GSM (850MHz with GPRS/Flat)

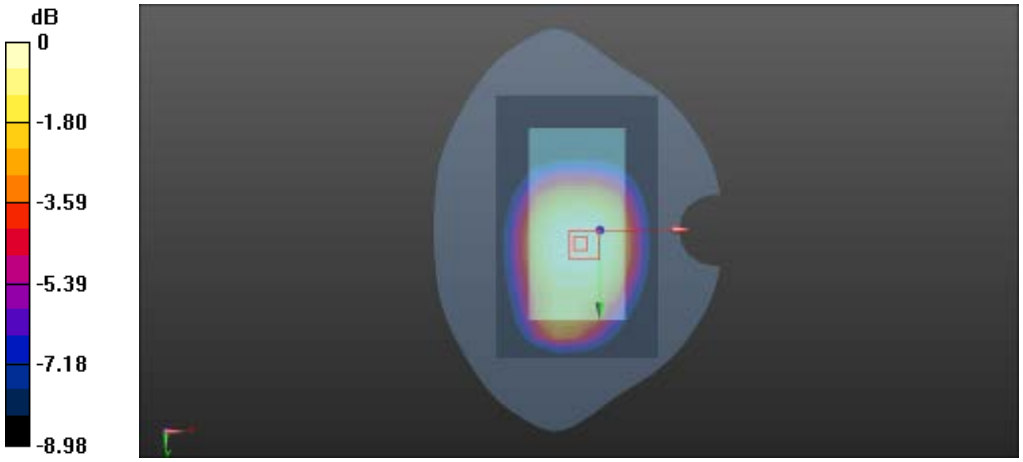
FLAT	TP	836.6 MHz

Communication System: UID 0, Generic GSM (0); Frequency: 836.6 MHz
Medium parameters used (extrapolated): f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.843; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(8.91, 8.91, 8.91); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 850 TP/850GPRS TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.450 W/kg
Flat-Section MSL 850 TP/850GPRS TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.359 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.567 W/kg
SAR(1 g) = 0.438 W/kg; SAR(10 g) = 0.330 W/kg
Maximum value of SAR (measured) = 0.458 W/kg



0 dB = 0.458 W/kg = -3.39 dBW/kg

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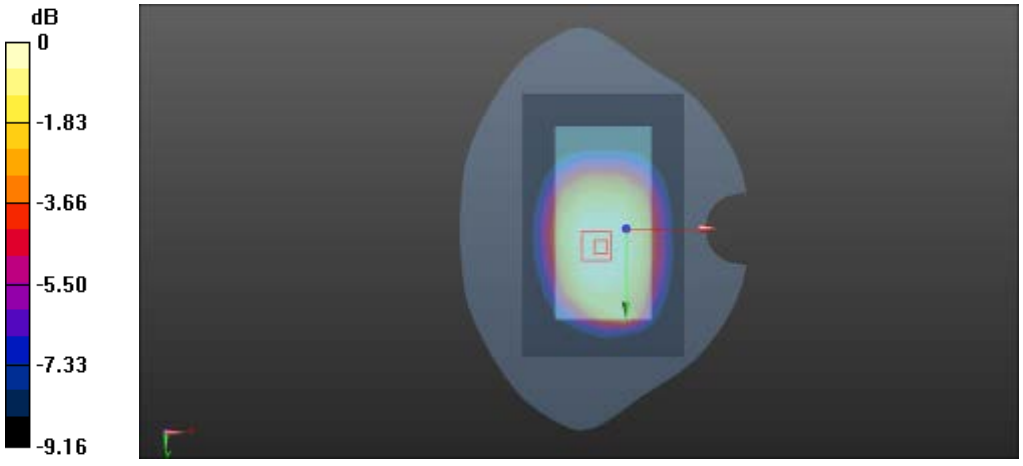
FLAT	TG	836.6 MHz

Communication System: UID 0, Generic GSM (0); Frequency: 836.6 MHz
Medium parameters used (extrapolated): f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.843; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(8.91, 8.91, 8.91); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 850 TG/850GPRS TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.498 W/kg
Flat-Section MSL 850 TG/850GPRS TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.336 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.599 W/kg
SAR(1 g) = 0.474 W/kg; SAR(10 g) = 0.361 W/kg



0 dB = 0.498 W/kg = -3.03 dBW/kg

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GSM (850MHz with EGPRS/Flat)

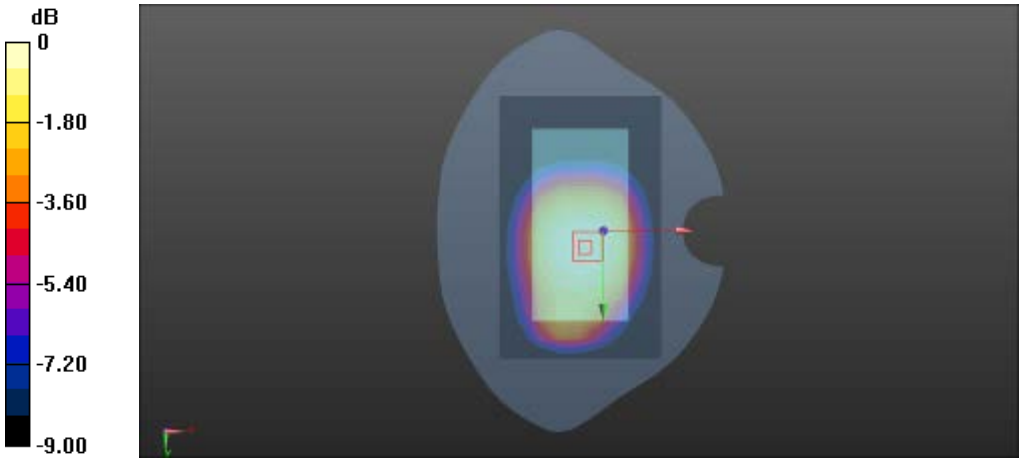
FLAT	TP	836.6 MHz

Communication System: UID 0, Generic GSM (0); Frequency: 836.6 MHz
Medium parameters used (extrapolated): f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.843; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(8.91, 8.91, 8.91); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 850 TP/850EGPRS TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.453 W/kg
Flat-Section MSL 850 TP/850EGPRS TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 21.207 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.572 W/kg
SAR(1 g) = 0.437 W/kg; SAR(10 g) = 0.330 W/kg
Maximum value of SAR (measured) = 0.457 W/kg



0 dB = 0.457 W/kg = -3.40 dBW/kg

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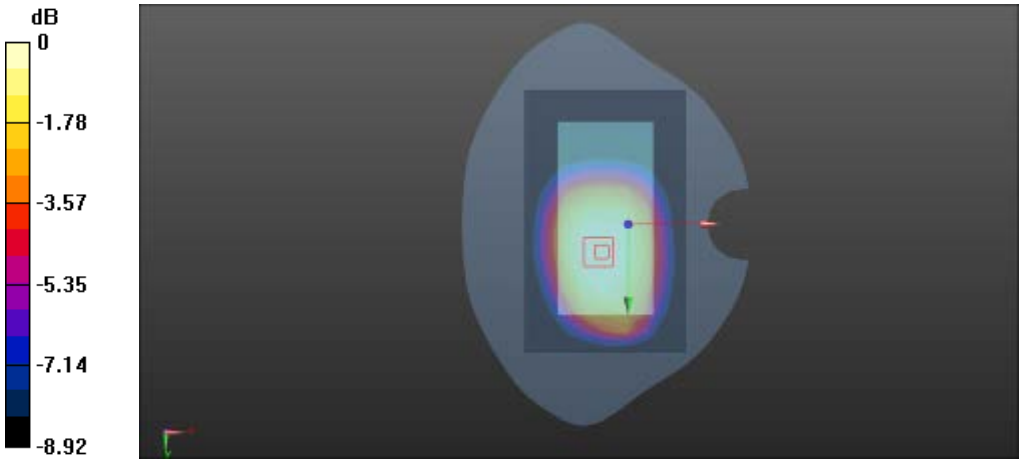
FLAT	TG	836.6 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 836.6 MHz
Medium parameters used (extrapolated): f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.843; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(8.91, 8.91, 8.91); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 850 TG/850EGPRS TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.660 W/kg
Flat-Section MSL 850 TG/850EGPRS TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.327 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.810 W/kg
SAR(1 g) = 0.630 W/kg; SAR(10 g) = 0.478 W/kg
Maximum value of SAR (measured) = 0.659 W/kg



0 dB = 0.659 W/kg = -1.81 dBW/kg

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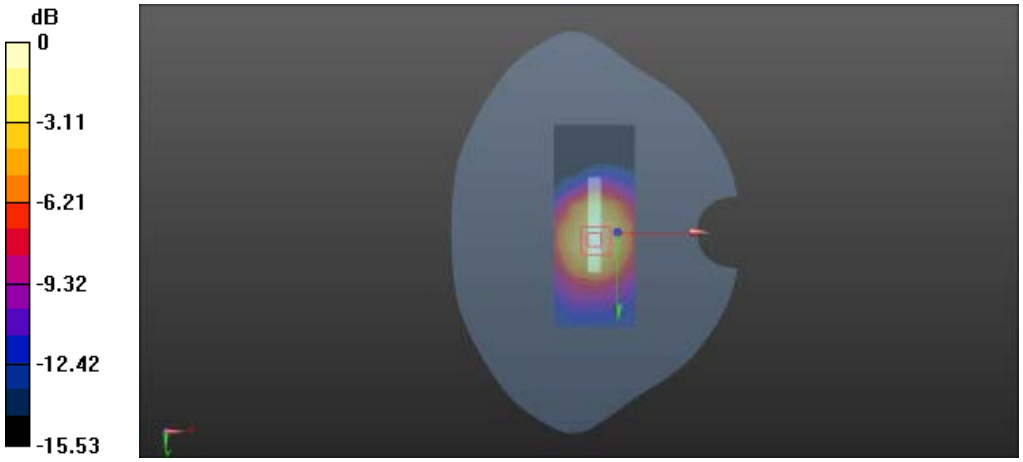
FLAT	Edge2	836.6 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 836.6 MHz
Medium parameters used (extrapolated): f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.843; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(8.91, 8.91, 8.91); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 850 HOT/850EGPRS edge 2/Area Scan (5x11x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.352 W/kg
Flat-Section MSL 850 HOT/850EGPRS edge 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 19.030 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.619 W/kg
SAR(1 g) = 0.326 W/kg; SAR(10 g) = 0.187 W/kg
Maximum value of SAR (measured) = 0.358 W/kg



0 dB = 0.358 W/kg = -4.46 dBW/kg

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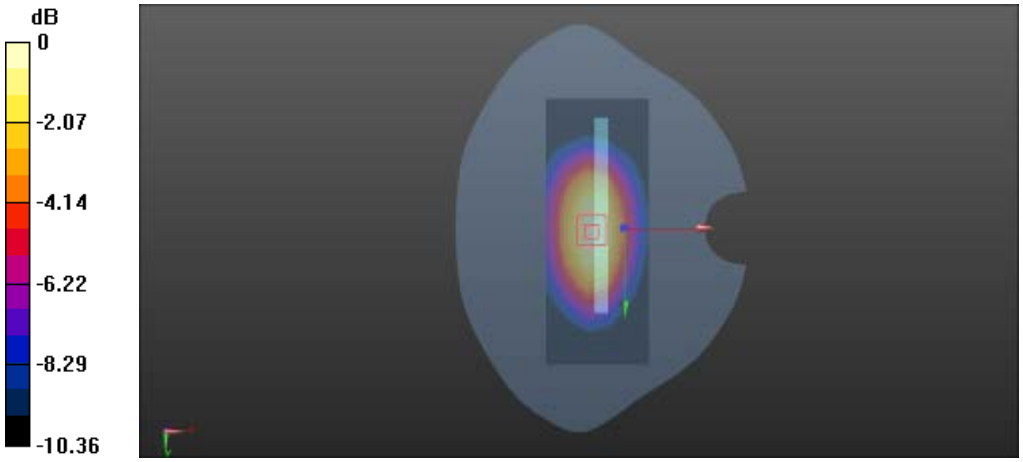
FLAT	Edge3	836.6 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 836.6 MHz
Medium parameters used (extrapolated): f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.843; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(8.91, 8.91, 8.91); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 850 HOT/850EGPRS edge 3/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.602 W/kg
Flat-Section MSL 850 HOT/850EGPRS edge 3/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.403 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 0.882 W/kg
SAR(1 g) = 0.588 W/kg; SAR(10 g) = 0.390 W/kg
Maximum value of SAR (measured) = 0.635 W/kg



0 dB = 0.635 W/kg = -1.97 dBW/kg

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GSM (1900MHz/Head)

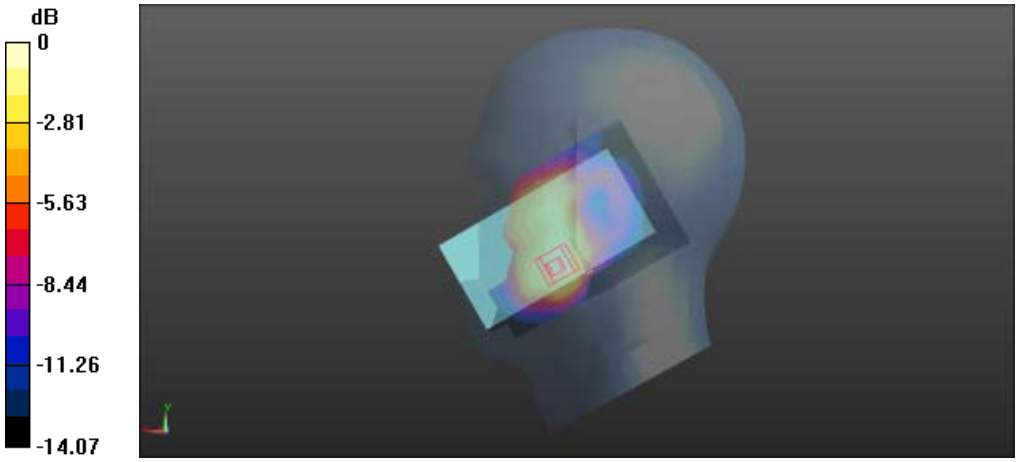
Left Side	Cheek	1880.0 MHz

Communication System: UID 0, Generic GSM (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL 1900/1900GSM touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.173 W/kg
Head-Section Left HSL 1900/1900GSM touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.922 V/m; Power Drift = 0.16 dB
Peak SAR (extrapolated) = 0.273 W/kg
SAR(1 g) = 0.176 W/kg; SAR(10 g) = 0.110 W/kg
Maximum value of SAR (measured) = 0.192 W/kg



0 dB = 0.192 W/kg = -7.17 dBW/kg

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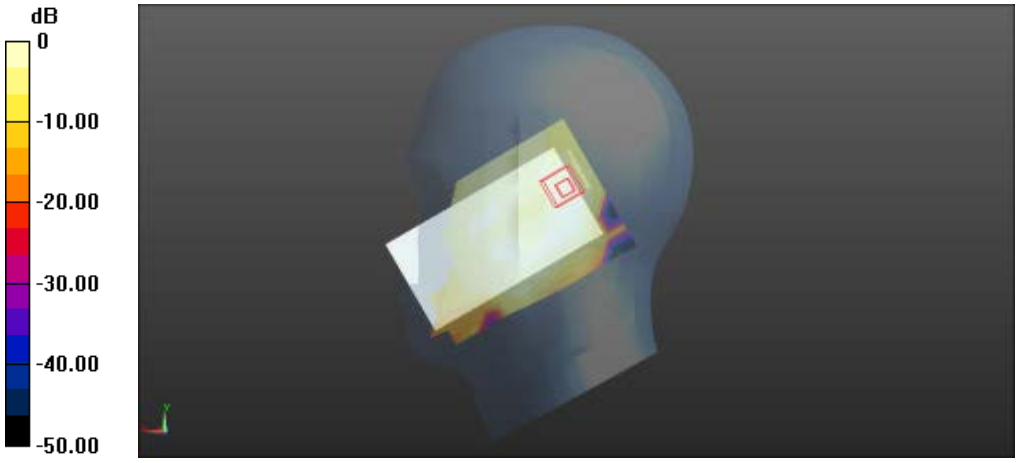
Left Side	tilt	1880 MHz

Communication System: UID 0, Generic GSM (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL 1900/1900GSM tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0501 W/kg
Head-Section Left HSL 1900/1900GSM tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.349 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.0950 W/kg
SAR(1 g) = 0.058 W/kg; SAR(10 g) = 0.030 W/kg
Maximum value of SAR (measured) = 0.0641 W/kg



0 dB = 0.0641 W/kg = -11.93 dBW/kg

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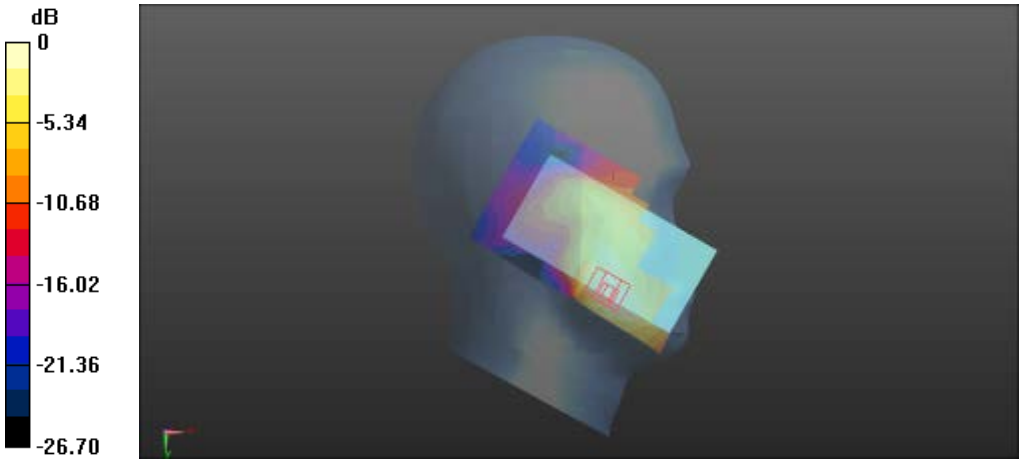
Right Side	Cheek	1880 MHz

Communication System: UID 0, Generic GSM (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL 1900/1900GSM touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.270 W/kg
Head-Section Right HSL 1900/1900GSM touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.756 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.410 W/kg
SAR(1 g) = 0.258 W/kg; SAR(10 g) = 0.156 W/kg
Maximum value of SAR (measured) = 0.281 W/kg



0 dB = 0.281 W/kg = -5.51 dBW/kg

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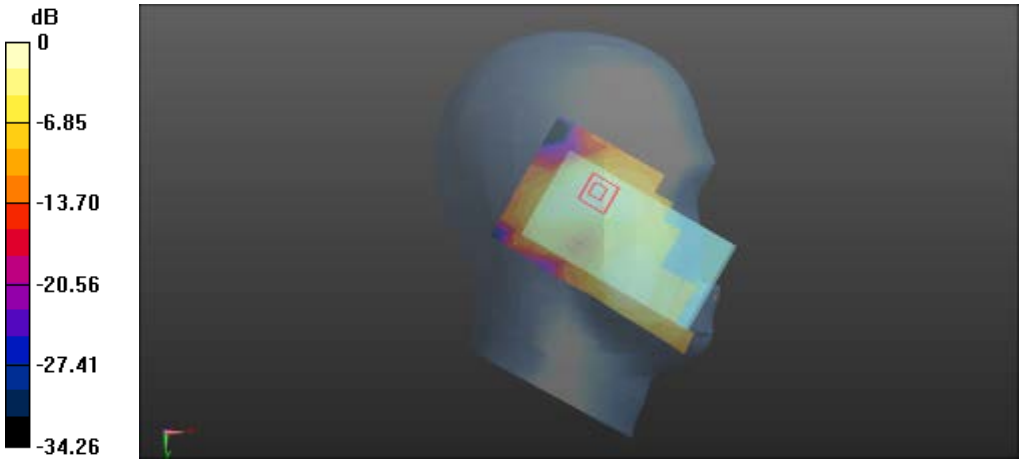
Right Side	tilt	1880.0 MHz

Communication System: UID 0, Generic GSM (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL 1900/1900GSM tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0752 W/kg
Head-Section Right HSL 1900/1900GSM tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.202 V/m; Power Drift = 0.39 dB
Peak SAR (extrapolated) = 0.125 W/kg
SAR(1 g) = 0.079 W/kg; SAR(10 g) = 0.047 W/kg
Maximum value of SAR (measured) = 0.0854 W/kg



0 dB = 0.0854 W/kg = -10.69 dBW/kg

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GSM with headset (1900MHz/Flat)

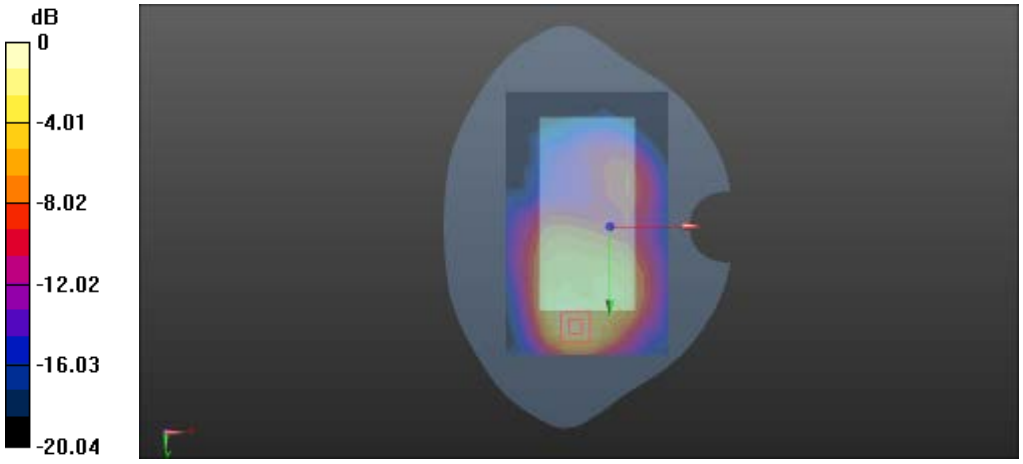
FLAT	TP	1880 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 1900 TP/1900GSM TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.304 W/kg
Flat-Section MSL 1900 TP/1900GSM TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.065 V/m; Power Drift = 0.20 dB
Peak SAR (extrapolated) = 0.684 W/kg
SAR(1 g) = 0.377 W/kg; SAR(10 g) = 0.199 W/kg
Maximum value of SAR (measured) = 0.420 W/kg



0 dB = 0.420 W/kg = -3.77 dBW/kg

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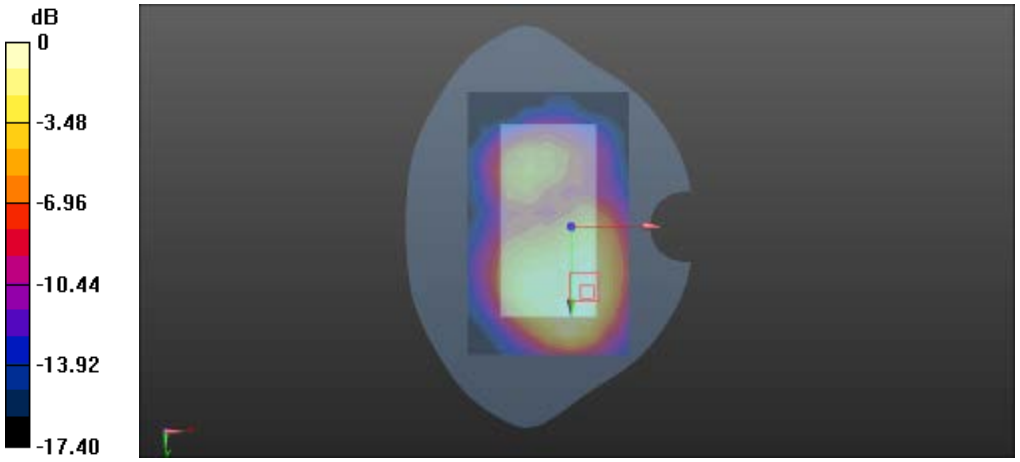
FLAT	TG	1880 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 1900 TG/1900GSM TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.303 W/kg
Flat-Section MSL 1900 TG/1900GSM TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.201 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.485 W/kg
SAR(1 g) = 0.274 W/kg; SAR(10 g) = 0.159 W/kg
Maximum value of SAR (measured) = 0.297 W/kg



0 dB = 0.297 W/kg = -5.27 dBW/kg

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GSM (1900MHz with GPRS/Flat)

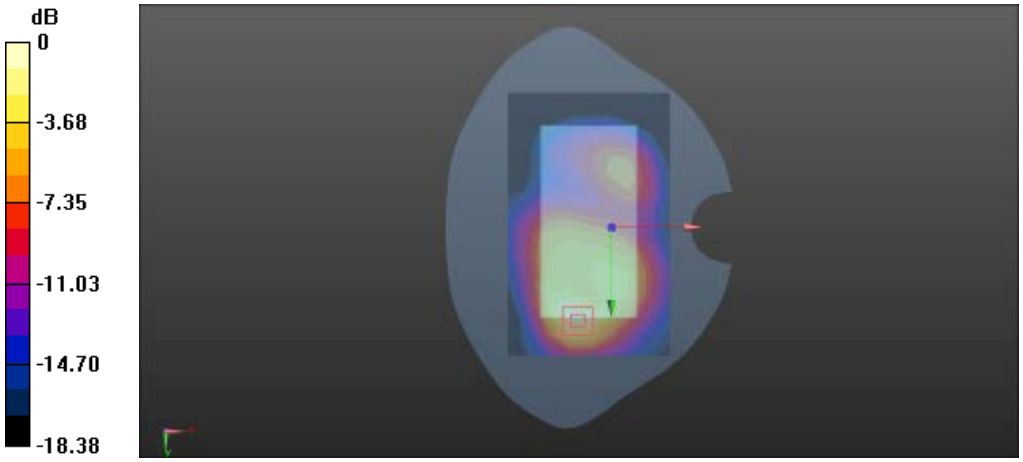
FLAT	TP	1880 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 1900 TP/1900GPRS TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.641 W/kg
Flat-Section MSL 1900 TP/1900GPRS TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.873 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 1.17 W/kg
SAR(1 g) = 0.648 W/kg; SAR(10 g) = 0.338 W/kg
Maximum value of SAR (measured) = 0.711 W/kg



0 dB = 0.711 W/kg = -1.48 dBW/kg

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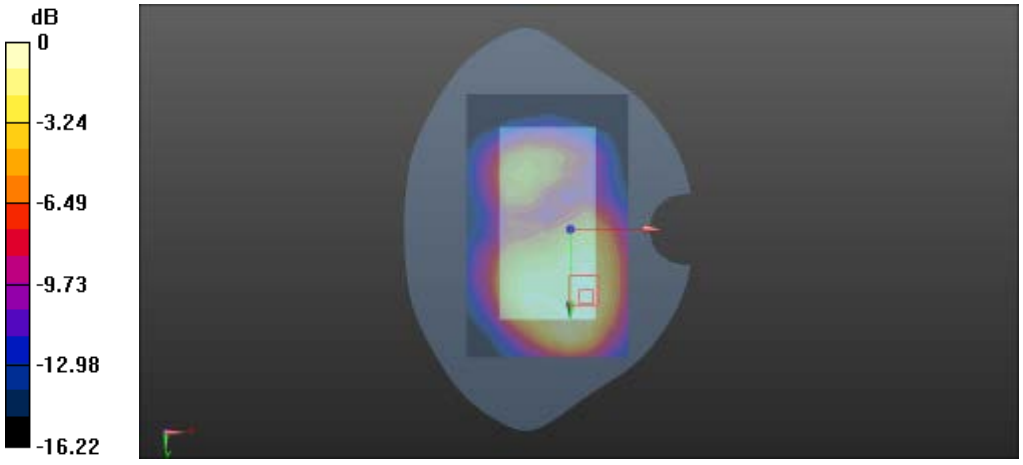
FLAT	TG	1880 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 1900 TG/1900GPRS TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.554 W/kg
Flat-Section MSL 1900 TG/1900GPRS TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.117 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.954 W/kg
SAR(1 g) = 0.508 W/kg; SAR(10 g) = 0.290 W/kg
Maximum value of SAR (measured) = 0.546 W/kg



0 dB = 0.546 W/kg = -2.63 dBW/kg

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GSM (1900MHz with EGPRS/Flat)

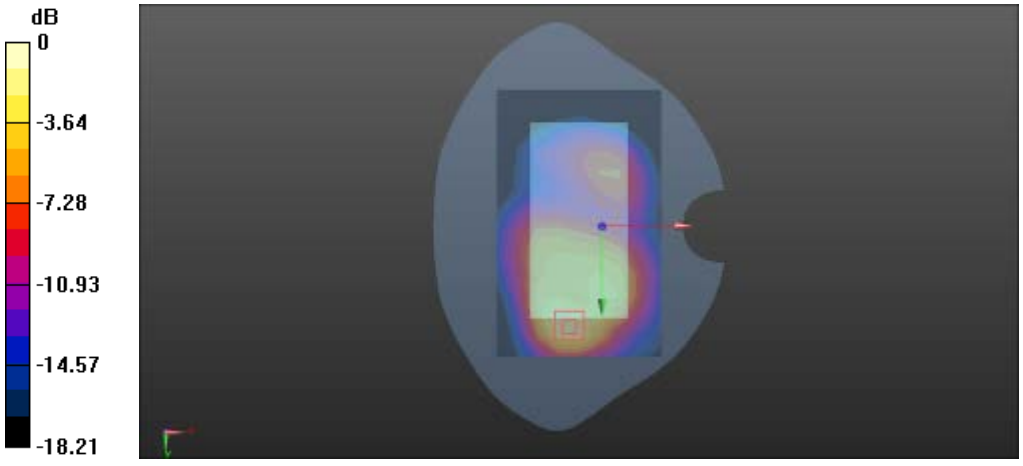
FLAT	TP	1880 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 1900 TP/1900EGPRS TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.571 W/kg
Flat-Section MSL 1900 TP/1900EGPRS TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.864 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.689 W/kg; SAR(10 g) = 0.360 W/kg
Maximum value of SAR (measured) = 0.777 W/kg



0 dB = 0.777 W/kg = -1.10 dBW/kg

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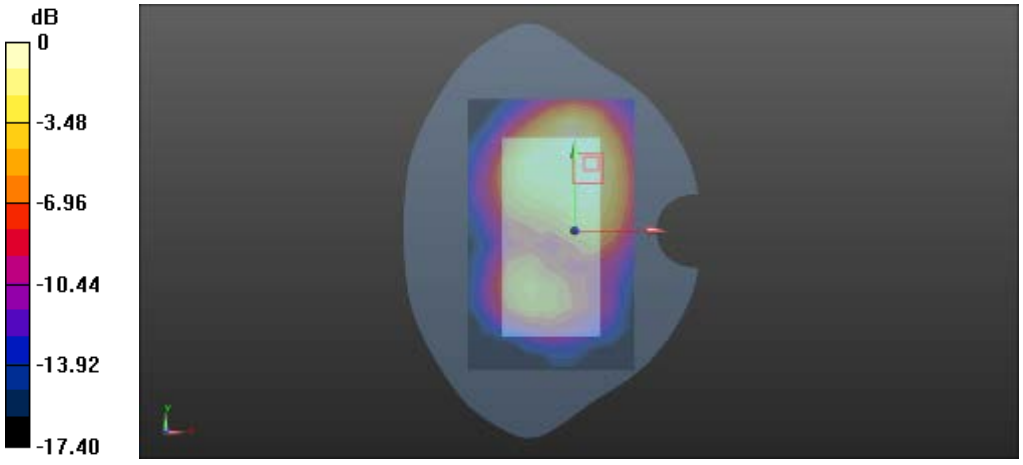
FLAT	TG	1880 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL 1900 TG/1900GSM TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.303 W/kg
Flat-Section MSL 1900 TG/1900GSM TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.201 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.485 W/kg
SAR(1 g) = 0.274 W/kg; SAR(10 g) = 0.159 W/kg
Maximum value of SAR (measured) = 0.297 W/kg



0 dB = 0.297 W/kg = -5.27 dBW/kg

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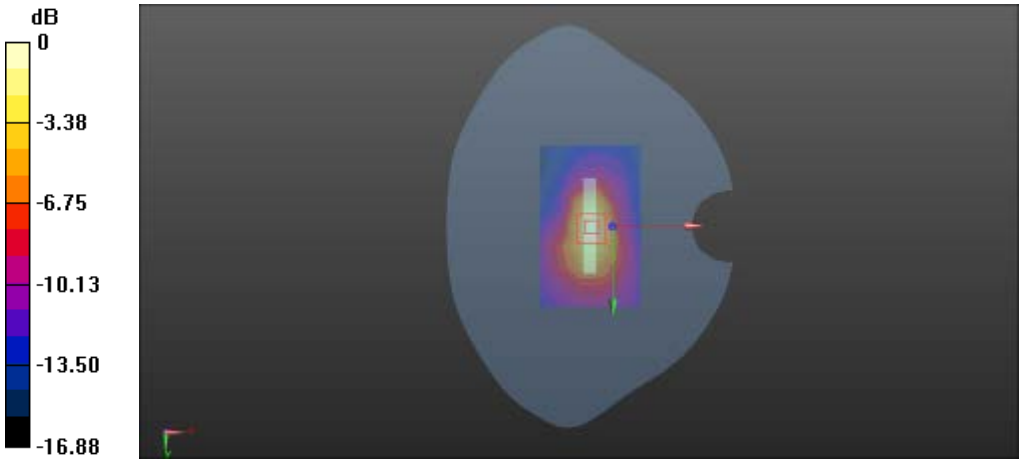
FLAT	EDGE2	1880 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL hotspot/1900 EGPRS edge 2 CH810 3 2 2 3 2/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.641 W/kg
Flat-Section MSL hotspot/1900 EGPRS edge 2 CH810 3 2 2 3 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.132 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.29 W/kg
SAR(1 g) = 0.742 W/kg; SAR(10 g) = 0.395 W/kg
Maximum value of SAR (measured) = 0.842 W/kg



0 dB = 0.842 W/kg = -0.75 dBW/kg

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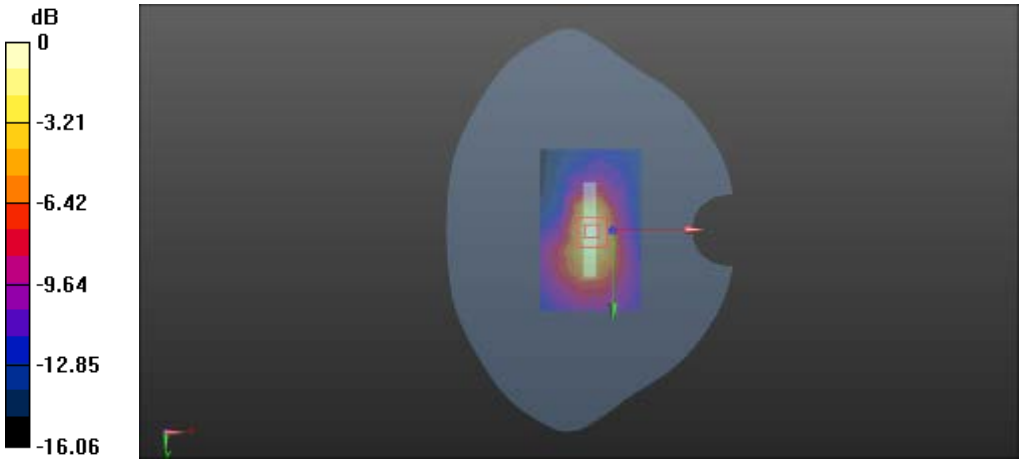
FLAT	EDGE2	1850.2 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 1850.2 MHz
Medium parameters used: f = 1850.2 MHz; σ = 1.53 S/m; ε_r = 51.24; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL hotspot/1900 EGPRS edge 2 CH810 3 2 2 3 4/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.652 W/kg
Flat-Section MSL hotspot/1900 EGPRS edge 2 CH810 3 2 2 3 4/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.470 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.749 W/kg; SAR(10 g) = 0.401 W/kg
Maximum value of SAR (measured) = 0.851 W/kg



0 dB = 0.851 W/kg = -0.70 dBW/kg

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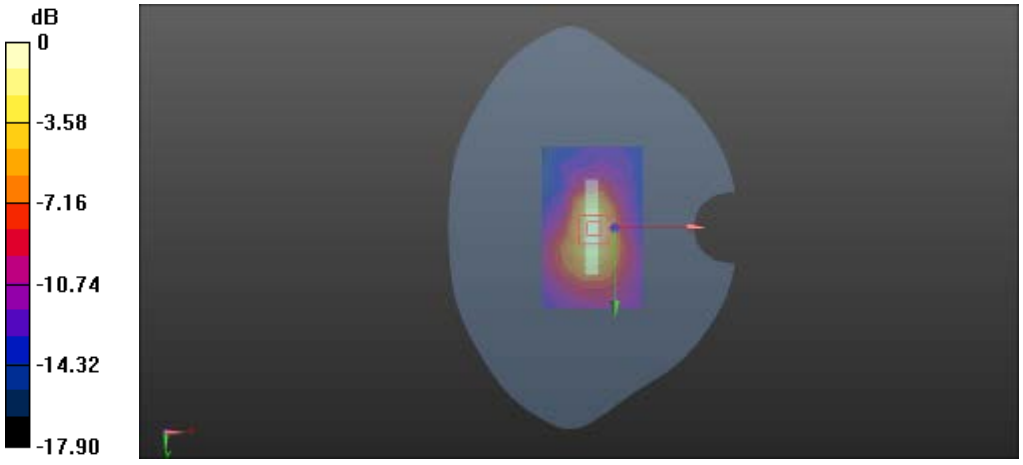
FLAT	EDGE2	1909.8 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 1909.8 MHz
Medium parameters used: f = 1909.8 MHz; σ = 1.6 S/m; ε_r = 51.04; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL hotspot/1900 EGPRS edge 2 CH810 3 2 2 3 3/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.611 W/kg
Flat-Section MSL hotspot/1900 EGPRS edge 2 CH810 3 2 2 3 3/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.680 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 1.27 W/kg
SAR(1 g) = 0.725 W/kg; SAR(10 g) = 0.387 W/kg
Maximum value of SAR (measured) = 0.823 W/kg



0 dB = 0.823 W/kg = -0.85 dBW/kg

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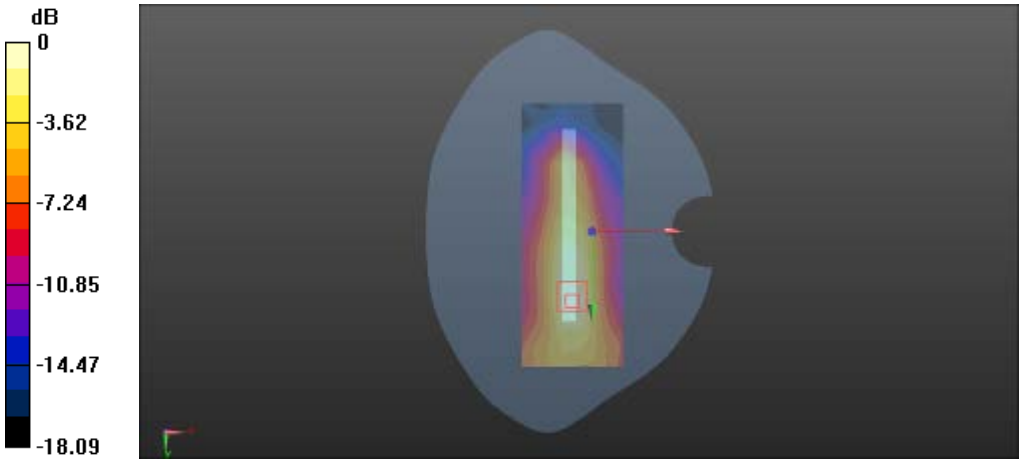
FLAT	EDGE3	1880 MHz

Communication System: UID 10021 - DAB, GSM-FDD (TDMA, GMSK); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL hotspot/1900 EGPRS edge 3/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.212 W/kg
Flat-Section MSL hotspot/1900 EGPRS edge 3/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.221 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.419 W/kg
SAR(1 g) = 0.241 W/kg; SAR(10 g) = 0.135 W/kg
Maximum value of SAR (measured) = 0.265 W/kg



0 dB = 0.265 W/kg = -5.77 dBW/kg

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WCDMA BAND2 (Head)

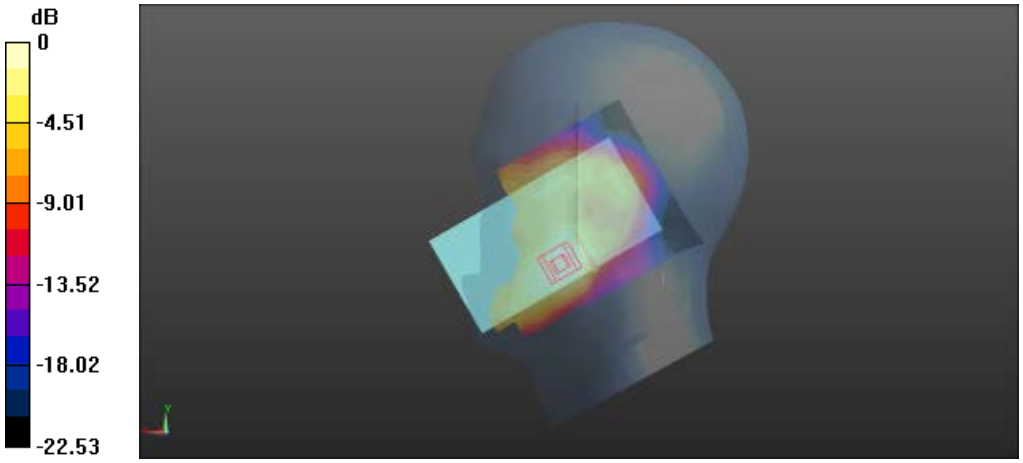
Left Side	Cheek	1880 MHz

Communication System: UID 0, band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.94, 4.94, 4.94); Calibrated: 8/21/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 2.0, 32.0
- Electronics: DAE4 Sn546; Calibrated: 8/19/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 2/WCDMA Band 2 touch M/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.217 W/kg
Head-Section Left HSL Band 2/WCDMA Band 2 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.235 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 0.307 W/kg
SAR(1 g) = 0.193 W/kg; SAR(10 g) = 0.116 W/kg
Maximum value of SAR (measured) = 0.208 W/kg



0 dB = 0.208 W/kg = -6.82 dBW/kg

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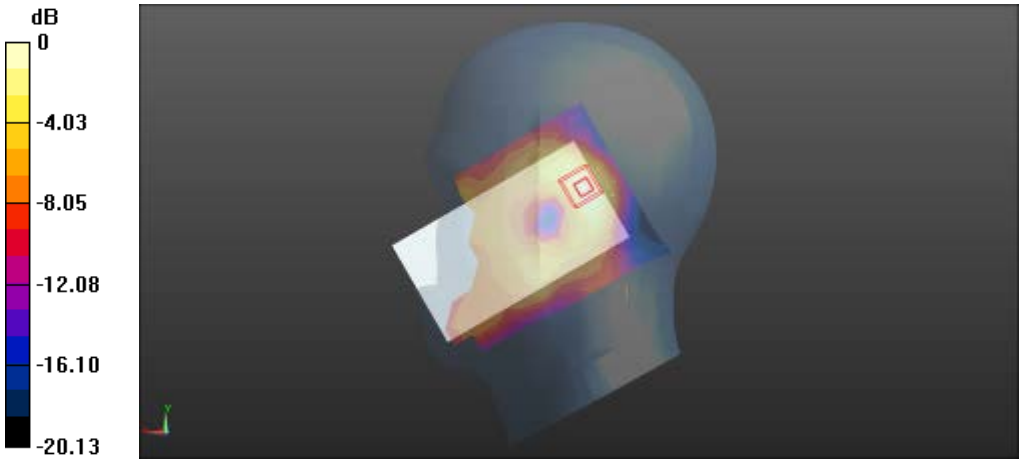
Left Side	Tilt	1880 MHz

Communication System: UID 0, band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.94, 4.94, 4.94); Calibrated: 8/21/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 2.0, 32.0
- Electronics: DAE4 Sn546; Calibrated: 8/19/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 2/WCDMA Band 2 tilt M/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0944 W/kg
Head-Section Left HSL Band 2/WCDMA Band 2 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.217 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.156 W/kg
SAR(1 g) = 0.090 W/kg; SAR(10 g) = 0.050 W/kg
Maximum value of SAR (measured) = 0.100 W/kg



0 dB = 0.100 W/kg = -10.00 dBW/kg

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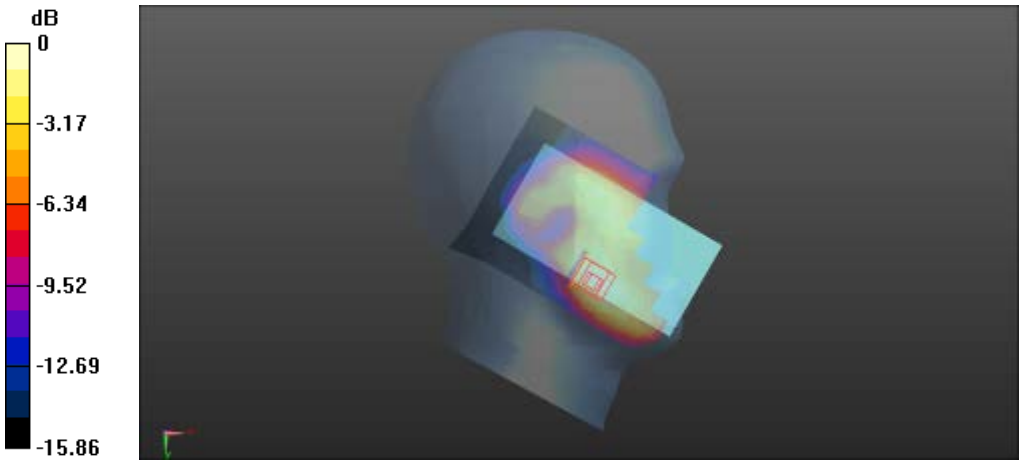
Right Side	Cheek	1880 MHz

Communication System: UID 0, band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.94, 4.94, 4.94); Calibrated: 8/21/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 2.0, 32.0
- Electronics: DAE4 Sn546; Calibrated: 8/19/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 2/WCDMA Band 2 touch M/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.152 W/kg
Head-Section Right HSL Band 2/WCDMA Band 2 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.916 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.227 W/kg
SAR(1 g) = 0.142 W/kg; SAR(10 g) = 0.086 W/kg



0 dB = 0.152 W/kg = -8.18 dBW/kg

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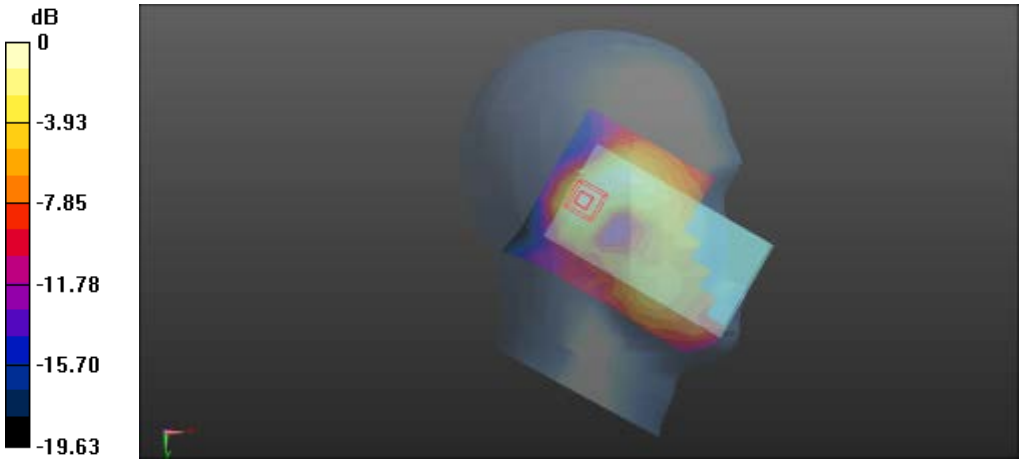
Right Side	Tilt	1880 MHz

Communication System: UID 0, band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.94, 4.94, 4.94); Calibrated: 8/21/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 2.0, 32.0
- Electronics: DAE4 Sn546; Calibrated: 8/19/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 2/WCDMA Band 2 tilt M/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0744 W/kg
Head-Section Right HSL Band 2/WCDMA Band 2 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.154 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.123 W/kg
SAR(1 g) = 0.068 W/kg; SAR(10 g) = 0.037 W/kg
Maximum value of SAR (measured) = 0.0754 W/kg



0 dB = 0.0754 W/kg = -11.23 dBW/kg

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WCDMA BAND2 (Flat)

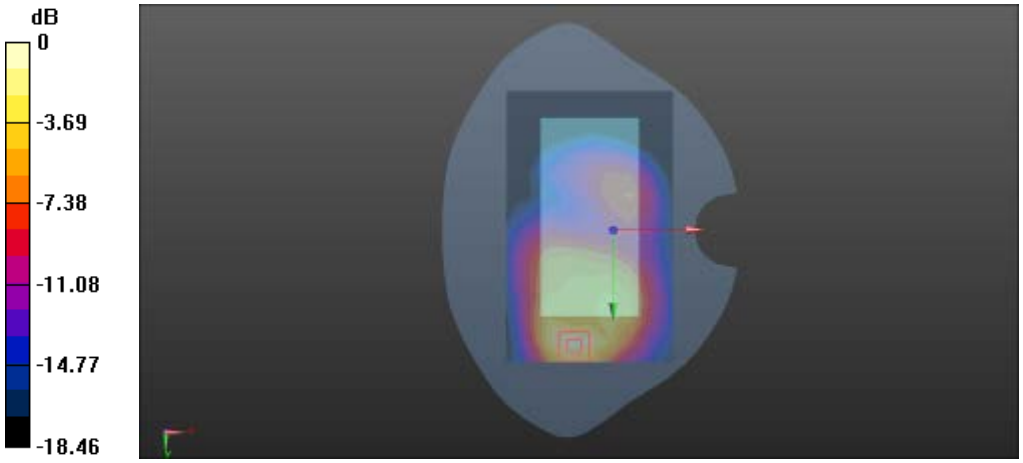
FLAT	Towards phantom	1880 MHz

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 2 TP/WCDMA Band 2 TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.601 W/kg
Flat-Section MSL Band 2 TP/WCDMA Band 2 TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.367 V/m; Power Drift = -0.13 dB
Peak SAR (extrapolated) = 1.04 W/kg
SAR(1 g) = 0.579 W/kg; SAR(10 g) = 0.303 W/kg
Maximum value of SAR (measured) = 0.637 W/kg



0 dB = 0.637 W/kg = -1.96 dBW/kg

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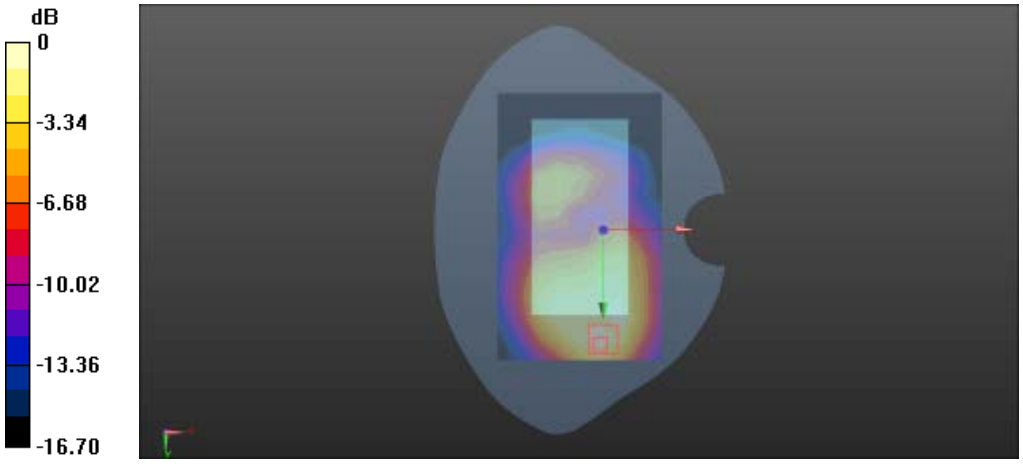
FLAT	Towards ground	1880 MHz

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 2 TG/WCDMA Band 2 TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.445 W/kg
Flat-Section MSL Band 2 TG/WCDMA Band 2 TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.615 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.718 W/kg
SAR(1 g) = 0.416 W/kg; SAR(10 g) = 0.235 W/kg
Maximum value of SAR (measured) = 0.460 W/kg



0 dB = 0.460 W/kg = -3.37 dBW/kg

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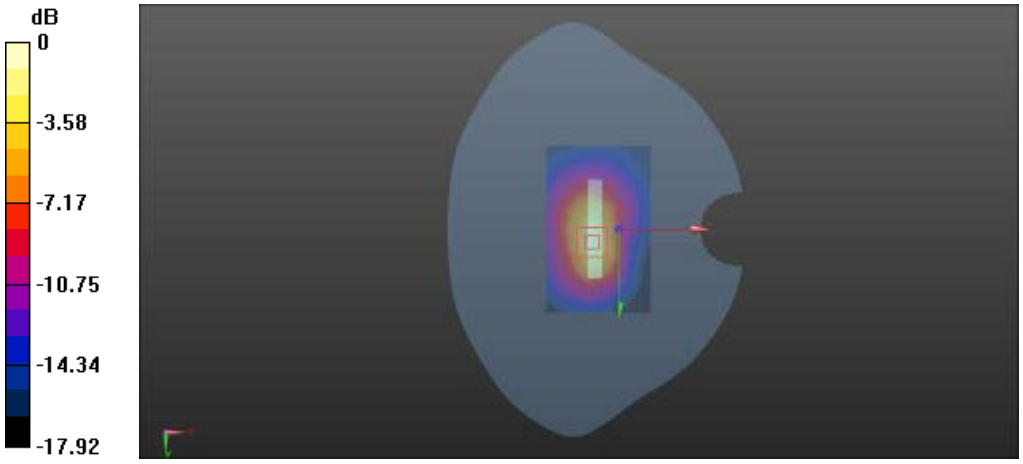
FLAT	Edge2	1880 MHz

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL hotspot/WCDMA Band 2 edge 2 M 2/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.899 W/kg
Flat-Section MSL hotspot/WCDMA Band 2 edge 2 M 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 24.317 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.68 W/kg
SAR(1 g) = 0.936 W/kg; SAR(10 g) = 0.480 W/kg
Maximum value of SAR (measured) = 1.07 W/kg



0 dB = 1.07 W/kg = 0.29 dBW/kg

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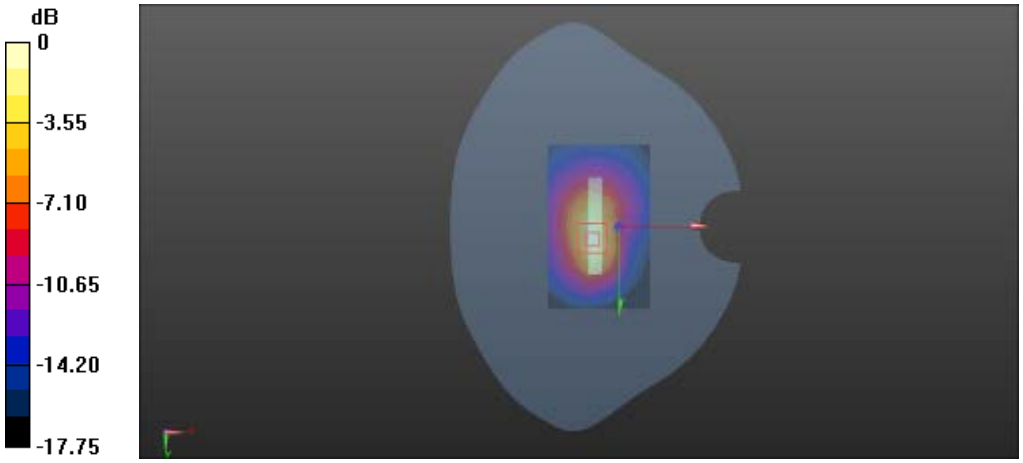
FLAT	Edge2	1852.4 MHz

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1852.4 MHz
Medium parameters used (interpolated): f = 1852.4 MHz; σ = 1.422 S/m; ε_r = 39.86; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL hotspot/WCDMA Band 2 edge 2 L/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.917 W/kg
Flat-Section MSL hotspot/WCDMA Band 2 edge 2 L/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 25.134 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 1.72 W/kg
SAR(1 g) = 0.963 W/kg; SAR(10 g) = 0.497 W/kg
Maximum value of SAR (measured) = 1.10 W/kg



0 dB = 1.10 W/kg = 0.41 dBW/kg

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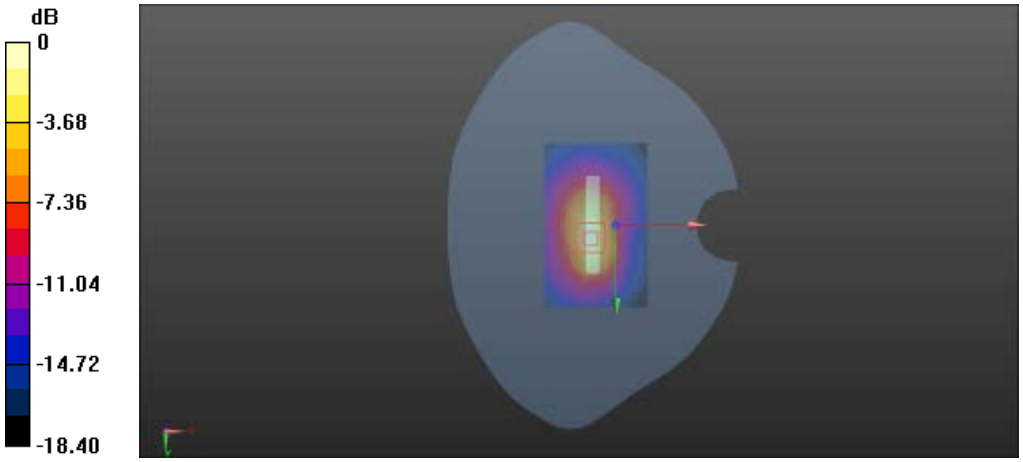
FLAT	Edge2	1907.6 MHz

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1907.6 MHz
Medium parameters used (interpolated): f = 1907.6 MHz; σ = 1.473 S/m; ε_r = 39.634; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection (Locations From Previous Scan Used)), Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL hotspot/WCDMA Band 2 edge 2 H/Area Scan (6x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.819 W/kg
Flat-Section MSL hotspot/WCDMA Band 2 edge 2 H/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 23.115 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 1.58 W/kg
SAR(1 g) = 0.869 W/kg; SAR(10 g) = 0.440 W/kg
Maximum value of SAR (measured) = 0.986 W/kg



0 dB = 0.986 W/kg = -0.06 dBW/kg

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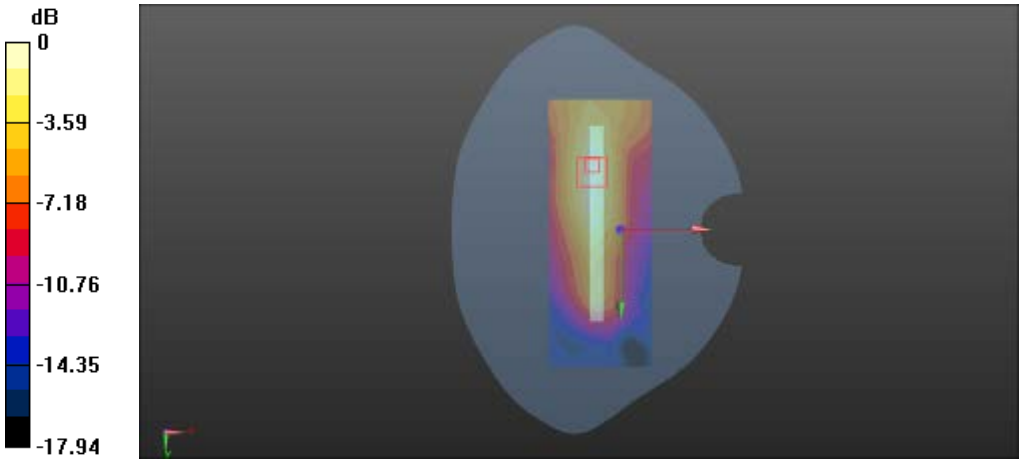
FLAT	Edge3	1880 MHz

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL hotspot/WCDMA Band 2 edge 3 M/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.194 W/kg
Flat-Section MSL hotspot/WCDMA Band 2 edge 3 M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.429 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.312 W/kg
SAR(1 g) = 0.182 W/kg; SAR(10 g) = 0.105 W/kg
Maximum value of SAR (measured) = 0.202 W/kg



0 dB = 0.202 W/kg = -6.95 dBW/kg

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WCDMA BAND 5 (Head)

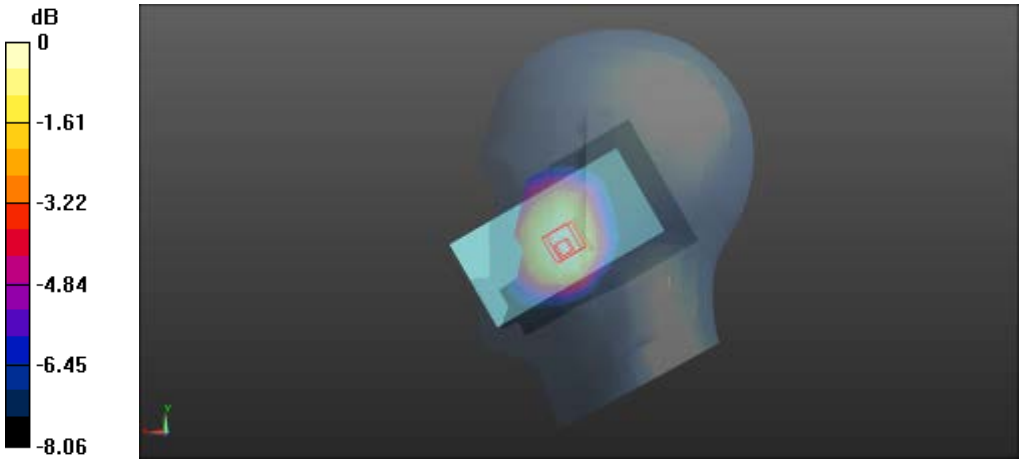
Left Side	Cheek	836.6 MHz

Communication System: UID 0, band 5 (0); Frequency: 836.6 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 S/m; ε_r = 41.478; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ES3DV3 - SN3127; ConvF(5.97, 5.97, 5.97); Calibrated: 8/21/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 2.0, 32.0
- Electronics: DAE4 Sn546; Calibrated: 8/19/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 5/WCDMA Band 5 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.153 W/kg
Head-Section Left HSL Band 5/WCDMA Band 5 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.140 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.179 W/kg
SAR(1 g) = 0.145 W/kg; SAR(10 g) = 0.112 W/kg
Maximum value of SAR (measured) = 0.152 W/kg



0 dB = 0.152 W/kg = -8.18 dBW/kg

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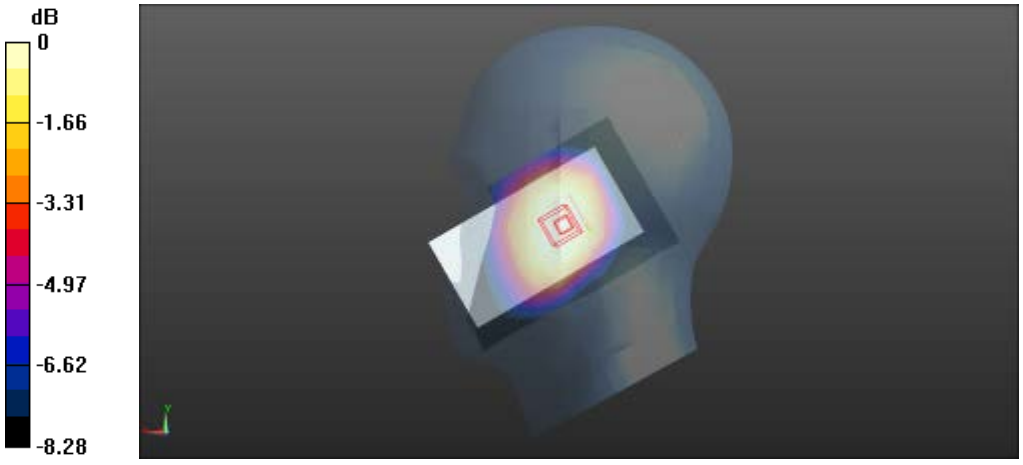
Left Side	Tilt	836.6 MHz

Communication System: UID 0, band 5 (0); Frequency: 836.6 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 S/m; ε_r = 41.478; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ES3DV3 - SN3127; ConvF(5.97, 5.97, 5.97); Calibrated: 8/21/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 2.0, 32.0
- Electronics: DAE4 Sn546; Calibrated: 8/19/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 5/WCDMA Band 5 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0969 W/kg
Head-Section Left HSL Band 5/WCDMA Band 5 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.666 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.113 W/kg
SAR(1 g) = 0.095 W/kg; SAR(10 g) = 0.076 W/kg
Maximum value of SAR (measured) = 0.0993 W/kg



0 dB = 0.0993 W/kg = -10.03 dBW/kg

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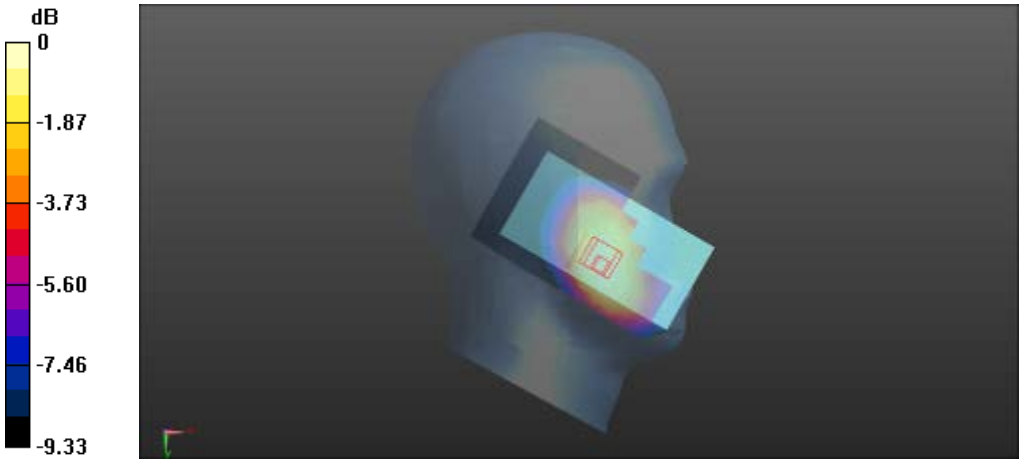
Right Side	Cheek	836.6 MHz

Communication System: UID 0, band 5 (0); Frequency: 836.6 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 S/m; ε_r = 41.478; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ES3DV3 - SN3127; ConvF(5.97, 5.97, 5.97); Calibrated: 8/21/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 2.0, 32.0
- Electronics: DAE4 Sn546; Calibrated: 8/19/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 5/WCDMA Band 5 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.137 W/kg
Head-Section Right HSL Band 5/WCDMA Band 5 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.230 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.193 W/kg
SAR(1 g) = 0.148 W/kg; SAR(10 g) = 0.111 W/kg
Maximum value of SAR (measured) = 0.156 W/kg



0 dB = 0.156 W/kg = -8.07 dBW/kg

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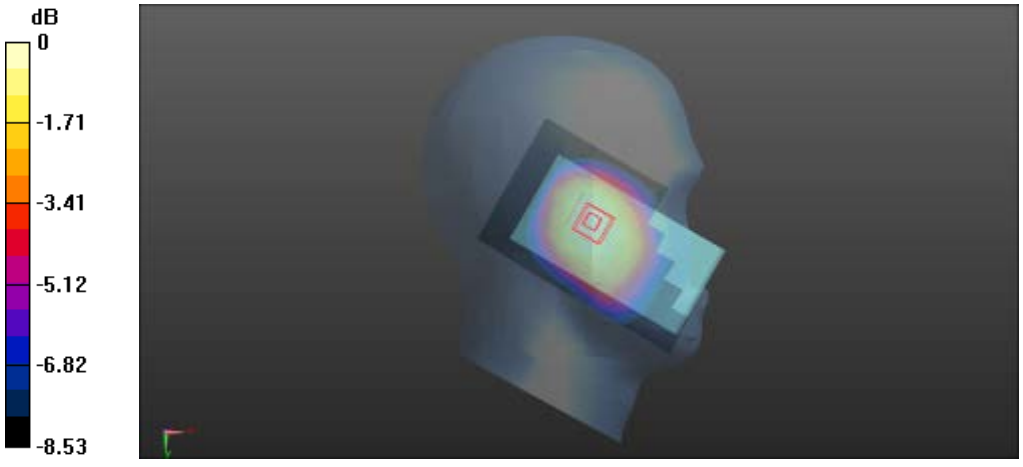
Right Side	Tilt	836.6 MHz

Communication System: UID 0, band 5 (0); Frequency: 836.6 MHz
Medium parameters used (interpolated): f = 836.6 MHz; σ = 0.89 S/m; ε_r = 41.478; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: ES3DV3 - SN3127; ConvF(5.97, 5.97, 5.97); Calibrated: 8/21/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 2.0, 32.0
- Electronics: DAE4 Sn546; Calibrated: 8/19/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 5/WCDMA Band 5 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.116 W/kg
Head-Section Right HSL Band 5/WCDMA Band 5 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.270 V/m; Power Drift = -0.46 dB
Peak SAR (extrapolated) = 0.137 W/kg
SAR(1 g) = 0.113 W/kg; SAR(10 g) = 0.088 W/kg
Maximum value of SAR (measured) = 0.119 W/kg



0 dB = 0.119 W/kg = -9.24 dBW/kg

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WCDMA BAND 5 (Flat)

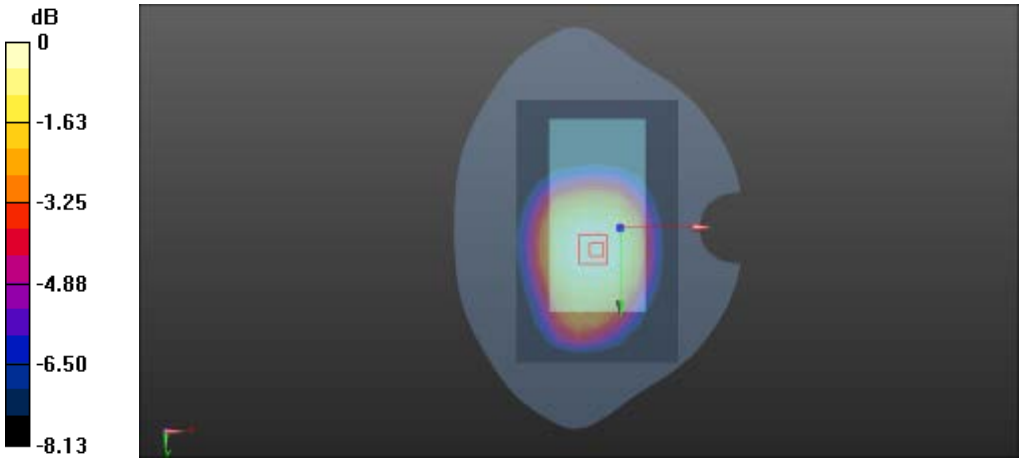
FLAT	Towards phantom	836.6 MHz

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 836.6 MHz
Medium parameters used (extrapolated): f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.843; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(8.91, 8.91, 8.91); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 5 TP/WCDMA Band 5 TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.207 W/kg
Flat-Section MSL Band 5 TP/WCDMA Band 5 TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.027 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.254 W/kg
SAR(1 g) = 0.198 W/kg; SAR(10 g) = 0.150 W/kg
Maximum value of SAR (measured) = 0.206 W/kg



0 dB = 0.206 W/kg = -6.86 dBW/kg

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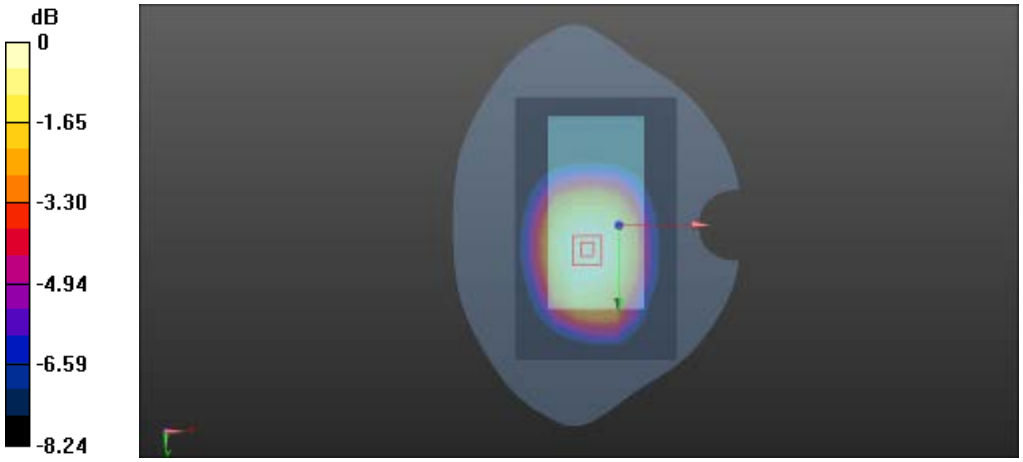
FLAT	Towards ground	836.6 MHz

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 836.6 MHz
Medium parameters used (extrapolated): f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.843; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(8.91, 8.91, 8.91); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 5 TG/WCDMA Band 5 TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.221 W/kg
Flat-Section MSL Band 5 TG/WCDMA Band 5 TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14.425 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.273 W/kg
SAR(1 g) = 0.214 W/kg; SAR(10 g) = 0.162 W/kg
Maximum value of SAR (measured) = 0.224 W/kg



0 dB = 0.224 W/kg = -6.50 dBW/kg

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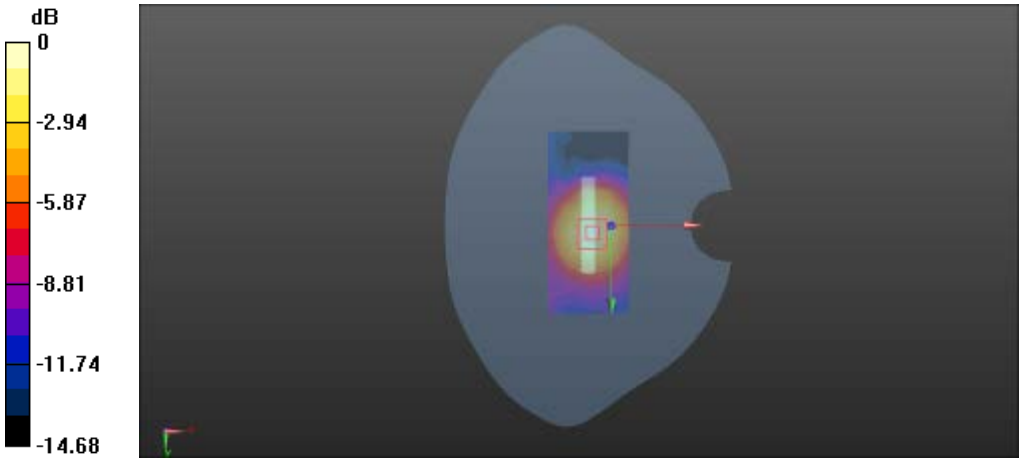
FLAT	Edge2	836.6 MHz

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 836.6 MHz
Medium parameters used (extrapolated): f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.843; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(8.91, 8.91, 8.91); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 5 hot/WCDMA Band 5 edge 2/Area Scan (5x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0956 W/kg
Flat-Section MSL Band 5 hot/WCDMA Band 5 edge 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.578 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.152 W/kg
SAR(1 g) = 0.089 W/kg; SAR(10 g) = 0.054 W/kg
Maximum value of SAR (measured) = 0.0971 W/kg



0 dB = 0.0971 W/kg = -10.13 dBW/kg

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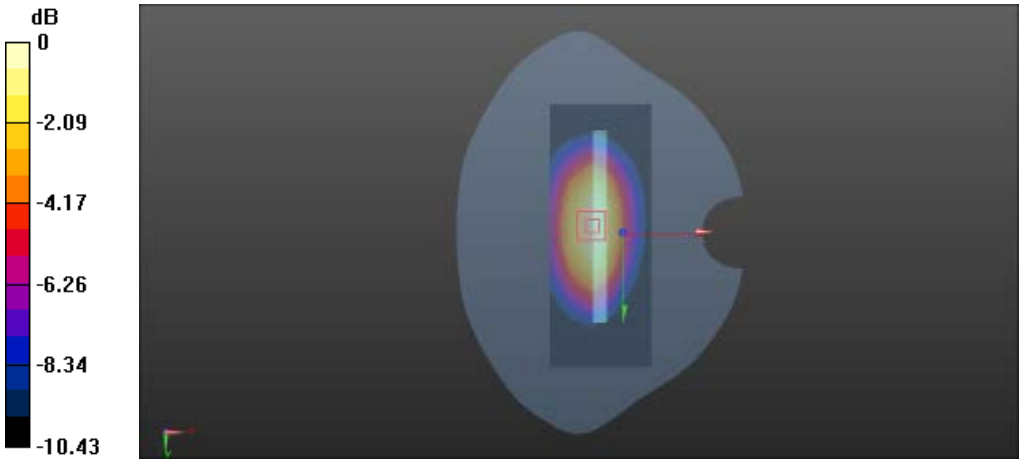
FLAT	Edge3	836.6 MHz

Communication System: UID 10011 - CAB, UMTS-FDD (WCDMA); Frequency: 836.6 MHz
Medium parameters used (extrapolated): f = 836.6 MHz; σ = 0.979 S/m; ε_r = 53.843; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(8.91, 8.91, 8.91); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1559; Type: SAM; Serial: 1559
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 5 hot/WCDMA Band 5 edge 3/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.263 W/kg
Flat-Section MSL Band 5 hot/WCDMA Band 5 edge 3/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.779 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.357 W/kg
SAR(1 g) = 0.245 W/kg; SAR(10 g) = 0.164 W/kg
Maximum value of SAR (measured) = 0.264 W/kg



0 dB = 0.264 W/kg = -5.78 dBW/kg

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Wi-Fi (Head)

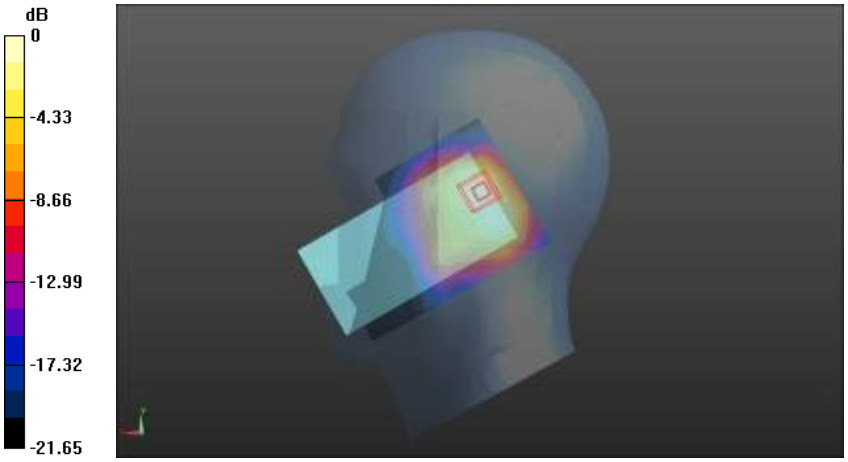
Left Side	Cheek	2462MHz

Communication System: UID 10012 - CAB, IEEE 802.11b Wi-Fi 2.4 GHz (DSSS, 1 Mbps);
Frequency: 2462 MHz;Duty Cycle: 1:1.53815
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.791 S/m; ε_r = 39.17; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.35, 4.35, 4.35); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Left HSL WIFI/WIFI touch H/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.397 W/kg
Head-Section Left HSL WIFI/WIFI touch H/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.482 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.733 W/kg
SAR(1 g) = 0.386 W/kg; SAR(10 g) = 0.204 W/kg
Maximum value of SAR (measured) = 0.423 W/kg



0 dB = 0.423 W/kg = -3.74 dBW/kg

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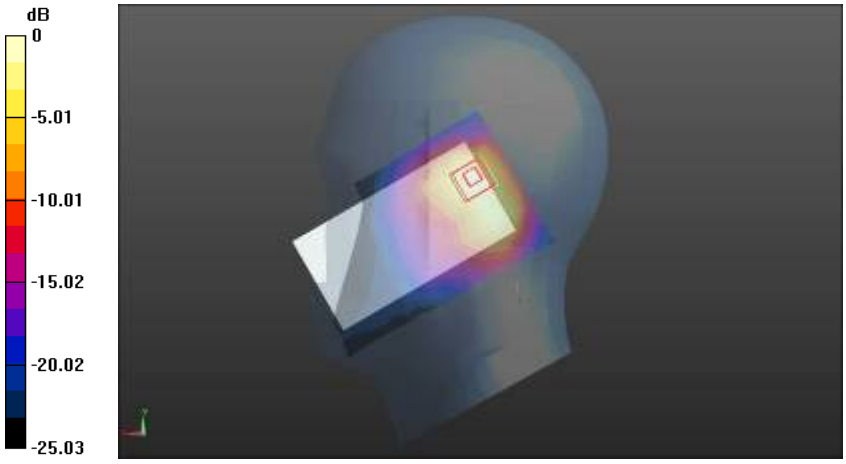
Left Side	Tilt	2462MHz

Communication System: UID 10012 - CAB, IEEE 802.11b Wi-Fi 2.4 GHz (DSSS, 1 Mbps);
Frequency: 2462 MHz;Duty Cycle: 1:1.53815
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.791 S/m; ε_r = 39.17; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.35, 4.35, 4.35); Calibrated: 2015/8/21;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Right HSL WIFI/WIFI touch H/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.445 W/kg
Head-Section Right HSL WIFI/WIFI touch H/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.469 V/m; Power Drift = -0.17 dB
Peak SAR (extrapolated) = 0.975 W/kg
SAR(1 g) = 0.447 W/kg; SAR(10 g) = 0.217 W/kg
Maximum value of SAR (measured) = 0.487 W/kg



0 dB = 0.487 W/kg = -3.12 dBW/kg

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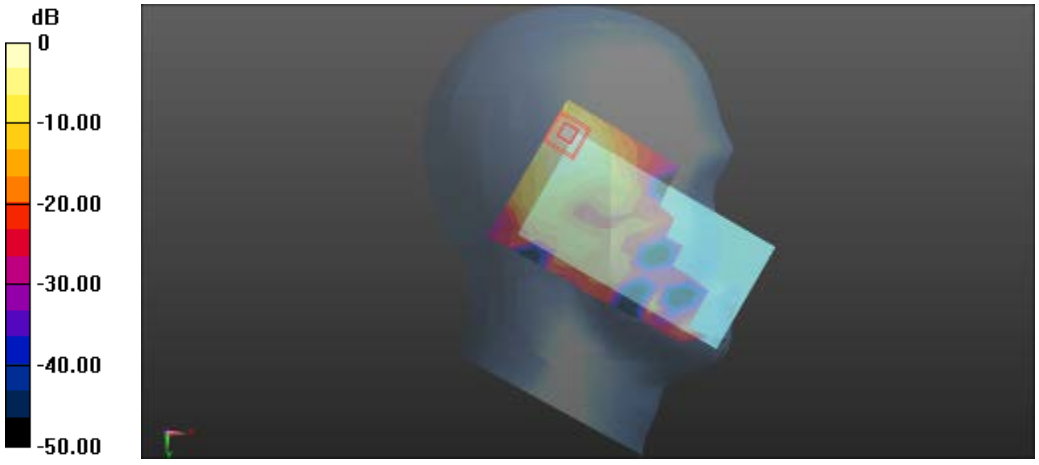
Right Side	Cheek	2462MHz

Communication System: UID 10012 - CAB, IEEE 802.11b Wi-Fi 2.4 GHz (DSSS, 1 Mbps);
Frequency: 2437 MHz;Duty Cycle: 1:1.53815
Medium parameters used (interpolated): f = 2437 MHz; σ = 1.782 S/m; ε_r = 39.236; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.35, 4.35, 4.35); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)
  Head-Section Right HSL WIFI/WIFI touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.0639 W/kg
  Head-Section Right HSL WIFI/WIFI touch M/Zoom Scan (7x7x7)/Cube 0:
  Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 2.531 V/m; Power Drift = -0.14 dB
  Peak SAR (extrapolated) = 0.161 W/kg
  SAR(1 g) = 0.061 W/kg; SAR(10 g) = 0.024 W/kg
  Maximum value of SAR (measured) = 0.0701 W/kg



0 dB = 0.0701 W/kg = -11.54 dBW/kg

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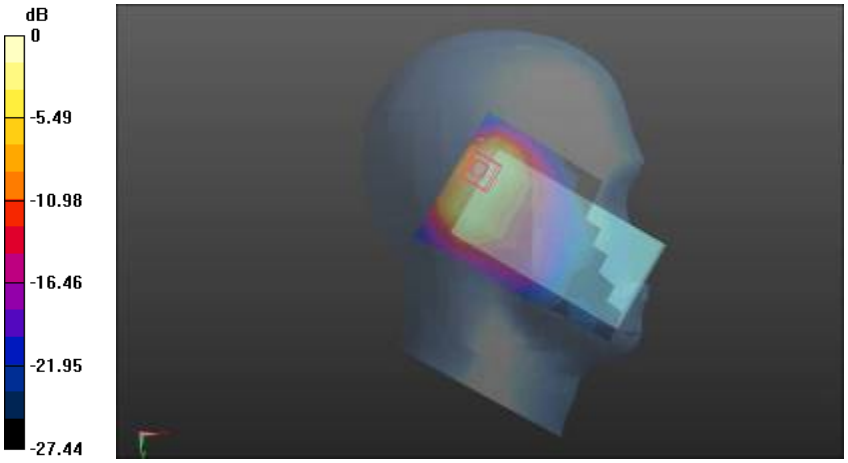
Right Side	Tilt	2462MHz

Communication System: UID 10012 - CAB, IEEE 802.11b Wi-Fi 2.4 GHz (DSSS, 1 Mbps);
Frequency: 2462 MHz;Duty Cycle: 1:1.53815
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.791 S/m; ε_r = 39.17; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.35, 4.35, 4.35); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Right HSL WIFI/WIFI tilt H/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.446 W/kg
Head-Section Right HSL WIFI/WIFI tilt H/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.496 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 1.07 W/kg
SAR(1 g) = 0.491 W/kg; SAR(10 g) = 0.226 W/kg
Maximum value of SAR (measured) = 0.546 W/kg



0 dB = 0.546 W/kg = -2.63 dBW/kg

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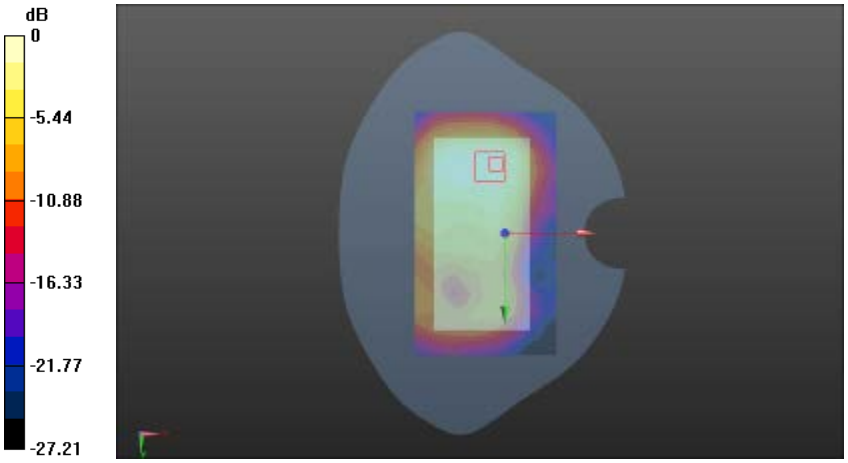
FLAT	Towards phantom	2462MHz

Communication System: UID 10012 - CAB, IEEE 802.11b Wi-Fi 2.4 GHz (DSSS, 1 Mbps);
Frequency: 2462 MHz;Duty Cycle: 1:1.53815
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.968 S/m; ε_r = 51.852; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.19, 4.19, 4.19); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1660; Type: QD000P40CD; Serial: TP:1660
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Flat-Section MSL WIFI TP/WIFI TP H/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.139 W/kg
Flat-Section MSL WIFI TP/WIFI TP H/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.715 V/m; Power Drift = -0.20 dB
Peak SAR (extrapolated) = 0.276 W/kg
SAR(1 g) = 0.131 W/kg; SAR(10 g) = 0.070 W/kg



0 dB = 0.139 W/kg = -8.57 dBW/kg

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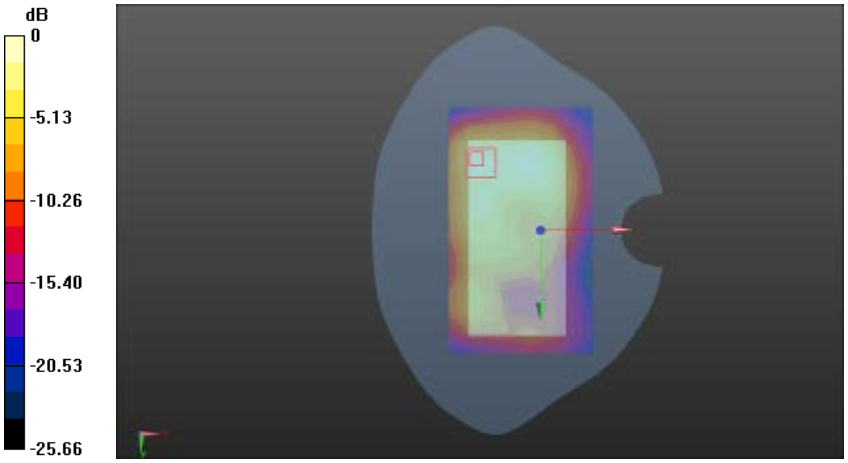
FLAT	Towards ground	2462MHz

Communication System: UID 10012 - CAA, IEEE 802.11b Wi-Fi 2.4 GHz (DSSS, 1 Mbps);
Frequency: 2462 MHz;Duty Cycle: 1:1.53815
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.968 S/m; ε_r = 51.852; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.19, 4.19, 4.19); Calibrated: 2015/8/21;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1660; Type: QD000P40CD; Serial: TP:1660
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Flat-Section MSLWIFI TG/WIF TG H/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.194 W/kg
Flat-Section MSLWIFI TG/WIF TG H/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.991 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 0.401 W/kg
SAR(1 g) = 0.170 W/kg; SAR(10 g) = 0.081 W/kg
Maximum value of SAR (measured) = 0.222 W/kg



0 dB = 0.222 W/kg = -6.54 dBW/kg

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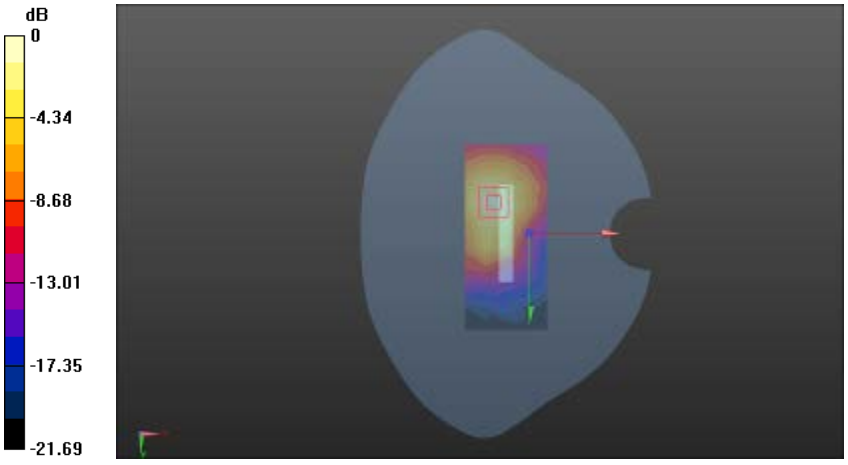
FLAT	Edge1	2462MHz

Communication System: UID 10012 - CAB, IEEE 802.11b Wi-Fi 2.4 GHz (DSSS, 1 Mbps);
Frequency: 2462 MHz;Duty Cycle: 1:1.53815
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.968 S/m; ε_r = 51.852; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.19, 4.19, 4.19); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1660; Type: QD000P40CD; Serial: TP:1660
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)
  Flat-Section MSLWIFI HOT/WIF H edge 1/Area Scan (5x10x1): Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.170 W/kg
  Flat-Section MSLWIFI HOT/WIF H edge 1/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 5.699 V/m; Power Drift = 0.05 dB
  Peak SAR (extrapolated) = 0.339 W/kg
  SAR(1 g) = 0.174 W/kg; SAR(10 g) = 0.089 W/kg
  Maximum value of SAR (measured) = 0.192 W/kg



0 dB = 0.192 W/kg = -7.17 dBW/kg

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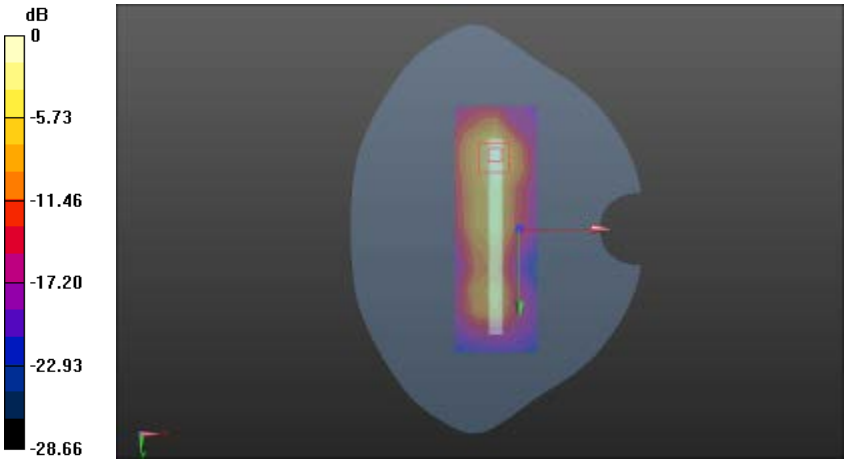
FLAT	Edge4	2462 MHz

Communication System: UID 10012 - CAB, IEEE 802.11b Wi-Fi 2.4 GHz (DSSS, 1 Mbps);
Frequency: 2462 MHz;Duty Cycle: 1:1.53815
Medium parameters used (interpolated): f = 2462 MHz; σ = 1.968 S/m; ε_r = 51.852; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.19, 4.19, 4.19); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1660; Type: QD000P40CD; Serial: TP:1660
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Flat-Section MSLWIFI HOT/WIF H edge 4/Area Scan (5x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.391 W/kg
Flat-Section MSLWIFI HOT/WIF H edge 4/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.118 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.976 W/kg
SAR(1 g) = 0.395 W/kg; SAR(10 g) = 0.168 W/kg
Maximum value of SAR (measured) = 0.447 W/kg



0 dB = 0.447 W/kg = -3.50 dBW/kg

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Wi-Fi 5GHz (Head)

Left Side	Cheek	5745MHz

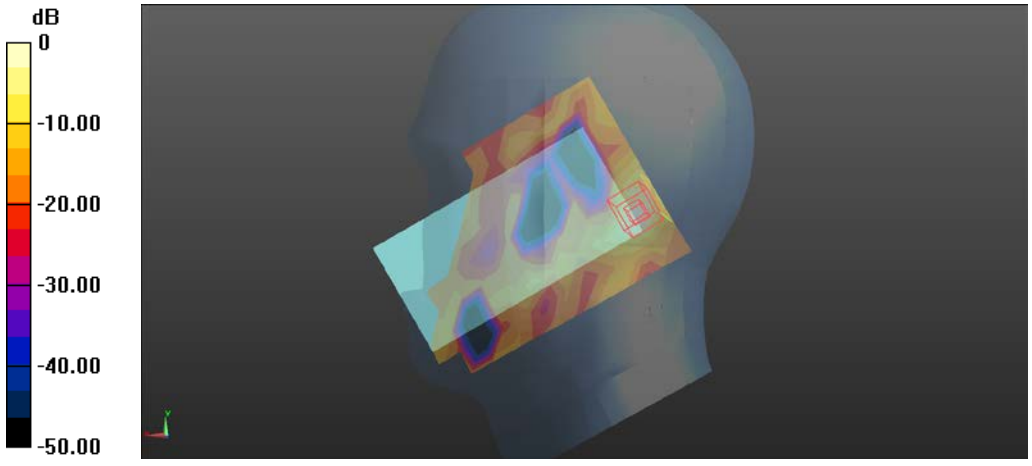
Communication System: UID 10062 - CAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps);
Frequency: 5745 MHz;Duty Cycle: 1:7.37904
Medium parameters used (interpolated): f = 5745 MHz; σ = 5.143 S/m; ε_r = 36.762; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3708; ConvF(4.57, 4.57, 4.57); Calibrated: 2015/10/26;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn720; Calibrated: 2015/10/29
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

  Head-Section Left HSL WIFI 5.8GHz/WIFI touch L/Area Scan (9x13x1):
  Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.363 W/kg

  Head-Section Left HSL WIFI 5.8GHz/WIFI touch L/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 1.843 V/m; Power Drift = -0.15 dB
  Peak SAR (extrapolated) = 1.09 W/kg
  SAR(1 g) = 0.358 W/kg; SAR(10 g) = 0.110 W/kg
  Maximum value of SAR (measured) = 0.434 W/kg



0 dB = 0.434 W/kg = -3.63 dBW/kg

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Left Side	Tilt	5745MHz

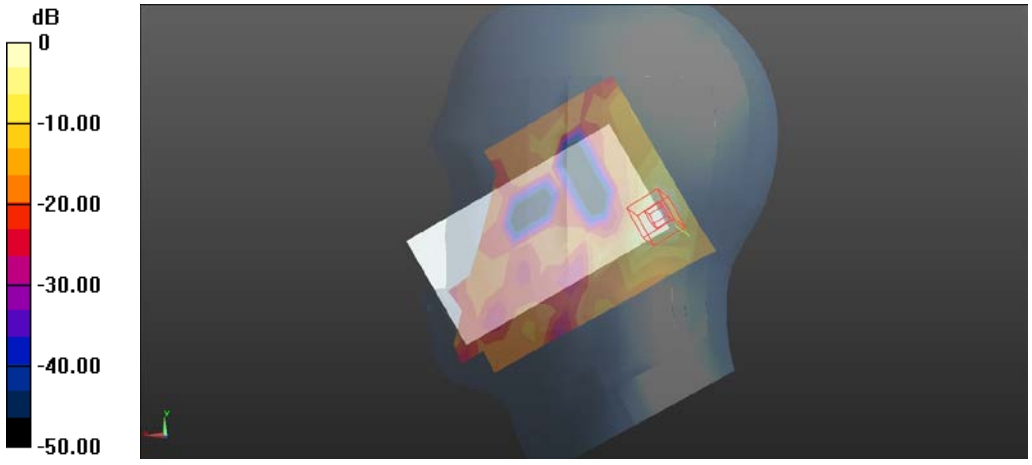
Communication System: UID 10062 - CAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps); Frequency: 5745 MHz;Duty Cycle: 1:7.37904
Medium parameters used (interpolated): f = 5745 MHz; σ = 5.143 S/m; ε_r = 36.762; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3708; ConvF(4.57, 4.57, 4.57); Calibrated: 2015/10/26;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn720; Calibrated: 2015/10/29
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Left HSL WIFI 5.8GHz/WIFI tilt L/Area Scan (9x13x1):
Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.329 W/kg

Head-Section Left HSL WIFI 5.8GHz/WIFI tilt L/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.760 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.355 W/kg; SAR(10 g) = 0.107 W/kg
Maximum value of SAR (measured) = 0.435 W/kg



0 dB = 0.435 W/kg = -3.62 dBW/kg

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Right Side	Cheek	5745MHz

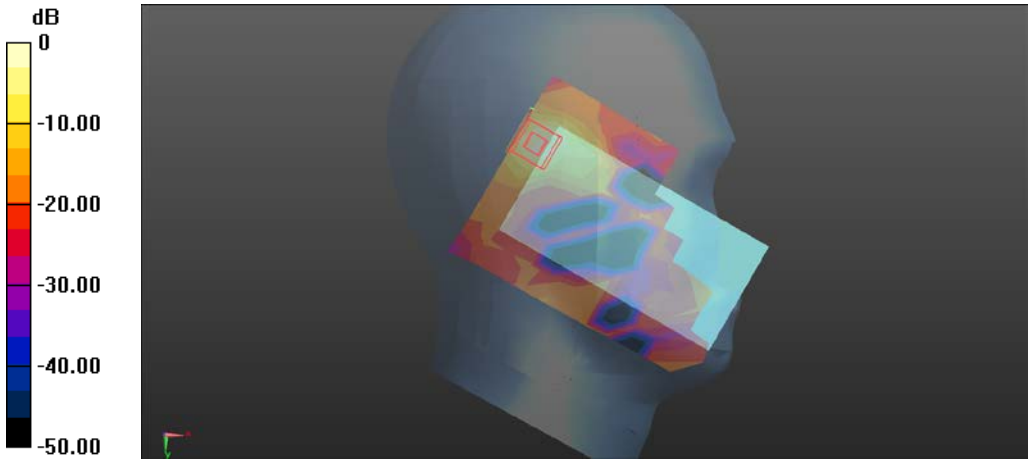
Communication System: UID 10062 - CAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps); Frequency: 5745 MHz;Duty Cycle: 1:7.37904
Medium parameters used (interpolated): f = 5745 MHz; σ = 5.143 S/m; ε_r = 36.762; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3708; ConvF(4.57, 4.57, 4.57); Calibrated: 2015/10/26;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn720; Calibrated: 2015/10/29
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

  Head-Section Right HSL WIFI 5.8GHz/WIFI touch L/Area Scan (9x13x1):
  Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.407 W/kg

  Head-Section Right HSL WIFI 5.8GHz/WIFI touch L/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 0 V/m; Power Drift = -0.10 dB
  Peak SAR (extrapolated) = 1.57 W/kg
  SAR(1 g) = 0.476 W/kg; SAR(10 g) = 0.133 W/kg
  Maximum value of SAR (measured) = 0.622 W/kg



0 dB = 0.622 W/kg = -2.06 dBW/kg

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Right Side	Tilt	5745MHz

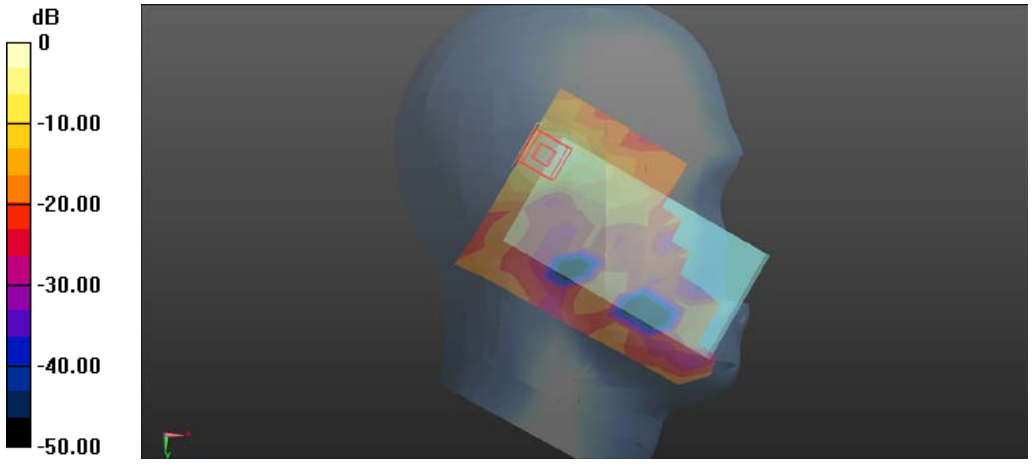
Communication System: UID 10062 - CAB, IEEE 802.11a/h WiFi 5 GHz (OFDM, 6 Mbps); Frequency: 5745 MHz;Duty Cycle: 1:7.37904
Medium parameters used (interpolated): f = 5745 MHz; σ = 5.143 S/m; ε_r = 36.762; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: EX3DV4 - SN3708; ConvF(4.57, 4.57, 4.57); Calibrated: 2015/10/26;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn720; Calibrated: 2015/10/29
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

  Head-Section Right HSL WIFI 5.8GHz/WIFI tilt L/Area Scan (9x13x1):
  Measurement grid: dx=15mm, dy=15mm
  Maximum value of SAR (measured) = 0.402 W/kg

  Head-Section Right HSL WIFI 5.8GHz/WIFI tilt L/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
  Reference Value = 1.507 V/m; Power Drift = -0.01 dB
  Peak SAR (extrapolated) = 1.63 W/kg
  SAR(1 g) = 0.505 W/kg; SAR(10 g) = 0.143 W/kg
  Maximum value of SAR (measured) = 0.629 W/kg



0 dB = 0.629 W/kg = -2.01 dBW/kg

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LTE BAND2- 20BW-1RB (Head)

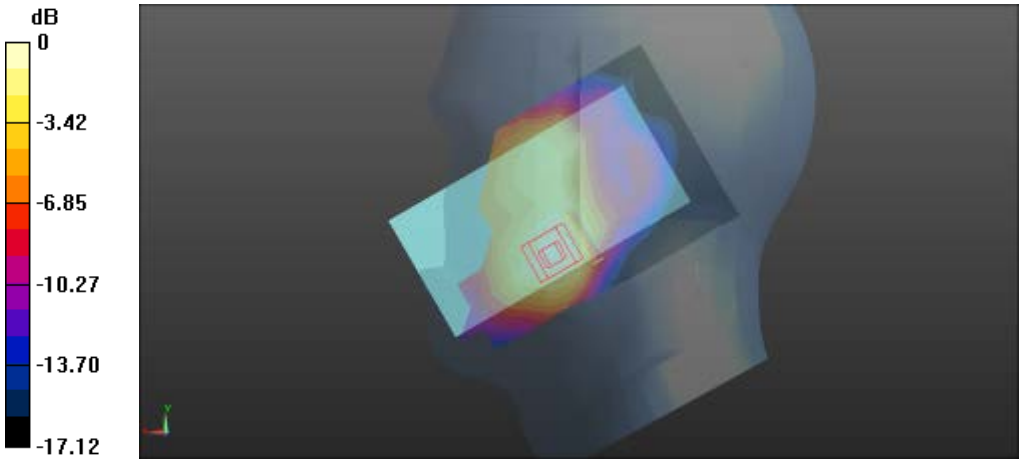
Left Side	Check	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 2/LTE Band 2 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.308 W/kg
Head-Section Left HSL Band 2/LTE Band 2 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.312 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.466 W/kg
SAR(1 g) = 0.298 W/kg; SAR(10 g) = 0.187 W/kg
Maximum value of SAR (measured) = 0.325 W/kg



0 dB = 0.325 W/kg = -4.88 dBW/kg

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Left Side	Tilt	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.57 S/m; ε_r = 51.14; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.53, 7.53, 7.53); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 2/LTE Band 2 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0619 W/kg
Head-Section Left HSL Band 2/LTE Band 2 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.796 V/m; Power Drift = 0.14 dB
Peak SAR (extrapolated) = 0.0930 W/kg
SAR(1 g) = 0.056 W/kg; SAR(10 g) = 0.031 W/kg
Maximum value of SAR (measured) = 0.0638 W/kg

0 dB = 0.0638 W/kg = -11.95 dBW/kg

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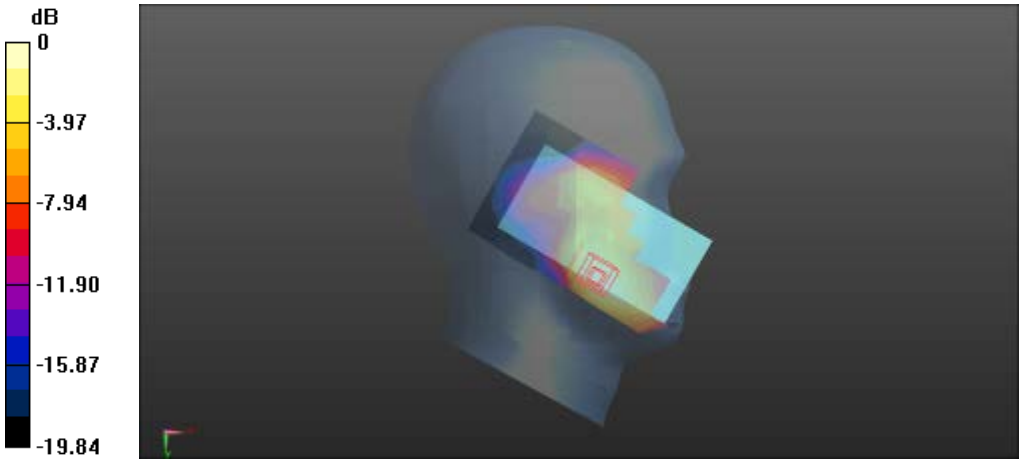
Right Side	Check	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 2/LTE Band 2 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.344 W/kg
Head-Section Right HSL Band 2/LTE Band 2 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.657 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.539 W/kg
SAR(1 g) = 0.340 W/kg; SAR(10 g) = 0.206 W/kg
Maximum value of SAR (measured) = 0.372 W/kg



0 dB = 0.372 W/kg = -4.29 dBW/kg

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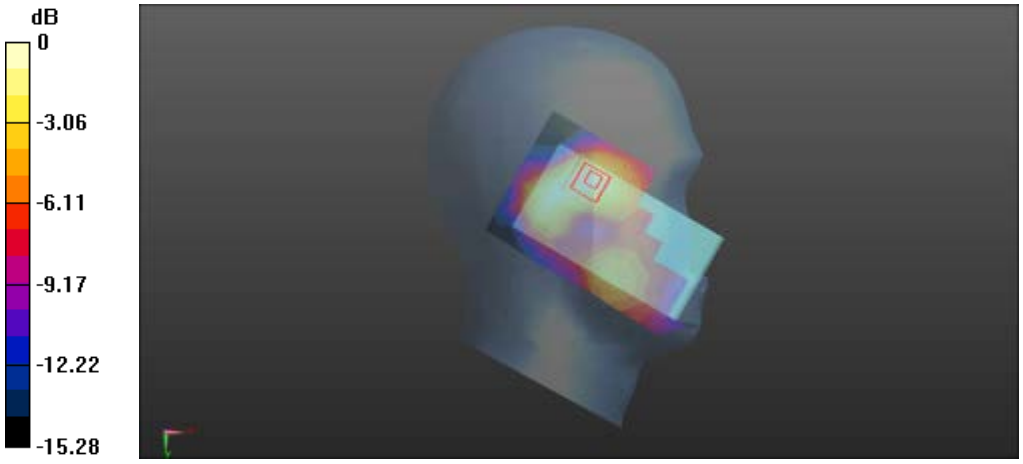
Right Side	Tilt	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 2/LTE Band 2 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.112 W/kg
Head-Section Right HSL Band 2/LTE Band 2 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.312 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.169 W/kg
SAR(1 g) = 0.109 W/kg; SAR(10 g) = 0.067 W/kg
Maximum value of SAR (measured) = 0.119 W/kg



0 dB = 0.119 W/kg = -9.24 dBW/kg

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LTE BAND2- 20BW-1RB (Flat)

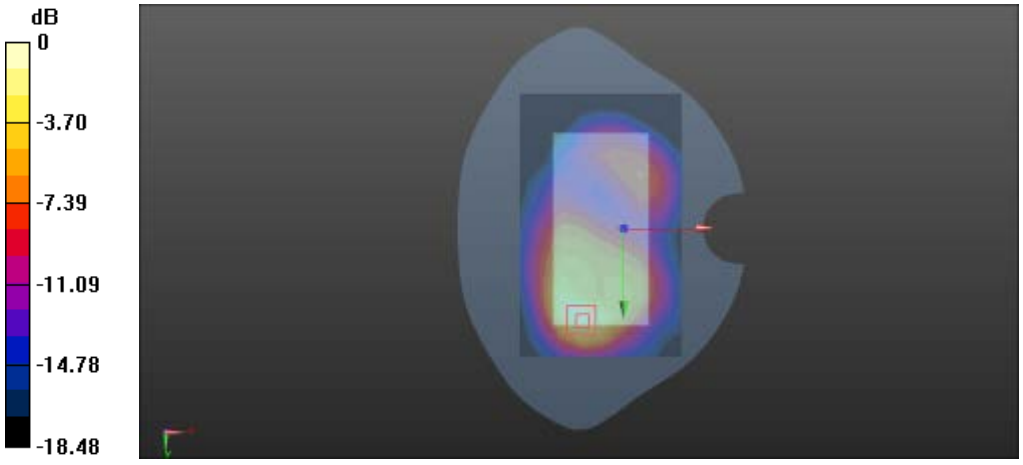
FLAT	Towards phantom	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 2 TP/LTE Band 2 TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.649 W/kg
Flat-Section MSL Band 2 TP/LTE Band 2 TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.904 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 1.13 W/kg
SAR(1 g) = 0.616 W/kg; SAR(10 g) = 0.317 W/kg
Maximum value of SAR (measured) = 0.691 W/kg



0 dB = 0.691 W/kg = -1.61 dBW/kg

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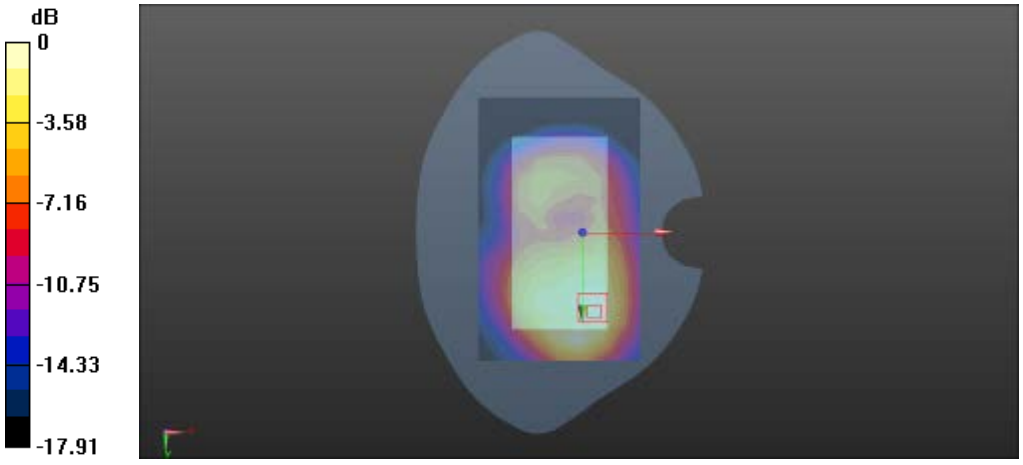
FLAT	Towards ground	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 2 TG/LTE Band 2 TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.656 W/kg
Flat-Section MSL Band 2 TG/LTE Band 2 TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.925 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.12 W/kg
SAR(1 g) = 0.618 W/kg; SAR(10 g) = 0.349 W/kg
Maximum value of SAR (measured) = 0.674 W/kg



0 dB = 0.674 W/kg = -1.71 dBW/kg

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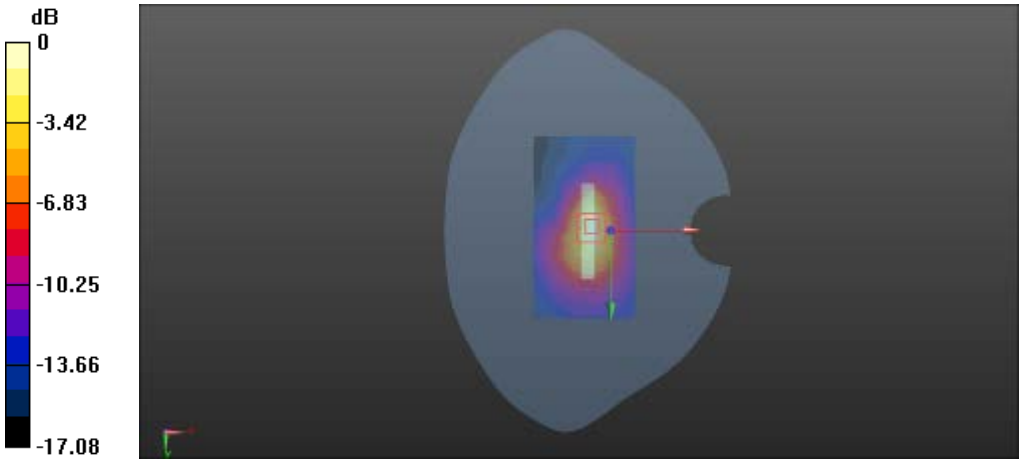
FLAT	Edge2	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -9.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 2 HOT/LTE Band 2 M edge 2/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.651 W/kg
Flat-Section MSL Band 2 HOT/LTE Band 2 M edge 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 22.173 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 1.16 W/kg
SAR(1 g) = 0.661 W/kg; SAR(10 g) = 0.343 W/kg
Maximum value of SAR (measured) = 0.748 W/kg



0 dB = 0.748 W/kg = -1.26 dBW/kg

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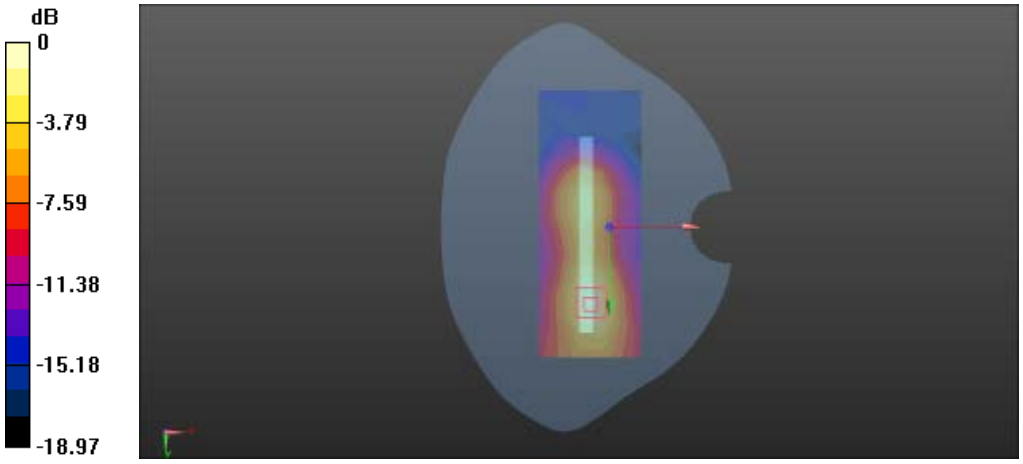
FLAT	Edge3	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 2 HOT/LTE Band 2 M edge 3/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.291 W/kg
Flat-Section MSL Band 2 HOT/LTE Band 2 M edge 3/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.091 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.564 W/kg
SAR(1 g) = 0.330 W/kg; SAR(10 g) = 0.184 W/kg
Maximum value of SAR (measured) = 0.363 W/kg



0 dB = 0.363 W/kg = -4.40 dBW/kg

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LTE BAND2- 20BW-50%RB (Head)

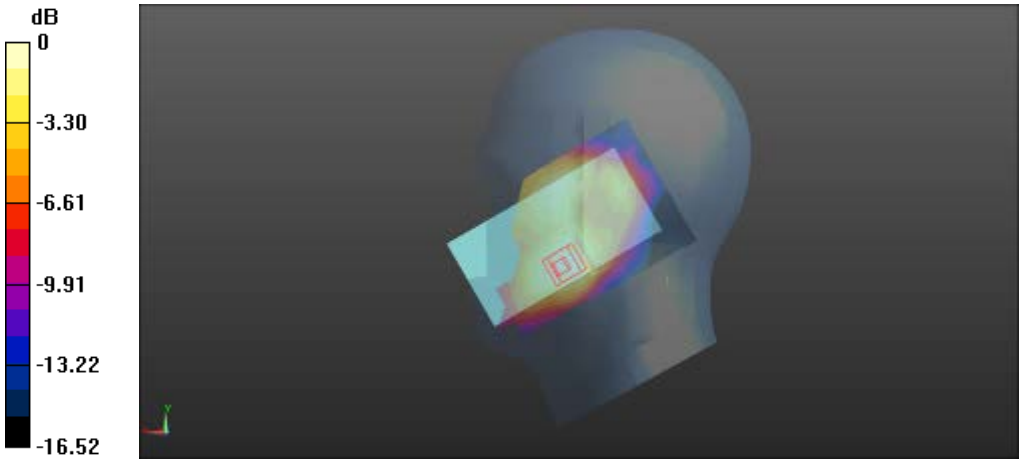
Left Side	Check	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 2/LTE Band 2 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.132 W/kg
Head-Section Left HSL Band 2/LTE Band 2 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.118 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 0.200 W/kg
SAR(1 g) = 0.127 W/kg; SAR(10 g) = 0.080 W/kg
Maximum value of SAR (measured) = 0.136 W/kg



0 dB = 0.136 W/kg = -8.66 dBW/kg

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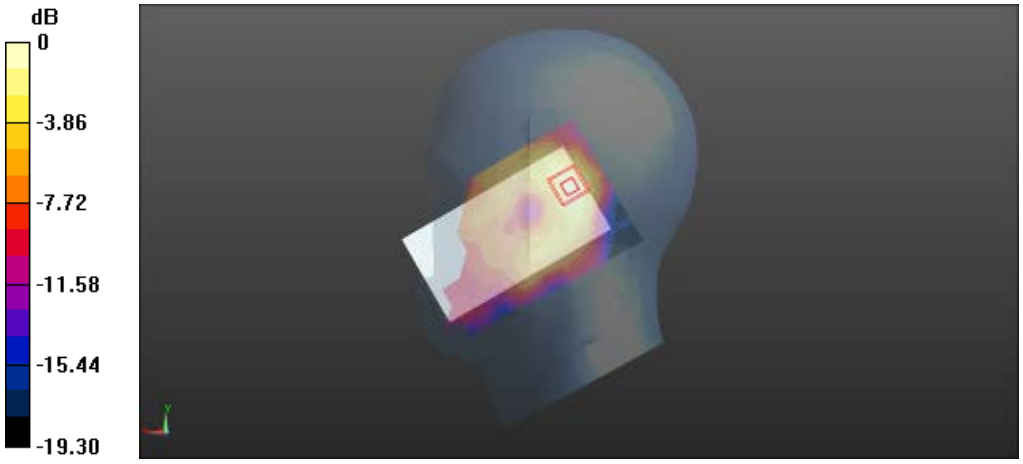
Left Side	Tilt	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 2/LTE Band 2 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0993 W/kg
Head-Section Left HSL Band 2/LTE Band 2 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.998 V/m; Power Drift = 0.18 dB
Peak SAR (extrapolated) = 0.166 W/kg
SAR(1 g) = 0.095 W/kg; SAR(10 g) = 0.053 W/kg
Maximum value of SAR (measured) = 0.105 W/kg



0 dB = 0.105 W/kg = -9.79 dBW/kg

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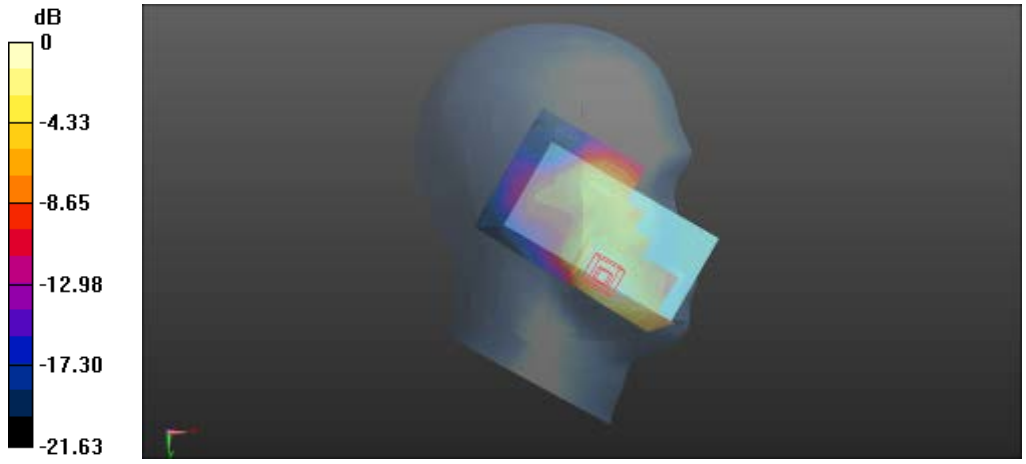
Right Side	Check	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 2/LTE Band 2 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.267 W/kg
Head-Section Right HSL Band 2/LTE Band 2 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.087 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.405 W/kg
SAR(1 g) = 0.251 W/kg; SAR(10 g) = 0.152 W/kg
Maximum value of SAR (measured) = 0.270 W/kg



0 dB = 0.270 W/kg = -5.69 dBW/kg

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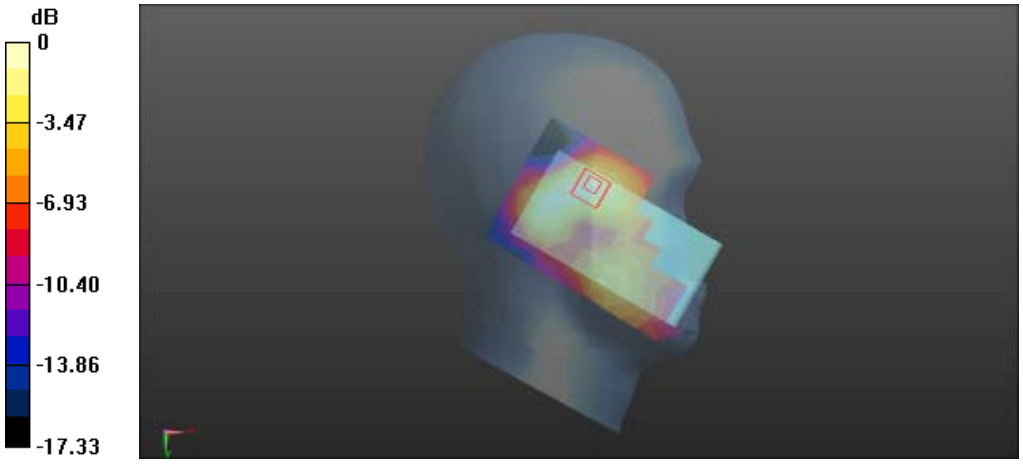
Right Side	Tilt	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 2/LTE Band 2 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0852 W/kg
Head-Section Right HSL Band 2/LTE Band 2 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.210 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.125 W/kg
SAR(1 g) = 0.080 W/kg; SAR(10 g) = 0.050 W/kg
Maximum value of SAR (measured) = 0.0864 W/kg



0 dB = 0.0864 W/kg = -10.63 dBW/kg

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LTE BAND2- 20BW-50%RB (Flat)

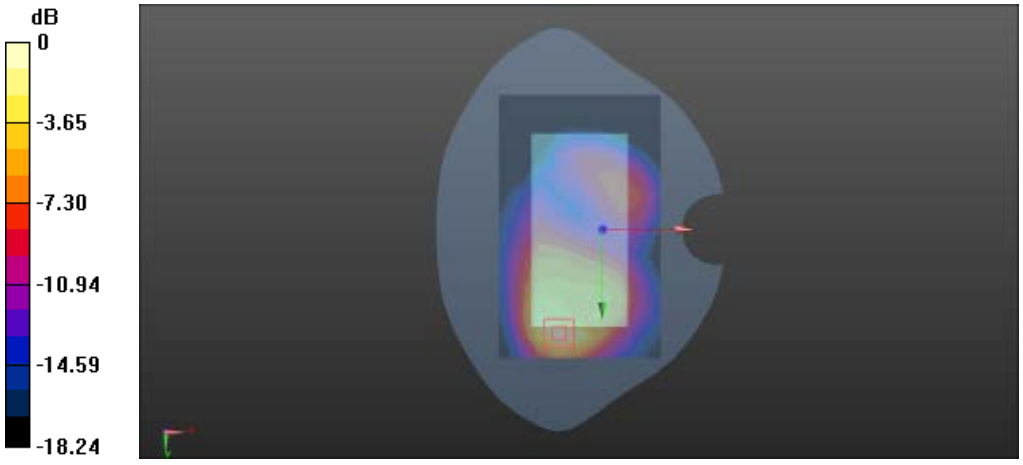
FLAT	Towards phantom	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 2 TP/LTE Band 2 TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.506 W/kg
Flat-Section MSL Band 2 TP/LTE Band 2 TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.767 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.849 W/kg
SAR(1 g) = 0.469 W/kg; SAR(10 g) = 0.244 W/kg
Maximum value of SAR (measured) = 0.536 W/kg



0 dB = 0.536 W/kg = -2.71 dBW/kg

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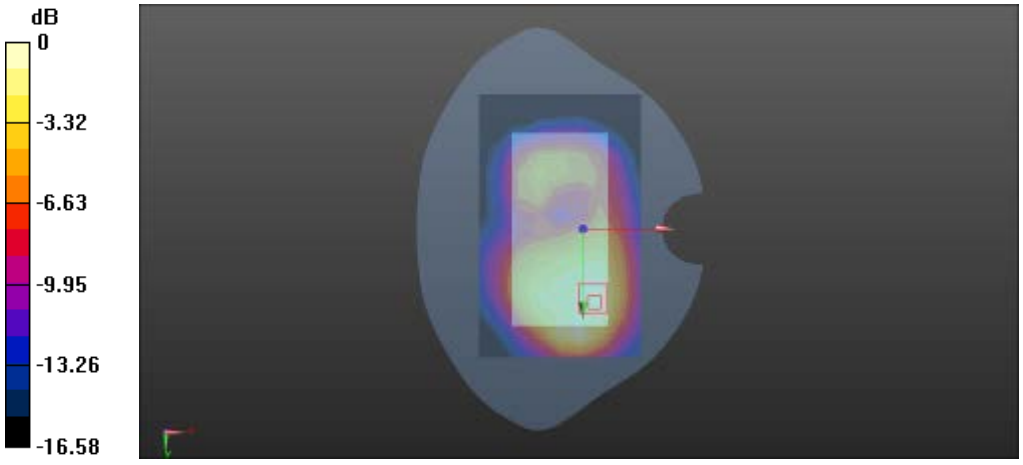
FLAT	Towards ground	1880MHz

Communication System: UID 0, LTE band 2 (0); Frequency: 1880 MHz
Medium parameters used: f = 1880 MHz; σ = 1.45 S/m; ε_r = 39.74; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 2 TG/LTE Band 2 TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.489 W/kg
Flat-Section MSL Band 2 TG/LTE Band 2 TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.180 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 0.804 W/kg
SAR(1 g) = 0.442 W/kg; SAR(10 g) = 0.249 W/kg
Maximum value of SAR (measured) = 0.485 W/kg



0 dB = 0.485 W/kg = -3.14 dBW/kg

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LTE BAND4- 5BW-1RB (Head)

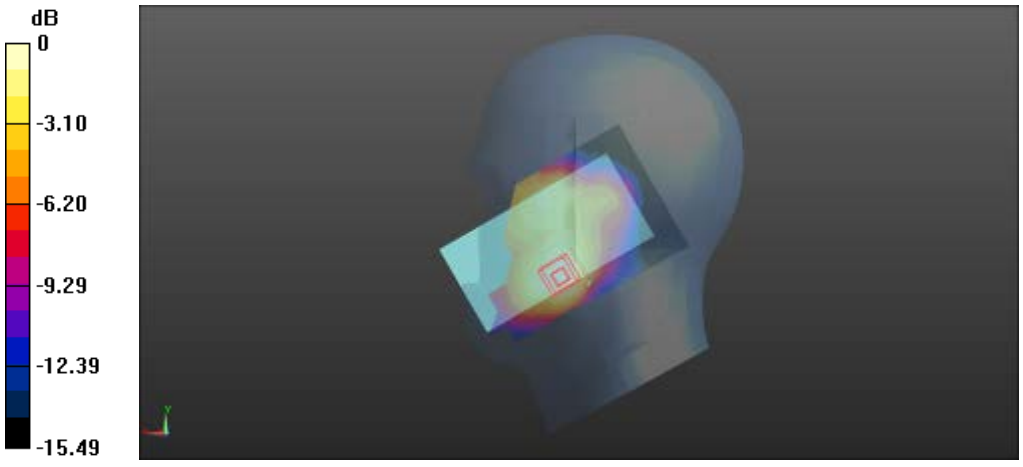
Left Side	Check	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 4/LTE Band 4 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.166 W/kg
Head-Section Left HSL Band 4/LTE Band 4 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.698 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.222 W/kg
SAR(1 g) = 0.157 W/kg; SAR(10 g) = 0.104 W/kg
Maximum value of SAR (measured) = 0.169 W/kg



0 dB = 0.169 W/kg = -7.72 dBW/kg

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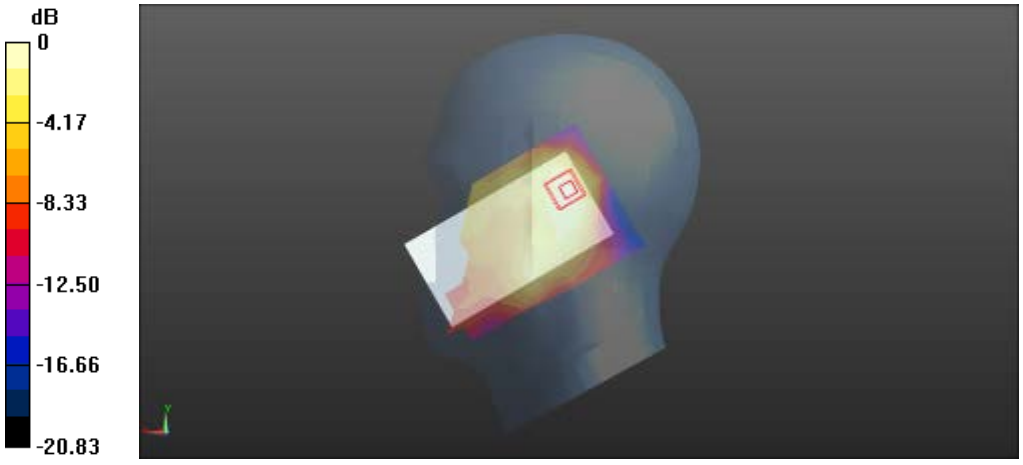
Left Side	Tilt	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 4/LTE Band 4 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0825 W/kg
Head-Section Left HSL Band 4/LTE Band 4 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.057 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.124 W/kg
SAR(1 g) = 0.078 W/kg; SAR(10 g) = 0.047 W/kg
Maximum value of SAR (measured) = 0.0834 W/kg



0 dB = 0.0834 W/kg = -10.79 dBW/kg

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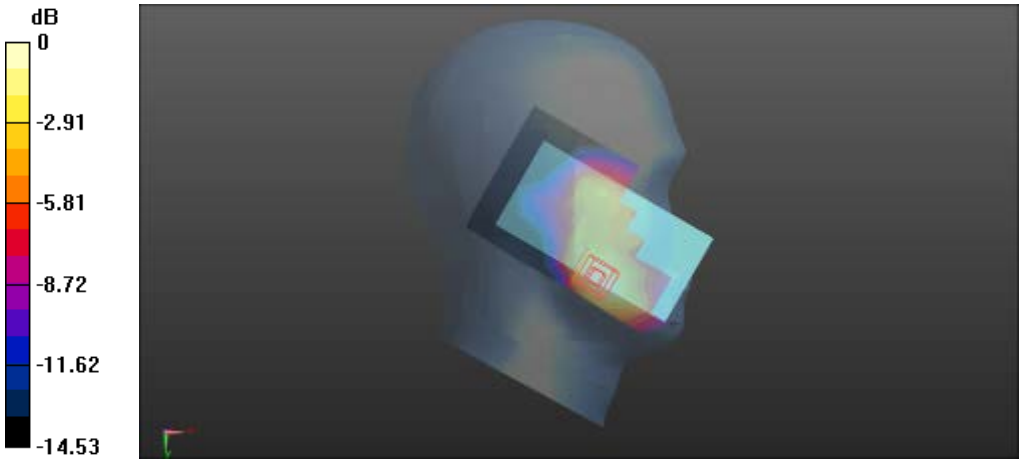
Right Side	Check	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 4/LTE Band 4 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.298 W/kg
Head-Section Right HSL Band 4/LTE Band 4 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.973 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.431 W/kg
SAR(1 g) = 0.283 W/kg; SAR(10 g) = 0.180 W/kg
Maximum value of SAR (measured) = 0.308 W/kg



0 dB = 0.308 W/kg = -5.11 dBW/kg

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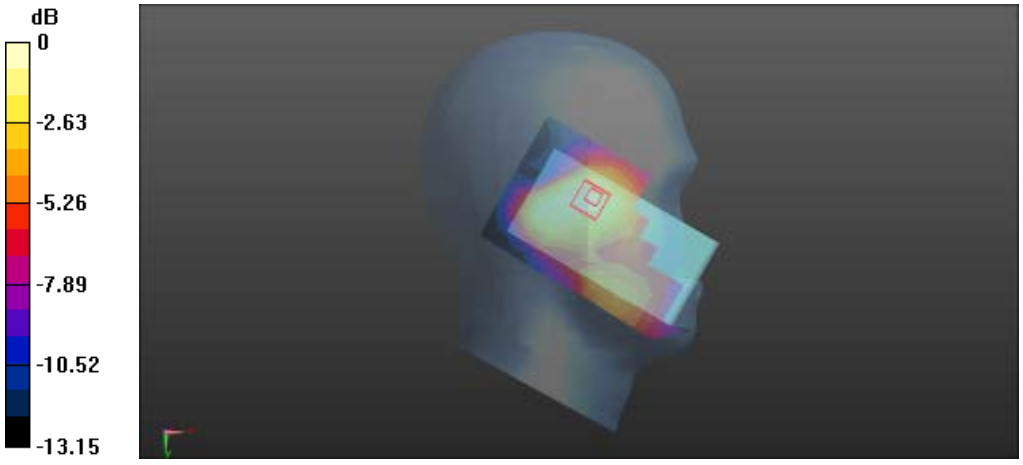
Right Side	Tilt	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 4/LTE Band 4 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0770 W/kg
Head-Section Right HSL Band 4/LTE Band 4 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.198 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.114 W/kg
SAR(1 g) = 0.079 W/kg; SAR(10 g) = 0.052 W/kg
Maximum value of SAR (measured) = 0.0846 W/kg



0 dB = 0.0846 W/kg = -10.73 dBW/kg

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LTE BAND4- 5BW-1RB (Flat)

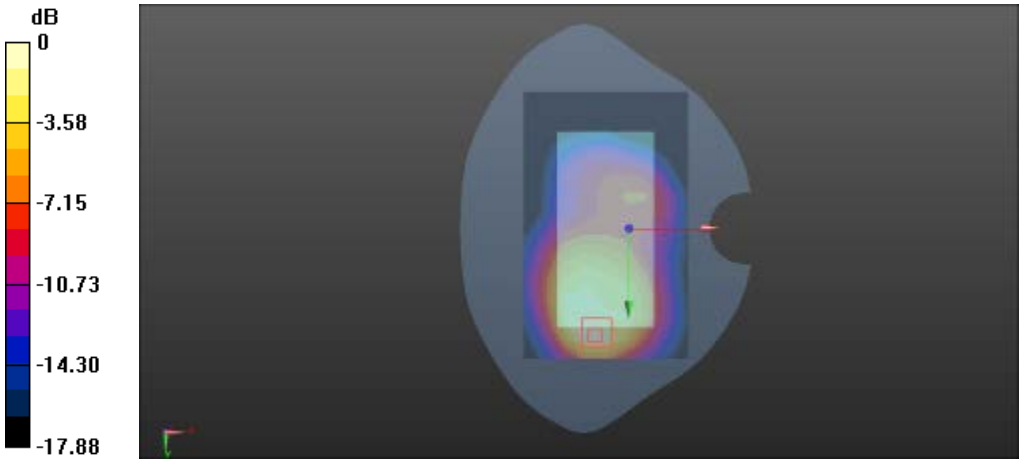
FLAT	Towards phantom	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 4 TP/LTE Band 4 TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.588 W/kg
Flat-Section MSL Band 4 TP/LTE Band 4 TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 9.260 V/m; Power Drift = -0.15 dB
Peak SAR (extrapolated) = 0.977 W/kg
SAR(1 g) = 0.567 W/kg; SAR(10 g) = 0.315 W/kg
Maximum value of SAR (measured) = 0.633 W/kg



0 dB = 0.633 W/kg = -1.99 dBW/kg

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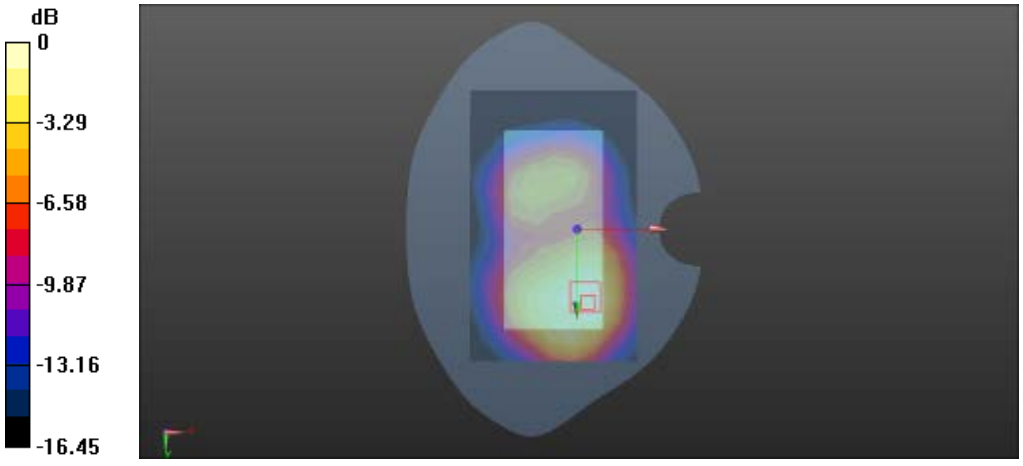
FLAT	Towards ground	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 4 TG/LTE Band 4 TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.598 W/kg
Flat-Section MSL Band 4 TG/LTE Band 4 TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.274 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.873 W/kg
SAR(1 g) = 0.526 W/kg; SAR(10 g) = 0.316 W/kg
Maximum value of SAR (measured) = 0.569 W/kg



0 dB = 0.569 W/kg = -2.45 dBW/kg

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LTE BAND4- 20BW-1RB (Head)

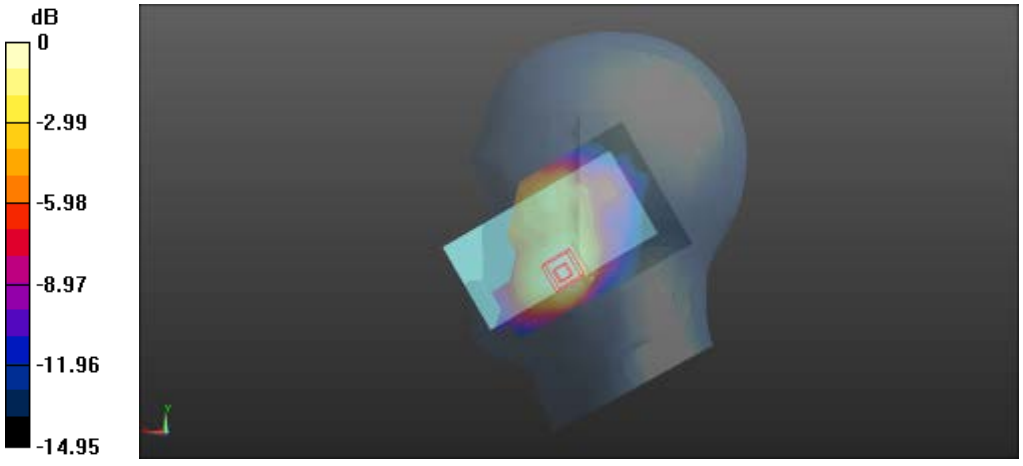
Left Side	Check	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 4/LTE Band 4 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.154 W/kg
Head-Section Left HSL Band 4/LTE Band 4 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.195 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 0.211 W/kg
SAR(1 g) = 0.144 W/kg; SAR(10 g) = 0.095 W/kg
Maximum value of SAR (measured) = 0.156 W/kg



0 dB = 0.156 W/kg = -8.07 dBW/kg

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Left Side	Tilt	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 4/LTE Band 4 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0445 W/kg
Head-Section Left HSL Band 4/LTE Band 4 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.340 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.0660 W/kg
SAR(1 g) = 0.043 W/kg; SAR(10 g) = 0.026 W/kg
Maximum value of SAR (measured) = 0.0460 W/kg

0 dB = 0.0460 W/kg = -13.37 dBW/kg

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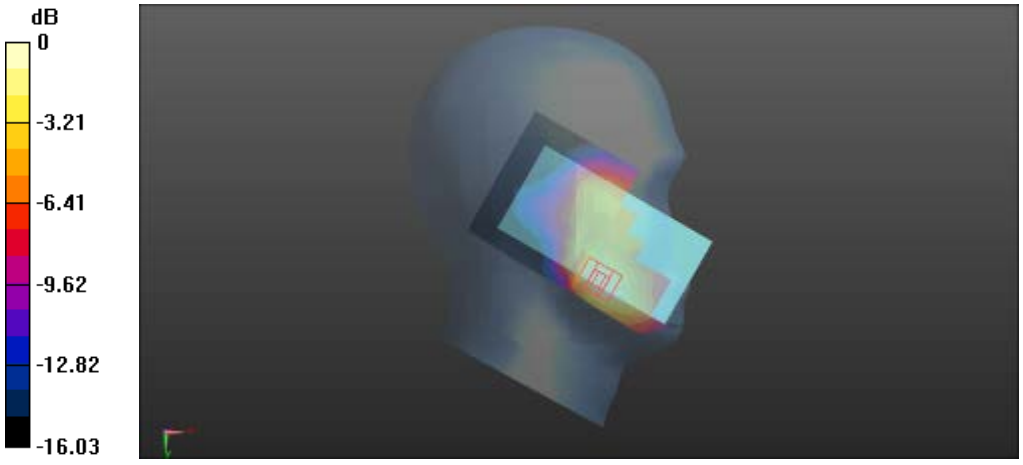
Right Side	Check	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 4/LTE Band 4 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.220 W/kg
Head-Section Right HSL Band 4/LTE Band 4 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.903 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.324 W/kg
SAR(1 g) = 0.211 W/kg; SAR(10 g) = 0.135 W/kg
Maximum value of SAR (measured) = 0.228 W/kg



0 dB = 0.228 W/kg = -6.42 dBW/kg

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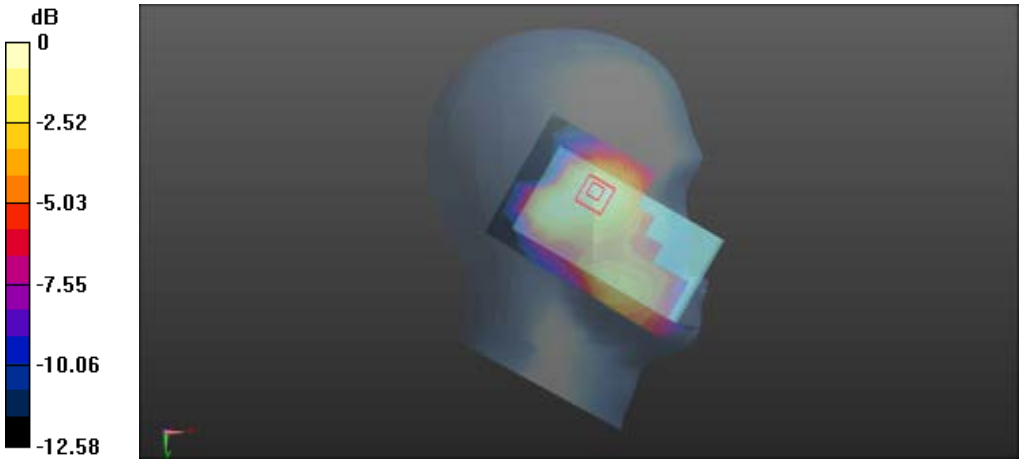
Right Side	Tilt	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 4/LTE Band 4 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm.
Maximum value of SAR (measured) = 0.0535 W/kg
Head-Section Right HSL Band 4/LTE Band 4 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.621 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.0790 W/kg
SAR(1 g) = 0.053 W/kg; SAR(10 g) = 0.036 W/kg
Maximum value of SAR (measured) = 0.0558 W/kg



0 dB = 0.0558 W/kg = -12.53 dBW/kg

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LTE BAND4- 20BW-1RB (Flat)

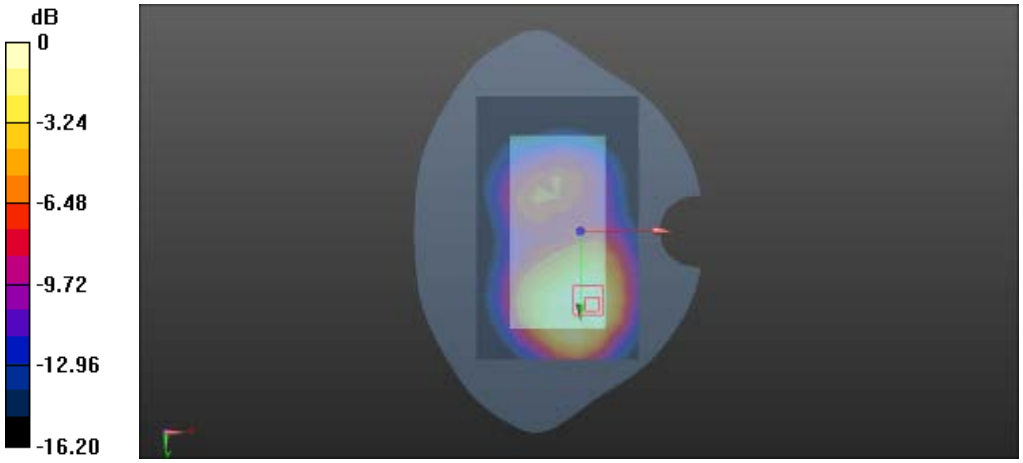
FLAT	Towards phantom	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 4 TG/LTE Band 4 TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.677 W/kg
Flat-Section MSL Band 4 TG/LTE Band 4 TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.646 V/m; Power Drift = -0.19 dB
Peak SAR (extrapolated) = 1.02 W/kg
SAR(1 g) = 0.597 W/kg; SAR(10 g) = 0.353 W/kg
Maximum value of SAR (measured) = 0.650 W/kg



0 dB = 0.650 W/kg = -1.87 dBW/kg

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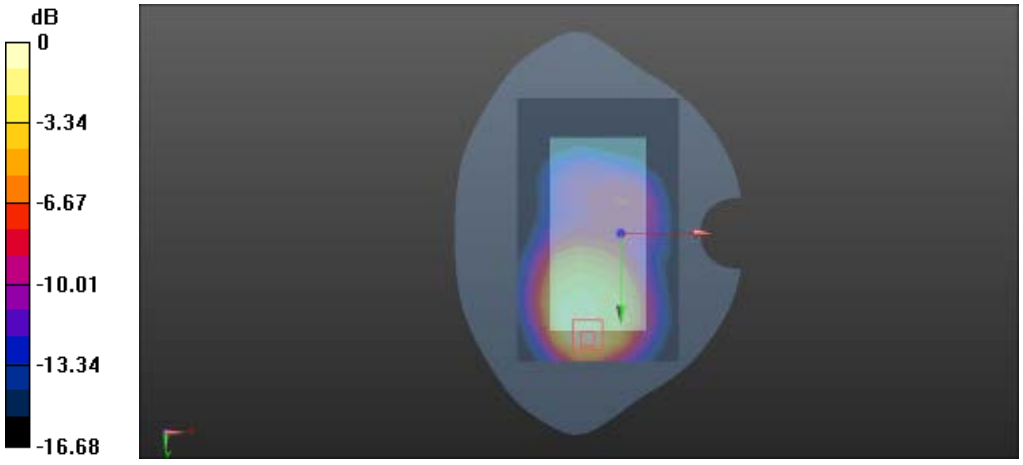
FLAT	Towards ground	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 4 TP/LTE Band 4 TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.442 W/kg
Flat-Section MSL Band 4 TP/LTE Band 4 TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.845 V/m; Power Drift = -0.22 dB
Peak SAR (extrapolated) = 0.768 W/kg
SAR(1 g) = 0.455 W/kg; SAR(10 g) = 0.258 W/kg
Maximum value of SAR (measured) = 0.507 W/kg



0 dB = 0.507 W/kg = -2.95 dBW/kg

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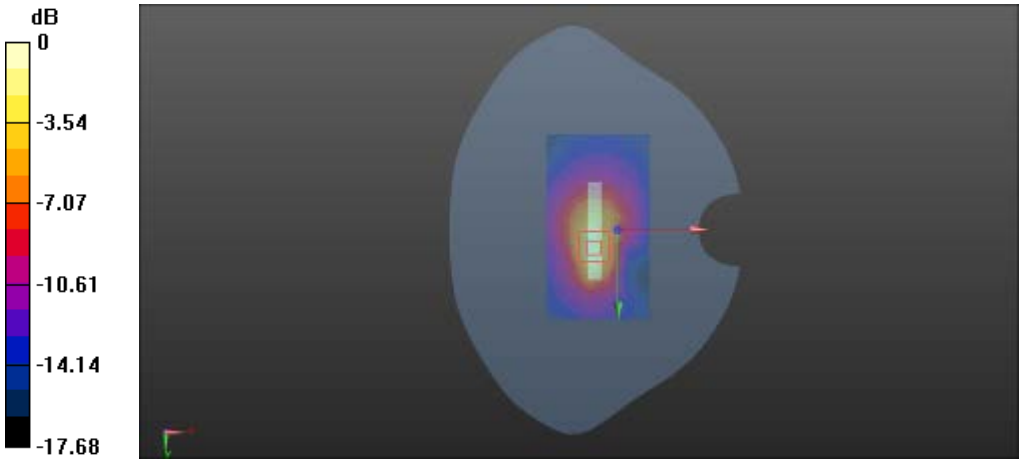
FLAT	Edge2	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 4 HOT/LTE Band 4 M edge 2/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.333 W/kg
Flat-Section MSL Band 4 HOT/LTE Band 4 M edge 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 15.372 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.655 W/kg
SAR(1 g) = 0.381 W/kg; SAR(10 g) = 0.199 W/kg
Maximum value of SAR (measured) = 0.440 W/kg



0 dB = 0.440 W/kg = -3.57 dBW/kg

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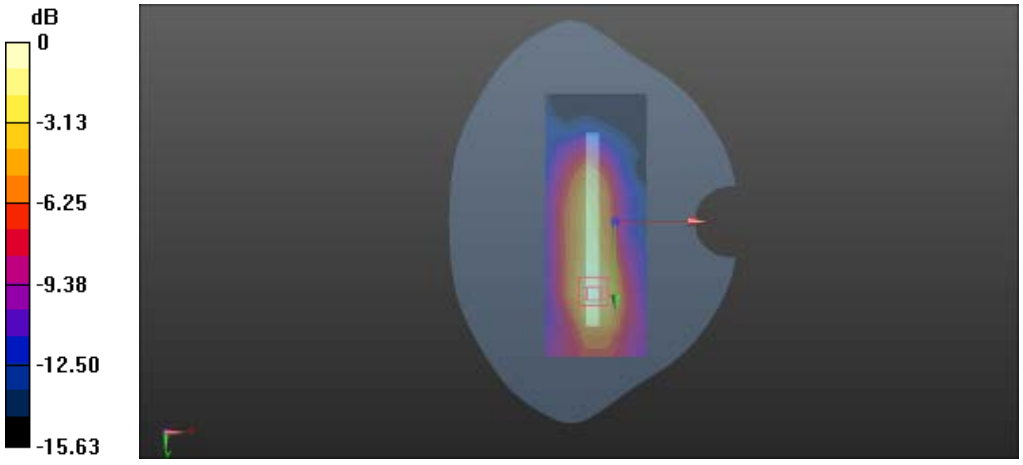
FLAT	Edge3	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 4 HOT/LTE Band 4 M edge 3/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.138 W/kg
Flat-Section MSL Band 4 HOT/LTE Band 4 M edge 3/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.309 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.243 W/kg
SAR(1 g) = 0.147 W/kg; SAR(10 g) = 0.084 W/kg
Maximum value of SAR (measured) = 0.162 W/kg



0 dB = 0.162 W/kg = -7.90 dBW/kg

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LTE BAND4- 20BW-50%RB (Head)

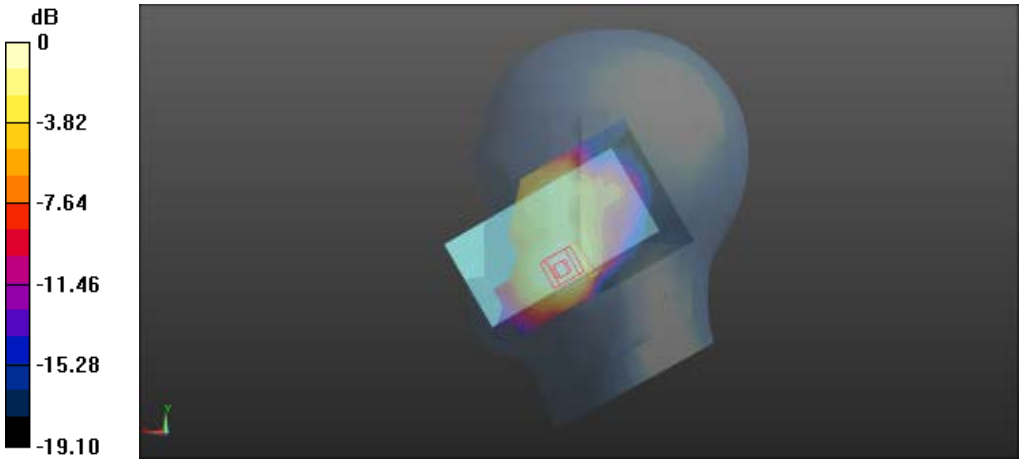
Left Side	Check	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 4/LTE Band 4 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.139 W/kg
Head-Section Left HSL Band 4/LTE Band 4 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.269 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.210 W/kg
SAR(1 g) = 0.138 W/kg; SAR(10 g) = 0.090 W/kg
Maximum value of SAR (measured) = 0.150 W/kg



0 dB = 0.150 W/kg = -8.24 dBW/kg

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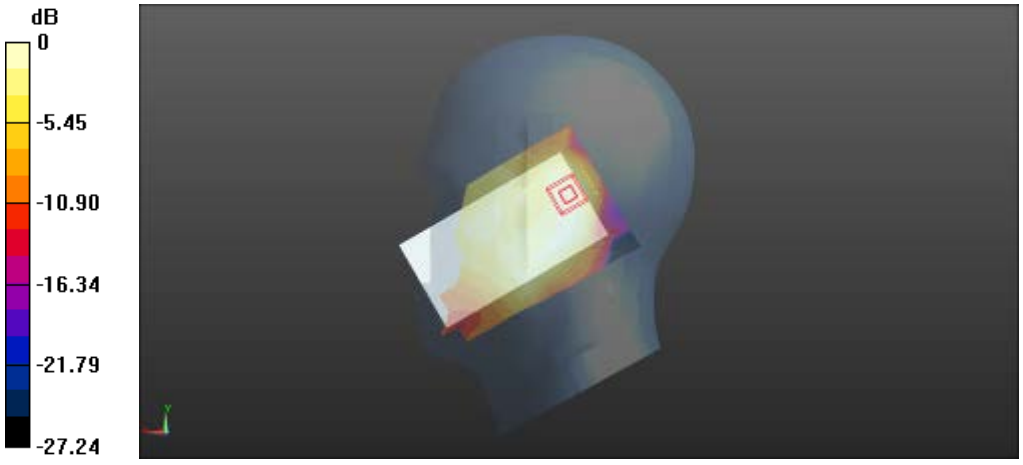
Left Side	Tilt	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Left Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Left HSL Band 4/LTE Band 4 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0789 W/kg
Head-Section Left HSL Band 4/LTE Band 4 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.468 V/m; Power Drift = 0.21 dB
Peak SAR (extrapolated) = 0.109 W/kg
SAR(1 g) = 0.070 W/kg; SAR(10 g) = 0.043 W/kg
Maximum value of SAR (measured) = 0.0784 W/kg



0 dB = 0.0784 W/kg = -11.06 dBW/kg

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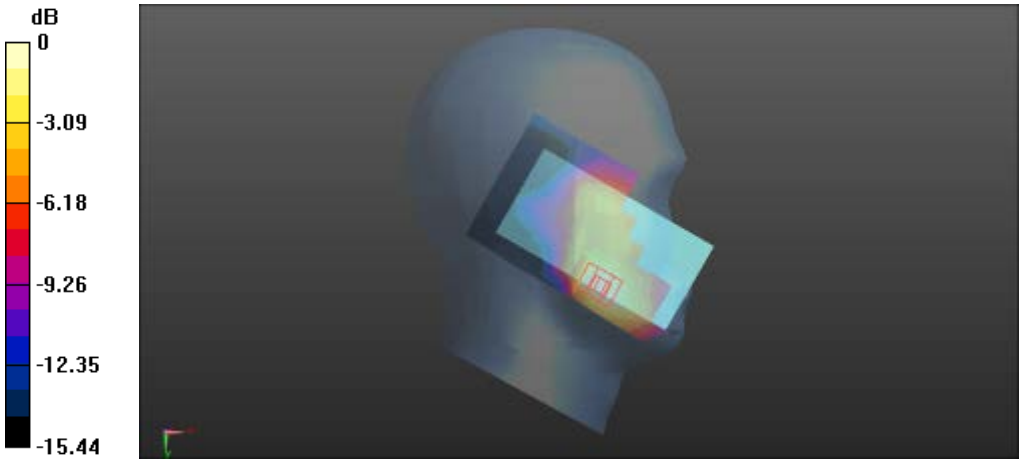
Right Side	Check	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 4/LTE Band 4 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.227 W/kg
Head-Section Right HSL Band 4/LTE Band 4 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.657 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.322 W/kg
SAR(1 g) = 0.215 W/kg; SAR(10 g) = 0.138 W/kg
Maximum value of SAR (measured) = 0.233 W/kg



0 dB = 0.233 W/kg = -6.33 dBW/kg

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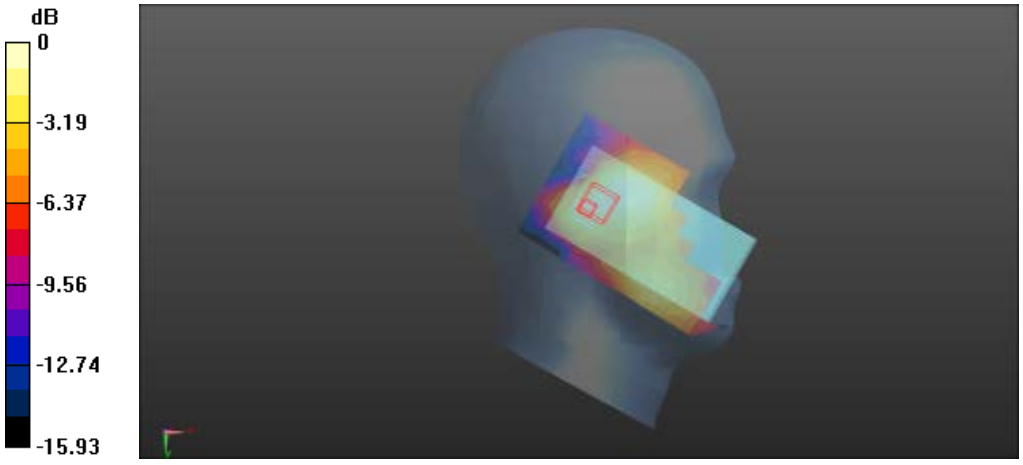
Right Side	Tilt	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Right Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Head-Section Right HSL Band 4/LTE Band 4 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0538 W/kg
Head-Section Right HSL Band 4/LTE Band 4 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.858 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.0750 W/kg
SAR(1 g) = 0.048 W/kg; SAR(10 g) = 0.032 W/kg
Maximum value of SAR (measured) = 0.0528 W/kg



0 dB = 0.0528 W/kg = -12.77 dBW/kg

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LTE BAND4- 20BW-50%RB (Flat)

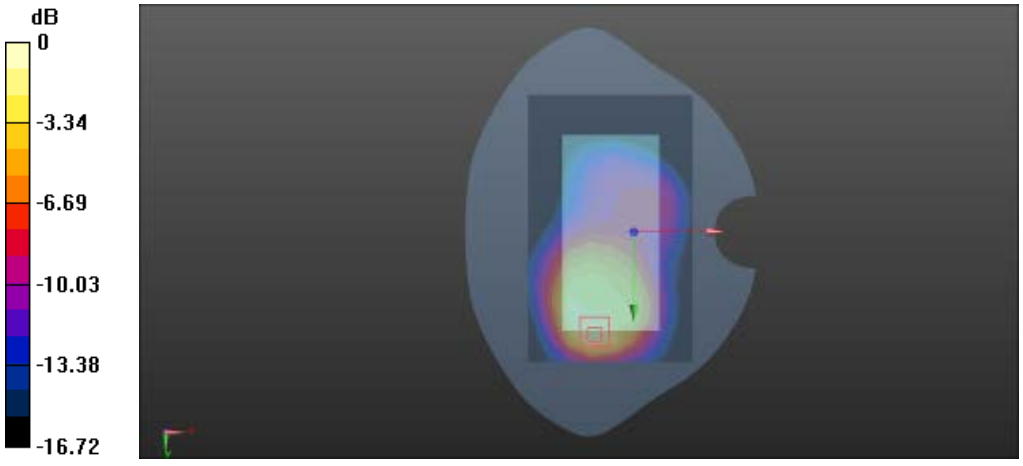
FLAT	Towards phantom	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 4 TP/LTE Band 4 TP M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.435 W/kg
Flat-Section MSL Band 4 TP/LTE Band 4 TP M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.898 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.817 W/kg
SAR(1 g) = 0.472 W/kg; SAR(10 g) = 0.258 W/kg
Maximum value of SAR (measured) = 0.531 W/kg



0 dB = 0.531 W/kg = -2.75 dBW/kg

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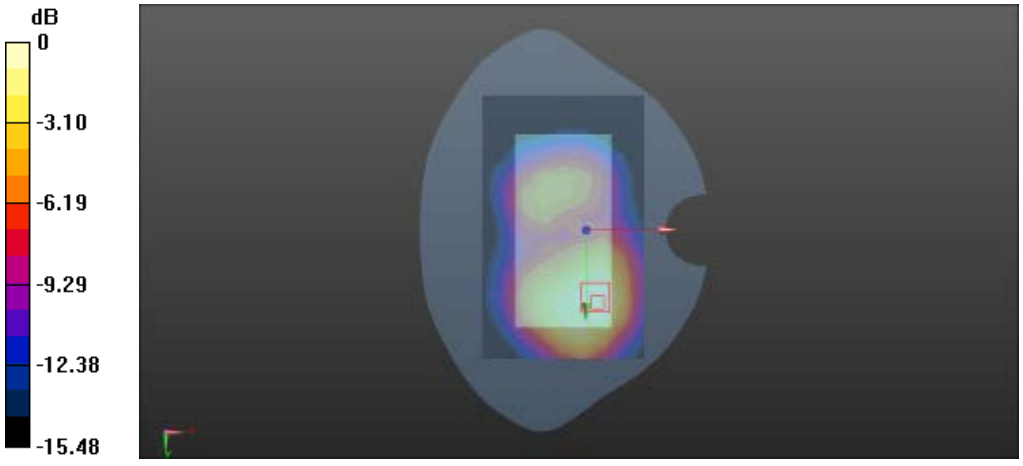
FLAT	Towards ground	1732.5MHz

Communication System: UID 0, LTE band 4 (0); Frequency: 1732.5 MHz
Medium parameters used (interpolated): f = 1732.5 MHz; σ = 1.363 S/m; ε_r = 40.136; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3708; ConvF(7.77, 7.77, 7.77); Calibrated: 10/26/2015;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection), z = -19.0, 31.0
- Electronics: DAE4 Sn720; Calibrated: 10/29/2015
- Phantom: SAM 1560; Type: SAM; Serial: 1560
- DASY52 52.8.7(1137); SEMCAD X 14.6.10(7164)

Flat-Section MSL Band 4 TG/LTE Band 4 TG M/Area Scan (9x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.456 W/kg
Flat-Section MSL Band 4 TG/LTE Band 4 TG M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.315 V/m; Power Drift = 0.21 dB
Peak SAR (extrapolated) = 0.670 W/kg
SAR(1 g) = 0.408 W/kg; SAR(10 g) = 0.246 W/kg
Maximum value of SAR (measured) = 0.440 W/kg



0 dB = 0.440 W/kg = -3.57 dBW/kg

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LTE BAND7- 20BW-1RB (Head)

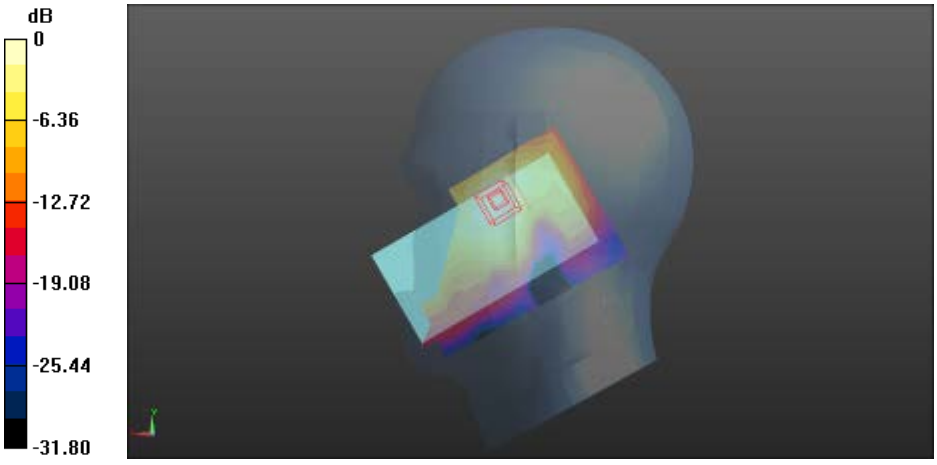
Left Side	Check	2535MHz

Communication System: UID 0, LTE band 7 (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used (extrapolated): f = 2535 MHz; σ = 1.869 S/m; ε_r = 38.76; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.26, 4.26, 4.26); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Left HSL Band 7/LTE Band 7 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.138 W/kg
Head-Section Left HSL Band 7/LTE Band 7 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.082 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 0.244 W/kg
SAR(1 g) = 0.134 W/kg; SAR(10 g) = 0.073 W/kg
Maximum value of SAR (measured) = 0.147 W/kg



0 dB = 0.147 W/kg = -8.33 dBW/kg

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Left Side	Tilt	2535MHz

Communication System: UID 0, LTE band 7 (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used (extrapolated): f = 2535 MHz; σ = 1.869 S/m; ε_r = 38.76; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.26, 4.26, 4.26); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Left HSL Band 7/LTE Band 7 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.133 W/kg
Head-Section Left HSL Band 7/LTE Band 7 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.620 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 0.252 W/kg
SAR(1 g) = 0.127 W/kg; SAR(10 g) = 0.065 W/kg
Maximum value of SAR (measured) = 0.138 W/kg

0 dB = 0.138 W/kg = -8.60 dBW/kg

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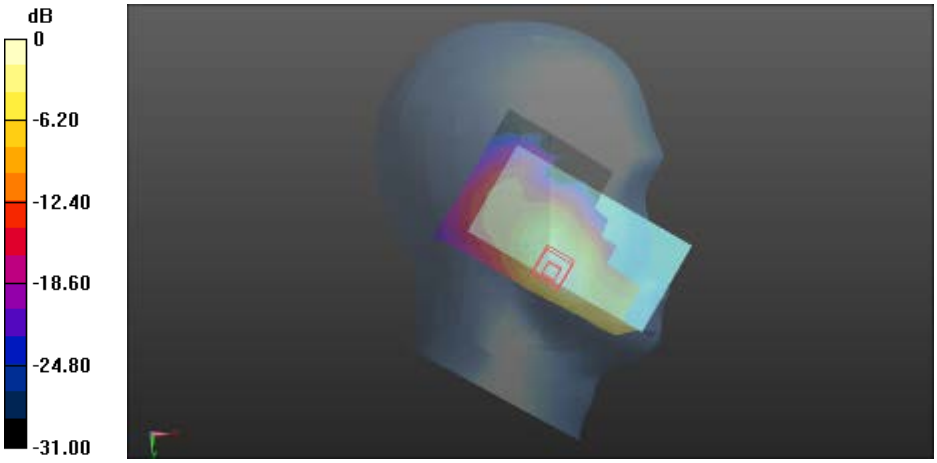
Right Side	Check	2535MHz

Communication System: UID 0, LTE band 7 (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used): f = 2535 MHz; σ = 1.869 S/m; ε_r = 38.76; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.26, 4.26, 4.26); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Right HSL Band 7/LTE Band 7 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.395 W/kg
Head-Section Right HSL Band 7/LTE Band 7 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.058 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.767 W/kg
SAR(1 g) = 0.362 W/kg; SAR(10 g) = 0.178 W/kg
Maximum value of SAR (measured) = 0.393 W/kg



0 dB = 0.393 W/kg = -4.06 dBW/kg

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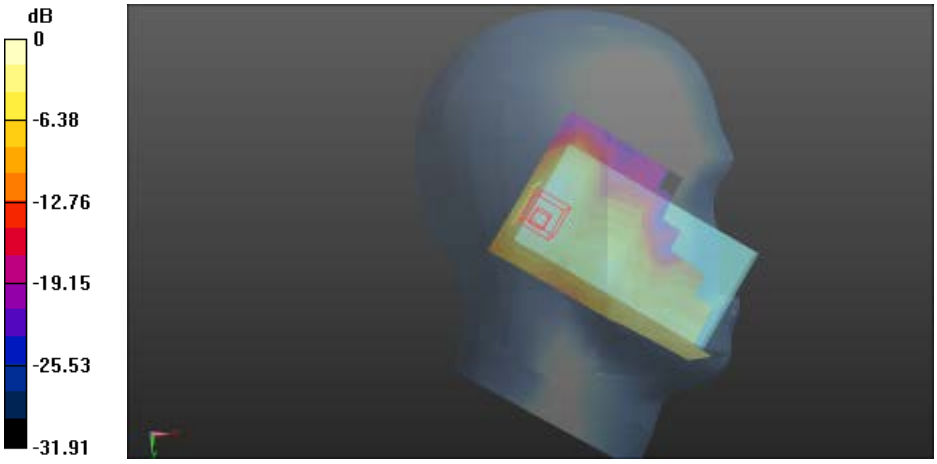
Right Side	Tilt	2535MHz

Communication System: UID 0, LTE band 7 (0); Frequency: 2535 MHz;Duty Cycle: 1:1
Medium parameters used (extrapolated): f = 2535 MHz; σ = 1.869 S/m; ε_r = 38.76; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.26, 4.26, 4.26); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Right HSL Band 7/LTE Band 7 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0858 W/kg
Head-Section Right HSL Band 7/LTE Band 7 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.879 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 0.164 W/kg
SAR(1 g) = 0.084 W/kg; SAR(10 g) = 0.044 W/kg
Maximum value of SAR (measured) = 0.0926 W/kg



0 dB = 0.0926 W/kg = -10.33 dBW/kg

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LTE BAND7- 20BW-1RB (Flat)

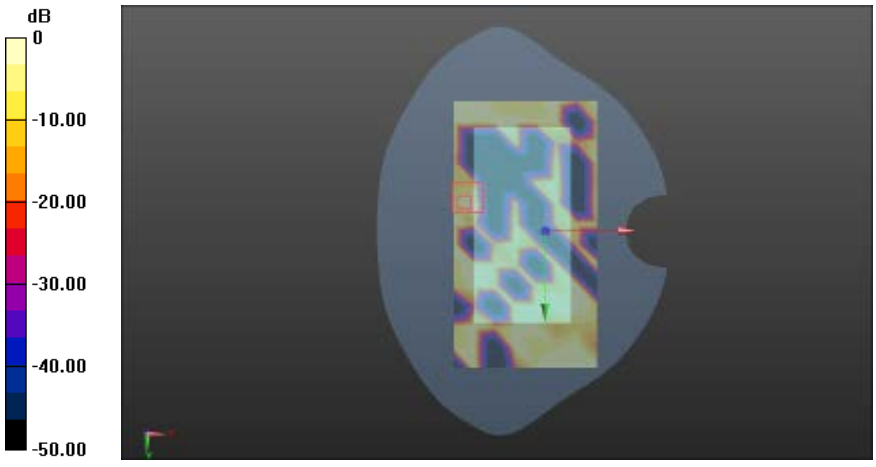
FLAT	Towards phantom	2535MHz

Communication System: UID 10169 - CAB, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 2535 MHz;Duty Cycle: 1:3.74111
Medium parameters used (extrapolated): f = 2535 MHz; σ = 2.045 S/m; ε_r = 50.427; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.09, 4.09, 4.09); Calibrated: 2015/8/21;
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1660; Type: QD000P40CD; Serial: TP:1660
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Flat-Section MSL Band 7 TP/LTE Band 7 TP M 2/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.000680 W/kg
Flat-Section MSL Band 7 TP/LTE Band 7 TP M 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.437 V/m; Power Drift = -0.12 dB
Peak SAR (extrapolated) = 0.000921 W/kg
SAR(1 g) = 6.42e-005 W/kg; SAR(10 g) = 1.31e-005 W/kg
Maximum value of SAR (measured) = 0.000924 W/kg



0 dB = 0.000924 W/kg = -30.34 dBW/kg

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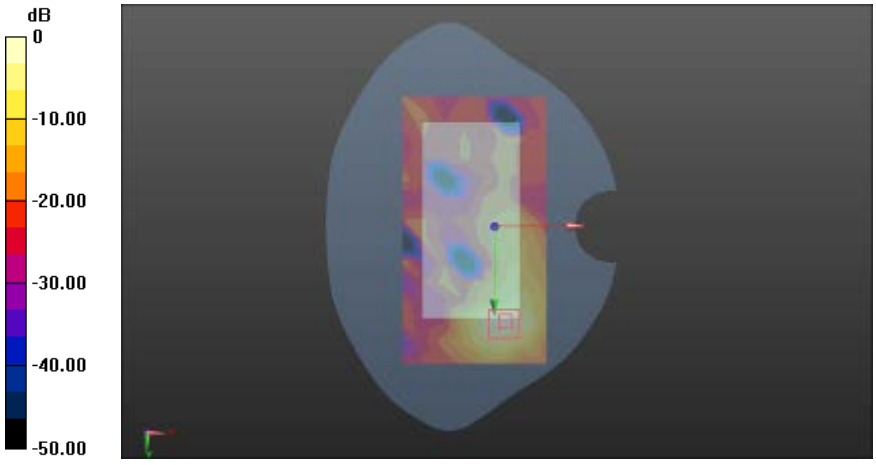
FLAT	Towards ground	2535MHz

Communication System: UID 10169 - CAB, LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK);
Frequency: 2535 MHz;Duty Cycle: 1:3.74111
Medium parameters used: f = 2535 MHz; σ = 2.045 S/m; ε_r = 50.427; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.09, 4.09, 4.09); Calibrated: 2015/8/21;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1660; Type: QD000P40CD; Serial: TP:1660
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Flat-Section MSL Band 7 TG/LTE Band 7 TG M 2/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0649 W/kg
Flat-Section MSL Band 7 TG/LTE Band 7 TG M 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.346 V/m; Power Drift = -0.18 dB
Peak SAR (extrapolated) = 0.111 W/kg
SAR(1 g) = 0.048 W/kg; SAR(10 g) = 0.020 W/kg
Maximum value of SAR (measured) = 0.0536 W/kg



0 dB = 0.0536 W/kg = -12.71 dBW/kg

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LTE BAND7- 20BW-50%RB (Head)

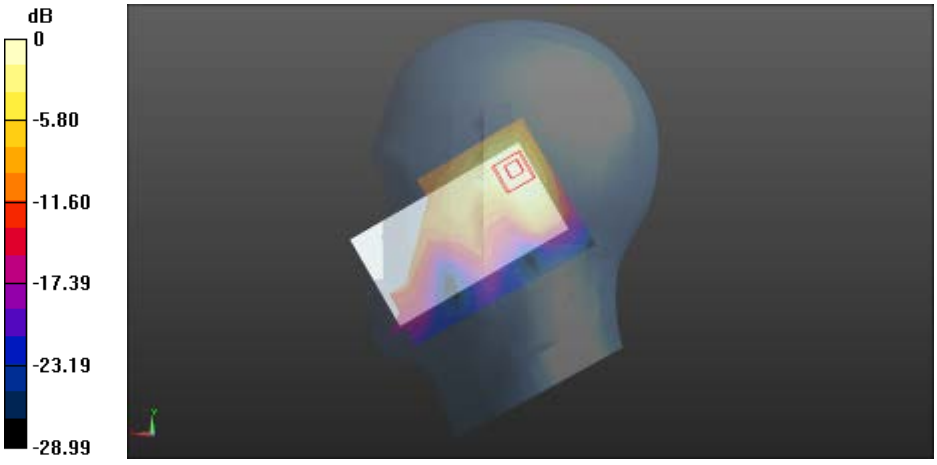
Left Side	Check	2535MHz

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK);
Frequency: 2535 MHz;Duty Cycle: 1:3.81066
Medium parameters used: f = 2535 MHz; σ = 2.045 S/m; ε_r = 50.427; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.26, 4.26, 4.26); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Left HSL Band 7/LTE Band 7 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.125 W/kg
Head-Section Left HSL Band 7/LTE Band 7 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.596 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.129 W/kg; SAR(10 g) = 0.065 W/kg
Maximum value of SAR (measured) = 0.141 W/kg



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

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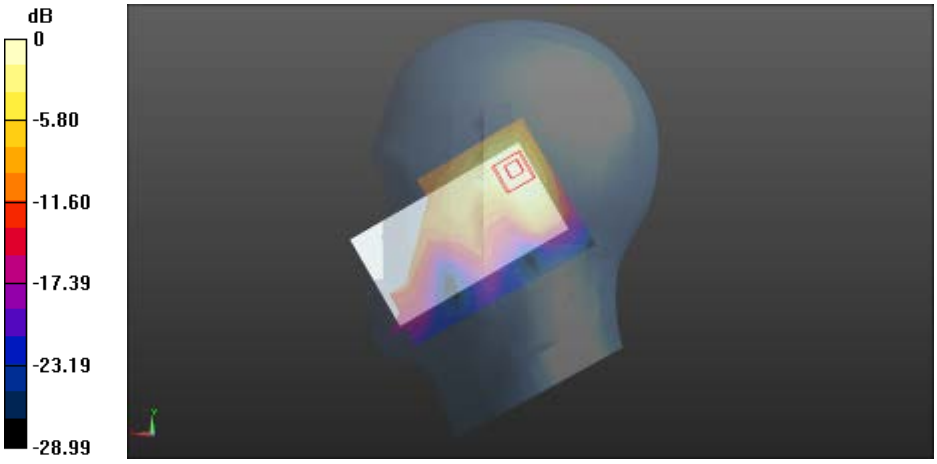
Left Side	Tilt	2535MHz

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK);
Frequency: 2535 MHz;Duty Cycle: 1:3.81066
Medium parameters used: f = 2535 MHz; σ = 2.045 S/m; ε_r = 50.427; ρ = 1000 kg/m^3
Phantom section: Left Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.26, 4.26, 4.26); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Left HSL Band 7/LTE Band 7 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.125 W/kg
Head-Section Left HSL Band 7/LTE Band 7 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.596 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.250 W/kg
SAR(1 g) = 0.129 W/kg; SAR(10 g) = 0.065 W/kg
Maximum value of SAR (measured) = 0.141 W/kg



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

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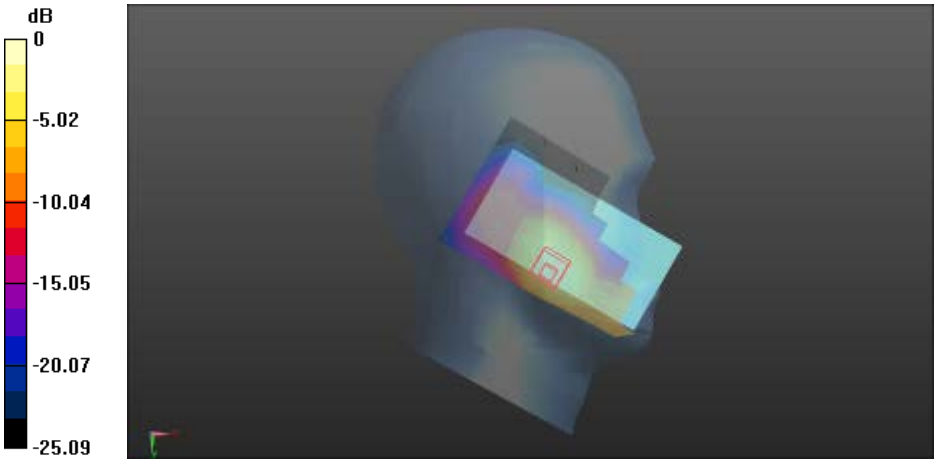
Right Side	Check	2535MHz

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK);
Frequency: 2535 MHz;Duty Cycle: 1:3.81066
Medium parameters used: f = 2535 MHz; σ = 2.045 S/m; ε_r = 50.427; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.26, 4.26, 4.26); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Right HSL Band 7/LTE Band 7 touch M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.275 W/kg
Head-Section Right HSL Band 7/LTE Band 7 touch M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.557 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 0.673 W/kg
SAR(1 g) = 0.327 W/kg; SAR(10 g) = 0.164 W/kg
Maximum value of SAR (measured) = 0.370 W/kg



0 dB = 0.370 W/kg = -4.32 dBW/kg

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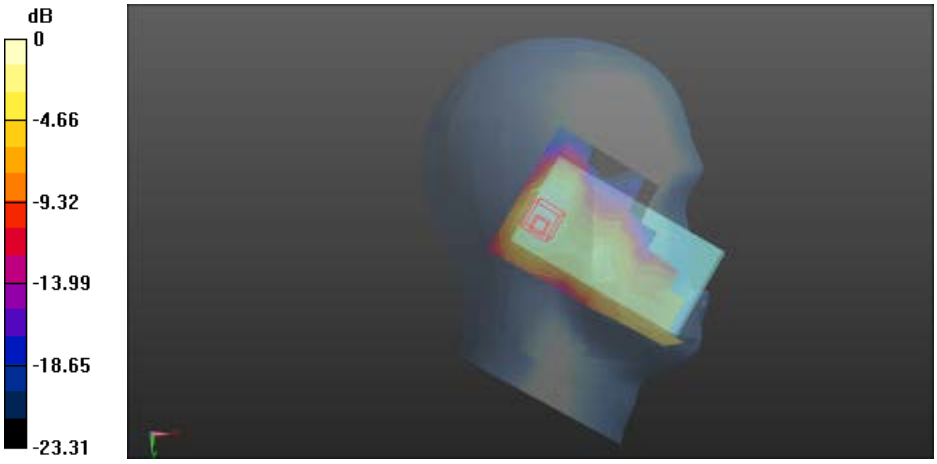
Right Side	Tilt	2535MHz

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 2535 MHz;Duty Cycle: 1:3.81066
Medium parameters used: f = 2500 MHz; σ = 1.837 S/m; ε_r = 38.944; ρ = 1000 kg/m^3
Phantom section: Right Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.26, 4.26, 4.26); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1659; Type: QD000P40CD; Serial: TP:1659
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Head-Section Right HSL Band 7/LTE Band 7 tilt M/Area Scan (8x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0878 W/kg
Head-Section Right HSL Band 7/LTE Band 7 tilt M/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.248 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 0.163 W/kg
SAR(1 g) = 0.087 W/kg; SAR(10 g) = 0.047 W/kg
Maximum value of SAR (measured) = 0.0948 W/kg



0 dB = 0.0948 W/kg = -10.23 dBW/kg

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LTE BAND7- 20BW-50%RB (Flat)

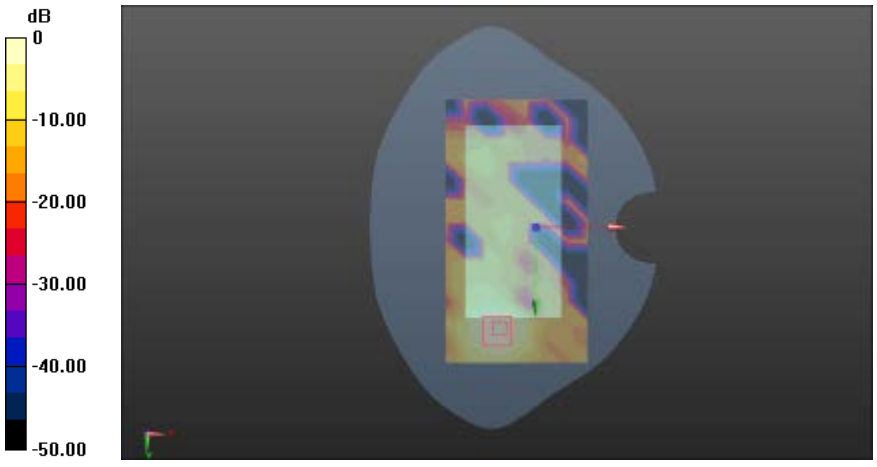
FLAT	Towards phantom	2535MHz

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 2535 MHz;Duty Cycle: 1:3.81066
Medium parameters used (extrapolated): f = 2535 MHz; σ = 2.045 S/m; ε_r = 50.427; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.09, 4.09, 4.09); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1660; Type: QD000P40CD; Serial: TP:1660
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Flat-Section MSL Band 7 TP/LTE Band 7 TP M 2/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.00940 W/kg
Flat-Section MSL Band 7 TP/LTE Band 7 TP M 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.511 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.0230 W/kg
SAR(1 g) = 0.011 W/kg; SAR(10 g) = 0.00442 W/kg
Maximum value of SAR (measured) = 0.0127 W/kg



0 dB = 0.0127 W/kg = -18.96 dBW/kg

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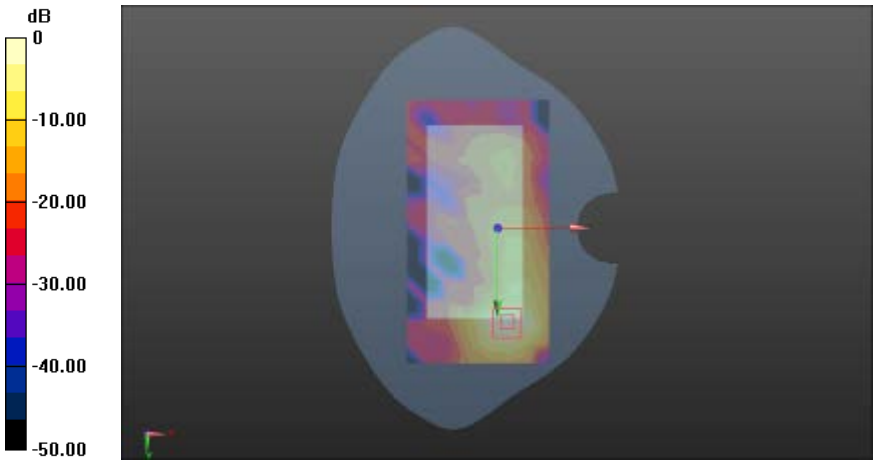
FLAT	Towards ground	2535MHz

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 2535 MHz;Duty Cycle: 1:3.81066
Medium parameters used (extrapolated): f = 2535 MHz; σ = 2.045 S/m; ε_r = 50.427; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.09, 4.09, 4.09); Calibrated: 2015/8/21;
- Sensor-Surface: 3mm (Mechanical Surface Detection), Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1660; Type: QD000P40CD; Serial: TP:1660
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Flat-Section MSL Band 7 TG/LTE Band 7 TG M 3/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.116 W/kg
Flat-Section MSL Band 7 TG/LTE Band 7 TG M 3/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.800 V/m; Power Drift = 1.13 dB
Peak SAR (extrapolated) = 0.204 W/kg
SAR(1 g) = 0.086 W/kg; SAR(10 g) = 0.036 W/kg
Maximum value of SAR (measured) = 0.0948 W/kg



0 dB = 0.0948 W/kg = -10.23 dBW/kg

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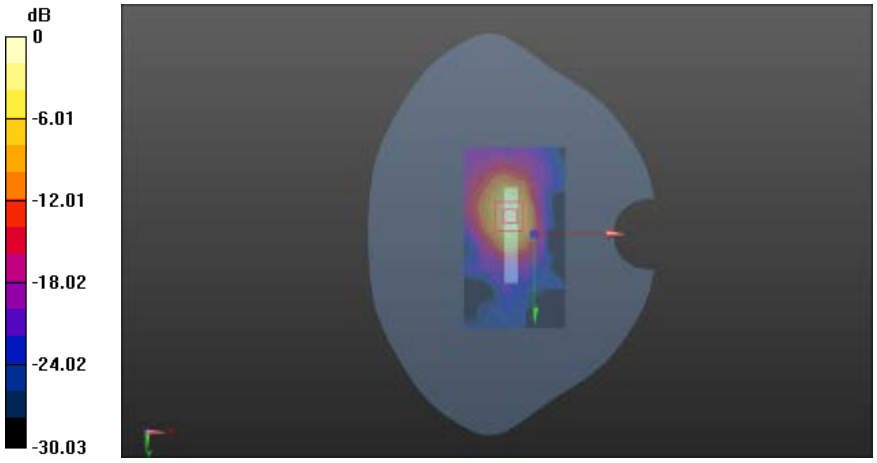
FLAT	Edge2	2535MHz

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 2535 MHz;Duty Cycle: 1:3.81066
Medium parameters used (extrapolated): f = 2535 MHz; σ = 2.045 S/m; ε_r = 50.427; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.09, 4.09, 4.09); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1660; Type: QD000P40CD; Serial: TP:1660
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Flat-Section MSL Band 7 HOT/LTE Band 7 L edge 2/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0995 W/kg
Flat-Section MSL Band 7 HOT/LTE Band 7 L edge 2/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.675 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.260 W/kg
SAR(1 g) = 0.113 W/kg; SAR(10 g) = 0.048 W/kg
Maximum value of SAR (measured) = 0.128 W/kg



0 dB = 0.128 W/kg = -8.93 dBW/kg

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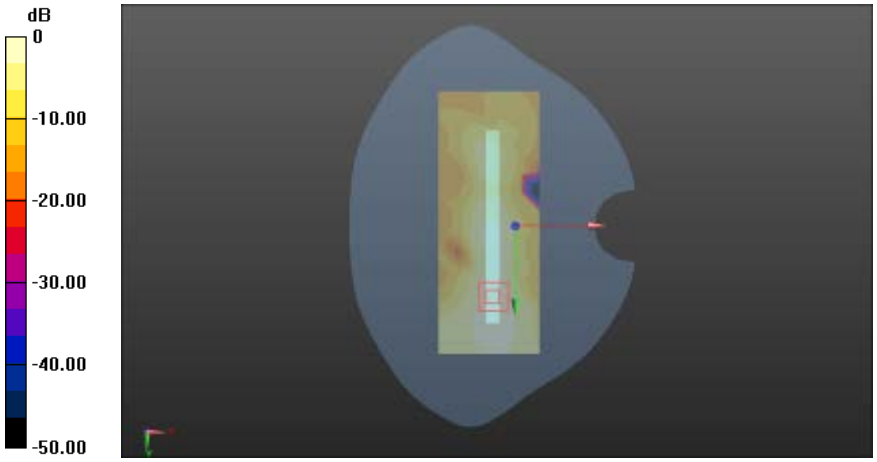
FLAT	Edge3	2535MHz

Communication System: UID 10297 - AAA, LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK); Frequency: 2535 MHz;Duty Cycle: 1:3.81066
Medium parameters used (extrapolated): f = 2535 MHz; σ = 2.045 S/m; ε_r = 50.427; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY5 Configuration:

- Probe: ES3DV3 - SN3127; ConvF(4.09, 4.09, 4.09); Calibrated: 2015/8/21;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn546; Calibrated: 2015/8/19
- Phantom: SAM 1660; Type: QD000P40CD; Serial: TP:1660
- Measurement SW: DASY52, Version 52.8 (7); SEMCAD X Version 14.6.10 (7164)

Flat-Section MSL Band 7 HOT/LTE Band 7 L edge 3/Area Scan (6x14x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.0104 W/kg
Flat-Section MSL Band 7 HOT/LTE Band 7 L edge 3/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.979 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.0330 W/kg
SAR(1 g) = 0.011 W/kg; SAR(10 g) = 0.00508 W/kg
Maximum value of SAR (measured) = 0.0111 W/kg



0 dB = 0.0111 W/kg = -19.55 dBW/kg

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APPENDIX C: RELEVANT PAGES FROM PROBE CALIBRATION REPORT(S)

EX3DV4 – SN:3708

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

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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 SRTC (Vitec) Certificate No: EX3-3708_Oct15

CALIBRATION CERTIFICATE

Object EX3DV4 - SN:3708

Calibration procedure(s) QA CAL-01.v9, QA CAL-14.v4, QA CAL-23.v5, QA CAL-25.v6
Calibration procedure for dosimetric E-field probes

Calibration date October 26, 2015

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 E4419B	GB41293874	01-Apr-15 (No. 217-02128)	Mar-16
Power sensor E4412A	MY41498087	01-Apr-15 (No. 217-02108)	Mar-16
Reference 3 dB Attenuator	SN: S5054 (3c)	01-Apr-15 (No. 217-02129)	Mar-16
Reference 20 dB Attenuator	SN: S5277 (20x)	01-Apr-15 (No. 217-02132)	Mar-16
Reference 30 dB Attenuator	SN: S5128 (30b)	01-Apr-15 (No. 217-02133)	Mar-16
Reference Probe ES3DV2	SN: 3013	30-Dec-14 (No. ES3-3013_Dec14)	Dec-15
DAE4	SN: 660	14-Jan-15 (No. DAE4-660_Jan15)	Jan-16
Secondary Standards	ID	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Apr-13)	In house check: Apr-16
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Israe Elnaouq	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: October 27, 2015

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

Certificate No: EX3-3708_Oct15 Page 1 of 11

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Accredited by the Swiss Accreditation Service (SAS)
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Accreditation No.: **SCS 0108**

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C, D	modulation dependent linearization parameters
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis
Connector Angle	information used in DASY system to align probe sensor X to the robot coordinate system

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z*: Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not affect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z*: DCP are numerical linearization parameters assessed based on the data of power sweep with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- *PAR*: PAR is the Peak to Average Ratio that is not calibrated but determined based on the signal characteristics
- *Ax,y,z; Bx,y,z; Cx,y,z; Dx,y,z; VRx,y,z*: *A, B, C, D* are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. *VR* is the maximum calibration range expressed in RMS voltage across the diode.
- *ConvF and Boundary Effect Parameters*: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

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Probe EX3DV4

SN:3708

Manufactured: July 21, 2009
Calibrated: October 26, 2015

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3708

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.19	0.35	0.44	± 10.1 %
DCP (mV)[B]	95.9	108.2	104.3	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	162.7	±3.0 %
		Y	0.0	0.0	1.0		188.3	
		Z	0.0	0.0	1.0		147.6	
10011-CAB	UMTS-FDD (WCDMA)	X	2.76	62.1	15.2	2.91	125.0	±0.9 %
		Y	3.39	68.0	18.7		107.0	
		Z	3.38	67.4	18.5		114.8	
10021-DAB	GSM-FDD (TDMA, GMSK)	X	0.84	56.0	8.3	9.39	46.5	±1.4 %
		Y	1.79	64.4	12.2		103.4	
		Z	1.87	64.0	12.7		81.8	
10062-CAB	IEEE 802.11ah WiFi 5 GHz (OFDM, 6 Mbps)	X	9.51	66.2	19.8	8.66	114.5	±2.5 %
		Y	10.21	69.5	21.9		141.3	
		Z	9.59	67.6	20.8		103.5	

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%.

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3708

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
900	41.5	0.97	9.09	9.09	9.09	0.30	1.10	± 12.0 %
1810	40.0	1.40	7.77	7.77	7.77	0.30	0.98	± 12.0 %
2000	40.0	1.40	7.78	7.78	7.78	0.31	0.95	± 12.0 %
5200	36.0	4.66	5.19	5.19	5.19	0.40	1.80	± 13.1 %
5300	35.9	4.76	4.97	4.97	4.97	0.40	1.80	± 13.1 %
5500	35.6	4.96	4.78	4.78	4.78	0.45	1.80	± 13.1 %
5600	35.5	5.07	4.46	4.46	4.46	0.50	1.80	± 13.1 %
5800	35.3	5.27	4.57	4.57	4.57	0.50	1.80	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 6 GHz frequency validity can be extended to ± 110 MHz.

[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.

[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3708

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
900	55.0	1.05	8.91	8.91	8.91	0.28	1.05	± 12.0 %
1810	53.3	1.52	7.53	7.53	7.53	0.39	0.80	± 12.0 %
2000	53.3	1.52	7.55	7.55	7.55	0.25	1.18	± 12.0 %
5200	49.0	5.30	4.34	4.34	4.34	0.50	1.90	± 13.1 %
5300	48.9	5.42	4.18	4.18	4.18	0.50	1.90	± 13.1 %
5500	48.6	5.65	3.82	3.82	3.82	0.55	1.90	± 13.1 %
5600	48.5	5.77	3.71	3.71	3.71	0.55	1.90	± 13.1 %
5800	48.2	6.00	3.86	3.86	3.86	0.55	1.90	± 13.1 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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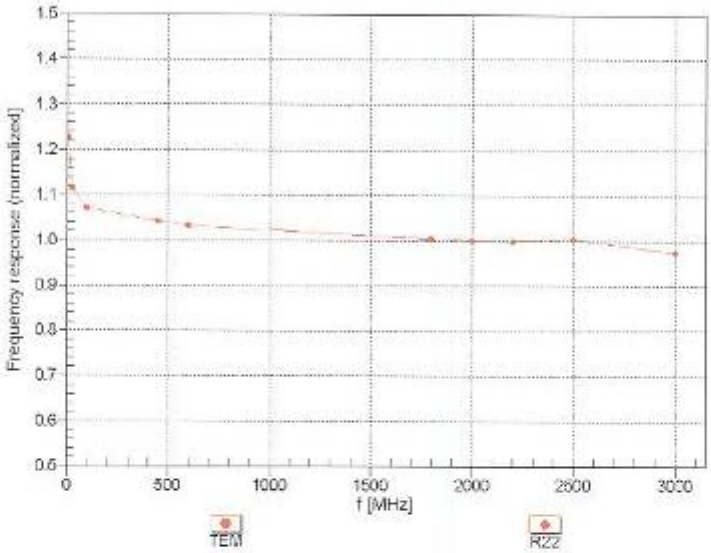
EX3DV4- SN:3708 October 26, 2015

Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

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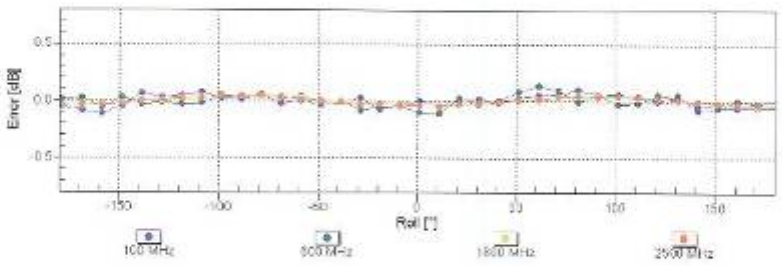
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM

f=1800 MHz,R22



Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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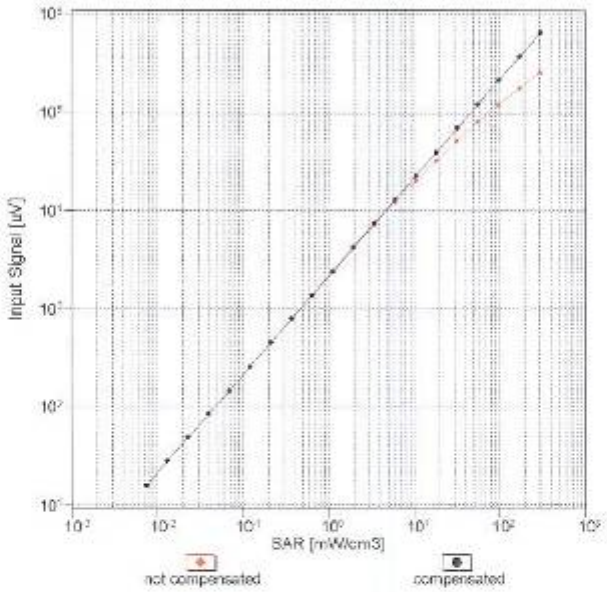
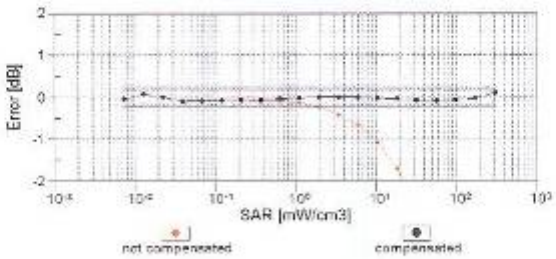
Dynamic Range f(SAR$_{head}$)
(TEM cell , f_{eval}= 1900 MHz)





Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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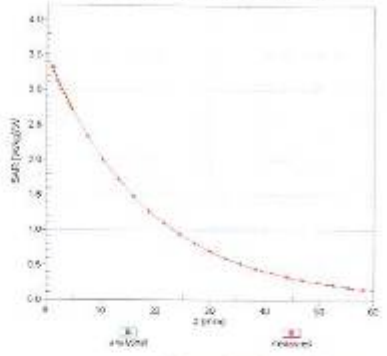
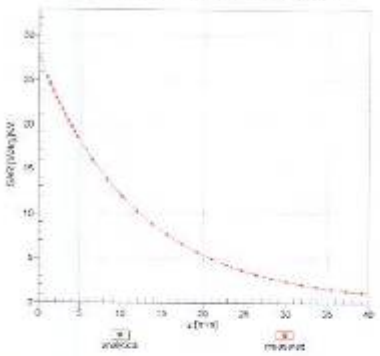
EX3DV4– SN:3708 October 26, 2015

Conversion Factor Assessment

f = 900 MHz,WGLS R9 (H_convF)

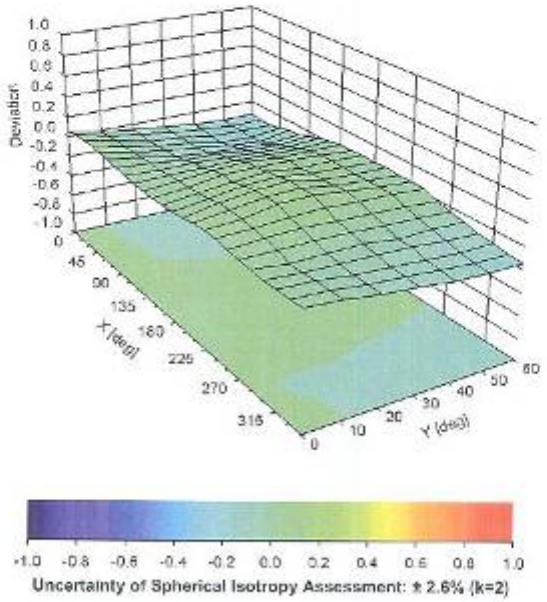


f = 1810 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

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DASY/EASY - Parameters of Probe: EX3DV4 - SN:3708

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	1.4
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	1.4 mm

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ES3DV3 – SN:3127

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

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Accreditation No.: SCS 0108

Client SRTC (Vitec)

Certificate No: ES3-3127_Aug15

CALIBRATION CERTIFICATE

Object ES3DV3 - SN:3127

Calibration procedure(s) QA CAL-01.v9, QA CAL-12.v9, QA CAL-23.v5, QA CAL-25.v6
Calibration procedure for dosimetric E-field probes

Calibration date: August 21, 2015

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%.

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Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-14)	In house check: Oct-15

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 22, 2015

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Certificate No: ES3-3127_Aug15 Page 1 of 11

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- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.
- *Connector Angle*: The angle is assessed using the information gained by determining the *NORMx* (no uncertainty required).

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Probe ES3DV3

SN:3127

Manufactured: July 11, 2006
Calibrated: August 21, 2015

Calibrated for DASY/EASY Systems
(Note: non-compatible with DASY2 system!)

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DASY/EASY - Parameters of Probe: ES3DV3 - SN:3127

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.29	1.26	1.21	± 10.1 %
DCP (mV)[B]	101.9	102.4	102.3	

Modulation Calibration Parameters

UID	Communication System Name		A dB	B dB√μV	C	D dB	VR mV	Unc[E] (k=2)
0	CW	X	0.0	0.0	1.0	0.00	212.8	±3.5 %
		Y	0.0	0.0	1.0		217.6	
		Z	0.0	0.0	1.0		201.8	
10012-CAB	IEEE 802.11b WiFi 2.4 GHz (DSSS, 1 Mbps)	X	3.13	70.1	19.5	1.87	149.4	±1.2 %
		Y	3.22	70.8	19.9		128.9	
		Z	3.05	69.7	19.4		143.4	
10100-CAB	LTE-FDD (SC-FDMA, 100% RB, 20 MHz, QPSK)	X	6.55	68.1	20.1	5.67	140.4	±1.4 %
		Y	6.53	68.0	20.0		143.6	
		Z	6.46	67.7	19.9		138.9	
10108-CAC	LTE-FDD (SC-FDMA, 100% RB, 10 MHz, QPSK)	X	6.42	67.6	20.0	5.80	138.0	±1.4 %
		Y	6.42	67.5	19.9		141.5	
		Z	6.34	67.4	19.9		131.8	
10154-CAC	LTE-FDD (SC-FDMA, 50% RB, 10 MHz, QPSK)	X	6.09	67.0	19.7	5.75	134.4	±1.2 %
		Y	6.05	66.8	19.6		132.2	
		Z	5.98	66.6	19.5		128.3	
10169-CAB	LTE-FDD (SC-FDMA, 1 RB, 20 MHz, QPSK)	X	5.23	67.7	20.3	5.73	139.3	±1.4 %
		Y	5.17	67.5	20.1		142.3	
		Z	4.99	66.8	19.8		131.0	
10175-CAC	LTE-FDD (SC-FDMA, 1 RB, 10 MHz, QPSK)	X	5.14	67.2	20.0	5.72	143.2	±1.2 %
		Y	5.07	67.0	19.9		135.5	
		Z	5.10	67.3	20.1		136.2	
10297-AAA	LTE-FDD (SC-FDMA, 50% RB, 20 MHz, QPSK)	X	6.48	67.8	20.2	5.81	142.2	±1.4 %
		Y	6.41	67.5	19.9		135.3	
		Z	6.35	67.4	19.9		135.2	

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%.

[A] The uncertainties of Norm X,Y,Z do not affect the E^2-field uncertainty inside TSL (see Pages 5 and 6).
[B] Numerical linearization parameter: uncertainty not required.
[E] Uncertainty is determined using the max. deviation from linear response applying rectangular distribution and is expressed for the square of the field value.

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DASY/EASY - Parameters of Probe: ES3DV3 - SN:3127

Calibration Parameter Determined in Head Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
450	43.5	0.87	6.50	6.50	6.50	0.19	2.30	± 13.3 %
750	41.9	0.89	6.25	6.25	6.25	0.38	1.58	± 12.0 %
900	41.5	0.97	5.97	5.97	5.97	0.45	1.57	± 12.0 %
1450	40.5	1.20	5.17	5.17	5.17	0.24	2.18	± 12.0 %
1810	40.0	1.40	4.94	4.94	4.94	0.62	1.35	± 12.0 %
2000	40.0	1.40	4.89	4.89	4.89	0.53	1.45	± 12.0 %
2450	39.2	1.80	4.35	4.35	4.35	0.50	1.71	± 12.0 %
2600	39.0	1.96	4.26	4.26	4.26	0.80	1.26	± 12.0 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.
[F] At frequencies below 3 GHz, the validity of tissue parameters (ε and σ) can be relaxed to ± 10% if liquid compensation formula is applied to measured SAR values. At frequencies above 3 GHz, the validity of tissue parameters (ε and σ) is restricted to ± 5%. The uncertainty is the RSS of the ConvF uncertainty for indicated target tissue parameters.
[G] Alpha/Depth are determined during calibration. SPEAG warrants that the remaining deviation due to the boundary effect after compensation is always less than ± 1% for frequencies below 3 GHz and below ± 2% for frequencies between 3-6 GHz at any distance larger than half the probe tip diameter from the boundary.

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DASY/EASY - Parameters of Probe: ES3DV3 - SN:3127

Calibration Parameter Determined in Body Tissue Simulating Media

f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unc (k=2)
450	56.7	0.94	6.82	6.82	6.82	0.12	1.50	± 13.3 %
750	55.5	0.96	6.02	6.02	6.02	0.55	1.41	± 12.0 %
900	55.0	1.05	5.88	5.88	5.88	0.67	1.27	± 12.0 %
1450	54.0	1.30	5.02	5.02	5.02	0.39	1.72	± 12.0 %
1810	53.3	1.52	4.67	4.67	4.67	0.57	1.49	± 12.0 %
2000	53.3	1.52	4.66	4.66	4.66	0.41	1.82	± 12.0 %
2450	52.7	1.95	4.19	4.19	4.19	0.80	1.13	± 12.0 %
2600	52.5	2.16	4.09	4.09	4.09	0.80	0.80	± 12.0 %

[C] Frequency validity above 300 MHz of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2), else it is restricted to ± 50 MHz. The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band. Frequency validity below 300 MHz is ± 10, 25, 40, 50 and 70 MHz for ConvF assessments at 30, 64, 128, 150 and 220 MHz respectively. Above 5 GHz frequency validity can be extended to ± 110 MHz.
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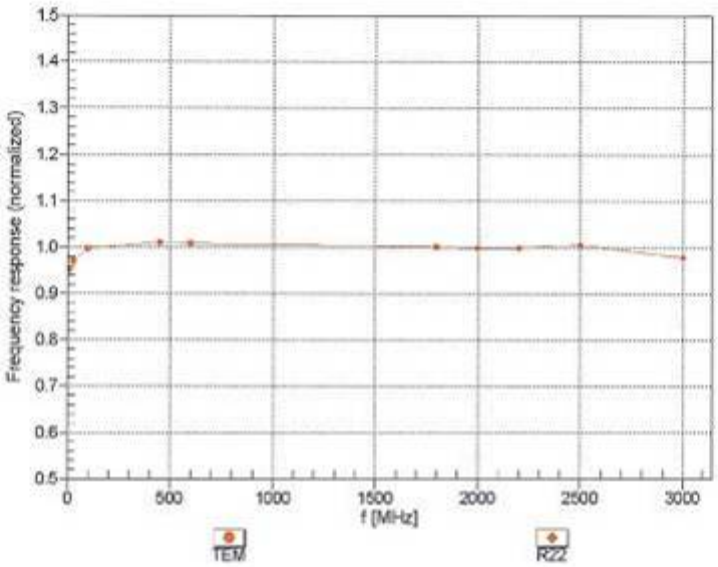
ES3DV3– SN:3127 August 21, 2015

Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

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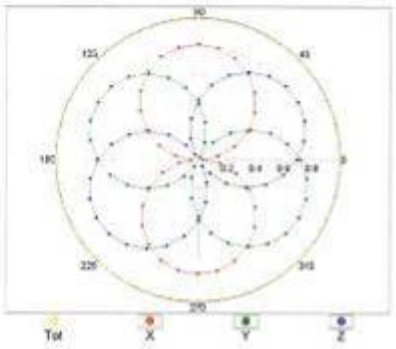
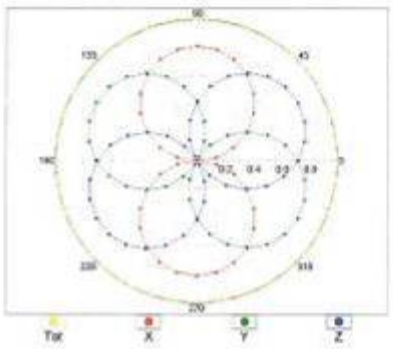
ES3DV3- SN:3127 August 21, 2015

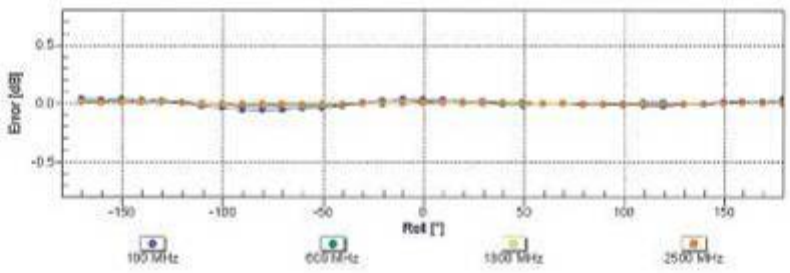
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



f=1800 MHz,R22





Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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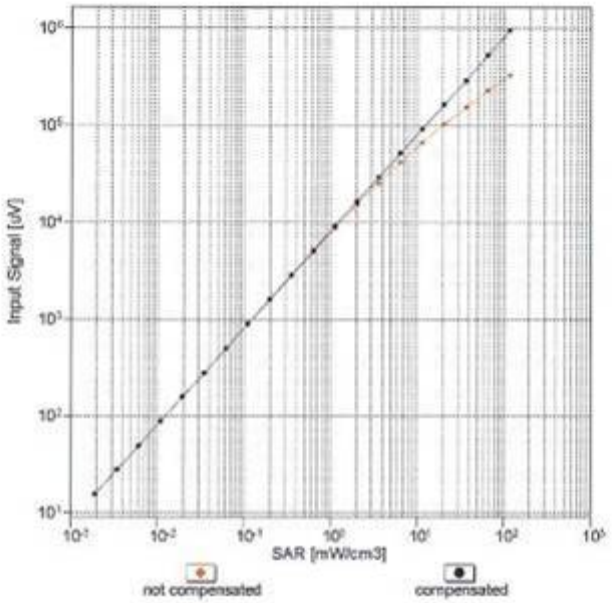
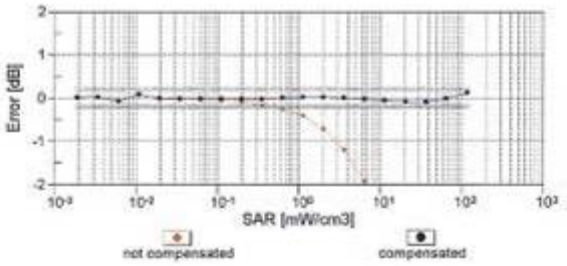
Dynamic Range f(SAR$_{head}$)
(TEM cell , f_{eval}= 1900 MHz)





Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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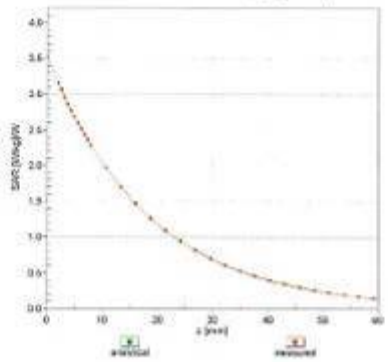
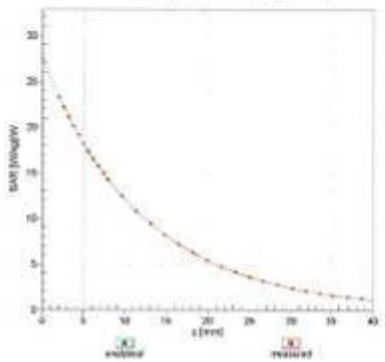
ES3DV3- SN:3127 August 21, 2015

Conversion Factor Assessment

f = 900 MHz,WGLS R9 (H_convF)

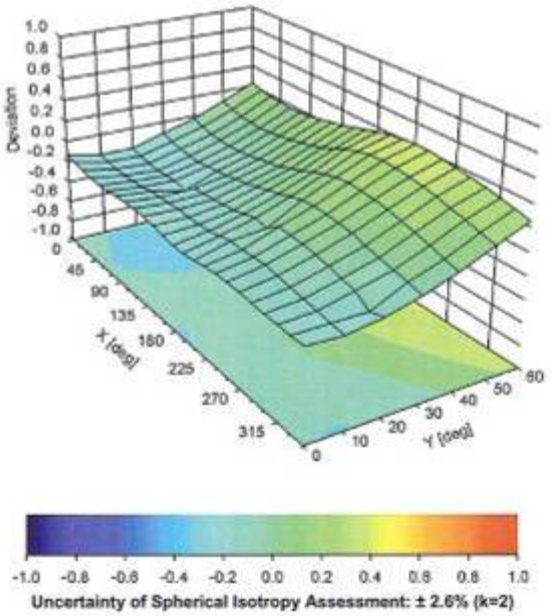


f = 1810 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

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DASY/EASY - Parameters of Probe: ES3DV3 - SN:3127

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-20.6
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	10 mm
Tip Diameter	4 mm
Probe Tip to Sensor X Calibration Point	2 mm
Probe Tip to Sensor Y Calibration Point	2 mm
Probe Tip to Sensor Z Calibration Point	2 mm
Recommended Measurement Distance from Surface	3 mm

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APPENDIX D: RELEVANT PAGES FROM DAE REPORT(S)

DAE4 – SN:546

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s p e a g

IMPORTANT NOTICE

USAGE OF THE DAE 4

The DAE unit is a delicate, high precision instrument and requires careful treatment by the user. There are no serviceable parts inside the DAE. Special attention shall be given to the following points:

Battery Exchange: The battery cover of the DAE4 unit is closed using a screw, over tightening the screw may cause the threads inside the DAE to wear out.

Shipping of the DAE: Before shipping the DAE to SPEAG for calibration, remove the batteries and pack the DAE in an antistatic bag. This antistatic bag shall then be packed into a larger box or container which protects the DAE from impacts during transportation. The package shall be marked to indicate that a fragile instrument is inside.

E-Stop Failures: Touch detection may be malfunctioning due to broken magnets in the E-stop. Rough handling of the E-stop may lead to damage of these magnets. Touch and collision errors are often caused by dust and dirt accumulated in the E-stop. To prevent E-stop failure, the customer shall always mount the probe to the DAE carefully and keep the DAE unit in a non-dusty environment if not used for measurements.

Repair: Minor repairs are performed at no extra cost during the annual calibration. However, SPEAG reserves the right to charge for any repair especially if rough unprofessional handling caused the defect.

DASY Configuration Files: Since the exact values of the DAE input resistances, as measured during the calibration procedure of a DAE unit, are not used by the DASY software, a nominal value of 200 MOhm is given in the corresponding configuration file.

Important Note:
Warranty and calibration is void if the DAE unit is disassembled partly or fully by the Customer.

Important Note:
Never attempt to grease or oil the E-stop assembly. Cleaning and readjusting of the E-stop assembly is allowed by certified SPEAG personnel only and is part of the annual calibration procedure.

Important Note:
To prevent damage of the DAE probe connector pins, use great care when installing the probe to the DAE. Carefully connect the probe with the connector notch oriented in the mating position. Avoid any rotational movement of the probe body versus the DAE while turning the locking nut of the connector. The same care shall be used when disconnecting the probe from the DAE.

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TN_BR040315AD DAE4.doc 11.12.2009

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Zeughausstrasse 43, 8004 Zurich, Switzerland

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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 **SRTC (Vitec)** **Certificate No: DAE4-546_Aug15**

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BM - SN: 546
Calibration procedure(s)	QA CAL-06.v29 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	August 19, 2015

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
Keithley Multimeter Type 2001	SN: 0810278	03-Oct-14 (No:15573)	Oct-15
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Auto DAE Calibration Unit	SE UWS 053 AA 1001	06-Jan-15 (in house check)	In house check: Jan-16
Calibrator Box V2.1	SE UMS 006 AA 1002	06-Jan-15 (in house check)	In house check: Jan-16

	Name	Function	Signature
Calibrated by:	Eric Hainfeld	Technician	
Approved by:	Fin Bomholt	Deputy Technical Manager	

Issued: August 19, 2015

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

Certificate No: DAE4-546_Aug15 Page 1 of 5

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Accreditation No.: SCS 0108

Glossary

DAE	data acquisition electronics
Connector angle	information used in DASY system to align probe sensor X to the robot coordinate system.

Methods Applied and Interpretation of Parameters

- *DC Voltage Measurement:* Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- *Connector angle*: The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.
  - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.
  - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage
  - *Input Offset Measurement*: Output voltage and statistical results over a large number of zero voltage measurements.
  - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - *Input resistance:* Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.
  - *Power consumption:* Typical value for information. Supply currents in various operating modes.

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DC Voltage Measurement

A/D - Converter Resolution nominal

High Range:	1LSB =	6.1μV ,	full range =	-100...+300 mV
Low Range:	1LSB =	61nV ,	full range =	-1.....+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Y	Z
High Range	405.336 ± 0.02% (k=2)	404.092 ± 0.02% (k=2)	404.198 ± 0.02% (k=2)
Low Range	3.98692 ± 1.50% (k=2)	3.95822 ± 1.50% (k=2)	3.97804 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	238.0 ° ± 1 °

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Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	200000.17	2.61	0.00
Channel X	+ Input	20001.92	0.26	0.00
Channel X	- Input	-19996.52	4.00	-0.02
Channel Y	+ Input	199998.64	0.80	0.00
Channel Y	+ Input	20000.01	-1.60	-0.01
Channel Y	- Input	-20002.44	-1.87	0.01
Channel Z	+ Input	199998.98	1.47	0.00
Channel Z	+ Input	19999.86	-1.78	-0.01
Channel Z	- Input	-19999.36	1.28	-0.01

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2001.57	0.04	0.00
Channel X	+ Input	202.28	0.46	0.23
Channel X	- Input	-197.49	0.58	-0.29
Channel Y	+ Input	2001.33	-0.16	-0.01
Channel Y	+ Input	200.95	-0.77	-0.38
Channel Y	- Input	-197.62	0.49	-0.25
Channel Z	+ Input	2001.37	-0.14	-0.01
Channel Z	+ Input	200.95	-0.72	-0.36
Channel Z	- Input	-199.01	-0.75	0.38

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	1.65	-0.31
	- 200	2.62	0.50
Channel Y	200	-0.53	-0.83
	- 200	-2.23	-2.01
Channel Z	200	2.37	2.32
	- 200	-4.10	-4.41

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	-3.10	-2.81
Channel Y	200	9.67	-	-0.28
Channel Z	200	5.63	7.07	-

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4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	15842	16118
Channel Y	16154	14844
Channel Z	15905	16297

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec
Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	1.14	0.46	2.34	0.37
Channel Y	-0.92	-2.45	0.81	0.55
Channel Z	-0.38	-1.37	0.99	0.43

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	−0.01	-8	-9

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DAE4 – SN:720

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s p e a g

720

IMPORTANT NOTICE

USAGE OF THE DAE 4

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Important Note:
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TN_BR040315AD DAE4.doc 11.12.2009

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Accreditation No.: SCS 0108

Glossary

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- *Connector angle*: The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters as documented in the Appendix contain technical information as a result from the performance test and require no uncertainty.
  - *DC Voltage Measurement Linearity:* Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
  - *Common mode sensitivity:* Influence of a positive or negative common mode voltage on the differential measurement.
  - *Channel separation:* Influence of a voltage on the neighbor channels not subject to an input voltage.
  - *AD Converter Values with inputs shorted:* Values on the internal AD converter corresponding to zero input voltage
  - *Input Offset Measurement*: Output voltage and statistical results over a large number of zero voltage measurements.
  - *Input Offset Current:* Typical value for information; Maximum channel input offset current, not considering the input resistance.
  - *Input resistance:* Typical value for information: DAE input resistance at the connector, during internal auto-zeroing and during measurement.
  - *Low Battery Alarm Voltage:* Typical value for information. Below this voltage, a battery alarm signal is generated.
  - *Power consumption:* Typical value for information. Supply currents in various operating modes.

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DC Voltage Measurement

A/D - Converter Resolution nominal

High Range:	1LSB =	6.1μV ,	full range =	-100...+300 mV
Low Range:	1LSB =	61nV ,	full range =	-1.....+3mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	X	Y	Z
High Range	403.371 ± 0.02% (k=2)	404.803 ± 0.02% (k=2)	403.221 ± 0.02% (k=2)
Low Range	3.95418 ± 1.50% (k=2)	3.96453 ± 1.50% (k=2)	3.95678 ± 1.50% (k=2)

Connector Angle

Connector Angle to be used in DASY system	24.5 ° ± 1 °

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Appendix (Additional assessments outside the scope of SCS0108)

1. DC Voltage Linearity

High Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	200039.17	0.08	0.00
Channel X	+ Input	20007.85	2.88	0.01
Channel X	- Input	-20003.79	1.66	-0.01
Channel Y	+ Input	200038.17	1.27	0.00
Channel Y	+ Input	20005.71	0.94	0.00
Channel Y	- Input	-20005.02	0.65	-0.00
Channel Z	+ Input	200037.58	0.29	0.00
Channel Z	+ Input	20002.16	-2.60	-0.01
Channel Z	- Input	-20009.49	-3.85	0.02

Low Range		Reading (μV)	Difference (μV)	Error (%)
Channel X	+ Input	2000.87	-0.43	-0.02
Channel X	+ Input	201.73	0.49	0.25
Channel X	- Input	-197.98	0.71	-0.36
Channel Y	+ Input	2000.71	-0.43	-0.02
Channel Y	+ Input	200.60	-0.47	-0.23
Channel Y	- Input	-199.19	-0.20	0.10
Channel Z	+ Input	2001.53	0.36	0.02
Channel Z	+ Input	200.20	-0.80	-0.40
Channel Z	- Input	-199.10	-0.12	0.06

2. Common mode sensitivity

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	-6.45	-7.56
	- 200	9.03	8.09
Channel Y	200	15.19	15.61
	- 200	-16.95	-16.86
Channel Z	200	-16.60	-16.82
	- 200	14.86	14.92

3. Channel separation

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	0.52	-2.99
Channel Y	200	8.70	-	0.42
Channel Z	200	5.85	6.72	-

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4. AD-Converter Values with inputs shorted

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

	High Range (LSB)	Low Range (LSB)
Channel X	16154	16284
Channel Y	16181	16307
Channel Z	16425	15796

5. Input Offset Measurement

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec
Input 10MΩ

	Average (μV)	min. Offset (μV)	max. Offset (μV)	Std. Deviation (μV)
Channel X	-0.59	-1.81	0.44	0.51
Channel Y	0.28	-0.71	1.50	0.42
Channel Z	0.28	-2.44	2.30	0.74

6. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

7. Input Resistance (Typical values for information)

	Zeroing (kOhm)	Measuring (MOhm)
Channel X	200	200
Channel Y	200	200
Channel Z	200	200

8. Low Battery Alarm Voltage (Typical values for information)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (Typical values for information)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.01	+6	+14
Supply (- Vcc)	-0.01	-8	-9

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APPENDIX E: RELEVANT PAGES FROM DIPOLE VALIDATION KIT REPORT(S)

D835V2 – SN:4d023

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S 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 SRTC (Vitec)

Certificate No: D835V2-4d023_Oct15

CALIBRATION CERTIFICATE

Object	D835V2 - SN: 4d023
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	October 20, 2015

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 EPM-442A	GB37480704	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	US37292783	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	MY41092317	07-Oct-15 (No. 217-02223)	Oct-16
Reference 20 dB Attenuator	SN: 5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe EX3DV4	SN: 7349	30-Dec-14 (No. EX3-7349_Dec14)	Dec-15
DAE4	SN: 601	17-Aug-15 (No. DAE4-601_Aug15)	Aug-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator R&S SMT-06	100972	15-Jun-15 (in house check Jun-15)	In house check: Jun-18
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: October 21, 2015

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

Certificate No: D835V2-4d023_Oct15 Page 1 of 8

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S 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

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) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 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 dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. 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%.

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	41.3 ± 6 %	0.94 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	2.39 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**9.24 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.55 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**6.04 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.2 ± 6 %	1.00 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.42 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**9.38 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.57 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**6.13 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	53.3 Ω - 3.8 jΩ
Return Loss	- 26.2 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	48.6 Ω - 5.4 jΩ
Return Loss	- 24.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.389 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
Manufactured on	December 17, 2004

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DASY5 Validation Report for Head TSL

Date: 20.10.2015

Test Laboratory: SPEAG, Zurich, Switzerland

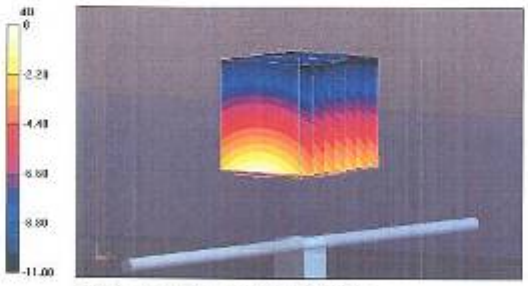
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d023

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 0.94 S/m; ε_r = 41.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(9.77, 9.77, 9.77); Calibrated: 30.12.2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

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 = 61.11 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 3.57 W/kg
SAR(1 g) = 2.39 W/kg; SAR(10 g) = 1.55 W/kg
Maximum value of SAR (measured) = 3.16 W/kg



0 dB = 3.16 W/kg = 5.00 dBW/kg

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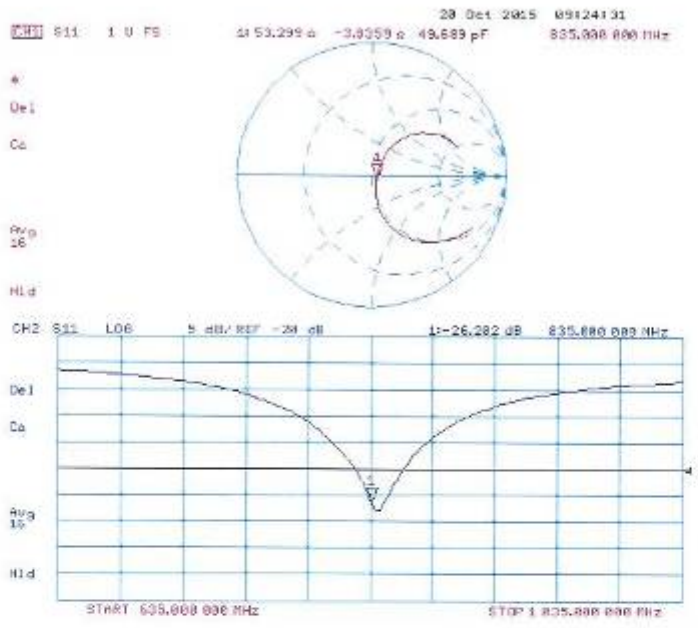
Impedance Measurement Plot for Head TSL



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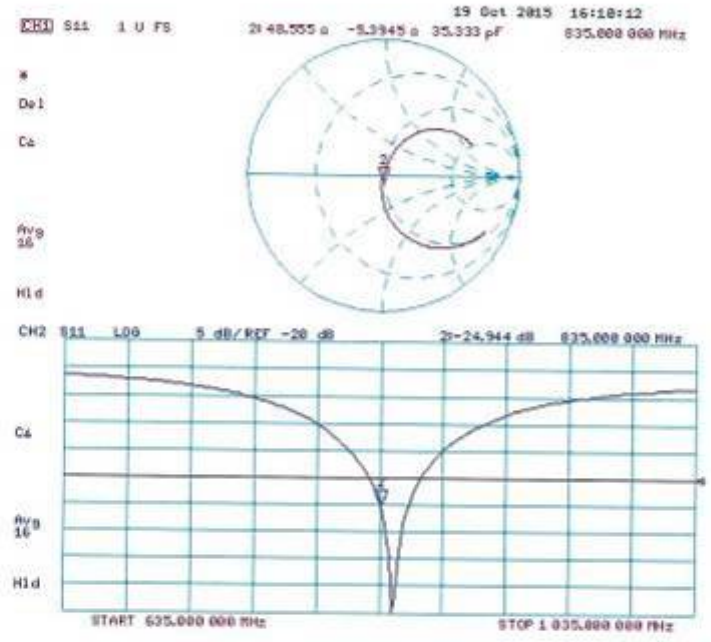
Impedance Measurement Plot for Body TSL



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DASY5 Validation Report for Body TSL

Date: 19.10.2015

Test Laboratory: SPEAG, Zurich, Switzerland

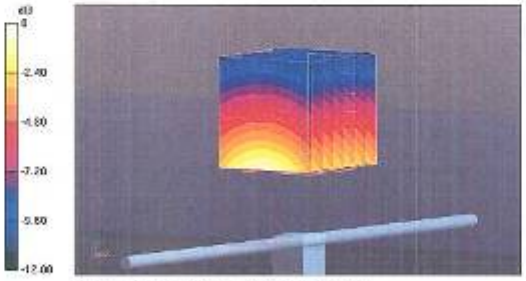
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN: 4d023

Communication System: UID 0 - CW; Frequency: 835 MHz
Medium parameters used: f = 835 MHz; σ = 1 S/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(9.72, 9.72, 9.72); Calibrated: 30.12.2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 60.02 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 3.65 W/kg
SAR(1 g) = 2.42 W/kg; SAR(10 g) = 1.57 W/kg
Maximum value of SAR (measured) = 3.23 W/kg



0 dB = 3.23 W/kg = 5.09 dBW/kg

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D1900V2 – SN:5d113

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

S Schweizerischer Kalibrierdienst
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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 SRTC (Vitec)

Certificate No: D1900V2-5d113_Oct15

CALIBRATION CERTIFICATE

Object	D1900V2 - SN: 5d113
Calibration procedure(s)	QA CAL-05.v9 Calibration procedure for dipole validation kits above 700 MHz
Calibration date:	October 19, 2015

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 EPM-442A	GB37480704	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	US37292783	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	MY41092317	07-Oct-15 (No. 217-02223)	Oct-16
Reference 20 dB Attenuator	SN: 5058 (20k)	31-Mar-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe EX3DV4	SN: 7349	30-Dec-14 (No. EX3-7349_Dec14)	Dec-15
DAE4	SN: 601	17-Aug-15 (No. DAE4-601_Aug15)	Aug-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator R&S SMT-06	100972	15-Jun-15 (in house check Jun-15)	In house check: Jun-18
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Jeton Eleziovic	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: October 19, 2015

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

Certificate No: D1900V2-5d113_Oct15 Page 1 of 8

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Calibration Laboratory of
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Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
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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

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) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 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 dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. 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%.

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
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	38.9 ± 6 %	1.38 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	9.82 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**39.4 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	5.13 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**20.5 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.3 ± 6 %	1.51 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	---	---

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	9.89 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**39.5 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.21 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.8 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	52.7 Ω + 8.3 jΩ
Return Loss	- 21.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.7 Ω + 8.3 jΩ
Return Loss	- 21.1 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.200 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
Manufactured on	July 24, 2009

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DASY5 Validation Report for Head TSL

Date: 19.10.2015

Test Laboratory: SPEAG, Zurich, Switzerland

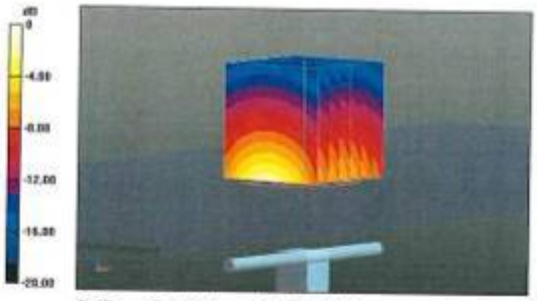
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d113

Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.38 S/m; ε_r = 38.9; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(8.14, 8.14, 8.14); Calibrated: 30.12.2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

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 = 108.3 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 18.5 W/kg
SAR(1 g) = 9.82 W/kg; SAR(10 g) = 5.13 W/kg
Maximum value of SAR (measured) = 15.2 W/kg



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

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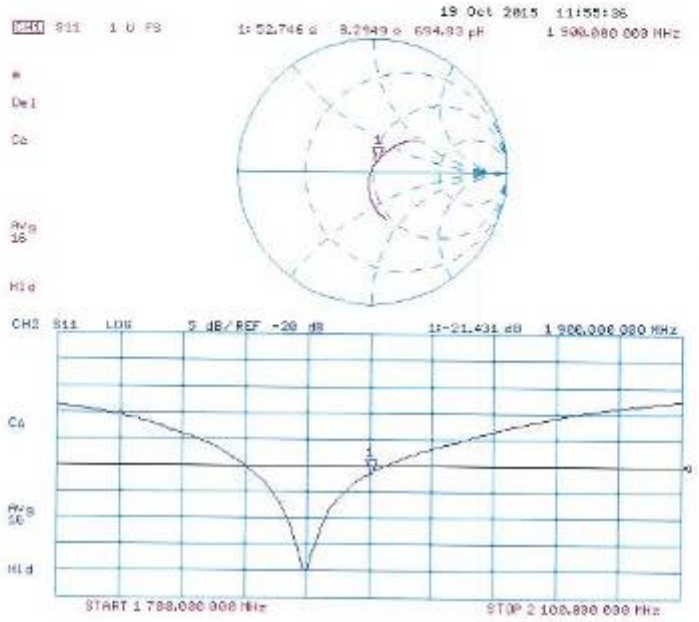
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 19.10.2015

Test Laboratory: SPEAG, Zurich, Switzerland

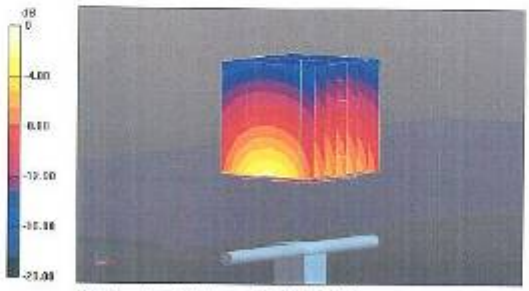
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN: 5d113

Communication System: UID 0 - CW; Frequency: 1900 MHz
Medium parameters used: f = 1900 MHz; σ = 1.51 S/m; ε_r = 52.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.9, 7.9, 7.9); Calibrated: 30.12.2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 104.0 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 17.7 W/kg
SAR(1 g) = 9.89 W/kg; SAR(10 g) = 5.21 W/kg
Maximum value of SAR (measured) = 15.1 W/kg



0 dB = 15.1 W/kg = 11.79 dBW/kg

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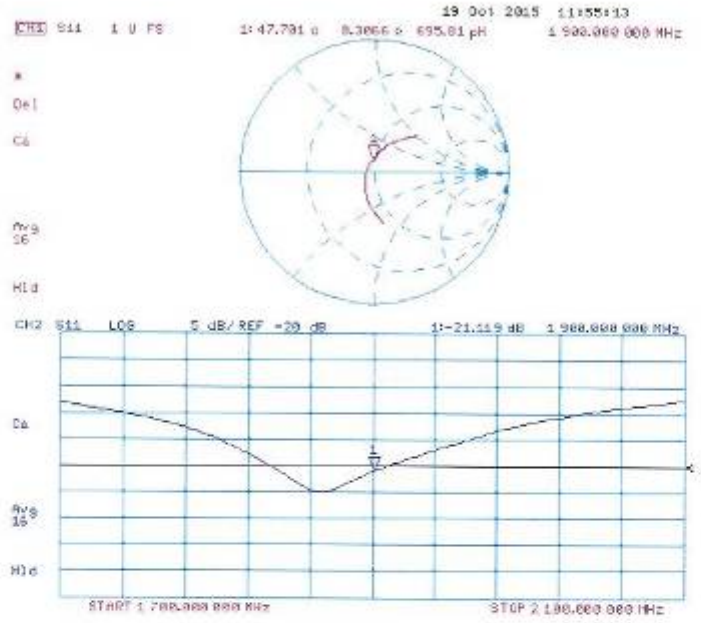
Impedance Measurement Plot for Body TSL



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D2450V2 – SN:738

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Accreditation No.: SCS 0108

Client SRTC (Vitec)

Certificate No: D2450V2-738_Oct15

CALIBRATION CERTIFICATE

Object D2450V2 - SN: 738

Calibration procedure(s) QA CAL-05.v9
Calibration procedure for dipole validation kits above 700 MHz

Calibration date: October 21, 2015

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 EPM-442A	GB37480704	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	US37292783	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	MY41092317	07-Oct-15 (No. 217-02223)	Oct-16
Reference 20 dB Attenuator	SN: 5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe EX3DV4	SN: 7349	30-Dec-14 (No. EX3-7349_Dec14)	Dec-15
DAE4	SN: 601	17-Aug-15 (No. DAE4-601_Aug15)	Aug-16

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator R&S SMT-06	100972	15-Jun-15 (in house check Jun-15)	In house check: Jun-18
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Leif Klysner	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: October 22, 2015

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Certificate No: D2450V2-738_Oct15 Page 1 of 8

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Accreditation No.: SCS 0108

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) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 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 dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. 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%.

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	38.0 ± 6 %	1.84 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	13.4 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**52.7 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.17 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.4 W/kg ± 16.5 % (k=2)**

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	**Permittivity**	**Conductivity**
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	52.8 ± 6 %	1.99 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	---	---

SAR result with Body TSL

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	13.1 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**51.9 W/kg ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**24.4 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	54.3 Ω + 5.7 jΩ
Return Loss	- 23.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	49.7 Ω + 7.1 jΩ
Return Loss	- 23.0 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.157 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
Manufactured on	August 26, 2003

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DASY5 Validation Report for Head TSL

Date: 21.10.2015

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz ; Type: D2450V2; Serial: D2450V2 - SN: 738

Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.84 S/m; ε_r = 38; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.67, 7.67, 7.67); Calibrated: 30.12.2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

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 = 114.5 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 27.8 W/kg
SAR(1 g) = 13.4 W/kg; SAR(10 g) = 6.17 W/kg
Maximum value of SAR (measured) = 22.2 W/kg

0 dB = 22.2 W/kg = 13.46 dBW/kg

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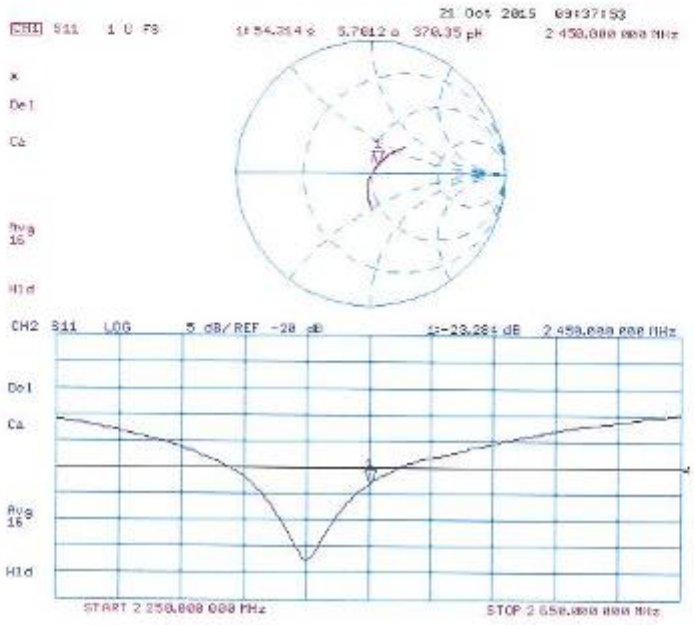
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 21.10.2015

Test Laboratory: SPEAG, Zurich, Switzerland

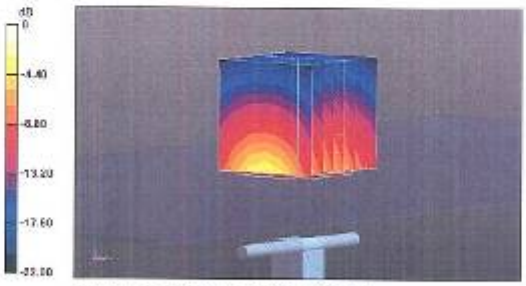
DUT: Dipole 2450 MHz ; Type: D2450V2; Serial: D2450V2 - SN: 738

Communication System: UID 0 - CW; Frequency: 2450 MHz
Medium parameters used: f = 2450 MHz; σ = 1.99 S/m; ε_r = 52.8; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.53, 7.53, 7.53); Calibrated: 30.12.2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:
Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 108.5 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 26.0 W/kg
SAR(1 g) = 13.1 W/kg; SAR(10 g) = 6.14 W/kg
Maximum value of SAR (measured) = 21.3 W/kg



0 dB = 21.3 W/kg = 13.28 dBW/kg

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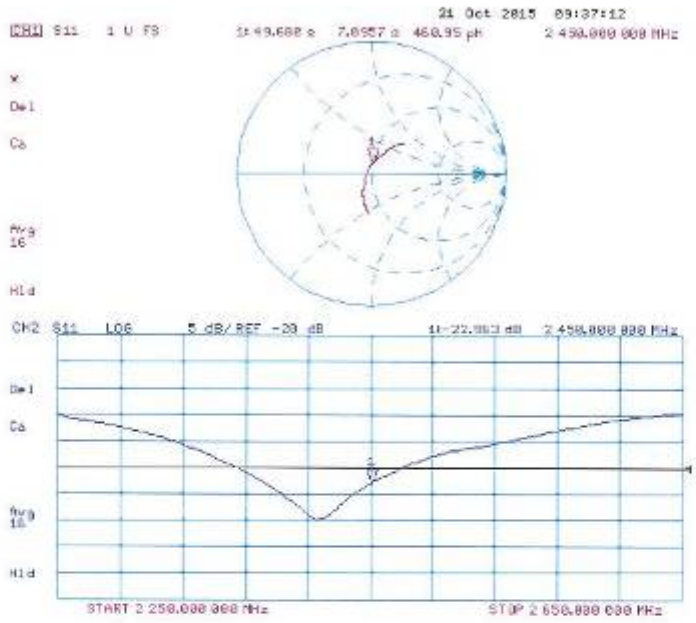
Impedance Measurement Plot for Body TSL



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D5GHzV2 – SN:1079

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Accreditation No.: SCS 0108

Client SRTC (Vitec) **Certificate No: D5GHzV2-1079_Oct15**

CALIBRATION CERTIFICATE

Object	D5GHzV2 - SN: 1079
Calibration procedure(s)	QA CAL-22.v2 Calibration procedure for dipole validation kits between 3-6 GHz
Calibration date:	October 23, 2015

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 EPM-442A	GB37480704	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	US37292783	07-Oct-15 (No. 217-02222)	Oct-16
Power sensor HP 8481A	MY41092317	07-Oct-15 (No. 217-02223)	Oct-16
Reference 20 dB Attenuator	SN: 5058 (20k)	01-Apr-15 (No. 217-02131)	Mar-16
Type-N mismatch combination	SN: 5047.2 / 06327	01-Apr-15 (No. 217-02134)	Mar-16
Reference Probe EX3DV4	SN: 3503	30-Dec-14 (No. EX3-3503_Dec14)	Dec-15
DAE4	SN: 601	17-Aug-15 (No. DAE4-601_Aug15)	Aug-16
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
RF generator R&S SMT-06	100972	15-Jun-15 (in house check Jun-15)	In house check: Jun-18
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-15)	In house check: Oct-16

	Name	Function	Signature
Calibrated by:	Claudio Leubler	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: October 27, 2015

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Accreditation No.: SCS 0108

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) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
c) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

d) DASY4/5 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 dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. 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%.

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Measurement Conditions

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

DASY Version	DASY5	V52.8.8
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy = 4.0 mm, dz = 1.4 mm	Graded Ratio = 1.4 (Z direction)
Frequency	5200 MHz ± 1 MHz 5300 MHz ± 1 MHz 5500 MHz ± 1 MHz 5600 MHz ± 1 MHz 5800 MHz ± 1 MHz	

Head TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	36.0	4.66 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.9 ± 6 %	4.48 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5200 MHz

SAR averaged over 1 cm^3 (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.19 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**81.3 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.34 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.2 W/kg ± 19.5 % (k=2)**

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Head TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.9	4.76 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.8 ± 6 %	4.58 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5300 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.50 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**84.4 W / kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.44 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.2 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.6	4.96 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.5 ± 6 %	4.77 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5500 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.37 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**83.0 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.39 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.7 W/kg ± 19.5 % (k=2)**

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Head TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.5	5.07 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.3 ± 6 %	4.87 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.67 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**85.9 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.47 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**24.4 W/kg ± 19.5 % (k=2)**

Head TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.0 ± 6 %	5.08 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

SAR result with Head TSL at 5800 MHz

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.30 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**82.2 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.35 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	**23.2 W/kg ± 19.5 % (k=2)**

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Body TSL parameters at 5200 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.1 ± 6 %	5.45 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5200 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.64 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**75.8 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.14 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.2 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5300 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.42 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.9 ± 6 %	5.57 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5300 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.89 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**78.3 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.21 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**21.9 W/kg ± 19.5 % (k=2)**

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Body TSL parameters at 5500 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.6	5.65 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.6 ± 6 %	5.84 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5500 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	8.19 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**81.3 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.28 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**22.6 W/kg ± 19.5 % (k=2)**

Body TSL parameters at 5600 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.4 ± 6 %	5.98 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5600 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	8.38 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**83.2 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.34 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**23.2 W/kg ± 19.5 % (k=2)**

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Body TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.0 ± 6 %	6.25 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	8.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**80.3 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.24 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**22.2 W/kg ± 19.5 % (k=2)**

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Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	47.9 Ω - 11.9 jΩ
Return Loss	- 18.2 dB

Antenna Parameters with Head TSL at 5300 MHz

Impedance, transformed to feed point	47.8 Ω - 8.9 jΩ
Return Loss	- 20.6 dB

Antenna Parameters with Head TSL at 5500 MHz

Impedance, transformed to feed point	50.3 Ω - 7.8 jΩ
Return Loss	- 22.2 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.8 Ω - 7.0 jΩ
Return Loss	- 21.9 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	54.4 Ω - 8.1 jΩ
Return Loss	- 21.1 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	48.3 Ω - 10.0 jΩ
Return Loss	- 19.8 dB

Antenna Parameters with Body TSL at 5300 MHz

Impedance, transformed to feed point	48.1 Ω - 6.0 jΩ
Return Loss	- 23.9 dB

Antenna Parameters with Body TSL at 5500 MHz

Impedance, transformed to feed point	52.0 Ω - 6.9 jΩ
Return Loss	- 23.1 dB

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Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	56.3 Ω - 5.0 jΩ
Return Loss	- 22.4 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	55.9 Ω - 6.1 jΩ
Return Loss	- 21.9 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.204 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
Manufactured on	September 26, 2008

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DASY5 Validation Report for Head TSL

Date: 23.10.2015

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1079

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5500 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 4.48 S/m; ε_r = 34.9; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5300 MHz; σ = 4.58 S/m; ε_r = 34.8; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5500 MHz; σ = 4.77 S/m; ε_r = 34.5; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 4.87 S/m; ε_r = 34.3; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5800 MHz; σ = 5.08 S/m; ε_r = 34; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.51, 5.51, 5.51); Calibrated: 30.12.2014, ConvF(5.21, 5.21, 5.21); Calibrated: 30.12.2014, ConvF(5.12, 5.12, 5.12); Calibrated: 30.12.2014, ConvF(4.92, 4.92, 4.92); Calibrated: 30.12.2014, ConvF(4.9, 4.9, 4.9); Calibrated: 30.12.2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 75.61 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 29.9 W/kg
SAR(1 g) = 8.19 W/kg; SAR(10 g) = 2.34 W/kg
Maximum value of SAR (measured) = 18.5 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 76.06 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 32.0 W/kg
SAR(1 g) = 8.5 W/kg; SAR(10 g) = 2.44 W/kg
Maximum value of SAR (measured) = 19.4 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 74.68 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 33.0 W/kg
SAR(1 g) = 8.37 W/kg; SAR(10 g) = 2.39 W/kg

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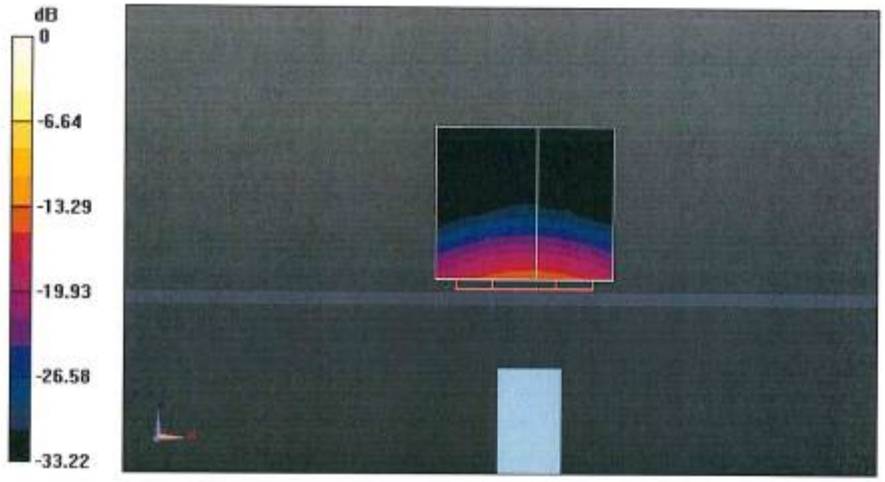
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 76.24 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 34.2 W/kg
SAR(1 g) = 8.67 W/kg; SAR(10 g) = 2.47 W/kg
Maximum value of SAR (measured) = 20.3 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 73.45 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 34.4 W/kg
SAR(1 g) = 8.3 W/kg; SAR(10 g) = 2.35 W/kg
Maximum value of SAR (measured) = 19.9 W/kg



0 dB = 18.5 W/kg = 12.67 dBW/kg

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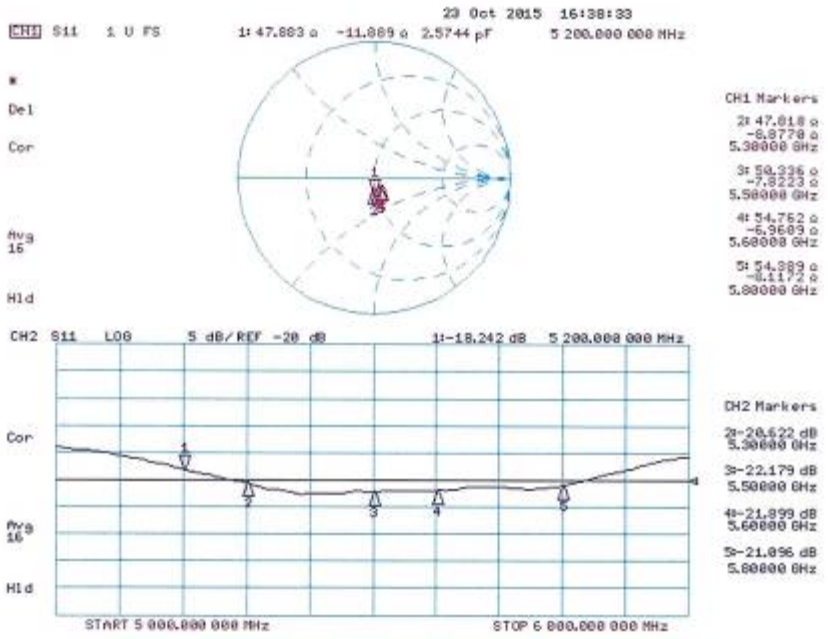
Impedance Measurement Plot for Head TSL



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DASY5 Validation Report for Body TSL

Date: 22.10.2015

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1079

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5300 MHz, Frequency: 5500 MHz, Frequency: 5600 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 5.45 S/m; ε_r = 47.1; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5300 MHz; σ = 5.57 S/m; ε_r = 46.9; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5500 MHz; σ = 5.84 S/m; ε_r = 46.6; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 5.98 S/m; ε_r = 46.4; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5800 MHz; σ = 6.25 S/m; ε_r = 46; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(4.95, 4.95, 4.95); Calibrated: 30.12.2014, ConvF(4.78, 4.78, 4.78); Calibrated: 30.12.2014, ConvF(4.45, 4.45, 4.45); Calibrated: 30.12.2014, ConvF(4.35, 4.35, 4.35); Calibrated: 30.12.2014, ConvF(4.32, 4.32, 4.32); Calibrated: 30.12.2014;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 17.08.2015
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 66.94 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 30.0 W/kg
SAR(1 g) = 7.64 W/kg; SAR(10 g) = 2.14 W/kg
Maximum value of SAR (measured) = 18.1 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.72 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 31.6 W/kg
SAR(1 g) = 7.89 W/kg; SAR(10 g) = 2.21 W/kg
Maximum value of SAR (measured) = 18.7 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.50 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 34.9 W/kg
SAR(1 g) = 8.19 W/kg; SAR(10 g) = 2.28 W/kg
Maximum value of SAR (measured) = 19.7 W/kg

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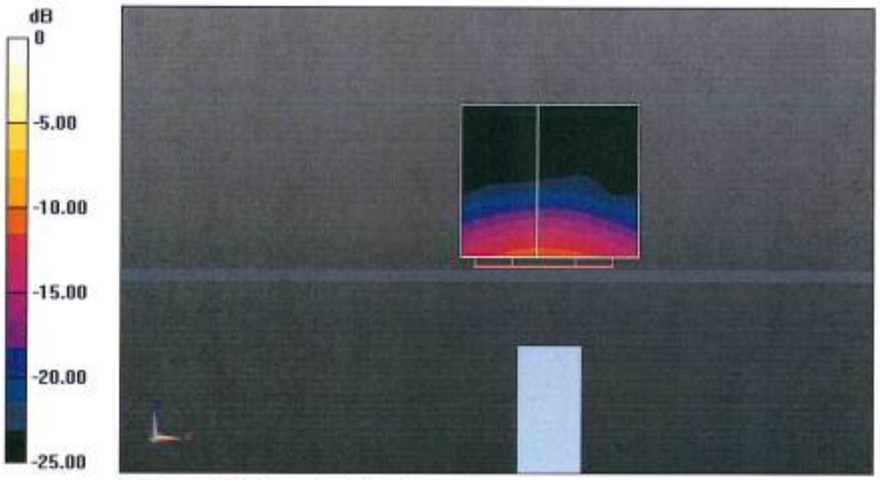
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.17 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 36.9 W/kg
SAR(1 g) = 8.38 W/kg; SAR(10 g) = 2.34 W/kg
Maximum value of SAR (measured) = 20.6 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 65.72 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 37.3 W/kg
SAR(1 g) = 8.09 W/kg; SAR(10 g) = 2.24 W/kg
Maximum value of SAR (measured) = 20.0 W/kg



0 dB = 18.1 W/kg = 12.58 dBW/kg

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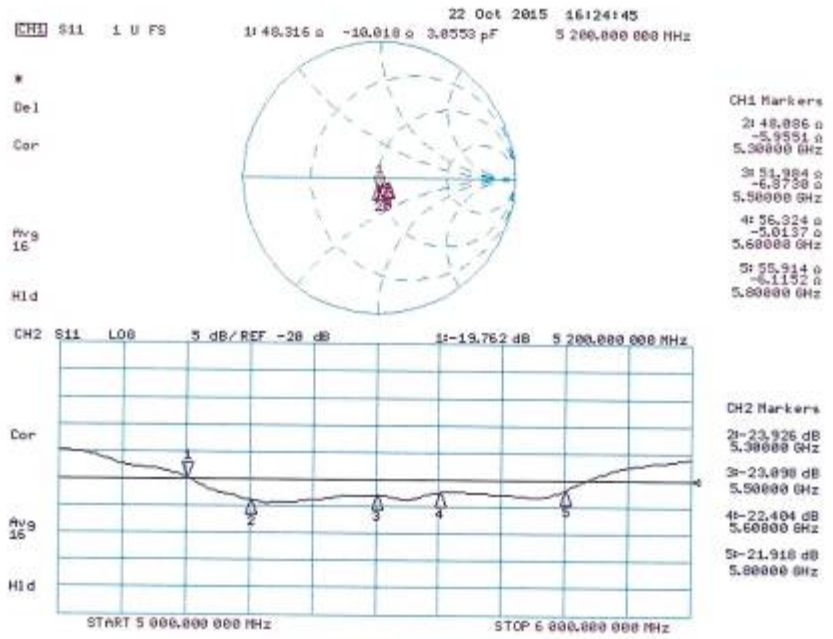
Impedance Measurement Plot for Body TSL



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APPENDIX F: TEST SETUP

Appendix Test Setup

--- End of report---

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