MOTOROLA SOLUTIONS

MS ISO/IEC 17025 TESTING

SAMM No.0826 CERTIFICATE 2518.05

DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 1 of 4

Motorola Solutions Inc.
EME Test Laboratory
Motorola Solutions Malaysia Sdn Bhd (Innoplex)
Plot 2A, Medan Bayan Lepas,
Mukim 12 SWD 11900 Bayan Lepas Penang, Malaysia.

Date of Report: 4/10/2019
Report Revision: A

Responsible Engineer:	Saw Sun Hock (EME Engineer)
Report Author:	Saw Sun Hock (EME Engineer)
Test Personnel:	Zarul, Azrii, Firdaus, Loh, Ammar, Naim, Zakwan, Bala
Date/s Tested:	12/25/2018-12/31/2018, 1/2/2019-1/4/2019, 1/6/2019-2/8/2019, 2/10/2019-2/13/2019, 2/27/2019-2/28/2019, 3/4/2019, 3/6/2019, 3/13/2019-3/15/2019, 3/18/2019-3/19/2019
Manufacturer:	Motorola Solutions Inc.
DUT Description:	Handheld Portable – APX NEXT All-band Model 4.5
Test TX mode(s):	FM; LTE; WLAN
Max. Power output:	Refer to Part 1 Table 3
Nominal Power:	Refer to Part 1 Table 3
Tx Frequency Bands:	Refer to Part 1 Table 3
Signaling type:	FM, TDMA, SC-FDMA, FHSS, DSSS, OFDM and NFC
Model(s) Tested:	H55TGT9PW8AN (PNUW1100A)
Model(s) Certified:	H55TGT9PW8AN (PNUW1100A), H45KGT9PW8AN, H45UCT9PW8AN and H45XDT9PW8AN
Serial Number(s):	437TUX0100, 437P1C0117, 437P1C0120, 437TUX0109, 437TUX0103, 437TUX0096, 437P1C0122
Classification:	Occupational/Controlled
FCC ID:	AZ489FT7199; LMR 150.8-173.4 MHz, 406.125-512 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 FCC equipment approval, which are clearly identified.
IC:	109U-89FT7199; 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 IC equipment approval, which are identified.
ISED Test Site registration:	109AK
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: 2019.04.24 23:24:05 +08'00'

Tiong Nguk Ing
Deputy Technical Manager (Approved Signatory)
Approval Date: 4/24/2019

Part 4 of 4

1.0 System Validation for WLAN

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

Table 1

Dates	Probe Calibration Point		Probe SN	Measured Tissue Parameters		Validation		
				σ	ϵ_r	Sensitivity	Linearity	Isotropy
CW								
4/24/2018	Body	2450	7486	2.01	47.90	Pass	Pass	Pass
4/23/2018	Head			1.82	36.30	Pass	Pass	Pass
4/28/2018	Body	5250		5.17	44.20	Pass	Pass	Pass
5/2/2018	Head			4.41	32.50	Pass	Pass	Pass
4/30/2018	Body	5600		5.85	44.20	Pass	Pass	Pass
5/2/2018	Head			4.74	32.10	Pass	Pass	Pass
4/30/2018	Body	5750		6.05	44.00	Pass	Pass	Pass
5/2/2018	Head			4.89	31.90	Pass	Pass	Pass
802.11								
5/7/2018	Body	5250	7486	5.36	44.40	Pass	Pass	Pass
5/5/2018	Head			4.56	32.60	Pass	Pass	Pass
5/7/2018	Body	5600		5.79	43.90	Pass	Pass	Pass
5/5/2018	Head			4.89	32.10	Pass	Pass	Pass
5/8/2018	Body	5750		5.99	43.60	Pass	Pass	Pass
5/5/2018	Head			5.04	31.90	Pass	Pass	Pass

2.0 System Verification for WLAN

System verification checks were conducted each day during the SAR assessment. The results are normalized to 1W. Appendix 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 2

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
7486	FCC Body	SPEAG 2450V2/ 782	50.50+/-10%	12.6	50.4	1/8/2019#
				12.8	51.2	1/9/2019
				12.2	48.8	2/5/2019
	IEEE/IEC Head		53.30+/-10%	12.9	51.60	1/9/2019
				12.8	51.20	2/6/2019
	FCC Body	SPEAG D5GHzV2_ 5250MHz/ 1026	74.50+/-10%	8.13	81.30	1/13/2019
				8.18	81.80	1/14/2019
				7.6	76.00	1/15/2019#
				7.91	79.10	1/16/2019
				8.03	80.30	1/25/2019#
	IEEE/IEC Head		81.00+/-10%	7.82	78.20	1/28/2019#

Note: "#" Tissue date covered for next testing day (within 24 hours)

Table 2 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
7486	FCC Body	SPEAG D5GHzV2_ 5600MHz/ 1026	77.70+/-10%	8.38	83.80	1/17/2019
				8.33	83.30	1/18/2019
				7.82	78.20	1/19/2019
				8.32	83.20	1/25/2019
				8.5	85.00	1/28/2019
				8.44	84.40	2/8/2019
	IEEE/IEC Head		85.90+/-10%	8.58	85.80	1/29/2019
				8.89	88.90	1/31/2019
				8.54	85.40	2/1/2019
				8.52	85.20	2/12/2019#
	FCC Body	SPEAG D5GHzV2_ 5750MHz/ 1026	75.40+/-10%	7.83	78.30	1/20/2019
				7.77	77.70	1/21/2019#
				8.28	82.80	1/22/2019#
				7.84	78.40	1/24/2019
				7.85	78.50	2/13/2019
				6.95	69.50	3/12/2019
	IEEE/IEC Head		82.00+/-10%	8.17	81.70	1/31/2019
				8.47	84.70	2/1/2019
				8.39	83.90	2/6/2019
				8.04	80.40	2/11/2019#

Note: "#" system performance checks covered for next testing day (within 24 hours)

3.0 Equivalent Tissue Test Results for WLAN

Simulated tissue prepared for SAR measurements are measured daily and within 24 hours of SAR testing to verify that the tissue is within +/- 5% of target parameters for each tested channel. The table below summarizes the measured tissue parameters used for the SAR assessment.

Table 3

Frequency (MHz)	Tissue Type	Conductivity Target (S/m)	Dielectric Constant Target	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
2412	FCC Body	1.91 (1.82 - 2.01)	52.8 (47.5 - 58.0)	1.98	47.6	1/8/2019#
				2.00	47.9	1/9/2019
				1.86	49.2	2/5/2019
	IEEE/IEC Head	1.77 (1.68 - 1.86)	39.3 (35.3 - 43.2)	1.84	36.2	1/9/2019
2437	FCC Body	1.94 (1.84-2.03)	52.7 (47.4-58.0)	1.89	49.1	2/5/2019
	IEEE/IEC Head	1.79 (1.70-1.88)	39.2 (35.3-43.1)	1.83	37.4	2/6/2019

Note: "#" Tissue date covered for next testing day (within 24 hours)

Table 3 Continued

Frequency (MHz)	Tissue Type	Conductivity Target (S/m)	Dielectric Constant Target	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
2450	FCC Body	1.95 (1.85-2.05)	52.7 (47.4-58.0)	2.02	47.5	1/8/2019#
				2.04	47.7	1/9/2019
				1.91	49.1	2/5/2019
	IEEE/IEC Head	1.80 (1.71-1.89)	39.2 (35.3-43.1)	1.88	36.1	1/9/2019
				1.85	37.4	2/6/2019
2462	FCC Body	1.97 (1.87-2.07)	52.7 (47.4-58.0)	1.92	49.0	2/5/2019
	IEEE/IEC Head	1.81 (1.72-1.90)	39.2 (35.3-43.1)	1.86	37.3	2/6/2019
5250	FCC Body	5.36 (4.82-5.89)	48.9 (44.1-53.8)	5.40	44.9	1/13/2019
				5.32	44.7	1/14/2019
				5.43	44.1	1/15/2019#
				5.58	44.2	1/16/2019
				5.25	44.2	1/25/2019#
	IEEE/IEC Head	4.71 (4.24-5.18)	36.0 (32.4-39.5)	4.29	32.7	1/28/2019#
5270	FCC Body	5.38 (4.84-5.92)	48.9 (44.0-53.8)	5.43	44.9	1/13/2019
				5.34	44.6	1/14/2019
				5.45	44.1	1/15/2019#
				5.58	44.2	1/16/2019
				5.27	44.2	1/25/2019
	IEEE/IEC Head	4.73 (4.26-5.20)	35.9 (32.3-39.5)	4.31	32.7	1/28/2019#
5310	FCC Body	5.43 (4.88-5.97)	48.9 (44.0-53.8)	5.32	44.1	1/25/2019#
	IEEE/IEC Head	4.77 (4.29-5.25)	35.9 (32.3-39.5)	4.35	32.6	1/28/2019#
5510	FCC Body	5.66 (5.10-6.23)	48.6 (43.7-53.5)	5.77	44.2	1/28/2019
	IEEE/IEC Head	4.98 (4.48-5.47)	35.6 (32.1-39.2)	4.59	32.3	1/31/2019#
5590	FCC Body	5.75 (5.18-6.33)	48.5 (43.6-53.3)	5.88	44.1	1/28/2019
	IEEE/IEC Head	5.06 (4.55-5.57)	35.5 (32.0-39.1)	4.71	32.3	2/01/2019
				4.60	32.1	2/12/2019#
5600	FCC Body	5.77 (5.19-6.34)	48.5 (43.6-53.3)	5.95	43.7	1/16/2019#
				5.78	43.7	1/18/2019
				5.69	43.7	1/19/2019
				5.68	43.6	1/25/2019
				5.89	44.1	1/28/2019
				5.85	44.2	2/8/2019
	IEEE/IEC Head	5.07 (4.56-5.58)	35.5 (32.0-39.1)	4.69	32.1	1/29/2019#
				4.68	32.2	1/31/2019#
				4.72	32.3	2/1/2019
				4.61	32.1	2/12/2019#

Note: "#" Tissue date covered for next testing day (within 24 hours)

Table 3 Continued

Frequency (MHz)	Tissue Type	Conductivity Target (S/m)	Dielectric Constant Target	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
5630	FCC Body	5.80 (5.22-6.38)	48.4 (43.6-53.3)	5.99	43.7	1/16/2019#
				5.82	43.6	1/18/2019
				5.73	43.7	1/19/2019
				5.71	43.6	1/25/2019
				5.89	44.1	2/8/2019
	IEEE/IEC Head	5.10 (4.59-5.61)	35.5 (31.9-39.0)	4.72	32.0	1/29/2019#
				4.71	32.2	1/31/2019#
5670	FCC Body	5.85 (5.26-6.43)	48.4 (43.5-53.2)	5.73	43.6	1/24/2019
	IEEE/IEC Head	5.14 (4.63-5.65)	35.4 (31.9-39.0)	4.67	32.0	2/12/2019
5750	FCC Body	5.94 (5.35-6.54)	48.3 (43.4-53.1)	5.81	43.6	1/20/2019
				5.87	43.6	1/21/2019#
				5.87	43.5	1/22/2019#
				5.83	43.5	1/24/2019
				6.00	43.5	2/13/2019
				6.15	45.7	3/12/2019#
	IEEE/IEC Head	5.22 (4.70-5.74)	35.4 (31.8-38.9)	4.83	32.0	1/31/2019
				4.88	32.1	2/1/2019
				4.80	32.0	2/6/2019
				4.85	32.2	2/11/2019#
5755	FCC Body	5.95 (5.35-6.54)	48.3 (43.4-53.1)	5.83	43.5	1/24/2019
	IEEE/IEC Head	5.23 (4.70-5.75)	35.3 (31.8-38.9)	4.89	32.0	2/1/2019
				4.86	32.2	2/11/2019#
5795	FCC Body	5.99 (5.39-6.59)	48.2 (43.4-53.0)	5.86	43.5	1/20/2019
				5.92	43.6	1/21/2019#
				5.92	43.4	1/22/2019
				5.89	43.4	1/24/2019
				6.06	43.4	2/13/2019
				6.21	45.6	3/12/2019#
	IEEE/IEC Head	5.27 (4.74-5.79)	35.3 (31.8-38.8)	4.87	31.9	1/31/2019
				4.85	32.0	2/06/2019
				4.89	32.1	2/11/2019#

Note: "#" Tissue date covered for next testing day (within 24 hours)

4.0 DUT Test Data for WLAN

SAR test reduction is applied using the following criteria according to KDB 248227 D01:

a. For 2.4GHz 802.11 g/n SAR testing is not required when then highest reported SAR for DSSS is adjusted by ratio of OFDM to DSSS specified maximum output power and adjusted SAR is ≤1.2 W/kg.

b. U-NII-1 SAR testing not required when U-NII-2A band highest reported SAR for a test configuration is ≤1.2 W/kg.

c. For all positions/configurations, when reported SAR is >0.8W/kg, SAR is measured for these test positions/configurations on the subsequent next highest measured output power channel(s) until the reported SAR is ≤1.2 W/kg or all required test positions/configurations are tested.

4.1 SAR assessment for WLAN 2.4 GHz (802.11 b/g/n)

Output Power Data

These power measurements were used to determine the necessary modes for SAR testing according to KDB 248227.

Table 4

Band	802.11	Ch. BW	Ch.	Freq. (MHz)	Measured conducted power (W)
2.4 GHz	b	20	1	2412	0.197
			6	2437	0.181
			11	2462	0.188
	g	20	1	2412	0.040
			6	2437	0.139
			11	2462	0.158
	n	20	1	2412	0.040
			6	2437	0.152
			11	2462	0.153
		40	3	2422	0.126
			6	2437	0.152
			9	2452	0.072

Assessments at the Body

Table below presents the data of the body assessment.

Table 4

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#
AN000304A03	NNTN9087A	PMLN7947A w/ NTN8266B	None	2412	0.197	-0.03	0.035	0.036	ZZ-AB-190108-03
AN000304A03	NNTN9087A	PMLN7947A w/ PMLN7965A	None	2412	0.197	-0.33	0.038	0.042	ZZ-AB-190108-06
AN000304A03	NNTN9087A	PMLN7948A w/ NTN8266B	None	2412	0.197	-0.08	0.030	0.031	ZZ-AB-190108-07
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN7965A	None	2412	0.197	-0.67	0.036	0.043	ZZ-AB-190108-08
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5407A	None	2412	0.197	-0.49	0.033	0.038	ZZ-AB-190205-03
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5408A	None	2412	0.197	-0.50	0.032	0.037	ZZ-AB-190108-10
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5409A	None	2412	0.197	-0.53	0.038	0.044	FD-AB-190108-11
AN000304A03	NNTN9089A	PMLN7964A w/ NTN8266B	None	2412	0.194	-0.95	0.023	0.030	FD-AB-190108-13
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN7965A	None	2412	0.194	-0.77	0.023	0.028	FD-AB-190109-01#
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5407A	None	2412	0.194	-0.04	0.009	0.010	FD-AB-190109-02#
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5408A	None	2412	0.194	-0.32	0.011	0.012	FD-AB-190109-03#
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5409A	None	2412	0.194	0.05	0.025	0.026	ZZ-AB-190109-05
Assessment of Additional Battery									
AN000304A03	NNTN9089A	PMLN7947A w/ PMLN7965A	None	2412	0.194	-0.74	0.040	0.049	ZZ-AB-190109-06

Note: Assessment of additional battery only applicable for carry case “PMLN7947A w/ NTN8266B” and “PMLN7947A w/ PMLN7965A”. Refer to Part 1 of the report, section 7.3 for the compatibility of body worn and battery.

Assessments at the Face

Table below presents the data of the face assessment.

Table 5

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#
AN000304A03	NNTN9087A	Non-Display side against the phantom	None	2412	0.197	-0.38	0.220	0.245	ZZ-FACE-190109-08
AN000304A03	NNTN9087A	Display side against the phantom	None	2412	0.197	0.37	0.020	0.020	ZZ-FACE-190109-09
Assessment of Additional Battery									
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	2412	0.194	-0.43	0.213	0.244	ZZ-FACE-190109-10

Additional Assessments for ISED Canada

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. The SAR results are in Tables below. SAR plot is included in Appendix for the highest configuration

Table 6

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#
WLAN 2.4 GHz (Body)									
AN000304A03	NNTN9089A	PMLN7947A w/ PMLN7965A	None	2412	0.194	-0.74	0.040	0.049	ZZ-AB-190109-06
AN000304A03	NNTN9089A	PMLN7947A w/ PMLN7965A	None	2437	0.199	-0.77	0.045	**0.054**	ZZ-AB-190205-06
AN000304A03	NNTN9089A	PMLN7947A w/ PMLN7965A	None	2462	0.185	-0.85	0.038	0.050	ZZ-AB-190205-07
WLAN 2.4 GHz (Face)									
AN000304A03	NNTN9087A	Non-Display side against the phantom	None	2412	0.197	-0.38	0.220	0.245	ZZ-FACE-190109-08
AN000304A03	NNTN9087A	Non-Display side against the phantom	None	2437	0.181	-0.30	0.220	0.262	ZZ-FACE-190206-02
AN000304A03	NNTN9087A	Non-Display side against the phantom	None	2462	0.188	-0.51	0.218	**0.262**	ZZ-FACE-190206-03

4.2 SAR assessment for WLAN 5.0 GHz (802.11 a/n/ac)

Output Power Data

These power measurements were used to determine the necessary modes for SAR testing according to KDB 248227.

Table 8

Band	802.11	Ch. BW	Ch.	Freq. (MHz)	Measured conducted power (W)
U-NII-1 (5.15-5.25GHz)	a	20	36	5180	0.132
			40	5200	0.143
			44	5220	0.129
			48	5240	0.150
	n	20	36	5180	0.133
			40	5200	0.135
			44	5220	0.130
			48	5240	0.151
		40	38	5190	0.069
			46	5230	0.140
	ac	20	36	5180	0.113
			40	5200	0.118
			44	5220	0.111
			48	5240	0.101
		40	38	5190	0.068
			46	5230	0.123
		80	42	5210	0.075
U-NII-2A (5.25-5.35GHz)	a	20	52	5260	0.112
			56	5280	0.105
			60	5300	0.119
			64	5320	0.115
	n	20	52	5260	0.108
			56	5280	0.102
			60	5300	0.116
			64	5320	0.110
		40	54	5270	0.118
			62	5310	0.081
	ac	20	52	5260	0.108
			56	5280	0.102
			60	5300	0.116
			64	5320	0.111
		40	54	5270	0.117
			62	5310	0.081
		80	58	5290	0.105

Table 8 Continued

Band	802.11	Ch. BW	Ch.	Freq. (MHz)	Measured conducted power (W)
U-NII-2C (5.47-5.65 GHz)	a	20	100	5500	0.107
			112	5560	0.111
			116	5580	0.110
			128	5640	0.119
	n	20	100	5500	0.104
			112	5560	0.107
			116	5580	0.106
			128	5640	0.115
		40	102	5510	0.085
			110	5550	0.113
			118	5590	0.117
			126	5630	0.122
	ac	20	100	5500	0.103
			112	5560	0.107
			116	5580	0.106
			128	5640	0.115
		40	102	5510	0.085
			110	5550	0.112
			118	5590	0.103
			126	5630	0.107
		80	106	5530	0.089
			122	5610	0.100
U-NII-3 (5.65-5.85 GHz)	a	20	132	5660	0.117
			149	5745	0.112
			165	5825	0.114
	n	20	132	5660	0.114
			149	5745	0.108
			165	5825	0.110
		40	134	5670	0.105
			142	5710	0.103
			151	5755	0.115
			159	5795	0.118
	ac	20	132	5660	0.114
			149	5745	0.109
			165	5825	0.110
		40	134	5670	0.105
			142	5710	0.102
			151	5755	0.114
			159	5795	0.117
		80	138	5690	0.108
			155	5775	0.102

Assessments at the Body U-NII-2A (5.25-5.35GHz)

Table below presents the data of the body assessment.

Table 9

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#
AN000304A03	NNTN9087A	PMLN7947A w/ NTN8266B	None	5270	0.118	-0.82	0.023	0.041	ZZ-AB-190125-04
AN000304A03	NNTN9087A	PMLN7947A w/ PMLN7965A	None	5270	0.118	-0.77	0.022	0.039	FD-AB-190113-05
AN000304A03	NNTN9087A	PMLN7948A w/ NTN8266B	None	5270	0.118	-0.63	0.022	0.038	FD-AB-190114-04
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN7965A	None	5270	0.118	-0.31	0.011	0.017	ZZ-AB-190114-05
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5407A	None	5270	0.118	-0.81	0.009	0.016	ZZ-AB-190114-06
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5408A	None	5270	0.118	-0.73	0.009	0.015	ZZ-AB-190114-07
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5409A	None	5270	0.118	-1.06	0.015	0.028	FD-AB-190115-05
AN000304A03	NNTN9089A	PMLN7964A w/ NTN8266B	None	5270	0.117	-0.17	0.023	0.035	FD-AB-190115-07
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN7965A	None	5270	0.117	-1.01	0.015	0.028	FD-AB-190116-07
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5407A	None	5270	0.117	-0.73	0.008	0.013	ZZ-AB-190116-01#
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5408A	None	5270	0.117	-1.09	0.004	0.007	ZZ-AB-190116-02#
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5409A	None	5270	0.117	0.03	0.010	0.015	FD-AB-190116-03#
Assessment of Additional Battery									
AN000304A03	NNTN9089A	PMLN7947A w/ NTN8266B	None	5270	0.117	-0.69	0.020	0.035	ZZ-AB-190116-08

Assessments at the Face U-NII-2A (5.25-5.35GHz)

Table below presents the data of the face assessment.

Table 10

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#
AN000304A03	NNTN9087A	Non-Display side against the phantom	None	5270	0.118	-0.22	0.381	0.590	ZZ-FACE-190128-08
AN000304A03	NNTN9087A	Display side against the phantom	None	5270	0.118	-0.47	0.015	0.025	ZZ-FACE-190129-01#
Assessment of Additional Battery									
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5270	0.117	-0.43	0.432	0.709	FD-FACE-190129-02#

Additional Assessments for ISED Canada

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. The SAR results are in Tables below. SAR plot is included in Appendix for the highest configuration

Table 11

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#
WLAN 5 GHz U-NII-2A (Body)									
AN000304A03	NNTN9087A	PMLN7947A w/ NTN8266B	None	5270	0.118	-0.82	0.023	**0.041**	ZZ-AB-190125-04
AN000304A03	NNTN9087A	PMLN7947A w/ NTN8266B	None	5310	0.081	-0.43	0.011	0.021	FD-AB-190126-02#
WLAN 5 GHz U-NII-2A (Face)									
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5270	0.117	-0.43	0.432	**0.709**	FD-FACE-190129-02#
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5310	0.079	0.01	0.313	0.549	FD-FACE-190129-04#

Assessments at the Body U-NII-2C (5.47-5.65 GHz)

Table below presents the data of the body assessment.

Table 12

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#
AN000304A03	NNTN9087A	PMLN7947A w/ NTN8266B	None	5630	0.122	0.01	0.015	0.021	ZZ-AB-190117-02#
AN000304A03	NNTN9087A	PMLN7947A w/ PMLN7965A	None	5630	0.122	-0.54	0.016	0.026	ZZ-AB-190117-03#
AN000304A03	NNTN9087A	PMLN7948A w/ NTN8266B	None	5630	0.122	-0.65	0.021	0.035	FD-AB-190117-06#
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN7965A	None	5630	0.122	-0.52	0.010	0.016	FD-AB-190117-05#
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5407A	None	5630	0.122	1.09	0.021	0.030	ZZ-AB-190117-07#
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5408A	None	5630	0.122	0.09	0.019	0.027	ZZ-AB-190117-08#
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5409A	None	5630	0.122	-0.65	0.028	0.046	ZZ-AB-190208-02
AN000304A03	NNTN9089A	PMLN7964A w/ NTN8266B	None	5630	0.122	-1.03	0.023	0.042	FD-AB-190118-03
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN7965A	None	5630	0.122	-0.12	0.012	0.018	FD-AB-190118-05
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5407A	None	5630	0.122	0.44	0.020	0.028	ZZ-AB-190118-06
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5408A	None	5630	0.122	-0.52	0.012	0.019	ZZ-AB-190118-07
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5409A	None	5630	0.122	1.06	0.015	0.021	ZZ-AB-190119-02
Assessment of Additional Battery									
AN000304A03	NNTN9089A	PMLN7947A w/ PMLN7965A	None	5630	0.122	-0.90	0.029	0.051	FD-AB-190125-06

Note: Assessment of additional battery only applicable for carry case “PMLN7947A w/ NTN8266B” and “PMLN7947A w/ PMLN7965A”. Refer to Part 1 of the report, section 7.3 for the compatibility of body worn and battery.

Assessments at the Face U-NII-2C (5.47-5.65 GHz)

Table below presents the data of the face assessment.

Table 13

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#
AN000304A03	NNTN9087A	Non-Display side against the phantom	None	5630	0.122	-0.30	0.528	0.806	ZZ-FACE-190129-05#
AN000304A03	NNTN9087A	Non-Display side against the phantom	None	5590	0.117	-0.32	0.437	0.699	ZZ-FACE-190213-01#
AN000304A03	NNTN9087A	Display side against the phantom	None	5630	0.122	-0.12	0.012	0.018	ZZ-FACE-190129-07
Assessment of Additional Battery									
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5630	0.122	0.00	0.601	0.856	ZZ-FACE-190130-01#
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5590	0.117	-0.16	0.507	0.781	ZZ-FACE-190201-07

Additional Assessments for ISED Canada

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. The SAR results are in Tables below. SAR plot is included in Appendix for the highest configuration.

Table 14

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#
WLAN 5 GHz U-NII-2C (Body)									
AN000304A03	NNTN9089A	PMLN7947A w/ PMLN7965A	None	5510	0.085	0.28	0.021	0.027	FD-AB-190128-04
AN000304A03	NNTN9089A	PMLN7947A w/ PMLN7965A	None	5590	0.117	-0.15	0.018	0.028	ZZ-AB-190128-06
AN000304A03	NNTN9089A	PMLN7947A w/ PMLN7965A	None	5630	0.122	-0.90	0.029	**0.051**	FD-AB-190125-06
WLAN 5 GHz U-NII-2C (Face)									
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5510	0.085	0.02	0.372	0.481	ZZ-FACE-190201-02#
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5590	0.117	-0.16	0.507	0.781	ZZ-FACE-190201-07
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5630	0.122	0.00	0.601	**0.856**	ZZ-FACE-190130-01#

Assessments at the Body U-NII-3 (5.65-5.85 GHz)

Table below presents the data of the body assessment.

Table 15

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#
AN000304A03	NNTN9087A	PMLN7947A w/ NTN8266B	None	5795	0.118	-0.65	0.019	0.033	ZZ-AB-190120-04
AN000304A03	NNTN9087A	PMLN7947A w/ PMLN7965A	None	5795	0.118	-0.71	0.023	0.040	FD-AB-190213-04
AN000304A03	NNTN9087A	PMLN7948A w/ NTN8266B	None	5795	0.118	-0.98	0.015	0.028	FD-AB-190120-07
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN7965A	None	5795	0.118	-0.80	0.013	0.023	FD-AB-190213-05
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5407A	None	5795	0.118	0.18	0.012	0.018	ZZ-AB-190121-04
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5408A	None	5795	0.118	-0.43	0.022	0.036	ZZ-AB-190121-05
AN000304A03	NNTN9087A	PMLN7948A w/ PMLN5409A	None	5795	0.118	-0.26	0.001	0.0009	ZZ-AB-190213-06
AN000304A03	NNTN9089A	PMLN7964A w/ NTN8266B	None	5795	0.117	-0.51	0.034	0.057	FD-AB-190122-01#
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN7965A	None	5795	0.117	-0.74	0.016	0.028	ZZ-AB-190122-03
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5407A	None	5795	0.117	-0.63	0.003	0.005	ZZ-AB-190122-04
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5408A	None	5795	0.117	0.38	0.021	0.031	ZZ-AB-190122-05
AN000304A03	NNTN9089A	PMLN7964A w/ PMLN5409A	None	5795	0.117	-0.16	0.016	0.025	ZZ-AB-190124-08
Assessment of Additional Battery									
AN000304A03	NNTN9089A	PMLN7947A w/ PMLN7965A	None	5795	0.118	0.36	0.015	0.022	FD-AB-190313-02#

Note: Assessment of additional battery only applicable for carry case “PMLN7947A w/ NTN8266B” and “PMLN7947A w/ PMLN7965A”. Refer to Part 1 of the report, section 7.3 for the compatibility of body worn and battery.

Assessments at the Face U-NII-3 (5.65-5.85 GHz)

Table below presents the data of the face assessment.

Table 16

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#
AN000304A03	NNTN9087A	Non-Display side against the phantom	None	5795	0.118	-0.38	0.636	1.022	ZZ-FACE-190211-02
AN000304A03	NNTN9087A	Non-Display side against the phantom	None	5755	0.115	-0.28	0.670	1.080	ZZ-FACE-190212-02#
AN000304A03	NNTN9087A	Display side against the phantom	None	5795	0.118	-0.27	0.038	0.060	ZZ-FACE-190131-13
Assessment of Additional Battery									
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5795	0.117	-0.19	0.762	1.183	ZZ-FACE-190206-06
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5755	0.115	-0.15	0.681	1.065	ZZ-FACE-190201-09

Additional Assessments for ISED Canada

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. The SAR results are in Tables below. SAR plot is included in Appendix for the highest configuration.

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#
WLAN 5 GHz U-NII-3 (Body)									
AN000304A03	NNTN9089A	PMLN7964A w/ NTN8266B	None	5670	0.105	0.43	0.020	0.033	FD-AB-190124-12
AN000304A03	NNTN9089A	PMLN7964A w/ NTN8266B	None	5755	0.115	-0.62	0.025	0.044	FD-AB-190124-13
AN000304A03	NNTN9089A	PMLN7964A w/ NTN8266B	None	5795	0.117	-0.51	0.034	**0.057**	FD-AB-190122-01#
WLAN 5 GHz U-NII-3 (Face)									
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5670	0.105	-0.31	0.49	0.806	ZZ-FACE-190212-04
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5755	0.115	-0.15	0.681	1.065	ZZ-FACE-190201-09
AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5795	0.117	-0.19	0.762	**1.183**	ZZ-FACE-190206-06

5.0 Variability Assessment

Per the guidelines in KDB 865664 SAR variability assessment is required because SAR results are above 0.8W/kg. The table below includes test results of the original measurement, the repeated measurement, and the ratio (SAR_{high}/SAR_{low}) for the applicable test configuration.

Table 18

Run#	Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq. (MHz)	Adj Calc. 1g-SAR (W/kg)	Ratio	Comments
ZZ-FACE-190212-01#	AN000304A03	NNTN9089A	Non-Display side against the phantom	None	5795	0.831	1.05	No additional repeated scans is required due to the Ratio (SAR_{high}/SAR_{low}) < 1.20
ZZ-FACE-190206-06						0.876		