



Appendix A

Detailed System Check Results

System Performance Check 2450 MHz Head
System Performance Check 5750 MHz Head

Test Laboratory: SGS-SAR Lab

System Performance Check 2450MHz Head

DUT: D2450V2; Type: D2450V2; Serial: 733

Communication System: UID 0, CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: HSL2450; Medium parameters used: $f = 2450$ MHz; $\sigma = 1.741$ S/m; $\epsilon_r = 38.95$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(7.58, 7.58, 7.58); Calibrated: 2019-02-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn414; Calibrated: 2018-12-03
- Phantom: SAM 7; Type: SAM; Serial: 1027
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Body/d=10mm, Pin=250mW/Area Scan (9x10x1): Measurement grid: dx=12mm, dy=12mm
Maximum value of SAR (measured) = 20.5 W/kg

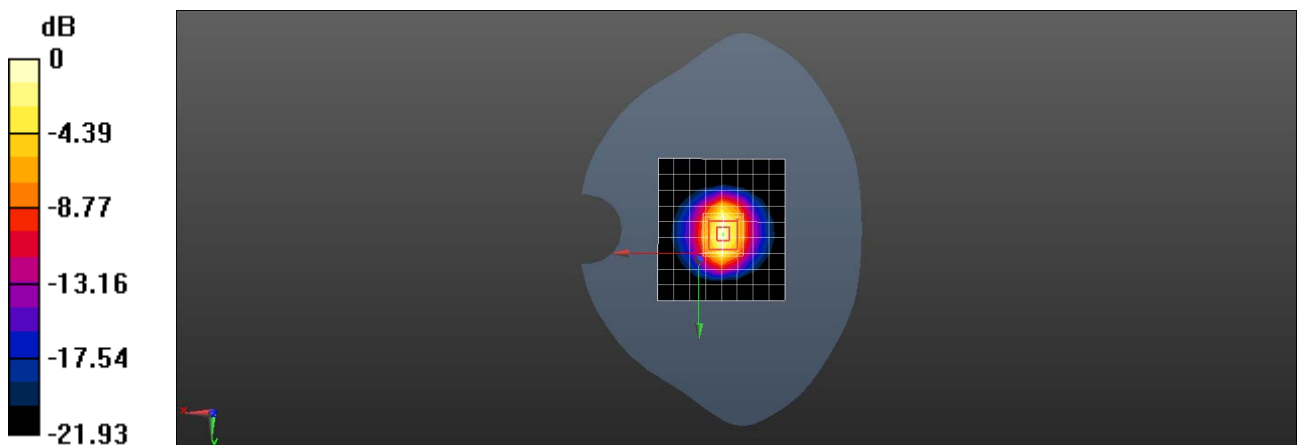
Body/d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 90.88 V/m; Power Drift = -0.02 dB

Peak SAR (extrapolated) = 26.0 W/kg

SAR(1 g) = 12.7 W/kg; SAR(10 g) = 5.88 W/kg

Maximum value of SAR (measured) = 21.2 W/kg



Test Laboratory: SGS-SAR Lab

System Performance Check 5.75GHz Head

DUT: D5GHzV2; Type: D5GHzV2; Serial: 1165

Communication System: UID 0, CW (0); Frequency: 5750 MHz; Duty Cycle: 1:1

Medium: HSL5G; Medium parameters used: $f = 5750$ MHz; $\sigma = 5.229$ S/m; $\epsilon_r = 34.621$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY 5 Configuration:

- Probe: EX3DV4 - SN3962; ConvF(4.9, 4.9, 4.9); Calibrated: 2019-02-25;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn896; Calibrated: 2019-09-18
- Phantom: SAM 3; Type: SAM; Serial: 1912
- DASY52 52.8.8(1222); SEMCAD X 14.6.10(7331)

Body/d=10mm, Pin=100mW, f=5750 MHz/Area Scan (8x8x1): Measurement grid:

dx=10mm, dy=10mm

Maximum value of SAR (measured) = 15.2 W/kg

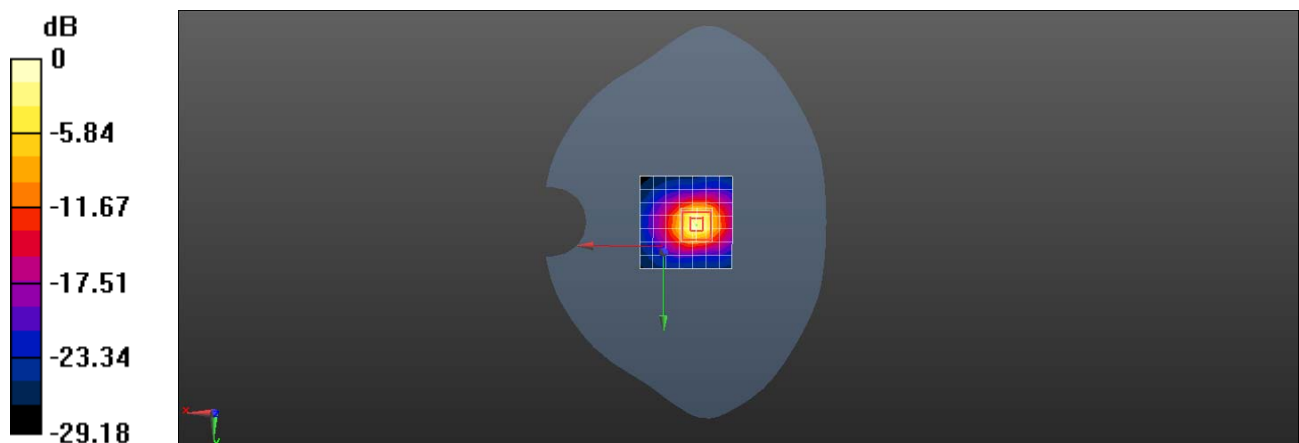
Body/d=10mm, Pin=100mW, f=5750 MHz/Zoom Scan (7x7x17)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 45.88 V/m; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 34.5 W/kg

SAR(1 g) = 7.76 W/kg; SAR(10 g) = 2.21 W/kg

Maximum value of SAR (measured) = 20.6 W/kg



0 dB = 20.6 W/kg = 13.14 dBW/kg



System Validation

Per FCC KDB 865664 D02, 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:

Frequency (MHz)	Date	Probe SN	Probe Type	Probe CAL Point	PERM (ϵ_r)	COND (σ)	CW Validation			MOD.Validation		
							Sensitivity	Probe Linearity	Probe Isotropy	Modulation	Duty. Factor	PAR
750	2019/2/29	3962	EX3DV4	750 Head	43.189	0.908	PASS	PASS	PASS	N/A	N/A	N/A
835	2019/2/29	3962	EX3DV4	835 Head	42.726	0.919	PASS	PASS	PASS	GMSK	PASS	N/A
1750	2019/2/29	3962	EX3DV4	1750 Head	41.867	1.378	PASS	PASS	PASS	N/A	N/A	N/A
1900	2019/2/29	3962	EX3DV4	1900 Head	41.844	1.383	PASS	PASS	PASS	GMSK	PASS	N/A
2000	2019/2/29	3962	EX3DV4	2000 Head	41.205	1.458	PASS	PASS	PASS	N/A	N/A	N/A
2300	2019/2/29	3962	EX3DV4	2300 Head	40.428	1.635	PASS	PASS	PASS	N/A	N/A	N/A
2450	2019/2/29	3962	EX3DV4	2450 Head	39.990	1.806	PASS	PASS	PASS	OFDM	PASS	N/A
2600	2019/2/29	3962	EX3DV4	2600 Head	39.480	1.980	PASS	PASS	PASS	TDD	PASS	N/A
5250	2019/2/29	3962	EX3DV4	5250 Head	36.070	4.747	PASS	PASS	PASS	OFDM	PASS	N/A
5600	2019/2/29	3962	EX3DV4	5600 Head	35.130	5.127	PASS	PASS	PASS	OFDM	PASS	N/A
5750	2019/2/29	3962	EX3DV4	5750 Head	34.790	5.319	PASS	PASS	PASS	OFDM	PASS	N/A
750	2019/2/29	3962	EX3DV4	750 Body	56.876	0.933	PASS	PASS	PASS	N/A	N/A	N/A
835	2019/2/29	3962	EX3DV4	835 Body	55.460	0.976	PASS	PASS	PASS	GMSK	PASS	N/A
1750	2019/2/29	3962	EX3DV4	1750 Body	53.570	1.476	PASS	PASS	PASS	N/A	N/A	N/A
1900	2019/2/29	3962	EX3DV4	1900 Body	53.090	1.478	PASS	PASS	PASS	GMSK	PASS	N/A
2300	2019/2/29	3962	EX3DV4	2300 Body	51.260	1.784	PASS	PASS	PASS	N/A	N/A	N/A
2450	2019/2/29	3962	EX3DV4	2450 Body	52.770	1.960	PASS	PASS	PASS	OFDM	PASS	N/A
2600	2019/2/29	3962	EX3DV4	2600 Body	51.423	2.177	PASS	PASS	PASS	TDD	PASS	N/A
5250	2019/2/29	3962	EX3DV4	5250 Body	48.430	5.372	PASS	PASS	PASS	OFDM	PASS	N/A
5600	2019/2/29	3962	EX3DV4	5600 Body	47.510	5.783	PASS	PASS	PASS	OFDM	PASS	N/A
5750	2019/2/29	3962	EX3DV4	5750 Body	47.170	5.949	PASS	PASS	PASS	OFDM	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 865664D01 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.