Appendix A. Plots of System Verification

The plots for system verification are shown as follows.

Measurement Report
S01 System Check_H1900_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D1900V2 – SN: 5d036	10.0 x 10.0 x 300.0		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,	,		CW, 0--	1900.000, 0	8.37	1.43	38.2

Hardware Setup

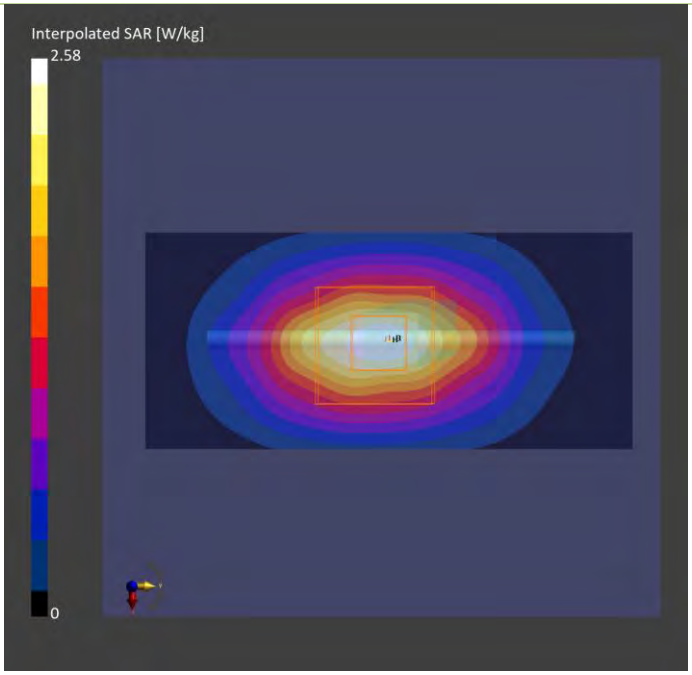
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	2.05	2.05
psSAR10g [W/kg]	1.07	1.06
Power Drift [dB]	0.00	-0.01



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
S02 System Check_H1750_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D1750V2 – SN: 1055	10.0 x 10.0 x 300.0		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,	,		CW, 0--	1750.000, 0	9.0	1.34	38.5

Hardware Setup

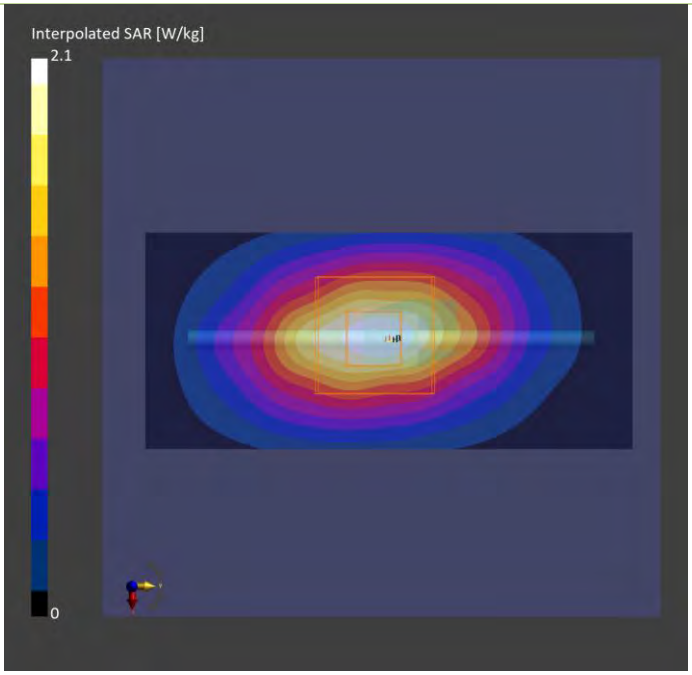
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	1.69	1.69
psSAR10g [W/kg]	0.906	0.892
Power Drift [dB]	0.00	-0.01



Measurement Report
S03 System Check_H750_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D750V3 – SN: 1013	10.0 x 10.0 x 300.0		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,	,		CW, 0--	750.000, 0	10.35	0.898	40.4

Hardware Setup

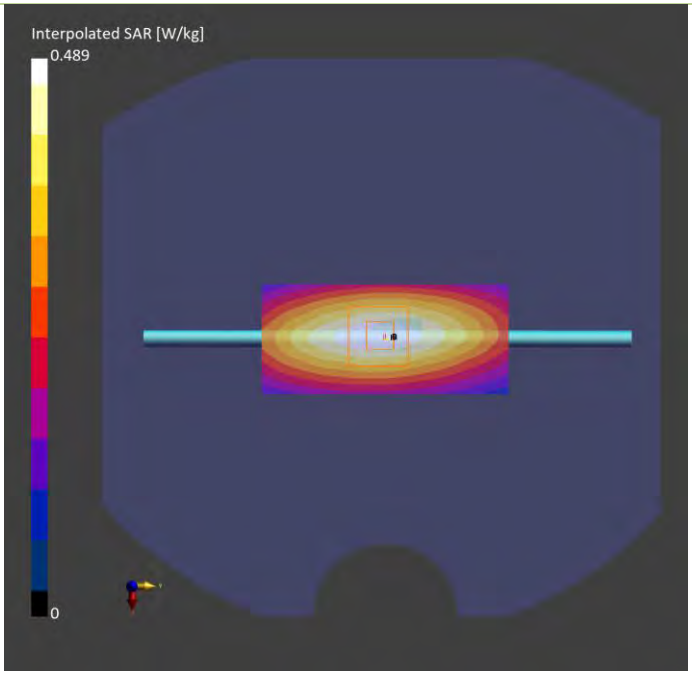
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.425	0.422
psSAR10g [W/kg]	0.283	0.276
Power Drift [dB]	0.01	0.01



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
S04 System Check_H750_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D750V3 – SN: 1013	10.0 x 10.0 x 300.0		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,	,		CW, 0--	750.000, 0	10.35	0.898	40.4

Hardware Setup

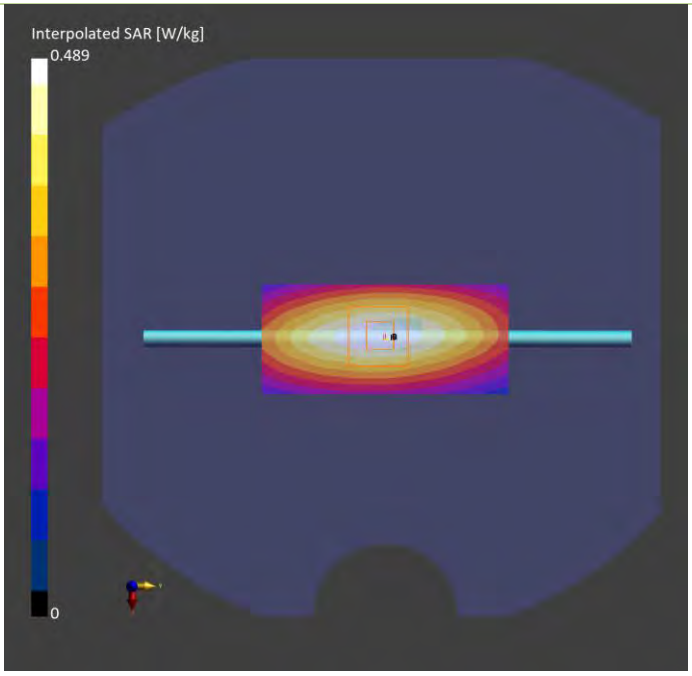
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.425	0.422
psSAR10g [W/kg]	0.283	0.276
Power Drift [dB]	0.01	0.01



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
S05 System Check_H750_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D750V3 – SN: 1013	10.0 x 10.0 x 300.0		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,	,		CW, 0--	750.000, 0	10.35	0.898	40.4

Hardware Setup

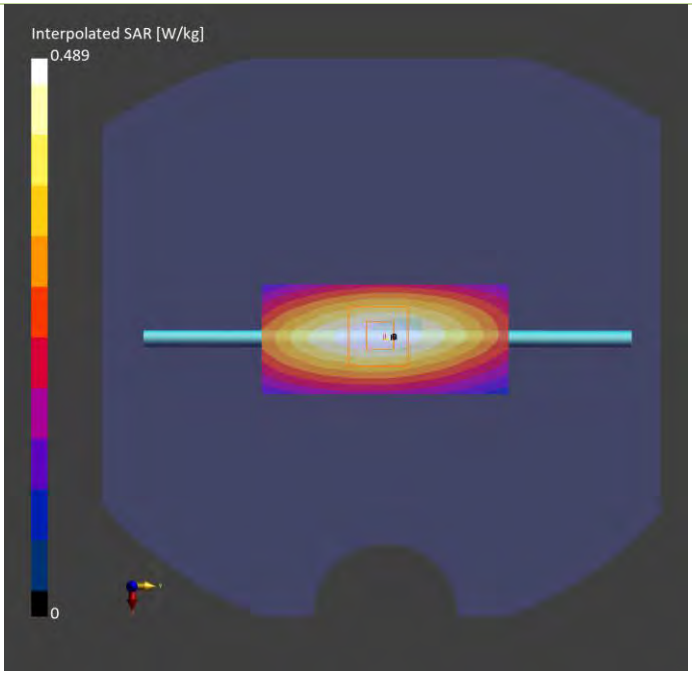
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.425	0.422
psSAR10g [W/kg]	0.283	0.276
Power Drift [dB]	0.01	0.01



Measurement Report
S06 System Check_H1750_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D1750V2 – SN: 1055	10.0 x 10.0 x 300.0		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,	,		CW, 0--	1750.000, 0	9.0	1.34	38.5

Hardware Setup

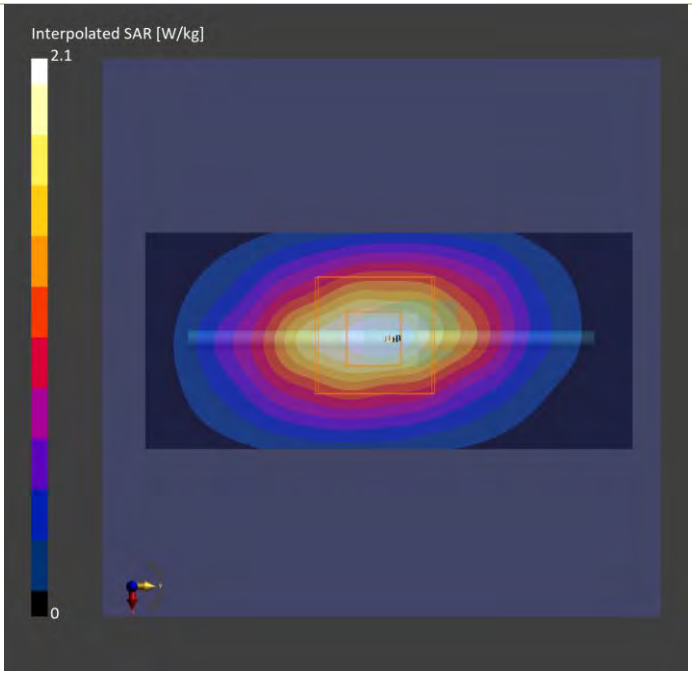
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	1.69	1.69
psSAR10g [W/kg]	0.906	0.892
Power Drift [dB]	0.00	-0.01



Measurement Report
S07 System Check_H2450_231208
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D2450V2 – SN: 737	10.0 x 10.0 x 300.0		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,	,		CW, 0--	2450.000, 0	7.82	1.78	37.5

Hardware Setup

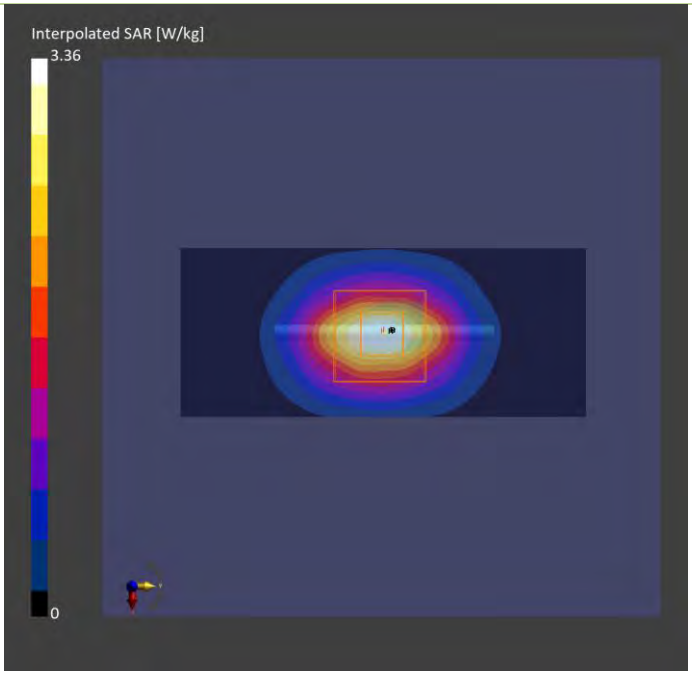
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-08	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	48.0 x 96.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-08	2023-12-08
psSAR1g [W/kg]	2.55	2.53
psSAR10g [W/kg]	1.18	1.18
Power Drift [dB]	-0.00	-0.00



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
S08 System Check_H5250_231208
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D5GHzV2 – SN: 1019	10.0 x 10.0 x 300.0		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,	,		CW, 0--	5250.000, 0	5.92	4.33	33.0

Hardware Setup

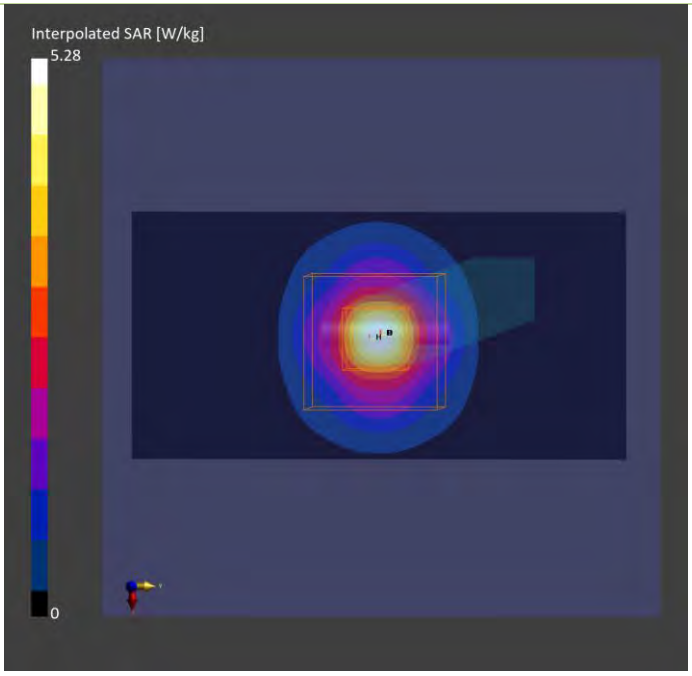
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-08	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-08	2023-12-08
psSAR1g [W/kg]	3.77	4.03
psSAR10g [W/kg]	1.12	1.21
Power Drift [dB]	-0.02	-0.07



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
S09 System Check_H5600_231208
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D5GHzV2 – SN: 1019	10.0 x 10.0 x 300.0		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,	,		CW, 0--	5600.000, 0	5.04	4.69	32.4

Hardware Setup

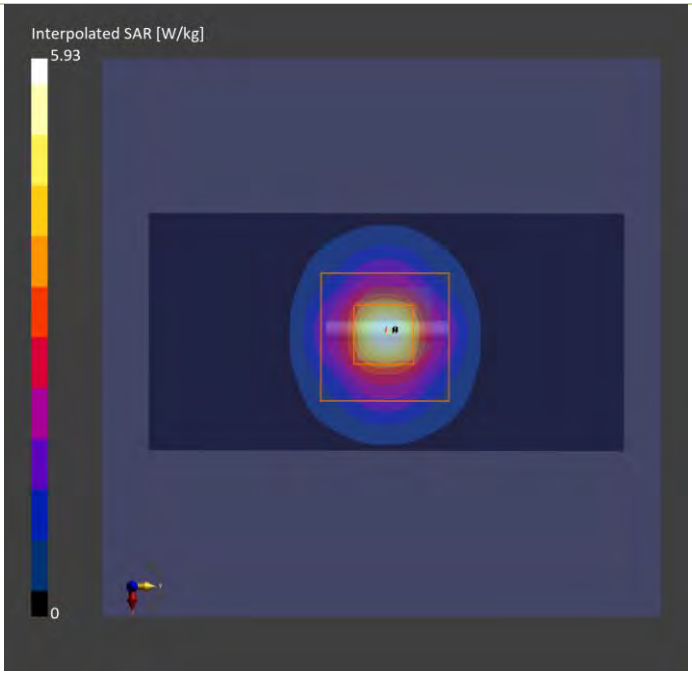
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-08	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-08	2023-12-08
psSAR1g [W/kg]	3.65	3.87
psSAR10g [W/kg]	1.03	1.11
Power Drift [dB]	-0.00	0.02



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
S10 System Check_H5750_231208
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D5GHzV2 – SN: 1145	10.0 x 10.0 x 300.0		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--	5750.0, 0	5.31	5.22	35.4

Hardware Setup

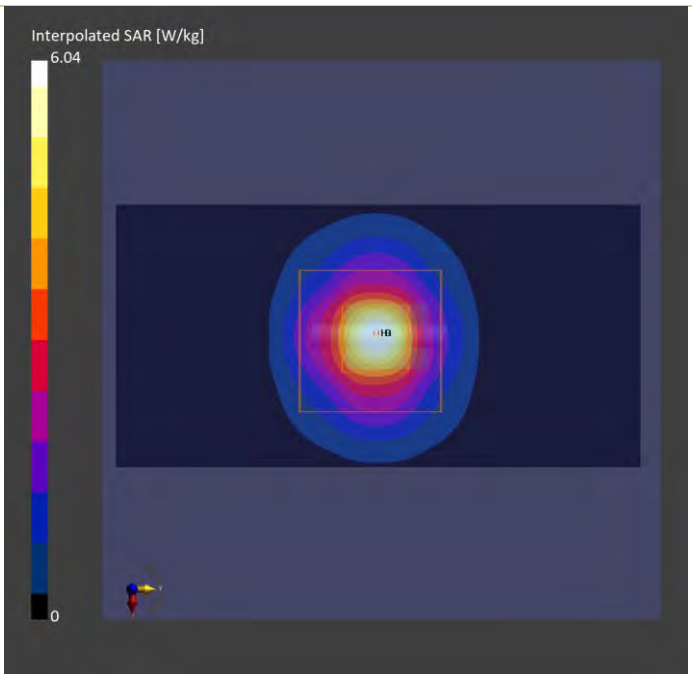
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-08	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-08	2023-12-08
psSAR1g [W/kg]	3.88	4.04
psSAR10g [W/kg]	1.13	1.17
Power Drift [dB]	0.04	-0.05



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
S11 System Check H2450_231213
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D2450V2 – SN: 737	10.0 x 10.0 x 300.0		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--	2450.0, 0	7.67	1.85	38.0

Hardware Setup

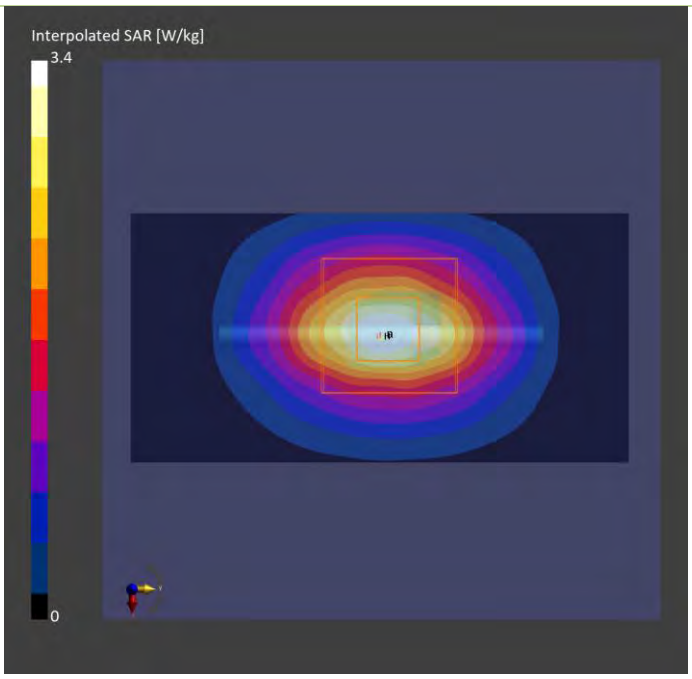
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 1987	H06T27N4 , 2023-Dec-13	EX3DV4 - SN7555, 2023-07-19	DAE4 Sn1585, 2023-07-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	48.0 x 96.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-13	2023-12-13
psSAR1g [W/kg]	2.59	2.63
psSAR10g [W/kg]	1.21	1.22
Power Drift [dB]	0.01	-0.05



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2023/12/18

S12 System Check_H13MHz_231218

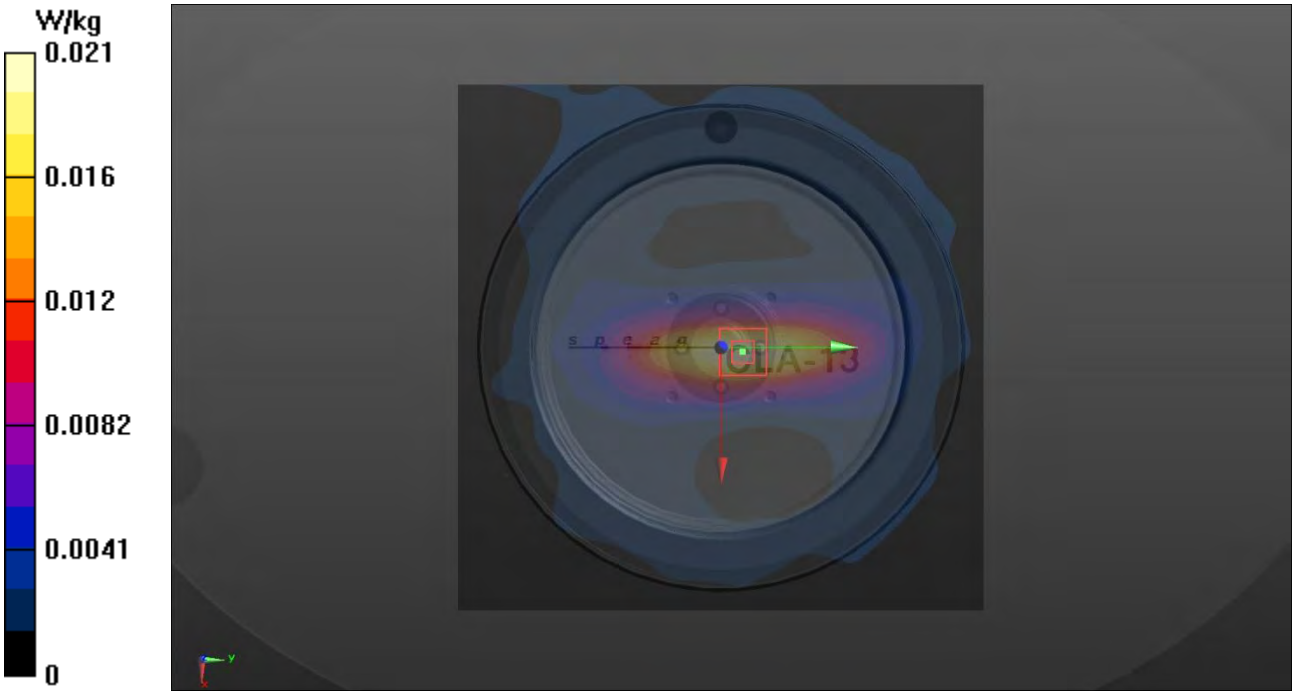
DUT: CLA-13 MHz ;Type: CLA-13 ;SN: 1018

Communication System: UID 10453 - AAD, Validation (Square, 10ms, 1ms); Frequency: 13 MHz;Duty Cycle: 1:10
Medium: H13_1218 Medium parameters used: f = 13 MHz; σ = 0.731 S/m; ε_r = 55.227; ρ = 1000 kg/m^3
Ambient Temperature：22.7 ℃ ； Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7720; ConvF(17.02, 17.02, 17.02) @ 13 MHz; Calibrated: 2023/03/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1761; Calibrated: 2023/11/17
- Phantom: ELI_Phantom_1204; Type: QD OVA 002 Ax; Serial: 1204
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Pin=1W/Area Scan (241x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0205 W/kg

Pin=1W/Zoom Scan (7x7x16)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 5.167 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.0300 W/kg
SAR(1 g) = 0.025 W/kg; SAR(10 g) = 0.017 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.0203 W/kg



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
S13 System Check_H1900_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D1900V2 – SN: 5d036	10.0 x 10.0 x 300.0		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,	,		CW, 0--	1900.000, 0	8.37	1.43	38.2

Hardware Setup

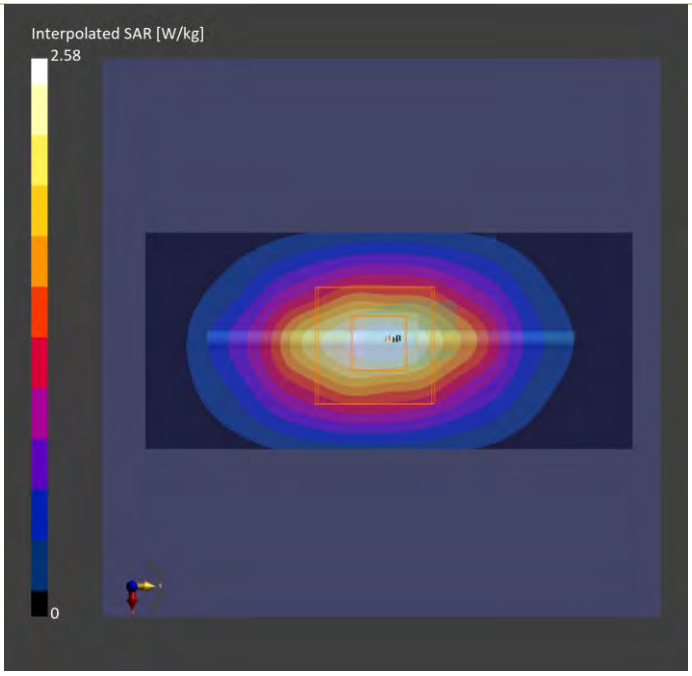
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	2.05	2.05
psSAR10g [W/kg]	1.07	1.06
Power Drift [dB]	0.00	-0.01



Measurement Report
S14 System Check_H1750_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D1750V2 – SN: 1055	10.0 x 10.0 x 300.0		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,	,		CW, 0--	1750.000, 0	9.0	1.34	38.5

Hardware Setup

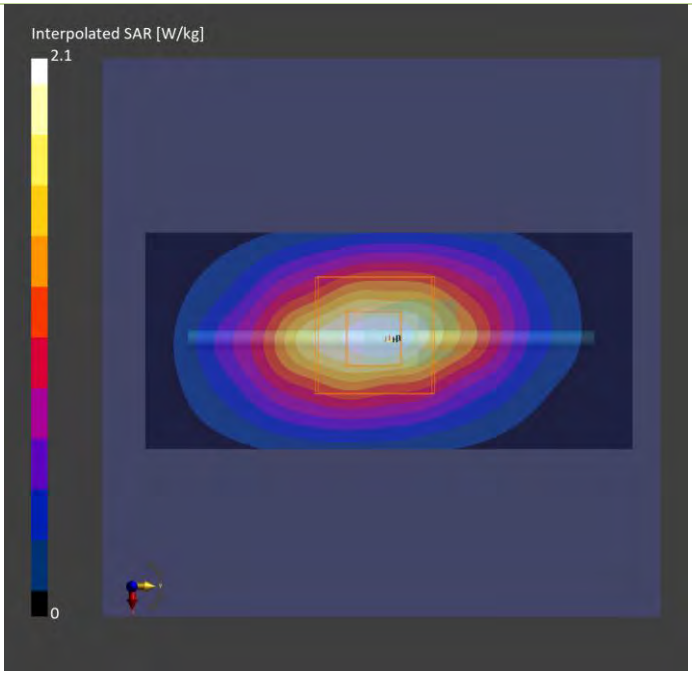
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	1.69	1.69
psSAR10g [W/kg]	0.906	0.892
Power Drift [dB]	0.00	-0.01



Measurement Report
S15 System Check_H750_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D750V3 – SN: 1013	10.0 x 10.0 x 300.0		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,	,		CW, 0--	750.000, 0	10.35	0.898	40.4

Hardware Setup

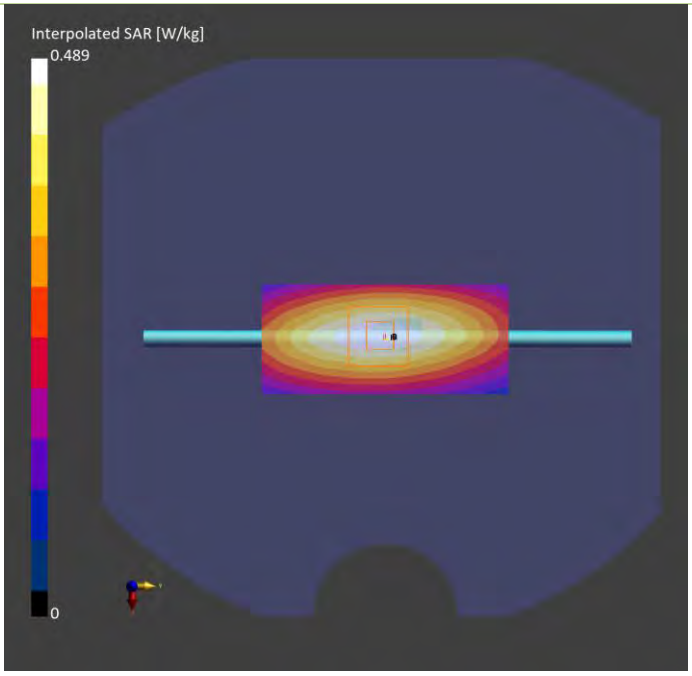
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.425	0.422
psSAR10g [W/kg]	0.283	0.276
Power Drift [dB]	0.01	0.01



Measurement Report
S16 System Check_H750_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D750V3 – SN: 1013	10.0 x 10.0 x 300.0		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,	,		CW, 0--	750.000, 0	10.35	0.898	40.4

Hardware Setup

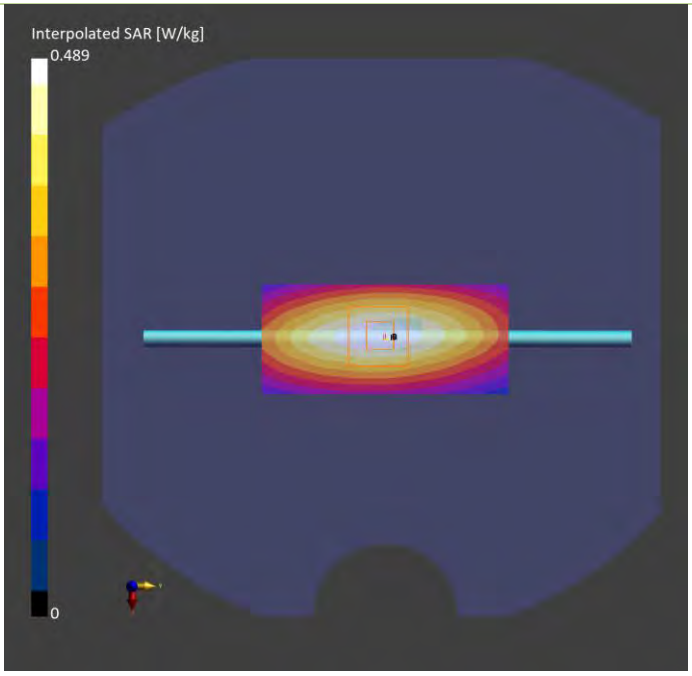
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.425	0.422
psSAR10g [W/kg]	0.283	0.276
Power Drift [dB]	0.01	0.01



Measurement Report
S17 System Check_H750_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D750V3 – SN: 1013	10.0 x 10.0 x 300.0		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,	,		CW, 0--	750.000, 0	10.35	0.898	40.4

Hardware Setup

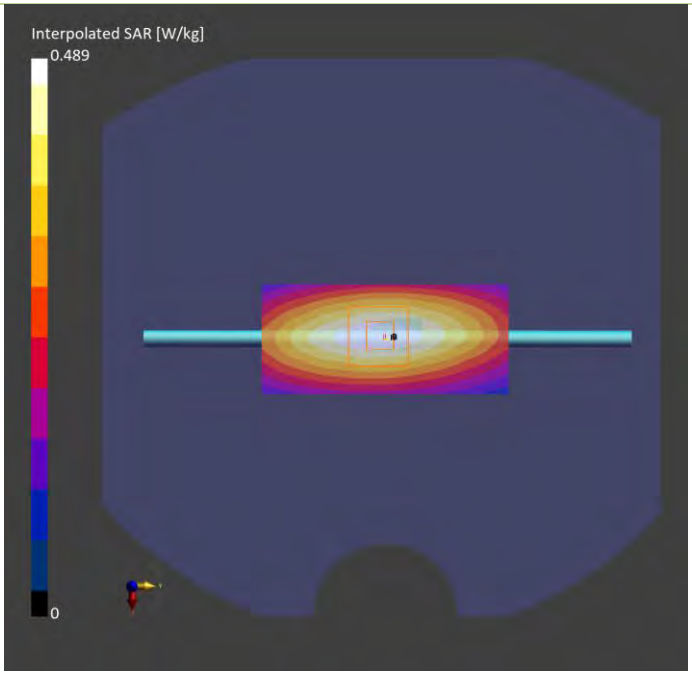
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.425	0.422
psSAR10g [W/kg]	0.283	0.276
Power Drift [dB]	0.01	0.01



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
S18 System Check_H1750_231207
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D1750V2 – SN: 1055	10.0 x 10.0 x 300.0		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,	,		CW, 0--	1750.000, 0	9.0	1.34	38.5

Hardware Setup

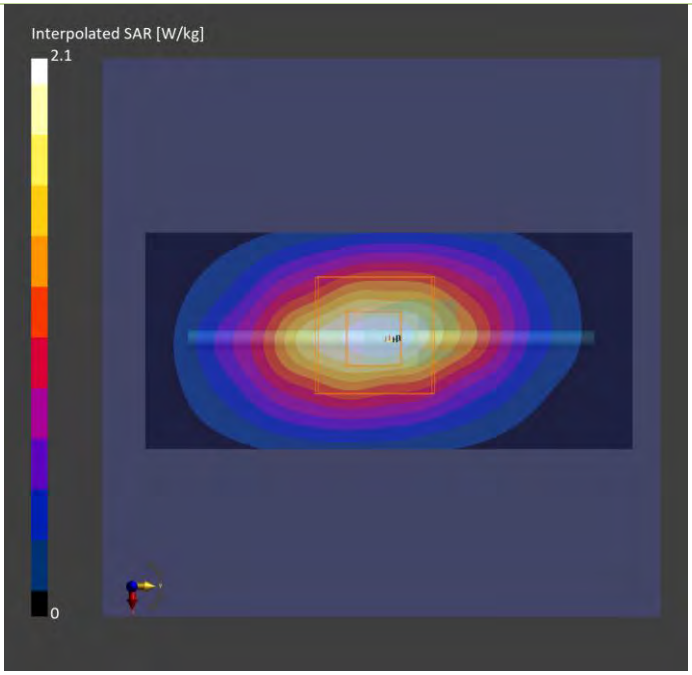
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	45.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	1.69	1.69
psSAR10g [W/kg]	0.906	0.892
Power Drift [dB]	0.00	-0.01



Measurement Report
S19 System Check_H2450_231211
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D2450V2 – SN: 737	10.0 x 10.0 x 300.0		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,	,		CW, 0--	2450.000, 0	7.82	1.77	37.4

Hardware Setup

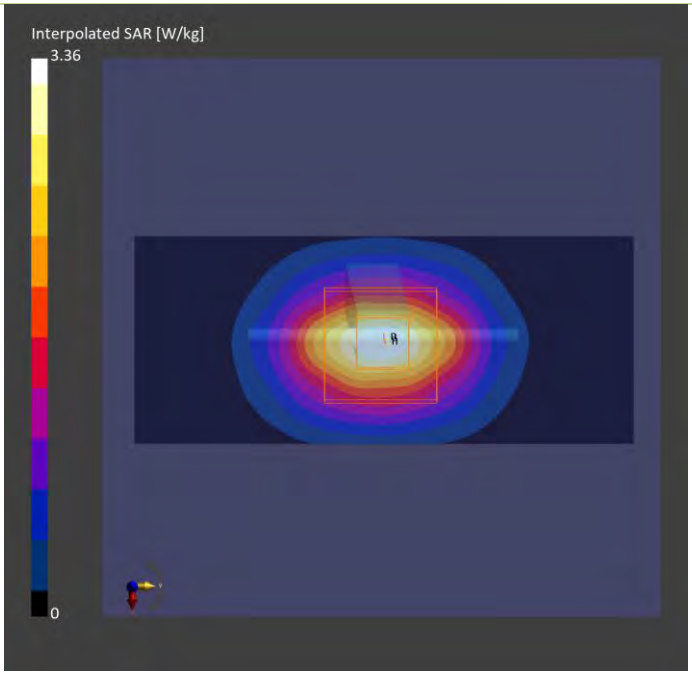
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-11	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	48.0 x 96.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-11	2023-12-11
psSAR1g [W/kg]	2.57	2.51
psSAR10g [W/kg]	1.14	1.13
Power Drift [dB]	-0.00	-0.12



Measurement Report
S20 System Check_H5250_231211
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D5GHzV2 – SN: 1019	10.0 x 10.0 x 300.0		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,	,		CW, 0--	5250.000, 0	5.92	4.35	33.0

Hardware Setup

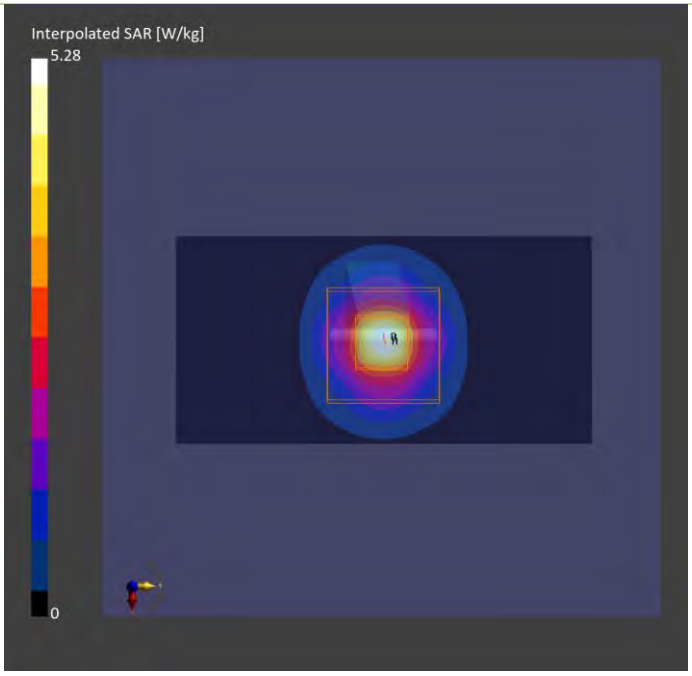
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-11	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-11	2023-12-11
psSAR1g [W/kg]	3.87	4.07
psSAR10g [W/kg]	1.14	1.23
Power Drift [dB]	-0.07	-0.13



Measurement Report
S21 System Check_H5600_231211
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D5GHzV2 – SN: 1019	10.0 x 10.0 x 300.0		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,	,		CW, 0--	5600.000, 0	5.04	4.71	32.5

Hardware Setup

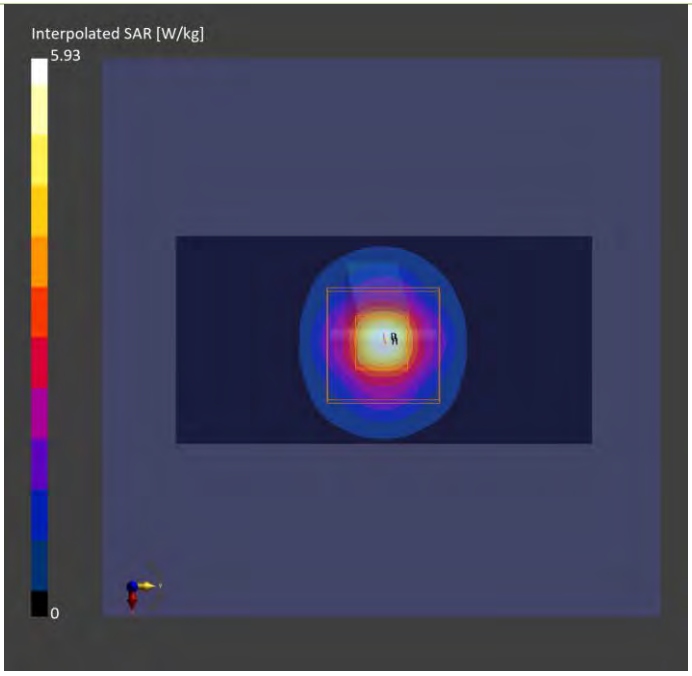
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-11	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 80.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-11	2023-12-11
psSAR1g [W/kg]	3.77	3.91
psSAR10g [W/kg]	1.08	1.17
Power Drift [dB]	-0.01	0.08



Measurement Report
S22 System Check_H5750_231211
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D5GHzV2 – SN: 1145	10.0 x 10.0 x 300.0		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--	5750.0, 0	5.31	4.87	32.2

Hardware Setup

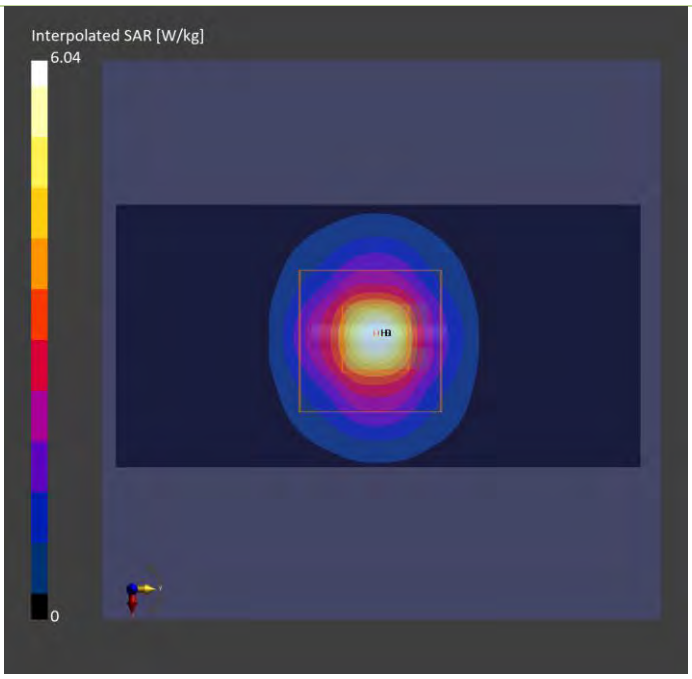
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-11	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	40.0 x 90.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-11	2023-12-11
psSAR1g [W/kg]	3.87	4.01
psSAR10g [W/kg]	1.11	1.17
Power Drift [dB]	0.07	-0.08



Measurement Report
S23 System Check H2450_231213
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Dipole, D2450V2 – SN: 737	10.0 x 10.0 x 300.0		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--	2450.0, 0	7.67	1.85	38.0

Hardware Setup

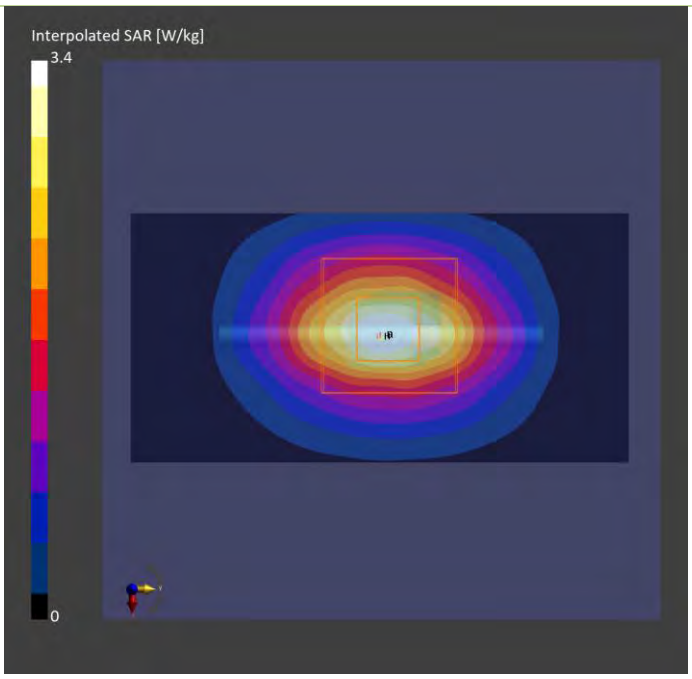
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 1987	H06T27N4 , 2023-Dec-13	EX3DV4 - SN7555, 2023-07-19	DAE4 Sn1585, 2023-07-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	48.0 x 96.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-13	2023-12-13
psSAR1g [W/kg]	2.59	2.63
psSAR10g [W/kg]	1.21	1.22
Power Drift [dB]	0.01	-0.05



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2023/12/18

S24 System Check_H13MHz_231218

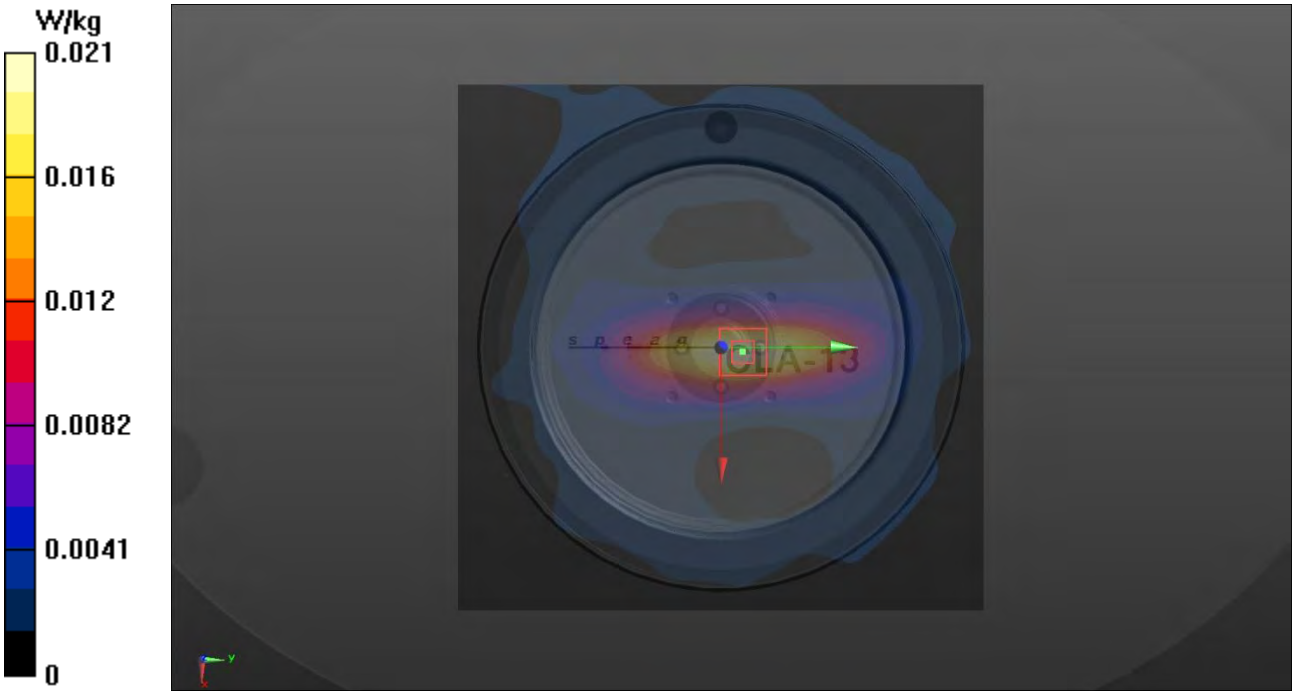
DUT: CLA-13 MHz ;Type: CLA-13 ;SN: 1018

Communication System: UID 10453 - AAD, Validation (Square, 10ms, 1ms); Frequency: 13 MHz;Duty Cycle: 1:10
Medium: H13_1218 Medium parameters used: f = 13 MHz; σ = 0.731 S/m; ε_r = 55.227; ρ = 1000 kg/m^3
Ambient Temperature：22.7 ℃ ； Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7720; ConvF(17.02, 17.02, 17.02) @ 13 MHz; Calibrated: 2023/03/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1761; Calibrated: 2023/11/17
- Phantom: ELI_Phantom_1204; Type: QD OVA 002 Ax; Serial: 1204
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Pin=1W/Area Scan (241x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0205 W/kg

Pin=1W/Zoom Scan (7x7x16)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 5.167 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.0300 W/kg
SAR(1 g) = 0.025 W/kg; SAR(10 g) = 0.017 W/kg (SAR corrected for target medium)
Maximum value of SAR (measured) = 0.0203 W/kg



Appendix B. Plots of Measurement

The SAR plots for highest measured SAR in each exposure configuration, wireless mode and frequency band combination are shown as follows.

Measurement Report
P01 LTE 2_QPSK20M_Front Face_10mm_Ch18900_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231204/001Q01N01	Watch

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,	Front Face, 10.00	Band 2	LTE-FDD, 10169-CAF	1880.000, 18900	8.37	1.41	38.3

Hardware Setup

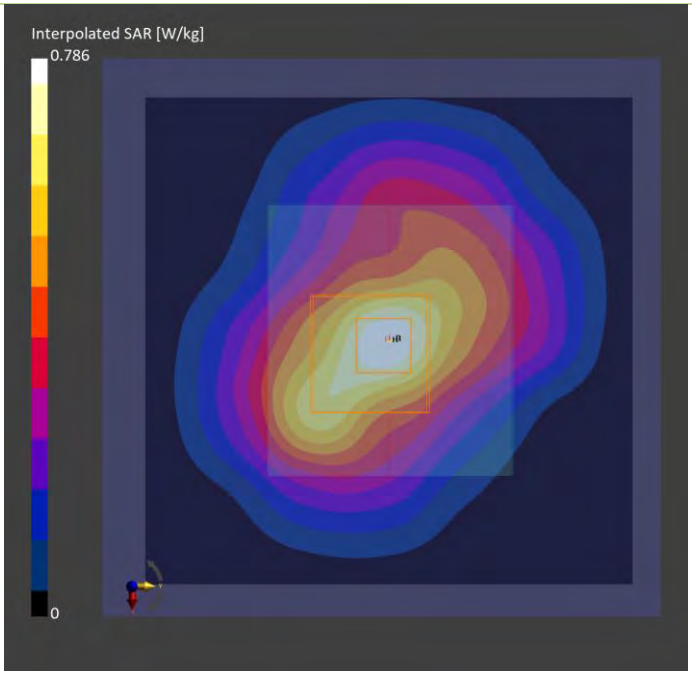
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.622	0.683
psSAR10g [W/kg]	0.350	0.398
Power Drift [dB]	0.06	0.16
M2/M1 [%]		77.8
Dist 3dB Peak [mm]		17.1



Measurement Report
P02 LTE 4_QPSK20M_Front Face_10mm_Ch20175_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231204/001Q01N01	Watch

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,	Front Face, 10.00	Band 4	LTE-FDD, 10169-CAF	1732.500, 20175	9.0	1.33	38.5

Hardware Setup

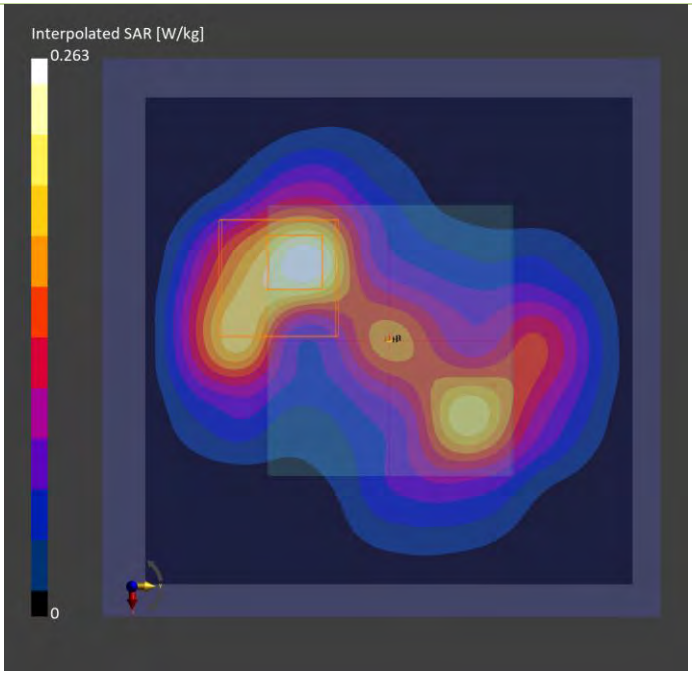
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.199	0.241
psSAR10g [W/kg]	0.105	0.114
Power Drift [dB]	0.05	0.12
M2/M1 [%]		47.8
Dist 3dB Peak [mm]		8.6



Measurement Report
P03 LTE 12_QPSK10M_Front Face_10mm_Ch23095_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231204/001Q01N01	Watch

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,	Front Face, 10.00	Band 12	LTE-FDD, 10175-CAH	707.500, 23095	10.35	0.884	40.5

Hardware Setup

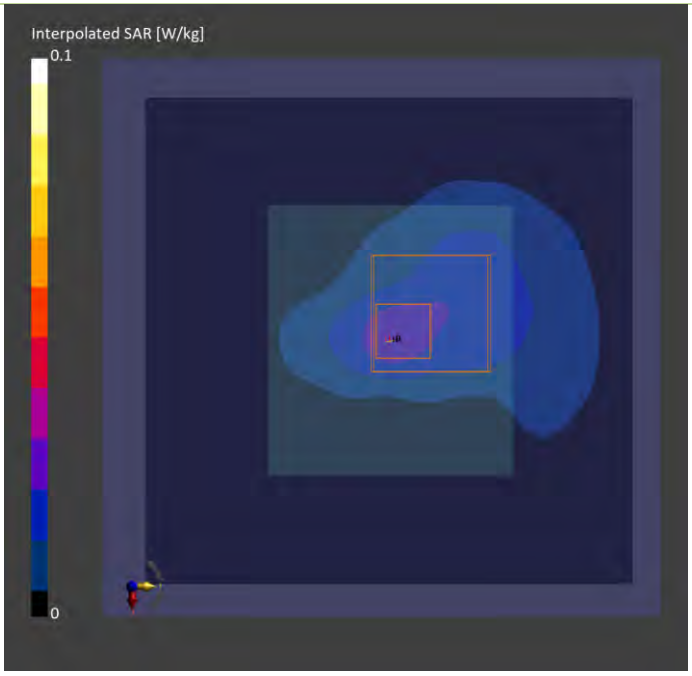
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.025	0.030
psSAR10g [W/kg]	0.015	0.015
Power Drift [dB]	0.11	0.17
M2/M1 [%]		53.8
Dist 3dB Peak [mm]		9.8



Measurement Report
P04 LTE 13_QPSK10M_Front Face_10mm_Ch23230_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231204/001Q01N01	Watch

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,	Front Face, 10.00	Band 13	LTE-FDD, 10175-CAH	782.000, 23230	10.35	0.909	40.3

Hardware Setup

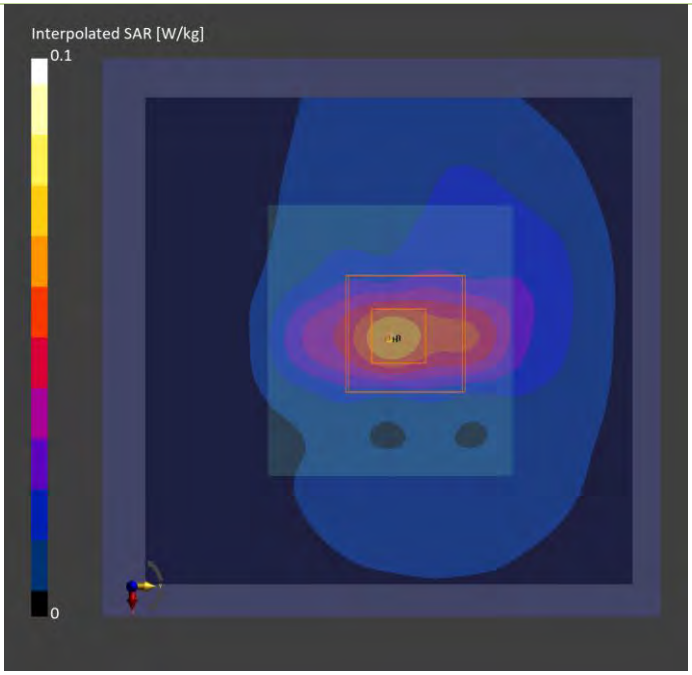
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.053	0.055
psSAR10g [W/kg]	0.029	0.027
Power Drift [dB]	-0.07	-0.02
M2/M1 [%]		53.1
Dist 3dB Peak [mm]		9.6



Measurement Report
P05 LTE 17_QPSK10M_Front Face_10mm_Ch23790_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231204/001Q01N01	Watch

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,	Front Face, 10.00	Band 17	LTE-FDD, 10175-CAH	710.000, 23790	10.35	0.884	40.5

Hardware Setup

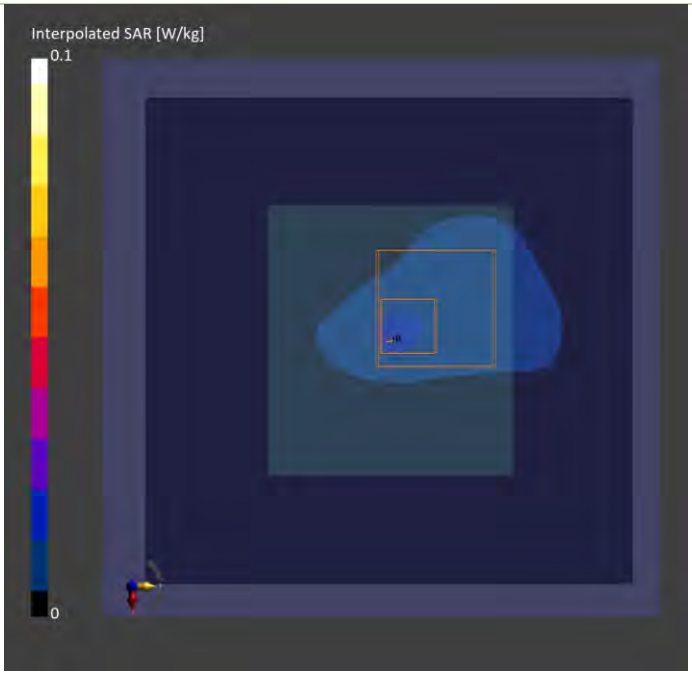
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.015	0.017
psSAR10g [W/kg]	0.009	0.008
Power Drift [dB]	-0.03	-0.18
M2/M1 [%]		48.3
Dist 3dB Peak [mm]		9.4



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
P06 LTE 66_QPSK20M_Front Face_10mm_Ch132322_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231204/001Q01N01	Watch

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,	Front Face, 10.00	Band 66	LTE-FDD, 10169-CAF	1745.000, 132322	9.0	1.34	38.5

Hardware Setup

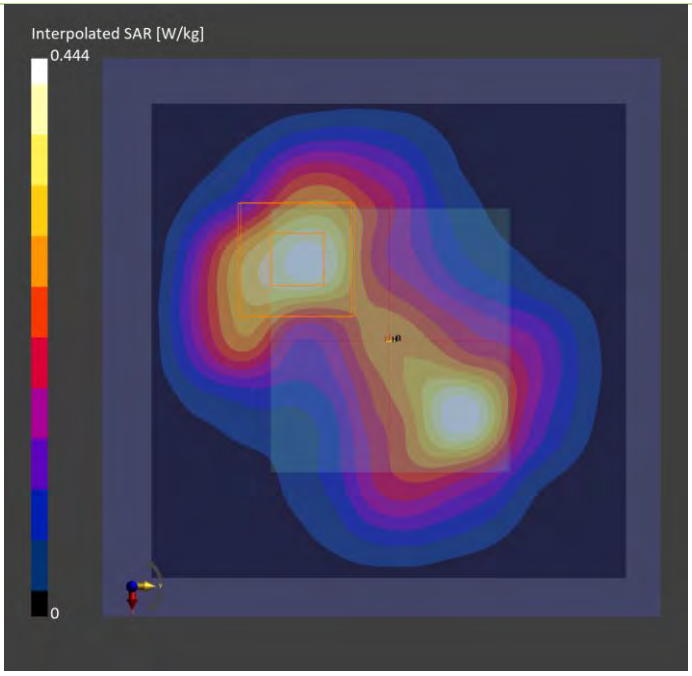
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.345	0.318
psSAR10g [W/kg]	0.191	0.158
Power Drift [dB]	-0.14	-0.16
M2/M1 [%]		50.2
Dist 3dB Peak [mm]		9.1



Measurement Report
P07 WLAN2.4G_802.11b_Front Face_10mm_Ch11_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231114/006Q01N01	Watch

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,	Front Face, 10.00	WLAN 2.4GHz	WLAN, 10012-CAB	2462.000, 11	7.82	1.79	37.5

Hardware Setup

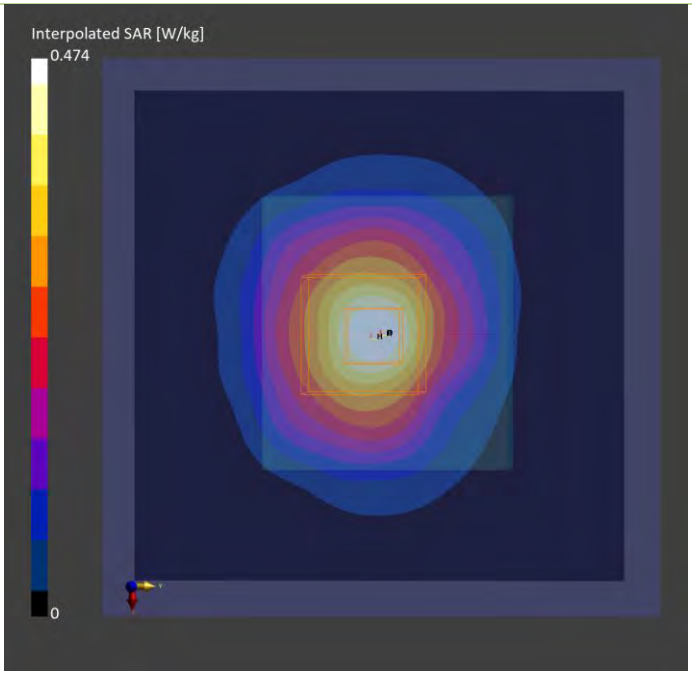
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-08	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	84.0 x 84.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-08	2023-12-08
psSAR1g [W/kg]	0.371	0.384
psSAR10g [W/kg]	0.189	0.209
Power Drift [dB]	-0.10	-0.13
M2/M1 [%]		62.3
Dist 3dB Peak [mm]		13.9



Measurement Report
P08 WLAN5.3G_802.11a_Front Face_10mm_Ch52_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231114/006Q01N01	Watch

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,	Front Face, 10.00	WLAN 5GHz	WLAN, 10062-CAE	5260.000, 52	5.92	4.34	33.0

Hardware Setup

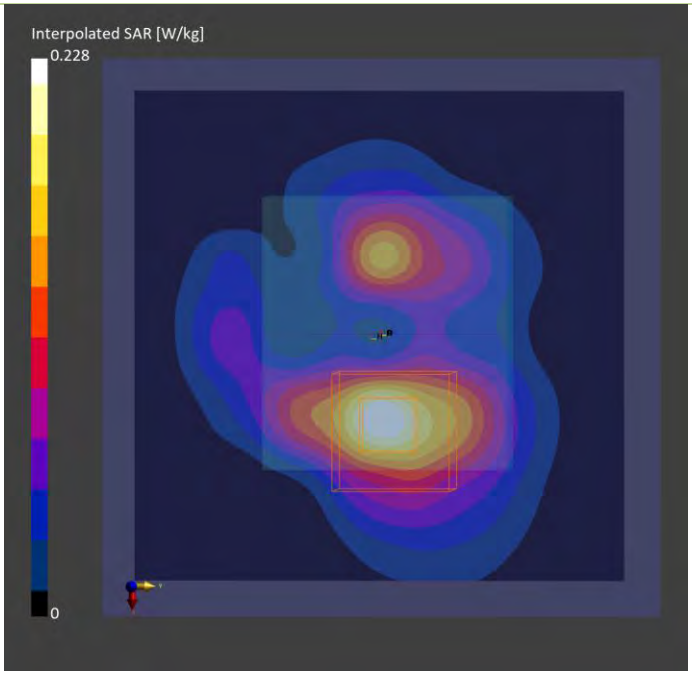
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-08	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-08	2023-12-08
psSAR1g [W/kg]	0.159	0.178
psSAR10g [W/kg]	0.059	0.063
Power Drift [dB]	-0.02	-0.08
M2/M1 [%]		67.3
Dist 3dB Peak [mm]		7.2



Measurement Report
P09 WLAN5.6G_802.11a_Front Face_10mm_Ch100_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231114/006Q01N01	Watch

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,	Front Face, 10.00	WLAN 5GHz	WLAN, 10062-CAE	5500.000, 100	5.04	4.58	32.6

Hardware Setup

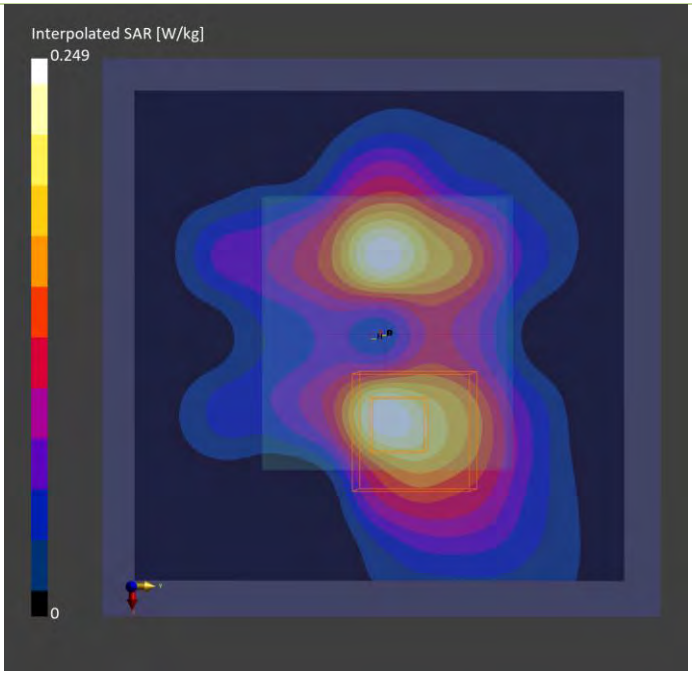
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-08	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-08	2023-12-08
psSAR1g [W/kg]	0.179	0.236
psSAR10g [W/kg]	0.068	0.071
Power Drift [dB]	-0.03	-0.04
M2/M1 [%]		65.2
Dist 3dB Peak [mm]		7.6



Measurement Report
P10 WLAN5.8G_802.11a_Front Face_10mm_Ch165_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231204/001Q01N01	Watch

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,	Front Face, 10.00	WLAN 5GHz	WLAN, 10062-CAE	5825.000, 165	5.31	4.92	32.0

Hardware Setup

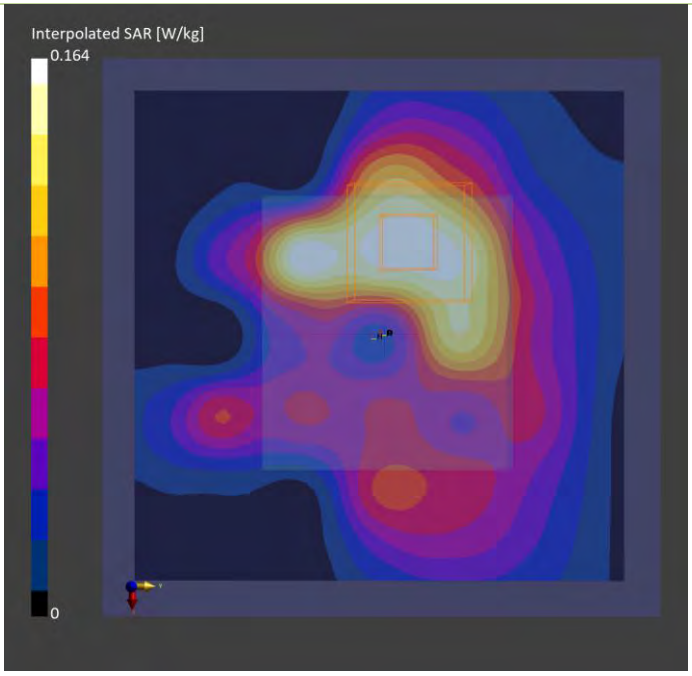
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-08	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-08	2023-12-08
psSAR1g [W/kg]	0.127	0.120
psSAR10g [W/kg]	0.053	0.029
Power Drift [dB]	-0.09	0.08
M2/M1 [%]		62.7
Dist 3dB Peak [mm]		5.9



Measurement Report
P11 BT_BDR_Front Face_10mm_Ch39_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231115/032Q06N01	Watch

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,	Front Face, 10.00	ISM 2.4 GHz Band	Bluetooth, 10032-CAA	2441.000, 39	7.67	1.85	38.0

Hardware Setup

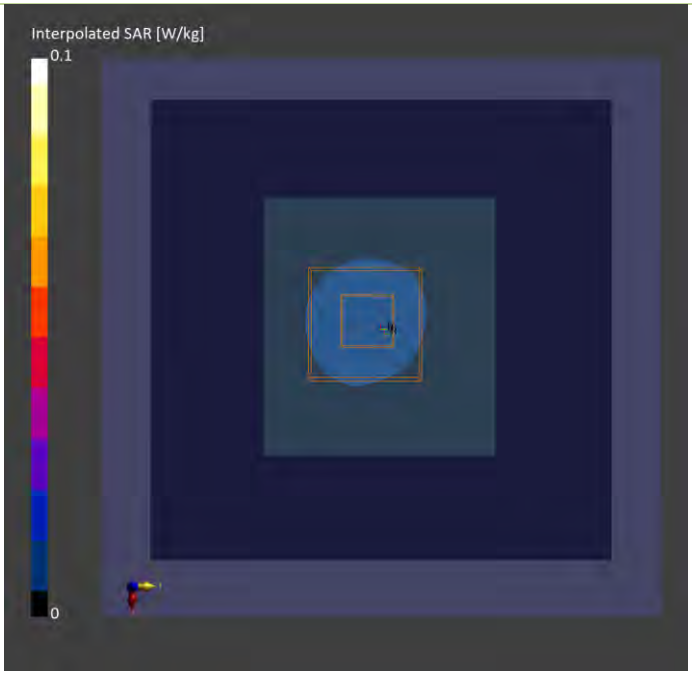
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 1987	H06T27N4 , 2023-Dec-13	EX3DV4 - SN7555, 2023-07-19	DAE4 Sn1585, 2023-07-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	84.0 x 84.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-13	2023-12-13
psSAR1g [W/kg]	0.01	0.010
psSAR10g [W/kg]	0.005	0.006
Power Drift [dB]	0.03	-0.12
M2/M1 [%]		57.3
Dist 3dB Peak [mm]		11.5



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2023/12/18

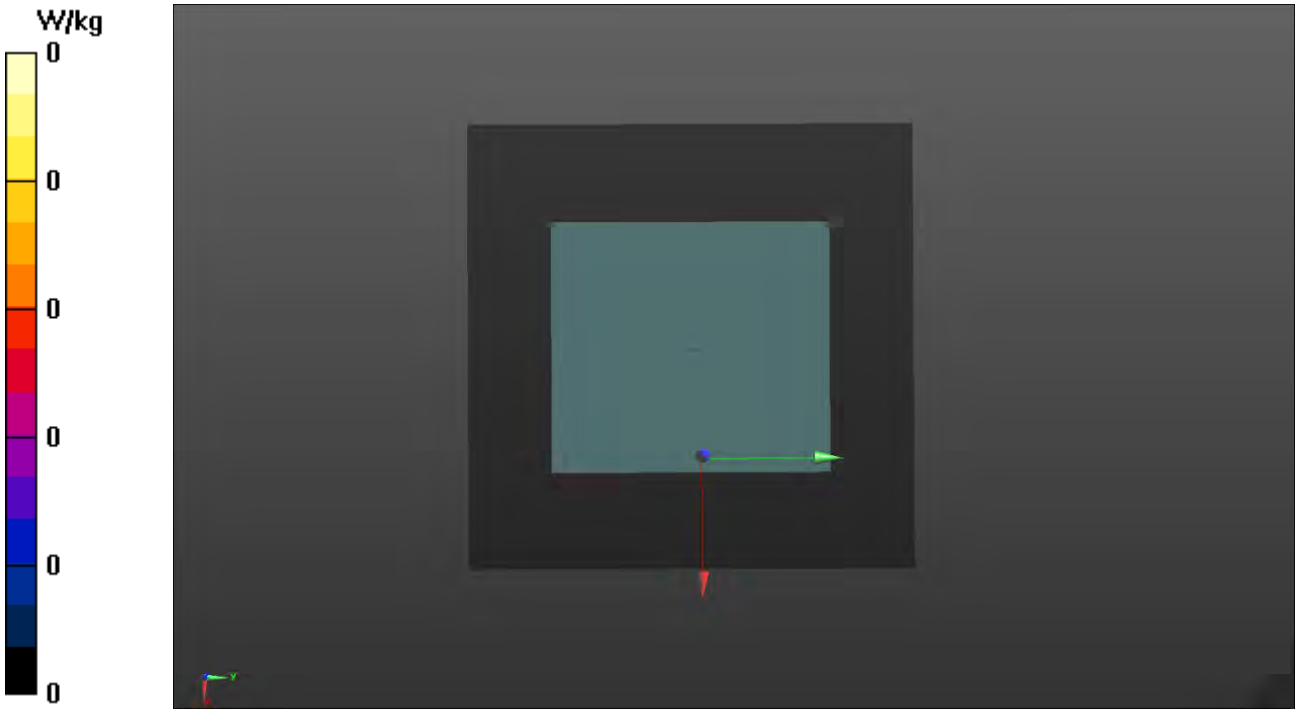
P12 NFC_ASK_Front Face_10mm_Ch1

DUT: BEDV-WTW-P23090682

Communication System: UID 0, CW (0); Frequency: 13.56 MHz;Duty Cycle: 1:1
Medium: H13_1218 Medium parameters used (interpolated): f = 13.56 MHz; σ = 0.731 S/m; ε_r = 55.12; ρ = 1000 kg/m^3
Ambient Temperature：22.6 ℃ ； Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7720; ConvF(17.02, 17.02, 17.02) @ 13.56 MHz; Calibrated: 2023/03/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1761; Calibrated: 2023/11/17
- Phantom: ELI_Phantom_1204; Type: QD OVA 002 Ax; Serial: 1204
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0 W/kg



Measurement Report
P13 LTE 2_QPSK20M_Rear Face_0mm_Ch18700_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231205/021Q05N01	Watch

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,	Rear Face, 0.00	Band 2	LTE-FDD, 10169-CAF	1860.000, 18700	8.37	1.40	38.3

Hardware Setup

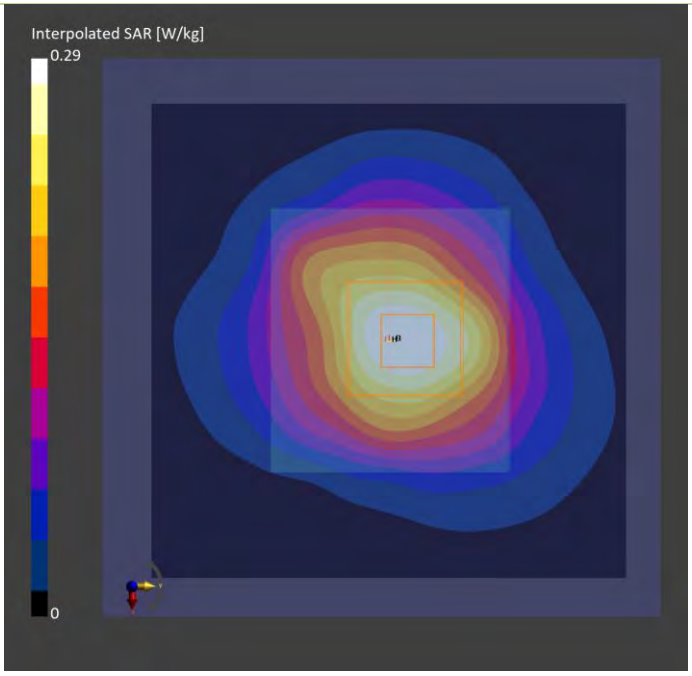
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.243	0.249
psSAR10g [W/kg]	0.142	0.151
Power Drift [dB]	0.02	-0.13
M2/M1 [%]		68.2
Dist 3dB Peak [mm]		13.8



Measurement Report
P14 LTE 4_QPSK20M_Rear Face_0mm_Ch20175_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231205/021Q05N01	Watch

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,	Rear Face, 0.00	Band 4	LTE-FDD, 10169-CAF	1732.500, 20175	9.0	1.33	38.5

Hardware Setup

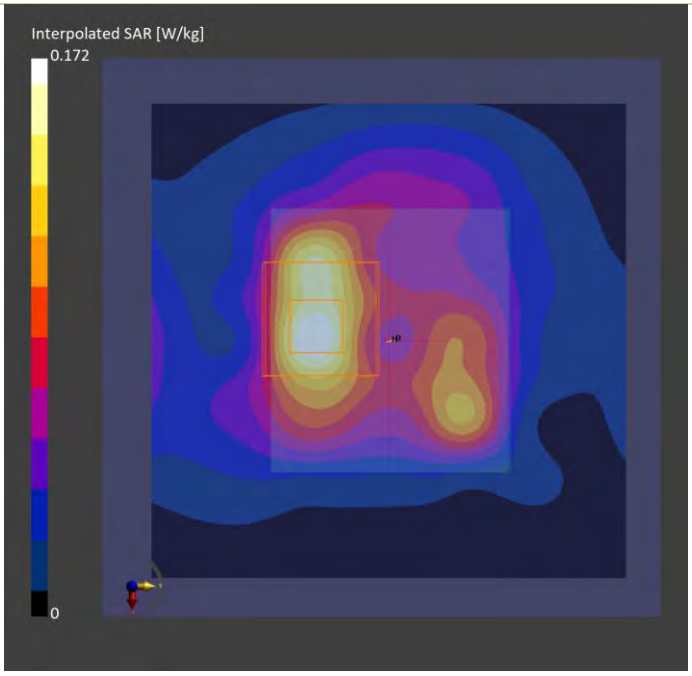
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.133	0.141
psSAR10g [W/kg]	0.070	0.078
Power Drift [dB]	0.01	0.08
M2/M1 [%]		64.6
Dist 3dB Peak [mm]		9.4



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
P15 LTE 12_QPSK10M_Rear Face_0mm_Ch23060_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231204/001Q01N01	Watch

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,	Rear Face, 0.00	Band 12	LTE-FDD, 10175-CAH	704.000, 23060	10.35	0.883	40.5

Hardware Setup

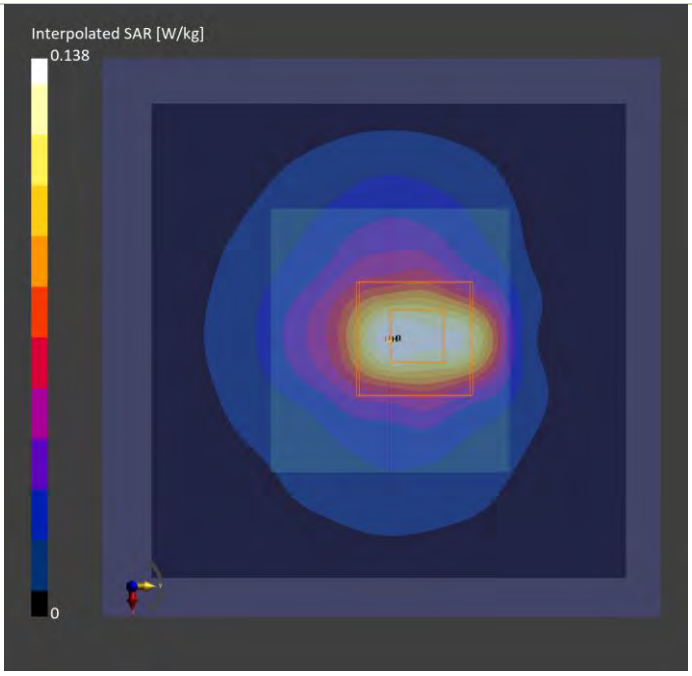
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.118	0.156
psSAR10g [W/kg]	0.067	0.062
Power Drift [dB]	0.01	0.01
M2/M1 [%]		37.7
Dist 3dB Peak [mm]		8.4



Measurement Report
P16 LTE 13_QPSK10M_Rear Face_0mm_Ch23230_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231204/001Q01N01	Watch

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,	Rear Face, 0.00	Band 13	LTE-FDD, 10175-CAH	782.000, 23230	10.35	0.909	40.3

Hardware Setup

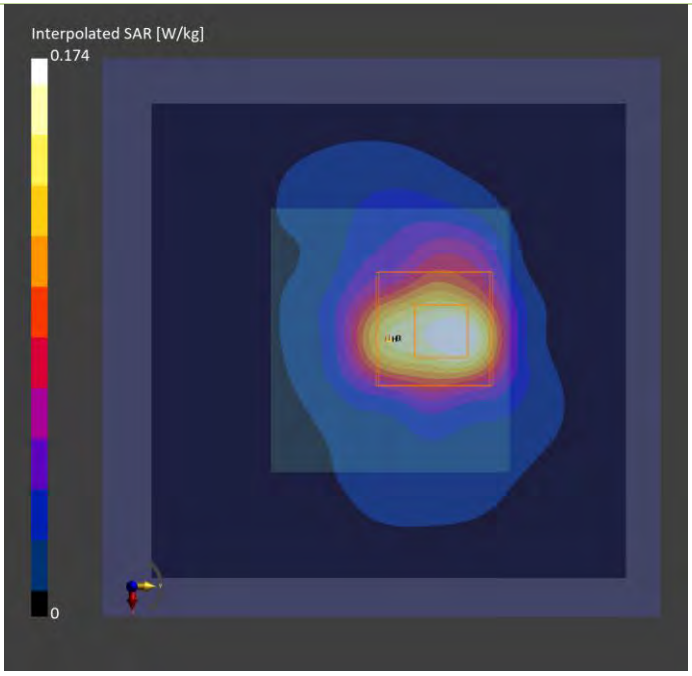
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.148	0.190
psSAR10g [W/kg]	0.082	0.074
Power Drift [dB]	0.04	0.07
M2/M1 [%]		31.1
Dist 3dB Peak [mm]		8.4



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
P17 LTE 17_QPSK10M_Rear Face_0mm_Ch23790_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231204/001Q01N01	Watch

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,	Rear Face, 0.00	Band 17	LTE-FDD, 10175-CAH	710.000, 23790	10.35	0.884	40.5

Hardware Setup

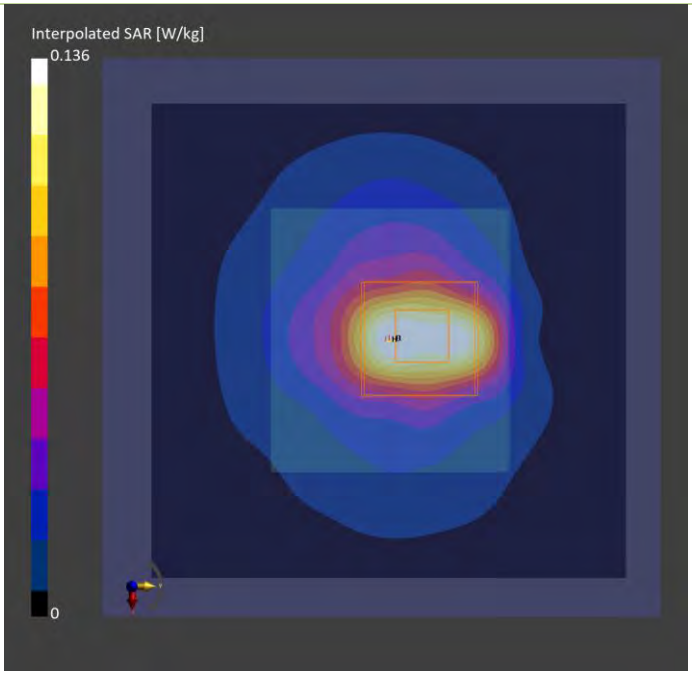
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.117	0.152
psSAR10g [W/kg]	0.067	0.060
Power Drift [dB]	-0.05	0.09
M2/M1 [%]		37.5
Dist 3dB Peak [mm]		8.2



Measurement Report
P18 LTE 66_QPSK20M_Rear Face_0mm_Ch132322_1RB_OS0_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231205/021Q05N01	Watch

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,	Rear Face, 0.00	Band 66	LTE-FDD, 10169-CAF	1745.000, 132322	9.0	1.34	38.5

Hardware Setup

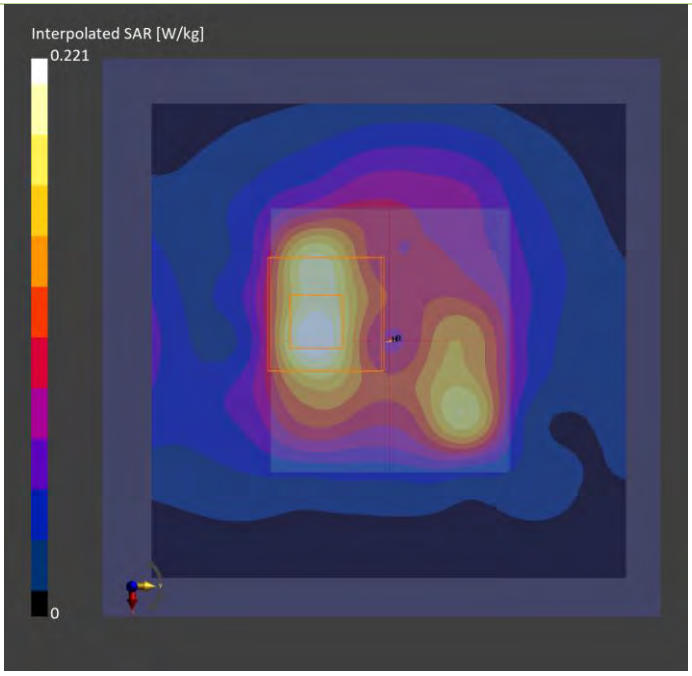
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-07	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	32.0 x 32.0 x 30.0
Grid Steps [mm]	15.0 x 15.0	8.0 x 8.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-07	2023-12-07
psSAR1g [W/kg]	0.171	0.190
psSAR10g [W/kg]	0.091	0.106
Power Drift [dB]	0.08	0.03
M2/M1 [%]		63.8
Dist 3dB Peak [mm]		9.1



Measurement Report
P19 WLAN2.4G_802.11b_Rear Face_0mm_Ch1_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231115/032Q06N01	Watch

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,	Rear Face, 0.00	WLAN 2.4GHz	WLAN, 10012-CAB	2412.000, 1	7.82	1.76	37.6

Hardware Setup

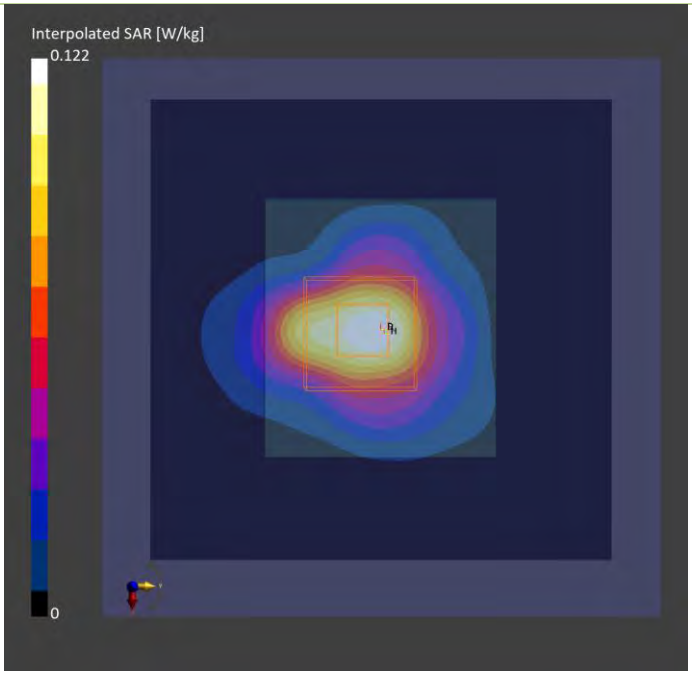
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H06T27N9 , 2023-Dec-11	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	84.0 x 84.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-11	2023-12-11
psSAR1g [W/kg]	0.097	0.095
psSAR10g [W/kg]	0.046	0.049
Power Drift [dB]	0.10	-0.07
M2/M1 [%]		42.9
Dist 3dB Peak [mm]		9.9



Measurement Report
P20 WLAN5.3G_802.11a_Rear Face_0mm_Ch52_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231115/032Q06N01	Watch

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,	Rear Face, 0.00	WLAN 5GHz	WLAN, 10062-CAE	5260.000, 52	5.92	4.34	33.0

Hardware Setup

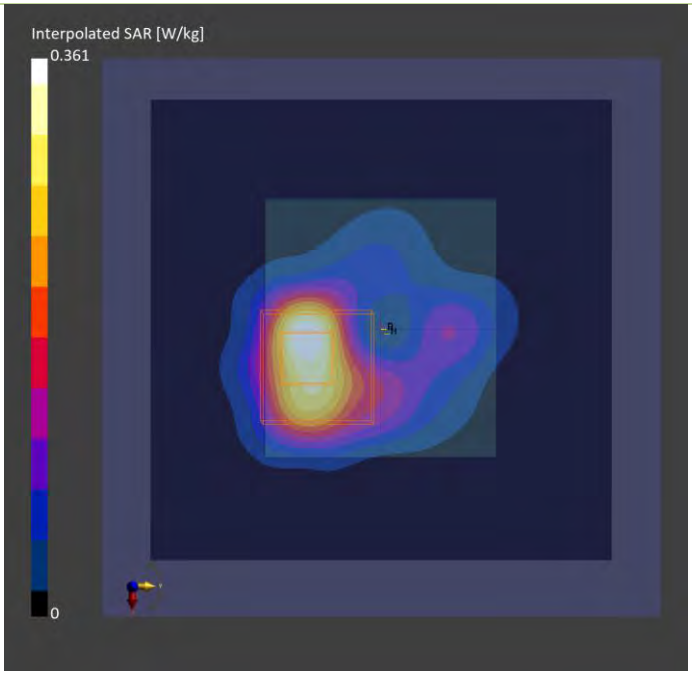
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-11	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-11	2023-12-11
psSAR1g [W/kg]	0.250	0.318
psSAR10g [W/kg]	0.089	0.088
Power Drift [dB]	-0.08	-0.03
M2/M1 [%]		64.8
Dist 3dB Peak [mm]		6.6



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
P21 WLAN5.6G_802.11a_Rear Face_0mm_Ch116_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231115/032Q06N01	Watch

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,	Rear Face, 0.00	WLAN 5GHz	WLAN, 10062-CAE	5580.000, 116	5.04	4.66	32.4

Hardware Setup

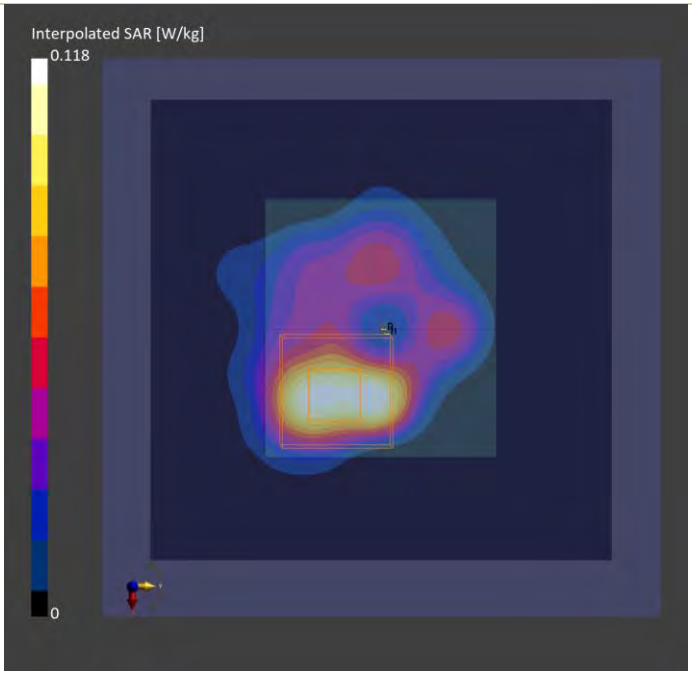
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-11	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-11	2023-12-11
psSAR1g [W/kg]	0.083	0.137
psSAR10g [W/kg]	0.028	0.024
Power Drift [dB]	0.03	0.05
M2/M1 [%]		59.9
Dist 3dB Peak [mm]		5.7



Measurement Report
P22 WLAN5.8G_802.11a_Rear Face_0mm_Ch165_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231115/032Q06N01	Watch

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,	Rear Face, 0.00	WLAN 5GHz	WLAN, 10062-CAE	5825.000, 165	5.31	4.92	32.0

Hardware Setup

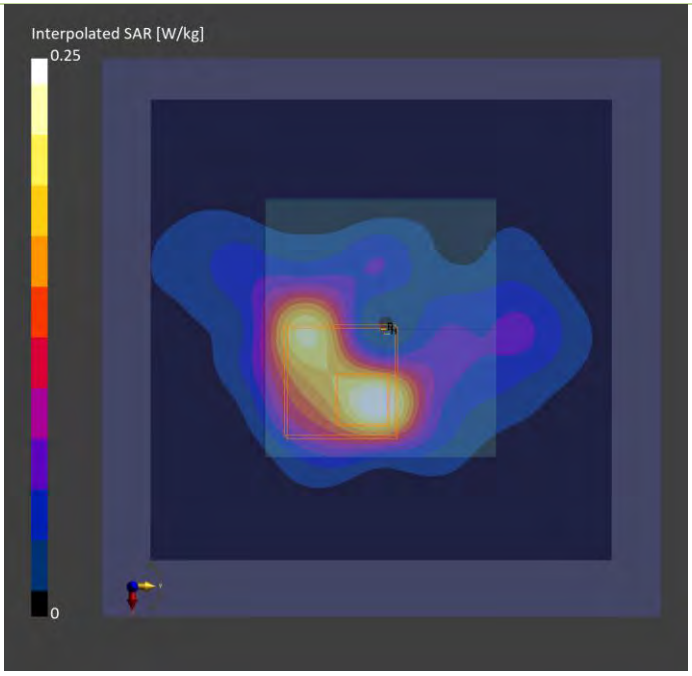
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 2122	H51T72N9 , 2023-Dec-11	EX3DV4 - SN7472, 2023-10-23	DAE4 Sn1590, 2023-09-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	90.0 x 90.0	24.0 x 24.0 x 22.0
Grid Steps [mm]	10.0 x 10.0	4.0 x 4.0 x 1.4
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-11	2023-12-11
psSAR1g [W/kg]	0.149	0.198
psSAR10g [W/kg]	0.055	0.047
Power Drift [dB]	0.14	-0.12
M2/M1 [%]		61.3
Dist 3dB Peak [mm]		5.7



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Report
P23 BT_BDR_Rear Face_0mm_Ch39_Ant 0
Device under Test Properties

Model, Manufacturer	Dimensions [mm]	IMEI	DUT Type
Freedom Watch	45.0 x 50.0 x 17.0	WTW231115/032Q06N01	Watch

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,	Rear Face, 0.00	ISM 2.4 GHz Band	Bluetooth, 10032-CAA	2441.000, 39	7.67	1.85	38.0

Hardware Setup

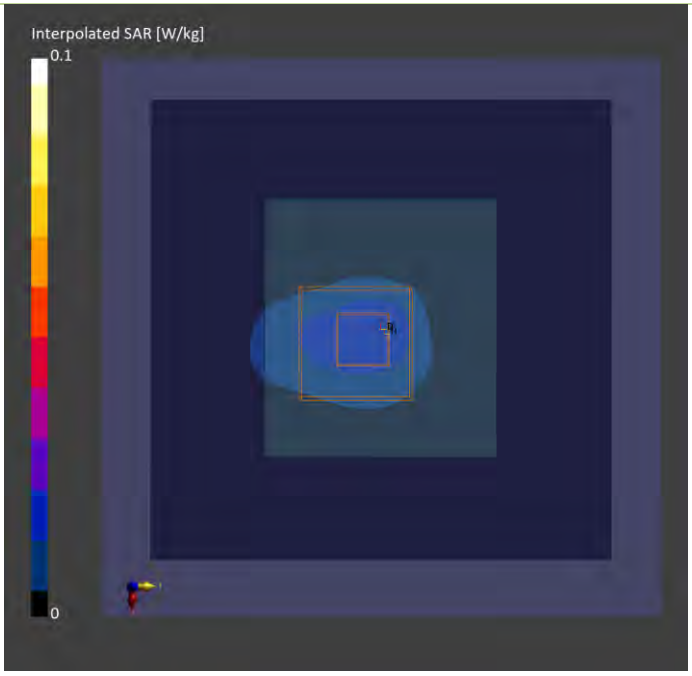
Phantom	TSL, Measured Date	Probe, Calibration Date	DAE, Calibration Date
Twin-SAM V8.0 (30deg probe tilt) - 1987	H06T27N4 , 2023-Dec-13	EX3DV4 - SN7555, 2023-07-19	DAE4 Sn1585, 2023-07-14

Scan Setup

	Area Scan	Zoom Scan
Grid Extents [mm]	84.0 x 84.0	30.0 x 30.0 x 30.0
Grid Steps [mm]	12.0 x 12.0	5.0 x 5.0 x 5.0
Sensor Surface [mm]	3.0	1.4

Measurement Results

	Area Scan	Zoom Scan
Date	2023-12-13	2023-12-13
psSAR1g [W/kg]	0.019	0.017
psSAR10g [W/kg]	0.009	0.008
Power Drift [dB]	-0.03	0.18
M2/M1 [%]		56.1
Dist 3dB Peak [mm]		8.1



Test Laboratory: Bureau Veritas ADT SAR/HAC Testing Lab Date: 2023/12/18

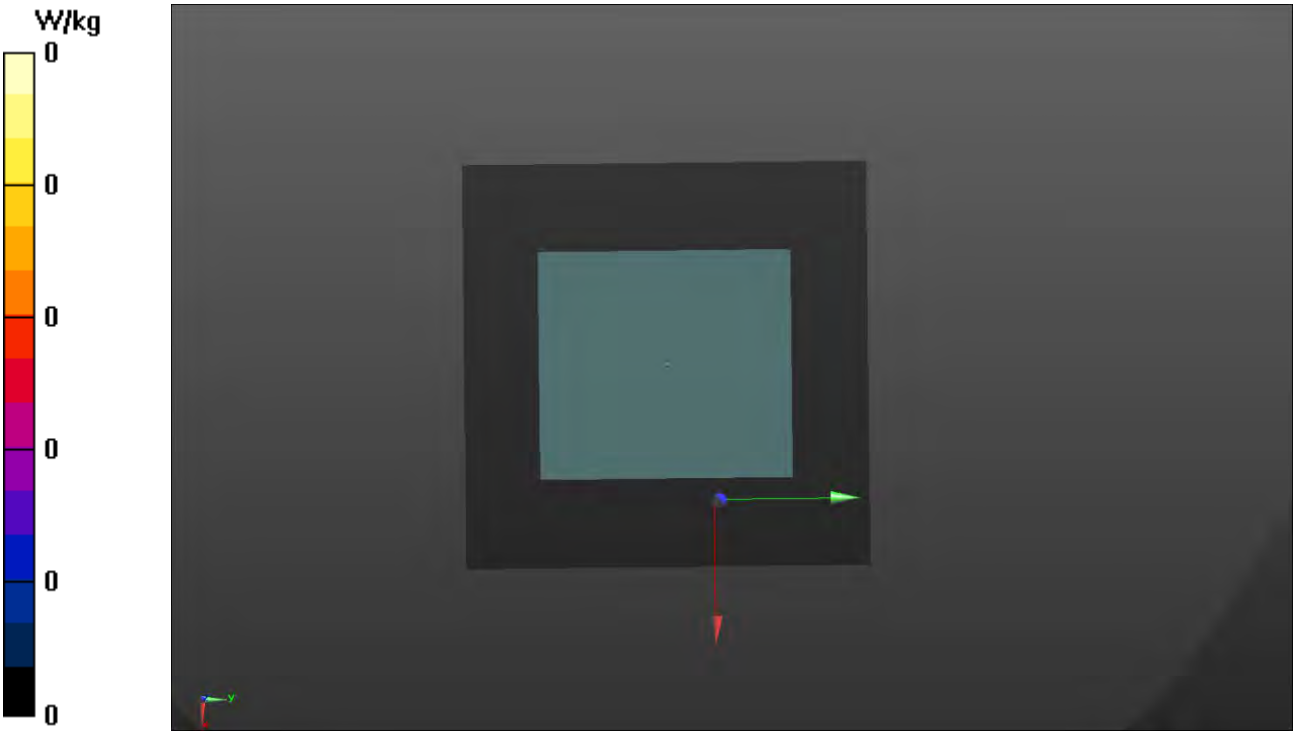
P24 NFC_ASK_Rear Face_0mm_Ch1

DUT: BEDV-WTW-P23090682

Communication System: UID 0, CW (0); Frequency: 13.56 MHz;Duty Cycle: 1:1
Medium: H13_1218 Medium parameters used (interpolated): f = 13.56 MHz; σ = 0.731 S/m; ε_r = 55.12; ρ = 1000 kg/m^3
Ambient Temperature：22.6 ℃ ； Liquid Temperature：21.7 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7720; ConvF(17.02, 17.02, 17.02) @ 13.56 MHz; Calibrated: 2023/03/23
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1761; Calibrated: 2023/11/17
- Phantom: ELI_Phantom_1204; Type: QD OVA 002 Ax; Serial: 1204
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

Area Scan (81x81x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0 W/kg



Appendix C. Tissue & System Verification

The measuring results for tissue simulating liquid and system check are shown as below.

Note:

1. For Section 4.3, the dielectric properties of the tissue simulating liquid have been measured within 24 hours before the SAR testing and within ±10 % of the target values. Liquid temperature during the SAR testing has kept within ±2 °C.

2. For Section 4.4, The SAR measurement system was validated according to procedures in FCC KDB 865664 D01. The validation status in tabulated summary is as below.

3. For Section 4.5, Comparing to the reference SAR value provided by SPEAG in dipole calibration certificate, the deviation of system check results is within its specification of 10 %. The result indicates the system check can meet the variation criterion and the plots please refer to Appendix A of this report.

Tissue Verification									Validation for CW			Validation for Modulation				System Check					Note			
Plot No.	Frequency (MHz)	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (εr)	Targeted Conductivity (σ)	Targeted Permittivity (εr)	Deviation Conductivity (σ)	Deviation Permittivity (εr)	Sensitivity Range	Probe Linearity	Probe Isotropy	Modulation Type	Duty Factor	PAR	Date	Frequency (MHz)	Targeted 1g SAR (W/kg)	Measured 1g SAR (W/kg)	Normalized 1g SAR (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N	Output Power (dBm)
S01	1900	21.7	1.43	38.2	1.4	40	2.14	-4.50	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	1900	39.30	2.05	40.90	4.08	5d036	7472	1590	17
S02	1750	21.7	1.34	38.5	1.37	40.1	-2.19	-3.99	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	1750	36.30	1.69	33.72	-7.11	1055	7472	1590	17
S03	750	21.7	0.898	40.4	0.9	42	-0.22	-3.81	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	750	8.56	0.422	8.42	-1.64	1013	7472	1590	17
S04	750	21.7	0.898	40.4	0.9	42	-0.22	-3.81	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	750	8.56	0.422	8.42	-1.64	1013	7472	1590	17
S05	750	21.7	0.898	40.4	0.9	42	-0.22	-3.81	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	750	8.56	0.422	8.42	-1.64	1013	7472	1590	17
S06	1750	21.7	1.34	38.5	1.37	40.1	-2.19	-3.99	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	1750	36.30	1.69	33.72	-7.11	1055	7472	1590	17
S07	2450	22.1	1.78	37.5	1.8	39.2	-1.11	-4.34	Pass	Pass	Pass	OFDM	N/A	Pass	Dec. 08, 2023	2450	50.40	2.53	50.48	0.16	737	7472	1590	17
S08	5250	22.1	4.33	33	4.71	35.9	-8.07	-8.08	Pass	Pass	Pass	OFDM	N/A	Pass	Dec. 08, 2023	5250	80.10	4.03	80.41	0.39	1019	7472	1590	17
S09	5600	22.1	4.69	32.4	5.07	35.5	-7.50	-8.73	Pass	Pass	Pass	OFDM	N/A	Pass	Dec. 08, 2023	5600	83.00	3.87	77.22	-6.97	1019	7472	1590	17
S10	5750	22.1	5.22	35.4	5.22	35.4	0.00	0.00	Pass	Pass	Pass	OFDM	N/A	Pass	Dec. 08, 2023	5750	77.90	4.04	80.61	3.48	1145	7472	1590	17
S11	2450	22.2	1.85	38	1.8	39.2	2.78	-3.06	Pass	Pass	Pass	OFDM	N/A	Pass	Dec. 13, 2023	2450	50.40	2.63	52.48	4.12	737	7555	1585	17
S12	13	22.3	0.731	55.227	0.75	55	-2.53	0.41	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 18, 2023	13	0.538	0.025	0.50	-7.28	1018	7720	1761	17

Tissue Verification									Validation for CW			Validation for Modulation				System Check					Note			
Plot No.	Frequency (MHz)	Liquid Temp. (℃)	Conductivity (σ)	Permittivity (εr)	Targeted Conductivity (σ)	Targeted Permittivity (εr)	Deviation Conductivity (σ)	Deviation Permittivity (εr)	Sensitivity Range	Probe Linearity	Probe Isotropy	Modulation Type	Duty Factor	PAR	Date	Frequency (MHz)	Targeted 10g SAR (W/kg)	Measured 10g SAR (W/kg)	Normalized 10g SAR (W/kg)	Deviation (%)	Dipole S/N	Probe S/N	DAE S/N	Output Power (dBm)
S13	1900	21.7	1.43	38.2	1.4	40	2.14	-4.50	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	1900	20.50	1.06	21.15	3.17	5d036	7472	1590	17
S14	1750	21.7	1.34	38.5	1.37	40.1	-2.19	-3.99	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	1750	19.20	0.892	17.80	-7.30	1055	7472	1590	17
S15	750	21.7	0.898	40.4	0.9	42	-0.22	-3.81	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	750	5.61	0.276	5.51	-1.84	1013	7472	1590	17
S16	750	21.7	0.898	40.4	0.9	42	-0.22	-3.81	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	750	5.61	0.276	5.51	-1.84	1013	7472	1590	17
S17	750	21.7	0.898	40.4	0.9	42	-0.22	-3.81	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	750	5.61	0.276	5.51	-1.84	1013	7472	1590	17
S18	1750	21.7	1.34	38.5	1.37	40.1	-2.19	-3.99	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 07, 2023	1750	19.20	0.892	17.80	-7.30	1055	7472	1590	17
S19	2450	22.1	1.77	37.4	1.8	39.2	-1.67	-4.59	Pass	Pass	Pass	OFDM	N/A	Pass	Dec. 11, 2023	2450	23.70	1.13	22.55	-4.87	737	7472	1590	17
S20	5250	22.1	4.35	33	4.71	35.9	-7.64	-8.08	Pass	Pass	Pass	OFDM	N/A	Pass	Dec. 11, 2023	5250	22.90	1.23	24.54	7.17	1019	7472	1590	17
S21	5600	22.1	4.71	32.5	5.07	35.5	-7.10	-8.45	Pass	Pass	Pass	OFDM	N/A	Pass	Dec. 11, 2023	5600	23.70	1.17	23.34	-1.50	1019	7472	1590	17
S22	5750	22.1	4.87	32.2	5.22	35.4	-6.70	-9.04	Pass	Pass	Pass	OFDM	N/A	Pass	Dec. 11, 2023	5750	21.80	1.17	23.34	7.09	1145	7472	1590	17
S23	2450	22.2	1.85	38	1.8	39.2	2.78	-3.06	Pass	Pass	Pass	OFDM	N/A	Pass	Dec. 13, 2023	2450	23.70	1.22	24.34	2.71	737	7555	1585	17
S24	13	22.3	0.731	55.227	0.75	55	-2.53	0.41	Pass	Pass	Pass	N/A	N/A	N/A	Dec. 18, 2023	13	0.337	0.017	0.34	0.65	1018	7720	1761	17

Appendix D. Maximum Target Conducted Power

The maximum conducted average power (Unit: dBm) including tune-up tolerance is shown as below.

LTE Max. Tune-up Power (Full)			
Mode	QPSK	16QAM	64QAM
	Maximum Target Power	Maximum Target Power	Maximum Target Power
LTE 2	22.5	21.5	20.5
LTE 4	23.0	22.0	21.0
LTE 12	22.5	21.5	20.5
LTE 13	22.5	21.5	20.5
LTE 17	22.5	21.5	20.5
LTE 66	22.5	21.5	20.5

Tune-up Power (Full)			
WLAN 2.4GHz			
Mode	Channel	Frequency	SISO Ant 0 Max Tune up
802.11b	1	2412	19.0
	6	2437	19.0
	11	2462	19.0
802.11g	1	2412	20.0
	6	2437	20.0
	11	2462	20.0
802.11n HT20	1	2412	19.0
	6	2437	19.0
	11	2462	19.0
802.11n HT40	3	2422	18.0
	6	2437	18.0
	9	2452	18.0
802.11ac VHT20	1	2412	19.0
	6	2437	19.0
	11	2462	19.0
802.11ac VHT40	3	2422	18.0
	6	2437	18.0
	9	2452	18.0

Tune-up Power (Full)			
Bluetooth			
Mode	Channel	Frequency	Ant 0 Max Tune-up
BR / EDR	0	2402	13.0
	39	2441	13.0
	78	2480	13.0
LE	0	2402	6.0
	19	2440	6.0
	39	2480	8.0

Tune-up Power (Full)			
WLAN 5.2GHz			
Mode	Channel	Frequency	SISO Ant 0 Max Tune up
802.11a	36	5180	20.0
	40	5200	20.0
	44	5220	20.0
	48	5240	20.0
802.11n HT20	36	5180	20.0
	40	5200	20.0
	44	5220	20.0
	48	5240	20.0
802.11n HT40	38	5190	19.0
	46	5230	19.0
802.11ac VHT20	36	5180	20.0
	40	5200	20.0
	44	5220	20.0
	48	5240	20.0
802.11ac VHT40	38	5190	19.0
	46	5230	19.0
802.11ac VHT80	42	5210	16.5

Tune-up Power (Full)			
WLAN 5.3GHz			
Mode	Channel	Frequency	SISO Ant 0 Max Tune up
802.11a	52	5260	20.0
	56	5280	20.0
	60	5300	20.0
	64	5320	20.0
802.11n HT20	52	5260	20.0
	56	5280	20.0
	60	5300	20.0
	64	5320	20.0
802.11n HT40	54	5270	19.0
	62	5310	19.0
802.11ac VHT20	52	5260	20.0
	56	5280	20.0
	60	5300	20.0
	64	5320	20.0
802.11ac VHT40	54	5270	19.0
	62	5310	19.0
802.11ac VHT80	58	5290	18.5

Tune-up Power (Full)			
WLAN 5.6GHz			
Mode	Channel	Frequency	SISO Ant 0 Max Tune up
802.11a	100	5500	20.0
	116	5580	20.0
	120	5600	20.0
	124	5620	20.0
	132	5660	20.0
	140	5700	20.0
	144	5720	20.0
802.11n HT20	100	5500	20.0
	116	5580	20.0
	120	5600	20.0
	124	5620	20.0
	132	5660	20.0
	140	5700	20.0
	144	5720	20.0
802.11n HT40	102	5510	19.0
	110	5550	19.0
	118	5590	19.0
	126	5630	19.0
	134	5670	19.0
	142	5710	19.0
802.11ac VHT20	100	5500	20.0
	116	5580	20.0
	120	5600	20.0
	124	5620	20.0
	132	5660	20.0
	140	5700	20.0
	144	5720	20.0
802.11ac VHT40	102	5510	19.0
	110	5550	19.0
	118	5590	19.0
	126	5630	19.0
	134	5670	19.0
	142	5710	19.0
802.11ac VHT80	106	5530	19.0
	122	5610	19.0
	138	5690	19.0

Tune-up Power (Full)			
WLAN 5.8GHz			
Mode	Channel	Frequency	SISO Ant 0 Max Tune up
802.11a	149	5745	20.0
	153	5765	20.0
	157	5785	20.0
	161	5805	20.0
	165	5825	20.0
802.11n HT20	149	5745	20.0
	153	5765	20.0
	157	5785	20.0
	161	5805	20.0
	165	5825	20.0
802.11n HT40	151	5755	19.0
	159	5795	19.0
802.11ac VHT20	149	5745	20.0
	153	5765	20.0
	157	5785	20.0
	161	5805	20.0
	165	5825	20.0
802.11ac VHT40	151	5755	19.0
	159	5795	19.0
802.11ac VHT80	155	5775	19.0

Appendix E. Measured Conducted Power Result

The measuring conducted power (Unit: dBm) are shown as below.

LTE Conducted Power (Full)							
LTE Band 2							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		18700	18900	19100	
		Frequence (MHz)		1860	1880	1900	
20M	QPSK	1	0	22.37	22.43	22.32	0
		1	50	22.32	22.41	22.39	0
		1	99	22.31	22.37	22.32	0
		50	0	21.47	21.48	21.43	1
		50	25	21.42	21.42	21.40	1
		50	50	21.36	21.37	21.31	1
		100	0	21.32	21.41	21.38	1
20M	16QAM	1	0	21.41	21.46	21.38	1
		1	50	21.41	21.43	21.42	1
		1	99	21.37	21.39	21.31	1
		50	0	20.37	20.47	20.43	2
		50	25	20.40	20.44	20.34	2
		50	50	20.37	20.37	20.34	2
		100	0	20.34	20.39	20.34	2
20M	64QAM	1	0	20.40	20.45	20.40	2
		1	50	20.40	20.41	20.35	2
		1	99	20.34	20.34	20.34	2
		50	0	19.45	19.46	19.37	3
		50	25	19.37	19.42	19.37	3
		50	50	19.24	19.33	19.31	3
		100	0	19.34	19.37	19.35	3
BW	MCS Index	Channel		18675	18900	19125	3GPP MPR
		Frequence (MHz)		1857.5	1880	1902.5	
15M	QPSK	1	0	22.33	22.35	22.26	0
		1	37	22.27	22.33	22.29	0
		1	74	22.28	22.34	22.23	0
		36	0	21.45	21.38	21.38	1
		36	19	21.32	21.35	21.36	1
		36	39	21.33	21.27	21.31	1
		75	0	21.29	21.39	21.29	1
15M	16QAM	1	0	21.34	21.36	21.37	1
		1	37	21.37	21.33	21.41	1
		1	74	21.31	21.35	21.31	1
		36	0	20.31	20.44	20.37	2
		36	19	20.36	20.40	20.24	2
		36	39	20.33	20.30	20.27	2
		75	0	20.34	20.39	20.25	2
15M	64QAM	1	0	20.38	20.36	20.39	2
		1	37	20.31	20.34	20.32	2
		1	74	20.28	20.29	20.34	2
		36	0	19.36	19.38	19.29	3
		36	19	19.35	19.40	19.35	3
		36	39	19.18	19.32	19.21	3
		75	0	19.29	19.33	19.35	3

LTE Conducted Power (Full)							
LTE Band 2							
BW	MCS Index	Channel		18650	18900	19150	3GPP MPR
		Frequence (MHz)		1855	1880	1905	
10M	QPSK	1	0	22.28	22.30	22.23	0
		1	24	22.18	22.19	22.28	0
		1	49	22.26	22.22	22.09	0
		25	0	21.41	21.29	21.33	1
		25	12	21.25	21.20	21.26	1
		25	25	21.24	21.17	21.22	1
		50	0	21.20	21.37	21.15	1
10M	16QAM	1	0	21.33	21.32	21.32	1
		1	24	21.23	21.27	21.40	1
		1	49	21.20	21.20	21.20	1
		25	0	20.24	20.33	20.32	2
		25	12	20.21	20.26	20.23	2
		25	25	20.20	20.21	20.13	2
		50	0	20.20	20.36	20.16	2
10M	64QAM	1	0	20.37	20.36	20.33	2
		1	24	20.18	20.27	20.18	2
		1	49	20.27	20.18	20.26	2
		25	0	19.32	19.34	19.25	3
		25	12	19.28	19.32	19.25	3
		25	25	19.16	19.30	19.21	3
		50	0	19.18	19.18	19.32	3
BW	MCS Index	Channel		18625	18900	19175	3GPP MPR
		Frequence (MHz)		1852.5	1880	1907.5	
5M	QPSK	1	0	22.28	22.29	22.22	0
		1	12	22.13	22.33	22.22	0
		1	24	22.26	22.33	21.94	0
		12	0	21.38	21.36	21.29	1
		12	6	21.18	21.26	21.17	1
		12	13	21.21	21.24	21.11	1
		25	0	21.19	21.29	21.03	1
5M	16QAM	1	0	21.28	21.24	21.35	1
		1	12	21.36	21.24	21.40	1
		1	24	21.21	21.28	21.22	1
		12	0	20.29	20.41	20.31	2
		12	6	20.24	20.29	20.09	2
		12	13	20.24	20.23	20.17	2
		25	0	20.28	20.33	20.21	2
5M	64QAM	1	0	20.35	20.31	20.36	2
		1	12	20.22	20.22	20.31	2
		1	24	20.18	20.28	20.28	2
		12	0	19.21	19.27	19.21	3
		12	6	19.31	19.34	19.34	3
		12	13	19.14	19.21	19.10	3
		25	0	19.28	19.22	19.27	3

LTE Conducted Power (Full)							
LTE Band 2							
BW	MCS Index	Channel		18615	18900	19185	3GPP MPR
		Frequence (MHz)		1851.5	1880	1908.5	
3M	QPSK	1	0	22.26	22.30	22.22	0
		1	7	22.15	22.29	22.28	0
		1	14	22.19	22.28	22.23	0
		8	0	21.37	21.36	21.32	1
		8	3	21.18	21.28	21.36	1
		8	7	21.32	21.25	21.22	1
		15	0	21.23	21.37	21.27	1
3M	16QAM	1	0	21.30	21.27	21.22	1
		1	7	21.28	21.20	21.33	1
		1	14	21.26	21.33	21.30	1
		8	0	20.16	20.33	20.28	2
		8	3	20.31	20.37	20.23	2
		8	7	20.25	20.29	20.12	2
		15	0	20.24	20.28	20.17	2
3M	64QAM	1	0	20.25	20.35	20.29	2
		1	7	20.31	20.19	20.17	2
		1	14	20.15	20.16	20.34	2
		8	0	19.29	19.33	19.21	3
		8	3	19.24	19.28	19.30	3
		8	7	19.09	19.25	19.06	3
		15	0	19.27	19.25	19.23	3
BW	MCS Index	Channel		18607	18900	19193	3GPP MPR
		Frequence (MHz)		1850.7	1880	1909.3	
1.4M	QPSK	1	0	22.31	22.38	22.23	0
		1	2	22.25	22.31	22.28	0
		1	5	22.20	22.36	22.19	0
		3	0	22.32	22.23	22.25	0
		3	1	22.28	22.30	22.21	0
		3	3	22.27	22.27	22.22	0
		6	0	21.23	21.24	21.15	1
1.4M	16QAM	1	0	21.22	21.27	21.36	1
		1	2	21.37	21.32	21.35	1
		1	5	21.22	21.22	21.23	1
		3	0	21.16	21.36	21.29	1
		3	1	21.23	21.34	21.12	1
		3	3	21.25	21.24	21.24	1
		6	0	20.27	20.37	20.23	2
1.4M	64QAM	1	0	20.23	20.32	20.31	2
		1	2	20.23	20.21	20.19	2
		1	5	20.26	20.23	20.19	2
		3	0	20.25	20.36	20.14	2
		3	1	20.20	20.39	20.29	2
		3	3	20.13	20.27	20.06	2
		6	0	19.28	19.28	19.27	3

LTE Conducted Power (Full)							
LTE Band 4							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		20050	20175	20300	
		Frequence (MHz)		1720	1732.5	1745	
20M	QPSK	1	0	22.83	22.96	22.91	0
		1	50	22.82	22.87	22.84	0
		1	99	22.78	22.84	22.76	0
		50	0	21.87	21.92	21.84	1
		50	25	21.77	21.86	21.77	1
		50	50	21.77	21.82	21.74	1
		100	0	21.78	21.84	21.80	1
20M	16QAM	1	0	21.87	21.89	21.86	1
		1	50	21.79	21.85	21.75	1
		1	99	21.78	21.81	21.73	1
		50	0	20.85	20.89	20.81	2
		50	25	20.79	20.84	20.77	2
		50	50	20.74	20.79	20.75	2
		100	0	20.79	20.82	20.77	2
20M	64QAM	1	0	20.82	20.86	20.83	2
		1	50	20.82	20.84	20.81	2
		1	99	20.72	20.81	20.76	2
		50	0	19.85	19.88	19.88	3
		50	25	19.84	19.85	19.80	3
		50	50	19.71	19.76	19.72	3
		100	0	19.77	19.82	19.77	3
BW	MCS Index	Channel		20025	20175	20325	3GPP MPR
		Frequence (MHz)		1717.5	1732.5	1747.5	
15M	QPSK	1	0	22.74	22.90	22.89	0
		1	37	22.80	22.85	22.77	0
		1	74	22.68	22.83	22.70	0
		36	0	21.79	21.92	21.84	1
		36	19	21.71	21.83	21.74	1
		36	39	21.76	21.82	21.66	1
		75	0	21.72	21.76	21.74	1
15M	16QAM	1	0	21.80	21.82	21.82	1
		1	37	21.73	21.85	21.75	1
		1	74	21.70	21.81	21.73	1
		36	0	20.84	20.89	20.75	2
		36	19	20.79	20.79	20.71	2
		36	39	20.73	20.76	20.67	2
		75	0	20.77	20.75	20.75	2
15M	64QAM	1	0	20.74	20.83	20.81	2
		1	37	20.72	20.78	20.80	2
		1	74	20.72	20.81	20.73	2
		36	0	19.85	19.79	19.87	3
		36	19	19.74	19.80	19.70	3
		36	39	19.64	19.71	19.71	3
		75	0	19.75	19.75	19.67	3

LTE Conducted Power (Full)							
LTE Band 4							
BW	MCS Index	Channel		20000	20175	20350	3GPP MPR
		Frequence (MHz)		1715	1732.5	1750	
10M	QPSK	1	0	22.64	22.87	22.84	0
		1	24	22.76	22.73	22.77	0
		1	49	22.65	22.73	22.59	0
		25	0	21.78	21.81	21.74	1
		25	12	21.58	21.69	21.60	1
		25	25	21.63	21.67	21.62	1
		50	0	21.69	21.71	21.70	1
10M	16QAM	1	0	21.78	21.73	21.72	1
		1	24	21.59	21.76	21.65	1
		1	49	21.68	21.70	21.66	1
		25	0	20.83	20.75	20.72	2
		25	12	20.67	20.72	20.62	2
		25	25	20.66	20.66	20.65	2
		50	0	20.72	20.71	20.66	2
10M	64QAM	1	0	20.66	20.75	20.80	2
		1	24	20.61	20.64	20.78	2
		1	49	20.61	20.78	20.72	2
		25	0	19.76	19.66	19.74	3
		25	12	19.67	19.65	19.69	3
		25	25	19.59	19.67	19.65	3
		50	0	19.67	19.62	19.61	3
BW	MCS Index	Channel		19975	20175	20375	3GPP MPR
		Frequence (MHz)		1712.5	1732.5	1752.5	
5M	QPSK	1	0	22.65	22.85	22.84	0
		1	12	22.72	22.83	22.69	0
		1	24	22.56	22.73	22.53	0
		12	0	21.79	21.83	21.63	1
		12	6	21.68	21.80	21.54	1
		12	13	21.65	21.69	21.52	1
		25	0	21.71	21.61	21.66	1
5M	16QAM	1	0	21.74	21.68	21.82	1
		1	12	21.63	21.78	21.67	1
		1	24	21.65	21.79	21.60	1
		12	0	20.74	20.80	20.75	2
		12	6	20.64	20.78	20.59	2
		12	13	20.62	20.62	20.67	2
		25	0	20.72	20.73	20.66	2
5M	64QAM	1	0	20.65	20.81	20.79	2
		1	12	20.57	20.75	20.76	2
		1	24	20.67	20.74	20.59	2
		12	0	19.85	19.78	19.78	3
		12	6	19.70	19.76	19.66	3
		12	13	19.63	19.70	19.63	3
		25	0	19.69	19.68	19.54	3

LTE Conducted Power (Full)							
LTE Band 4							
BW	MCS Index	Channel		19965	20175	20385	3GPP MPR
		Frequence (MHz)		1711.5	1732.5	1753.5	
3M	QPSK	1	0	22.68	22.88	22.86	0
		1	7	22.74	22.76	22.62	0
		1	14	22.55	22.71	22.59	0
		8	0	21.71	21.82	21.84	1
		8	3	21.68	21.70	21.60	1
		8	7	21.65	21.73	21.57	1
		15	0	21.70	21.73	21.63	1
3M	16QAM	1	0	21.71	21.69	21.81	1
		1	7	21.61	21.76	21.72	1
		1	14	21.57	21.78	21.72	1
		8	0	20.78	20.88	20.75	2
		8	3	20.78	20.69	20.62	2
		8	7	20.66	20.63	20.59	2
		15	0	20.64	20.69	20.70	2
3M	64QAM	1	0	20.70	20.75	20.81	2
		1	7	20.64	20.75	20.71	2
		1	14	20.66	20.67	20.66	2
		8	0	19.79	19.77	19.78	3
		8	3	19.73	19.69	19.70	3
		8	7	19.49	19.58	19.66	3
		15	0	19.72	19.64	19.52	3
BW	MCS Index	Channel		19957	20175	20393	3GPP MPR
		Frequence (MHz)		1710.7	1732.5	1754.3	
1.4M	QPSK	1	0	22.70	22.85	22.81	0
		1	2	22.79	22.79	22.76	0
		1	5	22.68	22.83	22.69	0
		3	0	22.64	22.81	22.83	0
		3	1	22.56	22.82	22.72	0
		3	3	22.73	22.79	22.55	0
		6	0	21.60	21.67	21.65	1
1.4M	16QAM	1	0	21.73	21.77	21.80	1
		1	2	21.63	21.84	21.74	1
		1	5	21.55	21.77	21.71	1
		3	0	21.83	21.82	21.73	1
		3	1	21.79	21.69	21.67	1
		3	3	21.68	21.71	21.52	1
		6	0	20.64	20.74	20.70	2
1.4M	64QAM	1	0	20.63	20.72	20.74	2
		1	2	20.64	20.64	20.71	2
		1	5	20.64	20.73	20.67	2
		3	0	20.70	20.70	20.87	2
		3	1	20.60	20.75	20.57	2
		3	3	20.62	20.69	20.56	2
		6	0	19.74	19.60	19.64	3

LTE Conducted Power (Full)							
LTE Band 12							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23060	23095	23130	
		Frequence (MHz)		704	707.5	711	
10M	QPSK	1	0	22.41	22.45	22.38	0
		1	24	22.28	22.36	22.28	0
		1	49	22.25	22.32	22.32	0
		25	0	21.34	21.41	21.40	1
		25	12	21.37	21.37	21.31	1
		25	25	21.31	21.33	21.24	1
		50	0	21.26	21.35	21.27	1
10M	16QAM	1	0	21.34	21.39	21.32	1
		1	24	21.31	21.37	21.36	1
		1	49	21.28	21.33	21.23	1
		25	0	20.32	20.39	20.30	2
		25	12	20.31	20.36	20.27	2
		25	25	20.26	20.34	20.30	2
		50	0	20.31	20.36	20.35	2
10M	64QAM	1	0	20.29	20.32	20.30	2
		1	24	20.24	20.29	20.29	2
		1	49	20.29	20.31	20.27	2
		25	0	19.32	19.36	19.26	3
		25	12	19.33	19.34	19.28	3
		25	25	19.26	19.27	19.17	3
		50	0	19.21	19.29	19.19	3
BW	MCS Index	Channel		23035	23095	23155	3GPP MPR
		Frequence (MHz)		701.5	707.5	713.5	
5M	QPSK	1	0	22.37	22.40	22.31	0
		1	12	22.22	22.36	22.26	0
		1	24	22.23	22.30	22.29	0
		12	0	21.27	21.32	21.38	1
		12	6	21.36	21.31	21.25	1
		12	13	21.30	21.27	21.16	1
		25	0	21.22	21.32	21.23	1
5M	16QAM	1	0	21.30	21.36	21.25	1
		1	12	21.30	21.29	21.32	1
		1	24	21.18	21.28	21.14	1
		12	0	20.26	20.36	20.27	2
		12	6	20.30	20.32	20.25	2
		12	13	20.21	20.26	20.27	2
		25	0	20.21	20.30	20.27	2
5M	64QAM	1	0	20.26	20.25	20.21	2
		1	12	20.18	20.19	20.20	2
		1	24	20.22	20.24	20.18	2
		12	0	19.25	19.35	19.22	3
		12	6	19.26	19.33	19.22	3
		12	13	19.24	19.17	19.13	3
		25	0	19.21	19.21	19.11	3

LTE Conducted Power (Full)							
LTE Band 12							
BW	MCS Index	Channel		23025	23095	23165	3GPP MPR
		Frequence (MHz)		700.5	707.5	714.5	
3M	QPSK	1	0	22.28	22.29	22.24	0
		1	7	22.08	22.28	22.16	0
		1	14	22.19	22.27	22.21	0
		8	0	21.22	21.25	21.33	1
		8	3	21.36	21.26	21.12	1
		8	7	21.15	21.21	21.13	1
		15	0	21.09	21.21	21.12	1
3M	16QAM	1	0	21.15	21.27	21.25	1
		1	7	21.25	21.18	21.21	1
		1	14	21.09	21.25	21.01	1
		8	0	20.13	20.32	20.21	2
		8	3	20.20	20.20	20.22	2
		8	7	20.21	20.21	20.24	2
		15	0	20.09	20.29	20.23	2
3M	64QAM	1	0	20.13	20.11	20.06	2
		1	7	20.17	20.13	20.09	2
		1	14	20.13	20.18	20.11	2
		8	0	19.17	19.35	19.18	3
		8	3	19.19	19.25	19.20	3
		8	7	19.15	19.02	18.99	3
		15	0	19.09	19.16	18.99	3
BW	MCS Index	Channel		23017	23095	23173	3GPP MPR
		Frequence (MHz)		699.7	707.5	715.3	
1.4M	QPSK	1	0	22.31	22.32	22.26	0
		1	2	22.11	22.22	22.12	0
		1	5	22.16	22.21	22.21	0
		3	0	22.18	22.30	22.25	0
		3	1	22.17	22.29	22.23	0
		3	3	22.18	22.15	22.13	0
		6	0	21.22	21.17	21.22	1
1.4M	16QAM	1	0	21.26	21.24	21.11	1
		1	2	21.27	21.25	21.23	1
		1	5	21.04	21.22	21.00	1
		3	0	21.18	21.33	21.24	1
		3	1	21.24	21.27	21.10	1
		3	3	21.12	21.15	21.23	1
		6	0	20.18	20.24	20.23	2
1.4M	64QAM	1	0	20.25	20.18	20.10	2
		1	2	20.09	20.18	20.11	2
		1	5	20.11	20.23	20.05	2
		3	0	20.11	20.22	20.09	2
		3	1	20.24	20.26	20.17	2
		3	3	20.21	20.17	20.11	2
		6	0	19.10	19.07	18.98	3

LTE Conducted Power (Full)							
LTE Band 13							
BW	MCS Index	RB Size	RB Offset		Mid		3GPP MPR (dB)
		Channel			23230		
		Frequence (MHz)			782		
10M	QPSK	1	0		22.42		0
		1	24		22.39		0
		1	49		22.35		0
		25	0		21.43		1
		25	12		21.41		1
		25	25		21.36		1
		50	0		21.39		1
10M	16QAM	1	0		21.41		1
		1	24		21.37		1
		1	49		21.33		1
		25	0		20.39		2
		25	12		20.36		2
		25	25		20.29		2
		50	0		20.33		2
10M	64QAM	1	0		20.37		2
		1	24		20.33		2
		1	49		20.31		2
		25	0		19.44		3
		25	12		19.41		3
		25	25		19.34		3
		50	0		19.37		3
BW	MCS Index	Channel		23205	23230	23255	3GPP MPR
		Frequence (MHz)		779.5	782	784.5	
5M	QPSK	1	0	22.36	22.39	22.32	0
		1	12	22.28	22.36	22.30	0
		1	24	22.28	22.33	22.28	0
		12	0	21.35	21.41	21.39	1
		12	6	21.35	21.36	21.36	1
		12	13	21.26	21.31	21.30	1
		25	0	21.27	21.33	21.27	1
5M	16QAM	1	0	21.27	21.37	21.31	1
		1	12	21.29	21.32	21.31	1
		1	24	21.29	21.29	21.24	1
		12	0	20.34	20.42	20.40	2
		12	6	20.29	20.37	20.33	2
		12	13	20.25	20.33	20.31	2
		25	0	20.29	20.36	20.27	2
5M	64QAM	1	0	20.32	20.37	20.31	2
		1	12	20.27	20.33	20.24	2
		1	24	20.21	20.31	20.29	2
		12	0	19.40	19.42	19.41	3
		12	6	19.27	19.37	19.37	3
		12	13	19.26	19.32	19.22	3
		25	0	19.33	19.35	19.29	3

LTE Conducted Power (Full)							
LTE Band 17							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		23780	23790	23800	
		Frequence (MHz)		709	710	711	
10M	QPSK	1	0	22.42	22.46	22.38	0
		1	24	22.39	22.42	22.42	0
		1	49	22.30	22.38	22.30	0
		25	0	21.45	21.47	21.39	1
		25	12	21.40	21.43	21.38	1
		25	25	21.31	21.38	21.35	1
		50	0	21.38	21.41	21.41	1
10M	16QAM	1	0	21.43	21.44	21.39	1
		1	24	21.36	21.41	21.41	1
		1	49	21.36	21.36	21.33	1
		25	0	20.37	20.45	20.37	2
		25	12	20.33	20.41	20.38	2
		25	25	20.30	20.36	20.26	2
		50	0	20.34	20.39	20.30	2
10M	64QAM	1	0	20.38	20.44	20.38	2
		1	24	20.39	20.41	20.36	2
		1	49	20.26	20.36	20.32	2
		25	0	19.34	19.41	19.33	3
		25	12	19.30	19.35	19.27	3
		25	25	19.26	19.31	19.30	3
		50	0	19.28	19.33	19.24	3
BW	MCS Index	Channel		23755	23790	23825	3GPP MPR
		Frequence (MHz)		706.5	710	713.5	
5M	QPSK	1	0	22.40	22.44	22.29	0
		1	12	22.33	22.36	22.42	0
		1	24	22.23	22.31	22.30	0
		12	0	21.42	21.37	21.38	1
		12	6	21.30	21.39	21.33	1
		12	13	21.30	21.32	21.26	1
		25	0	21.37	21.34	21.33	1
5M	16QAM	1	0	21.41	21.35	21.36	1
		1	12	21.33	21.41	21.32	1
		1	24	21.29	21.29	21.31	1
		12	0	20.32	20.45	20.37	2
		12	6	20.24	20.40	20.34	2
		12	13	20.21	20.26	20.19	2
		25	0	20.25	20.29	20.25	2
5M	64QAM	1	0	20.29	20.38	20.31	2
		1	12	20.32	20.34	20.31	2
		1	24	20.16	20.33	20.29	2
		12	0	19.33	19.40	19.31	3
		12	6	19.22	19.27	19.18	3
		12	13	19.20	19.26	19.21	3
		25	0	19.25	19.26	19.19	3

LTE Conducted Power (Full)							
LTE Band 66							
BW	MCS Index	RB Size	RB Offset	Low	Mid	High	3GPP MPR (dB)
		Channel		132072	132322	132572	
		Frequence (MHz)		1720	1745	1770	
20M	QPSK	1	0	22.35	22.41	22.34	0
		1	50	22.27	22.31	22.31	0
		1	99	22.23	22.35	22.24	0
		50	0	21.23	21.34	21.32	1
		50	25	21.29	21.28	21.33	1
		50	50	21.20	21.29	21.16	1
		100	0	21.33	21.26	21.13	1
20M	16QAM	1	0	21.22	21.30	21.32	1
		1	50	21.27	21.31	21.25	1
		1	99	21.17	21.19	21.23	1
		50	0	20.38	20.39	20.30	2
		50	25	20.30	20.32	20.26	2
		50	50	20.20	20.27	20.20	2
		100	0	20.31	20.34	20.21	2
20M	64QAM	1	0	20.27	20.33	20.32	2
		1	50	20.33	20.32	20.36	2
		1	99	20.26	20.22	20.22	2
		50	0	19.27	19.30	19.25	3
		50	25	19.16	19.28	19.15	3
		50	50	19.22	19.27	19.07	3
		100	0	19.16	19.22	19.17	3
BW	MCS Index	Channel		132047	132322	132597	3GPP MPR
		Frequence (MHz)		1717.5	1745	1772.5	
15M	QPSK	1	0	22.35	22.37	22.35	0
		1	37	22.26	22.29	22.31	0
		1	74	22.19	22.27	22.15	0
		36	0	21.24	21.32	21.29	1
		36	19	21.19	21.33	21.28	1
		36	39	21.20	21.28	21.18	1
		75	0	21.23	21.30	21.17	1
15M	16QAM	1	0	21.27	21.26	21.27	1
		1	37	21.27	21.24	21.26	1
		1	74	21.13	21.25	21.23	1
		36	0	20.39	20.38	20.35	2
		36	19	20.25	20.28	20.32	2
		36	39	20.20	20.26	20.21	2
		75	0	20.28	20.35	20.22	2
15M	64QAM	1	0	20.30	20.35	20.32	2
		1	37	20.28	20.30	20.36	2
		1	74	20.29	20.25	20.24	2
		36	0	19.33	19.35	19.21	3
		36	19	19.17	19.28	19.13	3
		36	39	19.15	19.19	19.09	3
		75	0	19.18	19.21	19.25	3

LTE Conducted Power (Full)							
LTE Band 66							
BW	MCS Index	Channel		132022	132322	132622	3GPP MPR
		Frequence (MHz)		1715	1745	1775	
10M	QPSK	1	0	22.32	22.34	22.30	0
		1	24	22.21	22.29	22.27	0
		1	49	22.20	22.25	22.22	0
		25	0	21.26	21.38	21.28	1
		25	12	21.24	21.25	21.33	1
		25	25	21.12	21.21	21.20	1
		50	0	21.31	21.27	21.15	1
10M	16QAM	1	0	21.24	21.30	21.27	1
		1	24	21.23	21.31	21.26	1
		1	49	21.14	21.27	21.21	1
		25	0	20.29	20.38	20.37	2
		25	12	20.26	20.27	20.34	2
		25	25	20.19	20.25	20.19	2
		50	0	20.30	20.27	20.24	2
10M	64QAM	1	0	20.32	20.33	20.32	2
		1	24	20.35	20.36	20.27	2
		1	49	20.25	20.31	20.15	2
		25	0	19.27	19.28	19.24	3
		25	12	19.18	19.26	19.12	3
		25	25	19.15	19.17	19.07	3
		50	0	19.21	19.22	19.24	3
BW	MCS Index	Channel		131997	132322	132647	3GPP MPR
		Frequence (MHz)		1712.5	1745	1777.5	
5M	QPSK	1	0	22.31	22.36	22.33	0
		1	12	22.25	22.30	22.26	0
		1	24	22.17	22.32	22.23	0
		12	0	21.25	21.38	21.32	1
		12	6	21.19	21.26	21.33	1
		12	13	21.14	21.23	21.18	1
		25	0	21.25	21.24	21.20	1
5M	16QAM	1	0	21.29	21.30	21.35	1
		1	12	21.20	21.27	21.27	1
		1	24	21.19	21.28	21.14	1
		12	0	20.33	20.42	20.37	2
		12	6	20.29	20.30	20.30	2
		12	13	20.24	20.24	20.14	2
		25	0	20.30	20.30	20.24	2
5M	64QAM	1	0	20.32	20.31	20.25	2
		1	12	20.34	20.33	20.32	2
		1	24	20.25	20.24	20.21	2
		12	0	19.29	19.27	19.24	3
		12	6	19.15	19.31	19.15	3
		12	13	19.20	19.23	19.11	3
		25	0	19.18	19.24	19.22	3

LTE Conducted Power (Full)							
LTE Band 66							
BW	MCS Index	Channel		131987	132322	132657	3GPP MPR
		Frequence (MHz)		1711.5	1745	1778.5	
3M	QPSK	1	0	22.31	22.37	22.33	0
		1	7	22.29	22.36	22.28	0
		1	14	22.23	22.30	22.17	0
		8	0	21.24	21.32	21.34	1
		8	3	21.20	21.30	21.29	1
		8	7	21.18	21.25	21.19	1
		15	0	21.27	21.30	21.16	1
3M	16QAM	1	0	21.25	21.27	21.34	1
		1	7	21.23	21.31	21.24	1
		1	14	21.19	21.25	21.22	1
		8	0	20.30	20.36	20.34	2
		8	3	20.27	20.36	20.28	2
		8	7	20.19	20.26	20.18	2
		15	0	20.31	20.27	20.21	2
3M	64QAM	1	0	20.29	20.29	20.30	2
		1	7	20.27	20.31	20.36	2
		1	14	20.24	20.22	20.21	2
		8	0	19.26	19.37	19.28	3
		8	3	19.22	19.32	19.12	3
		8	7	19.18	19.24	19.13	3
		15	0	19.15	19.22	19.24	3
BW	MCS Index	Channel		131979	132322	132665	3GPP MPR
		Frequence (MHz)		1710.7	1745	1779.3	
1.4M	QPSK	1	0	22.33	22.34	22.30	0
		1	2	22.28	22.33	22.30	0
		1	5	22.18	22.32	22.19	0
		3	0	21.24	21.31	21.27	0
		3	1	21.28	21.34	21.32	0
		3	3	21.12	21.31	21.11	0
		6	0	21.25	21.24	21.13	1
1.4M	16QAM	1	0	21.26	21.31	21.26	1
		1	2	21.29	21.25	21.25	1
		1	5	21.14	21.19	21.16	1
		3	0	20.37	20.32	20.40	1
		3	1	20.28	20.29	20.26	1
		3	3	20.21	20.32	20.24	1
		6	0	20.29	20.34	20.23	2
1.4M	64QAM	1	0	20.31	20.38	20.25	2
		1	2	20.34	20.35	20.28	2
		1	5	20.22	20.27	20.15	2
		3	0	19.29	19.35	19.25	2
		3	1	19.21	19.28	19.17	2
		3	3	19.16	19.18	19.14	2
		6	0	19.17	19.25	19.19	3

Conducted Power (Full)			
WLAN2.4GHz Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11b	1	2412	18.77
	6	2437	18.69
	11	2462	18.74
802.11g	1	2412	19.91
	6	2437	19.57
	11	2462	19.72
802.11n HT20	1	2412	18.77
	6	2437	18.96
	11	2462	18.50
802.11n HT40	3	2422	17.78
	6	2437	17.93
	9	2452	17.49
802.11ac VHT20	1	2412	18.81
	6	2437	18.98
	11	2462	18.53
802.11ac VHT40	3	2422	17.81
	6	2437	17.95
	9	2452	17.52

Conducted Power (Full)			
Bluetooth Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
BR / EDR	0	2402	12.07
	39	2441	12.42
	78	2480	12.88
LE	0	2402	5.30
	19	2440	5.96
	39	2480	7.81

Conducted Power (Full)			
WLAN 5.2GHz Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11a	36	5180	19.41
	40	5200	19.82
	44	5220	19.83
	48	5240	19.98
802.11n HT20	36	5180	19.16
	40	5200	19.20
	44	5220	19.15
	48	5240	19.81
802.11n HT40	38	5190	17.24
	46	5230	18.81
802.11ac VHT20	36	5180	19.26
	40	5200	19.71
	44	5220	19.69
	48	5240	19.94
802.11ac VHT40	38	5190	17.37
	46	5230	18.93
802.11ac VHT80	42	5210	16.30

Conducted Power (Full)			
WLAN 5.3GHz Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11a	52	5260	19.91
	56	5280	19.89
	60	5300	19.91
	64	5320	19.75
802.11n HT20	52	5260	19.67
	56	5280	19.65
	60	5300	19.68
	64	5320	19.52
802.11n HT40	54	5270	18.84
	62	5310	18.73
802.11ac VHT20	52	5260	19.79
	56	5280	19.70
	60	5300	19.78
	64	5320	19.63
802.11ac VHT40	54	5270	18.97
	62	5310	18.83
802.11ac VHT80	58	5290	18.47

Conducted Power (Full)			
WLAN 5.6GHz Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11a	100	5500	19.83
	116	5580	19.88
	120	5600	19.85
	124	5620	19.82
	132	5660	19.81
	140	5700	19.82
	144	5720	19.82
802.11n HT20	100	5500	19.61
	116	5580	19.65
	120	5600	19.63
	124	5620	19.59
	132	5660	19.51
	140	5700	19.63
	144	5720	19.57
802.11n HT40	102	5510	18.44
	110	5550	18.75
	118	5590	18.65
	126	5630	18.62
	134	5670	18.82
	142	5710	18.61
802.11ac VHT20	100	5500	19.71
	116	5580	19.96
	120	5600	19.78
	124	5620	19.76
	132	5660	19.68
	140	5700	19.72
	144	5720	19.67
802.11ac VHT40	102	5510	18.58
	110	5550	18.89
	118	5590	18.52
	126	5630	18.49
	134	5670	18.93
	142	5710	18.73
802.11ac VHT80	106	5530	17.48
	122	5610	18.61
	138	5690	18.91

Conducted Power (Full)			
WLAN 5.8GHz Ant 0			
Mode	Channel	Frequency	SISO Ant 0 Avg. Power
802.11a	149	5745	19.62
	153	5765	19.60
	157	5785	19.70
	161	5805	19.64
	165	5825	19.79
802.11n HT20	149	5745	19.48
	153	5765	19.46
	157	5785	19.54
	161	5805	19.49
	165	5825	19.62
802.11n HT40	151	5755	18.72
	159	5795	18.83
802.11ac VHT20	149	5745	19.59
	153	5765	19.53
	157	5785	19.64
	161	5805	19.61
	165	5825	19.75
802.11ac VHT40	151	5755	18.87
	159	5795	18.93
802.11ac VHT80	155	5775	18.89

Appendix F. SAR Test Result

SAR Results for Face / Extremity Exposure Condition.

Note:
1. SAR testing for WLAN / BT was performed on the maximum power mode.
2. SAR testing for LTE was performed on the maximum power mode.
3. The “< 0.001” means there is no SAR value or the SAR is too low to be measured.

Face SAR Test Result

System & Position								DUT Configuration	SAR							
Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Channel	RB#	RB offset	Ant Status	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
1	LTE 2	QPSK20M	Front Face	10	18900	1	0	Ant 0	-	1.00	22.50	22.43	1.02	0.16	0.683	0.70
	LTE 2	QPSK20M	Front Face	10	18900	50	0	Ant 0	-	1.00	21.50	21.48	1.00	0.13	0.485	0.49
	LTE 2	QPSK20M	Front Face	10	18700	1	0	Ant 0	-	1.00	22.50	22.37	1.03	0.09	0.515	0.53
	LTE 2	QPSK20M	Front Face	10	19100	1	50	Ant 0	-	1.00	22.50	22.39	1.03	-0.02	0.614	0.63
2	LTE 4	QPSK20M	Front Face	10	20175	1	0	Ant 0	-	1.00	23.00	22.96	1.01	0.12	0.241	0.24
	LTE 4	QPSK20M	Front Face	10	20175	50	0	Ant 0	-	1.00	22.00	21.92	1.02	0.04	0.163	0.17
	LTE 4	QPSK20M	Front Face	10	20050	1	0	Ant 0	-	1.00	23.00	22.83	1.04	-0.04	0.206	0.21
	LTE 4	QPSK20M	Front Face	10	20300	1	0	Ant 0	-	1.00	23.00	22.91	1.02	0.02	0.195	0.20
3	LTE 12	QPSK10M	Front Face	10	23095	1	0	Ant 0	-	1.00	22.50	22.45	1.01	0.17	0.03	0.03
	LTE 12	QPSK10M	Front Face	10	23095	25	0	Ant 0	-	1.00	21.50	21.41	1.02	-0.07	0.011	0.01
	LTE 12	QPSK10M	Front Face	10	23060	1	0	Ant 0	-	1.00	22.50	22.41	1.02	0.15	0.013	0.01
	LTE 12	QPSK10M	Front Face	10	23130	1	0	Ant 0	-	1.00	22.50	22.38	1.03	-0.03	0.022	0.02
4	LTE 13	QPSK10M	Front Face	10	23230	1	0	Ant 0	-	1.00	22.50	22.42	1.02	-0.02	0.055	0.06
	LTE 13	QPSK10M	Front Face	10	23230	25	0	Ant 0	-	1.00	21.50	21.43	1.02	-0.12	0.015	0.02
5	LTE 17	QPSK10M	Front Face	10	23790	1	0	Ant 0	-	1.00	22.50	22.46	1.01	-0.18	0.017	0.02
	LTE 17	QPSK10M	Front Face	10	23790	25	0	Ant 0	-	1.00	21.50	21.47	1.01	0.07	0.013	0.01
	LTE 17	QPSK10M	Front Face	10	23780	1	0	Ant 0	-	1.00	22.50	22.42	1.02	-0.08	0.013	0.01
	LTE 17	QPSK10M	Front Face	10	23800	1	24	Ant 0	-	1.00	22.50	22.42	1.02	0.05	0.014	0.01
6	LTE 66	QPSK20M	Front Face	10	132322	1	0	Ant 0	-	1.00	22.50	22.41	1.02	-0.16	0.318	0.32
	LTE 66	QPSK20M	Front Face	10	132322	50	0	Ant 0	-	1.00	21.50	21.34	1.04	0.06	0.248	0.26
	LTE 66	QPSK20M	Front Face	10	132072	1	0	Ant 0	-	1.00	22.50	22.35	1.04	0.11	0.266	0.28
	LTE 66	QPSK20M	Front Face	10	132572	1	0	Ant 0	-	1.00	22.50	22.34	1.04	-0.01	0.276	0.29

Face SAR Test Result

System & Position								DUT Configuration	SAR							
Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Channel	RB#	RB offset	Ant Status	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-1g (W/kg)	Scaled SAR-1g (W/kg)
	WLAN2.4G	802.11b	Front Face	10	1			Ant 0	96.40	1.04	19.00	18.77	1.05	0.04	0.262	0.29
	WLAN2.4G	802.11b	Front Face	10	6			Ant 0	96.40	1.04	19.00	18.69	1.07	-0.13	0.31	0.34
7	WLAN2.4G	802.11b	Front Face	10	11			Ant 0	96.40	1.04	19.00	18.74	1.06	-0.13	0.384	0.42
8	WLAN5.3G	802.11a	Front Face	10	52			Ant 0	95.90	1.04	20.00	19.91	1.02	-0.08	0.178	0.19
	WLAN5.3G	802.11a	Front Face	10	56			Ant 0	95.90	1.04	20.00	19.89	1.03	-0.03	0.171	0.18
	WLAN5.3G	802.11a	Front Face	10	60			Ant 0	95.90	1.04	20.00	19.91	1.02	0.14	0.167	0.18
	WLAN5.3G	802.11a	Front Face	10	64			Ant 0	95.90	1.04	20.00	19.75	1.06	0.17	0.157	0.17
	WLAN5.6G	802.11a	Front Face	10	116			Ant 0	97.40	1.03	20.00	19.88	1.03	0.11	0.226	0.24
9	WLAN5.6G	802.11a	Front Face	10	100			Ant 0	97.40	1.03	20.00	19.83	1.04	-0.04	0.236	0.25
	WLAN5.6G	802.11a	Front Face	10	120			Ant 0	97.40	1.03	20.00	19.85	1.04	0.01	0.225	0.24
	WLAN5.6G	802.11a	Front Face	10	124			Ant 0	97.40	1.03	20.00	19.82	1.04	0.07	0.221	0.24
	WLAN5.6G	802.11a	Front Face	10	132			Ant 0	97.40	1.03	20.00	19.81	1.04	0.15	0.228	0.24
	WLAN5.6G	802.11a	Front Face	10	140			Ant 0	97.40	1.03	20.00	19.82	1.04	0.01	0.186	0.20
	WLAN5.6G	802.11a	Front Face	10	144			Ant 0	97.40	1.03	20.00	19.82	1.04	-0.04	0.183	0.20
10	WLAN5.8G	802.11a	Front Face	10	165			Ant 0	96.90	1.03	20.00	19.79	1.05	0.08	0.12	0.13
	WLAN5.8G	802.11a	Front Face	10	149			Ant 0	96.90	1.03	20.00	19.62	1.09	0.17	0.095	0.11
	WLAN5.8G	802.11a	Front Face	10	153			Ant 0	96.90	1.03	20.00	19.60	1.10	0.1	0.097	0.11
	WLAN5.8G	802.11a	Front Face	10	157			Ant 0	96.90	1.03	20.00	19.70	1.07	-0.1	0.113	0.12
	WLAN5.8G	802.11a	Front Face	10	161				96.90	1.03	20.00	19.64	1.09	-0.05	0.103	0.11
11	BT	BR / EDR	Front Face	10	39			Ant 0	76.61	1.31	13.00	12.42	1.14	-0.12	0.01	0.01
	BT	BR / EDR	Front Face	10	0			Ant 0	76.61	1.31	13.00	12.07	1.24	0.01	0.005	0.01
	BT	BR / EDR	Front Face	10	78			Ant 0	76.61	1.31	13.00	12.88	1.03	-0.04	0.007	0.01
12	NFC	ASK	Front Face	10	1			Ant 0	-	1.00	-	-	1	0	<0.001	0.00

Extremity SAR Test Result

System & Position								DUT Configuration	SAR							
Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Channel	RB#	RB offset	Ant Status	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-10g (W/kg)	Scaled SAR-10g (W/kg)
	LTE 2	QPSK20M	Rear Face	0	18900	1	0	Ant 0	-	1.00	22.50	22.43	1.02	0.18	0.125	0.13
	LTE 2	QPSK20M	Rear Face	0	18900	50	0	Ant 0	-	1.00	21.50	21.48	1.00	0.04	0.113	0.11
13	LTE 2	QPSK20M	Rear Face	0	18700	1	0	Ant 0	-	1.00	22.50	22.37	1.03	-0.13	0.151	0.16
	LTE 2	QPSK20M	Rear Face	0	19100	1	50	Ant 0	-	1.00	22.50	22.39	1.03	0.06	0.133	0.14
14	LTE 4	QPSK20M	Rear Face	0	20175	1	0	Ant 0	-	1.00	23.00	22.96	1.01	0.08	0.078	0.08
	LTE 4	QPSK20M	Rear Face	0	20175	50	0	Ant 0	-	1.00	22.00	21.92	1.02	-0.09	0.058	0.06
	LTE 4	QPSK20M	Rear Face	0	20050	1	0	Ant 0	-	1.00	23.00	22.83	1.04	-0.03	0.073	0.08
	LTE 4	QPSK20M	Rear Face	0	20300	1	0	Ant 0	-	1.00	23.00	22.91	1.02	0.02	0.075	0.08
	LTE 12	QPSK10M	Rear Face	0	23095	1	0	Ant 0	-	1.00	22.50	22.45	1.01	-0.09	0.053	0.05
	LTE 12	QPSK10M	Rear Face	0	23095	25	0	Ant 0	-	1.00	21.50	21.41	1.02	-0.06	0.038	0.04
15	LTE 12	QPSK10M	Rear Face	0	23060	1	0	Ant 0	-	1.00	22.50	22.41	1.02	0.01	0.062	0.06
	LTE 12	QPSK10M	Rear Face	0	23130	1	0	Ant 0	-	1.00	22.50	22.38	1.03	0.11	0.053	0.05
16	LTE 13	QPSK10M	Rear Face	0	23230	1	0	Ant 0	-	1.00	22.50	22.42	1.02	0.07	0.074	0.08
	LTE 13	QPSK10M	Rear Face	0	23230	25	0	Ant 0	-	1.00	21.50	21.43	1.02	0.03	0.041	0.04
17	LTE 17	QPSK10M	Rear Face	0	23790	1	0	Ant 0	-	1.00	22.50	22.46	1.01	0.09	0.06	0.06
	LTE 17	QPSK10M	Rear Face	0	23790	25	0	Ant 0	-	1.00	21.50	21.47	1.01	0.11	0.049	0.05
	LTE 17	QPSK10M	Rear Face	0	23780	1	0	Ant 0	-	1.00	22.50	22.42	1.02	0.13	0.045	0.05
	LTE 17	QPSK10M	Rear Face	0	23800	1	24	Ant 0	-	1.00	22.50	22.42	1.02	-0.06	0.047	0.05
18	LTE 66	QPSK20M	Rear Face	0	132322	1	0	Ant 0	-	1.00	22.50	22.41	1.02	0.03	0.106	0.11
	LTE 66	QPSK20M	Rear Face	0	132322	50	0	Ant 0	-	1.00	21.50	21.34	1.04	0.01	0.076	0.08
	LTE 66	QPSK20M	Rear Face	0	132072	1	0	Ant 0	-	1.00	22.50	22.35	1.04	0.17	0.079	0.08
	LTE 66	QPSK20M	Rear Face	0	132572	1	0	Ant 0	-	1.00	22.50	22.34	1.04	-0.05	0.086	0.09

Extremity SAR Test Result

System & Position								DUT Configuration	SAR							
Plot No.	Band	Mode	Test Position	Separation Distance (mm)	Channel	RB#	RB offset	Ant Status	Duty Cycle	Crest Factor	Max. Tune-up Power (dBm)	Measured Conducted Power (dBm)	Scaling Factor	Power Drift (dB)	Measured SAR-10g (W/kg)	Scaled SAR-10g (W/kg)
19	WLAN2.4G	802.11b	Rear Face	0	1			Ant 0	96.40	1.04	19.00	18.77	1.05	-0.07	0.049	0.05
	WLAN2.4G	802.11b	Rear Face	0	6			Ant 0	96.40	1.04	19.00	18.69	1.07	-0.08	<0.001	0.00
	WLAN2.4G	802.11b	Rear Face	0	11			Ant 0	96.40	1.04	19.00	18.74	1.06	0.03	<0.001	0.00
20	WLAN5.3G	802.11a	Rear Face	0	52			Ant 0	95.90	1.04	20.00	19.91	1.02	-0.03	0.088	0.09
	WLAN5.3G	802.11a	Rear Face	0	56			Ant 0	95.90	1.04	20.00	19.89	1.03	0.17	0.078	0.08
	WLAN5.3G	802.11a	Rear Face	0	60			Ant 0	95.90	1.04	20.00	19.91	1.02	0.05	0.08	0.08
	WLAN5.3G	802.11a	Rear Face	0	64			Ant 0	95.90	1.04	20.00	19.75	1.06	0.09	0.077	0.08
21	WLAN5.6G	802.11a	Rear Face	0	116			Ant 0	97.40	1.03	20.00	19.88	1.03	0.05	0.024	0.03
	WLAN5.6G	802.11a	Rear Face	0	100			Ant 0	97.40	1.03	20.00	19.83	1.04	-0.08	0.019	0.02
	WLAN5.6G	802.11a	Rear Face	0	120			Ant 0	97.40	1.03	20.00	19.85	1.04	0.01	0.018	0.02
	WLAN5.6G	802.11a	Rear Face	0	124			Ant 0	97.40	1.03	20.00	19.82	1.04	-0.07	0.018	0.02
	WLAN5.6G	802.11a	Rear Face	0	132			Ant 0	97.40	1.03	20.00	19.81	1.04	0.13	0.02	0.02
	WLAN5.6G	802.11a	Rear Face	0	140			Ant 0	97.40	1.03	20.00	19.82	1.04	-0.1	0.023	0.02
	WLAN5.6G	802.11a	Rear Face	0	144			Ant 0	97.40	1.03	20.00	19.82	1.04	0.09	0.022	0.02
22	WLAN5.8G	802.11a	Rear Face	0	165			Ant 0	96.90	1.03	20.00	19.79	1.05	-0.12	0.047	0.05
	WLAN5.8G	802.11a	Rear Face	0	149			Ant 0	96.90	1.03	20.00	19.62	1.09	-0.06	0.038	0.04
	WLAN5.8G	802.11a	Rear Face	0	153			Ant 0	96.90	1.03	20.00	19.60	1.10	0.11	0.035	0.04
	WLAN5.8G	802.11a	Rear Face	0	157			Ant 0	96.90	1.03	20.00	19.70	1.07	-0.02	0.035	0.04
	WLAN5.8G	802.11a	Rear Face	0	161			Ant 0	96.90	1.03	20.00	19.64	1.09	0.18	0.039	0.04
23	BT	BR / EDR	Rear Face	0	39			Ant 0	76.61	1.31	13.00	12.42	1.14	0.18	0.008	0.01
	BT	BR / EDR	Rear Face	0	0			Ant 0	76.61	1.31	13.00	12.07	1.24	0.01	0.003	0.00
	BT	BR / EDR	Rear Face	0	78			Ant 0	76.61	1.31	13.00	12.88	1.03	0.07	<0.001	0.00
24	NFC	ASK	Rear Face	0	1			Ant 0	-	1.00	-	-	1	0	<0.001	0.00

Appendix H. Analysis of Simultaneous Transmission.

The analysis of simultaneous transmission SAR are shown as below.

<Possibilities of Simultaneous Transmission>

The simultaneous transmission possibilities for this device are listed as below.

Simultaneous TX Combination	Capable Transmit Configurations	Face / Extremity Exposure Condition
A	MAX WWAN + MAX WLAN 2.4G	Yes
B	MAX WWAN + MAX WLAN 5G	Yes
C	MAX WWAN + MAX BT	Yes
D	NFC + MAX WLAN 2.4G	Yes
E	NFC + MAX WLAN 5G	Yes
F	NFC + MAX BT	Yes
G	MAX WWAN + MAX WLAN 5G + MAX BT	Yes
H	MAX WWAN + MAX WLAN 2.4G + NFC	Yes
I	MAX WWAN + MAX BT + NFC	Yes
J	MAX WWAN + MAX WLAN 5G + MAX BT + NFC	Yes

Notes

1. The WLAN 2.4G and WLAN 5G cannot transmit simultaneously.
2. Simultaneous TX Combination A, D, can be coverd by H.
   Simultaneous TX Combination B, C, E, F, G and I can be coverd by J.

Simultaneous Transmission SAR Evaluation (Face)							
Position	1	2	3	4	5	H(1+2+5)	J(1+3+4+5)
	Max WWAN	Max WLAN 2.4GHz	Max WLAN 5GHz	Max BT	NFC	Summing result 1g SAR W/kg	Summing result 1g SAR W/kg
	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg	1g SAR W/kg		
Front Face	0.70	0.42	0.25	0.01	0.00	1.12	0.96

Simultaneous Transmission SAR Evaluation (Extremity)							
Position	1	2	3	4	5	H(1+2+5)	J(1+3+4+5)
	Max WWAN	Max WLAN 2.4GHz	Max WLAN 5GHz	Max BT	NFC	Summing result 10g SAR W/kg	Summing result 10g SAR W/kg
	10g SAR W/kg	10g SAR W/kg	10g SAR W/kg	10g SAR W/kg	10g SAR W/kg		
Rear Face	0.16	0.05	0.09	0.01	0.00	0.21	0.26

Appendix Z. Calibration Certificate for Probe and Dipole

The SPEAG calibration certificates are shown as follows.

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client **B.V. ADT**
Taoyuan City, Taiwan

Certificate No. **CLA13-1018_Mar23**

CALIBRATION CERTIFICATE

Object	CLA13 - SN: 1018
Calibration procedure(s)	QA CAL-15.v10 Calibration Procedure for SAR Validation Sources below 700 MHz
Calibration date:	March 20, 2023

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: CC2552 (20x)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 3877	06-Jan-23 (No. EX3-3877_Jan23)	Jan-24
DAE4	SN: 654	27-Jan-23 (No. DAE4-654_Jan23)	Jan-24

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter NRP2	SN: 107193	08-Nov-21 (in house check Dec-22)	In house check: Dec-24
Power sensor NRP-Z91	SN: 100922	15-Dec-09 (in house check Dec-22)	In house check: Dec-24
Power sensor NRP-Z91	SN: 100418	01-Jan-04 (in house check Dec-22)	In house check: Dec-24
RF generator HP 8648C	SN: US3642U01700	04-Aug-99 (in house check Jun-22)	In house check: Jun-24
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

	Name	Function	Signature
Calibrated by:	Jelon Kastrati	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: March 21, 2023

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	ELI4 Flat Phantom	Shell thickness: 2 ± 0.2 mm
EUT Positioning	Touch Position	
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	13 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	55.0	0.75 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	54.1 ± 6 %	0.74 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	1 W input power	0.534 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**0.538 W/kg ± 18.4 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	1 W input power	0.335 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**0.337 W/kg ± 18.0 % (k=2)**

Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.0 Ω + 2.8 jΩ
Return Loss	- 29.4 dB

Additional EUT Data

Manufactured by	SPEAG

Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

DASY5 Validation Report for Head TSL

Date: 20.03.2023

Test Laboratory: SPEAG, Zurich, Switzerland

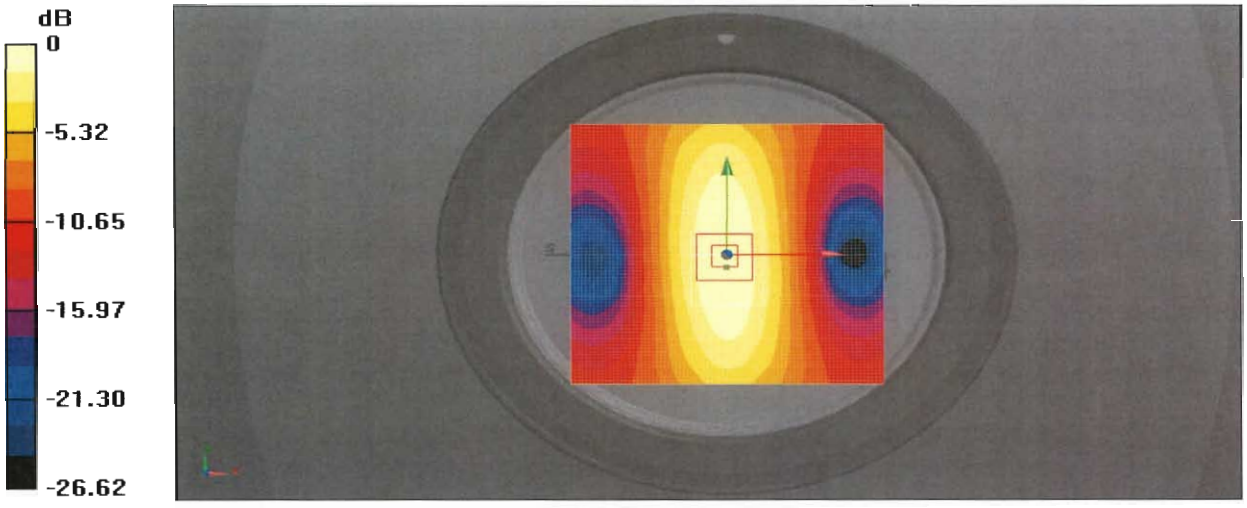
DUT: CLA13; Type: CLA13; Serial: CLA13 - SN: 1018

Communication System: UID 0 - CW; Frequency: 13 MHz
Medium parameters used: f = 13 MHz; σ = 0.74 S/m; εr = 54.1; ρ = 1000 kg/m3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY52 Configuration:

- Probe: EX3DV4 - SN3877; ConvF(15.33, 15.33, 15.33) @ 13 MHz; Calibrated: 06.01.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn654; Calibrated: 27.01.2023
- Phantom: ELI v6.0; Type: QDOVA003AA; Serial: TP:2034
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

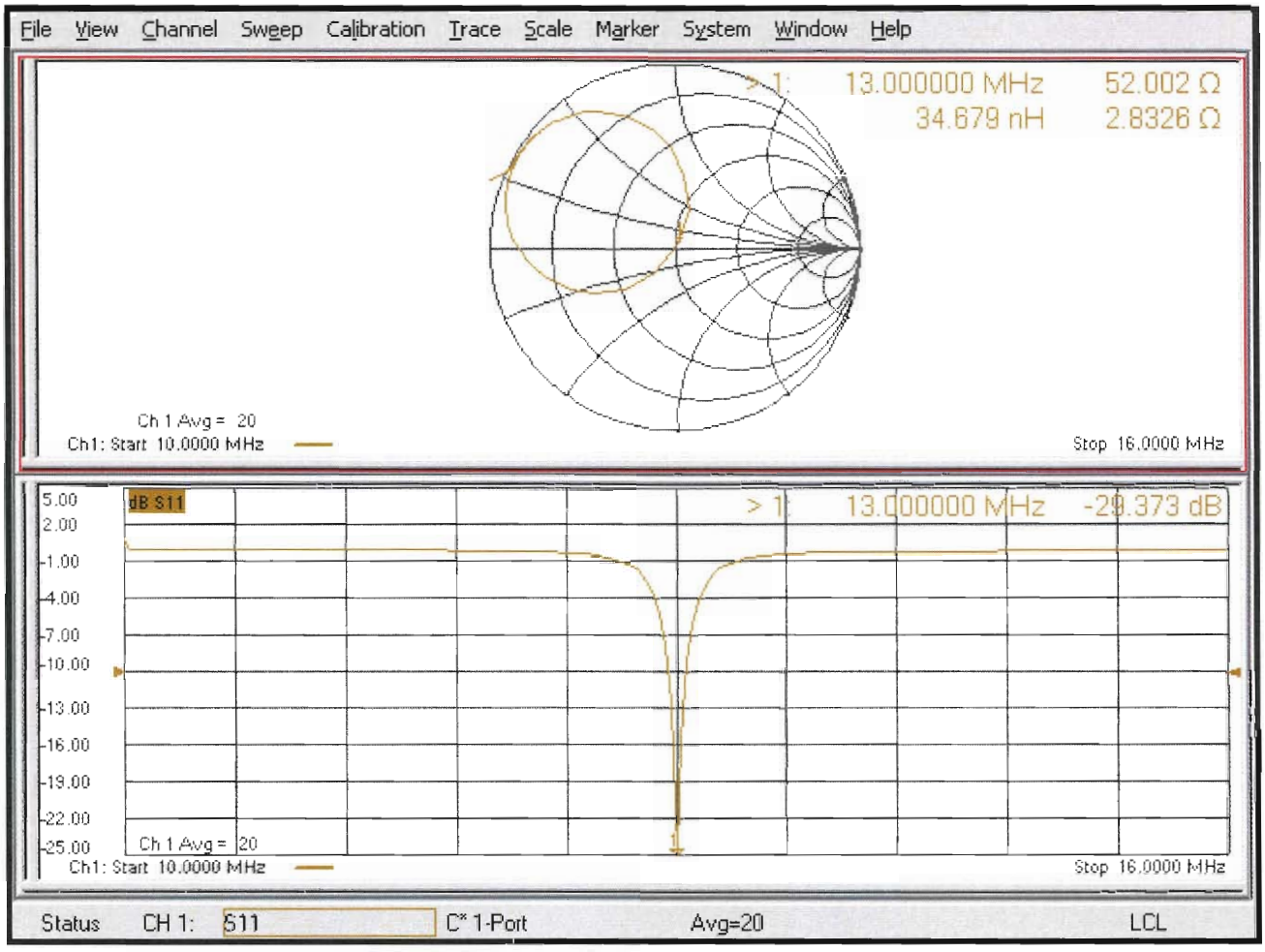
CLA Calibration for HSL-LF Tissue/CLA-13, touch configuration, Pin=1W/Zoom Scan, dist=1.4mm (8x10x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 32.07 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.05 W/kg
SAR(1 g) = 0.534 W/kg; SAR(10 g) = 0.335 W/kg
Smallest distance from peaks to all points 3 dB below = 18.4 mm
Ratio of SAR at M2 to SAR at M1 = 79.5%
Maximum value of SAR (measured) = 0.782 W/kg



0 dB = 0.782 W/kg = -1.07 dBW/kg

Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Impedance Measurement Plot for Head TSL



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Calibration Laboratory of
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Engineering AG
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Accreditation No.: SCS 0108

Client **B.V. ADT**
Taoyuan City

Certificate No. **D750V3-1013_Aug23**

CALIBRATION CERTIFICATE

Object	D750V3 - SN:1013
Calibration procedure(s)	QA CAL-05.v12 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz
Calibration date:	August 21, 2023

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104778	30-Mar-23 (No. 217-03804/03805)	Mar-24
Power sensor NRP-Z91	SN: 103244	30-Mar-23 (No. 217-03804)	Mar-24
Power sensor NRP-Z91	SN: 103245	30-Mar-23 (No. 217-03805)	Mar-24
Reference 20 dB Attenuator	SN: BH9394 (20k)	30-Mar-23 (No. 217-03809)	Mar-24
Type-N mismatch combination	SN: 310982 / 06327	30-Mar-23 (No. 217-03810)	Mar-24
Reference Probe EX3DV4	SN: 7349	10-Jan-23 (No. EX3-7349_Jan23)	Jan-24
DAE4	SN: 601	19-Dec-22 (No. DAE4-601_Dec22)	Dec-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-22)	In house check: Oct-24
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

	Name	Function	Signature
Calibrated by:	Michael Weber	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: August 22, 2023

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	41.9	0.89 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.5 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.17 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**8.56 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.42 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**5.61 W/kg ± 16.5 % (k=2)**

Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.3 Ω + 0.1 jΩ
Return Loss	- 29.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.033 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 21.08.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1013

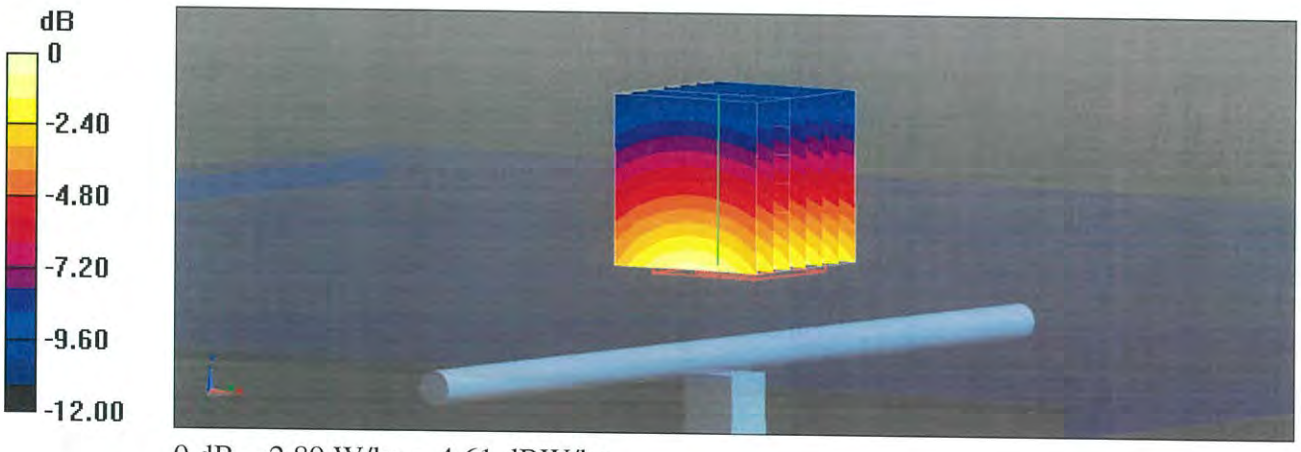
Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; σ = 0.91 S/m; ε_r = 42.5; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.11, 10.11, 10.11) @ 750 MHz; Calibrated: 10.01.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 19.12.2022
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

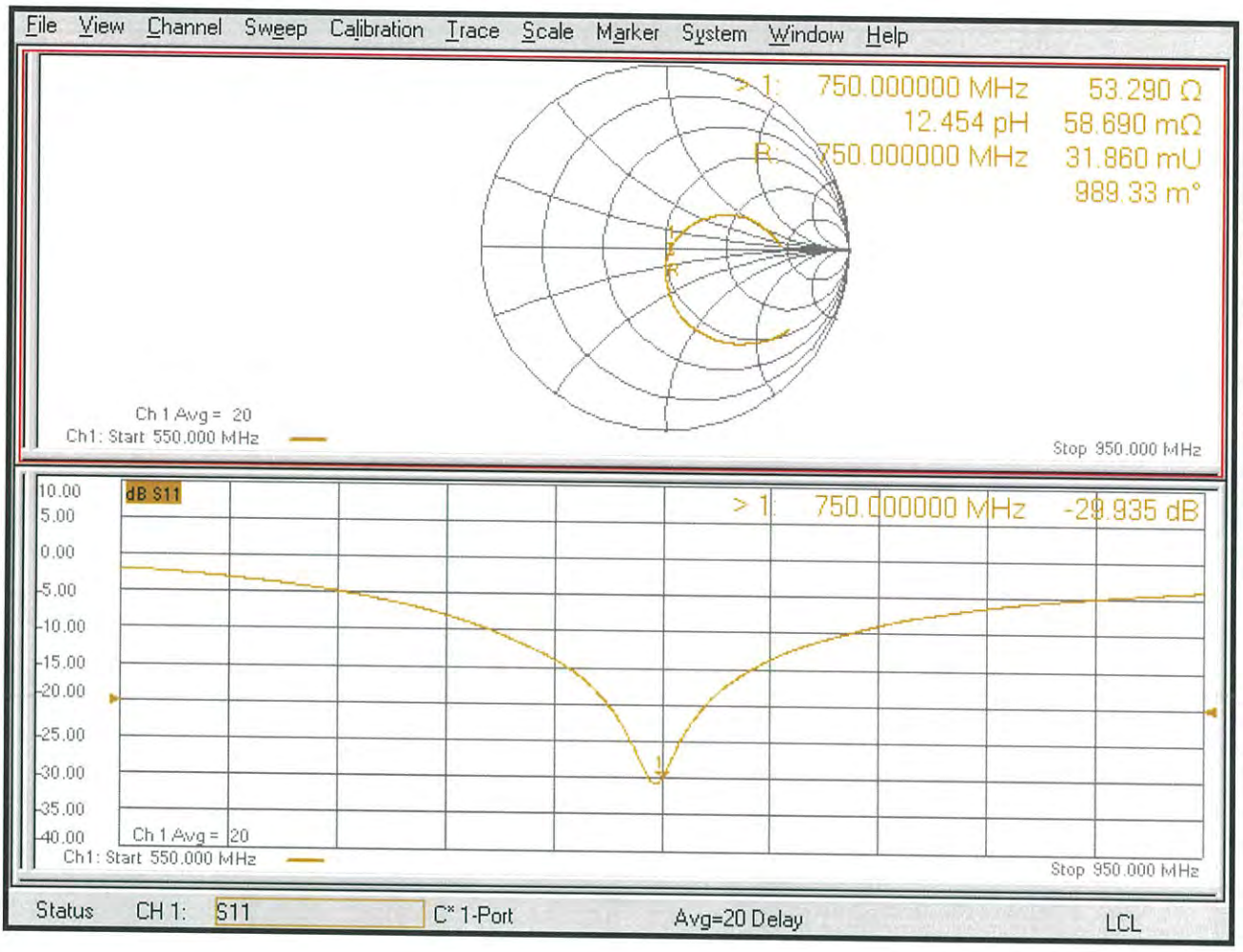
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.70 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 3.29 W/kg
SAR(1 g) = 2.17 W/kg; SAR(10 g) = 1.42 W/kg
Smallest distance from peaks to all points 3 dB below = 17.9 mm
Ratio of SAR at M2 to SAR at M1 = 65.6%
Maximum value of SAR (measured) = 2.89 W/kg



0 dB = 2.89 W/kg = 4.61 dBW/kg

Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Impedance Measurement Plot for Head TSL



Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Calibration Laboratory of
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Accreditation No.: SCS 0108

Client **B.V. ADT**
Taoyuan City

Certificate No. **D1750V2-1055_Sep23**

CALIBRATION CERTIFICATE

Object	D1750V2 - SN:1055
Calibration procedure(s)	QA CAL-05.v12 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz
Calibration date:	September 21, 2023

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP2	SN: 104778	30-Mar-23 (No. 217-03804/03805)	Mar-24
Power sensor NRP-Z91	SN: 103244	30-Mar-23 (No. 217-03804)	Mar-24
Power sensor NRP-Z91	SN: 103245	30-Mar-23 (No. 217-03805)	Mar-24
Reference 20 dB Attenuator	SN: BH9394 (20k)	30-Mar-23 (No. 217-03809)	Mar-24
Type-N mismatch combination	SN: 310982 / 06327	30-Mar-23 (No. 217-03810)	Mar-24
Reference Probe EX3DV4	SN: 7349	10-Jan-23 (No. EX3-7349_Jan23)	Jan-24
DAE4	SN: 601	19-Dec-22 (No. DAE4-601_Dec22)	Dec-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-22)	In house check: Oct-24
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

	Name	Function	Signature
Calibrated by:	Paulo Pina	Laboratory Technician	
Approved by:	Sven Kühn	Technical Manager	

Issued: September 21, 2023

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1750 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.1	1.37 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	40.3 ± 6 %	1.36 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.02 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**36.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	4.77 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**19.2 W/kg ± 16.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	49.5 Ω - 0.6 jΩ
Return Loss	- 42.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.228 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 21.09.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1750 MHz; Type: D1750V2; Serial: D1750V2 - SN:1055

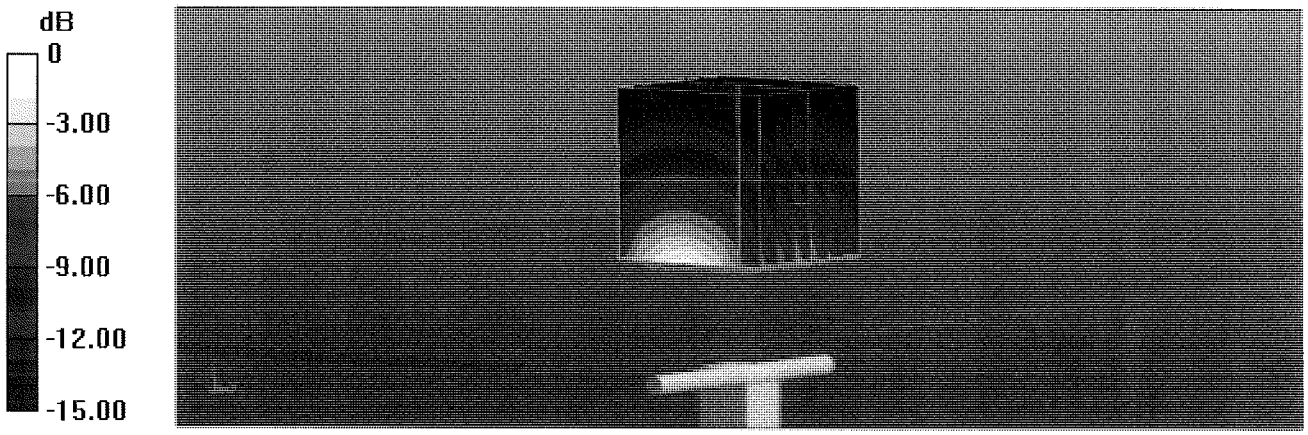
Communication System: UID 0 - CW; Frequency: 1750 MHz
Medium parameters used: f = 1750 MHz; σ = 1.36 S/m; ε_r = 40.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.67, 8.67, 8.67) @ 1750 MHz; Calibrated: 10.01.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 19.12.2022
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

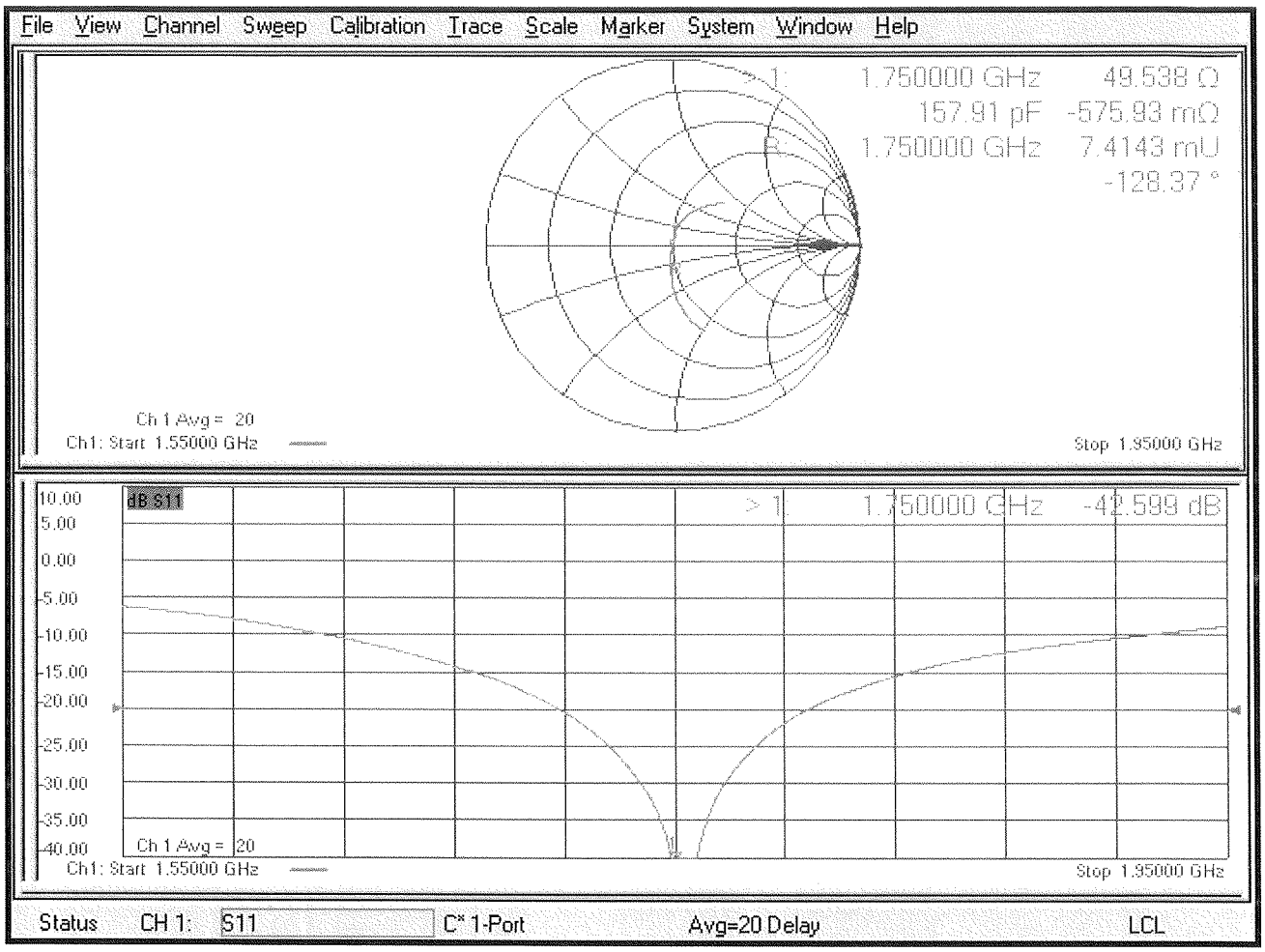
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 105.8 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 16.5 W/kg
SAR(1 g) = 9.02 W/kg; SAR(10 g) = 4.77 W/kg
Smallest distance from peaks to all points 3 dB below = 10 mm
Ratio of SAR at M2 to SAR at M1 = 55.4%
Maximum value of SAR (measured) = 13.6 W/kg



0 dB = 13.6 W/kg = 11.33 dBW/kg

Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Impedance Measurement Plot for Head TSL



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Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 0108

Client **B.V. ADT**

Certificate No: D1900V2-5d036_Feb23

CALIBRATION CERTIFICATE

Object	D1900V2 - SN:5d036
Calibration procedure(s)	QA CAL-05.v12 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz
Calibration date:	February 17, 2023

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter NRP	SN: 104778	04-Apr-22 (No. 217-03525/03524)	Apr-23
Power sensor NRP-Z91	SN: 103244	04-Apr-22 (No. 217-03524)	Apr-23
Power sensor NRP-Z91	SN: 103245	04-Apr-22 (No. 217-03525)	Apr-23
Reference 20 dB Attenuator	SN: BH9394 (20k)	04-Apr-22 (No. 217-03527)	Apr-23
Type-N mismatch combination	SN: 310982 / 06327	04-Apr-22 (No. 217-03528)	Apr-23
Reference Probe EX3DV4	SN: 7349	10-Jan-23 (No. EX3-7349_Jan23)	Jan-24
DAE4	SN: 601	19-Dec-22 (No. DAE4-601_Dec22)	Dec-23

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
Power sensor HP 8481A	SN: MY41093315	07-Oct-15 (in house check Oct-22)	In house check: Oct-24
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-22)	In house check: Oct-24
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-22)	In house check: Oct-24

	Name	Function	Signature
Calibrated by:	Paulo Pina	Laboratory Technician	
Approved by:	Niels Kuster	Quality Manager	

Issued: February 20, 2023

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

Report No. : SFBEDV-WTW-P23090682 R1
Cancels and replaces the report No.: SFBEDV-WTW-P23090682 dated Jan. 26, 2024

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEC/IEEE 62209-1528, "Measurement Procedure For The Assessment Of Specific Absorption Rate Of Human Exposure To Radio Frequency Fields From Hand-Held And Body-Worn Wireless Communication Devices - Part 1528: Human Models, Instrumentation And Procedures (Frequency Range of 4 MHz to 10 GHz)", October 2020.
b) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

c) DASY System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The source is mounted in a touch configuration below the center marking of the flat phantom.
- *Return Loss:* This parameter is measured with the source positioned under the liquid filled phantom (as described in the measurement condition clause). The Return Loss ensures low reflected power. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY52	V52.10.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.8 ± 6 %	1.40 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	9.83 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**39.3 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.12 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.5 W/kg ± 16.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL

Impedance, transformed to feed point	52.8 Ω + 5.0 jΩ
Return Loss	- 25.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.195 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 17.02.2023

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d036

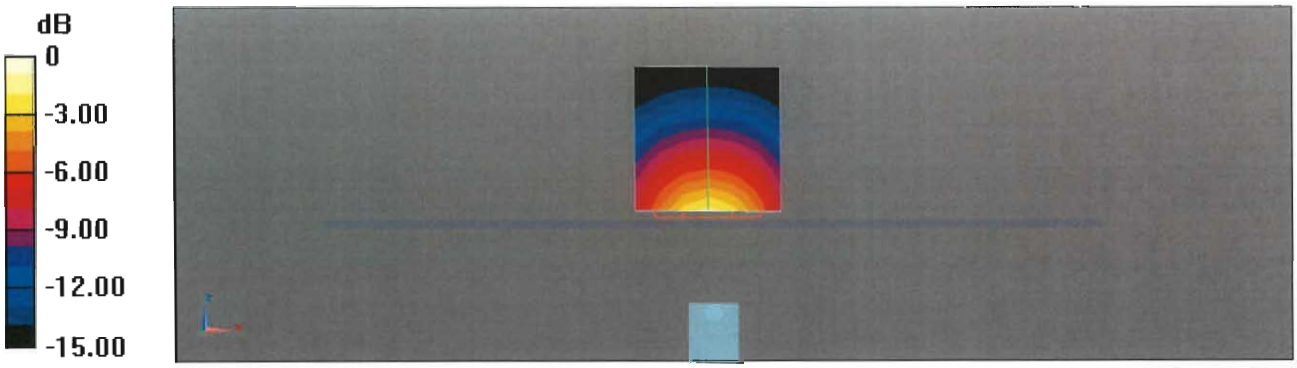
Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.4 S/m; ε_r = 39.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.35, 8.35, 8.35) @ 1900 MHz; Calibrated: 10.01.2023
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 19.12.2022
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Head Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 109.6 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 18.0 W/kg
SAR(1 g) = 9.83 W/kg; SAR(10 g) = 5.12 W/kg
Smallest distance from peaks to all points 3 dB below = 10 mm
Ratio of SAR at M2 to SAR at M1 = 55%
Maximum value of SAR (measured) = 15.2 W/kg



0 dB = 15.2 W/kg = 11.82 dBW/kg

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