



MOTOROLA



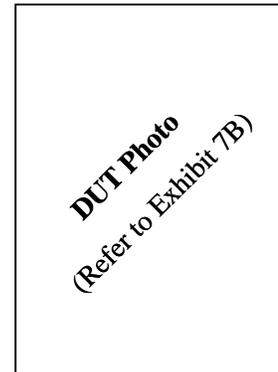
TESTING CERT # 2518.01

DECLARATION OF COMPLIANCE MPE ASSESSMENT Part 2 of 2

Enterprise Mobility Solution (EMS)
EME Test Laboratory
8000 West Sunrise Blvd
Fort Lauderdale, FL. 33322

Date of Report: October 25, 2010
Report Revision: Rev. O
Report ID: SR8723_MPE rpt_APX7500_UHFR1 and 7/800_Motorcycle_Rev O _101025

Responsible Engineer: Stephen C. Whalen (Principle Staff EME Eng.)
Date/s Tested: 6/24/2010 & 9/25/09-10/15/09
Manufacturer/Location: Motorola, Penang
Date submitted for test: 9/02/2010
DUT Description: Mackinaw Mobile UHFR1 (15 Watts) & 700/800 MHz (15 Watts) Motorcycle Mount option
Test TX mode(s): CW
Max. Power output: 18W
TX Frequency Bands: UHFR1 380-470 MHz;
 700MHz bands: 764-776MHz (talk around); 794-806MHz (Trunked);
 800MHz bands: 806-824MHz (Trunked); 851-870MHz (talk around)
Signaling type: Analog, APCO 25, and F2 (TDMA)
Model(s) Tested: M30QSS9PW1AN (UHF) with G67 motorcycle option and M30URS9PW1AN (7/800MHz) with G67 motorcycle option
Model(s) Certified: M30TSS9PW1AN(MHUS1008A) with G67 Motorcycle option
Serial Number(s): 123ABC4567 (M30QSS9PW1AN with G67 motorcycle option), 173 (M30URS9PW1AN with G67 motorcycle option)
Classification: Occupational/Controlled Environment



Regulatory Identifications
 FCC ID AZ492FT7043 – Part 22 & 90 (406.1-470 MHz & 763-775MHz; 793-805MHz; 806-824MHz; 851-869MHz), MPE results outside of Part 90 are not applicable for FCC compliance demonstration.

IC 109U-92FT7043 – RSS102

Approved Accessories:

Antenna(s):

Antennas for UHFR1 band	Antennas for 700/800MHz bands
HAE6014A (Motorcycle Mount, 380 - 433 MHz, 1/4 Wave, 2.15 dBi) HAE6032A (Motorcycle Mount, 425 - 470 MHz, 1/4 Wave, 2.15 dBi)	HAF4015A (Motorcycle Mount, 764-870 MHz, 1/4 wave, 5.15dBi) HAF4018A (Motorcycle Mount, 764-870 MHz, 1/4 wave, 5.15dBi)

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 4.0 of this report. This report shall not be reproduced without written approval from an officially designated representative of the Motorola 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.

Signature on file – Kim Uong for Deanna Zakharia
Deanna Zakharia
EMS EME Lab Senior Resource Manager,
Laboratory Director,

Approval Date: 10/26/2010

Certification Date:

Certification No.:

TABLE OF CONTENTS

Part 1 of 2: MPE Assessment for 380-470MHz band Part 2 of 2: MPE Assessment for the 764-870MHz band

Part 2 of 2

- 1.0 Product and System Description
- 2.0 Abbreviations / Definitions
- 3.0 Additional Options and Accessories
- 4.0 Measurement and Limit Standards
- 5.0 Measurement System Uncertainty Levels
- 6.0 Method of Measurement
 - 6.1 MPE assessment for motorcycle mounted antennas
 - 6.1.1 Bystander MPE assessment
 - 6.1.2 Operator MPE assessment
- 7.0 Test Site
- 8.0 Measurement System/Equipment
- 9.0 DUT Output Power and Test Frequencies
- 10.0 Test Set-Up Description
- 11.0 Test Results Summary
- 12.0 Conclusion

- APPENDIX A: Illustration of Antenna Location and Test Distances
- APPENDIX B: Meter/Probe Calibration Certificates
- APPENDIX C: DUT Photos

REVISION HISTORY

Date	Revision	Comments
10/25/2010	O	Initial release

1.0 Product and System Description

Model M30TSS9PW1AN (MHUS1008A) with G67 motorcycle option 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 or CQPSK family of modulation (Compatible 4-Level Frequency Modulation of Compatible Quadrature Phase Shift Keying). F2 is a TDMA 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 Push-To-Talk (PTT) while the device is properly installed on a motorcycle.

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 bystanders are evaluated to the General Population/Uncontrolled Exposure Limits, and the operator is evaluated to the Occupational/Controlled Exposure Limits.

(Note that "Bystanders" as used herein mean people other than operator)

2.0 Abbreviations / Definitions

APCO: Association of Public-Safety Communications Officials

C4FM: Compatible 4-Level Frequency Modulation

CNR: Calibration Not Required

CQPSK: Compatible Quadrature Phase Shift Keying

CW: Continues Wave

DUT: Device Under Test

F2: 2 slot Time Division Multiple Access

FM: Frequency Modulation

NA: Not Applicable

PTT: Push to Talk

TDMA: Time Division Multiple Access

MPE: Maximum Permissible Exposure

EME: Electromagnetic Energy

3.0 Additional Options and Accessories

NA

4.0 Measurement and Limit Standards

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

For test frequencies ranging from 764-870MHz MHz the MPE (Maximum Permissible Exposure) limit to electromagnetic energy in equivalent plane wave free-space power density is 0.51 – 0.58 mW/cm² (FCC)for General Population and 2.55-2.90 mW/cm² (FCC)for Occupational.

5.0 Measurement System Uncertainty Levels

Uncertainty Budget for Near Field Probe Measurements

	Tol. (± %)	Prob. Dist.	Divisor	u_i (±%)	ν_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	

6.0 Method of Measurement

6.1 MPE assessment for motorcycle-mounted antennas

(Refer to APPENDIX A for antenna location and test positions)

6.1.1 Bystander MPE assessment

MPE measurements for bystander conditions are determined by taking the average of (10) measurements in a 2m vertical line directly behind the vehicle, as indicated in Appendix A, with 20cm increments at the standard test distance of 60cm from the antenna. 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 while maintaining a minimum of twenty (20) centimeter separation distance between the probe sensor and reradiating structures. These measurements are representative of persons other than the operator standing next to the vehicle.

6.1.2 Operator MPE assessment

MPE measurements for operator conditions are performed by taking the following (3) measurements at the standard test distance of 30cm from the operators' seat area as indicated in Appendix A: scan the lower third of the antenna for a peak reading, scan the middle third of the antenna for a peak reading, and scan the top third (up to 2 meters from ground). 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 while maintaining a minimum of twenty (20) centimeter separation distance between the probe sensor and reradiating structures. The (3) results are then averaged.

7.0 Test Site

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

8.0 Measurement System/Equipment

Equipment Type	Model #	SN	Calibration Date
Motorcycle	2005 Kawasaki KZ1000		
Survey Meter / Probe – E-Field (Electric Field)	ETS Model HI-2200 / ETS Model E100	86887 / 83370	12/04/08

ETS equipments are measured in mW/cm² for E-field.

9.0 DUT Output Power and Test Frequencies

Power density measurements were performed with the test frequencies and associated power levels presented in the table below.

Test frequencies were chosen to include (approximately) the low, middle and high channels of the DUT bands and applicable antenna bands. The 794-806MHz band and 806-824MHz band were combined into one test band of 794-824MHz.

Note that the test frequencies that are outside the relevant FCC frequency allocations are presented in blue font.

Test Frequencies (MHz)	Measured Initial Power (W)
764.0875	17.4
770.0125	17.4
775.9125	17.4
794.0875	17.4
806.0125	17.4
823.9875	17.4
851.0125	17.5
860.0125	17.5
868.8875	17.5

10.0 Test Set-Up Description

All antennas listed on the cover page of this report were considered in order to develop the test plan for this product.

Assessments were performed with DUT (Device Under Test) installed on a test vehicle, while engine was at idle, at the specified distances and test locations indicated in sections 6.0, 11.0, and the APPENDIX A.

11.0 Test Results Summary

The tables below summarized the MPE measurement results for each test configuration: antenna (model and description), TX frequency, maximum output power, initial power, E/H field measurements, probe frequency cal factor, test positions (BS-Bystander, OP-Operator), average over body results, calculated power density results, max calculated power density results, % of the applicable FCC exposure limits.

MPE results for this motorcycle radio are based on 50% duty cycle which is in accordance with the User Manual instructions.

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

Bystander - 10 measurements are averaged over the body (*body_avg*).

Operator - 3 measurements are averaged over the body (*body_avg*).

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

Therefore;

$$Pwr_density_calc = body_avg * (probe_frequency_cal_factor)^2 * duty_cycle$$

$$Pwr_density_max_calc = pwr_density_calc * \frac{max_output_power}{initial_output_power}$$

Note1; For initial output power > max_output_power; max_output_power / initial output power = 1

Note2: The probe frequency cal factors used for MPE evaluation of this product are based on the worse case.

Note 3: The calibration certificate's frequency cal factors were determined by measuring V/m for E-field probe and A/m for H-field probe. The results presented herein are power density (mW/cm²) and therefore the cal factors were squared as indicated in the formula above.

Note that the test frequencies that are outside the relevant FCC frequency allocations are presented in blue font.

Table 1: E-Field MPE data summary for antenna HAF4015A

Ant. Model/ Desc.	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	E/H Field	Probe Cal. Factor (mW/cm ²)	Test Pos.	Avg. over Body (mW/cm ²)	Calc. P.D. (mW/cm ²)	Max Calc. P.D. (mW/cm ²)	% of FCC Spec Limit	FCC Spec Limit (mW/cm ²)
HAF4015A (764-870 MHz)	764.0875	18	17.4	E	1.2	OP	0.45	0.27	0.28	11	2.55
HAF4015A (764-870 MHz)	764.0875	18	17.4	E	1.2	BS	0.08	0.05	0.05	10	0.51
HAF4015A (764-870 MHz)	770.0125	18	17.4	E	1.21	OP	0.43	0.26	0.27	10	2.57
HAF4015A (764-870 MHz)	770.0125	18	17.4	E	1.21	BS	0.08	0.05	0.05	10	0.51
HAF4015A (764-870 MHz)	775.9125	18	17.4	E	1.21	OP	0.43	0.26	0.27	10	2.59
HAF4015A (764-870 MHz)	775.9125	18	17.4	E	1.21	BS	0.09	0.06	0.06	11	0.52
HAF4015A (764-870 MHz)	794.0875	18	17.4	E	1.23	OP	0.56	0.35	0.36	14	2.65
HAF4015A (764-870 MHz)	794.0875	18	17.4	E	1.23	BS	0.11	0.07	0.07	13	0.53
HAF4015A (764-870 MHz)	806.0125	18	17.4	E	1.22	OP	0.60	0.37	0.38	14	2.69
HAF4015A (764-870 MHz)	806.0125	18	17.4	E	1.22	BS	0.12	0.07	0.07	14	0.54
HAF4015A (764-870 MHz)	823.9875	18	17.4	E	1.2	OP	0.68	0.41	0.42	15	2.75
HAF4015A (764-870 MHz)	823.9875	18	17.4	E	1.2	BS	0.13	0.08	0.08	14	0.55
HAF4015A (764-870 MHz)	851.0125	18	17.5	E	1.17	OP	0.79	0.46	0.48	17	2.84
HAF4015A (764-870 MHz)	851.0125	18	17.5	E	1.17	BS	0.12	0.07	0.07	13	0.57
HAF4015A (764-870 MHz)	860.0125	18	17.5	E	1.15	OP	0.78	0.45	0.46	16	2.87
HAF4015A (764-870 MHz)	860.0125	18	17.5	E	1.15	BS	0.12	0.07	0.07	12	0.57
HAF4015A (764-870 MHz)	868.8875	18	17.5	E	1.14	OP	0.73	0.42	0.43	15	2.90
HAF4015A (764-870 MHz)	868.8875	18	17.5	E	1.14	BS	0.10	0.06	0.06	10	0.58

Table 2: E-Field MPE data summary for antenna HAF4018A

Ant. Model/ Desc.	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	E/H Field	Probe Cal. Factor (mW/cm ²)	Test Pos.	Avg. over Body (mW/cm ²)	Calc. P.D. (mW/cm ²)	Max Calc. P.D. (mW/cm ²)	% of FCC Spec Limit	FCC Spec Limit (mW/cm ²)
HAF4018A (764-870 MHz)	764.0875	18	17.4	E	1.2	OP	0.49	0.29	0.30	12	2.55
HAF4018A (764-870 MHz)	764.0875	18	17.4	E	1.2	BS	0.12	0.07	0.07	14	0.51
HAF4018A (764-870 MHz)	770.0125	18	17.4	E	1.21	OP	0.48	0.29	0.30	12	2.57
HAF4018A (764-870 MHz)	770.0125	18	17.4	E	1.21	BS	0.12	0.07	0.08	15	0.51
HAF4018A (764-870 MHz)	775.9125	18	17.4	E	1.21	OP	0.51	0.31	0.32	12	2.59
HAF4018A (764-870 MHz)	775.9125	18	17.4	E	1.21	BS	0.13	0.08	0.08	16	0.52
HAF4018A (764-870 MHz)	794.0875	18	17.4	E	1.23	OP	0.73	0.45	0.46	17	2.65
HAF4018A (764-870 MHz)	794.0875	18	17.4	E	1.23	BS	0.16	0.10	0.10	19	0.53
HAF4018A (764-870 MHz)	806.0125	18	17.4	E	1.22	OP	0.50	0.31	0.32	12	2.69
HAF4018A (764-870 MHz)	806.0125	18	17.4	E	1.22	BS	0.12	0.07	0.08	14	0.54
HAF4018A (764-870 MHz)	823.9875	18	17.4	E	1.2	OP	0.50	0.30	0.31	11	2.75
HAF4018A (764-870 MHz)	823.9875	18	17.4	E	1.2	BS	0.12	0.07	0.08	14	0.55
HAF4018A (764-870 MHz)	851.0125	18	17.5	E	1.17	OP	0.57	0.34	0.34	12	2.84
HAF4018A (764-870 MHz)	851.0125	18	17.5	E	1.17	BS	0.14	0.08	0.09	15	0.57
HAF4018A (764-870 MHz)	860.0125	18	17.5	E	1.15	OP	0.57	0.33	0.34	12	2.87
HAF4018A (764-870 MHz)	860.0125	18	17.5	E	1.15	BS	0.15	0.08	0.09	15	0.57
HAF4018A (764-870 MHz)	868.8875	18	17.5	E	1.14	OP	0.51	0.29	0.30	10	2.90
HAF4018A (764-870 MHz)	868.8875	18	17.5	E	1.14	BS	0.14	0.08	0.08	14	0.58

12.0 Conclusion

Depending on the test frequency for the 764-870MHz band, the assessments for this device at 764-870MHz band were performed with an output power range as indicated in section 9. The maximum allowable output power is equal to the upper limit of the final test factory transmit power specification of 18W. The highest power density results scale to the maximum allowable power output is 0.10mW/cm² for bystander test position and 0.46mW/cm² for operator test position.

The MPE results for operator presented herein demonstrate compliance to the applicable IEEE/FCC Occupational Population/Controlled Exposure limit.

The MPE results for bystander presented herein demonstrate compliance to the applicable FCC General Population/ Uncontrolled RF Exposure limit.

RF Exposure Results (764-870MHz)

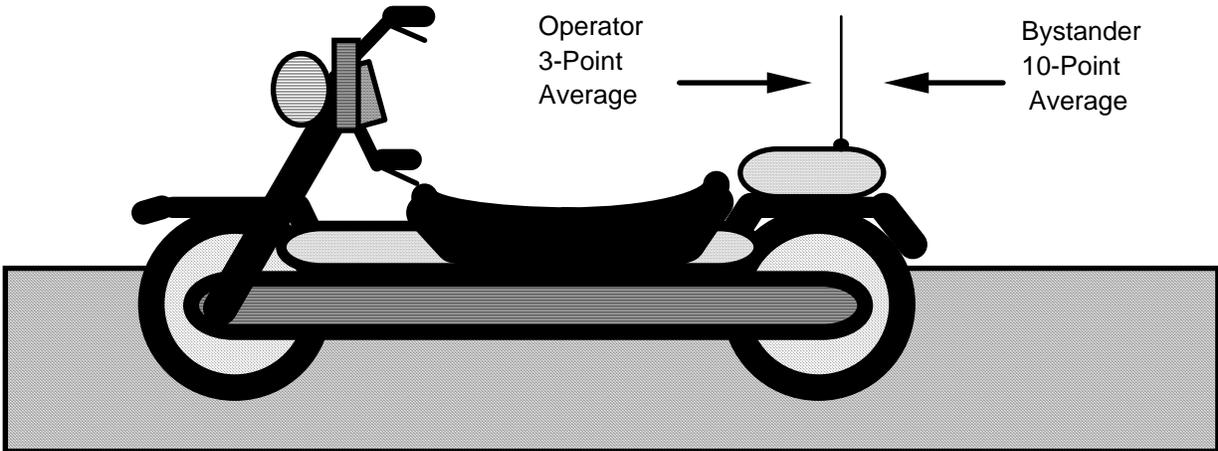
	7/800 Bands
Operator - Max Calculated Power Density	0.46 mW/cm ²
Bystander - Max Calculated Power Density	0.10 mW/cm ²

RF Exposure Results for FCC Part 90 Bands

	7/800 Bands
Operator - Max Calculated Power Density	0.46 mW/cm ²
Bystander - Max Calculated Power Density	0.10 mW/cm ²

APPENDIX A
Illustration of Antenna Locations and Test Positions

ANTENNA LOCATION DRAWING



APPENDIX B
Meter/Probe Calibration Certificates



Cert I.D.: 70578
 Lab Code 115844/1207.01



Certificate of Calibration Conformance

Page 1 of 4

The instrument identified 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:	00083370	Date Code:	
Tracking Number:	S000015131	Alternate ID:	
Date Completed:	04-Dec-08	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: Provided special data points 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				Condition of Instrument	
Boonton	9200B	RF Voltmeter	280601AE	29-Sep-09	In Tolerance to Internal Quality Standards
Hewlett Packard	437B	HP Power Meter	3125U12370	21-May-09	
Fluke	6060B	RF Signal Generator	5690204	20-May-09	In Tolerance to Internal Quality Standards
Marconi	2022	Signal Generator	119019/077	02-Oct-09	
Rohde & Schwarz	857.8008.0	Power Meter NRVD	828110/019	27-Dec-08	
Hewlett Packard	83620B	Signal Generator	3722A00541	19-Sep-09	

Calibration Completed By
 Alan Schifferdecker, Calibration Technician

Attested and Issued on 04-Dec-08
 Justin Tarvin, Calibration Supervisor

This document provides traceability of measurements to recognized national standards using controlled processes at the ETS-Lindgren Calibration Laboratory. Uncertainties listed are derived from the methods described by NIST Tech Note 1297. This certificate and report may not be reproduced, except in full, without the written approval of ETS-Lindgren Calibration Laboratory in accordance with ISO/IEC 17025-2005, QAF 1127 (06/07)



Frequency Response Calibration Factors
Model E100 Serial Number 00083370
Date of Calibration 4 Dec 2008

Frequency (MHz)	Applied V/m	Probe Reading			Correction Factor			Avg
		X	Y	Z	X	Y	Z	
1.00	7.97	6.74	6.71	6.60	1.18	1.19	1.21	1.19
1.00	20.01	17.05	16.99	16.75	1.17	1.18	1.19	1.18
1.00	69.93	59.37	59.09	58.36	1.18	1.18	1.20	1.19
1.00	124.30	105.11	104.67	103.34	1.18	1.19	1.20	1.19
15.00	8.02	7.86	7.79	7.76	1.02	1.03	1.03	1.03
15.00	19.96	19.62	19.45	19.42	1.02	1.03	1.03	1.02
15.00	70.28	68.97	68.30	68.14	1.02	1.03	1.03	1.03
15.00	125.20	122.31	121.06	120.78	1.02	1.03	1.04	1.03
30.00	8.02	8.00	7.92	7.89	1.00	1.01	1.02	1.01
30.00	20.11	20.09	19.88	19.85	1.00	1.01	1.01	1.01
30.00	69.83	69.30	68.56	68.31	1.01	1.02	1.02	1.02
30.00	124.31	122.47	121.21	120.74	1.01	1.03	1.03	1.02
75.00	8.03	8.24	8.23	8.12	0.97	0.98	0.99	0.98
75.00	20.11	20.71	20.64	20.46	0.97	0.97	0.98	0.98
75.00	70.04	72.11	71.83	71.03	0.97	0.98	0.99	0.98
75.00	124.66	128.20	127.66	126.29	0.97	0.98	0.99	0.98
100.00	8.02	8.17	8.13	8.04	0.98	0.99	1.00	0.99
100.00	20.04	20.45	20.33	20.21	0.98	0.99	0.99	0.99
100.00	70.33	71.31	70.79	70.25	0.99	0.99	1.00	0.99
100.00	124.43	125.68	124.79	123.57	0.99	1.00	1.01	1.00
150.00	8.03	8.14	8.14	8.02	0.99	0.99	1.00	0.99
150.00	19.96	20.33	20.31	20.09	0.98	0.98	0.99	0.99
150.00	70.14	71.64	71.55	70.58	0.98	0.98	0.99	0.98
150.00	125.58	128.56	128.42	126.52	0.98	0.98	0.99	0.98
200.00	8.00	8.43	8.53	8.28	0.95	0.94	0.97	0.95
200.00	19.97	21.08	21.37	20.85	0.95	0.93	0.96	0.95
200.00	69.86	74.08	74.82	72.92	0.94	0.93	0.96	0.94
200.00	124.95	132.17	134.06	130.32	0.95	0.93	0.96	0.95
250.00	7.97	8.11	7.88	7.96	0.98	1.01	1.00	1.00
250.00	19.99	20.55	19.75	20.20	0.97	1.01	0.99	0.99
250.00	70.06	72.32	70.37	70.59	0.97	1.00	0.99	0.99
250.00	125.12	128.64	124.26	125.28	0.97	1.01	1.00	0.99
300.00	8.00	8.08	7.94	7.97	0.99	1.01	1.00	1.00
300.00	20.03	20.57	20.25	20.34	0.97	0.99	0.98	0.98
300.00	69.79	72.57	71.30	71.56	0.96	0.98	0.98	0.97
300.00	125.28	130.82	128.42	128.85	0.96	0.98	0.97	0.97
400.00	8.00	8.10	7.97	7.97	0.99	1.00	1.00	1.00
400.00	19.89	20.15	19.87	19.89	0.99	1.00	1.00	1.00
400.00	69.67	70.49	69.32	69.33	0.99	1.01	1.00	1.00
400.00	125.09	126.27	124.24	124.10	0.99	1.01	1.01	1.00
500.00	8.01	7.89	7.95	7.68	1.02	1.01	1.03	1.02
500.00	19.94	19.59	19.74	19.37	1.02	1.01	1.03	1.02
500.00	70.28	69.65	70.06	68.64	1.01	1.00	1.02	1.01
500.00	124.58	123.19	123.63	121.24	1.01	1.01	1.03	1.02
600.00	8.01	7.65	7.63	7.61	1.04	1.05	1.06	1.05
600.00	20.01	19.34	19.09	19.06	1.04	1.05	1.05	1.04
600.00	69.90	67.55	67.54	66.46	1.03	1.04	1.05	1.04
600.00	125.28	120.21	120.01	119.47	1.03	1.05	1.05	1.04



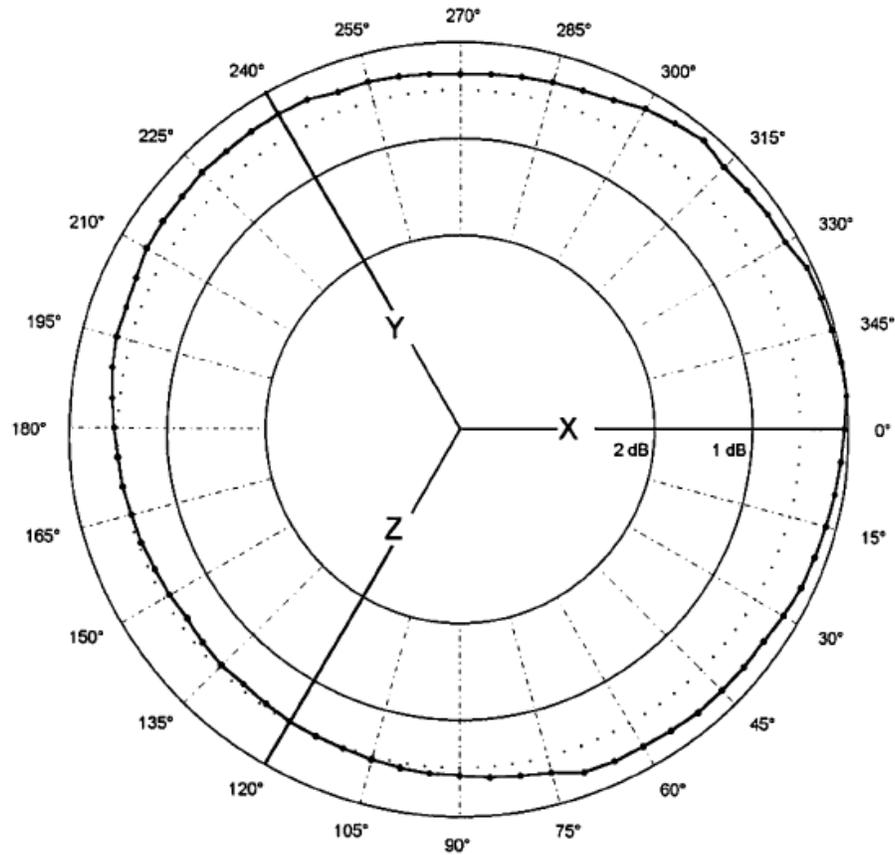
Frequency Response Calibration Factors
Model E100 Serial Number 00083370
Date of Calibration 4 Dec 2008

Frequency (MHz)	Applied V/m	Probe Reading			Correction Factor			
		X	Y	Z	X	Y	Z	Avg
700.00	7.96	7.56	7.35	7.42	1.05	1.08	1.07	1.07
700.00	20.10	19.21	18.63	18.87	1.05	1.08	1.06	1.06
700.00	70.26	67.25	65.16	65.96	1.05	1.08	1.07	1.06
700.00	125.09	119.09	115.24	116.69	1.05	1.09	1.07	1.07
800.00	8.04	7.34	7.28	7.22	1.10	1.10	1.11	1.10
800.00	20.02	18.38	18.27	18.07	1.09	1.09	1.11	1.10
800.00	69.85	64.15	63.68	63.03	1.09	1.10	1.11	1.10
800.00	124.82	113.69	112.90	111.64	1.10	1.10	1.12	1.11
900.00	7.97	7.70	7.78	7.56	1.03	1.02	1.05	1.04
900.00	20.03	19.42	19.58	19.07	1.03	1.02	1.05	1.03
900.00	70.21	67.77	68.79	66.47	1.04	1.02	1.06	1.04
900.00	124.81	119.63	120.40	117.19	1.04	1.04	1.06	1.05
1000.00	7.99	8.09	7.90	7.89	0.99	1.01	1.01	1.00
1000.00	19.92	20.17	19.63	19.74	0.99	1.01	1.01	1.00
1000.00	69.78	70.08	68.11	68.35	1.00	1.02	1.02	1.01
1000.00	124.80	124.87	120.11	120.41	1.01	1.04	1.03	1.02
2000.00	19.92	19.09	18.99	20.04	1.04	1.05	0.99	1.03
2450.00	20.38	19.27	18.50	17.75	1.06	1.10	1.15	1.10
3000.00	20.36	19.27	18.66	19.77	1.06	1.09	1.03	1.06
3500.00	20.02	21.99	21.67	19.57	0.91	0.92	1.02	0.95
4000.00	19.99	19.75	18.25	19.57	1.01	1.10	1.02	1.04
5000.00	19.97	14.40	13.92	15.38	1.39	1.43	1.30	1.37



PROBE ROTATIONAL RESPONSE

Model E100
S/N 00083370
Date 04-Dec-2008
Time 20:40:05
Variation 0.59 dB



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

APPENDIX C
DUT Photos
(Refer to Exhibit 7B)