Celltech
Testing and Engineering Services Lab

Test Report Serial Number:	45461649 R2.0
Test Report Date:	9 February 2021
Project Number:	1530

SAR Test Report - New Certification

Applicant:

RADIO ACTIVE DESIGNS

Radio Activ Designs
21 East Union Avenue
East Rutherford, NJ 07073
USA

Maximum Reported 1g SAR				
FCC	LMR	FACE:	n/a	W/kg
		BODY:	<0.1	
ISED		FACE:	n/a	
		BODY:	<0.1	
Simultaneous:				
Occupational Limit:			8.00	

FCC ID:	ISED Registration Number
2AA6F-UV-1GBP	11482A-UV1GBP
Product Name / PMN	Product Model Number / HVIN
UV-1G	UV-1G Belt Pack

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

ilac-MRA ACCREDITED

Test Lab Certificate: 2470.01

Industry Canada

IC Registration 3874A-1

FC

FCC Registration: 714830

Table of Contents

1.0 DOCUMENT CONTROL

Revision History				
Samples Tested By:	Jasmeet Gill	**Date(s) of Evaluation:**		25 Jan - 26 Jan 2021
Report Prepared By:	Jasmeet Gill, Art Voss, P.Eng.	**Report Reviewed By:**		Art Voss
Report Revision	**Description of Revision**	**Revised Section**	**Revised By**	**Revision Date**
1.0	Initial Release	n/a	Jasmeet Gill	27 January 2021
2.0	Revised HVIN and Equipment Class	2.0	Art Voss	9 February 2021

2.0 CLIENT AND DEVICE INFORMATION

Client Information		
Applicant Name	**Radio Active Designs**	
Applicant Address	21 East Union Avenue	
	East Rutherford, NJ 07073	
	USA	
DUT Information		
Device Identifier(s):	FCC ID:	**2AA6F-UV-1GBP**
	ISED:	**11482A-UV1GBP**
Device Marketing Name / PMN:	UV-1G	
Device Model(s) / HVIN:	UV-1G Belt Pack	
Test Sample Serial No.:	10815	
Equipment Class (FCC):	DWM - Part 15C Wireless Microphone, TLD - Part 74 Licensed LPAS Device	
Equipment Class (ISED):	RSS-210 - Wireless Microphone (26.1–806 MHz)	
Transmit Frequency Range (FCC):	VHF Band: 174.025 - 215.975MHz	
Transmit Frequency Range (ISED):	VHF Band: 174.025 - 215.975MHz	
Number of Channels:	Programmable	
Transmitter Rated Power:	50mW	
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:

Radio Active Designs

,(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.

Application:

This is an application for a new device certrification.

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 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:	
Radio Active Designs	UV-1G	
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	[X] General Population / Uncontrolled	[X] 1.6W/kg - 1g Volume
[ ] Class I Permissive Change		[ ] 8.0W/kg - 1g Volume
[ ] Class II Permissive Change	[ ] Occupational / Controlled	[ ] 4.0W/kg - 10g Volume
Reason for Change:		**Date(s) Evaluated:**
Original Filing		25 Jan - 26 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)
n/a	174.255	CW	16.43	16.99	0.05	-0.56	y
	185.185		17.33	16.99	0.05	0.34	y
	195.025		16.52	16.99	0.05	-0.47	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
Li-Ion Pack	BP-L	Li-Ion Battery Pack
n/a	BP-A	AA Battery Adapter
Headset		Manufacturer Provided

9.0 SAR MEASUREMENT SUMMARY

Table 9.1: Measured Results LMR VHF 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)	
26 Jan 2021	B1	UV-1G	Radio + Cable	174.255	CW	n/a	Li-Ion Pack	BC	Headset	0	0	16.43	0.030	0.015	-0.170
26 Jan 2021	B2	UV-1G	Radio + Cable	195.025	CW	n/a	Li-Ion Pack	BC	Headset	0	0	16.52	0.032	0.016	-0.130
26 Jan 2021	B3	UV-1G	Radio + Cable	185.185	CW	n/a	Li-Ion Pack	BC	Headset	0	0	17.33	0.033	0.017	-0.150
26 Jan 2021	B4	UV-1G	Antenna Cable	185.185	CW	n/a	Li-Ion Pack	BC	Headset	0	0	17.33	0.023	0.012	-0.170
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 LMR VHF 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)	
26 Jan 2021	F1*	UV-1G	Radio + Cable	185.185	CW	n/a	Li-Ion Pack	n/a	Headset	0	0	17.33	0.062	0.031	-0.090
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			

* Due to the extremely low SAR, this measurement was 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		F1	B3		
Maximum Measured SAR_M		0.062	0.030		(W/kg)
Frequency		185.185	185.185		(MHz)
Power Drift		-0.090	-0.650		(dB)
Conducted Power		17.330	17.330		(dBm)
Fluid Deviation from Target					
Δe	Permitivity	-3.67% (2)	-3.67% (2)		
Δσ	Conductivity	0.61% (2)	0.61% (2)		

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)	0.185185	0.185185		
Ce		-0.207	-0.207		
Cσ		0.786	0.786		
Ce * Δe		0.008	0.008		
Cσ * Δσ		0.005	0.005		
ΔSAR		0.012	0.012		(%)

Manufacturer's Tuneup Tolerance				
Measured Conducted Power	17.330	17.330		(dBm)
Rated Conducted Power	16.990	16.990		(dBm)
ΔP	0.340 (4)	0.340 (4)		(dB)

Note(4): SAR was Evaluated at the Maximum Tuneup Tolerance. SAR Adjustment is not Required.

SAR Adjustment for Fluid Sensitivity				
$SAR_1 = SAR_M * ΔSAR$	0.062	0.030		(W/kg)

SAR Adjustment for Tuneup Tolerance				
$SAR_2 = SAR_1 + [ΔP]$	0.062	0.030		(W/kg)

SAR Adjustment for Drift				
$SAR_3 = SAR_2 + Drift$	0.064	0.034		(W/kg)

reported SAR				
$FCC = SAR_2$	**0.06**	**0.03**		(W/kg)
$ISED = SAR_3$	**0.06**	**0.03**		(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 SAR EXPOSURE LIMITS

Table 11.1 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.			

12.0 DETAILS OF SAR EVALUATION

Table 12.1 Day Log

DAY LOG								
Date	Ambient Temp (°C)	Fluid Temp (°C)	Relative Humidity (%)	Barometric Pressure (kPa)	Fluid Dielectric	SPC	Test	Task
Jan 25 2021	24.4	22.3	20%	101.3	x	x		150 Head Fluid & SPC
Jan 26 2021	23.6	21.8	22%	101.0			x	150 Head Testing

Table 12.2 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.
NEAR-BODY Configuration

Table 12.3 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 $\pm$ 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 12.4 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 12.5 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	

13.0 MEASUREMENT UNCERTAINTIES

Table 13.1 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 13.2 Calculation of Degrees of Freedom

Table 13.2	
Calculation of the Degrees and Effective Degrees of Freedom	
$v_i = n - 1$	$v_{eff} = \dfrac{u_c^4}{\dfrac{m}{\sum_{i=1} \dfrac{c_i^4 u_i^4}{v_i}}}$

14.0 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 14.1 Fluid Dielectric Parameters 150MHz HEAD TSL, 25 Jan 2021

****
Aprel Laboratory
Test Result for UIM Dielectric Parameter
Mon 25/Jan/2021 12:54:13
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
0.1000	54.63	0.72	55.07	0.73
0.1100	54.17	0.73	53.22	0.73
0.1200	53.70	0.74	55.69	0.72
0.1300	53.23	0.75	54.57	0.76
0.1400	52.77	0.75	52.09	0.75
0.1500	52.30	0.76	52.09	0.76
0.1600	51.83	0.77	51.67	0.76
0.1700	51.37	0.77	51.20	0.78
0.1800	50.90	0.78	48.43	0.79
0.1900	50.43	0.79	49.14	0.79
0.2000	49.97	0.80	49.18	0.79

Table 14.2 Fluid Dielectric Analysis 150MHz HEAD TSL, 25 Jan 2021

FLUID DIELECTRIC PARAMETERS							
Date:	25 Jan 2021	Fluid Temp:	22.3	Frequency:	150MHz	Tissue:	Head
Freq (MHz)		Test_e	Test_s	Target_e	Target_s	Deviation Permittivity	Deviation Conductivity
100.0000		55.0700	0.7300	54.6300	0.72	0.81%	1.39%
110.0000		53.2200	0.7300	54.1700	0.73	-1.75%	0.00%
120.0000		55.6900	0.7200	53.7000	0.74	3.71%	-2.70%
130.0000		54.5700	0.7600	53.2300	0.75	2.52%	1.33%
140.0000		52.0900	0.7500	52.7700	0.75	-1.29%	0.00%
150.0000		52.0900	0.7600	52.3000	0.76	-0.40%	0.00%
160.0000		51.6700	0.7600	51.8300	0.77	-0.31%	-1.30%
170.0000		51.2000	0.7800	51.3700	0.77	-0.33%	1.30%
174.2550	*	50.0214	0.7843	51.1700	0.77	-2.24%	1.29%
180.0000		48.4300	0.7900	50.9000	0.78	-4.85%	1.28%
185.1850	*	48.7981	0.7900	50.6563	0.79	-3.67%	0.61%
190.0000		49.1400	0.7900	50.4300	0.79	-2.56%	0.00%
195.0250	*	49.1601	0.7900	50.1989	0.80	-2.07%	-0.63%
200.0000		49.1800	0.7900	49.9700	0.80	-1.58%	-1.25%

*Channel Frequency Tested

15.0 SYSTEM VERIFICATION TEST RESULTS

Table 15.1 System Verification Results 835MHz HEAD TSL, 11 Jan 2021

System Verification Test Results

Date		Frequency (MHz)	Validation Source		
			P/N		S/N
Jan 25 2021		150	CLA-150		4007
Fluid Type	Fluid Temp °C	Ambient Temp °C	Ambient Humidity (%)	Forward Power (mW)	Source Spacing (mm)
Head	22.3	24	20%	1000	0
Fluid Parameters					
Permittivity			Conductivity		
Measured	Target	Deviation	Measured	Target	Deviation
52.09	52.30	-0.40%	0.76	0.76	0.00%
Measured SAR					
1 gram			10 gram		
Measured	Target	Deviation	Measured	Target	Deviation
3.98	3.89	2.31%	2.66	2.57	3.50%
Measured SAR Normalized to 1.0W					
1 gram			10 gram		
Normalized	Target	Deviation	Normalized	Target	Deviation
3.98	3.87	2.84%	2.66	2.56	3.91%

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.

16.0 MEASUREMENT SYSTEM SPECIFICATIONS

Table 16.1 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 16.2 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

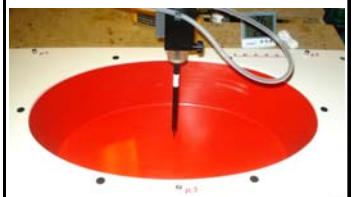
Probe Specification

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

17.0 TEST EQUIPMENT LIST

Table 17.1 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.

18.0 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

19.0 FLUID COMPOSITION

Table 20.1 Fluid Composition 835MHz HEAD TSL

150			150MHz Head	
Tissue Simulating Liquid (TSL) Composition				
Component by Percent Weight				
Water	**Sugar**	**Salt(1)**	**HEC(2)**	**Bacteriacide(3)**
38.35	55.5	5.15	0.9	0.1

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

APPENDIX A – SYSTEM VERIFICATION PLOTS

DUT: CLA-150; Type: CLA-150; Serial: 4007
Procedure Name: SPC 150H Input=1.0W, Target=3.89W/kg

Communication System: UID 0, CW (0); Frequency: 150 MHz;Duty Cycle: 1:1
Medium parameters used: f = 150 MHz; σ = 0.76 S/m; ε_r = 52.09; ρ = 1000 kg/m^3
Phantom section: Flat Section

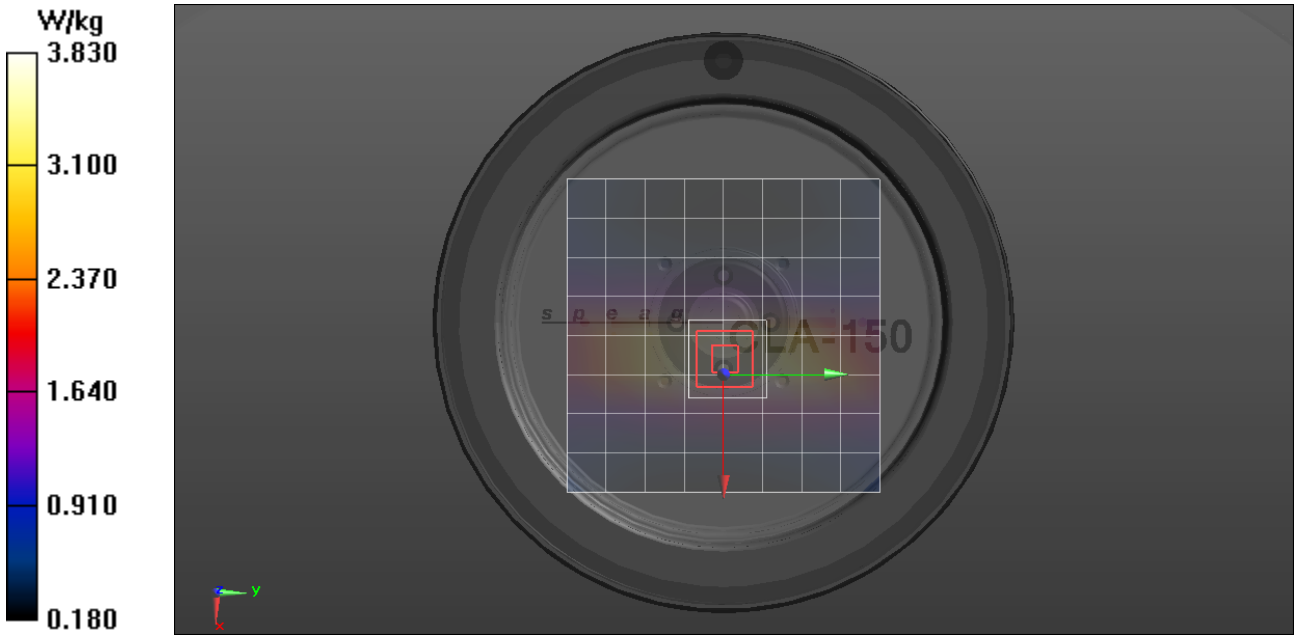
DASY5 Configuration:

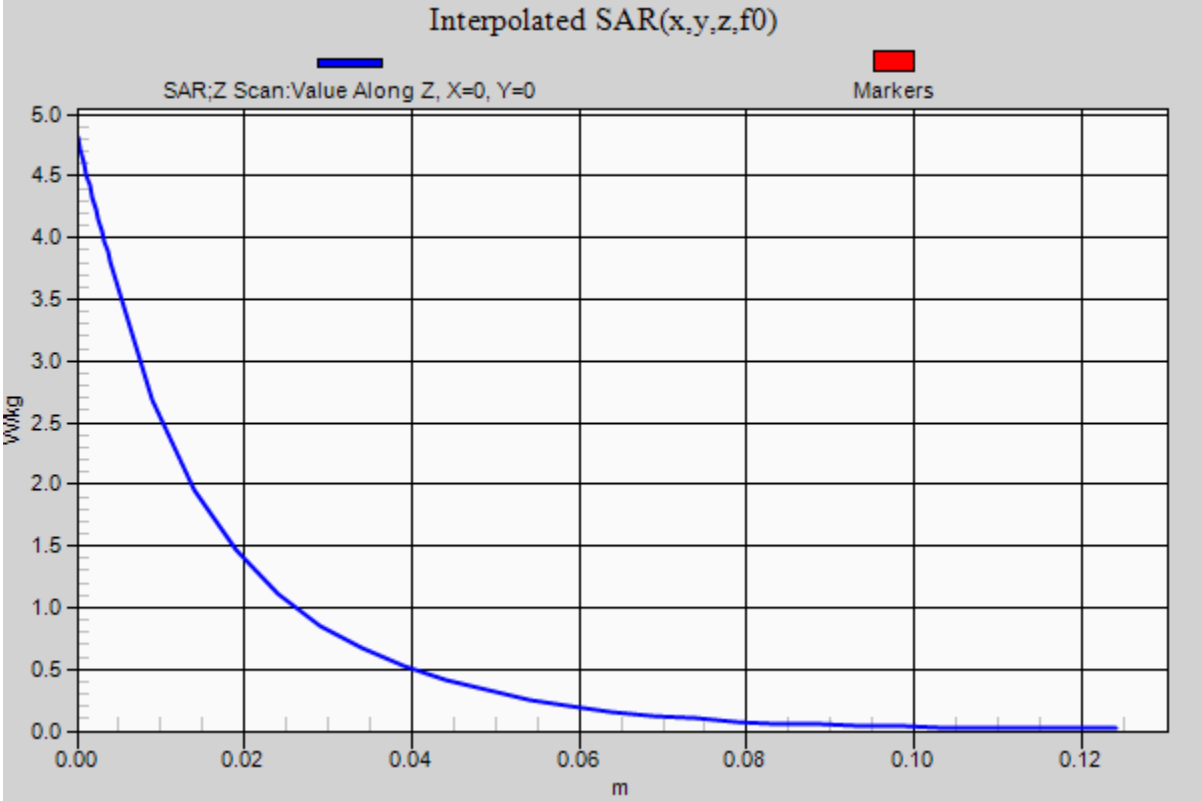
- Probe: EX3DV4 - SN3600; ConvF(9.59, 9.59, 9.59) @ 150 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn353; Calibrated: 3/17/2020
- Phantom: ELI V5.0 (20deg probe tilt); Type: QD OVA 002 Ax; Serial: 1234
- Measurement SW: DASY52, Version 52.10 (3); SEMCAD X Version 14.6.13 (7474)

SPC/SPC 150H Input=1.0W, Target=3.89W/kg/Area Scan (9x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 3.83 W/kg

SPC/SPC 150H Input=1.0W, Target=3.89W/kg/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 71.00 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 6.01 W/kg
SAR(1 g) = 3.98 W/kg; SAR(10 g) = 2.66 W/kg
Ratio of SAR at M2 to SAR at M1 = 68.3%
Maximum value of SAR (measured) = 4.27 W/kg

SPC/SPC 150H Input=1.0W, Target=3.89W/kg/Z Scan (1x1x36): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Penetration depth = 15.98 (14.36, 17.20) [mm]
Maximum value of SAR (interpolated) = 4.81 W/kg





APPENDIX B – MEASUREMENT PLOTS OF MAXIMUM MEASURED SAR

Plot B3

DUT: RAD Belt Pack; Type: Not Specified; Serial: Not Specified
Procedure Name: B3-RAD-185.185MHz

Communication System: UID 0, CW (0); Frequency: 185.185 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 185.185 MHz; σ = 0.79 S/m; ε_r = 48.798; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3600; ConvF(9.59, 9.59, 9.59) @ 185.185 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 1.5mm (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)

150H/B3-RAD-185.185MHz/Area Scan (10x23x1): Measurement grid: dx=15mm, dy=15mm

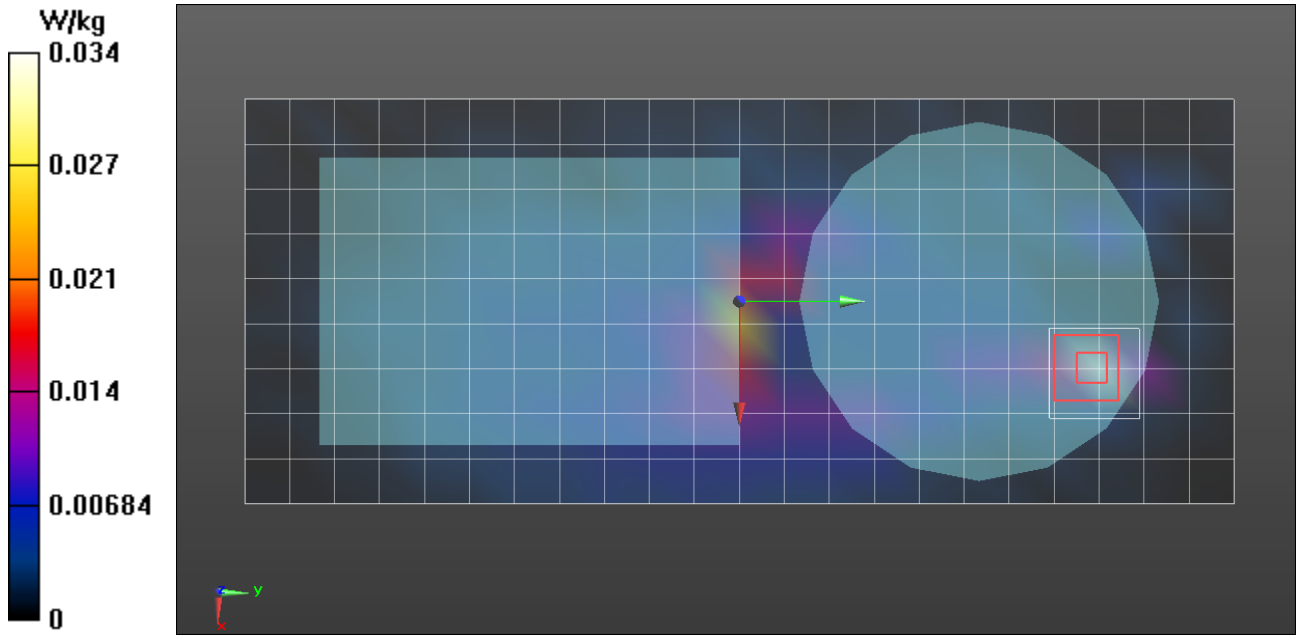
Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.0342 W/kg

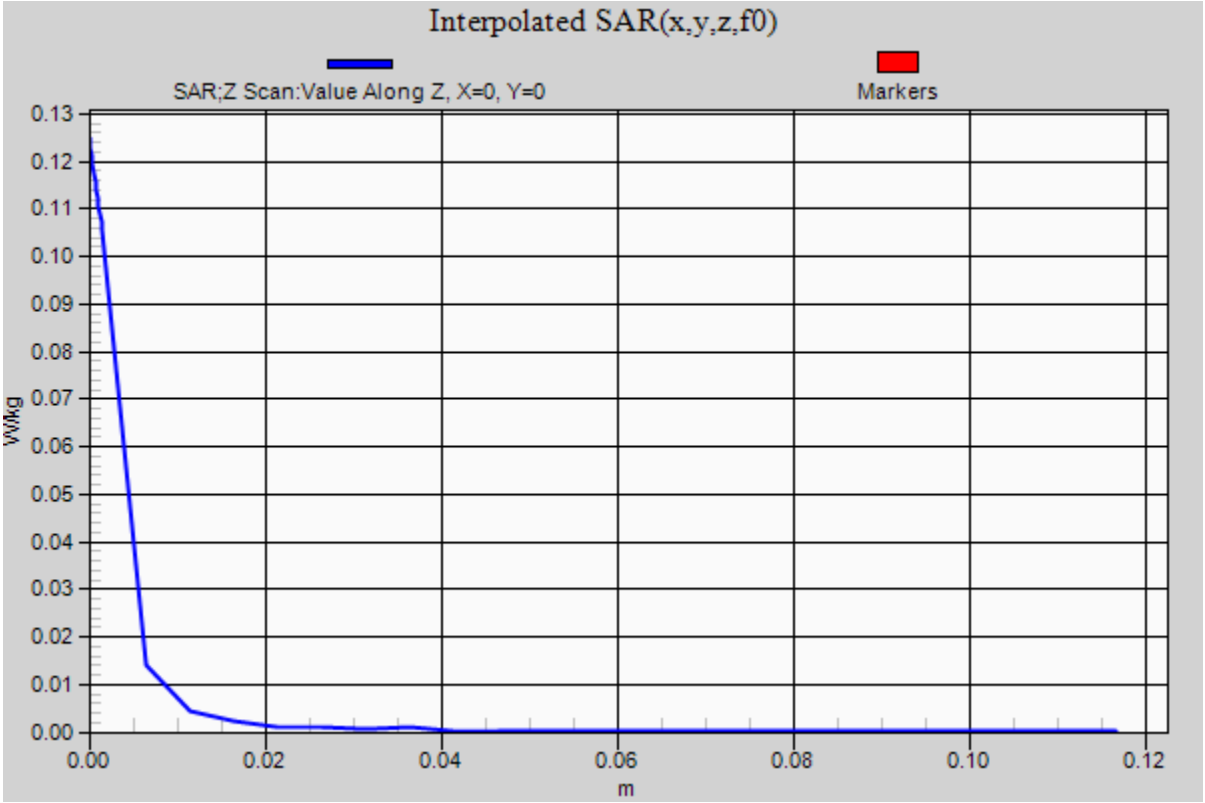
150H/B3-RAD-185.185MHz/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 5.568 V/m; Power Drift = -0.65 dB
Peak SAR (extrapolated) = 0.194 W/kg
SAR(1 g) = 0.030 W/kg; SAR(10 g) = 0.00897 W/kg
Smallest distance from peaks to all points 3 dB below = 3 mm
Ratio of SAR at M2 to SAR at M1 = 13.5%

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.109 W/kg

150H/B3-RAD-185.185MHz/Z Scan (1x1x35): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: Interpolated medium parameters used for SAR evaluation.
Penetration depth = 4.427 (2.482, 8.327) [mm]
Maximum value of SAR (interpolated) = 0.125 W/kg


W/kg
0.034
0.027
0.021
0.014
0.00684
0


Interpolated SAR(x,y,z,f0)
SAR;Z Scan:Value Along Z, X=0, Y=0
Markers
W/kg
0.13
0.12
0.11
0.10
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0.00
0.00
0.02
0.04
0.06
0.08
0.10
0.12
m

Plot B4

DUT: RAD Belt Pack; Type: Not Specified; Serial: Not Specified
Procedure Name: B4-RAD-185.185MHz Cable Only

Communication System: UID 0, CW (0); Frequency: 185.185 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 185.185 MHz; σ = 0.79 S/m; ε_r = 48.798; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3600; ConvF(9.59, 9.59, 9.59) @ 185.185 MHz; Calibrated: 3/25/2020
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 1.5mm (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)

150H/B4-RAD-185.185MHz Cable Only/Area Scan (4x38x1): Measurement grid: dx=15mm, dy=15mm

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.0224 W/kg

150H/B4-RAD-185.185MHz Cable Only/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=7.5mm, dy=7.5mm, dz=5mm
Reference Value = 3.777 V/m; Power Drift = -0.27 dB
Peak SAR (extrapolated) = 0.134 W/kg
SAR(1 g) = 0.023 W/kg; SAR(10 g) = 0.00776 W/kg
Ratio of SAR at M2 to SAR at M1 = 15.3%

Info: Interpolated medium parameters used for SAR evaluation.
Maximum value of SAR (measured) = 0.0775 W/kg

150H/B4-RAD-185.185MHz Cable Only/Z Scan (1x1x35): Measurement grid: dx=20mm, dy=20mm, dz=5mm

Info: Interpolated medium parameters used for SAR evaluation.
Penetration depth = 4.989 (2.624, 8.688) [mm]
Maximum value of SAR (interpolated) = 0.0912 W/kg