

This is Appendix for Test report No. 14993588H-A.

Appendix B: SAR Measurement data

Plot 1 WLAN

UL Japan, Ltd. ISE Laboratory SAR#2

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	EDGE BOTTOM, 0.00	WLAN 2.4GHz	2442.000, 7	7.69	1.73	39.7

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1207	HBBL-600-10000 2023-Dec-15, 2023-Dec-15	EX3DV4 - SN3917, 2023-05-23	DAE4 Sn1372, 2023-03-16

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	340.0 x 400.0	30.0 x 30.0 x 60.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	0.024	0.023
psSAR10g [W/Kg]	0.014	0.013
Power Drift [dB]	-0.35	0.06
M2/M1 [%]		83.6
Dist 3dB Peak [mm]		19.5



Plot 2 WLAN

Phantom Section, TSL	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	EDGE BOTTOM, 0.00	U-NII-1, U-NII-2A	5260.000, 52	5.19	4.78	37.2

Hardware Setup

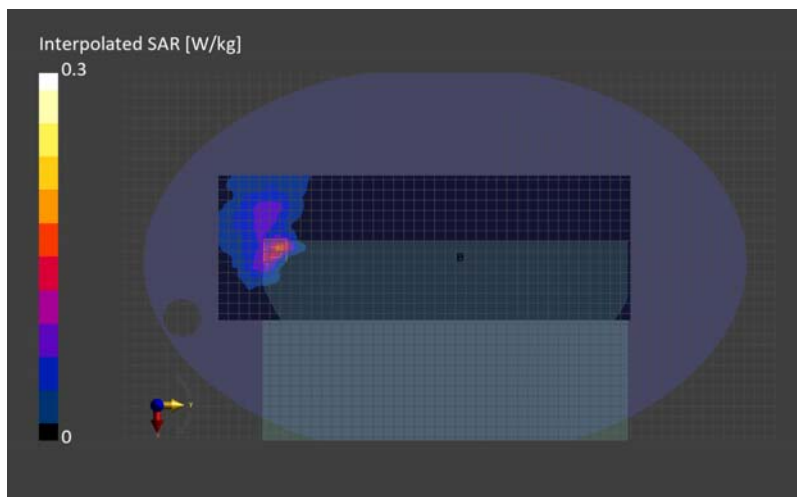
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1203	HBBL-600-10000 2023-Dec-18, 2023-Dec-18	EX3DV4 - SN3825, 2023-07-12	DAE4 Sn1369, 2023-05-23

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	140.0 x 400.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	0.120	0.129
psSAR10g [W/Kg]	0.045	0.040
Power Drift [dB]	N/A	-0.16
M2/M1 [%]		62.6
Dist 3dB Peak [mm]		7.2



Plot 3 WLAN

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	EDGE BOTTOM, 0.00	U-NII-2C Standalone	5690.000, 138	4.7	5.28	36.5

Hardware Setup

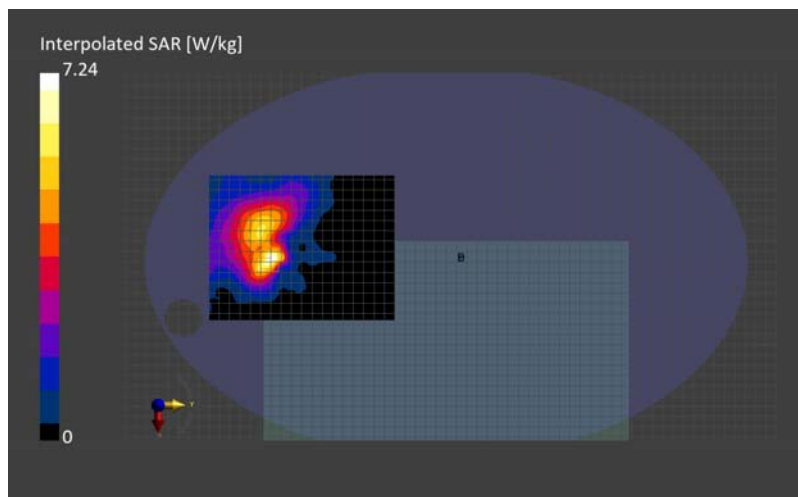
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1203	HBBL-600-10000 2023-Dec-19, 2023-Dec-19	EX3DV4 - SN3825, 2023-07-12	DAE4 Sn1369, 2023-05-23

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	140.0 x 180.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	0.281	0.304
psSAR10g [W/Kg]	0.111	0.102
Power Drift [dB]	-0.19	-0.05
M2/M1 [%]		61.9
Dist 3dB Peak [mm]		6.9



Plot 4 WLAN

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	EDGE BOTTOM, 0.00	WLAN 5GHz	5795.000, 159	4.72	5.40	36.4

Hardware Setup

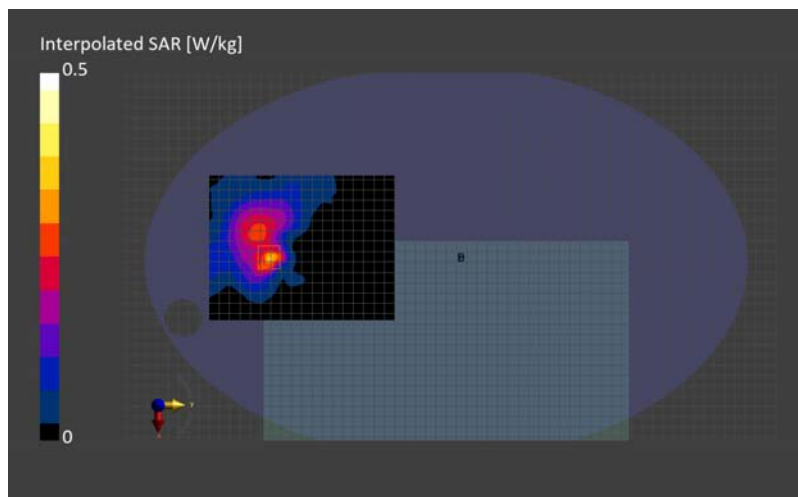
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1203	HBBL-600-10000 2023-Dec-20, 2023-Dec-20	EX3DV4 - SN3825, 2023-07-12	DAE4 Sn1369, 2023-05-23

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	140.0 x 180.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	0.254	0.261
psSAR10g [W/Kg]	0.097	0.090
Power Drift [dB]	-0.09	0.17
M2/M1 [%]		61.0
Dist 3dB Peak [mm]		6.5



Plot 5 WLAN

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	EDGE BOTTOM, 0.00	Custom Band	5835.000, 5835000	4.72	5.39	36.3

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1203	HBBL-600-10000 2023-Dec-20, 2023-Dec-20	EX3DV4 - SN3825, 2023-07-12	DAE4 Sn1369, 2023-05-23

Scans Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	140.0 x 180.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
psSAR1g [W/Kg]	0.268	0.288
psSAR10g [W/Kg]	0.107	0.103
Power Drift [dB]	0.18	0.14
M2/M1 [%]		60.9
Dist 3dB Peak [mm]		6.9



Plot 6 WLAN

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor
5G	EDGE BOTTOM, 2.00	Custom Band	6425.0, 6425000	1.0

Hardware Setup

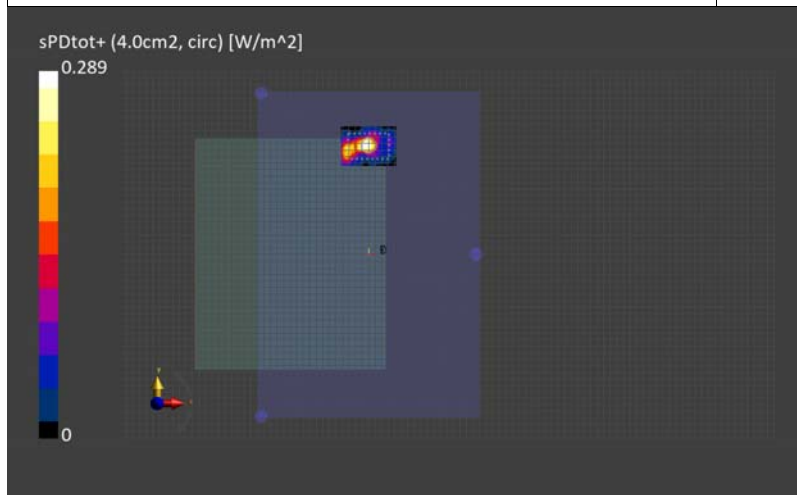
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1038	Air -	EUmmWV4 - SN9450_F1-55GHz, 2023-11-07	DAE4 Sn1372, 2023-03-16

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	80.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	Y

Measurement Results

Scan Type	5G Scan
Avg. Area [cm ²]	4.00
psPDn+ [W/m ²]	0.134
psPDtot+ [W/m ²]	0.289
psPDmod+ [W/m ²]	0.670
E _{max} [V/m]	16.5
Power Drift [dB]	-0.10



Plot 7 WLAN

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor
5G	EDGE BOTTOM, 2.00	U-NII-6	WLAN, 10554-AAE	6505.0, 111	1.0

Hardware Setup

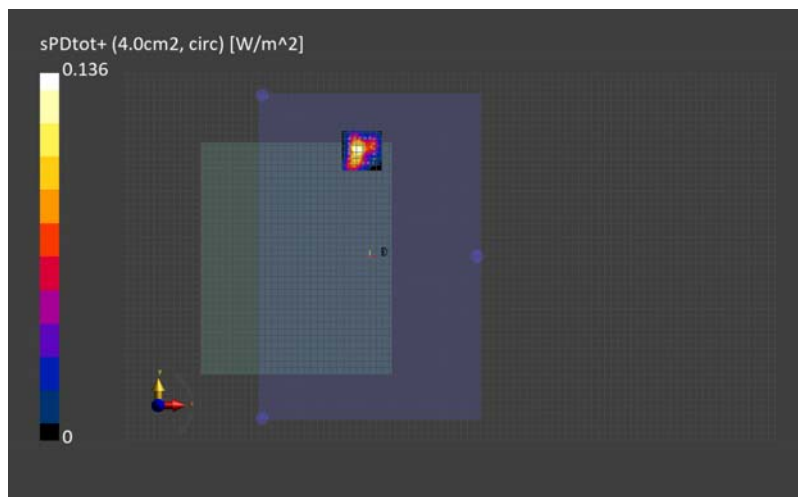
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1038	Air -	EUmmWV4 - SN9450_F1-55GHz, 2023-11-07	DAE4 Sn1372, 2023-03-16

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	Y

Measurement Results

Scan Type	5G Scan
Avg. Area [cm ²]	4.00
psPDn+ [W/m ²]	0.056
psPDtot+ [W/m ²]	0.136
psPDmod+ [W/m ²]	0.253
E _{max} [V/m]	9.16
Power Drift [dB]	-0.15



Plot 8 WLAN

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor
5G	EDGE BOTTOM, 2.00	U-NII-7	6585.0, 127	1.0

Hardware Setup

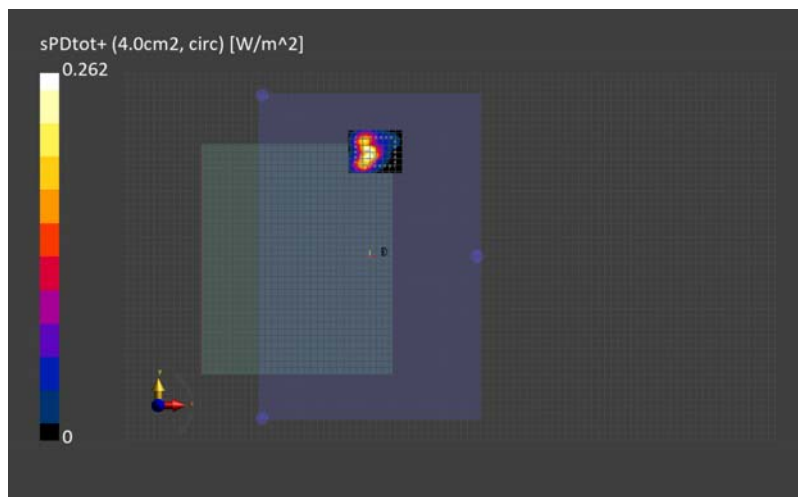
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1038	Air -	EUmmWV4 - SN9450_F1-55GHz, 2023-11-07	DAE4 Sn1372, 2023-03-16

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	80.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	Y

Measurement Results

Scan Type	5G Scan
Avg. Area [cm ²]	4.00
psPDn+ [W/m ²]	0.118
psPDtot+ [W/m ²]	0.262
psPDmod+ [W/m ²]	0.549
E _{max} [V/m]	14.4
Power Drift [dB]	-0.15



Plot 9 WLAN

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor
5G	EDGE BOTTOM, 2.00	Custom Band	6905.0, 6905000	1.0

Hardware Setup

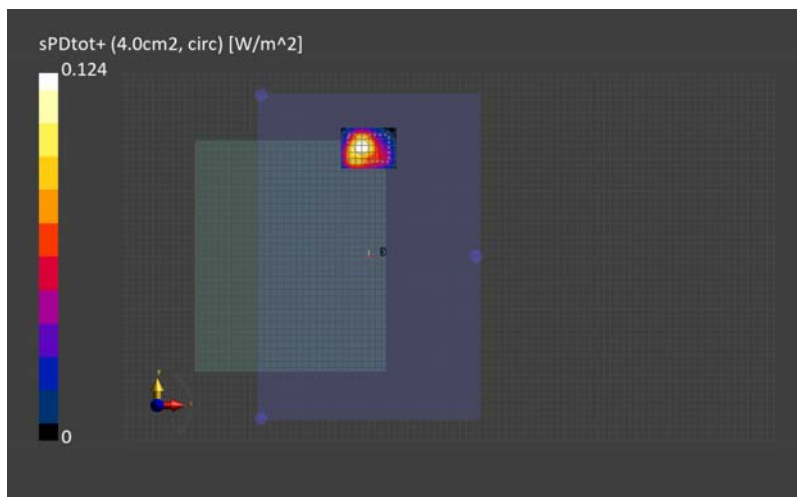
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1038	Air -	EUmmWV4 - SN9450_F1-55GHz, 2023-11-07	DAE4 Sn1372, 2023-03-16

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	80.0 x 60.0
Grid Steps [lambda]	0.0625 x 0.0625
Sensor Surface [mm]	2.0
MAIA	Y

Measurement Results

Scan Type	5G Scan
Avg. Area [cm ²]	4.00
psPDn+ [W/m ²]	0.104
psPDtot+ [W/m ²]	0.124
psPDmod+ [W/m ²]	0.126
E _{max} [V/m]	8.03
Power Drift [dB]	-0.14



Plot K1 WLAN

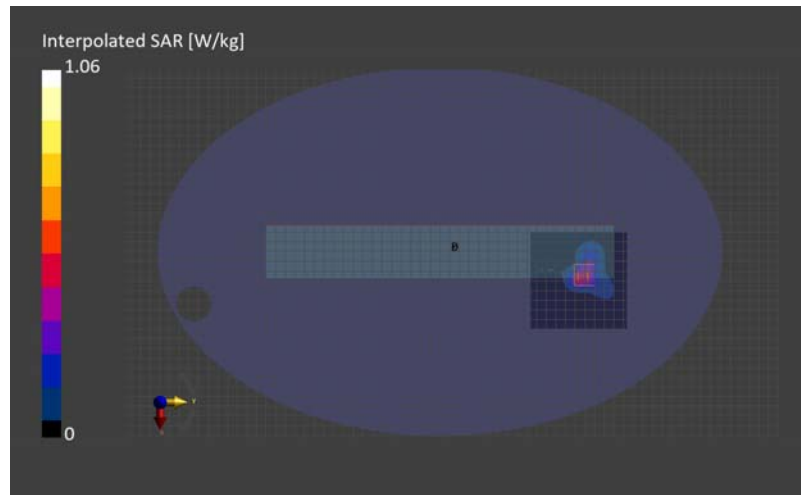
UL Japan, Ltd. ISE Laboratory SAR#1

Phantom Section, TSL	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Keyboard, 0 mm	WLAN 2.4GHz	2442.000, 7	7.75	1.73	39.5

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) 1203	HBBL-600-10000 Checked 2024-Feb-28 2450, 2024-Feb-28	EX3DV4 - SN3825, 2023-07-12	DAE4 Sn1369, 2023-05-23

Scans Setup		-	-
Scan		Area Scan	Zoom Scan
Grid Extents [mm]		100.0 x 100.0	30.0 x 30.0 x 30.0
Grid Steps [mm]		10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]		3.0	1.4
Graded Grid		N/A	Yes
Grading Ratio		N/A	1.5
MAIA		N/A	N/A
Surface Detection		VMS + 6p	VMS + 6p
Scan Method		Measured	Measured
Measurement Results		-	-
Scan		Area Scan	Zoom Scan
psSAR1g [W/Kg]		0.407	0.456
psSAR10g [W/Kg]		0.193	0.195
Power Drift [dB]		-0.05	-0.06
M2/M1 [%]		-	77.9
Dist 3dB Peak [mm]		-	8.1



Plot K2 WLAN

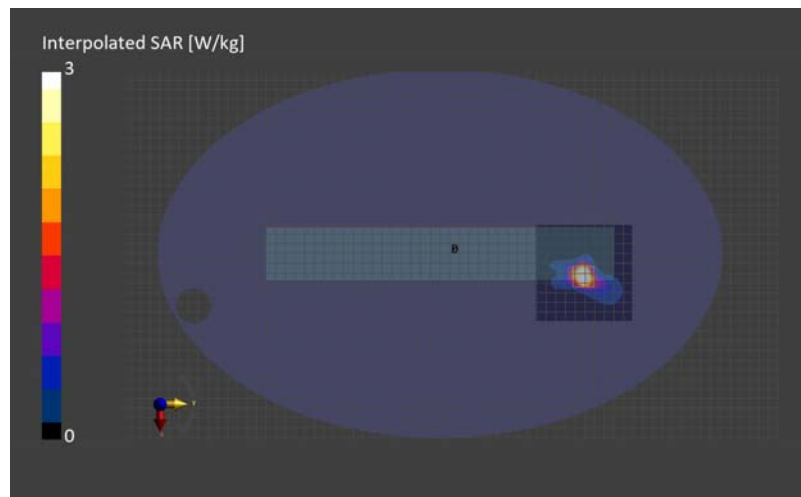
UL Japan, Ltd. ISE Laboratory SAR#1

Phantom Section, TSL	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Keyboard, 0 mm	U-NII-1, U-NII-2A	5260.000, 52	5.19	4.69	36.6

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1203	HBBL-600-10000 Checked 2024-Mar-01 5.25G, 2024-Mar-01	EX3DV4 - SN3825, 2023- 07-12	DAE4 Sn1369, 2023- 05-23

Scans Setup		-	-
Scan		Area Scan	Zoom Scan
Grid Extents [mm]		100.0 x 100.0	22.0 x 22.0 x 22.0
Grid Steps [mm]		10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]		3.0	1.4
Graded Grid		N/A	Yes
Grading Ratio		N/A	1.4
MAIA		N/A	N/A
Surface Detection		VMS + 6p	VMS + 6p
Scan Method		Measured	Measured
Measurement Results		-	-
Scan		Area Scan	Zoom Scan
psSAR1g [W/Kg]		2.77	2.94
psSAR10g [W/Kg]		0.902	0.867
Power Drift [dB]		-0.01	-0.01
M2/M1 [%]		-	64.8
Dist 3dB Peak [mm]		-	6.6



Plot K3 WLAN

UL Japan, Ltd. ISE Laboratory SAR#1

Phantom Section, TSL	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Keyboard, 0 mm	U-NII-2C Standalone	5690.000, 138	4.7	5.06	36.5

Hardware Setup

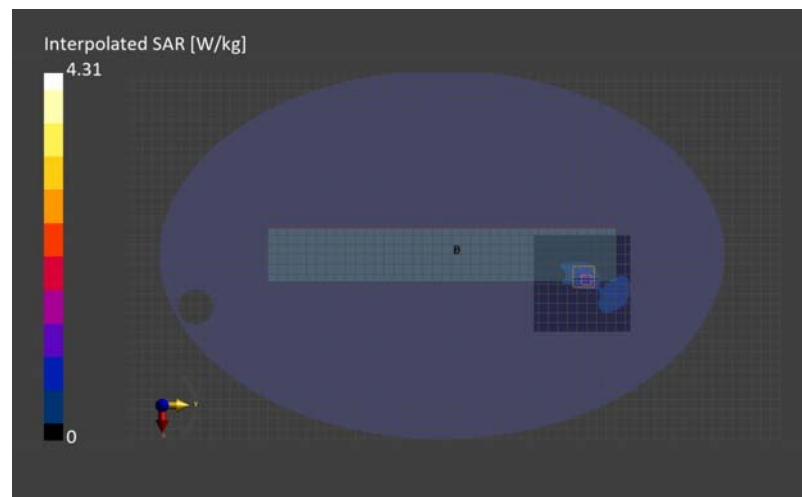
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1203	HBBL-600-10000 Checked 2024-Feb-26 5.2 5.6 5.8G, 2024-Feb-26	EX3DV4 - SN3825, 2023-07-12	DAE4 Sn1369, 2023-05-23

Scans Setup

Scan	Area Scan	Zoom Scan
Grid Extents [mm]	100.0 x 100.0	22.0 x 22.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	N/A	Yes
Grading Ratio	N/A	1.4
MAIA	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

Date	2024-02-27, 12:58	2024-02-27, 13:09
psSAR1g [W/kg]	0.872	1.09
psSAR10g [W/Kg]	0.313	0.352
Power Drift [dB]	-0.03	0.04
M2/M1 [%]	-	65.0
Dist 3dB Peak [mm]	-	6.6



Plot K4 WLAN

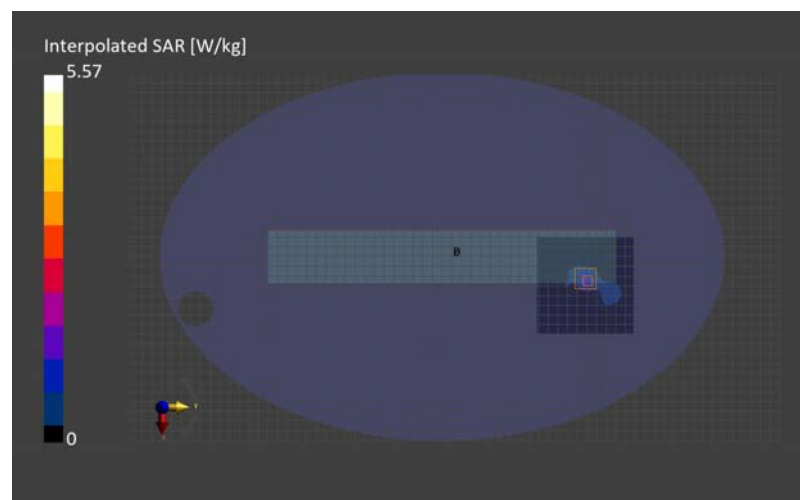
UL Japan, Ltd. ISE Laboratory SAR#1

Phantom Section, TSL	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Keyboard, 0 mm	Custom Band	5795.000, 5795000	4.72	5.19	36.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1203	HBBL-600-10000 Checked 2024-Feb-26 5.2 5.6 5.8G, 2024-Feb-26	EX3DV4 - SN3825, 2023-07-12	DAE4 Sn1369, 2023-05-23

Scans Setup		-	-
Scan		Area Scan	Zoom Scan
Grid Extents [mm]		100.0 x 100.0	22.0 x 22.0 x 22.0
Grid Steps [mm]		10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]		3.0	1.4
Graded Grid		N/A	Yes
Grading Ratio		N/A	1.4
MAIA		Y	N/A
Surface Detection		VMS + 6p	VMS + 6p
Scan Method		Measured	Measured
Measurement Results		-	-
Scan		Area Scan	Zoom Scan
psSAR1g [W/Kg]		1.16	1.38
psSAR10g [W/Kg]		0.369	0.401
Power Drift [dB]		0.00	0.01
M2/M1 [%]		-	64.1
Dist 3dB Peak [mm]		-	6.5



Plot K5 WLAN

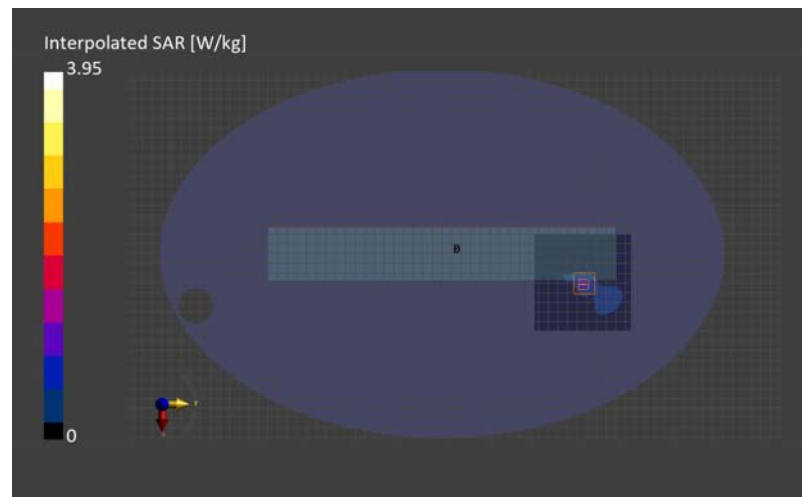
UL Japan, Ltd. ISE Laboratory SAR#1

Phantom Section, TSL	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	Keyboard, 0 mm	Custom Band	5835.000, 5835000	4.72	5.18	36.3

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V5.0 (20deg probe tilt) - 1203	HBBL-600-10000 Checked 2024-Feb-26 5.2 5.6 5.8G, 2024-Feb-26	EX3DV4 - SN3825, 2023-07-12	DAE4 Sn1369, 2023-05-23

Scans Setup		-	-
Scan		Area Scan	Zoom Scan
Grid Extents [mm]		100.0 x 100.0	22.0 x 22.0 x 22.0
Grid Steps [mm]		10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]		3.0	1.4
Graded Grid		N/A	Yes
Grading Ratio		N/A	1.4
MAIA		Y	N/A
Surface Detection		VMS + 6p	VMS + 6p
Scan Method		Measured	Measured
Measurement Results		-	-
Scan		Area Scan	Zoom Scan
psSAR1g [W/Kg]		0.869	0.917
psSAR10g [W/Kg]		0.244	0.246
Power Drift [dB]		0.07	0.11
M2/M1 [%]		-	64.0
Dist 3dB Peak [mm]		-	6.4



Plot K6 WLAN
UL Japan, Ltd. ISE Laboratory SAR#2

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor
5G	Keyboard, 2.00 mm	Custom Band	6425.0, 6425000	1.0

Hardware Setup

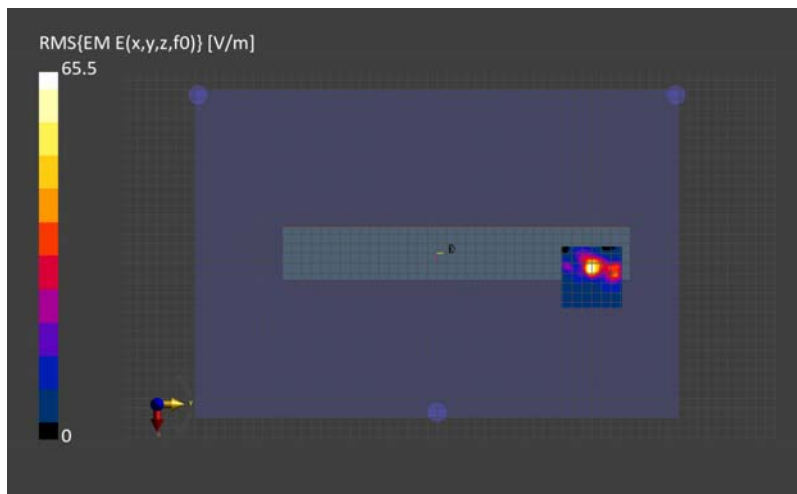
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1038	Air -	EUmmWV4 - SN9450_F1-55GHz, 2023-11-07	DAE4 Sn518, 2023-04-19

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.043746852134457635 x 0.043746852134457635
Sensor Surface [mm]	2.0
MAIA	Y

Measurement Results

Scan Type	5G Scan
Date	2024-03-01, 02:34
Avg. Area [cm ²]	4.00
psPDn+ [W/m ²]	1.10
psPDtot+ [W/m ²]	2.09
E _{max} [V/m]	65.5
Power Drift [dB]	0.19



Plot K7 WLAN
UL Japan, Ltd. ISE Laboratory SAR#2

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor
5G	Keyboard, 2.00 mm	Custom Band	6505.0, 6505000	1.0

Hardware Setup

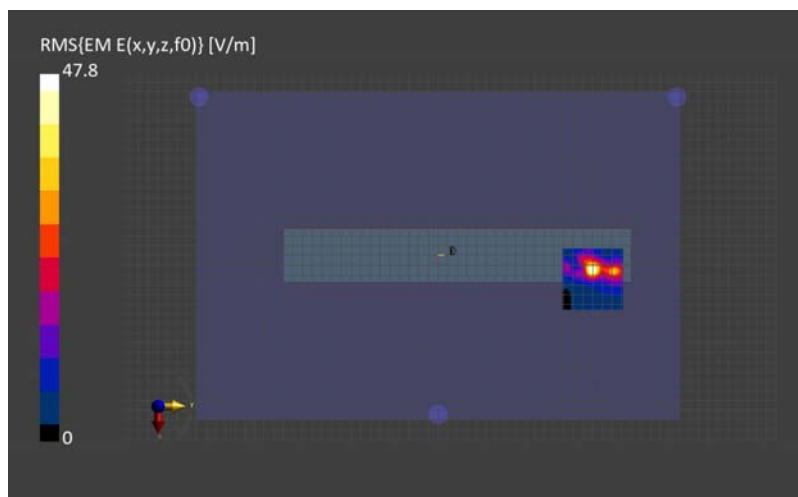
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1038	Air -	EUmmWV4 - SN9450_F1-55GHz, 2023-11-07	DAE4 Sn518, 2023-04-19

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.04429156002095672 x 0.04429156002095672
Sensor Surface [mm]	2.0
MAIA	Y

Measurement Results

Scan Type	5G Scan
Date	2024-03-01, 00:39
Avg. Area [cm ²]	4.00
psPDn+ [W/m ²]	0.763
psPDtot+ [W/m ²]	1.23
E _{max} [V/m]	47.8
Power Drift [dB]	0.19



Plot K8 WLAN
UL Japan, Ltd. ISE Laboratory SAR#2

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor
5G	Keyboard, 2.00 mm	Custom Band	6585.0, 6585000	1.0

Hardware Setup

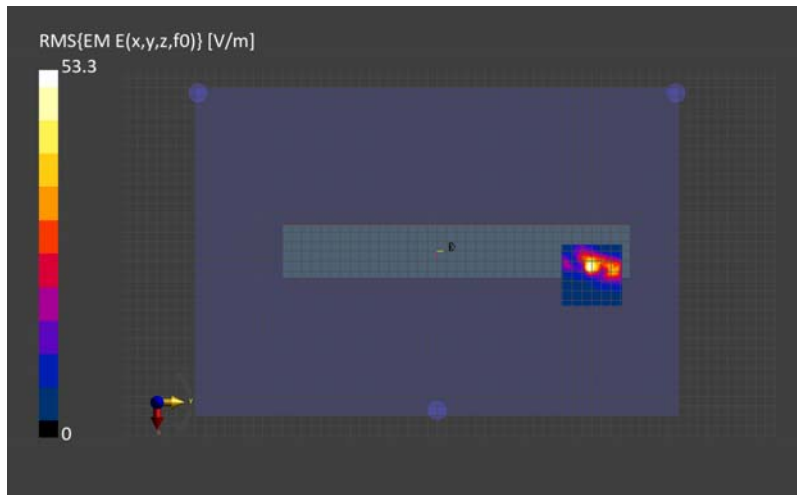
Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1038	Air -	EUmmWV4 - SN9450_F1-55GHz, 2023-11-07	DAE4 Sn518, 2023-04-19

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.0448362679074558 x 0.0448362679074558
Sensor Surface [mm]	2.0
MAIA	Y

Measurement Results

Scan Type	5G Scan
Date	2024-02-29, 16:21
Avg. Area [cm ²]	4.00
psPDn+ [W/m ²]	1.24
psPDtot+ [W/m ²]	2.36
E _{max} [V/m]	53.3
Power Drift [dB]	-0.02



Plot K9 WLAN
UL Japan, Ltd. ISE Laboratory SAR#2

Exposure Conditions

Phantom Section	Position, Test Distance [mm]	Band	Frequency [MHz], Channel Number	Conversion Factor
5G	Keyboard, 2.00 mm	Custom Band	6905.0, 6905000	1.0

Hardware Setup

Phantom	Medium	Probe, Calibration Date	DAE, Calibration Date
mmWave - 1038	Air -	EUmmWV4 - SN9450_F1-55GHz, 2023-11-07	DAE4 Sn518, 2023-04-19

Scans Setup

Scan Type	5G Scan
Grid Extents [mm]	60.0 x 60.0
Grid Steps [lambda]	0.04701509945345213 x 0.04701509945345213
Sensor Surface [mm]	2.0
MAIA	Y

Measurement Results

Scan Type	5G Scan
Date	2024-02-29, 21:23
Avg. Area [cm ²]	4.00
psPDn+ [W/m ²]	0.500
psPDtot+ [W/m ²]	1.12
E _{max} [V/m]	27.5
Power Drift [dB]	-0.16

