MOTOROLA SOLUTIONS

MS ISO/IEC 17025 TESTING SAMM No. 0826

ACCREDITED CERTIFICATE 2518.05

DECLARATION OF COMPLIANCE SAR ASSESSMENT PCII Report Part 1 of 2

Motorola Solutions Inc.
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Date of Report: 09/18/2020
Report Revision: A

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Report Author:	Ch'ng Jian Sheng (EME Engineer)
Date/s Tested:	08/04/2020 - 08/07/2020, 08/10/2020 - 08/13/2020, 08/16/2020 - 08/20/2020, 08/23/2020 - 08/26/2020, 09/03/2020, 09/17/2020 - 09/18/2020
Manufacturer:	Motorola Solutions Inc.
DUT Description:	Handheld Portable – APX NEXT XE ALL BAND MODEL 4.5, GRN
Test TX mode(s):	FM; LTE; WLAN
Max. Power output:	Refer to Table 3
Nominal Power:	Refer to Table 3
Tx Frequency Bands:	Refer to Table 3
Signaling type:	FM, TDMA, SC-FDMA, FHSS, DSSS, OFDM and NFC
Model(s) Tested:	H55TGT9PW8AN (FCC), NUW2100 (ISED)
Model(s) Certified:	H55TGT9PW8AN (FCC), NUW2100 (ISED), H55TGT9PW8AN (FCC), NUW2101 (ISED)
Serial Number(s):	437TWK4434, 437TWK4425, 437TWK4368, 437TWK4408
Classification:	Occupational/Controlled
Applicant Name:	Motorola Solutions Inc.
Applicant Address:	8000 West Sunrise Boulevard, Fort Lauderdale, Florida 33322
FCC ID:	AZ489FT7119; LMR 150.8-173.4 MHz, 406.125-512 MHz, 769-775 MHz, 799-824 MHz, 851-869 MHz; LTE; WLAN 2.4 GHz; WLAN 5GHz, Bluetooth, NFC This report contains results that are immaterial for FCC equipment approval, which are clearly identified.
IC:	109U-89FT7119; LMR 138-173.4 MHz, 406.125-430 MHz, 450-470 MHz, 769-775 MHz, 799-824 MHz, 851-869 MHz; LTE; WLAN 2.4 GH; WLAN 5GHz, Bluetooth, NFC This report contains results that are immaterial for ISED equipment approval, which are clearly identified.
ISED Test Site registration:	24843
FCC Test Firm Registration Number:	823256

The test results clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of 8 W/kg averaged over 1 gram per the requirements of FCC 47 CFR § 2.1093 and RSS-102 (Issue 5).

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. This reporting format is consistent with the suggested guidelines of the TIA TSB-150 December 2004. The results and statements contained in this report pertain only to the device(s) evaluated.

Tiong Nguk Ing Digitally signed by Tiong Nguk Ing Date: 2020.09.18 16:40:17 +08'00'

Tiong Nguk Ing
Deputy Technical Manager (Approved Signatory)
Approval Date: 9/18/2020

Part 1 of 2

APPENDICES

Part 2 of 2

APPENDICES

Report Revision History

Date	Revision	Comments
09/18/2020	A	Initial release

1.0 Introduction

This report details the utilization, test setup, test equipment, and test results of the Specific Absorption Rate (SAR) measurements performed at the Motorola Solutions Inc. EME Test Laboratory for handheld portable model number H55TGT9PW8AN (FCC); NUW2100 (ISED). This device is classified as Occupational/Controlled.

The information herein is to show evidence of Class II Permissive Change compliance for adding model H55TGT9PW8AN (FCC); NUW2100 (ISED) into existing APX Next family (FCC ID: AZ489FT7119). This device is electrically and software identical to APX Next model except for mechanical difference where the radio has a XE top control. New body worn accessories are introduced to this device (refer to Table 6).

2.0 FCC SAR Summary

Table 1

Equipment Class	Frequency band (MHz)	Max Calc at Body (W/kg)	Max Calc at Face (W/kg)
		1g-SAR	1g-SAR
TNF	150.8-173.4	0.58	0.45
	406.125-470	6.18	4.86
	450-512	7.51[1]	4.58[1]
	769-775	3.89	1.93[2]
	799-824	6.46[3]	2.05
	851-869	6.37[4]	1.23
PCF	LTE B2	0.082	0.322
	LTE B4	0.079	0.267
	LTE B5	0.046	0.105
	LTE B12	0.050	0.097
	LTE B13	0.086	0.097
	LTE B14	0.099	0.083
	LTE B17	0.031	0.111
DTS	2.4 GHz	0.111[5]	0.119
NII	5.0 GHz	0.059	0.767
Highest Simultaneous Transmission SAR	Sum of SAR (W/kg)	7.62[6]	5.63[6]

Notes:

[1] New highest SAR value at 450-512 MHz for body-worn accessory & face is 7.51 & 4.58 W/kg compared to previous on file SAR value of 6.08 & 4.48 W/kg.

[2] New highest SAR value at 769-775 MHz for face is 1.93 W/kg compared to previous on file SAR value of 1.72 W/kg.

[3] New highest SAR value at 799-824 MHz for body-worn accessory is 6.46 W/kg compared to previous on file SAR value of 5.41 W/kg.

[4] New highest SAR value at 851-869 MHz for body-worn accessory is 6.37 W/kg compared to previous on file SAR value of 4.53 W/kg.

[5] New highest SAR value at 2.4 GHz for body-worn accessory is 0.11 W/kg compared to previous on file SAR value of 0.05 W/kg.

[6] New highest simultaneous transmission SAR value for body-worn accessory & face is 7.62 & 5.63 W/kg compared to previous on file SAR value of 6.60 W/kg & 5.58 W/kg.

3.0 Abbreviations / Definitions

BT: Bluetooth
CNR: Calibration Not Required
CW: Continuous Wave
DSS: Direct Spread Spectrum
DTS: Digital Transmission System
DUT: Device Under Test
DXX: Part 15 Low Power Communication Device Transmitter
EME: Electromagnetic Energy
FHSS: Frequency Hopping Spread Spectrum
FM: Frequency Modulation
LMR: Land Mobile Radio
LTE: Long Term Evolution
NA: Not Applicable
OFDM: Orthogonal Frequency Division Multiplexing
PCF: PCS Licensed Transmitter Held to Face
PSM: Public Safety Microphone
PTT: Push to Talk
QPSK: Quadrature Pulse Shift Key
RB: Resource Blocks
RSM: Remote Speaker Microphone
SAR: Specific Absorption Rate
TDMA: Time Division Multiple Access
TNF: Licensed Non-Broadcast Transmitter Held to Face
16QAM: 16 State Quadrature Amplitude Modulation

Audio accessories: These accessories allow communication while the DUT is worn on the body.

Body worn accessories: These accessories allow the DUT to be worn on the body of the user.

Maximum Power: Defined as the upper limit of the production line final test station.

4.0 Referenced Standards and Guidelines

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

- IEC62209-1 (2016) Procedure to determine the specific absorption rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)
- Federal Communications Commission, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields", OET Bulletin 65, FCC, Washington, D.C.: 1997.
- IEEE 1528 (2013), Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
- American National Standards Institute (ANSI) / Institute of Electrical and Electronics Engineers (IEEE) C95. 1-1992
- Institute of Electrical and Electronics Engineers (IEEE) C95.1-2005
- International Commission on Non-Ionizing Radiation Protection (ICNIRP) 1998
- 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 5) – Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)
- Australian Communications Authority Radio communications (Electromagnetic Radiation - Human Exposure) Standard (2014)
- ANATEL, Brazil Regulatory Authority, Resolution No. 303 of July 2, 2002 "Regulation of the limitation of exposure to electrical, magnetic, and electromagnetic fields in the radio frequency range between 9 kHz and 300 GHz." and "Attachment to resolution # 303 from July 2, 2002"
- IEC62209-2 Edition 1.0 2010-03, Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices – Human models, instrumentation, and procedures – Part 2: Procedure to determine the specific absorption rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz).
- FCC KDB – 643646 D01 SAR Test for PTT Radios v01r03
- FCC KDB – 865664 D01 SAR Measurement 100 MHz to 6 GHz v01r04
- FCC KDB – 865664 D02 RF Exposure Reporting v01r02
- FCC KDB – 447498 D01 General RF Exposure Guidance v06
- FCC KDB – 941225 D05 SAR for LTE Devices v02r05
- FCC KDB – 941225 D01 3G SAR Procedures v03r01
- FCC KDB – 248227 D01 802.11 Wi-Fi SAR v02r02
- FCC KDB - 648474 D04 Handset SAR v01r03

5.0 SAR Limits

Table 2

EXPOSURE LIMITS	SAR (W/kg)	
	(General Population / Uncontrolled Exposure Environment)	(Occupational / Controlled Exposure Environment)
Spatial Average - ANSI - (averaged over the whole body)	0.08	0.4
Spatial Peak - ANSI - (averaged over any 1-g of tissue)	1.6	8.0
Spatial Peak – ICNIRP/ANSI - (hands/wrists/feet/ankles averaged over 10-g)	4.0	20.0
Spatial Peak - ICNIRP - (Head and Trunk 10-g)	2.0	10.0

6.0 Description of Device Under Test (DUT)

This portable device operates in the LMR bands using either frequency modulation (FM) with 100% transmit duty cycle or TDMA signals with maximum of 50% transmit duty cycle. For conservative assessment, FM signal was tested. It also contains LTE and WLAN technologies for data application, Bluetooth for short range wireless devices.

The LMR bands in this device operate in a half duplex system. A half duplex system only allows the user to transmit or receive. This device cannot transmit and receive simultaneously. The user must stop transmitting in order to receive a signal or listen for a response, regardless of PTT button or use of voice activated audio accessories. This type of operation, along with the RF safety booklet, which instructs the user to transmit no more than 50% of the time, justifies the use of 50% duty factor for this device.

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 wireless link audio accessories. The maximum actual transmission duty cycle is imposed by the Bluetooth standard. The maximum duty cycle for BT is 77.26%.

The intended operating positions are “at the face” with the DUT at least 2.5 cm from the mouth, and “at the body” by means of the offered body worn accessories. Body worn audio and PTT operation is accomplished by means of optional remote accessories that are connected to the radio. Operation at the body without an audio accessory attached is possible by means of BT accessories.

Table 3 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 3

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 Optional Accessories and Test Criteria

This device is offered with optional accessories. The following sections identify the test criteria and details for each accessory category applicable for this PCII filing only. Detail listing of all approved offered accessories available in the original filing report.

7.1 Antennas

There are optional removable antennas and internal LTE, WLAN/BT antennas offered for this product. The Table below lists their descriptions.

Table 4

Antenna No.	Antenna Models	Description	Selected for test	Tested
1	KT000026A01	All Band Antenna, ½ wave, -6 dBi (VHF), -1.5 dBi (UHF), -0.9 dBi (7/800MHz)	Yes	Yes
2	AN000297A01	All Band Antenna, ½ wave, -6.5 dBi (VHF), -0.5 dBi (UHF), -1 dBi (7/800MHz)	Yes	Yes
3	PMAD4088B	VHF Wideband Antenna, 136-174 MHz, 5/8 wave, -8.14 dBd	Yes	Yes
4	PMAD4094A	VHF Stubby Antenna, 147-160 MHz, ¼wave, -12.14dBd	Yes	Yes
5	PMAD4095A	VHF Stubby Antenna, 160-174MHz, ¼ wave, -12.14d Bd	Yes	Yes
6	PMAD4093A	VHF Stubby Antenna, 136-147MHz, ¼ wave, -12.14 dBd	Yes	Yes
7	PMAE4100A	UHF Stubby Antenna, 380-470MHz, ¼ wave, 0 dBi	Yes	Yes
8	PMAE4022B	UHF Whip Antenna, 380-480MHz, , ¼ wave, 0 dBi	Yes	Yes
9	PMAE4049A	UHF Whip Antenna, 450-527 MHz, , ¼ wave, 1.9 dBi	Yes	Yes
10	PMAE4102A	UHF Stubby Antenna, 450-527MHz, ¼ wave, 1.7 dBi	Yes	Yes
11	AN000296A01	7/800 Stubby Antenna, 760-870MHz, ¼ wave, -0.8 dBi	Yes	Yes
12	NAF5080A	7/800 Whip Antenna, 7/800MHz, ¼ wave, 0 dBi	Yes	Yes
13	PMAF4022A	7/800 Stubby Antenna, 7/800 MHz, ¼ wave, 0 dBi	Yes	Yes
14	PMAF4002A*	7/800 PSM Antenna, 7/800MHz, ¼ wave, 0 dBi	Yes	Yes
15	PMAE4065A*	UHF GPS PSM Antenna, 380-520 MHz, ¼ wave, -2 dBd	Yes	Yes
16	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)	Yes	Yes
17	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)	Yes	Yes

Note - * For PSM only

7.2 Battery

There are the batteries applicable for this PCII filing. The Table below lists their descriptions.

Table 5

Battery No.	Battery Models	Description	Selected for test	Tested
1	NNTN9087A	Standard Battery, IMPRES GEN2, Li-ion, IP68, 3800mAh Typical	Yes	Yes
2	NNTN9089A	High Capacity Battery, IMPRES GEN2, Li-ion, 5650mAh Typical	Yes	Yes
3	NNTN9216A	Standard Battery Pack, IMPRES GEN2, Li-ion, IP68, 4400mAh Typical	Yes	Yes

7.3 Body worn Accessories

These are the body worn applicable for this PCII filing. The Table below lists their descriptions. Appendix G illustrates the tested body worn accessories.

Table 6

Body worn No.	Body worn Models	Description	Selected for test	Tested	Comments
1	NTN8266B	Belt Clip Kit	Yes	Yes	Tested with PMLN8208A
2	PMLN7965B	3” Belt Clip	Yes	Yes	Tested with PMLN8208A
3	PMLN8208A*	XE Classic Holster	Yes	Yes	Tested with NTN8266B, PMLN7965B, RLN6486A & RLN6488A
4	PMLN8209A*	XE Boston Leather Holster	Yes	Yes	Tested with RLN6486A & RLN6488A; Only compatible with standard batteries
5	RLN6486A*	Boston Leather Firemans Radio Strap	Yes	Yes	Tested with PMLN8208A, PMLN8209A & RLN6488A
6	RLN6487A*	Boston Leather Firemans Radio Strap - XL	No	No	By similarity to RLN6486A
7	RLN6488A*	Boston Leather Anti-Swap Strap for Boston Leather Firemans Radio Strap	Yes	Yes	Tested with PMLN8208A, PMLN8209A & RLN6486A
8	AY000223A01*	Boston Leather Firemans Radio Strap with button back holder	No	No	By similarity to RLN6486A
9	AY000229A01*	Boston Leather Firemans Radio Strap with button back holder - XL	No	No	By similarity to RLN6486A
10	4205823V08	Belt clip for PSM	Yes	Yes	Tested with PSM only

*New body worn introduced for this model

7.4 Audio Accessories

These are the audio accessories applicable for this PCII filing. The Table below lists their descriptions.

Table 7

Audio No.	Audio Acc. Models	Description	Selected for test	Tested	Comments
1	PMMN4123A	Audio Accessory-Remote Speaker Microphone, MC550	Yes	Yes	
2	NMN6274B	Audio Accessory-Remote Speaker Microphone, IMPRES XP RSM For APX With Dual Microphone Noise Suppression, 3.5mm THRD Jack	Yes	Yes	
3	RLN5312B	Audio Accessory adapter With PTT	Yes	Yes	Test with BDN6783B
4	BDN6783B	CMRT Earpiece With Microphone and PTT - Black	Yes	Yes	Test with RLN5312B

8.0 Description of Test System

8.1 Descriptions of Robotics/Probes/Readout Electronics

Table 8

Dosimetric System type	System version	DAE type	Probe Type
Schmid & Partner Engineering AG SPEAG DASY5	52.10.2.1495	DAE4	EX3DV4 (E-Field)

The DASY5™ system is operated per the instructions in the DASY5™ Users Manual. The complete manual is available directly from SPEAG™. All measurement equipment used to assess SAR compliance was calibrated according to ISO/IEC 17025 A2LA guidelines. Section 9.0 presents additional test equipment information. Appendices B and C present the applicable calibration certificates. The E-field probe first scans a coarse grid over a large area inside the phantom in order to locate the interpolated maximum SAR distribution. After the coarse scan measurement, the probe is automatically moved to a position at the interpolated maximum. The subsequent scan can directly use this position as reference for the cube evaluations.

8.2 Description of Phantom(s)

Table 9

Phantom Type	Phantom(s) Used	Material Parameters	Phantom Dimensions LxWxD (mm)	Material Thickness (mm)	Support Structure Material	Loss Tangent (wood)
Triple Flat	NA	200MHz -6GHz; Er = 3-5, Loss Tangent = ≤0.05	280x175x175	2mm +/- 0.2mm	Wood	< 0.05
SAM	NA	300MHz -6GHz; Er = < 5, Loss Tangent = ≤0.05	Human Model			
Oval Flat	√	300MHz -6GHz; Er = 4+/- 1, Loss Tangent = ≤0.05	600x400x190			

8.3 Description of Simulated Tissue

The sugar based simulate tissue is produced by placing the correct measured amount of De-ionized water into a large container. Each of the dried ingredients are weighed and added to the water carefully to avoid clumping. If the solution has a high sugar concentration the water is pre-heated to aid in dissolving the ingredients. For Diacetin and similar type simulates, sugar and HEC ingredients are not needed. The solution is mixed thoroughly, covered, and allowed to sit overnight prior to use.

The simulated tissue mixture was mixed based on the Simulated Tissue Composition indicated in Table 10. During the daily testing of this product, the applicable mixture was used to measure the Di-electric parameters at each of the tested frequencies to verify that the Di-electric parameters were within the tolerance of the tissue specifications.

Simulated Tissue Composition (percent by mass)

Table 10

	150MHz		450MHz		750MHz		835MHz	
Ingredients	**Head**	**Body**	**Head**	**Body**	**Head**	**Body**	**Head**	**Body**
Sugar	55.4	49.7	56.0	46.5	57.0	46	57.0	44.9
Diacetin	0	0	0	0	0	0	NA	NA
De ionized - Water	38.35	46.2	39.1	50.53	40.12	51.8	40.45	53.06
Salt	5.15	3.00	3.8	1.87	1.78	1.1	1.45	0.94
HEC	1	1	1	1	1	1	1	1
Bact.	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1

Table 10 Continued

	1800MHz		2450MHz		5GHz (1)	
Ingredients	**Head**	**Body**	**Head**	**Body**	**Head**	**Body**
Sugar	NA	NA	NA	NA	NA	NA
Diacetin	51.5	35.0	51.0	34.5	NA	NA
De ionized - Water	47.82	64.35	48.75	65.20	NA	NA
Salt	0.58	0.55	0.15	0.20	NA	NA
HEC	NA	NA	NA	NA	NA	NA
Bact.	0.1	0.1	0.1	0.1	NA	NA

Note: (1) SPEAG provides Motorola proprietary stimulant ingredients for the 5GHz band.

9.0 Additional Test Equipment

The Table below lists additional test equipment used during the SAR assessment.

Table 11

Equipment Type	Model Number	Serial Number	Calibration Date	Calibration Due Date
SPEAG Probe	EX3DV4	7519	05/29/2020	05/29/2021
SPEAG Probe	EX3DV4	7533	11/06/2019	11/06/2020
SPEAG DAE	DAE4	1294	05/27/2020	05/27/2021
SPEAG DAE	DAE4	684	05/26/2020	05/26/2021
Dielectric Assessment Kit	DAK-12	1069	02/25/2020	02/25/2021
Dielectric Assessment Kit	DAK-3.5	1156	02/25/2020	02/25/2021
Network Analyzer	E5071B	MY42403218	9/13/2019	9/13/2020
Amplifier	50W 1000A	14715	CNR	CNR
Amplifier	5S1G4	313326	CNR	CNR
Amplifier	5S4G11	312663	CNR	CNR
Bi-Directional Coupler	3020A	40295	09/12/2019	09/12/2020
Bi-Directional Coupler	3022	81640	09/22/2019	09/22/2020
Bi-Directional Coupler	3020A	41931	07/09/2020	07/09/2021
Power Meter	E4416A	MY50001037	08/30/2019	08/30/2021
Power Meter	E4418B	MY45107917	07/01/2019	07/01/2021
Power Meter	E4416A	GB41293747	11/19/2018	11/19/2020
Power Meter	E4417A	GB41292245	12/12/2019	12/12/2020
Power Sensor	E9301B	MY50280001	04/22/2020	04/22/2021
Power Sensor	E9301B	MY55210006	04/22/2020	04/22/2021
Power Sensor	E9301B	MY50180003	07/04/2020	07/04/2021
Power Sensor	E9301B	MY41495594	5/18/2020	5/18/2021
WiFi Power Sensor	NRP-Z11	121252	3/11/2019	3/11/2021
Vector Signal Generator	E4438C	MY47272101	10/29/2019	10/29/2021
Vector Signal Generator	E9301B	MY55210006	04/22/2020	04/22/2021
Temperature & Humidity Logger	DSB	16326820	11/25/2019	11/25/2020
Temperature Probe	80PK-22	5032017	12/24/2019	12/24/2020
Thermometer	HH202A	35881	12/24/2019	12/24/2020
SPEAG Dipole	CLA150	4016	10/10/2018	10/10/2021
SPEAG Dipole	D450V3	1054	03/11/2019	03/11/2022
SPEAG Dipole	D450V3	1053	10/19/2018	10/19/2021
SPEAG Dipole	D750V3	1142	11/20/2019	11/20/2022
SPEAG Dipole	D750V3	1098	10/15/2018	10/15/2021
SPEAG Dipole	D835V2	4d029	02/24/2020	02/24/2023
SPEAG Dipole	D1800V2	278	10/15/2018	10/15/2021
SPEAG Dipole	D2450V3	703	10/16/2018	10/16/2021
SPEAG Dipole	D2450V3	782	02/20/2020	02/20/2023
SPEAG Dipole	D5GHzV2	1026	10/18/2018	10/18/2021
SPEAG Dipole	D5GHzV2	1027	01/31/2020	01/30/2023
Wideband radio Communication Tester	CMW500	153170	05/03/2019	05/03/2021

10.0 SAR Measurement System Validation and Verification

DASY output files of the probe/dipole calibration certificates and system verification test results are included in appendices B, C & D respectively.

10.1 System Validation

The SAR measurement system was validated according to procedures in KDB 865664. The validation status summary Table is below.

Table 12

Dates	Probe Calibration Point		Probe SN	Measured Tissue Parameters		Validation		
				σ	ϵ_r	Sensitivity	Linearity	Isotropy
CW								
07/15/2020	Head	150	7519	0.78	49.8	Pass	Pass	Pass
07/07/2020	Body			0.83	59.0	Pass	Pass	Pass
07/02/2020	Head	450		0.89	42.3	Pass	Pass	Pass
07/01/2020	Body			0.99	56.6	Pass	Pass	Pass
07/03/2020	Head	750		0.85	42.7	Pass	Pass	Pass
07/02/2020	Body			0.94	55.7	Pass	Pass	Pass
07/03/2020	Head	835		0.94	41.5	Pass	Pass	Pass
07/02/2020	Body			1.02	54.8	Pass	Pass	Pass
07/05/2020	Head	1800		1.35	40.5	Pass	Pass	Pass
07/06/2020	Body			1.48	51.7	Pass	Pass	Pass
07/14/2020	Head	2450		1.78	35.5	Pass	Pass	Pass
07/15/2020	Body			2.02	53.0	Pass	Pass	Pass
11/22/2019	Head	450	7533	0.86	42.8	Pass	Pass	Pass
11/22/2019	Body			0.95	58.4	Pass	Pass	Pass
11/20/2019	Head	750		0.86	42.5	Pass	Pass	Pass
12/11/2019	Body	835		1.01	53.2	Pass	Pass	Pass
12/09/2019	Body	2450		2.02	50.8	Pass	Pass	Pass
11/27/2019	Head	5250		4.33	33.8	Pass	Pass	Pass
11/29/2019	Body			5.31	44.5	Pass	Pass	Pass
11/28/2019	Head	5600		4.66	34.2	Pass	Pass	Pass
11/29/2019	Body			5.75	43.9	Pass	Pass	Pass
11/28/2019	Head	5750		4.84	33.9	Pass	Pass	Pass
11/29/2019	Body			5.94	43.7	Pass	Pass	Pass
LTE								
07/03/2020	Head	750 (1 RB)	7519	0.85	42.7	Pass	Pass	Pass
07/02/2020	Body			0.94	55.7	Pass	Pass	Pass
07/03/2020	Head	750 (50% RB)		0.85	42.7	Pass	Pass	Pass
07/02/2020	Body			0.94	55.7	Pass	Pass	Pass
09/02/2020	Head	835 (1 RB)		0.93	40.6	Pass	Pass	Pass
09/02/2020	Body	835 (50% RB)		1.01	52.5	Pass	Pass	Pass
07/05/2020	Head	1800 (1 RB)		1.35	40.5	Pass	Pass	Pass
07/06/2020	Body			1.48	51.7	Pass	Pass	Pass
07/05/2020	Head	1800 (50% RB)		1.35	40.5	Pass	Pass	Pass
07/06/2020	Body			1.48	51.7	Pass	Pass	Pass

Table 12 (continued)

Dates	Probe Calibration Point		Probe SN	Measured Tissue Parameters		Validation		
				σ	ϵ_r	Sensitivity	Linearity	Isotropy
802.11								
12/03/2019	Head	5250	7533	4.54	33.0	Pass	Pass	Pass
12/06/2019	Body			5.25	45.3	Pass	Pass	Pass
12/03/2019	Head	5600		4.90	32.5	Pass	Pass	Pass
12/09/2019	Body			5.85	44.7	Pass	Pass	Pass
12/03/2019	Head	5750		5.06	32.2	Pass	Pass	Pass
12/09/2019	Body			6.05	44.4	Pass	Pass	Pass

10.2 System Verification

System verification checks were conducted each day during the SAR assessment. The results are normalized to 1W. Appendix D includes DASY plots for each day during the SAR assessment. The Table below summarizes the daily system check results used for the SAR assessment.

Table 13

Probe Serial #	Tissue Type	Dipole Kit / Serial #	Ref SAR @ 1W (W/kg)	System Check Results Measured (W/kg)	System Check Test Results when normalized to 1W (W/kg)	Tested Date
7519	FCC Body	SPEAG CLA150 / 4016	3.95 +/- 10%	4.00	4.00	08/17/2020#
				3.91	3.91	08/18/2020
	IEEE/IEC Head		3.64 +/- 10%	3.72	3.72	08/18/2020
	FCC Body	SPEAG D450V3 / 1054	4.54 +/- 10%	1.20	4.80	08/12/2020
				1.11	4.44	08/13/2020#
				1.16	4.64	08/18/2020#
	IEEE/IEC Head		4.44 +/- 10%	1.11	4.44	08/16/2020
	FCC Body	SPEAG D750V3 / 1142	8.75 +/- 10%	2.19	8.76	08/05/2020#
				2.10	8.40	08/07/2020
	IEEE/IEC Head		8.52 +/- 10%	2.05	8.20	08/20/2020
				2.00	8.00	08/20/2020
	FCC Body	SPEAG D750V3 / 1098	8.63 +/- 10%	2.10	8.40	08/23/2020
	IEEE/IEC Head		8.23 +/- 10%	2.08	8.32	08/24/2020
	FCC Body	SPEAG D835V2 / 4d029	9.61 +/- 10%	2.44	9.76	08/09/2020
				2.32	9.28	08/10/2020
				2.54	10.16	08/11/2020
				2.40	9.60	08/19/2020
				2.37	9.48	09/03/2020
				2.21	8.84	09/17/2020#
	IEEE/IEC Head		9.70 +/- 10%	2.45	9.80	08/12/2020
				2.37	9.48	09/03/2020
	FCC Body	SPEAG D1800V2 / 278	39.60 +/- 10%	9.31	37.24	08/06/2020#
	IEEE/IEC Head		38.70 +/- 10%	9.90	39.60	08/07/2020
				9.96	39.84	08/25/2020
				8.78	35.12	08/25/2020
	FCC Body	SPEAG D2450V2 / 703	49.70 +/- 10%	11.60	46.40	08/04/2020#
	IEEE/IEC Head		52.90 +/- 10%	12.60	50.40	08/05/2020

Table 13 (continued)

Probe Serial #	Tissue Type	Dipole Kit / Serial #	Ref SAR @ 1W (W/kg)	System Check Results Measured (W/kg)	System Check Test Results when normalized to 1W (W/kg)	Tested Date
7533	FCC Body	SPEAG D450V3 / 1054	4.53 +/- 10%	1.10	4.40	08/24/2020
		SPEAG D450V3 / 1053	4.54 +/- 10%	1.16	4.64	08/26/2020
	IEEE/IEC Head		4.57 +/- 10%	1.12	4.48	08/24/2020
	IEEE/IEC Head	SPEAG D750V3 / 1098	8.23 +/- 10%	1.99	7.96	08/25/2020
	FCC Body	SPEAG D835V2 / 4d029	9.61 +/- 10%	2.37	9.48	08/24/2020#
				2.32	9.28	08/26/2020
	FCC Body	SPEAG D2450V2 / 782	51.90 +/- 10%	11.90	47.60	08/25/2020
	FCC Body	SPEAG D5GHzV2_ 5250MHz / 1026	74.50 +/- 10%	7.17	71.70	08/07/2020
				6.99	69.90	08/25/2020#
	IEEE/IEC Head	SPEAG D5GHzV2_ 5250MHz / 1027	80.60 +/- 10%	8.25	82.50	08/06/2020
	FCC Body	SPEAG D5GHzV2_ 5600MHz / 1026	77.70 +/- 10%	7.58	75.80	08/10/2020
				7.72	77.20	08/11/2020
	IEEE/IEC Head	SPEAG D5GHzV2_ 5600MHz / 1027	83.60 +/- 10%	8.46	84.60	08/06/2020
	FCC Body	SPEAG D5GHzV2_ 5750MHz / 1026	75.40 +/- 10%	7.35	73.50	08/11/2020
	IEEE/IEC Head	SPEAG D5GHzV2_ 5750MHz / 1027	79.70 +/- 10%	7.56	75.60	08/06/2020

Note: '#' indicates that system verification check covers next test day

10.3 Equivalent Tissue Test Results

Simulated tissue prepared for SAR measurements is measured daily and within 24 hours prior to actual SAR testing to verify that the tissue is within +/- 5% of target parameters at the center of the transmit band. This measurement is done using the applicable equipment indicated in section 9.0. The Table below summarizes the measured tissue parameters used for the SAR assessment.

Table 14

Frequency (MHz)	Tissue Type	Conductivity Target (S/m)	Dielectric Constant Target	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
150	FCC Body	0.80 (0.76-0.84)	61.9 (58.8-65.0)	0.78	60.7	08/17/2020#
				0.79	59.5	08/18/2020
	IEEE/IEC Head	0.76 (0.72-0.80)	52.3 (49.7-54.9)	0.73	51.0	08/18/2020
155	FCC Body	0.80 (0.76-0.84)	61.8 (58.7-64.9)	0.78	60.5	08/17/2020
				0.79	59.4	08/18/2020
	IEEE/IEC Head	0.76 (0.73-0.80)	52.1 (49.5-54.7)	0.74	50.8	08/18/2020
450	FCC Body	0.94 (0.89-0.99)	56.7 (53.9-59.5)	0.95	54.5	08/12/2020#
				0.95	54.9	08/13/2020#
				0.95	54.4	08/18/2020#
				0.94	54.3	08/24/2020
				0.92	54.4	08/26/2020
	IEEE/IEC Head	0.87 (0.83-0.91)	43.5 (41.3-45.7)	0.87	42.0	08/16/2020
				0.89	42.1	08/24/2020
460	FCC Body	0.94 (0.89-0.99)	56.7 (53.8-59.5)	0.96	54.2	08/18/2020#
				0.95	54.1	08/24/2020
	IEEE/IEC Head	0.87 (0.83-0.91)	43.4 (41.3-45.6)	0.90	41.9	08/24/2020
470	FCC Body	0.94 (0.89-0.99)	56.6 (53.8-59.5)	0.96	54.2	08/12/2020#
				0.96	54.6	08/13/2020#
				0.96	54.1	08/18/2020#
				0.96	54.0	08/24/2020
				0.94	54.1	08/26/2020
	IEEE/IEC Head	0.87 (0.83-0.91)	43.4 (41.2-45.6)	0.89	41.6	08/16/2020
				0.91	41.7	08/24/2020
481	FCC Body	0.94 (0.90-0.99)	56.6 (53.8-59.4)	0.97	54.5	08/13/2020#
497	FCC Body	0.94 (0.90-0.99)	56.5 (53.7-59.3)	0.99	53.7	08/18/2020#
	IEEE/IEC Head	0.87 (0.83-0.92)	43.2 (41.1-45.4)	0.92	41.1	08/16/2020
704	FCC Body	0.96 (0.91-1.01)	55.7 (52.9-58.5)	0.92	54.0	08/05/2020#
	IEEE/IEC Head	0.89 (0.84-0.93)	42.1 (40.0-44.3)	0.85	42.4	08/20/2020
709	FCC Body	0.96 (0.91-1.01)	55.7 (52.9-58.5)	0.93	53.9	08/23/2020
	IEEE/IEC Head	0.89 (0.84-0.93)	42.1 (40.0-44.2)	0.86	40.9	08/24/2020

Table 14 (continued)

Frequency (MHz)	Tissue Type	Conductivity Target (S/m)	Dielectric Constant Target	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
750	FCC Body	0.96 (0.92-1.01)	55.5 (52.8-58.3)	0.97	53.5	08/05/2020#
				0.93	55.3	08/07/2020
				0.97	53.6	08/23/2020
	IEEE/ IEC Head	0.89 (0.85-0.93)	41.9 (39.8-44.0)	0.85	41.7	08/20/2020
				0.89	41.7	08/20/2020
				0.90	40.3	08/24/2020
				0.90	40.0	08/25/2020
769	IEEE/ IEC Head	0.89 (0.85-0.94)	41.8 (39.7-43.9)	0.92	38.8	08/25/2020
772	IEEE/ IEC Head	0.89 (0.85-0.94)	41.8 (39.7-43.9)	0.92	39.7	08/25/2020
775	FCC Body	0.97 (0.92-1.01)	55.4 (52.7-58.2)	0.96	55.1	08/07/2020
	IEEE/IEC Head	0.89 (0.85-0.94)	41.8 (39.7-43.9)	0.88	42.3	08/12/2020
782	FCC Body	0.97 (0.92-1.01)	55.4 (52.6-58.2)	1.00	53.3	08/23/2020
	IEEE/IEC Head	0.89 (0.85-0.94)	41.7 (39.7-43.8)	0.93	39.9	08/24/2020
793	FCC Body	0.97 (0.92-1.02)	55.4 (52.6-58.1)	1.01	53.0	08/05/2020#
	IEEE/IEC Head	0.90 (0.85-0.94)	41.7 (39.6-43.8)	0.89	41.1	08/20/2020
799	FCC Body	0.97 (0.92-1.02)	55.3 (52.6-58.1)	0.98	53.2	08/24/2020#
809	FCC Body	0.90 (0.85-0.94)	41.6 (39.5-43.6)	0.98	54.1	08/09/2020
				0.98	53.7	08/10/2020
				0.97	53.8	08/26/2020
824	FCC Body	0.97 (0.92-1.02)	55.3 (52.5-58.1)	1.00	52.9	08/24/2020#
	IEEE/IEC Head	0.9 (0.85-0.94)	41.6 (39.5-43.6)	0.93	41.7	08/12/2020
835	FCC Body	0.97 (0.92-1.02)	55.2 (52.4-58.0)	1.00	53.8	08/09/2020
				1.01	53.5	08/10/2020
				1.01	53.1	08/11/2020
				1.02	52.7	08/19/2020
				1.02	52.8	08/24/2020#
				0.99	53.6	08/26/2020
				1.01	52.5	09/03/2020
				1.00	53.2	09/16/2020#
	IEEE/ IEC Head	0.90 (0.86-0.95)	41.5 (39.4-43.6)	0.94	41.5	08/12/2020
				0.93	40.6	09/03/2020
837	IEEE/ IEC Head	0.9 (0.86-0.95)	41.5 (39.4-43.6)	0.93	40.6	09/03/2020
844	FCC Body	0.98 (0.93-1.03)	55.2 (52.4-57.9)	1.02	52.5	09/03/2020

Table 14 (continued)

Frequency (MHz)	Tissue Type	Conductivity Target (S/m)	Dielectric Constant Target	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
851	FCC Body	0.99 (0.94-1.04)	55.2 (52.4-57.9)	1.02	53.3	08/10/2020
				1.03	53.0	08/11/2020
				1.03	52.5	08/19/2020#
				1.02	53.0	09/16/2020#
861	FCC Body	1.00 (0.95-1.05)	55.1 (52.4-57.9)	1.03	53.0	09/16/2020#
869	FCC Body	1.01 (0.96-1.06)	55.1 (52.3-57.9)	1.04	52.9	09/16/2020#
1745	FCC Body	1.49 (1.41-1.56)	53.4 (50.8-56.1)	1.45	51.5	08/06/2020#
	IEEE/IEC Head	1.37 (1.3-1.44)	40.1 (38.1-42.1)	1.39	38.3	08/06/2020#
1800	FCC Body	1.52 (1.44-1.6)	53.3 (50.6-56.0)	1.51	51.4	08/06/2020#
	IEEE/IEC Head	1.40 (1.33-1.47)	40.0 (38.0-42.0)	1.34	38.6	08/06/2020#
				1.46	38.9	08/25/2020
				1.34	38.3	08/25/2020
1860	IEEE/IEC Head	1.40 (1.33-1.47)	40.0 (38.0-42.0)	1.39	38.3	08/25/2020
1880	FCC Body	1.52 (1.44-1.60)	53.3 (50.6-56.0)	1.56	51.1	08/06/2020#
2412	FCC Body	1.91 (1.82-2.01)	52.8 (47.5-58.0)	1.99	48.1	08/25/2020
2437	FCC Body	1.94 (1.84-2.03)	52.7 (47.4-58.0)	2.03	48.0	08/04/2020#
2450	FCC Body	1.95 (1.85-2.05)	52.7 (47.4-58.0)	2.04	48.0	08/04/2020#
				2.04	48.0	08/25/2020
	IEEE/IEC Head	1.80 (1.71-1.89)	39.2 (35.3-43.1)	1.81	36.3	08/05/2020
5250	FCC Body	5.36 (4.82-5.89)	48.9 (44.1-53.8)	5.29	44.3	08/07/2020
				5.29	46.2	08/25/2020#
	IEEE/IEC Head	4.71 (4.24-5.18)	36.0 (32.4-39.5)	4.37	33.5	08/06/2020
5270	FCC Body	5.38 (4.84-5.92)	48.9 (44.0-53.8)	5.31	44.3	08/07/2020
				5.32	46.2	08/25/2020#
	IEEE/IEC Head	4.73 (4.26-5.20)	35.9 (32.3-39.5)	4.39	33.5	08/06/2020
5600	FCC Body	5.77 (5.19-6.34)	48.5 (43.6-53.3)	5.86	43.9	08/09/2020#
				5.87	43.8	08/10/2020#
	IEEE/IEC Head	5.07 (4.56-5.58)	35.5 (32.0-39.1)	4.71	33.0	08/06/2020
5630	FCC Body	5.80 (5.22-6.38)	48.4 (43.6-53.3)	5.90	43.8	08/09/2020#
				5.91	43.8	08/10/2020#
	IEEE/IEC Head	5.10 (4.59-5.61)	35.5 (31.9-39.0)	4.74	33.0	08/06/2020
5750	FCC Body	5.94 (5.35-6.54)	48.3 (43.4-53.1)	6.08	43.6	08/10/2020#
	IEEE/IEC Head	5.22 (4.70-5.74)	35.4 (31.8-38.9)	4.86	32.8	08/06/2020

Table 14 (continued)

Frequency (MHz)	Tissue Type	Conductivity Target (S/m)	Dielectric Constant Target	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
5795	FCC Body	5.99 (5.39-6.59)	48.2 (43.4-53.0)	6.14	43.5	08/10/2020#
	IEEE/IEC Head	5.27 (4.74-5.79)	35.3 (31.8-38.8)	4.90	32.7	08/06/2020

Note: '#' indicates that tissue test result covers next test day (within 24 hours)

11.0 Environmental Test Conditions

The EME Laboratory's ambient environment is well controlled resulting in very stable simulated tissue temperature and therefore stable dielectric properties. Simulated tissue temperature is measured prior to each scan to insure it is within +/ - 2^{o}C of the temperature at which the dielectric properties were determined. The liquid depth within the phantom used for measurements was at least 15cm. Additional precautions are routinely taken to ensure the stability of the simulated tissue such as covering the phantoms when scans are not actively in process in order to minimize evaporation. The lab environment is continuously monitored. The Table below presents the range and average environmental conditions during the SAR tests reported herein:

Table 15

	Target	Measured
Ambient Temperature	18 – 25 ˚C	Range: 18.4 - 24.4˚C Avg. 21.7 ˚C
Tissue Temperature	18 – 25 ˚C	Range: 20.7 - 22.6˚C Avg. 21.6˚C

Relative humidity target range is a recommended target

The EME Lab RF environment uses a Spectrum Analyzer to monitor for extraneous large signal RF disturbances that could possibly affect the test results. If such unwanted signals are discovered the SAR scans are repeated.

12.0 DUT Test Setup and Methodology

12.1 Measurements

SAR measurements were performed using the DASY system described in section 8.0 using zoom scans. Oval flat phantoms filled with applicable simulated tissue were used for body and face testing.

The Table below includes the step sizes and resolution of area and zoom scans per KDB 865664 requirements.

Table 16

Description		≤ 3 GHz	> 3 GHz
Maximum distance from closest measurement point (geometric center of probe sensors) to phantom surface		5 ± 1 mm	½·δ·ln(2) ± 0.5 mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location		30° ± 1°	20° ± 1°
DUT Configuration (s) Maximum area scan spatial resolution: ΔxArea, ΔyArea		≤ 2 GHz: ≤ 15 mm 2 – 3 GHz: ≤ 12 mm	3 – 4 GHz: ≤ 12 mm 4 – 6 GHz: ≤ 10 mm
		When the x or y dimension of the test device, in the measurement plane orientation, is smaller than the above, the measurement resolution must be ≤ the corresponding x or y dimension of the test device with at least one measurement point on the test device.	
Maximum zoom scan spatial resolution: ΔxZoom, ΔyZoom		≤ 2 GHz: ≤ 8 mm 2 – 3 GHz: ≤ 5 mm*	3 – 4 GHz: ≤ 5 mm* 4 – 6 GHz: ≤ 4 mm*
Maximum zoom scan spatial resolution, normal to phantom surface	uniform grid: ΔzZoom(n)	≤ 5 mm	3 – 4 GHz: ≤ 4 mm 4 – 5 GHz: ≤ 3 mm 5 – 6 GHz: ≤ 2 mm
Note: δ is the penetration depth of a plane-wave at normal incidence to the tissue medium; see draft standard IEEE P1528-2011 for details. * When zoom scan is required and the reported SAR from the area scan based 1-g SAR estimation procedures of KDB 447498 is ≤ 1.4 W/kg, ≤ 8 mm, ≤ 7 mm and ≤ 5 mm zoom scan resolution may be applied, respectively, for 2 GHz to 3 GHz, 3 GHz to 4 GHz and 4 GHz to 6 GHz.			

The DUT is a portable device operational at the body and face as described in section 6.0 while using the applicable accessories listed in section 7.0. KDB 941225 D05 was applied to LTE test configuration and KDB 248227 D01 applied to WLAN test configurations. CMW500 Communication Test set was used for LTE testing.

12.3 DUT Positioning Procedures

The positioning of the device for each body location is described below and illustrated in Appendix G.

12.3.1 Body

The DUT was positioned in normal use configuration against the phantom with the offered body worn accessory as well as with and without the offered audio accessories as applicable.

12.3.2 Head

Not applicable.

12.3.3 Face

The DUT was positioned with its' front and back sides separated 2.5cm from the phantom.

12.4 DUT Test Channels

The number of test channels was determined by using the following IEEE 1528 equation. The use of this equation produces the same or more test channels compared to the FCC KDB 447498 number of test channels formula.

$$N_c = 2 * roundup[10 * (f_{high} - f_{low}) / f_c] + 1$$

Where
N_c = Number of channels
F_{high} = Upper channel
F_{low} = Lower channel
F_c = Center channel

12.5 SAR Result Scaling Methodology

The calculated 1-gram and 10-gram averaged SAR results indicated as "Max Calc. 1g-SAR" in the data Tables is determined by scaling the measured SAR to account for power leveling variations and drift. Appendix F includes a shortened scan to justify SAR scaling for drift. For this device the "Max Calc. 1g-SAR" are scaled using the following formula:

$$Max\_Calc = SAR\_meas \cdot 10^{\frac{-Drift}{10}} \cdot \frac{P\_\max}{P\_\text{int}} \cdot DC$$

P_max = Maximum Power (W)
P_int = Initial Power (W)
Drift = DASY drift results (dB)
SAR_meas = Measured 1-g or 10-g Avg. SAR (W/kg)
DC = Transmission mode duty cycle in % where applicable
50% duty cycle is applied for PTT operation

Note: for conservative results, the following are applied:
If P_int > P_max, then P_max/P_int = 1.
Drift = 1 for positive drift

Additional SAR scaling was applied using the methodologies outlined in FCC KDB 865664 using tissue sensitivity values. SAR was scaled for conditions where the tissue permittivity was measured above the nominal target and for tissue conductivity that was measured below the nominal target. Negative or reduced SAR scaling is not permitted.

12.6 DUT Test Plan

The DUT was assessed at the body and face using the highest applicable configuration found during initial compliance assessment on filed with the FCC and ISED. All modes of operation identified in section 6.0 were considered during the development of the test plan.

13.0 DUT Test Data

13.1 LMR assessments for FCC

13.1.1 VHF (150.8-173.4 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 17 (bolded) are presented in Appendix E.

Table 17

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
PMAD4094A	NNTN9087A	PMLN8208A w/ NTN8266B	None	155.0000	6.25	-0.05	0.92	0.49	AN-AB-200817-12
		PMLN8208A w/ PMLN7965B			6.20	-0.38	0.99	0.57	AN-AB-200818-06
		PMLN8208A w/ RLN6486A w/ RLN6488A			6.23	-1.07	0.85	**0.58**	AN-AB-200818-08
		PMLN8209A w/ RLN6486A w/ RLN6488A			6.26	-0.37	0.64	0.37	AN-AB-200818-09
Face									
PMAD4094A	NNTN9216A	None; Radio @ back	None	155.0000	6.23	-0.19	0.81	0.45	AN-FACE-200818-15

13.1.2 UHF1 (406.125-470 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 18 (bolded) are presented in Appendix E.

Table 18

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
PMAE4049A	NNTN9087A	PMLN8208A w/ NTN8266B	PMMN4123A	470.0000	5.44	-0.30	11.00	**6.18**	AM(AMN)-AB-200813-01#
		PMLN8208A w/ PMLN7965B			5.49	-0.31	9.99	5.57	AM(AMN)-AB-200813-02#
		PMLN8208A w/ RLN6486A w/ RLN6488A			5.44	-0.31	10.90	6.13	AM(AMN)-AB-200813-04#
		PMLN8209A w/ RLN6486A w/ RLN6488A			5.42	-0.62	9.08	5.51	AM(AMN)-AB-200813-05#
Face									
PMAD4049A	NNTN9216A	None; Radio @ back	None	470.0000	5.45	-0.31	8.66	4.86	AN-FACE-200816-09

13.1.3 UHF2 (450-512 MHz) assessments at the Body & Face

The new derivative model was asses with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 19 (bolded) are presented in Appendix E.

Table 19

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
PMAE4049A	NNTN9087A	PMLN8208A w/ NTN8266B	NMN6274B	481.0000	5.44	-0.24	11.20	6.20	AM(AMN)-AB-200813-17
		PMLN8208A w/ PMLN7965B			5.43	-0.24	10.30	5.71	AM(AMN)-AB-200813-18
		PMLN8208A w/ RLN6486A w/ RLN6488A			5.40	-0.34	12.00	**6.85**	AM(AMN)-AB-200814-01#
		PMLN8209A w/ RLN6486A w/ RLN6488A			5.48	-0.41	9.38	5.36	AM(AMN)-AB-200814-02#
Face									
PMAE4049A	NNTN9216A	None; Radio @ back	None	496.5000	5.50	-0.21	8.43	4.58	AN-FACE-200816-08

13.1.4 769-775 MHz Assessments at the Body & Face

The new derivative model was asses with the highest applicable configuration at the Body and Face on file with the FCC. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 20 (bolded) are presented in Appendix E.

Table 20

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000296A01	NNTN9087A	PMLN8208A w/ NTN8266B	PMMN4123A	774.9875	2.76	-0.31	6.09	3.54	AN-AB-200807-16
		PMLN8208A w/ PMLN7965B			2.77	-0.27	5.69	3.27	AN-AB-200807-17
		PMLN8208A w/ RLN6486A w/ RLN6488A			2.76	-0.71	6.10	**3.89**	AN-AB-200807-20
		PMLN8209A w/ RLN6486A w/ RLN6488A			2.74	-0.35	6.17	3.65	AN-AB-200807-22
Face									
NAF5080A	NNTN9097A	None, Radio @ back	None	774.9875	2.76	-0.42	3.23	1.93	AN-FACE-200812-12

13.1.5 799-824 MHz Assessments at the Body & Face

The new derivative model was asses with the highest applicable configuration at the Body and Face on file with the FCC. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 21 (bolded) are presented in Appendix E.

Table 21

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000296A01	NNTN9087A	PMLN8208A w/ NTN8266B	PMMN4123A	808.5000	3.50	-0.37	6.90	3.86	AN-AB-200809-06
		PMLN8208A w/ PMLN7965B			3.51	-0.28	6.55	3.58	AN-AB-200809-07
		PMLN8208A w/ RLN6486A w/ RLN6488A			3.50	-0.64	6.93	4.13	AN-AB-200809-09
		PMLN8209A w/ RLN6486A w/ RLN6488A			3.50	-0.20	12.00	**6.46**	AN-AB-200810-09
Face									
NAF5080A	NNTN9087A	None, Radio @ back	None	823.9875	3.51	-0.39	3.65	2.05	AN-FACE-200812-13

13.1.6 851-869 MHz Assessments at the Body & Face

The new derivative model was asses with the highest applicable configuration at the Body and Face on file with the FCC. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 22 (bolded) are presented in Appendix E.

Table 22

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000296A01	NNTN9216A	PMLN8208A w/ NTN8266B	PMMN4123A	851.0125	3.43	-0.16	6.06	3.30	AM(AMN)-AB-200810-16
		PMLN8208A w/ PMLN7965B			3.44	-0.20	5.72	3.13	AM(AMN)-AB-200811-11
		PMLN8208A w/ RLN6486A w/ RLN6488A			3.42	-0.10	7.05	3.80	AM(AMN)-AB-200811-12
		PMLN8209A w/ RLN6486A w/ RLN6488A			3.45	-0.26	11.50	**6.37**	AN-AB-200918-01#
Face									
NAF5080A	NNTN9087A	None, Radio @ back	None	868.9875	3.42	-0.73	1.97	1.23	AN-FACE-200812-10

13.2 LMR Assessments for ISED

13.2.1 VHF (138-173.4 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 23 (bolded) are presented in Appendix E.

Table 23

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
PMAD4094A	NNTN9087A	PMLN8208A w/ NTN8266B	None	155.0000	6.25	-0.05	0.92	0.49	AN-AB-200817-12
		PMLN8208A w/ PMLN7965B			6.20	-0.38	0.99	0.57	AN-AB-200818-06
		PMLN8208A w/ RLN6486A w/ RLN6488A			6.23	-1.07	0.85	**0.58**	AN-AB-200818-08
		PMLN8209A w/ RLN6486A w/ RLN6488A			6.26	-0.37	0.64	0.37	AN-AB-200818-09
Face									
PMAD4094A	NNTN9216A	None; Radio @ back	None	155.0000	6.23	-0.19	0.81	0.45	AN-FACE-200818-15

13.2.2 UHF1 (406.125-430, 450-470 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 24 (bolded) are presented in Appendix E.

Table 24

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
PMAE4049A	NNTN9087A	PMLN8208A w/ NTN8266B	PMMN4123A	470.0000	5.44	-0.30	11.00	**6.18**	AM(AMN)-AB-200813-01#
		PMLN8208A w/ PMLN7965B			5.49	-0.31	9.99	5.57	AM(AMN)-AB-200813-02#
		PMLN8208A w/ RLN6486A w/ RLN6488A			5.44	-0.31	10.90	6.13	AM(AMN)-AB-200813-04#
		PMLN8209A w/ RLN6486A w/ RLN6488A			5.42	-0.62	9.08	5.51	AM(AMN)-AB-200813-05#
Face									
PMAE4049A	NNTN9216A	None; Radio @ back	None	470.0000	5.45	-0.31	8.66	4.86	AN-FACE-200816-09

13.2.3 UHF2 (450-470 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 25 (bolded) are presented in Appendix E.

Table 25

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
PMAE4049A	NNTN9087A	PMLN8208A w/ NTN8266B	BDN6783B w/ RLN5312B	470.0000	5.43	-0.30	11.60	6.52	AN-AB-200814-05#
		PMLN8208A w/ PMLN7965B			5.43	-0.23	10.60	5.87	AN-AB-200814-06#
		PMLN8208A w/ RLN6486A w/ RLN6488A			5.41	-0.34	11.60	**6.61**	AN-AB-200814-07#
		PMLN8209A w/ RLN6486A w/ RLN6488A			5.40	-0.39	10.30	5.95	AN-AB-200814-08#
Face									
PMAE4022B	NNTN9089A	None; Radio @ back	None	450.0000	5.37	-0.36	5.39	3.11	AN-FACE-200816-07

13.2.4 769-775 MHz assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 26 (bolded) are presented in Appendix E.

Table 26

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000296A01	NNTN9087A	PMLN8208A w/ NTN8266B	PMMN4123A	774.9875	2.76	-0.31	6.09	3.54	AN-AB-200807-16
		PMLN8208A w/ PMLN7965B			2.77	-0.27	5.69	3.27	AN-AB-200807-17
		PMLN8208A w/ RLN6486A w/ RLN6488A			2.76	-0.71	6.10	**3.89**	AN-AB-200807-20
		PMLN8209A w/ RLN6486A w/ RLN6488A			2.74	-0.35	6.17	3.65	AN-AB-200807-22
Face									
NAF5080A	NNTN9097A	None, Radio @ back	None	774.9875	2.76	-0.42	3.23	1.93	AN-FACE-200812-12

13.2.5 799-824 MHz assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 27 (bolded) are presented in Appendix E.

Table 27

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000296A01	NNTN9087A	PMLN8208A w/ NTN8266B	PMMN4123A	808.5000	3.50	-0.37	6.90	3.86	AN-AB-200809-06
		PMLN8208A w/ PMLN7965B			3.51	-0.28	6.55	3.58	AN-AB-200809-07
		PMLN8208A w/ RLN6486A w/ RLN6488A			3.50	-0.64	6.93	4.13	AN-AB-200809-09
		PMLN8209A w/ RLN6486A w/ RLN6488A			3.50	-0.20	12.00	**6.46**	AN-AB-200810-09
Face									
NAF5080A	NNTN9087A	None, Radio @ back	None	823.9875	3.51	-0.39	3.65	2.05	AN-FACE-200812-13

13.2.6 851-869 MHz assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 28 (bolded) are presented in Appendix E.

Table 28

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000296A01	NNTN9216A	PMLN8208A w/ NTN8266B	PMMN4123A	851.0125	3.43	-0.16	6.06	3.30	AM(AMN)-AB-200810-16
		PMLN8208A w/ PMLN7965B			3.44	-0.20	5.72	3.13	AM(AMN)-AB-200811-11
		PMLN8208A w/ RLN6486A w/ RLN6488A			3.42	-0.10	7.05	3.80	AM(AMN)-AB-200811-12
		PMLN8209A w/ RLN6486A w/ RLN6488A			3.45	-0.26	11.50	**6.37**	AN-AB-200918-01#
Face									
NAF5080A	NNTN9087A	None, Radio @ back	None	868.9875	3.42	-0.73	1.97	1.23	AN-FACE-200812-10

13.3 Additional assessments for each antenna for frequency bands with SAR degradation

Frequency bands (UHF2, 799-824 MHz and 851-869 MHz) observed body SAR degradation; additional body assessment was done with the previous highest applicable configuration for each of the remaining applicable offered antennas with highest SAR body worn accessory from above UHF2, 799-824 MHz and 851-869 MHz assessment. SAR plot of the highest result per Table 29 (bolded) are presented in Appendix E.

Table 29

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
UHF2									
KT000026A01	NNTN9087A	PMLN8208A w/ RLN6486A w/ RLN6488A	PMMN4123A	496.5000	5.48	-0.27	6.97	3.86	ZZ(AR)-AB-200819-06#
PMAE4022B	NNTN9087A	PMLN8208A w/ RLN6486A w/ RLN6488A	PMMN4123A	470.0000	5.46	-0.24	7.68	4.24	ZZ(AR)-AB-200819-07#
PMAE4100A	NNTN9089A	PMLN8208A w/ RLN6486A w/ RLN6488A	PMMN4123A	470.0000	5.42	-0.64	6.64	4.05	AN-AB-200819-08#
PMAE4102A	NNTN9087A	PMLN8208A w/ RLN6486A w/ RLN6488A	PMMN4123A	460.0000	5.34	-0.31	13.10	**7.51**	AN-AB-200819-09#
AN000297A01	NNTN9087A	PMLN8208A w/ RLN6486A w/ RLN6488A	PMMN4123A	450.0000	5.35	-0.31	8.26	4.66	AN-AB-200819-10#
799-824 MHz									
KT000026A01	NNTN9087A	PMLN8209A w/ RLN6486A w/ RLN6488A	PMMN4123A	808.5000	3.39	-0.52	7.32	**4.38**	ZZ(AR)-AB-200819-18
PMAE4022A	NNTN9087A	PMLN8209A w/ RLN6486A w/ RLN6488A	PMMN4123A	799.0125	2.79	-0.37	6.96	4.06	ZZ(AR)-AB-200819-19
AN000297A01	NNTN9087A	PMLN8209A w/ RLN6486A w/ RLN6488A	PMMN4123A	823.9875	3.56	-0.39	4.44	2.46	ZZ(AR)-AB-200819-20

Table 29 (continued)

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
851-869 MHz									
PMAE4022A	NNTN9087A	PMLN8209A w/ RLN6486A w/ RLN6488A	PMMN4123A	868.9875	3.43	-0.35	5.94	**3.38**	ZZ(AR)-AB-200820-01#
AN000297A01	NNTN9087A	PMLN8209A w/ RLN6486A w/ RLN6488A	PMMN4123A	851.0125	3.47	-0.36	4.66	2.63	ZZ(AR)-AB-200820-02#

13.4 Additional Assessments per ISED Notice 2016-DRS001

SAR degradation is observed at the Body and Face for UHF2, as per ISED Notice 2016-DRS001, additional tests were required for the low, mid and high frequency channels for the configuration with the highest SAR value.

Table 30

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
PMAE4102A	NNTN9087A	PMLN8208A w/ RLN6486A w/ RLN6488A	PMMN4123A	450.0000	5.33	-0.22	10.00	5.62	ZZ-AB-200824-10
				460.0000	5.34	-0.31	13.10	7.51	AN-AB-200819-09#
				470.0000	5.34	-0.43	11.40	6.72	ZZ-AB-200824-11
Face									
PMAE4022B	NNTN9089A	None; Radio @back	None	450.0000	5.37	-0.36	5.39	3.11	AN-FACE-200816-07
				460.0000	5.37	-0.32	5.13	2.93	BL(AMN)-FACE-200824-14
				470.0000	5.38	-0.32	4.69	2.67	BL(AMN)-FACE-200824-15

SAR degradation is observed at the Face for 769-775 MHz, as per ISED Notice 2016-DRS001, additional tests were required for the low, mid and high frequency channels for the configuration with the highest SAR value.

Table 31

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Face									
NAF5080A	NNTN9097A	None, Radio @ back	None	769.0125	2.75	-0.41	2.41	1.44	ZZ-FACE-200825-06
				772.0000	2.76	-0.25	2.51	1.44	ZZ-FACE-200825-07
				774.9875	2.76	-0.42	3.23	1.93	AN-FACE-200812-12

SAR degradation is observed at the Body for 799-824 MHz, as per ISED Notice 2016-DRS001, additional tests were required for the low, mid and high frequency channels for the configuration with the highest SAR value.

Table 32

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000296A01	NNTN9087A	PMLN8209A w/ RLN6486A w/ RLN6488A	PMMN4123A	799.0125	2.79	-0.52	8.14	4.92	BL(AMN)-AB-200825-01#
				808.5000	3.50	-0.20	12.00	6.46	AN-AB-200810-09
				823.9875	3.52	-0.48	10.50	6.00	BL(AMN)-AB-200825-02#

SAR degradation is observed at the Body for 851-869 MHz, as per ISED Notice 2016-DRS001, additional tests were required for the low, mid and high frequency channels for the configuration with the highest SAR value.

Table 33

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000296A01	NNTN9216A	PMLN8209A w/ RLN6486A w/ RLN6488A	PMMN4123A	851.0125	3.45	-0.26	11.50	**6.37**	AN-AB-200918-01#
				860.5000	3.42	-0.47	10.20	5.98	AN-AB-200918-02
				868.9875	3.43	-0.05	9.48	5.03	AN-AB-200918-03

13.5 LTE Assessments for FCC & ISED

13.5.1 LTE B2 (1850-1910 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 34 (bolded) are presented in Appendix E.

Table 34

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body (50% RB)									
AN000304A01	NNTN9089A	PMLN8208A w/ NTN8266B	None	1880.0000	0.170	0.13	0.056	0.082	AN-AB-200807-05#
		PMLN8208A w/ PMLN7965B			0.170	0.15	0.049	0.072	AN-AB-200807-06#
		PMLN8208A w/ RLN6486A w/ RLN6488A			0.170	-0.39	0.029	0.047	AN-AB-200806-18
	NNTN9087A	PMLN8209A w/ RLN6486A w/ RLN6488A			0.152	0.39	0.029	0.048	AN-AB-200807-07#
Face (50% RB)									
AN000304A01	NNTN9089A	None, Radio @ front	None	1860.0000	0.152	-0.09	0.192	**0.322**	BL(AR)-FACE-200825-19

13.5.2 LTE B4 (1710-1755 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 35 (bolded) are presented in Appendix E.

Table 35

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body (1 RB)									
AN000304A01	NNTN9089A	PMLN8208A w/ NTN8266B	None	1745.0000	0.200	0.31	0.063	0.079	AN-AB-200807-04#
		PMLN8208A w/ PMLN7965B			0.200	-0.06	0.048	0.061	AN-AB-200807-03#
		PMLN8208A w/ RLN6486A w/ RLN6488A			0.200	-0.28	0.047	0.063	AN-AB-200806-17
	NNTN9087A	PMLN8209A w/ RLN6486A w/ RLN6488A			0.182	0.24	0.022	0.030	AM(AMN)-AB-200806-11
Face (1 RB)									
AN000304A01	NNTN9216A	None, Radio @ front	None	1745.0000	0.200	-0.10	0.209	**0.267**	AM(AMN)-FACE-200807-11#

13.5.3 LTE B5 (824-849 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 36 (bolded) are presented in Appendix E.

Table 36

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body (50% RB)									
AN000304A01	NNTN9087A	PMLN8208A w/ NTN8266B	None	844.0000	0.137	0.00	0.020	0.036	FAZ-AB-200903-02
		PMLN8208A w/ PMLN7965B			0.137	0.02	0.020	0.036	FAZ-AB-200903-03
		PMLN8208A w/ RLN6486A w/ RLN6488A			0.137	0.38	0.016	0.029	FAZ-AB-200903-05
		PMLN8209A w/ RLN6486A w/ RLN6488A			0.137	0.02	0.025	0.046	FAZ-AB-200903-06
Face (1 RB)									
AN000304A01	NNTN9087A	None, Radio @ front	None	836.5000	0.174	-0.13	0.071	**0.105**	AR-FACE-200903-08

13.5.4 LTE B12 (699-716 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 37 (bolded) are presented in Appendix E.

Table 37

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body (1 RB)									
AN000304A01	NNTN9087A	PMLN8208A w/ NTN8266B	None	704.0000	0.174	-0.06	0.019	0.028	AN-AB-200805-13
		PMLN8208A w/ PMLN7965B			0.174	0.16	0.018	0.026	AN-AB-200805-15
		PMLN8208A w/ RLN6486A w/ RLN6488A			0.174	-0.13	0.018	0.027	AN-AB-200805-17
		PMLN8209A w/ RLN6486A w/ RLN6488A			0.174	0.03	0.035	0.050	AN-AB-200806-01#
Face (50% RB)									
AN000304A01	NNTN9087A	None, Radio @ front	None	704.0000	0.174	-0.23	0.064	**0.097**	ZZ(AR)-FACE-200820-10

13.5.5 LTE B13 (777-787 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 38 (bolded) are presented in Appendix E.

Table 38

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body (50% RB)									
AN000304A01	NNTN9087A	PMLN8208A w/ NTN8266B	None	782.0000	0.145	-0.14	0.022	0.039	ZZ-AB-200823-07
		PMLN8208A w/ PMLN7965B			0.145	0.03	0.021	0.036	ZZ-AB-200823-08
		PMLN8208A w/ RLN6486A w/ RLN6488A			0.145	-0.16	0.024	0.043	FAZ-AB-200824-02
		PMLN8209A w/ RLN6486A w/ RLN6488A			0.145	0.17	0.050	0.086	FAZ-AB-200824-03
Face (50% RB)									
AN000304A01	NNTN9087A	None, Radio @ front	None	782.0000	0.145	-0.08	0.055	**0.097**	BL(AR)-FACE-200824-10

13.5.6 LTE B14 (788-798 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 39 (bolded) are presented in Appendix E.

Table 39

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body (1 RB)									
AN000304A01	NNTN9087A	PMLN8208A w/ NTN8266B	None	793.0000	0.178	-0.02	0.035	0.049	AN-AB-200806-04#
		PMLN8208A w/ PMLN7965B			0.178	0.02	0.033	0.046	AN-AB-200806-05#
		PMLN8208A w/ RLN6486A w/ RLN6488A			0.178	0.00	0.039	0.055	AN-AB-200806-07#
		PMLN8209A w/ RLN6486A w/ RLN6488A			0.178	-0.23	0.067	**0.099**	AM(AMN)-AB-200806-09#
Face (1 RB)									
AN000304A01	NNTN9087A	None, Radio @ front	None	793.0000	0.178	-0.14	0.057	0.083	FAZ-FACE-200820-08

13.5.7 LTE B17 (704-716 MHz) assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 40 (bolded) are presented in Appendix E.

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Table 40

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body (1 RB)									
AN000304A01	NNTN9087A	PMLN8208A w/ NTN8266B	None	709.0000	0.185	-0.21	0.010	0.014	ZZ-AB-200823-02
		PMLN8208A w/ PMLN7965B			0.185	-0.04	0.013	0.018	ZZ-AB-200823-03
		PMLN8208A w/ RLN6486A w/ RLN6488A			0.185	-0.01	0.020	0.027	ZZ-AB-200823-05
		PMLN8209A w/ RLN6486A w/ RLN6488A			0.185	0.09	0.023	0.031	ZZ-AB-200823-06
Face (1 RB)									
AN000304A01	NNTN9216A	None, Radio @ front	None	709.0000	0.185	0.03	0.082	**0.111**	BL(AR)-FACE-200824-09

13.6 WLAN Assessments for FCC & ISED

13.6.1 WLAN 2.4 GHz Assessments at the Body & Face

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 41 (bolded) are presented in Appendix E.

Table 41

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000304A03	NNTN9087A	PMLN8208A w/ NTN8266B	None	2437.0000	0.164	-0.37	0.052	0.069	AN-AB-200805-02#
		PMLN8208A w/ PMLN7965B			0.164	-0.28	0.049	0.064	AN-AB-200805-03#
		PMLN8208A w/ RLN6486A w/ RLN6488A			0.164	-0.23	0.086	0.111	AN-AB-200805-05#
		PMLN8209A w/ RLN6486A w/ RLN6488A			0.164	0.12	0.045	0.055	AM(AMN)-AB-200805-07#
Face									
AN000304A03	NNTN9089A	None, Radio @ front	None	2462.0000	0.164	-0.11	0.094	**0.119**	AM(AMN)-FACE-200805-10

13.6.2 WLAN 5.0 GHz Assessments at the Body & Face

(U-NII-2A 5.25-5.35 GHz)

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 42 (bolded) are presented in Appendix E.

Table 42

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000304A03	NNTN9087A	PMLN8208A w/ NTN8266B	None	5270.0000	0.112	0.21	0.014	0.022	ZZ-AB-200826-02#
		PMLN8208A w/ PMLN7965B			0.112	0.24	0.025	0.039	AM-AB-200807-06
		PMLN8208A w/ RLN6486A w/ RLN6488A			0.112	0.37	0.020	0.031	ZZ-AB-200807-07
		PMLN8209A w/ RLN6486A w/ RLN6488A			0.112	-0.32	0.035	0.059	ZZ-AB-200807-09
Face									
AN000304A03	NNTN9216A	None, Radio @ front	None	5270.0000	0.112	-0.16	0.229	**0.373**	AM-FACE-200806-12

13.6.3 WLAN 5.0 GHz Assessments at the Body & Face

(U-NII-2C 5.47-5.65 GHz)

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 43 (bolded) are presented in Appendix E.

Table 43

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000304A03	NNTN9087A	PMLN8208A w/ NTN8266B	None	5630.0000	0.121	0.20	0.027	0.039	AM(AR)-AB-200810-02#
		PMLN8208A w/ PMLN7965B			0.121	0.39	0.025	0.036	AM(AR)-AB-200810-03#
		PMLN8208A w/ RLN6486A w/ RLN6488A			0.121	0.36	0.023	0.033	AM(AR)-AB-200810-04#
		PMLN8209A w/ RLN6486A w/ RLN6488A			0.121	0.34	0.028	0.041	AM(AR)-AB-200811-02#
Face									
AN000304A03	NNTN9216A	None, Radio @ front	None	5630.0000	0.121	-0.35	0.482	**0.760**	ZZ-FACE-200806-13

13.6.4 WLAN 5.0 GHz Assessments at the Body & Face

(U-NII-3 5.65-5.85 GHz)

The new derivative model was assessed with the previous highest applicable configuration at the Body and Face. Body assessments are done with the newly introduced body-worn accessories which are compatible with this new derivative model. SAR plot of the highest result per Table 44 (bolded) are presented in Appendix E.

Table 44

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000304A03	NNTN9087A	PMLN8208A w/ NTN8266B	None	5795.0000	0.125	0.16	0.018	0.025	ZZ-AB-200811-04#
		PMLN8208A w/ PMLN7965B			0.125	0.07	0.018	0.025	ZZ-AB-200811-05#
		PMLN8208A w/ RLN6486A w/ RLN6488A			0.125	-0.41	0.021	0.032	ZZ-AB-200811-06#
		PMLN8209A w/ RLN6486A w/ RLN6488A			0.125	0.25	0.023	0.032	ZZ-AB-200811-10#
Face									
AN000304A03	NNTN9216A	None, Radio @ front	None	5795.0000	0.120	-0.24	0.495	**0.767**	ZZ-FACE-200806-14

13.6.5 Additional Assessments per ISED Notice 2016-DRS001

Since SAR degradation is observed at the Body for WLAN 2.4GHz, as per ISED Notice 2016-DRS001, additional tests were required for the low, mid and high frequency channels for the configuration with the highest SAR value.

Table 45

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
Body									
AN000304A03	NNTN9087A	PMLN8208A w/ RLN6486A w/ RLN6488A	None	2412.0000	0.168	-0.10	0.045	0.055	ZZ-AB-200825-10
				2437.0000	0.164	-0.23	0.086	0.111	AN-AB-200805-05#
				2462.0000	0.162	0.26	0.074	0.092	ZZ-AB-200825-11

13.7 Shortened Scan Assessment

A "shortened" scan using the highest SAR configuration overall from above was performed to validate the SAR drift of the full DASY5™ coarse and zoom scans. Note that the shortened scan represents the zoom scan performance result; this is obtained by first running a coarse scan to find the peak area and then, using a newly charged battery, a zoom scan only was performed. The results of the shortened cube scan presented in Appendix D demonstrate that the scaling methodology used to determine the calculated SAR results presented herein are valid. The SAR result from the Table below is provided in Appendix F.

Table 46

Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq (MHz)	Init Pwr (W)	SAR Drift (dB)	Meas. 1g-SAR (W/kg)	Max Calc. 1g-SAR (W/kg)	Run#
PMAE4102A	NNTN9087A	PMLN8208A w/ RLN6486A w/ RLN6488A	PMMN4123A	460.0000	5.38	-0.18	12.00	6.63	BL(AMN)-AB-200824-12

14.0 Simultaneous Transmissions

14.1 Simultaneous Transmission for LMR and LTE

Table 47 (FCC)

Exposure condition	Body Worn Accessories	Standalone SAR (W/kg)					Sum of SAR (W/kg)			
		LMR				LTE	VHF + LTE	UHF1 + LTE	UHF2 + LTE	7/800 + LTE
		VHF	UHF1	UHF2	7/800					
Body	PMLN8208A w/ NTN8266B	0.49	6.18	6.20	3.86	0.082	0.57	6.26	6.28	3.94
	PMLN8208A w/ PMLN7965B	0.57	5.57	5.71	3.58	0.072	0.64	5.64	5.78	3.65
	PMLN8208A w/ RLN6486A w/ RLN6488A	0.58	6.13	7.51	4.13	0.063	0.64	6.19	7.57	4.19
	PMLN8209A w/ RLN6486A w/ RLN6488A	0.37	5.51	5.36	6.46	0.099	0.47	5.61	5.46	6.56
Face	NA	0.45	4.86	4.58	2.05	0.322	0.77	5.18	4.90	2.37

Table 48 (ISED)

Exposure condition	Body Worn Accessories	Standalone SAR (W/kg)					Sum of SAR (W/kg)			
		LMR				LTE	VHF + LTE	UHF1 + LTE	UHF2 + LTE	7/800 + LTE
		VHF	UHF1	UHF2	7/800					
Body	PMLN8208A w/ NTN8266B	0.49	6.18	6.52	3.86	0.082	0.57	6.26	6.60	3.94
	PMLN8208A w/ PMLN7965B	0.57	5.57	5.87	3.58	0.072	0.64	5.64	5.94	3.65
	PMLN8208A w/ RLN6486A w/ RLN6488A	0.58	6.13	7.51	4.13	0.063	0.64	6.19	7.57	4.19
	PMLN8209A w/ RLN6486A w/ RLN6488A	0.37	5.51	5.95	6.46	0.099	0.47	5.61	6.05	6.56
Face	NA	0.45	4.86	3.11	2.05	0.322	0.77	5.18	3.43	2.37

14.2 Simultaneous Transmission for LMR and WLAN 2.4 GHz

Table 49 (FCC)

Exposure condition	Body Worn Accessories	Standalone SAR (W/kg)					Sum of SAR (W/kg)			
		LMR				WLAN 2.4 GHz	VHF + WLAN 2.4 GHz	UHF1 + WLAN 2.4 GHz	UHF2 + WLAN 2.4 GHz	7/800 + WLAN 2.4 GHz
		VHF	UHF1	UHF2	7/800					
Body	PMLN8208A w/ NTN8266B	0.49	6.18	6.20	3.86	0.069	0.56	6.25	6.27	3.93
	PMLN8208A w/ PMLN7965B	0.57	5.57	5.71	3.58	0.064	0.63	5.63	5.77	3.64
	PMLN8208A w/ RLN6486A w/ RLN6488A	0.58	6.13	7.51	4.13	0.111	0.69	6.24	7.62	4.24
	PMLN8209A w/ RLN6486A w/ RLN6488A	0.37	5.51	5.36	6.46	0.055	0.43	5.57	5.42	6.52
Face	NA	0.45	4.86	4.58	2.05	0.119	0.57	4.98	4.70	2.17

Table 50 (ISED)

Exposure condition	Body Worn Accessories	Standalone SAR (W/kg)					Sum of SAR (W/kg)			
		LMR				WLAN 2.4 GHz	VHF + WLAN 2.4 GHz	UHF1 + WLAN 2.4 GHz	UHF2 + WLAN 2.4 GHz	7/800 + WLAN 2.4 GHz
		VHF	UHF1	UHF2	7/800					
Body	PMLN8208A w/ NTN8266B	0.49	6.18	6.52	3.86	0.069	0.56	6.25	6.59	3.93
	PMLN8208A w/ PMLN7965B	0.57	5.57	5.87	3.58	0.064	0.63	5.63	5.93	3.64
	PMLN8208A w/ RLN6486A w/ RLN6488A	0.58	6.13	7.51	4.13	0.111	0.69	6.24	7.62	4.24
	PMLN8209A w/ RLN6486A w/ RLN6488A	0.37	5.51	5.95	6.46	0.055	0.43	5.57	6.01	6.52
Face	NA	0.45	4.86	3.11	2.05	0.119	0.57	4.98	3.23	2.17

14.3 Simultaneous Transmission for LMR and WLAN 5.0 GHz

Table 51 (FCC)

Exposure condition	Body Worn Accessories	Standalone SAR (W/kg)					Sum of SAR (W/kg)			
		LMR				WLAN 5.0 GHz	VHF + WLAN 5.0 GHz	UHF1 + WLAN 5.0 GHz	UHF2 + WLAN 5.0 GHz	7/800 + WLAN 5.0 GHz
		VHF	UHF1	UHF2	7/800					
Body	PMLN8208A w/ NTN8266B	0.49	6.18	6.2	3.86	0.039	0.53	6.22	6.24	3.90
	PMLN8208A w/ PMLN7965B	0.57	5.57	5.71	3.58	0.039	0.61	5.61	5.75	3.62
	PMLN8208A w/ RLN6486A w/ RLN6488A	0.58	6.13	7.51	4.13	0.033	0.61	6.16	7.54	4.16
	PMLN8209A w/ RLN6486A w/ RLN6488A	0.37	5.51	5.36	6.46	0.059	0.43	5.57	5.42	6.52
Face	NA	0.45	4.86	4.58	2.05	0.767	1.22	5.63	5.35	2.82

Table 52 (ISED)

Exposure condition	Body Worn Accessories	Standalone SAR (W/kg)					Sum of SAR (W/kg)			
		LMR				WLAN 5.0 GHz	VHF + WLAN 5.0 GHz	UHF1 + WLAN 5.0 GHz	UHF2 + WLAN 5.0 GHz	7/800 + WLAN 5.0 GHz
		VHF	UHF1	UHF2	7/800					
Body	PMLN8208A w/ NTN8266B	0.49	6.18	6.52	3.86	0.039	0.53	6.22	6.56	3.90
	PMLN8208A w/ PMLN7965B	0.57	5.57	5.87	3.58	0.039	0.61	5.61	5.91	3.62
	PMLN8208A w/ RLN6486A w/ RLN6488A	0.58	6.13	7.51	4.13	0.033	0.61	6.16	7.54	4.16
	PMLN8209A w/ RLN6486A w/ RLN6488A	0.37	5.51	5.95	6.46	0.059	0.43	5.57	6.01	6.52
Face	NA	0.45	4.86	3.11	2.05	0.767	1.22	5.63	3.88	2.82

15.0 Results Summary

Based on the test guidelines from section 4.0 and satisfying frequencies within FCC bands and ISED Canada Frequency bands, the highest Operational Maximum Calculated 1-gram average SAR values found for this filing:

Table 53 (FCC)

Technologies	Frequency band (MHz)	Max Calc at Body (W/kg)	Max Calc at Face (W/kg)
		1g-SAR	1g-SAR
LMR	150.8-173.4	0.58	0.45
	406.125-470	6.18	4.86
	450-512	7.51	4.58
	769-775	3.89	1.93
	799-824	6.46	2.05
	851-869	6.37	1.23
LTE	LTE B2	0.082	0.322
	LTE B4	0.079	0.267
	LTE B5	0.046	0.105
	LTE B12	0.050	0.097
	LTE B13	0.086	0.097
	LTE B14	0.099	0.083
	LTE B17	0.031	0.111
WLAN	2.4 GHz	0.111	0.119
	5.0 GHz	0.059	0.767
Highest Simultaneous Transmission SAR	Sum of SAR (W/kg)	7.62	5.63

All results are scaled to the maximum output power.

Table 54 (ISED)

Technologies	Frequency band (MHz)	Max Calc at Body (W/kg)	Max Calc at Face (W/kg)
		1g-SAR	1g-SAR
LMR	138-173.4	0.58	0.45
	406.125-430, 450-470	6.18	4.86
	450-512	7.51	3.11
	769-775	3.89	1.93
	799-824	6.46	2.05
	851-869	6.37	1.23
LTE	LTE B2	0.082	0.322
	LTE B4	0.079	0.267
	LTE B5	0.046	0.105
	LTE B12	0.050	0.097
	LTE B13	0.086	0.097
	LTE B14	0.099	0.083
	LTE B17	0.031	0.111
WLAN	2.4 GHz	0.111	0.119
	5.0 GHz	0.059	0.767
Highest Simultaneous Transmission SAR	Sum of SAR (W/kg)	7.62	5.63

All results are scaled to the maximum output power.

The test results clearly demonstrate compliance with FCC Occupational/Controlled RF Exposure limits of 8 W/kg averaged over 1 gram per the requirements of FCC 47 CFR § 2.1093.

16.0 Variability Assessment

Per the guidelines in KDB 865664 SAR variability assessment is required for each frequency band with measured SAR results above 4.0 W/kg for occupational exposure condition.

The Tables below include test results of the original measurement, the repeated measurement, and the ratio (SAR_{high}/SAR_{low}) for the highest SAR configuration in each of the frequency bands that fulfill the guidelines mentioned above.

Table 55 (UHF1)

Run#	Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq. (MHz)	Adj. 1g-SAR (W/kg)	Ratio	Comments
AM(AMN)-AB-200813-01#	PMAE4049A	NNTN9087A	PMLN8208A w/ NTN8266B	PMMN4123A	470.0000	5.89	1.06	No additional repeated scans is required due to the Ratio (SAR_{high}/SAR_{low}) < 1.20
BL(AMN)-AB-200826-11						5.54		

Table 56 (UHF2)

Run#	Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq. (MHz)	Adj. 1g-SAR (W/kg)	Ratio	Comments
AN-AB-200819-09#	PMAE4102A	NNTN9087A	PMLN8208A w/ RLN6486A w/ RLN6488A	PMMN4123A	460.0000	7.03	1.12	No additional repeated scan is required due to the Ratio (SAR_{high}/SAR_{low}) < 1.20
BL(AMN)-AB-200824-12						6.25		

Table 57 (799-824 MHz)

Run#	Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq. (MHz)	Adj. 1g-SAR (W/kg)	Ratio	Comments
AN-AB-200810-09	AN000296A01	NNTN9087A	PMLN8209A w/ RLN6486A w/ RLN6488A	PMMN4123A	808.5000	6.28	1.05	No additional repeated scans is required due to the Ratio (SAR_{high}/SAR_{low}) < 1.20
BL(AMN)-AB-200826-14						5.96		

Table 58 (851-869 MHz)

Run#	Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq. (MHz)	Adj. 1g-SAR (W/kg)	Ratio	Comments
AN-AB-200918-01#	AN000296A01	NNTN9087A	PMLN8209A w/ RLN6486A w/ RLN6488A	PMMN4123A	851.0125	6.10	1.08	No additional repeated scans is required due to the Ratio (SAR_{high}/SAR_{low}) < 1.20
AN-AB-200917-25						5.63		

17.0 System Uncertainty

A system uncertainty analysis is required for this report per KDB 865664 because the highest report SAR value for Occupational exposure is more than 7.5W/kg.

Per the guidelines of ISO 17025 a reported system uncertainty is required and therefore measurement uncertainty budget is included in Appendix A.