Appendix A. System Check Plots

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System Validation-Probe 3736

Date: 2017/12/18

Test Laboratory: HUAWEI SAR/HAC Lab

SystemPerformanceCheck-D2450-EX-Body

DUT: Dipole 2450 MHz D2450V2; Type: D2450V2; Serial: D2450V2 -SN:978

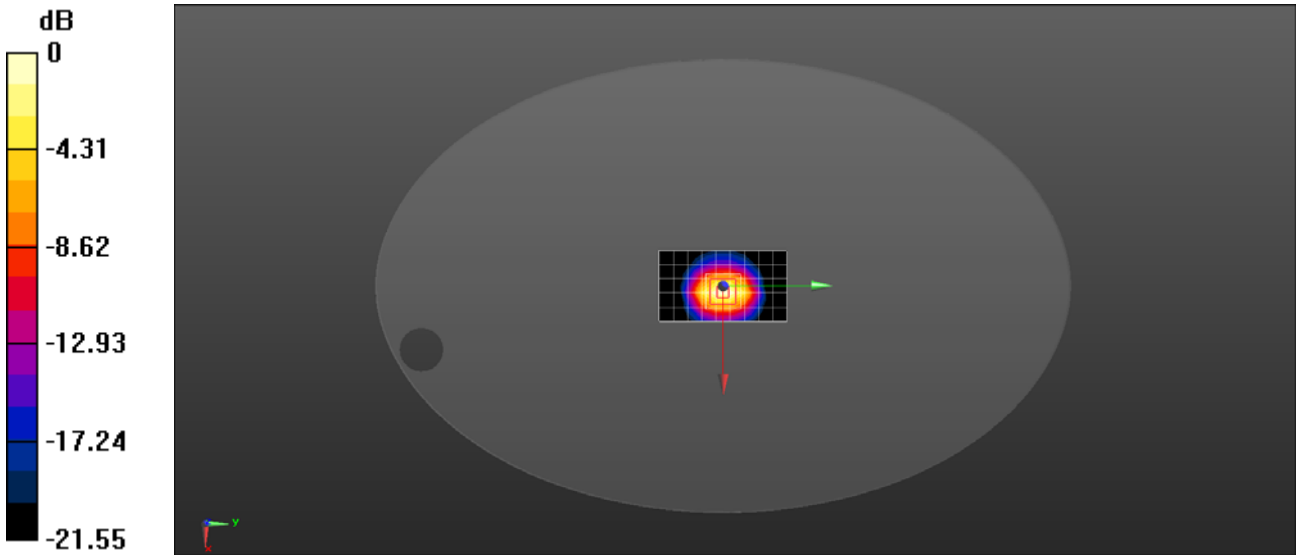
Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium parameters used: f = 2450 MHz; σ = 2.042 S/m; ε_r = 52.015; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3736; ConvF(7.21, 7.21, 7.21); Calibrated: 2017/4/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 1.0, 31.0
- Electronics: DAE4 Sn851; Calibrated: 2017/7/18
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1110
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7373)

Configuration/d=10mm, Pin=250mW/Area Scan (6x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 20.5 W/kg

Configuration/d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 78.38 V/m; Power Drift = -0.11 dB
Peak SAR (extrapolated) = 26.8 W/kg
SAR(1 g) = 13.2 W/kg; SAR(10 g) = 6.13 W/kg
Maximum value of SAR (measured) = 22.0 W/kg



0 dB = 22.0 W/kg = 13.42 dBW/kg

Date: 2017/12/18

Test Laboratory: HUAWEI SAR/HAC Lab

SystemPerformanceCheck-D5250-EX-Body

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1155

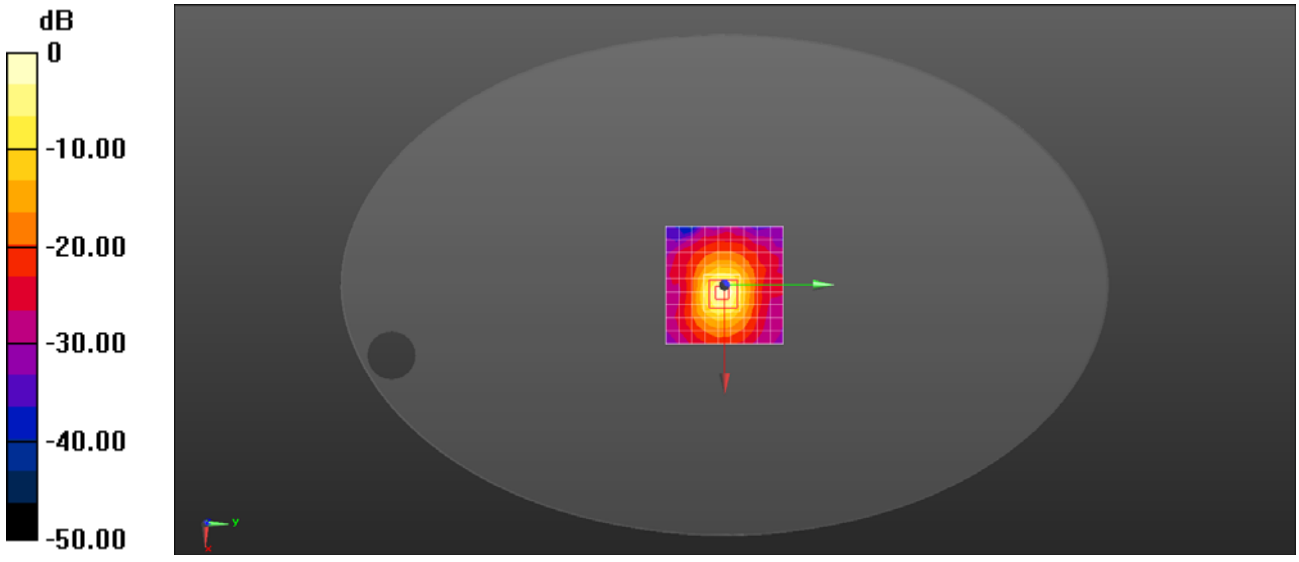
Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; σ = 5.378 S/m; ε_r = 46.904; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3736; ConvF(4.27, 4.27, 4.27); Calibrated: 2017/4/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 1.0, 25.0
- Electronics: DAE4 Sn851; Calibrated: 2017/7/18
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1110
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7373)

System Performance Check with D5GHzV2 Dipole (graded grid)/d=10mm, Pin=100mW, f=5250 MHz/Area Scan (10x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 16.5 W/kg

System Performance Check with D5GHzV2 Dipole (graded grid)/d=10mm, Pin=100mW, f=5250 MHz/Zoom Scan (4x4x1.4mm, graded), dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 63.24 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 34.1 W/kg
SAR(1 g) = 7.47 W/kg; SAR(10 g) = 2.1 W/kg
Maximum value of SAR (measured) = 18.3 W/kg



0 dB = 18.3 W/kg = 12.61 dBW/kg

Date: 2017/12/18

Test Laboratory: HUAWEI SAR/HAC Lab

SystemPerformanceCheck-D5600-EX-Body

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1155

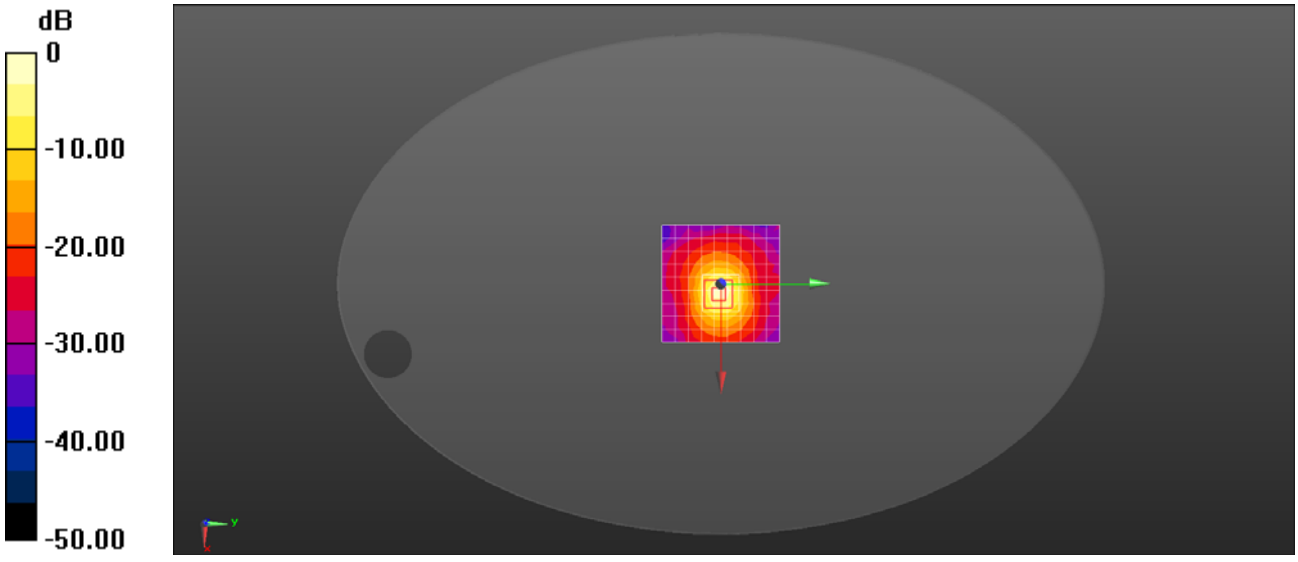
Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5600 MHz; σ = 5.867 S/m; ε_r = 46.235; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3736; ConvF(3.78, 3.78, 3.78); Calibrated: 2017/4/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 1.0, 25.0
- Electronics: DAE4 Sn851; Calibrated: 2017/7/18
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1110
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7373)

System Performance Check with D5GHzV2 Dipole (graded grid)/d=10mm, Pin=100mW, f=5250 MHz/Area Scan (10x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 14.2 W/kg

System Performance Check with D5GHzV2 Dipole (graded grid)/d=10mm, Pin=100mW, f=5250 MHz/Zoom Scan (4x4x1.4mm, graded), dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 58.17 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 34.8 W/kg
SAR(1 g) = 8.08 W/kg; SAR(10 g) = 2.3 W/kg
Maximum value of SAR (measured) = 20.4 W/kg



0 dB = 20.4 W/kg = 13.09 dBW/kg

Date: 2017/12/19

Test Laboratory: HUAWEI SAR/HAC Lab

SystemPerformanceCheck-D5750-EX-Body

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1155

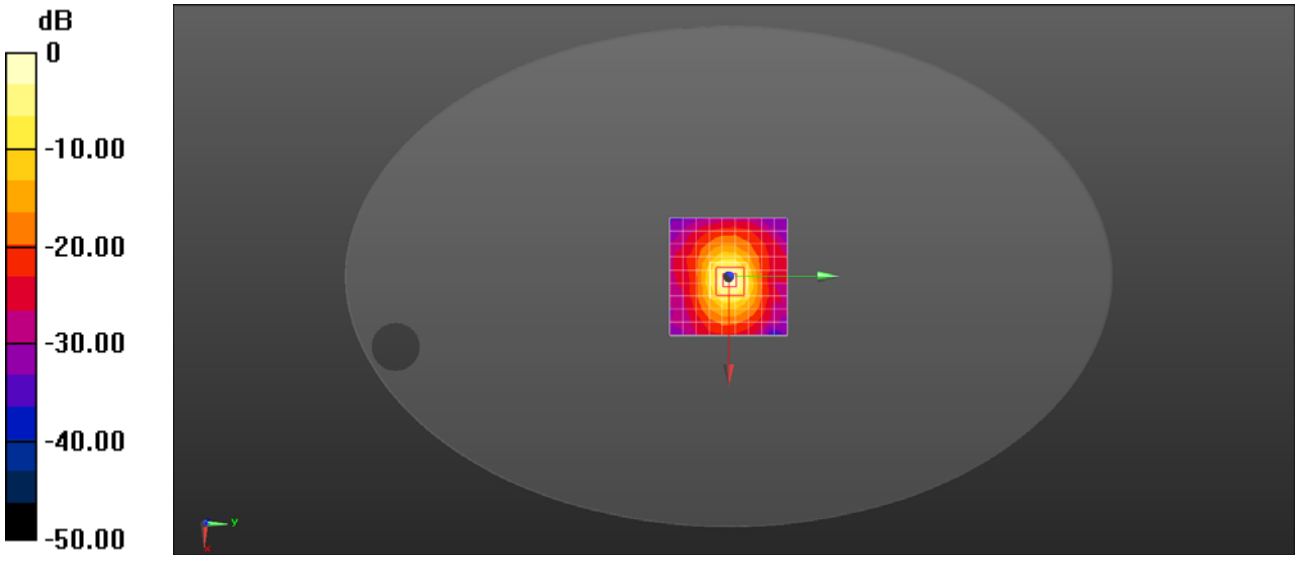
Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5750 MHz; σ = 6.09 S/m; ε_r = 46.053; ρ = 1000 kg/m^3
Phantom section: Flat Section

DASY Configuration:

- Probe: EX3DV4 - SN3736; ConvF(4.02, 4.02, 4.02); Calibrated: 2017/4/27;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection), z = 1.0, 25.0
- Electronics: DAE4 Sn851; Calibrated: 2017/7/18
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:1110
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7373)

System Performance Check with D5GHzV2 Dipole (graded grid)/d=10mm, Pin=100mW, f=5250 MHz/Area Scan (10x10x1): Measurement grid: dx=10mm, dy=10mm
Maximum value of SAR (measured) = 17.0 W/kg

System Performance Check with D5GHzV2 Dipole (graded grid)/d=10mm, Pin=100mW, f=5250 MHz/Zoom Scan (4x4x1.4mm, graded), dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 65.74 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 34.1 W/kg
SAR(1 g) = 7.98 W/kg; SAR(10 g) = 2.3 W/kg
Maximum value of SAR (measured) = 19.2 W/kg



0 dB = 19.2 W/kg = 12.84 dBW/kg

System Validation

Per FCC KDB 865664 D02v01, SAR system verification is required to confirm measurement accuracy. The SAR systems (including SAR probes, system components and software versions) used for this device were validated against its performance specifications prior to the SAR measurements. Reference dipoles are used with the required tissue-equivalent media for system validation, according to the procedures outlined in FCC KDB 865664 D01 and IEEE 1528-2013.Since SAR probe calibrations are frequency dependent, each probe calibration point must be validated at a frequency within the valid frequency range of the probe calibration point, using the system that normally operates with the probe for routine SAR measurements and according to the required tissue-equivalent media.

a tabulated summary of the system validation status, measurement frequencies, SAR probes, calibrated signal type(s) and tissue dielectric parameters has been included.

Table of SAR System validation summary:

FREQ.	DATE	PROBE SN	PROBE TYPE	PROBE CAL POINT		PERM	COND	CW VALIDATION			MOD.VALIDATION		
[Mhz]						(εr)	(σ)	SENSI-TIVITY	PROBE LINARITY	PROBE ISOTROPY	MOD. TYPE	DUTY. FACTORE	PAR
835	2017/12/7	3736	EX3DV4	835	Head	41.88	0.897	PASS	PASS	PASS	GMSK	PASS	N/A
1750	2017/12/7	3736	EX3DV4	1750	Head	39.92	1.382	PASS	PASS	PASS	NA	NA	N/A
1900	2017/12/7	3736	EX3DV4	1900	Head	39.64	1.446	PASS	PASS	PASS	GMSK	PASS	N/A
2450	2017/12/7	3736	EX3DV4	2450	Head	38.85	1.859	PASS	PASS	PASS	OFDM	PASS	PASS
2600	2017/12/7	3736	EX3DV4	2600	Head	38.56	1.976	PASS	PASS	PASS	TDD	PASS	N/A
5250	2017/12/7	3736	EX3DV4	5250	Head	24.52	4.528	PASS	PASS	PASS	OFDM	N/A	PASS
5600	2017/12/7	3736	EX3DV4	5600	Head	33.89	4.905	PASS	PASS	PASS	OFDM	N/A	PASS
5750	2017/12/7	3736	EX3DV4	5750	Head	33.63	5.077	PASS	PASS	PASS	OFDM	N/A	PASS
835	2017/12/7	3736	EX3DV4	835	Body	56.40	0.971	PASS	PASS	PASS	GMSK	PASS	N/A
1750	2017/12/7	3736	EX3DV4	1750	Body	54.73	1.476	PASS	PASS	PASS	N/A	N/A	N/A
1900	2017/12/7	3736	EX3DV4	1900	Body	54.49	1.568	PASS	PASS	PASS	GMSK	PASS	N/A
2450	2017/12/7	3736	EX3DV4	2450	Body	53.72	2.061	PASS	PASS	PASS	OFDM	PASS	PASS
2600	2017/12/7	3736	EX3DV4	2600	Body	53.42	2.205	PASS	PASS	PASS	TDD	PASS	N/A
5250	2017/12/7	3736	EX3DV4	5250	Body	48.26	5.490	PASS	PASS	PASS	OFDM	N/A	PASS
5600	2017/12/7	3736	EX3DV4	5600	Body	47.58	5.993	PASS	PASS	PASS	OFDM	N/A	PASS
5750	2017/12/7	3736	EX3DV4	5750	Body	47.31	6.226	PASS	PASS	PASS	OFDM	N/A	PASS
835	2017/12/7	3736	EX3DV4	835	Head	41.88	0.897	PASS	PASS	PASS	GMSK	PASS	N/A
1750	2017/12/7	3736	EX3DV4	1750	Head	39.92	1.382	PASS	PASS	PASS	NA	NA	N/A
1900	2017/12/7	3736	EX3DV4	1900	Head	39.64	1.446	PASS	PASS	PASS	GMSK	PASS	N/A

NOTE: While the probes have been calibrated for both CW and modulated signals, all measurements were performed using communication systems calibrated for CW signals only. Modulations in the table above represent test configurations for which the measurement system has been validated per FCC KDB Publication

865664D01v01 for scenarios when CW probe calibrations are used with other signal types. SAR systems were validated for modulated signals with a periodic duty cycle, such as GMSK, or with a high peak to average ratio (>5dB), such as OFDM according to KDB 865664.