

Appendix C: Measurement report

Plot Nº1

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	GSM 850	GSM, 10024-DAC	824.2, 128	6.12	0.890	41.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-06-20 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

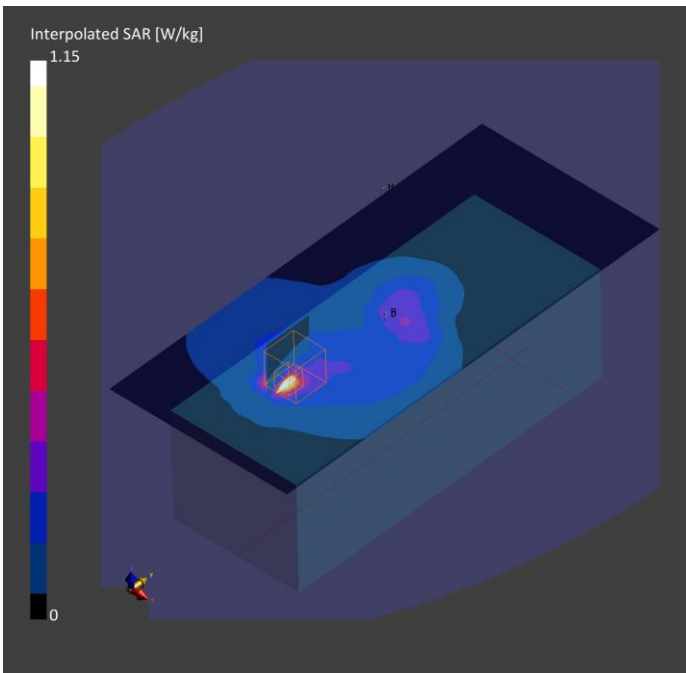
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	3.4 x 3.4 x 1.4
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-20, 16:16	2022-06-20, 16:31
psSAR1g [W/kg]	0.160	0.169
psSAR10g [W/kg]	0.077	0.056
Power Drift [dB]	0.05	-0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		51.4
Dist 3dB Peak [mm]		3.7

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº2

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	GSM 850	GSM, 10024-DAC	848.8, 251	6.12	0.918	41.1

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-06-20 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

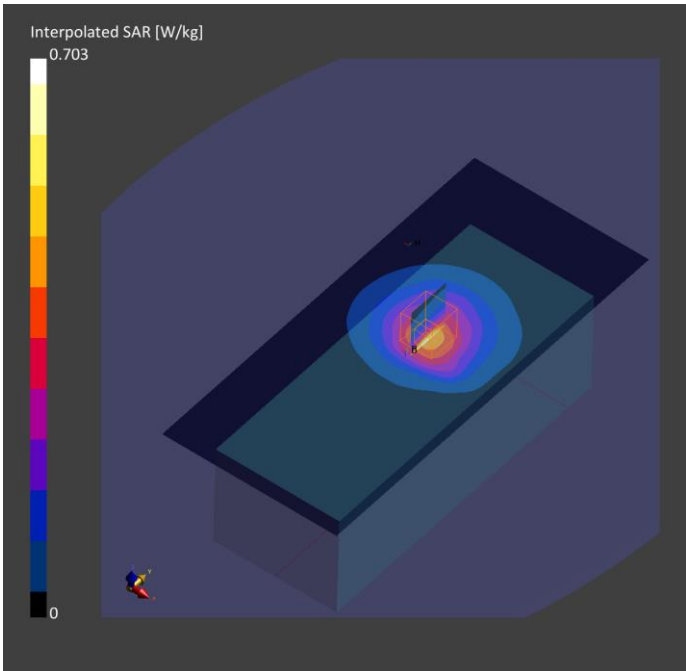
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-20, 15:07	2022-06-20, 15:13
psSAR1g [W/kg]	0.412	0.403
psSAR10g [W/kg]	0.268	0.250
Power Drift [dB]	0.00	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.4
Dist 3dB Peak [mm]		18.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº3

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	PCS 1900	GSM, 10028-DAC	1850.2, 512	5.28	1.39	39.3

Hardware Setup

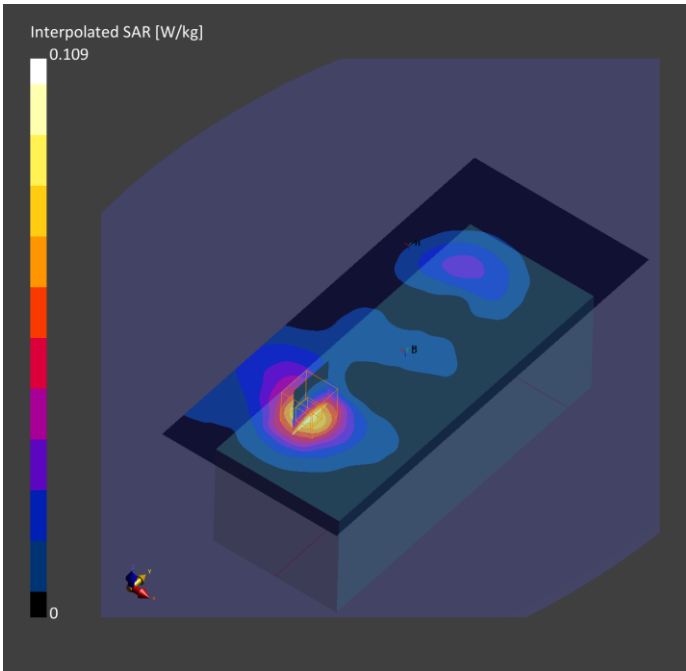
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz-2022-06- 09 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0	Date	2022-06-10, 08:35	2022-06-10, 11:13
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5	psSAR1g [W/kg]	0.066	0.068
Sensor Surface [mm]	3.0	3.0	psSAR10g [W/kg]	0.039	0.039
Graded Grid	Yes	Yes	Power Drift [dB]	-0.11	0.26
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	Y	Y	Scaling Factor [dB]		
Surface Detection	VMS + 6p	All points	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		86.9
			Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°4

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	PCS 1900	GSM, 10028-DAC	1850.2, 512	5.28	1.39	39.3

Hardware Setup

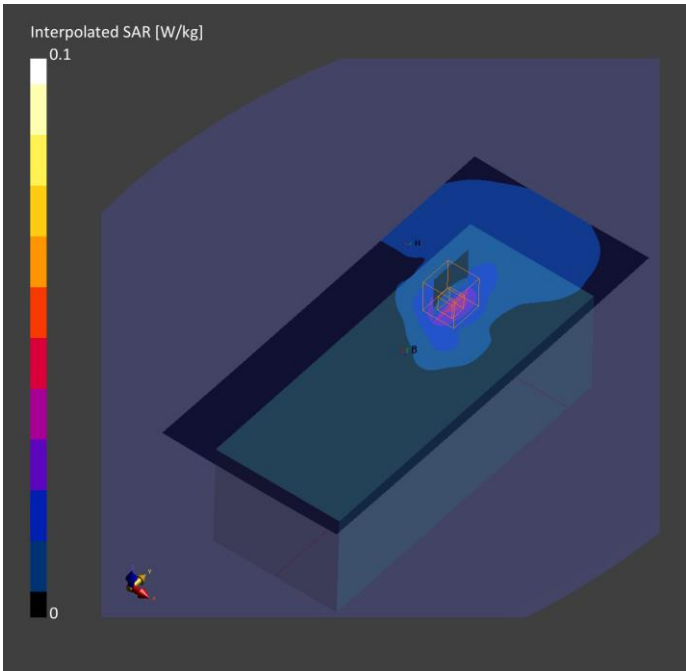
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz-2022-06- 09 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0	Date	2022-06-10, 12:17	2022-06-10, 12:30
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5	psSAR1g [W/kg]	0.031	0.031
Sensor Surface [mm]	3.0	3.0	psSAR10g [W/kg]	0.018	0.017
Graded Grid	Yes	Yes	Power Drift [dB]	-0.13	-0.46
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	Y	Y	Scaling Factor [dB]		
Surface Detection	All points	All points	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		85.5
			Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº5

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 2, UTRA/FDD	WCDMA, 10011-CAB	1852.4, 9262	5.28	1.39	39.3

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz-2022-06- 09 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

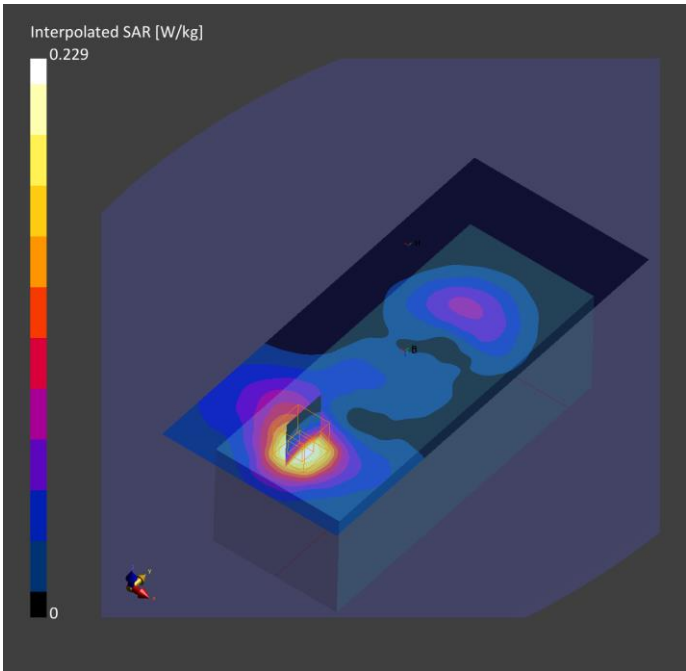
Scan Setup

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0	Date	2022-06-10, 00:26	2022-06-10, 00:33
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5	psSAR1g [W/kg]	0.138	0.141
Sensor Surface [mm]	3.0	3.0	psSAR10g [W/kg]	0.082	0.083
Graded Grid	Yes	Yes	Power Drift [dB]	0.02	0.01
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	Y	Y	Scaling Factor [dB]		
Surface Detection	VMS + 6p	VMS + 6p	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		86.0
			Dist 3dB Peak [mm]		18.0

Measurement Results

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°6

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 2, UTRA/FDD	WCDMA, 10011-CAB	1852.4, 9262	5.28	1.39	39.3

Hardware Setup

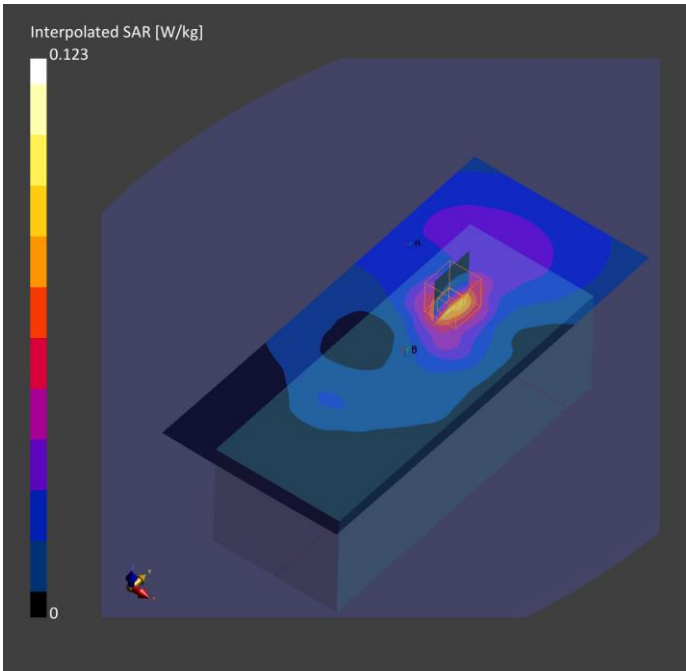
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz-2022-06- 09 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0	Date	2022-06-10, 14:01	2022-06-10, 14:14
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5	psSAR1g [W/kg]	0.060	0.062
Sensor Surface [mm]	3.0	3.0	psSAR10g [W/kg]	0.034	0.035
Graded Grid	Yes	Yes	Power Drift [dB]	0.04	0.02
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	Y	Y	Scaling Factor [dB]		
Surface Detection	All points	All points	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		85.3
			Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°7

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 4, UTRA/FDD	WCDMA, 10011-CAB	1752.6, 1513	5.28	1.40	38.9

Hardware Setup

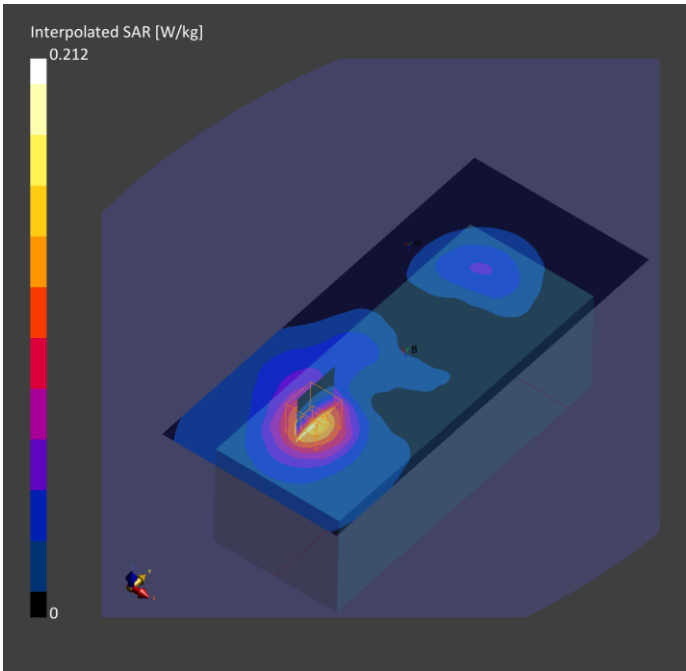
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1350-1850V3-1700MHz-2022-06- 06 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0	Date	2022-06-07, 09:57	2022-06-07, 11:49
Grid Steps [mm]	15.0 x 15.0	4.0 x 4.0 x 1.5	psSAR1g [W/kg]	0.132	0.127
Sensor Surface [mm]	3.0	3.0	psSAR10g [W/kg]	0.078	0.074
Graded Grid	Yes	Yes	Power Drift [dB]	0.06	0.02
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	Y	Y	Scaling Factor [dB]		
Surface Detection	VMS + 6p	VMS + 6p	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		86.2
			Dist 3dB Peak [mm]		19.4

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº8

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 11/07/2022

DUT: Harman Conmod; Type: Headunit; Serial: V04519N109900005

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1752.6 MHz; Duty Cycle: 1:1.95434

Medium parameters used (interpolated): $f = 1752.6$ MHz; $\sigma = 1.353$ S/m; $\epsilon_r = 39.222$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3052; ConvF(5.28, 5.28, 5.28) @ 1752.6 MHz; Calibrated: 22/09/2021
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1690; Calibrated: 08/09/2021
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=15 mm, ANT LTE 2/WCDMA IV, High CH, Back face/Area Scan (71x151x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.136 W/kg

Flat Phantom, d=15 mm, ANT LTE 2/WCDMA IV, High CH, Back face/Zoom Scan (9x9x6)/Cube

0: Measurement grid: dx=4mm, dy=4mm, dz=3mm

Reference Value = 5.282 V/m; Power Drift = -0.12 dB

Peak SAR (extrapolated) = 1.48 W/kg

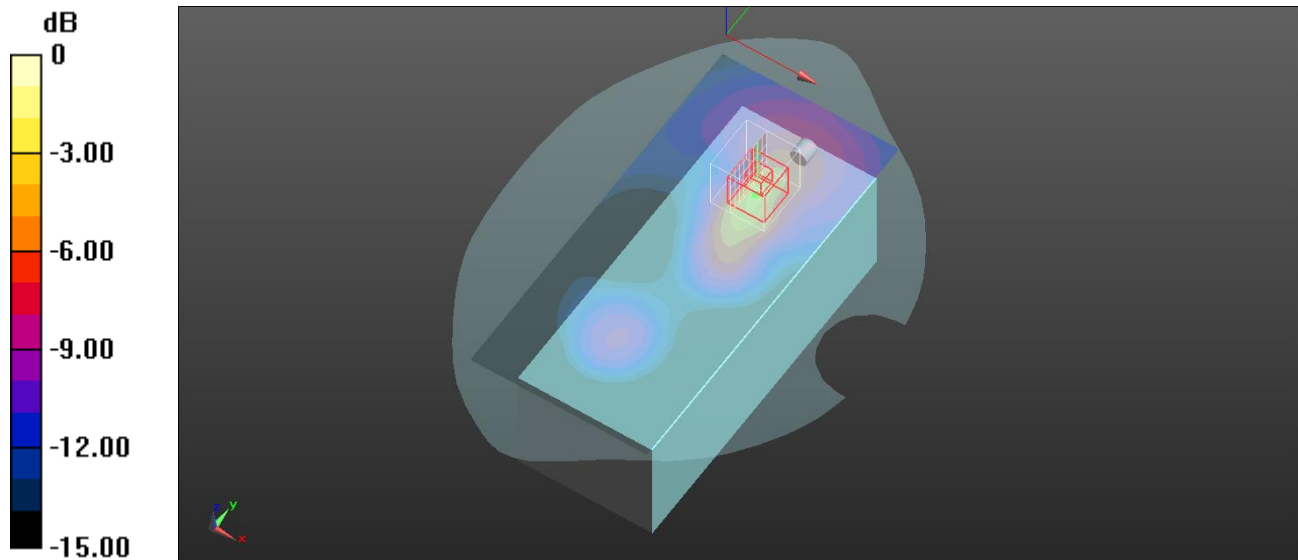
SAR(1 g) = 0.162 W/kg; SAR(10 g) = 0.063 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 4.3 mm

Ratio of SAR at M2 to SAR at M1 = 36.6%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.313 W/kg



0 dB = 0.313 W/kg = -5.04 dBW/kg

Plot Nº9

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 5, UTRA/FDD	WCDMA, 10011-CAB	846.6, 4233	6.12	0.900	40.7

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-06-01 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

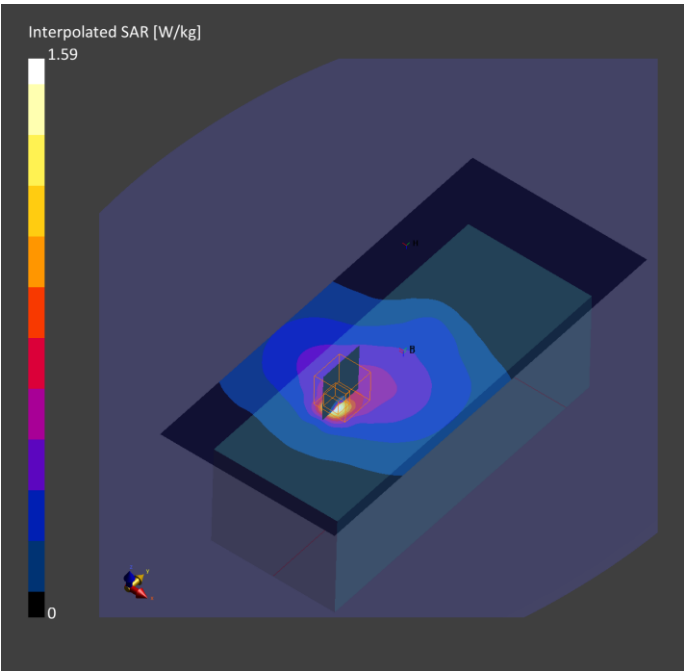
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	2.6 x 2.6 x 1.2
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.2
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-02, 04:05	2022-06-02, 04:35
psSAR1g [W/kg]	0.137	0.200
psSAR10g [W/kg]	0.072	0.067
Power Drift [dB]	0.04	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		56.1
Dist 3dB Peak [mm]		4.1

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº10

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 5, UTRA/FDD	WCDMA, 10011-CAB	846.6, 4233	6.12	0.913	41.1

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-06-20 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

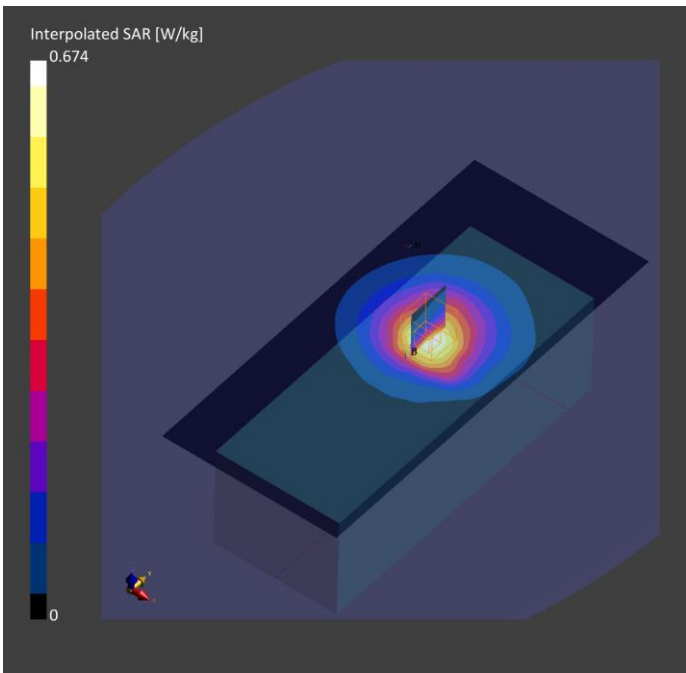
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-20, 15:45	2022-06-20, 15:51
psSAR1g [W/kg]	0.385	0.383
psSAR10g [W/kg]	0.251	0.237
Power Drift [dB]	0.02	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.1
Dist 3dB Peak [mm]		18.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº11

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 4, E- UTRA/FDD	LTE-FDD, 10297-AAD	1745.0, 20300	5.28	1.40	38.9

Hardware Setup

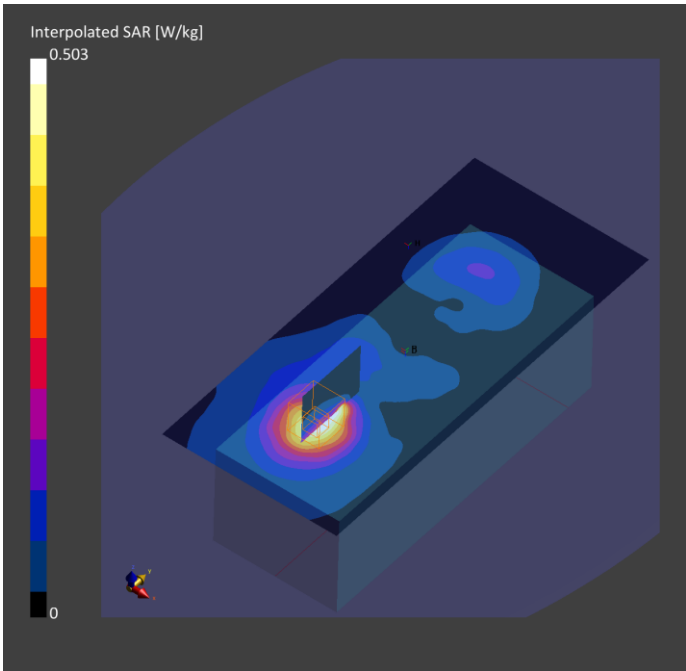
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1350-1850V3-1700MHz-2022-06- 06 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0	Date	2022-06-07, 23:29	2022-06-08, 00:02
Grid Steps [mm]	15.0 x 15.0	2.8 x 2.8 x 1.4	psSAR1g [W/kg]	0.149	0.141
Sensor Surface [mm]	3.0	3.0	psSAR10g [W/kg]	0.087	0.082
Graded Grid	Yes	Yes	Power Drift [dB]	0.03	-0.00
Grading Ratio	1.5	1.4	Power Scaling	Disabled	Disabled
MAIA	N/A	N/A	Scaling Factor [dB]		
Surface Detection	VMS + 6p	VMS + 6p	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		63.9
			Dist 3dB Peak [mm]		5.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°12

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 5, E- UTRA/FDD	LTE-FDD, 10175-CAG	836.5, 20525	6.12	0.890	40.8

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-06-01 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

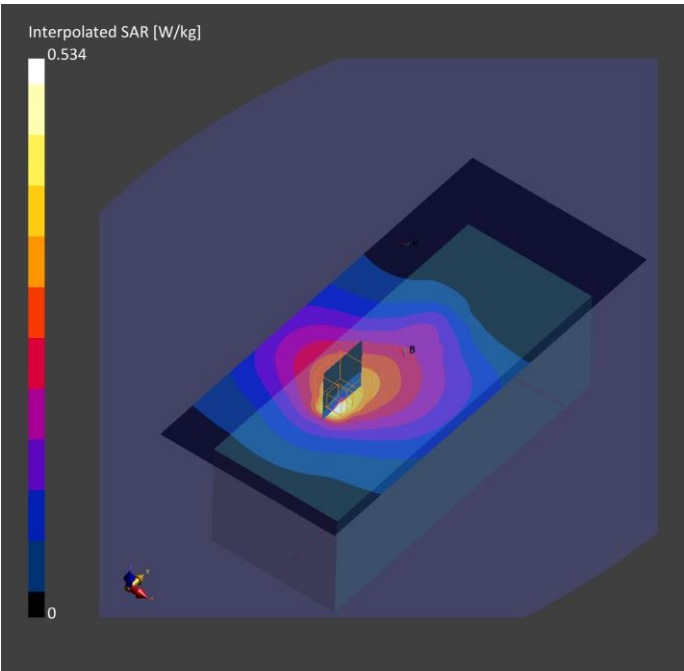
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	3.7 x 3.7 x 1.4
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-02, 00:24	2022-06-02, 00:38
psSAR1g [W/kg]	0.089	0.119
psSAR10g [W/kg]	0.054	0.055
Power Drift [dB]	-0.08	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		61.4
Dist 3dB Peak [mm]		5.6

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°13

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 20/07/2022

DUT: Harman Conmod; Type: Headunit; Serial: V04519N109900005

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2535 MHz;
Duty Cycle: 1:3.73852

Medium parameters used (interpolated): $f = 2535$ MHz; $\sigma = 1.915$ S/m; $\epsilon_r = 40.125$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2535 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 3mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 08/09/2021
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=15 mm, ANT LTE 1/LTE 7, 1RB High, Mid CH, Back face/Area Scan (71x151x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0613 W/kg

Flat Phantom, d=15 mm, ANT LTE 1/LTE 7, 1RB High, Mid CH, Back face/Zoom Scan (9x9x6)/Cube

0: Measurement grid: dx=4mm, dy=4mm, dz=3mm

Reference Value = 2.793 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.0960 W/kg

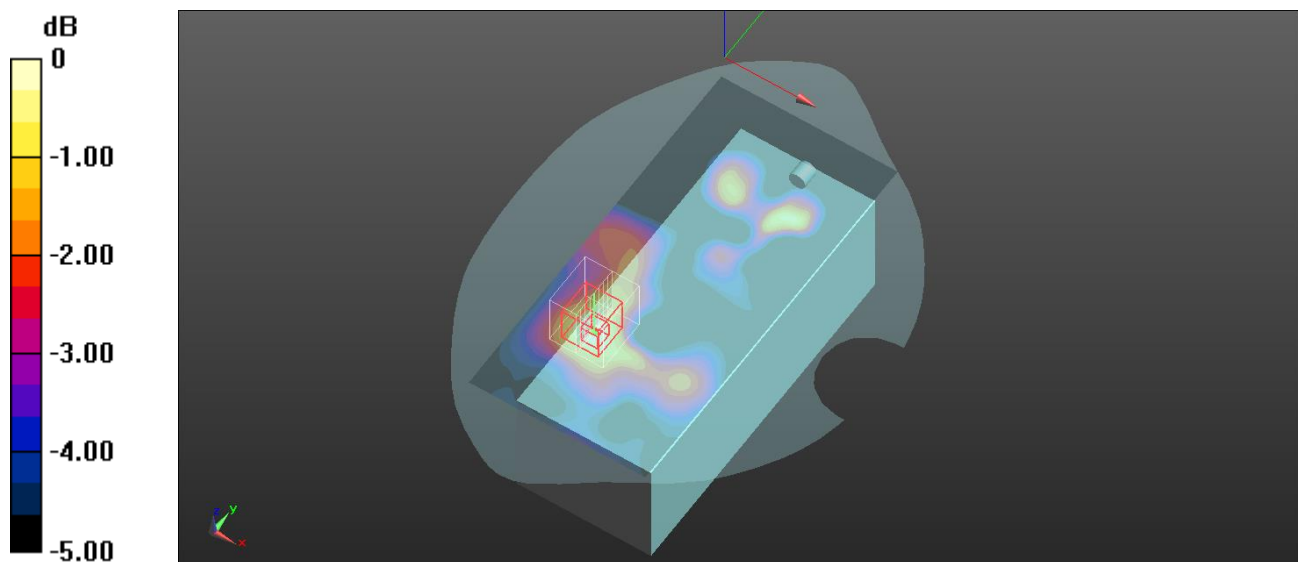
SAR(1 g) = 0.049 W/kg; SAR(10 g) = 0.025 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 64.6%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0621 W/kg



0 dB = 0.0621 W/kg = -12.07 dBW/kg

Plot Nº14

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 12, E- UTRA/FDD	LTE-FDD, 10175-CAG	707.5, 23095	9.84	0.860	41.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2 - 2022-06-15 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

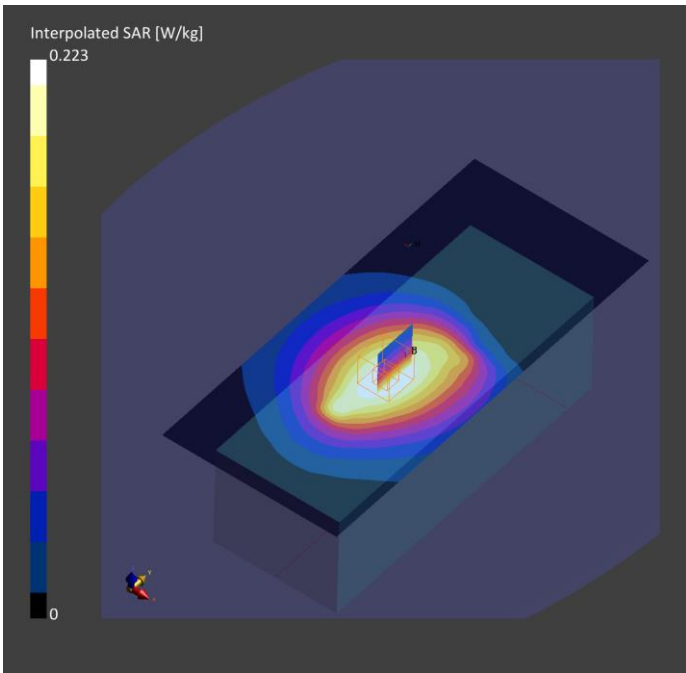
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-16, 10:04	2022-06-16, 10:10
psSAR1g [W/kg]	0.152	0.157
psSAR10g [W/kg]	0.108	0.116
Power Drift [dB]	0.01	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		87.9
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº15

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 13, E- UTRA/FDD	LTE-FDD, 10175-CAG	782.0, 23230	9.84	0.890	40.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2 - 2022-06-15 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

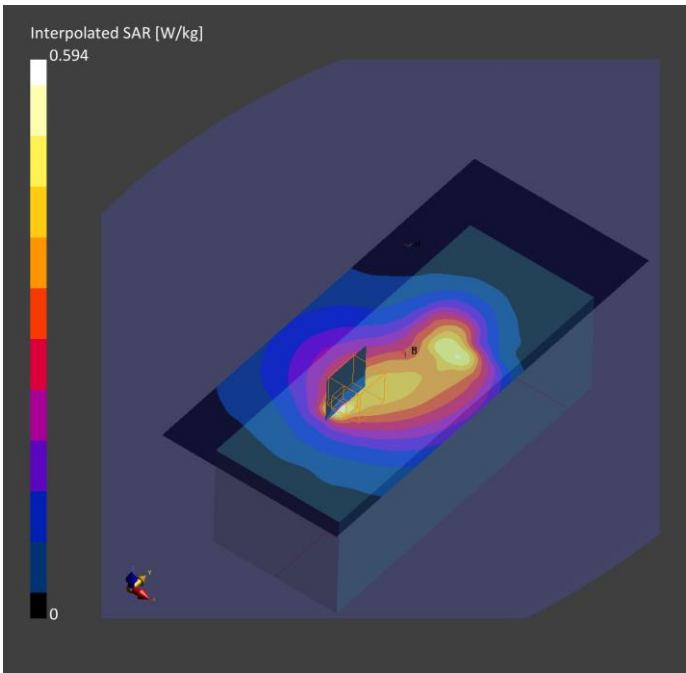
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	3.1 x 3.1 x 1.2
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.2
MAIA	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-15, 15:02	2022-06-15, 15:26
psSAR1g [W/kg]	0.073	0.103
psSAR10g [W/kg]	0.048	0.050
Power Drift [dB]	0.06	-0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		55.5
Dist 3dB Peak [mm]		4.4

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°16

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 14, E- UTRA/FDD	LTE-FDD, 10175-CAG	793.0, 23330	9.84	0.900	40.3

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2 - 2022-06-15 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

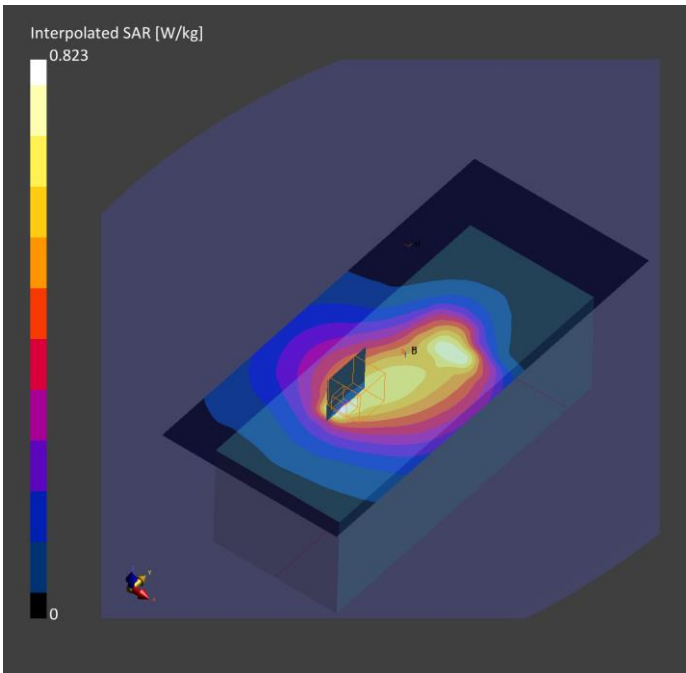
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	3.0 x 3.0 x 1.2
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.2
MAIA	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-15, 14:09	2022-06-15, 14:34
psSAR1g [W/kg]	0.083	0.124
psSAR10g [W/kg]	0.053	0.058
Power Drift [dB]	0.01	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		52.0
Dist 3dB Peak [mm]		4.4

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°17

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 25, E- UTRA/FDD	LTE-FDD, 10169-CAE	1860.0, 26140	5.28	1.39	39.2

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz-2022-06- 09 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

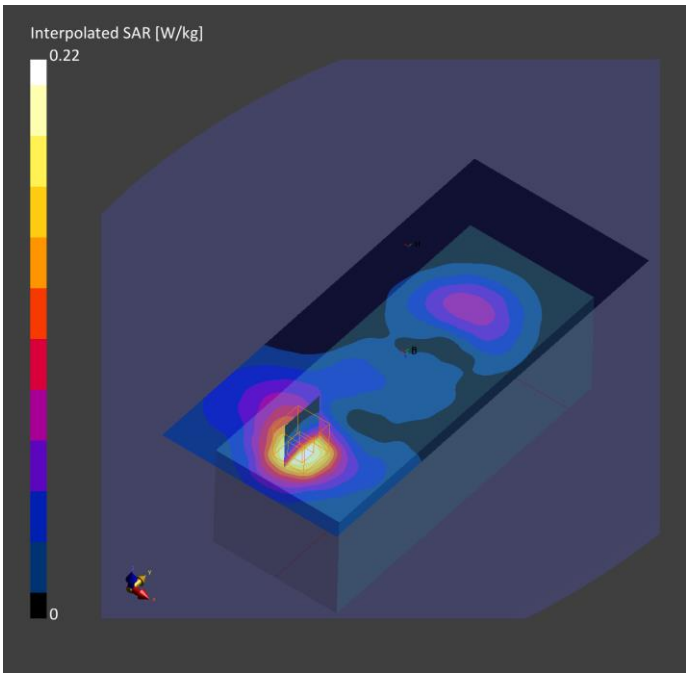
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-09, 23:44	2022-06-09, 23:51
psSAR1g [W/kg]	0.133	0.136
psSAR10g [W/kg]	0.079	0.080
Power Drift [dB]	0.01	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		87.0
Dist 3dB Peak [mm]		17.8

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°18

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 26 E- UTRA/FDD	LTE-FDD, 10181-CAE	831.5, 26865	6.12	0.883	40.9

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-06-01 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

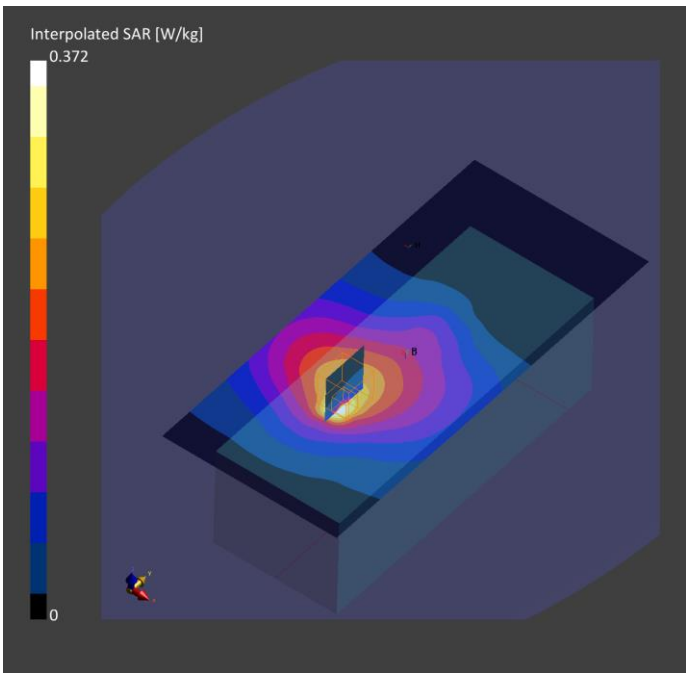
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	4.7 x 4.7 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-02, 01:23	2022-06-02, 01:33
psSAR1g [W/kg]	0.081	0.100
psSAR10g [W/kg]	0.050	0.051
Power Drift [dB]	-0.04	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		63.2
Dist 3dB Peak [mm]		6.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº19

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 13/09/2022

DUT: Harman Conmod; Type: Headunit; Serial: V04519N109900005

Communication System: UID 10435 - AAF, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9); Frequency: 2679.9 MHz; Duty Cycle: 1:6.05899

Medium parameters used: $f = 2680$ MHz; $\sigma = 2.08$ S/m; $\epsilon_r = 37.79$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.44, 7.44, 7.44) @ 2679.9 MHz; Calibrated: 25/08/2022
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 16/08/2022
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=15 mm, ANT LTE 1, LTE 41/LTE 41, 1RB High, High CH, Back face/Area Scan

(71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0661 W/kg

Flat Phantom, d=15 mm, ANT LTE 1, LTE 41/LTE 41, 1RB High, High CH, Back face/Zoom Scan

(9x9x6)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=3mm

Reference Value = 1.896 V/m; Power Drift = -0.24 dB

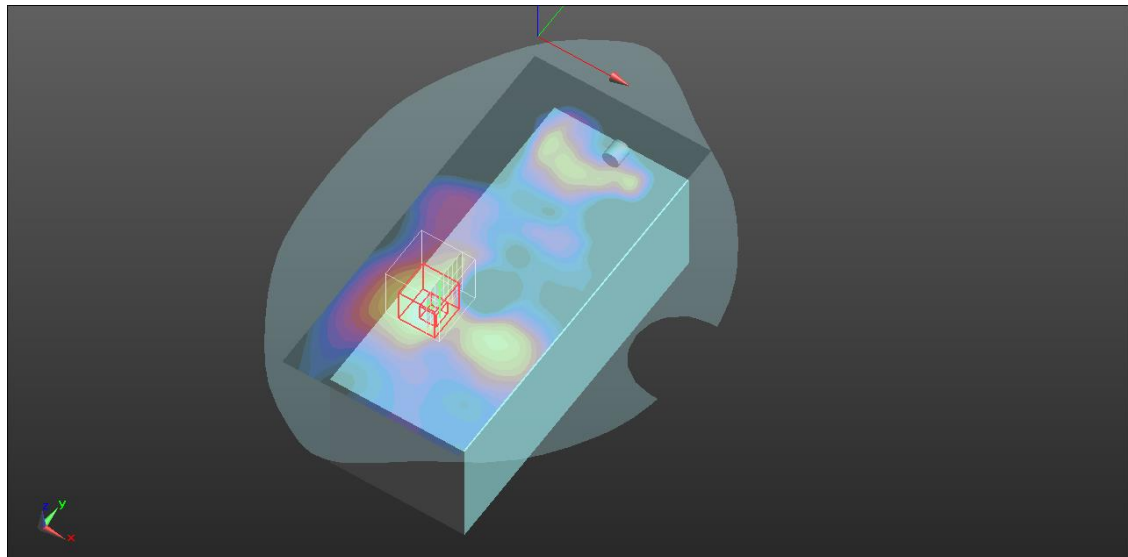
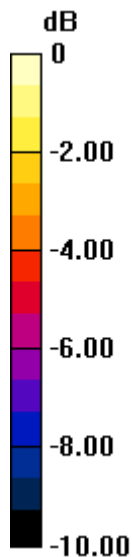
Peak SAR (extrapolated) = 0.119 W/kg

SAR(1 g) = 0.048 W/kg; SAR(10 g) = 0.021 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 62.2%

Maximum value of SAR (measured) = 0.0618 W/kg



0 dB = 0.0618 W/kg = -12.09 dBW/kg

Plot N°20

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 66, E- UTRA/FDD	LTE-FDD, 10169-CAE	1745.0, 132322	5.28	1.40	38.9

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1350-1850V3-1700MHz-2022-06- 06 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

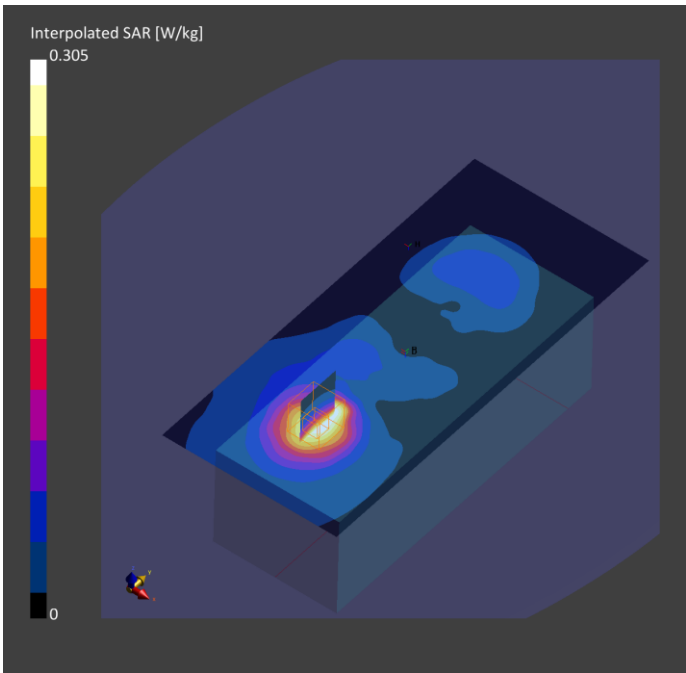
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-07, 22:56	2022-06-07, 23:02
psSAR1g [W/kg]	0.196	0.185
psSAR10g [W/kg]	0.115	0.108
Power Drift [dB]	0.03	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.1
Dist 3dB Peak [mm]		17.3

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°21

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 71, E- UTRA/FDD	LTE-FDD, 10169-CAE	680.5, 133297	9.84	0.850	41.9

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2 - 2022-06-15 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

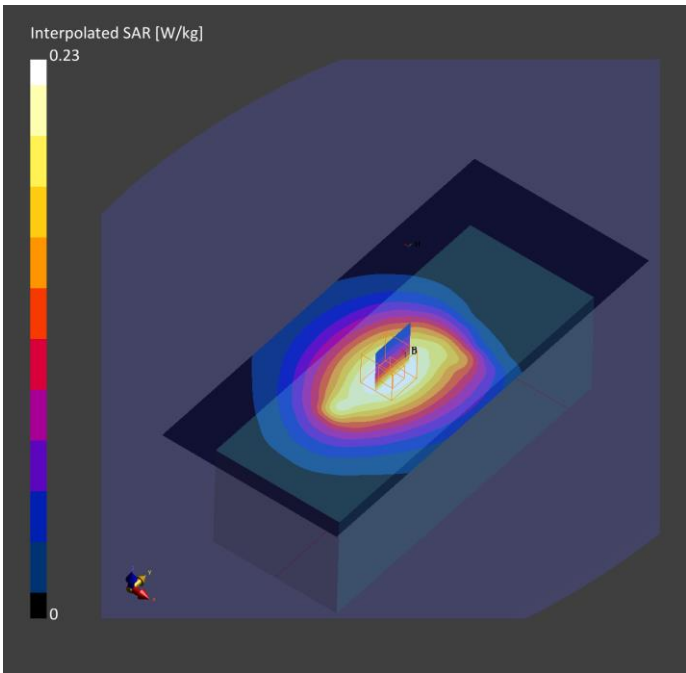
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-16, 08:49	2022-06-16, 08:55
psSAR1g [W/kg]	0.160	0.165
psSAR10g [W/kg]	0.114	0.122
Power Drift [dB]	-0.00	-0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		88.9
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº22

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12E00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	351948050028013	Headunit (Shark fin Antenna)

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 5, E- UTRA/FDD	LTE-FDD, 10175-CAG	829.0, 20450	6.12	0.888	42.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-08-24 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

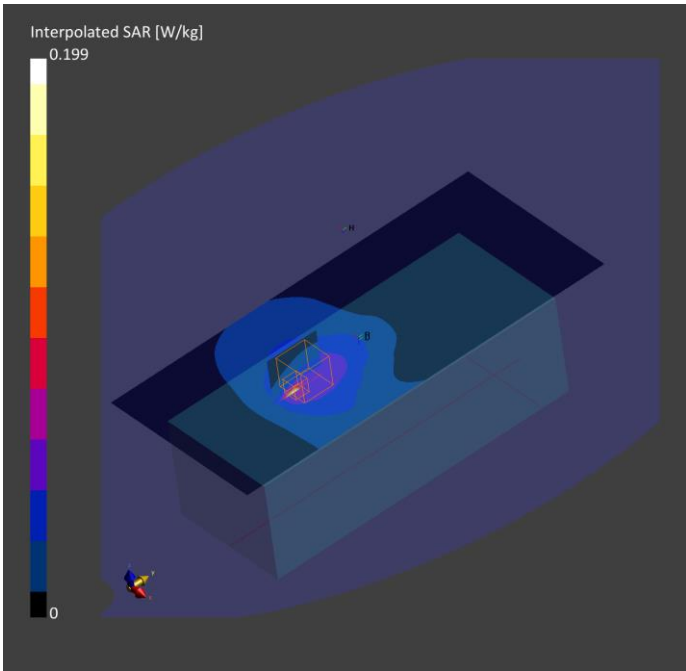
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	5.3 x 5.3 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-24, 12:02	2022-08-24, 12:11
psSAR1g [W/kg]	0.059	0.070
psSAR10g [W/kg]	0.039	0.042
Power Drift [dB]	-0.01	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		69.6
Dist 3dB Peak [mm]		8.1

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº23

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 14/09/2022

DUT: Harman Conmod; Type: Headunit; Serial: V04519N109900005

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2540.2 MHz;
Duty Cycle: 1:3.73852

Medium parameters used (interpolated): $f = 2540.2$ MHz; $\sigma = 1.93$ S/m; $\epsilon_r = 38.339$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.44, 7.44, 7.44) @ 2540.2 MHz; Calibrated: 25/08/2022
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 16/08/2022
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=15 mm, ANT LTE 1, LTE 41/CA LTE 7C, Back face/Area Scan (71x151x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0624 W/kg

Flat Phantom, d=15 mm, ANT LTE 1, LTE 41/CA LTE 7C, Back face/Zoom Scan (9x9x6)/Cube

0: Measurement grid: dx=4mm, dy=4mm, dz=3mm

Reference Value = 2.343 V/m; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.238 W/kg

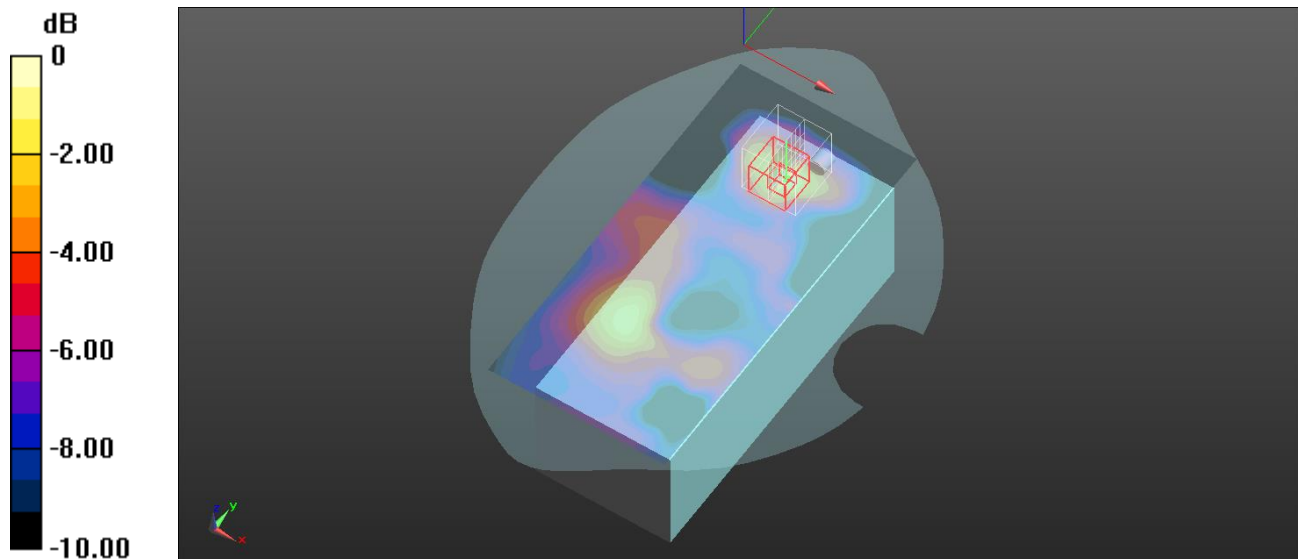
SAR(1 g) = 0.051 W/kg; SAR(10 g) = 0.021 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 42.3%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0803 W/kg



0 dB = 0.0803 W/kg = -10.95 dBW/kg

Plot N°24

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 14/09/2022

DUT: Harman Conmod; Type: Headunit; Serial: V04519N109900005

Communication System: UID 10435 - AAF, LTE-TDD (SC-FDMA, 1 RB, 20 MHz, QPSK, UL Subframe=2,3,4,7,8,9); Frequency: 2675 MHz; Duty Cycle: 1:6.05899

Medium parameters used (interpolated): $f = 2675$ MHz; $\sigma = 2.075$ S/m; $\epsilon_r = 37.81$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.44, 7.44, 7.44) @ 2675 MHz; Calibrated: 25/08/2022
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 16/08/2022
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=15 mm, ANT LTE 1, LTE 41/CA LTE 41C, Back face/Area Scan (71x151x1):

Interpolated grid: dx=1.500 mm, dy=1.500 mm

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.0484 W/kg

Flat Phantom, d=15 mm, ANT LTE 1, LTE 41/CA LTE 41C, Back face/Zoom Scan (9x9x6)/Cube

0: Measurement grid: dx=4mm, dy=4mm, dz=3mm

Reference Value = 1.788 V/m; Power Drift = -0.37 dB

Peak SAR (extrapolated) = 0.0780 W/kg

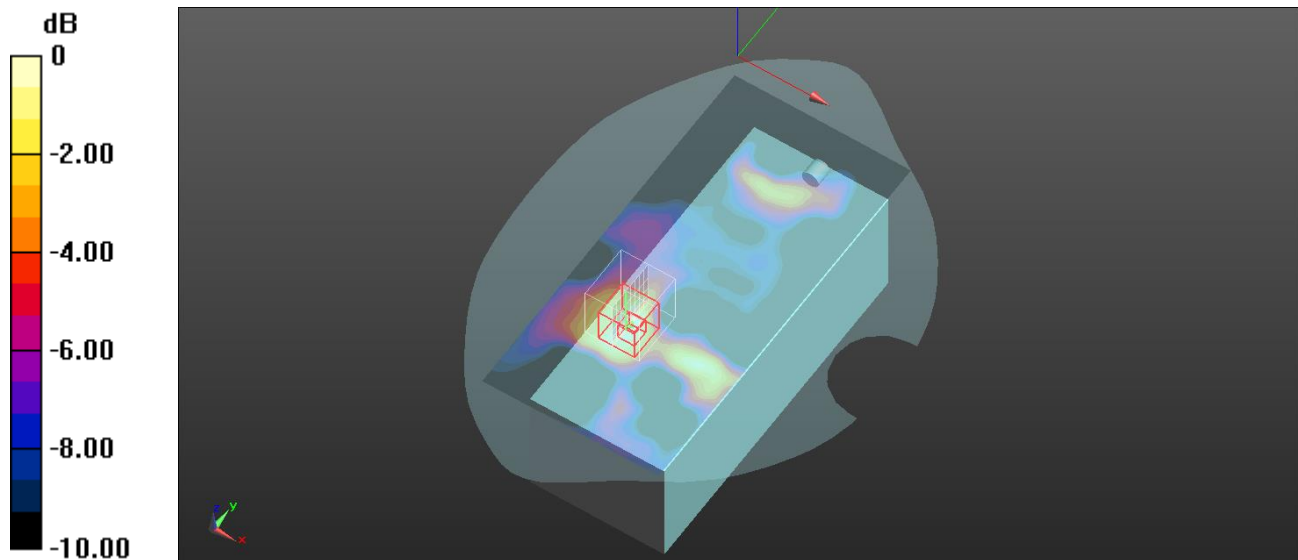
SAR(1 g) = 0.036 W/kg; SAR(10 g) = 0.016 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 60.7%

[Info: Interpolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0463 W/kg



0 dB = 0.0463 W/kg = -13.34 dBW/kg

Plot Nº25

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 66, E- UTRA/FDD	LTE-FDD, 10175-CAG	1750.1, 132373	5.28	1.35	39.3

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1700MHz_2022- 08-01 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

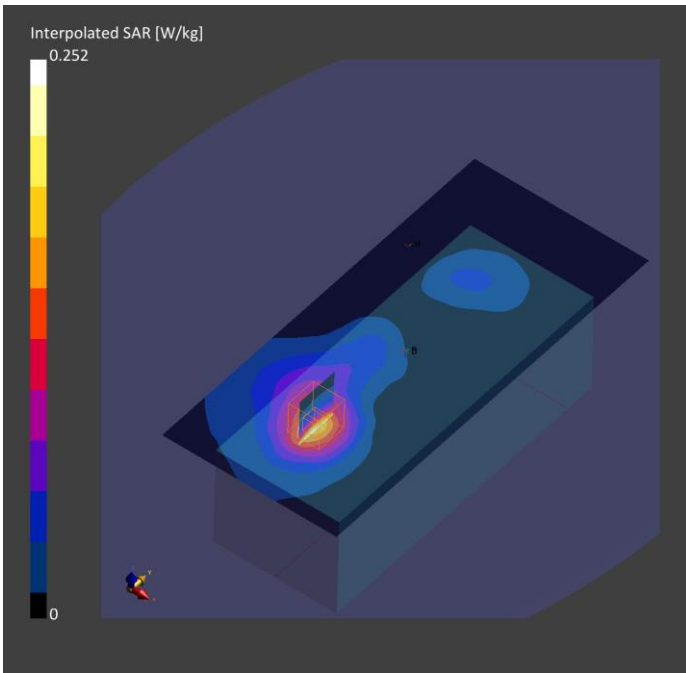
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-03, 08:37	2022-08-03, 08:43
psSAR1g [W/kg]	0.151	0.153
psSAR10g [W/kg]	0.089	0.091
Power Drift [dB]	0.08	0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.1
Dist 3dB Peak [mm]		17.7

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°26

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 66, E- UTRA/FDD	LTE-FDD, 10169-CAE	1745.1, 132323	5.28	1.35	39.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1700MHz_2022- 08-01 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

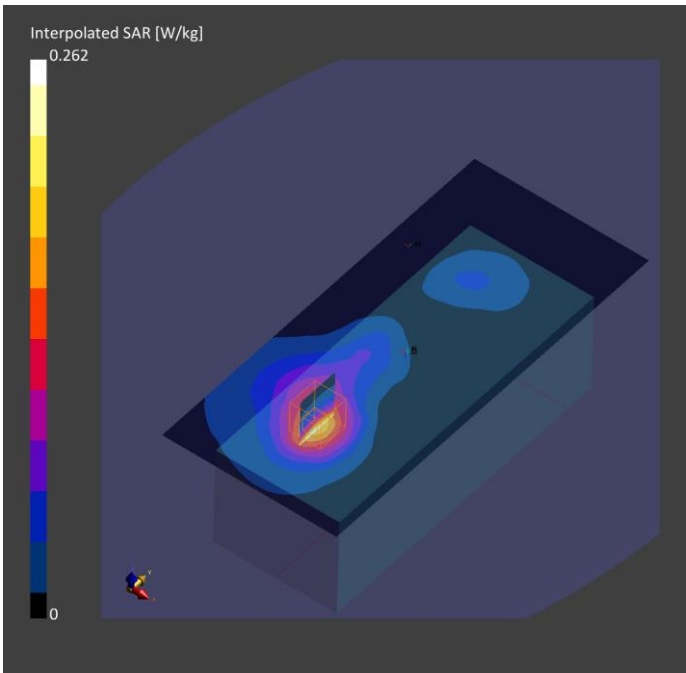
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-03, 08:53	2022-08-03, 08:59
psSAR1g [W/kg]	0.160	0.160
psSAR10g [W/kg]	0.094	0.095
Power Drift [dB]	0.08	0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.6
Dist 3dB Peak [mm]		17.3

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº27

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band n2	5G NR FR1 FDD, 10931-AAC	1860.0, 372000	8.3	1.41	39.2

Hardware Setup

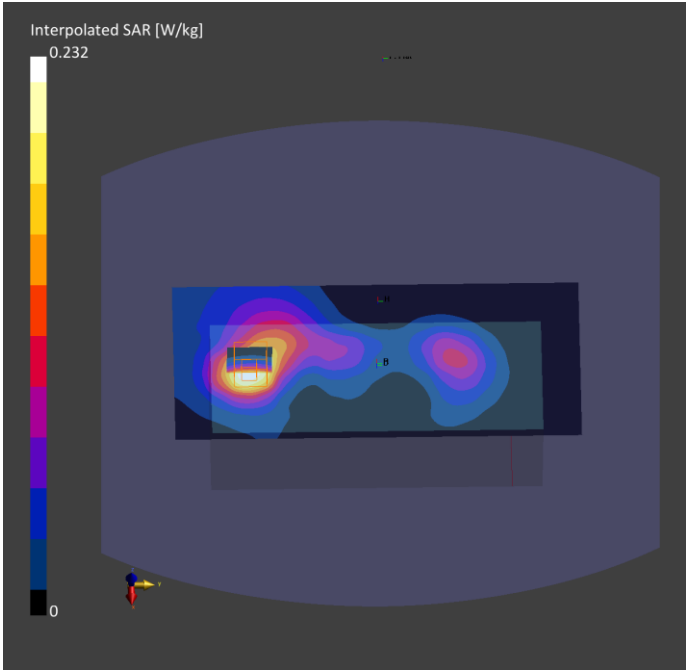
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2158	HBBL1550-1950V3-1900MHz-2022-12- 22 , --	EX3DV4 - SN7461, 2022-08-25	DAE4 Sn1690, 2022-10-13

Scan Setup

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0	Date	2022-12-23, 11:43	2022-12-23, 11:49
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5	psSAR1g [W/kg]	0.125	0.128
Sensor Surface [mm]	3.0	1.4	psSAR10g [W/kg]	0.075	0.074
Graded Grid	Yes	Yes	Power Drift [dB]	-0.03	0.03
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	Y	Y	Scaling Factor [dB]		
Surface Detection	VMS + 6p	VMS + 6p	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		80.6
			Dist 3dB Peak [mm]		18.7

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº28

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band n5	5G NR FR1 FDD, 10931-AAC	836.5, 167300	9.61	0.883	40.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2158	HSL900V2 - 2022-12-27 , --	EX3DV4 - SN7461, 2022-08-25	DAE4 Sn1690, 2022-10-13

Scan Setup

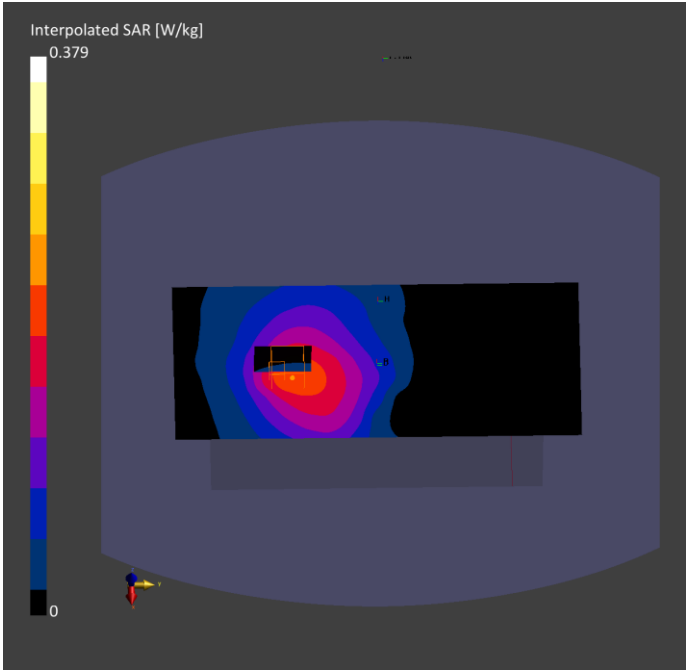
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	3.8 x 3.8 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-27, 12:49	2022-12-27, 13:04
psSAR1g [W/kg]	0.051	0.075
psSAR10g [W/kg]	0.035	0.040
Power Drift [dB]	0.02	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		47.2
Dist 3dB Peak [mm]		4.1

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº29

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band n7	5G NR FR1 FDD, 10931-AAC	2535.0, 507000	7.44	1.98	40.1

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2158	HBBL1900-3800V3 - 2600MHz - 2022- 12-27 , --	EX3DV4 - SN7461, 2022-08-25	DAE4 Sn1690, 2022-10-13

Scan Setup

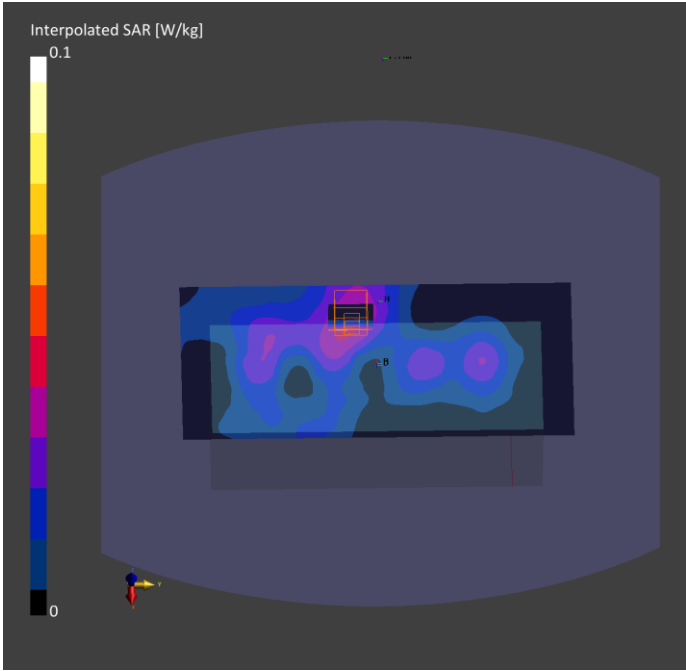
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 260.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-27, 18:08	2022-12-27, 18:16
psSAR1g [W/kg]	0.036	0.035
psSAR10g [W/kg]	0.021	0.019
Power Drift [dB]	0.04	-0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		77.8
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº30

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band n41	5G NR FR1 TDD, 10904-AAB	2546.0, 509202	7.44	1.93	38.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1900-3800V3 - 2600MHz - 2022- 09-15 , --	EX3DV4 - SN7461, 2022-08-25	DAE4 Sn669, 2022-08-16

Scan Setup

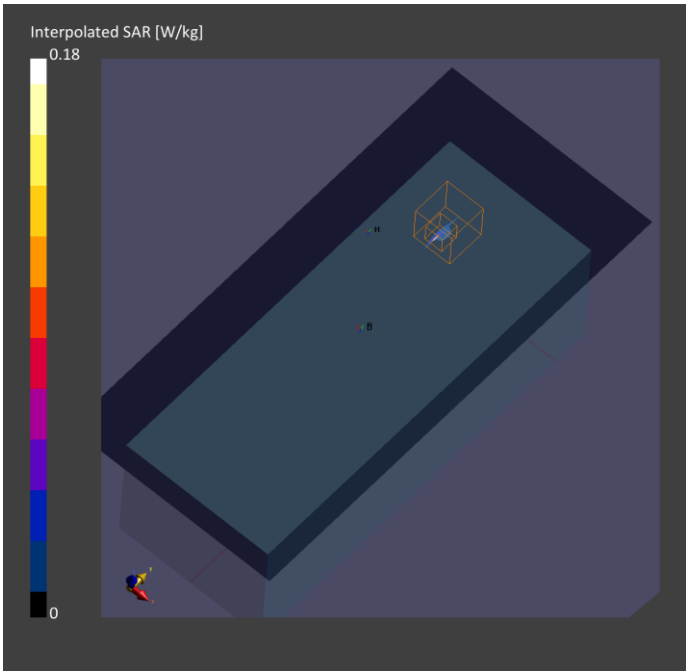
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 260.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-16, 10:32	2022-09-16, 10:41
psSAR1g [W/kg]	0.013	0.019
psSAR10g [W/kg]	0.006	0.004
Power Drift [dB]	-0.12	-0.15
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		37.2
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº31

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band n66	5G NR FR1 FDD, 10934-AAB	1730.0, 346000	8.3	1.34	41.2

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1350-1850-1700MHz-2022-09-20 , --	EX3DV4 - SN7461, 2022-08-25	DAE4 Sn669, 2022-08-16

Scan Setup

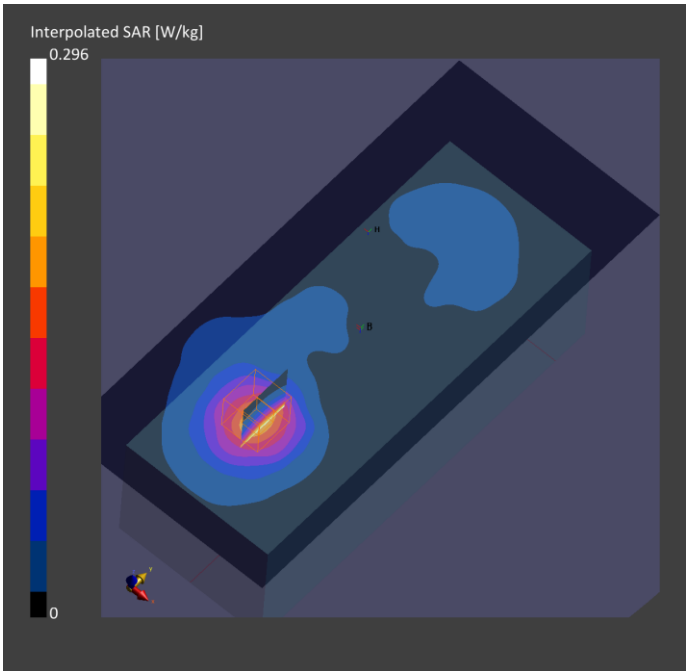
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-21, 11:16	2022-09-21, 11:22
psSAR1g [W/kg]	0.166	0.167
psSAR10g [W/kg]	0.097	0.097
Power Drift [dB]	0.05	-0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		83.1
Dist 3dB Peak [mm]		18.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°32

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band n71	5G NR FR1 FDD, 10931-AAB	673.0, 134600	9.84	0.860	43.2

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2-2022-09-21 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

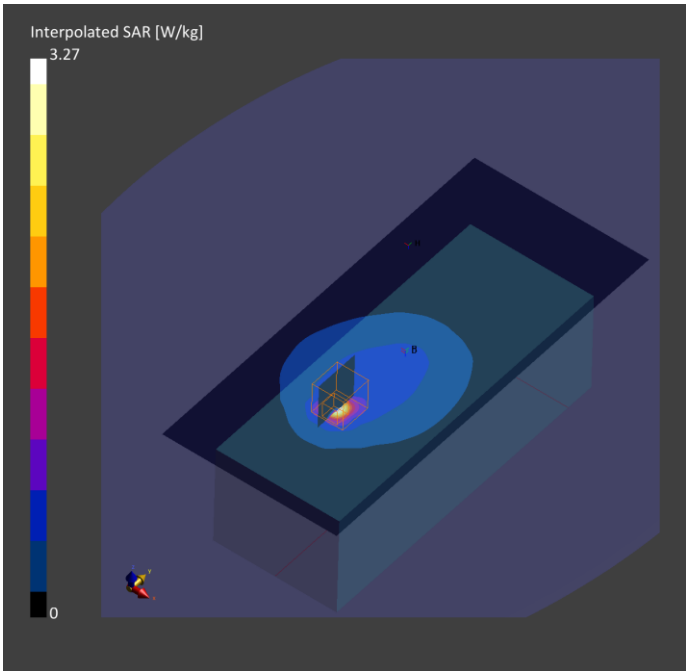
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	2.4 x 2.4 x 1.2
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.2
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-21, 16:40	2022-09-21, 17:15
psSAR1g [W/kg]	0.200	0.235
psSAR10g [W/kg]	0.096	0.067
Power Drift [dB]	-0.01	0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		37.6
Dist 3dB Peak [mm]		3.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°33

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 05/07/2022

DUT: Harman Conmod; Type: Headunit; Serial: V03799M250900006

Communication System: UID 10591 - AAC, IEEE 802.11n (HT Mixed, 20MHz, MCS0, 90pc duty cycle); Frequency: 5825 MHz; Duty Cycle: 1:7.29122

Medium parameters used (extrapolated): $f = 5825$ MHz; $\sigma = 5.366$ S/m; $\epsilon_r = 35.764$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(5.15, 5.15, 5.15) @ 5825 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 13/09/2021
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=10 mm, 5800MHz-30-06-2022/802.11n20, HT0, CH 165, Front face/Area Scan

(61x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

[Info: Extrapolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (interpolated) = 0.148 W/kg

Flat Phantom, d=10 mm, 5800MHz-30-06-2022/802.11n20, HT0, CH 165, Front face/Zoom Scan

(10x10x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 4.836 V/m; Power Drift = -0.21 dB

Peak SAR (extrapolated) = 0.232 W/kg

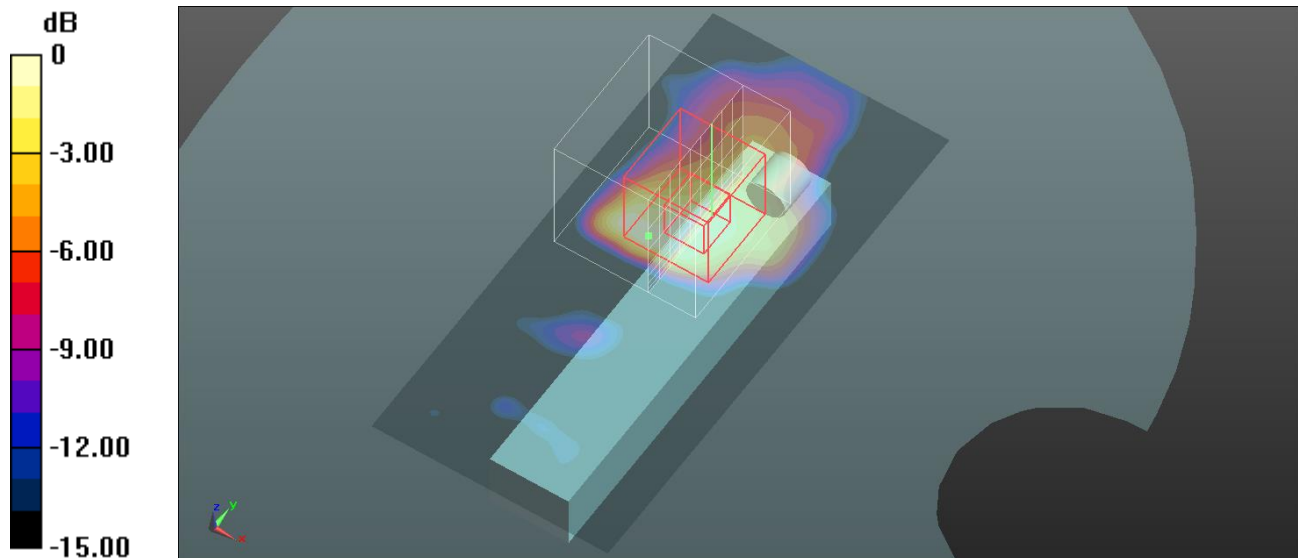
SAR(1 g) = 0.058 W/kg; SAR(10 g) = 0.019 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 9.1 mm

Ratio of SAR at M2 to SAR at M1 = 56.8%

[Info: Extrapolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.141 W/kg



0 dB = 0.141 W/kg = -8.51 dBW/kg

Plot Nº34

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 2, UTRA/FDD	WCDMA, 10011-CAB	1852.4, 9262	5.28	1.39	41.1

Hardware Setup

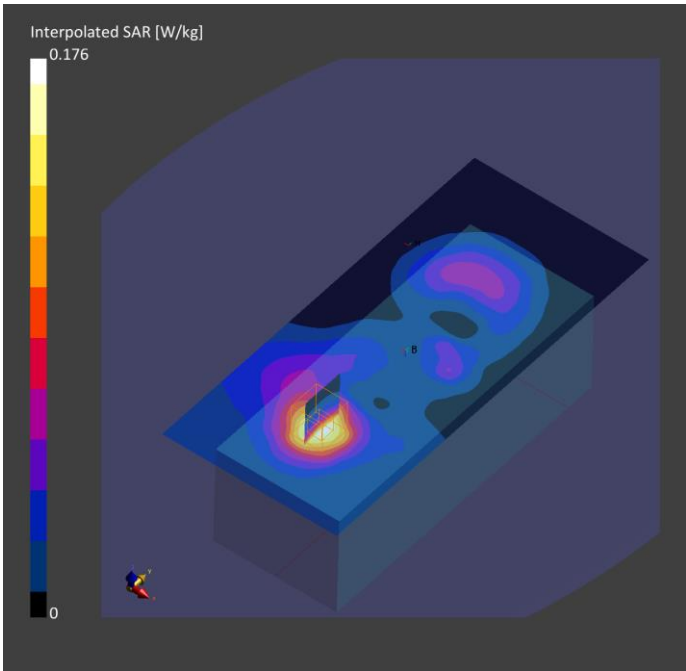
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz-2022-09- 06 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0	Date	2022-09-07, 08:03	2022-09-07, 08:10
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5	psSAR1g [W/kg]	0.110	0.108
Sensor Surface [mm]	3.0	3.0	psSAR10g [W/kg]	0.063	0.063
Graded Grid	Yes	Yes	Power Drift [dB]	-0.02	0.05
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	Y	Y	Scaling Factor [dB]		
Surface Detection	VMS + 6p	VMS + 6p	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		86.7
			Dist 3dB Peak [mm]		17.3

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº35

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 5, UTRA/FDD	WCDMA, 10011-CAB	846.6, 4233	6.12	0.900	42.5

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-09-05 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

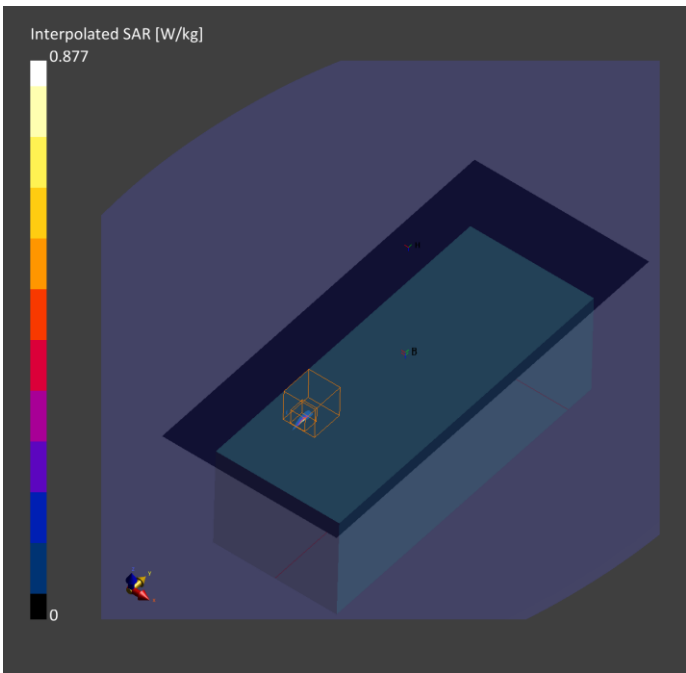
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	2.4 x 2.4 x 1.2
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.2
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-06, 08:10	2022-09-06, 08:45
psSAR1g [W/kg]	0.078	0.114
psSAR10g [W/kg]	0.043	0.041
Power Drift [dB]	0.03	0.10
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		56.7
Dist 3dB Peak [mm]		4.3

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°36

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 21/07/2022

DUT: Harman Conmod; Type: Headunit; Serial: V04519N109900005

Communication System: UID 10169 - CAE, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK); Frequency: 2559.9 MHz;
Duty Cycle: 1:3.73852

Medium parameters used: $f = 2560$ MHz; $\sigma = 1.93$ S/m; $\epsilon_r = 40.07$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2559.9 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 13/09/2021
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Flat Phantom, d=15 mm, ANT LTE 1/SPOT-CHECKING-LTE 7, 1RB Mid, High CH, Back face/Area Scan

(71x151x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm

Maximum value of SAR (interpolated) = 0.0465 W/kg

Flat Phantom, d=15 mm, ANT LTE 1/SPOT-CHECKING-LTE 7, 1RB Mid, High CH, Back face/Zoom Scan

(8x8x5)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 2.727 V/m; Power Drift = 0.18 dB

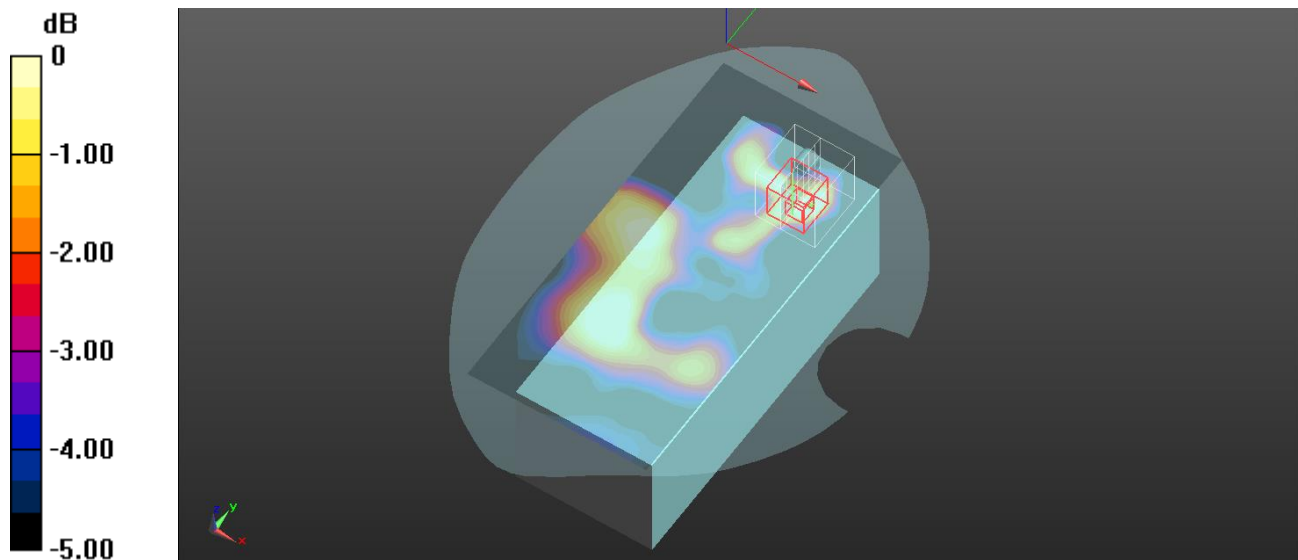
Peak SAR (extrapolated) = 0.0570 W/kg

SAR(1 g) = 0.030 W/kg; SAR(10 g) = 0.015 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below: Larger than measurement grid

Ratio of SAR at M2 to SAR at M1 = 49.1%

Maximum value of SAR (measured) = 0.0384 W/kg



0 dB = 0.0384 W/kg = -14.16 dBW/kg

Plot N°37

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 66, E- UTRA/FDD	LTE-FDD, 10169-CAE	1745.0, 132322	5.28	1.34	39.4

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1700MHz_2022- 08-01 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

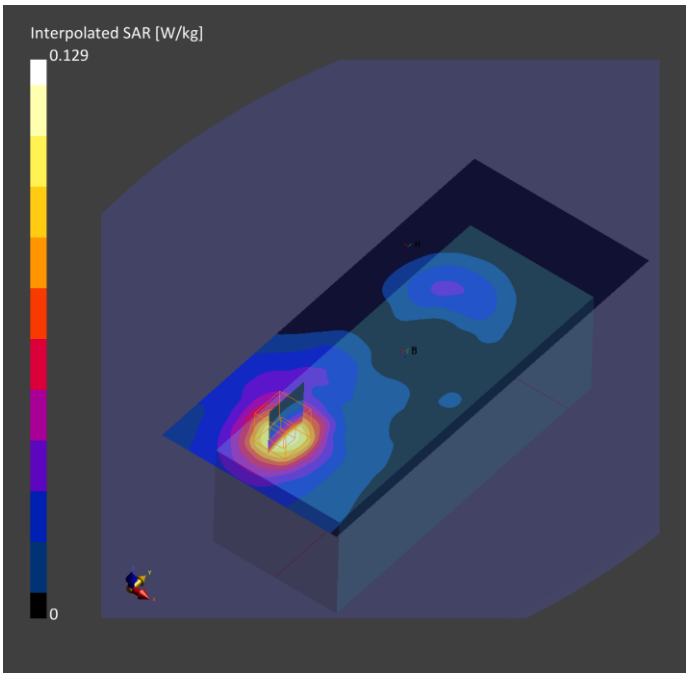
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-02, 15:25	2022-08-02, 15:31
psSAR1g [W/kg]	0.079	0.079
psSAR10g [W/kg]	0.048	0.046
Power Drift [dB]	0.17	-0.05
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.5
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°38

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 71, E- UTRA/FDD	LTE-FDD, 10169-CAE	680.5, 133297	9.84	0.860	42.7

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2 - 2022-09-12 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

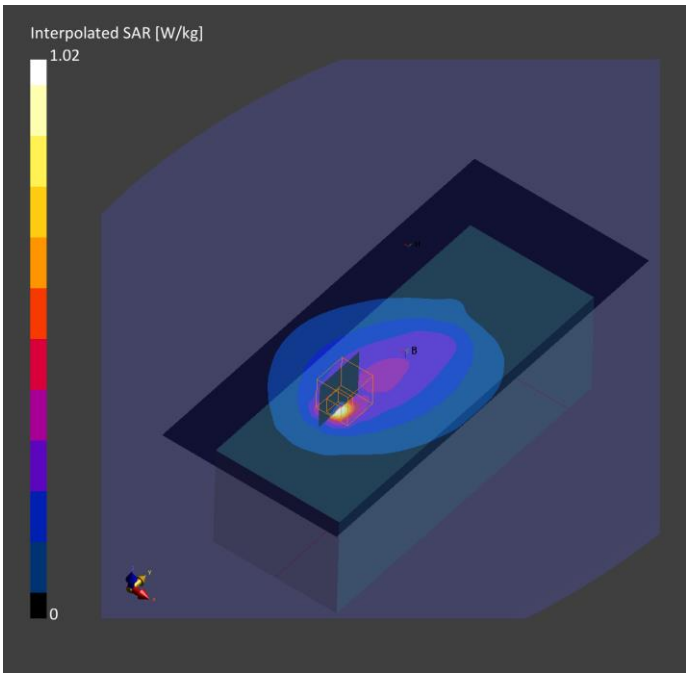
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	3.1 x 3.1 x 1.2
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.2
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-13, 08:47	2022-09-13, 09:11
psSAR1g [W/kg]	0.109	0.113
psSAR10g [W/kg]	0.056	0.043
Power Drift [dB]	-0.04	0.04
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		47.1
Dist 3dB Peak [mm]		3.6

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°39

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	GSM 850	GSM, 10024-DAC	848.8, 251	6.12	0.900	42.5

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-09-05 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

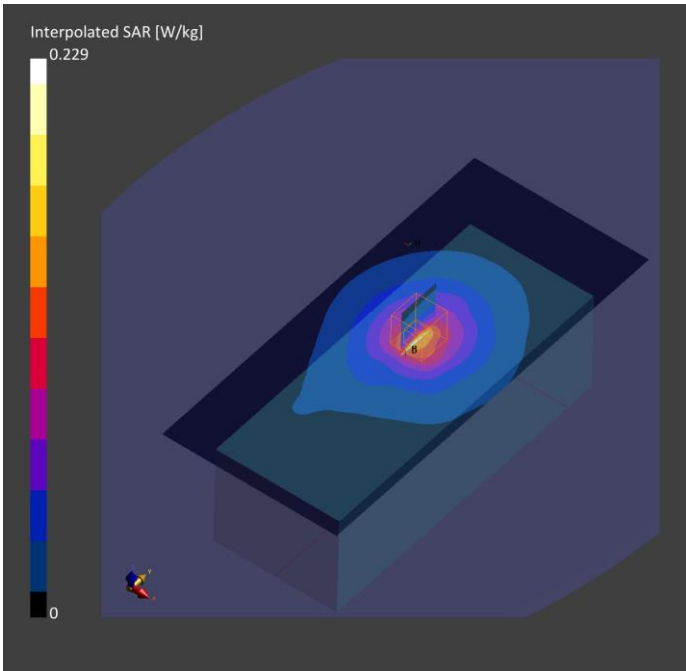
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-06, 10:32	2022-09-06, 10:38
psSAR1g [W/kg]	0.129	0.126
psSAR10g [W/kg]	0.084	0.077
Power Drift [dB]	-0.17	-0.06
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		83.1
Dist 3dB Peak [mm]		19.5

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot N°40

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 2, UTRA/FDD	WCDMA, 10011-CAB	1852.4, 9262	5.28	1.39	41.1

Hardware Setup

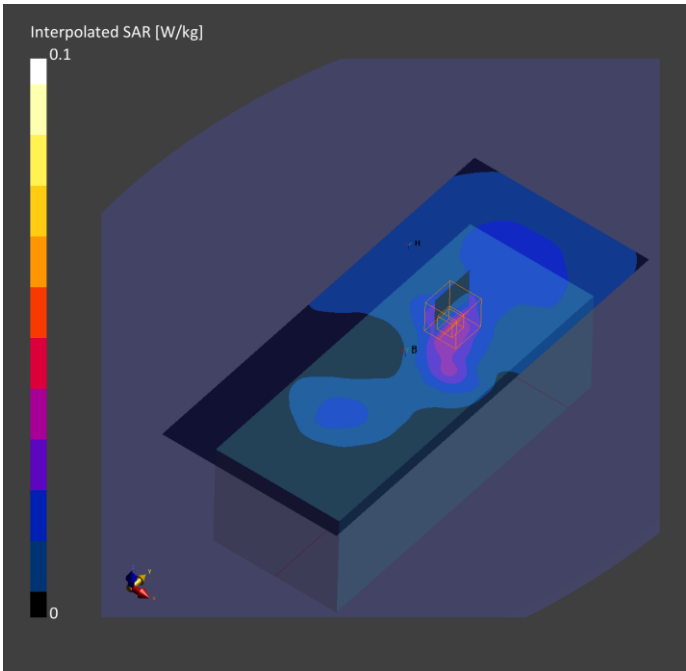
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz-2022-09- 06 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

	Area Scan	Zoom Scan		Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0	Date	2022-09-07, 08:56	2022-09-07, 09:02
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5	psSAR1g [W/kg]	0.033	0.035
Sensor Surface [mm]	3.0	3.0	psSAR10g [W/kg]	0.020	0.020
Graded Grid	Yes	Yes	Power Drift [dB]	-0.04	0.00
Grading Ratio	1.5	1.5	Power Scaling	Disabled	Disabled
MAIA	Y	Y	Scaling Factor [dB]		
Surface Detection	VMS + 6p	VMS + 6p	TSL Correction	No correction	No correction
Scan Method	Measured	Measured	M2/M1 [%]		85.8
			Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Plot Nº41

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH	220.0 x 85.0 x 70.0	358845890064948	Headunit

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	BACK, 15.00	Band 4, UTRA/FDD	WCDMA, 10011-CAB	1752.6, 1513	5.28	1.35	39.3

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1700MHz_2022- 08-01 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

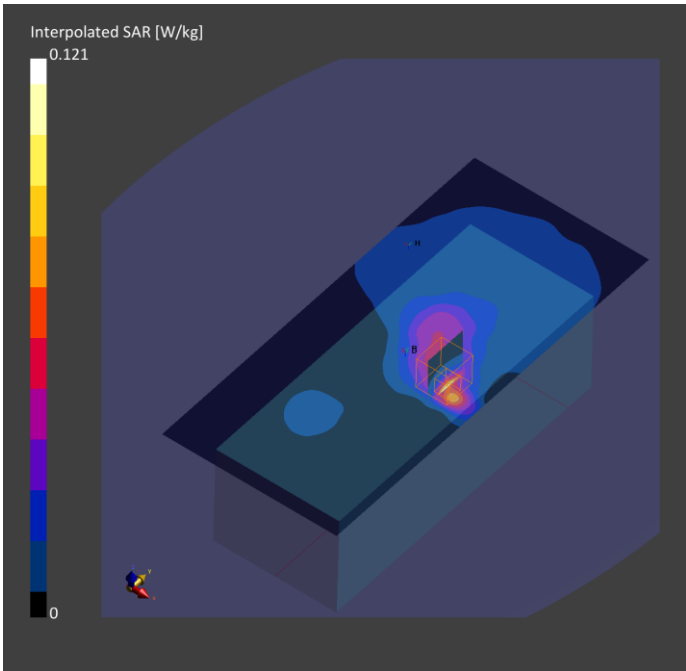
	Area Scan	Zoom Scan
Grid Extents [mm]	120.0 x 270.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	Y	Y
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-02, 16:09	2022-08-02, 16:16
psSAR1g [W/kg]	0.056	0.059
psSAR10g [W/kg]	0.031	0.031
Power Drift [dB]	0.03	-0.08
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.5
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Appendix D: System Validation Report

Validation results in 750 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	750.0, 0	9.84	0.870	40.8

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2 - 2022-06-15 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

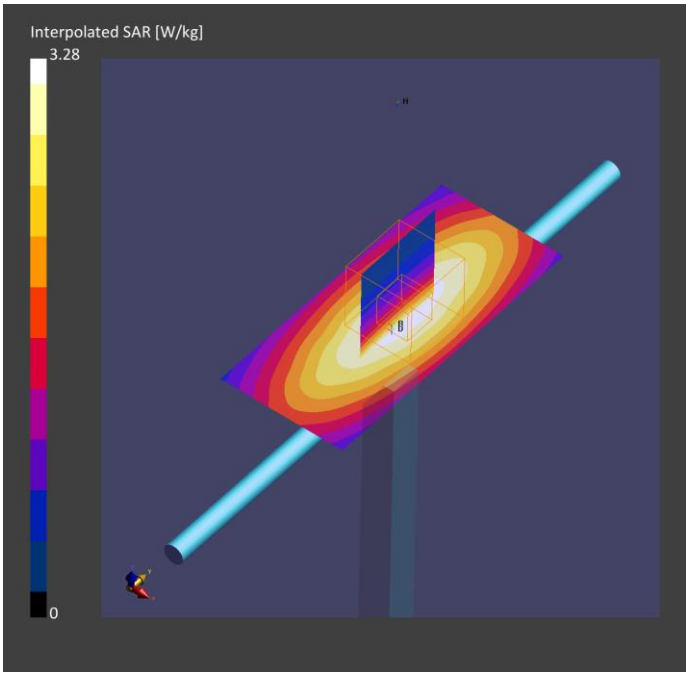
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-15, 09:22	2022-06-15, 09:27
psSAR1g [W/kg]	2.11	2.06
psSAR10g [W/kg]	1.41	1.35
Power Drift [dB]	-0.00	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.6
Dist 3dB Peak [mm]		> 15.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 750 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	750.0, 0	9.84	0.890	41.6

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2 - 2022-09-12 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

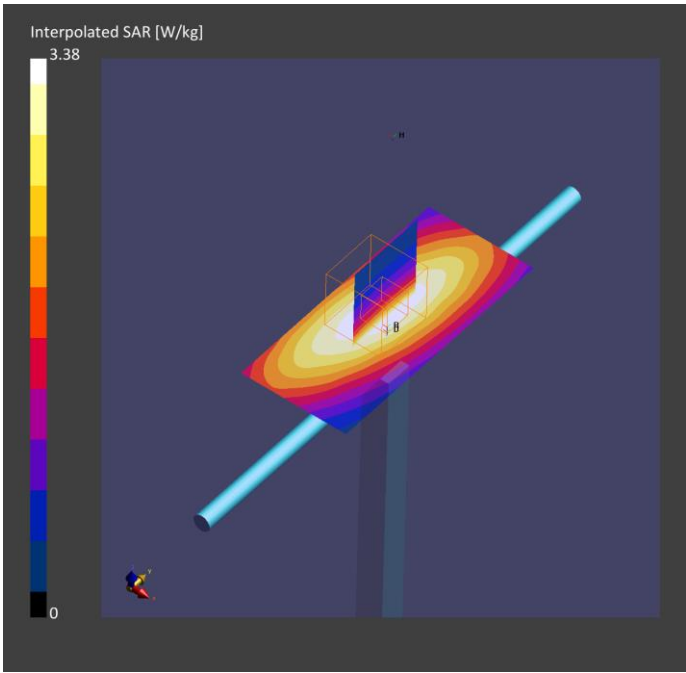
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-12, 14:35	2022-09-12, 14:40
psSAR1g [W/kg]	2.18	2.15
psSAR10g [W/kg]	1.47	1.41
Power Drift [dB]	0.01	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		87.0
Dist 3dB Peak [mm]		18.3

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 750 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	750.0, 0	9.84	0.910	41.9

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL750V2-2022-09-21 , --	EX3DV4 - SN7461, 2020-08-28	DAE4 Sn669, 2021-09-13

Scan Setup

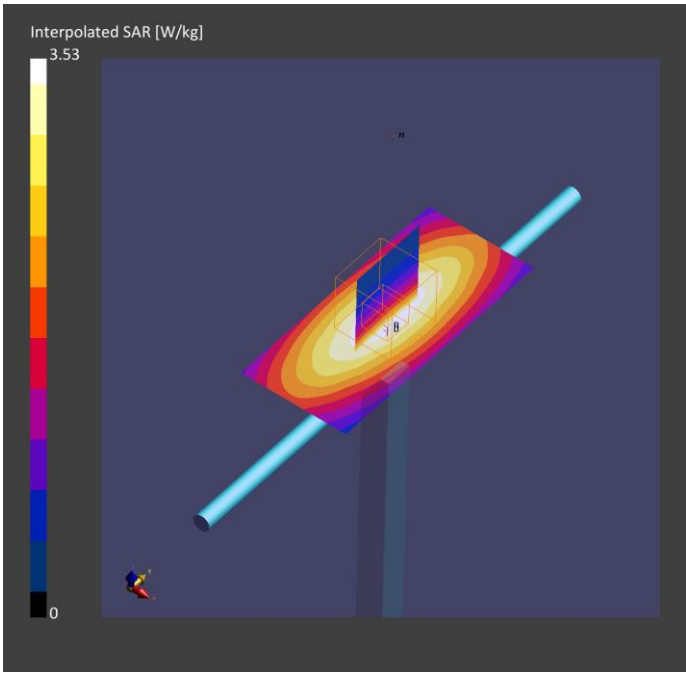
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-21, 15:07	2022-09-21, 15:12
psSAR1g [W/kg]	2.18	2.20
psSAR10g [W/kg]	1.46	1.44
Power Drift [dB]	0.01	0.07
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.0
Dist 3dB Peak [mm]		22.1

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 900 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	900.0, 0	6.12	0.950	40.1

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-06-01 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

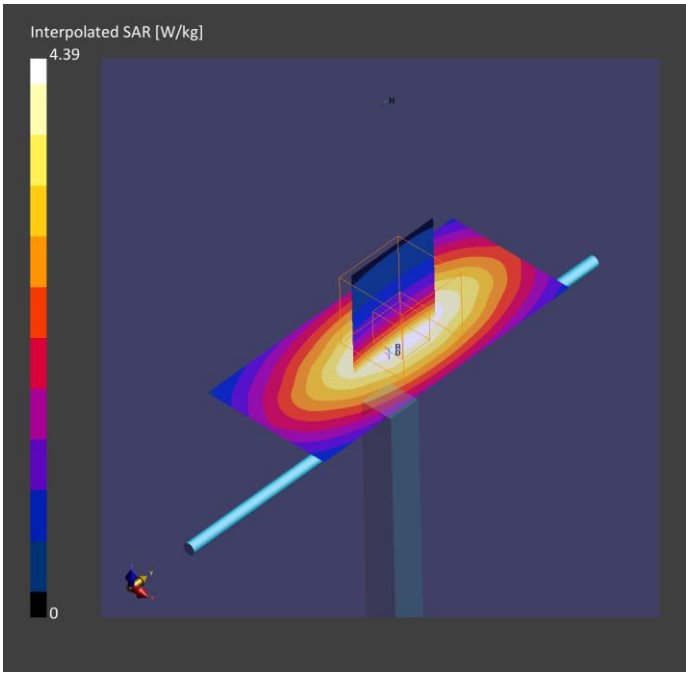
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-01, 09:54	2022-06-01, 09:59
psSAR1g [W/kg]	2.84	2.78
psSAR10g [W/kg]	1.86	1.77
Power Drift [dB]	-0.02	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		87.7
Dist 3dB Peak [mm]		22.9

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 900 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	900.0, 0	6.12	0.970	40.5

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-06-20 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

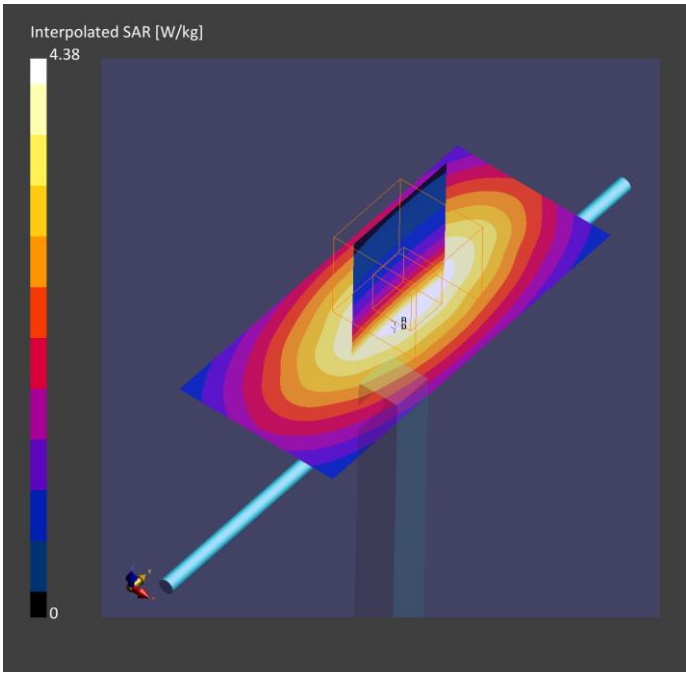
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-20, 10:19	2022-06-20, 10:24
psSAR1g [W/kg]	2.87	2.79
psSAR10g [W/kg]	1.87	1.78
Power Drift [dB]	0.02	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		88.1
Dist 3dB Peak [mm]		23.1

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 900 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	900.0, 0	6.12	0.970	41.5

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-08-24 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

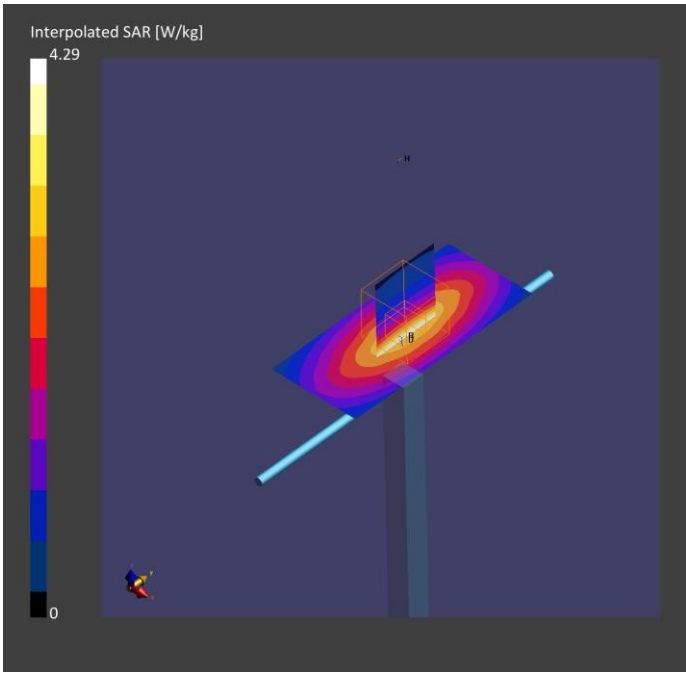
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-24, 08:54	2022-08-24, 09:00
psSAR1g [W/kg]	2.80	2.72
psSAR10g [W/kg]	1.81	1.74
Power Drift [dB]	-0.01	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		87.7
Dist 3dB Peak [mm]		20.4

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 900 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	900.0, 0	6.12	0.960	41.9

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HSL900V2 - 2022-09-05 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2022-08-16

Scan Setup

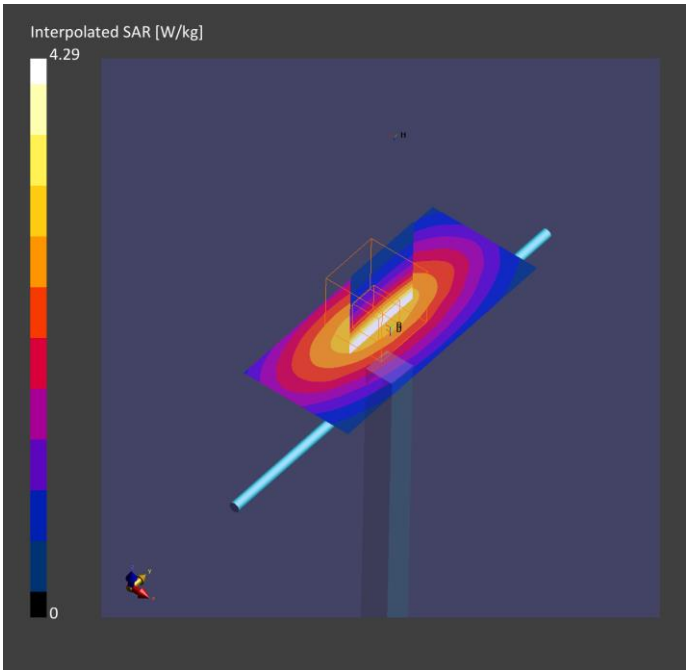
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-05, 13:44	2022-09-05, 13:49
psSAR1g [W/kg]	2.79	2.73
psSAR10g [W/kg]	1.83	1.75
Power Drift [dB]	-0.02	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		87.8
Dist 3dB Peak [mm]		19.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 900 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		CW, 0--	900.0, 0	9.61	0.950	39.7

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2158	HSL900V2 - 2022-12-27 , --	EX3DV4 - SN7461, 2022-08-25	DAE4 Sn1690, 2022-10-13

Scan Setup

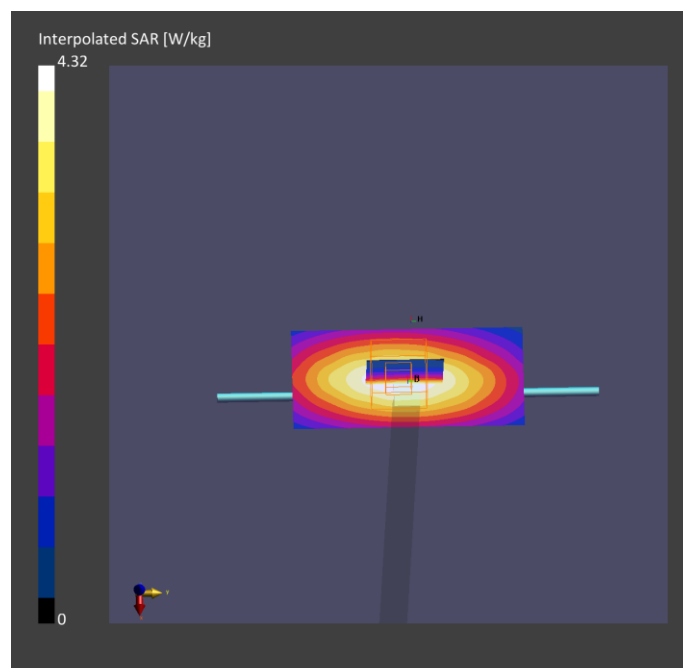
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-27, 09:29	2022-12-27, 09:34
psSAR1g [W/kg]	2.81	2.75
psSAR10g [W/kg]	1.83	1.77
Power Drift [dB]	-0.01	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		86.5
Dist 3dB Peak [mm]		17.2

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 1800 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	1800.0, 0	5.28	1.44	38.6

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1350-1850V3-1700MHz-2022-06- 06 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

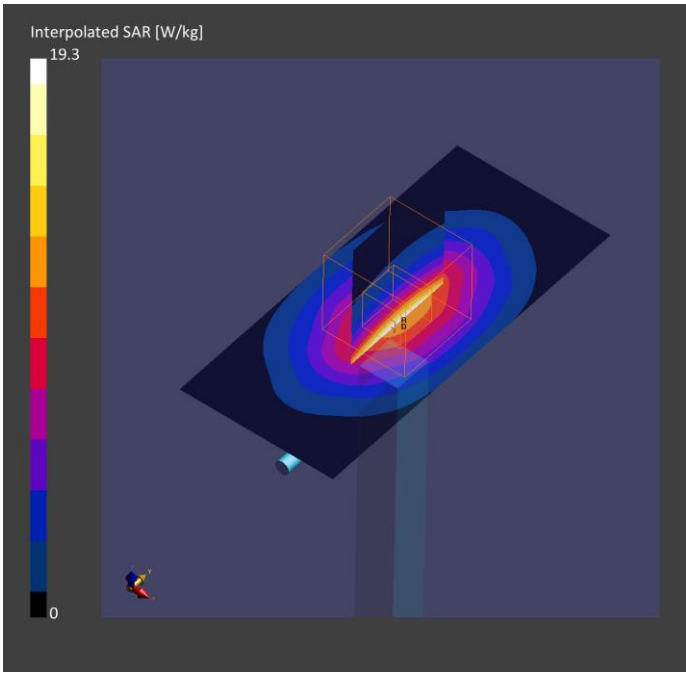
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-06, 13:46	2022-06-06, 13:51
psSAR1g [W/kg]	10.5	9.96
psSAR10g [W/kg]	5.54	5.08
Power Drift [dB]	0.01	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		82.5
Dist 3dB Peak [mm]		10.9

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 1800 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	1800.0, 0	5.28	1.35	39.5

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz-2022-06- 09 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

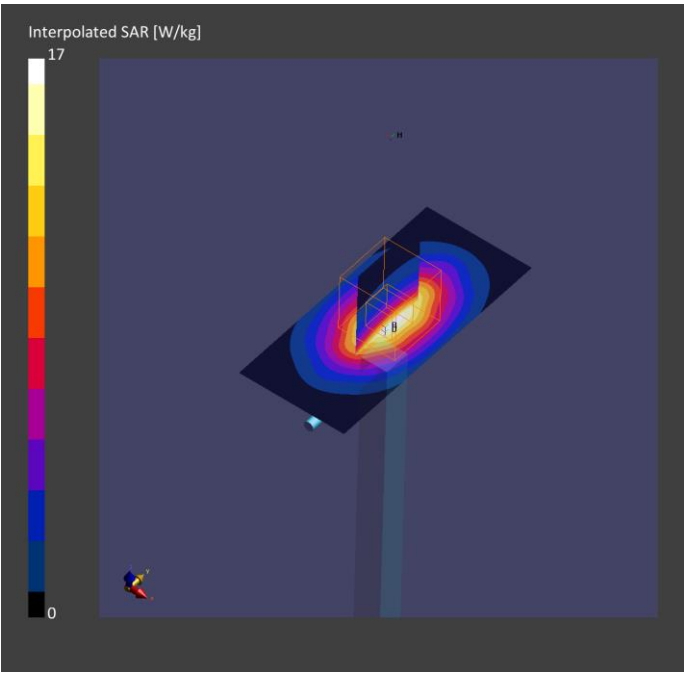
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-06-09, 13:44	2022-06-09, 13:49
psSAR1g [W/kg]	9.45	9.13
psSAR10g [W/kg]	4.95	4.77
Power Drift [dB]	0.01	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		83.8
Dist 3dB Peak [mm]		10.8

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 1800 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; **Date:** 11/07/2022

DUT: Dipole 1800 MHz D1800V2; **Type:** D1800V2; **Serial:** D1800V2 - SN:2d099

Communication System: UID 0, CW (0); **Frequency:** 1800 MHz; **Duty Cycle:** 1:1

Medium parameters used: $f = 1800$ MHz; $\sigma = 1.4$ S/m; $\epsilon_r = 39.01$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3052; ConvF(5.28, 5.28, 5.28) @ 1800 MHz; Calibrated: 22/09/2021
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1690; Calibrated: 08/09/2021
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 1800MHz, 2022-07-11/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 12.4 W/kg

Configuration 1800MHz, 2022-07-11/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 96.34 V/m; Power Drift = 0.06 dB

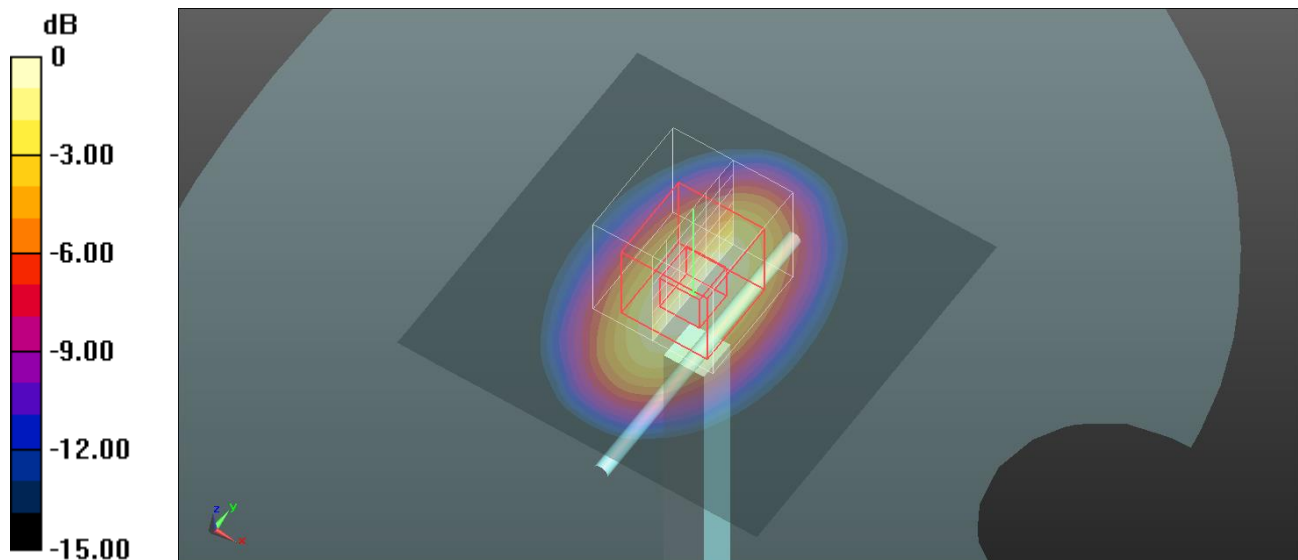
Peak SAR (extrapolated) = 17.9 W/kg

SAR(1 g) = 9.76 W/kg; SAR(10 g) = 5.14 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 11 mm

Ratio of SAR at M2 to SAR at M1 = 55.4%

Maximum value of SAR (measured) = 12.5 W/kg



0 dB = 12.5 W/kg = 10.97 dBW/kg

Validation results in 1800 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	1800.0, 0	5.28	1.39	39.1

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1700MHz_2022- 08-01 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

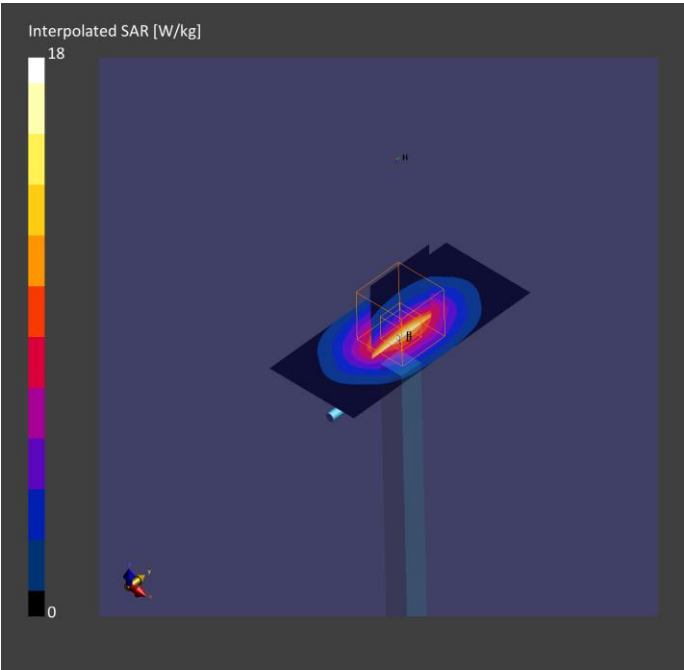
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-01, 10:06	2022-08-01, 10:12
psSAR1g [W/kg]	10.1	9.60
psSAR10g [W/kg]	5.30	5.00
Power Drift [dB]	0.01	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		83.7
Dist 3dB Peak [mm]		10.8

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 1800 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	1800.0, 0	5.28	1.38	41.3

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1550-1950V3-1900MHz-2022-09- 06 , --	ES3DV3 - SN3052, 2021-09-22	DAE4 Sn1690, 2021-09-08

Scan Setup

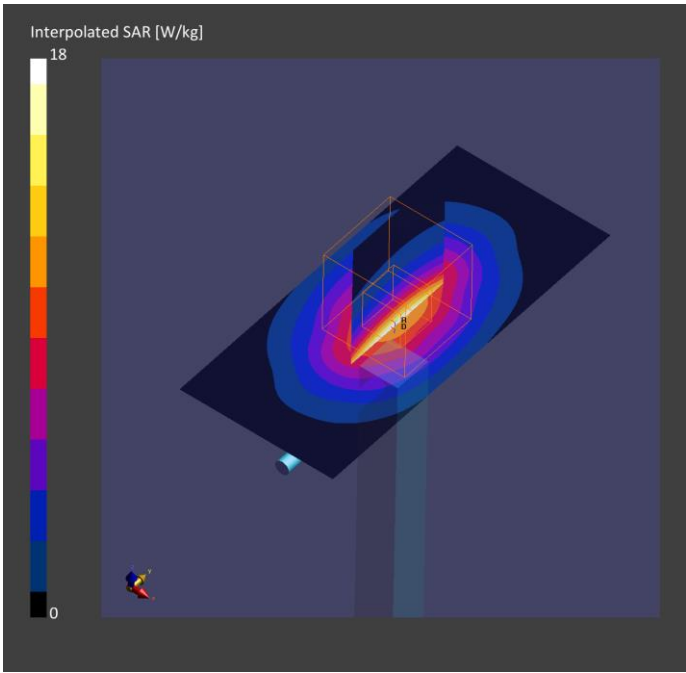
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	3.0
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-06, 14:09	2022-09-06, 14:14
psSAR1g [W/kg]	10.1	9.63
psSAR10g [W/kg]	5.31	5.02
Power Drift [dB]	0.01	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		84.3
Dist 3dB Peak [mm]		10.8

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 1800 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	1800.0, 0	8.3	1.39	41.0

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1350-1850-1700MHz-2022-09-20 , --	EX3DV4 - SN7461, 2022-08-25	DAE4 Sn669, 2022-08-16

Scan Setup

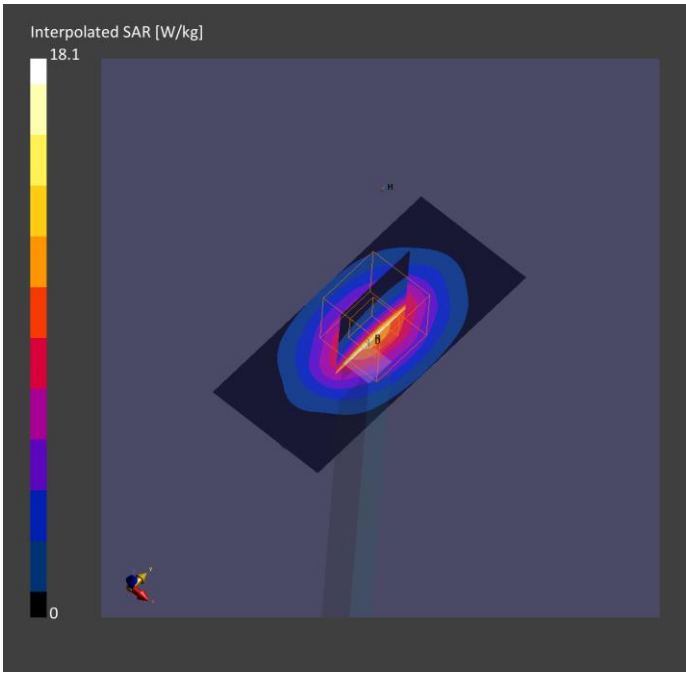
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-20, 16:00	2022-09-20, 16:05
psSAR1g [W/kg]	9.45	9.23
psSAR10g [W/kg]	4.94	4.71
Power Drift [dB]	-0.00	0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.1
Dist 3dB Peak [mm]		9.9

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 1800 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		CW, 0--	1800.0, 0	8.3	1.37	39.5

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2158	HBBL1550-1950V3-1900MHz-2022-12-22 , --	EX3DV4 - SN7461, 2022-08-25	DAE4 Sn1690, 2022-08-16

Scan Setup

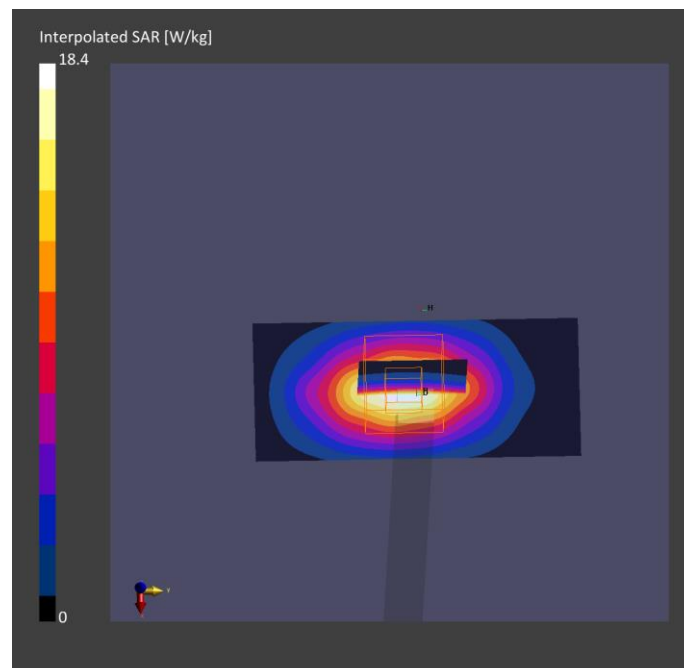
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 15.0	6.0 x 6.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-22, 17:33	2022-12-22, 17:38
psSAR1g [W/kg]	9.85	9.68
psSAR10g [W/kg]	5.25	5.07
Power Drift [dB]	0.00	-0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		81.7
Dist 3dB Peak [mm]		10.8

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 2600 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; **Date:** 20/07/2022

DUT: Dipole 2600 MHz D2600V2; **Type:** D2600V2; **Serial:** D2600V2 - SN:1023

Communication System: UID 0, CW (0); **Frequency:** 2600 MHz; **Duty Cycle:** 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 1.97$ S/m; $\epsilon_r = 39.98$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.27, 7.27, 7.27) @ 2600 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 13/09/2021
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 2600MHz, 2022-07-20/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: $dx=1.000$ mm, $dy=1.000$ mm

Maximum value of SAR (interpolated) = 23.1 W/kg

Configuration 2600MHz, 2022-07-20/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 111.4 V/m; Power Drift = 0.14 dB

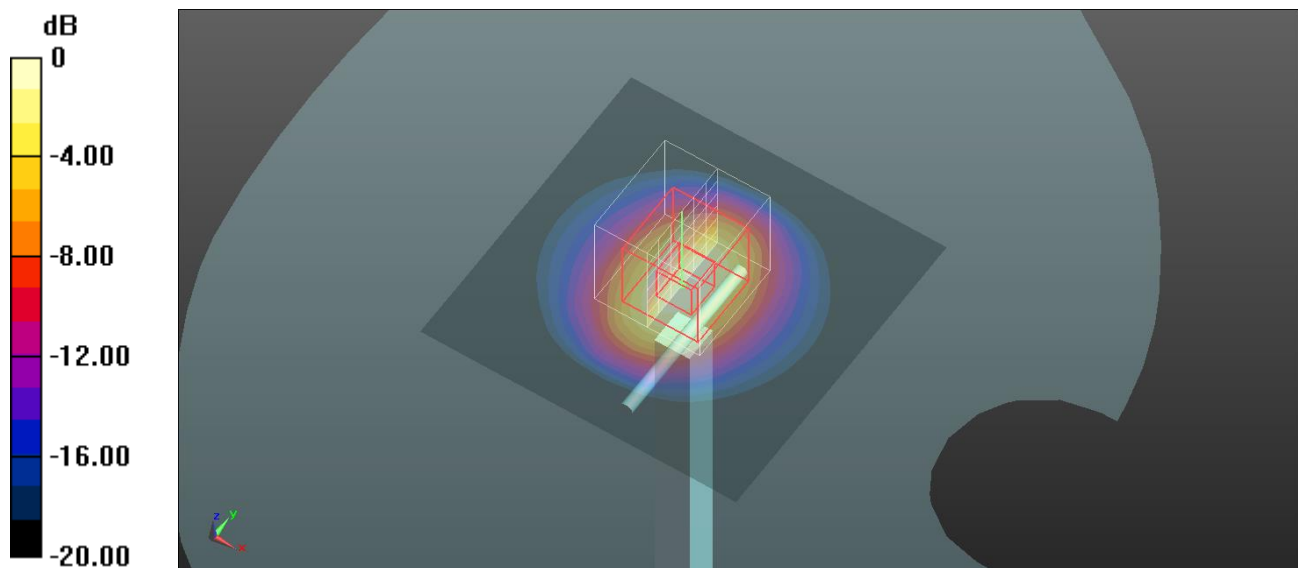
Peak SAR (extrapolated) = 33.0 W/kg

SAR(1 g) = 15 W/kg; SAR(10 g) = 6.61 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 9.1 mm

Ratio of SAR at M2 to SAR at M1 = 44.8%

Maximum value of SAR (measured) = 23.7 W/kg



0 dB = 23.7 W/kg = 13.75 dBW/kg

Validation results in 2600 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; Date: 13/09/2022

DUT: D2600V2 - SN1023; Type: D2600V2; Serial: SN1023

Communication System: UID 0, CW (0); Frequency: 2600 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2600$ MHz; $\sigma = 2$ S/m; $\epsilon_r = 38.11$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(7.44, 7.44, 7.44) @ 2600 MHz; Calibrated: 25/08/2022
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 16/08/2022
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 2600MHz, 2022-09-13/d=10mm, Pin=250 mW/Area Scan (91x91x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 23.7 W/kg

Configuration 2600MHz, 2022-09-13/d=10mm, Pin=250 mW/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 111.6 V/m; Power Drift = 0.07 dB

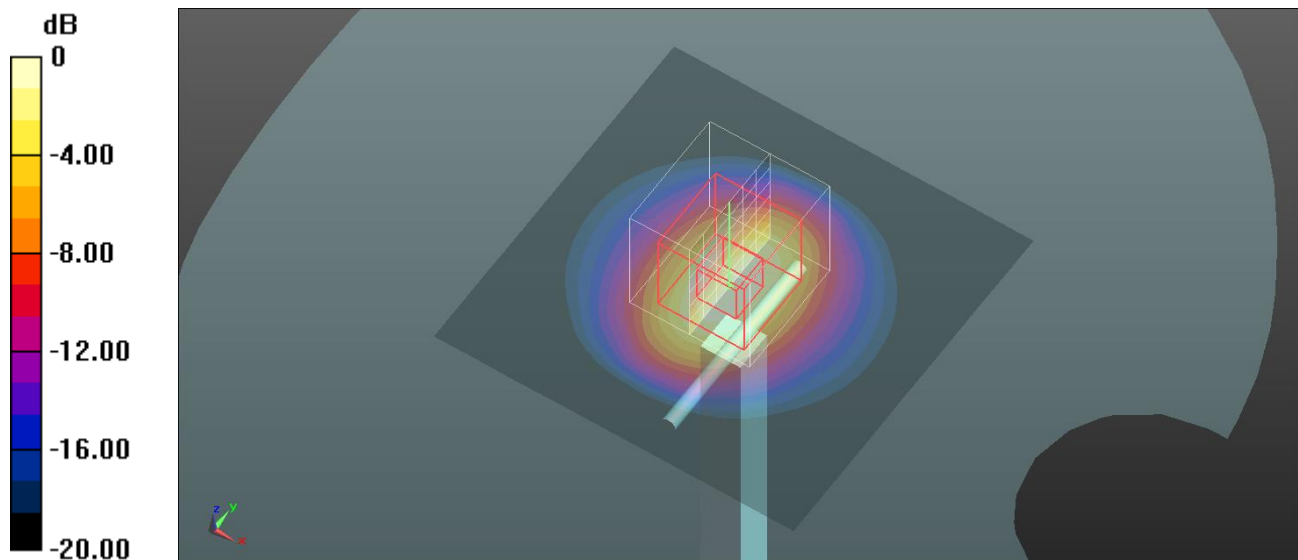
Peak SAR (extrapolated) = 33.4 W/kg

SAR(1 g) = 15.2 W/kg; SAR(10 g) = 6.7 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 9 mm

Ratio of SAR at M2 to SAR at M1 = 45.7%

Maximum value of SAR (measured) = 24.1 W/kg



0 dB = 24.1 W/kg = 13.82 dBW/kg

Validation results in 2600 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	2600.0, 0	7.44	1.99	38.2

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL1900-3800V3 - 2600MHz - 2022- 09-15 , --	EX3DV4 - SN7461, 2022-08-25	DAE4 Sn669, 2022-08-16

Scan Setup

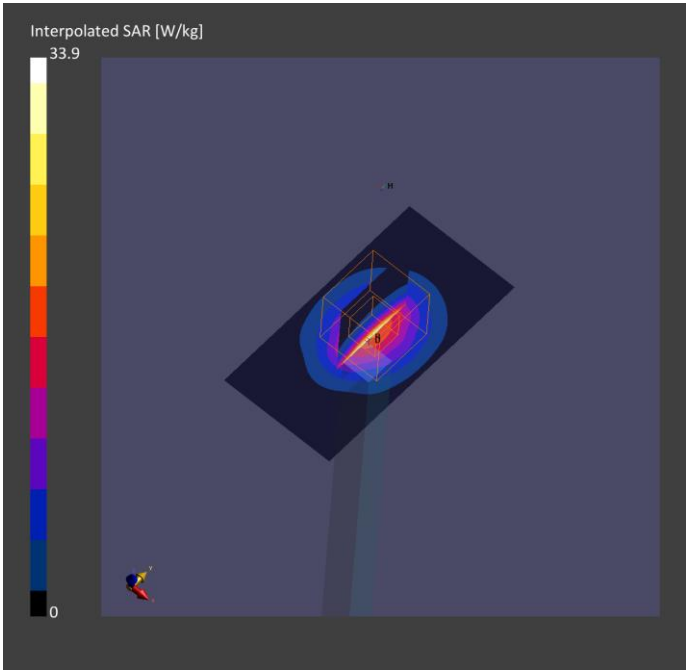
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-09-15, 13:43	2022-09-15, 13:49
psSAR1g [W/kg]	15.0	14.5
psSAR10g [W/kg]	6.70	6.34
Power Drift [dB]	0.01	0.00
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		77.5
Dist 3dB Peak [mm]		9.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 2600 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		CW, 0--	2600.0, 0	7.44	2.06	39.9

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V8.0 (20deg probe tilt) - 2158	HBBL1900-3800V3 - 2600MHz - 2022-12-27 , --	EX3DV4 - SN7461, 2022-08-25	DAE4 Sn1690, 2022-08-16

Scan Setup

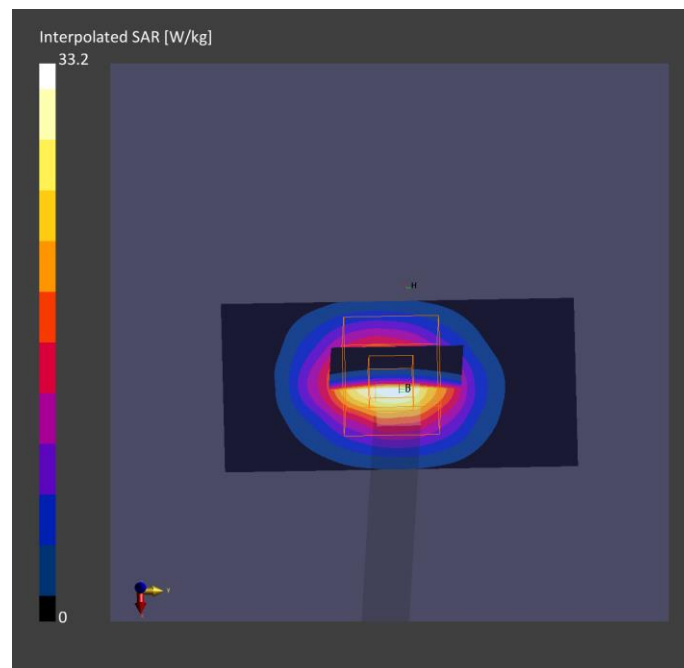
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.5
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-12-27, 16:56	2022-12-27, 17:03
psSAR1g [W/kg]	14.7	14.5
psSAR10g [W/kg]	6.57	6.33
Power Drift [dB]	-0.00	-0.03
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		76.9
Dist 3dB Peak [mm]		9.0

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 3300 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	3300.0, 0	7.27	2.80	36.8

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL3500-5800V5 - 2022-08-09 , --	EX3DV4 - SN7461, 2021-09-20	DAE4 Sn669, 2021-09-13

Scan Setup

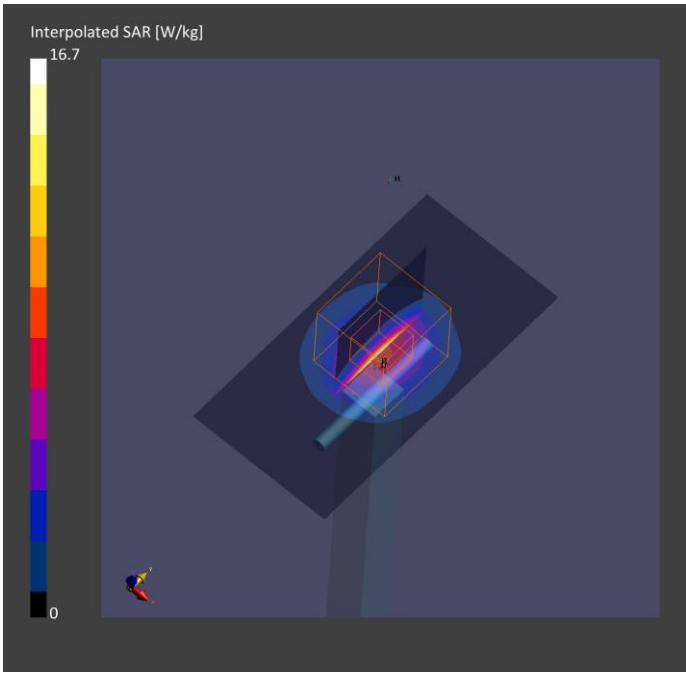
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	28.0 x 28.0 x 28.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-09, 12:58	2022-08-09, 13:04
psSAR1g [W/kg]	6.33	6.21
psSAR10g [W/kg]	2.48	2.39
Power Drift [dB]	-0.00	-0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		75.9
Dist 3dB Peak [mm]		8.9

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 3500 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	3500.0, 0	7.2	2.93	36.5

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL3500-5800V5 - 2022-08-09 , --	EX3DV4 - SN7461, 2021-09-20	DAE4 Sn669, 2021-09-13

Scan Setup

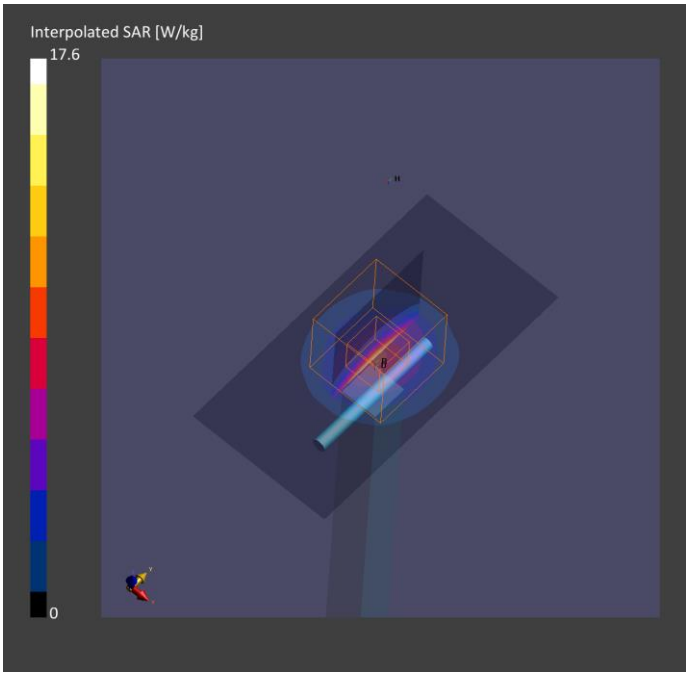
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	28.0 x 28.0 x 28.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-09, 13:14	2022-08-09, 13:21
psSAR1g [W/kg]	6.37	6.29
psSAR10g [W/kg]	2.43	2.36
Power Drift [dB]	0.00	0.01
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		74.3
Dist 3dB Peak [mm]		8.2

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 3700 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	3700.0, 0	7.15	3.08	36.1

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL3500-5800V5 - 2022-08-09 , --	EX3DV4 - SN7461, 2021-09-20	DAE4 Sn669, 2021-09-13

Scan Setup

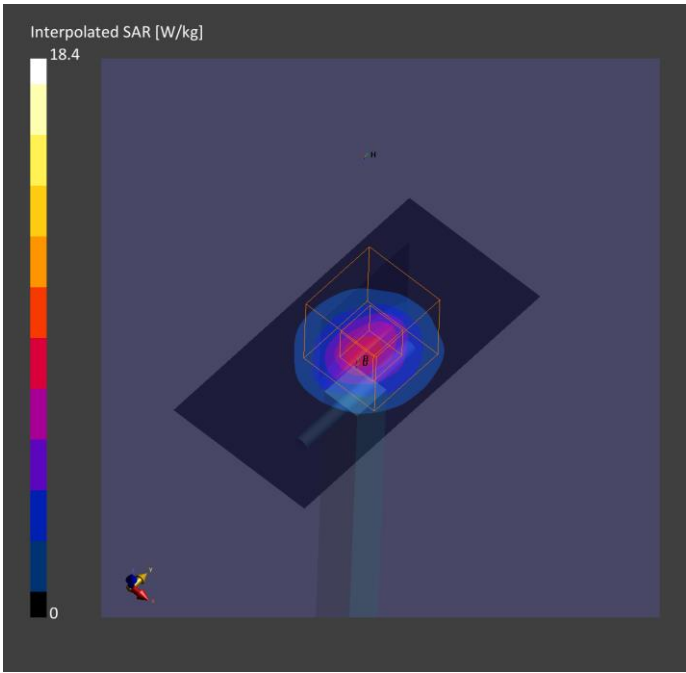
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	28.0 x 28.0 x 28.0
Grid Steps [mm]	10.0 x 10.0	5.0 x 5.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.5
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-09, 13:33	2022-08-09, 13:39
psSAR1g [W/kg]	6.23	6.28
psSAR10g [W/kg]	2.31	2.28
Power Drift [dB]	0.01	0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		73.1
Dist 3dB Peak [mm]		8.2

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 4200 MHz Band for Head TSL

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
TKCMOD12N00, HARMAN BECKER AUTOMOTIVE SYSTEMS GMBH			Dipole

Exposure Conditions

Phantom Section, TSL	Position, Test Distance [mm]	Band	Group, UID	Frequency [MHz], Channel Number	Conversion Factor	TSL Conductivity [S/m]	TSL Permittivity
Flat, HSL	,		, 0--	4200.0, 0	6.15	3.52	35.8

Hardware Setup

Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
ELI V4.0 (20deg probe tilt) - 1060	HBBL3500-5800V5 - 2022-08-09 , --	EX3DV4 - SN7461, 2021-09-20	DAE4 Sn669, 2021-09-13

Scan Setup

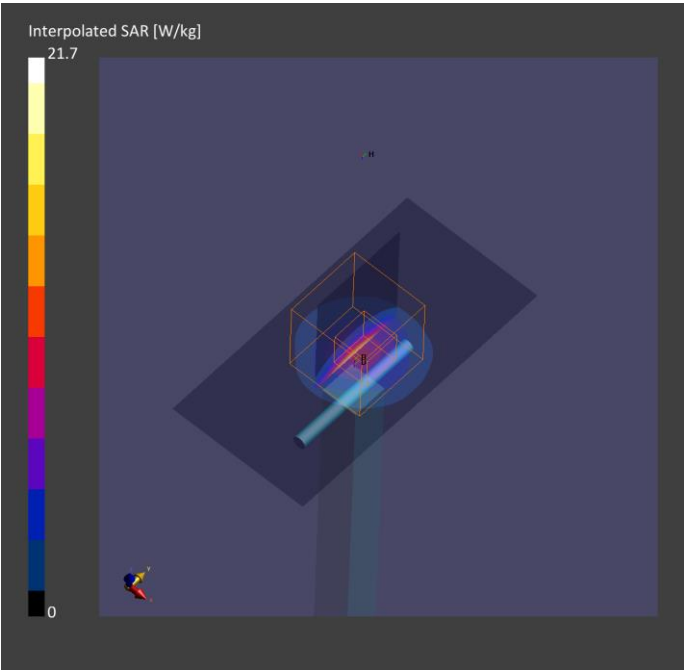
	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	25.0 x 25.0 x 25.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4
Graded Grid	Yes	Yes
Grading Ratio	1.5	1.4
MAIA	N/A	N/A
Surface Detection	VMS + 6p	VMS + 6p
Scan Method	Measured	Measured

Measurement Results

	Area Scan	Zoom Scan
Date	2022-08-09, 13:50	2022-08-09, 13:59
psSAR1g [W/kg]	6.46	6.54
psSAR10g [W/kg]	2.19	2.20
Power Drift [dB]	-0.00	-0.02
Power Scaling	Disabled	Disabled
Scaling Factor [dB]		
TSL Correction	No correction	No correction
M2/M1 [%]		69.3
Dist 3dB Peak [mm]		8.4

Warning(s) / Error(s)

Details	Area Scan	Zoom Scan
Warning(s)		
Error(s)		



Validation results in 5800 MHz Band for Head TSL

Test Laboratory: DEKRA Testing and Certification, S.A.U; **Date:** 04/07/2022

DUT: Dipole 5GHz; **Type:** D5GHzV2; **Serial:** D5GHzV2 - SN:1071

Communication System: UID 0, CW (0); Frequency: 5800 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.33$ S/m; $\epsilon_r = 35.79$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY5 Configuration:

- Probe: EX3DV4 - SN7461; ConvF(5.15, 5.15, 5.15) @ 5800 MHz; Calibrated: 28/08/2020
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn669; Calibrated: 13/09/2021
- Phantom: SAM head-body simulator ; Type: Twin SAM V4.0; Serial: ---
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

Configuration 5GHz, 04-07-2022/5800MHz, d=10mm, Pin=100 mW/Area Scan (61x61x1):

Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 19.9 W/kg

Configuration 5GHz, 04-07-2022/5800MHz, d=10mm, Pin=100 mW/Zoom Scan (8x8x8)/Cube 0:

Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 48.62 V/m; Power Drift = -0.13 dB

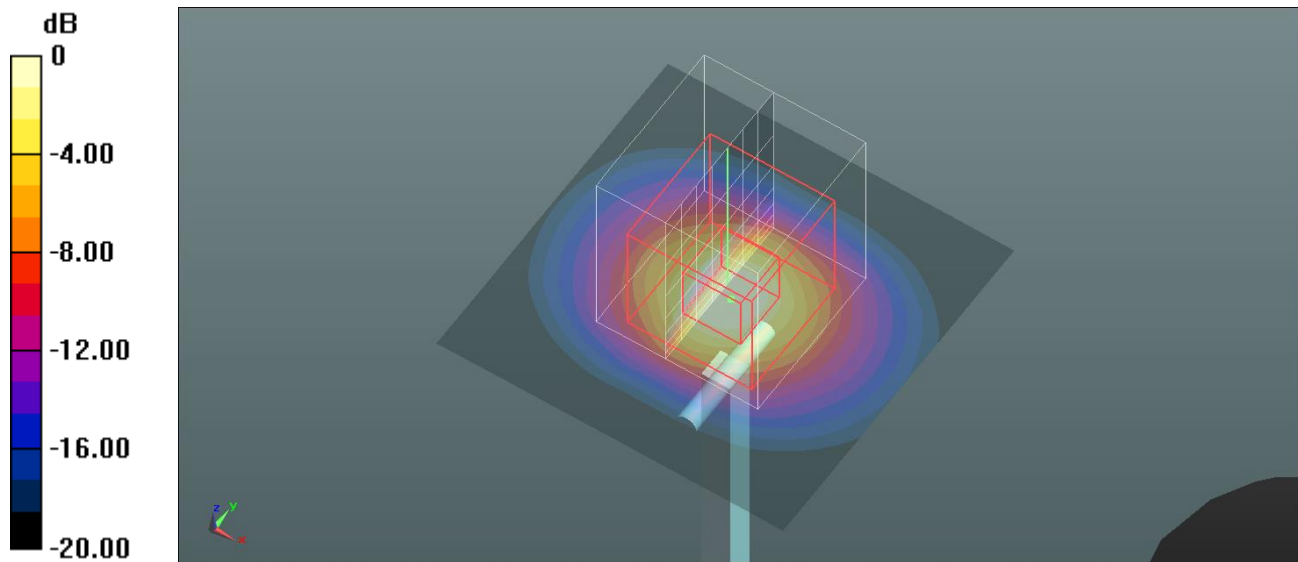
Peak SAR (extrapolated) = 33.3 W/kg

SAR(1 g) = 7.47 W/kg; SAR(10 g) = 2.11 W/kg (SAR corrected for target medium)

Smallest distance from peaks to all points 3 dB below = 7.1 mm

Ratio of SAR at M2 to SAR at M1 = 62%

Maximum value of SAR (measured) = 18.2 W/kg



0 dB = 18.2 W/kg = 12.60 dBW/kg