



MPE TEST REPORT

Motorola Solutions Inc.

EME Test Laboratory

Motorola Solutions Malaysia Sdn Bhd
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Date of Report: 06/18/2026

Report Revision: A

Responsible Engineer: Hoe Kean Loon (Senior EME Engineer)
Report Author: Sathishkumar Reveendran (EME Engineer)
Date/s Tested: 04/06/2026- 05/28/2026
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: 03/31/2026
DUT Description: GENESEE VHF 136-174Mz 1-25W LOW POWER
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: AAM29JNN9YA1AN
Model(s) Certified: Refer 1.0 Introduction
(HVIN/PMN)
Serial Number(s): 008TCF1530
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: AZ492FT7189
 This report contains results that are immaterial for FCC equipment approval, which are clearly identified.
FCC Test Firm Registration Number: 823256
IC: 109U-92FT7189
 This report contains results that are immaterial for ISED equipment approval, which are clearly identified.
ISED Test Site registration: 24843

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: 06/19/2026

Document Revision History

Date	Revision	Comments
06/18/2022	A	Initial release

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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 AAM29JNN9YA1AN.

Model	Hardware Version ID Number (HVIN)	Product Marketing Name (PMN)	Description
AAM29JNN9YA1AN	AAM29JNN9YA1AN	MR7r	MR7r 136-174 25W WIFI/BT/GNSS/RJ45 CD
AAM29JNN9HA1AN	AAM29JNN9HA1AN	MR7r	MR7r 136-174 25W WIFI/BT/GNSS/RJ45 CD
AAM29JNN9RA1AN	AAM29JNN9RA1AN	MR7b	MR7b 136-174 25W WIFI/BT/GNSS CD
AAM29JNN9GA1AN	AAM29JNN9GA1AN	MR7b	MR7b 136-174 25W WIFI/BT/GNSS CD
AAM29JNC9RA1AN	AAM29JNC9RA1AN	MR7b	MR7b 136-174 25W WIFI/BT/GNSS ND
AAM29JNC9GA1AN	AAM29JNC9GA1AN	MR7b	MR7b 136-174 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	150.8-173.4 (LMR)	0.349	174.3	0.153	76.4	0.201	100.3	0.068	34.0
DTS	2412 – 2462 (WLAN 2.4 GHz)	0.015	1.53	0.015	1.53	0.015	1.53	0.015	1.53
DTS	2402-2480 (Bluetooth)	0.004	0.43	0.004	0.43	0.004	0.43	0.004	0.43
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	176.02	N/A	78.12	N/A	102.02	N/A	35.72

3.0 Abbreviations / Definitions

CNR: Calibration Not Required
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 Nc 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 – H-Field	ETS Model HI-2200 ETS Model H200	00086316 00249839	01/23/2026	01/23/2027
Microrad Survey Meter Probe – H-Field Probe – E-Field	Microrad NHT 3DL Microrad 03H Microrad 01E	NHT 3DL/ 4171 03H / A22-O107 01E / A22-F242	07/14/2025	07/14/2026

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	5.0	N	1.00	5.0	25.0	∞
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		14.8	14.8	∞
Expanded Uncertainty (95% CONFIDENCE LEVEL)		$k=2$		30	30	

9.0 Product and System Description

The model AAM29JNN9YA1AN 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	136-174	FM	50*	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	2412 - 2462	DSSS, OFDM	98.88	0.01413
802.11 g			96.88	0.02818
802.11 n			98.01	0.02818
802.11 a	5180 - 5825	OFDM	97.01	0.02818
802.11 n/ac	5180 - 5825		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	RAD4214B	VHF 136-144MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, GPS Base & Mini U RF Connector	Yes	No	By similarity to HAD4006A
2	RAD4219B	VHF 136-144MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, GPS Base & BNC RF Connector	Yes	No	
3	RAD4198A	VHF 136-144MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, BNC RF Connector	Yes	No	
4	RAD4215B	VHF 146-150.8MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, GPS Base & Mini U RF Connector	Yes	No	By similarity to HAD4007A
5	RAD4220B	VHF 146-150.8MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, GPS Base & BNC RF Connector	Yes	No	
6	RAD4199A	VHF 146-150.8MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, BNC RF Connector	Yes	No	
7	RAD4216B	VHF 150.8-162MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, GPS Base & Mini U RF Connector	Yes	No	By similarity to HAD4008A
8	RAD4221B	VHF 150.8-162MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, GPS Base & BNC RF Connector	Yes	No	
9	RAD4200A	VHF 150.8-162MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, BNC RF Connector	Yes	No	
10	RAD4217B	VHF 162-174MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, GPS Base & Mini U RF Connector	Yes	No	By similarity to HAD4009A
11	RAD4222B	VHF 162-174MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, GPS Base & BNC RF Connector	Yes	No	
12	RAD4201A	VHF 162-174MHz, ANTENNA GAIN: 2.15 dBi, WAVE TYPE: 1/4, BNC RF Connector	Yes	No	

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 90 cm (for VHF 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 90 cm (for VHF 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.

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	HAD4006A	136 - 144	52.0	2.15	1/4 wave	R	NA	0	2
2	HAD4007A	144 - 150.8	49.0	2.15	1/4 wave	R	150.8	1	2
3	HAD4008A	150.8 - 162	45.5	2.15	1/4 wave	R	150.8-162	3	3
4	HAD4009A	162 - 174	43.0	2.15	1/4 wave	R	162-173.4	3	3
5	HAD4022A*	132 - 174	130.0 (138 MHz)	5.15	5/8 wave	R/T	150.8-173.4	4	6
			118.5 (144 MHz)						
			114.0 (150.8 MHz)						
			102.7 (158.0125MHz)						
			96.5 (165.0125MHz)						
			89.9 (173.0125MHz)						
6	RAD4218B	146 - 172	87.1	5.15	5/8 Wave	R	150.8-172	4	5
7	Internal Antenna	2400 - 2485	N/A	5	N/A	N/A	2402 - 2480	3	3
		5150 - 5250		5			5180 - 5240	3	3
		5250 - 5725		4			5260 - 5720	3	3
		5725 - 5850		6			5720 - 5825	3	3

Note: * Antenna length trimmed to frequency.

17.0 Test Results Summary**17.1 MPE Test Results Summary for LMR****Table 9**

MPE assessment for LMR VHF - trunk mounted antenna – Bystander

Notes:

Blue fonts: Frequencies not regulated by FCC.

Results highlight in yellow are configurations with highest percentage of limits

*Configuration required SAR simulation

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	5	HAD4022A, 5/8 wave (136-174MHz)	30.00	29.6	138.0000	0.11	N/A	N/A	0.13	86.70
							28.9	144.0000	0.11	N/A	N/A	0.13	83.50
							29.1	150.8000	0.11	0.20	55.90	0.13	86.60
			29.3				158.0125	0.11	0.20	57.10	0.13	88.50	
			29.2				165.0125	0.10	0.20	47.80	0.13	74.00	
			29.0				173.0125	0.11	0.20	53.80	0.13	83.40	
			29.3				158.0125	0.11	0.20	57.20	0.13	88.60	
			29.3				158.0125	0.14	0.20	69.90	0.13	*108.30	
Trunk	BS	H	0	5	HAD4022A, 5/8 wave (136-174MHz)	30.00	29.6	138.0000	0.14	N/A	N/A	0.13	*110.30
							28.9	144.0000	0.14	N/A	N/A	0.13	*111.20
							29.1	150.8000	0.14	0.20	71.30	0.13	*110.40
			29.3				158.0125	0.13	0.20	62.60	0.13	96.90	
			29.2				165.0125	0.12	0.20	61.90	0.13	95.90	
			29.0				173.0125	0.13	0.20	64.10	0.13	99.30	
			28.9				144.0000	0.15	0.20	74.50	0.13	*115.40	
			29.1				150.8000	0.15	0.20	76.40	0.13	*118.30	
			28.9				144.0000	0.13	0.20	62.60	0.13	96.90	
			29.1				150.8000	0.12	0.20	60.60	0.13	93.90	
			45				90	90					

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

Notes:

Blue fonts: Frequencies not regulated by FCC.

Results highlight in yellow are configurations with highest percentage of limits

*Configuration required SAR simulation

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	5	HAD4022A, 5/8 wave (136-174MHz)	30.00	29.60	138.0000	0.08	N/A	N/A	0.13	59.90
						28.90	144.0000	0.11	N/A	N/A	0.13	82.10
						29.10	150.8000	0.10	0.20	48.30	0.13	74.80
						29.30	158.0125	0.21	0.20	*103.10	0.13	*159.70
						29.20	165.0125	0.35	0.20	*174.30	0.13	*270.00
						29.00	173.0125	0.31	0.20	*153.00	0.13	*237.10
Trunk	PB	H	5	HAD4022A, 5/8 wave (136-174MHz)		29.60	138.0000	0.05	N/A	N/A	0.13	39.30
						28.90	144.0000	0.07	N/A	N/A	0.13	51.00
						29.10	150.8000	0.06	0.20	32.20	0.13	49.90
						29.30	158.0125	0.09	0.20	43.00	0.13	66.60
						29.20	165.0125	0.15	0.20	73.00	0.13	*113.00
						29.00	173.0125	0.15	0.20	74.10	0.13	*114.80

Table 11**MPE assessment for LMR VHF - 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/cm ²)	FCC Limit	% To FCC Spec Limit	ISED Limit	% To ISED Spec Limit
Trunk	PF	E	5	HAD4022A, 5/8 wave (136-174MHz)	30.00	29.60	138.0000	0.01	N/A	N/A	0.13	4.30
				HAD4022A, 5/8 wave (136-174MHz)		28.90	144.0000	0.01	N/A	N/A	0.13	5.40
				HAD4022A, 5/8 wave (136-174MHz)		29.10	150.8000	0.01	0.20	4.80	0.13	7.50
				HAD4022A, 5/8 wave (136-174MHz)		29.30	158.0125	0.01	0.20	6.20	0.13	9.60
				HAD4022A, 5/8 wave (136-174MHz)		29.20	165.0125	0.01	0.20	6.70	0.13	10.30
				HAD4022A, 5/8 wave (136-174MHz)		29.00	173.0125	0.01	0.20	6.20	0.13	9.60
Trunk	PF	H	5	HAD4022A, 5/8 wave (136-174MHz)		29.60	138.0000	0.02	N/A	N/A	0.13	17.30
				HAD4022A, 5/8 wave (136-174MHz)		28.90	144.0000	0.03	N/A	N/A	0.13	22.50
				HAD4022A, 5/8 wave (136-174MHz)		29.10	150.8000	0.03	0.20	13.60	0.13	21.00
				HAD4022A, 5/8 wave (136-174MHz)		29.30	158.0125	0.03	0.20	12.80	0.13	19.90
				HAD4022A, 5/8 wave (136-174MHz)		29.20	165.0125	0.02	0.20	11.40	0.13	17.60
				HAD4022A, 5/8 wave (136-174MHz)		29.00	173.0125	0.04	0.20	18.30	0.13	28.40

Table 12 (a)**MPE assessment for LMR VHF - roof mounted antenna – Bystander**

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	BS	E	1	HAD4006A, 1/4 wave (136-144MHz)	30.00	29.60	138.0000	0.03	N/A	N/A	0.13	24.50
						28.90	144.0000	0.04	N/A	N/A	0.13	30.20
			2	HAD4007A, 1/4 wave (144-152MHz)		28.90	144.0000	0.03	N/A	N/A	0.13	25.70
						29.10	150.8000	0.05	0.20	22.90	0.13	35.50
			3	HAD4008A, 1/4 wave (150.8-162MHz)		29.10	150.8000	0.03	0.20	15.20	0.13	29.50
						29.10	156.4000	0.03	0.20	15.90	0.13	24.60
						29.20	162.0000	0.03	0.20	16.30	0.13	25.20
						29.20	162.0000	0.03	0.20	14.40	0.13	22.30
			4	HAD4009A, 1/4 wave (162-174MHz)		29.20	165.0125	0.03	0.20	17.10	0.13	26.50
						29.00	173.0125	0.04	0.20	21.20	0.13	32.80
						29.60	138.0000	0.02	N/A	N/A	0.13	19.00
						28.90	144.0000	0.03	N/A	N/A	0.13	22.20
			5	HAD4022A, 5/8 wave (136-174MHz)		29.10	150.8000	0.03	0.20	15.10	0.13	23.40
						29.30	158.0125	0.03	0.20	16.30	0.13	25.20
						29.20	165.0125	0.03	0.20	16.40	0.13	25.50
						29.00	173.0125	0.04	0.20	19.80	0.13	30.60
			6	RAD4218B, 5/8 wave (146-172MHz)		29.00	146.0000	0.03	N/A	N/A	0.13	22.30
						29.10	150.8000	0.03	0.20	16.90	0.13	26.20
						29.00	157.1000	0.03	0.20	16.50	0.13	25.50
						28.90	166.3000	0.03	0.20	13.00	0.13	20.20
						28.70	172.0000	0.02	0.20	9.10	0.13	14.10

Table 12 (b)**MPE assessment for LMR VHF - 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. P.D. (mW/cm²)	FCC Limit	% To FCC Spec Limit	ISED Limit	% To ISED Spec Limit
Roof	BS	H	1	HAD4006A, 1/4 wave (136-144MHz)	30.00	29.60	138.0000	0.07	N/A	N/A	0.13	51.90
						28.90	144.0000	0.06	N/A	N/A	0.13	48.10
			2	HAD4007A, 1/4 wave (144-152MHz)		28.90	144.0000	0.07	N/A	N/A	0.13	53.70
						29.10	150.8000	0.07	0.20	34.00	0.13	52.70
			3	HAD4008A, 1/4 wave (150.8-162MHz)		29.10	150.8000	0.06	0.20	31.00	0.13	48.10
						29.10	156.4000	0.06	0.20	30.50	0.13	47.30
						29.20	162.0000	0.06	0.20	32.20	0.13	49.80
						29.20	162.0000	0.06	0.20	28.90	0.13	44.70
			4	HAD4009A, 1/4 wave (162-174MHz)		29.20	165.0125	0.05	0.20	27.20	0.13	42.10
						29.00	173.0125	0.06	0.20	29.90	0.13	46.30
			5	HAD4022A, 5/8 wave (136-174MHz)		29.60	138.0000	0.05	N/A	N/A	0.13	36.60
						28.90	144.0000	0.05	N/A	N/A	0.13	34.90
			6	RAD4218B, 5/8 wave (146-172MHz)		29.10	150.8000	0.05	0.20	27.50	0.13	42.60
						29.30	158.0125	0.04	0.20	21.40	0.13	33.10
						29.20	165.0125	0.05	0.20	22.80	0.13	35.30
						29.00	173.0125	0.06	0.20	30.10	0.13	46.70
						29.00	146.0000	0.05	N/A	N/A	0.13	36.10
						29.10	150.8000	0.04	0.20	20.20	0.13	31.30
						29.00	157.1000	0.05	0.20	22.40	0.13	34.70
						28.90	166.3000	0.05	0.20	23.90	0.13	37.10
						28.70	172.0000	0.04	0.20	21.80	0.13	33.80

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

Notes:

Blue fonts: Frequencies not regulated by FCC.

Results highlight in yellow are configurations with highest percentage of limits

*Configuration required SAR simulation

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	PB	E	1	HAD4006A, 1/4 wave (136-144MHz)	30.00	29.60	138.0000	0.07	N/A	N/A	0.13	56.30
						28.90	144.0000	0.08	N/A	N/A	0.13	65.30
			2	HAD4007A, 1/4 wave (144-152MHz)		28.90	144.0000	0.07	N/A	N/A	0.13	50.00
						29.10	150.8000	0.08	0.20	41.30	0.13	64.00
			3	HAD4008A, 1/4 wave (150.8-162MHz)		29.10	150.8000	0.09	0.20	46.30	0.13	71.70
						29.10	156.4000	0.18	0.20	89.70	0.13	*138.90
						29.20	162.0000	0.20	0.20	*100.30	0.13	*155.30
			4	HAD4009A, 1/4 wave (162-174MHz)		29.20	162.0000	0.17	0.20	84.20	0.13	*130.50
						29.20	165.0125	0.17	0.20	85.90	0.13	*133.00
						29.00	173.0125	0.15	0.20	74.90	0.13	*116.10
			5	HAD4022A, 5/8 wave (136-174MHz)		29.60	138.0000	0.02	N/A	N/A	0.13	15.20
						28.90	144.0000	0.02	N/A	N/A	0.13	13.50
						29.10	150.8000	0.02	0.20	9.80	0.13	14.00
						29.30	158.0125	0.02	0.20	9.80	0.13	15.20
						29.20	165.0125	0.02	0.20	10.60	0.13	16.40
						29.00	173.0125	0.02	0.20	8.00	0.13	12.40
			6	RAD4218B, 5/8 wave (146-172MHz)		29.00	146.0000	0.05	N/A	N/A	0.13	35.80
						29.10	150.8000	0.04	0.20	21.80	0.13	33.80
						29.00	157.1000	0.05	0.20	22.90	0.13	35.50
						28.90	166.3000	0.05	0.20	23.10	0.13	35.80
						28.70	172.0000	0.04	0.20	18.60	0.13	28.70

Table 13 (b)**MPE assessment for LMR VHF - 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/cm²)	FCC Limit	% To FCC Spec Limit	ISED Limit	% To ISED Spec Limit
Roof	PB	H	1	HAD4006A, 1/4 wave (136-144MHz)	30.00	29.60	138.0000	0.03	N/A	N/A	0.13	26.50
						28.90	144.0000	0.04	N/A	N/A	0.13	32.20
			2	HAD4007A, 1/4 wave (144-152MHz)		28.90	144.0000	0.04	N/A	N/A	0.13	29.40
						29.10	150.8000	0.04	0.20	18.80	0.13	29.10
			3	HAD4008A, 1/4 wave (150.8-162MHz)		29.10	150.8000	0.04	0.20	18.80	0.13	29.10
						29.10	156.4000	0.05	0.20	22.40	0.13	34.70
						29.20	162.0000	0.07	0.20	33.80	0.13	62.30
			4	HAD4009A, 1/4 wave (162-174MHz)		29.20	162.0000	0.07	0.20	32.90	0.13	50.90
						29.20	165.0125	0.07	0.20	36.10	0.13	56.00
						29.00	173.0125	0.06	0.20	31.70	0.13	49.10
			5	HAD4022A, 5/8 wave (136-174MHz)		29.60	138.0000	0.02	N/A	N/A	0.13	15.70
						28.90	144.0000	0.02	N/A	N/A	0.13	14.70
						29.10	150.8000	0.02	0.20	11.10	0.13	17.30
						29.30	158.0125	0.02	0.20	11.20	0.13	17.40
						29.20	165.0125	0.03	0.20	13.60	0.13	21.00
						29.00	173.0125	0.04	0.20	20.60	0.13	32.00
			6	RAD4218B, 5/8 wave (146-172MHz)		29.00	146.0000	0.04	N/A	N/A	0.13	29.30
						29.10	150.8000	0.03	0.20	15.00	0.13	23.20
						29.00	157.1000	0.04	0.20	19.10	0.13	29.60
						29.00	166.3000	0.03	0.20	16.10	0.13	25.00
						28.70	172.0000	0.02	0.20	12.20	0.13	18.90

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

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/cm²)	FCC Limit	% To FCC Spec Limit	ISED Limit	% To ISED Spec Limit
Roof	PF	E	1	HAD4006A, 1/4 wave (136-144MHz)	30.00	29.60	138.0000	0.04	N/A	N/A	0.13	27.90
						28.90	144.0000	0.03	N/A	N/A	0.13	23.50
			2	HAD4007A, 1/4 wave (144-152MHz)		28.90	144.0000	0.02	N/A	N/A	0.13	16.10
						29.10	150.8000	0.03	0.20	14.20	0.13	22.00
			3	HAD4008A, 1/4 wave (150.8-162MHz)		29.10	150.8000	0.03	0.20	15.00	0.13	23.30
						29.10	156.4000	0.03	0.20	16.40	0.13	25.40
						29.20	162.0000	0.03	0.20	16.70	0.13	25.90
			4	HAD4009A, 1/4 wave (162-174MHz)		29.20	162.0000	0.02	0.20	11.60	0.13	18.00
						29.20	165.0125	0.02	0.20	11.80	0.13	18.30
						29.00	173.0125	0.02	0.20	11.50	0.13	17.80
			5	HAD4022A, 5/8 wave (136-174MHz)		29.60	138.0000	0.01	N/A	N/A	0.13	4.70
						28.90	144.0000	0.01	N/A	N/A	0.13	5.20
						29.10	150.8000	0.01	0.20	4.00	0.13	6.10
						29.30	158.0125	0.01	0.20	4.10	0.13	6.30
						29.20	165.0125	0.01	0.20	4.90	0.13	7.60
			6	RAD4218B, 5/8 wave (146-172MHz)		29.00	173.0125	0.01	0.20	5.80	0.13	8.90
						29.00	146.0000	0.01	N/A	N/A	0.13	10.10
						29.10	150.8000	0.01	0.20	6.90	0.13	10.60
						29.00	157.1000	0.01	0.20	6.90	0.13	10.70
						28.90	166.3000	0.01	0.20	5.10	0.13	8.10
						28.70	172.0000	0.01	0.20	4.00	0.13	6.20

Table 14 (b)**MPE assessment for LMR VHF - 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	H	1	HAD4006A, 1/4 wave (136-144MHz)	30.00	29.6	138	0.01	N/A	N/A	0.13	29.1
						28.9	144	0.01	N/A	N/A	0.13	31.1
			2	HAD4007A, 1/4 wave (144-152MHz)		28.9	144	0.01	N/A	N/A	0.13	27.8
						29.1	150.8	0.01	0.2	19.4	0.13	30
			3	HAD4008A, 1/4 wave (150.8-162MHz)		29.1	150.8	0.03	0.2	16.3	0.13	25.2
						29.1	156.4	0.03	0.2	16.8	0.13	26
						29.2	162	0.03	0.2	16.9	0.13	26.2
			4	HAD4009A, 1/4 wave (162-174MHz)		29.2	162	0.03	0.2	16.7	0.13	25.9
						29.2	165.0125	0.04	0.2	18.3	0.13	28.3
						29	173.0125	0.03	0.2	16.1	0.13	25
			5	HAD4022A, 5/8 wave (136-174MHz)		29.6	138	0.03	N/A	N/A	0.13	23.8
						28.9	144	0.03	N/A	N/A	0.13	24.2
						29.1	150.8	0.03	0.2	13.1	0.13	20.3
						29.3	158.0125	0.04	0.2	17.8	0.13	27.6
						29.2	165.0125	0.03	0.2	12.9	0.13	20
			6	RAD4218B, 5/8 wave (146-172MHz)		29	173.0125	0.03	0.2	14.9	0.13	23.1
						29	146	0.03	N/A	N/A	0.13	22.6
						29.1	150.8	0.03	0.2	15.1	0.13	23.3
						29	157.1	0.03	0.2	16.7	0.13	25.8
						28.9	166.3	0.03	0.2	14.3	0.13	22.1
						28.7	172	0.03	0.2	15.3	0.13	23.7

17.2 MPE Test Results for Bluetooth and WLAN

MPE calculation was use 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) and (b) 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
Bluetooth (2402-2480MHz)									Y		Y	
BT EDR												
Internal Antenna	0.010	77.00%	2402.000	5.00	0.56	20	1.00	0.004	1.00	0.4	0.54	0.8
Internal Antenna	0.010	77.00%	2441.000	5.00	0.56	20	1.00	0.004	1.00	0.4	0.54	0.8
Internal Antenna	0.010	77.00%	2480.000	5.00	0.56	20	1.00	0.004	1.00	0.4	0.55	0.8
WiFi 2.4GHz (2412-2462MHz)												
802.11b												
Internal Antenna	0.014	98.88%	2412.000	5.00	0.56	20	1.00	0.008	1.00	0.8	0.54	1.4
Internal Antenna	0.014	98.88%	2437.000	5.00	0.56	20	1.00	0.008	1.00	0.8	0.54	1.4
Internal Antenna	0.014	98.88%	2462.000	5.00	0.56	20	1.00	0.008	1.00	0.8	0.54	1.4
802.11g												
Internal Antenna	0.028	96.88%	2412.000	5.00	0.56	20	1.00	0.015	1.00	1.5	0.54	2.8
Internal Antenna	0.028	96.88%	2437.000	5.00	0.56	20	1.00	0.015	1.00	1.5	0.54	2.8
Internal Antenna	0.028	96.88%	2462.000	5.00	0.56	20	1.00	0.015	1.00	1.5	0.54	2.8
802.11n												
Internal Antenna	0.028	98.01%	2412.000	5.00	0.56	20	1.00	0.015	1.00	1.5	0.54	2.8
Internal Antenna	0.028	98.01%	2437.000	5.00	0.56	20	1.00	0.015	1.00	1.5	0.54	2.8
Internal Antenna	0.028	98.01%	2462.000	5.00	0.56	20	1.00	0.015	1.00	1.5	0.54	2.8

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 ⁽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	
WiFi 5GHz												
802.11a, 20MHz (5180-5240MHz)												
Internal Antenna	0.028	97.01%	5180.000	5.00	1.00	20	1.00	0.014	1.00	1.4	0.90	1.5
Internal Antenna	0.028	97.01%	5502.000	5.00	1.00	20	1.00	0.014	1.00	1.4	0.94	1.4
Internal Antenna	0.028	97.01%	5825.000	5.00	1.00	20	1.00	0.014	1.00	1.4	0.98	1.4
802.11a, 20MHz (5260-5320MHz)												
Internal Antenna	0.028	97.01%	5260.000	4.00	1.00	20	1.00	0.011	1.00	1.1	0.91	1.2
Internal Antenna	0.028	97.01%	5290.000	4.00	1.00	20	1.00	0.011	1.00	1.1	0.92	1.2
Internal Antenna	0.028	97.01%	5320.000	4.00	1.00	20	1.00	0.011	1.00	1.1	0.92	1.2
802.11a, 20MHz (5500-5720MHz)												
Internal Antenna	0.028	97.01%	5500.000	4.00	1.00	20	1.00	0.011	1.00	1.1	0.94	1.2
Internal Antenna	0.028	97.01%	5610.000	4.00	1.00	20	1.00	0.011	1.00	1.1	0.96	1.1
Internal Antenna	0.028	97.01%	5720.000	4.00	1.00	20	1.00	0.011	1.00	1.1	0.97	1.1
802.11a, 20MHz (5720-5825MHz)												
Internal Antenna	0.028	97.01%	5720.000	6.00	1.00	20	1.00	0.017	1.00	1.7	0.97	1.8
Internal Antenna	0.028	97.01%	5772.500	6.00	1.00	20	1.00	0.017	1.00	1.7	0.97	1.8
Internal Antenna	0.028	97.01%	5825.000	6.00	1.00	20	1.00	0.017	1.00	1.7	0.98	1.8
802.11n/ac, 20MHz (5180-5240MHz)												
Internal Antenna	0.022	97.97%	5180.000	5.00	1.00	20	1.00	0.011	1.00	1.1	0.90	1.2
Internal Antenna	0.022	97.97%	5502.000	5.00	1.00	20	1.00	0.011	1.00	1.1	0.94	1.2
Internal Antenna	0.022	97.97%	5825.000	5.00	1.00	20	1.00	0.011	1.00	1.1	0.98	1.1
802.11n/ac, 20MHz (5260-5320MHz)												
Internal Antenna	0.022	97.97%	5260.000	4.00	1.00	20	1.00	0.009	1.00	0.9	0.91	1.0
Internal Antenna	0.022	97.97%	5290.000	4.00	1.00	20	1.00	0.009	1.00	0.9	0.92	0.9
Internal Antenna	0.022	97.97%	5320.000	4.00	1.00	20	1.00	0.009	1.00	0.9	0.92	0.9
802.11n/ac, 20MHz (5500-5720MHz)												
Internal Antenna	0.022	97.97%	5500.000	4.00	1.00	20	1.00	0.009	1.00	0.9	0.94	0.9
Internal Antenna	0.022	97.97%	5610.000	4.00	1.00	20	1.00	0.009	1.00	0.9	0.96	0.9
Internal Antenna	0.022	97.97%	5720.000	4.00	1.00	20	1.00	0.009	1.00	0.9	0.97	0.9
802.11n/ac, 20MHz (5720-5825MHz)												
Internal Antenna	0.022	97.97%	5720.000	6.00	1.00	20	1.00	0.014	1.00	1.4	0.97	1.4
Internal Antenna	0.022	97.97%	5772.500	6.00	1.00	20	1.00	0.014	1.00	1.4	0.97	1.4
Internal Antenna	0.022	97.97%	5825.000	6.00	1.00	20	1.00	0.014	1.00	1.4	0.98	1.4

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 VHF	150.8 - 173.4	19.4	**174.3	76.4
Bluetooth	2402 - 2480	0.43	0.43	0.43
WLAN 2.4 GHz	2412 - 2462	1.53	1.53	1.53
WLAN 5 GHz	5180 - 5825	1.72	1.72	1.72
ISED Canada				
LMR VHF	138 - 174	31.1	**270.0	118.3
Bluetooth	2402 - 2480	0.80	0.80	0.80
WLAN 2.4 GHz	2412 - 2462	2.85	2.85	2.85
WLAN 5 GHz	5180 - 5825	1.78	1.78	1.78

Notes: ** Required SAR Simulation.

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 VHF and WLAN	21.12	176.02	78.12
ISED Canada	LMR VHF and WLAN	33.95	272.85	121.15

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 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 VHF	150.8 - 173.4	0.349	0.153
ISED Canada	LMR VHF	138 - 174	0.349	0.153

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	0.004	0.004
	WLAN 2.4GHz	2412 - 2462	0.015	0.015
	WLAN 5GHz	5180 - 5825	0.017	0.017

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.

Although MPE is a convenient method of demonstrating RF Exposure requirements, SAR is recognized as the “basic restriction”. For those configurations in Table 9 - 14 with ‘*’, compliance to the General Population / Uncontrolled SAR 1g limit of 1.6 W/kg is demonstrated through SAR computational analysis.

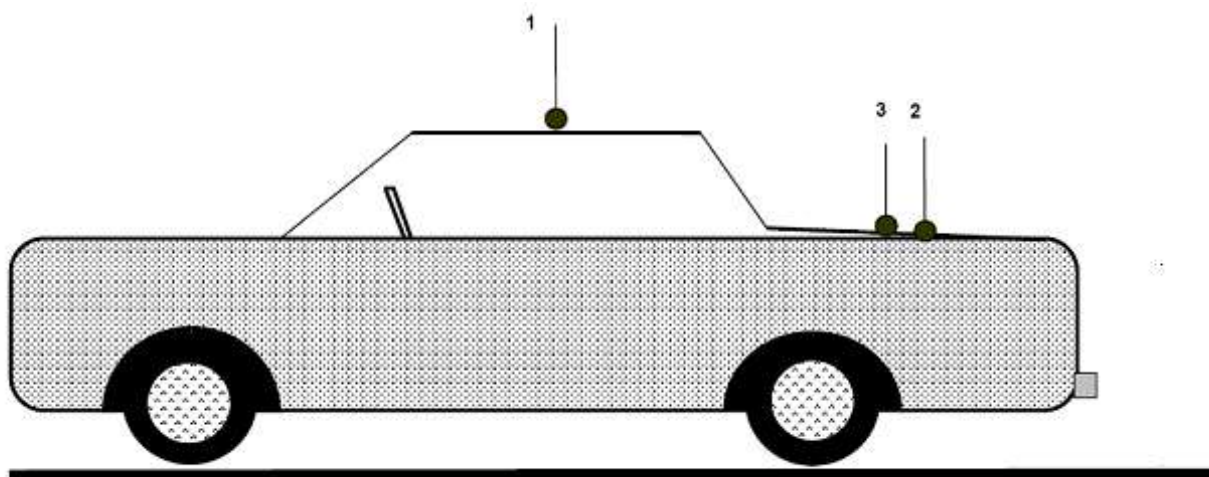
The computational results show that this device, when used with the offered antennas in accordance with the user manual instructions, exhibits the maximum peak average SAR values indicated in the Table below for the configurations requiring SAR analysis.

Table 19

Exposure Conditions	Maximum peak average SAR (1g)
FCC	
Passenger	0.46
ISED, Canada	
Passenger	0.46
Bystander	0.25

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.

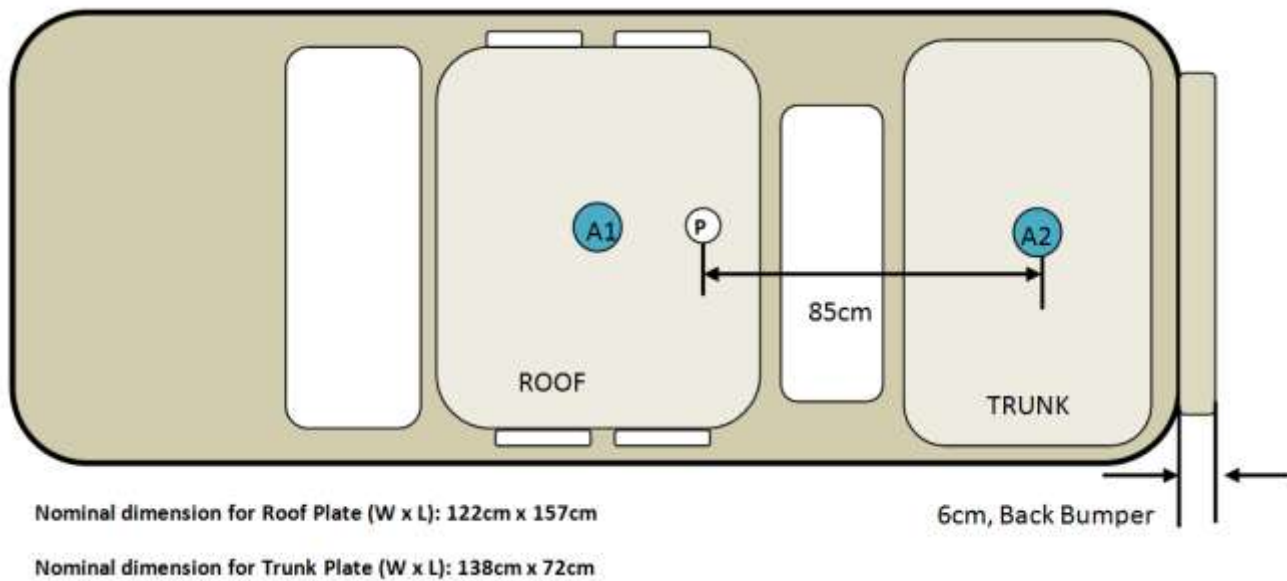
Appendix A - Antenna Locations, Test Distances, and Cable Losses**Antenna locations**

Roof (20cm from center)

Trunk (85cm from back of the back seat)

Trunk (center)

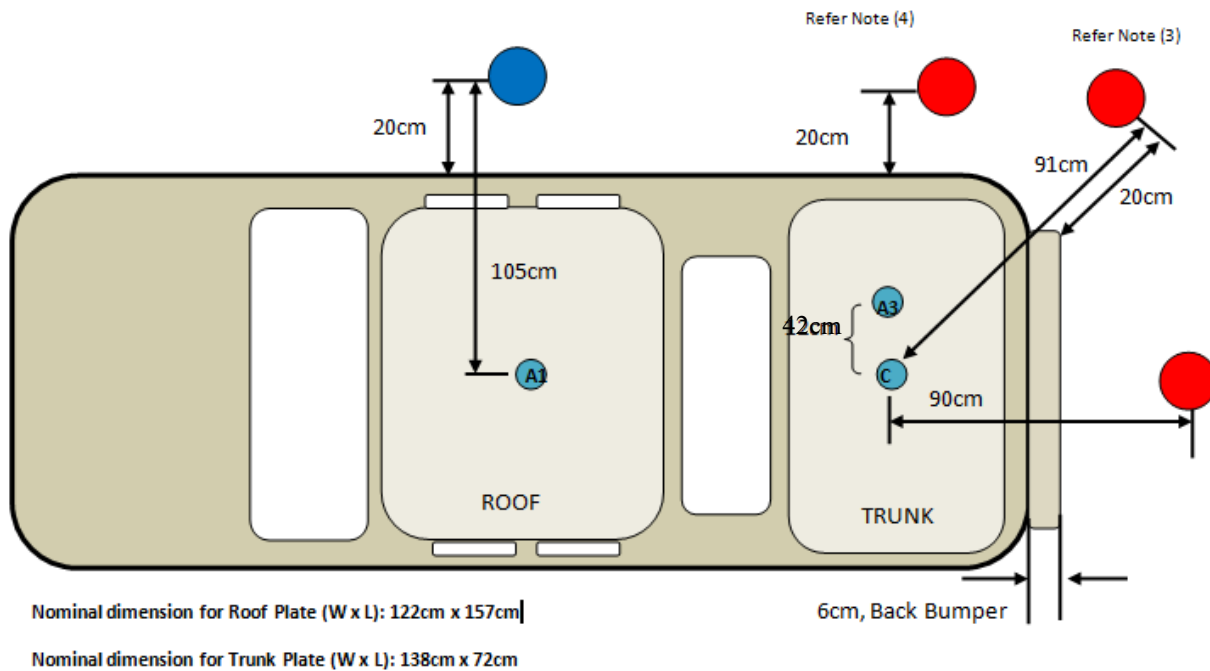
Passenger Antenna mounting (VHF)



Notes:

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

Bystander Antenna mounting (VHF)



By-Stander (BS) Test Locations:

- Roof Mount
- Trunk Mount

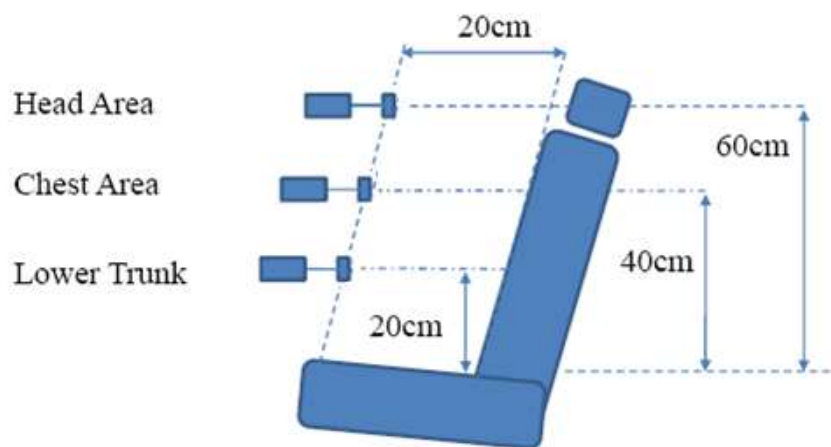
Notes:

- 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 42cm 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



Certificate of Calibration

ISO/IEC 17025:2017 and ANSI/NCSL Z540.1-1994
Certificate Number 260414-101721-346F95



Model Number H200; HI-2200
Manufacturer ETS - Lindgren
Description Field Probe
Serial Number 00084225; 00206805
Customer Asset No. N/A

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 04/20/2026
Temperature 23 °C
Humidity 30% 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 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	Substitution	287330

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 20 Apr 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 20 Apr 2026

Nate Potts
Nate Potts Iowa Service Center Manager

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Certificate of Calibration

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

Certificate Number 260414-101721-346f95



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	
EMCO	5101	TEM Cell	10420	NA	2003121920
EMCO	5302	G/TEM	10223	NA	2003121915
AR	600A400	Amplifier, 10KHz-400 MHz, 600W	624658	NA	
Agilent Technologies, Inc.	8648D	Signal Generator	10307	04/30/2026	250401-151556-4e6488
Agilent Technologies, Inc.	8648D	Signal Generator	11028	02/28/2027	260204-145205-0e49ed
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.

Parameter	Range	MU (+/-)
RF Isotropic E-Field Probes - TEM Cell - Linearity	5 kHz to 800 MHz	0.91 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: H200; HI-2200

Probe Serial No.: 00084225; 00206805

Notes:

CAL CERT #: 260414-101721-346f95

Correction Factors		
Freq MHz	Mult	dB
5	2.56	8.16
6	2.65	8.46
7	2.37	7.48
8	2.46	7.82
9	2.23	6.95
10	2.07	6.32
13.6	2.14	6.60
15	2.04	6.19
20	1.84	5.30
27.1	1.58	3.97
30	1.38	2.81
40	1.11	0.90
50	0.91	-0.84
60	0.96	-0.34
70	0.79	-2.03
75	0.85	-1.41
80	0.74	-2.56
90	1.35	2.63
100	0.84	-1.47
150	1.03	0.23
175	1.13	1.03
200	1.15	1.20
250	0.85	-1.39
300	0.76	-2.40

2026_Linearity.txt

Customer Name: Motorola Solutions Malaysia Sdn Bhd

Probe Manufacturer: ETS - Lindgren

Probe Model: H200; HI-2200

Probe Serial No.: 00084225; 00206805

Notes:

CAL CERT #: 260414-101721-346f95

Linearity

	Applied	Indicated	Max
Freq	Field	Field	Dev
MHz	A/m	A/m	dB
27.12	0.04	0.030	2.47
27.12	0.05	0.031	4.74
27.12	0.08	0.050	4.04
27.12	0.13	0.089	3.49
27.12	0.17	0.123	2.96
27.12	0.27	0.190	2.98
27.12	0.33	0.230	3.18
27.12	0.53	0.358	3.47
27.12	0.66	0.446	3.44
27.12	0.80	0.537	3.42
27.12	0.93	0.626	3.42
27.12	1.07	0.720	3.44
27.12	1.20	0.810	3.40
27.12	1.33	0.900	3.39
27.12	1.47	1.010	3.23
27.12	1.60	1.107	3.18

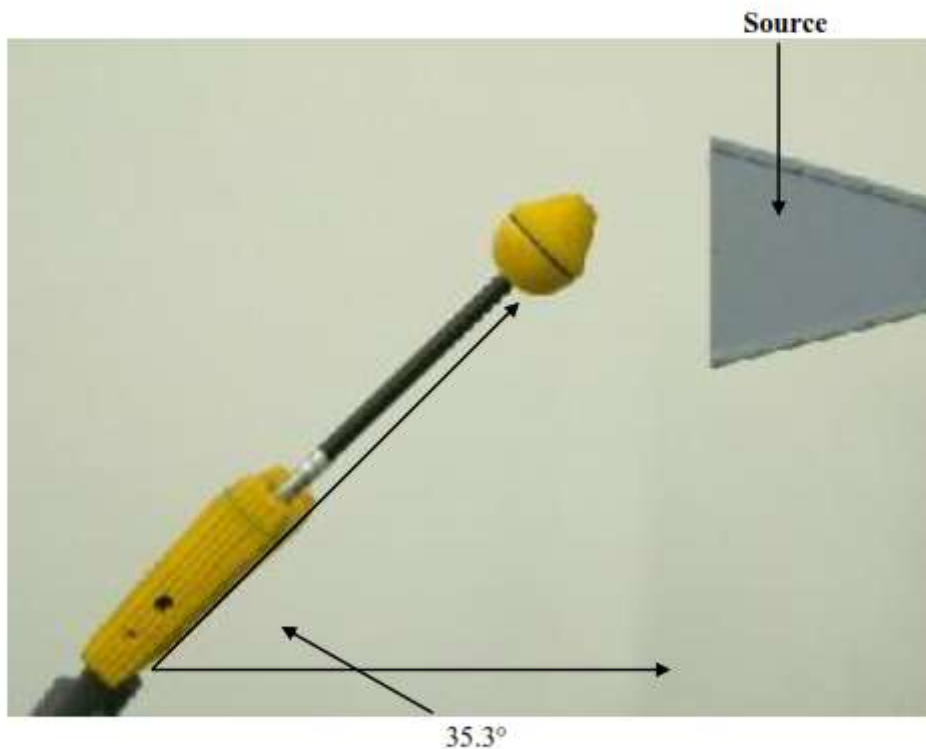
W&G_critical_angle.doc

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



LWIMP LPA



Electromagnetic Field Standards and Metrology Laboratory (LWIMP)
Telecommunications and Teleinformatics Department
Wrocław University of Science and Technology
50-372 Wrocław ul. Janiszewskiego 9 (bud. C-5 pok. 801-803)
 fax.: +48 (71) 3203189, tel. +48 (71) 3203087, 3202497, email: lwimp@pwr.edu.pl

Calibration laboratory meets the requirements of the PN-EN ISO/IEC 17025:2018 standard, accredited by Polish Centre for Accreditation, a signatory to EA MLA and ILAC MRA that include recognition of calibration certificates.
 Accreditation No AP 078



AP 078



CALIBRATION CERTIFICATE

Date of issue: 14 July 2025

Certificate No: LWIMP/W/278/25

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OBJECT OF CALIBRATION	Broadband electromagnetic field meter NHT3DL s/n 4171 with electromagnetic field probes: 01E s/n A22-F242 and 03H s/n A22-O107
APPLICANT	Precision Technologies Pte Ltd 211 Henderson Road # 13-02 - Henderson Industrial Park 159552 Singapore Singapore
CALIBRATION METHOD	Internal LWIMP calibration procedure: PrW-1: Magnetic field and magnetic induction meter calibration (ed. 6: 28.04.2014) PrW-2: Electric and electromagnetic field meter calibration (ed. 6: 28.04.2014) PrW-3: Electromagnetic field and power density meter calibration (ed. 6: 28.04.2014) PrW-4: Calibration using double-standardized field method (ed. 6: 28.04.2014)
ENVIRONMENTAL CONDITIONS	Calibration was performed in laboratory headquarters in environmental conditions: Temperature: (22 ± 24) °C Humidity: (25 ± 45) %
DATE OF CALIBRATION	14 July 2025
TRACEABILITY	This certificate is issued under the agreement EA MLA in the field of calibration and provides traceability of measurement results to the standards maintained in Central Office of Measures - Poland and PTB (Germany).
CALIBRATION RESULTS	The results have been presented on pages 2-5 of this certificate including uncertainty of measurement
UNCERTAINTY OF MEASUREMENT	Uncertainty of measurement has been evaluated in compliance with EA-4/02 M:2022. The expanded uncertainty assigned corresponds to a coverage probability of 95 % and the coverage factor k = 2

Head of Laboratory



KIEROWNIK
 Laboratorium Wzorców i Metrologii
 Pola Elektromagnetycznego
[Signature]
 dyktab. inż. Paweł Borkowski, prof. uczelni

FT-PS-09_02 ver.3 03-06-2022

This certificate may be presented or copied as a whole document only
 and the calibration results apply only to the calibrated object in this certificate.

Calibration Certificate issued by Calibration Certified Laboratory No AP 078

Date of issue: 14 July 2025

Certificate No: LWMP/W/278/25

Page 2/5

CALIBRATION RESULTS **Broadband electromagnetic field meter NHT3DL s/n with electromagnetic field probe: 01E s/n A22-F242**

E-field strength**Linearity:**

- Determining the correctness of the meter indicated field strength as a function of applied field
- Measurement frequency $f = 27 \text{ MHz}$
- The calibration result is the arithmetic mean of minimum and maximum indication of the meter at full rotation around the axis of the probe by setting the meter and probe axis perpendicular to the direction of the vector E and parallel to the direction of propagation.

Indicated field*	Applied field	$C_{d(E)} = \frac{E_{applied}}{E_{indicated}}$	Uncertainty
[V/m]	[V/m]		[%]
0,30	0,38	1,27	10
0,50	0,6	1,20	8
1,00	1,13	1,13	5
2,00	2,26	1,13	5
5,00	5,48	1,10	5
7,00	7,70	1,10	5
10,0	11,00	1,10	5
20,0	21,6	1,08	5
30,0	32,5	1,08	5
50,0	54,2	1,08	5
80,0	86,4	1,08	5
100	108	1,08	8
200	211	1,06	8
300	305	1,02	10

* Indication maintained with an accuracy of ± 5 last significant digit

Authorized by:

P. Bienkowski

Calibration Certificate issued by Calibration Certified Laboratory No AP 078

Date of issue: 14 July 2025

Certificate No: LWiMP/W/278/25

Page 3/5

CALIBRATION RESULTS **Broadband electromagnetic field meter NHT3DL s/n 4171 with electromagnetic field probe: 01E s/n A22-F242**

E-field strength**Frequency response:**

- Verifying the frequency response deviation from a flat characteristics
- Calibration was carried out in relation to the reference frequency $f = 27 \text{ MHz}$
- Calibration performed for the intensities of the reference field $E = 5 \pm 30 \text{ V/m}$
- Cf ratio was determined as the arithmetic mean of minimum and maximum indication of the meter at full rotation around the axis of the probe by setting the meter and probe axis perpendicular to the direction of the vector E and parallel to the direction of propagation for frequencies $f < 1000 \text{ MHz}$ and at "analytic" angle to the direction of the vector E for $f \geq 1000 \text{ MHz}$

Frequency	$C_f = \frac{Wsk_{ref}}{Wsk_f} *$	Uncertainty
[MHz]		[%]
0,1	3,92	5
0,2	2,24	5
0,5	1,34	5
1	1,13	5
3	1,02	5
5	1,01	5
10	1,00	5
27	1,00	5
50	0,99	5
100	0,99	5
200	1,01	5
300	1,00	8
500	0,89	8
900	0,95	10
1 000	1,00	15
1 800	0,89	15
2 100	1,12	15
2 400	0,91	15
2 600	0,99	15
3 000	0,88	15
3 200	0,70	15
3 500	0,75	15
3 800	0,69	15
4 000	0,69	15
5 000	0,67	15
6 000	0,79	15
6 500	0,89	16

* Indication maintained with an accuracy of ± 5 last significant digit**Isotropy deviation** $\delta < \pm 5\%$ for $f = 27 \text{ MHz}$ & $E = 10 \text{ V/m}$ * Wsk_{ref} – meter indication at a given field strength for reference frequency Wsk_f – meter indication for corresponding field strength for reference frequency

Note: The correct value of the field strength E at frequency f is calculated from the equation:

$$E_{correct} = E_{indicated} \cdot C_{d(E)} \cdot C_{f(f)}$$

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**CALIBRATION
RESULTS****Broadband electromagnetic field meter NHT3DL s/n 4171 with electromagnetic field probe
03H s/n A22-O107****H-field strength****Linearity:**

- Determining the correctness of the meter indicated field strength as a function of applied field
- Measurement frequency $f = 100 \text{ MHz}$
- The calibration result is the arithmetic mean of minimum and maximum indication of the meter at full rotation around the axis of the probe by setting the meter and probe axis perpendicular to the direction of the vector H

Indicated field*	Applied field	$C_{d(f)} = \frac{H_{\text{applied}}}{H_{\text{indicated}}}$	Uncertainty
[A/m]	[A/m]		[%]
0,010	0,012	1,20	10
0,020	0,016	0,80	10
0,050	0,048	0,96	10
0,100	0,098	0,98	10
0,200	0,206	1,03	8
0,500	0,519	1,04	8
1,00	1,04	1,04	10
1,50	1,57	1,05	10
2,00	2,07	1,03	10
4,00	4,04	1,01	10
6,00	5,88	0,98	10
8,00	7,70	0,96	10
10,00	9,52	0,95	10

* Indication maintained with an accuracy of ± 5 last significant digit

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CALIBRATION RESULTS**Broadband electromagnetic field meter NHT3DL s/n 4171 with electromagnetic field probe 03H s/n A22-O107****H-field strength****Frequency response:**

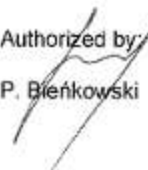
- Verifying the frequency response deviation from a flat characteristics
- Calibration was carried out in relation to the reference frequency $f = 100 \text{ MHz}$
- Calibration performed for the intensities of the reference field $H = 0,05 \text{ A/m}$

Frequency [MHz]	$C_f = \frac{Wsk_{ref}}{Wsk_f}$	Uncertainty [%]
30	1,40	8
50	1,14	8
100	1,00	8
200	0,96	8
300	0,83	10
500	0,89	10
800	1,05	12
1 000	1,77	12

* Wsk_{ref} —meter indication at a given field strength for reference frequency Wsk_f —meter indication for corresponding field strength for reference frequency**Isotropy deviation** $\delta < \pm 5\%$ for $f = 100 \text{ MHz}$ & $H = 0,05 \text{ A/m}$

Note: The correct value of the field strength B at frequency f is calculated from the equation:

$$H_{correct} = H_{indicated} \cdot C_{d(H)} \cdot C_{f(f)}$$

 Authorized by:

 P. Bieńkowski

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										BUT Max. TX Factor	Avg. over Body (mW/ cm2)	Calc. P.B. (mW/ cm2)	Max Calc. P.B. (mW/ cm2)
(1) 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	HAD4006A,1/4 wave (136-144MHz)	2.15	60	138.0000	30.0	29.6	CW	E	1.000	BS	2	0.016	0.031	0.052	0.053	0.055	0.070	0.083	0.107	0.082	0.075	0.5	0.062	0.031	0.032
Roof	HAD4006A,1/4 wave (136-144MHz)	2.15	60	144.0000	30.0	28.9	CW	E	1.000	BS	2	0.040	0.044	0.057	0.061	0.069	0.089	0.093	0.116	0.097	0.086	0.5	0.075	0.038	0.039
Roof	HAD4007A,1/4 wave (144-152MHz)	2.15	60	144.0000	30.0	28.9	CW	E	1.000	BS	2	0.020	0.052	0.066	0.058	0.044	0.045	0.094	0.092	0.094	0.074	0.5	0.064	0.032	0.033
Roof	HAD4007A,1/4 wave (144-152MHz)	2.15	60	150.8000	30.0	29.1	CW	E	1.000	BS	2	0.034	0.057	0.068	0.056	0.066	0.113	0.114	0.127	0.132	0.122	0.5	0.089	0.044	0.046
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	150.8000	30.0	29.1	CW	E	1.000	BS	2	0.017	0.045	0.041	0.034	0.041	0.045	0.091	0.105	0.079	0.090	0.5	0.059	0.029	0.030
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	156.4000	30.0	29.1	CW	E	1.000	BS	2	0.020	0.050	0.047	0.033	0.025	0.058	0.080	0.094	0.099	0.111	0.5	0.062	0.031	0.032
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	162.0000	30.0	29.2	CW	E	1.000	BS	2	0.015	0.049	0.043	0.026	0.042	0.068	0.085	0.096	0.099	0.112	0.5	0.064	0.032	0.033
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	162.0000	30.0	29.2	CW	E	1.000	BS	2	0.020	0.038	0.032	0.016	0.027	0.089	0.080	0.087	0.081	0.091	0.5	0.056	0.028	0.029
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	165.0125	30.0	29.2	CW	E	1.000	BS	2	0.023	0.037	0.031	0.024	0.039	0.084	0.087	0.112	0.113	0.117	0.5	0.067	0.033	0.034
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	173.0125	30.0	29.0	CW	E	1.000	BS	2	0.028	0.038	0.028	0.022	0.045	0.073	0.114	0.137	0.163	0.170	0.5	0.082	0.041	0.042
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	138.0000	30.0	29.6	CW	E	1.000	BS	2	0.010	0.021	0.020	0.014	0.010	0.019	0.048	0.086	0.120	0.135	0.5	0.048	0.024	0.024
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	144.0000	30.0	28.9	CW	E	1.000	BS	2	0.011	0.022	0.025	0.013	0.015	0.028	0.064	0.106	0.131	0.138	0.5	0.055	0.028	0.029
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	150.8000	30.0	29.1	CW	E	1.000	BS	2	0.012	0.030	0.020	0.013	0.020	0.040	0.071	0.106	0.135	0.140	0.5	0.059	0.029	0.030
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	158.0125	30.0	29.3	CW	E	1.000	BS	2	0.013	0.031	0.019	0.015	0.028	0.043	0.069	0.113	0.148	0.156	0.5	0.064	0.032	0.033
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	165.0125	30.0	29.2	CW	E	1.000	BS	2	0.012	0.035	0.023	0.012	0.025	0.047	0.080	0.100	0.145	0.161	0.5	0.064	0.032	0.033
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	173.0125	30.0	29.0	CW	E	1.000	BS	2	0.014	0.033	0.019	0.017	0.031	0.053	0.096	0.126	0.180	0.195	0.5	0.076	0.038	0.040

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/ cm ²)	Calc. P.D. (mW/ cm ²)	Max Calc. P.D. (mW/ cm ²)	
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor	Test Pos.	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	RAD4218B,5/8 wave (146-172MHz)	5.15	60	146.0000	30.0	29.0	CW	E	1.000	BS	2	0.017	0.040	0.050	0.029	0.029	0.051	0.064	0.084	0.094	0.098	0.5	0.056	0.028	0.029
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	150.8000	30.0	29.1	CW	E	1.000	BS	2	0.016	0.040	0.040	0.029	0.028	0.051	0.096	0.105	0.122	0.129	0.5	0.066	0.033	0.034
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	157.1000	30.0	29.0	CW	E	1.000	BS	2	0.020	0.046	0.045	0.029	0.028	0.030	0.097	0.093	0.121	0.128	0.5	0.064	0.032	0.033
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	166.3000	30.0	29.0	CW	E	1.000	BS	2	0.011	0.024	0.017	0.012	0.020	0.036	0.061	0.088	0.110	0.125	0.5	0.050	0.025	0.026
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	172.0000	30.0	28.7	CW	E	1.000	BS	2	0.008	0.012	0.012	0.008	0.012	0.022	0.039	0.066	0.076	0.094	0.5	0.035	0.017	0.018
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	60	138.0000	30.0	29.6	CW	E	1.000	BS	2	0.012	0.010	0.008	0.014	0.105	0.345	0.521	0.479	0.351	0.363	0.5	0.221	0.110	0.112
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	60	144.0000	30.0	28.9	CW	E	1.000	BS	2	0.011	0.011	0.013	0.033	0.109	0.348	0.478	0.410	0.322	0.342	0.5	0.208	0.104	0.108
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	60	150.8000	30.0	29.1	CW	E	1.000	BS	2	0.017	0.021	0.024	0.038	0.153	0.345	0.475	0.403	0.326	0.368	0.5	0.217	0.109	0.112
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	60	158.0125	30.0	29.3	CW	E	1.000	BS	2	0.010	0.007	0.011	0.040	0.159	0.369	0.453	0.407	0.369	0.407	0.5	0.223	0.112	0.114
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	60	165.0125	30.0	29.2	CW	E	1.000	BS	2	0.019	0.018	0.036	0.091	0.175	0.299	0.336	0.307	0.304	0.275	0.5	0.186	0.093	0.096
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	60	173.0125	30.0	29.0	CW	E	1.000	BS	2	0.014	0.012	0.040	0.105	0.194	0.343	0.377	0.354	0.342	0.300	0.5	0.208	0.104	0.108

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/ cm ²)	Calc. P.D. (mW/ cm ²)	Max Calc. P.D. (mW/ cm ²)	
Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	Probe Cal. Factor	Test Pos.	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	HAD4022A,5/8 wire (136-174MHz)	5.15	60	158.0125	30.0	29.3	CW	E	1.000	BS	2	0.010	0.007	0.011	0.040	0.159	0.369	0.453	0.407	0.369	0.407	0.5	0.223	0.112	0.114
Trunk	HAD4022A,5/8 wire (136-174MHz)	5.15	60	158.0125	30.0	29.3	CW	E	1.000	BS	2	0.028	0.059	0.084	0.071	0.126	0.293	0.433	0.380	0.380	0.381	0.5	0.224	0.112	0.114
Trunk	HAD4022A,5/8 wire (136-174MHz)	5.15	60	158.0125	30.0	29.3	CW	E	1.000	BS	2	0.010	0.007	0.011	0.040	0.159	0.369	0.453	0.407	0.369	0.407	0.5	0.223	0.112	0.114
Trunk	HAD4022A,5/8 wire (136-174MHz)	5.15	60	158.0125	30.0	29.3	CW	E	1.000	BS	2	0.040	0.066	0.074	0.115	0.271	0.431	0.479	0.439	0.413	0.402	0.5	0.273	0.137	0.140
Roof	HAD4006A,1/4 wire (136-144MHz)	2.15	60	138.0000	30.0	29.6	CW	H	0.720	BS	1	0.054	0.055	0.056	0.072	0.083	0.080	0.089	0.100	0.111	0.099	0.5	0.132	0.066	0.067
Roof	HAD4006A,1/4 wire (136-144MHz)	2.15	60	144.0000	30.0	28.9	CW	H	0.700	BS	1	0.039	0.046	0.066	0.064	0.080	0.085	0.091	0.091	0.116	0.095	0.5	0.120	0.060	0.062
Roof	HAD4007A,1/4 wire (144-152MHz)	2.15	60	144.0000	30.0	28.9	CW	H	0.700	BS	1	0.044	0.060	0.071	0.083	0.063	0.083	0.082	0.104	0.117	0.113	0.5	0.134	0.067	0.069
Roof	HAD4007A,1/4 wire (144-152MHz)	2.15	60	150.8000	30.0	29.1	CW	H	0.680	BS	1	0.039	0.043	0.057	0.083	0.073	0.086	0.090	0.111	0.122	0.119	0.5	0.132	0.066	0.068
Roof	HAD4008A,1/4 wire (150.8-162MHz)	2.15	60	150.8000	30.0	29.1	CW	H	0.680	BS	1	0.044	0.047	0.074	0.078	0.078	0.059	0.080	0.102	0.123	0.109	0.5	0.120	0.060	0.062
Roof	HAD4008A,1/4 wire (150.8-162MHz)	2.15	60	156.4000	30.0	29.1	CW	H	0.680	BS	1	0.039	0.049	0.072	0.083	0.061	0.081	0.076	0.107	0.114	0.107	0.5	0.118	0.059	0.061
Roof	HAD4008A,1/4 wire (150.8-162MHz)	2.15	60	162.0000	30.0	29.2	CW	H	0.680	BS	1	0.043	0.063	0.068	0.072	0.070	0.067	0.081	0.106	0.123	0.118	0.5	0.125	0.063	0.064

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				
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	162.0000	30.0	29.2	CW	H	0.680	BS	1	0.053	0.047	0.061	0.069	0.066	0.075	0.076	0.087	0.121	0.114	0.5	0.112	0.056	0.058
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	165.0125	30.0	29.2	CW	H	0.670	BS	1	0.039	0.049	0.062	0.062	0.063	0.072	0.081	0.083	0.118	0.120	0.5	0.106	0.053	0.054
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	173.0125	30.0	29.0	CW	H	0.670	BS	1	0.052	0.053	0.057	0.058	0.071	0.081	0.077	0.106	0.128	0.105	0.5	0.116	0.058	0.060
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	138.0000	30.0	29.6	CW	H	0.720	BS	1	0.053	0.047	0.058	0.048	0.057	0.061	0.076	0.075	0.107	0.085	0.5	0.093	0.047	0.047
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	144.0000	30.0	28.9	CW	H	0.700	BS	1	0.039	0.052	0.057	0.047	0.045	0.062	0.069	0.082	0.113	0.085	0.5	0.087	0.043	0.045
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	150.8000	30.0	29.1	CW	H	0.680	BS	1	0.053	0.053	0.051	0.057	0.057	0.067	0.070	0.095	0.128	0.108	0.5	0.107	0.053	0.055
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	158.0125	30.0	29.3	CW	H	0.680	BS	1	0.040	0.043	0.056	0.057	0.057	0.058	0.070	0.076	0.105	0.099	0.5	0.084	0.042	0.043
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	165.0125	30.0	29.2	CW	H	0.670	BS	1	0.040	0.045	0.055	0.054	0.055	0.060	0.070	0.092	0.107	0.107	0.5	0.089	0.044	0.046
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	173.0125	30.0	29.0	CW	H	0.670	BS	1	0.042	0.055	0.058	0.058	0.059	0.066	0.069	0.114	0.125	0.127	0.5	0.117	0.058	0.060
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	146.0000	30.0	29.0	CW	H	0.690	BS	1	0.038	0.055	0.060	0.058	0.057	0.068	0.070	0.089	0.099	0.091	0.5	0.090	0.045	0.047
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	150.8000	30.0	29.1	CW	H	0.680	BS	1	0.040	0.052	0.058	0.048	0.045	0.061	0.066	0.075	0.101	0.095	0.5	0.078	0.039	0.040
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	157.1000	30.0	29.0	CW	H	0.680	BS	1	0.046	0.055	0.059	0.052	0.047	0.062	0.071	0.080	0.115	0.087	0.5	0.086	0.043	0.045
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	166.3000	30.0	29.0	CW	H	0.670	BS	1	0.053	0.054	0.061	0.058	0.058	0.065	0.072	0.088	0.112	0.094	0.5	0.093	0.046	0.048
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	172.0000	30.0	28.7	CW	H	0.670	BS	1	0.037	0.052	0.058	0.055	0.055	0.061	0.065	0.079	0.105	0.103	0.5	0.083	0.042	0.044

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/ cm ²)	Calc. P.D. (mW/ cm ²)	Max Calc. P.D. (mW/ cm ²)		
(3) Ant Loc.	Ant. Model/ Desc.	Ant. Gain (dBi)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(5) Max Pwr (W)	Initial Pwr (W)	Test Mode	E/H Field	(6) Probe Cal. Factor			(7) Test Pos.	(8) 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	HAD4022A.5.8 wave (1.35-17.4MHz)	5.15	60	138.0000	30.0	29.6	CW	H	0.720	BS	1	0.070	0.074	0.089	0.082	0.083	0.098	0.148	0.175	0.172	0.142	0.5	0.281	0.141	0.142		
Trunk	HAD4022A.5.8 wave (1.35-17.4MHz)	5.15	60	144.0000	30.0	28.9	CW	H	0.700	BS	1	0.069	0.076	0.091	0.082	0.080	0.123	0.167	0.179	0.159	0.132	0.5	0.277	0.138	0.144		
Trunk	HAD4022A.5.8 wave (1.35-17.4MHz)	5.15	60	150.8000	30.0	29.1	CW	H	0.680	BS	1	0.072	0.068	0.092	0.080	0.097	0.132	0.171	0.182	0.166	0.131	0.5	0.276	0.138	0.143		
Trunk	HAD4022A.5.8 wave (1.35-17.4MHz)	5.15	60	158.0125	30.0	29.3	CW	H	0.680	BS	1	0.061	0.070	0.069	0.080	0.099	0.129	0.169	0.173	0.153	0.110	0.5	0.244	0.122	0.123		
Trunk	HAD4022A.5.8 wave (1.35-17.4MHz)	5.15	60	165.0125	30.0	29.2	CW	H	0.670	BS	1	0.081	0.088	0.082	0.095	0.130	0.144	0.163	0.150	0.125	0.100	0.5	0.241	0.120	0.124		
Trunk	HAD4022A.5.8 wave (1.35-17.4MHz)	5.15	60	173.0125	30.0	29.0	CW	H	0.670	BS	1	0.070	0.080	0.087	0.102	0.124	0.153	0.172	0.158	0.122	0.095	0.5	0.248	0.124	0.128		
Trunk	HAD4022A.5.8 wave (1.35-17.4MHz)	5.15	60	144.0000	30.0	28.9	CW	H	0.700	BS	1	0.069	0.076	0.091	0.082	0.080	0.123	0.167	0.179	0.159	0.132	0.5	0.277	0.138	0.144		
Trunk	HAD4022A.5.8 wave (1.35-17.4MHz)	5.15	60	144.0000	30.0	28.9	CW	H	0.700	BS	1	0.065	0.071	0.083	0.093	0.106	0.120	0.156	0.182	0.168	0.139	0.5	0.287	0.144	0.149		
Trunk	HAD4022A.5.8 wave (1.35-17.4MHz)	5.15	60	150.8000	30.0	29.1	CW	H	0.680	BS	1	0.072	0.068	0.092	0.080	0.097	0.132	0.171	0.182	0.166	0.131	0.5	0.276	0.138	0.143		
Trunk	HAD4022A.5.8 wave (1.35-17.4MHz)	5.15	60	150.8000	30.0	29.1	CW	H	0.680	BS	1	0.073	0.068	0.085	0.098	0.110	0.126	0.178	0.189	0.172	0.135	0.5	0.296	0.148	0.153		

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/ cm ²)	Calc. P.D. (mW/ cm ²)	Max Calc. P.D. (mW/ cm ²)
(5) 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				
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	60	144.0000	30.0	28.9	CW	H	0.700	BS	1	0.069	0.076	0.091	0.082	0.080	0.123	0.167	0.179	0.159	0.132	0.5	0.277	0.138	0.144
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	60	144.0000	30.0	28.9	CW	H	0.700	BS	1	0.063	0.068	0.075	0.083	0.091	0.116	0.153	0.168	0.147	0.120	0.5	0.241	0.121	0.125
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	60	150.8000	30.0	29.1	CW	H	0.680	BS	1	0.072	0.068	0.092	0.080	0.097	0.132	0.171	0.182	0.166	0.131	0.5	0.276	0.138	0.143
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	60	150.8000	30.0	29.1	CW	H	0.680	BS	1	0.065	0.069	0.071	0.076	0.092	0.118	0.160	0.171	0.151	0.123	0.5	0.235	0.118	0.121

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 (dB)	Ant. Meas. Dist. (cm)	Tx Freq (MHz)	(2) 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	HAD4006A,1/4 wave (136-144MHz)	2.15	60	138.0000	30.0	29.6	CW	E	1.000	PB	2	0.184	0.159	0.087	0.5	0.143	0.072	0.073	
Roof	HAD4006A,1/4 wave (136-144MHz)	2.15	60	144.0000	30.0	28.9	CW	E	1.000	PB	2	0.202	0.178	0.107	0.5	0.162	0.081	0.084	
Roof	HAD4007A,1/4 wave (144-152MHz)	2.15	60	144.0000	30.0	28.9	CW	E	1.000	PB	2	0.154	0.139	0.080	0.5	0.124	0.062	0.065	
Roof	HAD4007A,1/4 wave (144-152MHz)	2.15	60	150.8000	30.0	29.1	CW	E	1.000	PB	2	0.206	0.174	0.101	0.5	0.160	0.080	0.083	
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	150.8000	30.0	29.1	CW	E	1.000	PB	2	0.210	0.205	0.124	0.5	0.180	0.090	0.093	
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	156.4000	30.0	29.1	CW	E	1.000	PB	2	0.330	0.382	0.332	0.5	0.348	0.174	0.179	
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	162.0000	30.0	29.2	CW	E	1.000	PB	2	0.338	0.432	0.401	0.5	0.390	0.195	0.201	
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	162.0000	30.0	29.2	CW	E	1.000	PB	2	0.250	0.413	0.321	0.5	0.328	0.164	0.168	
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	165.0125	30.0	29.2	CW	E	1.000	PB	2	0.235	0.435	0.333	0.5	0.334	0.167	0.172	
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	173.0125	30.0	29.0	CW	E	1.000	PB	2	0.207	0.364	0.298	0.5	0.290	0.145	0.150	
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	138.0000	30.0	29.6	CW	E	1.000	PB	2	0.037	0.046	0.033	0.5	0.039	0.019	0.020	
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	144.0000	30.0	28.9	CW	E	1.000	PB	2	0.033	0.039	0.029	0.5	0.034	0.017	0.017	
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	150.8000	30.0	29.1	CW	E	1.000	PB	2	0.035	0.039	0.031	0.5	0.035	0.018	0.018	
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	158.0125	30.0	29.3	CW	E	1.000	PB	2	0.038	0.040	0.037	0.5	0.038	0.019	0.020	
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	165.0125	30.0	29.2	CW	E	1.000	PB	2	0.047	0.044	0.033	0.5	0.041	0.021	0.021	
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	173.0125	30.0	29.0	CW	E	1.000	PB	2	0.028	0.036	0.029	0.5	0.031	0.016	0.016	

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
Roof	RAD4218B, 5/8 wave (146-172MHz)	5.15	60	146.0000	30.0	29.0	CW	E	1.000	PB	2	0.111	0.098	0.059	0.5	0.089	0.045	0.046	
Roof	RAD4218B, 5/8 wave (146-172MHz)	5.15	60	150.8000	30.0	29.1	CW	E	1.000	PB	2	0.098	0.091	0.065	0.5	0.085	0.042	0.044	
Roof	RAD4218B, 5/8 wave (146-172MHz)	5.15	60	157.1000	30.0	29.0	CW	E	1.000	PB	2	0.104	0.097	0.065	0.5	0.089	0.044	0.046	
Roof	RAD4218B, 5/8 wave (146-172MHz)	5.15	60	166.3000	30.0	29.0	CW	E	1.000	PB	2	0.095	0.099	0.078	0.5	0.091	0.045	0.047	
Roof	RAD4218B, 5/8 wave (146-172MHz)	5.15	60	172.0000	30.0	28.7	CW	E	1.000	PB	2	0.080	0.067	0.066	0.5	0.071	0.036	0.037	
Trunk	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	138.0000	30.0	29.6	CW	E	1.000	PB	2	0.243	0.139	0.076	0.5	0.153	0.076	0.077	
Trunk	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	144.0000	30.0	28.9	CW	E	1.000	PB	2	0.260	0.213	0.140	0.5	0.204	0.102	0.106	
Trunk	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	150.8000	30.0	29.1	CW	E	1.000	PB	2	0.231	0.199	0.132	0.5	0.187	0.094	0.097	
Trunk	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	158.0125	30.0	29.3	CW	E	1.000	PB	2	0.435	0.472	0.301	0.5	0.403	0.201	0.206	
Trunk	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	165.0125	30.0	29.2	CW	E	1.000	PB	2	0.643	0.821	0.572	0.5	0.679	0.339	0.349	
Trunk	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	173.0125	30.0	29.0	CW	E	1.000	PB	2	0.551	0.702	0.522	0.5	0.592	0.296	0.306	

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)	
ⁱ) 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		⁶) Test Pos.	MPE Measur ements							
													Head/ Top 1/3	Chest/ Middle 1/3					Lower Trunk/ Bottom 1/3
Roof	HAD4006A,1/4 wave (136-144 MHz)	2.15	60	138.0000	30.0	29.6	CW	H	0.720	PB	1	0.066	0.061	0.048	0.5	0.068	0.034	0.034	
Roof	HAD4006A,1/4 wave (136-144 MHz)	2.15	60	144.0000	30.0	28.9	CW	H	0.700	PB	1	0.064	0.072	0.061	0.5	0.080	0.040	0.042	
Roof	HAD4007A,1/4 wave (144-152 MHz)	2.15	60	144.0000	30.0	28.9	CW	H	0.700	PB	1	0.064	0.069	0.055	0.5	0.073	0.037	0.038	
Roof	HAD4007A,1/4 wave (144-152 MHz)	2.15	60	150.8000	30.0	29.1	CW	H	0.680	PB	1	0.078	0.062	0.051	0.5	0.073	0.036	0.038	
Roof	HAD4008A,1/4 wave (150.8-162 MHz)	2.15	60	150.8000	30.0	29.1	CW	H	0.680	PB	1	0.076	0.061	0.055	0.5	0.073	0.036	0.038	
Roof	HAD4008A,1/4 wave (150.8-162 MHz)	2.15	60	156.4000	30.0	29.1	CW	H	0.680	PB	1	0.076	0.077	0.057	0.5	0.087	0.043	0.045	
Roof	HAD4008A,1/4 wave (150.8-162 MHz)	2.15	60	162.0000	30.0	29.2	CW	H	0.680	PB	1	0.090	0.091	0.079	0.5	0.131	0.066	0.068	
Roof	HAD4009A,1/4 wave (162-174 MHz)	2.15	60	162.0000	30.0	29.2	CW	H	0.680	PB	1	0.084	0.088	0.085	0.5	0.128	0.064	0.066	
Roof	HAD4009A,1/4 wave (162-174 MHz)	2.15	60	165.0125	30.0	29.2	CW	H	0.670	PB	1	0.087	0.099	0.087	0.5	0.141	0.070	0.072	
Roof	HAD4009A,1/4 wave (162-174 MHz)	2.15	60	173.0125	30.0	29.0	CW	H	0.670	PB	1	0.073	0.087	0.094	0.5	0.123	0.061	0.063	

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	HAD4022A,5/8 wave (136-174MHz)	5.15	60	138.0000	30.0	29.6	CW	H	0.720	PB	1	0.051	0.043	0.041	0.5	0.040	0.020	0.020	
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	144.0000	30.0	28.9	CW	H	0.700	PB	1	0.049	0.043	0.041	0.5	0.037	0.018	0.019	
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	150.8000	30.0	29.1	CW	H	0.680	PB	1	0.053	0.051	0.045	0.5	0.043	0.022	0.022	
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	158.0125	30.0	29.3	CW	H	0.680	PB	1	0.055	0.048	0.047	0.5	0.044	0.022	0.022	
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	165.0125	30.0	29.2	CW	H	0.670	PB	1	0.062	0.054	0.051	0.5	0.053	0.026	0.027	
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	173.0125	30.0	29.0	CW	H	0.670	PB	1	0.071	0.068	0.067	0.5	0.080	0.040	0.041	
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	146.0000	30.0	29.0	CW	H	0.690	PB	1	0.066	0.068	0.057	0.5	0.073	0.037	0.038	
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	150.8000	30.0	29.1	CW	H	0.680	PB	1	0.057	0.062	0.054	0.5	0.058	0.029	0.030	
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	157.1000	30.0	29.0	CW	H	0.680	PB	1	0.074	0.065	0.055	0.5	0.074	0.037	0.038	
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	166.3000	30.0	29.0	CW	H	0.670	PB	1	0.062	0.063	0.057	0.5	0.062	0.031	0.032	
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	172.0000	30.0	28.7	CW	H	0.670	PB	1	0.060	0.050	0.047	0.5	0.047	0.023	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							
													Head/ Top 1/3	Chest/ Middle 1/3					Lower Trunk/ Bottom 1/3
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	138.0000	30.0	29.6	CW	H	0.720	PB	1	0.078	0.073	0.063	0.5	0.100	0.050	0.051	
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	144.0000	30.0	28.9	CW	H	0.700	PB	1	0.096	0.083	0.067	0.5	0.127	0.063	0.066	
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	150.8000	30.0	29.1	CW	H	0.680	PB	1	0.100	0.083	0.068	0.5	0.125	0.063	0.064	
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	158.0125	30.0	29.3	CW	H	0.680	PB	1	0.113	0.097	0.082	0.5	0.168	0.084	0.086	
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	165.0125	30.0	29.2	CW	H	0.670	PB	1	0.136	0.139	0.112	0.5	0.284	0.142	0.146	
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	173.0125	30.0	29.0	CW	H	0.670	PB	1	0.141	0.133	0.115	0.5	0.287	0.143	0.148	

MPE calculations are defined in section 15.0.

Table D.2 (Continued)

MPE measurement data for Passenger

D.U.T. Info.										Probe Info.		⁽¹⁾ Meas. Unit			DUT Max. TX Factor	Avg. over Body (mW/cm ²)	Calc. P.D. (mW/cm ²)	Max. Calc. P.D. (mW/cm ²)
⁽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 Par.	MPE Measurements	Head/ Top 1/3	Chest/ Middle 1/3	Lower Trunk/ Bottom 1/3				
Roof	HAD4006A,1/4 wave (136-144MHz)	2.15	60	138.0000	30.0	29.6	CW	E	1.000	PF	2	0.074	0.080	0.059	0.5	0.071	0.036	0.036
Roof	HAD4006A,1/4 wave (136-144MHz)	2.15	60	144.0000	30.0	28.9	CW	E	1.000	PF	2	0.060	0.067	0.048	0.5	0.058	0.029	0.030
Roof	HAD4007A,1/4 wave (144-152MHz)	2.15	60	144.0000	30.0	28.9	CW	E	1.000	PF	2	0.047	0.043	0.030	0.5	0.040	0.020	0.021
Roof	HAD4007A,1/4 wave (144-152MHz)	2.15	60	150.8000	30.0	29.1	CW	E	1.000	PF	2	0.053	0.065	0.047	0.5	0.055	0.028	0.028
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	150.8000	30.0	29.1	CW	E	1.000	PF	2	0.045	0.053	0.077	0.5	0.058	0.029	0.030
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	156.4000	30.0	29.1	CW	E	1.000	PF	2	0.045	0.064	0.082	0.5	0.064	0.032	0.033
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	162.0000	30.0	29.2	CW	E	1.000	PF	2	0.049	0.063	0.083	0.5	0.065	0.033	0.033
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	162.0000	30.0	29.2	CW	E	1.000	PF	2	0.036	0.049	0.051	0.5	0.045	0.023	0.023
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	165.0125	30.0	29.2	CW	E	1.000	PF	2	0.042	0.048	0.048	0.5	0.046	0.023	0.024
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	173.0125	30.0	29.0	CW	E	1.000	PF	2	0.032	0.052	0.049	0.5	0.044	0.022	0.023
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	138.0000	30.0	29.6	CW	E	1.000	PF	2	0.012	0.014	0.010	0.5	0.012	0.006	0.006
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	144.0000	30.0	28.9	CW	E	1.000	PF	2	0.015	0.015	0.009	0.5	0.013	0.007	0.007
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	150.8000	30.0	29.1	CW	E	1.000	PF	2	0.017	0.018	0.011	0.5	0.015	0.008	0.008
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	158.0125	30.0	29.3	CW	E	1.000	PF	2	0.017	0.019	0.012	0.5	0.016	0.008	0.008
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	165.0125	30.0	29.2	CW	E	1.000	PF	2	0.022	0.024	0.011	0.5	0.019	0.010	0.010
Roof	HAD4022A,5/8 wave (136-174MHz)	5.15	60	173.0125	30.0	29.0	CW	E	1.000	PF	2	0.028	0.029	0.010	0.5	0.022	0.011	0.012

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	RAD4218B,5/8 wave (146-172MHz)	5.15	60	146.0000	30.0	29.0	CW	E	1.000	PF	2	0.023	0.028	0.025	0.5	0.025	0.013	0.013	
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	150.8000	30.0	29.1	CW	E	1.000	PF	2	0.025	0.028	0.027	0.5	0.027	0.013	0.014	
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	157.1000	30.0	29.0	CW	E	1.000	PF	2	0.023	0.028	0.029	0.5	0.027	0.013	0.014	
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	166.3000	30.0	29.0	CW	E	1.000	PF	2	0.015	0.028	0.020	0.5	0.021	0.011	0.011	
Roof	RAD4218B,5/8 wave (146-172MHz)	5.15	60	172.0000	30.0	28.7	CW	E	1.000	PF	2	0.013	0.018	0.015	0.5	0.015	0.008	0.008	
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	138.0000	30.0	29.6	CW	E	1.000	PF	2	0.013	0.007	0.013	0.5	0.011	0.006	0.006	
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	144.0000	30.0	28.9	CW	E	1.000	PF	2	0.020	0.009	0.011	0.5	0.013	0.007	0.007	
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	150.8000	30.0	29.1	CW	E	1.000	PF	2	0.025	0.012	0.019	0.5	0.019	0.009	0.010	
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	158.0125	30.0	29.3	CW	E	1.000	PF	2	0.032	0.015	0.026	0.5	0.024	0.012	0.012	
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	165.0125	30.0	29.2	CW	E	1.000	PF	2	0.034	0.016	0.028	0.5	0.026	0.013	0.013	
Trunk	HAD4022A,5/8 wave (136-174MHz)	5.15	N/A	173.0125	30.0	29.0	CW	E	1.000	PF	2	0.031	0.019	0.022	0.5	0.024	0.012	0.012	

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
Roof	HAD4006A,1/4 wave (136-144MHz)	2.15	60	138.0000	30.0	29.6	CW	H	0.720	PF	1	0.063	0.067	0.055	0.5	0.075	0.037	0.038	
Roof	HAD4006A,1/4 wave (136-144MHz)	2.15	60	144.0000	30.0	28.9	CW	H	0.700	PF	1	0.074	0.060	0.059	0.5	0.077	0.039	0.040	
Roof	HAD4007A,1/4 wave (144-152MHz)	2.15	60	144.0000	30.0	28.9	CW	H	0.700	PF	1	0.069	0.066	0.046	0.5	0.069	0.035	0.036	
Roof	HAD4007A,1/4 wave (144-152MHz)	2.15	60	150.8000	30.0	29.1	CW	H	0.680	PF	1	0.073	0.074	0.046	0.5	0.075	0.038	0.039	
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	150.8000	30.0	29.1	CW	H	0.680	PF	1	0.067	0.057	0.056	0.5	0.063	0.032	0.033	
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	156.4000	30.0	29.1	CW	H	0.680	PF	1	0.065	0.067	0.050	0.5	0.065	0.033	0.034	
Roof	HAD4008A,1/4 wave (150.8-162MHz)	2.15	60	162.0000	30.0	29.2	CW	H	0.680	PF	1	0.063	0.065	0.056	0.5	0.066	0.033	0.034	
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	162.0000	30.0	29.2	CW	H	0.680	PF	1	0.062	0.064	0.057	0.5	0.065	0.033	0.033	
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	165.0125	30.0	29.2	CW	H	0.670	PF	1	0.070	0.066	0.058	0.5	0.071	0.036	0.037	
Roof	HAD4009A,1/4 wave (162-174MHz)	2.15	60	173.0125	30.0	29.0	CW	H	0.670	PF	1	0.062	0.062	0.058	0.5	0.062	0.031	0.032	

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	Probe Cal. Factor	⁽⁵⁾ Test Pos.		MPE Measurements							
													Head/ Top 1/3	Chest/ Middle 1/3	Lower Trunk/ Bottom 1/3				
Roof	HAD4022A, 5/8 wave (136-174MHz)	5.15	60	138.0000	30.0	29.6	CW	H	0.720	PF	1	0.062	0.057	0.047	0.5	0.061	0.030	0.031	
Roof	HAD4022A, 5/8 wave (136-174MHz)	5.15	60	144.0000	30.0	28.9	CW	H	0.700	PF	1	0.061	0.057	0.053	0.5	0.060	0.030	0.031	
Roof	HAD4022A, 5/8 wave (136-174MHz)	5.15	60	150.8000	30.0	29.1	CW	H	0.680	PF	1	0.055	0.061	0.045	0.5	0.051	0.025	0.026	
Roof	HAD4022A, 5/8 wave (136-174MHz)	5.15	60	158.0125	30.0	29.3	CW	H	0.680	PF	1	0.069	0.064	0.056	0.5	0.070	0.035	0.036	
Roof	HAD4022A, 5/8 wave (136-174MHz)	5.15	60	165.0125	30.0	29.2	CW	H	0.670	PF	1	0.060	0.061	0.040	0.5	0.050	0.025	0.026	
Roof	HAD4022A, 5/8 wave (136-174MHz)	5.15	60	173.0125	30.0	29.0	CW	H	0.670	PF	1	0.055	0.061	0.059	0.5	0.058	0.029	0.030	
Roof	RAD4218B, 5/8 wave (146-172MHz)	5.15	60	146.0000	30.0	29.0	CW	H	0.690	PF	1	0.062	0.059	0.046	0.5	0.056	0.028	0.029	
Roof	RAD4218B, 5/8 wave (146-172MHz)	5.15	60	150.8000	30.0	29.1	CW	H	0.680	PF	1	0.063	0.063	0.046	0.5	0.058	0.029	0.030	
Roof	RAD4218B, 5/8 wave (146-172MHz)	5.15	60	158.0125	30.0	29.3	CW	H	0.680	PF	1	0.056	0.063	0.064	0.5	0.065	0.033	0.033	
Roof	RAD4218B, 5/8 wave (146-172MHz)	5.15	60	165.0125	30.0	29.2	CW	H	0.670	PF	1	0.057	0.059	0.056	0.5	0.056	0.028	0.029	
Roof	RAD4218B, 5/8 wave (146-172MHz)	5.15	60	172.0000	30.0	28.7	CW	H	0.670	PF	1	0.060	0.062	0.054	0.5	0.058	0.029	0.031	

MPE calculations are defined in section 15.0.

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	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	138.0000	30.0	29.6	CW	H	0.720	PF	1	0.045	0.056	0.040	0.5	0.044	0.022	0.022	
Trunk	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	144.0000	30.0	28.9	CW	H	0.700	PF	1	0.055	0.054	0.056	0.5	0.056	0.028	0.029	
Trunk	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	150.8000	30.0	29.1	CW	H	0.680	PF	1	0.061	0.059	0.043	0.5	0.053	0.026	0.027	
Trunk	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	158.0125	30.0	29.3	CW	H	0.680	PF	1	0.062	0.055	0.042	0.5	0.050	0.025	0.026	
Trunk	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	165.0125	30.0	29.2	CW	H	0.670	PF	1	0.060	0.053	0.038	0.5	0.044	0.022	0.023	
Trunk	HAD4022A, 5/8 wave (136-174MHz)	5.15	N/A	173.0125	30.0	29.0	CW	H	0.670	PF	1	0.077	0.065	0.049	0.5	0.071	0.035	0.037	

MPE calculations are defined in section 15.0.

Table D.3
LMR VHF MPE Results for FCC

Note:

Blue fonts: Frequencies not regulated by FCC.

Pmax (W)		30	P initial (W)		29.6	28.9	28.9	29	29.1	29.1	29	29.3	29.2	29.2	29	28.7	29
			FCC Limit (mW/cm²)		N/A	N/A	0.2	N/A	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
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	138.0000	144.0000	144.0000	146.0000	150.8000	156.4000	157.1000	158.0125	162.0000	165.0125	166.3000	172.0000	173.0125
BS	0	Roof	E	2		0.032	0.039										
BS	0	Roof	E	3			0.033		0.046								
BS	0	Roof	E	4					0.03	0.032			0.033				
BS	0	Roof	E	5	0.024	0.029							0.029	0.034			0.042
BS	0	Roof	E	6					0.03			0.033		0.033			0.04
BS	0	Roof	E	6				0.029	0.034		0.033				0.026	0.018	
BS	0	Trunk	E	5	0.112	0.108			0.112			0.14		0.096			0.108
PB	0	Roof	E	1	0.073	0.084											
PB	0	Roof	E	2			0.065		0.083								
PB	0	Roof	E	3					0.093	0.179			0.201				
PB	0	Roof	E	4									0.168	0.172			0.15
PB	0	Roof	E	5	0.02	0.017			0.018			0.02		0.021			0.016
PB	0	Roof	E	6				0.046	0.044		0.046				0.047	0.037	
PB	0	Trunk	E	5	0.077	0.106			0.097			0.206		0.349			0.306
PF	0	Roof	E	1	0.036	0.03											
PF	0	Roof	E	2		0.021			0.028								
PF	0	Roof	E	3					0.03	0.033			0.033				
PF	0	Roof	E	4									0.023	0.024			0.023
PF	0	Roof	E	5	0.006	0.007			0.008			0.008		0.01			0.012
PF	0	Roof	E	6				0.013	0.014		0.014				0.011	0.008	
PF	0	Trunk	E	5	0.006	0.007			0.01			0.012		0.013			0.012
BS	0	Roof	H	1	0.067	0.062											
BS	0	Roof	H	2		0.069			0.068								
BS	0	Roof	H	3					0.062	0.061			0.064				
BS	0	Roof	H	4									0.058	0.054			0.06
BS	0	Roof	H	5	0.047	0.045			0.055			0.043		0.046			0.06
BS	0	Roof	H	6				0.047	0.04		0.045				0.048	0.044	
BS	0	Trunk	H	5	0.142	0.125			0.121			0.125		0.124			0.128
PB	0	Roof	H	1	0.034	0.042											
PB	0	Roof	H	2		0.038			0.038								
PB	0	Roof	H	3					0.038	0.045			0.068				
PB	0	Roof	H	4									0.066	0.072			0.063
PB	0	Roof	H	5	0.02	0.019			0.022			0.022		0.027			0.041
PB	0	Roof	H	6				0.038	0.03		0.038				0.032	0.024	
PB	0	Trunk	H	5	0.051	0.066			0.064			0.086		0.146			0.148
PF	0	Roof	H	1	0.038	0.04											
PF	0	Roof	H	2		0.036			0.039								
PF	0	Roof	H	3					0.033	0.034			0.034				
PF	0	Roof	H	4									0.033	0.037			0.032
PF	0	Roof	H	5	0.031	0.031			0.026			0.036		0.026			0.03
PF	0	Roof	H	6				0.029	0.03			0.033		0.029		0.031	
PF	0	Trunk	H	5	0.022	0.029			0.027			0.026		0.023			0.037

Table D.5
LMR VHF MPE Variability Test (FCC)

Note:

Bystander measurement at initial mounting location
Bystander measurement at 10cm antenna offset from initial mounting location

Trunk / Roof	Test Post.	E/H Field	Antenna Model	Max Pwr (W)	Initial Pwr (W)	Tx Freq (MHz)	Max Calc. P.D. (mW/cm2)	FCC Limit	% To FCC Spec Limit	MPE Variability (%)
Trunk	BS (0 Degree)	E	HAD4022A 5/8 wave (136-174MHz)	30.00	29.10	150.8000	0.11	0.20	55.90%	
					29.10	150.8000	0.11	0.20	55.60%	-0.89%
Trunk	BS (0 Degree)	E	HAD4022A 5/8 wave (136-174MHz)	30.00	29.30	158.0125	0.11	0.20	57.10%	
					29.30	158.0125	0.12	0.20	57.80%	1.75%
Trunk	BS (0 Degree)	E	HAD4022A 5/8 wave (136-174MHz)	30.00	29.00	173.0125	0.11	0.20	53.80%	
					29.00	173.0125	0.11	0.20	52.80%	-1.85%
Trunk	BS (45 Degree)	E	HAD4022A 5/8 wave (136-174MHz)	30.00	29.30	158.0125	0.12	0.20	57.60%	
					29.30	158.0125	0.12	0.20	59.80%	4.35%
Trunk	BS (90 Degree)	E	HAD4022A 5/8 wave (136-174MHz)	30.00	29.30	158.0125	0.14	0.20	68.70%	
					29.30	158.0125	0.13	0.20	63.10%	-8.03%
Trunk	BS (0 Degree)	H	HAD4022A 5/8 wave (136-174MHz)	30.00	29.10	150.8000	0.14	0.20	71.30%	
					29.10	150.8000	0.14	0.20	67.80%	-4.90%
Trunk	BS (0 Degree)	H	HAD4022A 5/8 wave (136-174MHz)	30.00	29.30	158.0125	0.13	0.20	62.60%	
					29.30	158.0125	0.13	0.20	63.70%	1.60%
Trunk	BS (0 Degree)	H	HAD4022A 5/8 wave (136-174MHz)	30.00	29.20	165.0125	0.12	0.20	61.90%	
					29.20	165.0125	0.13	0.20	64.50%	4.03%
Trunk	BS (0 Degree)	H	HAD4022A 5/8 wave (136-174MHz)	30.00	29.00	173.0125	0.13	0.20	64.10%	
					29.00	173.0125	0.13	0.20	64.30%	0.78%
Trunk	BS (45 Degree)	H	HAD4022A 5/8 wave (136-174MHz)	30.00	29.10	150.8000	0.15	0.20	76.40%	
					29.10	150.8000	0.16	0.20	77.40%	1.31%
Trunk	BS (90 Degree)	H	HAD4022A 5/8 wave (136-174MHz)	30.00	29.10	150.8000	0.12	0.20	60.60%	
					29.10	150.8000	0.13	0.20	62.70%	3.31%