	1.08	1.05	1.07
800.00	20.01	18.20	18.51	18.79	1.10	1.09	1.06	1.08
800.00	70.11	64.66	65.16	66.08	1.09	1.08	1.06	1.07
800.00	124.54	114.33	115.44	115.49	1.09	1.08	1.08	1.08
900.00	8.01	7.73	7.90	8.11	1.04	1.01	0.99	1.01
900.00	20.03	19.06	19.57	20.19	1.05	1.02	1.00	1.02
900.00	70.05	67.21	68.79	69.68	1.04	1.02	1.01	1.02
900.00	125.46	120.34	121.90	123.03	1.05	1.03	1.02	1.03
1000.00	8.01	8.03	8.09	8.31	1.00	0.99	0.96	0.98
1000.00	19.92	19.81	19.86	20.44	1.01	1.00	0.98	0.99
1000.00	69.72	69.27	70.09	71.56	1.00	1.00	0.97	0.99
1000.00	125.71	124.36	124.64	125.68	1.01	1.01	1.00	1.01
2000.00	20.37	20.04	19.84	20.46	1.02	1.03	1.00	1.01
2450.00	20.04	18.11	19.40	19.62	1.11	1.03	1.02	1.05
3000.00	19.97	19.95	19.47	19.27	1.00	1.03	1.04	1.02
3500.00	19.93	20.40	22.00	20.96	0.98	0.91	0.95	0.94
4000.00	20.05	20.37	19.96	20.00	0.98	1.00	1.00	1.00
5000.00	19.80	14.46	15.77	14.64	1.37	1.26	1.35	1.33
5500.00	19.98	15.05	15.28	15.18	1.33	1.31	1.32	1.32
6000.00	20.07	13.45	15.63	15.58	1.49	1.28	1.29	1.35

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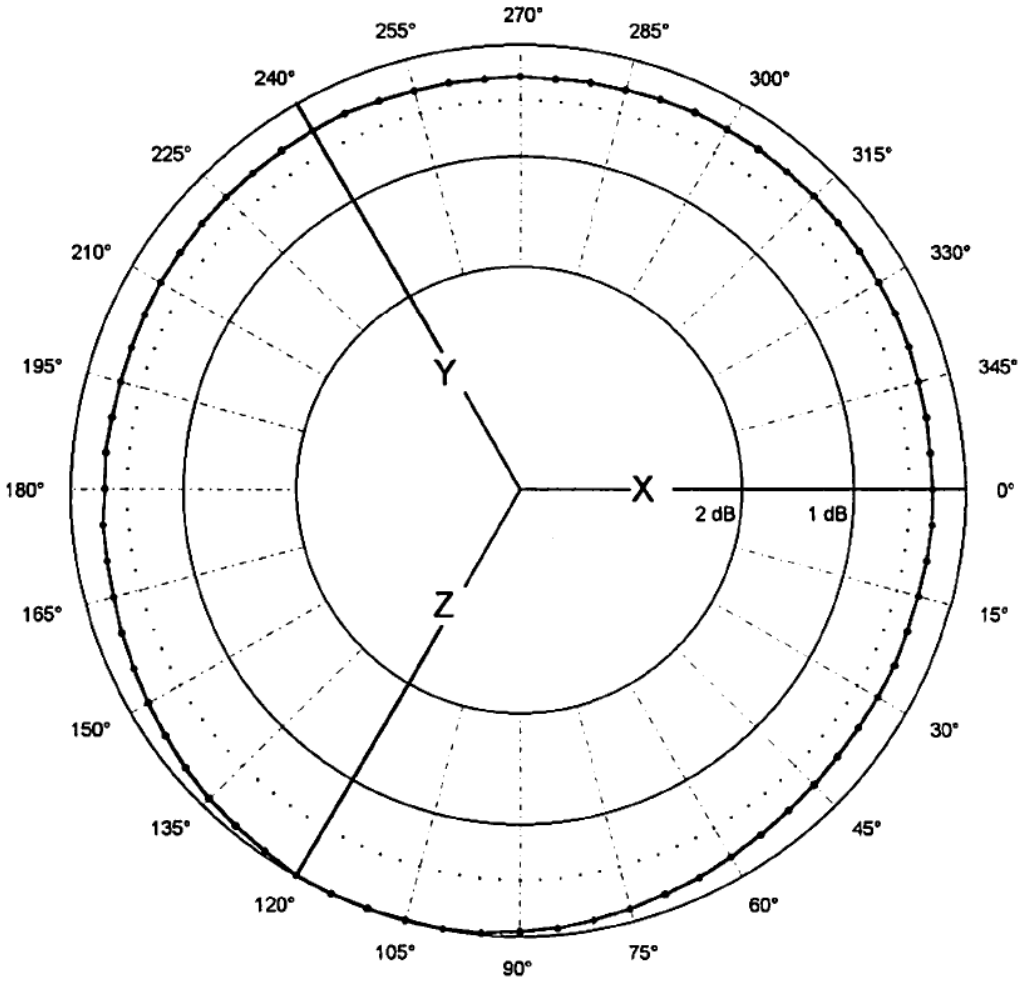
PROBE ROTATIONAL RESPONSE

Model	E100
S/N	00109011
Date	04-Jan-2011
Time	14:33:16
Variation	0.31 dB



- Isotropic response measured in a 20 V/m field at 400 MHz

Page 4 of 4

Appendix C - Photos of Assessed Antennas

(Refer to Exhibit 7B)

Appendix D – MPE Measurement Results

MPE measurement data for Bystander

D.U.T. Info.							Probe Info.		Test Pos.	Bystander (BS) Positions										DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor		20 cm	40 cm	60 cm	80 cm	100 cm	120 cm	140 cm	160 cm	180 cm	200 cm				
Trunk	HAE6010A, 380-433MHz	5.65	380.0125	120	120	CW	E	0.94	BS	0.35	0.26	0.44	0.48	0.52	0.34	0.25	0.51	0.74	0.79	0.5	0.468	0.220	0.22
Trunk	HAE6010A, 380-433MHz	5.65	393.0125	120	117	CW	E	0.96	BS	0.26	0.25	0.28	0.34	0.43	0.23	0.21	0.59	1.00	1.03	0.5	0.462	0.222	0.23
Trunk	HAE6010A, 380-433MHz	5.65	406.5000	120	120	CW	E	0.94	BS	0.33	0.18	0.39	0.50	0.69	0.30	0.18	0.23	0.85	0.91	0.5	0.456	0.214	0.21
Trunk	HAE6010A, 380-433MHz	5.65	419.5000	120	118	CW	E	0.97	BS	0.21	0.14	0.27	0.48	0.68	0.33	0.15	0.38	0.67	0.76	0.5	0.407	0.197	0.20
Trunk	HAE6010A, 380-433MHz	5.65	432.9875	120	120	CW	E	0.95	BS	0.19	0.11	0.30	0.48	0.64	0.32	0.21	0.37	0.62	0.66	0.5	0.390	0.185	0.19
Trunk	HAE6011A, 380-433MHz	7.15	380.0125	120	120	CW	E	0.94	BS	0.04	0.03	0.06	0.10	0.34	0.99	1.43	1.10	0.49	0.22	0.5	0.480	0.226	0.23
Trunk	HAE6011A, 380-433MHz	7.15	393.0125	120	117	CW	E	0.96	BS	0.04	0.03	0.04	0.07	0.26	0.87	1.29	0.97	0.42	0.22	0.5	0.421	0.202	0.21
Trunk	HAE6011A, 380-433MHz	7.15	406.5000	120	120	CW	E	0.94	BS	0.06	0.03	0.06	0.08	0.23	0.82	1.19	0.92	0.39	0.15	0.5	0.393	0.185	0.18
Trunk	HAE6011A, 380-433MHz	7.15	419.5000	120	118	CW	E	0.97	BS	0.02	0.02	0.03	0.05	0.11	0.36	0.54	0.42	0.18	0.07	0.5	0.180	0.087	0.09
Trunk	HAE6011A, 380-433MHz	7.15	432.9875	120	120	CW	E	0.95	BS	0.01	0.01	0.02	0.02	0.08	0.27	0.39	0.31	0.11	0.03	0.5	0.125	0.059	0.06
Trunk	HAE4011A, 450-470MHz	5.65	450.0125	120	120	CW	E	0.96	BS	0.00	0.01	0.03	0.12	0.56	1.23	1.33	0.79	0.25	0.28	0.5	0.460	0.221	0.22
Trunk	HAE4011A, 450-470MHz	5.65	460.0125	120	120	CW	E	0.96	BS	0.01	0.01	0.04	0.12	0.52	1.08	1.22	0.75	0.24	0.20	0.5	0.419	0.201	0.20
Trunk	HAE4011A, 450-470MHz	5.65	469.9875	120	120	CW	E	0.97	BS	0.01	0.01	0.03	0.07	0.27	0.62	0.73	0.48	0.17	0.14	0.5	0.253	0.123	0.12
Trunk	RAE4014ARB, 445-470MHz	7.15	445.0125	120	120	CW	E	0.96	BS	0.03	0.02	0.04	0.04	0.10	0.62	1.07	0.87	0.35	0.24	0.5	0.338	0.162	0.16
Trunk	RAE4014ARB, 445-470MHz	7.15	457.5000	120	120	CW	E	0.96	BS	0.00	0.00	0.01	0.01	0.05	0.33	0.69	0.81	0.57	0.21	0.5	0.268	0.129	0.13
Trunk	RAE4014ARB, 445-470MHz	7.15	469.9875	120	120	CW	E	0.97	BS	0.00	0.00	0.00	0.00	0.01	0.02	0.12	0.27	0.29	0.13	0.5	0.084	0.041	0.04

MPE calculations are defined in section 13.0.

MPE measurement data for Bystander

D.U.T. Info.							Probe Info.																		
										Bystander (BS) Positions										DUT Max.	Avg. over		Max Calc.
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor	Test Pos.	20 cm	40 cm	60 cm	80 cm	100 cm	120 cm	140 cm	160 cm	180 cm	200 cm	TX Factor	Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	P.D. (mW/ cm2)
Trunk	HAE6013A, 380-470MHz	4.15	380.0125	120	120	CW	E	0.94	BS	0.29	0.26	0.42	0.56	0.90	1.24	1.25	1.03	0.71	0.42	0.5	0.708	0.333	0.33
Trunk	HAE6013A, 380-470MHz	4.15	393.0125	120	117	CW	E	0.96	BS	0.20	0.20	0.23	0.34	0.68	0.90	0.87	0.74	0.50	0.30	0.5	0.496	0.238	0.24
Trunk	HAE6013A, 380-470MHz	4.15	406.5000	120	117	CW	E	0.96	BS	0.19	0.14	0.24	0.42	0.81	1.13	1.10	0.95	0.63	0.33	0.5	0.594	0.285	0.29
Trunk	HAE6013A, 380-470MHz	4.15	425.0125	120	120	CW	E	0.95	BS	0.20	0.12	0.31	0.52	1.06	1.40	1.39	1.11	0.65	0.34	0.5	0.710	0.337	0.34
Trunk	HAE6013A, 380-470MHz	4.15	438.0125	120	117	CW	E	0.98	BS	0.10	0.08	0.24	0.48	0.88	1.17	1.22	1.02	0.70	0.40	0.5	0.629	0.308	0.32
Trunk	HAE6013A, 380-470MHz	4.15	454.0125	120	118	CW	E	0.98	BS	0.08	0.08	0.25	0.44	0.82	1.06	1.10	0.81	0.51	0.29	0.5	0.544	0.267	0.27
Trunk	HAE6013A, 380-470MHz	4.15	469.9875	120	120	CW	E	0.97	BS	0.06	0.10	0.26	0.47	0.74	0.85	0.85	0.60	0.38	0.24	0.5	0.455	0.221	0.22
Trunk	HAE6031A, 380-520MHz	4.15	380.0125	120	120	CW	E	0.94	BS	0.25	0.24	0.38	0.50	0.77	1.05	1.08	0.90	0.62	0.38	0.5	0.617	0.290	0.29
Trunk	HAE6031A, 380-520MHz	4.15	393.0125	120	117	CW	E	0.96	BS	0.19	0.19	0.21	0.32	0.65	0.86	0.87	0.73	0.52	0.32	0.5	0.486	0.233	0.24
Trunk	HAE6031A, 380-520MHz	4.15	406.5000	120	117	CW	E	0.96	BS	0.19	0.13	0.23	0.42	0.78	1.05	1.07	0.93	0.62	0.35	0.5	0.577	0.277	0.28
Trunk	HAE6031A, 380-520MHz	4.15	425.0125	120	120	CW	E	0.95	BS	0.23	0.13	0.32	0.56	1.10	1.42	1.49	1.23	0.77	0.41	0.5	0.766	0.364	0.36
Trunk	HAE6031A, 380-520MHz	4.15	438.0125	120	117	CW	E	0.98	BS	0.12	0.10	0.28	0.52	0.96	1.29	1.40	1.22	0.83	0.49	0.5	0.721	0.353	0.36
Trunk	HAE6031A, 380-520MHz	4.15	454.0125	120	118	CW	E	0.98	BS	0.10	0.10	0.30	0.54	1.02	1.33	1.37	1.05	0.68	0.39	0.5	0.688	0.337	0.34
Trunk	HAE6031A, 380-520MHz	4.15	469.9875	120	120	CW	E	0.97	BS	0.08	0.13	0.31	0.56	0.89	1.10	1.13	0.87	0.60	0.41	0.5	0.608	0.295	0.29
45 degree																							
Trunk	HAE6031A, 380-520MHz	4.15	425.0125	120	120	CW	E	0.95	BS	0.16	0.13	0.43	0.29	0.71	0.93	1.04	0.82	0.55	0.33	0.5	0.539	0.256	0.26
90 degree																							
Trunk	HAE6031A, 380-520MHz	4.15	425.0125	120	120	CW	E	0.95	BS	0.21	0.16	0.40	0.36	0.66	0.97	1.18	1.05	0.69	0.39	0.5	0.607	0.288	0.29

MPE calculations are defined in section 13.0.

MPE measurement data for Passenger

D.U.T. Info.							Probe Info.		Test Pos.	Passenger Positions			DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor		Head	Chest	Lower Trunk				
Trunk	HAE6010A, 380-433MHz	5.65	380.0125	120	120	CW	E	0.94	PB	1.32	0.72	1.35	0.5	1.130	0.531	0.53
Trunk	HAE6010A, 380-433MHz	5.65	393.0125	120	117	CW	E	0.96	PB	1.30	0.76	0.80	0.5	0.953	0.458	0.47
Trunk	HAE6010A, 380-433MHz	5.65	406.5000	120	120	CW	E	0.94	PB	1.97	0.82	1.05	0.5	1.280	0.602	0.60
Trunk	HAE6010A, 380-433MHz	5.65	419.5000	120	118	CW	E	0.97	PB	0.94	0.42	0.50	0.5	0.620	0.301	0.31
Trunk	HAE6010A, 380-433MHz	5.65	432.9875	120	120	CW	E	0.95	PB	0.57	0.73	0.23	0.5	0.510	0.242	0.24
Trunk	HAE6011A, 380-433MHz	7.15	380.0125	120	120	CW	E	0.94	PB	1.06	0.28	0.81	0.5	0.717	0.337	0.34
Trunk	HAE6011A, 380-433MHz	7.15	393.0125	120	117	CW	E	0.96	PB	1.19	0.66	0.69	0.5	0.847	0.406	0.42
Trunk	HAE6011A, 380-433MHz	7.15	406.5000	120	120	CW	E	0.94	PB	1.14	0.43	0.84	0.5	0.803	0.378	0.38
Trunk	HAE6011A, 380-433MHz	7.15	419.5000	120	118	CW	E	0.97	PB	0.64	0.30	0.29	0.5	0.410	0.199	0.20
Trunk	HAE6011A, 380-433MHz	7.15	432.9875	120	120	CW	E	0.95	PB	0.11	0.11	0.03	0.5	0.083	0.040	0.04
Trunk	HAE4011A, 450-470MHz	5.65	450.0125	120	120	CW	E	0.96	PB	1.50	0.65	0.73	0.5	0.960	0.461	0.46
Trunk	HAE4011A, 450-470MHz	5.65	460.0125	120	120	CW	E	0.96	PB	1.71	0.34	0.75	0.5	0.933	0.448	0.45
Trunk	HAE4011A, 450-470MHz	5.65	469.9875	120	120	CW	E	0.97	PB	0.45	0.39	0.30	0.5	0.380	0.184	0.18
Trunk	RAE4014ARB, 445-470MHz	7.15	445.0125	120	120	CW	E	0.96	PB	0.51	0.30	0.18	0.5	0.330	0.158	0.16
Trunk	RAE4014ARB, 445-470MHz	7.15	457.5000	120	120	CW	E	0.96	PB	0.25	0.05	0.07	0.5	0.123	0.059	0.06
Trunk	RAE4014ARB, 445-470MHz	7.15	469.9875	120	120	CW	E	0.97	PB	0.01	0.01	0.01	0.5	0.010	0.005	0.00

MPE calculations are defined in section 13.0.

MPE measurement data for Passenger

D.U.T. Info.							Probe Info.		Test Pos.	Passenger Positions			DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor		Head	Chest	Lower Trunk				
Trunk	HAE6013A, 380-470MHz	4.15	380.0125	120	120	CW	E	0.94	PB	2.19	0.75	1.91	0.5	1.617	0.760	0.76
Trunk	HAE6013A, 380-470MHz	4.15	393.0125	120	117	CW	E	0.96	PB	2.55	1.32	1.10	0.5	1.657	0.795	0.82
Trunk	HAE6013A, 380-470MHz	4.15	406.5000	120	117	CW	E	0.96	PB	2.29	1.47	1.92	0.5	1.893	0.909	0.93
Trunk	HAE6013A, 380-470MHz	4.15	425.0125	120	120	CW	E	0.95	PB	1.60	1.32	0.54	0.5	1.153	0.548	0.55
Trunk	HAE6013A, 380-470MHz	4.15	438.0125	120	117	CW	E	0.98	PB	1.33	1.07	0.24	0.5	0.880	0.431	0.44
Trunk	HAE6013A, 380-470MHz	4.15	454.0125	120	118	CW	E	0.98	PB	2.62	0.62	1.32	0.5	1.520	0.745	0.76
Trunk	HAE6013A, 380-470MHz	4.15	469.9875	120	120	CW	E	0.97	PB	0.93	0.80	0.49	0.5	0.740	0.359	0.36
Trunk	HAE6031A, 380-520MHz	4.15	380.0125	120	120	CW	E	0.94	PB	2.55	0.73	1.86	0.5	1.713	0.805	0.81
Trunk	HAE6031A, 380-520MHz	4.15	393.0125	120	117	CW	E	0.96	PB	2.42	1.27	1.24	0.5	1.643	0.789	0.81
Trunk	HAE6031A, 380-520MHz	4.15	406.5000	120	117	CW	E	0.96	PB	2.34	1.49	1.74	0.5	1.857	0.891	0.91
Trunk	HAE6031A, 380-520MHz	4.15	425.0125	120	120	CW	E	0.95	PB	1.58	1.34	0.45	0.5	1.123	0.534	0.53
Trunk	HAE6031A, 380-520MHz	4.15	438.0125	120	117	CW	E	0.98	PB	1.68	1.23	0.33	0.5	1.080	0.529	0.54
Trunk	HAE6031A, 380-520MHz	4.15	454.0125	120	118	CW	E	0.98	PB	3.23	0.83	1.54	0.5	1.867	0.915	0.93
Trunk	HAE6031A, 380-520MHz	4.15	469.9875	120	120	CW	E	0.97	PB	1.22	1.15	0.72	0.5	1.030	0.500	0.50

MPE calculations are defined in section 13.0.

MPE measurement data for Passenger

D.U.T. Info.							Probe Info.									
										Passenger Positions						
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor	Test Pos.	Head	Chest	Lower Trunk	DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Trunk	HAE6010A, 380-433MHz	5.65	380.0125	120	120	CW	E	0.94	PF	0.26	0.22	0.37	0.5	0.283	0.133	0.13
Trunk	HAE6010A, 380-433MHz	5.65	393.0125	120	117	CW	E	0.96	PF	0.25	0.18	0.31	0.5	0.247	0.118	0.12
Trunk	HAE6010A, 380-433MHz	5.65	406.5000	120	120	CW	E	0.94	PF	0.25	0.21	0.36	0.5	0.273	0.128	0.13
Trunk	HAE6010A, 380-433MHz	5.65	419.5000	120	118	CW	E	0.97	PF	0.19	0.14	0.32	0.5	0.217	0.105	0.11
Trunk	HAE6010A, 380-433MHz	5.65	432.9875	120	120	CW	E	0.95	PF	0.16	0.13	0.05	0.5	0.113	0.054	0.05
Trunk	HAE6011A, 380-433MHz	7.15	380.0125	120	120	CW	E	0.94	PF	0.24	0.11	0.20	0.5	0.183	0.086	0.09
Trunk	HAE6011A, 380-433MHz	7.15	393.0125	120	117	CW	E	0.96	PF	0.15	0.12	0.25	0.5	0.173	0.083	0.09
Trunk	HAE6011A, 380-433MHz	7.15	406.5000	120	120	CW	E	0.94	PF	0.18	0.15	0.22	0.5	0.183	0.086	0.09
Trunk	HAE6011A, 380-433MHz	7.15	419.5000	120	118	CW	E	0.97	PF	0.12	0.05	0.17	0.5	0.113	0.055	0.06
Trunk	HAE6011A, 380-433MHz	7.15	432.9875	120	120	CW	E	0.95	PF	0.04	0.01	0.00	0.5	0.017	0.008	0.01
Trunk	HAE4011A, 450-470MHz	5.65	450.0125	120	120	CW	E	0.96	PF	0.23	0.28	0.31	0.5	0.273	0.131	0.13
Trunk	HAE4011A, 450-470MHz	5.65	460.0125	120	120	CW	E	0.96	PF	0.25	0.16	0.26	0.5	0.223	0.107	0.11
Trunk	HAE4011A, 450-470MHz	5.65	469.9875	120	120	CW	E	0.97	PF	0.18	0.08	0.11	0.5	0.123	0.060	0.06
Trunk	RAE4014ARB, 445-470MHz	7.15	445.0125	120	120	CW	E	0.96	PF	0.09	0.08	0.04	0.5	0.070	0.034	0.03
Trunk	RAE4014ARB, 445-470MHz	7.15	457.5000	120	120	CW	E	0.96	PF	0.05	0.06	0.02	0.5	0.043	0.021	0.02
Trunk	RAE4014ARB, 445-470MHz	7.15	469.9875	120	120	CW	E	0.97	PF	0.01	0.00	0.00	0.5	0.003	0.002	0.00

MPE calculations are defined in section 13.0.

MPE measurement data for Passenger

D.U.T. Info.							Probe Info.		Test Pos.	Passenger Positions			DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor		Head	Chest	Lower Trunk				
Trunk	HAE6013A, 380-470MHz	4.15	380.0125	120	120	CW	E	0.94	PF	0.52	0.29	0.66	0.5	0.490	0.230	0.23
Trunk	HAE6013A, 380-470MHz	4.15	393.0125	120	117	CW	E	0.96	PF	0.33	0.28	0.54	0.5	0.383	0.184	0.19
Trunk	HAE6013A, 380-470MHz	4.15	406.5000	120	117	CW	E	0.96	PF	0.43	0.32	0.69	0.5	0.480	0.230	0.24
Trunk	HAE6013A, 380-470MHz	4.15	425.0125	120	120	CW	E	0.95	PF	0.40	0.40	0.22	0.5	0.340	0.162	0.16
Trunk	HAE6013A, 380-470MHz	4.15	438.0125	120	117	CW	E	0.98	PF	0.41	0.20	0.23	0.5	0.280	0.137	0.14
Trunk	HAE6013A, 380-470MHz	4.15	454.0125	120	118	CW	E	0.98	PF	0.32	0.35	0.53	0.5	0.400	0.196	0.20
Trunk	HAE6013A, 380-470MHz	4.15	469.9875	120	120	CW	E	0.97	PF	0.35	0.49	0.45	0.5	0.430	0.209	0.21
Trunk	HAE6031A, 380-520MHz	4.15	380.0125	120	120	CW	E	0.94	PF	0.58	0.25	0.58	0.5	0.470	0.221	0.22
Trunk	HAE6031A, 380-520MHz	4.15	393.0125	120	117	CW	E	0.96	PF	0.29	0.27	0.49	0.5	0.350	0.168	0.17
Trunk	HAE6031A, 380-520MHz	4.15	406.5000	120	117	CW	E	0.96	PF	0.41	0.46	0.74	0.5	0.537	0.258	0.26
Trunk	HAE6031A, 380-520MHz	4.15	425.0125	120	120	CW	E	0.95	PF	0.25	0.20	0.10	0.5	0.183	0.087	0.09
Trunk	HAE6031A, 380-520MHz	4.15	438.0125	120	117	CW	E	0.98	PF	0.47	0.25	0.22	0.5	0.313	0.154	0.16
Trunk	HAE6031A, 380-520MHz	4.15	454.0125	120	118	CW	E	0.98	PF	0.36	0.44	0.71	0.5	0.503	0.247	0.25
Trunk	HAE6031A, 380-520MHz	4.15	469.9875	120	120	CW	E	0.97	PF	0.65	0.31	0.41	0.5	0.457	0.221	0.22

MPE calculations are defined in section 13.0.

MPE measurement data for Bystander

D.U.T. Info.							Probe Info.			Bystander (BS) Positions										DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor	Test Pos.	20 cm	40 cm	60 cm	80 cm	100 cm	120 cm	140 cm	160 cm	180 cm	200 cm				
Roof	HAE6012A, 380-433MHz	2.15	380.0125	120	120	CW	E	0.94	BS	0.05	0.03	0.08	0.08	0.18	0.23	0.46	0.60	0.62	0.57	0.5	0.290	0.136	0.14
Roof	HAE6012A, 380-433MHz	2.15	393.0125	120	117	CW	E	0.96	BS	0.03	0.02	0.03	0.04	0.09	0.23	0.46	0.57	0.61	0.60	0.5	0.268	0.129	0.13
Roof	HAE6012A, 380-433MHz	2.15	406.5000	120	120	CW	E	0.94	BS	0.02	0.02	0.05	0.11	0.19	0.27	0.52	0.71	0.76	0.75	0.5	0.340	0.160	0.16
Roof	HAE6012A, 380-433MHz	2.15	419.5000	120	118	CW	E	0.97	BS	0.02	0.02	0.05	0.09	0.19	0.32	0.41	0.50	0.60	0.65	0.5	0.285	0.138	0.14
Roof	HAE6012A, 380-433MHz	2.15	432.9875	120	120	CW	E	0.95	BS	0.02	0.02	0.04	0.10	0.14	0.22	0.34	0.52	0.62	0.66	0.5	0.268	0.127	0.13
Roof	HAE4003A, 450-470MHz	2.15	450.0125	120	120	CW	E	0.96	BS	0.01	0.03	0.03	0.10	0.12	0.25	0.38	0.63	0.77	0.81	0.5	0.313	0.150	0.15
Roof	HAE4003A, 450-470MHz	2.15	460.0125	120	120	CW	E	0.96	BS	0.01	0.01	0.03	0.09	0.19	0.28	0.38	0.59	0.73	0.86	0.5	0.317	0.152	0.15
Roof	HAE4003A, 450-470MHz	2.15	469.9875	120	120	CW	E	0.97	BS	0.00	0.01	0.02	0.10	0.12	0.21	0.38	0.62	0.78	0.81	0.5	0.305	0.148	0.15
Roof	HAE6010A, 380-433MHz	5.65	380.0125	120	120	CW	E	0.94	BS	0.06	0.03	0.08	0.06	0.13	0.18	0.25	0.23	0.15	0.19	0.5	0.136	0.064	0.06
Roof	HAE6010A, 380-433MHz	5.65	393.0125	120	117	CW	E	0.96	BS	0.03	0.02	0.03	0.04	0.11	0.20	0.31	0.23	0.14	0.22	0.5	0.133	0.064	0.07
Roof	HAE6010A, 380-433MHz	5.65	406.5000	120	120	CW	E	0.94	BS	0.04	0.03	0.06	0.12	0.20	0.26	0.40	0.33	0.23	0.23	0.5	0.190	0.089	0.09
Roof	HAE6010A, 380-433MHz	5.65	419.5000	120	118	CW	E	0.97	BS	0.04	0.02	0.07	0.12	0.22	0.35	0.36	0.26	0.12	0.16	0.5	0.172	0.083	0.08
Roof	HAE6010A, 380-433MHz	5.65	432.9875	120	120	CW	E	0.95	BS	0.03	0.02	0.04	0.10	0.17	0.30	0.32	0.24	0.11	0.05	0.5	0.138	0.066	0.07
Roof	HAE6011A, 380-433MHz	7.15	380.0125	120	120	CW	E	0.94	BS	0.00	0.00	0.00	0.00	0.01	0.03	0.15	0.37	0.71	0.79	0.5	0.206	0.097	0.10
Roof	HAE6011A, 380-433MHz	7.15	393.0125	120	117	CW	E	0.96	BS	0.00	0.00	0.00	0.00	0.01	0.04	0.19	0.46	0.77	0.84	0.5	0.231	0.111	0.11
Roof	HAE6011A, 380-433MHz	7.15	406.5000	120	120	CW	E	0.94	BS	0.00	0.00	0.00	0.01	0.02	0.04	0.13	0.38	0.71	0.78	0.5	0.207	0.097	0.10
Roof	HAE6011A, 380-433MHz	7.15	419.5000	120	118	CW	E	0.97	BS	0.00	0.00	0.00	0.00	0.01	0.03	0.08	0.17	0.31	0.37	0.5	0.097	0.047	0.05
Roof	HAE6011A, 380-433MHz	7.15	432.9875	120	120	CW	E	0.95	BS	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.09	0.19	0.22	0.5	0.052	0.025	0.02

MPE calculations are defined in section 13.0.

MPE measurement data for Bystander

D.U.T. Info.							Probe Info.			Bystander (BS) Positions										DUT			
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor	Test Pos.	20 cm	40 cm	60 cm	80 cm	100 cm	120 cm	140 cm	160 cm	180 cm	200 cm	Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Roof	HAE4011A, 450-470MHz	5.65	450.0125	120	120	CW	E	0.96	BS	0.00	0.00	0.00	0.01	0.03	0.09	0.26	0.63	0.95	0.87	0.5	0.284	0.136	0.14
Roof	HAE4011A, 450-470MHz	5.65	460.0125	120	120	CW	E	0.96	BS	0.00	0.00	0.00	0.00	0.00	0.08	0.21	0.54	0.82	0.83	0.5	0.248	0.119	0.12
Roof	HAE4011A, 450-470MHz	5.65	469.9875	120	120	CW	E	0.97	BS	0.00	0.00	0.00	0.01	0.02	0.04	0.14	0.34	0.54	0.51	0.5	0.160	0.078	0.08
Roof	RAE4014ARB, 445-470MHz	7.15	445.0125	120	120	CW	E	0.96	BS	0.00	0.00	0.00	0.01	0.01	0.01	0.05	0.26	0.64	0.80	0.5	0.178	0.085	0.09
Roof	RAE4014ARB, 445-470MHz	7.15	457.5000	120	120	CW	E	0.96	BS	0.00	0.00	0.00	0.00	0.00	0.00	0.03	0.16	0.40	0.55	0.5	0.114	0.055	0.05
Roof	RAE4014ARB, 445-470MHz	7.15	469.9875	120	120	CW	E	0.97	BS	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.02	0.04	0.09	0.5	0.015	0.007	0.01
Roof	HAE6013A, 380-470MHz	4.15	380.0125	120	120	CW	E	0.94	BS	0.08	0.05	0.12	0.09	0.17	0.22	0.40	0.63	0.64	0.59	0.5	0.299	0.141	0.14
Roof	HAE6013A, 380-470MHz	4.15	393.0125	120	117	CW	E	0.96	BS	0.03	0.02	0.04	0.05	0.11	0.24	0.50	0.64	0.67	0.63	0.5	0.293	0.141	0.14
Roof	HAE6013A, 380-470MHz	4.15	406.5000	120	117	CW	E	0.96	BS	0.03	0.01	0.03	0.06	0.13	0.29	0.50	0.62	0.72	0.71	0.5	0.310	0.149	0.15
Roof	HAE6013A, 380-470MHz	4.15	425.0125	120	120	CW	E	0.95	BS	0.03	0.02	0.06	0.11	0.15	0.27	0.39	0.55	0.72	0.73	0.5	0.303	0.144	0.14
Roof	HAE6013A, 380-470MHz	4.15	438.0125	120	117	CW	E	0.98	BS	0.01	0.02	0.04	0.09	0.18	0.23	0.34	0.52	0.66	0.65	0.5	0.274	0.134	0.14
Roof	HAE6013A, 380-470MHz	4.15	454.0125	120	118	CW	E	0.98	BS	0.01	0.01	0.03	0.08	0.13	0.22	0.36	0.50	0.58	0.61	0.5	0.253	0.124	0.13
Roof	HAE6013A, 380-470MHz	4.15	469.9875	120	120	CW	E	0.97	BS	0.00	0.00	0.00	0.09	0.11	0.19	0.38	0.56	0.63	0.58	0.5	0.254	0.123	0.12
Roof	HAE6031A, 380-520MHz	4.15	380.0125	120	120	CW	E	0.94	BS	0.06	0.04	0.09	0.07	0.14	0.19	0.35	0.53	0.56	0.50	0.5	0.253	0.119	0.12
Roof	HAE6031A, 380-520MHz	4.15	393.0125	120	117	CW	E	0.96	BS	0.03	0.02	0.04	0.04	0.12	0.27	0.47	0.58	0.63	0.62	0.5	0.282	0.135	0.14
Roof	HAE6031A, 380-520MHz	4.15	406.5000	120	117	CW	E	0.96	BS	0.02	0.01	0.03	0.06	0.12	0.30	0.48	0.60	0.71	0.69	0.5	0.302	0.145	0.15
Roof	HAE6031A, 380-520MHz	4.15	425.0125	120	120	CW	E	0.95	BS	0.03	0.02	0.05	0.11	0.17	0.29	0.41	0.57	0.74	0.74	0.5	0.313	0.149	0.15
Roof	HAE6031A, 380-520MHz	4.15	438.0125	120	117	CW	E	0.98	BS	0.01	0.02	0.05	0.11	0.20	0.26	0.38	0.61	0.74	0.75	0.5	0.313	0.153	0.16
Roof	HAE6031A, 380-520MHz	4.15	454.0125	120	118	CW	E	0.98	BS	0.02	0.02	0.05	0.10	0.18	0.27	0.41	0.63	0.74	0.77	0.5	0.319	0.156	0.16
Roof	HAE6031A, 380-520MHz	4.15	469.9875	120	120	CW	E	0.97	BS	0.01	0.01	0.00	0.11	0.14	0.25	0.47	0.72	0.85	0.78	0.5	0.334	0.162	0.16

MPE calculations are defined in section 13.0.

MPE measurement data for Passenger

D.U.T. Info.							Probe Info.		Test Pos.	Passenger Positions			DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor		Head	Chest	Lower Trunk				
Roof	HAE6012A, 380-433MHz	2.15	380.0125	120	120	CW	E	0.94	PB	0.30	0.29	0.18	0.5	0.257	0.121	0.12
Roof	HAE6012A, 380-433MHz	2.15	393.0125	120	117	CW	E	0.96	PB	0.28	0.31	0.32	0.5	0.303	0.146	0.15
Roof	HAE6012A, 380-433MHz	2.15	406.5000	120	120	CW	E	0.94	PB	0.55	0.51	0.61	0.5	0.557	0.262	0.26
Roof	HAE6012A, 380-433MHz	2.15	419.5000	120	118	CW	E	0.97	PB	0.26	0.14	0.21	0.5	0.203	0.099	0.10
Roof	HAE6012A, 380-433MHz	2.15	432.9875	120	120	CW	E	0.95	PB	0.11	0.10	0.23	0.5	0.147	0.070	0.07
Roof	HAE4003A, 450-470MHz	2.15	450.0125	120	120	CW	E	0.96	PB	0.19	0.13	0.27	0.5	0.197	0.094	0.09
Roof	HAE4003A, 450-470MHz	2.15	460.0125	120	120	CW	E	0.96	PB	0.12	0.17	0.08	0.5	0.123	0.059	0.06
Roof	HAE4003A, 450-470MHz	2.15	469.9875	120	120	CW	E	0.97	PB	0.08	0.17	0.11	0.5	0.120	0.058	0.06
Roof	HAE6010A, 380-433MHz	5.65	380.0125	120	120	CW	E	0.94	PB	0.19	0.22	0.17	0.5	0.193	0.091	0.09
Roof	HAE6010A, 380-433MHz	5.65	393.0125	120	117	CW	E	0.96	PB	0.30	0.32	0.34	0.5	0.320	0.154	0.16
Roof	HAE6010A, 380-433MHz	5.65	406.5000	120	120	CW	E	0.94	PB	0.58	0.59	0.76	0.5	0.643	0.302	0.30
Roof	HAE6010A, 380-433MHz	5.65	419.5000	120	118	CW	E	0.97	PB	0.29	0.21	0.27	0.5	0.257	0.124	0.13
Roof	HAE6010A, 380-433MHz	5.65	432.9875	120	120	CW	E	0.95	PB	0.12	0.12	0.25	0.5	0.163	0.078	0.08
Roof	HAE6011A, 380-433MHz	7.15	380.0125	120	120	CW	E	0.94	PB	0.02	0.03	0.02	0.5	0.023	0.011	0.01
Roof	HAE6011A, 380-433MHz	7.15	393.0125	120	117	CW	E	0.96	PB	0.04	0.04	0.04	0.5	0.040	0.019	0.02
Roof	HAE6011A, 380-433MHz	7.15	406.5000	120	120	CW	E	0.94	PB	0.09	0.08	0.08	0.5	0.083	0.039	0.04
Roof	HAE6011A, 380-433MHz	7.15	419.5000	120	118	CW	E	0.97	PB	0.02	0.02	0.04	0.5	0.027	0.013	0.01
Roof	HAE6011A, 380-433MHz	7.15	432.9875	120	120	CW	E	0.95	PB	0.00	0.00	0.23	0.5	0.077	0.036	0.04

MPE calculations are defined in section 13.0.

MPE measurement data for Passenger

D.U.T. Info.							Probe Info.		Test Pos.	Passenger Positions			DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor		Head	Chest	Lower Trunk				
Roof	HAE4011A, 450-470MHz	5.65	450.0125	120	120	CW	E	0.96	PB	0.02	0.02	0.05	0.5	0.030	0.014	0.01
Roof	HAE4011A, 450-470MHz	5.65	460.0125	120	120	CW	E	0.96	PB	0.02	0.03	0.02	0.5	0.023	0.011	0.01
Roof	HAE4011A, 450-470MHz	5.65	469.9875	120	120	CW	E	0.97	PB	0.01	0.02	0.02	0.5	0.017	0.008	0.01
Roof	RAE4014ARB, 445-470MHz	7.15	445.0125	120	120	CW	E	0.96	PB	0.02	0.01	0.05	0.5	0.027	0.013	0.01
Roof	RAE4014ARB, 445-470MHz	7.15	457.5000	120	120	CW	E	0.96	PB	0.00	0.00	0.00	0.5	0.000	0.000	0.00
Roof	RAE4014ARB, 445-470MHz	7.15	469.9875	120	120	CW	E	0.97	PB	0.00	0.00	0.00	0.5	0.000	0.000	0.00
Roof	HAE6013A, 380-470MHz	4.15	380.0125	120	120	CW	E	0.94	PB	0.31	0.31	0.25	0.5	0.290	0.136	0.14
Roof	HAE6013A, 380-470MHz	4.15	393.0125	120	117	CW	E	0.96	PB	0.26	0.33	0.34	0.5	0.310	0.149	0.15
Roof	HAE6013A, 380-470MHz	4.15	406.5000	120	117	CW	E	0.96	PB	0.42	0.28	0.33	0.5	0.343	0.165	0.17
Roof	HAE6013A, 380-470MHz	4.15	425.0125	120	120	CW	E	0.95	PB	0.13	0.17	0.23	0.5	0.177	0.084	0.08
Roof	HAE6013A, 380-470MHz	4.15	438.0125	120	117	CW	E	0.98	PB	0.12	0.08	0.21	0.5	0.137	0.067	0.07
Roof	HAE6013A, 380-470MHz	4.15	454.0125	120	118	CW	E	0.98	PB	0.09	0.10	0.12	0.5	0.103	0.051	0.05
Roof	HAE6013A, 380-470MHz	4.15	469.9875	120	120	CW	E	0.97	PB	0.05	0.13	0.08	0.5	0.087	0.042	0.04

MPE calculations are defined in section 13.0.

MPE measurement data for Passenger

D.U.T. Info.							Probe Info.		Test Pos.	Passenger Positions			DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor		Head	Chest	Lower Trunk				
Roof	HAE6031A, 380-520MHz	4.15	380.0125	120	120	CW	E	0.94	PB	0.26	0.26	0.21	0.5	0.243	0.114	0.11
Roof	HAE6031A, 380-520MHz	4.15	393.0125	120	117	CW	E	0.96	PB	0.28	0.25	0.34	0.5	0.290	0.139	0.14
Roof	HAE6031A, 380-520MHz	4.15	406.5000	120	117	CW	E	0.96	PB	0.35	0.25	0.40	0.5	0.333	0.160	0.16
Roof	HAE6031A, 380-520MHz	4.15	425.0125	120	120	CW	E	0.95	PB	0.12	0.18	0.25	0.5	0.183	0.087	0.09
Roof	HAE6031A, 380-520MHz	4.15	438.0125	120	117	CW	E	0.98	PB	0.15	0.10	0.26	0.5	0.170	0.083	0.09
Roof	HAE6031A, 380-520MHz	4.15	454.0125	120	118	CW	E	0.98	PB	0.10	0.12	0.18	0.5	0.133	0.065	0.07
Roof	HAE6031A, 380-520MHz	4.15	469.9875	120	120	CW	E	0.97	PB	0.08	0.17	0.14	0.5	0.130	0.063	0.06
Roof	HAE6012A, 380-433MHz	2.15	380.0125	120	120	CW	E	0.94	PF	0.02	0.09	0.12	0.5	0.077	0.036	0.04
Roof	HAE6012A, 380-433MHz	2.15	393.0125	120	117	CW	E	0.96	PF	0.03	0.14	0.14	0.5	0.103	0.050	0.05
Roof	HAE6012A, 380-433MHz	2.15	406.5000	120	120	CW	E	0.94	PF	0.12	0.15	0.16	0.5	0.143	0.067	0.07
Roof	HAE6012A, 380-433MHz	2.15	419.5000	120	118	CW	E	0.97	PF	0.10	0.11	0.18	0.5	0.130	0.063	0.06
Roof	HAE6012A, 380-433MHz	2.15	432.9875	120	120	CW	E	0.95	PF	0.09	0.05	0.09	0.5	0.077	0.036	0.04
Roof	HAE4003A, 450-470MHz	2.15	450.0125	120	120	CW	E	0.96	PF	0.09	0.14	0.12	0.5	0.117	0.056	0.06
Roof	HAE4003A, 450-470MHz	2.15	460.0125	120	120	CW	E	0.96	PF	0.21	0.24	0.14	0.5	0.197	0.094	0.09
Roof	HAE4003A, 450-470MHz	2.15	469.9875	120	120	CW	E	0.97	PF	0.15	0.18	0.05	0.5	0.127	0.061	0.06

MPE calculations are defined in section 13.0.

MPE measurement data for Passenger

D.U.T. Info.							Probe Info.		Test Pos.	Passenger Positions			DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor		Head	Chest	Lower Trunk				
Roof	HAE6010A, 380-433MHz	5.65	380.0125	120	120	CW	E	0.94	PF	0.03	0.08	0.11	0.5	0.073	0.034	0.03
Roof	HAE6010A, 380-433MHz	5.65	393.0125	120	117	CW	E	0.96	PF	0.03	0.13	0.13	0.5	0.097	0.046	0.05
Roof	HAE6010A, 380-433MHz	5.65	406.5000	120	120	CW	E	0.94	PF	0.11	0.18	0.21	0.5	0.167	0.078	0.08
Roof	HAE6010A, 380-433MHz	5.65	419.5000	120	118	CW	E	0.97	PF	0.10	0.12	0.18	0.5	0.133	0.065	0.07
Roof	HAE6010A, 380-433MHz	5.65	432.9875	120	120	CW	E	0.95	PF	0.08	0.06	0.10	0.5	0.080	0.038	0.04
Roof	HAE6011A, 380-433MHz	7.15	380.0125	120	120	CW	E	0.94	PF	0.01	0.01	0.01	0.5	0.010	0.005	0.00
Roof	HAE6011A, 380-433MHz	7.15	393.0125	120	117	CW	E	0.96	PF	0.01	0.02	0.02	0.5	0.017	0.008	0.01
Roof	HAE6011A, 380-433MHz	7.15	406.5000	120	120	CW	E	0.94	PF	0.01	0.01	0.01	0.5	0.010	0.005	0.00
Roof	HAE6011A, 380-433MHz	7.15	419.5000	120	118	CW	E	0.97	PF	0.02	0.02	0.02	0.5	0.020	0.010	0.01
Roof	HAE6011A, 380-433MHz	7.15	432.9875	120	120	CW	E	0.95	PF	0.00	0.00	0.00	0.5	0.000	0.000	0.00
Roof	HAE4011A, 450-470MHz	5.65	450.0125	120	120	CW	E	0.96	PF	0.03	0.03	0.02	0.5	0.027	0.013	0.01
Roof	HAE4011A, 450-470MHz	5.65	460.0125	120	120	CW	E	0.96	PF	0.05	0.04	0.03	0.5	0.040	0.019	0.02
Roof	HAE4011A, 450-470MHz	5.65	469.9875	120	120	CW	E	0.97	PF	0.02	0.02	0.01	0.5	0.017	0.008	0.01
Roof	RAE4014ARB, 445-470MHz	7.15	445.0125	120	120	CW	E	0.96	PF	0.01	0.01	0.00	0.5	0.007	0.003	0.00
Roof	RAE4014ARB, 445-470MHz	7.15	457.5000	120	120	CW	E	0.96	PF	0.00	0.00	0.00	0.5	0.000	0.000	0.00
Roof	RAE4014ARB, 445-470MHz	7.15	469.9875	120	120	CW	E	0.97	PF	0.00	0.00	0.00	0.5	0.000	0.000	0.00

MPE calculations are defined in section 13.0.

MPE measurement data for Passenger

D.U.T. Info.							Probe Info.		Test Pos.	Passenger Positions			DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor		Head	Chest	Lower Trunk				
Roof	HAE6013A, 380-470MHz	4.15	380.0125	120	120	CW	E	0.94	PF	0.05	0.10	0.14	0.5	0.097	0.045	0.05
Roof	HAE6013A, 380-470MHz	4.15	393.0125	120	117	CW	E	0.96	PF	0.03	0.13	0.14	0.5	0.100	0.048	0.05
Roof	HAE6013A, 380-470MHz	4.15	406.5000	120	117	CW	E	0.96	PF	0.19	0.21	0.23	0.5	0.210	0.101	0.10
Roof	HAE6013A, 380-470MHz	4.15	425.0125	120	120	CW	E	0.95	PF	0.06	0.15	0.13	0.5	0.113	0.054	0.05
Roof	HAE6013A, 380-470MHz	4.15	438.0125	120	117	CW	E	0.98	PF	0.06	0.07	0.07	0.5	0.067	0.033	0.03
Roof	HAE6013A, 380-470MHz	4.15	454.0125	120	118	CW	E	0.98	PF	0.09	0.05	0.15	0.5	0.097	0.047	0.05
Roof	HAE6013A, 380-470MHz	4.15	469.9875	120	120	CW	E	0.97	PF	0.16	0.11	0.10	0.5	0.123	0.060	0.06
Roof	HAE6031A, 380-520MHz	4.15	380.0125	120	120	CW	E	0.94	PF	0.05	0.09	0.09	0.5	0.077	0.036	0.04
Roof	HAE6031A, 380-520MHz	4.15	393.0125	120	117	CW	E	0.96	PF	0.03	0.15	0.16	0.5	0.113	0.054	0.06
Roof	HAE6031A, 380-520MHz	4.15	406.5000	120	117	CW	E	0.96	PF	0.18	0.20	0.22	0.5	0.200	0.096	0.10
Roof	HAE6031A, 380-520MHz	4.15	425.0125	120	120	CW	E	0.95	PF	0.04	0.16	0.13	0.5	0.110	0.052	0.05
Roof	HAE6031A, 380-520MHz	4.15	438.0125	120	117	CW	E	0.98	PF	0.09	0.08	0.08	0.5	0.083	0.041	0.04
Roof	HAE6031A, 380-520MHz	4.15	454.0125	120	118	CW	E	0.98	PF	0.10	0.07	0.15	0.5	0.107	0.052	0.05
Roof	HAE6031A, 380-520MHz	4.15	469.9875	120	120	CW	E	0.97	PF	0.25	0.16	0.44	0.5	0.283	0.137	0.14

MPE calculations are defined in section 13.0.

Appendix E - SAR Simulation Report