12.2. System Check Plots – A1490

This appendix contains the following system validation distribution scans.

Scan Reference Number	Title
001	System Performance Check 750MHz Body 28 04 15
002	System Performance Check 900MHz Body 27 04 15
003	System Performance Check 1800MHz Body 05 05 15
004	System Performance Check 1900MHz Body 30 04 15
005	System Performance Check 1900MHz Body 05 05 15
006	System Performance Check 2450MHz Body 07 05 15
007	System Performance Check 5250 MHz Body 05 05 15
008	System Performance Check 5600 MHz Body 05 05 15
009	System Performance Check 5750 MHz Body 05 05 15

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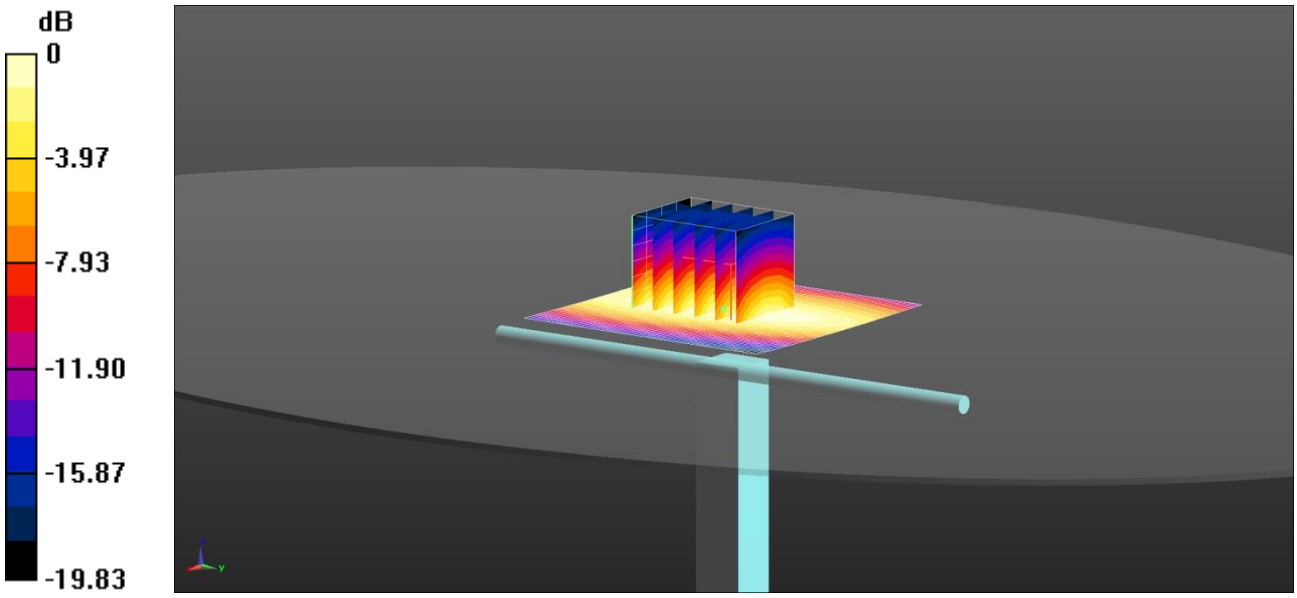
001: System Performance Check 750MHz Body 28 04 15
Date: 28/04/15
DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1011



0 dB = 2.31 W/kg = 3.64 dBW/kg

Communication System: UID 0, CW (0); Frequency: 750 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used: f = 750 MHz; σ = 0.918 S/m; ε_r = 53.635; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.32, 6.32, 6.32); Calibrated: 22/05/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 19/03/15
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

SAR/d=15mm, Pin=250 mW, dist=10.0mm (ET-Probe) 2/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.31 W/kg
SAR/d=15mm, Pin=250 mW, dist=10.0mm (ET-Probe) 2/Zoom Scan (5x5x7) (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.64 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 2.93 W/kg
SAR(1 g) = 2.16 W/kg; SAR(10 g) = 1.46 W/kg
Maximum value of SAR (measured) = 2.34 W/kg

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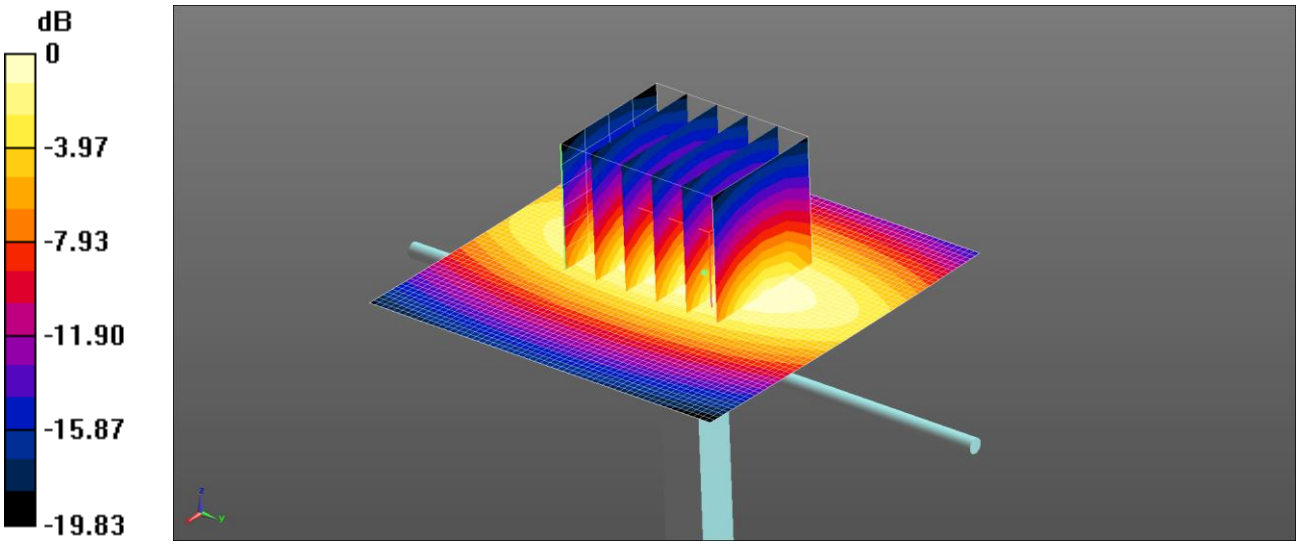
002: System Performance Check 900MHz Body 27 04 15
Date: 27/4/2015
DUT: Dipole 900 MHz D900V2; Type: D900V2; Serial: SN:1d168



0 dB = 2.93 W/kg = 4.66 dBW/kg

Communication System: UID 0, CW; Frequency: 900 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used: f = 900 MHz; σ = 1.02 S/m; ε_r = 52.967; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.09, 6.09, 6.09); Calibrated: 22/5/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 19/3/2015
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

SAR/d=15mm, Pin=250 mW, dist=10.0mm (ET-Probe) 2/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 2.93 W/kg

SAR/d=15mm, Pin=250 mW, dist=10.0mm (ET-Probe) 2/Zoom Scan (5x5x7) (5x6x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 56.36 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 3.58 W/kg
SAR(1 g) = 2.67 W/kg; SAR(10 g) = 1.78 W/kg
Maximum value of SAR (measured) = 2.91 W/kg

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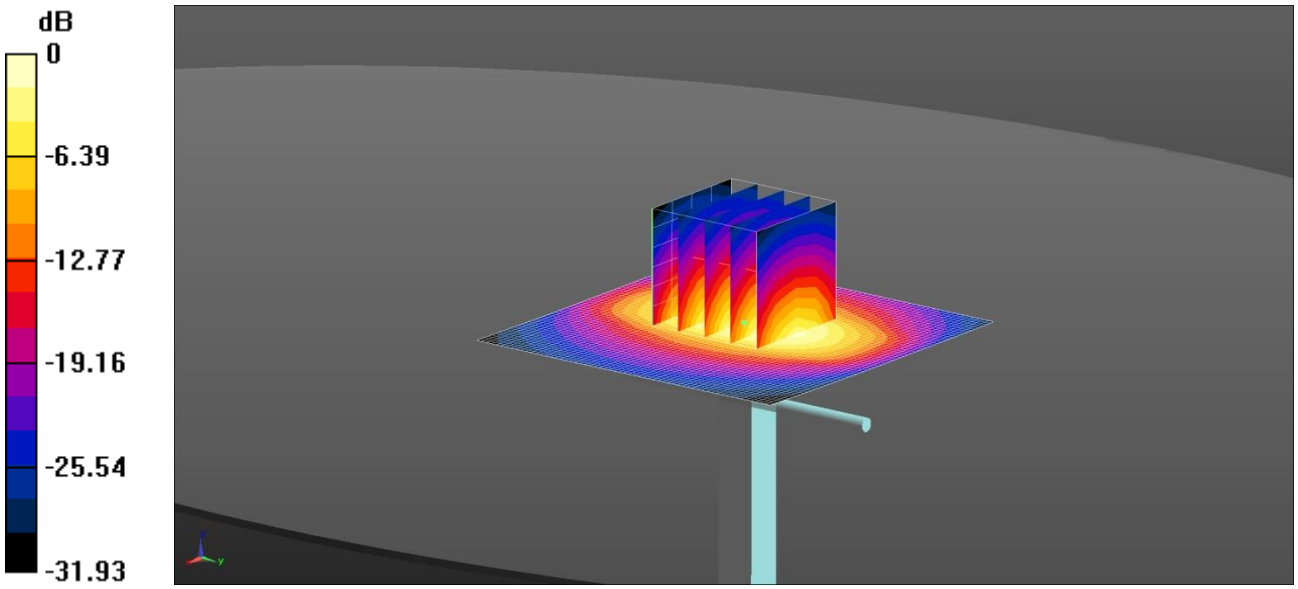
003: System Performance Check 1800MHz Body 05 05 15
Date: 05/05/15
DUT: Dipole 1800 MHz; Type: D1800V2; Serial: 264



0 dB = 11.2 W/kg = 10.48 dBW/kg

Communication System: UID 0, CW; Frequency: 1800 MHz;Duty Cycle: 1:1
Medium: 1800MHz MSL Medium parameters used: f = 1800 MHz; σ = 1.546 S/m; ε_r = 52.006; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3994; ConvF(8.03, 8.03, 8.03); Calibrated: 17/03/15;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 16/09/14
- Phantom: ELI v5.0; Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

SAR/d=10mm, Pin=250 mW, dist=10.0mm (ET-Probe)/Area Scan (61x61x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 11.2 W/kg

SAR/d=10mm, Pin=250 mW, dist=10.0mm (ET-Probe)/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 80.91 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 17.9 W/kg
SAR(1 g) = 9.59 W/kg; SAR(10 g) = 4.9 W/kg
Maximum value of SAR (measured) = 10.8 W/kg

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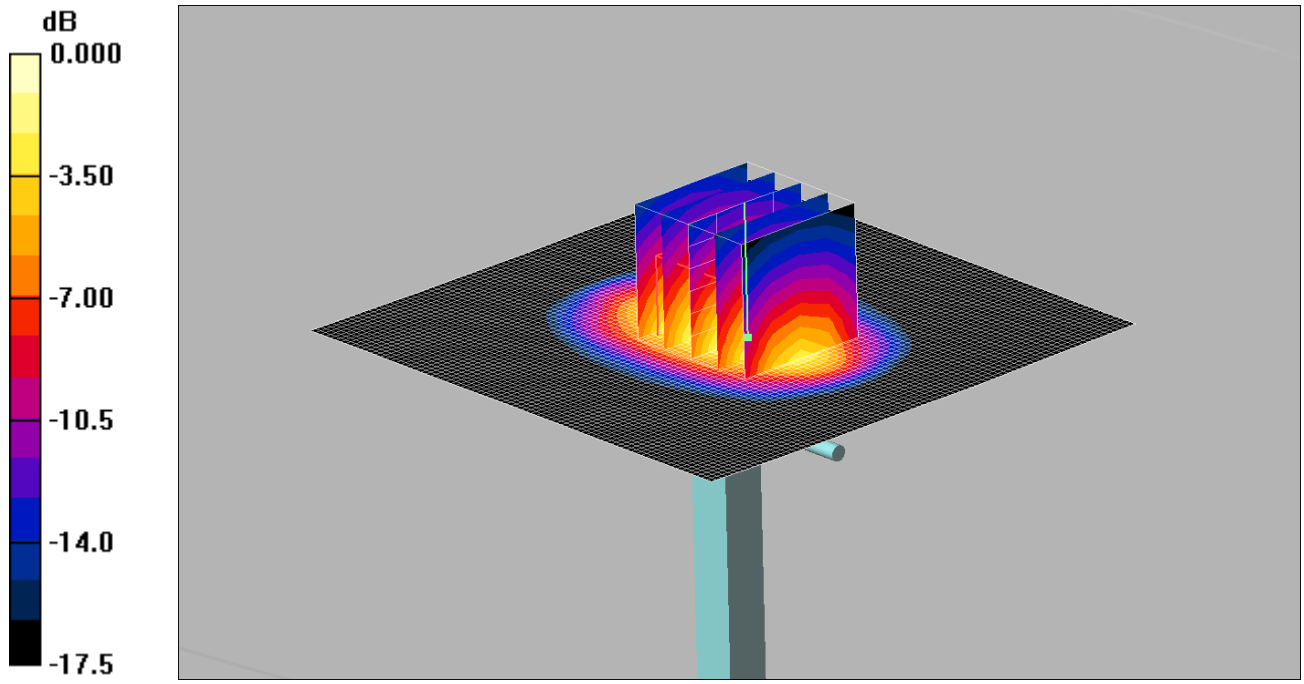
004: System Performance Check 1900MHz Body 30 04 15
Date: 30/04/2015
DUT: Dipole 1900 MHz; SN540; Type: D1900V2; Serial: SN540



0 dB = 10.8mW/g

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used: f = 1900 MHz; σ = 1.51 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ES3DV3 - SN3304; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 20/08/2014
- Phantom: ELI v5.0; Type: QDOVA002AA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.3 mW/g

d=10mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 86.8 V/m; Power Drift = -0.078 dB
Peak SAR (extrapolated) = 17.1 W/kg
SAR(1 g) = 9.76 mW/g; SAR(10 g) = 5.23 mW/g
Maximum value of SAR (measured) = 10.8 mW/g

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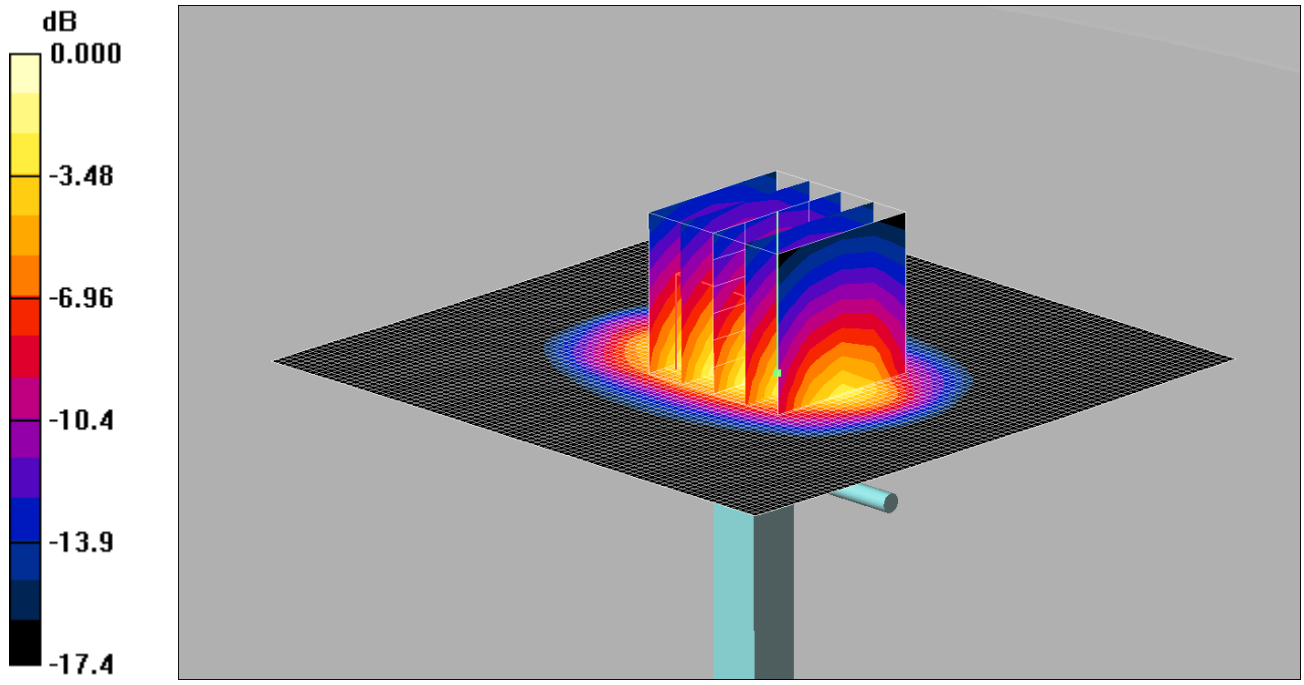
005: System Performance Check 1900MHz Body 05 05 15
Date: 05/05/2015
DUT: Dipole 1900 MHz; SN540; Type: D1900V2; Serial: SN540



0 dB = 11.4mW/g

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used: f = 1900 MHz; σ = 1.52 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ES3DV3 - SN3304; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 20/08/2014
- Phantom: ELI v5.0; Type: QDOVA002AA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

d=10mm, Pin=250mW/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 11.8 mW/g

d=10mm, Pin=250mW/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 87.5 V/m; Power Drift = -0.021 dB
Peak SAR (extrapolated) = 18.0 W/kg
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.49 mW/g
Maximum value of SAR (measured) = 11.4 mW/g

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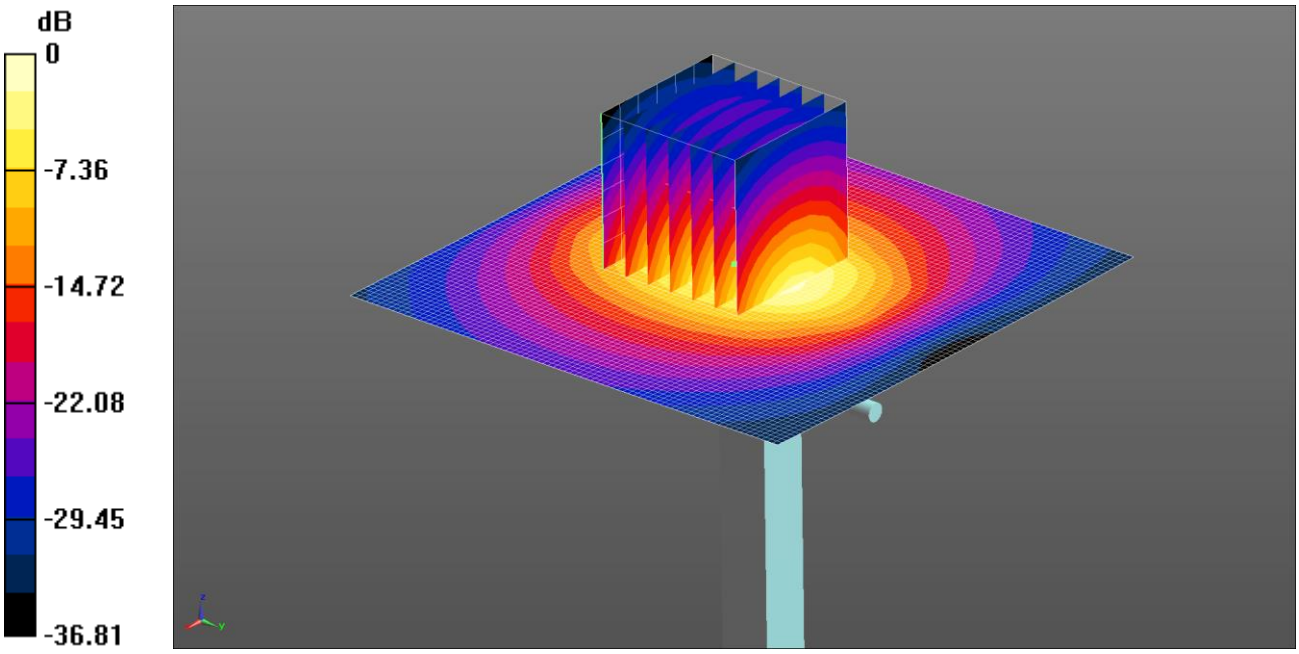
006: System Performance Check 2450MHz Body 07 05 15
Date: 07/05/2015
DUT: Dipole 2440 MHz; Type: D2440V2; Serial: D2440V2 - SN:701



0 dB = 14.7 W/kg = 11.66 dBW/kg

Communication System: UID 0, CW (0); Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: 2450MHz MSL Medium parameters used: f = 2450 MHz; σ = 2.02 S/m; ε_r = 53.318; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3994; ConvF(7.39, 7.39, 7.39); Calibrated: 07/05/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 16/09/2014
- Phantom: ELI v5.0; Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7164)

Configuration/d=10mm, Pin=250mW 2 2 2 2 2/Area Scan (81x81x1): Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 14.7 W/kg

Configuration/d=10mm, Pin=250mW 2 2 2 2 2/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 79.848 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 25.8 W/kg
SAR(1 g) = 12.4 W/kg; SAR(10 g) = 5.71 W/kg
Maximum value of SAR (measured) = 14.0 W/kg

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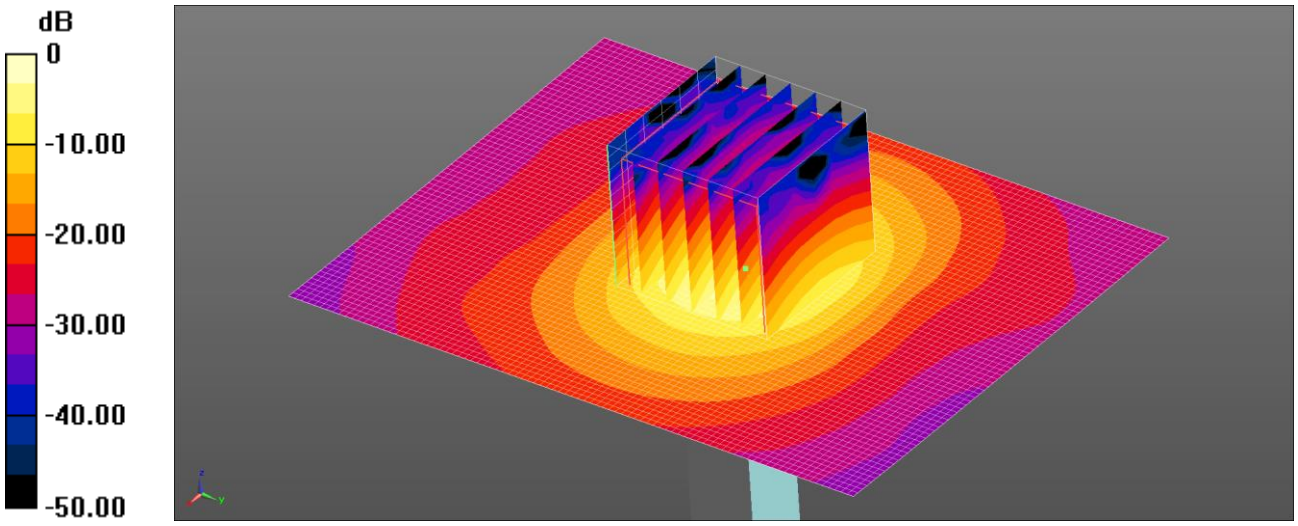
007: System Performance Check 5250 MHz Body 05 05 15
Date: 05/05/15
DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 16.2 W/kg = 12.10 dBW/kg

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: 5GHz MSL Medium parameters used: f = 5250 MHz; σ = 5.352 S/m; ε_r = 48.4; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3814; ConvF(4.38, 4.38, 4.38); Calibrated: 18/09/14;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1435; Calibrated: 20/02/15
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/d=10mm, Pin=100mW 2 2/Area Scan (71x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 16.7 W/kg

Configuration/d=10mm, Pin=100mW 2 2/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 40.16 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 31.1 W/kg
SAR(1 g) = 7.61 W/kg; SAR(10 g) = 2.12 W/kg
Maximum value of SAR (measured) = 16.2 W/kg

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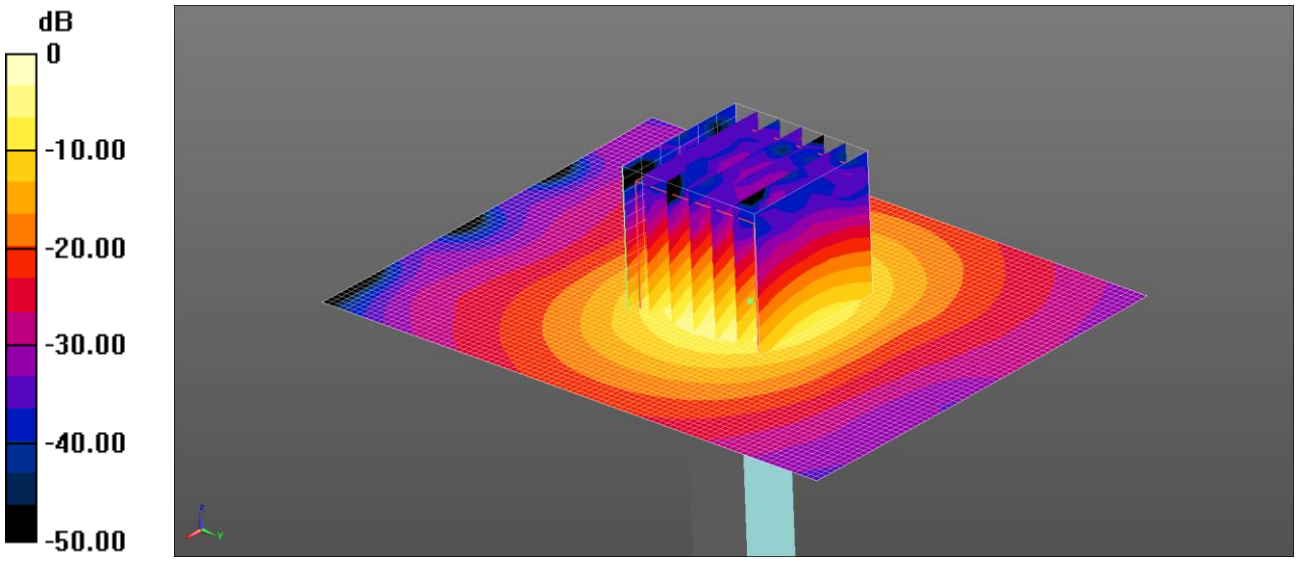
008: System Performance Check 5600 MHz Body 05 05 15
Date: 05/05/15
DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 17.1 W/kg = 12.33 dBW/kg

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: 5GHz MSL Medium parameters used: f = 5600 MHz; σ = 5.891 S/m; ε_r = 47.455; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3814; ConvF(3.79, 3.79, 3.79); Calibrated: 18/09/14;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1435; Calibrated: 20/02/15
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/d=10mm, Pin=100mW 2 2 2/Area Scan (71x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 17.4 W/kg

Configuration/d=10mm, Pin=100mW 2 2 2/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 38.53 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 34.7 W/kg
SAR(1 g) = 7.9 W/kg; SAR(10 g) = 2.18 W/kg
Maximum value of SAR (measured) = 17.1 W/kg

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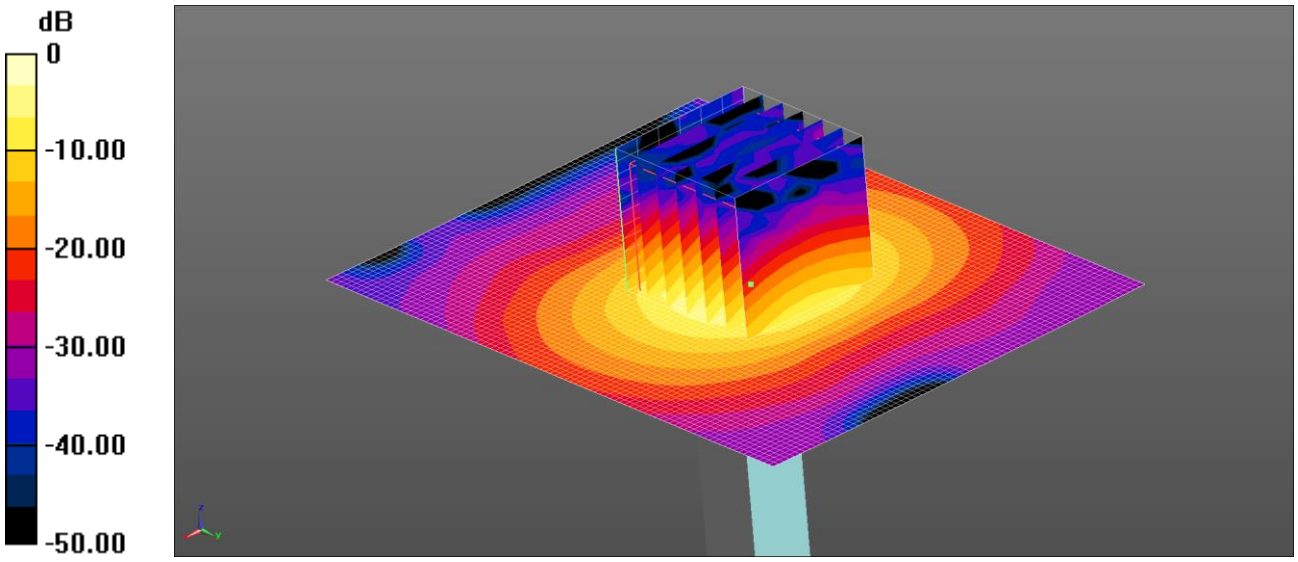
009: System Performance Check 5750 MHz Body 05 05 15
Date: 05/05/15
DUT: 5GHz Dipole; Type: D5GHzV2; Serial: SN 1016



0 dB = 15.8 W/kg = 11.99 dBW/kg

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium: 5GHz MSL Medium parameters used: f = 5750 MHz; σ = 6.079 S/m; ε_r = 46.961; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3814; ConvF(4.06, 4.06, 4.06); Calibrated: 18/09/14;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1435; Calibrated: 20/02/15
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/d=10mm, Pin=100mW 2 2/Area Scan (71x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 16.2 W/kg

Configuration/d=10mm, Pin=100mW 2 2/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 36.12 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 32.8 W/kg
SAR(1 g) = 7.29 W/kg; SAR(10 g) = 2.02 W/kg
Maximum value of SAR (measured) = 15.8 W/kg

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12.3. SAR Test Plots

This appendix contains the following SAR distribution scans.

Scan Reference Number	Title
001	Back of EUT Facing Phantom GSM850 GPRS 2Tx CS1 CH251
002	Back of EUT Facing Phantom GSM1900 GPRS 2Tx CS1 CH810
003	Back of EUT Facing Phantom UMTS FDD 2 RMC 12.2Kbps CH9538
004	Back of EUT Facing Phantom UMTS FDD 4 RMC 12.2Kbps CH1413
005	Back of EUT Facing Phantom UMTS FDD 5 RMC 12.2Kbps CH4132
006	Back of EUT Facing Phantom CDMA BC0 1xEvDo Rel 0 CH384
007	Back of EUT Facing Phantom CDMA BC1 RC3 SO32 CH1175
008	Back of EUT Facing Phantom CDMA BC10 RC3 SO32 CH476
009	Back of EUT Facing Phantom CDMA BC15 RC3 SO32 CH25
010	Right of EUT Facing Phantom LTE FDD 2 20MHz 50%RB Mid CH18900
011	Right of EUT Facing Phantom LTE FDD 4 20MHz 50%RB Low CH20300
012	Back of EUT Facing Phantom LTE FDD 5 10MHz 50%RB Mid CH20525
013	Back of EUT Facing Phantom LTE FDD 13 10MHz 1RB Low CH23230
014	Back of EUT Facing Phantom LTE FDD 17 10MHz 1RB Mid CH23790
015	Right of EUT Facing Phantom LTE FDD 25 20MHz 100%RB CH26590
016	Back of EUT Facing Phantom LTE FDD 26 5MHz 50%RB Low CH26763
017	Bottom Of EUT Facing Phantom WiFi 802.11b MIMO CDD Ant 1 CH2
018	Bottom of EUT Facing Phantom Wi-Fi 5GHz 802.11n HT40 SISO Ant 2 CH46
019	Bottom of EUT Facing Phantom Wi-Fi 5GHz 802.11a HT20 SISO Ant 2 CH60
020	Bottom of EUT Facing Phantom Wi-Fi 5GHz 802.11a HT20 SISO Ant 2 CH136
021	Bottom of EUT Facing Phantom Wi-Fi 5GHz 802.11a HT20 SISO Ant 2 CH157

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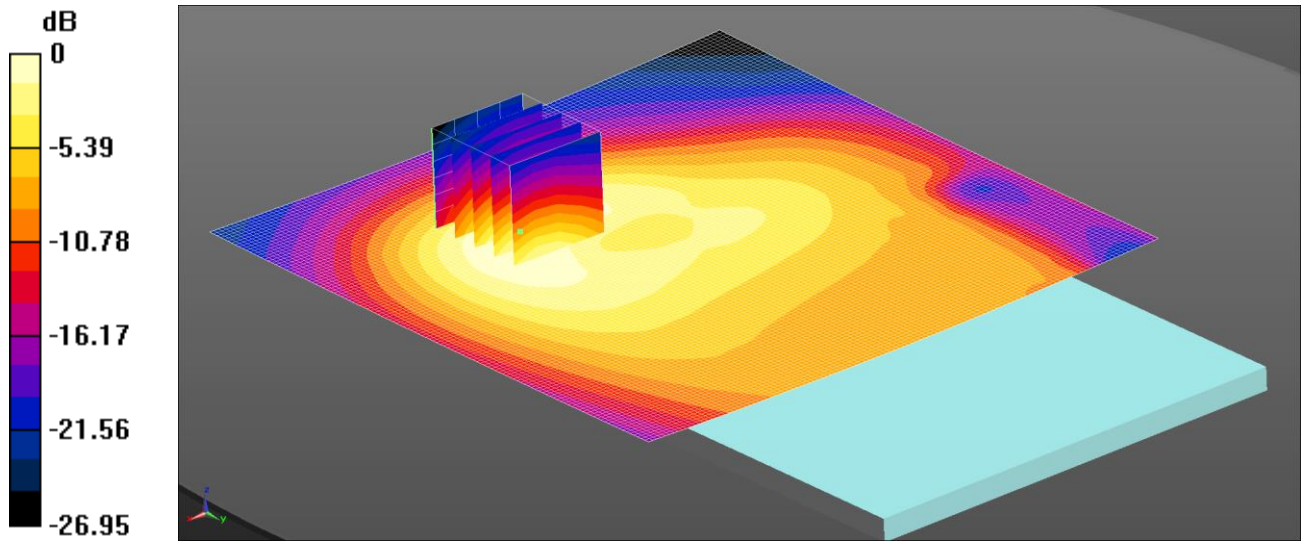
001: Back of EUT Facing Phantom GSM850 GPRS 2Tx CS1 CH251
Date: 28/4/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.667 W/kg = -1.76 dBW/kg

Communication System: UID 0, GPRS 2Tx (0); Frequency: 848.8 MHz;Duty Cycle: 1:4.00037
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 848.8 MHz; σ = 0.981 S/m; ε_r = 53.215; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.22, 6.22, 6.22); Calibrated: 22/5/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 19/3/2015
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Back - Middle/Area Scan 2 (121x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.667 W/kg

Configuration/Back - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.97 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 0.825 W/kg
SAR(1 g) = 0.622 W/kg; SAR(10 g) = 0.419 W/kg
Maximum value of SAR (measured) = 0.670 W/kg

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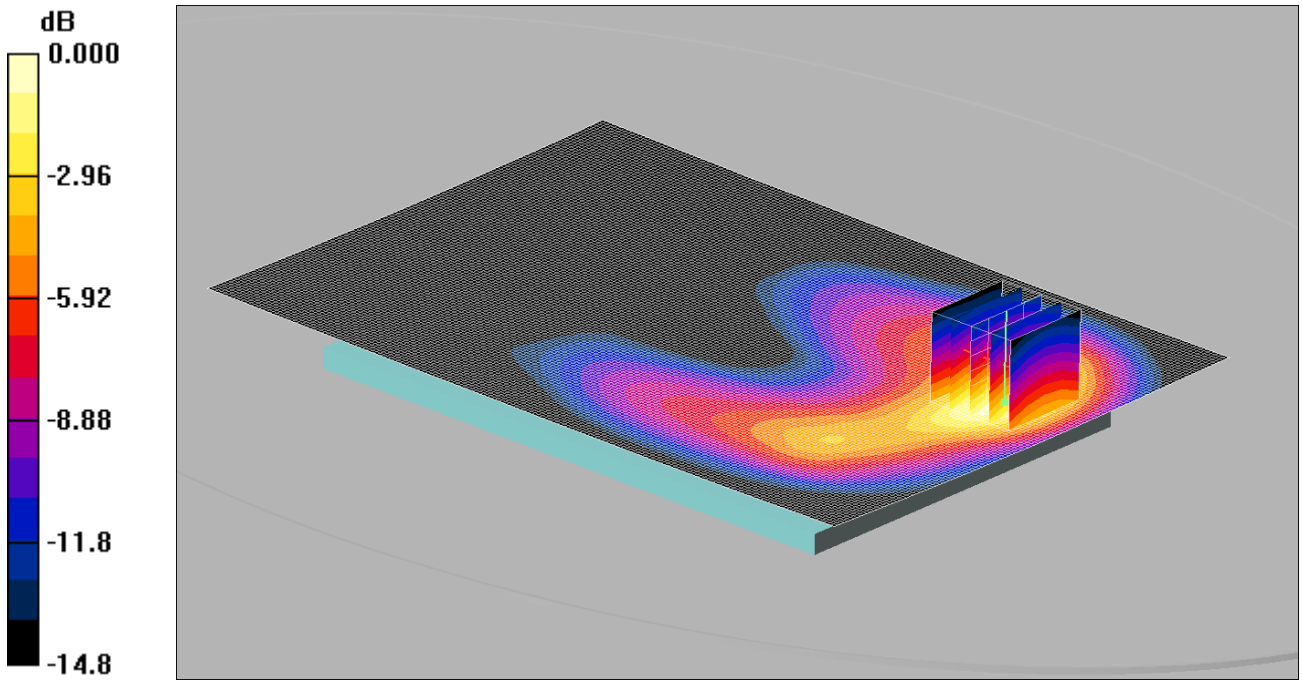
002: Back of EUT Facing Phantom GSM1900 GPRS 2Tx CS1 CH810
Date: 30/04/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.482mW/g

Communication System: GPRS 1900 2Tx; Frequency: 1909.8 MHz;Duty Cycle: 1:4
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1909.8 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ES3DV3 - SN3304; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 20/08/2014
- Phantom: ELI v5.0; Type: QDOVA002AA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back - High/Area Scan (121x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.478 mW/g

Back - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 17.3 V/m; Power Drift = -0.015 dB
Peak SAR (extrapolated) = 0.691 W/kg
SAR(1 g) = 0.437 mW/g; SAR(10 g) = 0.257 mW/g
Maximum value of SAR (measured) = 0.482 mW/g

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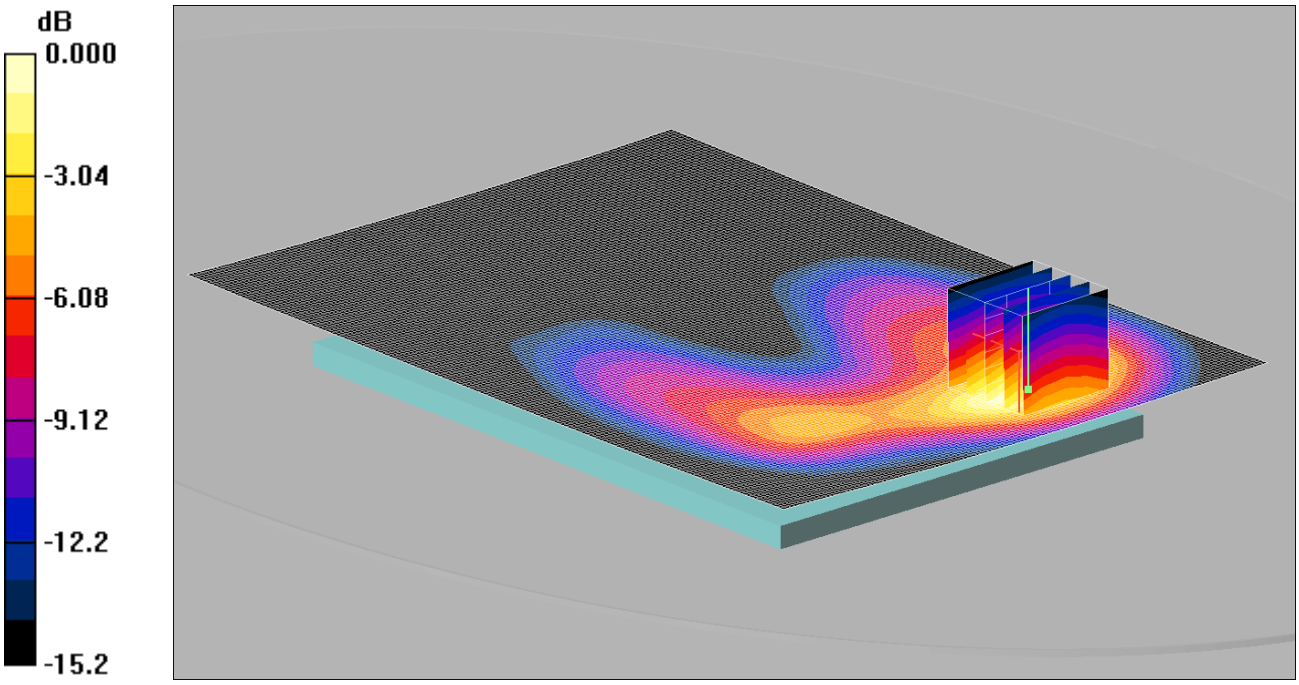
003: Back of EUT Facing Phantom UMTS FDD 2 RMC 12.2Kbps CH9538
Date: 30/04/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.585mW/g

Communication System: UMTS-FDD II; Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1907.6 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ES3DV3 - SN3304; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 20/08/2014
- Phantom: ELI v5.0; Type: QDOVA002AA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back - High/Area Scan (121x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.552 mW/g

Back - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 19.6 V/m; Power Drift = -0.011 dB
Peak SAR (extrapolated) = 0.827 W/kg
SAR(1 g) = 0.520 mW/g; SAR(10 g) = 0.302 mW/g
Maximum value of SAR (measured) = 0.585 mW/g

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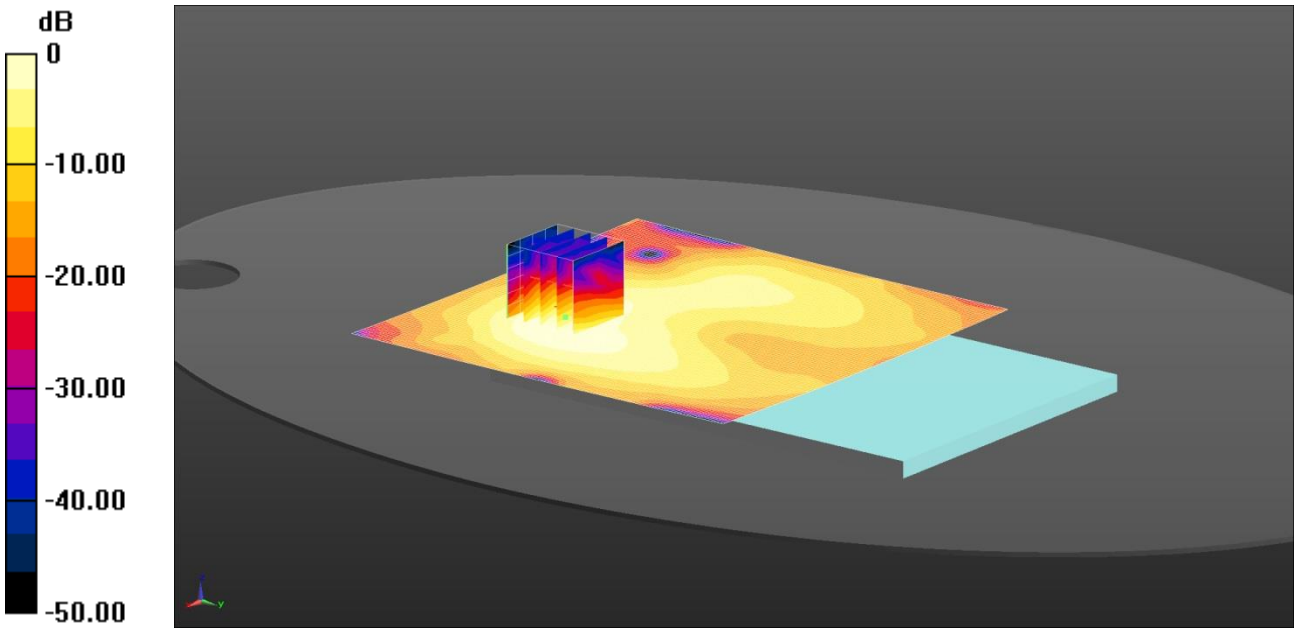
004: Back of EUT Facing Phantom UMTS FDD 4 RMC 12.2Kbps CH1413
Date: 06/05/15
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.658 W/kg = -1.82 dBW/kg

Communication System: UID 0, UMTS FDD (0); Frequency: 1732.4 MHz;Duty Cycle: 1:1
Medium: 1800MHz MSL Medium parameters used (interpolated): f = 1732.4 MHz; σ = 1.485 S/m; ε_r = 52.194; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3994; ConvF(8.03, 8.03, 8.03); Calibrated: 17/03/15;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 16/09/14
- Phantom: ELI v5.0; Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Back - Middle 2 - Prox Always Off 2 2 2/Area Scan 2 (121x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.658 W/kg
Configuration/Back - Middle 2 - Prox Always Off 2 2 2/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.83 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.955 W/kg
SAR(1 g) = 0.603 W/kg; SAR(10 g) = 0.375 W/kg
Maximum value of SAR (measured) = 0.645 W/kg

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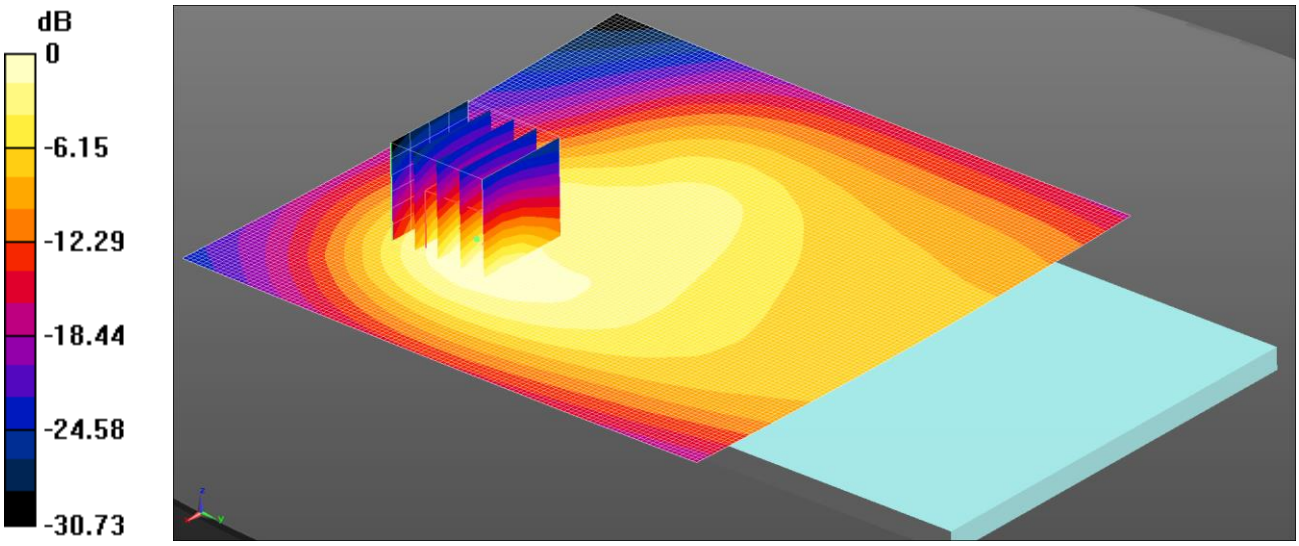
005: Back of EUT Facing Phantom UMTS FDD 5 RMC 12.2Kbps CH4132
Date: 28/4/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.492 W/kg = -3.08 dBW/kg

Communication System: UID 0, UMTS FDD (0); Frequency: 826.4 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 826.4 MHz; σ = 0.968 S/m; ε_r = 53.316; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.22, 6.22, 6.22); Calibrated: 22/5/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 19/3/2015
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Back - Middle/Area Scan 2 (121x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.492 W/kg

Configuration/Back - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.03 V/m; Power Drift = -0.07 dB
Peak SAR (extrapolated) = 0.603 W/kg
SAR(1 g) = 0.456 W/kg; SAR(10 g) = 0.308 W/kg
Maximum value of SAR (measured) = 0.489 W/kg

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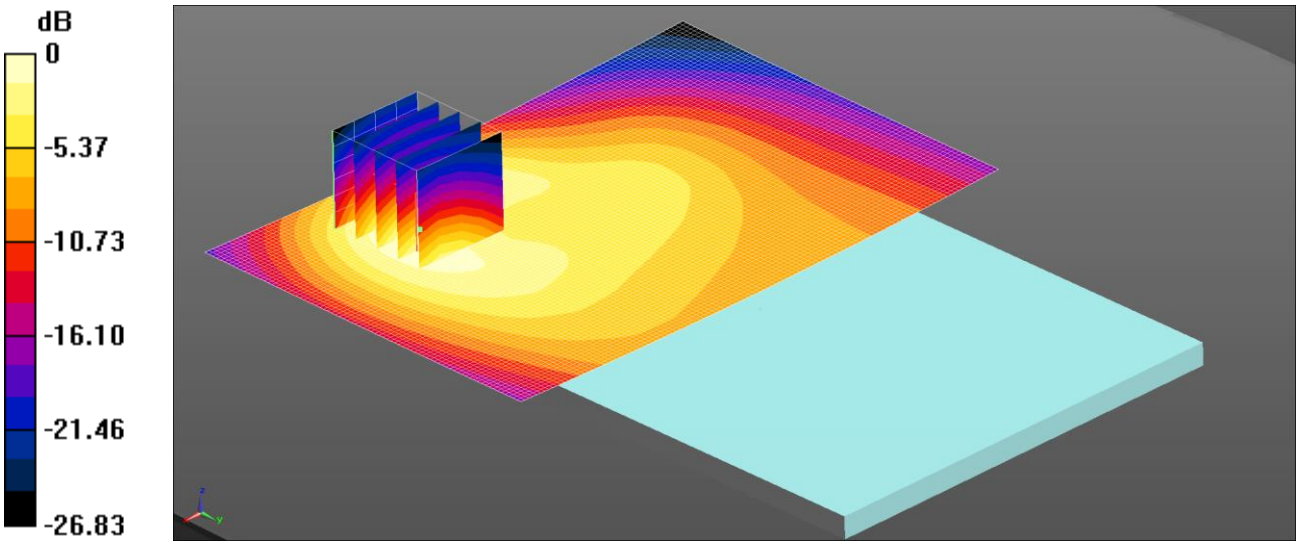
006: Back of EUT Facing Phantom CDMA BC0 1xEvDo Rel 0 CH384
Date: 29/4/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.524 W/kg = -2.80 dBW/kg

Communication System: UID 0, CDMA2000 (0); Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.52 MHz; σ = 0.974 S/m; ε_r = 53.27; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.22, 6.22, 6.22); Calibrated: 22/5/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 19/3/2015
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)
Configuration/Back - Middle/Area Scan 2 (121x81x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.524 W/kg

Configuration/Back - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.561 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.648 W/kg
SAR(1 g) = 0.488 W/kg; SAR(10 g) = 0.323 W/kg
Maximum value of SAR (measured) = 0.521 W/kg

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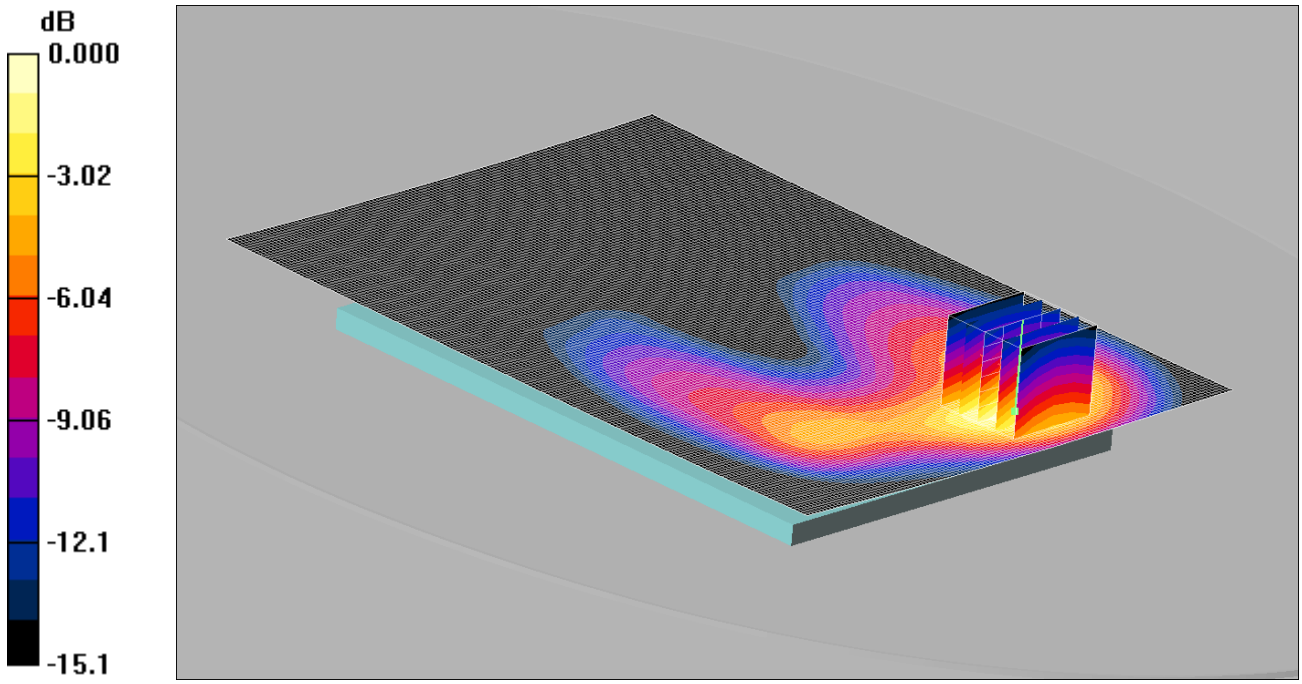
007: Back of EUT Facing Phantom CDMA BC1 RC3 SO32 CH1175
Date: 30/04/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.544mW/g

Communication System: CDMA 2000 BC1 US; Frequency: 1908.75 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1908.75 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ES3DV3 - SN3304; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 20/08/2014
- Phantom: ELI v5.0; Type: QDOVA002AA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Back - High/Area Scan (121x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.523 mW/g

Back - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.8 V/m; Power Drift = 0.052 dB
Peak SAR (extrapolated) = 0.780 W/kg
SAR(1 g) = 0.490 mW/g; SAR(10 g) = 0.288 mW/g
Maximum value of SAR (measured) = 0.544 mW/g

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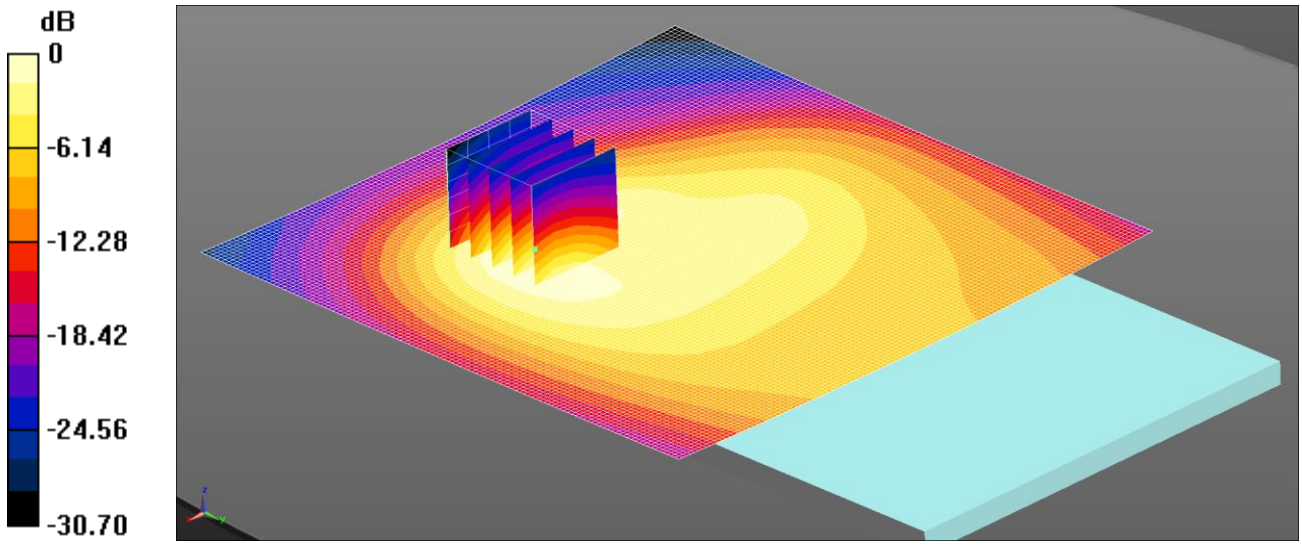
008: Back of EUT Facing Phantom CDMA BC10 RC3 SO32 CH476
Date: 28/4/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.644 W/kg = -1.91 dBW/kg

Communication System: UID 0, CDMA2000 (0); Frequency: 817.9 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 817.9 MHz; σ = 0.963 S/m; ε_r = 53.354; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.22, 6.22, 6.22); Calibrated: 22/5/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 19/3/2015
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Back - Middle/Area Scan 2 (121x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.644 W/kg

Configuration/Back - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 22.55 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.777 W/kg
SAR(1 g) = 0.586 W/kg; SAR(10 g) = 0.395 W/kg
Maximum value of SAR (measured) = 0.631 W/kg

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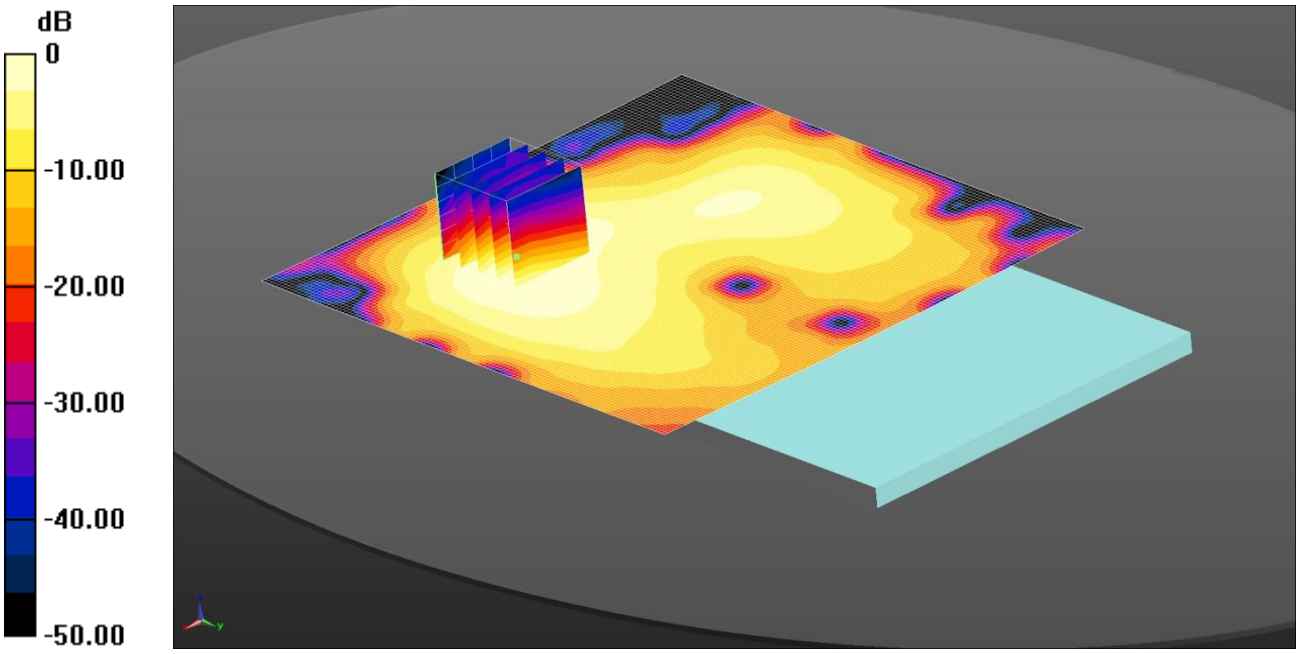
009: Back of EUT Facing Phantom CDMA BC15 RC3 SO32 CH25
Date: 06/05/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.658 W/kg = -1.82 dBW/kg

Communication System: UID 0, CDMA2000 (0); Frequency: 1711.3 MHz;Duty Cycle: 1:1
Medium: 1800MHz MSL Medium parameters used (interpolated): f = 1711.3 MHz; σ = 1.469 S/m; ε_r = 52.251; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3994; ConvF(8.03, 8.03, 8.03); Calibrated: 17/03/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 16/09/2014
- Phantom: ELI v5.0; Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7164)

Configuration/Back - Middle 2 - Prox Always Off/Area Scan 2 (121x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.658 W/kg

Configuration/Back - Middle 2 - Prox Always Off/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.010 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 0.900 W/kg
SAR(1 g) = 0.589 W/kg; SAR(10 g) = 0.367 W/kg
Maximum value of SAR (measured) = 0.636 W/kg

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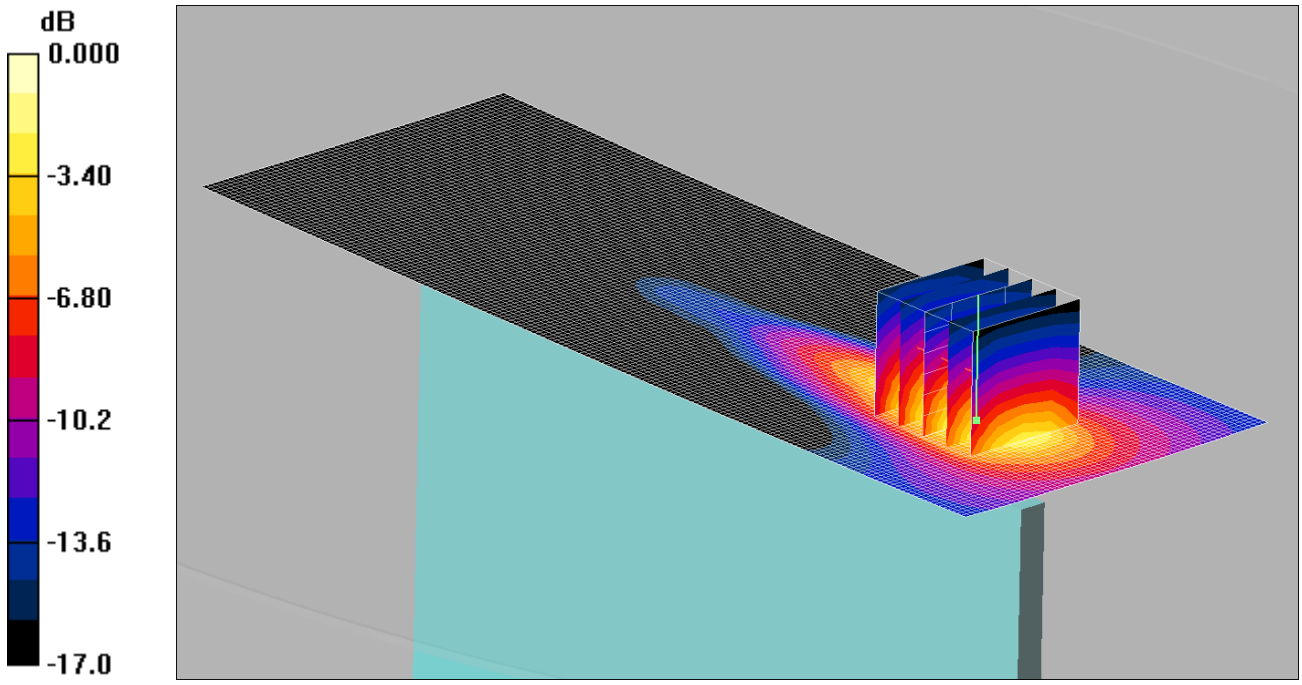
010: Right of EUT Facing Phantom LTE FDD 2 20MHz 50%RB Mid CH18900
Date: 05/05/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.885mW/g

Communication System: LTE - Band 2 / 20MHz Channel; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1880 MHz; σ = 1.5 mho/m; ε_r = 53.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ES3DV3 - SN3304; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 20/08/2014
- Phantom: ELI v5.0; Type: QDOVA002AA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right - Middle/Area Scan (61x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.883 mW/g

Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.1 V/m; Power Drift = -0.039 dB
Peak SAR (extrapolated) = 1.54 W/kg
SAR(1 g) = 0.773 mW/g; SAR(10 g) = 0.385 mW/g
Maximum value of SAR (measured) = 0.885 mW/g

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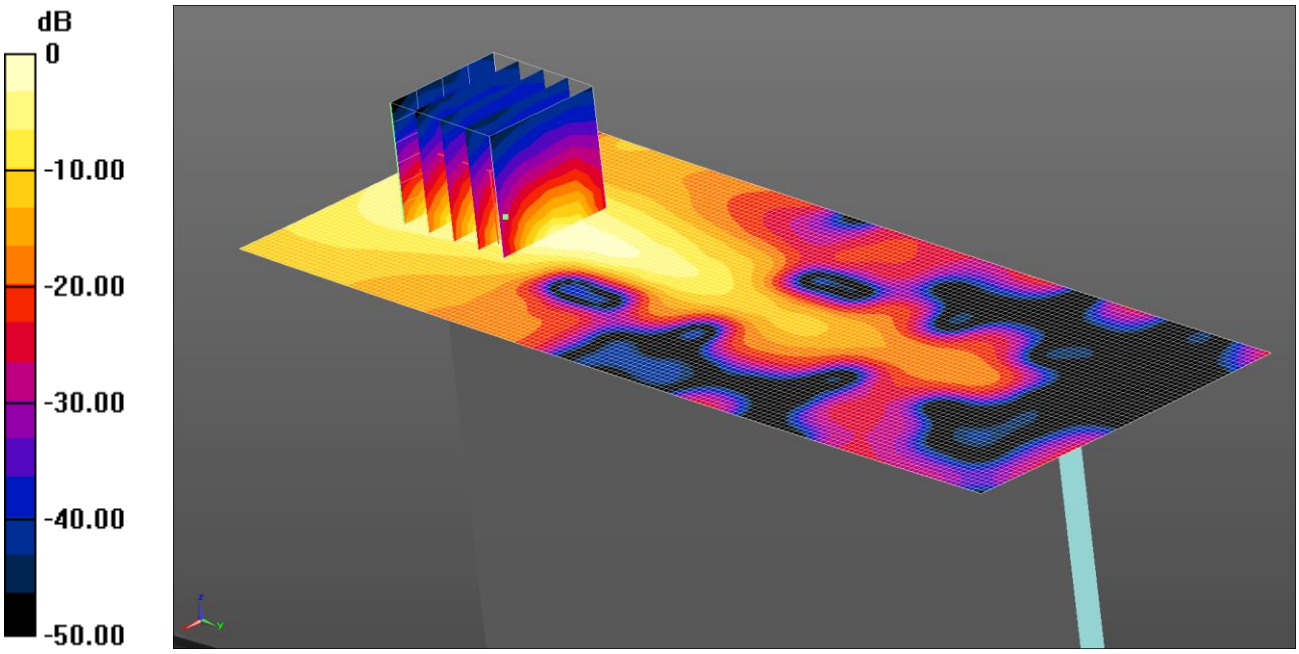
011: Right of EUT Facing Phantom LTE FDD 4 20MHz 50%RB Low CH20300
Date: 06/05/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.812 W/kg = -0.90 dBW/kg

Communication System: UID 0, LTE FDD Bands - 20MHz Channel BW (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium: 1800MHz MSL Medium parameters used (interpolated): f = 1745 MHz; σ = 1.495 S/m; ε_r = 52.16; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3994; ConvF(8.03, 8.03, 8.03); Calibrated: 17/03/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 16/09/2014
- Phantom: ELI v5.0; Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7164)

Configuration/Right - Middle/Area Scan 2 (61x161x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.812 W/kg

Configuration/Right - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.334 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.43 W/kg
SAR(1 g) = 0.715 W/kg; SAR(10 g) = 0.363 W/kg
Maximum value of SAR (measured) = 0.801 W/kg

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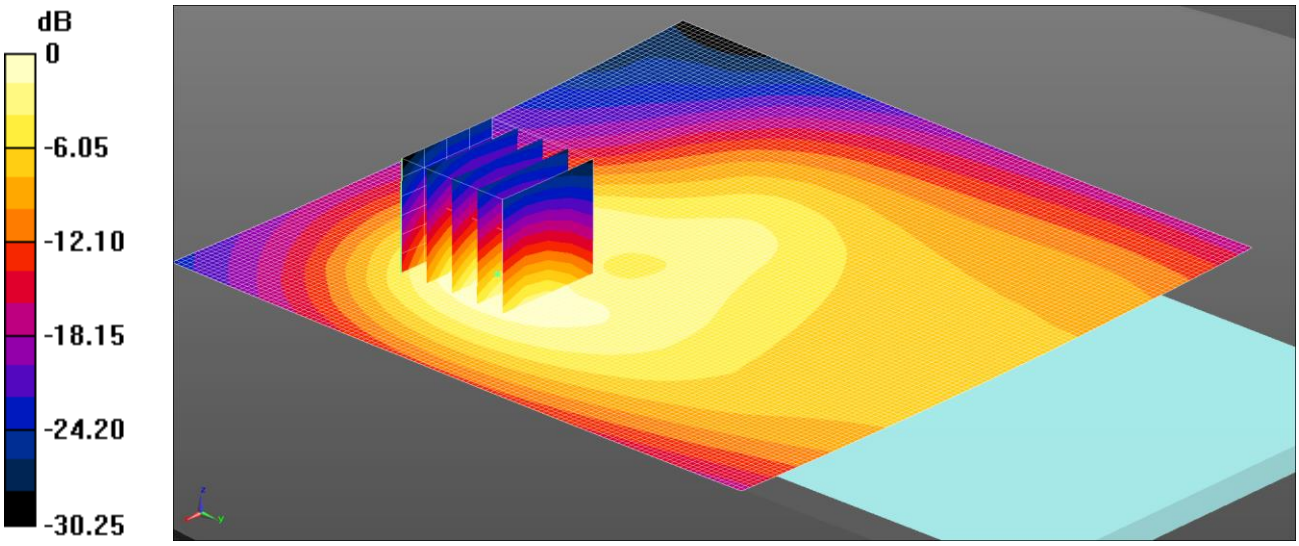
012: Back of EUT Facing Phantom LTE FDD 5 10MHz 50%RB Mid CH20525
Date 27/4/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.318 W/kg = -4.98 dBW/kg

Communication System: UID 0, LTE Bands - 10MHz Channel BW (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 836.5 MHz; σ = 0.974 S/m; ε_r = 53.27; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.22, 6.22, 6.22); Calibrated: 22/5/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 19/3/2015
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Back - Middle/Area Scan 2 (121x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.318 W/kg

Configuration/Back - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.215 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 0.407 W/kg
SAR(1 g) = 0.308 W/kg; SAR(10 g) = 0.205 W/kg
Maximum value of SAR (measured) = 0.333 W/kg

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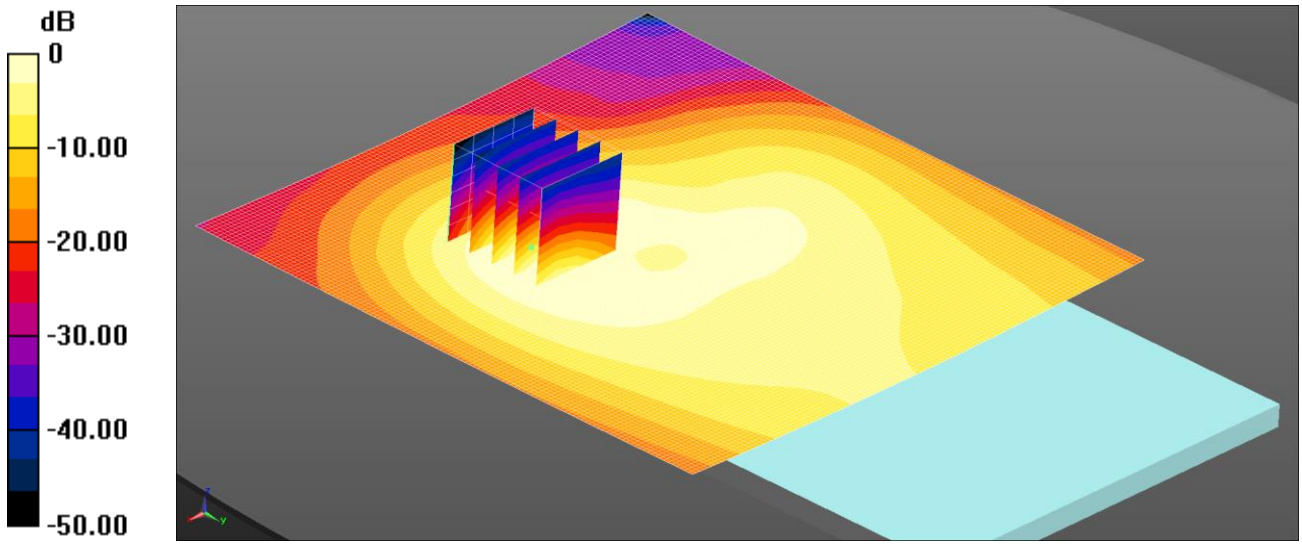
013: Back of EUT Facing Phantom LTE FDD 13 10MHz 1RB Low CH23230
Date: 28/4/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.470 W/kg = -3.28 dBW/kg

Communication System: UID 0, LTE Bands - 10MHz Channel BW (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 782 MHz; σ = 0.94 S/m; ε_r = 53.506; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.32, 6.32, 6.32); Calibrated: 22/5/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 19/3/2015
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Back - Middle/Area Scan 2 (121x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.470 W/kg

Configuration/Back - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 15.35 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.590 W/kg
SAR(1 g) = 0.431 W/kg; SAR(10 g) = 0.287 W/kg
Maximum value of SAR (measured) = 0.468 W/kg

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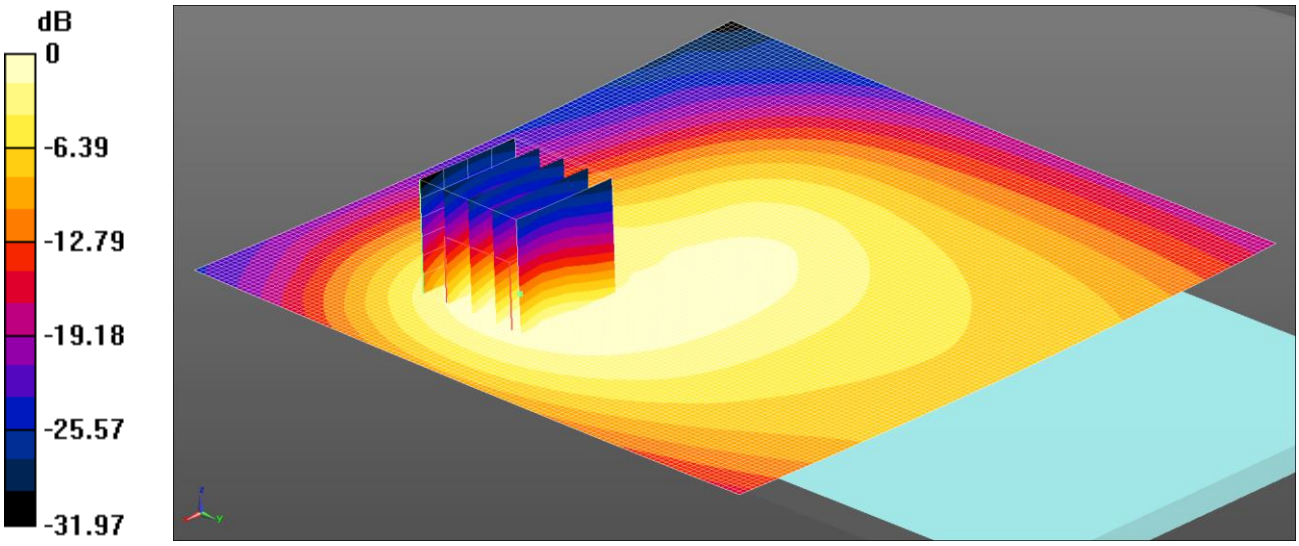
014: Back of EUT Facing Phantom LTE FDD 17 10MHz 1RB Mid CH23790
Date: 29/4/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.291 W/kg = -5.36 dBW/kg

Communication System: UID 0, LTE Bands - 10MHz Channel BW (0); Frequency: 710 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 710 MHz; σ = 0.897 S/m; ε_r = 53.869; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.32, 6.32, 6.32); Calibrated: 22/5/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 19/3/2015
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Back - Middle/Area Scan 2 (121x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.291 W/kg

Configuration/Back - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.517 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 0.361 W/kg
SAR(1 g) = 0.265 W/kg; SAR(10 g) = 0.183 W/kg
Maximum value of SAR (measured) = 0.278 W/kg

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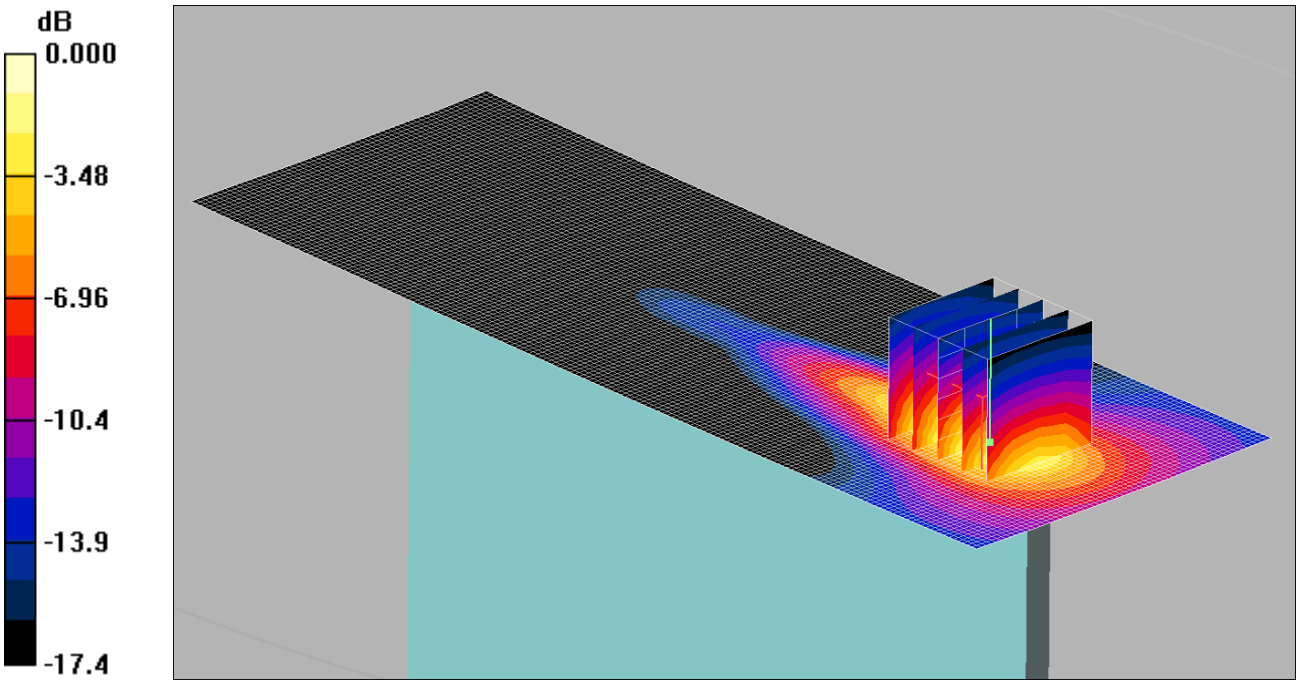
015: Right of EUT Facing Phantom LTE FDD 25 20MHz 100%RB CH26590
Date: 05/05/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.865mW/g

Communication System: LTE - Band 25 / 20MHz Channel; Frequency: 1905 MHz;Duty Cycle: 1:1
Medium: 1900 MHz MSL Medium parameters used (interpolated): f = 1905 MHz; σ = 1.53 mho/m; ε_r = 53.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ES3DV3 - SN3304; ConvF(4.69, 4.69, 4.69);
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn432; Calibrated: 20/08/2014
- Phantom: ELI v5.0; Type: QDOVA002AA;
- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Right - High/Area Scan (61x171x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.862 mW/g

Right - High/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 24.1 V/m; Power Drift = 0.001 dB
Peak SAR (extrapolated) = 1.52 W/kg
SAR(1 g) = 0.754 mW/g; SAR(10 g) = 0.371 mW/g
Maximum value of SAR (measured) = 0.865 mW/g

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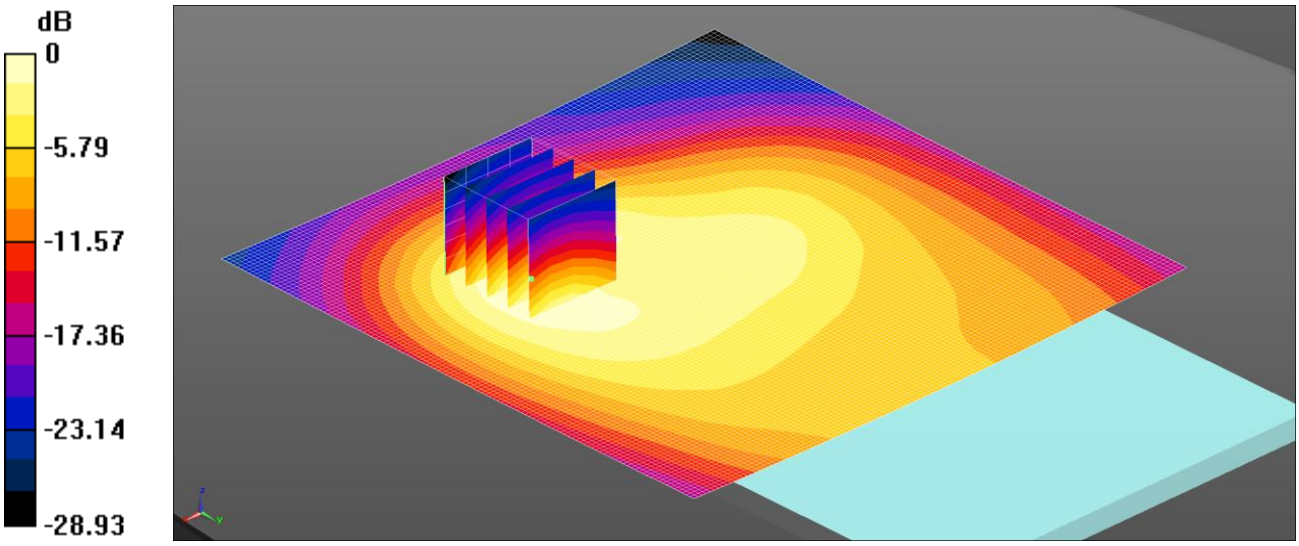
016: Back of EUT Facing Phantom LTE FDD 26 5MHz 50%RB Low CH26763
Date: 27/4/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.342 W/kg = -4.66 dBW/kg

Communication System: UID 0, LTE FDD Bands - 5MHz Channel BW (0); Frequency: 821.3 MHz;Duty Cycle: 1:1
Medium: 900 MHz MSL Medium parameters used (interpolated): f = 821.3 MHz; σ = 0.965 S/m; ε_r = 53.338; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: ET3DV6 - SN1586; ConvF(6.22, 6.22, 6.22); Calibrated: 22/5/2014;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn417; Calibrated: 19/3/2015
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Back - Middle/Area Scan 2 (121x121x1): Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.342 W/kg

Configuration/Back - Middle/Zoom Scan (5x5x7) (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.11 V/m; Power Drift = -0.14 dB
Peak SAR (extrapolated) = 0.420 W/kg
SAR(1 g) = 0.320 W/kg; SAR(10 g) = 0.217 W/kg
Maximum value of SAR (measured) = 0.340 W/kg

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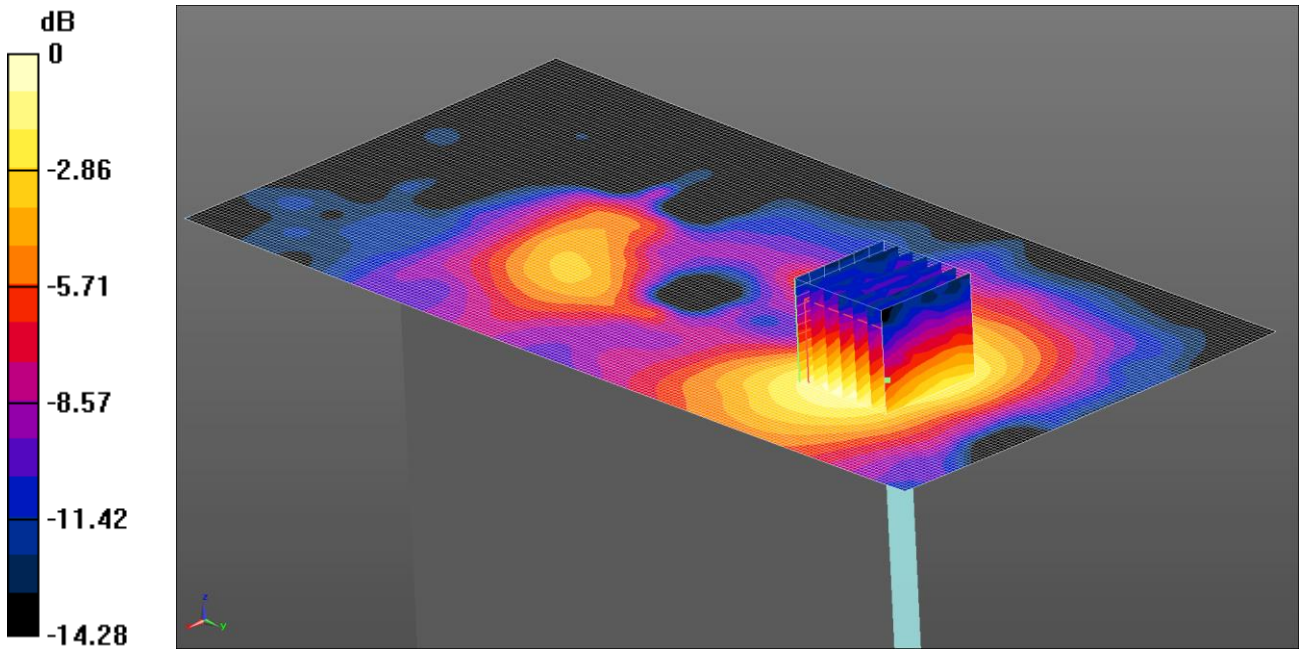
017: Bottom Of EUT Facing Phantom WiFi 802.11b MIMO CDD Ant 1 CH2
Date: 07/05/2015
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.0418 W/kg = -13.79 dBW/kg

Communication System: UID 0, WLAN 802.11 (0); Frequency: 2417 MHz;Duty Cycle: 1:1
Medium: 2450MHz MSL Medium parameters used (interpolated): f = 2417 MHz; σ = 1.983 S/m; ε_r = 53.403; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3994; ConvF(7.19, 7.19, 7.19); Calibrated: 17/03/2015;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn450; Calibrated: 16/09/2014
- Phantom: ELI v5.0; Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7164)

Configuration/Bottom of EUT Facing Phantom/Area Scan (101x201x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0410 W/kg
Configuration/Bottom of EUT Facing Phantom/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.463 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 0.0780 W/kg
SAR(1 g) = 0.039 W/kg; SAR(10 g) = 0.021 W/kg
Maximum value of SAR (measured) = 0.0418 W/kg

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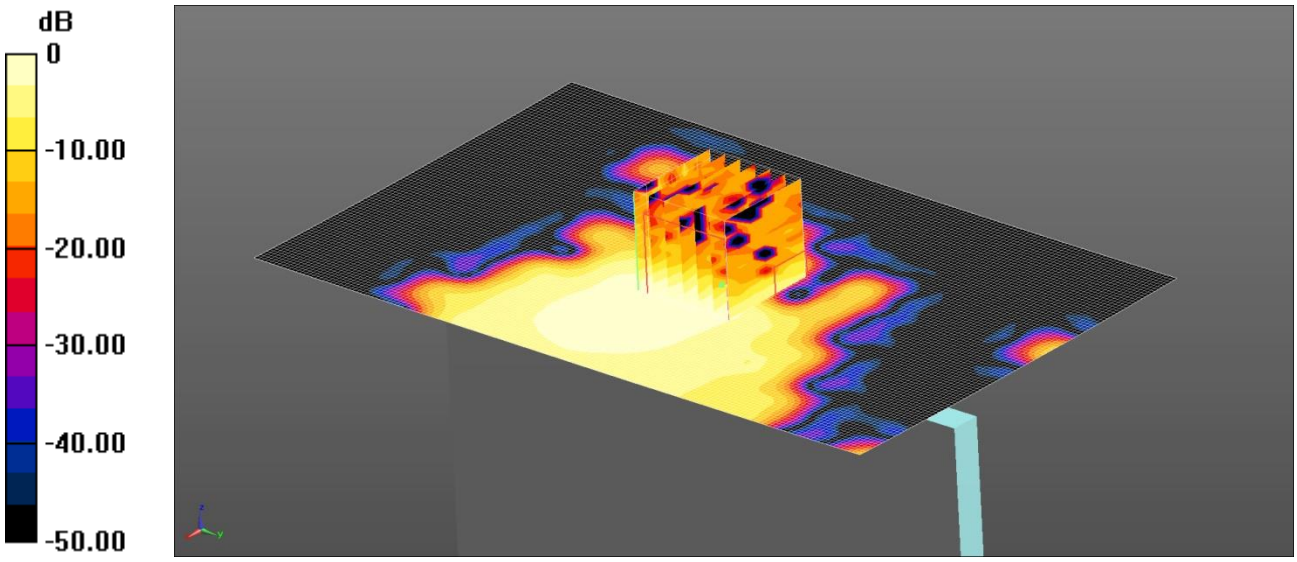
018: Bottom of EUT Facing Phantom Wi-Fi 5GHz 802.11n HT40 SISO Ant 2 CH46
Date: 06/05/15
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.0951 W/kg = -10.22 dBW/kg

Communication System: UID 0, WLAN 802.11 (0); Frequency: 5230 MHz;Duty Cycle: 1:1
Medium: 5GHz MSL Medium parameters used (interpolated): f = 5230 MHz; σ = 5.405 S/m; ε_r = 48.066; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3814; ConvF(4.38, 4.38, 4.38); Calibrated: 18/09/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1435; Calibrated: 20/02/15
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Bottom of EUT Facing Phantom/Area Scan (101x161x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.121 W/kg

Configuration/Bottom of EUT Facing Phantom/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 2.351 V/m; Power Drift = 0.17 dB
Peak SAR (extrapolated) = 0.735 W/kg
SAR(1 g) = 0.091 W/kg; SAR(10 g) = 0.029 W/kg
Maximum value of SAR (measured) = 0.0951 W/kg

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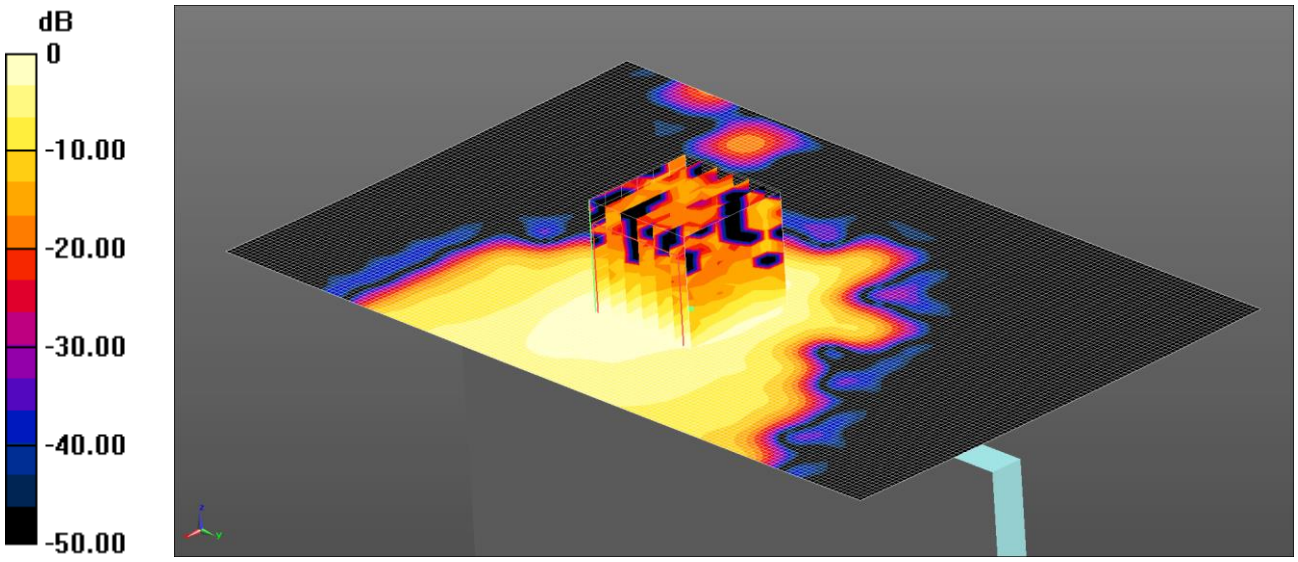
019: Bottom of EUT Facing Phantom Wi-Fi 5GHz 802.11a HT20 SISO Ant 2 CH60
Date: 06/05/15
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.127 W/kg = -8.96 dBW/kg

Communication System: UID 0, WLAN 802.11 (0); Frequency: 5300 MHz;Duty Cycle: 1:1
Medium: 5GHz MSL Medium parameters used: f = 5300 MHz; σ = 5.502 S/m; ε_r = 47.806; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3814; ConvF(4.18, 4.18, 4.18); Calibrated: 18/09/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1435; Calibrated: 20/02/15
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Bottom of EUT Facing Phantom/Area Scan (101x161x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.121 W/kg
Configuration/Bottom of EUT Facing Phantom/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 4.858 V/m; Power Drift = 0.11 dB
Peak SAR (extrapolated) = 0.297 W/kg
SAR(1 g) = 0.105 W/kg; SAR(10 g) = 0.038 W/kg
Maximum value of SAR (measured) = 0.127 W/kg

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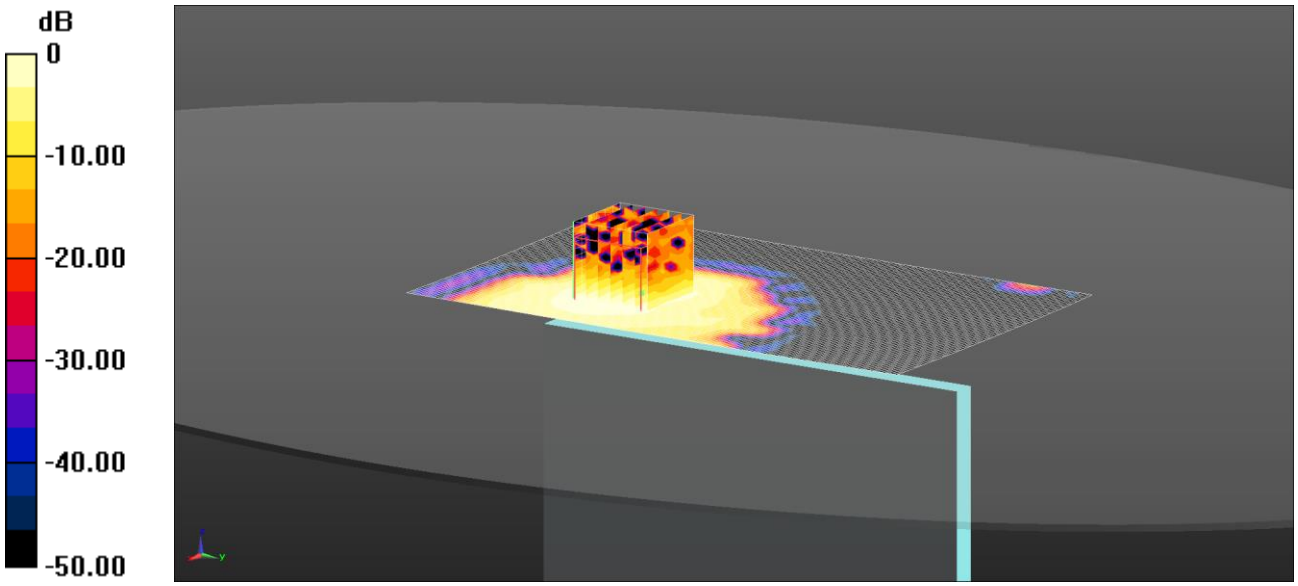
020: Bottom of EUT Facing Phantom Wi-Fi 5GHz 802.11a HT20 SISO Ant 2 CH136
Date: 06/05/15
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.134 W/kg = -8.73 dBW/kg

Communication System: UID 0, WLAN 802.11 (0); Frequency: 5680 MHz;Duty Cycle: 1:1
Medium: 5GHz MSL Medium parameters used (interpolated): f = 5680 MHz; σ = 5.996 S/m; ε_r = 47.151; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3814; ConvF(3.79, 3.79, 3.79); Calibrated: 18/09/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1435; Calibrated: 20/02/15
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Bottom of EUT Facing Phantom/Area Scan (101x161x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.128 W/kg
Configuration/Bottom of EUT Facing Phantom/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 4.684 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 0.357 W/kg
SAR(1 g) = 0.116 W/kg; SAR(10 g) = 0.046 W/kg
Maximum value of SAR (measured) = 0.134 W/kg

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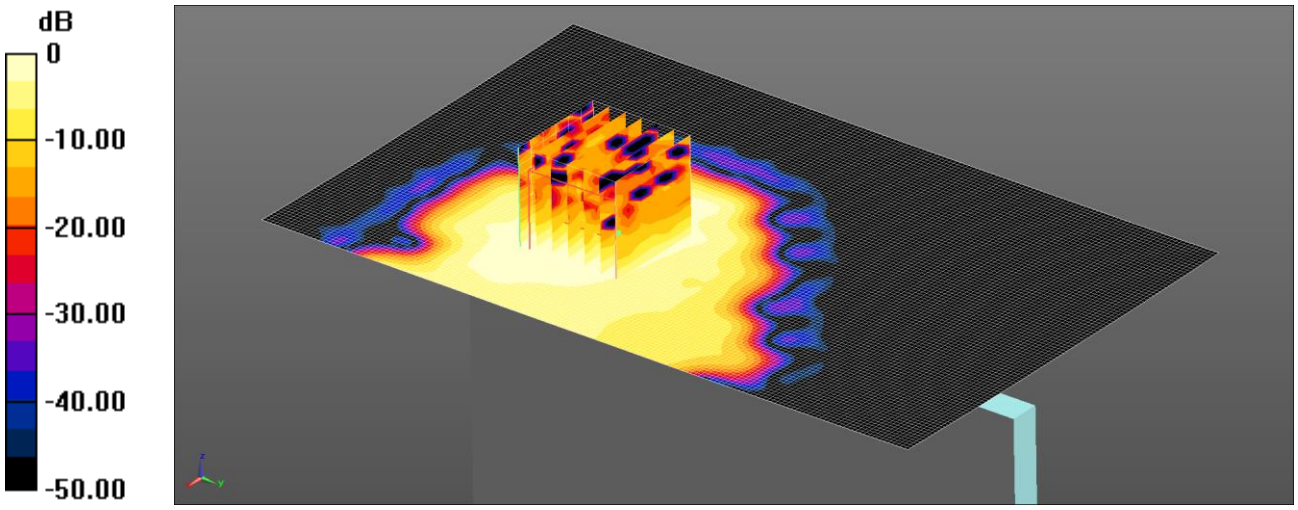
021: Bottom of EUT Facing Phantom Wi-Fi 5GHz 802.11a HT20 SISO Ant 2 CH157
Date: 06/05/15
DUT Model: A1490; Sleeve Model: Infinea TAB Mini (Linea TAB Mini); Sleeve contains FCC ID: YRWDATECSBT301



0 dB = 0.108 W/kg = -9.67 dBW/kg

Communication System: UID 0, WLAN 802.11 (0); Frequency: 5785 MHz;Duty Cycle: 1:1
Medium: 5GHz MSL Medium parameters used (interpolated): f = 5785 MHz; σ = 6.175 S/m; ε_r = 46.921; ρ = 1000 kg/m^3
Phantom section: Flat Section
DASY4 Configuration:
- Probe: EX3DV4 - SN3814; ConvF(4.06, 4.06, 4.06); Calibrated: 18/09/14;
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1435; Calibrated: 20/02/15
- Phantom: ELI v5.0 (30deg probe tilt); Type: QDOVA002AA;
- ; SEMCAD X Version 14.6.10 (7331)

Configuration/Bottom of EUT Facing Phantom/Area Scan (101x161x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.113 W/kg

Configuration/Bottom of EUT Facing Phantom/Zoom Scan (7x7x12) (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 3.184 V/m; Power Drift = 0.15 dB
Peak SAR (extrapolated) = 0.780 W/kg
SAR(1 g) = 0.098 W/kg; SAR(10 g) = 0.033 W/kg
Maximum value of SAR (measured) = 0.108 W/kg

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12.4. Calibration Certificate for E-Field Probe

This sub-section contains Cal Certificates for E-Field Probes, and is not included in the total number of pages for this report.

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

Checked by: 3/06/14

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 108

A2112

Client UL RFI UK

Certificate No: ET3-1586_May14

CALIBRATION CERTIFICATE

Object: ET3DV6 - SN:1586

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

Calibration date: May 22, 2014

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	03-Apr-14 (No. 217-01911)	Apr-15
Power sensor E4412A	MY41498087	03-Apr-14 (No. 217-01911)	Apr-15
Reference 3 dB Attenuator	SN: S5054 (3c)	03-Apr-14 (No. 217-01915)	Apr-15
Reference 20 dB Attenuator	SN: S5277 (20x)	03-Apr-14 (No. 217-01919)	Apr-15
Reference 30 dB Attenuator	SN: S5129 (30b)	03-Apr-14 (No. 217-01920)	Apr-15
Reference Probe ES3DV2	SN: 3013	30-Dec-13 (No. ES3-3013_Dec13)	Dec-14
DAE4	SN: 660	13-Dec-13 (No. DAE4-660_Dec13)	Dec-14
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-13)	In house check: Oct-14

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

Issued: May 22, 2014

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

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
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 108

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

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).

Probe ET3DV6

SN:1586

Manufactured: May 7, 2001
Calibrated: May 22, 2014

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

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1586

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	1.87	1.89	1.93	± 10.1 %
DCP (mV)[B]	99.5	99.5	100.1	

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	228.9	±3.5 %
		Y	0.0	0.0	1.0		236.5	
		Z	0.0	0.0	1.0		229.7	

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 NormX,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.

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1586

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)	Unct. (k=2)
750	41.9	0.89	6.82	6.82	6.82	0.30	3.00	± 12.0 %
835	41.5	0.90	6.54	6.54	6.54	0.32	3.00	± 12.0 %
900	41.5	0.97	6.34	6.34	6.34	0.32	3.00	± 12.0 %
1450	40.5	1.20	5.46	5.46	5.46	0.47	2.80	± 12.0 %
1750	40.1	1.37	5.39	5.39	5.39	0.76	2.16	± 12.0 %
1900	40.0	1.40	5.15	5.15	5.15	0.80	2.12	± 12.0 %
2100	39.8	1.49	5.19	5.19	5.19	0.80	2.02	± 12.0 %
2300	39.5	1.67	4.80	4.80	4.80	0.80	1.91	± 12.0 %
2450	39.2	1.80	4.53	4.53	4.53	0.70	1.95	± 12.0 %

[C] Frequency validity 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.
[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.

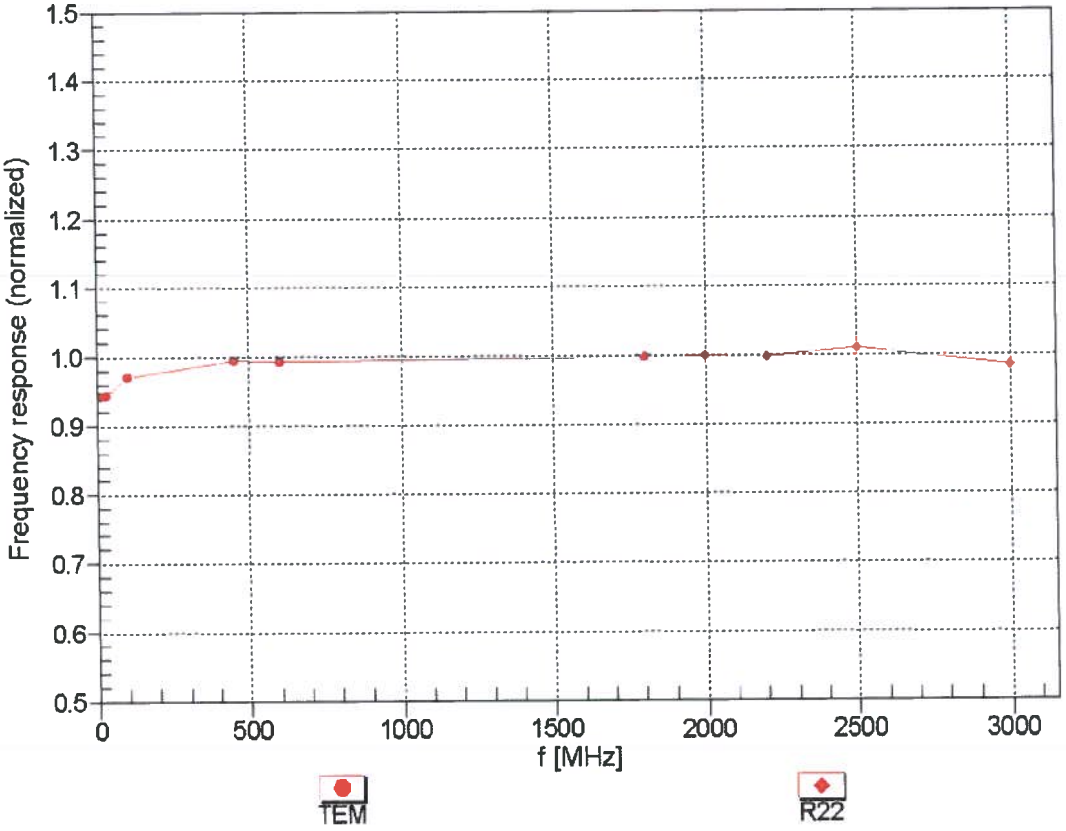
DASY/EASY - Parameters of Probe: ET3DV6 - SN:1586

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)	Unct. (k=2)
750	55.5	0.96	6.32	6.32	6.32	0.35	3.00	± 12.0 %
835	55.2	0.97	6.22	6.22	6.22	0.38	3.00	± 12.0 %
900	55.0	1.05	6.09	6.09	6.09	0.40	2.97	± 12.0 %
1450	54.0	1.30	5.12	5.12	5.12	0.48	2.88	± 12.0 %
1750	53.4	1.49	4.94	4.94	4.94	0.80	2.49	± 12.0 %
1900	53.3	1.52	4.69	4.69	4.69	0.80	2.32	± 12.0 %
2100	53.2	1.62	4.78	4.78	4.78	0.80	2.23	± 12.0 %
2300	52.9	1.81	4.35	4.35	4.35	0.80	1.73	± 12.0 %
2450	52.7	1.95	4.12	4.12	4.12	0.45	2.05	± 12.0 %

[C] Frequency validity 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.
[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.

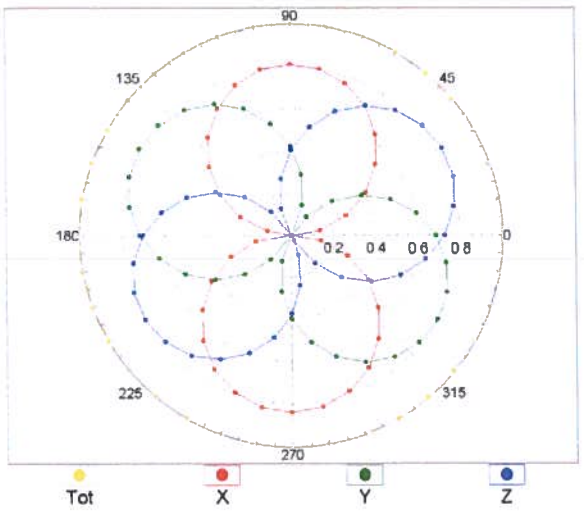
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



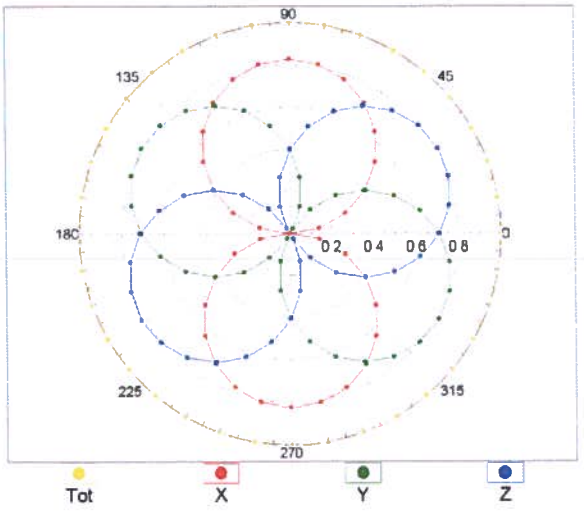
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

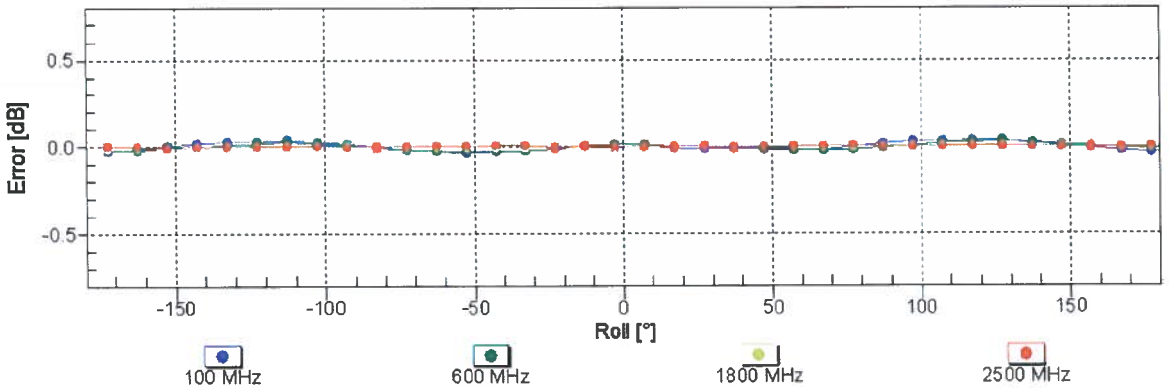
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



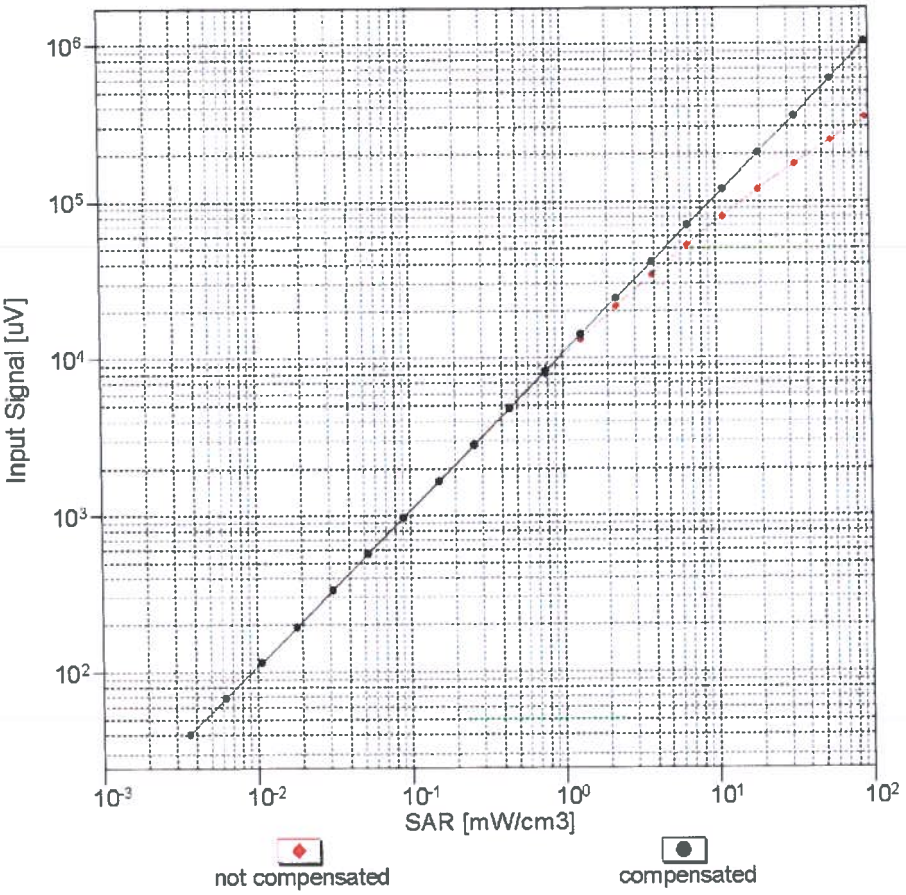
f=1800 MHz,R22

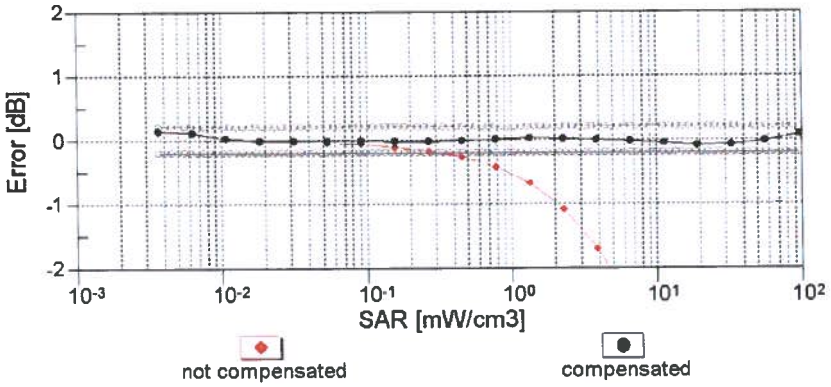




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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

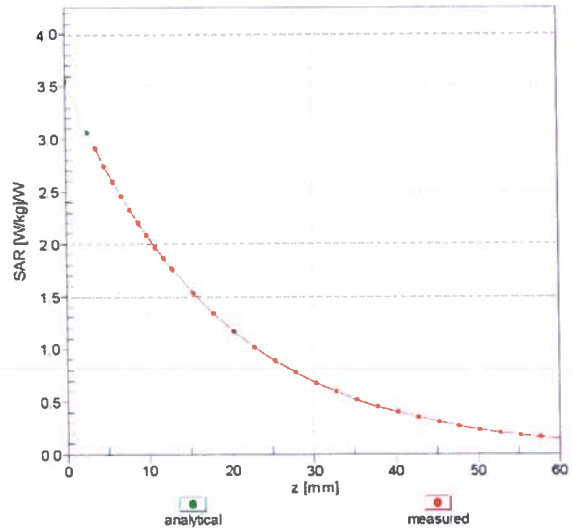




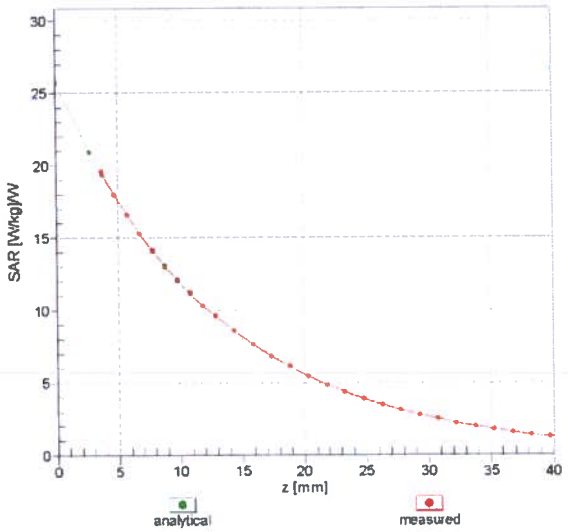
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 900 MHz,WGLS R9 (H_convF)

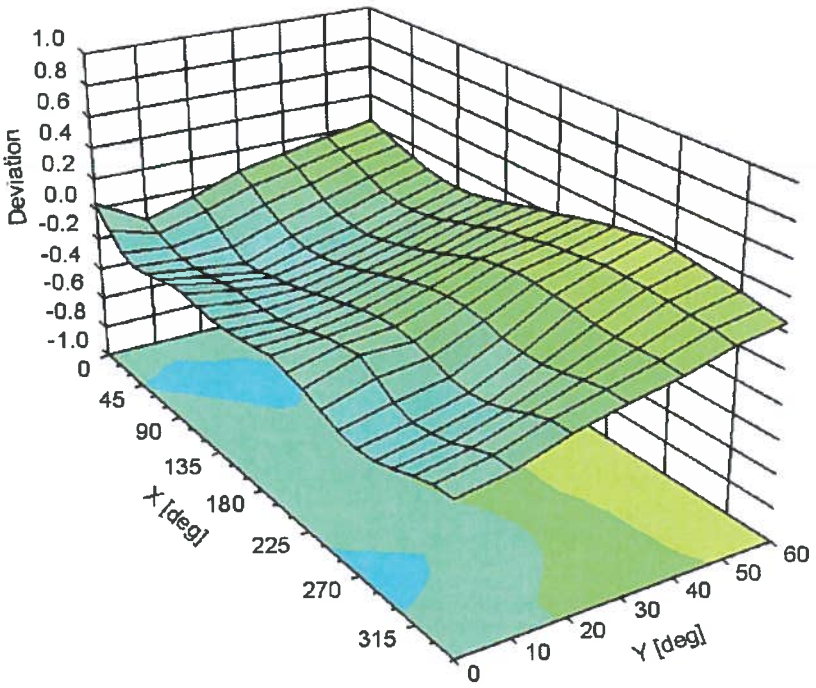


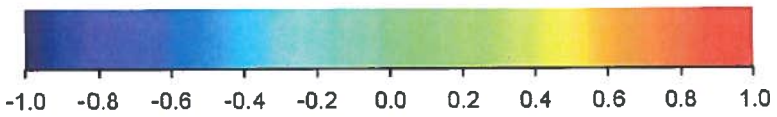
f = 1750 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





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

DASY/EASY - Parameters of Probe: ET3DV6 - SN:1586

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	-52.7
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	6.8 mm
Probe Tip to Sensor X Calibration Point	2.7 mm
Probe Tip to Sensor Y Calibration Point	2.7 mm
Probe Tip to Sensor Z Calibration Point	2.7 mm
Recommended Measurement Distance from Surface	4 mm

A2544 Checked M. Nolan 25/03/2015

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

S Schweizerischer Kalibrierdienst
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Swiss Calibration Service

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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 UL RFI UK

Certificate No: EX3-3994_Mar15

CALIBRATION CERTIFICATE

Object: EX3DV4 - SN:3994

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: March 17, 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	03-Apr-14 (No. 217-01911)	Apr-15
Power sensor E4412A	MY41498087	03-Apr-14 (No. 217-01911)	Apr-15
Reference 3 dB Attenuator	SN: S5054 (3c)	03-Apr-14 (No. 217-01915)	Apr-15
Reference 20 dB Attenuator	SN: S5277 (20x)	03-Apr-14 (No. 217-01919)	Apr-15
Reference 30 dB Attenuator	SN: S5129 (30b)	03-Apr-14 (No. 217-01920)	Apr-15
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-14)	In house check: Oct-15

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

Issued: March 18, 2015

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

Calibration Laboratory of
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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

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).

Probe EX3DV4

SN:3994

Manufactured: January 21, 2014
Calibrated: March 17, 2015

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

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3994

Basic Calibration Parameters

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu V/(V/m)^2$)[A]	0.49	0.50	0.43	± 10.1 %
DCP (mV)[B]	101.4	102.1	91.9	

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	143.7	±2.7 %
		Y	0.0	0.0	1.0		150.6	
		Z	0.0	0.0	1.0		149.3	

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 NormX,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.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3994

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)	Unct. (k=2)
750	41.9	0.89	10.60	10.60	10.60	0.36	1.04	± 12.0 %
835	41.5	0.90	10.01	10.01	10.01	0.32	1.08	± 12.0 %
900	41.5	0.97	9.60	9.60	9.60	0.25	1.28	± 12.0 %
1450	40.5	1.20	8.85	8.85	8.85	0.20	1.20	± 12.0 %
1750	40.1	1.37	8.34	8.34	8.34	0.42	0.80	± 12.0 %
1900	40.0	1.40	8.10	8.10	8.10	0.37	0.80	± 12.0 %
2100	39.8	1.49	8.26	8.26	8.26	0.37	0.80	± 12.0 %
2300	39.5	1.67	7.71	7.71	7.71	0.40	0.80	± 12.0 %
2450	39.2	1.80	7.42	7.42	7.42	0.39	0.83	± 12.0 %
2600	39.0	1.96	7.22	7.22	7.22	0.37	0.88	± 12.0 %
5250	35.9	4.71	5.30	5.30	5.30	0.35	1.80	± 13.1 %
5600	35.5	5.07	4.77	4.77	4.77	0.40	1.80	± 13.1 %
5750	35.4	5.22	4.73	4.73	4.73	0.45	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 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.

DASY/EASY - Parameters of Probe: EX3DV4 - SN:3994

Calibration Parameter Determined in Body Tissue Simulating Media

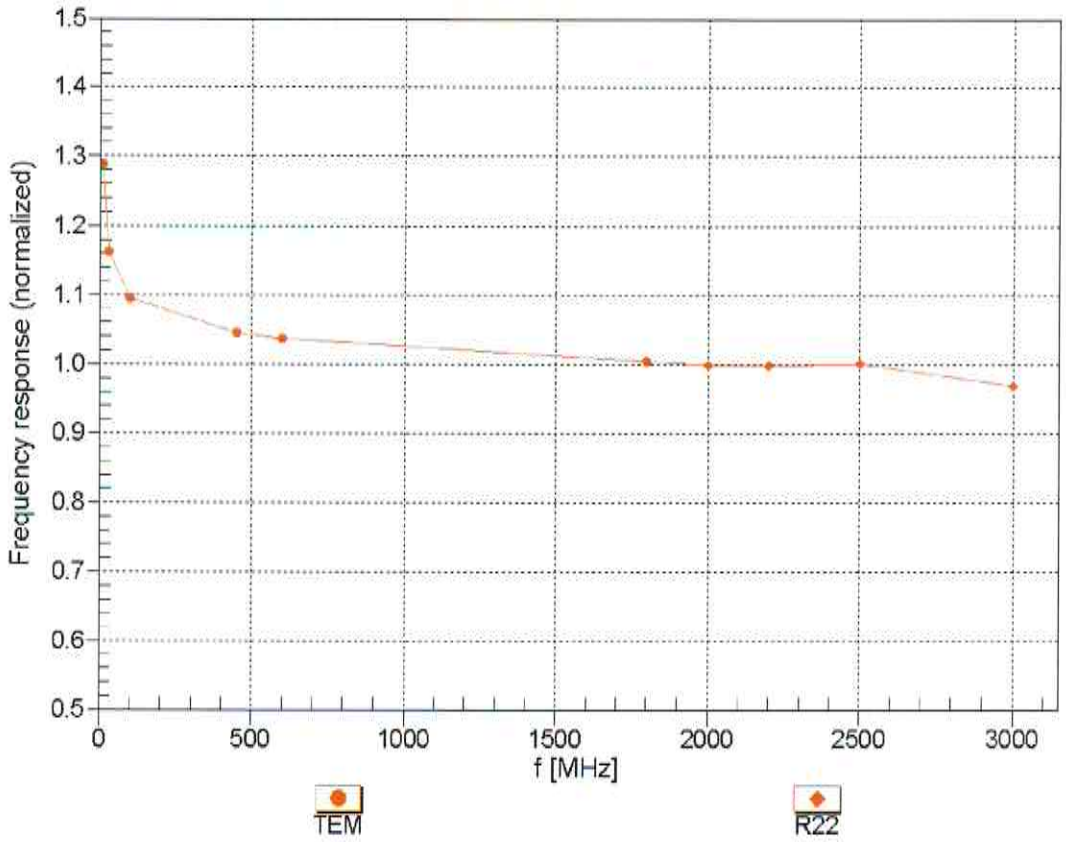
f (MHz) [C]	Relative Permittivity [F]	Conductivity (S/m) [F]	ConvF X	ConvF Y	ConvF Z	Alpha [G]	Depth [G] (mm)	Unct. (k=2)
750	55.5	0.96	9.82	9.82	9.82	0.25	1.21	± 12.0 %
835	55.2	0.97	9.72	9.72	9.72	0.34	0.98	± 12.0 %
900	55.0	1.05	9.61	9.61	9.61	0.50	0.80	± 12.0 %
1450	54.0	1.30	8.17	8.17	8.17	0.23	1.26	± 12.0 %
1750	53.4	1.49	8.03	8.03	8.03	0.34	0.97	± 12.0 %
1900	53.3	1.52	7.63	7.63	7.63	0.42	0.83	± 12.0 %
2100	53.2	1.62	7.83	7.83	7.83	0.48	0.80	± 12.0 %
2300	52.9	1.81	7.29	7.29	7.29	0.46	0.81	± 12.0 %
2450	52.7	1.95	7.19	7.19	7.19	0.30	0.80	± 12.0 %
2600	52.5	2.16	6.88	6.88	6.88	0.22	0.80	± 12.0 %
5250	48.9	5.36	4.56	4.56	4.56	0.50	1.90	± 13.1 %
5600	48.5	5.77	3.94	3.94	3.94	0.55	1.90	± 13.1 %
5750	48.3	5.94	4.26	4.26	4.26	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.

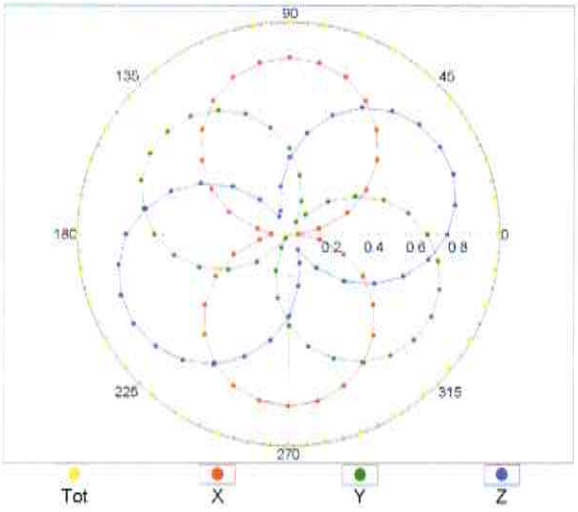
Frequency Response of E-Field
(TEM-Cell:ifi110 EXX, Waveguide: R22)



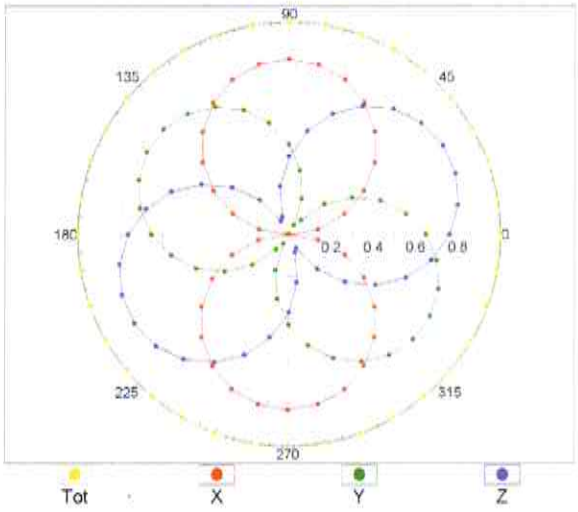
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

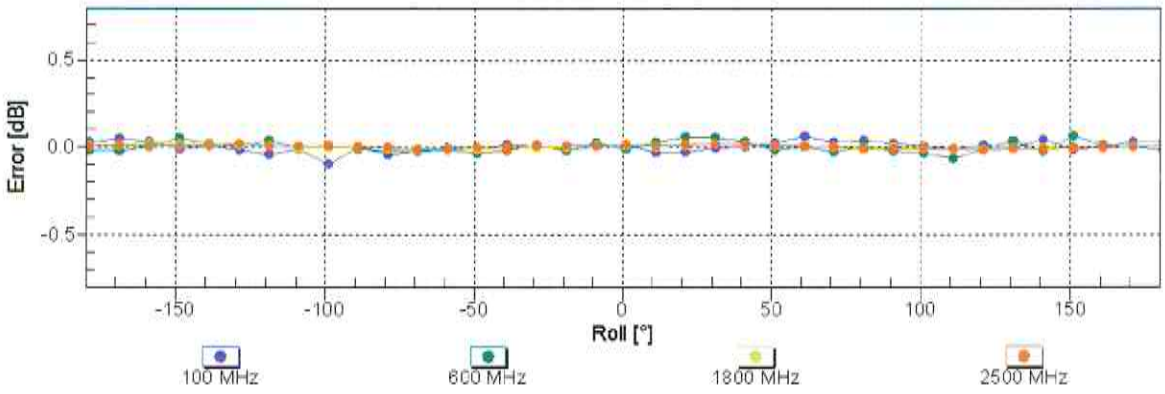
Receiving Pattern (ϕ), ϑ = 0°

f=600 MHz,TEM



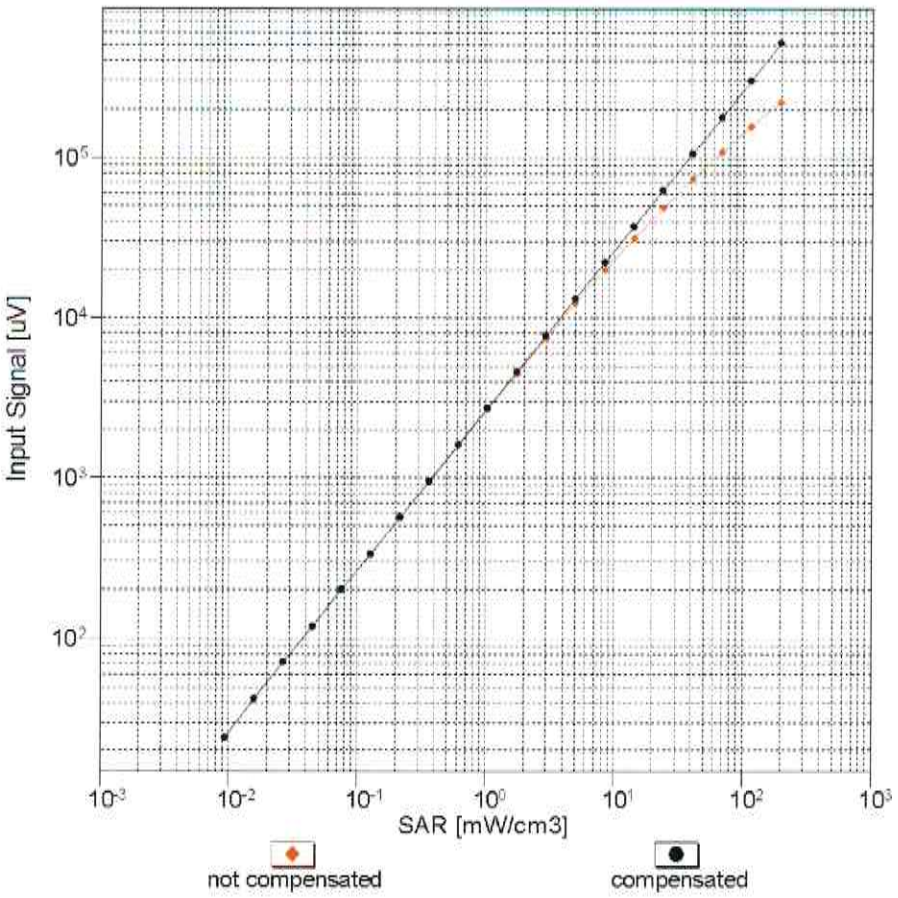
f=1800 MHz,R22

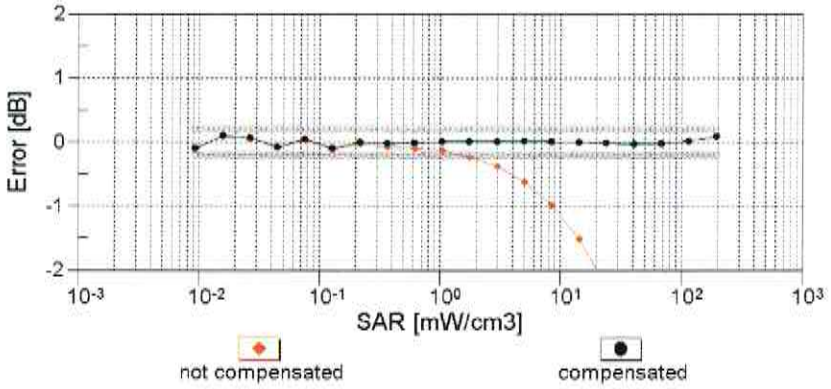




Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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

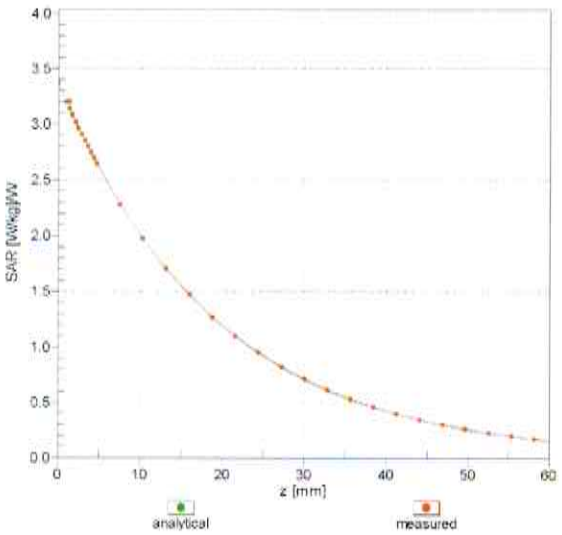




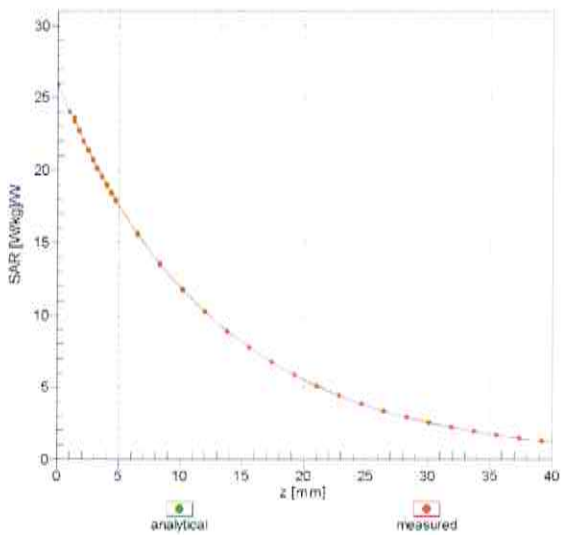
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

f = 900 MHz,WGLS R9 (H_convF)

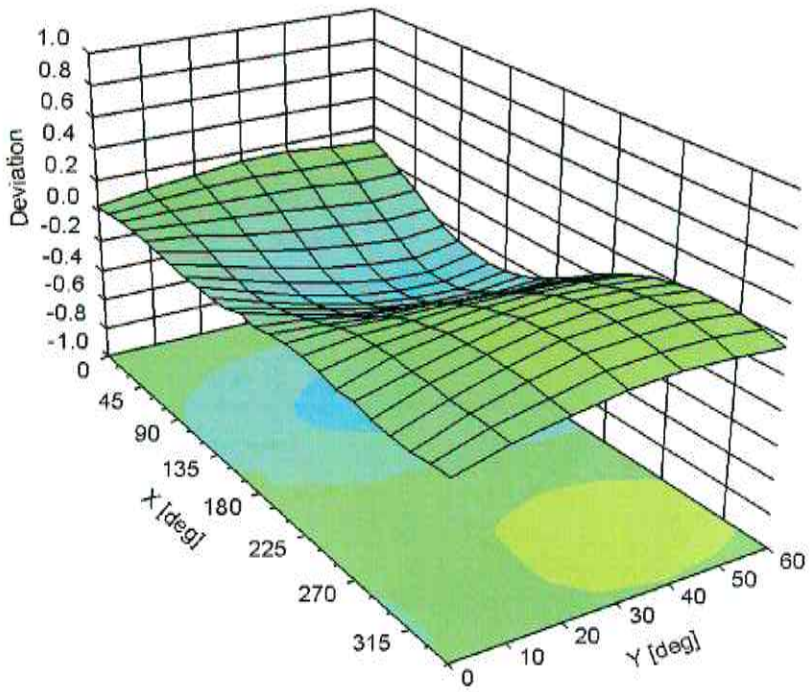


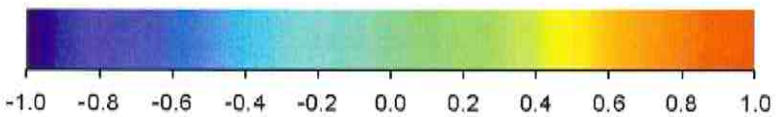
f = 1750 MHz,WGLS R22 (H_convF)



Deviation from Isotropy in Liquid

Error (ϕ, ϑ), f = 900 MHz





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