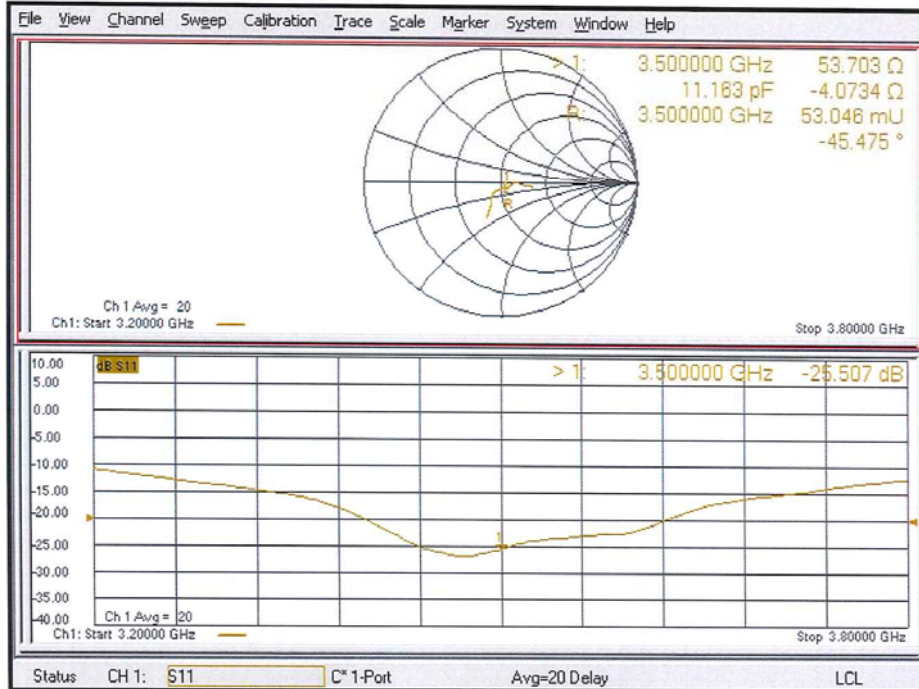


Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 14.12.2022

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 3500 MHz; Type: D3500V2; Serial: D3500V2 - SN:1052

Communication System: UID 0 - CW; Frequency: 3500 MHz

Medium parameters used: $f = 3500$ MHz; $\sigma = 3.33$ S/m; $\epsilon_r = 51$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(7.46, 7.46, 7.46) @ 3500 MHz; Calibrated: 08.03.2022
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 31.08.2022
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.4(1535); SEMCAD X 14.6.14(7501)

Dipole Calibration for Body Tissue/Pin=100 mW, d=10mm, f=3500MHz/Zoom Scan , dist=1.4mm (8x8x8)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 63.71 V/m; Power Drift = -0.09 dB

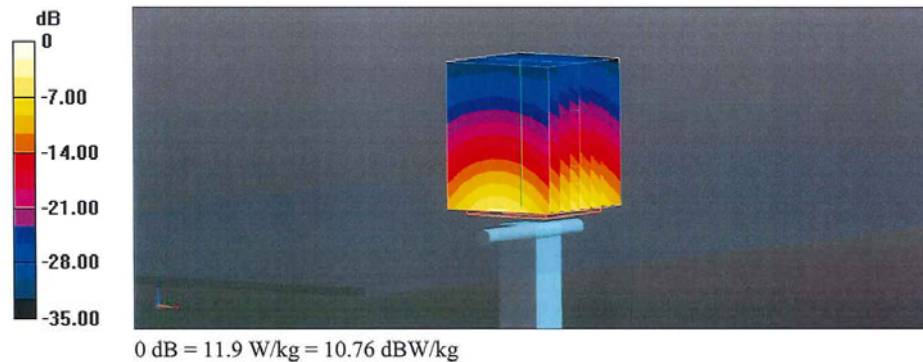
Peak SAR (extrapolated) = 16.9 W/kg

SAR(1 g) = 6.46 W/kg; SAR(10 g) = 2.42 W/kg

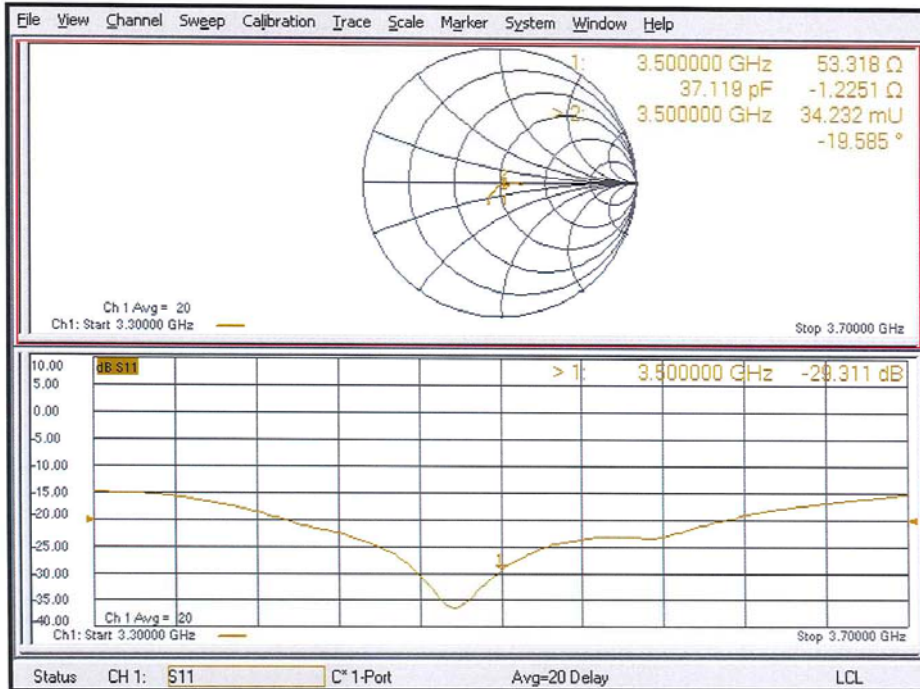
Smallest distance from peaks to all points 3 dB below = 8 mm

Ratio of SAR at M2 to SAR at M1 = 76.1%

Maximum value of SAR (measured) = 11.9 W/kg



Impedance Measurement Plot for Body TSL



Calibration for Impedance and Return-loss

Equipment	Dipole Antenna	Model	D3500V2
Manufacture	Schmid & Partner Engineering AG	Serial	1052
Tested by	Hisayoshi Sato		

1. Test environment

Date	December 22, 2023		
Ambient Temperature	23.0 deg.C	Relative humidity	40 %RH

2. Equipment used

LIMS ID	Description	Manufacturer	Model	Serial	Last Cal Date	Interval
88581	Thermo-Hygrometer	CUSTOM. Inc	CTH-201	-	2023/7/18	12
142056	2mm Oval Flat Phantom	Schmid & Partner Engineering AG	QDOVA001BB	1045	2023/5/10	12
176484	Head Simulating Liquid	Schmid & Partner Engineering AG	HBBL600-10000V6	SL AAH U16 BC	-	-
150815	Network Analyzer	Keysight Technologies Inc	E5071C	MY46523746	2023/08/11	12
141991	2.4mm Calibration Kit	Keysight Technologies Inc	85056A	MY44300225	2023/8/29	12
142060	SAM Phantom	Schmid & Partner Engineering AG	QD000F40CB	1333	2023/5/10	12
176483	Body Simulating Liquid	Schmid & Partner Engineering AG	MBBL600-6000	SL AAM U16 BC	-	-

3. Test Result

Impedance,Transformed to feed point	cal day	Head (real part) [Ω]	Head (img part) [jΩ]	Deviation (real part) [Ω]	Deviation (img part) [jΩ]	Tolerance	Result
Calibration (SPEAG)	2022/12/14	53.70	-4.07	-	-	-	-
Calibration(ULJ)	2023/12/22	54.29	-1.96	0.58	2.11	+/- 5 Ω +/- 5 jΩ	Complied

Return loss	cal day	Head [dB]	Deviation [%]	Deviation [dB]	Tolerance [%]	Tolerance [± dB]	Result
Calibration (SPEAG)	2022/12/14	-25.51	-	-	-	-	-
Calibration(ULJ)	2023/12/22	-26.83	-5.18	-1.32	+/- 20.00	5.10	Complied

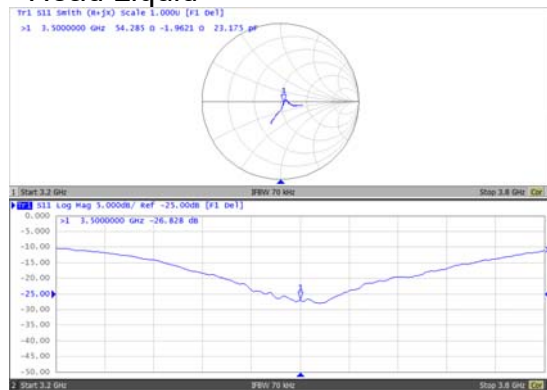
Impedance,Transformed to feed point	cal day	Body (real part) [Ω]	Body (img part) [jΩ]	Deviation (real part) [Ω]	Deviation (img part) [jΩ]	Tolerance	Result
Calibration (SPEAG)	2022/12/14	53.32	-1.23	-	-	-	-
Calibration(ULJ)	2023/12/22	52.58	0.11	-0.74	1.34	+/- 5 Ω +/- 5 jΩ	Complied

Return loss	cal day	Body [dB]	Deviation [%]	Deviation [dB]	Tolerance [%]	Tolerance [± dB]	Result
Calibration (SPEAG)	2022/12/14	-29.31	-	-	-	-	-
Calibration(ULJ)	2023/12/22	-32.02	-9.24	-2.71	+/- 20.00	5.86	Complied

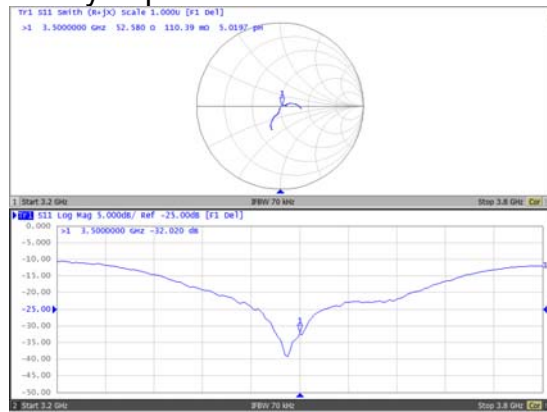
Tolerance: According to the KDB 865664 D1

Measurement Plots

<Head Liquid>



<Body Liquid>



End of Appendix