Body TSL parameters at 5800 MHz

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.2	6.00 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.2 ± 6 %	6.24 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

SAR result with Body TSL at 5800 MHz

SAR averaged over 1 cm^3 (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.51 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**74.6 W/kg ± 19.9 % (k=2)**

SAR averaged over 10 cm^3 (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.09 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	**20.7 W/kg ± 19.5 % (k=2)**

Appendix (Additional assessments outside the scope of SCS 0108)

Antenna Parameters with Head TSL at 5200 MHz

Impedance, transformed to feed point	48.7 Ω - 5.5 jΩ
Return Loss	- 24.9 dB

Antenna Parameters with Head TSL at 5250 MHz

Impedance, transformed to feed point	48.6 Ω - 4.0 jΩ
Return Loss	- 27.5 dB

Antenna Parameters with Head TSL at 5300 MHz

Impedance, transformed to feed point	47.7 Ω - 3.3 jΩ
Return Loss	- 27.7 dB

Antenna Parameters with Head TSL at 5500 MHz

Impedance, transformed to feed point	50.9 Ω - 3.9 jΩ
Return Loss	- 28.2 dB

Antenna Parameters with Head TSL at 5600 MHz

Impedance, transformed to feed point	54.2 Ω + 0.3 jΩ
Return Loss	- 27.9 dB

Antenna Parameters with Head TSL at 5750 MHz

Impedance, transformed to feed point	51.7 Ω - 0.8 jΩ
Return Loss	- 34.7 dB

Antenna Parameters with Head TSL at 5800 MHz

Impedance, transformed to feed point	52.1 Ω - 2.4 jΩ
Return Loss	- 30.1 dB

Antenna Parameters with Body TSL at 5200 MHz

Impedance, transformed to feed point	48.9 Ω - 5.6 jΩ
Return Loss	- 24.8 dB

Antenna Parameters with Body TSL at 5250 MHz

Impedance, transformed to feed point	48.0 Ω - 2.2 jΩ
Return Loss	- 30.4 dB

Antenna Parameters with Body TSL at 5300 MHz

Impedance, transformed to feed point	48.3 Ω - 3.0 jΩ
Return Loss	- 29.1 dB

Antenna Parameters with Body TSL at 5500 MHz

Impedance, transformed to feed point	50.2 Ω - 2.2 jΩ
Return Loss	- 33.1 dB

Antenna Parameters with Body TSL at 5600 MHz

Impedance, transformed to feed point	55.5 Ω + 1.0 jΩ
Return Loss	- 25.5 dB

Antenna Parameters with Body TSL at 5750 MHz

Impedance, transformed to feed point	52.3 Ω + 0.8 jΩ
Return Loss	- 32.3 dB

Antenna Parameters with Body TSL at 5800 MHz

Impedance, transformed to feed point	52.9 Ω - 1.8 jΩ
Return Loss	- 29.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.201 ns

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG

DASY5 Validation Report for Head TSL

Date: 22.07.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1060

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5250 MHz, Frequency: 5300 MHz, Frequency: 5500 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 4.46 S/m; ε_r = 35.5; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5250 MHz; σ = 4.51 S/m; ε_r = 35.5; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5300 MHz; σ = 4.56 S/m; ε_r = 35.4; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5500 MHz; σ = 4.76 S/m; ε_r = 35.1; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 4.86 S/m; ε_r = 35; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5750 MHz; σ = 5.02 S/m; ε_r = 34.8; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5800 MHz; σ = 5.07 S/m; ε_r = 34.7; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.64, 5.64, 5.64) @ 5200 MHz, ConvF(5.4, 5.4, 5.4) @ 5250 MHz, ConvF(5.39, 5.39, 5.39) @ 5300 MHz, ConvF(5.1, 5.1, 5.1) @ 5500 MHz, ConvF(4.95, 4.95, 4.95) @ 5600 MHz, ConvF(4.98, 4.98, 4.98) @ 5750 MHz, ConvF(4.96, 4.96, 4.96) @ 5800 MHz; Calibrated: 25.03.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 74.16 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 28.1 W/kg
SAR(1 g) = 8.06 W/kg; SAR(10 g) = 2.32 W/kg
Maximum value of SAR (measured) = 17.8 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 74.71 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 27.3 W/kg
SAR(1 g) = 8.07 W/kg; SAR(10 g) = 2.33 W/kg
Maximum value of SAR (measured) = 17.8 W/kg

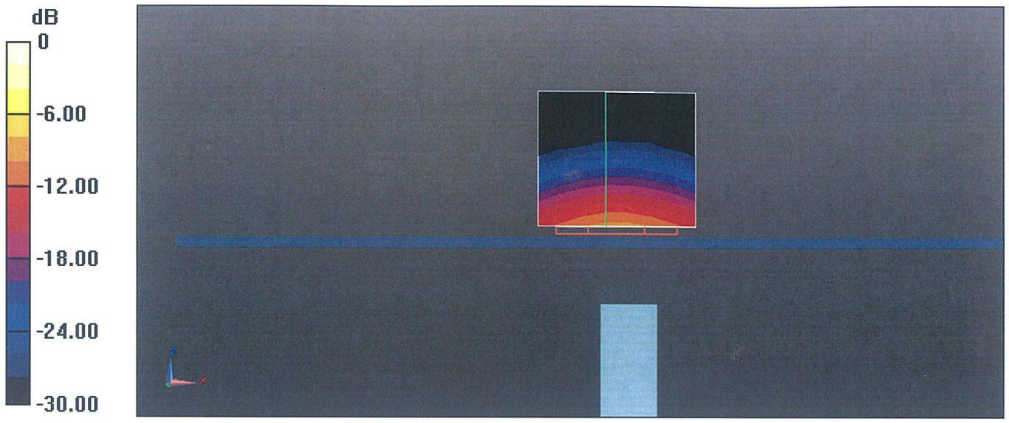
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 75.07 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 28.8 W/kg
SAR(1 g) = 8.23 W/kg; SAR(10 g) = 2.37 W/kg
Maximum value of SAR (measured) = 18.5 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 74.21 V/m; Power Drift = 0.7 dB
Peak SAR (extrapolated) = 32.1 W/kg
SAR(1 g) = 8.51 W/kg; SAR(10 g) = 2.43 W/kg
Maximum value of SAR (measured) = 19.6 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 75.03 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 31.0 W/kg
SAR(1 g) = 8.49 W/kg; SAR(10 g) = 2.43 W/kg
Maximum value of SAR (measured) = 19.4 W/kg

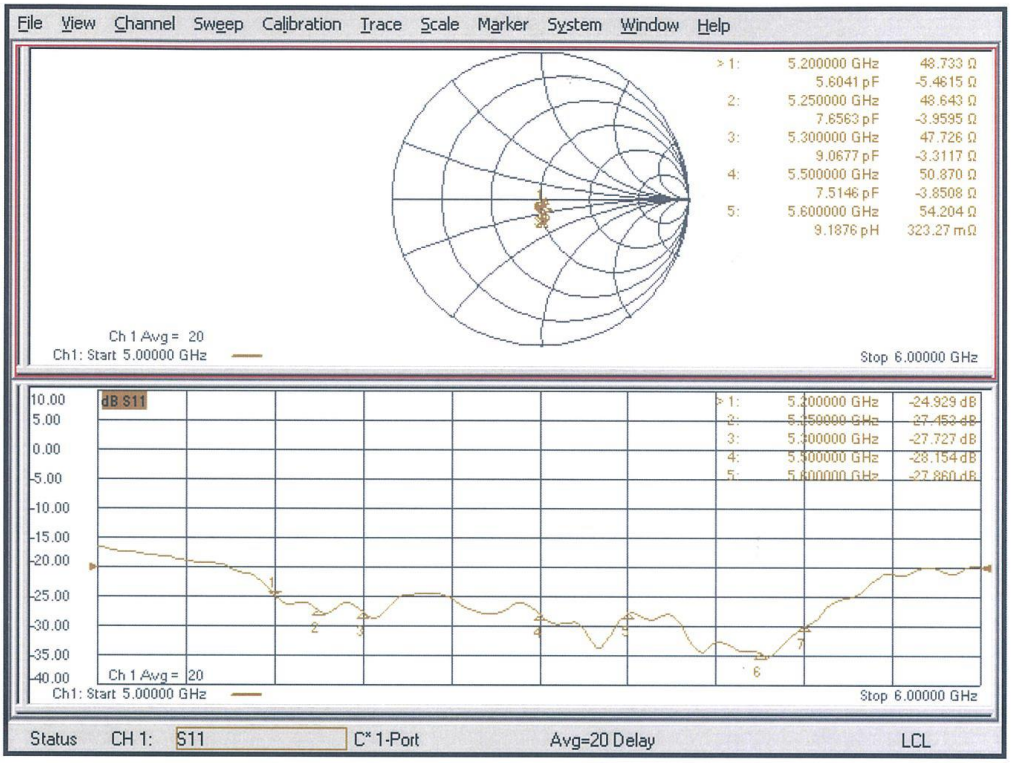
Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 71.89 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 31.1 W/kg
SAR(1 g) = 8.08 W/kg; SAR(10 g) = 2.31 W/kg
Maximum value of SAR (measured) = 18.8 W/kg

Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 72.69 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 31.8 W/kg
SAR(1 g) = 8.14 W/kg; SAR(10 g) = 2.30 W/kg
Maximum value of SAR (measured) = 19.0 W/kg

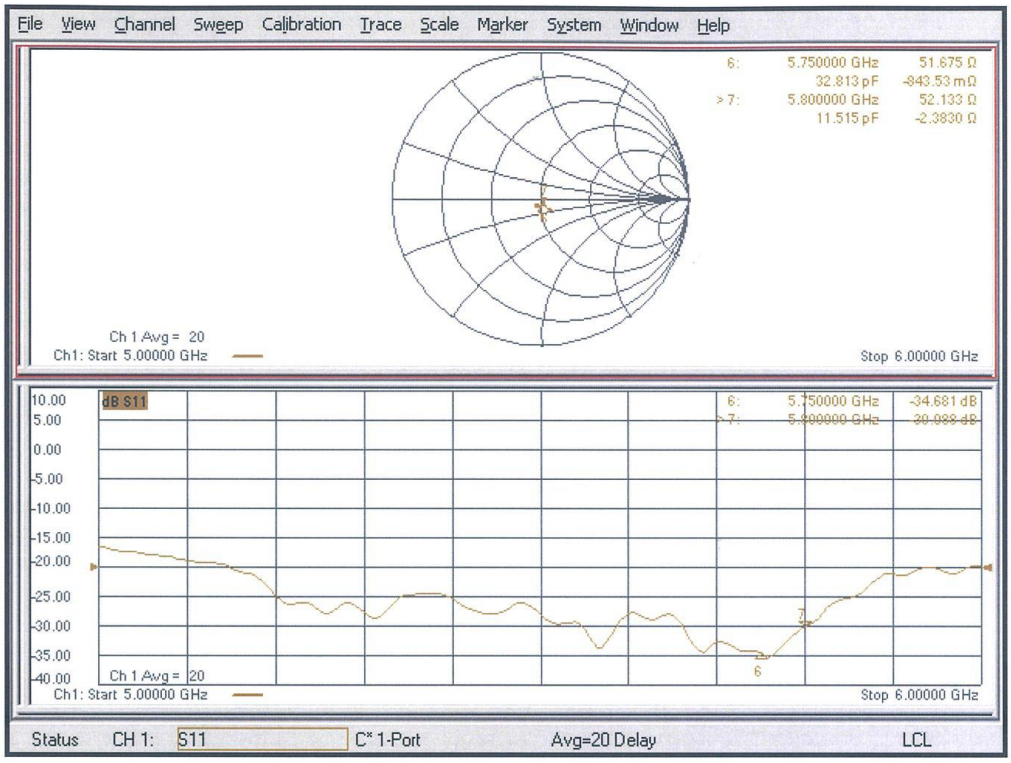


0 dB = 19.0 W/kg = 12.79 dBW/kg

Impedance Measurement Plot for Head TSL (5200, 5250, 5300, 5500, 5600 MHz)



Impedance Measurement Plot for Head TSL (5750, 5800 MHz)



DASY5 Validation Report for Body TSL

Date: 22.07.2019

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole D5GHzV2; Type: D5GHzV2; Serial: D5GHzV2 - SN:1060

Communication System: UID 0 - CW; Frequency: 5200 MHz, Frequency: 5250 MHz, Frequency: 5300 MHz, Frequency: 5500 MHz, Frequency: 5600 MHz, Frequency: 5750 MHz, Frequency: 5800 MHz
Medium parameters used: f = 5200 MHz; σ = 5.43 S/m; ε_r = 47.3; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5250 MHz; σ = 5.49 S/m; ε_r = 47.2; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5300 MHz; σ = 5.56 S/m; ε_r = 47.1; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5500 MHz; σ = 5.83 S/m; ε_r = 46.7; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5600 MHz; σ = 5.97 S/m; ε_r = 46.6; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5750 MHz; σ = 6.17 S/m; ε_r = 46.3; ρ = 1000 kg/m^3 ,
Medium parameters used: f = 5800 MHz; σ = 6.24 S/m; ε_r = 46.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.14, 5.14, 5.14) @ 5200 MHz, ConvF(5.26, 5.26, 5.26) @ 5250 MHz, ConvF(5.25, 5.25, 5.25) @ 5300 MHz, ConvF(4.79, 4.79, 4.79) @ 5500 MHz, ConvF(4.74, 4.74, 4.74) @ 5600 MHz, ConvF(4.62, 4.62, 4.62) @ 5750 MHz, ConvF(4.62, 4.62, 4.62) @ 5800 MHz; Calibrated: 25.03.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 30.04.2019
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.2(1504); SEMCAD X 14.6.12(7470)

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5200 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.89 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 27.5 W/kg
SAR(1 g) = 7.41 W/kg; SAR(10 g) = 2.08 W/kg
Maximum value of SAR (measured) = 17.2 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5250 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 69.26 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 29.2 W/kg
SAR(1 g) = 7.67 W/kg; SAR(10 g) = 2.15 W/kg
Maximum value of SAR (measured) = 17.9 W/kg

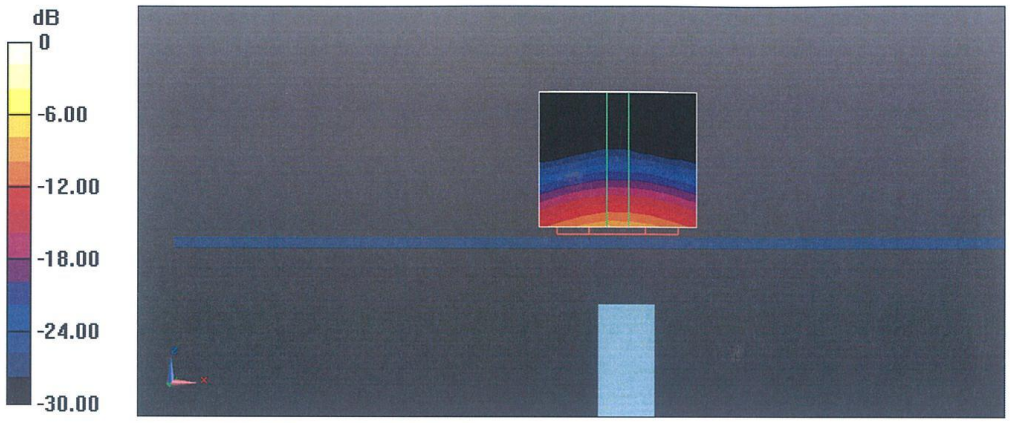
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.18 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 29.0 W/kg
SAR(1 g) = 7.52 W/kg; SAR(10 g) = 2.13 W/kg
Maximum value of SAR (measured) = 17.4 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5500 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 69.45 V/m; Power Drift = 0.00 dB
Peak SAR (extrapolated) = 32.7 W/kg
SAR(1 g) = 8 W/kg; SAR(10 g) = 2.23 W/kg
Maximum value of SAR (measured) = 19.1 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.13 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 32.9 W/kg
SAR(1 g) = 7.87 W/kg; SAR(10 g) = 2.22 W/kg
Maximum value of SAR (measured) = 18.8 W/kg

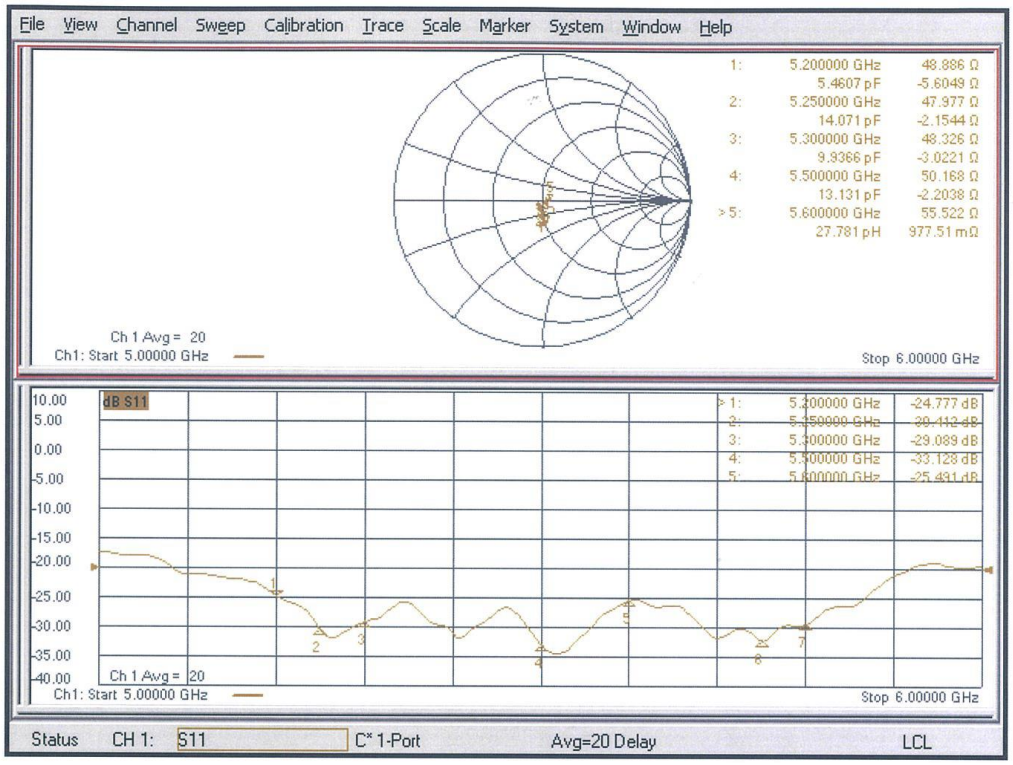
Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 67.49 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 34.1 W/kg
SAR(1 g) = 7.79 W/kg; SAR(10 g) = 2.18 W/kg
Maximum value of SAR (measured) = 19.0 W/kg

Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 66.59 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 32.0 W/kg
SAR(1 g) = 7.51 W/kg; SAR(10 g) = 2.09 W/kg
Maximum value of SAR (measured) = 18.0 W/kg

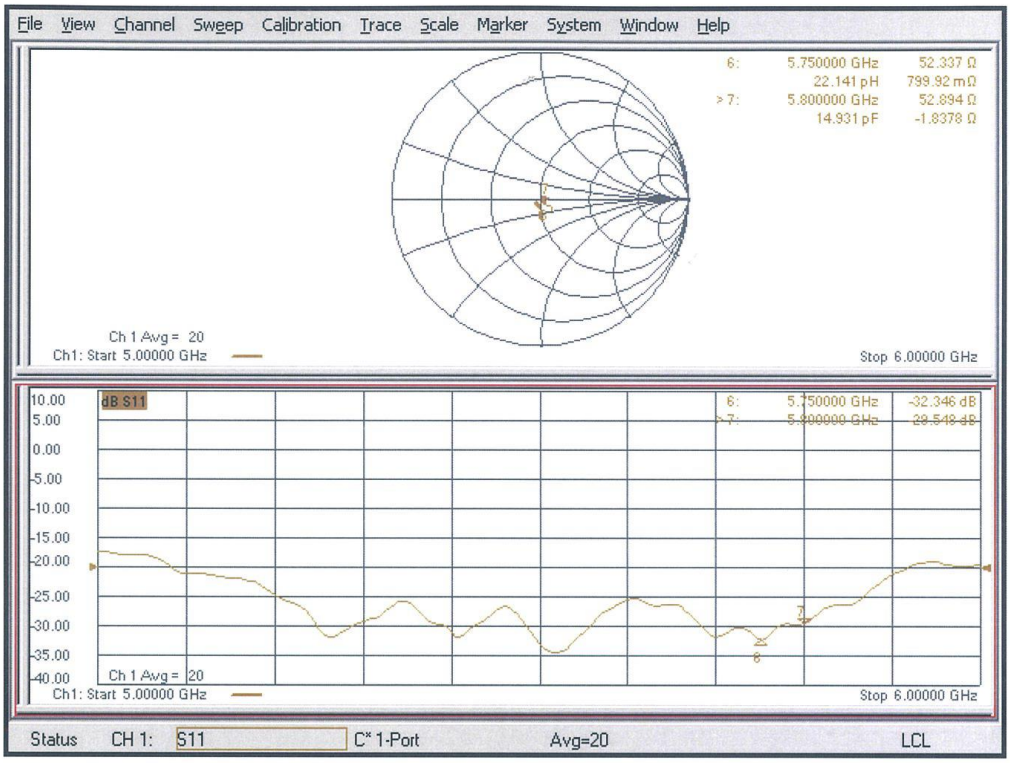


0 dB = 18.0 W/kg = 12.55 dBW/kg

Impedance Measurement Plot for Body TSL (5200, 5250, 5300, 5500, 5600 MHz)



Impedance Measurement Plot for Body TSL (5750, 5800 MHz)



ANNEX I SAR Test Result

I.1 Tissue and Verification

Table I.1-1: Dielectric Performance of Head Tissue Simulating Liquid

Measurement Date (yyyy-mm-dd)	Type	Frequency	Permittivity ε	Drift (%)	Conductivity σ (S/m)	Drift (%)
2020-6-5	Head	750 MHz	41.71	-0.55	0.88	-1.12
2020-6-9	Head	1750 MHz	39.85	-0.57	1.383	0.95
2020-6-16	Head	2600 MHz	38.46	-1.41	1.956	-0.20
2020/9/11	Head	1900 MHz	39.36	-1.60	1.404	0.29
2020/9/12	Head	2600 MHz	38.36	-1.67	1.935	-1.28

Table I.1-2: System Validation of Head

Measurement Date (yyyy-mm-dd)	Frequency	Target value (W/kg)		Measured value(W/kg)		Deviation	
		10 g Average	1 g Average	10 g Average	1 g Average	10 g Average	1 g Average
2020-6-5	750 MHz	5.57	8.57	5.64	8.44	1.26%	-1.52%
2020-6-9	1750 MHz	19.3	36.6	19.08	36.6	-1.14%	0.00%
2020-6-16	2600 MHz	25.1	55.8	25.52	56	1.67%	0.36%
2020/9/11	1900 MHz	20.6	39.6	20.52	39.08	-0.39%	-1.31%
2020/9/12	2600 MHz	25.3	57.0	25.72	57.12	1.66%	0.21%

I.2 Measurement result for 5G NR

Table1: Summery of Receiver detection mechanism

Antenna	Receiver on (head scenario)	Receiver off + Hotspot on (Body/other scenario)	Receiver off (Body/other scenario)
Main antenna	Power Level A1	Power Level B1	Power Level C1

Maximum Target Power for Production Unit – Level A1

No.	Test Freq Description	5G-n66						Tune up	Power Results (dBm) n66
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		
1	High	15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1777.5	355500	20.7	19.66
2	Middle	15	5	DFT-s-OFDM QPSK	Inner_Full	1745	349000	20.7	19.83
3	Low	15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1712.5	342500	20.7	19.77
4	High	15	20	DFT-s-OFDM QPSK	Edge_1RB_Right	1770	354000	20.7	19.75
5	Middle	15	20	DFT-s-OFDM QPSK	Inner_Full	1745	349000	20.7	19.77
6	Low	15	20	DFT-s-OFDM QPSK	Edge_1RB_Left	1720	344000	20.7	20.04

According to the table above, the maximum power configuration is selected as the default test configuration

No.	Test Freq Description	5G-n66						Tune up	Power Results (dBm) n66
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		
1	default	15	20	DFT-s-OFDM PI/2 BPSK1	Edge_1RB_Left	1720	344000	20.7	19.92
2	default	15	20	DFT-s-OFDM 16QAM	Edge_1RB_Left	1720	344000	20.7	19.93
3	default	15	20	DFT-s-OFDM 64QAM	Edge_1RB_Left	1720	344000	20.7	19.95
4	default	15	20	DFT-s-OFDM 256QAM	Edge_1RB_Left	1720	344000	19.2	19.17
5	default	15	20	CP-OFDM QPSK	Edge_1RB_Left	1720	344000	20.7	19.84
6	default	15	20	CP-OFDM 16QAM	Edge_1RB_Left	1720	344000	20.7	19.93
7	default	15	20	CP-OFDM 64QAM	Edge_1RB_Left	1720	344000	20.2	19.74
8	default	15	20	CP-OFDM 256QAM	Edge_1RB_Left	1720	344000	17.2	17.19
9	default	15	20	DFT-s-OFDM QPSK	Edge_Full_Right	1720	344000	20.7	**20.4**
10	default	15	20	DFT-s-OFDM QPSK	Edge_Full_Left	1720	344000	20.7	20.38
11	default	15	20	DFT-s-OFDM QPSK	Inner_1RB_Right	1720	344000	20.7	20.09
12	default	15	20	DFT-s-OFDM QPSK	Inner_1RB_Left	1720	344000	20.7	20.08
13	default	15	20	DFT-s-OFDM QPSK	Outer_Full	1720	344000	20.7	19.8
14	default	15	10	DFT-s-OFDM QPSK	Edge_Full_Right	1715	343000	20.7	20.38
15	default	15	15	DFT-s-OFDM QPSK	Edge_Full_Right	1717.5	343500	20.7	20.18

Maximum Target Power for Production Unit – Level B1

No.	Test Freq Description	5G-n66						Tune up	Power Results (dBm) n66
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		
1	High	15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1777.5	355500	21.7	20.62
2	Middle	15	5	DFT-s-OFDM QPSK	Inner_Full	1745	349000	21.7	20.78
3	Low	15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1712.5	342500	21.7	20.75
4	High	15	20	DFT-s-OFDM QPSK	Edge_1RB_Right	1770	354000	21.7	20.73
5	Middle	15	20	DFT-s-OFDM QPSK	Inner_Full	1745	349000	21.7	20.75
6	Low	15	20	DFT-s-OFDM QPSK	Edge_1RB_Left	1720	344000	21.7	20.95

According to the table above, the maximum power configuration is selected as the default test configuration

No.	Test Freq Description	5G-n66						Tune up	Power Results (dBm) n66
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		
1	default	15	20	DFT-s-OFDM PI/2 BPSK1	Edge_1RB_Left	1720	344000	21.7	20.93
2	default	15	20	DFT-s-OFDM 16QAM	Edge_1RB_Left	1720	344000	21.7	20.89
3	default	15	20	DFT-s-OFDM 64QAM	Edge_1RB_Left	1720	344000	21.2	20.91
4	default	15	20	DFT-s-OFDM 256QAM	Edge_1RB_Left	1720	344000	19.2	19.16
5	default	15	20	CP-OFDM QPSK	Edge_1RB_Left	1720	344000	20.7	20.67
6	default	15	20	CP-OFDM 16QAM	Edge_1RB_Left	1720	344000	20.7	20.63
7	default	15	20	CP-OFDM 64QAM	Edge_1RB_Left	1720	344000	20.2	20.19
8	default	15	20	CP-OFDM 256QAM	Edge_1RB_Left	1720	344000	17.2	17.17
9	default	15	20	DFT-s-OFDM QPSK	Edge_Full_Right	1720	344000	21.7	21.41
10	default	15	20	DFT-s-OFDM QPSK	Edge_Full_Left	1720	344000	21.7	21.34
11	default	15	20	DFT-s-OFDM QPSK	Inner_1RB_Right	1720	344000	21.7	21.09
12	default	15	20	DFT-s-OFDM QPSK	Inner_1RB_Left	1720	344000	21.7	21.06
13	default	15	20	DFT-s-OFDM QPSK	Outer_Full	1720	344000	21.7	20.83
14	default	15	10	DFT-s-OFDM QPSK	Edge_Full_Right	1715	343000	21.7	21.34
15	default	15	15	DFT-s-OFDM QPSK	Edge_Full_Right	1717.5	343500	21.7	21.27

Maximum Target Power for Production Unit – Level C1

No.	Test Freq Description	5G-n66						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n66
1	High	15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1777.5	355500	23.5	22.65
2	Middle	15	5	DFT-s-OFDM QPSK	Inner_Full	1745	349000	24.5	23.24
3	Low	15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1712.5	342500	23.5	22.75
4	High	15	20	DFT-s-OFDM QPSK	Edge_1RB_Right	1770	354000	23.5	22.73
5	Middle	15	20	DFT-s-OFDM QPSK	Inner_Full	1745	349000	24.5	23.27
6	Low	15	20	DFT-s-OFDM QPSK	Edge_1RB_Left	1720	344000	23.5	21.08

According to the table above, the maximum power configuration is selected as the default test configuration

No.	Test Freq Description	5G-n66						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n66
1	default	15	20	DFT-s-OFDM PI/2 BPSK1	Inner_Full	1745	349000	24.5	23.24
2	default	15	20	DFT-s-OFDM 16QAM	Inner_Full	1745	349000	23.5	22.97
3	default	15	20	DFT-s-OFDM 64QAM	Inner_Full	1745	349000	22	21.48
4	default	15	20	DFT-s-OFDM 256QAM	Inner_Full	1745	349000	20	19.43
5	default	15	20	CP-OFDM QPSK	Inner_Full	1745	349000	23	22.48
6	default	15	20	CP-OFDM 16QAM	Inner_Full	1745	349000	22.5	21.97
7	default	15	20	CP-OFDM 64QAM	Inner_Full	1745	349000	21	20.43
8	default	15	20	CP-OFDM 256QAM	Inner_Full	1745	349000	18	17.49
9	default	15	20	DFT-s-OFDM QPSK	Edge_Full_Right	1745	349000	23.5	22.97
10	default	15	20	DFT-s-OFDM QPSK	Edge_Full_Left	1745	349000	23.5	22.91
11	default	15	20	DFT-s-OFDM QPSK	Inner_1RB_Right	1745	349000	24.5	23.17
12	default	15	20	DFT-s-OFDM QPSK	Inner_1RB_Left	1745	349000	24.5	23.09
13	default	15	20	DFT-s-OFDM QPSK	Outer_Full	1745	349000	23.5	22.84
14	default	15	10	DFT-s-OFDM QPSK	Inner_Full	1745	349000	24.5	23.07
15	default	15	15	DFT-s-OFDM QPSK	Inner_Full	1745	349000	24.5	23.14

Maximum Target Power for Production Unit – Level A1

No.	Test Freq Description	5G-n41 SISO						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n41
1	High	30	20	DFT-s-OFDM QPSK	Edge_1RB_Right	2679.99	535998	24.2	23.50
2	Middle-1	30	20	DFT-s-OFDM QPSK	Inner_Full	2636.49	527298	27.7	26.82
3	Middle-2	30	20	DFT-s-OFDM QPSK	Inner_Full	2592.99	518598	27.7	26.43
4	Middle-3	30	20	DFT-s-OFDM QPSK	Inner_Full	2549.51	509902	27.7	26.95
5	Low	30	20	DFT-s-OFDM QPSK	Edge_1RB_Left	2506.02	501204	24.2	23.66
6	High	30	100	DFT-s-OFDM QPSK	Edge_1RB_Right	2640	528000	24.2	23.76
7	Middle	30	100	DFT-s-OFDM QPSK	Inner_Full	2616.51	523302	27.7	26.83
8	Middle	30	100	DFT-s-OFDM QPSK	Inner_Full	2592.99	518598	27.7	26.91
9	Middle	30	100	DFT-s-OFDM QPSK	Inner_Full	2569.5	513900	27.7	**26.96**
10	Low	30	100	DFT-s-OFDM QPSK	Edge_1RB_Left	2546.01	509202	24.2	23.88

According to the table above, the maximum power configuration is selected as the default test configuration

No.	Test Freq Description	5G-n41 SISO						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n41
1	Middle-1	30	100	DFT-s-OFDM PI/2 BPSK1	Inner_Full	2569.5	513900	27.7	26.92
2	Middle-1	30	100	DFT-s-OFDM 16QAM	Inner_Full	2569.5	513900	26.7	26.19
3	Middle-1	30	100	DFT-s-OFDM 64QAM	Inner_Full	2569.5	513900	25.2	24.74
4	Middle-1	30	100	DFT-s-OFDM 256QAM	Inner_Full	2569.5	513900	23.2	22.84
5	Middle-1	30	100	CP-OFDM QPSK	Inner_Full	2569.5	513900	26.2	25.56
6	Middle-1	30	100	CP-OFDM 16QAM	Inner_Full	2569.5	513900	25.7	25.22
7	Middle-1	30	100	CP-OFDM 64QAM	Inner_Full	2569.5	513900	24.2	23.92
8	Middle-1	30	100	CP-OFDM 256QAM	Inner_Full	2569.5	513900	21.2	21.08
9	Middle-1	30	100	DFT-s-OFDM QPSK	Edge_Full_Right	2569.5	513900	24.2	24.11
10	Middle-1	30	100	DFT-s-OFDM QPSK	Edge_Full_Left	2569.5	513900	24.2	23.76
11	Middle-1	30	100	DFT-s-OFDM QPSK	Inner_1RB_Right	2569.5	513900	27.7	26.37
12	Middle-1	30	100	DFT-s-OFDM QPSK	Inner_1RB_Left	2569.5	513900	27.7	26.77
13	Middle-1	30	100	DFT-s-OFDM QPSK	Outer_Full	2569.5	513900	26.7	26.20
14	default	30	40	DFT-s-OFDM QPSK	Inner_Full	2554.5	510900	27.7	25.96
15	default	30	50	DFT-s-OFDM QPSK	Inner_Full	2557	511401	27.7	25.79
16	default	30	60	DFT-s-OFDM QPSK	Inner_Full	2559.5	511899	27.7	26.23
17	default	30	80	DFT-s-OFDM QPSK	Inner_Full	2564.51	512900	27.7	26.04
18	default	30	90	DFT-s-OFDM QPSK	Inner_Full	2567	513399	27.7	26.07

Maximum Target Power for Production Unit – Level C1

No.	Test Freq Description	5G-n41 SISO						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n41
1	High	30	20	DFT-s-OFDM QPSK	Edge_1RB_Right	2679.99	535998	23	22.05
2	Middle-1	30	20	DFT-s-OFDM QPSK	Inner_Full	2636.49	527298	23	22.09
3	Middle-2	30	20	DFT-s-OFDM QPSK	Inner_Full	2592.99	518598	23	22.07
4	Middle-3	30	20	DFT-s-OFDM QPSK	Inner_Full	2549.51	509902	23	22.05
5	Low	30	20	DFT-s-OFDM QPSK	Edge_1RB_Left	2506.02	501204	23	**21.76**
6	High	30	100	DFT-s-OFDM QPSK	Edge_1RB_Right	2640	528000	23	22.30
7	Middle	30	100	DFT-s-OFDM QPSK	Inner_Full	2616.51	523302	23	22.22
8	Middle	30	100	DFT-s-OFDM QPSK	Inner_Full	2592.99	518598	23	22.25
9	Middle	30	100	DFT-s-OFDM QPSK	Inner_Full	2569.5	513900	23	22.26
10	Low	30	100	DFT-s-OFDM QPSK	Edge_1RB_Left	2546.01	509202	23	22.45

According to the table above, the maximum power configuration is selected as the default test configuration

No.	Test Freq Description	5G-n41 SISO						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n41
1	Low	30	100	DFT-s-OFDM PI/2 BPSK1	Edge_1RB_Left	2546.01	509202	23	22.33
2	Low	30	100	DFT-s-OFDM 16QAM	Edge_1RB_Left	2546.01	509202	23	22.89
3	Low	30	100	DFT-s-OFDM 64QAM	Edge_1RB_Left	2546.01	509202	23	22.34
4	Low	30	100	DFT-s-OFDM 256QAM	Edge_1RB_Left	2546.01	509202	23	22.64
5	Low	30	100	CP-OFDM QPSK	Edge_1RB_Left	2546.01	509202	23	22.27
6	Low	30	100	CP-OFDM 16QAM	Edge_1RB_Left	2546.01	509202	23	22.13
7	Low	30	100	CP-OFDM 64QAM	Edge_1RB_Left	2546.01	509202	23	22.26
8	Low	30	100	CP-OFDM 256QAM	Edge_1RB_Left	2546.01	509202	22.5	21.05
9	Low	30	100	DFT-s-OFDM 16QAM	Edge_Full_Right	2546.01	509202	23	21.85
10	Low	30	100	DFT-s-OFDM 16QAM	Edge_Full_Left	2546.01	509202	23	22.34
11	Low	30	100	DFT-s-OFDM 16QAM	Inner_1RB_Right	2546.01	509202	23	21.83
12	Low	30	100	DFT-s-OFDM 16QAM	Inner_1RB_Left	2546.01	509202	23	22.35
13	Low	30	100	DFT-s-OFDM 16QAM	Outer_Full	2546.01	509202	23	22.14
14	default	30	40	DFT-s-OFDM 16QAM	Edge_1RB_Left	2516.01	503202	23	22.67
15	default	30	50	DFT-s-OFDM 16QAM	Edge_1RB_Left	2521.02	504204	23	22.64
16	default	30	60	DFT-s-OFDM 16QAM	Edge_1RB_Left	2526	505200	23	22.55
16	default	30	80	DFT-s-OFDM 16QAM	Edge_1RB_Left	2536.02	507204	23	22.70
16	default	30	90	DFT-s-OFDM 16QAM	Edge_1RB_Left	2541	508200	23	22.63

Maximum Target Power for Production Unit – Level A1/B1/C1

No.	Test Freq Description	5G-n71						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n71
1	High	15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	695.5	139100	23	22.56
2	Middle	15	5	DFT-s-OFDM QPSK	Inner_Full	680.5	136100	24	23.02
3	Low	15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	665.5	133100	23	22.84
4	High	15	20	DFT-s-OFDM QPSK	Edge_1RB_Right	688	137600	23	22.64
5	Middle	15	20	DFT-s-OFDM QPSK	Inner_Full	680.5	136100	24	23.05
6	Low	15	20	DFT-s-OFDM QPSK	Edge_1RB_Left	673	134600	23	22.97

According to the table above, the maximum power configuration is selected as the default test configuration

No.	Test Freq Description	5G-n71						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n71
1	default	15	20	DFT-s-OFDM PI/2 BPSK1	Inner_Full	680.5	136100	24	23.02
2	default	15	20	DFT-s-OFDM 16QAM	Inner_Full	680.5	136100	23	22.94
3	default	15	20	DFT-s-OFDM 64QAM	Inner_Full	680.5	136100	21.5	21.46
4	default	15	20	DFT-s-OFDM 256QAM	Inner_Full	680.5	136100	19.5	19.42
5	default	15	20	CP-OFDM QPSK	Inner_Full	680.5	136100	22.5	22.43
6	default	15	20	CP-OFDM 16QAM	Inner_Full	680.5	136100	22	21.91
7	default	15	20	CP-OFDM 64QAM	Inner_Full	680.5	136100	20.5	20.41
8	default	15	20	CP-OFDM 256QAM	Inner_Full	680.5	136100	17.5	17.42
9	default	15	20	DFT-s-OFDM QPSK	Edge_Full_Right	680.5	136100	23	22.63
10	default	15	20	DFT-s-OFDM QPSK	Edge_Full_Left	680.5	136100	23	22.88
11	default	15	20	DFT-s-OFDM QPSK	Inner_1RB_Right	680.5	136100	24	22.77
12	default	15	20	DFT-s-OFDM QPSK	Inner_1RB_Left	680.5	136100	24	23.04
13	default	15	20	DFT-s-OFDM QPSK	Outer_Full	680.5	136100	23	22.94
14	default	15	10	DFT-s-OFDM QPSK	Inner_Full	680.5	136100	24	23.01
15	default	15	15	DFT-s-OFDM QPSK	Inner_Full	680.5	136100	24	22.94

Maximum Target Power for Production Unit – Level A1

No.	Test Freq Description	5G-n25						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n25
1	High	15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1912.5	382500	21.7	20.23
2	Middle	15	5	DFT-s-OFDM QPSK	Inner_Full	1882.5	376500	21.7	20.55
3	Low	15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1852.5	370500	21.7	20.28
4	High	15	20	DFT-s-OFDM QPSK	Edge_1RB_Right	1905	381000	21.7	20.21
5	Middle	15	20	DFT-s-OFDM QPSK	Inner_Full	1882.5	376500	21.7	20.71
6	Low	15	20	DFT-s-OFDM QPSK	Edge_1RB_Left	1860	372000	21.7	20.48

According to the table above, the maximum power configuration is selected as the default test configuration

No.	Test Freq Description	5G-n25						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n25
1	Low	15	20	DFT-s-OFDM PI/2 BPSK1	Inner_Full	1882.5	376500	21.7	20.21
2	Low	15	20	DFT-s-OFDM 16QAM	Inner_Full	1882.5	376500	21.7	20.55
3	Low	15	20	DFT-s-OFDM 64QAM	Inner_Full	1882.5	376500	21.7	20.28
4	Low	15	20	DFT-s-OFDM 256QAM	Inner_Full	1882.5	376500	20.2	20.17
5	Low	15	20	CP-OFDM QPSK	Inner_Full	1882.5	376500	21.7	20.70
6	Low	15	20	CP-OFDM 16QAM	Inner_Full	1882.5	376500	21.7	20.43
7	Low	15	20	CP-OFDM 64QAM	Inner_Full	1882.5	376500	21.2	20.68
8	Low	15	20	CP-OFDM 256QAM	Inner_Full	1882.5	376500	18.2	18.24
9	Low	15	20	DFT-s-OFDM QPSK	Edge_Full_Right	1882.5	376500	21.7	20.04
10	Low	15	20	DFT-s-OFDM QPSK	Edge_Full_Left	1882.5	376500	21.7	20.06
11	Low	15	20	DFT-s-OFDM QPSK	Inner_1RB_Right	1882.5	376500	21.7	20.05
12	Low	15	20	DFT-s-OFDM QPSK	Inner_1RB_Left	1882.5	376500	21.7	20.08
13	Low	15	20	DFT-s-OFDM QPSK	Outer_Full	1882.5	376500	21.7	**20.68**
14	Low	15	10	DFT-s-OFDM QPSK	Outer_Full	1882.5	376500	21.7	20.45
15	Low	15	15	DFT-s-OFDM QPSK	Outer_Full	1882.5	376500	21.7	20.66
16	High	15	20	DFT-s-OFDM QPSK	Inner_Full	1905	381000	21.7	20.21
17	Low	15	20	DFT-s-OFDM QPSK	Inner_Full	1860	372000	21.7	20.48

Maximum Target Power for Production Unit – Level B1

No.	Test Freq Description	5G-n25						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n25
1	High	15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1912.5	382500	22.7	21.09
2	Middle	15	5	DFT-s-OFDM QPSK	Inner_Full	1882.5	376500	22.7	21.49
3	Low	15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1852.5	370500	22.7	21.08
4	High	15	20	DFT-s-OFDM QPSK	Edge_1RB_Right	1905	381000	22.7	20.77
5	Middle	15	20	DFT-s-OFDM QPSK	Inner_Full	1882.5	376500	22.7	**20.83**
6	Low	15	20	DFT-s-OFDM QPSK	Edge_1RB_Left	1860	372000	22.7	20.77

According to the table above, the maximum power configuration is selected as the default test configuration

No.	Test Freq Description	5G-n25						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n25
1	Low	15	5	DFT-s-OFDM PI/2 BPSK1	Inner_Full	1882.5	376500	22.7	21.26
2	Low	15	5	DFT-s-OFDM 16QAM	Inner_Full	1882.5	376500	22.7	21.45
3	Low	15	5	DFT-s-OFDM 64QAM	Inner_Full	1882.5	376500	22.2	21.26
4	Low	15	5	DFT-s-OFDM 256QAM	Inner_Full	1882.5	376500	20.2	19.70
5	Low	15	5	CP-OFDM QPSK	Inner_Full	1882.5	376500	22.7	21.33
6	Low	15	5	CP-OFDM 16QAM	Inner_Full	1882.5	376500	22.7	21.34
7	Low	15	5	CP-OFDM 64QAM	Inner_Full	1882.5	376500	21.2	20.86
8	Low	15	5	CP-OFDM 256QAM	Inner_Full	1882.5	376500	18.2	17.67
9	Low	15	5	DFT-s-OFDM QPSK	Edge_Full_Right	1882.5	376500	22.7	21.01
10	Low	15	5	DFT-s-OFDM QPSK	Edge_Full_Left	1882.5	376500	22.7	20.96
11	Low	15	5	DFT-s-OFDM QPSK	Inner_1RB_Right	1882.5	376500	22.7	21.08
12	Low	15	5	DFT-s-OFDM QPSK	Inner_1RB_Left	1882.5	376500	22.7	21.03
13	Low	15	5	DFT-s-OFDM QPSK	Outer_Full	1882.5	376500	22.7	20.99
14	Low	15	10	DFT-s-OFDM QPSK	Edge_Full_Right	1882.5	372000	22.7	21.21
15	Low	15	15	DFT-s-OFDM QPSK	Edge_Full_Right	1882.5	372000	22.7	21.19

Maximum Target Power for Production Unit – Level C1

No.	Test Freq Description	5G-n25						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n25
1	High	15	5	DFT-s-OFDM QPSK	Edge_1RB_Right	1912.5	382500	23.7	23.11
2	Middle	15	5	DFT-s-OFDM QPSK	Inner_Full	1882.5	376500	24.7	23.84
3	Low	15	5	DFT-s-OFDM QPSK	Edge_1RB_Left	1852.5	370500	23.7	23.23
4	High	15	20	DFT-s-OFDM QPSK	Edge_1RB_Right	1905	381000	23.7	23.13
5	Middle	15	20	DFT-s-OFDM QPSK	Inner_Full	1882.5	376500	24.7	**24.22**
6	Low	15	20	DFT-s-OFDM QPSK	Edge_1RB_Left	1860	372000	23.7	23.25

According to the table above, the maximum power configuration is selected as the default test configuration

No.	Test Freq Description	5G-n25						Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation	NR Test Freq. (MHz)	NR Test CH.		n25
1	Middle	15	20	DFT-s-OFDM PI/2 BPSK1	Inner_Full	1882.5	376500	24.7	23.65
2	Middle	15	20	DFT-s-OFDM 16QAM	Inner_Full	1882.5	376500	23.7	**21.78**
3	Middle	15	20	DFT-s-OFDM 64QAM	Inner_Full	1882.5	376500	22.2	20.78
4	Middle	15	20	DFT-s-OFDM 256QAM	Inner_Full	1882.5	376500	20.2	18.55
5	Middle	15	20	CP-OFDM QPSK	Inner_Full	1882.5	376500	23.2	21.40
6	Middle	15	20	CP-OFDM 16QAM	Inner_Full	1882.5	376500	22.7	21.39
7	Middle	15	20	CP-OFDM 64QAM	Inner_Full	1882.5	376500	21.2	19.89
8	Middle	15	20	CP-OFDM 256QAM	Inner_Full	1882.5	376500	18.2	16.55
9	Middle	15	20	DFT-s-OFDM QPSK	Edge_Full_Right	1882.5	376500	23.7	23.05
10	Middle	15	20	DFT-s-OFDM QPSK	Edge_Full_Left	1882.5	376500	23.7	23.19
11	Middle	15	20	DFT-s-OFDM QPSK	Inner_1RB_Right	1882.5	376500	24.7	23.21
12	Middle	15	20	DFT-s-OFDM QPSK	Inner_1RB_Left	1882.5	376500	24.7	23.16
13	Middle	15	20	DFT-s-OFDM QPSK	Outer_Full	1882.5	376500	23.7	23.69
14	Middle	15	10	DFT-s-OFDM QPSK	Inner_Full	1882.5	376500	24.7	23.75
15	Middle	15	15	DFT-s-OFDM QPSK	Inner_Full	1882.5	376500	24.7	23.32

Maximum Target Power for Production Unit – Level A1/B1/C1

No.	Test Freq Description	5G-n41 MIMO							Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.		n41
1	High	30	20	CP-OFDM QPSK	Edge_1RB_Right	1@50	2679.99	535998	23.5	21.91
2	Middle-1	30	20	CP-OFDM QPSK	Inner_Full	25@12	2636.49	527298	25.5	24.23
3	Middle-2	30	20	CP-OFDM QPSK	Inner_Full	25@12	2592.99	518598	25.5	24.17
4	Middle-3	30	20	CP-OFDM QPSK	Inner_Full	25@12	2549.51	509902	25.5	23.99
5	Low	30	20	CP-OFDM QPSK	Edge_1RB_Left	1@0	2506.02	501204	23.5	21.71
6	High	30	100	CP-OFDM QPSK	Edge_1RB_Right	1@272	2640	528000	23.5	21.87
7	Middle	30	100	CP-OFDM QPSK	Inner_Full	135@67	2616.51	523302	25.5	24.55
8	Middle	30	100	CP-OFDM QPSK	Inner_Full	135@67	2592.99	518598	25.5	24.33
9	Middle	30	100	CP-OFDM QPSK	Inner_Full	135@67	2569.5	513900	25.5	**24.36**
10	Low	30	100	CP-OFDM QPSK	Edge_1RB_Left	1@0	2546.01	509202	23.5	21.80

According to the table above, the maximum power configuration is selected as the default test configuration

No.	Test Freq Description	5G-n41 MIMO							Tune up	Power Results (dBm)
		SCS (kHz)	NR BW (MHz)	Modulation	RB allocation		NR Test Freq. (MHz)	NR Test CH.		n41
1	Middle-1	30	100	CP-OFDM 16QAM	Inner_Full	135@67	2616.51	523302	25	24.42
2	Middle-1	30	100	CP-OFDM 64QAM	Inner_Full	135@67	2616.51	523302	23.5	22.27
3	Middle-1	30	100	CP-OFDM 256QAM	Inner_Full	135@67	2616.51	523302	20.5	19.10
4	Middle-1	30	100	CP-OFDM QPSK	Edge_Full_Right	2@271	2616.51	523302	23.5	22.87
5	Middle-1	30	100	CP-OFDM QPSK	Edge_Full_Left	2@0	2616.51	523302	23.5	21.50
6	Middle-1	30	100	CP-OFDM QPSK	Inner_1RB_Right	1@271	2616.51	523302	25.5	23.57
7	Middle-1	30	100	CP-OFDM QPSK	Inner_1RB_Left	1@1	2616.51	523302	25.5	23.66
8	Middle-1	30	100	CP-OFDM QPSK	Outer_Full	270@0	2616.51	523302	24	22.68
9	Middle-1	30	40	CP-OFDM QPSK	Inner_1RB_Right	135@67	2592.99	518598	25.5	24.54
10	Middle-1	30	50	CP-OFDM QPSK	Inner_1RB_Right	135@67	2592.99	518598	25.5	24.52
11	Middle-1	30	60	CP-OFDM QPSK	Inner_1RB_Right	135@67	2592.99	518598	25.5	24.53
12	Middle-1	30	80	CP-OFDM QPSK	Inner_1RB_Right	135@67	2592.99	518598	25.5	24.53
13	Middle-1	30	90	CP-OFDM QPSK	Inner_1RB_Right	135@67	2592.99	518598	25.5	24.53
14	Middle-1	30	100	CP-OFDM QPSK	Inner_Full	135@67	2640	528000	25.5	24.32
15	Middle-1	30	100	CP-OFDM QPSK	Inner_Full	135@67	2546.01	509202	25.5	23.90

I.3 SAR Test Result

Table I.3-1: SAR Values (NR5G n41 SISO-Head)

Ambient Temperature: 22.2 ℃ Liquid Temperature: 22 ℃											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
513900	2569.5	Left	Cheek	Fig.1	26.96	27	0.07	**0.07**	0.132	**0.13**	0.03
513900	2569.5	Left	Tilt	/	26.96	27	0.049	**0.05**	0.100	**0.10**	-0.06
513900	2569.5	Right	Cheek		26.96	27	0.054	**0.05**	0.110	**0.11**	0.04
513900	2569.5	Right	Tilt	/	26.96	27	0.027	**0.03**	0.052	**0.05**	0.07
513900	2569.5	Right	Cheek	CP-OFDM	25.56	26.2	0.051	**0.06**	0.104	**0.12**	0.02

Table I.3-2: SAR Values (NR5G n41 SISO -Body)

Ambient Temperature: 22.2 ℃ Liquid Temperature: 22 ℃										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
509202	2546.01	Front	/	22.89	23	0.145	**0.15**	0.277	**0.28**	-0.07
528000	2640	Rear	/	22.5	23	0.332	**0.37**	0.667	**0.75**	0.08
523302	2616.51	Rear	/	22.42	23	0.281	**0.32**	0.603	**0.69**	0.14
518598	2592.99	Rear	/	22.45	23	0.289	**0.33**	0.631	**0.72**	0.06
513900	2569.5	Rear	/	22.46	23	0.293	**0.33**	0.639	**0.72**	0.09
509202	2546.01	Rear	Fig.2	22.89	23	0.384	**0.39**	0.748	**0.77**	0.13
509202	2546.01	Left	/	22.89	23	0.033	**0.03**	0.059	**0.06**	-0.02
509202	2546.01	Right	/	22.89	23	0.052	**0.05**	0.095	**0.10**	0.12
509202	2546.01	Bottom	/	22.89	23	0.354	**0.36**	0.705	**0.72**	-0.10
509202	2546.01	Rear	CP-OFDM	22.27	23	0.329	**0.39**	0.657	**0.78**	0.17

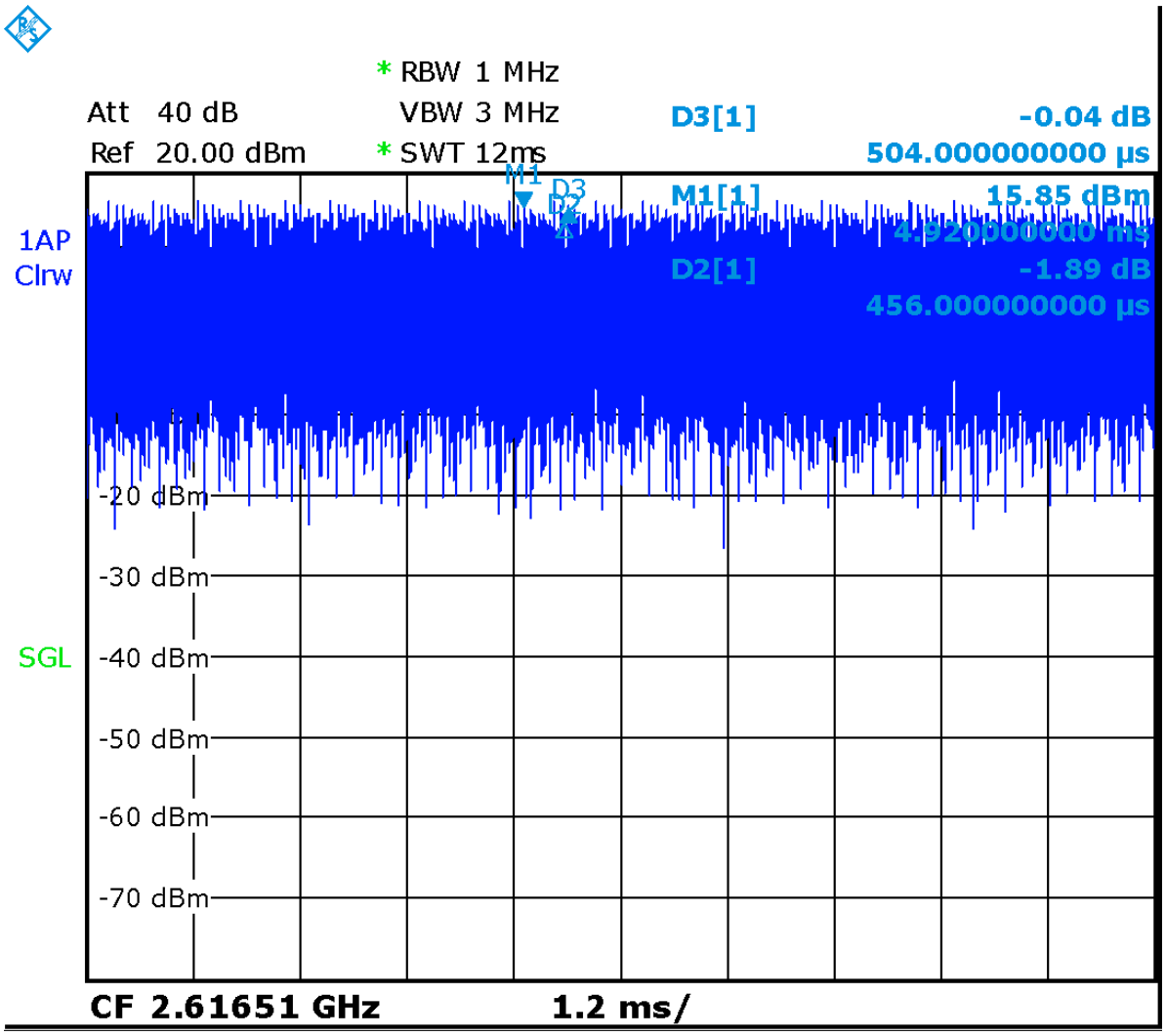
Note: The distance between the EUT and the phantom bottom is 10mm

Table I.3-3: SAR Values (NR5G n41 SISO - Head) - Scaled Reported SAR

Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
513900	2569.5	Left	Cheek	90.48%	92.5%	**0.13**	**0.13**

Table I.3-4: SAR Values (NR5G n41 SISO - Body) – Scaled Reported SAR

Frequency		Test Position	D (mm)	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
509202	2546.01	Rear	10	90.48%	92.5%	**0.77**	**0.79**



Picture 14.5 The plot of duty factor for n41

Table I.3-5: SAR Values (NR5G n66-Head)

Ambient Temperature: 22.2 ℃ Liquid Temperature: 22 ℃											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
344000	1720	Left	Cheek	/	20.4	20.7	0.149	**0.16**	0.243	**0.26**	0.12
344000	1720	Left	Tilt	/	20.4	20.7	0.119	**0.13**	0.212	**0.23**	-0.01
344000	1720	Right	Cheek	Fig.3	20.4	20.7	0.309	**0.33**	0.615	**0.66**	0.08

344000	1720	Right	Tilt	/	20.4	20.7	0.103	**0.11**	0.188	**0.20**	0.04
344000	1720	Right	Cheek	CP-OFDM	19.93	20.7	0.228	**0.27**	0.423	**0.51**	0.01

Table I.3-6: SAR Values (NR5G n66-Body)

Ambient Temperature: 22.2 °C Liquid Temperature: 22 °C										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
344000	1720	Front	/	21.41	21.7	0.101	**0.11**	0.190	**0.20**	0.08
344000	1720	Rear	/	21.41	21.7	0.234	**0.25**	0.429	**0.46**	0.07
344000	1720	Left	Fig.4	21.41	21.7	0.264	**0.28**	0.509	**0.54**	-0.08
344000	1720	Top	/	21.41	21.7	0.068	**0.07**	0.115	**0.12**	-0.03
344000	1720	Left	CP-OFDM	20.67	20.7	0.227	**0.23**	0.447	**0.45**	0.09

Note: The distance between the EUT and the phantom bottom is 10mm

Table I.3-7: SAR Values (NR5G n66-Body)

Ambient Temperature: 22.2 °C Liquid Temperature: 22 °C										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
349000	1745	Front	/	23.27	24.5	0.091	**0.12**	0.154	**0.20**	0.12
349000	1745	Rear	Fig.5	23.27	24.5	0.176	**0.23**	0.293	**0.39**	0.00
349000	1745	Rear	CP-OFDM	22.48	22.7	0.136	**0.14**	0.284	**0.30**	0.08

Note: The distance between the EUT and the phantom bottom is 15mm

Table I.3-8: SAR Values (NR5G n71-Head)

Ambient Temperature: 22.2 °C Liquid Temperature: 22 °C											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
134600	673	Left	Cheek	Fig.6	23.05	24.5	0.272	**0.38**	0.495	**0.69**	0.05
134600	673	Left	Tilt	/	23.05	24.5	0.062	**0.09**	0.089	**0.12**	-0.10
134600	673	Right	Cheek	/	23.05	24.5	0.113	**0.16**	0.205	**0.29**	-0.07
134600	673	Right	Tilt	/	23.05	24.5	0.047	**0.07**	0.07	**0.10**	0.04
134600	673	Right	Cheek	CP-OFDM	22.43	22.5	0.234	**0.24**	0.42	**0.43**	0.05

Table I.3-9: SAR Values (NR5G n71-Body)

Ambient Temperature: 22.2 °C Liquid Temperature: 22 °C										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
134600	673	Front	/	23.05	24.5	0.148	**0.21**	0.244	**0.34**	0.01
134600	673	Rear	/	23.05	24.5	0.185	**0.26**	0.311	**0.43**	0.04
134600	673	Left	Fig.7	23.05	24.5	0.253	**0.35**	0.455	**0.64**	0.04
134600	673	Left	CP-OFDM	22.43	22.5	0.225	**0.23**	0.411	**0.42**	0.06

Note: The distance between the EUT and the phantom bottom is 10mm

Table I.3-10: SAR Values (NR5G n25-Head)

Ambient Temperature: 22.2 °C Liquid Temperature: 22 °C											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
376500	1882.5	Left	Cheek	/	20.71	21.7	0.141	**0.18**	0.229	**0.29**	-0.04
376500	1882.5	Left	Tilt	/	20.71	21.7	0.111	**0.14**	0.191	**0.24**	-0.12
381000	1905	Right	Cheek	/	20.21	2.7	0.348	**0.01**	0.703	**0.01**	-0.04
376500	1882.5	Right	Cheek	/	20.71	21.7	0.405	**0.51**	0.813	**1.02**	0.18
372000	1860	Right	Cheek	Fig.8	20.48	21.7	0.446	**0.59**	0.885	**1.17**	-0.08
376500	1882.5	Right	Tilt	/	20.71	21.7	0.130	**0.16**	0.241	**0.30**	-0.07
376500	1882.5	Right	Cheek	CP-OFDM	20.70	21.7	0.372	**0.47**	0.769	**0.97**	0.11

Table I.3-11: SAR Values (NR5G n25-Body)

Ambient Temperature: 22.2 °C Liquid Temperature: 22 °C										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
376500	1882.5	Front	/	21.49	22.7	0.221	**0.29**	0.398	**0.53**	-0.02
376500	1882.5	Rear	/	21.49	22.7	0.293	**0.39**	0.533	**0.70**	-0.09
382500	1912.5	Left	/	21.43	22.7	0.358	**0.48**	0.674	**0.90**	-0.07
376500	1882.5	Left	Fig.9	21.49	22.7	0.37	**0.49**	0.694	**0.92**	0.10
370500	1852.5	Left	/	21.41	22.7	0.359	**0.48**	0.666	**0.90**	0.07
376500	1882.5	Top	/	21.49	22.7	<0.01	**<0.01**	<0.01	**<0.01**	/
376500	1882.5	Rear	CP-OFDM	21.33	22.7	0.311	**0.43**	0.548	**0.75**	0.02

Note: The distance between the EUT and the phantom bottom is 10mm

Table I.3-12: SAR Values (NR5G n25-Body)

Ambient Temperature: 22.2 °C Liquid Temperature: 22 °C										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
376500	1882.5	Front	/	24.22	24.7	0.09	**0.10**	0.153	**0.17**	-0.04
376500	1882.5	Rear	Fig.10	24.22	24.7	0.264	**0.29**	0.445	**0.50**	-0.16
376500	1882.5	Rear	CP-OFDM	21.4	23.2	0.217	**0.33**	0.322	**0.49**	0.05

Note: The distance between the EUT and the phantom bottom is 15mm

Table I.3-13: SAR Values (NR5G n41 MIMO-Head)

Ambient Temperature: 22.2 °C Liquid Temperature: 22 °C											
Frequency		Side	Test Position	Figure No./Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g) (W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz										
523302	2616.51	Left	Cheek	/	24.55	25.5	0.125	**0.16**	0.242	**0.30**	0.05
523302	2616.51	Left	Tilt	/	24.55	25.5	0.087	**0.11**	0.189	**0.24**	0.03
523302	2616.51	Right	Cheek	Fig.11	24.55	25.5	0.295	**0.37**	0.63	**0.78**	0.08
523302	2616.51	Right	Tilt	/	24.55	25.5	0.171	**0.21**	0.358	**0.45**	0.07

Note: Test MIMO mode at maximum power transmission

Table I.3-14: SAR Values (NR5G n41 MIMO -Body)

Ambient Temperature: 22.2 °C Liquid Temperature: 22 °C										
Frequency		Test Position	Figure No./ Note	Conducted Power (dBm)	Max. tune-up Power (dBm)	Measured SAR(10g) (W/kg)	Reported SAR(10g)(W/kg)	Measured SAR(1g) (W/kg)	Reported SAR(1g) (W/kg)	Power Drift (dB)
Ch.	MHz									
523302	2616.51	Front	/	24.55	25.5	0.065	**0.08**	0.124	**0.15**	0.12
528000	2640	Rear	/	24.32	25.5	0.334	**0.44**	0.735	**0.96**	-0.10
523302	2616.51	Rear	Fig.12	24.55	25.5	0.353	**0.44**	0.782	**0.97**	0.09
518598	2592.99	Rear	/	24.33	25.5	0.328	**0.43**	0.696	**0.91**	-0.08
513900	2569.5	Rear	/	24.36	25.5	0.257	**0.33**	0.55	**0.72**	-0.04
509202	2546.01	Rear	/	23.9	25.5	0.271	**0.39**	0.568	**0.82**	0.09
523302	2616.51	Left	/	24.55	25.5	0.151	**0.19**	0.31	**0.39**	0.07
523302	2616.51	Right	/	24.55	25.5	0.023	**0.03**	0.042	**0.05**	0.01
523302	2616.51	Bottom	/	24.55	25.5	0.223	**0.28**	0.438	**0.55**	-0.02
523302	2616.51	Top[	/	24.55	25.5	0.024	**0.03**	0.041	**0.05**	-0.03

Note: The distance between the EUT and the phantom bottom is 10mm

Note1: Test MIMO mode at maximum power transmission

Table I.3-15: SAR Values (NR5G n41 MIMO - Head) - Scaled Reported SAR

Frequency		Side	Test Position	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
523302	2616.51	Right	Cheek	92.5%	92.5%	**0.78**	**0.78**

Table I.3-16: SAR Values (NR5G n41 MIMO - Body) – Scaled Reported SAR

Frequency		Test Position	D (mm)	Actual duty factor	maximum duty factor	Reported SAR (1g) (W/kg)	Scaled reported SAR (1g) (W/kg)
MHz	Ch.						
523302	2616.51	Rear	10	92.5%	92.5%	**0.97**	**0.97**

I.4 Evaluation of Simultaneous

Table I.4-1: The sum of reported SAR values for Main antenna and WiFi-2.4G

	Position	Band	Cellular antenna	WiFi	Sum
Highest reported SAR value for Head	Right hand, Cheek	n25	1.17	0.13	**1.30**

Note1: we have evaluated and chose the highest value of WiFi 2.4G and 5G in the above table.

Table I.4-2: The sum of reported SAR values for Main antenna + WiFi-5G+BT

	Position	Band	Cellular antenna	WiFi-5G	BT	Sum
Maximum reported SAR value for Body	Rear 10mm	n41 MIMO	0.97	0.26	<0.01	**1.23**

I.5 List of Main Instruments

No.	Name	Type	Serial Number	Calibration Date	Valid Period
01	Network analyzer	N5239A	MY46110673	January 24, 2020	One year
02	Power meter	NRP2	101919	May 12, 2020	One year
03	Power sensor	NRP-Z91	101547		
04	Signal Generator	E4438C	MY49070393	January 4, 2020	One Year
05	Amplifier	60S1G4	0331848	No Calibration Requested	
06	BTS	CMW500	129942	February 10, 2020	One year
07	E-field Probe	SPEAG EX3DV4	3617	Jan 30, 2020	One year
08	DAE	SPEAG DAE4	777	January 8, 2020	One year
09	Dipole Validation Kit	SPEAG D750V3	1017	July 18,2019	One year
10	Dipole Validation Kit	SPEAG D1900V2	5d101	July 17,2019	One year
11	Dipole Validation Kit	SPEAG D2600V2	1012	July 17,2019	One year
12	Dipole Validation Kit	SPEAG D1900V2	5d101	July 28,2020	One year
13	Dipole Validation Kit	SPEAG D2600V2	1012	July 21,2020	One year

I.6 Graph Results

n41_CH513900 Left Cheek

Date: 6/16/2020
Electronics: DAE4 Sn777
Medium: head 2600 MHz
Medium parameters used: f = 2569.5; σ = 1.926 mho/m; εr = 38.59; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: n41 2569.5 Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(7.52,7.52,7.52)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.199 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.851 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 0.248 W/kg
SAR(1 g) = 0.132 W/kg; SAR(10 g) = 0.07 W/kg
Maximum value of SAR (measured) = 0.142 W/kg

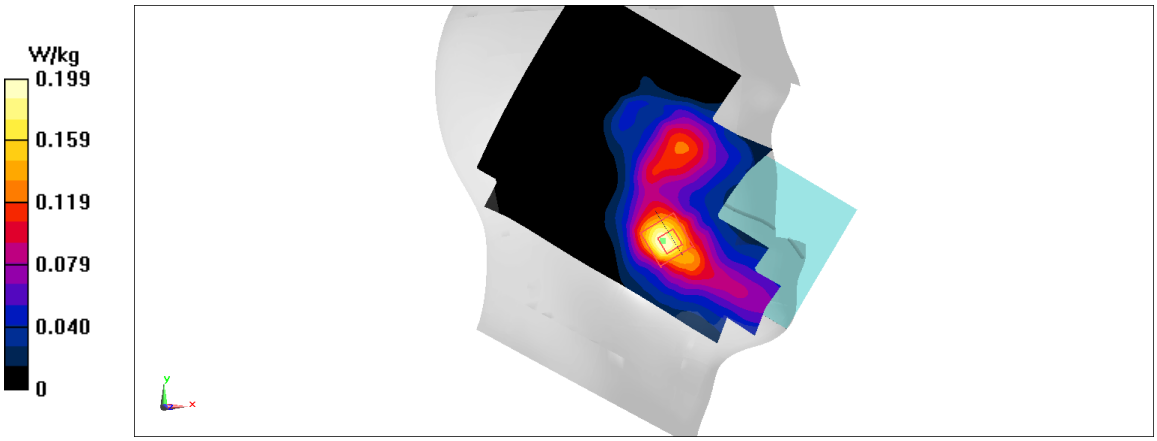


Fig A.1

n41_CH509202 Rear
Date: 6/16/2020
Electronics: DAE4 Sn777
Medium: head 2600 MHz
Medium parameters used: f = 2546.01; σ = 1.913 mho/m; εr = 38.75; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: n41 2546.01 Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(7.52,7.52,7.52)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.19 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.48 V/m; Power Drift = 0.13 dB
Peak SAR (extrapolated) = 1.55 W/kg
SAR(1 g) = 0.748 W/kg; SAR(10 g) = 0.384 W/kg
Maximum value of SAR (measured) = 1.24 W/kg

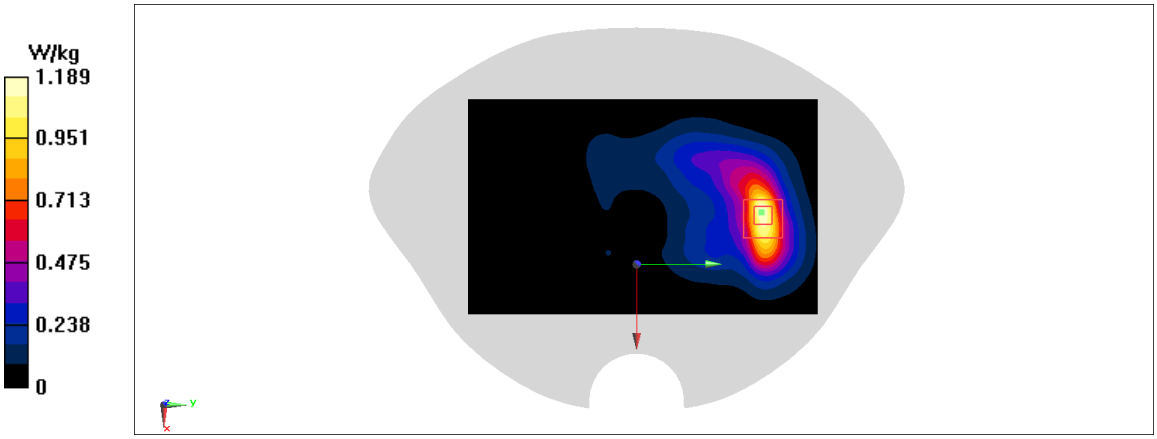


Fig A.2

n66_CH344000 Right Cheek
Date: 6/9/2020
Electronics: DAE4 Sn777
Medium: head 1750 MHz
Medium parameters used: f = 1770; σ = 1.402 mho/m; εr =39.79 ; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD66 2593 Duty Cycle: 1：1
Probe: EX3DV4 – SN3617 ConvF(8.41,8.41,8.41)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.86 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.2 W/kg
SAR(1 g) = 0.615 W/kg; SAR(10 g) = 0.309 W/kg
Maximum value of SAR (measured) = 0.685 W/kg

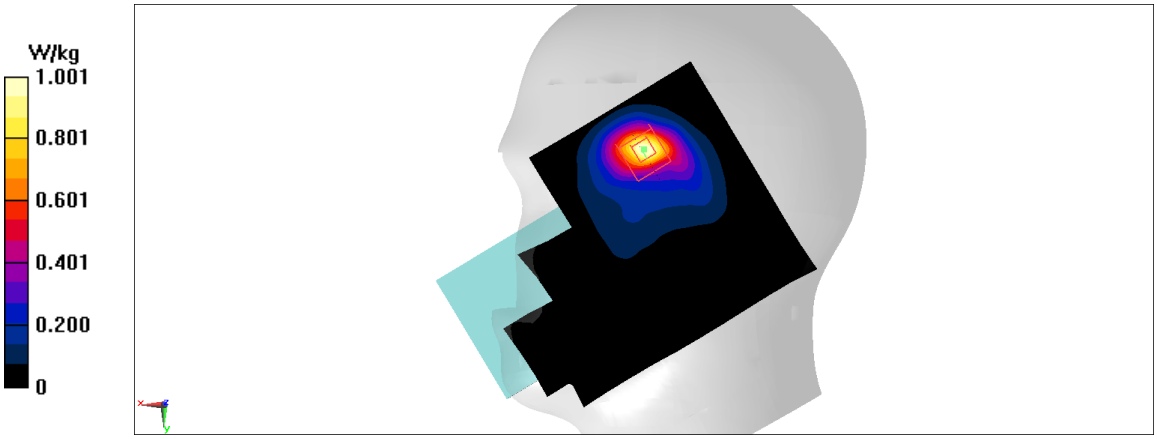


Fig A.3

n66_CH344000 Left
Date: 6/9/2020
Electronics: DAE4 Sn777
Medium: head 1750 MHz
Medium parameters used: f = 1720; σ = 1.367 mho/m; εr = 39.92; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD66 2593 Duty Cycle: 1：1
Probe: EX3DV4 – SN3617 ConvF(8.41,8.41,8.41)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.829 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.576 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 0.9 W/kg
SAR(1 g) = 0.509 W/kg; SAR(10 g) = 0.264 W/kg
Maximum value of SAR (measured) = 0.581 W/kg

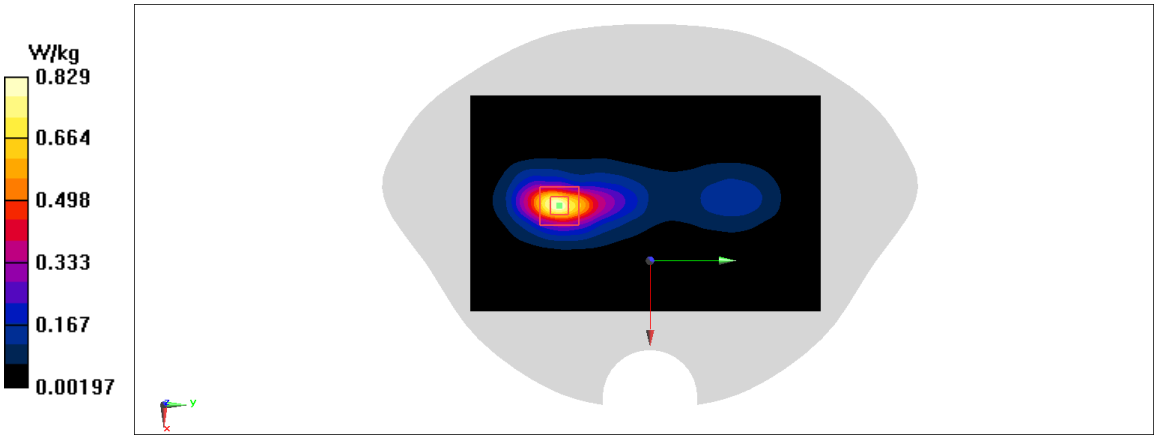


Fig A.4

n66_CH349000 Rear
Date: 6/9/2020
Electronics: DAE4 Sn777
Medium: head 1750 MHz
Medium parameters used: f = 1720; σ = 1.367 mho/m; εr = 39.92; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: LTE1700-FDD66 2593 Duty Cycle: 1：1
Probe: EX3DV4 – SN3617 ConvF(8.41,8.41,8.41)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.415 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.444 V/m; Power Drift = 0 dB
Peak SAR (extrapolated) = 0.462 W/kg
SAR(1 g) = 0.293 W/kg; SAR(10 g) = 0.176 W/kg
Maximum value of SAR (measured) = 0.317 W/kg

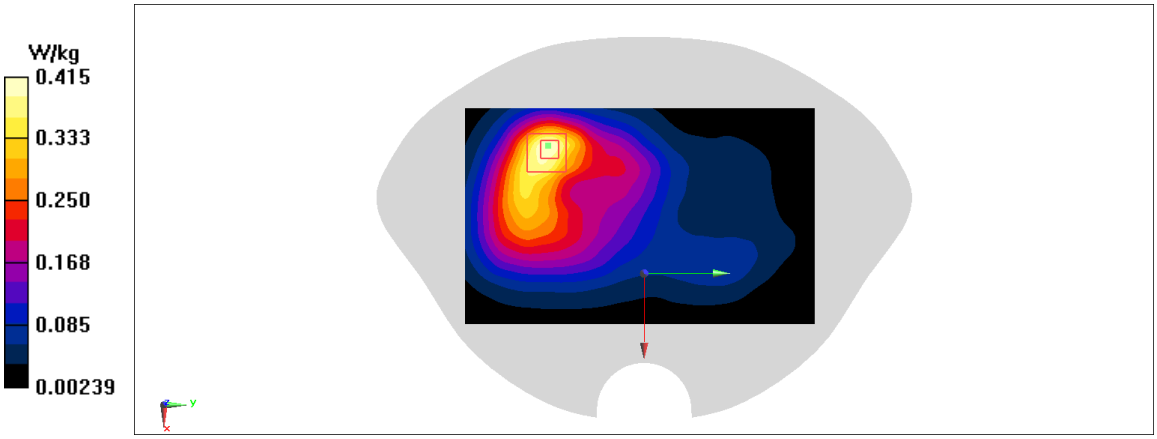


Fig A.5

n71_CH134600 Left Cheek
Date: 6/5/2020
Electronics: DAE4 Sn777
Medium: head 750 MHz
Medium parameters used: f = 673; σ = 0.892 mho/m; εr = 42.38; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: 5G700-n71 2593 Duty Cycle: 1：1
Probe: EX3DV4 – SN3617 ConvF(10.07,10.07,10.07)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.687 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.982 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 0.972 W/kg
SAR(1 g) = 0.495 W/kg; SAR(10 g) = 0.272 W/kg
Maximum value of SAR (measured) = 0.495 W/kg

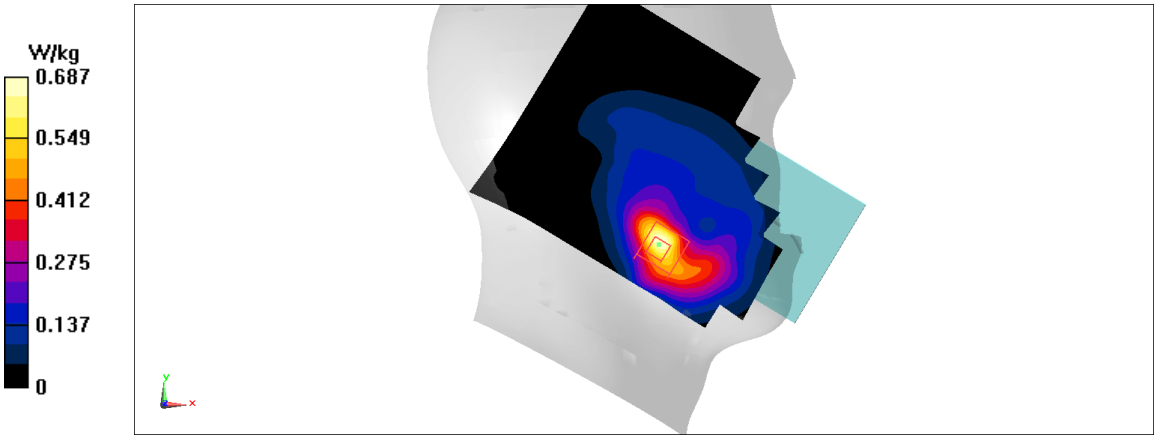


Fig A.6

n71_CH134600 Left
Date: 6/5/2020
Electronics: DAE4 Sn777
Medium: head 750 MHz
Medium parameters used: f = 673; σ = 0.892 mho/m; εr = 42.38; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: 5G700-n71 2593 Duty Cycle: 1：1
Probe: EX3DV4 – SN3617 ConvF(10.07,10.07,10.07)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.749 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 14 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 0.816 W/kg
SAR(1 g) = 0.455 W/kg; SAR(10 g) = 0.253 W/kg
Maximum value of SAR (measured) = 0.51 W/kg

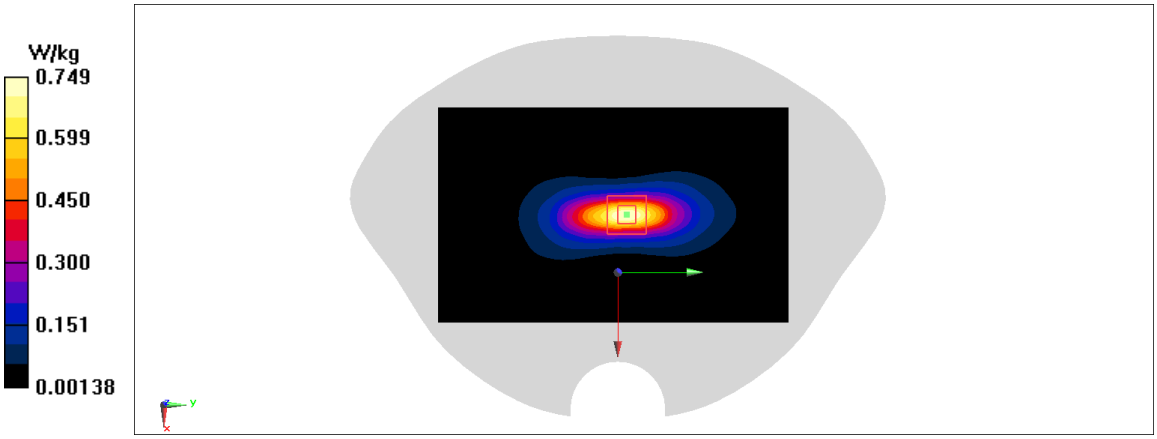


Fig A.7

n25_CH376500 Right Cheek
Date: 9/11/2020
Electronics: DAE4 Sn777
Medium: head 1900 MHz
Medium parameters used: f = 1882.5 MHz; σ = 1.387 mho/m; εr = 39.38; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: n25 1882.5 MHz Duty Cycle:
Probe: EX3DV4 – SN3617 ConvF(8.14,8.14,8.14)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.5 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 12.31 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 1.6 W/kg
SAR(1 g) = 0.885 W/kg; SAR(10 g) = 0.446 W/kg
Maximum value of SAR (measured) = 1.28 W/kg

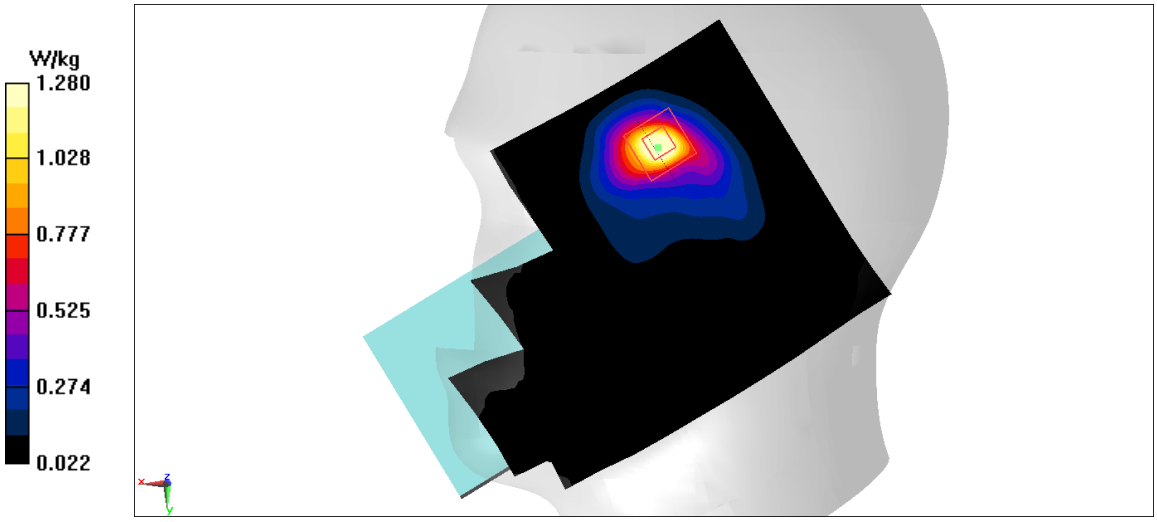


Fig A.8

n25_CH376500 Rear
Date: 9/11/2020
Electronics: DAE4 Sn777
Medium: head 1900 MHz
Medium parameters used: f = 1882.5 MHz; σ = 1.387 mho/m; εr = 39.38; ρ = 1000 kg/m^3
Ambient Temperature: 22.5°C, Liquid Temperature: 22.3°C
Communication System: n25 1882.5 MHz Duty Cycle:
Probe: EX3DV4 – SN3617 ConvF(8.14,8.14,8.14)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 1.13 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.734 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.694 W/kg; SAR(10 g) = 0.370 W/kg

Maximum value of SAR (measured) = 0.793 W/kg

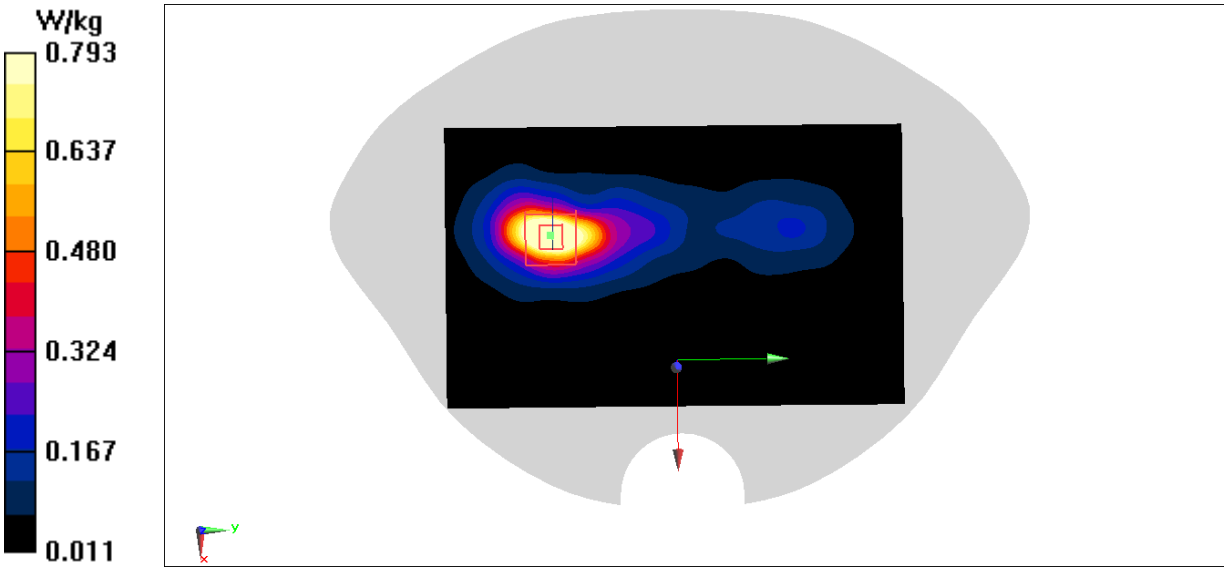


Fig A.9

n25_CH376500 Rear
Date: 9/11/2020
Electronics: DAE4 Sn777
Medium: head 1900 MHz
Medium parameters used: f = 1882.5 MHz; σ = 1.387 mho/m; εr = 39.38; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: n25 1882.5 MHz Duty Cycle:
Probe: EX3DV4 – SN3617 ConvF(8.14,8.14,8.14)

Area Scan (81x131x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm

Maximum value of SAR (interpolated) = 0.649 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.972 V/m; Power Drift = -0.16 dB
Peak SAR (extrapolated) = 0.645 W/kg
SAR(1 g) = 0.445 W/kg; SAR(10 g) = 0.264 W/kg
Maximum value of SAR (measured) = 0.493 W/kg

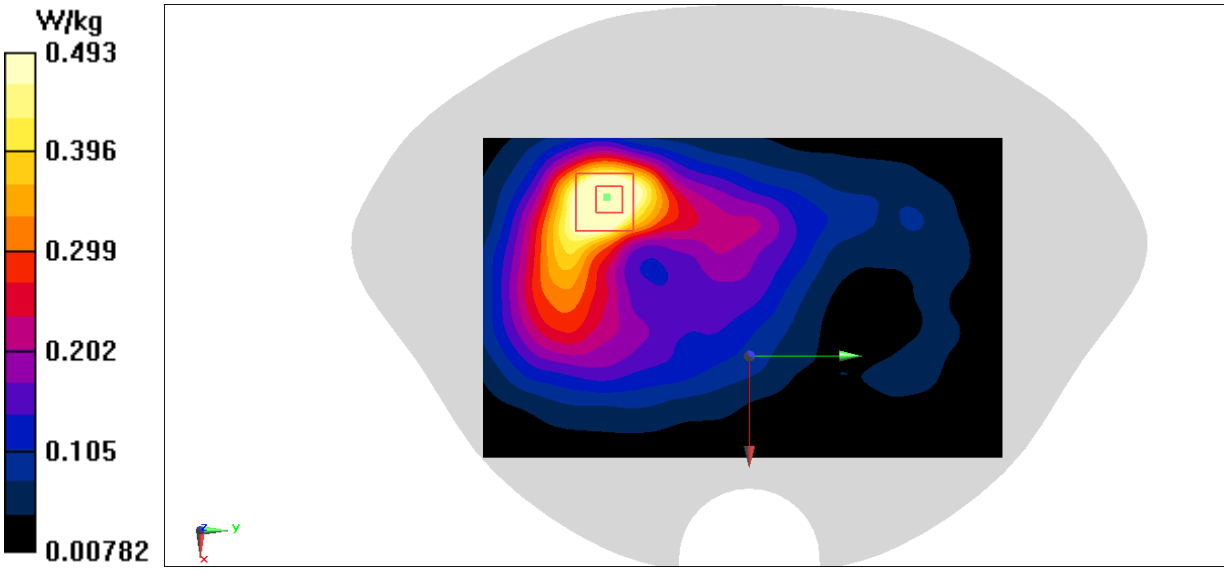


Fig A.10

n41 MIMO_CH523302 Left Cheek
Date: 9/12/2020
Electronics: DAE4 Sn777
Medium: head 2600 MHz
Medium parameters used: f = 2616.51; σ = 1.95 mho/m; εr = 38.41; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: n41 MIMO 2616.51 Duty Cycle:
Probe: EX3DV4 – SN3617 ConvF(7.52,7.52,7.52)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.16 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.348 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 1.33 W/kg
SAR(1 g) = 0.63 W/kg; SAR(10 g) = 0.295 W/kg
Maximum value of SAR (measured) = 0.686 W/kg

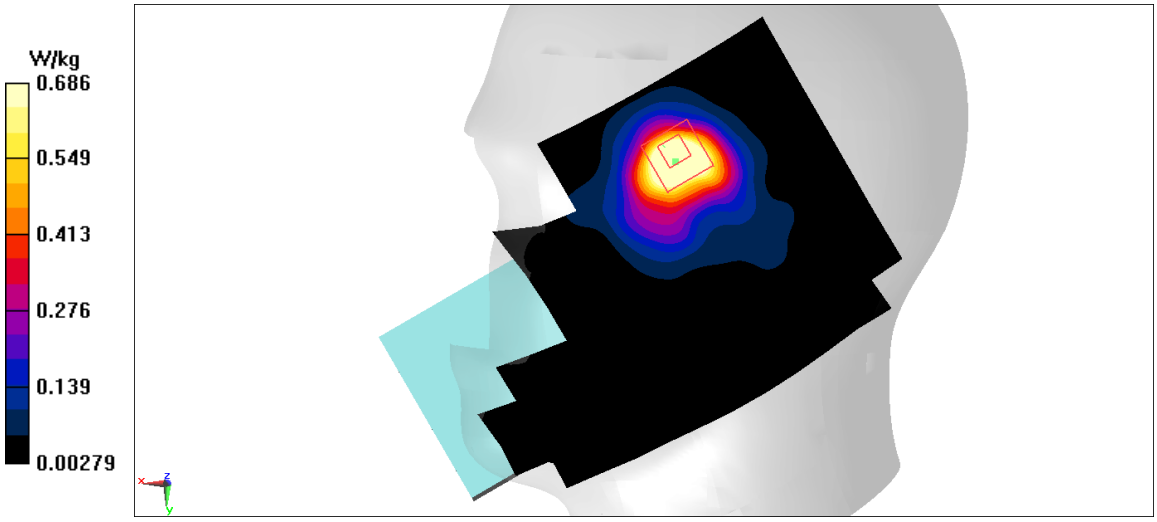


Fig A.11

n41 MIMO_CH523302 Rear
Date: 9/12/2020
Electronics: DAE4 Sn777
Medium: head 2600 MHz
Medium parameters used: f = 2616.51; σ = 1.95 mho/m; εr = 38.41; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC, Liquid Temperature: 22.3ºC
Communication System: n41 MIMO 2616.51 Duty Cycle:
Probe: EX3DV4 – SN3617 ConvF(7.52,7.52,7.52)

Area Scan (71x121x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.31 W/kg

Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 4.983 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 1.41 W/kg
SAR(1 g) = 0.782 W/kg; SAR(10 g) = 0.353 W/kg
Maximum value of SAR (measured) = 0.918 W/kg

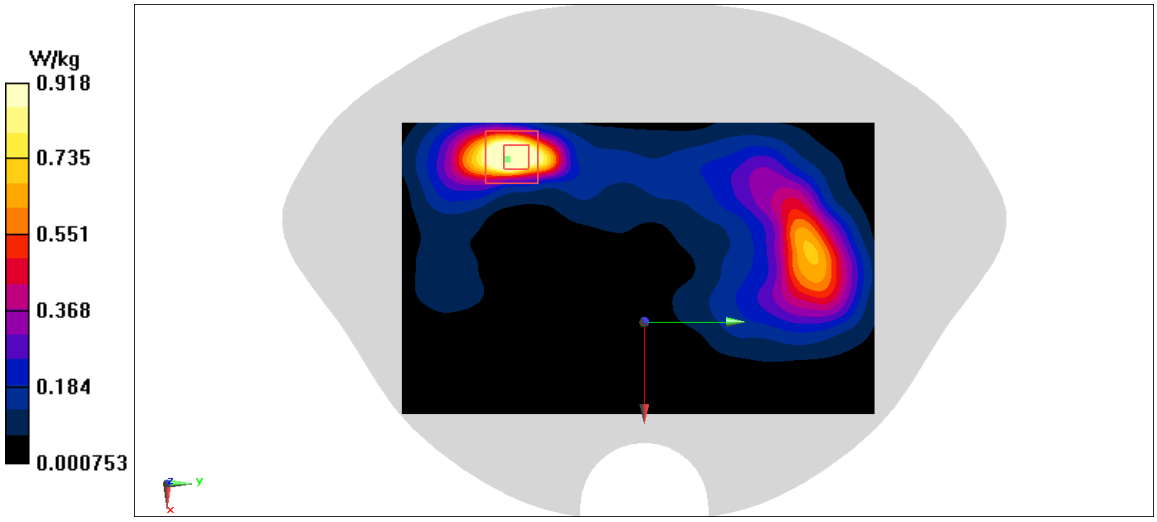


Fig A.12

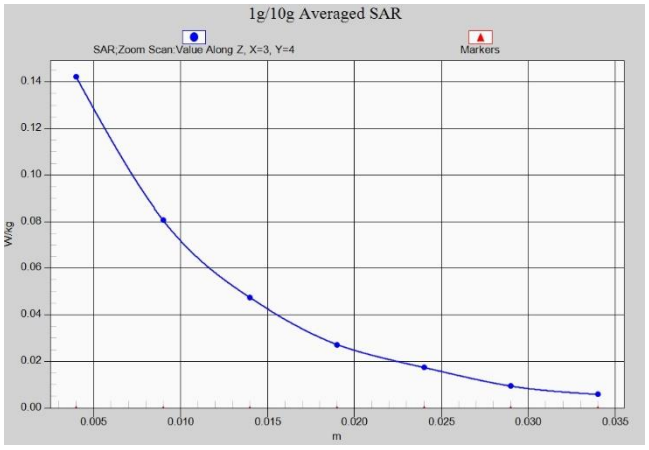


Fig. 1-52 Z-Scan at power reference point (n41)

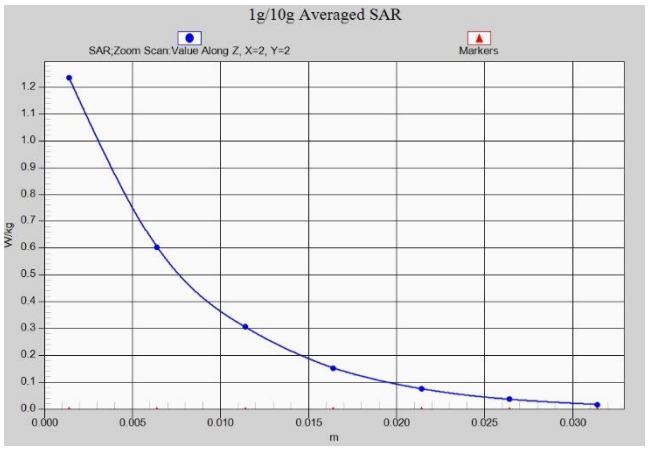


Fig. 1-53 Z-Scan at power reference point (n41)

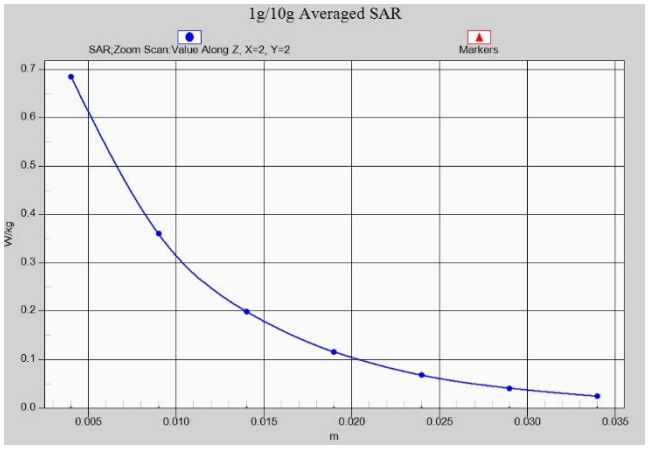


Fig. 1-54 Z-Scan at power reference point (n66)

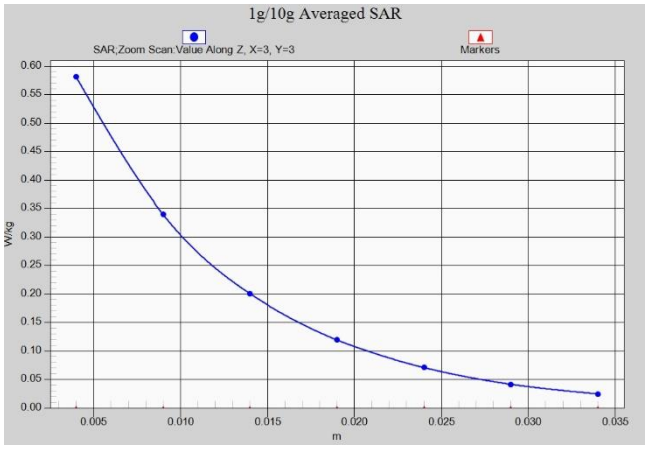


Fig. 1-55 Z-Scan at power reference point (n66)

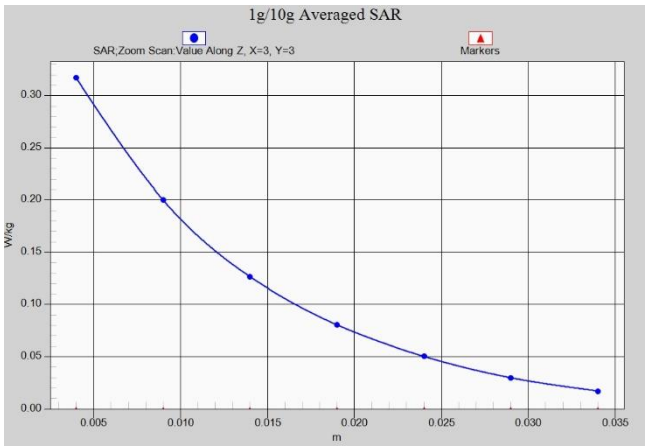


Fig. 1-56 Z-Scan at power reference point (n66)

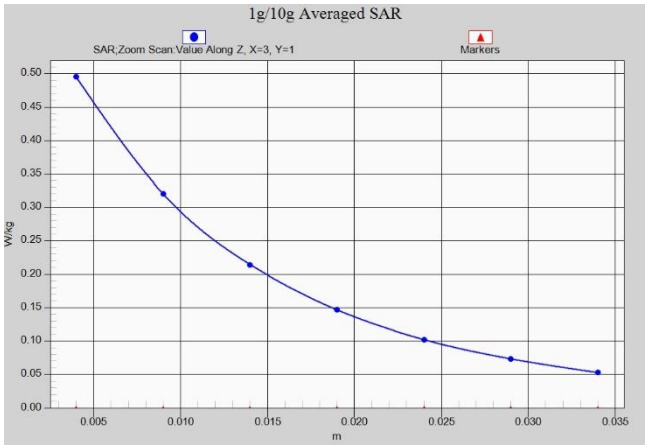


Fig. 1-57 Z-Scan at power reference point (n71)

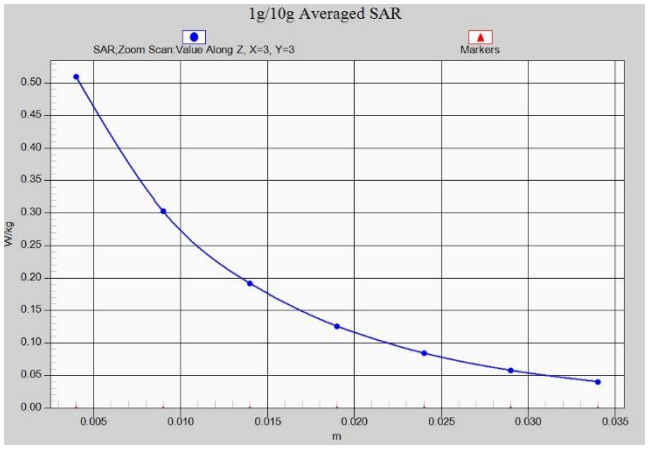


Fig. 1-58 Z-Scan at power reference point (n71)

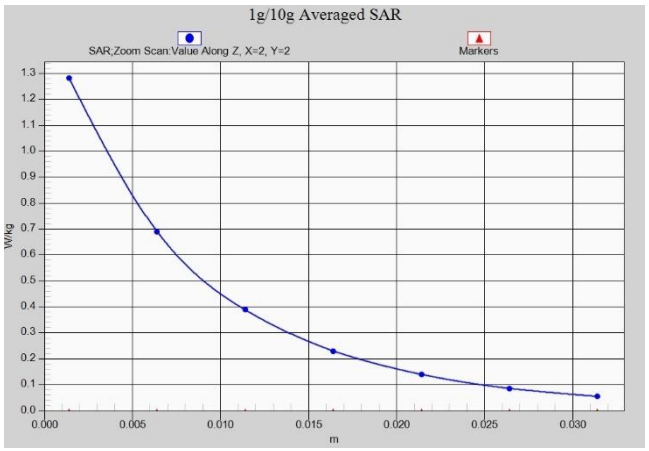


Fig. 1-57 Z-Scan at power reference point (n25)

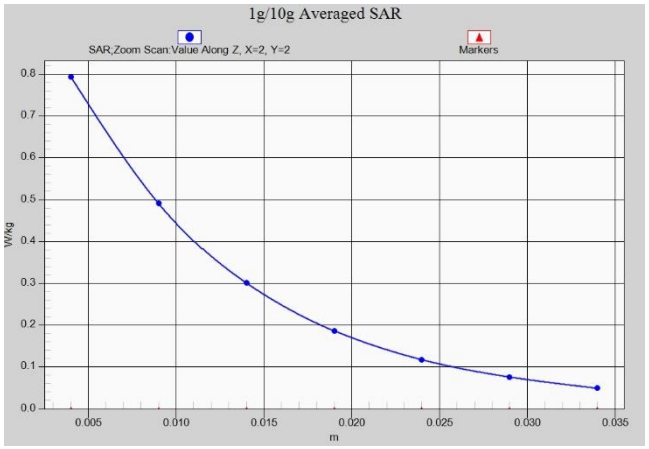


Fig. 1-58 Z-Scan at power reference point (n25)

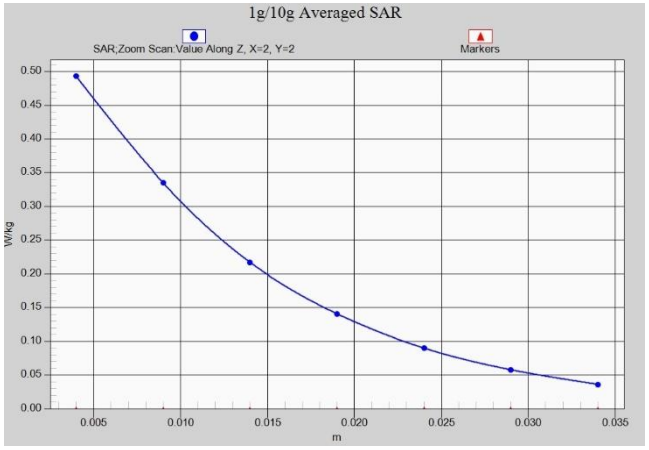


Fig. 1-58 Z-Scan at power reference point (n25)

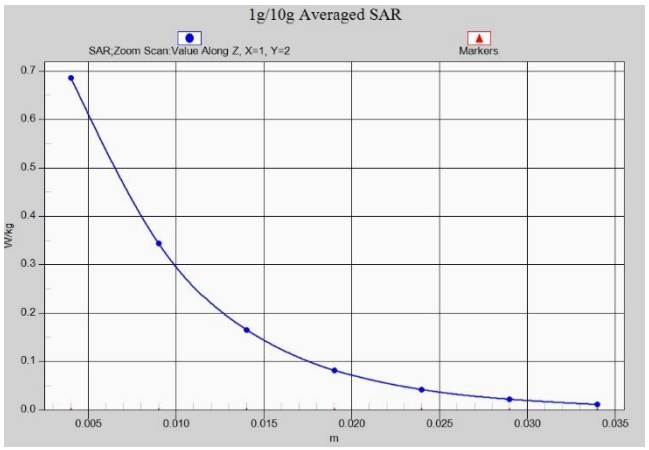


Fig. 1-58 Z-Scan at power reference point (n41 MIMO)

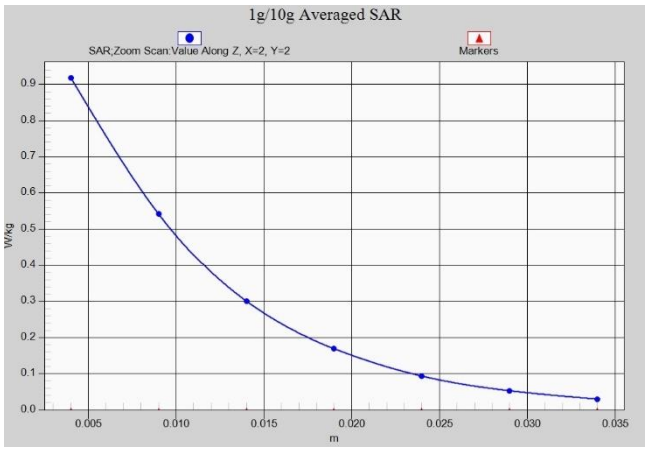


Fig. 1-58 Z-Scan at power reference point (n41 MIMO)

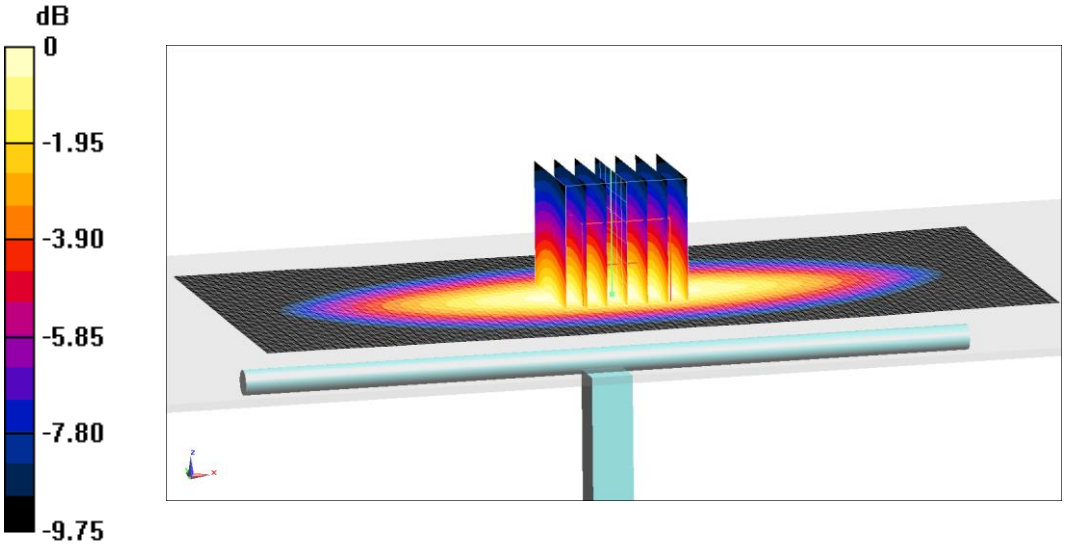
I.7 System Verification Results

750 MHz

Date: 6/5/2020
Electronics: DAE4 Sn777
Medium: Head 750 MHz
Medium parameters used: f = 750 MHz; σ =0.88 mho/m; ε_r = 41.71; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(10.07,10.07,10.07)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 59.67 V/m; Power Drift = 0.04
Fast SAR: SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.38 W/kg
Maximum value of SAR (interpolated) = 2.74 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =59.67 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 3.22 W/kg
SAR(1 g) = 2.11 W/kg; SAR(10 g) = 1.41 W/kg
Maximum value of SAR (measured) = 2.84 W/kg



0 dB = 2.84 W/kg = 4.53 dB W/kg

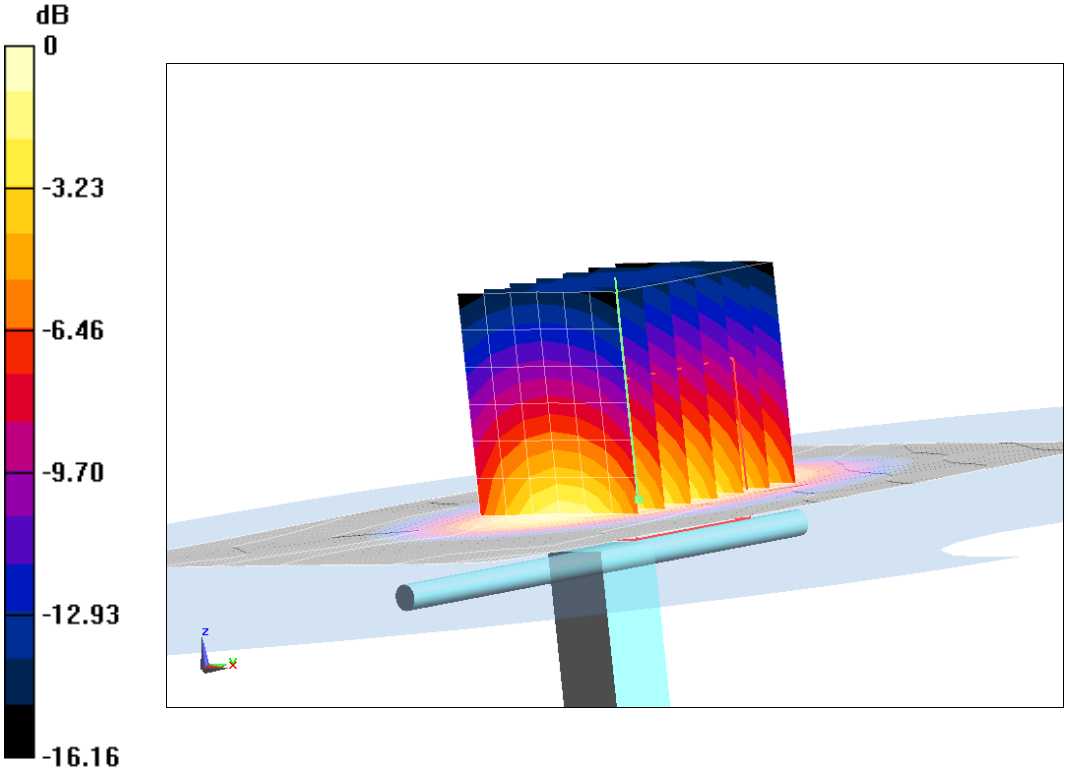
Fig.B.1 validation 750 MHz 250mW

1750 MHz

Date: 6/9/2020
Electronics: DAE4 Sn777
Medium: Head 1750 MHz
Medium parameters used: f = 1750 MHz; σ =1.383 mho/m; ε_r = 39.85; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 1750 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(8.41,8.41,8.41)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 107.99 V/m; Power Drift = 0.03
Fast SAR: SAR(1 g) = 9 W/kg; SAR(10 g) = 4.91 W/kg
Maximum value of SAR (interpolated) = 14.09 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =107.99 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 16.34 W/kg
SAR(1 g) = 9.15 W/kg; SAR(10 g) = 4.77 W/kg
Maximum value of SAR (measured) = 13.84 W/kg



0 dB = 13.84 W/kg = 11.41 dB W/kg

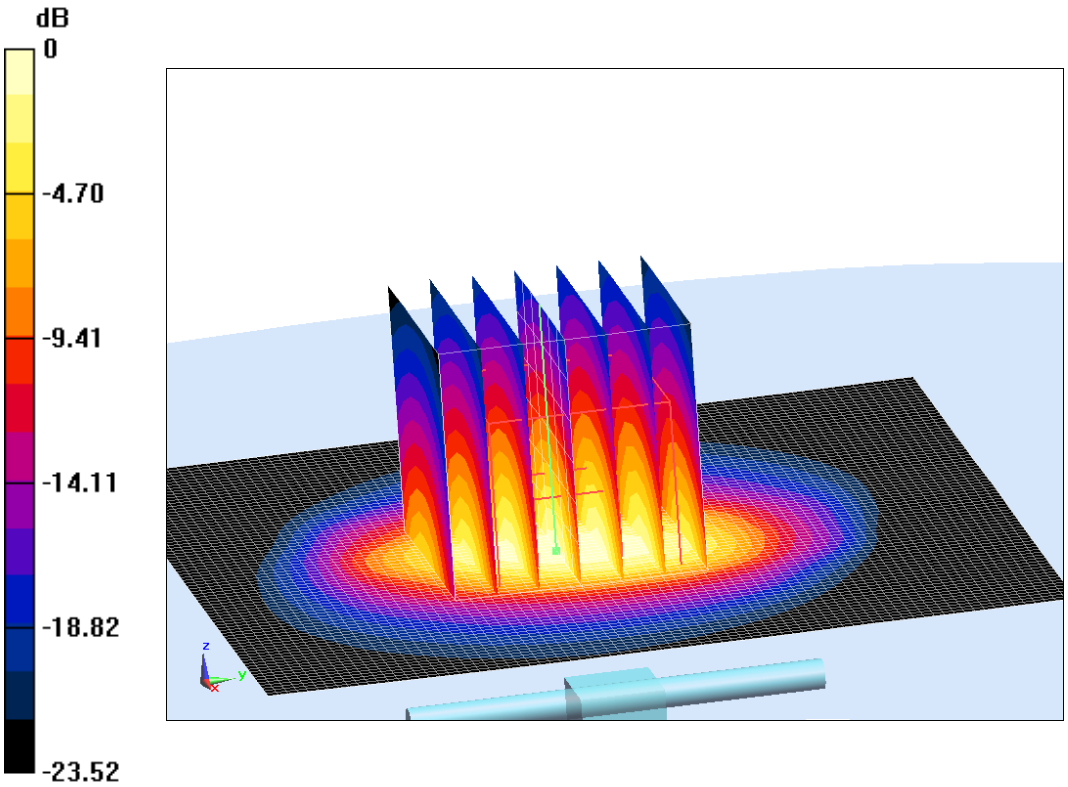
Fig.B.2 validation 1750 MHz 250mW

2600 MHz

Date: 6/16/2020
Electronics: DAE4 Sn777
Medium: Head 2600 MHz
Medium parameters used: f = 2600 MHz; σ =1.956 mho/m; ε_r = 38.46; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 2600 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(7.52,7.52,7.52)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 120.63 V/m; Power Drift = -0.08
Fast SAR: SAR(1 g) = 13.95 W/kg; SAR(10 g) = 6.23 W/kg
Maximum value of SAR (interpolated) = 25.17 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =120.63 V/m; Power Drift = -0.08 dB
Peak SAR (extrapolated) = 28.69 W/kg
SAR(1 g) = 14 W/kg; SAR(10 g) = 6.38 W/kg
Maximum value of SAR (measured) = 23.95 W/kg



0 dB = 23.95 W/kg = 13.79 dB W/kg

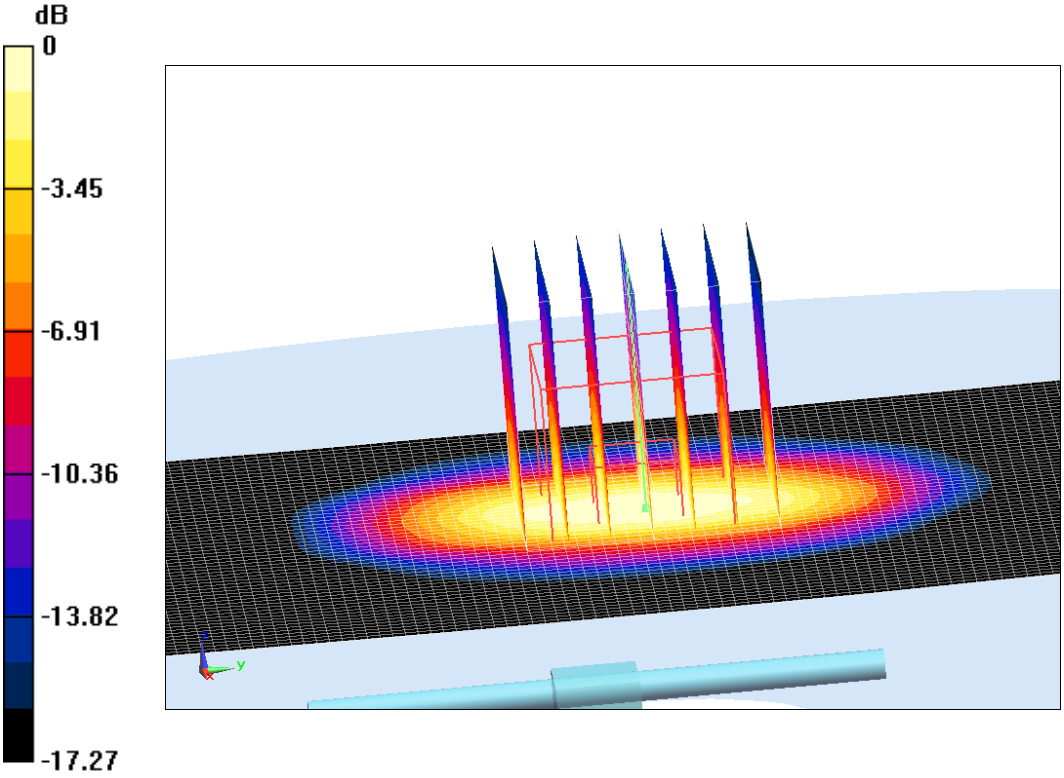
Fig.B.3 validation 2600 MHz 250mW

1900 MHz

Date: 9/11/2020
Electronics: DAE4 Sn777
Medium: Head 1900 MHz
Medium parameters used: f = 1900 MHz; σ =1.404 mho/m; ε_r = 39.36; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 1900 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(8.14,8.14,8.14)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 107.96 V/m; Power Drift = -0.04
Fast SAR: SAR(1 g) = 10.09 W/kg; SAR(10 g) = 5.1 W/kg
Maximum value of SAR (interpolated) = 15.24 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =107.96 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 18.06 W/kg
SAR(1 g) = 9.77 W/kg; SAR(10 g) = 5.13 W/kg
Maximum value of SAR (measured) = 15.33 W/kg



0 dB = 15.33 W/kg = 11.86 dB W/kg

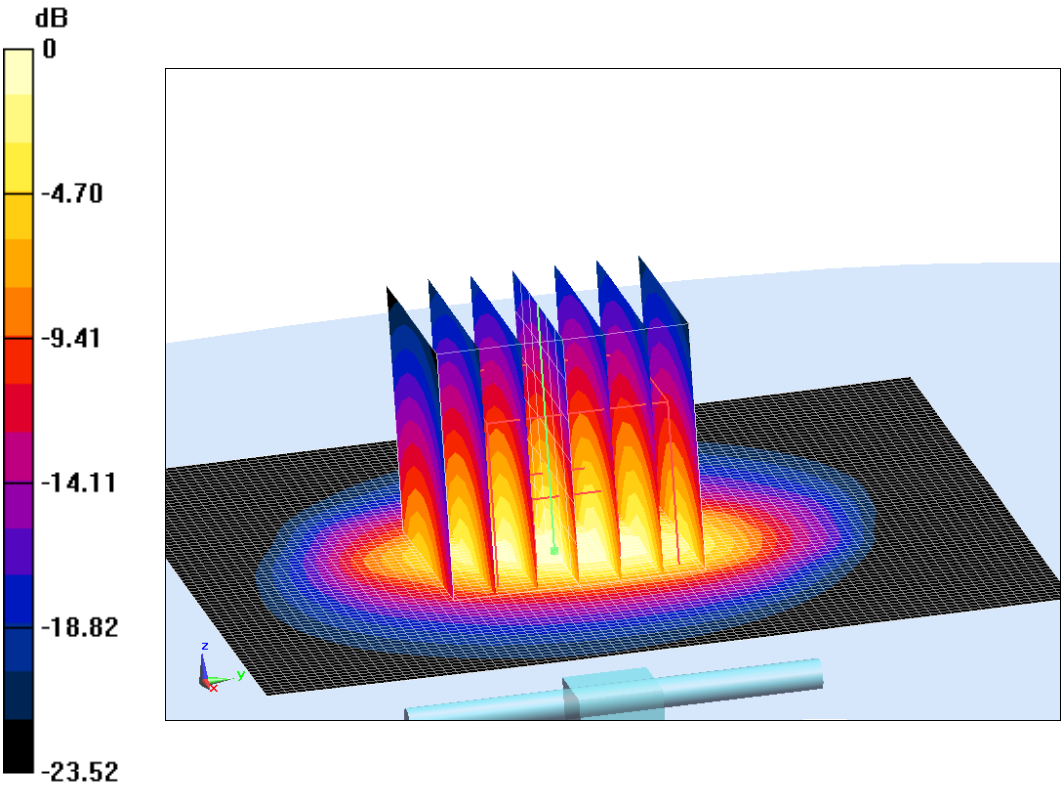
Fig.B.4 validation 1900 MHz 250mW

2600 MHz

Date: 9/12/2020
Electronics: DAE4 Sn777
Medium: Head 2600 MHz
Medium parameters used: f = 2600 MHz; σ =1.935 mho/m; ε_r = 38.36; ρ = 1000 kg/m^3
Ambient Temperature: 22.5ºC Liquid Temperature: 22.3ºC
Communication System: CW Frequency: 2600 MHz Duty Cycle: 1:1
Probe: EX3DV4 – SN3617 ConvF(7.52,7.52,7.52)

System Validation /Area Scan (81x191x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Reference Value = 123.17 V/m; Power Drift = 0.06
Fast SAR: SAR(1 g) = 14.33 W/kg; SAR(10 g) = 6.31 W/kg
Maximum value of SAR (interpolated) = 24.71 W/kg

System Validation /Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value =123.17 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 29.05 W/kg
SAR(1 g) = 14.28 W/kg; SAR(10 g) = 6.43 W/kg
Maximum value of SAR (measured) = 23.93 W/kg



0 dB = 23.93 W/kg = 13.79 dB W/kg

Fig.B.5 validation 2600 MHz 250mW

I.8 Dipole Calibration Certificate

1900 MHz Dipole Calibration Certificate

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

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Accreditation No.: SCS 0108

Client CTTL-BJ (Auden)

Certificate No: D1900V2-5d101_Jul20

CALIBRATION CERTIFICATE

Object	D1900V2 - SN:5d101
Calibration procedure(s)	QA CAL-05.v11 Calibration Procedure for SAR Validation Sources between 0.7-3 GHz
Calibration date:	July 28, 2020

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 NRP	SN: 104778	01-Apr-20 (No. 217-03100/03101)	Apr-21
Power sensor NRP-Z91	SN: 103244	01-Apr-20 (No. 217-03100)	Apr-21
Power sensor NRP-Z91	SN: 103245	01-Apr-20 (No. 217-03101)	Apr-21
Reference 20 dB Attenuator	SN: BH9394 (20k)	31-Mar-20 (No. 217-03106)	Apr-21
Type-N mismatch combination	SN: 310982 / 06327	31-Mar-20 (No. 217-03104)	Apr-21
Reference Probe EX3DV4	SN: 7349	29-Jun-20 (No. EX3-7349_Jun20)	Jun-21
DAE4	SN: 601	27-Dec-19 (No. DAE4-601_Dec19)	Dec-20

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power meter E4419B	SN: GB39512475	30-Oct-14 (in house check Feb-19)	In house check: Oct-20
Power sensor HP 8481A	SN: US37292783	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
Power sensor HP 8481A	SN: MY41092317	07-Oct-15 (in house check Oct-18)	In house check: Oct-20
RF generator R&S SMT-06	SN: 100972	15-Jun-15 (in house check Oct-18)	In house check: Oct-20
Network Analyzer Agilent E8358A	SN: US41080477	31-Mar-14 (in house check Oct-19)	In house check: Oct-20

	Name	Function	Signature
Calibrated by:	Jeffrey Katzman	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: July 29, 2020

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

Certificate No: D1900V2-5d101_Jul20 Page 1 of 8

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Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

Additional Documentation:

e) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.