Test Report Serial Number:	454646 R6.0
Test Report Date:	5 March 2021
Project Number:	1522

SAR Test Report - New Certification

Applicant:

Maximum Reported 1g SAR				
FCC	LMR	FACE:	2.36	W/kg
		BODY:	3.52	
ISED		FACE:	2.51	
		BODY:	3.52	
Simultaneous:			3.54	
Occupational Limit:			8.00	

Harris Corporation
221 Jefferson Ridge Parkway
Lynchburg, VA, 24501
USA

FCC ID:	ISED Registration Number
OWDTR-0162-E	3636B-0162
Product Name / PMN	Product Model Number / HVIN
XL-95	XL-x5-7/8

In Accordance With:

FCC 47 CFR §2.1093
Radiofrequency Radiation Exposure Evaluation: Portable Devices

IC RSS-102 Issue 5
Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)

Approved By:

Ben Hewson, President
Celltech Labs Inc.
21-364 Lougheed Rd.
Kelowna, BC, V1X 7R8
Canada

Test Lab Certificate: 2470.01 | **IC Registration 3874A-1** | **FCC Registration: 714830**

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1.0 DOCUMENT CONTROL

Revision History				
Samples Tested By:	Jasmeet Gill, Trevor Whillock	**Date(s) of Evaluation:**		12 Jan - 22 Jan 2021
Report Prepared By:	Trevor Whillock, Art Voss, P.Eng.	**Report Reviewed By:**		Art Voss
Report Revision	**Description of Revision**	**Revised Section**	**Revised By**	**Revision Date**
0.1	Draft Release	n/a	Trevor Whillock	22 Jan 2021
0.2	Draft Release - Revised	n/a	Art Voss	25 Jan 2021
1.0	Final Release	n/a	Art Voss	26 Jan 2021
2.0	Revised LMR Operating Frequencies	2.0	Art Voss	27 Jan 2021
3.0	Revised Product Marketing Name / PMN	2,3,5	Art Voss	27 Jan 2021
4.0	Revised per TCB Comments	2,10,11,F	Art Voss	11 Feb 2021
5.0	Removed Battery P4 from the Manufacturer's Accessory List	8	Art Voss	12 Feb 2021
6.0	Revised Rated Power, pg 11	6	Art Voss	5 March 2021

2.0 CLIENT AND DEVICE INFORMATION

Client Information		
Applicant Name	**Harris Corporation**	
Applicant Address	221 Jefferson Ridge Parkway	
	Lynchburg, VA, 24501	
	USA	
DUT Information		
Device Identifier(s):	**FCC ID:**	**OWDTR-0162-E**
	ISED:	**3636B-0162**
Device Marketing Name / PMN:	XL-95	
Device Model(s) / HVIN:	XL-x5-7/8	
Test Sample Serial No.:	A40198E2A012	
	A40198E2A013	
Equipment Class (FCC):	Licensed Non-Broadcast Transmitter Held to Face (TNF) FCC Part 90 - LMRS	
	Digital Transmission System (DTS) FCC Part 15C - WiFi	
	Spread Spectrum Transmitter (DSS) FCC Part 15C - BT	
	Unlicensed National Information Infrastructure (NII) FCC Part 15E - WiFi	
Equipment Class (ISED):	Land Mobile Radio Transmitter/Receiver (27.41-960MHz) RSS-119	
	WLAN RSS-247 - WiFi 2412 - 2462MHz	
	BlueTooth Device RSS-247 - BT	
	WLAN RSS-247 - WiFi 5180 - 5240MHz	
	Spread Spectrum/Digital Device (5725 - 5850MHz) RSS-247	
Transmit Frequency Range (FCC):	700 Band: 763 - 776MHz, 793-806MHz	
	800 Band: 806 - 825MHz, 851 - 870MHz	
	BT: 2402-2480MHz	
	WiFI 2.4G: 2412-2462MHz	
	WiFi 5G: 5180-5240MHz, 5745-5825MHz	
Transmit Frequency Range (ISED):	700 Band: 768 - 776MHz, 798-806MHz	
	800 Band: 806 - 824MHz, 851 - 869MHz	
	BT: 2402-2480MHz	
	WiFi 2.4G: 2412-2462MHz	
	WiFi 5G: 5180-5240MHz, 5745-5825MHz	
Number of Channels:	Programmable	
Transmitter Rated Power Including Tune-Up Tolerance:	700 Band: 2.7W (34.3dBm)	
	800 Band: 3.2W (35.1dBm)	
	BT: 0.0016W (2dBm)	
	WLAN 2.4G: 0.0083W (9.2dBm)	
	WLAN 5G: 5180-5240MHz: 0.015W (11.76dBm)	
	WLAN 5G: 5745-5825MHz: 0.003W (4.77dBm)	
Duty Cycle:	BT/WLAN: 100%, LMR: 50% PTT Duty Cycle	
DUT Power Source:	7.4VDC Li-Ion Rechargeable Battery, AA Alkaline Battery	
Deviation(s) from standard/procedure:	None	
Modification of DUT:	None	

3.0 SCOPE OF EVALUATION/DATA REUSE

This Certification Report was prepared on behalf of:

Harris Corporation

,(the '*Applicant*"), in accordance with the applicable Federal Communications Commission (FCC) CFR 47 and Innovation, Scientific and Economic Development (ISED) Canada rules parts and regulations (the '*Rules*'). The scope of this investigation was limited to only the equipment, devices and accessories (the '*Equipment*') supplied by the *Applicant*. The tests and measurements performed on this *Equipment* were only those set forth in the applicable *Rules* and/or the Test and Measurement Standards they reference. The *Rules* applied and the Test and Measurement Standards used during this evaluation appear in the Normative References section of this report. The limits set forth in the technical requirements of the applicable *Rules* were applied to the measurement results obtained during this evaluation and ,unless otherwise noted, these limits were used as the Pass/Fail criteria. The Pass/Fail statements made in this report apply to only the tests and measurements performed on only the *Equipment* tested during this evaluation. Where applicable and permissible, information including test and measurement data and/or results from previous evaluations of same or similar equipment, devices and/or accessories may be cited in this report.

As per FCC 47 CFR Part §2.1091 and §2.1093, an RF Exposure evaluation report is required for this *Equipment* and the results of the RF Exposure evaluation appear in this report.

The XL-95, FCC ID: **OWDTR-0162-E** , IC ID: **3636B-0162**, is a 7/800 MHz band Push-To-Talk (PTT), Licensed Mobile Radio Service (LMRS) transceiver intended for Occupational Use. This "host" employs WiFi and Bluetooth transceivers. The XL-95P is similar to the XG-75P, FCC ID: OWDTR-0074-E, IC ID: 3636B-0074 , which has been previously evaluated for SAR and the results of those previous evaluations were taken into consideration when developing the XL-95P SAR Test Plan. The XL-95P uses the same accessories as the XG-75P and these accessories and additional accessories were also taken into consideration and/or evaluated as well.

Application:

This is an application for a new device certification.

Scope:

Due to the nature of this device, the scope of this evaluation is to evaluate the SAR for intended use applications. It will include an extensive evaluation of the LMR transmitter and all simultaneous transmission conditions that can occur with this host device. The analysis of the Standalone and Simultaneous Transmission SAR if found in Section 11.0 of this report.

The Test Plan developed for this evaluation is based on the required test channels and configurations which produced the highest worst case SAR and where applicable, SAR test reduction and/or SAR test exclusion may be utilized. The DUT was evaluated for SAR at the maximum tune up tolerance and conducted output power level, preset by the manufacturer and in accordance with the procedures described in IEEE 1528, IEC 62209-2, FCC KDB 865646, 447498, and RSS 102.

4.0 NORMATIVE REFERENCES

Normative References*	
ANSI / ISO 17025:2017	General Requirements for competence of testing and calibration laboratories
FCC CFR Title 47 Part 2 Title 47: Part 2.1093:	Code of Federal Regulations Telecommunication Radiofrequency Radiation Exposure Evaluation: Portable Devices
Health Canada Safety Code 6 (2015)	Limits of Human Exposure to Radiofrequency Electromagnetic Energy in the Frequency Range from 3kHz to 300GHz
Industry Canada Spectrum Management & Telecommunications Policy RSS-102 Issue 5:	Radio Frequency Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)
IEEE International Committee on Electromagnetic Safety IEEE 1528-2013:	IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques
IEC International Standard IEC 62209-2 2019	Human exposure to radio frequency fields from hand-held and body-mounted wireless communication devices - Part 2
FCC KDB KDB 248227 D01v02r02	SAR Guidance for IEEE 802.11 (WiFi) Transmitters
FCC KDB KDB 447498 D01v06	Mobile and Portable Devices RF Exposure Procedures and Equipment Authorization Policies
FCC KDB KDB 643646 D01v01r03	SAR Test Reduction Considerations for Occupational PTT Radios
FCC KDB KDB 690783 D01v01r03	SAR Listings on Equipment Authorization Grants
FCC KDB KDB 865664 D01v01r04	SAR Measurement Requirements for 100MHz to 6GHz
* When the issue number or issue date is omitted, the latest version is assumed.	

5.0 STATEMENT OF COMPLIANCE

This measurement report demonstrates that samples of the product model(s) were evaluated for Specific Absorption Rate (SAR) on the date(s) shown, in accordance with the Measurement Procedures cited and were found to comply with the Standard(s) Applied based on the Exposure Limits of the Use Group indicated for which the product is intended to be used.

Applicant:	Model Name / PMN:	
Harris Corporation	XL-95	
Standard(s) Applied:	**Measurement Procedure(s):**	
FCC 47 CFR §2.1093 Health Canada's Safety Code 6	FCC KDB 865664, FCC KDB 447498, FCC KDB 643646, FCC KDB 941225 Industry Canada RSS-102 Issue 5 IEEE Standard 1528-2013, IEC 62209-2	
Reason For Issue:	**Use Group:**	**Limits Applied:**
[X] New Certification	[ ] General Population / Uncontrolled	[ ] 1.6W/kg - 1g Volume
[ ] Class I Permissive Change		[X] 8.0W/kg - 1g Volume
[ ] Class II Permissive Change	[X] Occupational / Controlled	[ ] 4.0W/kg - 10g Volume
Reason for Change:		**Date(s) Evaluated:**
Original Filing		12 Jan - 22 Jan, 2021

The results of this investigation are based solely on the test sample(s) provided by the applicant which was not adjusted, modified or altered in any manner whatsoever except as required to carry out specific tests or measurements. A description of the device, operating configuration, detailed summary of the test results, methodologies and procedures used during this evaluation, the equipment used and the various provisions of the rules are included in this test report.

I attest that the data reported herein is true and accurate within the tolerance of the Measurement Instrument Uncertainty; that all tests and measurements were performed in accordance with accepted practices or procedures; and that all tests and measurements were performed by me or by trained personnel under my direct supervision. The results of this investigation are based solely on the test sample(s) provided by the client which were not adjusted, modified or altered in any manner whatsoever, except as required to carry out specific tests or measurements. This test report has been completed in accordance with ISO/IEC 17025.

Art Voss, P.Eng.
Technical Manager
Celltech Labs Inc.

26 January 2021
Date

6.0 RF CONDUCTED POWER MEASUREMENT

Conducted Power Measurements							
Channel	Frequency (MHz)	Mode	Measured Power (dBm)	Rated Power (dBm)	Rated Power (W)	Delta (dBm)	SAR Test Channel (Y/N)
LMRS	764.000	CW	33.95	34.30	2.69	-0.35	y
	766.000		33.97	34.30	2.69	-0.33	y
	794.000		33.95	34.30	2.69	-0.35	y
	806.000		34.69	35.10	3.24	-0.41	y
	812.000		34.70	35.10	3.24	-0.40	y
	824.000		34.68	35.10	3.24	-0.42	y
	851.000		34.76	35.10	3.24	-0.34	y
	861.000		34.75	35.10	3.24	-0.35	y
	869.000		34.77	35.10	3.24	-0.33	y
WiFi	2412.000	802.11b 11Mbps	7.85	9.20	0.0083	-1.35	y
	2437.000		9.15	9.20	0.0083	-0.05	y
	2462.000		8.12	9.20	0.0083	-1.08	y
	2412.000	802.11g 24Mbps	7.96	9.20	0.0083	-1.24	
	2437.000		8.18	9.20	0.0083	-1.02	
	2462.000		8.95	9.20	0.0083	-0.25	
	2412.000	802.11n 19.5Mbps	7.65	9.20	0.0083	-1.55	
	2437.000		7.89	9.20	0.0083	-1.31	
	2462.000		8.00	9.20	0.0083	-1.20	
BT	2402.000	GFSK	2.04	2.04	0.0016	0.00	y
	2440.000		2.00	2.04	0.0016	-0.04	y
	2480.000		2.03	2.04	0.0016	-0.01	y
	2402.000	2-EDR	-1.59	2.04	0.0016	-3.63	
	2440.000		-0.20	2.04	0.0016	-2.24	
	2480.000		0.36	2.04	0.0016	-1.68	
	2402.000	3-EDR	-0.98	2.04	0.0016	-3.02	
	2440.000		0.10	2.04	0.0016	-1.94	
	2480.000		0.69	2.04	0.0016	-1.35	
U-NII-1	5180.000	802.11a	11.18	11.76	0.0150	-0.58	y
	5220.000		10.95	11.76	0.0150	-0.81	y
	5260.000		10.35	11.76	0.0150	-1.41	y
U-NII-3	5745.000	802.11a	2.58	2.60	0.0018	-0.02	y
	5785.000		0.65	2.60	0.0018	-1.95	y
	5825.000		0.10	2.60	0.0018	-2.50	y

7.0 NUMBER OF TEST CHANNELS (N_C)

The number of test channels and test configurations were determined in accordance with FCC KDB 447498, FCC KDB 643646 and FCC KDB 248227. When applicable, SAR Test Reduction was exercised in accordance with FCC KDB 643646 and FCC KDB 248227.

8.0 ACCESSORIES EVALUATED

Table 8.1 Manufacturer's Accessory List

Manufacturer's Accessory List						
Test Report ID Number	Manufacturer's Part Number	Description	Change ID(1)	Type II Group(3)	SAR(4) Evaluated	SAR(5) Tested
Antenna						
T1	KRE1011506/1	ANTENNA,806-870 MHZ,FLEX END-FED GAIN,FM	1		Y	Y
T2	KRE1011506/2	Antenna,764-870MHz,1/4 Wave Whip	1		Y	Y
T3	14002-0223-01	ANTENNA,764-870 MHZ,1/2 WAVE, WHIP	1		Y	Y
T4	14035-4440-01	ANTENNA,WHIP,1/2 WAVE 762-870MHZ	1	(7)	Y	N
T5	14035-4440-02	ANTENNA,WHIP,1/4 WAVE,762-870MHZ	1	(7)	Y	N

Manufacturer's Accessory List						
Test Report ID Number	Manufacturer's Part Number	Description	Change ID(1)	Type II Group(3)	SAR(4) Evaluated	SAR(5) Tested
Battery						
P1	BT-023436-001	Battery,Li-Polymer,3600 mAH	1		Y	Y
P2	14002-0199-01	BATTERY,AA CLAMSHELL	1		Y	Y
P3	14002-0214-01	BATTERY, LI-ION,21WH	1		Y	Y

Manufacturer's Accessory List						
Test Report ID Number	Manufacturer's Part Number	Description	Change ID[1]	Type II Group[3]	SAR[4] Evaluated	SAR[5] Tested
		Audio Accessory				
A1	EA-009580-001	Earphone Kit, Black	1	Y	Y	N
A2	EA-009580-002	Earphone Kit, Beige	1	Y	Y	N
A3	EA-009580-003	2-Wire Kit, Palm mic, Black	1	Y	Y	N
A4	EA-009580-004	2-Wire Kit, Palm mic, Beige	1	Y	Y	N
A5	EA-009580-005	3-Wire Kit, Mini-Lapel Mic, Black	1	Y	Y	N
A6	EA-009580-006	3-Wire Kit, Mini-Lapel Mic, Beige	1	Y	Y	N
A7	EA-009580-007	Explorer Headset w / PTT	1	Y	Y	N
A8	EA-009580-008	Lightw eight headset single spkr w / PTT	1	Y	Y	N
A9	EA-009580-009	Breeze Headset w / PTT	1	Y	Y	N
A10	EA-009580-010	Headset, heavy duty, N/C behind the head, w / PTT	1	Y	Y	N
A11	EA-009580-011	Ranger Headset w / PTT	1	Y	Y	N
A12	EA-009580-012	Skull mic w /body PTT & earcup	1	Y	Y	N
A13	EA-009580-013	Headset, heavy duty, N/C over the head, w / PTT	1	Y	Y	N
A14	EA-009580-014	Throat mic w /acoustic tube & body PTT	1	Y	Y	N
A15	EA-009580-015	Throat mic w /acoustic tube, body PTT, & ring PTT	1	Y	Y	N
A16	EA-009580-016	Breeze headset w / PTT & pigtail jack	1	Y	Y	N
A17	EA-009580-017	Hurricane headset w / PTT	1	Y	Y	N
A18	EA-009580-018	Hurricane headset w / PTT & pigtail jack	1	Y	Y	N
A19	EA-009580-031	Tac4 Headset	1	Y	Y	N
A20	LS103239V2	Earphone for speaker/mic	1	Y	Y	N
A21	LS103239V1	Earphone for Speaker-Mic <IS>	1	Y	Y	N
A22	MC-009104-002	Speaker-Mic, GPS, non-IS	1	Y	Y	N
A23	MC-011617-601	Ruggedized Speaker Mic-Coil Cord	1	Y	Y	N
A24	MC-011617-611	Speaker-Microphone	1	Y	Y	N
A25	MC-011617-701	Standard Speaker Mic - Non Ant	1	Y	Y	N
A26	MC-011617-651	Rugged Speaker-Microphone w / man-dow n	1	Y	Y	N
A27	MC-023933-001	Speaker-Mic, No Ant. (cc), <IS>	1	Y	Y	N
A28	MC-023933-002	Speaker-Mic, W/ Ant. (cc) provision, <IS>	1	Y	Y	N
A29	12082-0660-02	Push-To-Talk Pushbutton for Hazardous Locations, 60mm, Nexus, Mushroom Top, 4Pin	1	Y	Y	N
A30	12082-0660-04	Push-To-Talk Pushbutton for Hazardous Locations, 60mm, Nexus, Flat Top, 4Pin	1	Y	Y	N
A31	12150-4001-03	Fire Speaker MIC	1	Y	Y	N
A32	12150-4001-04	Fire Speaker MIC	1	Y	Y	N
A50	MC-011617-730	Spkrmic,Antenna,Straight,30in	1		Y	Y
A51	MC-011617-703	Spkrmic,Straight Cord,25.6in,Antenna	1		Y	Y
A52	MC-011617-718	Spkrmic,Antenna,Straight,18in	1		Y	Y
A53	MC-011617-606	Spkrmic,Rugged,Coiled Cord,Yellow	1		Y	Y
A54	MC-011617-602	Spkrmic,Rugged,Antenna,Straight,P7300	1		Y	Y
A55	12150-1000-03	SPKR MIC,PREMIUM,FIRE,XG FAMILY,BLK	1	Y	Y	N
A56	12150-1000-07	SPKR MIC,PREMIUM,FIRE,XG FAMILY,YLW	1	Y	Y	N
A57	12082-0800-02	MIC,WIRELESS,BLUETOOTH,ADVANCED,NA	1	Y	Y	N
A58	12082-0684-01	BLUETOOTH, COVERT, EARPIECE /MIC /PTT	1	Y	Y	N

Manufacturer's Accessory List						
Test Report ID Number	Manufacturer's Part Number	Description	Change ID[1]	Type II Group[3]	SAR[4] Evaluated	SAR[5] Tested
Below Requires UDC to 6-pin Hirose Adapter						
A33	14002-0197-02	UDC to 6-pin Hirose adapter	1	Y	Y	N
A34	V1-10168	1 Wire Earphone Kit Black (Receive only no transmit)	1	Y	Y	N
A35	V1-10167	1 Wire Earphone Kit Beige (Receive only no transmit)	1	Y	Y	N
A36	V1-10166	2 Wire Palm Microphone Kit Black	1	Y	Y	N
A37	V1-10165	2 Wire Palm Microphone Kit Beige	1	Y	Y	N
A38	V1-10164	3 Wire Mini Lapel Microphone Kit Black	1	Y	Y	N
A39	V1-10163	3 Wire Mini Lapel Microphone Kit Beige	1	Y	Y	N
A40	V4-BA2MD1	Breeze, lightw eight, behind-the-head, single spkr w ith std PTT	1	Y	Y	N
A41	V4-BA2MD3B	Breeze, lightw eight, behind-the-head, single spkr w /std. PTT & 2.5mm pigtail for PTT	1	Y	Y	N
A42	V4-10190	Lightw eight Single Spkr Padded Headband w ith std PTT	1	Y	Y	N
A43	V4-NR2MD1	Ranger Single Speaker behind-the-head w ith std PTT	1	Y	Y	N
A44	V4-10148	Over-the-head Dual Speaker Heavy Duty w ith std PTT	1	Y	Y	N
A45	V4-10148-S	Over-the-head Dual Speaker Heavy Duty w ith std PTT-IS/ATEX	1	Y	Y	N
A46	V4-10001	Behind-the-Head Dual Speaker Heavy Duty w ith std PTT	1	Y	Y	N
A47	V4-10001-S	Behind-the-Head Dual Speaker Heavy Duty w ith std PTT-IS/ATEX	1	Y	Y	N
A48	V1-T12MD137	Professional Throat Mic w ith Acoustic Tube & 80mm PTT	1	Y	Y	N
A49	V4-10279	Professional Skull Mic w ith Earcup, Aviation Quality & 80 MM PTT	1	Y	Y	N

Manufacturer's Accessory List						
Test Report ID Number	Manufacturer's Part Number	Description	Change ID[1]	Type II Group[3]	SAR[4] Evaluated	SAR[5] Tested
		Body-Worn Accessory				
B1	CC-014527	Belt Loop, Leather (BEE)	1	Y	Y	N
B2	CC23894	Metal Belt Clip	1	(6)	Y	Y
B3	KT-016201-001 (kit)	Kit containing: FM-016199-001 P7300 BEE Nylon case (Black) (with radio retaining strap) & CC-014527 BEE Leather Belt Loop	1	Y	Y	N
B4	KT-016201-002 (kit)	Kit contains: FM-016199-002 P7300 BEE Nylon case (Orange) (with radio retaining strap) & CC-014527 BEE Leather Belt Loop	1	Y	Y	N
B5	KT-016201-003 (kit)	Kit contains: FM-016199-003 P7300 BEE Leather Case (with radio retaining strap) w/o Shoulder Strap D-rings, KRY1011608/2 Swivel Mount & CC-014527 BEE Leather Belt Loop	1	Y	Y	N
B6	KT-016201-004 (kit)	Kit contains: FM-016199-004 P7300 BEE Leather Case with Shoulder Strap D-rings (with radio retaining strap), KRY1011608/2 Swivel Mount & CC-014524-001 BEE Shoulder Strap	1	Y	Y	N
B7	FM-017262-001	Swivel Mount	1	Y	Y	N
B8	14002-0187-09	Premium Leather Case Elastic Strap	1	Y	Y	N
B9	14002-0215-01	Premium Leather Case Kit containing: 14002-0187-01 Leather case, KRY1011609/1 Leather Belt Loop, FM-017262-001 D-swivel.	1	Y	Y	N
B10	14002-0215-02	Premium Shoulder Strap Leather Case Kit containing: 14002-0187-02 Leather case with D-rings, CC103333V1 Shoulder strap, FM-017262-001 D-swivel.	1	Y	Y	N
B11	14002-0215-03	Premium Black Nylon Case Kit containing: 14002-0187-03 black nylon case, KRY1011609/1 Leather Belt Loop.	1	Y	Y	N
B12	14002-0215-04	Premium Orange Nylon Case Kit containing: 14002-0187-04 orange nylon case, KRY1011609/1 Leather Belt Loop.	1	Y	Y	N
B13	14002-0217-01	Olive Drab Nylon Case	1	(6)	Y	Y
B14	14002-0218-01	BELT LOOP, LEATHER, PREMIUM	1	Y	Y	N
B15	14011-0012-01	Black Nylon Case with Belt Loop Kit (BEE)	1	(6)	Y	Y
B16	14011-0012-02	Orange Nylon Case with Belt Loop Kit (BEE)	1	Y	Y	N
B17	14011-0012-03	Leather Case with Belt Loop Kit (BEE)	1	Y	Y	N
B18	14011-0012-04	Leather Case with Shoulder Strap Kit (BEE)	1	Y	Y	N
B26	14002-0215-01	CASE,LEATHER,PREMIUM,XG75/25,BELT LOOP	1	Y	Y	N
B27	CC-014524-002	Strap,Stnd,Retaining,Use w/ Shlder Strap	1	Y	Y	N

Manufacturer's Accessory List						
Test Report ID Number	Manufacturer's Part Number	Description	Change ID(1)	Type II Group(3)	SAR(4) Evaluated	SAR(5) Tested
Merzon Combinations						
B19	KRY1011609/1 or 14002-0218-0	Leather Belt Loop	1	Y	Y	N
	FM-017262-001	Swivel Mount	1	Y	Y	N
B20	14011-0011-01	Nylon Case (Black)	1	Y	Y	N
	KRY1011609/1 or 14002-0218-0	Leather Belt Loop	1	Y	Y	N
B21	14011-0011-02	Nylon Case (Orange)	1	Y	Y	N
	KRY1011609/1 or 14002-0218-0	Leather Belt Loop	1	Y	Y	N
B22	14011-0011-03	Nylon Case	1	Y	Y	N
	KRY1011609/1 or 14002-0218-0	Leather Belt Loop	1	Y	Y	N
	FM-017262-001	Swivel Mount	1	Y	Y	N
B23	FM-016199-001	Nylon Case (Black)	1	Y	Y	N
	KRY1011609/1 or 14002-0218-0	Leather Belt Loop	1	Y	Y	N
B24	FM-016199-002	Nylon Case (Orange)	1	Y	Y	N
	KRY1011609/1 or 14002-0218-0	Leather Belt Loop	1	Y	Y	N
B25	FM-016199-003	Nylon Case	1	Y	Y	N
	KRY1011609/1 or 14002-0218-0	Leather Belt Loop	1	Y	Y	N
	FM-017262-001	Swivel Mount	1	Y	Y	N

(1) Change ID: Indicates the change number in which the accessory was added.
(3) Type II Group: "y" indicates that this accessory was evaluated with similar devices and found to have no significant contribution to the *reported SAR*
(4) SAR Evaluated: Indicates the accessory was visually evaluated and may or may not have tested.
(5) SAR Tested: Indicates the accessory was SAR tested during the course of this investigation.
(6) These accessories produced the highest SAR in previous evaluations.
(7) These antennas are similar physically, electrically and frequency response.

9.0 SAR MEASUREMENT SUMMARY

Table 9.1: Measured Results LMR 7/800 Band – BODY

Measured SAR Results (1g) - BODY Configuration (FCC/ISED)															
Date	Plot ID	DUT		Test Frequency (*MHz*)	Modulation	Accessories				DUT Spacing		Conducted Power (*dBm*)	Measured SAR (1g)		SAR Drift (*dB*)
		M/N	Type			Antenna ID	Battery ID	Body ID	Audio ID	DUT (*mm*)	Antenna (*mm*)		100% DC (*W/kg*)	50% DC (*W/kg*)	
12 Jan 2021	B1	XL-95	PTT	764	CW	T2	P1	B2	A53	0	25	33.95	5.710	2.855	-0.230
12 Jan 2021	B2	XL-95	PTT	766	CW	T2	P1	B2	A53	0	25	33.97	6.420	3.210	-0.160
12 Jan 2021	B3	XL-95	PTT	794	CW	T2	P1	B2	A53	0	25	33.95	4.700	2.350	-0.130
12 Jan 2021	B4	XL-95	PTT	806	CW	T2	P1	B2	A53	0	25	34.69	5.010	2.505	-0.260
12 Jan 2021	B5	XL-95	PTT	812	CW	T2	P1	B2	A53	0	25	34.7	4.750	2.375	-0.110
12 Jan 2021	B6	XL-95	PTT	824	CW	T2	P1	B2	A53	0	25	34.68	4.790	2.395	-0.420
12 Jan 2021	B7	XL-95	PTT	851	CW	T2	P1	B2	A53	0	25	34.76	4.130	2.065	-0.240
12 Jan 2021	B8	XL-95	PTT	861	CW	T2	P1	B2	A53	0	25	34.75	4.550	2.275	-0.270
12 Jan 2021	B9	XL-95	PTT	869	CW	T2	P1	B2	A53	0	25	34.77	4.780	2.390	-0.360
12 Jan 2021	B10	XL-95	PTT	764 Low	CW	T1	P1	B2	A53	0	25	33.95	3.770	1.885	-0.480
12 Jan 2021	B11	XL-95	PTT	812 Mid	CW	T1	P1	B2	A53	0	25	34.7	2.150	1.075	0.020
12 Jan 2021	B12	XL-95	PTT	869 High	CW	T1	P1	B2	A53	0	25	34.77	5.040	2.520	-0.220
12 Jan 2021	B13	XL-95	PTT	764 Low	CW	T3	P1	B2	A53	0	25	33.95	4.280	2.140	-0.510
12 Jan 2021	B14	XL-95	PTT	812 Mid	CW	T3	P1	B2	A53	0	25	34.7	2.300	1.150	0.060
12 Jan 2021	B15	XL-95	PTT	869 High	CW	T3	P1	B2	A53	0	25	34.77	1.870	0.935	-0.030
12 Jan 2021	B16	XL-95	PTT	766 w/c	CW	T2	P4	B2	A53	0	25	33.97	5.640	2.820	-0.260
12 Jan 2021	B17	XL-95	PTT	766 w/c	CW	T2	P3	B2	A53	0	25	33.97	4.040	2.020	-0.180
13 Jan 2021	B18	XL-95	PTT	766 w/c	CW	T2	P2	B2	A53	0	25	33.97	2.890	1.445	-0.430
13 Jan 2021	B19	XL-95	PTT	766 w/c	CW	T2	P1	B13	A53	0	30	33.97	5.570	2.785	-0.170
13 Jan 2021	B20	XL-95	PTT	766 w/c	CW	T2	P1	B15	A53	0	59	33.97	2.080	1.040	-0.250
SAR Limit							Spatial Peak			Head/Body		RF Exposure Category			
FCC 47 CFR 2.1093				Health Canada Safety Code 6			1 Gram Average			8.0 W/kg		Occupational/User Aware			

Table 9.1: Measured Results LMR 7/800 Band – BODY (Cont)

Measured SAR Results (1g) - BODY Configuration (FCC/ISED)															
Date	Plot ID	DUT		Test Frequency (*MHz*)	Modulation	Accessories				DUT Spacing		Conducted Power (*dBm*)	Measured SAR (1g)		SAR Drift (*dB*)
		M/N	Type			Antenna ID	Battery ID	Body ID	Audio ID	DUT (*mm*)	Antenna (*mm*)		100% DC (*W/kg*)	50% DC (*W/kg*)	
13 Jan 2021	B21	MC-602	SpMc	766 w/c	CW	T2	P1		A54	0	30	33.97	6.530	3.265	0.070
13 Jan 2021	B22	MC-602	SpMc	764 w/c2	CW	T2	P1		A54	0	30	33.95	6.430	3.215	-0.060
13 Jan 2021	B23	MC-602	SpMc	806 w/c3	CW	T2	P1		A54	0	30	34.69	4.470	2.235	0.000
13 Jan 2021	B24	MC-602	SpMc	869	CW	T1	P1		A54	0	30	34.77	6.470	3.235	0.030
14 Jan 2021	B25	MC-602	SpMc	812	CW	T1	P1		A54	0	30	34.7	6.260	3.130	0.080
13 Jan 2021	B26	MC-602	SpMc	764	CW	T1	P1		A54	0	30	33.95	3.760	1.880	-0.200
13 Jan 2021	B27	MC-602	SpMc	764	CW	T3	P1		A54	0	30	33.95	3.380	1.690	-0.200
13 Jan 2021	B28	MC-602	SpMc	812	CW	T3	P1		A54	0	30	34.7	2.360	1.180	-0.080
13 Jan 2021	B29	MC-602	SpMc	869	CW	T3	P1		A54	0	30	34.77	1.830	0.915	0.180
14 Jan 2021	B30	MC-703	SpMc	812	CW	T1	P1		A51	0	30	34.7	1.910	0.955	-0.090
14 Jan 2021	B31	MC-718	SpMc	812	CW	T1	P1		A52	0	30	34.7	3.780	1.890	-0.340
14 Jan 2021	B32	MC-730	SpMc	812	CW	T1	P1		A50	0	30	34.7	1.580	0.790	-0.020
SAR Limit						Spatial Peak				Head/Body		RF Exposure Category			
FCC 47 CFR 2.1093				Health Canada Safety Code 6		1 Gram Average				8.0 W/kg		Occupational/User Aware			

Table 9.2: Measured Results WLAN 2.4G & BT Band – BODY

Measured SAR Results (1g) - BODY Configuration (FCC/ISED)															
Date	Plot ID	DUT		Test Frequency (*MHz*)	Modulation	Accessories				DUT Spacing		Conducted Power (*dBm*)	Measured SAR (1g)		SAR Drift (*dB*)
		M/N	Type			Antenna ID	Battery ID	Body ID	Audio ID	DUT (*mm*)	Antenna (*mm*)		100% DC (*W/kg*)	50% DC (*W/kg*)	
19 Jan 2021	B1	XL-95	PTT	2412	DSSS 6Mbps	T2	P1	B2	A53	0		7.85	0.000		0.000
19 Jan 2021	B2	XL-95	PTT	2437	DSSS 6Mbps	T2	P1	B2	A53	0		9.15	0.000		0.000
19 Jan 2021	B3	XL-95	PTT	2462	DSSS 6Mbps	T2	P1	B2	A53	0		8.12	0.000		0.000
19 Jan 2021	B4	XL-95	PTT	2437	HT20 MCS12	T2	P1	B2	A53	0		9.15	0.000		0.000
19 Jan 2021	B5	XL-95	PTT	2437	DSSS 6Mbps	T2	P1	n/a	A53	0		9.15	0.000		0.000
19 Jan 2021	B6	XL-95	PTT	2402	GFSK	T2	P1	B2	A53	0		2.1	0.001		0.000
SAR Limit							Spatial Peak			Head/Body		RF Exposure Category			
FCC 47 CFR 2.1093				Health Canada Safety Code 6			1 Gram Average			1.6 W/kg		General Population/User Unaware			

Table 9.3: Measured Results WLAN 5G Band – BODY

Measured SAR Results (1g) - BODY Configuration (FCC/ISED)															
Date	Plot ID	DUT		Test Frequency (*MHz*)	Modulation	Accessories				DUT Spacing		Conducted Power (*dBm*)	Measured SAR (1g)		SAR Drift (*dB*)
		M/N	Type			Antenna ID	Battery ID	Body ID	Audio ID	DUT (*mm*)	Antenna (*mm*)		100% DC (*W/kg*)	50% DC (*W/kg*)	
21 Jan 2021	B1	XL-95	PTT	5220	OFDM 6Mbps	T2	P1	B2	A53	0		11.58	0.000		0.000
21 Jan 2021	B1	XL-95	PTT	5785	OFDM 6Mbps	T2	P1	B2	A53	0		4.65	0.000		0.000
SAR Limit							Spatial Peak			Head/Body		RF Exposure Category			
FCC 47 CFR 2.1093				Health Canada Safety Code 6			1 Gram Average			1.6 W/kg		General Population/User Unaware			

Table 9.4: Measured Results LMR 7/800 Band – FACE

Measured SAR Results (1g) - FACE Configuration (FCC/ISED)															
Date	Plot ID	DUT		Test Frequency (*MHz*)	Modulation	Accessories				DUT Spacing		Conducted Power (*dBm*)	Measured SAR (1g)		SAR Drift (*dB*)
		M/N	Type			Antenna ID	Battery ID	Body ID	Audio ID	DUT (*mm*)	Antenna (*mm*)		100% DC (*W/kg*)	50% DC (*W/kg*)	
13 Jan 2021	F1	XL-95	PTT	764	CW	T2	P1	n/a	n/a	25	50	33.95	2.300	1.150	-0.180
13 Jan 2021	F2	XL-95	PTT	766	CW	T2	P1	n/a	n/a	25	50	33.97	2.340	1.170	-0.340
13 Jan 2021	F3	XL-95	PTT	794	CW	T2	P1	n/a	n/a	25	50	33.95	2.290	1.145	-0.340
13 Jan 2021	F4	XL-95	PTT	806	CW	T2	P1	n/a	n/a	25	50	34.69	2.820	1.410	0.060
13 Jan 2021	F5	XL-95	PTT	812	CW	T2	P1	n/a	n/a	25	50	34.7	2.410	1.205	-0.310
13 Jan 2021	F6	XL-95	PTT	824	CW	T2	P1	n/a	n/a	25	50	34.68	2.520	1.260	-0.120
13 Jan 2021	F7	XL-95	PTT	851	CW	T2	P1	n/a	n/a	25	50	34.76	2.180	1.090	-0.090
13 Jan 2021	F8	XL-95	PTT	861	CW	T2	P1	n/a	n/a	25	50	34.75	1.840	0.920	0.030
13 Jan 2021	F9	XL-95	PTT	869	CW	T2	P1	n/a	n/a	25	50	34.77	1.960	0.980	-0.180
14 Jan 2021	F10	XL-95	PTT	764	CW	T1	P1	n/a	n/a	25	50	33.95	0.830	0.415	-0.560
14 Jan 2021	F11	XL-95	PTT	812	CW	T1	P1	n/a	n/a	25	50	34.7	1.410	0.705	0.090
14 Jan 2021	F12	XL-95	PTT	869	CW	T1	P1	n/a	n/a	25	50	34.77	1.010	0.505	0.390
14 Jan 2021	F13	XL-95	PTT	764	CW	T3	P1	n/a	n/a	25	50	33.95	0.844	0.422	-0.520
14 Jan 2021	F14	XL-95	PTT	812	CW	T3	P1	n/a	n/a	25	50	34.7	0.499	0.250	0.050
14 Jan 2021	F15	XL-95	PTT	869	CW	T3	P1	n/a	n/a	25	50	34.77	0.360	0.180	0.320
14 Jan 2021	F16	XL-95	PTT	806	CW	T2	P2	n/a	n/a	25	50	34.69	4.290	2.145	-0.280
14 Jan 2021	F17	XL-95	PTT	806	CW	T2	P4	n/a	n/a	25	50	34.69	2.680	1.340	-0.010
14 Jan 2021	F18	XL-95	PTT	806	CW	T2	P3	n/a	n/a	25	50	34.69	3.160	1.580	-0.320
SAR Limit							Spatial Peak			Head/Body		RF Exposure Category			
FCC 47 CFR 2.1093				Health Canada Safety Code 6			1 Gram Average			8.0 W/kg		Occupational/User Aware			

Table 9.4: Measured Results LMR 7/800 Band – FACE (Cont)

Measured SAR Results (1g) - FACE Configuration (FCC/ISED)															
Date	Plot ID	DUT		Test Frequency (*MHz*)	Modulation	Accessories				DUT Spacing		Conducted Power (*dBm*)	Measured SAR (1g)		SAR Drift (*dB*)
		M/N	Type			Antenna ID	Battery ID	Body ID	Audio ID	DUT (*mm*)	Antenna (*mm*)		100% DC (*W/kg*)	50% DC (*W/kg*)	
14 Jan 2021	F19	**MC-602**	**SpMc**	w/c 806	**CW**	T2	P1	n/a	A54	**25**	**55**	**34.69**	1.410	0.705	0.100
14 Jan 2021	F20	**MC-602**	**SpMc**	w/c 812	**CW**	T1	P1	n/a	A54	**25**	**55**	**34.7**	0.785	0.393	-0.360
14 Jan 2021	F21	**MC-602**	**SpMc**	w/c 764	**CW**	T3	P1	n/a	A54	**25**	**55**	**33.95**	0.818	0.409	-0.180
15 Jan 2021	F22	**MC-703**	**SpMc**	w/c 806	**CW**	T2	P1	n/a	A51	**25**	**55**	**34.69**	2.690	1.345	-0.120
15 Jan 2021	F23	**MC-703**	**SpMc**	w/c 812	**CW**	T1	P1	n/a	A51	**25**	**55**	**34.7**	2.810	1.405	0.100
15 Jan 2021	F24	**MC-703**	**SpMc**	w/c 764	**CW**	T3	P1	n/a	A51	**25**	**55**	**33.95**	1.240	0.620	-0.430
15 Jan 2021	F25	**MC-718**	**SpMc**	w/c 812	**CW**	T1	P1	n/a	A52	**25**	**55**	**34.7**	3.430	1.715	-0.070
15 Jan 2021	F26	**MC-718**	**SpMc**	w/c 764	**CW**	T3	P1	n/a	A52	**25**	**55**	**33.95**	1.300	0.650	-0.290
15 Jan 2021	F27	**MC-718**	**SpMc**	w/c 806	**CW**	T2	P1	n/a	A52	**25**	**55**	**34.69**	2.740	1.370	-0.250
15 Jan 2021	F28	**MC-730**	**SpMc**	w/c 806	**CW**	T2	P1	n/a	A50	**25**	**55**	**34.69**	2.290	1.145	-0.140
15 Jan 2021	F29	**MC-730**	**SpMc**	w/c 812	**CW**	T1	P1	n/a	A50	**25**	**55**	**34.7**	1.110	0.555	0.000
15 Jan 2021	F30	**MC-730**	**SpMc**	w/c 764	**CW**	T3	P1	n/a	A50	**25**	**55**	**33.95**	1.740	0.870	-0.230
SAR Limit							**Spatial Peak**			**Head/Body**		**RF Exposure Category**			
FCC 47 CFR 2.1093				**Health Canada Safety Code 6**			**1 Gram Average**			**8.0 W/kg**		**Occupational/User Aware**			

Table 9.5: Measured Results WLAN 2.4G & BT Band – FACE

Measured SAR Results (1g) - FACE Configuration (FCC/ISED)															
Date	Plot ID	DUT		Test Frequency (*MHz*)	Modulation	Accessories				DUT Spacing		Conducted Power (*dBm*)	Measured SAR (1g)		SAR Drift (*dB*)
		M/N	Type			Antenna ID	Battery ID	Body ID	Audio ID	DUT (*mm*)	Antenna (*mm*)		100% DC (*W/kg*)	50% DC (*W/kg*)	
19 Jan 2021	F1	XL-95	PTT	2437	DSSS 6Mbps	T2	P1	n/a	n/a	25		9.15	0.000	[redacted]	0.000
19 Jan 2021	F2*	XL-95	PTT	2437	DSSS 6Mbps	T2	P1	n/a	n/a	0		9.15	0.010		0.000
19 Jan 2021	F3	XL-95	PTT	2402	GFSK	T2	P1	n/a	n/a	25		2.1	0.000		0.000
19 Jan 2021	F4*	XL-95	PTT	2402	GFSK	T2	P1	n/a	n/a	0		2.1	0.004		0.000
SAR Limit							Spatial Peak			Head/Body		RF Exposure Category			
FCC 47 CFR 2.1093				Health Canada Safety Code 6			1 Gram Average			1.6 W/kg		General Population/User Unaware			

Table 9.6: Measured Results WLAN 5G Band – FACE

Measured SAR Results (1g) - FACE Configuration (FCC/ISED)															
Date	Plot ID	DUT		Test Frequency (*MHz*)	Modulation	Accessories				DUT Spacing		Conducted Power (*dBm*)	Measured SAR (1g)		SAR Drift (*dB*)
		M/N	Type			Antenna ID	Battery ID	Body ID	Audio ID	DUT (*mm*)	Antenna (*mm*)		100% DC (*W/kg*)	50% DC (*W/kg*)	
20 Jan 2021	F1*	XL-95	PTT	5220	OFDM 6Mbps	T2	P1	n/a	n/a	0		11.58	0.166	[redacted]	0.000
20 Jan 2021	F2	XL-95	PTT	5220	OFDM 6Mbps	T2	P1	n/a	n/a	25		11.58	0.013		0.000
21 Jan 2021	F3	XL-95	PTT	5180	OFDM 6Mbps	T2	P1	n/a	n/a	25		10.95	0.017		0.000
21 Jan 2021	F4	XL-95	PTT	5260	OFDM 6Mbps	T2	P1	n/a	n/a	25		10.35	0.015		0.000
21 Jan 2021	F5*	XL-95	PTT	5180	OFDM 6Mbps	T2	P1	n/a	n/a	0		10.95	0.145		0.000
21 Jan 2021	F1*	XL-95	PTT	5785	OFDM 6Mbps	T2	P1	n/a	n/a	0		4.65	0.069		0.000
21 Jan 2021	F2	XL-95	PTT	5785	OFDM 6Mbps	T2	P1	n/a	n/a	25		4.65	0.016		0.000
21 Jan 2021	F3	XL-95	PTT	5745	OFDM 6Mbps	T2	P1	n/a	n/a	25		3.52	0.018		0.000
21 Jan 2021	F4	XL-95	PTT	5825	OFDM 6Mbps	T2	P1	n/a	n/a	25		2.18	0.001		0.000
21 Jan 2021	F5*	XL-95	PTT	5745	OFDM 6Mbps	T2	P1	n/a	n/a	0		3.52	0.084		0.000
SAR Limit							Spatial Peak			Head/Body		RF Exposure Category			
FCC 47 CFR 2.1093				Health Canada Safety Code 6			1 Gram Average			1.6 W/kg		General Population/User Unaware			

* Due to the low conducted power and the extremely low SAR, these measurements were made with a 0mm separation as verification of DUT operation. Since this was an exceptional test configuration, these measurement values will not be used as the *reported* SAR.

10.0 SCALING OF MAXIMUM MEASURE SAR

Table 10.1 SAR Scaling – LMR

Scaling of Maximum Measured SAR (1g)					
Measured Parameters		Configuration			
		Face	Body	Head	
Plot ID		F16	B21		
Maximum Measured SAR_M		2.145	3.265		(W/kg)
Frequency		806	766		(MHz)
Power Drift		-0.280	0.070 (1)		(dB)
Conducted Power		34.690	33.970		(dBm)
Fluid Deviation from Target					
Δe	Permitivity	-0.65% (2)	-0.77% (2)		
Δσ	Conductivity	-1.00% (2)	-4.60% (2)		

Note(1): Power Drift is Positive, Drift Adjustment not Required.

Note(2): Fluid Dielectric Parameters are Within 5% of Targets. SAR Adjustment for Fluid Sensitivity is not Required.

Fluid Sensitivity Calculation (1g)			IEC 62209-2 Annex F		
Delta SAR = Ce * Δe + Cσ * Δσ					(F.1)
$Ce = (-0.0007854*f^3) + (0.009402*f^2) - (0.02742*f) - 0.2026$					(F.2)
$Cσ = (0.009804*f^3) - (0.08661*f^2) + (0.02981*f) + 0.7829$					(F.3)
f	Frequency (GHz)	0.806	0.766		
Ce		-0.219	-0.218		
Cσ		0.756	0.759		
Ce * Δe		0.001	0.002		
Cσ * Δσ		-0.008	-0.035		
ΔSAR		-0.006	-0.033		(%)

Manufacturer's Tuneup Tolerance				
Measured Conducted Power	34.690	33.970		(dBm)
Rated Conducted Power	35.100	34.300		(dBm)
ΔP	-0.410	-0.330		(dB)

SAR Adjustment for Fluid Sensitivity				
$SAR_1 = SAR_M * ΔSAR$	2.145	3.265		(W/kg)

SAR Adjustment for Tuneup Tolerance				
$SAR_2 = SAR_1 + [ΔP]$	2.357	3.522		(W/kg)

SAR Adjustment for Drift				
$SAR_3 = SAR_2 + Drift$	2.513	3.522		(W/kg)

reported SAR				
$FCC = SAR_2$	**2.36**	**3.52**		(W/kg)
$ISED = SAR_3$	**2.51**	**3.52**		(W/kg)

NOTES to Table
(1) Scaling of the Maximum Measured SAR is based on the highest, 100% duty cycle, Face, Body and/or Head SAR measured of ALL test channels, configurations and accessories used during THIS evaluation. The Measured Fluid Deviation parameters apply only to deviation of the tissue equivalent fluids used at the frequencies which produced the highest measured SAR. The Measured Conducted Power applies to the Conducted Power measured at the frequencies producing the highest Face, Body and/or Head SAR. The Measured Drift is the SAR drift associated with that specific SAR measurement. The Reported SAR is the accumulation of all SAR Adjustments from the applicable Steps 1 through 3. The Plot ID is for indentification of the SAR Measurement Plots in the Annexes of this report. NOTE: Some of the scaling factors in Steps 1 through 3 may not apply and are identified by grayed fields.
Step 1
Per IEC-62209-1 and FCC KDB 865664. Scaling required only when Measured Fluid Deviation is greater than 5%. If the Measured Fluid Deviation is greater than 5%, Table 10.1 will be shown and will indicate the SAR scaling factor in percent (%). SAR is MULTIPLIED by this scaling factor only when the scaling factor is positive (+).
Step 2
Per KDB 447498. Scaling required only when the difference (Delta) between the Measured Conducted Power and the Manufacturer's Rated Conducted Power is (-) Negative. The absolute value of Delta is ADDED to the SAR.
Step 3
Per IEC 62209-1. Scaling required only when Measured Drift is (-) Negative. The absolute value of Measured Drift is added to Reported.
Step 4
The Reported SAR is the Maximum Final Adjusted SAR from the applicable Steps 1 through 3 and are reported on Page 1 of this report.

11.0 ANALYSIS OF SIMULTANEOUS TRANSMISSION

Simultaneous Transmission Analysis

The XL-95P employs Wi-Fi and BlueTooth capable of simultaneously transmitting with the LMR transmitter. The Wi-Fi and BlueTooth transmitters share the same antenna and the transmissions are interleaved such that only one transmitter is transmitting at a time. As per FCC KDB 447498, simultaneous transmission analysis is required for devices capable of simultaneous transmission. The Wi-Fi and BT SAR are subject to General Population limits of 1.6W/kg. The LMR SAR is subject to Occupational limits of 8.0W/kg. To determine Simultaneous Transmission SAR Test Exclusion when different SAR limits are applied to the different transmit modes, the Sum-of-the-Ratios of the SAR to the respective SAR limit is applied. When the Sum-of-the-Ratios is ≤ 1.0, Simultaneous Transmission SAR Test Exclusion may be applied.

When the Sum-of-the-Ratios exceeds 1.0, the SAR to Peak Location Separation Ration (SPLSR) may be used to determine simultaneous transmission SAR test exclusion. However, the equation for determining this exclusion applies to General Population limits only. Reference Operation Description Part 2. When mixed Occupational and General Population exposure limits are used, the SAR of the Occupational configuration is normalize to the General Population limit. For example if $SAR_{Occupational}$ = 6.4W/kg and SAR_{GenPop} = 0.65W/kg, normalizing the Occupational SAR to General Population limits yields $SAR_{OccNorm}$ = 1.28W/kg. The SPLSR equation of KDB 447498 4.3.2 c) becomes

$$(SAR_1 + SAR_2)^{1.5}/R_i \leq 0.04 = (SAR_{OccNorm} + SAR_{GenPop})^{1.5}/R_i = (1.28 + 0.65)^{1.5}/R_i \leq 0.04$$

SAR for each transmission band, transmission mode and/or equipment class was evaluated with Body-Worn and Audio Accessories in the BODY configuration and with no Accessories in the HEAD configurations. The DUT was configured with the maximum Transmit Time Invertal (TTI) at 100% trasmit duty cycle. Only the Maximum *reported* SAR for BODY and HEAD configuration is used in the Sum-of-the-Ratios or SPLSR calculation and the worst case of all possible combinations is considered.

Table 11.1 List of Possible Transmitters

List of Possible Transmitters				
Type	Class	Frequency Range		Rated Output Power (dBm)
		Lower (MHz)	Upper (MHz)	
LMR 700	TNF	764.0	806.0	34.30
LMR 800		806.0	869.0	35.10
BlueTooth	DSS	2402.0	2480.0	2.04
WiFi 2.4	DTS	2412.0	2462.0	9.20
WiFi 5	NII	5150.0	5240.0	11.76
WiFi 5	NII	5745.0	5825.0	4.77

Table 11.2 List of Possible Transmitters Combinations

Simultaneous Transmitter Combinations				
Configuration Number	Transmitter			
	LMR 7/800	BlueTooth	WiFi 2.4	WiFi 5
1	X	X		
2	X		X	
3	X			X

Indicates this configuration is not supported

Table 11.3 Analysis of Sum-of-the-Ratios

Analysis of Sum-of-the-Ratios
For All Transmitters and Configurations

Configuration Number	Configuration	Transmitter Type								Sum of Ratios	Sum of SARs
		LMR Band		BlueTooth		WiFi 2.4		WiFi 5			
		stand-alone SAR (W/kg)	Ratio to Limit	*stand-alone* SAR (W/kg)	Ratio to Limit	*stand-alone* SAR (W/kg)	Ratio to Limit	*stand-alone* SAR (W/kg)	Ratio to Limit		
		SAR Limit = 8.0W/kg (Occupational)		*SAR Limit = 1.6W/kg (General Population)*							*(W/kg)*
1	HEAD	2.510	0.314	0.000	0.000					0.314	2.510
2						0.000	0.000			0.314	2.510
3								0.017	0.011	0.324	2.527
1	BODY	3.520	0.440	0.001	0.001					0.441	3.520
2						0.000	0.000			0.440	3.520
3								0.018	0.011	0.451	3.538

Indicates this combination is not supported

Simultaneous Transmission SAR Test Exclusion may be determined by applying the Sum-of-the-Ratios for the worst case combinations of all simultaneously transmitting transmitters. From the above table, none of the stand-alone transmitters exceed their respective limit. Additionally, the Sum-of-the-Ratios for the worst case combinations of the transmitters with General Population limits do not exceed 1.0.

12.0 SAR EXPOSURE LIMITS

Table 12.1 Exposure Limits

SAR RF EXPOSURE LIMITS			
FCC 47 CFR§2.1093	**Health Canada Safety Code 6**	**General Population / Uncontrolled Exposure(4)**	**Occupational / Controlled Exposure(5)**
Spatial Average(1) (averaged over the whole body)		0.08 W/kg	0.4 W/kg
Spatial Peak(2) (Head and Trunk averaged over any 1 g of tissue)		1.6 W/kg	**8.0 W/kg**
Spatial Peak(3) (Hands/Wrists/Feet/Ankles averaged over 10 g)		4.0 W/kg	20.0 W/kg
(1) The Spatial Average value of the SAR averaged over the whole body.			
(2) The Spatial Peak value of the SAR averaged over any 1 gram of tissue, defined as a tissue volume in the shape of a cube and over the appropriate averaging time.			
(3) The Spatial Peak value of the SAR averaged over any 10 grams of tissue, defined as a tissue volume in the shape of a cube and over the appropriate averaging time.			
(4) Uncontrolled environments are defined as locations where there is potential exposure to individuals who have no knowledge or control of their potential exposure.			
(5) Controlled environments are defined as locations where there is potential exposure to individuals who have knowledge of their potential exposure and can exercise control over their exposure.			

13.0 DETAILS OF SAR EVALUATION

Table 13.1 Day Log

DAY LOG								
Date	Ambient Temp (° C)	Fluid Temp (° C)	Relative Humidity (%)	Barometric Pressure (kPa)	Fluid Dielectric	SPC	Test	Task
Jan 11 2021	24.9	23.8	27%	102.1	x	x		835H Fluids and SPC
Jan 12 2021	23.8	24.1	27%	100.7			x	835H NA Body SAR Testing
Jan 13 2021	23.5	23.3	27%	100.4			x	835H NA Body/Face SAR Testing
Jan 14 2021	24.3	23.3	23%	103.7			X	835H NA SAR Face Testing
Jan 14 2021	24.8	24.2	22%	103.5	X	X		835H Fluids and SPC
Jan 15 2021	23.9	23.2	23%	102.9			x	835H NA SAR Face Testing
Jan 18 2021	24.5	24.1	24%	103.5	X	X		2450H Fluids and SPC
Jan 19 2021	25	24.4	19%	102.4			x	2450H NA SAR Testing
Jan 20 2021	25.7	22.2	22%	102.3		x	x	5250H & 5750H Fluids and SPC
Jan 21 2021	26.3	24.0	18%	102.5			x	5250H & 5750H NA SAR Testing

Table 13.2 DUT Positioning

DUT Positioning
Positioning
The DUT Positioner was securely fastened to the Phantom Platform. Registration marks were placed on the DUT and the Positioner to ensure consistent positioning of the DUT for each test evaluation.
FACE Configuration
The DUT was securely clamped into the device holder with the surface of the DUT normally held to the user's face facing the phantom. The device holder was adjusted to ensure that the horizontal axis of the DUT was parallel to the bottom of the phantom. A 25mm spacer block was used to set the separation distance between the DUT and the phantom to 25mm. When applicable and unless by design, the antenna of the DUT was prevented from sagging away from the phantom. The spacer block was removed before testing.
BODY Configuration
Body-Worn and Audio Accessories were affixed to the DUT in the manner in which they are intended to be used. The DUT, with its accessories, were securely clamped into the device holder with the surface of the DUT normally in contact with the body in direct contact with the bottom of the phantom, or 0mm separation from the DUT's accessory to the phantom. Body-Worn Accessory straps, linkages, etc. were positioned in a fashion resembling that for which they were intended to be used. Audio Accessory cables, etc., were positioned in a fashion resembling that for which they were intended to be used.
HEAD Configuration
This device is not intended to be held to the ear and was not tested in the HEAD configuration.

Table 13.3 General Procedures and Report

General Procedures and Reporting
General Procedures
The fluid dielectric parameters of the Active Tissue Simulating Liquid (TSL) were measured as described in this Section, recorded and entered into the DASY Measurement Server. Active meaning the TSL used during the SAR evaluation of the DUT. The temperature of the Active TSL was measured and recorded prior to performing a System Performance Check (SPC). An SPC was performed with the Active TSL prior to the start of the test series. The temperature of the Active TSL was measured throughout the day and the Active TSL temperature was maintained to ± 0.5°C. The Active TSL temperature was maintained to within ±1.0°C throughout the test series. TSL analysis and SPC were repeated when the Active TSL use exceeded 84 hours. An Area Scan exceeding the length and width of the DUT projection was performed and the locations of all maximas within 2dB of the Peak SAR recorded. A Zoom Scan centered over the Peak SAR location(s) was performed and the 1g and 10g SAR values recorded. The resolutions of the Area Scan and Zoom Scan are described in the Scan Resolution table(s) in this Section. A Power Reference Measurement was taken at the phantom reference point immediately prior to the Area Scan. A Power Drift measurement was taken at the phantom reference point immediately following the Zoom Scan to determine the power drift. A Z-Scan from the *Maximum Distance to Phantom Surface* to the fluid surface was performed following the power drift measurement.
Reporting
The 1g SAR, 10g SAR and power drift measurements are recorded in the SAR Measurement Summary tables in the SAR Measurement Summary Section of this report. The SAR values shown in the 100% DC (Duty Cycle) column are the SAR values reported by the SAR Measurement Server with the DUT operating at 100% transmit duty cycle. The SAR values in the 50% DC column have been scaled by 50% for 50% Push-To-Talk duty cycle compensation. These tables also include other information such as transmit channel and frequency, modulation, accessories tested and DUT-phantom separation distance. In the Scaling of Maximum Measured SAR Section of this report, the highest measured SAR in the BODY and FACE configurations, within the entire scope of this assessment, are, when applicable, scaled for Fluid Sensitivity, Manufacturer's Tune-Up Tolerance, Simultaneous Transmission and Drift. With the exception of Duty Cycle correction/compensation, SAR values are ONLY scaled up, not down. The final results of this scaling is the *reported SAR* which appears on the Cover Page of this report.

Table 13.4 Fluid Dielectric and Systems Performance Check

Fluid Dielectric and Systems Performance Check
Fluid Dielectric Measurement Procedure
The fluid dielectric parameters of the Tissue Simulating Liquid (TSL) are measured using the Open-Ended Coax Method connected to an Agilent 8753ET Network Analyzer connected to a measurement server running Aprel Dielectric Property Measurement System. A frequency range of ± 100MHz for frequencies > 300MHz and ± 50MHz for frequencies ≤ 300MHz with frequency step size of 10MHz is used. The center frequency is centered around the SAR measurement probe's calibration point for that TSL frequency range. A calibration of the setup is performed using a short-open-deionized water (at 23°C in a 300ml beaker) method. A sample of the TSL is placed in a 300ml beaker and the open-ended coax is submerged approximately 8mm below the fluid surface in the approximate center of the beaker. A check of the setup is made to ensure no air is trapped under the open-ended coax. The sample of TSL is measured and compared to the FCC OET Bulletin 65 Supplement C targets for HEAD or BODY for the entire fluid measurement range. Fluid adjustment are made if the dielectric parameters are > 5% in range that the DUT is to be tested. If the adjustments fail to bring the parameters to ≤ 5% but are < 10%, the SAR Fluid Sensitivity as per IEC 62201-1 and FCC KDB 865664 are applied to the highest measured SAR. A TSL with dielectric parameters > 10% in the DUT test frequency range are not used.
Systems Performance Check
The fluid dielectric parameters of the Active TSL are entered into the DASY Measurement Server at each of the 10MHz step size intervals. Active meaning the TSL used during the SAR evaluation of the DUT. The DASY Measurement System will automatically interpolate the dielectric parameters for DUT test frequencies that fall between the 10MHz step intervals. A Systems Performance Check (SPC) is performed in accordance with IEEE 1528 "System Check" and FCC KDB 865664 "System Verification". A validation source, dipole or Confined Loop Antenna (CLA), is placed under the geometric center of the phantom and separated from the phantom in accordance to the validation source's Calibration Certificate data. A CW signal set to the frequency of the validate source's and SAR measurement probe's calibration frequency with a forward power set to the validation source's Calibration Certificate data power setting is applied to the validation source. An Area Scan is centered over the projection of the validation source's feed point and an Area Scan is taken. A Zoom Scan centered over the Peak SAR measurement of the Area Scan and the 1g and 10g SAR is measured. The measured 1g and 10g SAR is compared to the 1g and 10g SAR measurements from the validation source's Calibration Certificate. When required, the measured SAR is normalized to 1.0W and compared to the normalized SAR indicated on the validation source's Calibration Certificate. The SPC is considered valid when the measured and normalized SAR is ≤ 10% of the measured and normalize SAR of the validation source's Calibration Certificate. The fluid dielectric parameters of the Active TSL and SPC are repeated when the Active TSL has been in use for greater than 84 hours or if the Active TSL temperature has exceed ± 1°C of the initial fluid analysis.

Table 13.5 Scan Resolution 100MHz to 2GHz

Scan Resolution 100MHz to 2GHz	
Maximum distance from the closest measurement point to phantom surface: (Geometric Center of Probe Center)	**4 ± 1 mm**
Maximum probe angle normal to phantom surface. (Flat Section ELI Phantom)	**5° ± 1°**
Area Scan Spatial Resolution ΔX, ΔY	**15 mm**
Zoom Scan Spatial Resolution ΔX, ΔY	**7.5 mm**
Zoom Scan Spatial Resolution ΔZ (Uniform Grid)	**5 mm**
Zoom Scan Volume X, Y, Z	**30 mm**
Phantom	**ELI**
Fluid Depth	**150 ± 5 mm**
An Area Scan with an area extending beyond the device was used to locate the candidate maximas within 2dB of the global maxima.	
A Zoom Scan centered over the peak SAR location(s) determined by the Area Scan was used to determine the 1-gram and 10-gram peak spatial-average SAR	

Table 13.6 Scan Resolution 2GHz to 3GHz

Scan Resolution 2GHz to 3GHz	
Maximum distance from the closest measurement point to phantom surface: (Geometric Center of Probe Center)	**4 ± 1 mm**
Maximum probe angle normal to phantom surface. (Flat Section ELI Phantom)	**5° ± 1°**
Area Scan Spatial Resolution ΔX, ΔY	**12 mm**
Zoom Scan Spatial Resolution ΔX, ΔY	**5 mm**
Zoom Scan Spatial Resolution ΔZ (Uniform Grid)	**5 mm**
Zoom Scan Volume X, Y, Z	**30 mm**
Phantom	**ELI**
Fluid Depth	**150 ± 5 mm**
An Area Scan with an area extending beyond the device was used to locate the candidate maximas within 2dB of the global maxima.	
A Zoom Scan centered over the peak SAR location(s) determined by the Area Scan was used to determine the 1-gram and 10-gram peak spatial-average SAR	

Table 13.7 Scan Resolution 5GHz to 6GHz

Scan Resolution 5GHz to 6GHz	
Maximum distance from the closest measurement point to phantom surface: (Geometric Center of Probe Center)	**4 ± 1 mm**
Maximum probe angle normal to phantom surface. (Flat Section ELI Phantom)	**5° ± 1°**
Area Scan Spatial Resolution ΔX, ΔY	**10 mm**
Zoom Scan Spatial Resolution ΔX, ΔY	**4 mm**
Zoom Scan Spatial Resolution ΔZ (Uniform Grid)	**2 mm**
Zoom Scan Volume X, Y, Z	**22 mm**
Phantom	**ELI**
Fluid Depth	**100 ± 5 mm**
An Area Scan with an area extending beyond the device was used to locate the candidate maximas within 2dB of the global maxima.	
A Zoom Scan centered over the peak SAR location(s) determined by the Area Scan was used to determine the 1-gram and 10-gram peak spatial-average SAR	

14.0 MEASUREMENT UNCERTAINTIES

Table 14.1 Measurement Uncertainty

IEEE 1528 Table E.9

UNCERTAINTY BUDGET FOR DEVICE EVALUATION (IEEE 1528-2013 Table 9)										
Source of Uncertainty	**IEEE 1528 Section**	**Toler ±%**	**Prob Dist**	**Div**	**Div**	**c_i**	**c_i**	**Stand Unct ±%**	**Stand Unct ±%**	**V_i or V_{eff}**
Measurement System						**(1g)**	**(10g)**	**(1g)**	**(10g)**	
EX3DV4 Probe Calibration** (*k*=1)	E.2.1	6.7	N	1.00	1	1	1	**6.7**	**6.7**	∞
Axial Isotropy** (*k*=1)	E.2.2	0.6	R	1.73	√3	0.7	0.7	**0.2**	**0.2**	∞
Hemispherical Isotropy** (*k*=1)	E.2.2	3.2	R	1.73	√3	0.7	0.7	**1.3**	**1.3**	∞
Boundary Effect*	E.2.3	1.0	R	1.73	√3	1	1	0.6	0.6	∞
Linearity** (*k*=1)	E.2.4	**0.5**	R	1.73	√3	1	1	**0.3**	**0.3**	∞
System Detection Limits*	E.2.4	1.0	R	1.73	√3	1	1	0.6	0.6	∞
Modulation Response** (*k*=1)	E.2.5	**8.3**	R	1.73	√3	1	1	**4.8**	**4.8**	∞
Readout Electronics*	E.2.6	0.3	N	1.00	1	1	1	0.3	0.3	∞
Response Time*	E.2.7	0.8	R	1.73	√3	1	1	0.5	0.5	∞
Integration Time*	E.2.8	2.6	R	1.73	√3	1	1	1.5	1.5	∞
RF Ambient Conditions - Noise	E.6.1	**0.0**	R	1.73	√3	1	1	0.0	0.0	**10**
RF Ambient Conditions - Reflection	E.6.1	**0.0**	R	1.73	√3	1	1	0.0	0.0	**10**
Probe Positioner Mechanical Tolerance*	E.6.2	0.0	R	1.73	√3	1	1	0.0	0.0	∞
Probe Positioning wrt Phantom Shell*	E.6.3	0.4	R	1.73	√3	1	1	0.2	0.2	∞
Post-processing*	E.5	2.0	R	1.73	√3	1	1	1.2	1.2	∞
Test Sample Related										
Test Sample Positioning	E.4.2	**2.2**	N	1.00	1	1	1	2.2	2.2	**5**
Device Holder Uncertainty*	E.4.1	3.6	N	1.00	1	1	1	3.6	3.6	∞
SAR Drift Measurement[2]	E.2.9	0.0	R	1.73	√3	1	1	0.0	0.0	∞
SAR Power Scaling[3]	E.6.5	0.0	R	1.73	√3	1	1	0.0	0.0	∞
Phantom and Tissue Parameters										
Phantom Uncertainty*	E.3.1	6.1	R	1.73	√3	1	1	3.5	3.5	∞
SAR Correction Uncertainty	E.3.2	**1.6**	N	1.00	1	1	0.84	1.6	1.3	∞
Liquid Conductivity (measurement)	E.3.3	**5.0**	N	1.00	1	0.78	0.71	3.9	3.6	**10**
Liquid Permittivity (measurement)	E.3.3	**5.0**	N	1.00	1	0.23	0.26	1.2	1.3	**10**
Liquid Conductivity (Temperature)	E.3.2	**0.4**	R	1.73	√3	0.78	0.71	0.2	0.2	**10**
Liquid Permittivity Temperature)	E.3.2	**0.2**	R	1.73	√3	0.23	0.26	0.0	0.0	**10**
Effective Degrees of Freedom[1]									**V_{eff} =**	**1141**
Combined Standard Uncertainty			**RSS**					**11.1**	**11.0**	
Expanded Uncertainty (95% Confidence Interval)			**k=2**					**22.2**	**21.9**	
Measurement Uncertainty Table in accordance with IEEE Standard 1528-2003										

(1) The Effective Degrees of Freedom is > 30

Therefore a coverage factor of k=2 represents an approximate confidence level of 95%.

(2) The SAR Value is compensated for Drift

(3) SAR Power Scaling not Required

* Provided by SPEAG for DASY4

** Standard Uncertainty Calibration Data Provided by SPEAG for EX3DEV4 Probe

Table 14.2 Calculation of Degrees of Freedom

Table 14.2	
Calculation of the Degrees and Effective Degrees of Freedom	
$v_i = n - 1$	$v_{eff} = \frac{u_c^4}{\sum_{i=1}^{m} \frac{c_i^4 u_i^4}{v_i}}$

15.0 FLUID DIELECTRIC PARAMETERS

Note: Effective February 19, 2019 TCB Workshop: FCC has permitted the use of single head-tissue simulating liquid specified in IEC 62209-1 for all SAR tests.TSL can be changed in a Permissive Change. If SAR increased and Original SAR > 1.2W/kg, additional SAR measurements will be required.

Table 15.1 Fluid Dielectric Parameters 835MHz HEAD TSL, 11 Jan 2021

****
Aprel Laboratory
Test Result for UIM Dielectric Parameter
Mon 11/Jan/2021 13:47:59
Freq Frequency(GHz)
FCC_eH FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e Epsilon of UIM
Test_s Sigma of UIM
****

Freq	FCC_eH	FCC_sH	Test_e	Test_s
0.7350	42.02	0.89	41.72	0.81
0.7450	41.97	0.89	41.86	0.83
0.7550	41.92	0.89	41.75	0.84
0.7650	41.86	0.89	41.57	0.85
0.7750	41.81	0.90	41.20	0.85
0.7850	41.76	0.90	41.29	0.85
0.7950	41.71	0.90	41.19	0.88
0.8050	41.66	0.90	41.43	0.89
0.8150	41.60	0.90	40.95	0.90
0.8250	41.55	0.90	40.78	0.90
0.8350	41.50	0.90	40.89	0.90
0.8450	41.50	0.91	40.55	0.91
0.8550	41.50	0.92	40.60	0.92
0.8650	41.50	0.93	40.15	0.93
0.8750	41.50	0.94	40.09	0.95
0.8850	41.50	0.95	39.96	0.96
0.8950	41.50	0.96	39.89	0.97
0.9050	41.50	0.97	39.88	0.98
0.9150	41.50	0.98	39.63	0.99
0.9250	41.48	0.98	39.67	1.01
0.9350	41.46	0.99	39.65	1.01

Table 15.2 Fluid Dielectric Analysis 835MHz HEAD TSL, 11 Jan 2021

FLUID DIELECTRIC PARAMETERS							
Date:	11 Jan 2021	Fluid Temp:	23.8	Frequency:	835MHz	Tissue:	Head
Freq (MHz)		Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
735.0000		41.7200	0.8100	42.0200	0.89	-0.71%	-8.99%
745.0000		41.8600	0.8300	41.9700	0.89	-0.26%	-6.74%
755.0000		41.7500	0.8400	41.9200	0.89	-0.41%	-5.62%
764.0000	*	41.5880	0.8490	41.8660	0.89	-0.66%	-4.61%
765.0000		41.5700	0.8500	41.8600	0.89	-0.69%	-4.49%
766.0000	*	41.5330	0.8500	41.8550	0.89	-0.77%	-4.60%
775.0000		41.2000	0.8500	41.8100	0.90	-1.46%	-5.56%
785.0000		41.2900	0.8500	41.7600	0.90	-1.13%	-5.56%
794.0000	*	41.2000	0.8770	41.7150	0.90	-1.23%	-2.56%
795.0000		41.1900	0.8800	41.7100	0.90	-1.25%	-2.22%
805.0000		41.4300	0.8900	41.6600	0.90	-0.55%	-1.11%
806.0000	*	41.3820	0.8910	41.6540	0.90	-0.65%	-1.00%
812.0000	*	41.0940	0.8970	41.6180	0.90	-1.26%	-0.33%
815.0000		40.9500	0.9000	41.6000	0.90	-1.56%	0.00%
824.0000	*	40.7970	0.9000	41.5550	0.90	-1.82%	0.00%
825.0000		40.7800	0.9000	41.5500	0.90	-1.85%	0.00%
835.0000		40.8900	0.9000	41.5000	0.90	-1.47%	0.00%
845.0000		40.5500	0.9100	41.5000	0.91	-2.29%	0.00%
851.0000	*	40.5800	0.9160	41.5000	0.92	-2.22%	0.00%
855.0000		40.6000	0.9200	41.5000	0.92	-2.17%	0.00%
861.0000	*	40.3300	0.9260	41.5000	0.93	-2.82%	0.00%
865.0000		40.1500	0.9300	41.5000	0.93	-3.25%	0.00%
869.0000	*	40.1260	0.9380	41.5000	0.93	-3.31%	0.43%
875.0000		40.0900	0.9500	41.5000	0.94	-3.40%	1.06%
885.0000		39.9600	0.9600	41.5000	0.95	-3.71%	1.05%
895.0000		39.8900	0.9700	41.5000	0.96	-3.88%	1.04%
905.0000		39.8800	0.9800	41.5000	0.97	-3.90%	1.03%
915.0000		39.6300	0.9900	41.5000	0.98	-4.51%	1.02%
925.0000		39.6700	1.0100	41.4800	0.98	-4.36%	3.06%
935.0000		39.6500	1.0100	41.4600	0.99	-4.37%	2.02%

*Channel Frequency Tested

Table 15.3 Fluid Dielectric Parameters 835MHz HEAD TSL, 14 Jan 2021

Aprel Laboratory
Test Result for UIM Dielectric Parameter
Thu 14/Jan/2021 18:18:01
Freq Frequency(GHz)
FCC_eH FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e Epsilon of UIM
Test_s Sigma of UIM

Freq	FCC_eH	FCC_sH	Test_e	Test_s
0.7350	42.02	0.89	41.18	0.83
0.7450	41.97	0.89	40.71	0.84
0.7550	41.92	0.89	40.51	0.85
0.7650	41.86	0.89	40.75	0.87
0.7750	41.81	0.90	40.31	0.89
0.7850	41.76	0.90	40.72	0.89
0.7950	41.71	0.90	40.39	0.92
0.8050	41.66	0.90	40.24	0.93
0.8150	41.60	0.90	40.73	0.93
0.8250	41.55	0.90	40.50	0.95
0.8350	41.50	0.90	40.06	0.94
0.8450	41.50	0.91	39.80	0.95
0.8550	41.50	0.92	39.70	0.94
0.8650	41.50	0.93	39.22	0.95
0.8750	41.50	0.94	39.23	0.95
0.8850	41.50	0.95	39.01	0.97
0.8950	41.50	0.96	38.86	0.99
0.9050	41.50	0.97	38.56	1.01
0.9150	41.50	0.98	39.00	1.01
0.9250	41.48	0.98	38.79	1.04
0.9350	41.46	0.99	38.97	1.05

Table 15.4 Fluid Dielectric Analysis 835MHz HEAD TSL, 14 Jan 2021

FLUID DIELECTRIC PARAMETERS							
Date:	14 Jan 2021	Fluid Temp:	24.2	Frequency:	835MHz	Tissue:	Head
Freq (MHz)		Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
735.0000		41.1800	0.8300	42.0200	0.89	-2.00%	-6.74%
745.0000		40.7100	0.8400	41.9700	0.89	-3.00%	-5.62%
755.0000		40.5100	0.8500	41.9200	0.89	-3.36%	-4.49%
764.0000	*	40.7260	0.8680	41.8660	0.89	-2.72%	-2.47%
765.0000		40.7500	0.8700	41.8600	0.89	-2.65%	-2.25%
766.0000	*	40.7060	0.8720	41.8550	0.89	-2.75%	-2.13%
775.0000		40.3100	0.8900	41.8100	0.90	-3.59%	-1.11%
785.0000		40.7200	0.8900	41.7600	0.90	-2.49%	-1.11%
794.0000	*	40.4230	0.9170	41.7150	0.90	-3.10%	1.89%
795.0000		40.3900	0.9200	41.7100	0.90	-3.16%	2.22%
805.0000		40.2400	0.9300	41.6600	0.90	-3.41%	3.33%
806.0000	*	40.2890	0.9300	41.6540	0.90	-3.28%	3.33%
812.0000	*	40.5830	0.9300	41.6180	0.90	-2.49%	3.33%
815.0000		40.7300	0.9300	41.6000	0.90	-2.09%	3.33%
824.0000	*	40.5230	0.9480	41.5550	0.90	-2.48%	5.33%
825.0000		40.5000	0.9500	41.5500	0.90	-2.53%	5.56%
835.0000		40.0600	0.9400	41.5000	0.90	-3.47%	4.44%
845.0000		39.8000	0.9500	41.5000	0.91	-4.10%	4.40%
851.0000	*	39.7400	0.9440	41.5000	0.92	-4.24%	3.06%
855.0000		39.7000	0.9400	41.5000	0.92	-4.34%	2.17%
861.0000	*	39.4120	0.9460	41.5000	0.93	-5.03%	2.16%
865.0000		39.2200	0.9500	41.5000	0.93	-5.49%	2.15%
869.0000	*	39.2240	0.9500	41.5000	0.93	-5.48%	1.71%
875.0000		39.2300	0.9500	41.5000	0.94	-5.47%	1.06%
885.0000		39.0100	0.9700	41.5000	0.95	-6.00%	2.11%
895.0000		38.8600	0.9900	41.5000	0.96	-6.36%	3.13%
905.0000		38.5600	1.0100	41.5000	0.97	-7.08%	4.12%
915.0000		39.0000	1.0100	41.5000	0.98	-6.02%	3.06%
925.0000		38.7900	1.0400	41.4800	0.98	-6.49%	6.12%
935.0000		38.9700	1.0500	41.4600	0.99	-6.01%	6.06%

*Channel Frequency Tested

Table 15.5 Fluid Dielectric Parameters 2450MHz HEAD TSL, 18 Jan 2021

****
Aprel Laboratory
Test Result for UIM Dielectric Parameter
Mon 18/Jan/2021 11:42:51
Freq Frequency(GHz)
FCC_eH FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e Epsilon of UIM
Test_s Sigma of UIM
****

Freq	FCC_eH	FCC_sH	Test_e	Test_s
2.3500	39.38	1.71	36.75	1.69
2.3600	39.36	1.72	36.73	1.68
2.3700	39.34	1.73	36.62	1.71
2.3800	39.32	1.74	36.56	1.72
2.3900	39.31	1.75	36.72	1.72
2.4000	39.29	1.76	36.55	1.72
2.4100	39.27	1.76	36.42	1.73
2.4200	39.25	1.77	36.26	1.75
2.4300	39.24	1.78	36.35	1.73
2.4400	39.22	1.79	36.03	1.76
2.4500	39.20	1.80	36.21	1.76
2.4600	39.19	1.81	36.10	1.81
2.4700	39.17	1.82	36.07	1.81
2.4800	39.16	1.83	36.14	1.82
2.4900	39.15	1.84	36.13	1.85
2.5000	39.14	1.85	36.04	1.87
2.5100	39.12	1.87	36.01	1.85
2.5200	39.11	1.88	35.99	1.86
2.5300	39.10	1.89	36.08	1.85
2.5400	39.09	1.90	35.95	1.89
2.5500	39.07	1.91	35.96	1.89

Table 15.6 Fluid Dielectric Analysis 2450MHz HEAD TSL, 18 Jan 2021

FLUID DIELECTRIC PARAMETERS							
Date:	18 Jan 2021	Fluid Temp:	24.1	Frequency:	2450MHz	Tissue:	Head
Freq (MHz)		Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
2350.0000		36.7500	1.6900	39.3800	1.71	-6.68%	-1.17%
2360.0000		36.7300	1.6800	39.3600	1.72	-6.68%	-2.33%
2370.0000		36.6200	1.7100	39.3400	1.73	-6.91%	-1.16%
2380.0000		36.5600	1.7200	39.3200	1.74	-7.02%	-1.15%
2390.0000		36.7200	1.7200	39.3100	1.75	-6.59%	-1.71%
2400.0000		36.5500	1.7200	39.2900	1.76	-6.97%	-2.27%
2410.0000		36.4200	1.7300	39.2700	1.76	-7.26%	-1.70%
2412.0000	*	36.3880	1.7340	39.2660	1.76	-7.33%	-1.59%
2420.0000		36.2600	1.7500	39.2500	1.77	-7.62%	-1.13%
2430.0000		36.3500	1.7300	39.2400	1.78	-7.36%	-2.81%
2437.0000	*	36.1260	1.7510	39.2260	1.79	-7.90%	-2.01%
2440.0000		36.0300	1.7600	39.2200	1.79	-8.13%	-1.68%
2450.0000		36.2100	1.7600	39.2000	1.80	-7.63%	-2.22%
2460.0000		36.1000	1.8100	39.1900	1.81	-7.88%	0.00%
2462.0000	*	36.0940	1.8100	39.1860	1.81	-7.89%	-0.11%
2470.0000		36.0700	1.8100	39.1700	1.82	-7.91%	-0.55%
2480.0000		36.1400	1.8200	39.1600	1.83	-7.71%	-0.55%
2490.0000		36.1300	1.8500	39.1500	1.84	-7.71%	0.54%
2500.0000		36.0400	1.8700	39.1400	1.85	-7.92%	1.08%
2510.0000		36.0100	1.8500	39.1200	1.87	-7.95%	-1.07%
2520.0000		35.9900	1.8600	39.1100	1.88	-7.98%	-1.06%
2530.0000		36.0800	1.8500	39.1000	1.89	-7.72%	-2.12%
2540.0000		35.9500	1.8900	39.0900	1.90	-8.03%	-0.53%
2550.0000		35.9600	1.8900	39.0700	1.91	-7.96%	-1.05%

*Channel Frequency Tested

Table 15.5 Fluid Dielectric Parameters 5250MHz HEAD TSL, 20 Jan 2021

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Aprel Laboratory
Test Result for UIM Dielectric Parameter
Wed 20/Jan/2021 11:50:56
Freq Frequency(GHz)
FCC_eH FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e Epsilon of UIM
Test_s Sigma of UIM
****

Freq	FCC_eH	FCC_sH	Test_e	Test_s
5.1500	36.04	4.60	34.27	4.79
5.1600	36.03	4.61	34.30	4.77
5.1700	36.02	4.62	34.28	4.80
5.1800	36.01	4.63	34.05	4.88
5.1900	36.00	4.64	34.17	4.76
5.2000	35.99	4.65	34.23	4.82
5.2100	35.97	4.67	34.20	4.89
5.2200	35.96	4.68	34.11	4.91
5.2300	35.95	4.69	34.16	4.91
5.2400	35.94	4.70	34.15	4.80
5.2500	35.93	4.71	34.15	4.85
5.2600	35.92	4.72	34.27	4.92
5.2700	35.91	4.73	33.94	4.93
5.2800	35.89	4.74	34.00	4.96
5.2900	35.88	4.75	34.10	4.95
5.3000	35.87	4.76	34.24	4.98
5.3100	35.86	4.77	34.15	4.93
5.3200	35.85	4.78	34.32	5.02
5.3300	35.84	4.79	34.11	4.97
5.3400	35.83	4.80	34.02	5.04
5.3500	35.81	4.81	33.89	4.98

Table 15.6 Fluid Dielectric Analysis 5250MHz HEAD TSL, 20 Jan 2021

FLUID DIELECTRIC PARAMETERS							
Date:	20 Jan 2021	Fluid Temp:	22.2	Frequency:	5250MHz	Tissue:	Head
Freq (MHz)		Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
5150.0000		34.2700	4.7900	36.0400	4.60	-4.91%	4.13%
5160.0000		34.3000	4.7700	36.0300	4.61	-4.80%	3.47%
5170.0000		34.2800	4.8000	36.0200	4.62	-4.83%	3.90%
5180.0000	*	34.0500	4.8800	36.0100	4.63	-5.44%	5.40%
5190.0000		34.1700	4.7600	36.0000	4.64	-5.08%	2.59%
5200.0000		34.2300	4.8200	35.9900	4.65	-4.89%	3.66%
5210.0000		34.2000	4.8900	35.9700	4.67	-4.92%	4.71%
5220.0000	*	34.1100	4.9100	35.9600	4.68	-5.14%	4.91%
5230.0000		34.1600	4.9100	35.9500	4.69	-4.98%	4.69%
5240.0000		34.1500	4.8000	35.9400	4.70	-4.98%	2.13%
5250.0000		34.1500	4.8500	35.9300	4.71	-4.95%	2.97%
5260.0000	*	34.2700	4.9200	35.9200	4.72	-4.59%	4.24%
5270.0000		33.9400	4.9300	35.9100	4.73	-5.49%	4.23%
5280.0000		34.0000	4.9600	35.8900	4.74	-5.27%	4.64%
5290.0000		34.1000	4.9500	35.8800	4.75	-4.96%	4.21%
5300.0000		34.2400	4.9800	35.8700	4.76	-4.54%	4.62%
5310.0000		34.1500	4.9300	35.8600	4.77	-4.77%	3.35%
5320.0000		34.3200	5.0200	35.8500	4.78	-4.27%	5.02%
5330.0000		34.1100	4.9700	35.8400	4.79	-4.83%	3.76%
5340.0000		34.0200	5.0400	35.8300	4.80	-5.05%	5.00%
5350.0000		33.8900	4.9800	35.8100	4.81	-5.36%	3.53%

*Channel Frequency Tested

Table 15.7 Fluid Dielectric Parameters 5750MHz HEAD TSL, 20 Jan 2021

****
Aprel Laboratory
Test Result for UIM Dielectric Parameter
Wed 20/Jan/2021 12:40:36
Freq Frequency(GHz)
FCC_eH FCC OET 65 Supplement C (June 2001) Limits for Head Epsilon
FCC_sH FCC OET 65 Supplement C (June 2001) Limits for Head Sigma
Test_e Epsilon of UIM
Test_s Sigma of UIM
****

Freq	FCC_eH	FCC_sH	Test_e	Test_s
5.6500	35.47	5.12	33.21	5.38
5.6600	35.46	5.13	33.13	5.43
5.6700	35.45	5.14	33.21	5.38
5.6800	35.44	5.15	33.24	5.38
5.6900	35.43	5.16	33.12	5.40
5.7000	35.41	5.17	33.24	5.34
5.7100	35.40	5.18	33.26	5.38
5.7200	35.39	5.19	33.25	5.42
5.7300	35.38	5.20	33.12	5.38
5.7400	35.37	5.21	33.30	5.43
5.7500	35.36	5.22	33.21	5.48
5.7600	35.35	5.23	33.16	5.46
5.7700	35.33	5.24	33.11	5.54
5.7800	35.32	5.25	33.11	5.53
5.7900	35.31	5.26	33.20	5.54
5.8000	35.30	5.27	33.25	5.57
5.8100	35.29	5.28	33.10	5.59
5.8200	35.28	5.29	33.16	5.61
5.8300	35.27	5.30	32.92	5.53
5.8400	35.25	5.31	33.19	5.60
5.8500	35.24	5.32	33.16	5.60

Table 15.8 Fluid Dielectric Analysis 5750MHz HEAD TSL, 20 Jan 2021

FLUID DIELECTRIC PARAMETERS							
Date:	20 Jan 2021	Fluid Temp:	22.2	Frequency:	575MHz	Tissue:	Head
Freq (MHz)		Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
5650.0000		33.2100	5.3800	35.4700	5.12	-6.37%	5.08%
5660.0000		33.1300	5.4300	35.4600	5.13	-6.57%	5.85%
5670.0000		33.2100	5.3800	35.4500	5.14	-6.32%	4.67%
5680.0000		33.2400	5.3800	35.4400	5.15	-6.21%	4.47%
5690.0000		33.1200	5.4000	35.4300	5.16	-6.52%	4.65%
5700.0000		33.2400	5.3400	35.4100	5.17	-6.13%	3.29%
5710.0000		33.2600	5.3800	35.4000	5.18	-6.05%	3.86%
5720.0000		33.2500	5.4200	35.3900	5.19	-6.05%	4.43%
5730.0000		33.1200	5.3800	35.3800	5.20	-6.39%	3.46%
5740.0000		33.3000	5.4300	35.3700	5.21	-5.85%	4.22%
5745.0000	*	33.2550	5.4550	35.3650	5.22	-5.97%	4.60%
5750.0000		33.2100	5.4800	35.3600	5.22	-6.08%	4.98%
5760.0000		33.1600	5.4600	35.3500	5.23	-6.20%	4.40%
5770.0000		33.1100	5.5400	35.3300	5.24	-6.28%	5.73%
5780.0000		33.1100	5.5300	35.3200	5.25	-6.26%	5.33%
5785.0000	*	33.1550	5.5350	35.3150	5.26	-6.12%	5.33%
5790.0000		33.2000	5.5400	35.3100	5.26	-5.98%	5.32%
5800.0000		33.2500	5.5700	35.3000	5.27	-5.81%	5.69%
5810.0000		33.1000	5.5900	35.2900	5.28	-6.21%	5.87%
5820.0000		33.1600	5.6100	35.2800	5.29	-6.01%	6.05%
5825.0000	*	33.0400	5.5700	35.2750	5.30	-6.34%	5.19%
5830.0000		32.9200	5.5300	35.2700	5.30	-6.66%	4.34%
5840.0000		33.1900	5.6000	35.2500	5.31	-5.84%	5.46%
5850.0000		33.1600	5.6000	35.2400	5.32	-5.90%	5.26%

*Channel Frequency Tested

16.0 SYSTEM VERIFICATION TEST RESULTS

Table 16.1 System Verification Results 835MHz HEAD TSL, 11 Jan 2021

System Verification Test Results

Date		Frequency (MHz)	Validation Source		
			P/N		S/N
Jan 11 2021		835	D835V2		4d075
Fluid Type	Fluid Temp °C	Ambient Temp °C	Ambient Humidity (%)	Forward Power (mW)	Source Spacing (mm)
Head	23.8	25	27%	250	15
Fluid Parameters					
Permittivity			Conductivity		
Measured	Target	Deviation	Measured	Target	Deviation
40.89	41.50	-1.47%	0.90	0.90	0.00%
Measured SAR					
1 gram			10 gram		
Measured	Target	Deviation	Measured	Target	Deviation
2.23	2.41	-7.47%	1.44	1.55	-7.10%
Measured SAR Normalized to 1.0W					
1 gram			10 gram		
Normalized	Target	Deviation	Normalized	Target	Deviation
8.92	9.45	-5.61%	5.76	6.11	-5.73%

Prior to the SAR evaluations, system checks were performed on the planar section of the phantom and a SPEAG validation dipole in accordance with the procedures described in IEEE 1528-2013, FCC KDB 846224 and IEC 62209-1.

The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a Network Analyzer.

The forward power was applied to the dipole and the system was verified to a tolerance of +10% from the system manufacturer's dipole calibration target SAR value.

The forward power applied was same forward power applied by the calibration lab during the calibration of this validation source.

Table 16.2 System Verification Results 835MHz HEAD TSL, 14 Jan 2021

System Verification Test Results

Date		Frequency (MHz)	Validation Source		
			P/N		S/N
Jan 14 2021		835	D835V2		4d075
Fluid Type	Fluid Temp °C	Ambient Temp °C	Ambient Humidity (%)	Forward Power (mW)	Source Spacing (mm)
Head	24.2	25	22%	250	15

Fluid Parameters					
Permittivity			Conductivity		
Measured	Target	Deviation	Measured	Target	Deviation
40.06	41.50	-3.47%	0.94	0.90	4.44%

Measured SAR					
1 gram			10 gram		
Measured	Target	Deviation	Measured	Target	Deviation
2.49	2.41	3.32%	1.61	1.55	3.87%

Measured SAR Normalized to 1.0W					
1 gram			10 gram		
Normalized	Target	Deviation	Normalized	Target	Deviation
9.96	9.45	5.40%	6.44	6.11	5.40%

Prior to the SAR evaluations, system checks were performed on the planar section of the phantom and a SPEAG validation dipole in accordance with the procedures described in IEEE 1528-2013, FCC KDB 846224 and IEC 62209-1.

The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a Network Analyzer.

The forward power was applied to the dipole and the system was verified to a tolerance of +10% from the system manufacturer's dipole calibration target SAR value.

The forward power applied was same forward power applied by the calibration lab during the calibration of this validation source.

Table 16.3 System Verification Results 2450MHz HEAD TSL, 18 Jan 2021

System Verification Test Results

Date		Frequency (MHz)	Validation Source		
			P/N		S/N
Jan 18 2021		2450	D2450V2		825
Fluid Type	Fluid Temp °C	Ambient Temp °C	Ambient Humidity (%)	Forward Power (mW)	Source Spacing (mm)
Head	24.1	25	24%	250	10
Fluid Parameters					
Permittivity			Conductivity		
Measured	Target	Deviation	Measured	Target	Deviation
36.21	39.20	-7.63%	1.76	1.80	-2.22%
Measured SAR					
1 gram			10 gram		
Measured	Target	Deviation	Measured	Target	Deviation
13.90	13.30	4.51%	6.63	6.16	7.63%
Measured SAR Normalized to 1.0W					
1 gram			10 gram		
Normalized	Target	Deviation	Normalized	Target	Deviation
55.60	52.10	6.72%	26.52	24.30	9.14%

Prior to the SAR evaluations, system checks were performed on the planar section of the phantom and a SPEAG validation dipole in accordance with the procedures described in IEEE 1528-2013, FCC KDB 846224 and IEC 62209-1.

The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a Network Analyzer.

The forward power was applied to the dipole and the system was verified to a tolerance of +10% from the system manufacturer's dipole calibration target SAR value.

The forward power applied was same forward power applied by the calibration lab during the calibration of this validation source.

Table 16.4 System Verification Results 5250MHz HEAD TSL, 20 Jan 2021

System Verification Test Results

Date		Frequency (MHz)	Validation Source		
			P/N		S/N
Jan 20 2021		5250	D5GHzV2		1031
Fluid Type	Fluid Temp °C	Ambient Temp °C	Ambient Humidity (%)	Forward Power (mW)	Source Spacing (mm)
Head	22.2	26	22%	55	10
Fluid Parameters					
Permittivity			Conductivity		
Measured	Target	Deviation	Measured	Target	Deviation
34.15	35.93	-4.95%	4.85	4.71	2.97%
Measured SAR					
1 gram			10 gram		
Measured	Target	Deviation	Measured	Target	Deviation
4.28	4.39	-2.61%	1.25	1.26	-0.75%
Measured SAR Normalized to 1.0W					
1 gram			10 gram		
Normalized	Target	Deviation	Normalized	Target	Deviation
77.82	80.00	-2.73%	22.73	22.90	-0.75%

Prior to the SAR evaluations, system checks were performed on the planar section of the phantom and a SPEAG validation dipole in accordance with the procedures described in IEEE 1528-2013, FCC KDB 846224 and IEC 62209-1.

The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a Network Analyzer.

The forward power was applied to the dipole and the system was verified to a tolerance of +10% from the system manufacturer's dipole calibration target SAR value.

The forward power applied was same forward power applied by the calibration lab during the calibration of this validation source.

Table 16.5 System Verification Results 5750MHz HEAD TSL, 20 Jan 2021

System Verification Test Results

Date		Frequency (MHz)	Validation Source		
			P/N		S/N
Jan 20 2021		5750	D5GHzV2		1031
Fluid Type	Fluid Temp °C	Ambient Temp °C	Ambient Humidity (%)	Forward Power (mW)	Source Spacing (mm)
Head	22.2	26	22%	55	10
Fluid Parameters					
Permittivity			Conductivity		
Measured	Target	Deviation	Measured	Target	Deviation
33.21	35.36	-6.08%	5.48	5.22	4.98%
Measured SAR					
1 gram			10 gram		
Measured	Target	Deviation	Measured	Target	Deviation
4.36	4.42	-1.36%	1.26	1.25	0.80%
Measured SAR Normalized to 1.0W					
1 gram			10 gram		
Normalized	Target	Deviation	Normalized	Target	Deviation
79.27	80.40	-1.41%	22.90	22.80	0.44%

Prior to the SAR evaluations, system checks were performed on the planar section of the phantom and a SPEAG validation dipole in accordance with the procedures described in IEEE 1528-2013, FCC KDB 846224 and IEC 62209-1.

The dielectric parameters of the simulated tissue mixture were measured prior to the system performance check using a Dielectric Probe Kit and a Network Analyzer.

The forward power was applied to the dipole and the system was verified to a tolerance of +10% from the system manufacturer's dipole calibration target SAR value.

The forward power applied was same forward power applied by the calibration lab during the calibration of this validation source.

17.0 MEASUREMENT SYSTEM SPECIFICATIONS

Table 17.1 Measurement System

SAR Measurement System
Celltech Labs Inc. SAR measurement facility employs a Dosimetric Assessment System (DASY™) manufactured by Schmid & Partner Engineering AG (SPEAG™) of Zurich, Switzerland. The DASY6 measurement system is comprised of the measurement server, a robot controller, a computer, a near-field probe, a probe alignment sensor, an Elliptical Planar Phantom (ELI) phantom and a specific anthropomorphic mannequin (SAM) phantom for Head and/or Body SAR evaluations. The robot is a six-axis industrial robot performing precise movements to position the probe to the location (points) of maximum electromagnetic field (EMF). A cell controller system contains the power supply, robot controller and a teach pendant (Joystick) to control the robot's servo motors. The Staubli robot is connected to the cell controller to allow software manipulation of the robot. A data acquisition electronic (DAE) circuit performs the signal amplification, signal multiplexing, AD-conversion, offset measurements, mechanical surface detection, collision detection, etc. is connected to the Electro-optical coupler (EOC). The EOC performs the conversion from the optical form the DAE to digital electronic signal and transfers data to the DASY6 measurement server. The DAE4 utilizes a highly sensitive electrometer-grade preamplifier with auto-zeroing, a channel and gain-switching multiplexer, a fast 16-bit AD-converter, a command decoder and a control logic unit. Transmission to the DASY6 measurement server is accomplished through an optical downlink for data and status information and an optical uplink for commands and clock lines. The mechanical probe-mounting device includes two different sensor systems for frontal and sidewise probe contacts. The sensor systems are also used for mechanical surface detection and probe collision detection. The robot utilizes a controller with built in VME-bus computer.

DASY 6 SAR System with SAM Phantom

DASY 6 Measurement Controller


Table 17.2 Measurement System Specifications

Measurement System Specification	
Specifications	
Positioner	Stäubli Unimation Corp. Robot Model: TX90XL
Repeatability	+/- 0.035 mm
No. of axis	6.0
Data Acquisition Electronic (DAE) System	
Cell Controller	
Processor	Intel(R) Core(TM) i7-7700
Clock Speed	3.60 GHz
Operating System	Windows 10 Professional
Data Converter	
Features	Signal Amplifier, multiplexer, A/D converter, and control logic
Software	Measurement Software: DASY6, V 6.4.0.12171 / DASY52 V10.2(1504)
	Postprocessing Software: SEMCAD X, V14.6.12(7470)
Connecting Lines	Optical downlink for data and status info., Optical uplink for commands and clock
DASY Measurement Server	
Function	Real-time data evaluation for field measurements and surface detection
Hardware	Intel ULV Celeron CPU 400 MHz; 128 MB chip disk; 128 MB RAM
Connections	COM1, COM2, DAE, Robot, Ethernet, Service Interface
E-Field Probe	
Model	EX3DV4
Serial No.	3600
Construction	Triangular core fiber optic detection system
Frequency	10 MHz to 6 GHz
Linearity	±0.2 dB (30 MHz to 3 GHz)
Phantom	
Type	ELI Elliptical Planar Phantom
Shell Material	Fiberglass
Thickness	2mm +/- .2mm
Volume	> 30 Liter

Measurement System Specification

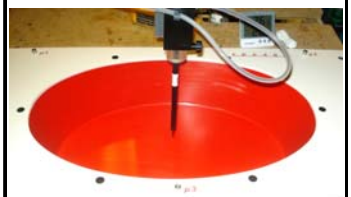
Probe Specification

Construction:	Symmetrical design with triangular core; Built-in shielding against static charges PEEK enclosure material (resistant to organic solvents, glycol)
Calibration:	In air from 10 MHz to 2.5 GHz In head simulating tissue at frequencies of 900 MHz and 1.8 GHz (accuracy ± 8%)
Frequency:	10 MHz to > 6 GHz; Linearity: ± 0.2 dB (30 MHz to 3 GHz)
Directivity:	± 0.2 dB in head tissue (rotation around probe axis) ± 0.4 dB in head tissue (rotation normal to probe axis)
Dynamic Range:	5 µW/g to > 100 mW/g; Linearity: ± 0.2 dB
Surface Detect:	± 0.2 mm repeatability in air and clear liquids over diffuse reflecting surfaces
Dimensions:	Overall length: 330 mm; Tip length: 16 mm; Body diameter: 12 mm; Tip diameter: 6.8 mm Distance from probe tip to dipole centers: 2.7 mm
Application:	General dosimetry up to 3 GHz; Compliance tests of mobile phone

EX3DV4 E-Field Probe

Phantom Specification

The SAM V5.0 phantom is an elliptical planar fiberglass shell phantom with a shell thickness of 2.0mm +/- .2mm at the planar area. This phantom conforms to OET Bulletin 65, Supplement C, IEEE 1528-2013, IEC 62209-1 and IEC 62209-2.



ELI Phantom

Device Positioner Specification

The DASY4 device positioner has two scales for device rotation (with respect to the body axis) and the device inclination (with respect to the line between the ear openings). The plane between the ear openings and the mouth tip has a rotation angle of 65^{O}. The bottom plate contains three pair of bolts for locking the device holder. The device holder positions are adjusted to the standard measurement positions in the three sections.

Device Positioner

18.0 TEST EQUIPMENT LIST

Table 18.1 Equipment List and Calibration

Test Equipment List				
DESCRIPTION	ASSET NO.	SERIAL NO.	DATE CALIBRATED	CALIBRATION DUE
Schmid & Partner DASY 6 System	-	-	-	-
-DASY Measurement Server	00158	1078	CNR	CNR
-Robot	00046	599396-01	CNR	CNR
-DAE4	00019	353	17-Mar-20	17-Mar-23
-EX3DV4 E-Field Probe	00213	3600	25-Mar-20	25-Mar-23
-CLA 30 Validation Dipole	00300	1005	18-Mar-20	18-Mar-23
-CLA150 Validation Dipole	00251	4007	18-Mar-20	18-Mar-23
-D450V3 Validation Dipole	00221	1068	23-Apr-18	23-Apr-21
-D750V3 Validation Dipole	00238	1061	21-Mar-19	21-Mar-22
-D835V2 Validation Dipole	00217	4D075	20-Apr-18	20-Apr-21
-D900V2 Validation Dipole	00020	54	16-Mar-20	16-Mar-23
-D2450V2 Validation Dipole**	00219	825	24-Apr-18	24-Apr-21
-D5GHzV2 Validation Dipole	00126	1031	26-Apr-18	26-Apr-21
ELI Phantom	00247	1234	CNR	CNR
SAM Phantom	00154	1033	CNR	CNR
HP 85070C Dielectric Probe Kit	00033	none	CNR	CNR
Gigatronics 8652A Power Meter	00007	1835801	26-Mar-19	26-Mar-22
Gigatronics 80701A Power Sensor	00186	1837002	COU	COU
Gigatronics 80334A Power Sensor	00237	1837001	26-Mar-19	26-Mar-22
HP 8753ET Network Analyzer	00134	US39170292	6-Jan-21	6-Jan-24
Rohde & Schwarz SMR20 Signal Generator	00006	100104	11-Aug-20	11-Aug-23
Amplifier Research 10W1000C Power Amplifier	00041	27887	CNR	CNR
Amplifier Research 5S1G4 Power Amplifier	00106	26235	CNR	CNR
Narda Directional Coupler 3020A	00064	-	CNR	CNR
Traceable VWR Thermometer	00334	192385455	6-Aug-19	6-Aug-21
Kangaroo VWR Humidity/Thermometer	00334	192385455	5-Aug-19	6-Aug-22
Bipolar Power Supply 6299A	00086	1144A02155	CNR	CNR
DC-18G 10W 30db Attenuator	00102	-	COU	COU
R&S FSP40 Spectrum Analyzer	00241	100500	15-May-18	15-May-21
RF Cable-SMA	00311	-	CNR	CNR
HP Calibration Kit	00145	-	CNR	CNR

CNR = Calibration Not Required

SB=Stand By

COU = Calibrate on Use

*Verifed and Extended

* *Per KDB 865664 3.2.2; Supporting documentation is included in the report for validation dipoles exceeding the recommended anual calibration cycle.
When applicable, reference Appendix F

Note: Per KDB 865664, Dipoles are evaluated annually for return loss and impedance. The dipole's SAR target can only be assessed by the SAR equipment manufacturer and remains the target until the dipole is recalibrated by the manufacturer. The dipole's SAR is evaluated and compared to this target during each and every System Verification which is performed prior to and/or during each DUT SAR evaluation. The results of these verifications are shown in Section 16.

19.0 SYSTEM VALIDATION SUMMARY

System Validation Summary											
Frequency (MHz)	Validation Date	Probe Model	Probe S/N	Validation Source	Source S/N	Tissue	Tissue Dielectrics		Validation Results		
							Permitivity	Conductivity	Sensitivity	Linearity	Isotropy
30	31-May-20	EX3DV4	3600	CLA-30	1005	Head	52.40	0.75	Pass	Pass	Pass
150	20-May-20	EX3DV4	3600	CLA-150	4007	Head	52.59	0.76	Pass	Pass	Pass
450	12-Aug-20	EX3DV4	3600	D450V3	1068	Head	43.64	0.84	Pass	Pass	Pass
750	20-Jun-19	EX3DV4	3600	D750V3	1061	Head	44.27	0.83	Pass	Pass	Pass
835	17-Aug-20	EX3DV4	3600	D835V2	4d075	Head	40.60	0.87	Pass	Pass	Pass
900	20-Aug-20	EX3DV4	3600	D900V2	045	Head	39.09	0.94	Pass	Pass	Pass
1640	5-Jul-18	EX3DV4	3600	1620-S-2	207-00102	Head	39.87	1.27	Pass	Pass	Pass
1800	18-Jun-19	EX3DV4	3600	D1800V2	247	Head	54.77	1.53	Pass	Pass	Pass
2450	27-May-20	EX3DV4	3600	D2450V2	825	Head	37.21	1.95	Pass	Pass	Pass
5250	29-May-20	EX3DV4	3600	D5GHzV2	1031	Head	34.44	5.07	Pass	Pass	Pass
5750	28-May-20	EX3DV4	3600	D5GHzV2	1031	Head	35.16	5.56	Pass	Pass	Pass

20.0 FLUID COMPOSITION

Table 20.1 Fluid Composition 835MHz HEAD TSL

835			835MHz Head	
Tissue Simulating Liquid (TSL) Composition				
Component by Percent Weight				
Water	**Sugar**	**Salt(1)**	**HEC(2)**	**Bacteriacide(3)**
40.71	56.63	1.48	0.99	0.19

(1) Non-Iodinized
(2) **H**ydroxy**E**thyl-**C**ellulose: Sigma-Aldrich P/N 54290-500g
(3) Dow Chemical Dowicil 75 Antimicrobial Perservative

Table 20.2 Fluid Composition 2450MHz HEAD TSL

2450			2450MHz Head	
Tissue Simulating Liquid (TSL) Composition				
Component by Percent Weight				
Water	**Glycol**	**Salt(1)**	**HEC(2)**	**Bacteriacide(3)**
52.0	48.0	0.0	0.0	0.0

(1) Non-Iodinized
(2) **H**ydroxy**E**thyl-**C**ellulose: Sigma-Aldrich P/N 54290-500g
(3) Dow Chemical Dowicil 75 Antimicrobial Perservative

Table 20.3 Fluid Composition 5250MHz Head TSL

This is a proprietary composition by SPEAG.

APPENDIX A – SYSTEM VERIFICATION PLOTS

Plot A.1 System Verification Plot, 835MHz, 11 January 2021

DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN:4d075
Procedure Name: SPC 835H,Target=2.41W/kg,1.55W/kg,Input 250mW

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.9 S/m; ε_r = 40.89; ρ = 1000 kg/m^3
Phantom section: Flat Section

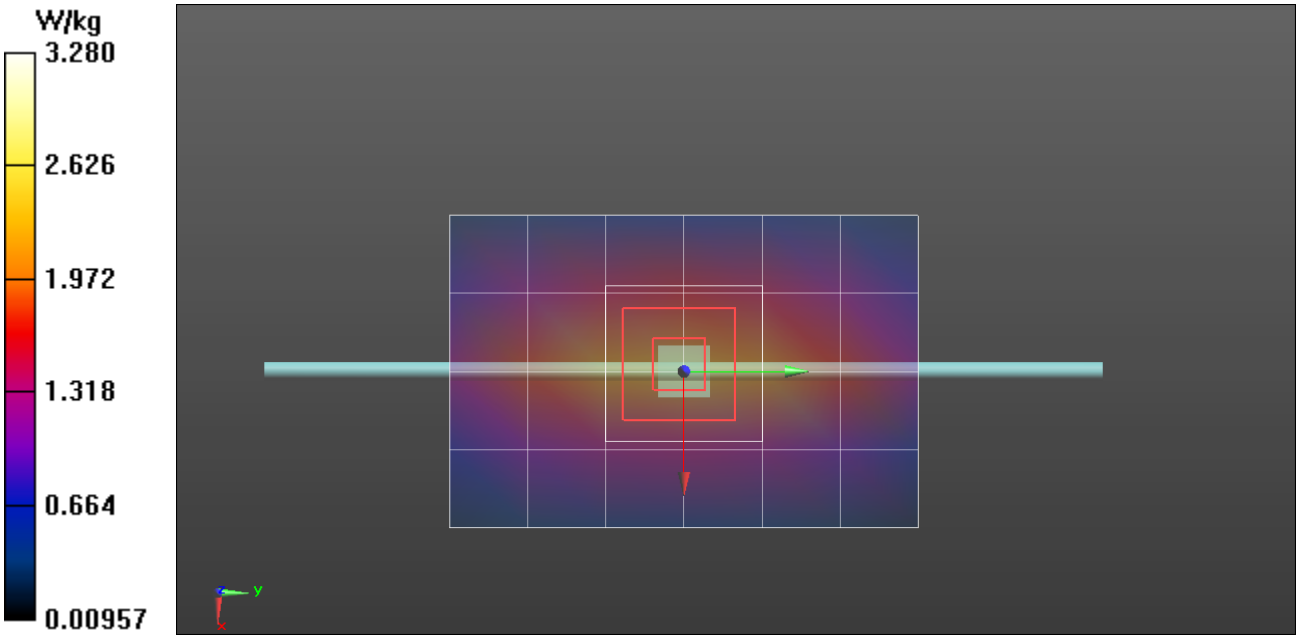
DASY5 Configuration:

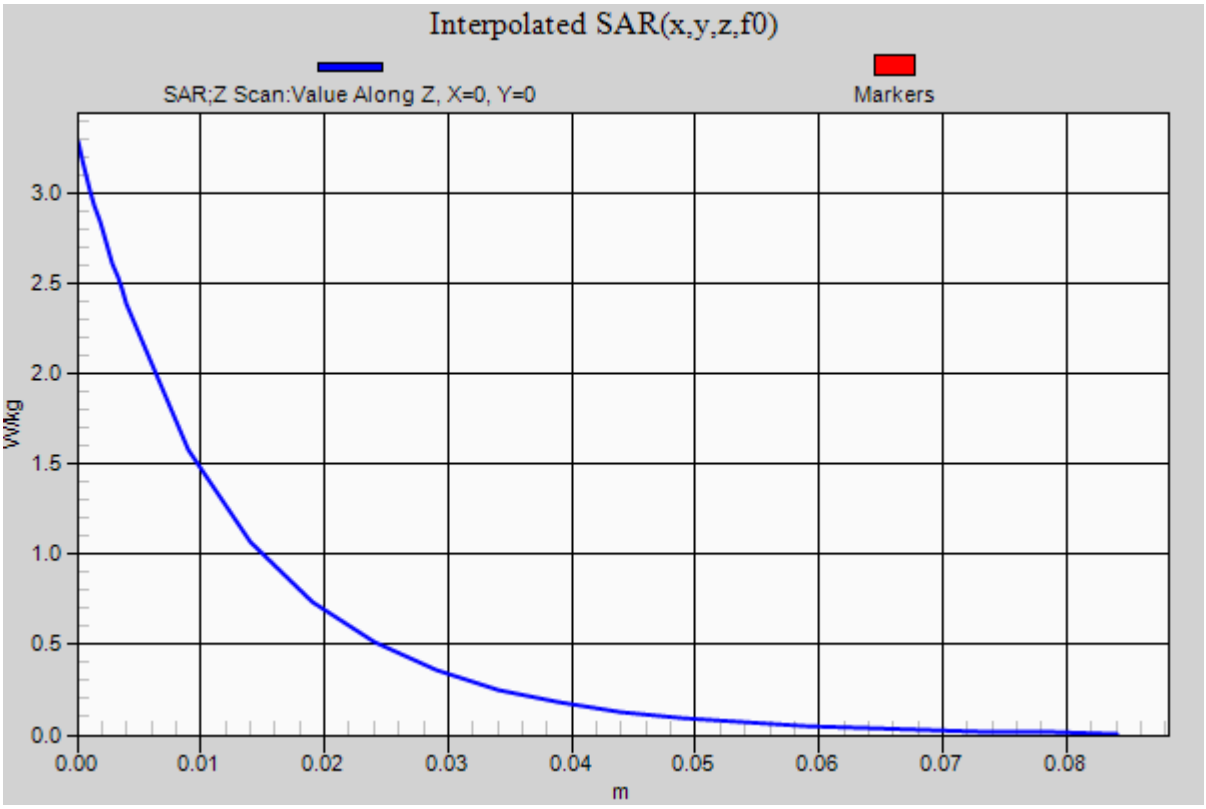
- Probe: EX3DV4 - SN3600; ConvF(8.17, 8.17, 8.17) @ 835 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 3/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

SPC/SPC 835H,Target=2.41W/kg,1.55W/kg,Input 250mW/Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.39 W/kg

SPC/SPC 835H,Target=2.41W/kg,1.55W/kg,Input 250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 51.58 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.40 W/kg
SAR(1 g) = 2.23 W/kg; SAR(10 g) = 1.44 W/kg
Ratio of SAR at M2 to SAR at M1 = 65.8%
Maximum value of SAR (measured) = 2.41 W/kg

SPC/SPC 835H,Target=2.41W/kg,1.55W/kg,Input 250mW/Z Scan (1x1x28): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Penetration depth = 12.76 (12.06, 13.41) [mm]
Maximum value of SAR (interpolated) = 3.28 W/kg




Interpolated SAR(x,y,z,f0)
SAR;Z Scan:Value Along Z, X=0, Y=0
Markers
W/kg
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
m

Plot A.2 System Verification Plot, 835MHz, 14 January 2021

DUT: Dipole 835 MHz D835V2; Type: D835V2; Serial: D835V2 - SN:4d075
Procedure Name: SPC 835H,Target=2.41W/kg,1.55W/kg,Input 250mW

Communication System: UID 0, CW (0); Frequency: 835 MHz;Duty Cycle: 1:1
Medium parameters used: f = 835 MHz; σ = 0.94 S/m; ε_r = 40.06; ρ = 1000 kg/m^3
Phantom section: Flat Section

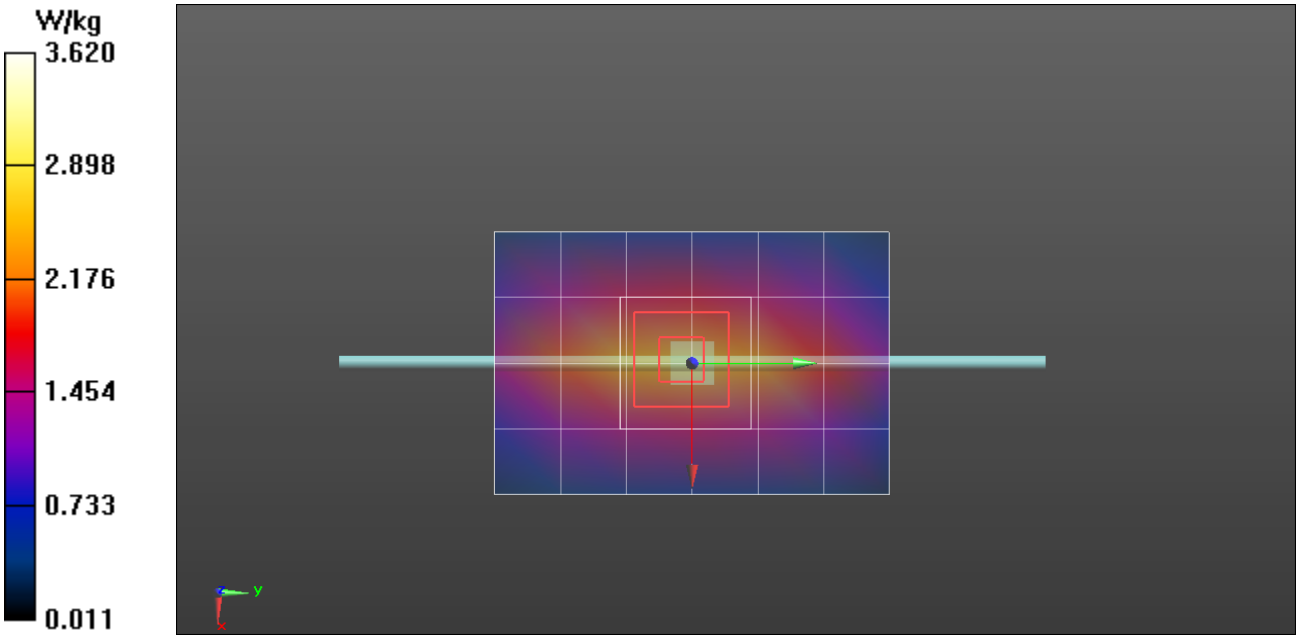
DASY5 Configuration:

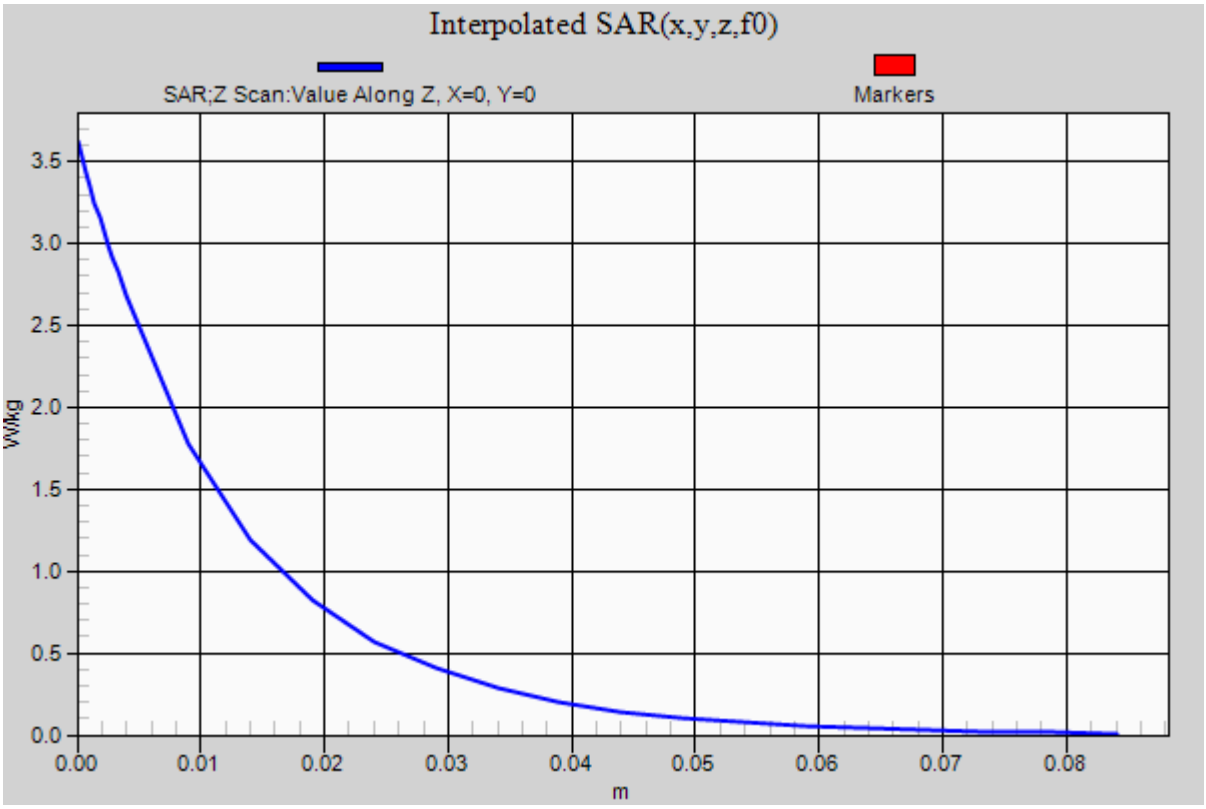
- Probe: EX3DV4 - SN3600; ConvF(8.17, 8.17, 8.17) @ 835 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 3/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

SPC/SPC 835H,Target=2.41W/kg,1.55W/kg,Input 250mW/Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.69 W/kg

SPC/SPC 835H,Target=2.41W/kg,1.55W/kg,Input 250mW/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 53.57 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 3.78 W/kg
SAR(1 g) = 2.49 W/kg; SAR(10 g) = 1.61 W/kg
Ratio of SAR at M2 to SAR at M1 = 66%
Maximum value of SAR (measured) = 2.68 W/kg

SPC/SPC 835H,Target=2.41W/kg,1.55W/kg,Input 250mW/Z Scan (1x1x28): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Penetration depth = 12.66 (12.12, 13.44) [mm]
Maximum value of SAR (interpolated) = 3.62 W/kg




Interpolated SAR(x,y,z,f0)
SAR;Z Scan:Value Along Z, X=0, Y=0
Markers
W/kg
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
m

Plot A.3 System Verification Plot, 2450MHz, 18 January 2021

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 - SN:825
Procedure Name: SPC 2450H Input=250mw, Target=[14.63][13.3][11.97]W/kg 2

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 1.76 S/m; ε_r = 36.21; ρ = 1000 kg/m^3
Phantom section: Flat Section

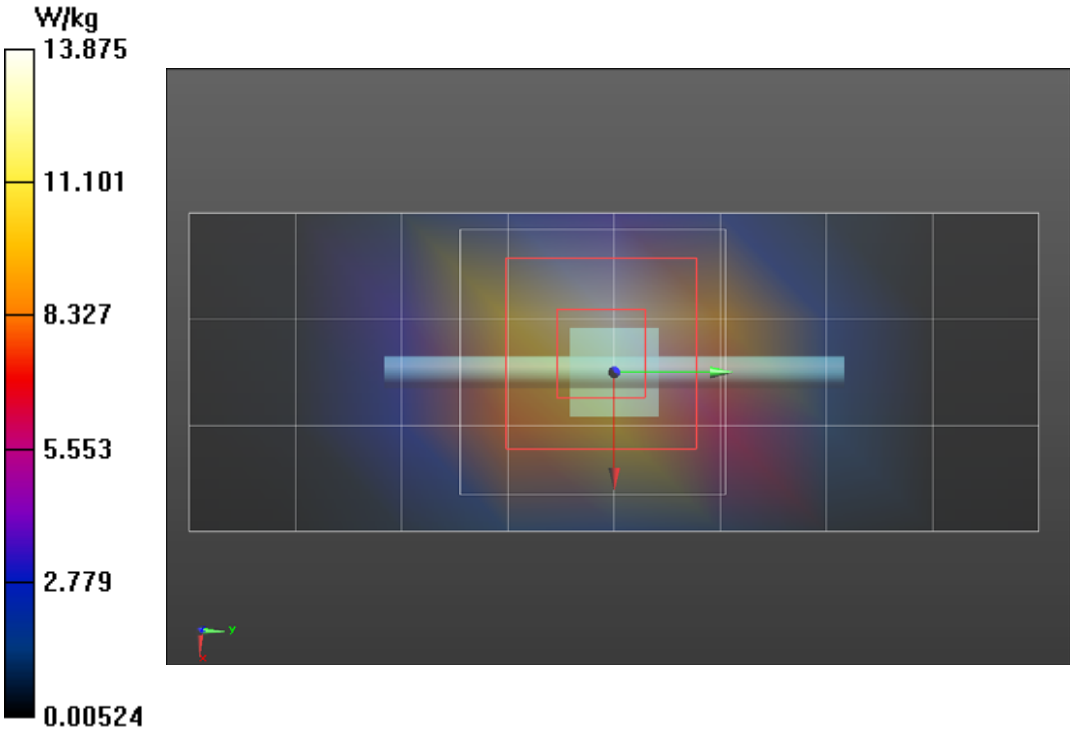
DASY5 Configuration:

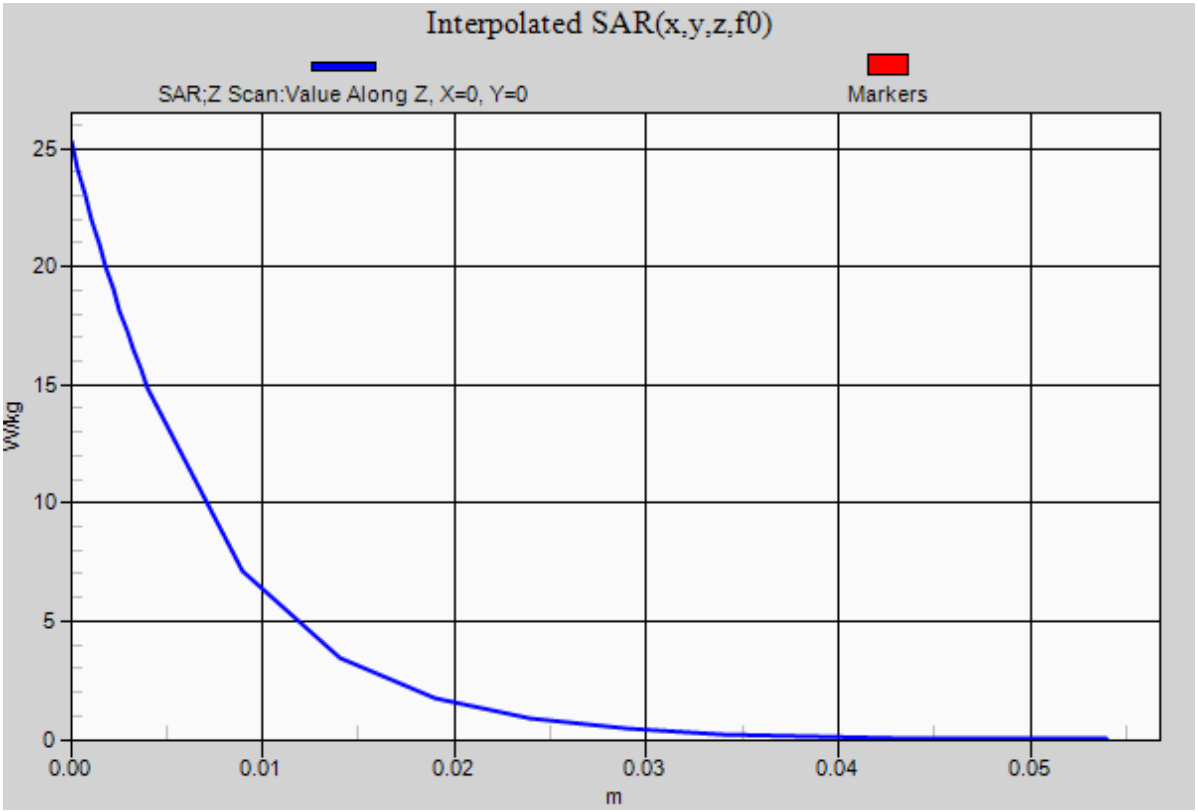
- Probe: EX3DV4 - SN3600; ConvF(6.45, 6.45, 6.45) @ 2450 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 3/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

SPC/SPC 2450H Input=250mw, Target=[14.63][13.3][11.97]W/kg 2/Area Scan (4x9x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 13.9 W/kg

SPC/SPC 2450H Input=250mw, Target=[14.63][13.3][11.97]W/kg 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 92.39 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 29.8 W/kg
SAR(1 g) = 13.8 W/kg; SAR(10 g) = 6.27 W/kg
Smallest distance from peaks to all points 3 dB below = 10 mm
Ratio of SAR at M2 to SAR at M1 = 47.5%
Maximum value of SAR (measured) = 15.5 W/kg

SPC/SPC 2450H Input=250mw, Target=[14.63][13.3][11.97]W/kg 2/Z Scan (1x1x22): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Penetration depth = 6.996 (6.786, 7.136) [mm]
Maximum value of SAR (interpolated) = 25.3 W/kg


W/kg
13.875
11.101
8.327
5.553
2.779
0.00524


Interpolated SAR(x,y,z,f0)
SAR;Z Scan:Value Along Z, X=0, Y=0
Markers
W/kg
25
20
15
10
5
0
0.00
0.01
0.02
0.03
0.04
0.05
m

Plot A.4 System Verification Plot, 5250MHz, 20January 2021

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1031
Procedure Name: SPC 5250H Input=55 mw, Target= [3.96][4.4][4.83], Target=7.99W/kg@100mw

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; σ = 4.85 S/m; ε_r = 34.15; ρ = 1000 kg/m^3
Phantom section: Flat Section

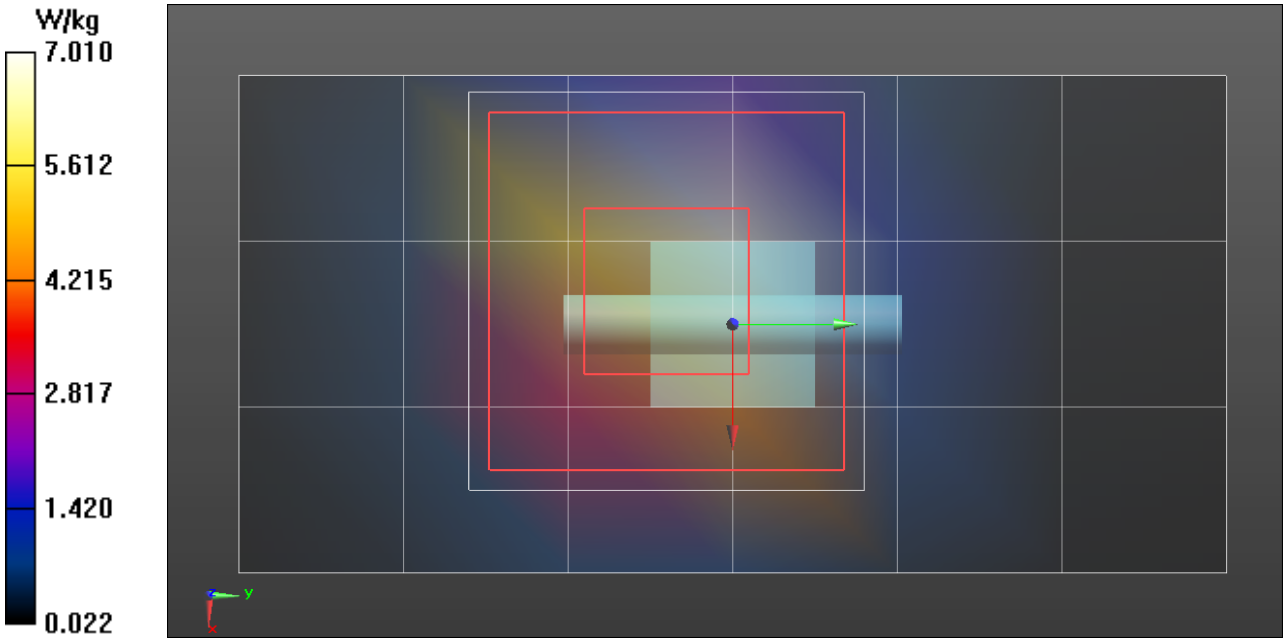
DASY5 Configuration:

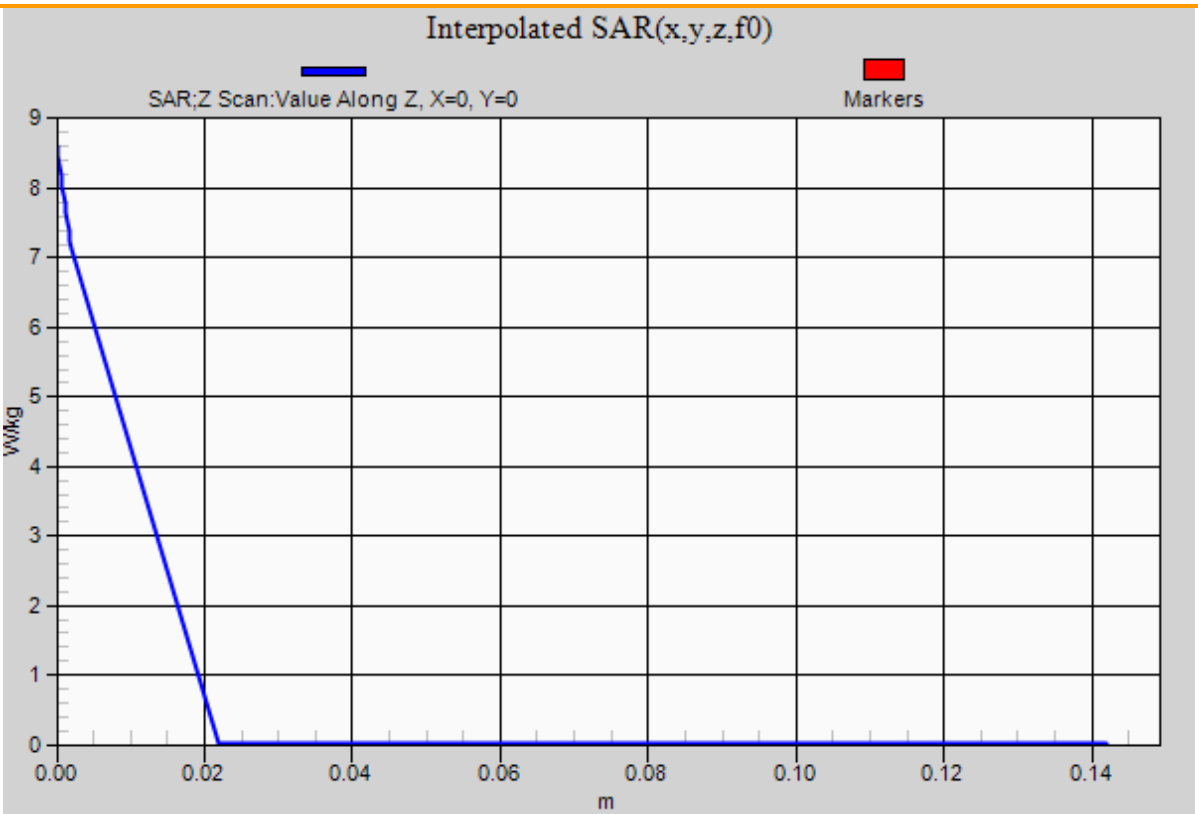
- Probe: EX3DV4 - SN3600; ConvF(4.47, 4.47, 4.47) @ 5250 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 3/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

SPC/SPC 5250H Input=55 mw, Target= [3.96][4.4][4.83], Target=7.99W/kg@100mw/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 7.01 W/kg

SPC/SPC 5250H Input=55 mw, Target= [3.96][4.4][4.83], Target=7.99W/kg@100mw/Zoom Scan (7x7x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 29.21 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 17.0 W/kg
SAR(1 g) = 4.28 W/kg; SAR(10 g) = 1.25 W/kg
Smallest distance from peaks to all points 3 dB below = 7.4 mm
Ratio of SAR at M2 to SAR at M1 = 54.8%
Maximum value of SAR (measured) = 8.83 W/kg

SPC/SPC 5250H Input=55 mw, Target= [3.96][4.4][4.83], Target=7.99W/kg@100mw/Z Scan (1x1x19): Measurement grid: dx=20mm, dy=20mm, dz=20mm
Penetration depth = n/a (n/a, 2.782) [mm]
Maximum value of SAR (interpolated) = 8.60 W/kg





Plot A.5 System Verification Plot, 5750MHz, 18 January 2021

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:xxx
Procedure Name: SPC 5750H Input=55 mw, Target=[3.978][4.42][4.862], Target=8.04W/kg@100mw

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; σ = 5.48 S/m; ε_r = 33.21; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

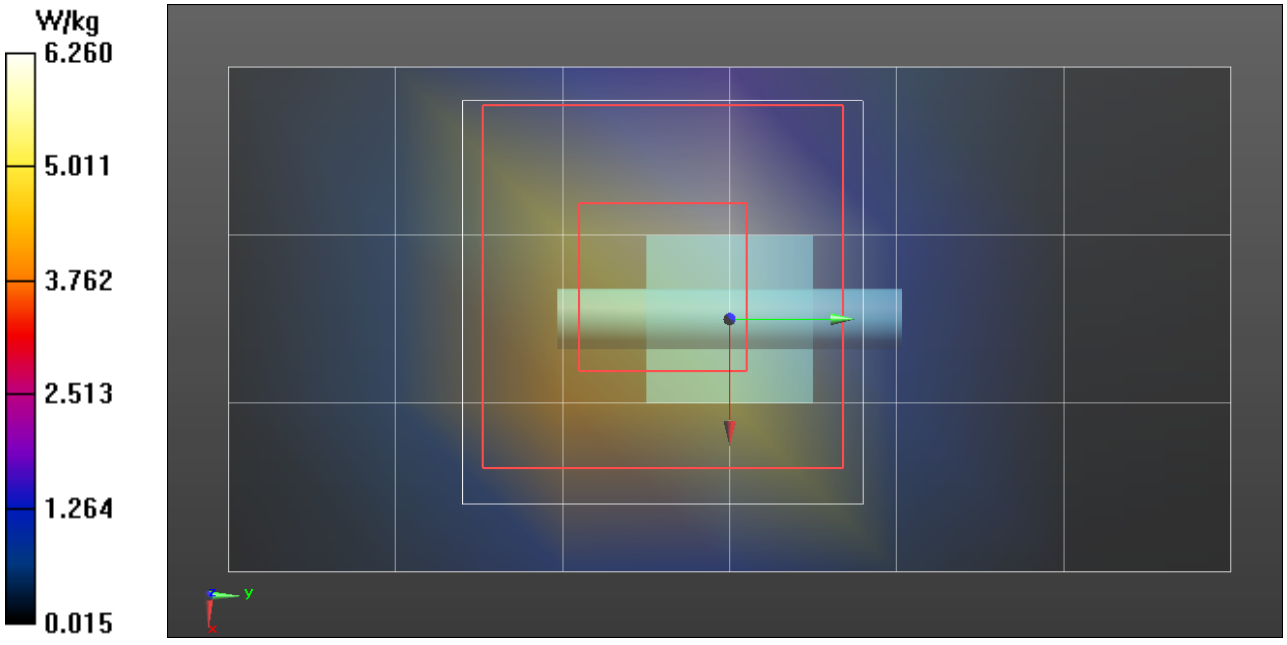
- Probe: EX3DV4 - SN3600; ConvF(4.12, 4.12, 4.12) @ 5750 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 3/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

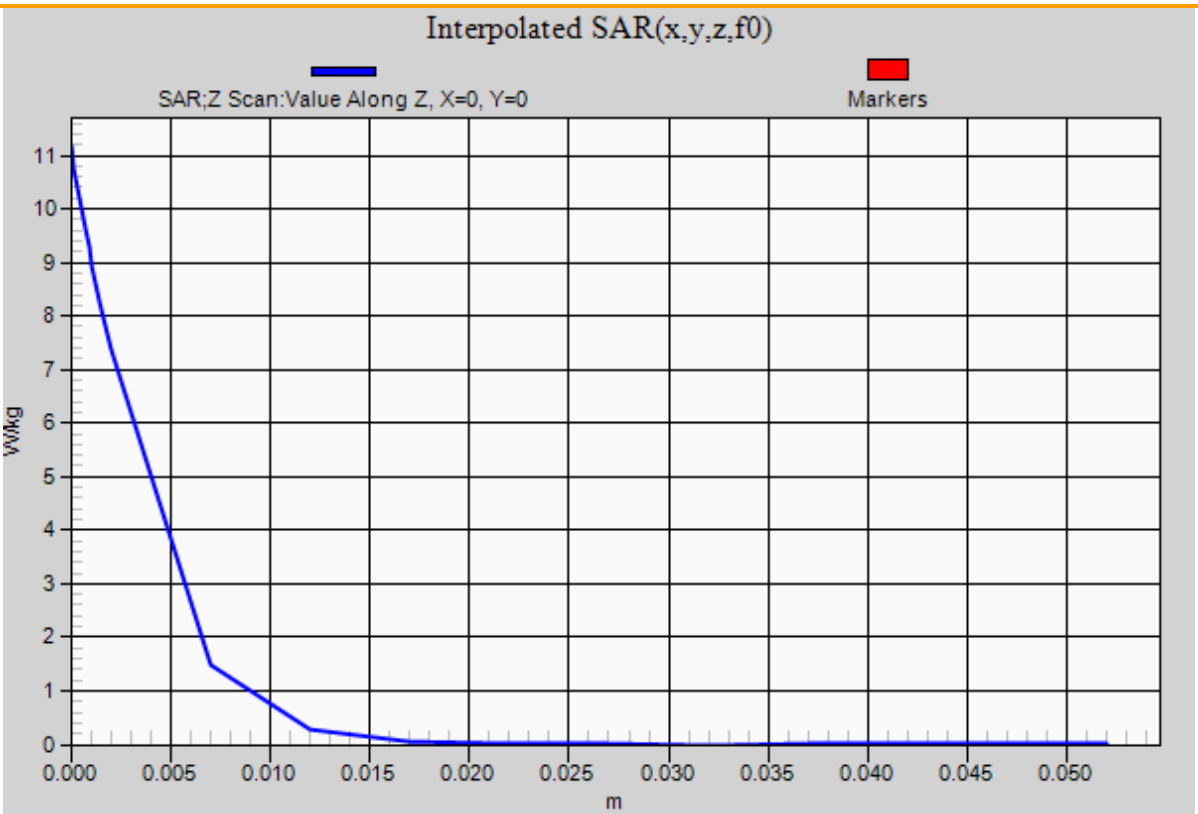
SPC/SPC 5750H Input=55 mw, Target=[3.978][4.42][4.862], Target=8.04W/kg@100mw/Area Scan (4x7x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 6.26 W/kg

SPC/SPC 5750H Input=55 mw, Target=[3.978][4.42][4.862], Target=8.04W/kg@100mw/Zoom Scan (7x7x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 27.03 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 19.0 W/kg
SAR(1 g) = 4.36 W/kg; SAR(10 g) = 1.26 W/kg
Smallest distance from peaks to all points 3 dB below = 7.9 mm
Ratio of SAR at M2 to SAR at M1 = 51.6%

Maximum value of SAR (measured) = 9.10 W/kg

SPC/SPC 5750H Input=55 mw, Target=[3.978][4.42][4.862], Target=8.04W/kg@100mw/Z Scan (1x1x22): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Penetration depth = 2.917 (3.116, 2.754) [mm]
Maximum value of SAR (interpolated) = 11.2 W/kg





APPENDIX B – MEASUREMENT PLOTS OF MAXIMUM MEASURED SAR

Plot B2

DUT: Harris XL-95; Type: PTT;
Procedure Name: B2-Harris XL-95, 766MHz Body Config, Ant 506/2,bat Li Poly, Audio MC-606

Communication System: UID 0, CW (0); Frequency: 766 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 766 MHz; σ = 0.85 S/m; ε_r = 41.533; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3600; ConvF(8.28, 8.28, 8.28) @ 766 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 3/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

835H/B2-Harris XL-95, 766MHz Body Config, Ant 506/2,bat Li Poly, Audio MC-606/Area Scan (8x21x1): Measurement grid: dx=15mm, dy=15mm

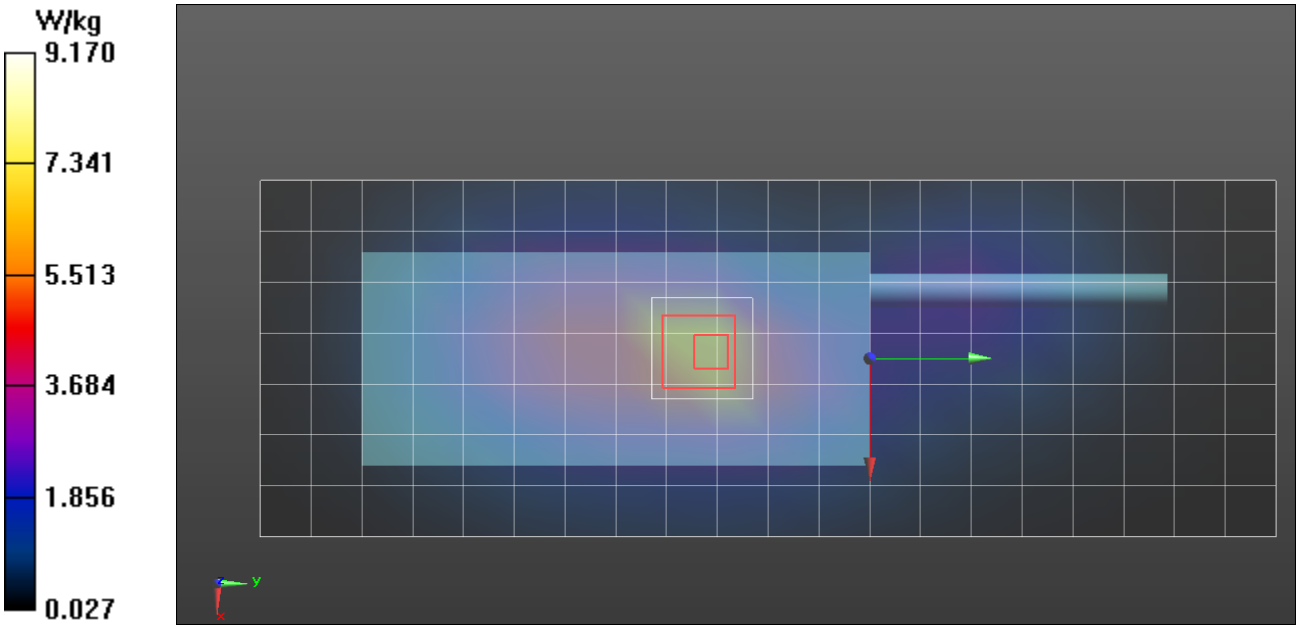
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 6.64 W/kg

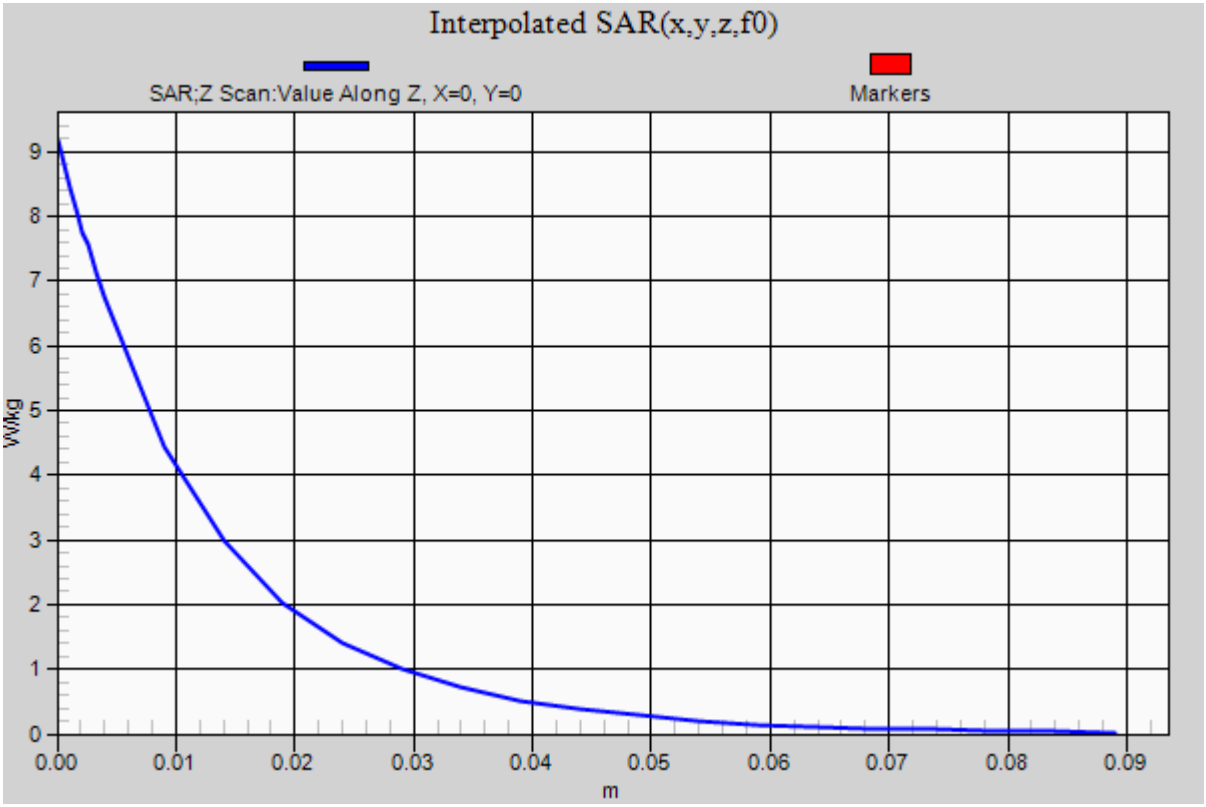
835H/B2-Harris XL-95, 766MHz Body Config, Ant 506/2,bat Li Poly, Audio MC-606/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 51.27 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 10.5 W/kg
SAR(1 g) = 6.42 W/kg; SAR(10 g) = 4.02 W/kg
Smallest distance from peaks to all points 3 dB below = 17.1 mm
Ratio of SAR at M2 to SAR at M1 = 65.8%

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 6.81 W/kg

835H/B2-Harris XL-95, 766MHz Body Config, Ant 506/2,bat Li Poly, Audio MC-606/Z Scan (1x1x29): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: Interpolated medium parameters used for SAR evaluation.
Penetration depth = 12.47 (11.92, 13.06) [mm]
Maximum value of SAR (interpolated) = 9.17 W/kg


W/kg
9.170
7.341
5.513
3.684
1.856
0.027


Interpolated SAR(x,y,z,f0)
SAR;Z Scan:Value Along Z, X=0, Y=0
Markers
W/kg
m
0
1
2
3
4
5
6
7
8
9
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09

Plot B21

DUT: Harris XL-95; Type: PTT;
Procedure Name: B21-Harris XL-95, 766MHz, Ant 506/2,bat Li Poly, Audio MC-011617-602 w/ Ant

Communication System: UID 0, CW (0); Frequency: 766 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 766 MHz; σ = 0.85 S/m; ε_r = 41.533; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3600; ConvF(8.28, 8.28, 8.28) @ 766 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 3/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

835H/B21-Harris XL-95, 766MHz, Ant 506/2,bat Li Poly, Audio MC-011617-602 w/ Ant/Area Scan (8x16x1): Measurement grid: dx=15mm, dy=15mm

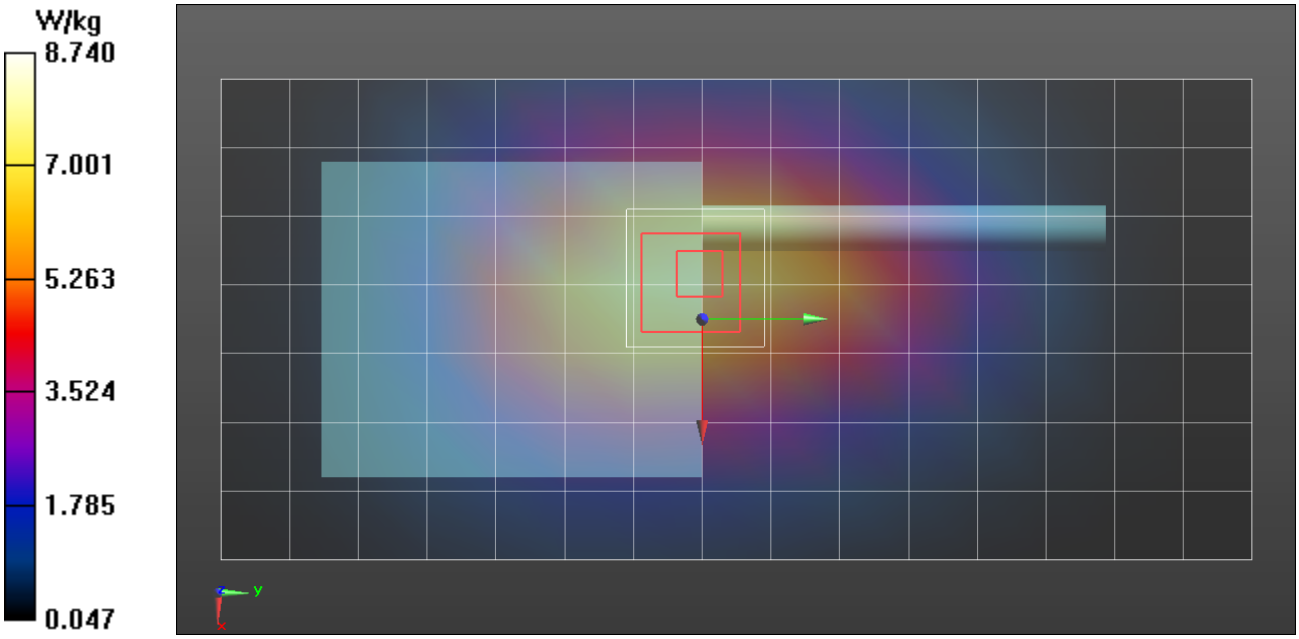
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 7.65 W/kg

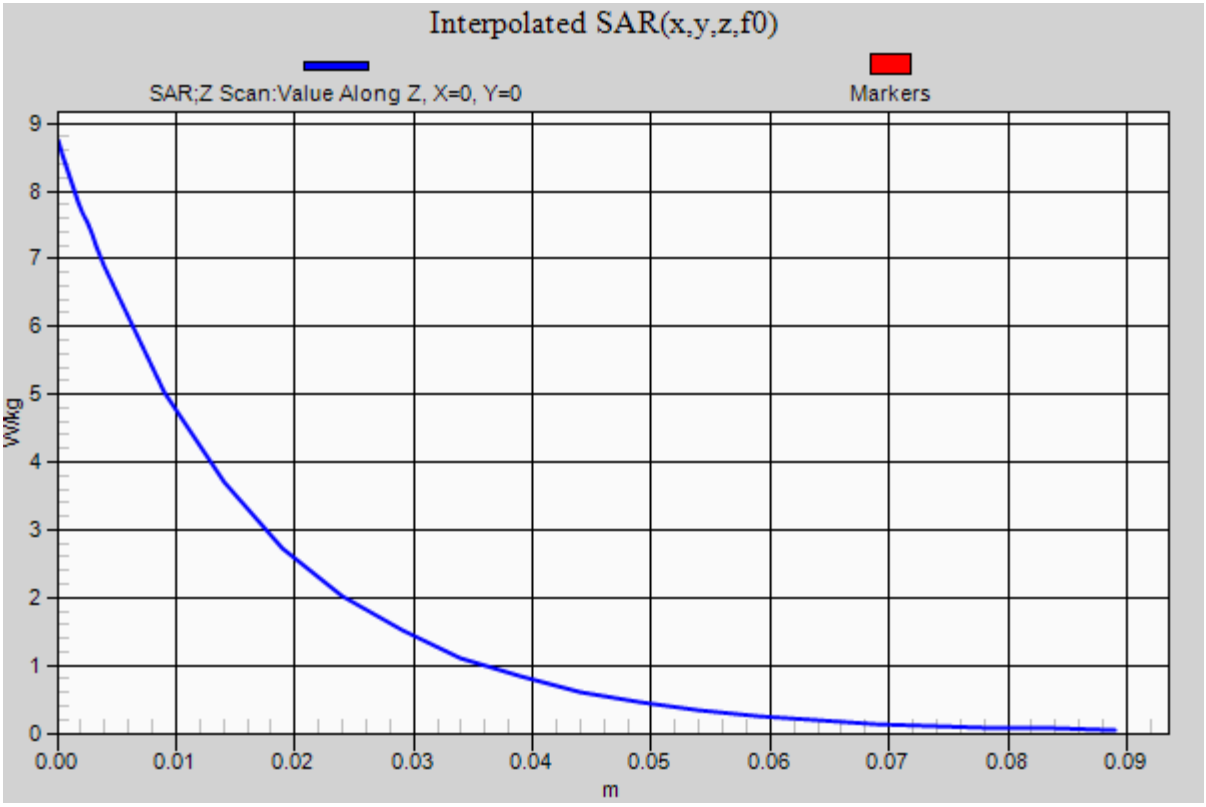
835H/B21-Harris XL-95, 766MHz, Ant 506/2,bat Li Poly, Audio MC-011617-602 w/ Ant/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 86.02 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 8.87 W/kg
SAR(1 g) = 6.53 W/kg; SAR(10 g) = 4.67 W/kg
Ratio of SAR at M2 to SAR at M1 = 73%

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 6.92 W/kg

835H/B21-Harris XL-95, 766MHz, Ant 506/2,bat Li Poly, Audio MC-011617-602 w/ Ant/Z Scan (1x1x29): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: Interpolated medium parameters used for SAR evaluation.
Penetration depth = 16.27 (15.86, 16.48) [mm]
Maximum value of SAR (interpolated) = 8.74 W/kg





Plot F16

DUT: Harris XL-95; Type: PTT;
Procedure Name: F16-Harris XL-95, 806MHz Face Config, Ant 506/2,bat Clam Shell

Communication System: UID 0, CW (0); Frequency: 806 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 806 MHz; σ = 0.891 S/m; ε_r = 41.382; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3600; ConvF(8.28, 8.28, 8.28) @ 806 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 3/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

835H/F16-Harris XL-95, 806MHz Face Config, Ant 506/2,bat Clam Shell/Area Scan (8x21x1): Measurement grid: dx=15mm, dy=15mm

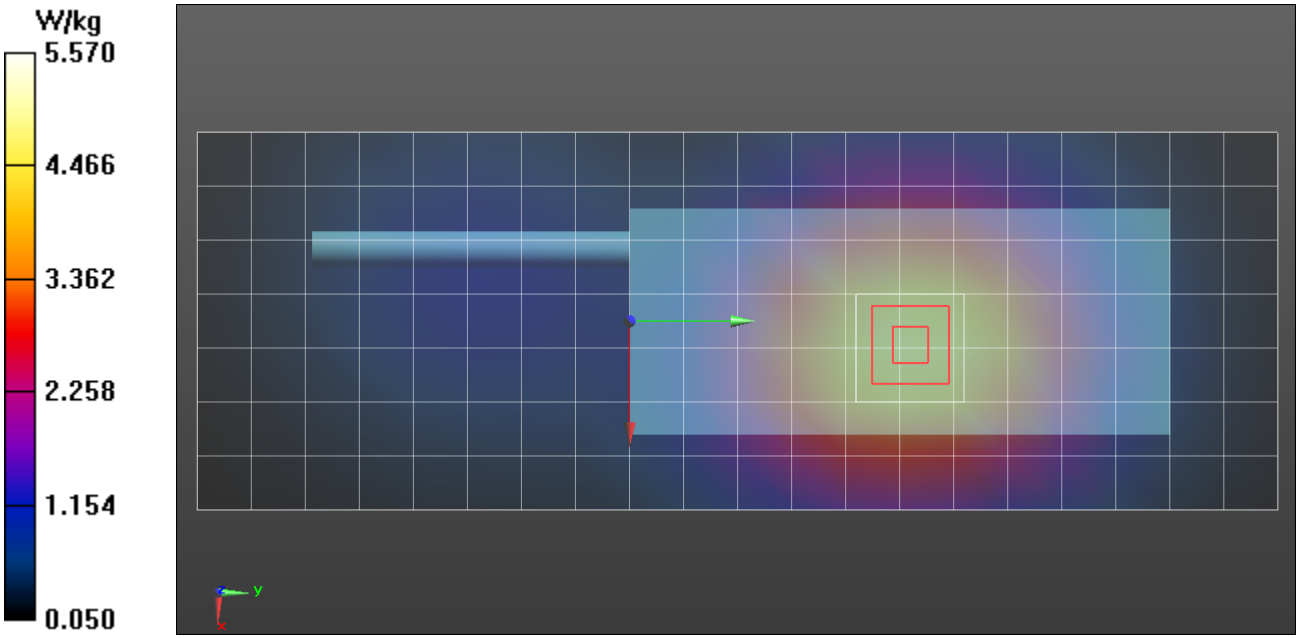
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 4.55 W/kg

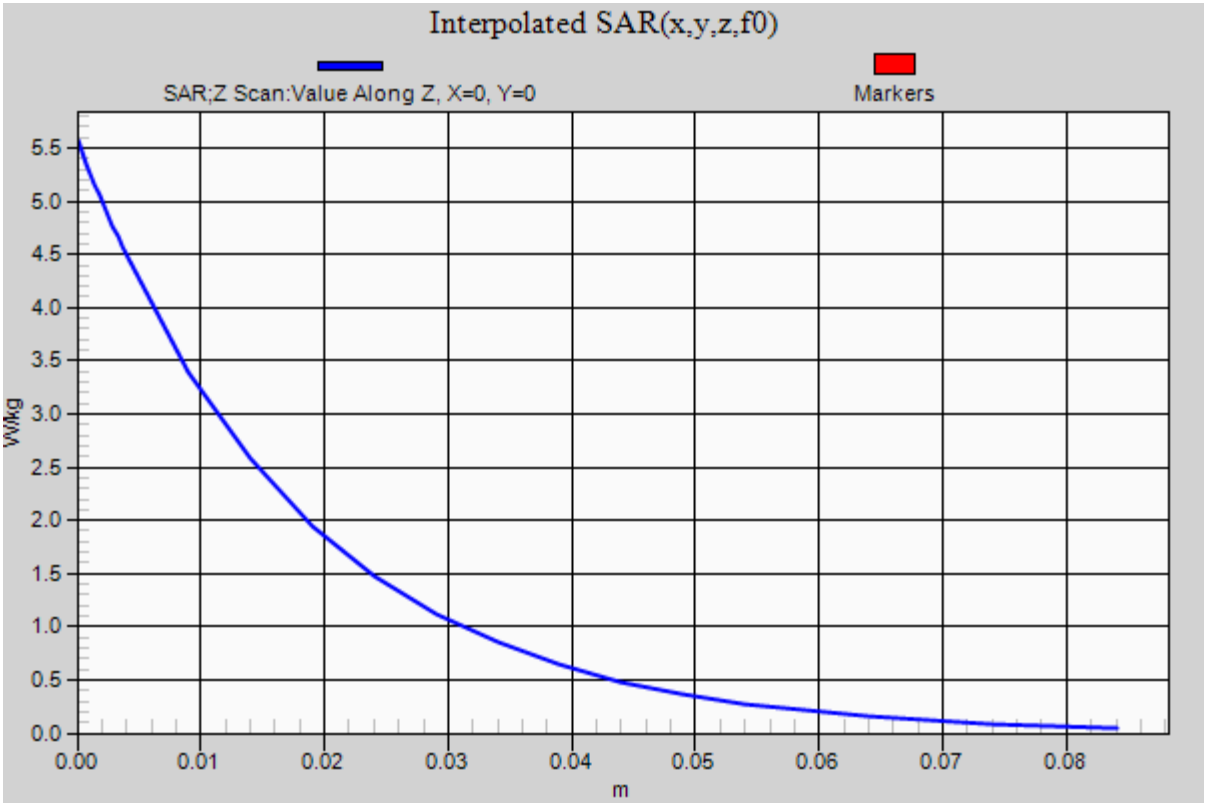
835H/F16-Harris XL-95, 806MHz Face Config, Ant 506/2,bat Clam Shell/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 32.22 V/m; Power Drift = -0.28 dB
Peak SAR (extrapolated) = 5.57 W/kg
SAR(1 g) = 4.29 W/kg; SAR(10 g) = 3.18 W/kg
Ratio of SAR at M2 to SAR at M1 = 75.6%

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 4.52 W/kg

835H/F16-Harris XL-95, 806MHz Face Config, Ant 506/2,bat Clam Shell/Z Scan (1x1x28): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: Interpolated medium parameters used for SAR evaluation.
Penetration depth = 18.08 (17.83, 17.95) [mm]
Maximum value of SAR (interpolated) = 5.57 W/kg





Plot F25

DUT: Harris XL-95; Type: PTT;
Procedure Name: F25-Harris XL-95, 812MHz, Ant 506/1,bat Li Poly SpMc MC-718

Communication System: UID 0, CW (0); Frequency: 812 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 812 MHz; σ = 0.93 S/m; ε_r = 40.583; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3600; ConvF(8.17, 8.17, 8.17) @ 812 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 3/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

835H/F25-Harris XL-95, 812MHz, Ant 506/1,bat Li Poly SpMc MC-718/Area Scan (8x22x1): Measurement grid: dx=15mm, dy=15mm

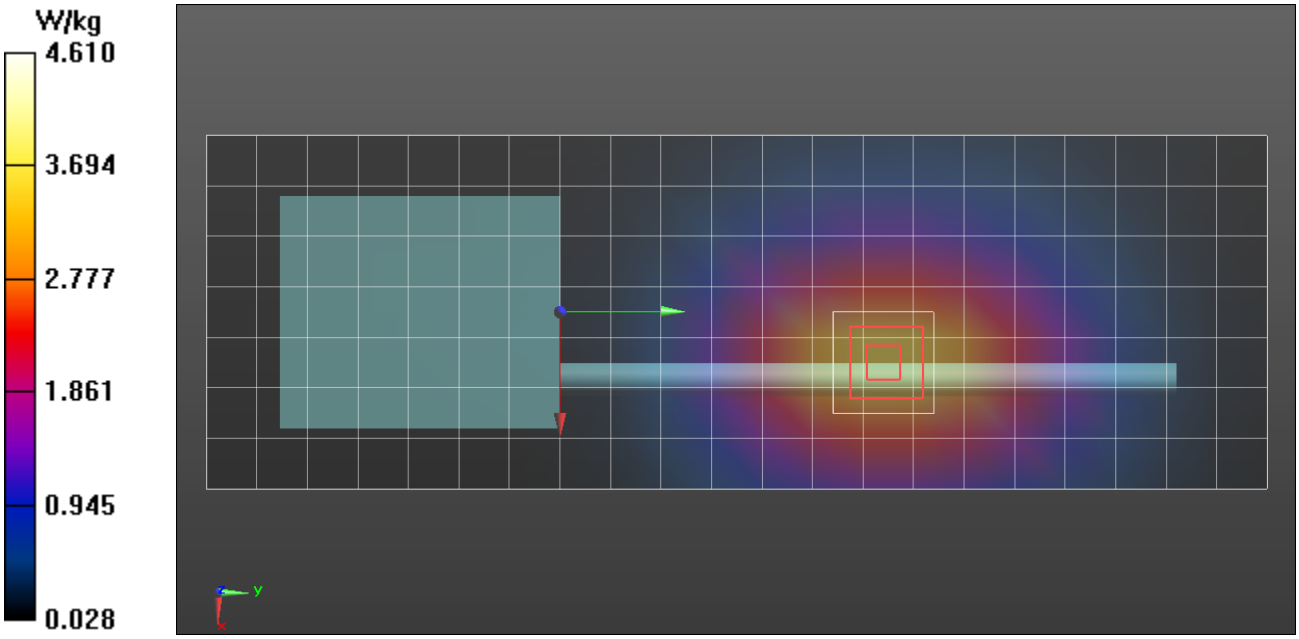
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 3.51 W/kg

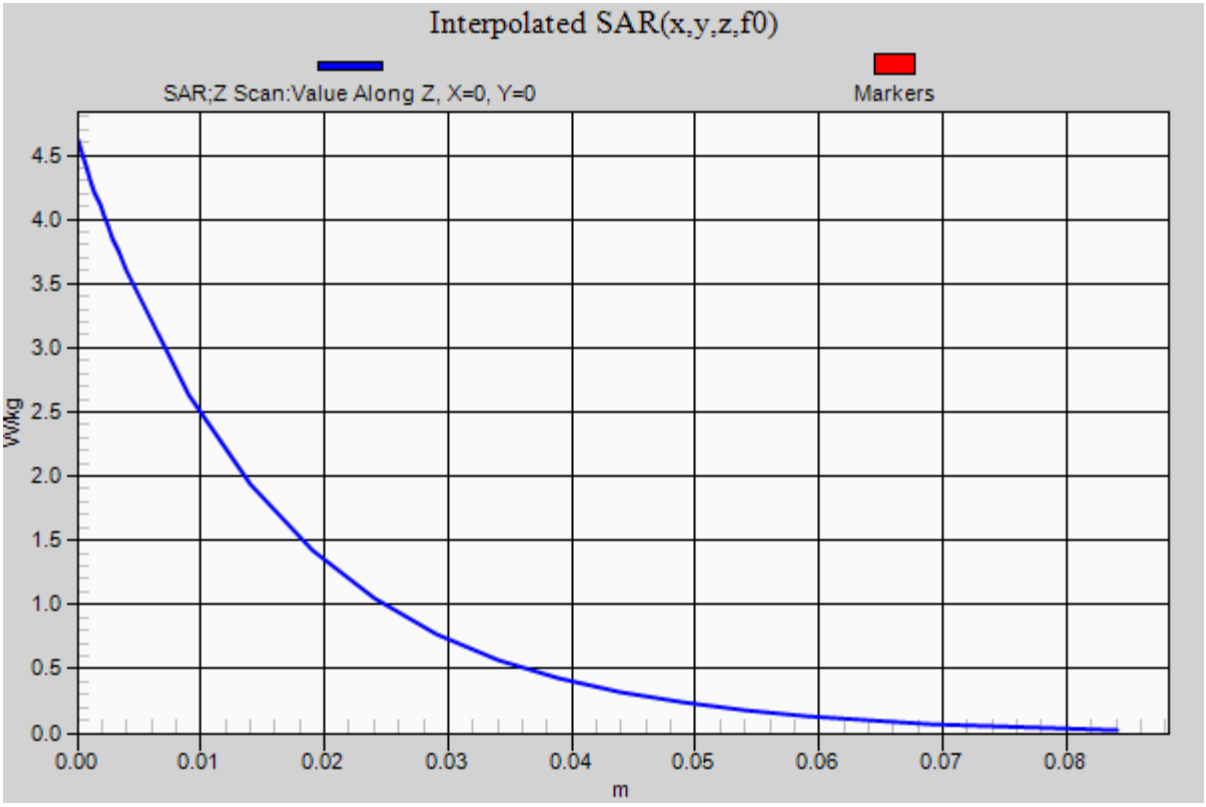
835H/F25-Harris XL-95, 812MHz, Ant 506/1,bat Li Poly SpMc MC-718/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 11.04 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 4.62 W/kg
SAR(1 g) = 3.43 W/kg; SAR(10 g) = 2.46 W/kg
Ratio of SAR at M2 to SAR at M1 = 73.1%

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 3.64 W/kg

835H/F25-Harris XL-95, 812MHz, Ant 506/1,bat Li Poly SpMc MC-718/Z Scan (1x1x28): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: Interpolated medium parameters used for SAR evaluation.
Penetration depth = 16.27 (16.02, 16.24) [mm]
Maximum value of SAR (interpolated) = 4.61 W/kg


W/kg
4.610
3.694
2.777
1.861
0.945
0.028
y


Interpolated SAR(x,y,z,f0)
SAR;Z Scan:Value Along Z, X=0, Y=0
Markers
W/kg
4.5
4.0
3.5
3.0
2.5
2.0
1.5
1.0
0.5
0.0
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
m