Appendix Annual validation for Test Lab.

General calibration information

Date	2022.12.15
Test Laboratory	ShenZhen Morlab Communications Technology Co., Ltd.
Antenna serial No.	D5250V2-SN: 1176

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.068Ω +1.05jΩ
Return Loss	-32.818dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.276 ns

After long term use with 100W radiated power，only a slight warming of the dipole near the feed point 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 arm，because they might bend or the soldered connections near the feed point may be damaged.

Test Laboratory: Shenzhen Morlab Communications Technology Co., Ltd. Date: 2022.12.15

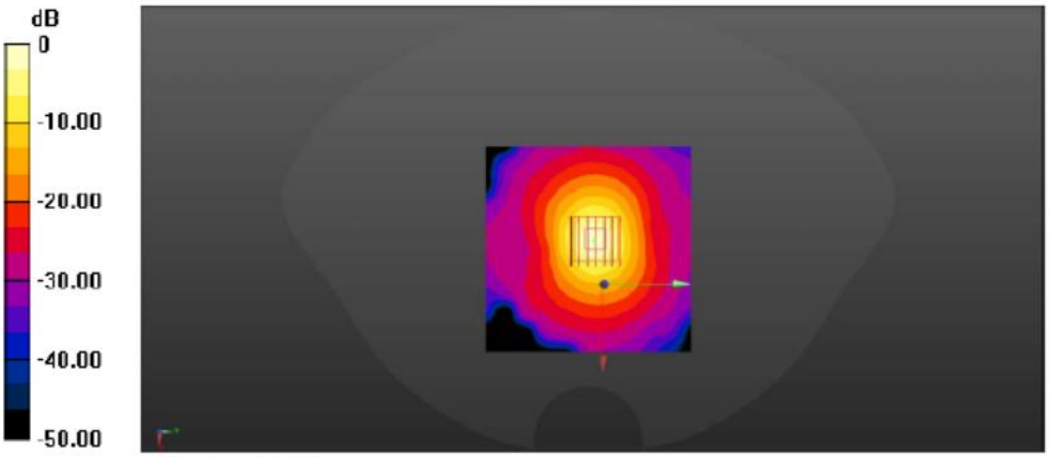
System Check_5250MHz_Head

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: HSL_5250 Medium parameters used: f = 5250 MHz; σ = 4.714 S/m; ε_r = 36.322; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7608; ConvF(5.16, 5.16, 5.16) @ 5250 MHz; Calibrated: 2022.01.12
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1643; Calibrated: 2021.12.30
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2020
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

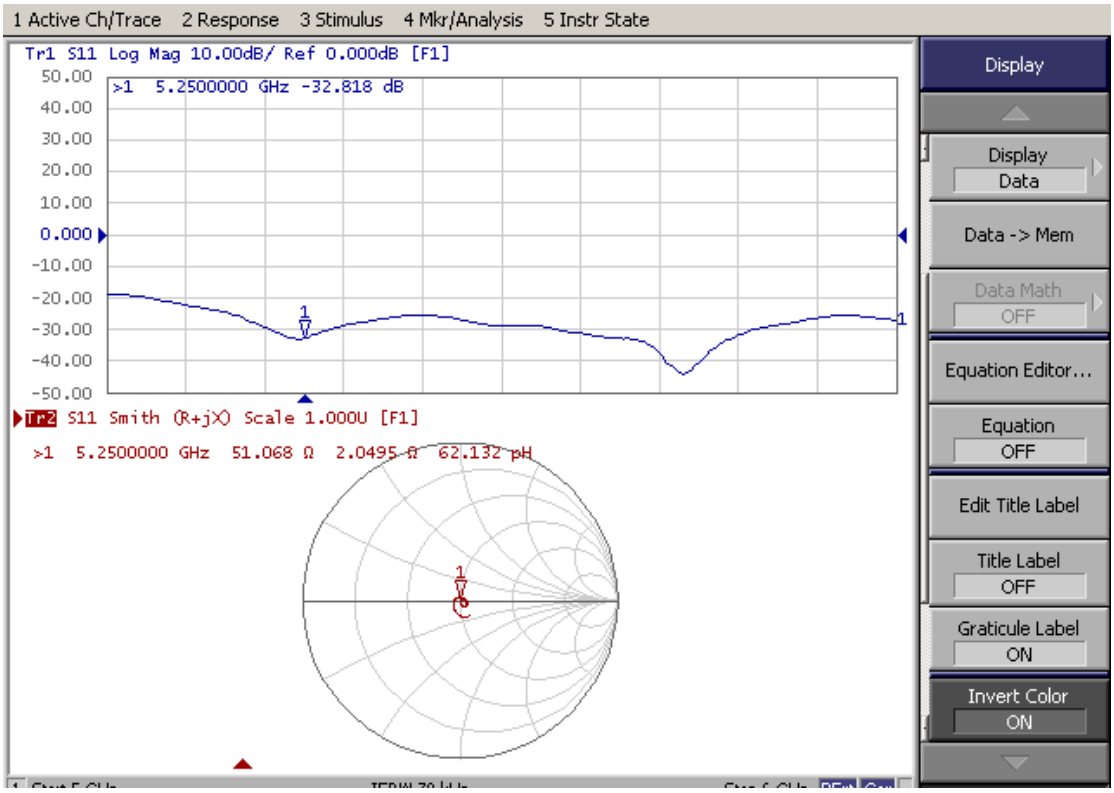
CW5250/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 13.52 W/kg

CW5250/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 55.31 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 21.2 W/kg
SAR(1 g) = 7.57 W/kg; SAR(10 g) = 2.25 W/kg
Maximum value of SAR (measured) = 13.06 W/kg



0 dB = 13.06 W/kg

Appendix Impedance Measurement Plot for Head TSL



Appendix Annual validation for Test Lab.

General calibration information

Date	2022.12.15
Test Laboratory	ShenZhen Morlab Communications Technology Co., Ltd.
Antenna serial No.	D5600V2-SN: 1176

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.89Ω -2.58jΩ
Return Loss	-31.355dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.276 ns

After long term use with 100W radiated power，only a slight warming of the dipole near the feed point 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 arm，because they might bend or the soldered connections near the feed point may be damaged.

Test Laboratory: Shenzhen Morlab Communications Technology Co., Ltd. Date: 2022.12.15

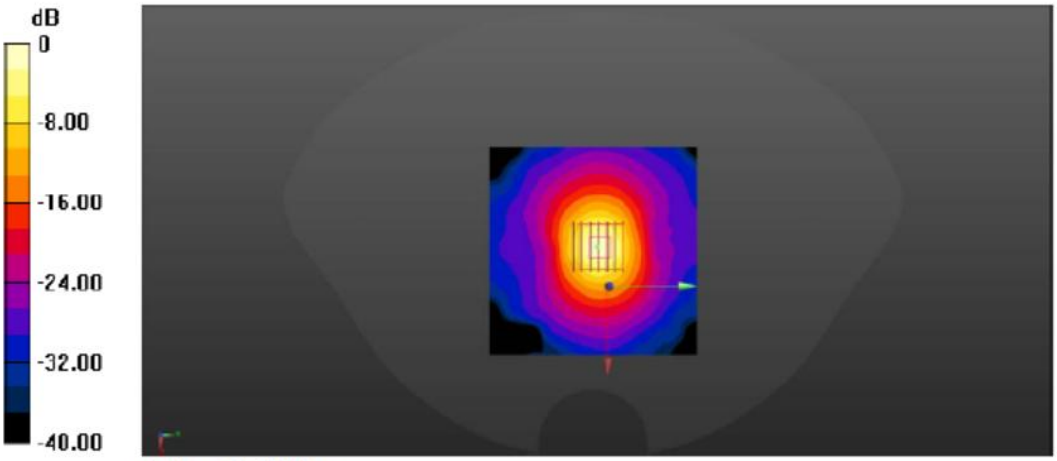
System Check_5600MHz_Head

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: HSL_5600 Medium parameters used: f = 5600 MHz; σ = 5.11 S/m; ε_r = 35.521; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7608; ConvF(4.74, 4.74, 4.74) @ 5600 MHz; Calibrated: 2022.01.12
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1643; Calibrated: 2021.12.30
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2020
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

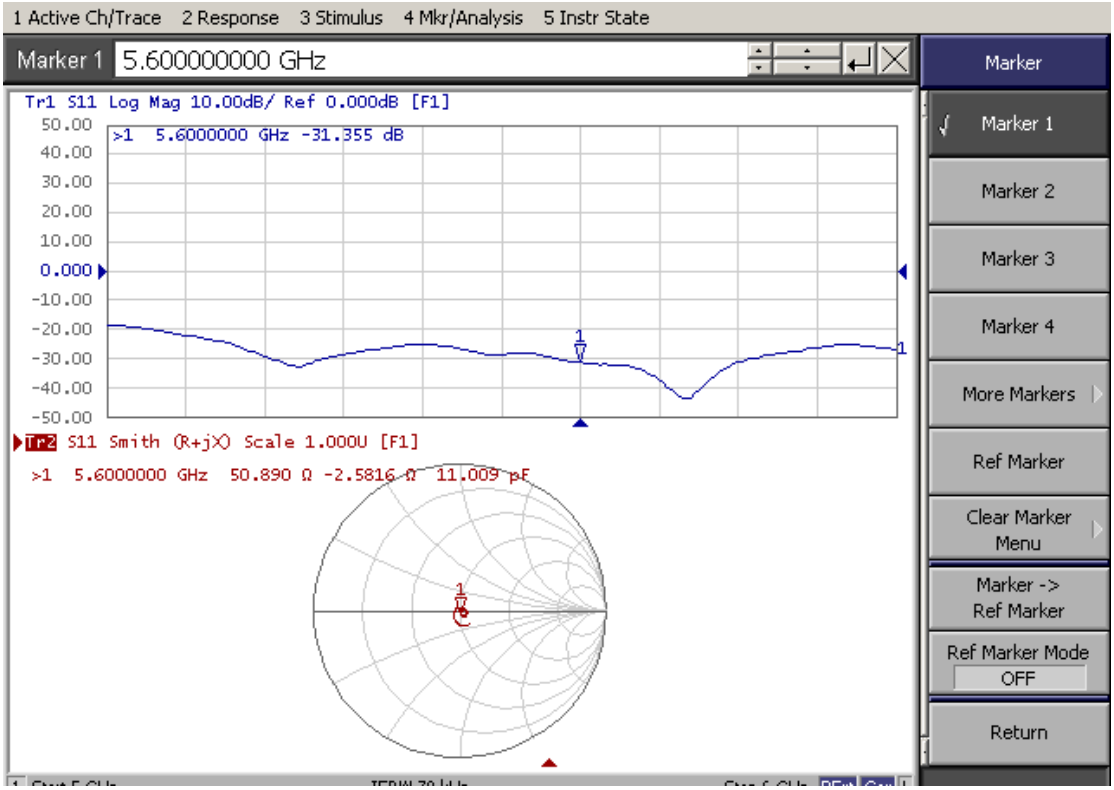
CW5600/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 19.24 W/kg

CW5600/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 49.70 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 21.0 W/kg
SAR(1 g) = 8.05 W/kg; SAR(10 g) = 2.37 W/kg
Maximum value of SAR (measured) = 19.1 W/kg



0 dB = 19.1 W/kg

Appendix Impedance Measurement Plot for Head TSL



Appendix Annual validation for Test Lab.

General calibration information

Date	2022.12.15
Test Laboratory	ShenZhen Morlab Communications Technology Co., Ltd.
Antenna serial No.	D5750V2-SN: 1176

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.962Ω +1.96jΩ
Return Loss	-40.247dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.276 ns

After long term use with 100W radiated power，only a slight warming of the dipole near the feed point 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 arm，because they might bend or the soldered connections near the feed point may be damaged.

Test Laboratory: Shenzhen Morlab Communications Technology Co., Ltd. Date: 2022.12.15

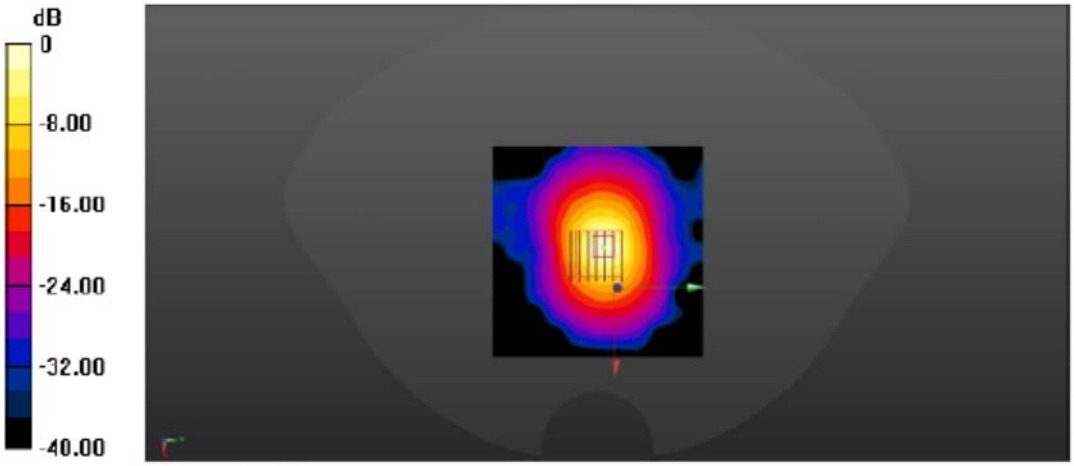
System Check_5750MHz_Head

Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium: HSL_5750 Medium parameters used: f = 5750 MHz; σ = 5.355 S/m; ε_r = 35.127; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3823; ConvF(4.45, 4.45, 4.45) @ 5750 MHz; Calibrated: 2022.03.04
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1643; Calibrated: 2021.12.30
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2020
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

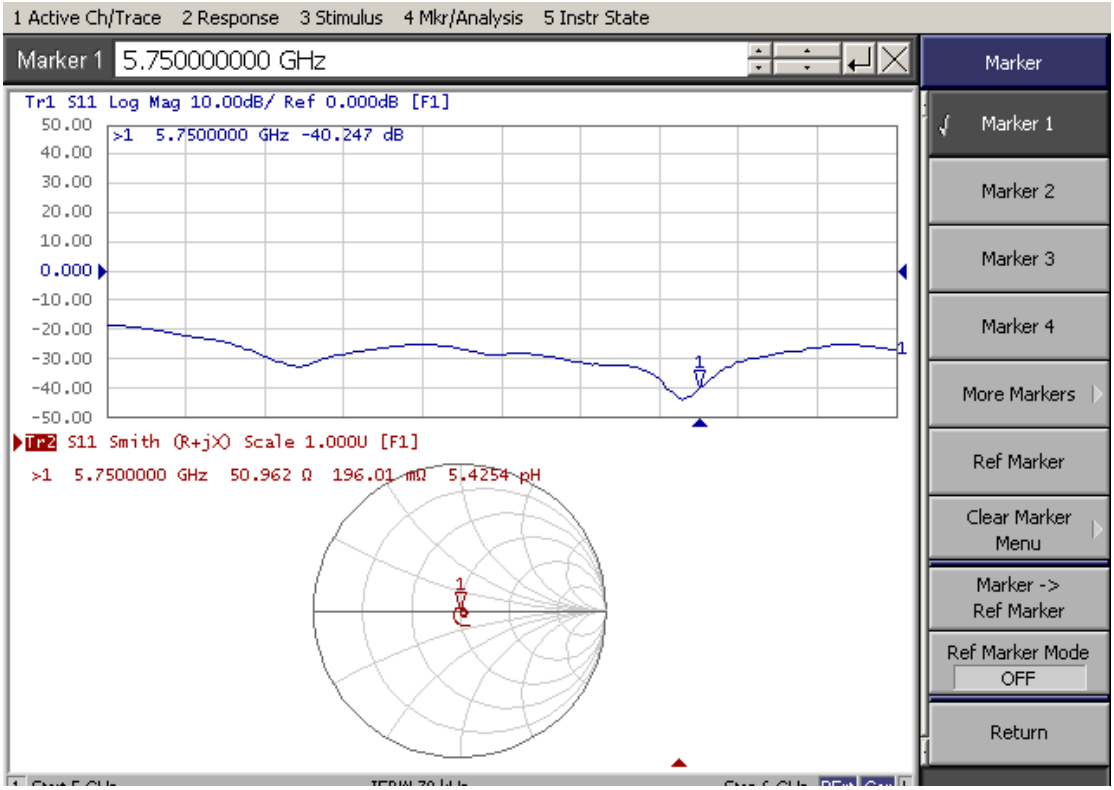
CW5750/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 21.6 W/kg

CW5750/Zoom Scan (7x7x12)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 56.28 V/m; Power Drift = 0.12 dB
Peak SAR (extrapolated) = 36.5 W/kg
SAR(1 g) = 7.98 W/kg; SAR(10 g) = 2.35 W/kg
Maximum value of SAR (measured) = 21.1 W/kg



0 dB = 21.1 W/kg

Appendix Impedance Measurement Plot for Head TSL



Appendix Annual validation for Test Lab.

General calibration information

Date	2023.11.28
Test Laboratory	ShenZhen Morlab Communications Technology Co., Ltd.
Antenna serial No.	D5250V2-SN: 1176

Antenna Parameters with Head TSL

Impedance, transformed to feed point	5.250Ω+0.364jΩ
Return Loss	-28.158dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.276 ns

After long term use with 100W radiated power，only a slight warming of the dipole near the feed point 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 arm，because they might bend or the soldered connections near the feed point may be damaged.

Test Laboratory: Shenzhen Morlab Communications Technology Co., Ltd. Date: 2023.11.28

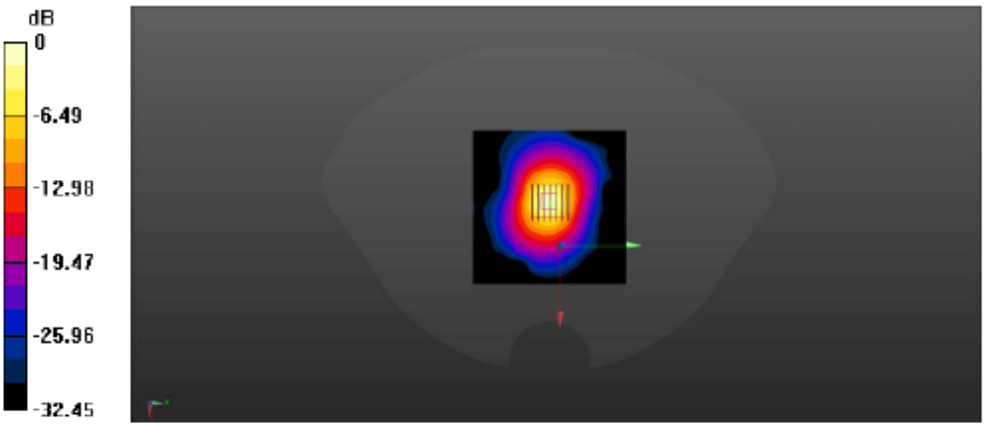
System Check_5250MHz_Head

Communication System: UID 0, CW (0); Frequency: 5250 MHz;Duty Cycle: 1:1
Medium: HSL_5250 Medium parameters used: f = 5250 MHz; σ = 4.85 S/m; ε_r = 36.122; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.4 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7608; ConvF(5.35, 5.35, 5.35) @ 5250 MHz; Calibrated: 2023.03.15
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1643; Calibrated: 2023.02.22
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2020
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

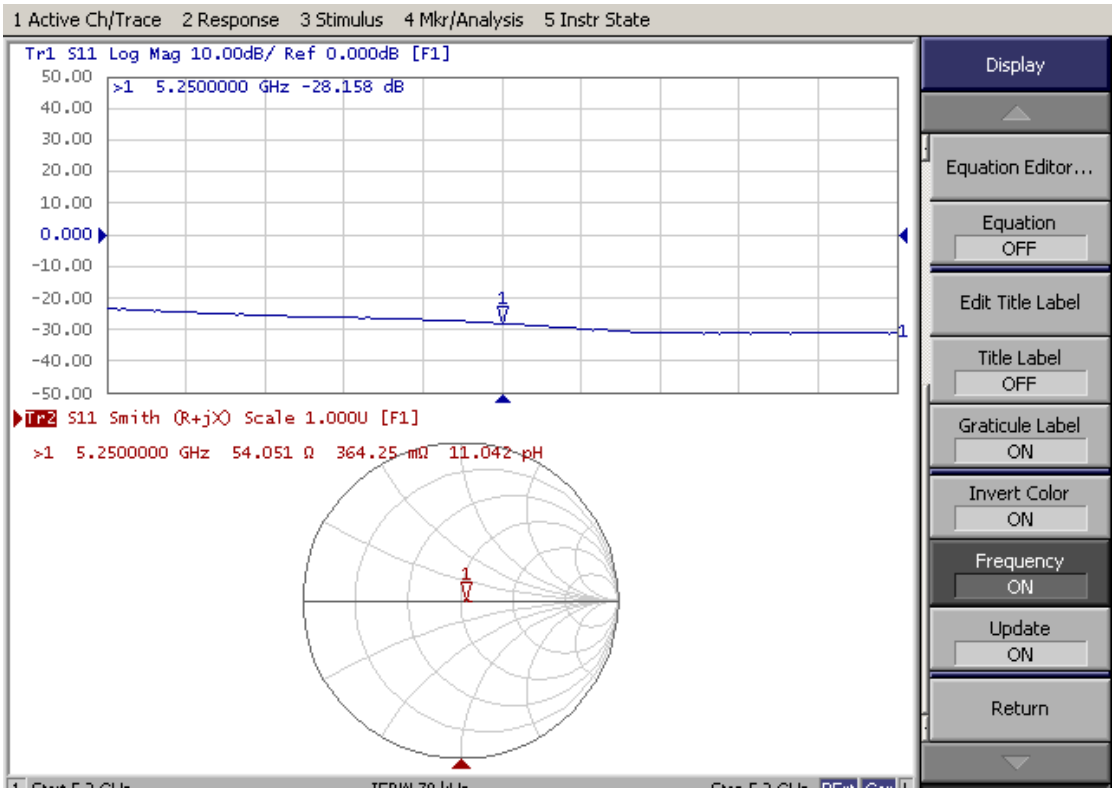
CW5250/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 17.77 W/kg

CW5250/Zoom Scan (7x7x13)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 42.38 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 45.81 W/kg
SAR(1 g) = 8.23 W/kg; SAR(10 g) = 2.25 W/kg
Maximum value of SAR (measured) = 17.81 W/kg



0 dB = 17.81 W/kg

Appendix Impedance Measurement Plot for Head TSL



Appendix Annual validation for Test Lab.

General calibration information

Date	2023.11.29
Test Laboratory	ShenZhen Morlab Communications Technology Co., Ltd.
Antenna serial No.	D5600V2-SN: 1176

Antenna Parameters with Head TSL

Impedance, transformed to feed point	55.288Ω-0.389jΩ
Return Loss	-25.958dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.276 ns

After long term use with 100W radiated power，only a slight warming of the dipole near the feed point 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 arm，because they might bend or the soldered connections near the feed point may be damaged.

Test Laboratory: Shenzhen Morlab Communications Technology Co., Ltd. Date: 2023.11.29

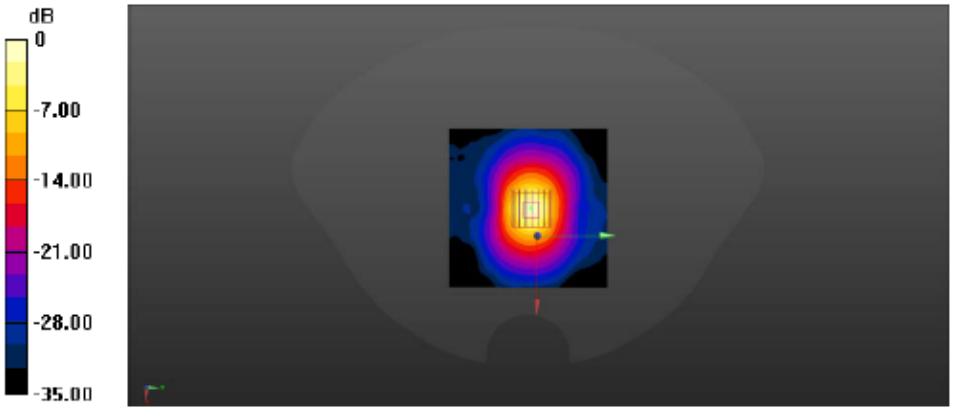
System Check_5600MHz_Head

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: HSL_5600 Medium parameters used: f = 5600 MHz; σ = 5.187 S/m; ε_r = 36.116; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7608; ConvF(4.8, 4.8, 4.8) @ 5600 MHz; Calibrated: 2023.03.15
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1643; Calibrated: 2023.02.22
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2020
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

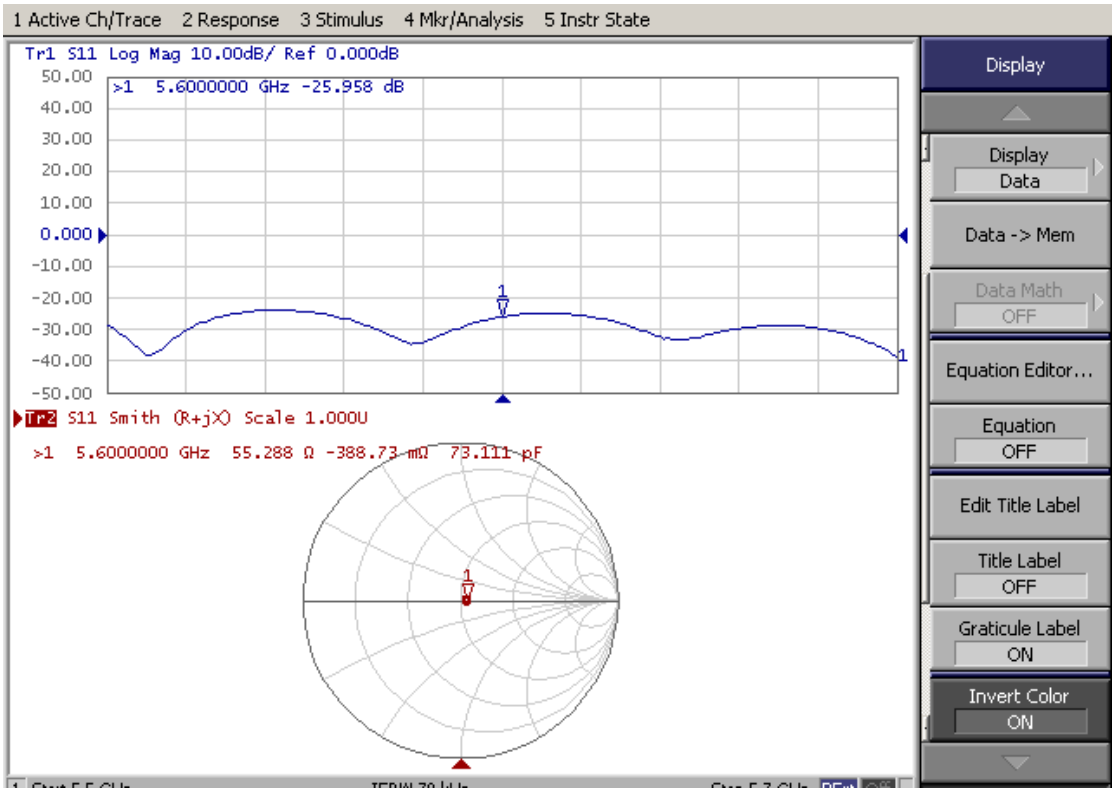
CW5600/Area Scan (101x101x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 17.77 W/kg

CW5600/Zoom Scan (7x7x13)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 52.66 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 31.5 W/kg
SAR(1 g) = 8.42 W/kg; SAR(10 g) = 2.34 W/kg
Maximum value of SAR (measured) = 17.77 W/kg



0 dB = 17.77 W/kg

Appendix Impedance Measurement Plot for Head TSL



Appendix Annual validation for Test Lab.

General calibration information

Date	2023.11.30
Test Laboratory	ShenZhen Morlab Communications Technology Co., Ltd.
Antenna serial No.	D5750V2-SN: 1176

Antenna Parameters with Head TSL

Impedance, transformed to feed point	53.308Ω+2.342jΩ
Return Loss	-28.129dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.276 ns

After long term use with 100W radiated power，only a slight warming of the dipole near the feed point 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 arm，because they might bend or the soldered connections near the feed point may be damaged.

Test Laboratory: Shenzhen Morlab Communications Technology Co., Ltd. Date: 2023.11.30

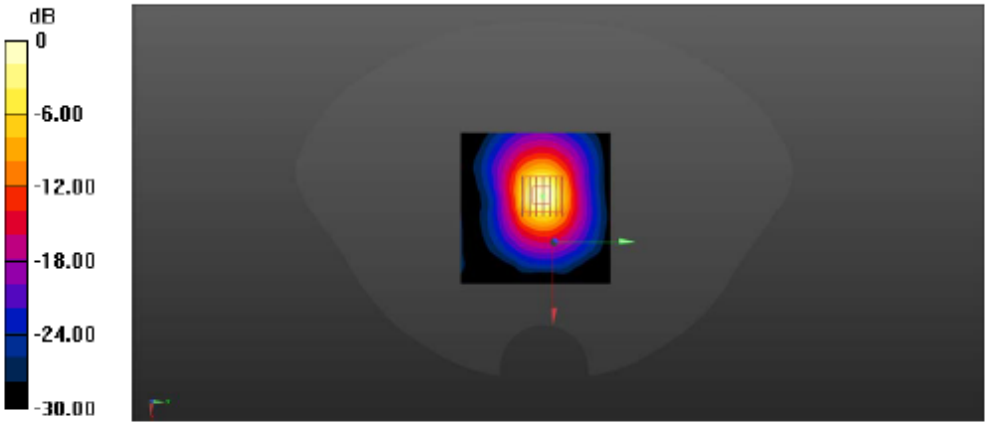
System Check_5750MHz_Head

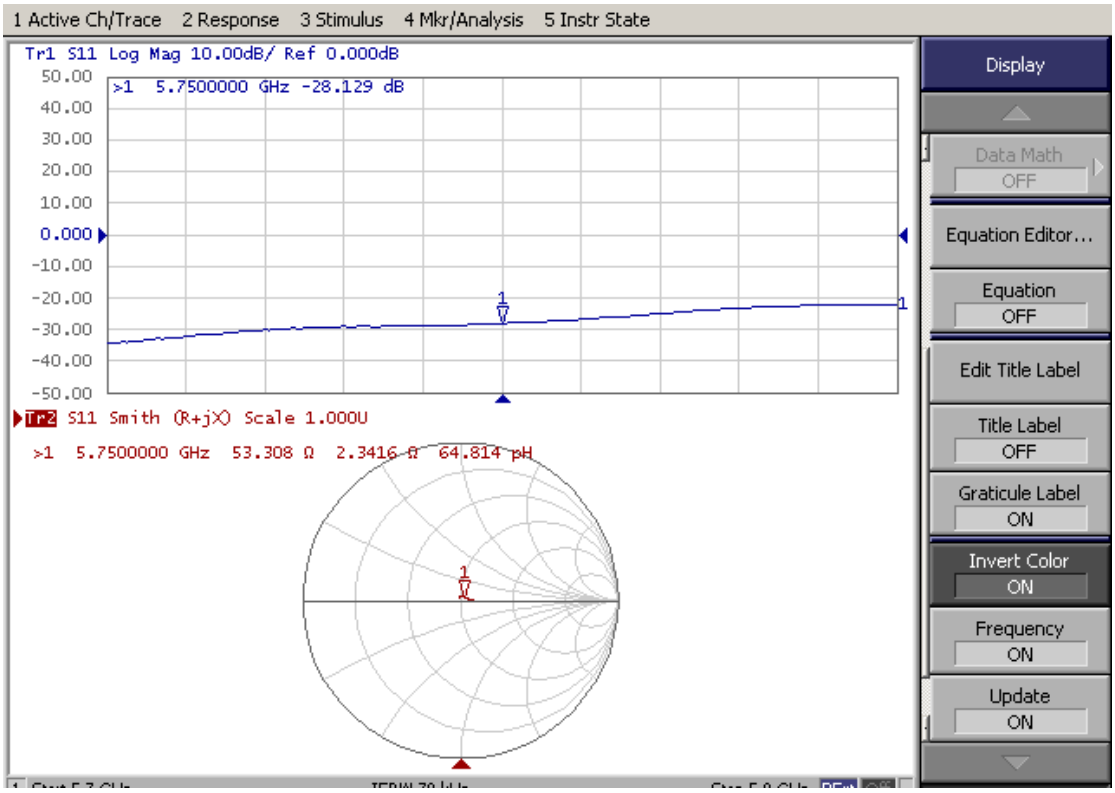
Communication System: UID 0, CW (0); Frequency: 5750 MHz;Duty Cycle: 1:1
Medium: HSL_5750 Medium parameters used: f = 5750 MHz; σ = 5.226 S/m; ε_r = 35.494; ρ = 1000 kg/m^3
Ambient Temperature：23.2 ℃; Liquid Temperature：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN7608; ConvF(4.87, 4.87, 4.87) @ 5750 MHz; Calibrated: 2023.03.15
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1643; Calibrated: 2023.02.22
- Phantom: Twin-SAM; Type: QD 000 P41 Ax; Serial: 2020
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7483)

CW5750/Area Scan (91x91x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 29.4 W/kg

CW5750/Zoom Scan (7x7x13)/Cube 0: Measurement grid: dx=4mm, dy=4mm, dz=2mm
Reference Value = 46.23 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 45.5 W/kg
SAR(1 g) = 8.56 W/kg; SAR(10 g) = 2.41 W/kg
Maximum value of SAR (measured) = 15.3 W/kg



0 dB = 15.3 W/kg

Appendix Impedance Measurement Plot for Head TSL