

 MOTOROLA SOLUTIONS	    SMM 826 CERTIFICATE 2518.05																																														
MPE TEST REPORT																																															
Motorola Solutions Inc. EME Test Laboratory Motorola Solutions Malaysia Sdn Bhd Plot 2A, Medan Bayan Lepas, Mukim 12 SWD 11900 Bayan Lepas Penang, Malaysia.	Date of Report: 08/22/2026 Report Revision: B																																														
<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">Responsible Engineer:</td> <td>Sathishkumar Reveendran (EME Engineer)</td> </tr> <tr> <td>Report Author:</td> <td>Sathishkumar Reveendran (EME Engineer)</td> </tr> <tr> <td>Date/s Tested:</td> <td>5/15/2026, 5/19/2026 - 5/22/2026, 5/25/2026, 6/03/2026</td> </tr> <tr> <td>Test Location:</td> <td>Penang EME Laboratory</td> </tr> <tr> <td>Manufacturer:</td> <td>Motorola Solutions Malaysia Sdn Bhd.</td> </tr> <tr> <td>Manufacturer Location:</td> <td>Plot 2A, Medan Bayan Lepas Mukim, 12 SWD, 11900 Bayan Lepas, Penang, Malaysia</td> </tr> <tr> <td>Hardware Receive Date:</td> <td>05/05/2026</td> </tr> <tr> <td>DUT Description:</td> <td>GENESEE UHF 400-470MHz 1-25W LOWPOWER</td> </tr> <tr> <td>Test TX mode(s):</td> <td>CW</td> </tr> <tr> <td>Max. Power output:</td> <td>Refer table 6</td> </tr> <tr> <td>Tx Frequency Bands:</td> <td>Refer table 6</td> </tr> <tr> <td>Signaling type:</td> <td>FM, TDMA, FHSS(Bluetooth), WLAN 2.4GHz 802.11b/g/n & WLAN 5GHz 802.11a/n/ac</td> </tr> <tr> <td>Model(s) Tested:</td> <td>AAM29QNN9YA1AN (PMUE5985A)</td> </tr> <tr> <td>Model(s) Certified: (HVIN/PMN)</td> <td>Refer 1.0 Introduction</td> </tr> <tr> <td>Serial Number(s):</td> <td>008TCH0256</td> </tr> <tr> <td>Classification:</td> <td>Occupational/Controlled Environment</td> </tr> <tr> <td>Applicant Name:</td> <td>Motorola Solutions Inc.</td> </tr> <tr> <td>Applicant Address:</td> <td>Plot 2A, Medan Bayan Lepas Mukim, 12 SWD, 11900 Bayan Lepas, Penang, Malaysia</td> </tr> <tr> <td>Firmware Version (FVIN):</td> <td>D02.26.02.0175</td> </tr> <tr> <td>FCC ID:</td> <td>AZ492FT7191</td> </tr> <tr> <td>FCC Test Firm Registration Number:</td> <td>823256</td> </tr> <tr> <td>IC:</td> <td>109U-92FT7191</td> </tr> <tr> <td>ISED Test Site registration:</td> <td>24843</td> </tr> </table> This report contains results that are immaterial for FCC equipment approval, which are clearly identified. This report contains results that are immaterial for ISED equipment approval, which are clearly identified.		Responsible Engineer:	Sathishkumar Reveendran (EME Engineer)	Report Author:	Sathishkumar Reveendran (EME Engineer)	Date/s Tested:	5/15/2026, 5/19/2026 - 5/22/2026, 5/25/2026, 6/03/2026	Test Location:	Penang EME Laboratory	Manufacturer:	Motorola Solutions Malaysia Sdn Bhd.	Manufacturer Location:	Plot 2A, Medan Bayan Lepas Mukim, 12 SWD, 11900 Bayan Lepas, Penang, Malaysia	Hardware Receive Date:	05/05/2026	DUT Description:	GENESEE UHF 400-470MHz 1-25W LOWPOWER	Test TX mode(s):	CW	Max. Power output:	Refer table 6	Tx Frequency Bands:	Refer table 6	Signaling type:	FM, TDMA, FHSS(Bluetooth), WLAN 2.4GHz 802.11b/g/n & WLAN 5GHz 802.11a/n/ac	Model(s) Tested:	AAM29QNN9YA1AN (PMUE5985A)	Model(s) Certified: (HVIN/PMN)	Refer 1.0 Introduction	Serial Number(s):	008TCH0256	Classification:	Occupational/Controlled Environment	Applicant Name:	Motorola Solutions Inc.	Applicant Address:	Plot 2A, Medan Bayan Lepas Mukim, 12 SWD, 11900 Bayan Lepas, Penang, Malaysia	Firmware Version (FVIN):	D02.26.02.0175	FCC ID:	AZ492FT7191	FCC Test Firm Registration Number:	823256	IC:	109U-92FT7191	ISED Test Site registration:	24843
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The MPE results clearly demonstrate compliance with FCC/ISED Occupational/Controlled RF Exposure limits. FCC/ISED rules require compliance for Passengers and Bystanders to the FCC/ISED General Population/Uncontrolled limits. 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 (no deviation from standard methods). 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. The results and statements contained in this report pertain only to the device(s) evaluated.																																															
 Saw Sun Hock (Approval Signatory) Approved Date: 08/22/2026																																															

Document Revision History

Date	Revision	Comments
07/02/2026	A	Initial release
08/22/2026	B	Update HAE6021A specifications: change RF connector to BNC

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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 for product model AAM29QNN9YA1AN (PMUE5985A).

Model	Hardware Version ID Number (HVIN)	Product Marketing Name (PMN)	Description
AAM29QNN9YA1AN (PMUE5985A)	AAM29QNN9YA1AN	MR7r	MR7r 400-470 25W WIFI/BT/GNSS/RJ45 CD
AAM29QNN9HA1AN (PMUE5985A)	AAM29QNN9HA1AN	MR7r	MR7r 400-470 25W WIFI/BT/GNSS/RJ45 CD
AAM29QNN9RA1AN (PMUE5976A)	AAM29QNN9RA1AN	MR7b	MR7b 400-470 25W WIFI/BT/GNSS CD
AAM29QNN9GA1AN (PMUE5976A)	AAM29QNN9GA1AN	MR7b	MR7b 400-470 25W WIFI/BT/GNSS CD
AAM29QNC9RA1AN (PMUE5976A)	AAM29QNC9RA1AN	MR7b	MR7b 400-470 25W WIFI/BT/GNSS ND
AAM29QNC9GA1AN (PMUE5976A)	AAM29QNC9GA1AN	MR7b	MR7b 400-470 25W WIFI/BT/GNSS ND

2.0 FCC MPE Summary

Table 1

Equipment Class	Frequency band (MHz)	Trunk Mounted Antennas				Roof Mounted Antennas			
		Passenger		Bystander		Passenger		Bystander	
		Power Density (mW/cm ²)	Percentage of Limit (%)	Power Density (mW/cm ²)	Percentage of Limit (%)	Power Density (mW/cm ²)	Percentage of Limit (%)	Power Density (mW/cm ²)	Percentage of Limit (%)
TNB	406.1-470 (LMR)	0.145	49.59	0.116	39.52	0.028	10.42	0.063	20.41
DTS	2412 – 2462 (WLAN 2.4 GHz)	0.017	1.71	0.017	1.71	0.017	1.71	0.017	1.71
DTS	2402-2480 (Bluetooth)	0.005	0.48	0.005	0.48	0.005	0.48	0.005	0.48
NII	5180 - 5825 (WLAN 5 GHz)	0.017	1.72	0.017	1.72	0.017	1.72	0.017	1.72
Simultaneous (Highest Combined Percentage of Limit)		N/A	51.31	N/A	41.24	N/A	12.14	N/A	22.13

3.0 Abbreviations / Definitions

CW: Continuous Wave
 DUT: Device Under Test
 EME: Electromagnetic Energy
 FM: Frequency Modulation
 MPE: Maximum Permissible Exposure
 GPS: Global Positioning System
 LMR: Land Mobile Radio
 NA or N/A: Not Applicable
 BS: Bystander
 PB: Passenger Back seat
 PF: Passenger Front seat
 PTT: Push to Talk
 TDMA: Time Division Multiple Access

4.0 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 (Edition 97-01), FCC, Washington, D.C.: August 1997.
- 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
- Institute of Electrical and Electronics Engineers (IEEE) C95.3-2021
- Ministry of Health (Canada) Safety Code 6 (2015), Limits of Human Exposure to Radio frequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz
- RSS-102 (Issue 6) – Radio Frequency (RF) Exposure Compliance of Radio communication Apparatus (All Frequency Bands)
- FCC KDB – 447498 D01 General RF Exposure Guidance v06
- FCC KDB – 865664 D02 RF Exposure Reporting v01r02

5.0 Power Density Limits

Table 2 – Occupational / Controlled Exposure Limits

Frequency Range (MHz)	FCC OET Bulletin 65	IEEE C95.1	IEEE C95.1	RSS-102 Issue 6
	mW/cm ²	mW/cm ²	W/m ²	W/m ²
10 – 20				10.0
20 – 48				$44.72 / f^{0.5}$
30 – 300	1.0			
48 – 100				6.455
10 – 400				
100 – 300		1.0	10.0	
100 – 6,000				$0.6455 f^{0.5}$
300 – 1,500	$f/300$			
300 – 3,000		$f/300$	$f/30$	
400 – 2,000				
1,500 – 15,000				
1,500 – 100,000	5.0			
2,000 – 300,000				
3,000 – 300,000		10.0	100.0	
6,000 – 15,000				50.0
15000 – 150,000				50.0
150000 – 300,000				$3.33 \times 10^{-4} f$

Table 3 – General Population / Uncontrolled Exposure Limits

Frequency Range (MHz)	FCC OET Bulletin 65	IEEE C95.1	IEEE C95.1	RSS-102 Issue 6
	mW/cm ²	mW/cm ²	W/m ²	W/m ²
10 – 20				2.0
20 – 48				$8.944 / f^{0.5}$
30 – 300	0.2			
48 – 300				1.291
10 – 400				
100 – 300		0.2		
100 – 400			2.0	
300 – 1,500	$f/1,500$			
300 – 6000				$0.02619 f^{0.6834}$
400 – 2,000			$f/200$	
300 – 15,000		$f/1,500$		
1,500 – 15,000				
1,500 – 100,000	1.0			
2,000 – 100,000			10.0	
2,000 – 300,000				
6,000 – 15,000				10.0
15,000 – 150,000				10.0
150,000 – 300,000				$6.67 \times 10^{-5} f$

6.0 N_c Test Channels

The number of test channels is 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

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

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.

7.0 Measurement Equipment

Table 4 – Equipment

Equipment Type	Model #	SN	Calibration Date	Calibration Due Date
Automobile	Volvo 240-1988	NA	NA	NA
Survey Meter Probe – E-Field	ETS Model HI-2200 ETS Model E100	00086316 00206767	01/23/2026	01/23/2027

E-field measurements are in mW/cm².

8.0 Measurement System Uncertainty Levels

Table 5 – Uncertainty Budget for Near Field Probe Measurements

	Tol. (± %)	Prob. Dist.	Divisor	u_i (±%)		v_i
Measurement System						
Probe Calibration	4.8	N	1.00	4.8	23.0	∞
Survey Meter Calibration	0.0	N	1.00	0.0	0.0	¥
Hemispherical Isotropy	8.0	R	1.73	4.6	21.33	∞
Linearity	5.0	R	1.73	2.9	8.33	∞
Pulse Response	1.0	R	1.73	0.6	0.33	∞
RF Ambient Noise	3.0	R	1.73	1.7	3.00	∞
RF Reflections	8.0	R	1.73	4.6	21.33	∞
Probe Positioning	10.0	R	1.73	5.8	33.333	∞
Test sample Related					0.00	
Antenna Positioning	3.0	N	1.00	3.0	9.0	∞
Power drift	5.0	R	1.73	2.9	8.33	∞
Bystander measurement uncertainty	4.8	N	1.00	4.8	23.04	∞
Passenger measurement uncertainty	8.1	N	1.00	8.1	65.61	∞
Combined Standard Uncertainty		RSS		14.7	14.7	∞
Expanded Uncertainty (95% CONFIDENCE LEVEL)		$k=2$		29	29	

9.0 Product and System Description

The model AAM29QNN9YA1AN (PMUE5985A) device operates in the LMR bands using either frequency modulation (FM) with 100% transmit duty cycle or TDMA signals with a maximum of 50% transmit duty cycle. For conservative assessment, the FM signal was tested. A duty factor of 50% applies for PTT operation mode.

This device also incorporates a Class 1 Bluetooth device which is a Frequency Hopping Spread Spectrum (FHSS) technology. The Bluetooth radio modem is used to wirelessly link audio accessories. The maximum actual transmission duty cycle is imposed by the Bluetooth standard. The maximum duty cycle for BT is 77%. Bluetooth Low Energy (BT LE) is intended to reduce power consumption.

This device also contains WLAN technology for data capabilities over 802.11b/g/n 2.4 GHz and 802.11a/n/ac 5 GHz wireless networks.

Table 6 below summarizes the technologies, bands, maximum duty cycles and maximum output powers. Maximum output powers are defined as upper limit of the production line final test station.

Table 6

Technology	Transmit Band (MHz)	Transmission	Duty Cycle (%)	Conducted (Average Detector) Maximum Power (W)
LMR	400-470	FM	50 ⁽¹⁾	30
Bluetooth	2402 - 2480	FHSS	77	0.01
Bluetooth LE (1M)			62.47	0.01
Bluetooth LE (2M)			33.64	0.01
802.11 b			98.88	0.01413
802.11 g	2412 - 2462	DSSS, OFDM	96.88	0.02818
802.11 n			98.01	0.02818
802.11 a			97.01	0.02818
802.11 n/ac	5180 -5825	OFDM	97.97	0.02239

Note - * includes 50% PTT operation

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)

10.0 Additional Options and Accessories

Refer to Table 8 for complete list of tested antennas. The additional antenna kits listed below are electrically identical to the tested antennas, featuring either a BNC or Mini-U connector.

Table 7

No.	Antenna Models	Description	Selected for test	Tested	Comments
1.	PMAE4030B	UHF 403-430MHz, ANTENNA GAIN: 2.15dBi, WAVE TYPE:1/4, GPS Base & Mini-U RF Connector	Yes	No	By similarity to HAD4002A
2.	PMAE4031B	UHF 450-470MHz, ANTENNA GAIN: 2.15dBi, WAVE TYPE:1/4, GPS Base & Mini-U RF Connector	Yes	No	By similarity to HAE4003A
3.	PMAE4035B	UHF 403-430MHz, ANTENNA GAIN: 2.15dBi, WAVE TYPE:1/4, GPS Base & BNC RF Connector	Yes	No	By similarity to HAD4002A
4.	PMAE4036B	UHF 406-420MHz, ANTENNA GAIN: 5.65dBi, WAVE TYPE:5/8, GPS Base & BNC RF Connector	Yes	No	By similarity to PMAE4032B
5.	PMAE4037B	UHF 450-470MHz, ANTENNA GAIN: 2.15dBi, WAVE TYPE:1/4, GPS Base & BNC RF Connector	Yes	No	By similarity to HAE4003A
6.	PMAE4038B	UHF 450-470MHz, ANTENNA GAIN: 7.15dBi, WAVE TYPE:1/2, GPS Base & BNC RF Connector	Yes	No	By similarity to PMAE4034B
7.	HAE6017B	UHF 403-527MHz, ANTENNA GAIN: 4.15dBi, WAVE TYPE:5/8, GPS Base & BNC RF Connector	Yes	No	By similarity to HAE6022A
8.	HAE6021A	UHF 403-527MHz, ANTENNA GAIN: 4.15dBi, WAVE TYPE:5/8, BNC RF Connector	Yes	No	By similarity to HAE6022A
9.	RAE4151A	UHF 403-430MHz, ANTENNA GAIN: 2.15dBi, WAVE TYPE:1/4, BNC RF Connector	Yes	No	By similarity to HAE4002A
10.	RAE4152A	UHF 450-470MHz, ANTENNA GAIN: 2.15dBi, WAVE TYPE:1/4, BNC RF Connector	Yes	No	By similarity to HAE4003A

11.0 Test Set-Up Description

Assessments were performed with mobile radio installed in the test vehicle, at the specified distances and test locations indicated in sections 12.0, 13.0 and Appendix A.

All antennas described in Table 8 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.

The system was tested using a low-loss 16' Teflon RG58A/U cable attaching the radio to the transmit antenna. This cable is shorter and lower attenuation than the 17' RG58A/U cables supplied in the customer kits for connecting the radio to the transmit antenna. The cable used in the test setup also has lower attenuation over the test frequency range than the cable provided in the customer kits. The use of a shorter cable with lower attenuation in the test setup ensures that the test data is more conservative with regards to the actual installation. Cable losses are reported in Appendix A.

12.0 Method of Measurement with trunk mounted antenna(s)

12.1 External/Bystander vehicle MPE measurements

Initially the 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 the distance between the antenna and the geometric center of the probe sensor equal to 60 cm (for UHF band). 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 45° radial at the corner of the trunk, and 90° radial at the side of the trunk.

Tests for the 90° radial direction were conducted with the antenna displaced towards the "bystander on the side of the trunk" test location in order to attain 90 cm (42 cm antenna displacement) distances from that test location. In this way, the antenna is closer to the test location, and the MPE is higher, than it would be if the antenna was left at the center of the trunk

12.2 Internal/Passenger vehicle MPE measurements

Antenna is located toward the center of the trunk at a minimum 85 cm 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.

13.0 Method of Measurement with roof mounted antenna(s)

13.1 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 20 cm height increments, with the distance between the antenna and the geometric center of the probe sensor equal to 60 cm (for UHF band). 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.

13.2 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.

14.0 MPE Variability Requirement for External/Bystander vehicle MPE measurement

If all the MPE bystander measurements for a particular antenna are below 50% of the FCC MPE limit, no variability testing for that antenna is required.

If one or more MPE bystander measurements for a particular is between 50-80% of the FCC MPE limit, with no results > 80%, variability testing shall be done on the single worst case for that antenna.

For any MPE bystander measurement above 80% of the MPE limit, variability testing shall be done for all of such configuration. When SAR simulation is performed for a particular antenna configuration to determine compliance, variability measurements are not required for that antenna configuration.

The MPE bystander measurements for all tested antennas are below 50% of the FCC MPE Specification limit, thus, no variability testing for these antennas is required.

15.0 MPE Calculations

The final MPE results for this mobile radio are presented in section 16.0. These results are based on 50% duty cycle for PTT for LMR bands.

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

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.*)

$$\text{Calc.}_P.D. = (\text{Avg_over_body}) * (\text{probe_frequency_cal_factor}) * (\text{duty_cycle})$$

Note 1: 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/cm²) 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/cm²) using the equation 3. H-field measurements are only applicable to frequencies below 300MHz.

Equation 3 – Converting A/m to mW/cm²

$$mW/cm^2 = (A/m)^2 * 37.699$$

Equation 4 – Power Density Maximum Calculation

$$Max_Calc._P.D. = P.D._calc * \frac{\text{max_output_power}}{\text{initial_output_power}}$$

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

16.0 Antenna Summary

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

Table 8

Antenna No.	Antenna Model	Frequency Range (MHz)	Physical Length (cm)	Gain (dBi)	Remarks	Mount Location (Roof/Trunk)	Overlap FCC Bands (MHz)	FCC N _c	Actual N _c
1	HAE4002A	403-430	17.5	2.15	¼ wave	R	406.1-512	1	4
2	HAE4003A	450-470	16	2.15	¼ wave	R	N/A	0	3
3	HAE6022A	403-527	27.8	4.15	5/8 Wave	R/T	406.1-512	2	8
4	PMAE4032B	406-420	35.5	5.65	5/8 Wave	R/T	N/A	0	2
5	PMAE4033B	450-470	31.0	5.65	5/8 Wave	R/T	N/A	0	3
6	PMAE4034B	450-470	76.8	7.15	½ Wave	R/T	N/A	0	3
7	RAE4154A	450-470	76.7	7.15	5/8 Wave	R/T	N/A	0	3
8	RAE4163A	410-430	8.26	3	¼ wave	R	N/A	0	3
9	RAE4164A	430-450	8.26	3	¼ wave	R	N/A	0	3
10	RAE4168A	450-470	8.26	3	¼ wave	R	N/A	0	3
11	Internal Antenna	2400-2485	N/A	5.5	N/A	N/A	2402-2480	3	3
		5150-5250		6			5180-5240	3	3
		5250-5725		3			5260-5720	3	3
		5725-5850		6			5720-5825	3	3

17.0 Test Results Summary

17.1 MPE Test Results Summary for LMR

Table 9

MPE assessment for LMR UHF - trunk mounted antenna – Bystander

Notes:

Blue fonts: Frequencies not regulated by FCC.

Results highlight in yellow are configurations with highest percentage of limits

Trunk/Roof	Test Position	E/H Field	Angle (Degree)	Antenna No.	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/cm²)	FCC Limit	% To FCC Spec Limit	ISED Limit	% To ISED Spec Limit
Trunk	BS	E	0	3	HAE6022A, 5/8 Wave (403-527 MHz)	30	29.80	403.0125	0.09	N/A	N/A	N/A	N/A
			29.90				406.1250	0.09	0.27	33.10	0.16	56.40	
			0				30.00	419.9875	0.09	0.28	32.00	0.16	55.10
			0				29.80	429.9875	0.09	0.29	32.20	0.17	55.80
			0				29.40	439.1000	0.10	0.29	35.50	0.17	62.00
			0				29.90	450.0125	0.09	0.30	30.90	0.17	54.40
			0				29.90	460.0000	0.11	0.31	35.60	0.17	63.20
			0				30.00	469.9875	0.09	0.31	29.90	0.18	53.40
			45				29.40	439.1000	0.10	0.29	35.50	N/A	N/A
			90				29.90	460.0000	0.12	0.31	38.70	0.17	68.70
			45				29.40	439.1000	0.12	0.29	39.50	N/A	N/A
			90				29.90	460.0000	0.11	0.31	34.50	0.17	61.20
			0	4	PMAE4032B, 5/8 Wave (406-420 MHz)		29.90	406.1250	0.07	0.27	25.30	0.16	43.20
			0				30.00	419.9875	0.07	0.28	25.50	0.16	43.90
			0	5	PMAE4033B, 5/8 Wave (450-470 MHz)		29.90	450.0125	0.08	0.30	28.10	0.17	49.40
			0				29.90	460.0000	0.10	0.31	31.80	0.17	56.30
			0				30.00	469.9875	0.09	0.31	30.00	0.18	53.50
			0	6	PMAE4034B, 1/2 Wave (450-470 MHz)		29.90	450.0125	0.10	0.30	33.50	0.17	58.90
			0				29.90	460.0000	0.10	0.31	33.00	0.17	58.60
			0				30.00	469.9875	0.09	0.31	27.30	0.18	48.80
			0	7	RAE4154A, 5/8 Wave (450-470 MHz)		29.90	450.0125	0.08	0.30	26.10	0.17	45.90
			0				29.90	460.0000	0.07	0.31	24.10	0.17	42.80
			0				30.00	469.9875	0.03	0.31	10.60	0.18	19.00

Table 10**MPE assessment for LMR UHF - trunk mounted antenna – Passenger Back**

Notes:

Blue fonts: Frequencies not regulated by FCC.

Results highlight in yellow are configurations with highest percentage of limits

Trunk/Roof	Test Position	E/H Field	Antenna No.	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/cm²)	FCC Limit	% To FCC Spec Limit	ISED Limit	% To ISED Spec Limit
Trunk	PB	E	3	HAE6022A, 5/8 Wave (403-527 MHz)	30	29.80	403.0125	0.15	N/A	N/A	N/A	N/A
						29.90	406.1250	0.12	0.27	45.40	0.16	77.40
						30.00	419.9875	0.11	0.28	38.70	0.16	66.70
						29.80	429.9875	0.13	0.29	45.10	0.17	78.30
						29.40	439.1000	0.15	0.29	49.60	N/A	N/A
						29.90	450.0125	0.12	0.30	40.10	0.17	70.70
			29.90	460.0000		0.14	0.31	44.40	0.17	78.80		
			30.00	469.9875		0.14	0.31	43.50	0.18	77.60		
			29.90	406.1250		0.11	0.27	39.80	0.16	67.80		
			30.00	419.9875		0.10	0.28	35.70	0.16	61.50		
			29.90	450.0125		0.11	0.30	38.00	0.17	67.00		
			29.90	460.0000		0.11	0.31	34.90	0.17	61.90		
			30.00	469.9875		0.12	0.31	38.90	0.18	69.50		
			29.90	450.0125		0.09	0.30	30.00	0.17	52.80		
			29.90	460.0000		0.12	0.31	37.50	0.17	66.50		
			30.00	469.9875		0.10	0.31	33.00	0.18	59.00		
			29.90	450.0125		0.05	0.30	15.30	0.17	27.00		
			29.90	460.0000		0.05	0.31	17.60	0.17	31.30		
			30.00	469.9875		0.02	0.31	7.70	0.18	13.80		

Table 11**MPE assessment for LMR UHF - trunk mounted antenna – Passenger Front**

Notes:

Blue fonts: Frequencies not regulated by FCC.

Results highlight in yellow are configurations with highest percentage of limits

Trunk/Roof	Test Position	E/H Field	Antenna No.	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/cm²)	FCC Limit	% To FCC Spec Limit	ISED Limit	% To ISED Spec Limit
Trunk	PF	E	3	HAE6022A, 5/8 Wave (403-527 MHz)	30	29.8	403.0125	0.05	N/A	N/A	N/A	N/A
						29.9	406.1250	0.05	0.27	20.00	0.16	34.20
						30	419.9875	0.06	0.28	22.80	0.16	39.20
						29.8	429.9875	0.08	0.29	27.00	0.17	46.90
						29.4	439.1000	0.06	0.29	21.60	N/A	N/A
						29.9	450.0125	0.07	0.30	23.40	0.17	41.30
			4	PMAE4032B, 5/8 Wave (406-420 MHz)		29.9	460.0000	0.08	0.31	25.20	0.17	44.60
						30	469.9875	0.08	0.31	25.70	0.18	45.90
						29.9	406.1250	0.04	0.27	16.30	0.16	27.80
						30	419.9875	0.05	0.28	18.60	0.16	32.10
			5	PMAE4033B, 5/8 Wave (450-470 MHz)		29.9	450.0125	0.05	0.30	16.80	0.17	29.60
						29.9	460.0000	0.07	0.31	22.10	0.17	39.20
						30	469.9875	0.06	0.31	20.10	0.18	35.90
			6	PMAE4034B, 1/2 Wave (450-470 MHz)		29.9	450.0125	0.06	0.30	18.30	0.17	32.20
						29.9	460.0000	0.07	0.31	23.10	0.17	41.00
						30	469.9875	0.05	0.31	15.70	0.18	28.10
			7	RAE4154A, 5/8 Wave (450-470 MHz)		29.9	450.0125	0.04	0.30	14.40	0.17	25.40
						29.9	460.0000	0.04	0.31	13.40	0.17	23.70
						30	469.9875	0.02	0.31	5.10	0.18	9.10

Table 12**MPE assessment for LMR UHF - roof mounted antenna – Bystander**

Notes:

Blue fonts: Frequencies not regulated by FCC.

Results highlight in yellow are configurations with highest percentage of limits

Trunk/Roof	Test Position	E/H Field	Antenna No.	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. PD. (mW/cm²)	FCC Limit	% To FCC Spec Limit	ISED Limit	% To ISED Spec Limit
Roof	BS	E	1	HAE4002A, 1/4 Wave (403-430 MHz)	30	29.80	403.0125	0.05	N/A	N/A	N/A	N/A
						29.90	406.1250	0.05	0.27	18.20	0.16	31.00
						30.00	419.9875	0.04	0.28	15.10	0.16	26.00
			10	RAE4168A, 1/4 Wave (450-470MHz)		29.80	429.9875	0.05	0.29	16.50	0.17	28.70
						29.90	450.0125	0.05	0.30	15.30	0.17	27.00
						29.90	460.0000	0.05	0.31	15.20	0.17	26.90
			2	HAE4003A, 1/4 Wave (450-470 MHz)		30.00	469.9875	0.02	0.31	4.70	0.18	8.30
						29.90	450.0125	0.05	0.30	17.50	0.17	30.90
						29.90	460.0000	0.06	0.31	18.50	0.17	32.90
			3	HAE6022A, 5/8 Wave (403-527 MHz)		30.00	469.9875	0.05	0.31	14.80	0.18	26.40
						29.80	403.0125	0.05	N/A	N/A	N/A	N/A
						29.90	406.1250	0.05	0.27	17.10	0.16	29.10
						30.00	419.9875	0.04	0.28	15.20	0.16	26.10
						29.80	429.9875	0.05	0.29	17.90	0.17	31.10
						29.40	439.1000	0.05	0.29	16.40	N/A	N/A
						29.90	450.0125	0.05	0.30	17.10	0.17	30.10
						29.90	460.0000	0.06	0.31	18.20	0.17	32.30
						30.00	469.9875	0.05	0.31	15.10	0.18	26.90
			4	PMAE4032B, 5/8Wave (406-420 MHz)		29.90	406.1250	0.05	0.27	16.50	0.16	28.10
						30.00	419.9875	0.04	0.28	14.40	0.16	24.80
						29.90	450.0125	0.05	0.30	15.70	0.17	27.60
			5	PMAE4033B, 5/8 Wave (450-470 MHz)		29.90	460.0000	0.06	0.31	20.40	0.17	36.20
						30.00	469.9875	0.05	0.31	15.40	0.18	27.50
						29.90	450.0125	0.05	0.30	16.20	0.17	28.60
			6	PMAE4034B, 1/2 Wave (450-470 MHz)		29.90	460.0000	0.06	0.31	18.00	0.17	31.90
						30.00	469.9875	0.04	0.31	13.40	0.18	23.90
						29.90	450.0125	0.03	0.30	10.70	0.17	18.80
			7	RAE4154A, 5/8 Wave (450-470 MHz)		29.80	460.0000	0.03	0.31	10.90	0.17	19.40
						30.00	469.9875	0.01	0.31	3.30	0.18	5.90
						29.80	413.0125	0.05	0.28	16.70	0.16	28.60
			8	RAE4163A, 1/4 Wave (410-430 MHz)		30.00	419.9875	0.04	0.28	13.10	0.16	22.50
						29.80	429.9875	0.04	0.29	14.90	0.17	25.90
						29.80	430.0125	0.04	0.29	15.10	N/A	N/A
			9	RAE4164A, 1/4 Wave (430-450 MHz)		29.40	439.1000	0.04	0.29	13.00	N/A	N/A
						29.90	449.9875	0.01	0.30	3.80	0.17	6.60

Table 13 (a)**MPE assessment for LMR UHF - roof mounted antenna – Passenger Back**

Notes:

Blue fonts: Frequencies not regulated by FCC.

Trunk/Roof	Test Position	E/H Field	Antenna No.	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/cm^2)	FCC Limit	% To FCC Spec Limit	ISED Limit	% To ISED Spec Limit
Roof	PB	E	1	HAE4002A, 1/4 Wave (403-430 MHz)	30	29.80	403.0125	0.030	N/A	N/A	N/A	N/A
						29.90	406.1250	0.020	0.27	8.00	0.16	13.60
						30.00	419.9875	0.020	0.28	6.20	0.16	10.70
						29.80	429.9875	0.020	0.29	5.50	0.17	9.60
			10	RAE4168A, 1/4 Wave (450-470MHz)		29.90	450.0125	0.020	0.30	4.90	0.17	8.60
						29.90	460.0000	0.020	0.31	6.70	0.17	11.80
						30.00	469.9875	0.010	0.31	1.60	0.18	2.90
						29.90	450.0125	0.020	0.30	5.70	0.17	10.00
			2	HAE4003A, 1/4 Wave (450-470 MHz)		29.90	460.0000	0.030	0.31	8.20	0.17	14.50
						30.00	469.9875	0.020	0.31	6.50	0.18	11.60
						29.80	403.0125	0.030	N/A	N/A	N/A	N/A
						29.90	406.1250	0.030	0.27	9.20	0.16	15.70
			3	HAE6022A, 5/8 Wave (403-527 MHz)		30.00	419.9875	0.020	0.28	7.10	0.16	12.20
						29.80	429.9875	0.020	0.29	6.20	0.17	10.70
						29.40	439.1000	0.020	0.29	5.50	N/A	N/A
						29.90	450.0125	0.020	0.30	6.40	0.17	11.20
						29.90	460.0000	0.030	0.31	8.30	0.17	14.80
						30.00	469.9875	0.020	0.31	6.30	0.18	11.20

Table 13 (b)**MPE assessment for LMR UHF - roof mounted antenna – Passenger Back**

Notes:

Results highlight in yellow are configurations with highest percentage of limits

Trunk/Roof	Test Position	E/H Field	Antenna No.	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/cm^2)	FCC Limit	% To FCC Spec Limit	ISED Limit	% To ISED Spec Limit
Roof	PB	E	4	PMAE4032B, 5/8 Wave (406-420 MHz)	30	29.90	406.1250	0.030	0.27	10.40	0.16	17.80
						30.00	419.9875	0.020	0.28	6.20	0.16	10.70
			5	PMAE4033B, 5/8 Wave (450-470 MHz)		29.90	450.0125	0.020	0.30	5.40	0.17	9.40
						29.90	460.0000	0.030	0.31	8.40	0.17	15.00
						30.00	469.9875	0.020	0.31	6.00	0.18	10.70
						29.90	450.0125	0.010	0.30	2.50	0.17	4.40
			6	PMAE4034B, 1/2 Wave (450-470 MHz)		29.90	460.0000	0.010	0.31	3.80	0.17	6.70
						30.00	469.9875	0.010	0.31	3.00	0.18	5.30
						29.90	450.0125	0.002	0.30	0.60	0.17	1.10
						29.80	460.0000	0.003	0.31	1.10	0.17	2.00
			7	RAE4154A, 5/8 Wave (450-470 MHz)		30.00	469.9875	0.001	0.31	0.30	0.18	0.60
						29.80	413.0125	0.020	0.28	7.60	0.16	13.10
						30.00	419.9875	0.020	0.28	5.90	0.16	10.20
						29.80	429.9875	0.010	0.29	4.40	0.17	7.60
			8	RAE4163A, 1/4 Wave (410-430 MHz)		29.80	430.0125	0.010	0.29	4.70	N/A	N/A
						29.40	439.1000	0.010	0.29	3.50	N/A	N/A
						29.90	449.9875	0.003	0.30	1.00	N/A	N/A

Table 14 (a)**MPE assessment for LMR UHF - roof mounted antenna – Passenger Front**

Notes:

Blue fonts: Frequencies not regulated by FCC.

Results highlight in yellow are configurations with highest percentage of limits

Trunk/Roof	Test Position	E/H Field	Antenna No.	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/cm²)	FCC Limit	% To FCC Spec Limit	ISED Limit	% To ISED Spec Limit
Roof	PF	E	1	HAE4002A, 1/4 Wave (403-430 MHz)	30	29.80	403.0125	0.010	N/A	N/A	N/A	N/A
						29.90	406.1250	0.010	0.27	3.80	0.16	6.40
						30.00	419.9875	0.020	0.28	5.50	0.16	9.50
			10	RAE4168A, 1/4 Wave (450-470MHz)		29.80	429.9875	0.010	0.29	3.10	0.17	5.30
						29.90	450.0125	0.010	0.30	4.00	0.17	7.00
						29.90	460.0000	0.010	0.31	4.60	0.17	8.20
			2	HAE4003A, 1/4 Wave (450-470 MHz)		30.00	469.9875	0.000	0.31	0.90	0.18	1.60
						29.90	450.0125	0.010	0.30	3.90	0.17	6.90
						29.90	460.0000	0.010	0.31	4.60	0.17	8.20
			3	HAE6022A, 5/8 Wave (403-527 MHz)		30.00	469.9875	0.020	0.31	6.40	0.18	11.40
						29.80	403.0125	0.010	N/A	N/A	N/A	N/A
						29.90	406.1250	0.010	0.27	3.90	0.16	6.60
						30.00	419.9875	0.010	0.28	4.30	0.16	7.40
						29.80	429.9875	0.010	0.29	2.90	0.17	5.00
						29.40	439.1000	0.010	0.29	3.00	0.17	5.20
						29.90	450.0125	0.010	0.30	3.30	0.17	5.80
						29.90	460.0000	0.017	0.31	5.40	0.17	9.60
						30.00	469.9875	0.014	0.31	4.30	0.18	7.70
			4	PMAE4032B, 5/8 Wave (406-420 MHz)		29.90	406.1250	0.009	0.27	3.40	0.16	5.90
						30.00	419.9875	0.018	0.28	6.60	0.16	11.40
						29.90	450.0125	0.011	0.30	3.50	0.17	6.20
			5	PMAE4033B, 5/8Wave (450-470 MHz)		29.90	460.0000	0.016	0.31	5.20	0.17	9.30
						30.00	469.9875	0.016	0.31	5.10	0.18	9.00
						29.90	450.0125	0.006	0.30	2.00	0.17	3.50
			6	PMAE4034B, 1/2 Wave (450-470 MHz)		29.90	460.0000	0.006	0.31	1.80	0.17	3.20
						30.00	469.9875	0.008	0.31	2.70	0.18	4.70
						29.90	450.0125	0.004	0.30	1.40	0.17	2.50
			7	RAE4154A, 5/8 Wave (450-470 MHz)		29.80	460.0000	0.006	0.31	2.00	0.17	3.50
						30.00	469.9875	0.008	0.31	2.60	0.18	4.70
						29.80	413.0125	0.013	0.28	4.80	0.16	8.30
			8	RAE4163A, 1/4 Wave (410-430 MHz)		30.00	419.9875	0.011	0.28	3.80	0.16	6.60
						29.80	429.9875	0.012	0.29	4.30	0.17	7.50
						29.80	430.0125	0.008	0.29	2.80	0.17	4.90
			9	RAE4164A, 1/4 Wave (430-450 MHz)		29.40	439.1000	0.011	0.29	3.60	0.17	6.30
						29.90	449.9875	0.002	0.30	0.50	0.17	0.90

17.2 MPE Test Results for Bluetooth and WLAN

MPE calculation was used to determine power density for these transmitters due to lower power. According to FCC's OET Bulletin 65 Edition 97-01 Section 2, calculations can be made to predict RF field strength and power density levels around typical RF sources. Equation (5) is generally accurate in far-field of an antenna.

Equation 5 – Power Density Calculation

$$S = \frac{P_t G}{4\pi d^2} F$$

Equation (5) accounts for the maximum duty cycle of the signal, and the factor, F, to provide a worst-case prediction of power density per FCC OET Bulletin 65, Edition 97-01 1997.

Where:

- S = power density
- P_t = maximum output power scaled by the maximum duty cycle of the signal
- G = power gain of the antenna in the direction of interest relative to an isotropic radiator
- d = distance from antenna
- F = Enhancement factor [1 or 2.56 for predicting ground-level field strength]

Table 15(a), (b) and (c) summarized the MPE calculation for each standalone transmitter bands, Bluetooth and WLAN.

Table 15 (a)

Antenna #	Max Power (W)	Duty Cycle (%)	Tx Frequency (MHz)	Antenna Gain (dBi)	Cable Loss, L (dB)	Dist., d (cm)	Enhancement Factor, F ⁽⁴⁾	Max Calc. MPE (mW/cm ²)	MPE Spec Limit (mW/cm ²)			
									FCC	% of FCC Spec Limit	ISED limit	% of ISED Spec Limit
									Y		Y	
Bluetooth (2402-2480MHz)												
Internal Antenna	0.010	77.00%	2402.000	5.50	0.56	20	1.00	0.005	1.00	0.48	0.54	0.89
Internal Antenna	0.010	77.00%	2441.000	5.50	0.56	20	1.00	0.005	1.00	0.48	0.54	0.88
Internal Antenna	0.010	77.00%	2480.000	5.50	0.56	20	1.00	0.005	1.00	0.48	0.55	0.87
WiFi 2.4												
WiFi 2.4 (2412-2462MHz) 802.11b												
Internal Antenna	0.014	98.88%	2412.000	5.50	0.56	20	1.00	0.009	1.00	0.87	0.54	1.62
Internal Antenna	0.014	98.88%	2437.000	5.50	0.56	20	1.00	0.009	1.00	0.87	0.54	1.60
Internal Antenna	0.014	98.88%	2462.000	5.50	0.56	20	1.00	0.009	1.00	0.87	0.54	1.59
WiFi 2.4 (2412-2462MHz) 802.11g												
Internal Antenna	0.028	96.88%	2412.000	5.50	0.56	20	1.00	0.017	1.00	1.69	0.54	3.16
Internal Antenna	0.028	96.88%	2437.000	5.50	0.56	20	1.00	0.017	1.00	1.69	0.54	3.13
Internal Antenna	0.028	96.88%	2462.000	5.50	0.56	20	1.00	0.017	1.00	1.69	0.54	3.11
WiFi 2.4 (2412-2462MHz) 802.11n20												
Internal Antenna	0.028	98.01%	2412.000	5.50	0.56	20	1.00	0.017	1.00	1.71	0.54	3.19
Internal Antenna	0.028	98.01%	2437.000	5.50	0.56	20	1.00	0.017	1.00	1.71	0.54	3.17
Internal Antenna	0.028	98.01%	2462.000	5.50	0.56	20	1.00	0.017	1.00	1.71	0.54	3.15

Table 15 (b)

Antenna #	Max Power (W)	Duty Cycle (%)	Tx Frequency (MHz)	Antenna Gain (dBi)	Cable Loss, L (dB)	Dist., d (cm)	Enhancement Factor, F ⁽¹⁾	Max Calc. MPE (mW/cm ²)	MPE Spec Limit (mW/cm ²)			
									FCC	% of FCC Spec Limit	ISED limit	% of ISED Spec Limit
WiFi 5GHz												
WiFi 5GHz UNII-1 (5.15-5.25GHz)												
802.11a												
Internal Antenna	0.028	97.01%	5180.000	6.00	1.00	20	1.00	0.017	1.00	1.72	0.90	1.90
Internal Antenna	0.028	97.01%	5200.000	6.00	1.00	20	1.00	0.017	1.00	1.72	0.91	1.90
Internal Antenna	0.028	97.01%	5240.000	6.00	1.00	20	1.00	0.017	1.00	1.72	0.91	1.89
802.11n20												
Internal Antenna	0.022	97.97%	5180.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.90	1.53
Internal Antenna	0.022	97.97%	5200.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.91	1.52
Internal Antenna	0.022	97.97%	5240.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.91	1.51
802.11ac20												
Internal Antenna	0.022	97.97%	5180.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.90	1.53
Internal Antenna	0.022	97.97%	5200.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.91	1.52
Internal Antenna	0.022	97.97%	5240.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.91	1.51
WiFi 5GHz UNII-2A (5.25-5.35GHz)												
802.11a												
Internal Antenna	0.028	97.01%	5260.000	3.00	1.00	20	1.00	0.009	1.00	0.86	0.91	0.94
Internal Antenna	0.028	97.01%	5280.000	3.00	1.00	20	1.00	0.009	1.00	0.86	0.92	0.94
Internal Antenna	0.028	97.01%	5320.000	3.00	1.00	20	1.00	0.009	1.00	0.86	0.92	0.94
802.11n20												
Internal Antenna	0.022	97.97%	5260.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.91	0.76
Internal Antenna	0.022	97.97%	5280.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.92	0.75
Internal Antenna	0.022	97.97%	5320.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.92	0.75
802.11ac20												
Internal Antenna	0.022	97.97%	5260.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.91	0.76
Internal Antenna	0.022	97.97%	5280.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.92	0.75
Internal Antenna	0.022	97.97%	5320.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.92	0.75

Table 15 (c)

Antenna #	Max Power (W)	Duty Cycle (%)	Tx Frequency (MHz)	Antenna Gain (dBi)	Cable Loss, L (dB)	Dist., d (cm)	Enhancement Factor, F ⁽¹⁾	Max Calc. MPE (mW/cm ²)	MPE Spec Limit (mW/cm ²)			
									FCC	% of FCC Spec Limit	ISED limit	% of ISED Spec Limit
WiFi 5GHz												
WiFi 5GHz UNII-2C (5.47-5.725GHz)												
802.11a												
Internal Antenna	0.028	97.01%	5500.000	3.00	1.00	20	1.00	0.009	1.00	0.86	0.94	0.91
Internal Antenna	0.028	97.01%	5600.000	3.00	1.00	20	1.00	0.009	1.00	0.86	0.95	0.90
Internal Antenna	0.028	97.01%	5720.000	3.00	1.00	20	1.00	0.009	1.00	0.86	0.97	0.89
802.11n20												
Internal Antenna	0.022	97.97%	5500.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.94	0.73
Internal Antenna	0.022	97.97%	5600.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.95	0.72
Internal Antenna	0.022	97.97%	5720.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.97	0.71
802.11ac20												
Internal Antenna	0.022	97.97%	5500.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.94	0.73
Internal Antenna	0.022	97.97%	5600.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.95	0.72
Internal Antenna	0.022	97.97%	5720.000	3.00	1.00	20	1.00	0.007	1.00	0.69	0.97	0.71
WiFi 5GHz UNII-3 (5.725-5.825GHz)												
802.11a												
Internal Antenna	0.028	97.01%	5745.000	6.00	1.00	20	1.00	0.017	1.00	1.72	0.97	1.77
Internal Antenna	0.028	97.01%	5785.000	6.00	1.00	20	1.00	0.017	1.00	1.72	0.98	1.76
Internal Antenna	0.028	97.01%	5825.000	6.00	1.00	20	1.00	0.017	1.00	1.72	0.98	1.75
802.11n20												
Internal Antenna	0.022	97.97%	5745.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.97	1.42
Internal Antenna	0.022	97.97%	5785.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.98	1.41
Internal Antenna	0.022	97.97%	5825.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.98	1.41
802.11ac20												
Internal Antenna	0.022	97.97%	5745.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.97	1.42
Internal Antenna	0.022	97.97%	5785.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.98	1.41
Internal Antenna	0.022	97.97%	5825.000	6.00	1.00	20	1.00	0.014	1.00	1.38	0.98	1.41

Notes:

- Distance from antenna (d), 20cm for more conservative estimation.
- Enhancement Factor (F), 1 (Ground reflection already factor in during antenna characterization)

17.3 Simultaneous Transmission

LMR bands can transmit simultaneously with Bluetooth or WLAN 2.4 GHz or WLAN 5 GHz. Bluetooth and WLAN 2.4 GHz or WLAN 5 GHz transmitters cannot transmit at the same time.

The highest percentage of limit for each standalone transmitters indicated in Table 16.

Table 16

Transmitters	Frequency Band (MHz)	Highest Percentage of Limit (%)		
		Passenger, Front Seat (PF)	Passenger, Back Seat (PB)	Bystander (BS)
FCC US				
LMR UHF	406.1-470	27.03	49.59	39.52
Bluetooth	2402 - 2480	0.48	0.48	0.48
WLAN 2.4 GHz	2412 - 2462	1.71	1.71	1.71
WLAN 5 GHz	5180 - 5825	1.72	1.72	1.72
ISED Canada				
LMR UHF	406.1-430, 450-470	46.93	78.75	68.69
Bluetooth	2402 - 2480	0.89	0.89	0.89
WLAN 2.4 GHz	2412 - 2462	3.19	3.19	3.19
WLAN 5 GHz	5180 - 5825	1.90	1.90	1.90

Per KDB 447498 D01, simultaneous transmission MPE test exclusion applies when the sum of MPE ratios for all simultaneous transmitting antennas incorporated in a host device is ≤ 1.0 , according to calculated/estimated, numerically modeled, or measured field strengths or power density.

The calculated maximum power density for WLAN 2.4 GHz exceeds both WLAN 5 GHz and Bluetooth, or conversely, with WLAN 5 GHz exceeding WLAN 2.4 GHz and Bluetooth. These transmitters cannot operate simultaneously, so the highest power density configuration from each case (WLAN 2.4 GHz or WLAN 5 GHz) was selected to evaluate simultaneous transmission test exclusion, as detailed in Table 17.

Table 17

Designator	Simultaneous Transmission Scenario	Highest Combined Percentage of Limit (%)		
		Passenger, Front Seat (PF)	Passenger, Back Seat (PB)	Bystander (BS)
FCC	LMR UHF and WLAN 5GHz	28.72	51.32	41.22
ISED Canada	LMR UHF and WLAN 2.4GHz	50.09	81.99	71.89

18.0 Conclusion

The assessments for this device were performed with an output power range as indicated in section 17.1 (for LMR) and 17.2 (for BT/WLAN). The maximum allowable output power is equal to the upper limit of the final test factory transmit power specification listed in Table 6. The highest power density results for LMR and BT/WLAN transmitter scaled to maximum allowable power output are indicated in Table 18 and 19 for internal/passenger to the vehicle, and external/bystander to the vehicle.

Table 18: Maximum MPE RF Exposure Summary (LMR)

Designator	Transmitters	Frequency Band (MHz)	Passenger	Bystander
			Power Density (mW/cm ²)	Power Density (mW/cm ²)
FCC	LMR UHF	406.1- 470	0.145	0.116
ISED Canada	LMR UHF	406.1-430, 450-470	0.136	0.119

Table 19: Maximum MPE RF Exposure Summary (BT/WLAN)

Designator	Transmitters	Frequency Band (MHz)	Passenger	Bystander
			Power Density (mW/cm ²)	Power Density (mW/cm ²)
FCC / ISED Canada	Bluetooth	2402 - 2480	0.89	0.89
	WLAN 2.4GHz	2412 - 2462	3.19	3.19
	WLAN 5GHz	5180 - 5825	1.90	1.90

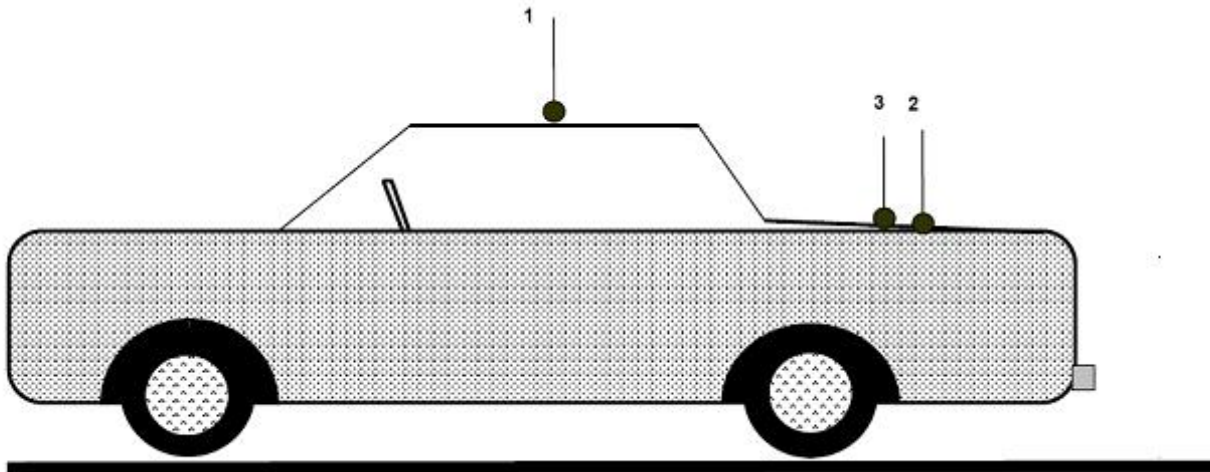
These MPE results herein demonstrate compliance to the FCC / ISED Canada Occupational/Controlled Exposure limit. FCC / ISED Canada rules require compliance for Passengers and Bystanders to the FCC / ISED Canada General Population/Uncontrolled limits.

19.0 User Instructions Considerations

In order to facilitate the task of professional users, the Safety Manual for this radio requires that bystanders be kept at least 2 ft (60 cm) from the vehicle Body.

Appendix A - Antenna Locations, Test Distances, and Cable Losses

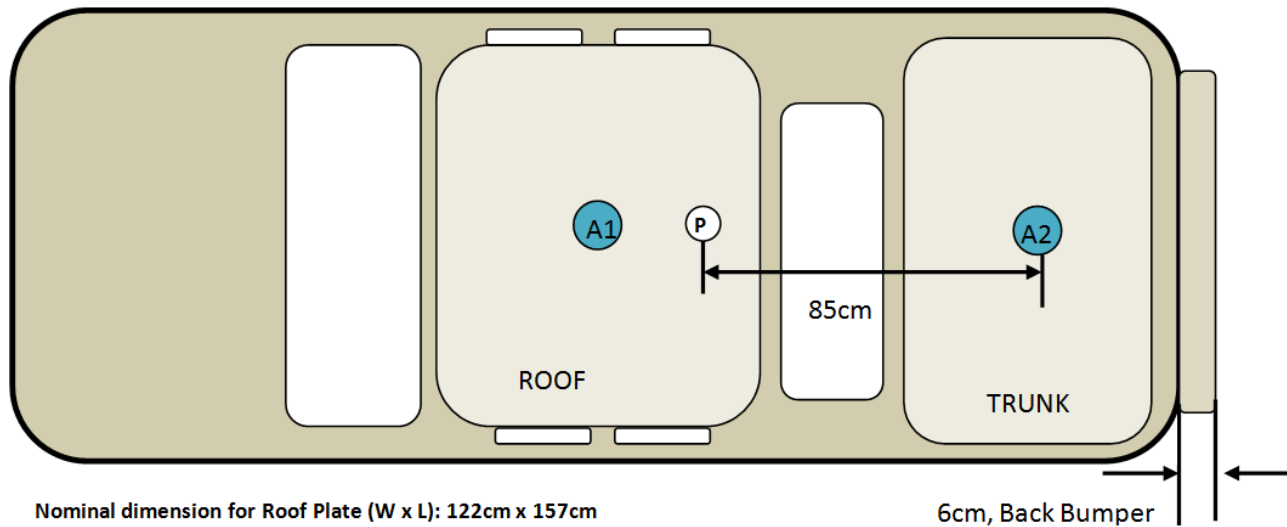
Antenna locations



Roof (20cm from center)

Trunk (85cm from back of the back seat)

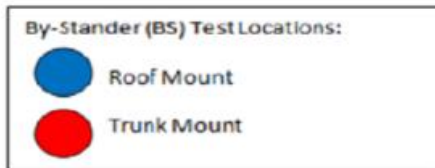
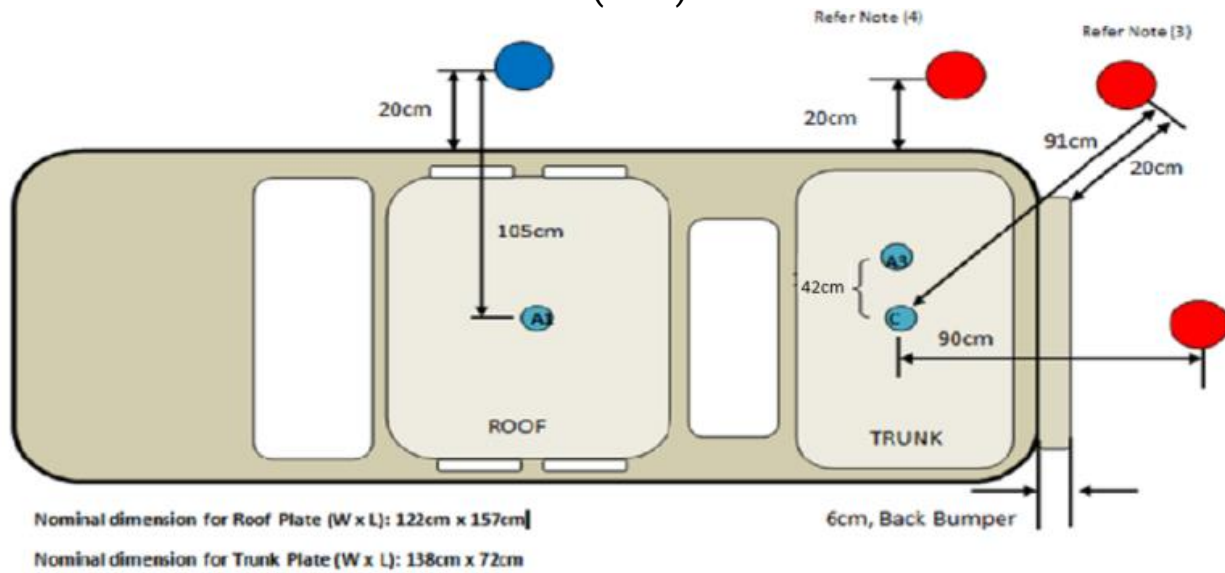
Passenger Antenna mounting (UHF)



Notes:

- 1.) Antenna location A1: Mobile radio roof antenna mounting locations for passenger back and front testing (UHF)
- 2.) Antenna location A2: Mobile trunk antenna mounting locations for passenger back and front testing (UHF)
- 3.) Total distance between trunk mount antenna and rear passenger is 85cm

Bystander Antenna mounting (UHF)



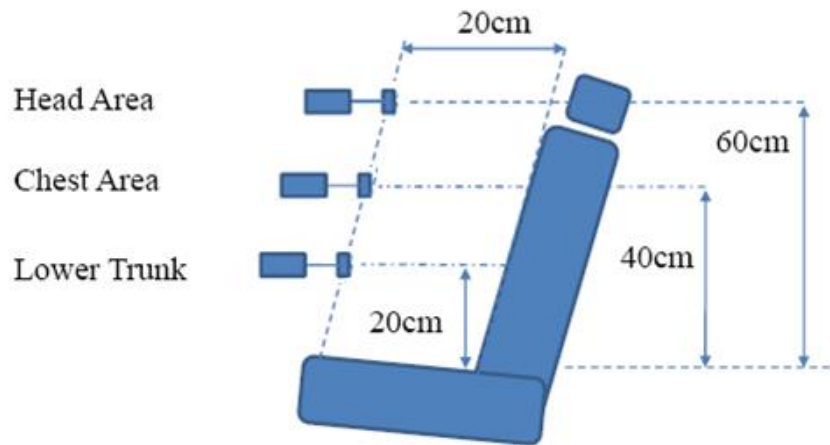
Notes:

- 1) Antenna location A1: LMR antennas roof mount
- 2) Antenna location A3: LMR antennas trunk mount for bystander testing.
- 3) Total distance between Bystander 45 degree angles from the centered-trunk mount antenna is 91cm to maintain a minimum 20cm separation between probe sensor and vehicle body.
- 4) Total distance between Bystander 90 degree angle from the centered-trunk mount antenna is 90cm (by moving antenna location A3 12cm from center of the trunk).

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

Meter - Probe

 Probe diameter is 5.5cm



Cable Losses

Test Cable

Teflon RG58A/U Loss Per 100 Feet

160 MHz - 5 dB

450 MHz - 9 dB

1 GHz - 13.8 dB

Customer Cable

RG-58A/U Loss Per 100 Feet (For LMR)

136 MHz – 5.5 dB

450 MHz – 9.6 dB

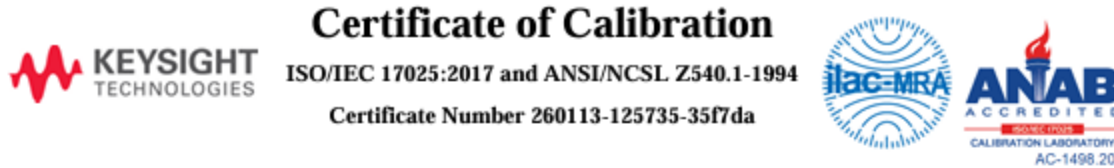
900 MHz – 13.9 dB

PFP 240 Loss Per 100 Feet (For BT/WLAN)

2500 MHz - 12.9 dB

5800 MHz -20.4 dB

Appendix B - Probe Calibration Certificates



Model Number E100: HI-2200
Manufacturer ETS - Lindgren
Description Field Probe
Serial Number 00206767: 00086316
Customer Asset No. N/A: MSI0206

Customer
 Motorola Solutions Malaysia Sdn Bhd
 Innoplex Plot 2A, Medan Bayan Lepas
 Central Test & Equip Mgt Mukim 12, S.W.D., Bayan Lepas
 Bayan Lepas, PENANG 11900
 Malaysia

Date of Calibration 01/23/2026
Temperature 22°C
Humidity 41% RH

Location of Calibration
 Keysight Technologies Inc.
 1346 Yellowwood Road
 Kimballton, IA 51543
 United States

This certifies that the equipment has been calibrated using applicable Keysight Technologies procedures and in compliance with ISO/IEC 17025:2017 and ANSI/NCSL Z540.1-1994 (R2002). The quality management system is registered to ISO 9001:2015.

Calibration Standard(s)	Calibration Method(s)	Calibration Procedure(s)
IEEE Std 1309-2013 Section 4.1	Calculated, Substitution	287330
IEEE Std 1309-2013 Section 5		
IEEE Std 1309-2013 Section 8.2		
IEEE Std 1309-2013 Section Annex A		
IEEE Std 1309-2013 Section A.3		
IEEE Std 1309-2013 Section 7.3		
IEEE Std 1309-2013 Section 8.3.3.3		

Calibration Software
 Probe Comparison 1.5.3

As Received Conditions
 The measured values of the equipment were observed in specification at the points tested.

Action Taken
 No action was taken.

As Completed Conditions
 The measured values of the equipment were observed in specification at the points tested.

Calibration Due
 Based on the customer's request, the next calibration is due on 23 Jan 2027

Remarks or Special Requirements
 A probe position document is included with this certificate. This calibration is valid only for the alignment/mounting position specified in this report.

This calibration report shall not be reproduced, except in full. The documented results relate to the equipment calibrated only.

The test limits stated in the report correspond to the published specifications of the equipment, at the points tested.

Keysight Technologies, Inc.
 1346 Yellowwood Road
 Kimballton, IA 51543
 United States
 Issue Date 23 Jan 2026

Nate Potts Iowa Service Center Manager

Page 1 of 7



Certificate of Calibration

ISO/IEC 17025:2017 and ANSI/NCCL Z540.1-1994
Certificate Number 260113-125735-35f7da



Traceability Information

Technician Name Dennis Bissen

Measurements are traceable to the International System of Units (SI) via national metrology institutes (www.keysight.com/find/NMI) that are signatories to the CIPM Mutual Recognition Arrangement.

Calibration Equipment Used

Manufacturer	Model Number	Model Description	Equipment ID	Cal Due Date	Certificate Number
AR	100W1000B	Amp	11546	NA	
AR	15T4G18	Amp	10888	NA	NA
EMCO	5101	TEM Cell	10420	NA	2003121920
EMCO	5302	G-TEM	10223	NA	2003121915
AR	75A250	Amp	10560	NA	N/A
AR	80S1G4	Amp	11728	NA	
Agilent Technologies, Inc.	83650B	Synthesized Swept Signal Generator	1354	01/31/2026	250129-082200-6d9f0c
Agilent Technologies, Inc.	8648D	Signal Generator	10307	04/30/2026	250401-151556-4e64f8
Agilent Technologies, Inc.	8648D	Signal Generator	11028	02/28/2026	250225-110237-453fed
Schwarzbeck Mess-Elektronik	BBHA 9120D	Horn	10194	10/31/2026	251023-103452-59bb69
Narda	EF6092	Electric Field Probe	666444	03/10/2026	2025010156-1
AR	FL7006	Isotropic Probe	10946	05/20/2027	2025090150-1
Holaday	HI-4422	Isotropic Probe	10022	04/19/2027	2025010151-1

Compliance with Specification

Unless otherwise noted, the calibration results are reported without factoring in the effect of uncertainty on the assessment of compliance/specification.

In Specification/Out of Specification Explanation

The standard criteria to determine the "In Specification/Out of Specification" status is based on one or more of the following conditions, as requested by the client:

1. If the manufacturer has a specified specification for the item being calibrated, then the calibration values are compared to this specification, and the values must fall within the manufacturer's specification. The specification may be obtained from the manufacturer's web site, data sheets, equipment manuals, etc.
2. Where specifications are called out in a published standard, the calibration results are compared to this specification, and the measured values must fall within the standard's specification.
3. In cases where the manufacturer, standard, or client does not identify any relevant specifications, applicable calibration results are compared to historical data with a +/- 3 dB specification.

Uncertainty of Measurement

The uncertainty evaluation has been performed in accordance with ISO/IEC Guide 98-3:2008(GUM). The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k such that the coverage probability corresponds to approximately 95%. This probability corresponds to a coverage factor of $k=2$ for a normal distribution.



Certificate of Calibration

ISO/IEC 17025:2017 and ANSI/NCSL Z540.1-1994

Certificate Number 260113-125735-35f7da



Parameter	Range	MU (+/-)
RF Isotropic E-Field Probes - GTEM Cell - Isotropic	10 kHz to 1000 MHz	0.97 dB
RF Isotropic E-Field Probes - TEM Cell - Linearity	5 kHz to 800 MHz	0.91 dB
RF Isotropic E-Field Probes - Anechoic Chamber - Frequency Response	(450 to 18,000) MHz	1.1 dB
RF Isotropic E-Field Probes - GTEM Cell - Frequency Response	10 kHz to 1000 MHz	0.79 dB

2026_Frequency Response.txt

Customer Name: Motorola Solutions Malaysia Sdn Bhd

Probe Manufacturer: ETS - Lindgren

Probe Model: E100; HI-2200

Probe Serial No.: 00206767; 00086316

Notes:

CAL CERT #: 260113-125735-35f7da

Freq MHz	Mult	20V/m dB
0.1	1.07	0.61
0.5	0.96	-0.34
1	0.89	-1.02
3	0.91	-0.80
15	0.92	-0.68
27.12	0.94	-0.58
30	0.93	-0.63
75	0.96	-0.32
100	1.00	-0.03
150	1.01	0.04
200	1.02	0.21
250	1.05	0.46
300	1.11	0.88
400	0.86	-1.34
500	1.06	0.48
600	1.08	0.66
700	1.19	1.48
800	0.82	-1.70
900	0.99	-0.11
1000	1.14	1.11
2000	1.19	1.53
2450	1.19	1.52
3000	0.98	-0.19
3500	0.87	-1.25
4000	1.08	0.64
5000	1.03	0.29
5500	0.98	-0.19
6000	1.08	0.63

2026_Isotropic Response.txt

Customer Name: Motorola Solutions Malaysia Sdn Bhd

Probe Manufacturer: ETS - Lindgren

Probe Model: E100; HI-2200

Probe Serial No.: 00206767; 00086316

Notes:

CAL CERT # 260113-125735-35f7da

Isotropic Response at 400 MHz at 20V/m

Deg	Response dB
0	0.00
45	-0.03
90	-0.10
135	-0.23
180	-0.21
225	-0.06
270	-0.01
315	-0.16
360	-0.05

Max Dev. 0.23

2026_Linearity.txt

Customer Name: Motorola Solutions Malaysia Sdn Bhd

Probe Manufacturer: ETS - Lindgren

Probe Model: E100; HI-2200

Probe Serial No.: 00206767; 00086316

Notes:

CAL CERT #: 260113-125735-35f7da

Linearity

Freq MHz	Applied Field V/m	Indicated Field V/m	Max Dev dB
27.12	0.50	0.79	-3.97
27.12	1.00	1.06	-0.51
27.12	2.01	1.87	0.63
27.12	4.03	3.70	0.74
27.12	8.04	7.50	0.60
27.12	15.09	14.00	0.65
27.12	20.17	18.90	0.56
27.12	30.10	28.40	0.50
27.12	50.01	46.80	0.58
27.12	65.11	61.40	0.51
27.12	100.70	94.60	0.54
27.12	125.30	117.50	0.56
27.12	200.50	188.30	0.55
27.12	252.80	237.50	0.54
27.12	300.20	282.60	0.52
27.12	350.90	330.80	0.51
27.12	403.40	378.00	0.56
27.12	452.30	424.30	0.56
27.12	502.10	473.10	0.52
27.12	553.90	525.40	0.46
27.12	604.30	577.90	0.39

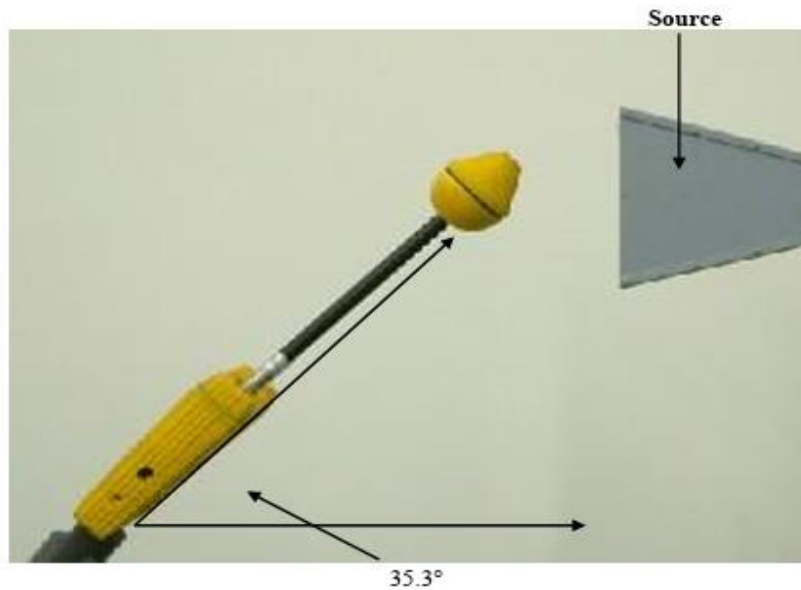
W&G_critical_angle.doc

Probe Alignment/Mounting Position

The alignment/mounting position of the probe is critical. The correction factors given with calibration are valid only for the indicated alignment/mounting position. Deviation from indicated alignment/mounting position of calibration can produce errors in excess of 6 dB.

The probe was positioned with the probe wand at a 35.3° angle position with the probe head centered in front of the field source. The picture below is for probe positioning reference only. The equipment shown does not necessarily indicate the equipment used for calibration.

Side View



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17025

A2LA Calibration

E-Field	
EME LAB	E100
<i>Freqs to be calibrated</i>	
QTY	MHz
1	1
2	15
3	30
4	75
5	100
6	150
7	200
8	250
9	300
10	400
11	500
12	600
13	700
14	800
15	900
16	1000
17	2000
18	2450
19	3000
20	3500
21	4000
22	5000
23	5500
24	6000

H-Field	
EME LAB	H200
<i>Freqs to be calibrated</i>	
QTY	MHz
1	10
2	15
3	30
4	50
5	75
6	100
7	150
8	175
9	200
10	250
11	300

** Range of probe is (5-300) MHz

Electromagnetic Survey Meter	
EME LAB	HI-2200
The above meter is to be used when calibrating the E-Field and H-Field probes.	

Appendix C - Photos of Assessed Antennas
(Refer to Exhibit 7B)

Appendix D - MPE Measurement Results

Table D.1
MPE measurement data for Bystander

D.U.T. Info.								Probe Info.				MPE Measurements										DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)		
(2) Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(3) Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	(4) Probe Cal. Factor			(5) Test Pos.	(6) Meas. Unit	Bystander (BS) Positions													
														20 cm	40 cm	60 cm	80 cm	100 cm	120 cm	140 cm	160 cm					180 cm	200 cm
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	403.0125	30.0	29.8	CW	E	0.870	BS	2	0.005	0.003	0.008	0.022	0.041	0.063	0.123	0.200	0.303	0.268	0.5	0.090	0.045	0.045		
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	406.1250	30.0	29.9	CW	E	0.870	BS	2	0.005	0.002	0.008	0.018	0.039	0.067	0.134	0.219	0.322	0.313	0.5	0.098	0.049	0.049		
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	419.9875	30.0	30.0	CW	E	0.900	BS	2	0.005	0.004	0.010	0.030	0.052	0.069	0.091	0.162	0.259	0.256	0.5	0.084	0.042	0.042		
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	429.9875	30.0	29.8	CW	E	0.920	BS	2	0.004	0.003	0.009	0.039	0.053	0.056	0.103	0.213	0.287	0.255	0.5	0.094	0.047	0.047		
Roof	HAE4003A, 1/4 Wave (450-470 MHz)	2.15	60	450.0125	30.0	29.9	CW	E	0.960	BS	2	0.005	0.007	0.017	0.030	0.045	0.070	0.135	0.237	0.292	0.254	0.5	0.105	0.052	0.053		
Roof	HAE4003A, 1/4 Wave (450-470 MHz)	2.15	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.001	0.003	0.005	0.016	0.031	0.073	0.171	0.256	0.325	0.276	0.5	0.113	0.057	0.057		
Roof	HAE4003A, 1/4 Wave (450-470 MHz)	2.15	60	469.9875	30.0	30.0	CW	E	1.000	BS	2	0.005	0.004	0.008	0.028	0.042	0.060	0.107	0.196	0.242	0.235	0.5	0.093	0.046	0.046		
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	403.0125	30.0	29.8	CW	E	0.870	BS	2	0.006	0.003	0.009	0.019	0.050	0.068	0.130	0.219	0.347	0.286	0.5	0.099	0.049	0.050		
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	406.1250	30.0	29.9	CW	E	0.870	BS	2	0.003	0.001	0.007	0.016	0.038	0.061	0.123	0.213	0.305	0.291	0.5	0.092	0.046	0.046		
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	419.9875	30.0	30.0	CW	E	0.900	BS	2	0.005	0.004	0.009	0.026	0.058	0.077	0.101	0.190	0.232	0.241	0.5	0.085	0.042	0.042		
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	429.9875	30.0	29.8	CW	E	0.920	BS	2	0.004	0.004	0.008	0.031	0.059	0.070	0.124	0.229	0.311	0.269	0.5	0.102	0.051	0.051		
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	439.1000	30.0	29.4	CW	E	0.940	BS	2	0.005	0.005	0.009	0.022	0.052	0.055	0.130	0.212	0.267	0.244	0.5	0.094	0.047	0.048		
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	450.0125	30.0	29.9	CW	E	0.960	BS	2	0.006	0.003	0.011	0.028	0.037	0.062	0.152	0.245	0.281	0.238	0.5	0.102	0.051	0.051		
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.002	0.002	0.007	0.014	0.037	0.059	0.158	0.266	0.342	0.250	0.5	0.111	0.056	0.056		
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	469.9875	30.0	30.0	CW	E	1.000	BS	2	0.004	0.003	0.009	0.021	0.042	0.068	0.118	0.224	0.252	0.203	0.5	0.094	0.047	0.047		

MPE calculations are defined in section 15.0.

Table D.1 (Continued)
MPE measurement data for Bystander

D.U.T. Info.									Probe Info.			MPE Measurements										DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
(2)Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(3) Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	(4) Probe Cal. Factor	(5) Test Pos.		(6) Meas. Unit	Bystander (BS) Positions												
													20 cm	40 cm	60 cm	80 cm	100 cm	120 cm	140 cm	160 cm	180 cm	200 cm			
Roof	PM4E4032B, 5/8 Wave (406-420 MHz)	5.65	60	406.1250	30.0	29.9	CW	E	0.870	BS	2	0.006	0.004	0.008	0.023	0.043	0.074	0.133	0.212	0.277	0.242	0.5	0.089	0.044	0.045
Roof	PM4E4032B, 5/8 Wave (406-420 MHz)	5.65	60	419.9875	30.0	30.0	CW	E	0.900	BS	2	0.003	0.003	0.010	0.032	0.061	0.077	0.111	0.187	0.219	0.194	0.5	0.081	0.040	0.040
Roof	PM4E4033B, 5/8 Wave (450-470 MHz)	5.65	60	450.0125	30.0	29.9	CW	E	0.960	BS	2	0.004	0.004	0.012	0.021	0.035	0.070	0.159	0.219	0.257	0.196	0.5	0.094	0.047	0.047
Roof	PM4E4033B, 5/8 Wave (450-470 MHz)	5.65	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.004	0.005	0.007	0.018	0.083	0.102	0.190	0.300	0.298	0.266	0.5	0.125	0.062	0.063
Roof	PM4E4033B, 5/8 Wave (450-470 MHz)	5.65	60	469.9875	30.0	30.0	CW	E	1.000	BS	2	0.005	0.005	0.009	0.031	0.048	0.066	0.135	0.223	0.248	0.194	0.5	0.096	0.048	0.048
Roof	PM4E4034B, 1/2 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	BS	2	0.001	0.003	0.004	0.008	0.014	0.035	0.103	0.210	0.325	0.308	0.5	0.097	0.049	0.049
Roof	PM4E4034B, 1/2 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.001	0.001	0.002	0.003	0.010	0.030	0.103	0.255	0.382	0.336	0.5	0.110	0.055	0.055
Roof	PM4E4034B, 1/2 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	BS	2	0.001	0.001	0.002	0.011	0.014	0.026	0.077	0.181	0.272	0.255	0.5	0.084	0.042	0.042
Roof	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	BS	2	0.001	0.001	0.001	0.002	0.002	0.005	0.029	0.109	0.234	0.282	0.5	0.064	0.032	0.032
Roof	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.8	CW	E	0.980	BS	2	0.001	0.001	0.001	0.002	0.002	0.004	0.030	0.122	0.242	0.275	0.5	0.067	0.033	0.034
Roof	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	BS	2	0.001	0.001	0.001	0.002	0.002	0.002	0.007	0.031	0.080	0.079	0.5	0.021	0.010	0.010

MPE calculations are defined in section 15.0.

Table D.1 (Continued)
MPE measurement data for Bystander

D.U.T. Info.									Probe Info.			MPE Measurements										DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)	
(2)Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(3) Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	(4) Probe Cal. Factor	(5) Test Pos.		(6) Meas. Unit	Bystander (BS) Positions													
													20 cm	40 cm	60 cm	80 cm	100 cm	120 cm	140 cm	160 cm	180 cm					200 cm
Roof	RAE4163A, 1/4 Wave (410-430 MHz)	3.00	60	413.0125	30.0	29.8	CW	E	0.890	BS	2	0.004	0.003	0.007	0.023	0.037	0.077	0.162	0.212	0.257	0.243	0.5	0.091	0.046	0.046	
Roof	RAE4163A, 1/4 Wave (410-430 MHz)	3.00	60	419.9875	30.0	30.0	CW	E	0.900	BS	2	0.003	0.002	0.007	0.017	0.044	0.058	0.101	0.136	0.231	0.214	0.5	0.073	0.037	0.037	
Roof	RAE4163A, 1/4 Wave (410-430 MHz)	3.00	60	429.9875	30.0	29.8	CW	E	0.920	BS	2	0.001	0.003	0.005	0.033	0.047	0.054	0.102	0.177	0.259	0.243	0.5	0.085	0.043	0.043	
Roof	RAE4164A, 1/4 Wave (430-450 MHz)	3.00	60	430.0125	30.0	29.8	CW	E	0.920	BS	2	0.002	0.005	0.013	0.032	0.048	0.055	0.103	0.178	0.249	0.247	0.5	0.086	0.043	0.043	
Roof	RAE4164A, 1/4 Wave (430-450 MHz)	3.00	60	439.1000	30.0	29.4	CW	E	0.940	BS	2	0.003	0.003	0.008	0.021	0.026	0.036	0.088	0.174	0.230	0.207	0.5	0.075	0.037	0.038	
Roof	RAE4164A, 1/4 Wave (430-450 MHz)	3.00	60	449.9875	30.0	29.9	CW	E	0.960	BS	2	0.001	0.002	0.002	0.005	0.007	0.010	0.028	0.050	0.065	0.064	0.5	0.022	0.011	0.011	
Roof	RAE4168A, 1/4 Wave (450-470MHz)	3.00	60	450.0125	30.0	29.9	CW	E	0.960	BS	2	0.003	0.004	0.013	0.021	0.037	0.060	0.122	0.201	0.248	0.247	0.5	0.092	0.046	0.046	
Roof	RAE4168A, 1/4 Wave (450-470MHz)	3.00	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.001	0.001	0.004	0.009	0.029	0.064	0.133	0.193	0.263	0.249	0.5	0.093	0.046	0.047	
Roof	RAE4168A, 1/4 Wave (450-470MHz)	3.00	60	469.9875	30.0	30.0	CW	E	1.000	BS	2	0.001	0.001	0.002	0.005	0.007	0.019	0.040	0.068	0.081	0.068	0.5	0.029	0.015	0.015	
Trunk	PMAE4032B, 5/8 Wave (406-420 MHz)	5.65	60	406.1250	30.0	29.9	CW	E	0.870	BS	2	0.054	0.055	0.121	0.119	0.188	0.331	0.338	0.217	0.105	0.043	0.5	0.137	0.068	0.069	
Trunk	PMAE4032B, 5/8 Wave (406-420 MHz)	5.65	60	419.9875	30.0	30.0	CW	E	0.900	BS	2	0.054	0.046	0.083	0.110	0.207	0.350	0.368	0.213	0.101	0.052	0.5	0.143	0.071	0.071	

MPE calculations are defined in section 15.0.

Table D.1 (Continued)
MPE measurement data for Bystander

D.U.T. Info.									Probe Info.			MPE Measurements										DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)	
(2)Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(3) Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	(4) Probe Cal. Factor	(5) Test Pos.		(6) Meas. Unit	Bystander (BS) Positions													
													20 cm	40 cm	60 cm	80 cm	100 cm	120 cm	140 cm	160 cm	180 cm					200 cm
Trunk	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	450.0125	30.0	29.9	CW	E	0.960	BS	2	0.052	0.033	0.077	0.058	0.261	0.451	0.452	0.254	0.083	0.028	0.5	0.168	0.084	0.084	
Trunk	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.052	0.026	0.060	0.066	0.323	0.514	0.499	0.265	0.122	0.055	0.5	0.194	0.097	0.097	
Trunk	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	469.9875	30.0	30.0	CW	E	1.000	BS	2	0.035	0.014	0.055	0.125	0.305	0.474	0.426	0.261	0.124	0.060	0.5	0.188	0.094	0.094	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	403.0125	30.0	29.8	CW	E	0.870	BS	2	0.070	0.076	0.154	0.136	0.229	0.393	0.409	0.298	0.191	0.115	0.5	0.180	0.090	0.091	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	406.1250	30.0	29.9	CW	E	0.870	BS	2	0.075	0.074	0.131	0.112	0.220	0.399	0.438	0.314	0.185	0.106	0.5	0.179	0.089	0.090	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	419.9875	30.0	30.0	CW	E	0.900	BS	2	0.062	0.049	0.109	0.104	0.242	0.425	0.460	0.296	0.142	0.101	0.5	0.179	0.090	0.090	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	429.9875	30.0	29.8	CW	E	0.920	BS	2	0.068	0.048	0.097	0.084	0.283	0.497	0.475	0.268	0.111	0.060	0.5	0.183	0.092	0.092	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	439.1000	30.0	29.4	CW	E	0.940	BS	2	0.062	0.051	0.096	0.120	0.319	0.535	0.507	0.306	0.113	0.056	0.5	0.204	0.102	0.104	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	450.0125	30.0	29.9	CW	E	0.960	BS	2	0.059	0.035	0.079	0.070	0.286	0.498	0.446	0.273	0.122	0.057	0.5	0.185	0.092	0.093	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.058	0.031	0.058	0.157	0.359	0.581	0.519	0.302	0.113	0.045	0.5	0.218	0.109	0.109	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	469.9875	30.0	30.0	CW	E	1.000	BS	2	0.033	0.014	0.054	0.124	0.310	0.500	0.455	0.232	0.112	0.039	0.5	0.187	0.094	0.094	

MPE calculations are defined in section 15.0.

Table D.1 (Continued)
MPE measurement data for Bystander

D.U.T. Info.									Probe Info.				MPE Measurements										DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)	
(2)Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(3) Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	(4) Probe Cal. Factor	(5) Test Pos.			(6) Meas. Unit	Bystander (BS) Positions													
														20 cm	40 cm	60 cm	80 cm	100 cm	120 cm	140 cm	160 cm	180 cm					200 cm
Trunk	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	BS	2	0.014	0.012	0.029	0.016	0.065	0.330	0.499	0.364	0.139	0.155	0.5	0.156	0.078	0.078		
Trunk	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.013	0.007	0.020	0.021	0.083	0.314	0.476	0.321	0.117	0.132	0.5	0.147	0.074	0.074		
Trunk	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	BS	2	0.003	0.004	0.007	0.018	0.052	0.168	0.198	0.118	0.043	0.055	0.5	0.067	0.033	0.033		
Trunk	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	BS	2	0.018	0.016	0.035	0.021	0.139	0.471	0.682	0.495	0.131	0.076	0.5	0.200	0.100	0.100		
Trunk	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.019	0.009	0.022	0.028	0.165	0.508	0.688	0.459	0.104	0.059	0.5	0.202	0.101	0.101		
Trunk	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	BS	2	0.011	0.007	0.029	0.028	0.152	0.433	0.572	0.363	0.078	0.040	0.5	0.171	0.086	0.086		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	439.1000	30.0	29.4	CW	E	0.940	BS	2	0.062	0.051	0.096	0.120	0.319	0.535	0.507	0.306	0.113	0.056	0.5	0.204	0.102	0.104		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	439.1000	30.0	29.4	CW	E	0.940	BS	2	0.005	0.022	0.056	0.094	0.320	0.758	0.489	0.250	0.126	0.083	0.5	0.207	0.104	0.106		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.058	0.031	0.058	0.157	0.359	0.581	0.519	0.302	0.113	0.045	0.5	0.218	0.109	0.109		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.006	0.020	0.052	0.161	0.392	0.784	0.536	0.283	0.120	0.062	0.5	0.237	0.118	0.119		

MPE calculations are defined in section 15.0.

Table D.1 (Continued)
MPE measurement data for Bystander

D.U.T. Info.								Probe Info.				MPE Measurements										DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
(2)Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(3) Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	(4) Probe Cal. Factor			(5) Test Pos.	(6) Meas. Unit	Bystander (BS) Positions											
														20 cm	40 cm	60 cm	80 cm	100 cm	120 cm	140 cm	160 cm				
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	439.1000	30.0	29.4	CW	E	0.940	BS	2	0.062	0.051	0.096	0.120	0.319	0.535	0.507	0.306	0.113	0.056	0.5	0.204	0.102	0.104
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	439.1000	30.0	29.4	CW	E	0.940	BS	2	0.030	0.029	0.078	0.144	0.392	0.596	0.588	0.348	0.146	0.061	0.5	0.227	0.113	0.116
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.058	0.031	0.058	0.157	0.359	0.581	0.519	0.302	0.113	0.045	0.5	0.218	0.109	0.109
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	460.0000	30.0	29.9	CW	E	0.980	BS	2	0.021	0.019	0.066	0.135	0.361	0.574	0.506	0.287	0.126	0.056	0.5	0.211	0.105	0.106

MPE calculations are defined in section 15.0.

Table D.2
MPE measurement data for Passenger

D.U.T. Info.								Probe Info.			(6) Meas. Unit				DUT Max. TX Factor	Avg. over Body (mW/cm2)	Calc. P.D. (mW/cm2)	Max Calc. P.D. (mW/cm2)	
(2) Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(3) Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	(4) Probe Cal. Factor		(5) Test Pos.	MPE Measurements	(6) Meas. Unit						
													Head/ Top 1/3	Chest/ Middle 1/3					Lower Trunk/ Bottom 1/3
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	403.0125	30.0	29.8	CW	E	0.870	PB	2	0.055	0.075	0.050	0.5	0.052	0.026	0.026	
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	406.1250	30.0	29.9	CW	E	0.870	PB	2	0.029	0.063	0.056	0.5	0.043	0.021	0.022	
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	419.9875	30.0	30.0	CW	E	0.900	PB	2	0.021	0.049	0.046	0.5	0.035	0.017	0.017	
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	429.9875	30.0	29.8	CW	E	0.920	PB	2	0.010	0.040	0.053	0.5	0.032	0.016	0.016	
Roof	HAE4003A, 1/4 Wave (450-470 MHz)	2.15	60	450.0125	30.0	29.9	CW	E	0.960	PB	2	0.029	0.036	0.041	0.5	0.034	0.017	0.017	
Roof	HAE4003A, 1/4 Wave (450-470 MHz)	2.15	60	460.0000	30.0	29.9	CW	E	0.980	PB	2	0.035	0.061	0.057	0.5	0.050	0.025	0.025	
Roof	HAE4003A, 1/4 Wave (450-470 MHz)	2.15	60	469.9875	30.0	30.0	CW	E	1.000	PB	2	0.037	0.031	0.054	0.5	0.041	0.020	0.020	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	403.0125	30.0	29.8	CW	E	0.870	PB	2	0.044	0.077	0.059	0.5	0.052	0.026	0.026	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	406.1250	30.0	29.9	CW	E	0.870	PB	2	0.036	0.073	0.062	0.5	0.050	0.025	0.025	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	419.9875	30.0	30.0	CW	E	0.900	PB	2	0.016	0.067	0.049	0.5	0.040	0.020	0.020	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	429.9875	30.0	29.8	CW	E	0.920	PB	2	0.013	0.043	0.059	0.5	0.035	0.018	0.018	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	439.1000	30.0	29.4	CW	E	0.940	PB	2	0.019	0.039	0.043	0.5	0.032	0.016	0.016	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	450.0125	30.0	29.9	CW	E	0.960	PB	2	0.030	0.038	0.051	0.5	0.038	0.019	0.019	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	460.0000	30.0	29.9	CW	E	0.980	PB	2	0.033	0.071	0.052	0.5	0.051	0.025	0.026	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	469.9875	30.0	30.0	CW	E	1.000	PB	2	0.026	0.039	0.053	0.5	0.039	0.020	0.020	

MPE calculations are defined in section 15.0.

Table D.2 (Continued)
MPE measurement data for Passenger

D.U.T. Info.								Probe Info.			⁽⁶⁾ Meas. Unit				DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)	
⁽²⁾ Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	⁽³⁾ Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	⁽⁴⁾ Probe Cal. Factor		⁽⁵⁾ Test Pos.	MPE Measur- ements							
													Head/ Top 1/3	Chest/ Middle 1/3					Lower Trunk/ Bottom 1/3
Roof	PMAE4032B, 5/8 Wave (406-420 MHz)	5.65	60	406.1250	30.0	29.9	CW	E	0.870	PB	2	0.046	0.082	0.066	0.5	0.056	0.028	0.028	
Roof	PMAE4032B, 5/8 Wave (406-420 MHz)	5.65	60	419.9875	30.0	30.0	CW	E	0.900	PB	2	0.023	0.047	0.046	0.5	0.035	0.017	0.017	
Roof	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	450.0125	30.0	29.9	CW	E	0.960	PB	2	0.033	0.029	0.038	0.5	0.032	0.016	0.016	
Roof	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	460.0000	30.0	29.9	CW	E	0.980	PB	2	0.033	0.059	0.066	0.5	0.052	0.026	0.026	
Roof	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	469.9875	30.0	30.0	CW	E	1.000	PB	2	0.030	0.027	0.056	0.5	0.038	0.019	0.019	
Roof	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	PB	2	0.015	0.013	0.019	0.5	0.015	0.008	0.008	
Roof	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.9	CW	E	0.980	PB	2	0.024	0.028	0.019	0.5	0.023	0.012	0.012	
Roof	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	PB	2	0.014	0.022	0.020	0.5	0.019	0.009	0.009	
Roof	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	PB	2	0.005	0.004	0.003	0.5	0.004	0.002	0.002	
Roof	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.8	CW	E	0.980	PB	2	0.006	0.010	0.005	0.5	0.007	0.003	0.003	
Roof	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	PB	2	0.003	0.002	0.001	0.5	0.002	0.001	0.001	

MPE calculations are defined in section 15.0.

Table D.2 (Continued)
MPE measurement data for Passenger

D.U.T. Info.									Probe Info.			(6) Meas. Unit				DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
(2) Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(3) Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	(4) Probe Cal. Factor	(5) Test Pos.		MPE Measur ements							
													Head/ Top 1/3	Chest/ Middle 1/3	Lower Trunk/ Bottom 1/3				
Roof	RAE4163A, 1/4 Wave (410-430 MHz)	3.00	60	413.0125	30.0	29.8	CW	E	0.890	PB	2	0.033	0.057	0.051	0.5	0.042	0.021	0.021	
Roof	RAE4163A, 1/4 Wave (410-430 MHz)	3.00	60	419.9875	30.0	30.0	CW	E	0.900	PB	2	0.019	0.050	0.041	0.5	0.033	0.017	0.017	
Roof	RAE4163A, 1/4 Wave (410-430 MHz)	3.00	60	429.9875	30.0	29.8	CW	E	0.920	PB	2	0.009	0.040	0.032	0.5	0.025	0.012	0.013	
Roof	RAE4164A, 1/4 Wave (430-450 MHz)	3.00	60	430.0125	30.0	29.8	CW	E	0.920	PB	2	0.010	0.038	0.040	0.5	0.027	0.013	0.014	
Roof	RAE4164A, 1/4 Wave (430-450 MHz)	3.00	60	439.1000	30.0	29.4	CW	E	0.940	PB	2	0.013	0.028	0.023	0.5	0.020	0.010	0.010	
Roof	RAE4164A, 1/4 Wave (430-450 MHz)	3.00	60	449.9875	30.0	29.9	CW	E	0.960	PB	2	0.007	0.006	0.005	0.5	0.006	0.003	0.003	
Roof	RAE4168A, 1/4 Wave (450-470MHz)	3.00	60	450.0125	30.0	29.9	CW	E	0.960	PB	2	0.024	0.031	0.036	0.5	0.029	0.015	0.015	
Roof	RAE4168A, 1/4 Wave (450-470MHz)	3.00	60	460.0000	30.0	29.9	CW	E	0.980	PB	2	0.030	0.049	0.046	0.5	0.041	0.020	0.020	
Roof	RAE4168A, 1/4 Wave (450-470MHz)	3.00	60	469.9875	30.0	30.0	CW	E	1.000	PB	2	0.008	0.010	0.013	0.5	0.010	0.005	0.005	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	403.0125	30.0	29.8	CW	E	0.870	PB	2	0.384	0.404	0.261	0.5	0.304	0.152	0.153	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	406.1250	30.0	29.9	CW	E	0.870	PB	2	0.275	0.361	0.209	0.5	0.245	0.123	0.123	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	419.9875	30.0	30.0	CW	E	0.900	PB	2	0.223	0.268	0.232	0.5	0.217	0.108	0.108	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	429.9875	30.0	29.8	CW	E	0.920	PB	2	0.444	0.144	0.250	0.5	0.257	0.128	0.129	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	439.1000	30.0	29.4	CW	E	0.940	PB	2	0.474	0.198	0.236	0.5	0.285	0.142	0.145	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	450.0125	30.0	29.9	CW	E	0.960	PB	2	0.370	0.155	0.225	0.5	0.240	0.120	0.120	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	460.0000	30.0	29.9	CW	E	0.980	PB	2	0.345	0.282	0.204	0.5	0.271	0.136	0.136	
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	469.9875	30.0	30.0	CW	E	1.000	PB	2	0.336	0.208	0.273	0.5	0.272	0.136	0.136	

MPE calculations are defined in section 15.0.

Table D.2 (Continued)
MPE measurement data for Passenger

D.U.T. Info.								Probe Info.			⁽⁶⁾ Meas. Unit			DUT Max. TX Factor	Avg. over Body (mW/cm2)	Calc. P.D. (mW/cm2)	Max Calc. P.D. (mW/cm2)		
⁽²⁾ Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	⁽³⁾ Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	⁽⁴⁾ Probe Cal. Factor		⁽⁵⁾ Test Pos.	MPE Measurements							
													Head/ Top 1/3					Chest/ Middle 1/3	Lower Trunk/ Bottom 1/3
Trunk	PMAE4032B, 5/8 Wave (406-420 MHz)	5.65	60	406.1250	30.0	29.9	CW	E	0.870	PB	2	0.338	0.180	0.222	0.5	0.215	0.107	0.108	
Trunk	PMAE4032B, 5/8 Wave (406-420 MHz)	5.65	60	419.9875	30.0	30.0	CW	E	0.900	PB	2	0.223	0.252	0.191	0.5	0.200	0.100	0.100	
Trunk	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	450.0125	30.0	29.9	CW	E	0.960	PB	2	0.345	0.148	0.218	0.5	0.228	0.114	0.114	
Trunk	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	460.0000	30.0	29.9	CW	E	0.980	PB	2	0.331	0.181	0.141	0.5	0.213	0.107	0.107	
Trunk	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	469.9875	30.0	30.0	CW	E	1.000	PB	2	0.404	0.173	0.155	0.5	0.244	0.122	0.122	
Trunk	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	PB	2	0.361	0.124	0.075	0.5	0.179	0.090	0.090	
Trunk	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.9	CW	E	0.980	PB	2	0.378	0.172	0.152	0.5	0.229	0.115	0.115	
Trunk	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	PB	2	0.387	0.124	0.110	0.5	0.207	0.104	0.104	
Trunk	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	PB	2	0.193	0.050	0.043	0.5	0.092	0.046	0.046	
Trunk	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.9	CW	E	0.980	PB	2	0.224	0.060	0.046	0.5	0.108	0.054	0.054	
Trunk	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	PB	2	0.093	0.032	0.020	0.5	0.048	0.024	0.024	

MPE calculations are defined in section 15.0.

Table D.2 (Continued)
MPE measurement data for Passenger

D.U.T. Info.								Probe Info.			(6) Meas. Unit				DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)	
(2)/Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(3) Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	(4) Probe Cal. Factor		(5) Test Pos.	MPE Measur- ements	(6) Meas. Unit						
													Head/ Top 1/3	Chest/ Middle 1/3					Lower Trunk/ Bottom 1/3
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	403.0125	30.0	29.8	CW	E	0.870	PF	2	0.016	0.019	0.020	0.5	0.016	0.008	0.008	
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	406.1250	30.0	29.9	CW	E	0.870	PF	2	0.031	0.017	0.022	0.5	0.020	0.010	0.010	
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	419.9875	30.0	30.0	CW	E	0.900	PF	2	0.033	0.046	0.024	0.5	0.031	0.015	0.015	
Roof	HAE4002A, 1/4 Wave (403-430 MHz)	2.15	60	429.9875	30.0	29.8	CW	E	0.920	PF	2	0.026	0.010	0.021	0.5	0.017	0.009	0.009	
Roof	HAE4003A, 1/4 Wave (450-470 MHz)	2.15	60	450.0125	30.0	29.9	CW	E	0.960	PF	2	0.035	0.022	0.016	0.5	0.023	0.012	0.012	
Roof	HAE4003A, 1/4 Wave (450-470 MHz)	2.15	60	460.0000	30.0	29.9	CW	E	0.980	PF	2	0.044	0.025	0.017	0.5	0.028	0.014	0.014	
Roof	HAE4003A, 1/4 Wave (450-470 MHz)	2.15	60	469.9875	30.0	30.0	CW	E	1.000	PF	2	0.042	0.051	0.027	0.5	0.040	0.020	0.020	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	403.0125	30.0	29.8	CW	E	0.870	PF	2	0.023	0.017	0.026	0.5	0.019	0.010	0.010	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	406.1250	30.0	29.9	CW	E	0.870	PF	2	0.026	0.024	0.022	0.5	0.021	0.010	0.010	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	419.9875	30.0	30.0	CW	E	0.900	PF	2	0.027	0.026	0.027	0.5	0.024	0.012	0.012	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	429.9875	30.0	29.8	CW	E	0.920	PF	2	0.024	0.013	0.017	0.5	0.017	0.008	0.008	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	439.1000	30.0	29.4	CW	E	0.940	PF	2	0.040	0.008	0.007	0.5	0.017	0.009	0.009	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	450.0125	30.0	29.9	CW	E	0.960	PF	2	0.031	0.016	0.015	0.5	0.020	0.010	0.010	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	460.0000	30.0	29.9	CW	E	0.980	PF	2	0.055	0.031	0.015	0.5	0.033	0.016	0.017	
Roof	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	469.9875	30.0	30.0	CW	E	1.000	PF	2	0.043	0.018	0.020	0.5	0.027	0.014	0.014	

MPE calculations are defined in section 15.0.

Table D.2 (Continued)
MPE measurement data for Passenger

D.U.T. Info.								Probe Info.			⁽⁶⁾ Meas. Unit				DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)	
⁽²⁾ Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	⁽³⁾ Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	⁽⁴⁾ Probe Cal. Factor		⁽⁵⁾ Test Pos.	MPE Measur ements							
													Head/ Top 1/3	Chest/ Middle 1/3					Lower Trunk/ Bottom 1/3
Roof	PMAE4032B, 5/8 Wave (406-420 MHz)	5.65	60	406.1250	30.0	29.9	CW	E	0.870	PF	2	0.019	0.024	0.021	0.5	0.019	0.009	0.009	
Roof	PMAE4032B, 5/8 Wave (406-420 MHz)	5.65	60	419.9875	30.0	30.0	CW	E	0.900	PF	2	0.055	0.048	0.020	0.5	0.037	0.018	0.018	
Roof	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	450.0125	30.0	29.9	CW	E	0.960	PF	2	0.035	0.016	0.015	0.5	0.021	0.011	0.011	
Roof	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	460.0000	30.0	29.9	CW	E	0.980	PF	2	0.036	0.047	0.015	0.5	0.032	0.016	0.016	
Roof	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	469.9875	30.0	30.0	CW	E	1.000	PF	2	0.055	0.021	0.019	0.5	0.032	0.016	0.016	
Roof	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	PF	2	0.018	0.013	0.006	0.5	0.012	0.006	0.006	
Roof	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.9	CW	E	0.980	PF	2	0.016	0.011	0.007	0.5	0.011	0.006	0.006	
Roof	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	PF	2	0.015	0.020	0.015	0.5	0.017	0.008	0.008	
Roof	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	PF	2	0.015	0.006	0.005	0.5	0.008	0.004	0.004	
Roof	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.8	CW	E	0.980	PF	2	0.017	0.013	0.007	0.5	0.012	0.006	0.006	
Roof	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	PF	2	0.019	0.022	0.008	0.5	0.016	0.008	0.008	

MPE calculations are defined in section 15.0.

Table D.2 (Continued)

MPE measurement data for Passenger

D.U.T. Info.										Probe Info.			(6) Meas. Unit				DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)
(2) Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(3) Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	(4) Probe Cal. Factor	(5) Test Pos.	MPE Measur ements									
													Head/ Top 1/3	Chest/ Middle 1/3	Lower Trunk/ Bottom 1/3					
Roof	RAE4163A, 1/4 Wave (410-430 MHz)	3.00	60	413.0125	30.0	29.8	CW	E	0.890	PF	2	0.045	0.026	0.018	0.5	0.026	0.013	0.013		
Roof	RAE4163A, 1/4 Wave (410-430 MHz)	3.00	60	419.9875	30.0	30.0	CW	E	0.900	PF	2	0.028	0.024	0.019	0.5	0.021	0.011	0.011		
Roof	RAE4163A, 1/4 Wave (410-430 MHz)	3.00	60	429.9875	30.0	29.8	CW	E	0.920	PF	2	0.044	0.012	0.024	0.5	0.025	0.012	0.012		
Roof	RAE4164A, 1/4 Wave (430-450 MHz)	3.00	60	430.0125	30.0	29.8	CW	E	0.920	PF	2	0.032	0.010	0.010	0.5	0.016	0.008	0.008		
Roof	RAE4164A, 1/4 Wave (430-450 MHz)	3.00	60	439.1000	30.0	29.4	CW	E	0.940	PF	2	0.038	0.010	0.018	0.5	0.021	0.010	0.011		
Roof	RAE4164A, 1/4 Wave (430-450 MHz)	3.00	60	449.9875	30.0	29.9	CW	E	0.960	PF	2	0.006	0.002	0.002	0.5	0.003	0.002	0.002		
Roof	RAE4168A, 1/4 Wave (450-470MHz)	3.00	60	450.0125	30.0	29.9	CW	E	0.960	PF	2	0.037	0.026	0.011	0.5	0.024	0.012	0.012		
Roof	RAE4168A, 1/4 Wave (450-470MHz)	3.00	60	460.0000	30.0	29.9	CW	E	0.980	PF	2	0.034	0.032	0.021	0.5	0.028	0.014	0.014		
Roof	RAE4168A, 1/4 Wave (450-470MHz)	3.00	60	469.9875	30.0	30.0	CW	E	1.000	PF	2	0.006	0.009	0.002	0.5	0.006	0.003	0.003		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	403.0125	30.0	29.8	CW	E	0.870	PF	2	0.149	0.078	0.090	0.5	0.092	0.046	0.046		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	406.1250	30.0	29.9	CW	E	0.870	PF	2	0.204	0.089	0.080	0.5	0.108	0.054	0.054		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	419.9875	30.0	30.0	CW	E	0.900	PF	2	0.305	0.040	0.080	0.5	0.128	0.064	0.064		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	429.9875	30.0	29.8	CW	E	0.920	PF	2	0.396	0.024	0.082	0.5	0.154	0.077	0.077		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	439.1000	30.0	29.4	CW	E	0.940	PF	2	0.335	0.014	0.046	0.5	0.124	0.062	0.063		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	450.0125	30.0	29.9	CW	E	0.960	PF	2	0.277	0.062	0.099	0.5	0.140	0.070	0.070		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	460.0000	30.0	29.9	CW	E	0.980	PF	2	0.325	0.073	0.073	0.5	0.154	0.077	0.077		
Trunk	HAE6022A, 5/8 Wave (403-527 MHz)	4.15	60	469.9875	30.0	30.0	CW	E	1.000	PF	2	0.304	0.066	0.113	0.5	0.161	0.081	0.081		

MPE calculations are defined in section 15.0.

Table D.2 (Continued)
MPE measurement data for Passenger

D.U.T. Info.								Probe Info.			⁽⁶⁾ Meas. Unit				DUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.D. (mW/ cm2)	Max Calc. P.D. (mW/ cm2)	
⁽²⁾ Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	⁽³⁾ Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	⁽⁴⁾ Probe Cal. Factor		⁽⁵⁾ Test Pos.	MPE Measur ements							
													Head/ Top 1/3	Chest/ Middle 1/3					Lower Trunk/ Bottom 1/3
Trunk	PMAE4032B, 5/8 Wave (406-420 MHz)	5.65	60	406.1250	30.0	29.9	CW	E	0.870	PF	2	0.195	0.053	0.056	0.5	0.088	0.044	0.044	
Trunk	PMAE4032B, 5/8 Wave (406-420 MHz)	5.65	60	419.9875	30.0	30.0	CW	E	0.900	PF	2	0.234	0.041	0.073	0.5	0.104	0.052	0.052	
Trunk	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	450.0125	30.0	29.9	CW	E	0.960	PF	2	0.256	0.034	0.024	0.5	0.100	0.050	0.050	
Trunk	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	460.0000	30.0	29.9	CW	E	0.980	PF	2	0.266	0.087	0.061	0.5	0.135	0.068	0.068	
Trunk	PMAE4033B, 5/8 Wave (450-470 MHz)	5.65	60	469.9875	30.0	30.0	CW	E	1.000	PF	2	0.270	0.074	0.034	0.5	0.126	0.063	0.063	
Trunk	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	PF	2	0.206	0.061	0.075	0.5	0.109	0.055	0.055	
Trunk	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.9	CW	E	0.980	PF	2	0.227	0.112	0.094	0.5	0.141	0.071	0.071	
Trunk	PMAE4034B, 1/2 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	PF	2	0.142	0.082	0.072	0.5	0.099	0.049	0.049	
Trunk	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	450.0125	30.0	29.9	CW	E	0.960	PF	2	0.158	0.049	0.063	0.5	0.086	0.043	0.043	
Trunk	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	460.0000	30.0	29.9	CW	E	0.980	PF	2	0.146	0.066	0.038	0.5	0.082	0.041	0.041	
Trunk	RAE4154A, 5/8 Wave (450-470 MHz)	7.15	60	469.9875	30.0	30.0	CW	E	1.000	PF	2	0.070	0.015	0.011	0.5	0.032	0.016	0.016	

MPE calculations are defined in section 15.0

Table D.3
LMR UHF MPE Results for FCC

Note:

Blue fonts: Frequencies not regulated by FCC.

Pmax (W)		30		P initial (W)		29.8	29.8	29.9	29.8	30	29.8	29.8	29.4	29.9	29.9	29.9	29.8	30
				FCC Limit (mW/cm^2)		NA	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Test Pos	Angle	Trunk/ Roof	E/H Field	Antenna no.	f1	f2	f3	f4	f5	f6	f7	f8	f9	f10	f11	f12	f13	
BS	0	Roof	E	1	403.0125	403.0125	406.1250	413.0125	419.9875	429.9875	430.0125	439.1000	449.9875	450.0125	460.0000	460.0000	469.9875	
BS	0	Roof	E	2	0.045		0.049		0.042	0.047				0.053	0.057		0.046	
BS	0	Roof	E	3	0.05		0.046		0.042	0.051		0.048		0.051	0.056		0.047	
BS	0	Roof	E	4			0.045		0.04									
BS	0	Roof	E	5										0.047	0.063		0.048	
BS	0	Roof	E	6										0.049	0.055		0.042	
BS	0	Roof	E	7										0.032	0.034		0.01	
BS	0	Roof	E	8				0.046	0.037	0.043								
BS	0	Roof	E	9							0.043	0.038	0.011					
BS	0	Roof	E	10										0.046	0.047		0.015	
BS	0	Trunk	E	3	0.091		0.09		0.09	0.092		0.116		0.093	0.106		0.094	
BS	0	Trunk	E	4			0.069		0.071									
BS	0	Trunk	E	5										0.084	0.097		0.094	
BS	0	Trunk	E	6										0.1	0.101		0.086	
BS	0	Trunk	E	7										0.078	0.074		0.033	
PB	0	Roof	E	1	0.026		0.022		0.017	0.016								
PB	0	Roof	E	2										0.017	0.025		0.02	
PB	0	Roof	E	3	0.026		0.025		0.02	0.018		0.016		0.019	0.026		0.02	
PB	0	Roof	E	4			0.028		0.017									
PB	0	Roof	E	5										0.016	0.026		0.019	
PB	0	Roof	E	6										0.008	0.012		0.009	
PB	0	Roof	E	7										0.002	0.003		0.001	
PB	0	Roof	E	8				0.021	0.017	0.013								
PB	0	Roof	E	9							0.014	0.01	0.003					
PB	0	Roof	E	10										0.015	0.02		0.005	
PB	0	Trunk	E	3	0.153		0.123		0.108	0.129		0.145		0.12	0.136		0.136	
PB	0	Trunk	E	4			0.108		0.1									
PB	0	Trunk	E	5										0.114	0.107		0.122	
PB	0	Trunk	E	6										0.09	0.115		0.104	
PB	0	Trunk	E	7										0.046	0.054		0.024	
PF	0	Roof	E	1	0.008		0.01		0.015	0.009								
PF	0	Roof	E	2										0.012	0.014		0.02	
PF	0	Roof	E	3	0.01		0.01		0.012	0.008		0.009		0.01	0.017		0.014	
PF	0	Roof	E	4			0.009		0.018									
PF	0	Roof	E	5										0.011	0.016		0.016	
PF	0	Roof	E	6										0.006	0.006		0.008	
PF	0	Roof	E	7										0.004	0.006		0.008	
PF	0	Roof	E	8				0.013	0.011	0.012								
PF	0	Roof	E	9							0.008	0.011	0.002					
PF	0	Roof	E	10										0.012	0.014		0.003	
PF	0	Trunk	E	3	0.046		0.054		0.064	0.077		0.063		0.07	0.077		0.081	
PF	0	Trunk	E	4			0.044		0.052									
PF	0	Trunk	E	5										0.05	0.068		0.063	
PF	0	Trunk	E	6										0.055	0.071		0.049	
PF	0	Trunk	E	7										0.043	0.041		0.016	