

 MOTOROLA SOLUTIONS	    SMM 826 CERTIFICATE 2518.05																																																
MPE TEST REPORT																																																	
Motorola Solutions Inc. EME Test Laboratory Motorola Solutions Malaysia Sdn Bhd Plot 2A, Medan Bayan Lepas, Mukim 12 SWD 11900 Bayan Lepas Penang, Malaysia.	Date of Report: 05/06/2026 Report Revision: B																																																
<table style="width: 100%; border: none;"> <tr> <td style="width: 30%;">Responsible Engineer:</td> <td>Alfred Hoe Kean Loon (EME Engineer)</td> </tr> <tr> <td>Report Author:</td> <td>Hamidi Bin Ismail (EME Technician)</td> </tr> <tr> <td>Date/s Tested:</td> <td>01/21/2026</td> </tr> <tr> <td>Test Location:</td> <td>Penang EME Laboratory</td> </tr> <tr> <td>Manufacturer:</td> <td>Motorola Solutions Malaysia Sdn Bhd.</td> </tr> <tr> <td>Manufacturer Location:</td> <td>Plot 2A, Medan Bayan Lepas Mukim, 12 SWD, 11900 Bayan Lepas, Penang, Malaysia</td> </tr> <tr> <td>Hardware Receive Date:</td> <td>N/A</td> </tr> <tr> <td>DUT Description:</td> <td>CHGR VEHICULAR ADAPTER IMPRES 2 RF HARD WIRED</td> </tr> <tr> <td>Test TX mode(s):</td> <td>Refer to Table 4</td> </tr> <tr> <td>Max. Power output:</td> <td>Refer to Table 4</td> </tr> <tr> <td>Tx Frequency Bands:</td> <td>Refer to Table 4</td> </tr> <tr> <td>Signaling type:</td> <td>Refer to Table 4</td> </tr> <tr> <td>Model(s) Certified:</td> <td>Refer 1.0 Introduction</td> </tr> <tr> <td>(HVIN/PMN)</td> <td></td> </tr> <tr> <td>Classification:</td> <td>Occupational/Controlled Environment</td> </tr> <tr> <td>Applicant Name:</td> <td>Motorola Solutions Inc.</td> </tr> <tr> <td>Applicant Address:</td> <td>Plot 2A, Medan Bayan Lepas Mukim, 12 SWD, 11900 Bayan Lepas, Penang, Malaysia</td> </tr> <tr> <td>Firmware Version (FVIN):</td> <td>APX NEXT, APX NEXT XE (D05.75.54, D00.00.14)</td> </tr> <tr> <td>FCC ID:</td> <td>AZ489FT7119</td> </tr> <tr> <td></td> <td>This report contains results that are immaterial for FCC equipment approval, which are clearly identified.</td> </tr> <tr> <td>FCC Test Firm Registration Number:</td> <td>823256</td> </tr> <tr> <td>IC:</td> <td>109U-89FT7119</td> </tr> <tr> <td></td> <td>This report contains results that are immaterial for ISSED equipment approval, which are clearly identified.</td> </tr> <tr> <td>ISED Test Site registration:</td> <td>24843</td> </tr> </table>		Responsible Engineer:	Alfred Hoe Kean Loon (EME Engineer)	Report Author:	Hamidi Bin Ismail (EME Technician)	Date/s Tested:	01/21/2026	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:	N/A	DUT Description:	CHGR VEHICULAR ADAPTER IMPRES 2 RF HARD WIRED	Test TX mode(s):	Refer to Table 4	Max. Power output:	Refer to Table 4	Tx Frequency Bands:	Refer to Table 4	Signaling type:	Refer to Table 4	Model(s) Certified:	Refer 1.0 Introduction	(HVIN/PMN)		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):	APX NEXT, APX NEXT XE (D05.75.54, D00.00.14)	FCC ID:	AZ489FT7119		This report contains results that are immaterial for FCC equipment approval, which are clearly identified.	FCC Test Firm Registration Number:	823256	IC:	109U-89FT7119		This report contains results that are immaterial for ISSED equipment approval, which are clearly identified.	ISED Test Site registration:	24843
Responsible Engineer:	Alfred Hoe Kean Loon (EME Engineer)																																																
Report Author:	Hamidi Bin Ismail (EME Technician)																																																
Date/s Tested:	01/21/2026																																																
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:	N/A																																																
DUT Description:	CHGR VEHICULAR ADAPTER IMPRES 2 RF HARD WIRED																																																
Test TX mode(s):	Refer to Table 4																																																
Max. Power output:	Refer to Table 4																																																
Tx Frequency Bands:	Refer to Table 4																																																
Signaling type:	Refer to Table 4																																																
Model(s) Certified:	Refer 1.0 Introduction																																																
(HVIN/PMN)																																																	
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):	APX NEXT, APX NEXT XE (D05.75.54, D00.00.14)																																																
FCC ID:	AZ489FT7119																																																
	This report contains results that are immaterial for FCC equipment approval, which are clearly identified.																																																
FCC Test Firm Registration Number:	823256																																																
IC:	109U-89FT7119																																																
	This report contains results that are immaterial for ISSED equipment approval, which are clearly identified.																																																
ISED Test Site registration:	24843																																																
The test results clearly demonstrate compliance with FCC 47 CFR § 2.1093 and RSS-102 (Issue 6) 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.																																																	
 (Approval Signatory) Approved Date: 05/06/2026																																																	

Table of Contents

1.0	Introduction	3
2.0	MPE Summary	4
3.0	Abbreviations / Definitions	5
4.0	Referenced Standards and Guidelines	5
5.0	Power Density Limits	6
6.0	Product and System Description	8
7.0	Additional Options and Accessories	9
8.0	MPE Assessment	10
9.0	Simultaneous Transmission	23
10.0	Conclusion	23

Report Revision History

Date	Revision	Comments
04/27/2026	A	Initial release
05/06/2026	B	Slim down the certified model table at 1.0 Introduction by bundle together according to the sales models

1.0 Introduction

This report contains calculated Maximum Permissible Exposure (MPE) results for product family APX Next and APX Next XE with APX Next vehicular adapter part number PMPN5044A. Table 1 shows the certified model for the product family.

Model	Hardware Version ID Number (HVIN)	Product Marketing Name (PMN)	Description
H55TGT9PW8AN	NUW2100	APX NEXT XE	APX NEXT XE model ALL-BAND MODEL 4.5GRN
H45TGT9PW8AN	NUW2100-H45	APX NEXT XE	APX NEXT XE model ALL Bands (band driven by software options) MODEL 4.5 GRN
H45TGT9PW8AN	NUW2101-H45	APX NEXT XE	APX NEXT XE model ALL Bands (bands driven by software options) MODEL 4.5 BLK
H55TGT9PW8AN	NUW2101	APX NEXT XE	APX NEXT XE ALL BAND MODEL 4.5, BLK
H55TGT9PW8AN	H55TGT9PW8AN	APX NEXT	APX NEXT ALL-BAND MODEL 4.5
H45KGT9PW8AN	H45KGT9PW8AN	APX NEXT	APX NEXT 136-174 MHz; MODEL 4.5
H45TGT9PW8AN	H45TGT9PW8AN	APX NEXT	APX NEXT ALL BAND; MODEL 4.5, (Bands controlled by options)
H45UCT9PW8AN	H45UCT9PW8AN	APX NEXT	APX NEXT 7/800 MHz; MODEL 4.5
H45XDT9PW8AN	H45XDT9PW8AN	APX NEXT	APX NEXT 380-520 MHz; MODEL 4.5

2.0MPE Summary**Table 1**

Equipment Class	Frequency Band (MHz)	Power Density (mW/cm ²)	FCC Limit (mW/cm ²)	ISED Limit (mW/cm ²)
TNF	136-174 (VHF)	0.106	53.06	82.20
	380-470 (UHF R1)	0.145	53.60	91.41
	450-520 (UHF R2)	0.103	34.28	60.37
	762-870 (7/800)	0.058	10.70	22.71
DSS	2402-2480MHz (Bluetooth)	0.000	0.02	0.03
DXX	NFC 13.56MHz	0.000	0.04	0.17
PCF	LTE B2	0.004	0.41	0.91
	LTE B4	0.003	0.31	0.74
	LTE B5	0.001	0.26	0.56
	LTE B12	0.001	0.26	0.52
	LTE B13	0.001	0.24	0.50
	LTE B14	0.001	0.21	0.44
	LTE B17	0.001	0.23	0.46
DTS	2412 – 2462 MHz (WLAN 2.4 GHz)	0.004	0.41	0.75
NII	5180 – 5825 MHz (WLAN 5 GHz)	0.004	0.38	0.40

3.0 Abbreviations / Definitions

DUT: Device Under Test
EME: Electromagnetic Energy
MPE: Maximum Permissible Exposure

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
- 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 1992/1999	IEEE C95.1 2005	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 1992/1999	IEEE C95.1 2005	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 Product and System Description**Table 4**

Technologies	Tx Band (MHz)	Transmission	Duty Cycle (%)	Nominal Power (W)	Max Power (W)
LMR	136-174	FM	*50	6.00	6.60
LMR	380-470	FM	*50	5.00	5.70
LMR	450-520	FM	*50	5.00	5.70
LMR	762-776; 792-806	FM	*50	2.50	2.99
LMR	806-825; 851-870	FM	*50	3.00	3.60
LTE Band 2	1850-1910	QPSK, 16QAM	100	0.200	0.252
LTE Band 4	1710-1755	QPSK, 16QAM	100	0.200	0.252
LTE Band 5	824-849	QPSK, 16QAM	100	0.200	0.252
LTE Band 12	699-716	QPSK, 16QAM	100	0.200	0.252
LTE Band 13	777-787	QPSK, 16QAM	100	0.200	0.252
LTE Band 14	788-798	QPSK, 16QAM	100	0.200	0.252
LTE Band 17	704-716	QPSK, 16QAM	100	0.200	0.252
Bluetooth	2400-2485	FHSS	77.26	0.009	0.0115
Bluetooth LE	2400-2485	FHSS	62.68	0.009	0.0115
NFC	13.56	NFC	100	0.035	0.035
WLAN 802.11 b	2412-2462	DSSS	99.20	0.178	0.200
WLAN 802.11 g / n (20 MHz)	2412-2462	OFDM	94.90 (802.11g) 94.36 (802.11n)	0.033 (CH 1) / 0.150 (CH 2-11)	0.045 (CH 1) / 0.158 (CH 2-11)
WLAN 802.11 n (40 MHz)	2412-2462	OFDM	89.08	0.100 (CH 3) / 0.063 (CH 9) / 0.150 (Other channels)	0.126 (CH 3) / 0.079 (CH 9) / 0.158 (Other channels)
WLAN 802.11 a / n / ac (20 MHz)	5180-5825	OFDM	96.30 (802.11a) 95.59 (802.11 n / ac)	0.089 (CH 140) / 0.126 (other Channels)	0.126 (CH 140) / 0.158 (other Channels)
WLAN 802.11 n / ac (40 MHz)	5180-5825	OFDM	90.94	0.089 (CH 38, CH 102) 0.112 (CH 62) 0.126 (other Channels)	0.100 (CH 38, CH 102) / 0.126 (CH 62) / 0.158 (other Channels)
WLAN 802.11 ac (80 MHz)	5180-5825	OFDM	80.27	0.063 (CH 42) 0.089 (CH 106) 0.100 (other Channels)	0.079 (CH 42) 0.100 (CH 106) 0.126 (other Channels)

Note-* includes 50% PTT operation

7.0 Additional Options and Accessories

Refer to Table 5 for complete list of tested antennas.

Table 5

No.	Antenna Models	Description	Tested	Comments
1	HAD4006A	UNITY GAIN ANTENNA QUARTERWAVE VHF 136-144 - ROOF MOUNT	No	MPE Calculation
2	HAD4007A	UNITY GAIN ANTENNA QUARTERWAVE VHF 144-150.8 - ROOF MOUNT	No	MPE Calculation
3	HAD4008A	MOBILE ANTENNA, ROOF MOUNT, 1/4 WAVE, 151-162 MHZ	No	MPE Calculation
4	HAD4009A	MOBILE ANTENNA, ROOF MOUNT, 1/4 WAVE, 162-174 MHZ	No	MPE Calculation
5	HAD4021A	MOBILE ANTENNA, WIDEBAND, 136-174 MHZ	No	MPE Calculation
6	HAD4022A	MOBILE ANTENNA, 3DB GAIN, 136-174 MHZ	No	MPE Calculation
7	HAE4003A	MOBILE ANTENNA, ROOF MOUNT, 1/4 WAVE, 450-470 MHZ	No	MPE Calculation
8	HAE4004A	UNITY GAIN ANTENNA UHF 470-512 QUARTERWAVE - ROOF MOUNT	No	MPE Calculation
9	HAE4011AA	ANTENNA ROOF TOP 3.5DB UHF	No	MPE Calculation
10	HAE4013A	ANTENNA ROOF TOP 3.5DB UHF	No	MPE Calculation
11	HAE6010A	ANT 3.5DB GAIN 380-433MHZ	No	MPE Calculation
12	HAE6011A	ANT 5.0DB GAIN 380-433MHZ	No	MPE Calculation
13	HAE6012A	UNITY GAIN ANTENNA UHF 380-433 QUARTERWAVE - ROOF MOUNT	No	MPE Calculation
14	HAE6013A	ANT WIDEBAND 2.0DB GAIN 380-470 MHZ	No	MPE Calculation
15	HAF4013A	MOBILE ANTENNA, LOW PROFILE, 762-870 MHZ	No	MPE Calculation
16	HAF4014A	ANT 3DB ELEVATED FEED 762-870	No	MPE Calculation
17	HAF4016A	MOBILE ANTENNA, ROOF MOUNT, 1/4 WAVE, 762-870 MHZ	No	MPE Calculation
18	HAF4017A	ANT 3DB COLLINEAR 762-870MHZ	No	MPE Calculation
19	HAE4012A	ANT ROOF TOP 3.5 dB 470-495 MHz	No	MPE Calculation
20	HAD4016A	ANT ROOF MT WB VHF 136/162	No	MPE Calculation
21	HAD4017A	MOBILE ANTENNA, ROOF MOUNT, 146-174 MHZ	No	MPE Calculation
22	HAE6031A	ANT, 2DB WIDEBAND 380-520 MHZ	No	MPE Calculation
23	HAE6016A	MOBILE ANTENNA, LOW PROFILE, 450-512 MHZ	No	MPE Calculation
24	AN000131A02	MOBILE ANTENNA, WHIP, ALL BAND	No	MPE Calculation
25	AN000131A03	MOBILE ANTENNA, WHIP, ALL BAND (replacement whip for AN000131A02)	No	MPE Calculation
26	AN000304A01	LTE Antenna, 699-798 MHz, 824-849 MHz, 1710-2155MHz, ¼ wave, Band 4 (1.02 dBi), Band 2 (2.15 dBi), Band 12 (-3.18 dBi), Band 13 (-3.00 dBi), Band 14 (-3.52 dBi), Band 5 (-2.34 dBi), Band 17 (-3.65 dBi)	No	MPE Calculation
27	AN000304A03	WiFi/BT Antenna, 2400-2480 MHz, 5150-5850 MHz, ¼ wave, 2400 MHz (3.1 dBi), 2440 MHz (3.2 dBi), 2480 MHz (2.9 dBi), 5150MHz (2.8 dBi), 5500MHz (4.0 dBi) , 5850MHz (1.9 dBi)	No	MPE Calculation

8.0MPE Assessment

MPE calculations were used to determine the RF exposure for this device. 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 below was used to show compliance for this device:

$$S = \frac{P_t G}{4\pi d^2} F \quad \text{Equation (1)}$$

Equation (1) account for the maximum duty cycle of the signal, and the factor, F, to provide a conservative power density prediction.

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 6

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
LMR												
VHF(136-174MHz)												
HAD4006A(136-144MHz)												
HAD4006A	6.6000	50.00%	138.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	41.20
HAD4006A	6.6000	50.00%	140.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	41.20
HAD4006A	6.6000	50.00%	144.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	41.20
HAD4007A(144-150.8MHz)												
HAD4007A	6.6000	50.00%	144.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	41.20
HAD4007A	6.6000	50.00%	150.8000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4008A(151-162MHz)												
HAD4008A	6.6000	50.00%	151.0000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4008A	6.6000	50.00%	156.4000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4008A	6.6000	50.00%	162.0000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4009A(162-174MHz)												
HAD4009A	6.6000	50.00%	162.0000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4009A	6.6000	50.00%	165.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4009A	6.6000	50.00%	173.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4021A(136-174MHz)												
HAD4021A	6.6000	50.00%	138.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	41.20
HAD4021A	6.6000	50.00%	144.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	41.20
HAD4021A	6.6000	50.00%	150.8000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4021A	6.6000	50.00%	158.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4021A	6.6000	50.00%	165.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4021A	6.6000	50.00%	173.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4022A(136-174MHz)												
HAD4022A	6.6000	50.00%	138.0000	5.15	0.00	90	1.00	0.106	0.20	NA	0.13	82.20
HAD4022A	6.6000	50.00%	144.0000	5.15	0.00	90	1.00	0.106	0.20	NA	0.13	82.20
HAD4022A	6.6000	50.00%	150.8000	5.15	0.00	90	1.00	0.106	0.20	53.06	0.13	82.20
HAD4022A	6.6000	50.00%	158.0125	5.15	0.00	90	1.00	0.106	0.20	53.06	0.13	82.20
HAD4022A	6.6000	50.00%	165.0125	5.15	0.00	90	1.00	0.106	0.20	53.06	0.13	82.20
HAD4022A	6.6000	50.00%	173.0125	5.15	0.00	90	1.00	0.106	0.20	53.06	0.13	82.20

Table 6 (Continued)

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
HAD4016A(136-162MHz)												
HAD4016A	6.6000	50.00%	138.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	41.20
HAD4016A	6.6000	50.00%	144.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	41.20
HAD4016A	6.6000	50.00%	150.8000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4016A	6.6000	50.00%	156.4000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4016A	6.6000	50.00%	162.0000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4017A(146-174MHz)												
HAD4017A	6.6000	50.00%	146.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	NA
HAD4017A	6.6000	50.00%	150.8000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	41.20
HAD4017A	6.6000	50.00%	158.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4017A	6.6000	50.00%	165.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
HAD4017A	6.6000	50.00%	173.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A02(136-174MHz)												
AN000131A02	6.6000	50.00%	138.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	NA
AN000131A02	6.6000	50.00%	144.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	41.20
AN000131A02	6.6000	50.00%	146.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	NA
AN000131A02	6.6000	50.00%	150.8000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A02	6.6000	50.00%	156.4000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A02	6.6000	50.00%	158.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A02	6.6000	50.00%	162.0000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A02	6.6000	50.00%	165.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A02	6.6000	50.00%	173.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A03(136-174MHz)												
AN000131A03	6.6000	50.00%	138.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	NA
AN000131A03	6.6000	50.00%	144.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	41.20
AN000131A03	6.6000	50.00%	146.0000	2.15	0.00	90	1.00	0.053	0.20	NA	0.13	NA
AN000131A03	6.6000	50.00%	150.8000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A03	6.6000	50.00%	156.4000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A03	6.6000	50.00%	158.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A03	6.6000	50.00%	162.0000	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A03	6.6000	50.00%	165.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
AN000131A03	6.6000	50.00%	173.0125	2.15	0.00	90	1.00	0.053	0.20	26.59	0.13	41.20
UHF 1(380-470MHz)												
HAE6010A(380-433MHz)												
HAE6010A	5.7000	50.00%	380.0125	5.65	0.00	90	1.00	0.103	0.25	NA	0.15	NA
HAE6010A	5.7000	50.00%	393.0125	5.65	0.00	90	1.00	0.103	0.26	NA	0.16	NA
HAE6010A	5.7000	50.00%	406.5000	5.65	0.00	90	1.00	0.103	0.27	37.95	0.16	64.71
HAE6010A	5.7000	50.00%	419.5000	5.65	0.00	90	1.00	0.103	0.28	36.77	0.16	63.33
HAE6010A	5.7000	50.00%	432.9875	5.65	0.00	90	1.00	0.103	0.29	35.63	0.17	NA

Table 6 (Continued)

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
HAE6011A(380-433MHz)												
HAE6011A	5.7000	50.00%	380.0125	7.15	0.00	90	1.00	0.145	0.25	NA	0.15	NA
HAE6011A	5.7000	50.00%	393.0125	7.15	0.00	90	1.00	0.145	0.26	NA	0.16	NA
HAE6011A	5.7000	50.00%	406.5000	7.15	0.00	90	1.00	0.145	0.27	53.60	0.16	91.41
HAE6011A	5.7000	50.00%	419.5000	7.15	0.00	90	1.00	0.145	0.28	51.94	0.16	89.46
HAE6011A	5.7000	50.00%	432.9875	7.15	0.00	90	1.00	0.145	0.29	50.32	0.17	NA
HAE6012A(380-433MHz)												
HAE6012A	5.7000	50.00%	380.0125	2.15	0.00	90	1.00	0.046	0.25	NA	0.15	NA
HAE6012A	5.7000	50.00%	393.0125	2.15	0.00	90	1.00	0.046	0.26	NA	0.16	NA
HAE6012A	5.7000	50.00%	406.5000	2.15	0.00	90	1.00	0.046	0.27	16.95	0.16	28.91
HAE6012A	5.7000	50.00%	419.5000	2.15	0.00	90	1.00	0.046	0.28	16.43	0.16	28.29
HAE6012A	5.7000	50.00%	432.9875	2.15	0.00	90	1.00	0.046	0.29	15.91	0.17	NA
HAE6013A(380-470MHz)												
HAE6013A	5.7000	50.00%	380.0125	4.15	0.00	90	1.00	0.073	0.25	NA	0.15	NA
HAE6013A	5.7000	50.00%	393.0125	4.15	0.00	90	1.00	0.073	0.26	NA	0.16	NA
HAE6013A	5.7000	50.00%	406.5000	4.15	0.00	90	1.00	0.073	0.27	26.86	0.16	45.81
HAE6013A	5.7000	50.00%	422.0125	4.15	0.00	90	1.00	0.073	0.28	25.88	0.16	44.65
HAE6013A	5.7000	50.00%	438.0125	4.15	0.00	90	1.00	0.073	0.29	24.93	0.17	NA
HAE6013A	5.7000	50.00%	450.0125	4.15	0.00	90	1.00	0.073	0.30	24.27	0.17	42.74
HAE6013A	5.7000	50.00%	469.9875	4.15	0.00	90	1.00	0.073	0.31	23.24	0.18	41.49
HAE4003A(450-470MHz)												
HAE4003A	5.7000	50.00%	450.0125	2.15	0.00	90	1.00	0.046	0.30	15.31	0.17	26.97
HAE4003A	5.7000	50.00%	460.0000	2.15	0.00	90	1.00	0.046	0.31	14.98	0.17	26.56
HAE4003A	5.7000	50.00%	469.9875	2.15	0.00	90	1.00	0.046	0.31	14.66	0.18	26.18
HAE4011AA(450-470MHz)												
HAE4011AA	5.7000	50.00%	450.0125	5.65	0.00	90	1.00	0.103	0.30	34.28	0.17	60.37
HAE4011AA	5.7000	50.00%	460.0000	5.65	0.00	90	1.00	0.103	0.31	33.53	0.17	59.47
HAE4011AA	5.7000	50.00%	469.9875	5.65	0.00	90	1.00	0.103	0.31	32.82	0.18	58.60
HAE6031A(380-520MHz)												
HAE6031A	5.7000	50.00%	380.0125	4.15	0.00	90	1.00	0.073	0.25	NA	0.15	NA
HAE6031A	5.7000	50.00%	393.0125	4.15	0.00	90	1.00	0.073	0.26	NA	0.16	NA
HAE6031A	5.7000	50.00%	406.5000	4.15	0.00	90	1.00	0.073	0.27	26.86	0.16	45.81
HAE6031A	5.7000	50.00%	422.0125	4.15	0.00	90	1.00	0.073	0.28	25.88	0.16	44.65
HAE6031A	5.7000	50.00%	438.0125	4.15	0.00	90	1.00	0.073	0.29	24.93	0.17	NA
HAE6031A	5.7000	50.00%	450.0125	4.15	0.00	90	1.00	0.073	0.30	24.27	0.17	42.74
HAE6031A	5.7000	50.00%	469.9875	4.15	0.00	90	1.00	0.073	0.31	23.24	0.18	41.49

Table 6 (Continued)

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
HAE6016A(450-512MHz)												
HAE6016A	5.7000	50.00%	450.0125	2.15	0.00	90	1.00	0.046	0.30	15.31	0.17	26.97
HAE6016A	5.7000	50.00%	469.9875	2.15	0.00	90	1.00	0.046	0.31	14.66	0.18	26.18
AN000131A02(380-520MHz)												
AN000131A02	5.7000	50.00%	380.0125	2.15	0.00	90	1.00	0.046	0.25	NA	0.15	NA
AN000131A02	5.7000	50.00%	393.0125	2.15	0.00	90	1.00	0.046	0.26	NA	0.16	NA
AN000131A02	5.7000	50.00%	406.5000	2.15	0.00	90	1.00	0.046	0.27	16.95	0.16	28.91
AN000131A02	5.7000	50.00%	419.5000	2.15	0.00	90	1.00	0.046	0.28	16.43	0.16	28.29
AN000131A02	5.7000	50.00%	422.0125	2.15	0.00	90	1.00	0.046	0.28	16.33	0.16	28.18
AN000131A02	5.7000	50.00%	432.9875	2.15	0.00	90	1.00	0.046	0.29	15.91	0.17	NA
AN000131A02	5.7000	50.00%	438.0125	2.15	0.00	90	1.00	0.046	0.29	15.73	0.17	NA
AN000131A02	5.7000	50.00%	450.0125	2.15	0.00	90	1.00	0.046	0.30	15.31	0.17	26.97
AN000131A02	5.7000	50.00%	460.0000	2.15	0.00	90	1.00	0.046	0.31	14.98	0.17	26.56
AN000131A02	5.7000	50.00%	469.9875	2.15	0.00	90	1.00	0.046	0.31	14.66	0.18	26.18
AN000131A03(380-520MHz)												
AN000131A03	5.7000	50.00%	380.0125	2.15	0.00	90	1.00	0.046	0.25	NA	0.15	NA
AN000131A03	5.7000	50.00%	393.0125	2.15	0.00	90	1.00	0.046	0.26	NA	0.16	NA
AN000131A03	5.7000	50.00%	406.5000	2.15	0.00	90	1.00	0.046	0.27	16.95	0.16	28.91
AN000131A03	5.7000	50.00%	419.5000	2.15	0.00	90	1.00	0.046	0.28	16.43	0.16	28.29
AN000131A03	5.7000	50.00%	422.0125	2.15	0.00	90	1.00	0.046	0.28	16.33	0.16	28.18
AN000131A03	5.7000	50.00%	432.9875	2.15	0.00	90	1.00	0.046	0.29	15.91	0.17	NA
AN000131A03	5.7000	50.00%	438.0125	2.15	0.00	90	1.00	0.046	0.29	15.73	0.17	NA
AN000131A03	5.7000	50.00%	450.0125	2.15	0.00	90	1.00	0.046	0.30	15.31	0.17	26.97
AN000131A03	5.7000	50.00%	460.0000	2.15	0.00	90	1.00	0.046	0.31	14.98	0.17	26.56
AN000131A03	5.7000	50.00%	469.9875	2.15	0.00	90	1.00	0.046	0.31	14.66	0.18	26.18
UHF 2(450-520MHz)												
HAE4003A(450-470MHz)												
HAE4003A	5.7000	50.00%	450.0125	2.15	0.00	90	1.00	0.046	0.30	15.31	0.17	26.97
HAE4003A	5.7000	50.00%	460.0000	2.15	0.00	90	1.00	0.046	0.31	14.98	0.17	26.56
HAE4003A	5.7000	50.00%	469.9875	2.15	0.00	90	1.00	0.046	0.31	14.66	0.18	26.18
HAE4004A(470-512MHz)												
HAE4004A	5.7000	50.00%	470.0125	2.15	0.00	90	1.00	0.046	0.31	14.66	0.18	NA
HAE4004A	5.7000	50.00%	482.5000	2.15	0.00	90	1.00	0.046	0.32	14.28	0.18	NA
HAE4004A	5.7000	50.00%	496.5000	2.15	0.00	90	1.00	0.046	0.33	13.88	0.18	NA
HAE4004A	5.7000	50.00%	511.9875	2.15	0.00	90	1.00	0.046	0.34	13.46	0.19	NA
HAE4004A	5.7000	50.00%	519.9875	2.15	0.00	90	1.00	0.046	0.35	13.25	0.19	NA

Table 6 (Continued)

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
HAE4011AA(450-470MHz)												
HAE4011AA	5.7000	50.00%	450.0125	5.65	0.00	90	1.00	0.103	0.30	34.28	0.17	60.37
HAE4011AA	5.7000	50.00%	460.0000	5.65	0.00	90	1.00	0.103	0.31	33.53	0.17	59.47
HAE4011AA	5.7000	50.00%	469.9875	5.65	0.00	90	1.00	0.103	0.31	32.82	0.18	58.60
HAE4012A(470-495MHz)												
HAE4012A	5.7000	50.00%	470.0125	5.65	0.00	90	1.00	0.103	0.31	32.82	0.18	NA
HAE4012A	5.7000	50.00%	482.5000	5.65	0.00	90	1.00	0.103	0.32	31.97	0.18	NA
HAE4012A	5.7000	50.00%	494.9875	5.65	0.00	90	1.00	0.103	0.33	31.16	0.18	NA
HAE4013A(494-512MHz)												
HAE4013A	5.7000	50.00%	494.9875	5.65	0.00	90	1.00	0.103	0.33	31.16	0.18	NA
HAE4013A	5.7000	50.00%	503.0000	5.65	0.00	90	1.00	0.103	0.34	30.67	0.18	NA
HAE4013A	5.7000	50.00%	511.9875	5.65	0.00	90	1.00	0.103	0.34	30.13	0.19	NA
HAE6013A(380-470MHz)												
HAE6013A	5.7000	50.00%	450.0125	4.15	0.00	90	1.00	0.073	0.30	24.27	0.17	42.74
HAE6013A	5.7000	50.00%	469.9875	4.15	0.00	90	1.00	0.073	0.31	23.24	0.18	41.49
HAE6031A(380-520MHz)												
HAE6031A	5.7000	50.00%	450.0125	4.15	0.00	90	1.00	0.073	0.30	24.27	0.17	42.74
HAE6031A	5.7000	50.00%	469.9875	4.15	0.00	90	1.00	0.073	0.31	23.24	0.18	41.49
HAE6031A	5.7000	50.00%	482.5000	4.15	0.00	90	1.00	0.073	0.32	22.63	0.18	NA
HAE6031A	5.7000	50.00%	496.5000	4.15	0.00	90	1.00	0.073	0.33	21.99	0.18	NA
HAE6031A	5.7000	50.00%	511.9875	4.15	0.00	90	1.00	0.073	0.34	21.33	0.19	NA
HAE6031A	5.7000	50.00%	519.9875	4.15	0.00	90	1.00	0.073	0.35	21.00	0.19	NA
HAE6016A(450-512MHz)												
HAE6016A	5.7000	50.00%	482.5000	2.15	0.00	90	1.00	0.046	0.32	14.28	0.18	NA
HAE6016A	5.7000	50.00%	496.5000	2.15	0.00	90	1.00	0.046	0.33	13.88	0.18	NA
HAE6016A	5.7000	50.00%	511.9875	2.15	0.00	90	1.00	0.046	0.34	13.46	0.19	NA
AN000131A02(380-520MHz)												
AN000131A02	5.7000	50.00%	450.0125	2.15	0.00	90	1.00	0.046	0.30	15.31	0.17	26.97
AN000131A02	5.7000	50.00%	460.0000	2.15	0.00	90	1.00	0.046	0.31	14.98	0.17	26.56
AN000131A02	5.7000	50.00%	469.9875	2.15	0.00	90	1.00	0.046	0.31	14.66	0.18	26.18
AN000131A02	5.7000	50.00%	470.0125	2.15	0.00	90	1.00	0.046	0.31	14.66	0.18	NA
AN000131A02	5.7000	50.00%	482.5000	2.15	0.00	90	1.00	0.046	0.32	14.28	0.18	NA
AN000131A02	5.7000	50.00%	493.9875	2.15	0.00	90	1.00	0.046	0.33	13.95	0.18	NA
AN000131A02	5.7000	50.00%	494.9875	2.15	0.00	90	1.00	0.046	0.33	13.92	0.18	NA
AN000131A02	5.7000	50.00%	496.5000	2.15	0.00	90	1.00	0.046	0.33	13.88	0.18	NA
AN000131A02	5.7000	50.00%	503.0000	2.15	0.00	90	1.00	0.046	0.34	13.70	0.18	NA
AN000131A02	5.7000	50.00%	511.9875	2.15	0.00	90	1.00	0.046	0.34	13.46	0.19	NA
AN000131A02	5.7000	50.00%	519.9875	2.15	0.00	90	1.00	0.046	0.35	13.25	0.19	NA

Table 6 (Continued)

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
AN000131A03(380-520MHz)												
AN000131A03	5.7000	50.00%	450.0125	2.15	0.00	90	1.00	0.046	0.30	15.31	0.17	26.97
AN000131A03	5.7000	50.00%	460.0000	2.15	0.00	90	1.00	0.046	0.31	14.98	0.17	26.56
AN000131A03	5.7000	50.00%	469.9875	2.15	0.00	90	1.00	0.046	0.31	14.66	0.18	26.18
AN000131A03	5.7000	50.00%	470.0125	2.15	0.00	90	1.00	0.046	0.31	14.66	0.18	NA
AN000131A03	5.7000	50.00%	482.5000	2.15	0.00	90	1.00	0.046	0.32	14.28	0.18	NA
AN000131A03	5.7000	50.00%	493.9875	2.15	0.00	90	1.00	0.046	0.33	13.95	0.18	NA
AN000131A03	5.7000	50.00%	494.9875	2.15	0.00	90	1.00	0.046	0.33	13.92	0.18	NA
AN000131A03	5.7000	50.00%	496.5000	2.15	0.00	90	1.00	0.046	0.33	13.88	0.18	NA
AN000131A03	5.7000	50.00%	503.0000	2.15	0.00	90	1.00	0.046	0.34	13.70	0.18	NA
AN000131A03	5.7000	50.00%	511.9875	2.15	0.00	90	1.00	0.046	0.34	13.46	0.19	NA
AN000131A03	5.7000	50.00%	519.9875	2.15	0.00	90	1.00	0.046	0.35	13.25	0.19	NA
7/800												
HAF4013A(762-870MHz)												
HAF4013A	2.9900	50.00%	762.0125	5.15	0.00	90	1.00	0.048	0.51	NA	0.24	NA
HAF4013A	2.9900	50.00%	769.0125	5.15	0.00	90	1.00	0.048	0.51	9.38	0.25	19.57
HAF4013A	2.9900	50.00%	772.0000	5.15	0.00	90	1.00	0.048	0.51	9.34	0.25	19.52
HAF4013A	2.9900	50.00%	774.9875	5.15	0.00	90	1.00	0.048	0.52	9.31	0.25	19.47
HAF4013A	2.9900	50.00%	794.0125	5.15	0.00	90	1.00	0.048	0.53	NA	0.25	NA
HAF4013A	2.9900	50.00%	799.0125	5.15	0.00	90	1.00	0.048	0.53	9.03	0.25	19.06
HAF4013A	3.6000	50.00%	811.5000	5.15	0.00	90	1.00	0.058	0.54	10.70	0.25	22.71
HAF4013A	3.6000	50.00%	823.9875	5.15	0.00	90	1.00	0.058	0.55	10.54	0.26	22.48
HAF4013A	3.6000	50.00%	851.0125	5.15	0.00	90	1.00	0.058	0.57	10.20	0.26	21.98
HAF4013A	3.6000	50.00%	860.5000	5.15	0.00	90	1.00	0.058	0.57	10.09	0.27	21.82
HAF4013A	3.6000	50.00%	868.9875	5.15	0.00	90	1.00	0.058	0.58	9.99	0.27	21.67
HAF4014A(762-870MHz)												
HAF4014A	2.9900	50.00%	762.0125	5.15	0.00	90	1.00	0.048	0.51	NA	0.24	NA
HAF4014A	2.9900	50.00%	769.0125	5.15	0.00	90	1.00	0.048	0.51	9.38	0.25	19.57
HAF4014A	2.9900	50.00%	772.0000	5.15	0.00	90	1.00	0.048	0.51	9.34	0.25	19.52
HAF4014A	2.9900	50.00%	774.9875	5.15	0.00	90	1.00	0.048	0.52	9.31	0.25	19.47
HAF4014A	2.9900	50.00%	794.0125	5.15	0.00	90	1.00	0.048	0.53	NA	0.25	NA
HAF4014A	2.9900	50.00%	799.0125	5.15	0.00	90	1.00	0.048	0.53	9.03	0.25	19.06
HAF4014A	3.6000	50.00%	811.5000	5.15	0.00	90	1.00	0.058	0.54	10.70	0.25	22.71
HAF4014A	3.6000	50.00%	823.9875	5.15	0.00	90	1.00	0.058	0.55	10.54	0.26	22.48
HAF4014A	3.6000	50.00%	851.0125	5.15	0.00	90	1.00	0.058	0.57	10.20	0.26	21.98
HAF4014A	3.6000	50.00%	860.5000	5.15	0.00	90	1.00	0.058	0.57	10.09	0.27	21.82
HAF4014A	3.6000	50.00%	868.9875	5.15	0.00	90	1.00	0.058	0.58	9.99	0.27	21.67

Table 6 (Continued)

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
HAF4016A(762-870MHz)												
HAF4016A	2.9900	50.00%	762.0125	2.15	0.00	90	1.00	0.024	0.51	NA	0.24	NA
HAF4016A	2.9900	50.00%	769.0125	2.15	0.00	90	1.00	0.024	0.51	4.70	0.25	9.81
HAF4016A	2.9900	50.00%	772.0000	2.15	0.00	90	1.00	0.024	0.51	4.68	0.25	9.78
HAF4016A	2.9900	50.00%	774.9875	2.15	0.00	90	1.00	0.024	0.52	4.66	0.25	9.76
HAF4016A	2.9900	50.00%	794.0125	2.15	0.00	90	1.00	0.024	0.53	NA	0.25	NA
HAF4016A	2.9900	50.00%	799.0125	2.15	0.00	90	1.00	0.024	0.53	4.52	0.25	9.55
HAF4016A	3.6000	50.00%	811.5000	2.15	0.00	90	1.00	0.029	0.54	5.36	0.25	11.38
HAF4016A	3.6000	50.00%	823.9875	2.15	0.00	90	1.00	0.029	0.55	5.28	0.26	11.26
HAF4016A	3.6000	50.00%	851.0125	2.15	0.00	90	1.00	0.029	0.57	5.11	0.26	11.02
HAF4016A	3.6000	50.00%	860.5000	2.15	0.00	90	1.00	0.029	0.57	5.06	0.27	10.94
HAF4016A	3.6000	50.00%	868.9875	2.15	0.00	90	1.00	0.029	0.58	5.01	0.27	10.86
HAF4017A(762-870MHz)												
HAF4017A	2.9900	50.00%	762.0125	5.15	0.00	90	1.00	0.048	0.51	NA	0.24	NA
HAF4017A	2.9900	50.00%	769.0125	5.15	0.00	90	1.00	0.048	0.51	9.38	0.25	19.57
HAF4017A	2.9900	50.00%	772.0000	5.15	0.00	90	1.00	0.048	0.51	9.34	0.25	19.52
HAF4017A	2.9900	50.00%	774.9875	5.15	0.00	90	1.00	0.048	0.52	9.31	0.25	19.47
HAF4017A	2.9900	50.00%	794.0125	5.15	0.00	90	1.00	0.048	0.53	NA	0.25	NA
HAF4017A	2.9900	50.00%	799.0125	5.15	0.00	90	1.00	0.048	0.53	9.03	0.25	19.06
HAF4017A	3.6000	50.00%	811.5000	5.15	0.00	90	1.00	0.058	0.54	10.70	0.25	22.71
HAF4017A	3.6000	50.00%	823.9875	5.15	0.00	90	1.00	0.058	0.55	10.54	0.26	22.48
HAF4017A	3.6000	50.00%	851.0125	5.15	0.00	90	1.00	0.058	0.57	10.20	0.26	21.98
HAF4017A	3.6000	50.00%	860.5000	5.15	0.00	90	1.00	0.058	0.57	10.09	0.27	21.82
HAF4017A	3.6000	50.00%	868.9875	5.15	0.00	90	1.00	0.058	0.58	9.99	0.27	21.67
AN000131A02(698-870MHz)												
AN000131A02	2.9900	50.00%	762.0125	2.15	0.00	90	1.00	0.024	0.51	NA	0.24	NA
AN000131A02	2.9900	50.00%	769.0125	2.15	0.00	90	1.00	0.024	0.51	4.70	0.25	9.81
AN000131A02	2.9900	50.00%	772.0000	2.15	0.00	90	1.00	0.024	0.51	4.68	0.25	9.78
AN000131A02	2.9900	50.00%	774.9875	2.15	0.00	90	1.00	0.024	0.52	4.66	0.25	9.76
AN000131A02	2.9900	50.00%	794.0125	2.15	0.00	90	1.00	0.024	0.53	NA	0.25	NA
AN000131A02	2.9900	50.00%	799.0125	2.15	0.00	90	1.00	0.024	0.53	4.52	0.25	9.55
AN000131A02	3.6000	50.00%	811.5000	2.15	0.00	90	1.00	0.029	0.54	5.36	0.25	11.38
AN000131A02	3.6000	50.00%	823.9875	2.15	0.00	90	1.00	0.029	0.55	5.28	0.26	11.26
AN000131A02	3.6000	50.00%	851.0125	2.15	0.00	90	1.00	0.029	0.57	5.11	0.26	11.02
AN000131A02	3.6000	50.00%	860.5000	2.15	0.00	90	1.00	0.029	0.57	5.06	0.27	10.94
AN000131A02	3.6000	50.00%	868.9875	2.15	0.00	90	1.00	0.029	0.58	5.01	0.27	10.86

Table 6 (Continued)

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
AN000131A03(698-870MHz)												
AN000131A03	2.9900	50.00%	762.0125	2.15	0.00	90	1.00	0.024	0.51	NA	0.24	NA
AN000131A03	2.9900	50.00%	769.0125	2.15	0.00	90	1.00	0.024	0.51	4.70	0.25	9.81
AN000131A03	2.9900	50.00%	772.0000	2.15	0.00	90	1.00	0.024	0.51	4.68	0.25	9.78
AN000131A03	2.9900	50.00%	774.9875	2.15	0.00	90	1.00	0.024	0.52	4.66	0.25	9.76
AN000131A03	2.9900	50.00%	794.0125	2.15	0.00	90	1.00	0.024	0.53	NA	0.25	NA
AN000131A03	2.9900	50.00%	799.0125	2.15	0.00	90	1.00	0.024	0.53	4.52	0.25	9.55
AN000131A03	3.6000	50.00%	811.5000	2.15	0.00	90	1.00	0.029	0.54	5.36	0.25	11.38
AN000131A03	3.6000	50.00%	823.9875	2.15	0.00	90	1.00	0.029	0.55	5.28	0.26	11.26
AN000131A03	3.6000	50.00%	851.0125	2.15	0.00	90	1.00	0.029	0.57	5.11	0.26	11.02
AN000131A03	3.6000	50.00%	860.5000	2.15	0.00	90	1.00	0.029	0.57	5.06	0.27	10.94
AN000131A03	3.6000	50.00%	868.9875	2.15	0.00	90	1.00	0.029	0.58	5.01	0.27	10.86
BT/BTLE												
AN000304A03	0.0115	77.26%	2412.0000	3.10	0.00	90	1.00	0.000	1.00	0.02	0.54	0.03
AN000304A03	0.0115	77.26%	2437.0000	3.10	0.00	90	1.00	0.000	1.00	0.02	0.54	0.03
AN000304A03	0.0115	77.26%	2462.0000	3.20	0.00	90	1.00	0.000	1.00	0.02	0.54	0.03
NFC												
NFC Antenna	0.0350	100.00%	13.5600	0.00	0.00	90	1.00	0.000	0.98	0.04	0.20	0.17
LTE												
Band 2												
AN000304A01	0.2520	100.00%	1850.0000	2.15	0.00	90	1.00	0.004	1.00	0.41	0.45	0.91
AN000304A01	0.2520	100.00%	1880.0000	2.15	0.00	90	1.00	0.004	1.00	0.41	0.45	0.90
AN000304A01	0.2520	100.00%	1910.0000	2.15	0.00	90	1.00	0.004	1.00	0.41	0.46	0.89
Band 4												
AN000304A01	0.2520	100.00%	1710.0000	1.02	0.00	90	1.00	0.003	1.00	0.31	0.42	0.74
AN000304A01	0.2520	100.00%	1732.0000	1.02	0.00	90	1.00	0.003	1.00	0.31	0.43	0.73
AN000304A01	0.2520	100.00%	1755.0000	1.02	0.00	90	1.00	0.003	1.00	0.31	0.43	0.73
Band 5												
AN000304A01	0.2520	100.00%	824.0000	-2.34	0.00	90	1.00	0.001	0.55	0.26	0.26	0.56
AN000304A01	0.2520	100.00%	836.5000	-2.34	0.00	90	1.00	0.001	0.56	0.26	0.26	0.56
AN000304A01	0.2520	100.00%	849.0000	-2.34	0.00	90	1.00	0.001	0.57	0.26	0.26	0.55
Band 12												
AN000304A01	0.2520	100.00%	699.0000	-3.18	0.00	90	1.00	0.001	0.47	0.26	0.23	0.52
AN000304A01	0.2520	100.00%	707.5000	-3.18	0.00	90	1.00	0.001	0.47	0.25	0.23	0.51
AN000304A01	0.2520	100.00%	716.0000	-3.18	0.00	90	1.00	0.001	0.48	0.25	0.23	0.51

Table 6 (Continued)

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
Band 13												
AN000304A01	0.2520	100.00%	777.0000	-3.00	0.00	90	1.00	0.001	0.52	0.24	0.25	0.50
AN000304A01	0.2520	100.00%	782.0000	-3.00	0.00	90	1.00	0.001	0.52	0.24	0.25	0.50
AN000304A01	0.2520	100.00%	787.0000	-3.00	0.00	90	1.00	0.001	0.52	0.24	0.25	0.50
Band 14												
AN000304A01	0.2520	100.00%	788.0000	-3.52	0.00	90	1.00	0.001	0.53	0.21	0.25	0.44
AN000304A01	0.2520	100.00%	793.0000	-3.52	0.00	90	1.00	0.001	0.53	0.21	0.25	0.44
AN000304A01	0.2520	100.00%	798.0000	-3.52	0.00	90	1.00	0.001	0.53	0.21	0.25	0.44
Band 17												
AN000304A01	0.2520	100.00%	704.0000	-3.65	0.00	90	1.00	0.001	0.47	0.23	0.23	0.46
AN000304A01	0.2520	100.00%	710.0000	-3.65	0.00	90	1.00	0.001	0.47	0.23	0.23	0.46
AN000304A01	0.2520	100.00%	716.0000	-3.65	0.00	90	1.00	0.001	0.48	0.22	0.23	0.46
Wifi 2.4GHz												
802.11b												
AN000304A03	0.2000	99.20%	2412.0000	3.10	0.00	90	1.00	0.004	1.00	0.40	0.54	0.74
AN000304A03	0.2000	99.20%	2437.0000	3.10	0.00	90	1.00	0.004	1.00	0.40	0.54	0.74
AN000304A03	0.2000	99.20%	2462.0000	3.20	0.00	90	1.00	0.004	1.00	0.41	0.54	0.75
802.11g												
AN000304A03	0.0450	94.90%	2412.0000	3.10	0.00	90	1.00	0.001	1.00	0.09	0.54	0.16
AN000304A03	0.1580	94.90%	2437.0000	3.10	0.00	90	1.00	0.003	1.00	0.30	0.54	0.56
AN000304A03	0.1580	94.90%	2462.0000	3.20	0.00	90	1.00	0.003	1.00	0.31	0.54	0.57
802.11n (20MHz)												
AN000304A03	0.0450	94.36%	2412.0000	3.10	0.00	90	1.00	0.001	1.00	0.09	0.54	0.16
AN000304A03	0.1580	94.36%	2437.0000	3.10	0.00	90	1.00	0.003	1.00	0.30	0.54	0.55
AN000304A03	0.1580	94.36%	2462.0000	3.20	0.00	90	1.00	0.003	1.00	0.31	0.54	0.56
802.11n (40MHz)												
AN000304A03	0.1580	89.08%	2437.0000	3.10	0.00	90	1.00	0.003	1.00	0.28	0.54	0.52
Wifi 5GHz												
UNII-1												
802.11a												
AN000304A03	0.1580	96.30%	5180.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.90	0.31
AN000304A03	0.1580	96.30%	5200.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.91	0.31
AN000304A03	0.1580	96.30%	5240.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.91	0.31

Table 6 (Continued)

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
802.11n (20MHz)												
AN000304A03	0.1580	95.59%	5180.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.90	0.31
AN000304A03	0.1580	95.59%	5200.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.91	0.31
AN000304A03	0.1580	95.59%	5240.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.91	0.31
802.11n (40MHz)												
AN000304A03	0.1580	90.94%	5190.0000	2.80	0.00	90	1.00	0.003	1.00	0.27	0.91	0.30
AN000304A03	0.1580	90.94%	5230.0000	2.80	0.00	90	1.00	0.003	1.00	0.27	0.91	0.30
802.11ac (20MHz)												
AN000304A03	0.1580	95.59%	5180.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.90	0.31
AN000304A03	0.1580	95.59%	5200.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.91	0.31
AN000304A03	0.1580	95.59%	5240.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.91	0.31
802.11ac (40MHz)												
AN000304A03	0.1580	90.94%	5190.0000	2.80	0.00	90	1.00	0.003	1.00	0.27	0.91	0.30
AN000304A03	0.1580	90.94%	5230.0000	2.80	0.00	90	1.00	0.003	1.00	0.27	0.91	0.30
802.11ac (80MHz)												
AN000304A03	0.1260	80.27%	5210.0000	2.80	0.00	90	1.00	0.002	1.00	0.19	0.91	0.21
UNII-2A												
802.11a												
AN000304A03	0.1580	96.30%	5260.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.91	0.31
AN000304A03	0.1580	96.30%	5280.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.92	0.31
AN000304A03	0.1580	96.30%	5320.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.92	0.31
802.11n (20MHz)												
AN000304A03	0.1580	95.59%	5260.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.91	0.31
AN000304A03	0.1580	95.59%	5280.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.92	0.31
AN000304A03	0.1580	95.59%	5320.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.92	0.31
802.11n (40MHz)												
AN000304A03	0.1580	90.94%	5270.0000	2.80	0.00	90	1.00	0.003	1.00	0.27	0.92	0.29
AN000304A03	0.1580	90.94%	5310.0000	2.80	0.00	90	1.00	0.003	1.00	0.27	0.92	0.29
802.11ac (20MHz)												
AN000304A03	0.1580	95.59%	5260.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.91	0.31
AN000304A03	0.1580	95.59%	5280.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.92	0.31
AN000304A03	0.1580	95.59%	5320.0000	2.80	0.00	90	1.00	0.003	1.00	0.28	0.92	0.31

Table 6 (Continued)

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
802.11ac (40MHz)												
AN000304A03	0.1580	90.94%	5270.0000	2.80	0.00	90	1.00	0.003	1.00	0.27	0.92	0.29
AN000304A03	0.1580	90.94%	5310.0000	2.80	0.00	90	1.00	0.003	1.00	0.27	0.92	0.29
802.11ac (80MHz)												
AN000304A03	0.1260	80.27%	5290.0000	2.80	0.00	90	1.00	0.002	1.00	0.19	0.92	0.21
UNII-2C												
802.11a												
AN000304A03	0.1580	96.30%	5500.0000	4.00	0.00	90	1.00	0.004	1.00	0.38	0.94	0.40
AN000304A03	0.1580	96.30%	5600.0000	4.00	0.00	90	1.00	0.004	1.00	0.38	0.95	0.39
AN000304A03	0.1580	96.30%	5720.0000	4.00	0.00	90	1.00	0.004	1.00	0.38	0.97	0.39
802.11n (20MHz)												
AN000304A03	0.1580	95.59%	5500.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.94	0.40
AN000304A03	0.1580	95.59%	5600.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.95	0.39
AN000304A03	0.1580	95.59%	5720.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.97	0.38
802.11n (40MHz)												
AN000304A03	0.1580	90.94%	5510.0000	4.00	0.00	90	1.00	0.004	1.00	0.35	0.94	0.38
AN000304A03	0.1580	90.94%	5590.0000	4.00	0.00	90	1.00	0.004	1.00	0.35	0.95	0.37
AN000304A03	0.1580	90.94%	5670.0000	4.00	0.00	90	1.00	0.004	1.00	0.35	0.96	0.37
802.11ac (20MHz)												
AN000304A03	0.1580	95.59%	5500.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.94	0.40
AN000304A03	0.1580	95.59%	5600.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.95	0.39
AN000304A03	0.1580	95.59%	5720.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.97	0.38
802.11ac (40MHz)												
AN000304A03	0.1580	90.94%	5510.0000	4.00	0.00	90	1.00	0.004	1.00	0.35	0.94	0.38
AN000304A03	0.1580	90.94%	5590.0000	4.00	0.00	90	1.00	0.004	1.00	0.35	0.95	0.37
AN000304A03	0.1580	90.94%	5670.0000	4.00	0.00	90	1.00	0.004	1.00	0.35	0.96	0.37
802.11ac (80MHz)												
AN000304A03	0.1260	80.27%	5530.0000	4.00	0.00	90	1.00	0.002	1.00	0.25	0.95	0.26
AN000304A03	0.1260	80.27%	5610.0000	4.00	0.00	90	1.00	0.002	1.00	0.25	0.96	0.26
UNII-3												
802.11a												
AN000304A03	0.1580	96.30%	5745.0000	4.00	0.00	90	1.00	0.004	1.00	0.38	0.97	0.39
AN000304A03	0.1580	96.30%	5785.0000	4.00	0.00	90	1.00	0.004	1.00	0.38	0.98	0.38
AN000304A03	0.1580	96.30%	5825.0000	4.00	0.00	90	1.00	0.004	1.00	0.38	0.98	0.38

Table 6 (Continued)

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
802.11n (20MHz)												
AN000304A03	0.1580	95.59%	5745.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.97	0.38
AN000304A03	0.1580	95.59%	5785.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.98	0.38
AN000304A03	0.1580	95.59%	5825.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.98	0.38
802.11n (40MHz)												
AN000304A03	0.1580	90.94%	5755.0000	4.00	0.00	90	1.00	0.004	1.00	0.35	0.97	0.36
AN000304A03	0.1580	90.94%	5795.0000	4.00	0.00	90	1.00	0.004	1.00	0.35	0.98	0.36
802.11ac (20MHz)												
AN000304A03	0.1580	95.59%	5745.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.97	0.38
AN000304A03	0.1580	95.59%	5785.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.98	0.38
AN000304A03	0.1580	95.59%	5825.0000	4.00	0.00	90	1.00	0.004	1.00	0.37	0.98	0.38
802.11ac (40MHz)												
AN000304A03	0.1580	90.94%	5755.0000	4.00	0.00	90	1.00	0.004	1.00	0.35	0.97	0.36
AN000304A03	0.1580	90.94%	5795.0000	4.00	0.00	90	1.00	0.004	1.00	0.35	0.98	0.36
802.11ac (80MHz)												
AN000304A03	0.1260	80.27%	5755.0000	4.00	0.00	90	1.00	0.002	1.00	0.25	0.97	0.26

9.0 Simultaneous Transmission

Per KDB 447498, 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 evaluation here considers LMR, BT, LTE, Wifi 2.4GHz and Wifi 5GHz transmitter are transmitting simultaneously. The sum of MPE percentage to the limit is calculated as follows:

Table 7: FCC, US

Simultaneous Transmission Scenario	Highest % to FCC limit						Sum of MPE percentage to the FCC limit
	LMR	BT	NFC	LTE	Wifi 2.4GHz	Wifi 5GHz	
	53.60	0.02	0.04	0.41	0.41	0.38	
LMR+BT	x	x					53.62
LMR+LTE	x			x			54.01
LMR+Wifi 2.4GHz	x				x		54.01
LMR+Wifi 5GHz	x					x	53.98

Table 8: ISED, Canada

Simultaneous Transmission Scenario	Highest % to ISED limit						Sum of MPE percentage to the ISED limit
	LMR	BT	NFC	LTE	Wifi 2.4GHz	Wifi 5GHz	
	92.41	0.03	0.17	0.91	0.75	0.40	
LMR+BT	x	x					91.44
LMR+LTE	x			x			93.32
LMR+Wifi 2.4GHz	x				x		92.16
LMR+Wifi 5GHz	x					x	91.81

10.0 Conclusion

The MPE assessment presented in this report concludes that product family APX Next and APX Next XE with APX Next vehicular adapter part number PMPN5044A, when transmitting at a minimum separation distance of 90 cm from the antenna, are compliant to FCC and ISED Canada General Population /Uncontrolled RF exposure limits.