



DECLARATION OF COMPLIANCE SAR ASSESSMENT Part 1 of 2

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Date/s Tested: 09/17/2023-09/19/2023, 09/21/2023-09/30/2023, 10/01/2023-10/13/2023, 10/15/2023, 10/18/2023-10/19/2023, 12/18/2023
Manufacturer: Motorola Solutions Inc.
Manufacturer Location: Penang, Malaysia
DUT Description: Handheld Portable – MTP3550 800 FKP CLR ROM GNSS
Test TX mode(s): MSPD (4:7), SSPD (1:4) and Bluetooth / Bluetooth LE
Max. Power output: Refer Table 3
Nominal Power: Refer Table 3
Tx Frequency Bands: Refer Table 3
Signaling type: TDMA, PI/4DQPSK & FHSS (Bluetooth / Bluetooth LE)
Model(s) Tested: AZH63UCH6TZ8BN (PMUF1782B)
Model(s) Certified: Refer to Section 1.0 Introduction
Serial Number(s): 121TZX0093, 121TZX0094
Classification: Occupational/Controlled Environment
Firmware Version: D35.000.9941
Applicant Name: Motorola Solutions Inc.
Applicant Address: Plot 2A, Medan Bayan Lepas, Mukim 12 SWD, 11900 Bayan Lepas, Penang, Malaysia.
FCC ID: AZ489FT7179
 This report contains results that are immaterial for FCC equipment approval, which are clearly identified.
FCC Test Firm Registration Number: 823256
IC: 109U-89FT7179
 This report contains results that are immaterial for ISED equipment approval, which are clearly identified.
ISED Test Site registration: 24843

The test results clearly demonstrate compliance with 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.

Saw Sun Hock (Approval Signatory)
Approved Date: 05/07/2024

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Report Revision History

Date	Revision	Comments
12/19/2023	A	Initial release
03/18/2024	B	Update the Firmware Version from R35.000.9941 to D35.000.9941.
05/06/2024	C	To exclude the ANZ Models and to update the Applicant Address.

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 AZH63UCH6TZ8BN (PMUF1782B). This device is classified as Occupational/Controlled Environment and model certified is listed as below:

Model	Description
AZH63UCH6TZ8BN (PMUF1782B)	MTP3550 800 FKP CLR ROM GNSS
AZH62UCF6TZ8BN (PMUF1739B)	MTP3500 800MHZ LKP CLR GNSS
AZH62UCF6TZ8BN (PMUF1740B)	MTP3500 800MHZ LKP CLR GNSS
AZH62UCF6TZ8BN (PMUF1741B)	MTP3500 800MHZ LKP CLR GNSS
AZH63UCH6TZ8BN (PMUF1747B)	MTP3550 800 FKP CLR ROM GNSS
AZH63UCH6TZ8BN (PMUF1748B)	MTP3550 800 FKP CLR ROM GNSS
AZH63UCH6TZ8BN (PMUF1749B)	MTP3550 800 FKP CLR ROM GNSS
AZH63UCH6TZ8BN (PMUF1752B)	MTP3550 800 FKP CLR ROM GNSS
AZH63UCH6TZ8BN (PMUF1753B)	MTP3550 800 FKP CLR ROM GNSS
AZH63UCH6TZ8BN (PMUF1754B)	MTP3550 800 FKP CLR ROM GNSS
AZH63UCH6TZ8BN (PMUF1755B)	MTP3550 800 FKP CLR ROM GNSS
AZH63UCH6TZ8BN (PMUF1783B)	MTP3550 800 FKP CLR ROM GNSS
AZH63UCH6TZ8BN (PMUF1784B)	MTP3550 800 FKP CLR ROM GNSS

2.0 FCC SAR Summary

Table 1

Equipment Class	Frequency band (MHz)	Max Calc at Body (W/kg)	Max Calc at Face (W/kg)	Max Calc at Head (W/kg)
		1g-SAR	1g-SAR	1g-SAR
TNF	809 – 824	6.14	0.60	3.88
	854 - 869	6.79	0.66	3.48
DSS	2402-2480MHz	0.10	0.10	0.10
Simultaneous Results		6.89	0.76	3.98

3.0 Abbreviations / Definitions

BT:	Bluetooth
CNR:	Calibration Not Required
CW:	Continuous Wave
DSS:	Part 15 Spread Spectrum Transmitter
DUT:	Device Under Test
DTS	Digital Transmission System
EME:	Electromagnetic Energy
MSPD:	Multi Slot Packed Data
SSPD:	Single Slot Packet Data
FHSS:	Frequency Hopping Spread Spectrum
DSP:	Digital Signal Processor
PI/4DQPSK:	$\Pi/4$ Differential Quadrature Phase Shift Keying
FM:	Frequency Modulation
LMR:	Land Mobile Radio
NA:	Not Applicable
PTT:	Push to Talk
RSM:	Remote Speaker Microphone
SAR:	Specific Absorption Rate
TNF:	Licensed Non-Broadcast Transmitter Held to Face

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.

- Federal Communications Commission, “Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields”, OET Bulletin 65, FCC, Washington, D.C.: 1997.
- Institute of Electrical and Electronics Engineers (IEEE) C95.1-2019
- 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 Radio communication Apparatus (All Frequency Bands)
- ANATEL, Brazil Regulatory Authority, Resolution No 700 of September 28, 2018 "Approves the Regulation on the Assessment of Human Exposure to Electric, Magnetic and Electromagnetic Fields Associated with the Operation of Radio communication Transmitting Stations.

- IEC/IEEE 62209-1528-2020- Measurement procedure for the assessment of specific absorption rate of human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 1528: Human models, instrumentation, and procedures (Frequency range of 4 MHz to 10 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 - 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 dispatch, phone and Packet data modes. It uses three digital technologies: PI/4DQPSK, QAM and Time Division Multiple Access (TDMA).

PI/4DQPSK is a modulation technique that transmits information by altering the phase of the radio frequency (RF) signal. Data is converted into complex symbols, which alter the RF signal and transmit the information. When the signal is received, the change in phase is converted back into symbols and then into the original data. The system can accommodate 4-voice / Data channels in the standard 25 kHz channel as used on the two-way radio. The system can accommodate 4- Data channels in the standard 25 kHz or 50 kHz channels as used on the two-way radio. Time Division Multiple Access (TDMA) is used to allocate portions of the RF signal by dividing time into four slots, one for each unit. Time allocation enables each unit to transmit its voice information without interference from other transmitting units. Transmission from a unit or base station is accommodated in time-slot lengths of 15 milliseconds and frame lengths of 60 milliseconds.

The TDMA technique requires sophisticated algorithms and a digital signal processor (DSP) to perform voice compressions/decompressions and RF modulation/demodulation. The radios can be used by transmitting Multi Slot Packed Data (MSPD) with 4:7 (57.14%) duty cycle, Single Slot Packed Data (SSPD) with 1:4 (25%) duty cycle.

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 50%. Simultaneous transmission can occur between the BT and primary transmitter. Refer to section 12.0 Simultaneous Transmission Exclusion.

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

Radio Type	Band (MHz)	Transmission	Duty Cycle (%)	Conducted (Average Detector) Power	
				Nominal Power (W)	Max Power (W)
LMR	806 – 825	MSPD	57.14	2.24	2.51
		SSPD	25	2.80	3.00
	851 - 870	MSPD	57.14	2.24	2.51
		SSPD	25	2.80	3.00
BT	2402 – 2480	FHSS	50	N/A	0.00215
BT LE	2402 - 2480	FHSS	50	N/A	0.00210

The intended operating positions are “against the head” in phone mode, “at the face” with the DUT at least 1 inch 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.

7.0 Optional Accessories and Test Criteria

This device is offered with optional accessories. All accessories were individually evaluated during the test plan creation to determine if testing was required per the guidelines outlined in “SAR Test Reduction Considerations for Occupational PTT Radios” FCC KDB 643646 to assess compliance of this device. The following sections identify the test criteria and details for each accessory category. Refer to Exhibit 7B for antenna separation distances.

7.1 Antennas

Table 4

Antenna No.	Antenna Models	Description	Selected for test	Tested
1	85012069001	Stubby antenna, 806-870MHz, ½ wave, 2.65dBi	Yes	Yes
2	85012070001	Whip antenna, 806-870MHz, ½ wave, 3.15dBi	Yes	Yes
3	*0104042J37	PIFA antenna, 2402-2480MHz ¼ wave, 0.1dBi	No	No

* Refer to sections 13.8 and 14.0 for BT low power test exclusion.

7.2 Battery

Table 5

Battery No.	Battery Models	Description	Selected for test	Tested	Comments
1	NNTN8020B	BATT STD IP55 LIION 1850M 1950T	Yes	Yes	Default battery for body testing
2	NNTN8020BC	BATT STD IP55 LIION 1850M 1950T	No	No	By similarity to NNTN8020B
3	NNTN8023C	BATTERY PACK, BATT LIION 2200T	Yes	Yes	
4	NNTN8023CC	BATT LIION 2200T	No	No	By similarity to NNTN8023C
5	PMNN4522A	BATT IMPRES2 LIION IP68 3400T	Yes	Yes	Default battery for face testing

7.3 Body worn Accessories

Table 6

Body worn No.	Body worn Models	Description	Selected for test	Tested	Comments
1	GMDN0386A	Peter Jones Klick Fast sew on dock	Yes	Yes	Tested with PMLN8025A & PMLN5004B
2	GMDN0445AA	Peter Jones Klick Fast snap on tag dock	Yes	Yes	Tested with PMLN8025A & PMLN5004B
3	GMDN0445AC	Peter Jones Loop w/Dock	Yes	Yes	Tested with PMLN8025A & PMLN5004B
4	GMDN0497A	Peter Jones Belt Dock 38mm	No	No	Non-metallic, assess with closer distance part GMDN3086A
5	GMDN0547A	Peter Jones Klick Fast double tongue tag dock	Yes	Yes	Tested with PMLN8025A & PMLN5004B
6	GMDN0566AC	Leather Belt Loop and Dock	Yes	Yes	Tested with PMLN8025A & PMLN5004B
7	GMLN4488A	Peter Jones Click Fast 50 mm Dock Belt	No	No	Non-metallic and further distance compared to GMDN0386A

Table 6 (Continued)

Body worn No.	Body worn Models	Description	Selected for test	Tested	Comments
8	GMLN5401A	CARRY ACCESSORY-CASE,MTP3000 SERIES SOFT LEATHER CASE WITH BUILT IN BELT CLIP	Yes	Yes	Tested with PMLN8025A & PMLN5004B
9	HLN6602A	Universal Chest Pack	Yes	Yes	
10	HLN9714A	Large Belt clip 2.5 inch	Yes	Yes	
11	HLN9767C	CARRY ACCESSORY-STRAP,WRIST STRAP	No	No	For hand carry purposes only
12	NTN5243A	Shoulder strap for carry case	Yes	Yes	Tested with PMLN5885B & PMLN5887B
13	PMLN5004B	SHOULDER WEARING DEVICE	Yes	Yes	Tested with GMDN0386A, GMDN0445AA, GMDN0445AC, GMDN0497A, GMDN0547A, GMDN0566AC, PMLN7961A, GMLN5401A & WALN4037A
14	PMLN5616B	Short Belt clip 2 inch	Yes	Yes	
15	PMLN5829A	PETER JONES DOCK 01 32MM BELT	No	No	By similarity to GMDN0386A
16	PMLN5885B	Hard Leather Case 3 SWLBL FKP/LKP	Yes	Yes	Tested with NTN5243A
17	PMLN5887B	SOFT LEATHER CASE 3 SWLBL FKP/LKP	Yes	Yes	Tested with NTN5243A
18	PMLN5888B	Soft Leather Case 2.5 SWLBL FKP/LKP	No	No	By similarity to PMLN5887B
19	PMLN5890B	SOFT LEATHER POUCH USE W/P.J. STUD	No	No	Non-metallic leather pouch and use with PMLN5004B. Configuration similar to PMLN5004B.
20	PMLN7961A	MOUNTING KIT,KLICK FAST SHOULDER MOUNT DOCKRSMTAGLON G	Yes	Yes	Tested with PMLN8025A & PMLN5004B
21	PMLN8025A	CARRY ACCESSORY-BELT CLIP,PETER JONES STUD VERSION 2	Yes	Yes	Tested with GMDN0386A, GMDN0445AA, GMDN0445AC, GMDN0497A, GMDN0547A, GMDN0566AC, PMLN7961A, GMLN5401A & WALN4037A
22	RLN4570A	Break-a-way Chest Pack with Radio Holder	Yes	Yes	

Table 6 (Continued)

Body worn No.	Body worn Models	Description	Selected for test	Tested	Comments
23	RLN4815A	FANNY PACK CARRY ACCESSORY	Yes	Yes	
24	WALN4307A	Peter Jones Klick Fast retro fitting garment with easy screw-to-fit dock	Yes	Yes	Tested with PMLN8025A & PMLN5004B
25	PMLN5004B	SHOULDER WEARING DEVICE	Yes	Yes	Tested with GMDN0386A, GMDN0445AA, GMDN0445AC, GMDN0497A, GMDN0547A, GMDN0566AC, PMLN7961A, GMLN5401A & WALN4037A
26	PMLN5616B	Short Belt clip 2 inch	Yes	Yes	
27	PMLN5829A	PETER JONES DOCK 01 32MM BELT	No	No	By similarity to GMDN0386A
28	PMLN5885B	Hard Leather Case 3 SWLBL FKP/LKP	Yes	Yes	Tested with NTN5243A
29	PMLN5887B	SOFT LEATHER CASE 3 SWLBL FKP/LKP	Yes	Yes	Tested with NTN5243A
30	PMLN5888B	Soft Leather Case 2.5 SWLBL FKP/LKP	No	No	By similarity to PMLN5887B
31	PMLN5890B	SOFT LEATHER POUCH USE W/P.J. STUD	No	No	Non-metallic leather pouch and use with PMLN5004B. Configuration similar to PMLN5004B.

7.4 Audio Accessories**Table 7**

Audio No.	Audio Acc. Models	Description	Selected for test	Tested	Comments
1	PMMN4072A	IMPRES RSM Large 3.5mm Jack NC Emergency	Yes	No	Default audio Intended for test, Per KDB provisions test not required
2	PMMN4074A	IMPRES RSM with 3.5mm Jack	No	No	By similarity to PMMN4072A
3	PMMN4075A	RSM small IP57, no Emergency, IP57	No	No	By similarity to PMMN4072A
4	PMMN4078A	RSM small 3.5 Jack, Emergency	No	No	By similarity to PMMN4072A
5	PMLN7269A	New 2-wire Surveillance Kit, black.	Yes	No	Intended for test, Per KDB provisions test not required
6	PMLN7270A	New 2-wire Surveillance Kit, beige.	No	No	By similarity to PMLN7269A
7	PMLN5731A	Heavy Duty Headset	Yes	No	Intended for test, Per KDB provisions test not required
8	PMLN6635A	Lightweight Headset	Yes	No	Intended for test, Per KDB provisions test not required
9	PMLN5727A	Earpiece In-line Mic/PTT, Mag One	Yes	No	Intended for test, Per KDB provisions test not required

Table 7 (Continued)

Audio No.	Audio Acc. Models	Description	Selected for test	Tested	Comments
10	PMLN5729A	Impress ear microphone system	Yes	No	Intended for test, Per KDB provisions test not required
11	PMLN5732A	Earset with boom mic, Mag One	No	No	By similarity to PMLN5727A
12	PMLN5733A	Earbud with in-line MIC/PTT, Mag One	Yes	No	Intended for test, Per KDB provisions test not required
13	PMLN5724A	2-wire surveillance kit, black	No	No	By similarity to PMLN7269A
14	PMLN5726A	2-wire surveillance kit, beige	No	No	By similarity to PMLN7269A
15	PMLN6754A	3-Wire Surveillance Earpiece, black	Yes	No	Intended for test, Per KDB provisions test not required
16	PMLN6755A	3-Wire Surveillance Earpiece, beige	No	No	By similarity to PMLN6754A
17	PMLN6759A	Impress Temple Transducer	No	No	By similarity to PMLN6635A
18	PMLN6761A	Breeze Headset MagOne	Yes	No	Intended for test, Per KDB provisions test not required
19	PMLN6757A	Adjust D-style with in-line PTT/Mic	Yes	No	Intended for test, Per KDB provisions test not required
20	PMLN6760A	Behind the head heavy duty headset	Yes	No	Intended for test, Per KDB provisions test not required
21	GMMN4578A	AUDIO ACCESSORY-REMOTE SPEAKER MICROPHONE, SAVOX C-C500 RSM MTP3000	Yes	No	Intended for test, Per KDB provisions test not required
22	GMMN4579B	SAVOX C-C400 Control COM MTP3000	Yes	No	For use with GMMN4585A or GMMN4584A Intended for test, Per KDB provisions test not required
23	GMMN4585A	SAVOX HC-1 Helmet-COM Unit Bone-Mic	Yes	No	For use with GMMN4579B Intended for test, Per KDB provisions test not required
24	GMMN4584A	SAVOX HC-2 Helmet-COM Unit Bone-Mic	Yes	No	For use with GMMN4579B Intended for test, Per KDB provisions test not required
25	PMLN7464A	OTTO OTH HEADSET SLIM GCAI CONNECTOR (NON-TIA)	Yes	No	Intended for test, Per KDB provisions test not required

8.0 Description of Test System

DASY6™ Test System



DASY8™ 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 DASY 6	V16.2.2.1588	DAE4	EX3DV4 (E-Field)
Schmid & Partner Engineering AG SPEAG DASY 8	V16.2.2.1588	DAE4	EX3DV4 (E-Field)

The **DASY6™** and **DASY8™** system are operated per the instructions in the DASY6™ and DASY8™ 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.

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. 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 (percentage by mass)

Table 10

Ingredients	835MHz
	Head
Sugar	57.0
Diacetin	NA
De ionized-Water	40.45
Salt	1.45
HEC	1
Bact.	0.1

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	7594	11/02/2022	11/02/2025
SPEAG PROBE	EX3DV4	3612	10/22/2021	10/22/2024
SPEAG PROBE	EX3DV4	7816	10/06/2023	10/06/2024
SPEAG DAE	DAE4	729	06/09/2021	06/09/2024
SPEAG DAE	DAE4	1483	10/10/2022	10/10/2025
POWER SOURCE	SE UMS 160 CB	4302	11/10/2022	11/10/2023*
POWER SOURCE	SE UMS 160 CA	4251	04/04/2023	04/04/2024
DATA LOGGER	DSB	16398306	12/14/2022	12/14/2023*

Note: * Denotes SAR assessment was done before the equipment calibration due date.

Table 11 (Continued)

Equipment Type	Model Number	Serial Number	Calibration Date	Calibration Due Date
DATA LOGGER	DSB	16326831	11/26/2023	11/26/2024
THERMOMETER	HH806AU	080307	11/28/2022	11/28/2023*
THERMOMETER	Hi98509	3CC770	5/30/2023	5/29/2024
DIGITAL THERMOMETER	1523	3492108	11/04/2022	11/04/2023
TEMPERATURE PROBE	80PK-22	06032017	11/28/2022	11/28/2023
NETWORK ANALYZER	E5071B	MY42403218	09/24/2022	09/24/2023*
NETWORK ANALYZER	E5071B	MY42403147	02/21/2023	02/21/2024
DIELECTRIC ASSESSMENT KIT	DAK-3.5	1120	10/03/2022	10/03/2023*
DIELECTRIC ASSESSMENT KIT	DAK-3.5	1156	04/11/2023	04/11/2024
SPEAG DIPOLE	D835V2	4D029	08/27/2021	08/27/2024
POWER METER	E4419B	GB42420608	11/14/2022	11/14/2023*
POWER METER	E4419B	MY45103725	06/18/2023	06/18/2024
POWER SENSOR	E9301B	MY55210006	05/18/2023	05/18/2024

Note: * Denotes SAR assessment was done before the equipment calibration due date.

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								
07/24/2023	Head	835	7594	0.93	40.94	Pass	Pass	Pass
01/19/2023			3612	0.94	40.94	Pass	Pass	Pass
10/27/2023			7816	0.94	39.67	Pass	Pass	Pass
Signaling 12.5%								
07/25/2023	Head	835	7594	0.93	40.94	Pass	Pass	Pass
01/28/2023			3612	0.90	43.42	Pass	Pass	Pass
10/27/2023			7816	0.94	39.67	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 (bolded) with the largest deviation from the qualified source SAR target for each dipole. 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	Deviation (%)
7594	IEEE/I EC Head	SPEAG D835V3 / 4D029	9.84 +/- 10%	0.475	9.34	230917@	-5.1%
				0.450	8.89	230918@	-9.6%
				0.473	9.46	230921@	-3.8%
				0.485	9.62	230922@	-2.2%
				0.483	9.56	230923@	-2.9%
				0.483	9.53	230924@	-3.2%
				0.480	9.65	230925@	-1.9%
				0.470	9.37	230926@	-4.8%
				0.506	9.97	230927@	1.3%
				0.467	9.40	230928	-4.5%
				0.497	9.87	230929@	0.3%
				0.478	9.49	230930@	-3.5%
				0.296	9.37	230930@	-4.8%
				0.301	9.53	231001@	-3.2%
				0.299	9.46	231002@	-3.8%
				0.283	8.96	231003@	-9.0%
				0.288	9.11	231004@	-7.4%
				0.295	9.34	231005@	-5.1%
				0.292	9.24	231006@	-6.1%
				0.292	9.24	231007@	-6.1%
				0.300	9.49	231008@	-3.5%
				0.294	9.30	231009@	-5.4%
				0.300	9.49	231010@	-3.5%
3612				0.461	9.30	231018@	-5.4%
7816				0.459	9.56	231218	-2.9%

Note: '@' indicates that system performance check covers next test day (within 24 hours)

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
809	IEEE/ IEC Head	0.9 (0.85-0.94)	41.6 (39.5-43.7)	0.912	40.017	230917@
				0.919	40.622	230918@
				0.916	40.205	230921@
				0.913	40.028	230922@
				0.915	40.050	230923@
				0.914	40.285	230924
				0.906	39.953	230925@
				0.919	40.341	230926@
				0.917	39.919	230927@
				0.912	39.959	230930
				0.891	41.051	231018@
816.5		0.9 (0.85-0.94)	41.6 (39.5-43.7)	0.923	40.093	230921@
				0.921	40.191	230924@
				0.912	39.863	230925
				0.927	40.230	230926@
				0.915	41.353	230928
824		0.9 (0.85-0.94)	41.6 (39.5-43.6)	0.929	40.010	230921@
				0.927	39.812	230922@
				0.929	40.077	230924@
				0.920	39.768	230925@
				0.933	40.161	230926@
				0.922	41.265	230928
				0.931	40.387	230929@
				0.869	41.414	231218
835		0.9 (0.86-0.95)	41.5 (39.4-43.6)	0.938	39.670	230917@
				0.944	40.313	230918@
				0.941	39.842	230921@
				0.938	39.661	230922@
				0.940	39.688	230923@
				0.939	39.944	230924@
				0.930	39.656	230925@
				0.945	39.997	230926@
				0.941	39.615	230927@
				0.932	41.130	230928
				0.941	40.256	230929@
				0.944	40.396	230930@
				0.937	40.505	231001@
				0.942	39.878	231002@
				0.939	40.705	231003@
				0.943	39.960	231004@
				0.936	40.596	231005@
				0.936	40.062	231006@

Note: '@' indicates that system performance check covers next test day (within 24 hours)

Table 14 (Continued)

Frequency (MHz)	Tissue Type	Conductivity Target (S/m)	Dielectric Constant Target	Conductivity Meas. (S/m)	Dielectric Constant Meas.	Tested Date
835	IEEE/ IEC Head	0.9 (0.86-0.95)	41.5 (39.4-43.6)	0.938	40.155	231007@
				0.942	40.112	231008@
				0.944	40.088	231009@
				0.934	41.468	231010@
				0.901	40.965	231018@
				0.874	41.385	231218
854		0.92 (0.87-0.97)	41.5 (39.4-43.6)	0.938	40.155	231007@
				0.954	40.237	231001@
				0.960	39.646	231002@
				0.958	40.490	231003@
				0.954	40.380	231005@
				0.954	40.062	231006@
				0.952	41.260	231010@
				0.959	39.893	231007@
				0.962	39.850	231008@
				0.962	39.841	231009
				0.908	40.923	231018@
861.5		0.93 (0.88-0.97)	41.5 (39.4-43.6)	0.970	40.084	230930@
				0.960	40.149	231001@
				0.967	39.572	231002@
				0.966	39.600	231003@
				0.962	40.287	231005@
				0.962	39.716	231006@
				0.966	39.797	231007@
				0.968	39.766	231008
				0.969	39.751	231009
				0.960	41.146	231010@
869		0.94 (0.89-0.98)	41.5 (39.4-43.6)	0.967	40.048	231001@
				0.974	39.492	231002@
				0.973	40.308	231003@
				0.974	39.551	231004@
				0.970	40.196	231005@
				0.968	39.631	231006@
				0.974	39.706	231007@
				0.975	39.666	231008@
				0.977	39.652	231009@
				0.967	41.066	231010@
			0.913	40.905	231018@	

Note: '@' indicates that system performance check 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 $\pm 2^{\circ}\text{C}$ 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: 19.8 – 22.9°C Avg. 21.3 °C
Tissue Temperature	18 – 25 °C	Range: 20.2-22.6°C Avg. 21.4°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 contaminants 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	$\frac{1}{2} \cdot \delta \cdot \ln(2) \pm 0.5$ mm
Maximum probe angle from probe axis to phantom surface normal at the measurement location		$30^\circ \pm 1^\circ$	$20^\circ \pm 1^\circ$
Maximum area scan spatial resolution: Δx_{Area} , Δy_{Area}		≤ 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 $\leq$ 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: Δx_{Zoom} , Δy_{Zoom}		≤ 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: $\Delta z_{Zoom}(n)$	≤ 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.			

12.2 DUT Configuration(s)

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. All accessories listed in section 7.0 of this report were considered when implementing the guidelines specified in KDB 643646.

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

The DUT was placed against the right and left heads of the SAM phantom in the cheek touch and 15° tilt positions.

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.

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

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:

$$\text{Max_Calc} = \text{SAR_meas} \cdot 10^{\frac{-\text{Drift}}{10}} \cdot \frac{P_{\text{max}}}{P_{\text{int}}} \cdot \text{DC}$$

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 $P_{\text{int}} > P_{\text{max}}$, then $P_{\text{max}}/P_{\text{int}} = 1$.

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 guidelines and requirements outlined in section 4.0 were used to assess compliance of this device. All modes of operation identified in section 6.0 were considered during the development of the test plan. For conservative assessment, MSPD 4:7 with (57.14%) data transmission was tested for body exposure; SSPD with 1:4 (25%) phone mode was tested for head exposure and SSPD with 1:4 (25%) PTT mode was tested for face exposure. A 50% duty cycle was applied to PTT configurations in the final results.

Standalone and simultaneous BT testing were assessed in sections 13.8 and 14.0 per the guidelines of KDB 447498.

13.0 DUT Test Data

13.1 LMR assessments at the Body for 809-824MHz band

Battery NNTN8020B was selected as the default battery for assessments at the Body because it is the thinnest battery (refer to Exhibit 7B for battery illustration). The default battery was used during conducted power measurements for all test channels within FCC allocated frequency range (809-824MHz) which are listed in Table 17. The channel with the highest conducted power will be identified as the default channel per KDB 643646 (SAR Test for PTT Radios). SAR plots of the highest results per Table (bolded) are presented in Appendix E.

Table 17

Test Freq (MHz)	Power (W)
809.0000	2.44
816.5000	2.44
824.0000	2.41

Assessments at the Body with Body worn HLN6602A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel. SAR plots of the highest results per Table (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#
85012069001	NNTN8020B	HLN6602A	None	809.0000	2.47	0.02	4.94	5.02	DAN-AB-230921-09
				816.5000	2.45	0.06	5.80	5.94	DAN-AB-230921-10
				824.0000	2.44	0.07	5.27	5.42	DAN-AB-230921-11
85012070001				809.0000	2.45	0.02	5.68	5.82	DAN-AB-230921-12
				816.5000	2.45	-0.07	5.59	5.82	DAN-AB-230921-13
				824.0000	2.44	0.01	5.97	6.14	AMF-AB-230921-14
Assessment of Additional Batteries									
85012069001	NNTN8023C	HLN6602A	None	809.0000					
				816.5000	2.43	0.07	5.59	5.77	AMF-AB-230921-15
				824.0000					
85012070001				809.0000					
				816.5000	2.47	0.06	5.45	5.54	AMF-AB-230921-17
				824.0000	2.44	0.01	5.53	5.69	AMF-AB-230921-16
85012069001	PMNN4522A			809.0000					
				816.5000	2.47	0.08	5.13	5.21	AMF-AB-230921-18
				824.0000					
85012070001				809.0000					
				816.5000	2.47	0.10	4.48	4.55	AMF-AB-230921-20
				824.0000	2.46	0.07	4.85	4.95	AMF-AB-230921-19

Assessments at the Body with Body worn HLN9714A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	HLN9714A	None	809.0000	2.47	0.10	5.45	5.54	AMF-AB-230921-21
				816.5000	2.47	0.04	5.27	5.36	AMF-AB-230922-01@
				824.0000	2.45	0.05	5.28	5.41	AMF-AB-230922-02@
85012070001				809.0000	2.48	0.03	5.19	5.25	AMF-AB-230922-03@
				816.5000	2.47	0.09	4.17	4.24	AMF-AB-230922-04@
				824.0000	2.44	0.05	5.26	5.41	AMF-AB-230922-06
Assessment of Additional Batteries									
85012069001	NNTN8023C	HLN9714A	None	809.0000	2.46	0.06	5.13	5.23	DAN-AB-230922-07
				816.5000					
				824.0000					
85012070001				809.0000					
				816.5000					
85012069001	PMNN4522A			824.0000	2.44	-0.03	5.13	5.31	DAN-AB-230922-08
				809.0000	2.48	0.08	4.57	4.63	DAN-AB-230922-09
				816.5000					
85012070001				824.0000					
				809.0000					
		816.5000							
824.0000		2.45	0.18	3.89	3.99	DAN-AB-230922-10			

Assessments at the Body with Body worn PMLN5004B w/ PMLN7961A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN5004B w/ PMLN7961A	None	809.0000	2.46	0.08	2.59	2.64	DAN-AB-230922-11
				816.5000					
				824.0000					
85012070001				809.0000	2.45	0.12	2.63	2.69	DAN-AB-230922-12
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5004B w/ PMLN7961A	None	809.0000	2.45	0.06	2.52	2.58	DAN-AB-230922-13
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.46	0.07	2.26	2.31	DAN-AB-230922-14
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN5004B w/ GMLN5401A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN5004B w/ GMLN5401A	None	809.0000	2.45	0.01	2.31	2.37	AMF-AB-230922-15
				816.5000					
				824.0000					
85012070001				809.0000	2.44	-0.03	2.30	2.38	AMF-AB-230922-16
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5004B w/ GMLN5401A	None	809.0000	2.47	0.12	2.24	2.28	AMF-AB-230922-17
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.49	0.03	2.15	2.17	AMF-AB-230922-18
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN5004B w/ GMDN0386A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN5004B w/ GMDN0386A	None	809.0000	2.48	0.07	3.47	3.51	AMF-AB-230923-01@
				816.5000					
				824.0000	2.45	0.00	3.07	3.15	AMF-AB-230923-02@
85012070001				809.0000	2.47	0.02	3.19	3.24	AMF-AB-230923-03@
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN5004B w/ GMDN0386A	None	809.0000	2.48	-0.02	3.17	3.22	AMF-AB-230923-04@
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.46	0.05	2.88	2.94	AMF-AB-230923-05@
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN5004B w/ GMDN0445AA

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN5004B w/ GMDN0445AA	None	809.0000	2.46	0.01	2.63	2.68	AMF-AB-230923-06@
				816.5000					
				824.0000					
85012070001				809.0000	2.47	0.10	2.48	2.52	AMF-AB-230923-08
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN5004B w/ GMDN0445AA	None	809.0000	2.47	0.09	2.49	2.53	SAN-AB-230923-09
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.48	0.10	2.41	2.44	SAN-AB-230923-10
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN5004B w/ GMDN0445AC

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN5004B w/ GMDN0445AC	None	809.0000	2.46	0.04	2.25	2.30	AMF-AB-230923-14
				816.5000					
				824.0000					
85012070001				809.0000	2.47	0.08	2.19	2.23	AMF-AB-230924-01@
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN5004B w/ GMDN0445AC	None	809.0000	2.45	0.06	2.09	2.14	AMF-AB-230924-02@
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.45	0.12	1.95	2.00	AMF-AB-230924-03@
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN5004B w/ GMDN0566AC

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN5004B w/ GMDN0566AC	None	809.0000	2.46	0.11	1.62	1.65	SAN-AB-230924-09
				816.5000					
				824.0000					
85012070001				809.0000	2.46	0.07	1.65	1.68	SAN-AB-230924-10
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5004B w/ GMDN0566AC	None	809.0000	2.47	0.03	1.64	1.67	SAN-AB-230924-11
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.48	0.15	1.45	1.47	SAN-AB-230924-12
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN5004B w/ GMDN0547A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#	
85012069001	NNTN8020B	PMLN5004B w/ GMDN0547A	None	809.0000	2.47	0.11	2.53	2.57	SAN-AB-230924-13	
				816.5000						
				824.0000						
85012070001				809.0000	2.48	0.01	2.58	2.61	SAN-AB-230924-14	
				816.5000						
				824.0000						
Assessment of Additional Batteries										
85012070001	NNTN8023C	PMLN5004B w/ GMDN0547A	None	809.0000	2.47	0.06	2.39	2.43	SAN-AB-230924-15	
				816.5000						
				824.0000						
	PMNN4522A			809.0000	2.48	0.02	2.22	2.25	SAN-AB-230924-16	
				816.5000						
				824.0000						

Assessments at the Body with Body worn PMLN5004B w/ WALN4307A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN5004B w/ WALN4307A	None	809.0000	2.48	-0.01	2.75	2.79	SAN-AB-230924-17
				816.5000					
				824.0000					
85012070001				809.0000	2.48	0.08	2.62	2.65	SAN-AB-230924-18
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN5004B w/ WALN4307A	None	809.0000	2.47	0.02	2.60	2.64	SAN-AB-230924-19
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.48	-0.04	2.39	2.44	DAN-AB-230924-20
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN5616B

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN5616B	None	809.0000	2.47	-0.03	5.24	5.36	DAN-AB-230924-21
				816.5000	2.45	-0.01	5.19	5.33	DAN-AB-230924-22
				824.0000	2.45	0.12	5.30	5.43	DAN-AB-230924-23
85012070001				809.0000	2.47	0.11	4.31	4.38	DAN-AB-230924-24
				816.5000	2.46	-0.07	5.09	5.28	DAN-AB-230925-01@
				824.0000	2.45	0.02	5.35	5.48	DAN-AB-230925-02@
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN5616B	None	809.0000					
				816.5000					
				824.0000	2.46	0.07	5.29	5.40	DAN-AB-230925-03@
85012070001				809.0000					
				816.5000					
85012069001	PMNN4522A			824.0000	2.46	0.38	5.24	5.35	DAN-AB-230925-04@
				809.0000					
				816.5000					
85012070001				824.0000	2.46	0.11	4.00	4.08	DAN-AB-230925-05@
				809.0000					
	816.5000								
		824.0000	2.46	0.09	4.38	4.47	DAN-AB-230925-06@		

Assessments at the Body with Body worn RLN4570A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	RLN4570A	None	809.0000	2.47	0.10	4.75	4.83	SAN-AB-230925-16
				816.5000	2.47	0.13	5.56	5.65	SAN-AB-230925-17
				824.0000	2.44	0.10	5.49	5.65	SAN-AB-230925-18
85012070001				809.0000	2.47	0.07	4.99	5.07	DAN-AB-230925-19
				816.5000	2.45	0.08	5.41	5.54	DAN-AB-230925-20
				824.0000	2.45	0.16	5.44	5.57	DAN-AB-230925-21
Assessment of Additional Batteries									
85012069001	NNTN8023C	RLN4570A	None	809.0000					
				816.5000	2.48	0.19	5.59	5.66	DAN-AB-230925-22
				824.0000					
85012070001				809.0000					
				816.5000					
				824.0000	2.45	0.01	5.54	5.68	DAN-AB-230925-23
85012069001	PMNN4522A			809.0000					
				816.5000	2.47	0.11	4.95	5.03	DAN-AB-230925-24
				824.0000					
85012070001				809.0000					
				816.5000					
				824.0000	2.45	0.09	5.02	5.14	DAN-AB-230926-01@

Assessments at the Body with Body worn RLN4815A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	RLN4815A	None	809.0000	2.47	0.05	2.66	2.70	DAN-AB-230926-02@
				816.5000					
				824.0000					
85012070001				809.0000	2.47	0.00	2.91	2.96	DAN-AB-230926-03@
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012070001	NNTN8023C	RLN4815A	None	809.0000	2.47	0.08	2.68	2.72	DAN-AB-230926-05@
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.47	0.23	2.46	2.50	DAN-AB-230926-06@
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN8025A w/ PMLN7961A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#	
85012069001	NNTN8020B	PMLN8025A w/ PMLN7961A	None	809.0000	2.48	0.09	3.22	3.26	SAN-AB-230926-08	
				816.5000						
				824.0000						
85012070001				809.0000	2.47	0.08	3.24	3.29	SAN-AB-230926-11	
				816.5000						
				824.0000						
Assessment of Additional Batteries										
85012070001	NNTN8023C	PMLN8025A w/ PMLN7961A	None	809.0000	2.48	0.12	3.03	3.07	SAN-AB-230926-12	
				816.5000						
				824.0000						
	PMNN4522A			809.0000	2.48	0.07	2.75	2.78	SAN-AB-230926-13	
				816.5000						
				824.0000						

Assessments at the Body with Body worn PMLN8025A w/ GMLN5401A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN8025A w/ GMLN5401A	None	809.0000	2.48	0.03	3.12	3.16	SAN-AB-230926-14
				816.5000					
				824.0000					
85012070001				809.0000	2.47	0.18	3.03	3.08	SAN-AB-230926-15
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN8025A w/ GMLN5401A	None	809.0000	2.48	0.01	3.02	3.06	SAN-AB-230926-16
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.48	0.13	2.89	2.92	DAN-AB-230926-17
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN8025A w/ GMDN0386A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN8025A w/ GMDN0386A	None	809.0000	2.47	-0.02	3.95	4.03	DAN-AB-230926-18
				816.5000	2.46	0.08	4.25	4.34	DAN-AB-230926-19
				824.0000	2.45	-0.06	3.81	3.96	DAN-AB-230926-20
85012070001				809.0000	2.47	0.10	3.90	3.96	DAN-AB-230926-21
816.5000									
824.0000				2.46	-0.04	4.00	4.12	DAN-AB-230926-22	
Assessment of Additional Batteries									
85012069001	NNTN8023C PMNN4522A	PMLN8025A w/ GMDN0386A	None	809.0000					
				816.5000	2.47	0.09	4.02	4.09	DAN-AB-230927-01@
				824.0000					
85012070001				809.0000					
816.5000									
824.0000				2.46	-0.03	3.91	4.02	DAN-AB-230927-02@	
85012069001				809.0000					
816.5000				2.47	0.04	3.55	3.61	DAN-AB-230927-03@	
824.0000									
85012070001				809.0000					
				816.5000					
				824.0000	2.45	0.19	3.42	3.50	DAN-AB-230927-04@

Assessments at the Body with Body worn PMLN8025A w/ GMDN0445AA

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN8025A w/ GMDN0445AA	None	809.0000	2.47	0.07	3.43	3.49	DAN-AB-230927-05@
				816.5000					
				824.0000					
85012070001				809.0000	2.47	-0.05	3.13	3.22	DAN-AB-230927-06@
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN8025A w/ GMDN0445AA	None	809.0000	2.45	-0.17	3.14	3.35	AMF-AB-230927-08
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.46	0.02	2.99	3.05	AMF-AB-230927-09
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN8025A w/ GMDN0445AC

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN8025A w/ GMDN0445AC	None	809.0000	2.48	0.13	2.49	2.52	AMF-AB-230927-10
				816.5000					
				824.0000					
85012070001				809.0000	2.48	0.12	2.29	2.32	AMF-AB-230927-11
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN8025A w/ GMDN0445AC	None	809.0000	2.48	-0.03	2.35	2.39	AMF-AB-230927-12
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.48	0.09	2.17	2.20	AMF-AB-230927-13
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN8025A w/ GMDN0566AC

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN8025A w/ GMDN0566AC	None	809.0000	2.45	0.08	1.82	1.86	AMF-AB-230927-19
				816.5000					
				824.0000					
85012070001				809.0000	2.46	0.06	1.99	2.03	AMF-AB-230927-20
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN8025A w/ GMDN0566AC	None	809.0000	2.47	0.23	1.92	1.95	DAN-AB-230927-21
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.46	0.31	1.63	1.66	DAN-AB-230927-22
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN8025A w/ GMDN0547A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN8025A w/ GMDN0547A	None	809.0000	2.45	0.07	3.28	3.36	DAN-AB-230927-23
				816.5000					
				824.0000					
85012070001				809.0000	2.47	-0.02	3.05	3.11	DAN-AB-230927-24
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN8025A w/ GMDN0547A	None	809.0000	2.45	0.08	3.11	3.19	DAN-AB-230927-25
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.48	0.07	3.01	3.05	DAN-AB-230927-26
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN8025A w/ WALN4307A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN8025A w/ WALN4307A	None	809.0000	2.47	0.10	3.19	3.24	DAN-AB-230927-27
				816.5000					
				824.0000					
85012070001				809.0000	2.47	0.15	3.23	3.28	DAN-AB-230928-01@
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN8025A w/ WALN4307A	None	809.0000	2.45	0.07	3.06	3.13	DAN-AB-230928-02@
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.47	0.14	2.82	2.87	DAN-AB-230928-03@
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN5885B w/ NTN5243A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN5885B w/ NTN5243A	None	809.0000	2.47	0.02	2.99	3.04	DAN-AB-231018-10
				816.5000					
				824.0000					
85012070001				809.0000	2.47	0.14	3.36	3.41	DAN-AB-231018-11
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5885B w/ NTN5243A	None	809.0000	2.45	0.04	3.19	3.27	DAN-AB-231018-12
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.47	-0.02	2.98	3.04	DAN-AB-231018-13
				816.5000					
				824.0000					

Assessments at the Body with Body worn PMLN5887B w/ NTN5243A

DUT assessment with offered antennas, default battery and, optional body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 17 for highest output power channel.

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#
85012069001	NNTN8020B	PMLN5885B w/ NTN5243A	None	809.0000	2.47	0.10	2.89	2.94	DAN-AB-231019-01@
				816.5000					
				824.0000					
85012070001				809.0000	2.47	0.14	2.89	2.94	DAN-AB-231019-02@
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN5885B w/ NTN5243A	None	809.0000	2.46	0.08	2.95	3.01	DAN-AB-231019-03@
				816.5000					
				824.0000					
	PMNN4522A			809.0000	2.47	0.17	2.38	2.42	DAN-AB-231019-04@
				816.5000					
				824.0000					

Assessment at the Body with audio accessory

DUT voice assessment using the overall highest SAR configuration at the body from above with default audio accessory attached. Additional testing in voice mode (SSPD) is not required per IEEE1528 because of lower “maximum sourced-based time averaged output power as compared to data mode (MSPD). Assessment per “KDB 643646 Body SAR Test Consideration for Audio Accessories without Built-in Antenna; when overall reported SAR < 4.0 W/kg, SAR tested for that audio accessory is not necessary.” This was applicable to all remaining accessories.

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#
85012070001	NNTN8020B	HLN6602A	PMMN4072A	809.0000					
				816.5000					
				824.0000	2.68	0.11	2.21	1.24	SAN-AB-231012-15

Assessment of wireless BT configuration

DUT voice assessment using the overall highest SAR configuration at the body from above without an audio accessory attached.

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#
85012070001	NNTN8020B	HLN6602A	None	809.0000					
				816.5000					
				824.0000	2.69	0.05	2.53	1.41	SAN-AB-231012-16

13.2 LMR assessments at the Face for 809-824 MHz band

Battery PMNN4522A was selected as the default battery for assessments at the Face because it has the highest capacity (refer to Exhibit 7B for battery illustration). The default battery was used during conducted power measurements for all test channels within FCC allocated frequency range (809-824 MHz) which are listed in Table 43. The channel with the highest conducted power will be identified as the default channel per KDB 643646 (SAR Test for PTT Radios).

Table 43

Test Freq (MHz)	Power (W)
809.0000	2.69
816.5000	2.69
824.0000	2.66

DUT assessment with offered antennas, default battery with front of DUT positioned 2.5cm facing phantom per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 43 for highest output power channel. SAR plots of the highest results per Table (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#
85012069001	PMNN4522A	@ front	None	809.0000	2.74	0.02	0.85	0.47	DAN-FACE-230919-02@
				816.5000					
				824.0000					
85012070001				809.0000	2.75	0.05	0.80	0.43	DAN-FACE-230919-03@
				816.5000					
				824.0000					
Assessment of Additional Batteries									
85012069001	NNTN8020B	@ front	None	809.0000	2.75	-0.06	0.88	0.49	DAN-FACE-230919-04@
				816.5000					
				824.0000					
	NNTN8023C			809.0000	2.75	0.09	0.86	0.47	DAN-FACE-230919-05@
				816.5000					
				824.0000					

13.3 LMR assessments at the Head for 809-824 MHz band

Battery PMNN4522A was selected as the default battery for assessments at the Face because it has the highest capacity (refer to Exhibit 7B for battery illustration). The default battery was used during conducted power measurements for all test channels within FCC allocated frequency range (809-824 MHz) which are listed in Table 45. The channel with the highest conducted power will be identified as the default channel per KDB 643646 (SAR Test for PTT Radios).

Table 45

Test Freq (MHz)	Power (W)
809.0000	2.69
816.5000	2.69
824.0000	2.66

Assessment at the Left ear with Cheek Touch and 15° Tilt positions

Left ear position assessment with offered antennas and default battery with the DUT in both the cheek touch and tilt positions per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 45 for highest output power channel.

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#
85012070001	PMNN4522A	None, Touch	None	809.0000	2.71	0.08	2.85	3.15	SAN-LEAR-230917-10
				816.5000					
				824.0000					
		None, Tilt		809.0000	2.73	-0.02	2.00	2.21	SAN-LEAR-230917-11
				816.5000					
				824.0000					
85012069001	None, Touch	809.0000		2.75	0.07	3.00	3.27	SAN-LEAR-230918-01@	
		816.5000							
		824.0000							
	None, Tilt	809.0000		2.73	-0.02	2.39	2.64	AMF-LEAR-230930-08	
		816.5000							
		824.0000							
Assessment of Additional Batteries									
85012070001	NNTN8020B	None, Touch	None	809.0000	2.75	0.05	3.27	3.57	SAN-LEAR-230918-03@
				816.5000					
				824.0000					
	NNTN8023C			809.0000	2.75	0.08	3.03	3.31	SAN-LEAR-230918-02@
				816.5000					
				824.0000					

Assessment at the Right ear with Cheek Touch and 15° Tilt positions

Left ear position assessment with offered antennas and default battery with the DUT in both the cheek touch and tilt positions per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 45 for highest output power channel. SAR plots of the highest results per Table (bolded) are presented in Appendix E.

Table 47

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#	
85012070001	PMNN4522A	None, Touch	None	809.0000	2.77	-0.01	2.78	3.02	AMF-REAR-230918-04@	
				816.5000						
				824.0000						
		None, Tilt		809.0000	2.75	-0.08	2.15	2.39	AMF-REAR-230918-05@	
				816.5000						
				824.0000						
85012069001		None, Touch		809.0000	2.78	-0.16	3.14	3.52	AMF-REAR-230918-07@	
				816.5000						
				824.0000						
		None, Tilt		809.0000	2.75	0.09	2.30	2.51	AMF-REAR-230918-06@	
				816.5000						
				824.0000						
Assessment of Additional Batteries										
85012070001	NNTN8020B	None, Touch		None	809.0000	2.75	-0.13	3.26	3.66	AMF-REAR-230918-08@
					816.5000					
					824.0000					
	NNTN8023C				809.0000	2.75	-0.06	3.25	3.59	DAN-REAR-230919-01@
					816.5000					
			824.0000							

13.4 LMR assessments at the Body for 854-869 MHz band

Battery NNTN8020B was selected as the default battery for assessments at the Body because it is the thinnest battery (refer to Exhibit 7B for battery illustration). The default battery was used during conducted power measurements for all test channels within FCC allocated frequency range (854-869MHz) which are listed in Table 48. The channel with the highest conducted power will be identified as the default channel per KDB 643646 (SAR Test for PTT Radios).

Table 48

Test Freq (MHz)	Power (W)
854.0000	2.44
861.5000	2.43
869.0000	2.45

Assessments at the Body with Body worn HLN6602A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 49

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#
85012069001	NNTN8020B	HLN6602A	None	854.0000	2.45	0.06	6.36	6.52	SAN-AB-231002-07@
				861.5000	2.44	0.14	5.75	5.91	DAN-AB-231002-08@
				869.0000	2.46	-0.03	5.85	6.01	SAN-AB-231002-06@
85012070001				854.0000	2.45	0.01	6.06	6.21	DAN-AB-231002-10@
				861.5000	2.45	0.05	5.85	5.99	DAN-AB-231002-11@
				869.0000	2.46	0.10	6.16	6.29	DAN-AB-231002-09@
Assessment of Additional Batteries									
85012069001	NNTN8023C	HLN6602A	None	854.0000	2.46	0.07	5.66	5.78	DAN-AB-231002-12@
				861.5000	2.45	-0.21	5.42	5.83	DAN-AB-231002-13@
				869.0000					
854.0000									
85012070001	861.5000			2.45	0.09	6.34	6.50	DAN-AB-231002-15@	
	869.0000			2.46	0.01	6.53	6.66	DAN-AB-231002-14@	
85012069001	PMNN4522A			854.0000	2.46	0.11	4.62	4.71	DAN-AB-231002-16@
				861.5000	2.44	-0.02	5.39	5.57	DAN-AB-231002-17@
				869.0000					
85012070001				854.0000					
				861.5000	2.43	0.07	5.99	6.19	AMF-AB-231002-22
				869.0000	2.42	0.09	5.51	5.71	AMF-AB-231002-21

Assessments at the Body with Body worn HLN9714A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 50

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#
85012069001	NNTN8020B	HLN9714A	None	854.0000	2.44	-0.09	5.99	6.29	AMF-AB-231002-24
				861.5000	2.44	-0.05	5.96	6.20	AMF-AB-231003-01@
				869.0000	2.42	0.01	5.96	6.18	AMF-AB-231002-23
85012070001				854.0000	2.46	0.11	6.09	6.21	AMF-AB-231003-03@
				861.5000	2.45	0.03	6.02	6.17	AMF-AB-231003-04@
				869.0000	2.43	-0.02	6.20	6.43	AMF-AB-231010-11
Assessment of Additional Batteries									
85012069001	NNTN8023C	HLN6602A	None	854.0000	2.46	0.06	5.90	6.02	AMF-AB-231003-05@
				861.5000	2.44	0.07	5.94	6.11	AMF-AB-231003-06@
				869.0000					
85012070001				854.0000					
	861.5000			2.46	-0.06	6.17	6.38	DAN-AB-231003-08@	
	869.0000			2.45	0.10	6.30	6.45	DAN-AB-231003-07@	
85012069001	PMNN4522A			854.0000	2.46	0.04	4.93	5.03	DAN-AB-231003-09@
				861.5000	2.46	0.13	4.92	5.02	DAN-AB-231003-10@
				869.0000					
85012070001				854.0000					
				861.5000	2.46	0.15	4.52	4.61	DAN-AB-231003-13
				869.0000	2.44	0.17	4.51	4.64	DAN-AB-231003-12

Assessments at the Body with Body worn PMLN5004B w/ PMLN7961A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 51

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#
85012069001	NNTN8020B	PMLN5004B w/ PMLN7961A	None	854.0000	2.45	-0.05	3.34	3.46	AMF-AB-231003-15
				861.5000					
				869.0000	2.43	-0.02	3.43	3.56	AMF-AB-231003-14
85012070001				854.0000	2.47	0.13	3.24	3.29	AMF-AB-231004-02@
				861.5000					
				869.0000	2.45	0.07	3.71	3.80	AMF-AB-231004-01@
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5004B w/ PMLN7961A	None	854.0000					
				861.5000					
				869.0000	2.43	0.11	3.44	3.55	AMF-AB-231004-03@
	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.45	0.08	3.11	3.19	AMF-AB-231004-04@

Assessments at the Body with Body worn PMLN5004B w/ GMLN5401A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 52

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#
85012069001	NNTN8020B	PMLN5004B w/ GMLN5401A	None	854.0000					
				861.5000					
				869.0000	2.47	-0.02	3.22	3.29	AMF-AB-231004-05@
85012070001				854.0000					
				861.5000					
				869.0000	2.45	-0.01	3.14	3.22	AMF-AB-231004-06@
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN5004B w/ GMLN5401A	None	854.0000					
				861.5000					
				869.0000	2.44	-0.05	2.90	3.02	AMF-AB-231004-07@
	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.46	0.05	2.88	2.94	DAN-AB-231004-08@

Assessments at the Body with Body worn PMLN5004B w/ GMDN0386A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 53

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#	
85012069001	NNTN8020B	PMLN5004B w/ GMDN0386A	None	854.0000	2.47	0.05	4.02	4.09	DAN-AB-231004-11@	
				861.5000	2.45	0.07	3.76	3.85	DAN-AB-231004-10@	
				869.0000	2.46	0.03	4.10	4.18	DAN-AB-231004-09@	
85012070001				854.0000	2.46	0.00	3.92	4.00	DAN-AB-231004-14@	
				861.5000	2.46	-0.02	4.09	4.19	DAN-AB-231004-13@	
				869.0000	2.46	0.15	4.33	4.42	DAN-AB-231004-12@	
Assessment of Additional Batteries										
85012069001	NNTN8023C	PMLN5004B w/ GMDN0386A	None	854.0000						
				861.5000						
				869.0000	2.46	0.03	4.03	4.11	DAN-AB-231004-15@	
85012070001				854.0000						
				861.5000						
85012069001	PMNN4522A			869.0000	2.46	0.03	4.04	4.12	DAN-AB-231004-16@	
				85012069001	854.0000					
					861.5000					
85012070001				869.0000	2.45	-0.03	3.57	3.68	DAN-AB-231004-18	
				854.0000						
		861.5000								
		869.0000	2.46	0.08	3.61	3.68	DAN-AB-231004-19			

Assessments at the Body with Body worn PMLN5004B w/ GMDN0445AA

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 54

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#
85012069001	NNTN8020B	PMLN5004B w/ GMDN0445AA	None	854.0000					
				861.5000					
				869.0000	2.46	0.05	3.07	3.13	DAN-AB-231004-20
85012070001				854.0000					
861.5000									
869.0000				2.43	0.12	3.18	3.28	AMF-AB-231004-21	
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5004B w/ GMDN0445AA	None	854.0000					
				861.5000					
				869.0000	2.42	0.14	3.05	3.16	AMF-AB-231004-22
	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.42	0.11	2.89	3.00	AMF-AB-231004-23

Assessments at the Body with Body worn PMLN5004B w/ GMDN0445AC

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 55

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#
85012069001	NNTN8020B	PMLN5004B w/ GMDN0445AC	None	854.0000					
				861.5000					
				869.0000	2.45	0.09	2.73	2.80	AMF-AB-231004-24
85012070001				854.0000					
				861.5000					
				869.0000	2.44	0.05	2.91	2.99	AMF-AB-231004-25
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5004B w/ GMDN0445AC	None	869.0000	2.45	0.05	2.72	2.79	AMF-AB-231005-01@
85012070001	PMNN4522A			869.0000	2.45	0.05	2.50	2.56	AMF-AB-231005-02@

Assessments at the Body with Body worn PMLN5004B w/ GMDN0566AC

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 56

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#
85012069001	NNTN8020B	PMLN5004B w/ GMDN0566AC	None	854.0000					
				861.5000					
				869.0000	2.43	-0.01	2.22	2.30	AMF-AB-231005-08@
854.0000									
861.5000									
869.0000				2.43	0.01	2.39	2.47	ZIQ-AB-231005-10	
85012070001									
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5004B w/ GMDN0566AC	None	854.0000					
				861.5000					
				869.0000	2.44	0.13	2.20	2.26	ZIQ-AB-231005-11
	854.0000								
	861.5000								
	869.0000			2.45	0.00	2.03	2.08	ZIQ-AB-231005-12	
PMNN4522A									

Assessments at the Body with Body worn PMLN5004B w/ GMDN0547A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 57

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#
85012069001	NNTN8020B	PMLN5004B w/ GMDN0547A	None	854.0000					
				861.5000					
				869.0000	2.45	-0.04	3.13	3.24	ZIQ-AB-231005-14
85012070001				854.0000					
				861.5000					
				869.0000	2.45	0.13	3.28	3.36	ZIQ-AB-231005-15
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5004B w/ GMDN0547A	None	854.0000					
				861.5000					
				869.0000	2.44	0.15	3.08	3.17	AMF-AB-231005-16
	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.43	0.11	2.95	3.05	AMF-AB-231005-17

Assessments at the Body with Body worn PMLN5004B w/ WALN4307A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 58

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#
85012069001	NNTN8020B	PMLN5004B w/ WALN4307A	None	854.0000					
				861.5000					
				869.0000	2.45	0.04	3.03	3.10	AMF-AB-231005-18
85012070001				854.0000					
861.5000									
869.0000				2.45	0.04	3.29	3.37	AMF-AB-231005-19	
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5004B w/ WALN4307A	None	854.0000					
				861.5000					
				869.0000	2.44	-0.07	3.08	3.22	AMF-AB-231005-20
	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.43	0.08	2.96	3.06	AMF-AB-231006-01@

Assessments at the Body with Body worn PMLN5616B

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 59

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#
85012069001	NNTN8020B	PMLN5616B	None	854.0000	2.45	0.14	5.99	6.14	AMF-AB-231006-04@
				861.5000	2.44	0.17	5.14	5.29	AMF-AB-231006-03@
				869.0000	2.45	-0.02	5.81	5.98	AMF-AB-231006-02@
85012070001				854.0000	2.43	0.08	5.88	6.07	AMF-AB-231006-06@
				861.5000	2.43	-0.03	6.21	6.46	SAN-AB-231006-07@
				869.0000	2.44	0.09	6.51	6.70	AMF-AB-231006-05@
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN5616B	None	854.0000	2.46	0.04	5.89	6.01	SAN-AB-231006-08@
				861.5000	2.47	-0.02	6.04	6.17	SAN-AB-231006-09@
				869.0000					
854.0000									
85012070001	861.5000			2.45	-0.20	5.53	5.93	SAN-AB-231006-11@	
	869.0000			2.47	0.04	6.33	6.43	SAN-AB-231006-10@	
	85012069001			PMNN4522A	854.0000	2.43	0.25	4.35	4.49
861.5000					2.44	0.04	4.46	4.59	SAN-AB-231006-14
869.0000									
854.0000									
85012070001					861.5000	2.45	-0.11	4.94	5.19
	869.0000				2.47	0.12	5.14	5.22	SAN-AB-231006-15

Assessments at the Body with Body worn RLN4570A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel. SAR plots of the highest results per Table (bolded) are presented in Appendix E.

Table 60

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#
85012069001	NNTN8020B	RLN4570A	None	854.0000	2.44	-0.27	5.37	5.88	SAN-AB-231007-07@
				861.5000	2.46	0.13	5.27	5.38	DAN-AB-231007-06@
				869.0000	2.45	0.13	4.63	4.74	DAN-AB-231007-05@
85012070001				854.0000	2.47	0.03	5.97	6.07	SAN-AB-231007-09@
				861.5000	2.46	0.11	5.75	5.87	SAN-AB-231007-10@
				869.0000	2.45	0.06	6.03	6.18	SAN-AB-231007-08@
Assessment of Additional Batteries									
85012069001	NNTN8023C	RLN4570A	None	854.0000	2.46	0.12	6.24	6.37	SAN-AB-231010-14
				861.5000	2.44	0.02	6.05	6.22	SAN-AB-231007-12@
				869.0000					
85012070001				854.0000					
				861.5000	2.45	0.09	6.43	6.59	SAN-AB-231007-16
				869.0000	2.46	-0.21	6.34	6.79	SAN-AB-231007-15
85012069001	PMNN4522A			854.0000	2.44	0.01	5.36	5.51	SAN-AB-231007-17
				861.5000					
				869.0000					
85012070001				854.0000					
				861.5000	2.44	0.02	5.51	5.67	SAN-AB-231007-19
				869.0000	2.45	0.09	5.68	5.82	SAN-AB-231007-18

Assessments at the Body with Body worn RLN4815A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 61

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#	
85012069001	NNTN8020B	RLN4815A	None	854.0000	2.44	0.14	3.07	3.16	DAN-AB-231007-22	
				861.5000	2.46	0.06	3.83	3.91	DAN-AB-231007-21	
				869.0000	2.45	0.07	4.20	4.30	SAN-AB-231007-20	
85012070001				854.0000	2.46	0.26	3.62	3.69	DAN-AB-231007-25	
				861.5000	2.46	0.12	3.85	3.93	DAN-AB-231007-24	
				869.0000	2.44	0.09	4.03	4.15	DAN-AB-231007-23	
Assessment of Additional Batteries										
85012069001	NNTN8023C	RLN4815A	None	854.0000						
				861.5000						
				869.0000	2.46	-0.01	3.34	3.42	DAN-AB-231007-26	
85012070001				854.0000						
				861.5000						
85012069001	PMNN4522A			869.0000	2.46	0.09	3.79	3.87	DAN-AB-231008-01@	
				85012069001	854.0000					
					861.5000					
85012070001				869.0000	2.45	-0.05	3.31	3.43	DAN-AB-231008-02@	
				854.0000						
	861.5000									
869.0000	2.45	0.10	3.72	3.81	DAN-AB-231008-03@					

Assessments at the Body with Body worn PMLN8025A w/ PMLN7961A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 62

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#
85012069001	NNTN8020B	PMLN8025A w/ PMLN7961A	None	854.0000	2.44	-0.02	3.78	3.91	DAN-AB-231008-05@
				861.5000					
				869.0000	2.45	0.13	3.85	3.94	DAN-AB-231008-04@
85012070001				854.0000	2.46	0.19	3.50	3.57	SAN-AB-231008-08@
				861.5000	2.45	0.08	3.92	4.02	SAN-AB-231008-07@
				869.0000	2.46	0.17	4.25	4.34	SAN-AB-231008-06@
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN8025A w/ PMLN7961A	None	854.0000					
				861.5000					
				869.0000	2.47	0.15	4.01	4.07	SAN-AB-231008-09@
	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.47	0.08	3.48	3.54	SAN-AB-231008-11

Assessments at the Body with Body worn PMLN8025A w/ GMLN5401A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 63

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#
85012069001	NNTN8020B	PMLN8025A w/ GMLN5401A	None	854.0000	2.47	0.01	3.50	3.56	SAN-AB-231008-13
				861.5000					
				869.0000	2.47	-0.05	3.66	3.76	SAN-AB-231008-12
85012070001				854.0000	2.47	0.00	3.47	3.53	SAN-AB-231008-15
				861.5000					
				869.0000	2.46	0.10	3.62	3.69	SAN-AB-231008-14
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN8025A w/ GMLN5401A	None	854.0000					
				861.5000					
				869.0000	2.46	-0.06	3.67	3.80	DAN-AB-231008-16
	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.47	0.10	3.36	3.41	DAN-AB-231008-17

Assessments at the Body with Body worn PMLN8025A w/ GMDN0386A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 64

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#	
85012069001	NNTN8020B	PMLN8025A w/ GMDN0386A	None	854.0000	2.47	0.13	4.83	4.91	DAN-AB-231008-20	
				861.5000	2.45	-0.06	4.58	4.76	DAN-AB-231008-19	
				869.0000	2.46	-0.02	4.57	4.68	DAN-AB-231008-18	
85012070001				854.0000	2.47	0.04	4.67	4.75	DAN-AB-231009-01@	
				861.5000	2.45	0.07	4.95	5.07	DAN-AB-231008-22	
				869.0000	2.46	0.04	5.04	5.14	DAN-AB-231008-21	
Assessment of Additional Batteries										
85012069001	NNTN8023C	PMLN8025A w/ GMDN0386A	None	854.0000	2.46	0.12	4.61	4.70	DAN-AB-231009-02@	
				861.5000						
				869.0000						
85012070001				854.0000						
				861.5000						
85012069001	PMNN4522A			869.0000	2.47	0.08	5.00	5.08	DAN-AB-231009-03@	
				85012069001	854.0000	2.47	0.09	3.97	4.03	DAN-AB-231009-04@
					861.5000					
869.0000										
85012070001					854.0000					
		861.5000								
		869.0000	2.46	0.05	4.22	4.31	DAN-AB-231009-05@			

Assessments at the Body with Body worn PMLN8025A w/ GMDN0445AA

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 65

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#
85012069001	NNTN8020B	PMLN8025A w/ GMDN0445AA	None	854.0000	2.47	0.09	3.73	3.79	DAN-AB-231009-07@
				861.5000					
				869.0000	2.46	0.05	3.67	3.74	DAN-AB-231009-06@
85012070001				854.0000	2.46	0.10	3.50	3.57	AMF-AB-231009-09@
				861.5000					
				869.0000	2.45	0.02	3.87	3.96	AMF-AB-231009-08@
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN8025A w/ GMDN0445AA	None	854.0000					
				861.5000					
				869.0000	2.46	0.01	3.68	3.75	AMF-AB-231009-10@
	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.45	0.05	3.43	3.51	AMF-AB-231009-11@

Assessments at the Body with Body worn PMLN8025A w/ GMDN0445AC

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 66

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#
85012069001	NNTN8020B	PMLN8025A w/ GMDN0445AC	None	854.0000					
				861.5000					
				869.0000	2.45	0.03	3.31	3.39	AMF-AB-231009-12@
85012070001				854.0000					
				861.5000					
				869.0000	2.46	-0.05	3.21	3.31	AMF-AB-231009-13@
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN8025A w/ GMDN0445AC	None	854.0000					
				861.5000					
				869.0000	2.46	0.07	3.08	3.14	AMF-AB-231009-14@
85012069001	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.44	0.08	2.73	2.81	AMF-AB-231009-15@

Assessments at the Body with Body worn PMLN8025A w/ GMDN0566AC

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 67

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#
85012069001	NNTN8020B	PMLN8025A w/ GMDN0566AC	None	854.0000					
				861.5000					
				869.0000	2.47	0.03	2.75	2.79	AMF-AB-231009-16@
85012070001				854.0000					
				861.5000					
				869.0000	2.45	0.00	3.00	3.07	AMF-AB-231009-18
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN8025A w/ GMDN0566AC	None	854.0000					
				861.5000					
				869.0000	2.46	0.13	2.80	2.86	AMF-AB-231009-19
	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.45	0.14	2.67	2.74	AMF-AB-231009-20

Assessments at the Body with Body worn PMLN8025A w/ GMDN0547A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 68

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#
85012069001	NNTN8020B	PMLN8025A w/ GMDN0547A	None	854.0000	2.47	0.05	3.53	3.59	AMF-AB-231009-22
				861.5000					
				869.0000	2.44	-0.06	3.83	3.99	AMF-AB-231009-21
85012070001				854.0000	2.46	0.06	3.54	3.61	DAN-AB-231009-25
				861.5000	2.45	0.06	3.61	3.70	DAN-AB-231009-24
				869.0000	2.45	0.04	3.93	4.03	AMF-AB-231009-23
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN8025A w/ GMDN0547A	None	854.0000					
				861.5000					
				869.0000	2.46	0.01	3.79	3.87	DAN-AB-231009-26
	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.45	0.11	3.52	3.61	DAN-AB-231009-27

Assessments at the Body with Body worn PMLN8025A w/ WALN4307A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 69

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#
85012069001	NNTN8020B	PMLN8025A w/ WALN4307A	None	854.0000	2.46	0.21	3.42	3.49	DAN-AB-231009-30
				861.5000	2.45	0.05	3.69	3.78	DAN-AB-231009-29
				869.0000	2.45	0.08	3.99	4.09	DAN-AB-231009-28
85012070001				854.0000	2.46	0.01	3.65	3.72	DAN-AB-231009-33
				861.5000	2.45	0.17	3.75	3.84	DAN-AB-231009-32
				869.0000	2.46	0.04	4.01	4.09	DAN-AB-231009-31
Assessment of Additional Batteries									
85012069001	NNTN8023C	PMLN8025A w/ WALN4307A	None	854.0000					
				861.5000					
				854.0000	2.46	0.09	3.77	3.85	DAN-AB-231010-01@
85012070001				861.5000					
				869.0000					
	869.0000			2.46	0.12	3.84	3.92	DAN-AB-231010-02@	
85012069001	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.45	0.10	3.57	3.66	DAN-AB-231010-03@
85012070001				854.0000					
		861.5000							
		869.0000	2.45	0.06	3.51	3.60	DAN-AB-231010-04@		

Assessments at the Body with Body worn PMLN5885B w/ NTN5243A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 70

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#
85012069001	NNTN8020B	PMLN5885B w/ NTN5243A	None	854.0000					
				861.5000					
				869.0000	2.45	-0.02	3.06	3.15	SAN-AB-231019-05@
85012070001				854.0000	2.46	0.06	3.77	3.85	SAN-AB-231019-07@
				861.5000					
				869.0000	2.46	0.05	3.73	3.81	SAN-AB-231019-06@
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5885B w/ NTN5243A	None	854.0000	2.45	0.01	3.61	3.70	SAN-AB-231019-08@
				861.5000					
				869.0000					
	PMNN4522A			854.0000	2.46	-0.04	2.76	2.84	SAN-AB-231019-09@
				861.5000					
				869.0000					

Assessments at the Body with Body worn PMLN5887B w/ NTN5243A

DUT assessment with offered antennas, default battery and, default body worn accessory per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 48 for highest output power channel.

Table 71

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#
85012069001	NNTN8020B	PMLN5887B w/ NTN5243A	None	854.0000					
				861.5000					
				869.0000	2.45	0.05	3.10	3.18	SAN-AB-231019-10@
85012070001				854.0000	2.45	0.20	3.35	3.43	SAN-AB-231019-12@
				861.5000					
				869.0000	2.44	-0.12	3.62	3.83	SAN-AB-231019-11@
Assessment of Additional Batteries									
85012070001	NNTN8023C	PMLN5887B w/ NTN5243A	None	854.0000					
				861.5000					
				869.0000	2.45	0.05	3.49	3.58	SAN-AB-231019-13@
	PMNN4522A			854.0000					
				861.5000					
				869.0000	2.45	0.04	2.95	3.02	SAN-AB-231019-14@

Assessment at the Body with audio accessory

DUT voice assessment using the overall highest SAR configuration at the body from above with default audio accessory attached. Additional testing in voice mode (SSPD) is not required per IEEE1528 because of lower “maximum source-based time averaged output power as compared to data mode (MSPD). Assessment per “KDB 643646 Body SAR Test Consideration for Audio Accessories without Built-in Antenna; when overall reported SAR < 4.0 W/kg, SAR tested for that audio accessory is not necessary.” This was applicable to all remaining accessories.

Table 72

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#
85012070001	NNTN8023C	RLN4570A	PMMN4072A	854.0000					
				861.5000					
				869.0000	2.70	-0.05	2.77	1.56	AMF-AB-231010-13

Assessment of wireless BT configuration

DUT voice assessment using the overall highest SAR configuration at the body from above without an audio accessory attached.

Table 73

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#
85012070001	NNTN8020B	RLN4570A	None	854.0000					
				861.5000					
				869.0000	2.70	0.14	3.28	1.82	AMF-AB-231010-12

13.5 LMR assessments at the Face for 854-869 MHz band

Battery PMNN4522A was selected as the default battery for assessments at the Face because it has the highest capacity (refer to Exhibit 7B for battery illustration). The default battery was used during conducted power measurements for all test channels within FCC allocated frequency range (854-869 MHz) which are listed in Table 74. The channel with the highest conducted power will be identified as the default channel per KDB 643646 (SAR Test for PTT Radios).

Table 74

Test Freq (MHz)	Power (W)
854.0000	2.67
861.5000	2.68
869.0000	2.66

DUT assessment with offered antennas, default battery with front of DUT positioned 2.5cm facing phantom per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 74 for highest output power channel. SAR plots of the highest results per Table (bolded) are presented in Appendix E.

Table 75

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#	
85012069001	PMNN4522A	@ front	None	854.0000						
				861.5000	2.69	0.11	1.11	0.62	DAN-FACE-231001-07@	
				869.0000						
85012070001				854.0000						
861.5000				2.69	0.00	1.10	0.61	DAN-FACE-231001-08@		
869.0000										
Assessment of Additional Batteries										
85012069001	NNTN8020B	@ front	None	854.0000						
				861.5000	2.69	0.05	1.16	0.65	DAN-FACE-231001-09@	
				869.0000						
	NNTN8023C			854.0000						
				861.5000	2.69	0.01	1.15	0.64	DAN-FACE-231001-10@	
				869.0000						

13.6 LMR assessments at the Head for 854-869 MHz band

Battery PMNN4522A was selected as the default battery for assessments at the Face because it has the highest capacity (refer to Exhibit 7B for battery illustration). The default battery was used during conducted power measurements for all test channels within FCC allocated frequency range (854-869 MHz) which are listed in Table 76. The channel with the highest conducted power will be identified as the default channel per KDB 643646 (SAR Test for PTT Radios).

Table 76

Test Freq (MHz)	Power (W)
854.0000	2.67
861.5000	2.68
869.0000	2.66

Assessment at the Left ear with Cheek Touch and 15° Tilt positions

Left ear position assessment with offered antennas and default battery with the DUT in both the cheek touch and tilt positions per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 76 for highest output power channel. SAR plots of the highest results per Table (bolded) are presented in Appendix E.

Table 77

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#
85012070001	PMNN4522A	None, Touch	None	854.0000	2.70	0.00	3.07	3.41	AMF-LEAR-230930-10
				861.5000					
				869.0000					
		None, Tilt		854.0000	2.70	-0.01	2.46	2.74	AMF-LEAR-230930-12
				861.5000					
				869.0000					
85012069001		None, Touch		854.0000	2.69	0.19	2.96	3.30	AMF-LEAR-230930-11
				861.5000					
				869.0000					
		None, Tilt		854.0000	2.70	-0.03	2.34	2.62	AMF-LEAR-230930-13
				861.5000					
				869.0000					
Assessment of Additional Batteries									
85012070001	NNTN8020B	None, Touch	None	854.0000	2.71	0.03	2.92	3.23	SAN-LEAR-230930-14
				861.5000					
				869.0000					
	NNTN8023C			854.0000	2.70	0.03	2.93	3.26	SAN-LEAR-230930-15
				861.5000					
				869.0000					

Assessment at the Right ear with Cheek Touch and 15° Tilt positions

Left ear position assessment with offered antennas and default battery with the DUT in both the cheek touch and tilt positions per KDB 643646. Optional batteries were tested per the requirements of KDB 643646. Refer to Table 76 for highest output power channel.

Table 78

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#
85012070001	PMNN4522A	None, Touch	None	854.0000	2.71	0.05	2.94	3.25	SAN-REAR-231001-01@
				861.5000					
				869.0000					
		None, Tilt		854.0000	2.71	0.02	2.41	2.67	SAN-REAR-231001-02@
				861.5000					
				869.0000					
85012069001		None, Touch		854.0000	2.73	0.02	2.88	3.16	SAN-REAR-231001-04@
				861.5000					
				869.0000					
		None, Tilt		854.0000	2.72	0.16	2.47	2.72	SAN-REAR-231001-03@
				861.5000					
				869.0000					
Assessment of Additional Batteries									
85012070001	NNTN8020B	None, Touch	None	854.0000	2.71	0.10	2.96	3.28	SAN-REAR-231001-05@
				861.5000					
				869.0000					
	NNTN8023C			854.0000	2.72	0.00	2.87	3.17	SAN-REAR-231001-06@
				861.5000					
				869.0000					

13.7 Assessment for ISED, Canada

Based on the assessment results from Body, Face and Head per KDB 643646, additional tests were not required for ISED Canada frequency range (806-824MHz, 851-869MHz) as testing performed is compliance with ISED Canada frequency range.

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. SAR plots of the highest results per Table (bolded) are presented in Appendix E.

Table 79

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#
ISED, Canada frequency range (806-824 MHz)									
Body									
85012070001	NNTN8020B	HLN6602A	None	809.0000	2.45	0.02	5.68	5.82	DAN-AB-230921-12
				816.5000	2.45	-0.07	5.59	5.82	DAN-AB-230921-13
				824.0000	2.44	0.01	5.97	6.14	AMF-AB-230921-14
Face									
85012069001	NNTN8020B	@ front	None	809.0000	2.75	-0.06	0.88	0.49	DAN-FACE-230919-04@
				816.5000	2.75	-0.03	0.95	0.52	AMF-FACE-230928-09
				824.0000	2.73	-0.08	1.07	0.60	SAN-FACE-230930-02@
Head									
85012069001	NNTN8020B	None, Touch	None	809.0000	2.75	-0.13	3.26	3.66	AMF-REAR-230918-08@
				816.5000	2.72	-0.03	3.49	3.88	AMF-REAR-230928-11
				824.0000	2.71	-0.01	3.45	3.83	AMF-REAR-230928-12
ISED, Canada frequency range (851-869 MHz)									
Body									
85012070001	NNTN8023C	RLN4570A	None	854.0000	2.46	0.12	6.24	6.37	SAN-AB-231010-14
				861.5000	2.45	0.09	6.43	6.59	SAN-AB-231007-16
				869.0000	2.46	-0.21	6.34	6.79	SAN-AB-231007-15
Face									
85012069001	NNTN8020B	@ front	None	854.0000	2.70	0.06	1.05	0.58	AMF-FACE-231010-07@
				861.5000	2.69	0.05	1.16	0.65	DAN-FACE-231001-09@
				869.0000	2.70	0.03	1.19	0.66	AMF-FACE-231010-08@
Head									
85012070001	PMNN4522A	None, Touch	None	854.0000	2.70	0.00	3.07	3.41	AMF-LEAR-230930-10
				861.5000	2.66	0.07	3.09	3.48	AMF-LEAR-231011-03@
				869.0000	2.70	0.06	3.09	3.43	AMF-LEAR-231011-04@

13.8 Assessment at the Bluetooth band

13.8.1 FCC US Requirement

Per guidelines in KDB 447498, the following formula was used to determine the test exclusion for standalone Bluetooth transmitter;

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] * [\sqrt{F_{(\text{GHz})}}] = 0.73$, which is ≤ 3 for 1-g SAR extremity

where:

Max. power = 2.31mW (4.61mW*50% duty cycle)

Min. test separation distance = 5mm for actual test separation < 5mm

$F(\text{GHz}) = 2.48 \text{ GHz}$

Per the result from the calculation above, the standalone SAR assessment was not required for Bluetooth band. Therefore, SAR results for Bluetooth are not reported herein.

13.8.2 ISED Canada Requirement

Based on RSS-102 Issue 5, exemption limits for SAR evaluation for controlled devices at Bluetooth frequency band with separation distance $\leq 5\text{mm}$ was 20 mW.

Standalone Bluetooth transmitter operates at

Maximum conducted power:

= 4.61 mW * 50%

= 2.31 mW or 3.64 dBm

Equivalent isotropically radiated power (EIRP):

= Maximum conducted power, dBm + Antenna gain, dBi

= 3.64 dBm + 0.1 dBi

= 3.74 dBm or 2.37 mW

Higher output power level, maximum EIRP power 2.37 mW was below the threshold power level 20 mW. Hence SAR test was not required for Bluetooth band.

13.9 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 80

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#
85012070001	NNTN8023C	RLN4570A	None	869.0000	2.46	-0.01	6.16	6.30	SAN-AB-231011-02@

14.0 Simultaneous Transmission

The Table below summarizes the simultaneous transmission conditions for this device.

Table 81

Exposure Conditions	Capable Simultaneous Transmit Configurations
Body-Worn	LMR + BT
Face	LMR + BT
Head	LMR + BT

14.1 Simultaneous Transmission Exclusion for BT

Per guidelines in KDB 447498, the following formula was used to determine the test exclusion to an antenna that transmits simultaneously with other antennas for test distances $\leq 50\text{mm}$:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] * [\sqrt{F(\text{GHz})/X}] = 0.10 \text{ W/kg}$, which is $\leq 0.4 \text{ W/kg}$ (1g)

where:

X = 7.5 for 1g-SAR

Max. power = 2.31mW (4.61mW*50% duty cycle)

Min. test separation distance = 5mm for actual test separation < 5mm

F(GHz) = 2.48 GHz

Per the result from the calculation above, simultaneous transmission SAR test exclusion is applied and therefore the sums of 1-g SAR test exclusion are shown in Table below:

Table 82

Exposure Conditions	LMR 809 – 824 MHz	LMR 854 – 869 MHz	BT 2402 -2480 MHz	Sum of 1-g SAR (W/kg) 809 -824 MHz + BT	Sum of 1-g SAR (W/kg) 854 869 MHz + BT
Body-Worn	6.14	6.79	0.10	6.24	6.89
Face	0.60	0.66	0.10	0.70	0.76
Head	3.88	3.48	0.10	3.98	3.58

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 83

Designator	Frequency band (MHz)	Max Calc at Body (W/kg)	Max Calc at Face (W/kg)	Max Calc at Head (W/kg)
		1g-SAR	1g-SAR	1g-SAR
FCC US				
LMR	809 - 824	6.14	0.60	3.88
LMR	854 - 869	6.79	0.66	3.48
BT	2402-2480	0.10	0.10	0.10
Highest Simultaneous Transmission SAR		6.89	0.76	3.98
ISED Canada				
LMR	806 - 824	6.14	0.60	3.88
LMR	851 - 869	6.79	0.66	3.48
BT	2402-2480	0.10	0.10	0.10
Highest Simultaneous Transmission SAR		6.89	0.76	3.98

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 and RSS-102 (Issue 5).

16.0 Variability Assessment

Per the guidelines in KDB 865664 SAR variability assessment is required because SAR results are above 4.0W/kg (Occupational)

The Table below includes test results of the original measurement(s), the repeated measurement(s), and the ratio (SAR_{high}/SAR_{low}) for the applicable test configuration(s).

Table 84

Run#	Antenna	Battery	Carry Accessory	Cable Accessory	Test Freq. (MHz)	Adj Calc. 1g-SAR (W/kg)	Ratio	Comments
809 - 824MHz								
AMF-AB-230921-14	85012070001	NNTN8020B	HLN6602A	None	824.0000	5.97	1.05	No additional repeated scans is required due to the Ratio (SAR _{high} /SAR _{low}) < 1.20
DAN-AB-231218-04						5.71		
854 - 869MHz								
SAN-AB-231007-15	85012070001	NNTN8023C	RLN4570A	None	869.0000	6.65	1.08	No additional repeated scans is required due to the Ratio (SAR _{high} /SAR _{low}) < 1.20
SAN-AB-231011-02@						6.17		

17.0 System Uncertainty

A system uncertainty analysis is not required for this report per KDB 865664 because the highest report SAR value for Occupational exposure is less than 7.5W/kg.

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

Appendix A

Measurement Uncertainty Budget

Uncertainty Budget for System Validation (dipole & flat phantom) for 800 MHz to 3 GHz

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e = f(d,k)</i>	<i>f</i>	<i>g</i>	<i>h = c x f / e</i>	<i>i = c x g / e</i>	<i>k</i>
Uncertainty Component	IEEE 1528 section	Tol. (± %)	Prob. Dist.	Div.	<i>c_i</i> (1 g)	<i>c_i</i> (10 g)	1 g <i>u_i</i> (±%)	10 g <i>u_i</i> (±%)	<i>v_i</i>
Measurement System									
Probe Calibration	E.2.1	6.0	N	1.00	1	1	6.0	6.0	∞
Axial Isotropy	E.2.2	4.7	R	1.73	1	1	2.7	2.7	∞
Spherical Isotropy	E.2.2	9.6	R	1.73	0	0	0.0	0.0	∞
Boundary Effect	E.2.3	1.0	R	1.73	1	1	0.6	0.6	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	0.3	N	1.00	1	1	0.3	0.3	∞
Response Time	E.2.7	1.1	R	1.73	1	1	0.6	0.6	∞
Integration Time	E.2.8	0.0	R	1.73	1	1	0.0	0.0	∞
RF Ambient Conditions - Noise	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1	0.0	R	1.73	1	1	0.0	0.0	∞
Probe Positioner Mechanical Tolerance	E.6.2	0.4	R	1.73	1	1	0.2	0.2	∞
Probe Positioning w.r.t. Phantom	E.6.3	1.4	R	1.73	1	1	0.8	0.8	∞
Max. SAR Evaluation (ext., int., avg.)	E.5	3.4	R	1.73	1	1	2.0	2.0	∞
Dipole									
Dipole Axis to Liquid Distance	8, E.4.2	2.0	R	1.73	1	1	1.2	1.2	∞
Input Power and SAR Drift Measurement	8, 6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity (target)	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (measurement)	E.3.3	3.3	R	1.73	0.64	0.43	1.2	0.8	∞
Liquid Permittivity (target)	E.3.2	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Liquid Permittivity (measurement)	E.3.3	1.9	R	1.73	0.6	0.49	0.6	0.5	∞
Combined Standard Uncertainty			RSS				9	9	99999
Expanded Uncertainty (95% CONFIDENCE LEVEL)			k=2				18	17	

Notes for uncertainty budget Tables:

a) Column headings a-k are given for reference.

b) Tol. - tolerance in influence quantity.

c) Prob. Dist. – Probability distribution

d) N, R - normal, rectangular probability distributions

e) Div. - divisor used to translate tolerance into normally distributed standard uncertainty

f) *c_i* - sensitivity coefficient that should be applied to convert the variability of the uncertainty component into a variability of SAR.

g) *u_i* – SAR uncertainty

h) *v_i* - degrees of freedom for standard uncertainty and effective degrees of freedom for the expanded uncertainty

Uncertainty Budget for Device Under Test, for 800 MHz to 3 GHz

<i>a</i>	<i>b</i>	<i>c</i>	<i>d</i>	<i>e</i> = <i>f</i> (<i>d</i> , <i>k</i>)	<i>f</i>	<i>g</i>	<i>h</i> = <i>c</i> × <i>f</i> / <i>e</i>	<i>i</i> = <i>c</i> × <i>g</i> / <i>e</i>	<i>k</i>
Uncertainty Component	IEEE 1528 section	Tol. (± %)	Prob Dist	Div.	<i>c_i</i> (1 g)	<i>c_i</i> (10 g)	1 g <i>u_i</i> (±%)	10 g <i>u_i</i> (±%)	<i>v_i</i>
Measurement System									
Probe Calibration	E.2.1	6.0	N	1.00	1	1	6.0	6.0	∞
Axial Isotropy	E.2.2	4.7	R	1.73	0.707	0.707	1.9	1.9	∞
Hemispherical Isotropy	E.2.2	9.6	R	1.73	0.707	0.707	3.9	3.9	∞
Boundary Effect	E.2.3	1.0	R	1.73	1	1	0.6	0.6	∞
Linearity	E.2.4	4.7	R	1.73	1	1	2.7	2.7	∞
System Detection Limits	E.2.5	1.0	R	1.73	1	1	0.6	0.6	∞
Readout Electronics	E.2.6	0.3	N	1.00	1	1	0.3	0.3	∞
Response Time	E.2.7	1.1	R	1.73	1	1	0.6	0.6	∞
Integration Time	E.2.8	1.1	R	1.73	1	1	0.6	0.6	∞
RF Ambient Conditions - Noise	E.6.1	3.0	R	1.73	1	1	1.7	1.7	∞
RF Ambient Conditions - Reflections	E.6.1	0.0	R	1.73	1	1	0.0	0.0	∞
Probe Positioner Mech. Tolerance	E.6.2	0.4	R	1.73	1	1	0.2	0.2	∞
Probe Positioning w.r.t Phantom	E.6.3	1.4	R	1.73	1	1	0.8	0.8	∞
Max. SAR Evaluation (ext., int., avg.)	E.5	3.4	R	1.73	1	1	2.0	2.0	∞
Test sample Related									
Test Sample Positioning	E.4.2	3.2	N	1.00	1	1	3.2	3.2	29
Device Holder Uncertainty	E.4.1	4.0	N	1.00	1	1	4.0	4.0	8
SAR drift	6.6.2	5.0	R	1.73	1	1	2.9	2.9	∞
Phantom and Tissue Parameters									
Phantom Uncertainty	E.3.1	4.0	R	1.73	1	1	2.3	2.3	∞
Liquid Conductivity (target)	E.3.2	5.0	R	1.73	0.64	0.43	1.8	1.2	∞
Liquid Conductivity (measurement)	E.3.3	3.3	N	1.00	0.64	0.43	2.1	1.4	∞
Liquid Permittivity (target)	E.3.2	5.0	R	1.73	0.6	0.49	1.7	1.4	∞
Liquid Permittivity (measurement)	E.3.3	1.9	N	1.00	0.6	0.49	1.1	0.9	∞
Combined Standard Uncertainty			RSS				11	11	419
Expanded Uncertainty (95% CONFIDENCE LEVEL)			<i>k</i> =2				22	22	

Notes for uncertainty budget Tables:

a) Column headings a-k are given for reference.

b) Tol. - tolerance in influence quantity.

c) Prob. Dist. – Probability distribution

d) N, R - normal, rectangular probability distributions

e) Div. - divisor used to translate tolerance into normally distributed standard uncertainty

f) *c_i* - sensitivity coefficient that should be applied to convert the variability of the uncertainty component into a variability of SAR.

g) *u_i* – SAR uncertainty

h) *v_i* - degrees of freedom for standard uncertainty and effective degrees of freedom for the expanded uncertainty