

**Head TSL parameters at 5750 MHz**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.4	5.22 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.7 ± 6 %	5.03 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Head TSL at 5750 MHz**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.09 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	<b>80.4 W/kg ± 19.9 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.29 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	<b>22.7 W/kg ± 19.5 % (k=2)</b>

**Head TSL parameters at 5800 MHz**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	35.3	5.27 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	34.6 ± 6 %	5.09 mho/m ± 6 %
Head TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Head TSL at 5800 MHz**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	Condition	
SAR measured	100 mW input power	8.16 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	<b>81.1 W/kg ± 19.9 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	100 mW input power	2.28 W/kg
SAR for nominal Head TSL parameters	normalized to 1W	<b>22.7 W/kg ± 19.5 % (k=2)</b>

**Body TSL parameters at 5200 MHz**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	49.0	5.30 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.8 ± 6 %	5.46 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Body TSL at 5200 MHz**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.30 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>72.7 W/kg ± 19.9 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.04 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>20.3 W/kg ± 19.5 % (k=2)</b>

**Body TSL parameters at 5250 MHz**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.36 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.7 ± 6 %	5.53 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Body TSL at 5250 MHz**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.45 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>74.2 W/kg ± 19.9 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (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	<b>20.8 W/kg ± 19.5 % (k=2)</b>

**Body TSL parameters at 5300 MHz**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.9	5.42 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.6 ± 6 %	5.60 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Body TSL at 5300 MHz**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.36 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>73.3 W/kg ± 19.9 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.06 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>20.5 W/kg ± 19.5 % (k=2)</b>

**Body TSL parameters at 5500 MHz**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.6	5.65 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.2 ± 6 %	5.87 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Body TSL at 5500 MHz**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.86 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>78.3 W/kg ± 19.9 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.17 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>21.6 W/kg ± 19.5 % (k=2)</b>

**Body TSL parameters at 5600 MHz**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.5	5.77 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	47.0 ± 6 %	6.01 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Body TSL at 5600 MHz**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.72 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>76.8 W/kg ± 19.9 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.15 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>21.4 W/kg ± 19.5 % (k=2)</b>

**Body TSL parameters at 5750 MHz**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	48.3	5.94 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	46.8 ± 6 %	6.22 mho/m ± 6 %
Body TSL temperature change during test	< 0.5 °C	----	----

**SAR result with Body TSL at 5750 MHz**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.61 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>75.7 W/kg ± 19.9 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.11 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>21.0 W/kg ± 19.5 % (k=2)</b>

**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	46.7 ± 6 %	6.29 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 <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	100 mW input power	7.42 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>73.9 W/kg ± 19.9 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	100 mW input power	2.04 W/kg
SAR for nominal Body TSL parameters	normalized to 1W	<b>20.3 W/kg ± 19.5 % (k=2)</b>

**Appendix (Additional assessments outside the scope of SCS 0108)****Antenna Parameters with Head TSL at 5200 MHz**

Impedance, transformed to feed point	48.8 $\Omega$ - 6.5 j $\Omega$
Return Loss	- 23.6 dB

**Antenna Parameters with Head TSL at 5250 MHz**

Impedance, transformed to feed point	48.0 $\Omega$ - 4.6 j $\Omega$
Return Loss	- 25.7 dB

**Antenna Parameters with Head TSL at 5300 MHz**

Impedance, transformed to feed point	47.2 $\Omega$ - 3.5 j $\Omega$
Return Loss	- 26.7 dB

**Antenna Parameters with Head TSL at 5500 MHz**

Impedance, transformed to feed point	49.8 $\Omega$ - 3.6 j $\Omega$
Return Loss	- 28.8 dB

**Antenna Parameters with Head TSL at 5600 MHz**

Impedance, transformed to feed point	54.4 $\Omega$ + 0.4 j $\Omega$
Return Loss	- 27.5 dB

**Antenna Parameters with Head TSL at 5750 MHz**

Impedance, transformed to feed point	52.1 $\Omega$ - 1.3 j $\Omega$
Return Loss	- 32.3 dB

**Antenna Parameters with Head TSL at 5800 MHz**

Impedance, transformed to feed point	51.2 $\Omega$ - 3.1 j $\Omega$
Return Loss	- 29.6 dB

**Antenna Parameters with Body TSL at 5200 MHz**

Impedance, transformed to feed point	48.4 $\Omega$ - 5.5 j $\Omega$
Return Loss	- 24.6 dB

**Antenna Parameters with Body TSL at 5250 MHz**

Impedance, transformed to feed point	47.2 $\Omega$ - 3.2 j $\Omega$
Return Loss	- 27.1 dB

**Antenna Parameters with Body TSL at 5300 MHz**

Impedance, transformed to feed point	47.0 $\Omega$ - 2.0 j $\Omega$
Return Loss	- 28.5 dB

**Antenna Parameters with Body TSL at 5500 MHz**

Impedance, transformed to feed point	50.6 $\Omega$ - 2.4 j $\Omega$
Return Loss	- 32.3 dB

**Antenna Parameters with Body TSL at 5600 MHz**

Impedance, transformed to feed point	$54.5 \Omega + 0.4 j\Omega$
Return Loss	- 27.3 dB

**Antenna Parameters with Body TSL at 5750 MHz**

Impedance, transformed to feed point	$52.5 \Omega - 0.8 j\Omega$
Return Loss	- 32.0 dB

**Antenna Parameters with Body TSL at 5800 MHz**

Impedance, transformed to feed point	$52.1 \Omega - 2.4 j\Omega$
Return Loss	- 30.0 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.200 ns
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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
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**DASY5 Validation Report for Head TSL**

Date: 20.07.2020

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;  $\sigma = 4.47$  S/m;  $\epsilon_r = 35.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>,Medium parameters used:  $f = 5250$  MHz;  $\sigma = 4.52$  S/m;  $\epsilon_r = 35.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>,Medium parameters used:  $f = 5300$  MHz;  $\sigma = 4.57$  S/m;  $\epsilon_r = 35.3$ ;  $\rho = 1000$  kg/m<sup>3</sup>,Medium parameters used:  $f = 5500$  MHz;  $\sigma = 4.77$  S/m;  $\epsilon_r = 35$ ;  $\rho = 1000$  kg/m<sup>3</sup>,Medium parameters used:  $f = 5600$  MHz;  $\sigma = 4.88$  S/m;  $\epsilon_r = 34.9$ ;  $\rho = 1000$  kg/m<sup>3</sup>,Medium parameters used:  $f = 5750$  MHz;  $\sigma = 5.03$  S/m;  $\epsilon_r = 34.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>,Medium parameters used:  $f = 5800$  MHz;  $\sigma = 5.09$  S/m;  $\epsilon_r = 34.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

## DASY52 Configuration:

- Probe: EX3DV4 - SN3503; ConvF(5.8, 5.8, 5.8) @ 5200 MHz, ConvF(5.5, 5.5, 5.5) @ 5250 MHz, ConvF(5.49, 5.49, 5.49) @ 5300 MHz, ConvF(5.25, 5.25, 5.25) @ 5500 MHz, ConvF(5.1, 5.1, 5.1) @ 5600 MHz, ConvF(5.08, 5.08, 5.08) @ 5750 MHz, ConvF(5.01, 5.01, 5.01) @ 5800 MHz; Calibrated: 31.12.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.12.2019
- Phantom: Flat Phantom 5.0 (front); Type: QD 000 P50 AA; Serial: 1001
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**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 = 77.61 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 28.4 W/kg

**SAR(1 g) = 7.94 W/kg; SAR(10 g) = 2.26 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 68.7%

Maximum value of SAR (measured) = 18.2 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 = 79.07 V/m; Power Drift = -0.01 dB

Peak SAR (extrapolated) = 28.2 W/kg

**SAR(1 g) = 8.08 W/kg; SAR(10 g) = 2.30 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.2 mm

Ratio of SAR at M2 to SAR at M1 = 69.5%

Maximum value of SAR (measured) = 18.4 W/kg

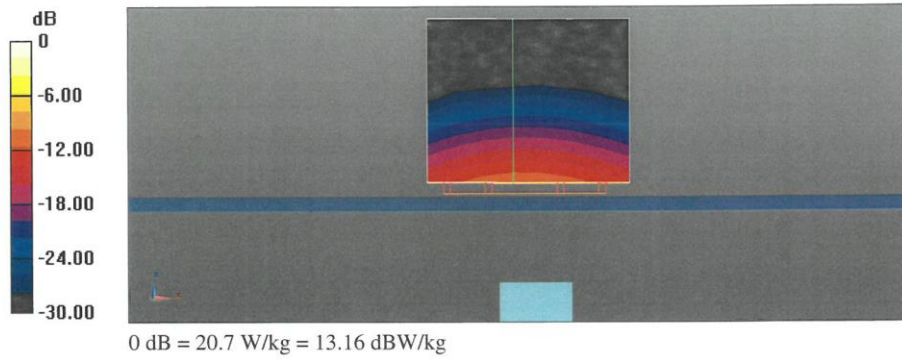
**Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm  
Reference Value = 78.56 V/m; Power Drift = 0.01 dB  
Peak SAR (extrapolated) = 29.6 W/kg  
**SAR(1 g) = 8.22 W/kg; SAR(10 g) = 2.33 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.4 mm  
Ratio of SAR at M2 to SAR at M1 = 68.3%  
Maximum value of SAR (measured) = 19.0 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 = 78.44 V/m; Power Drift = 0.02 dB  
Peak SAR (extrapolated) = 33.9 W/kg  
**SAR(1 g) = 8.66 W/kg; SAR(10 g) = 2.42 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.2 mm  
Ratio of SAR at M2 to SAR at M1 = 65.9%  
Maximum value of SAR (measured) = 20.7 W/kg

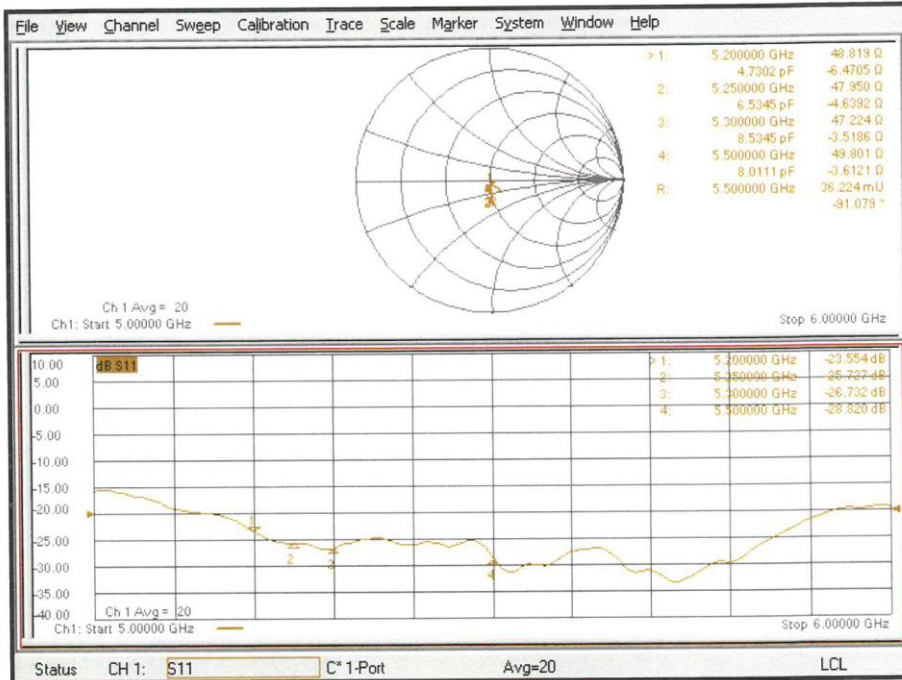
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Reference Value = 78.89 V/m; Power Drift = -0.00 dB  
Peak SAR (extrapolated) = 31.6 W/kg  
**SAR(1 g) = 8.37 W/kg; SAR(10 g) = 2.37 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.4 mm  
Ratio of SAR at M2 to SAR at M1 = 66.8%  
Maximum value of SAR (measured) = 20.2 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 = 75.69 V/m; Power Drift = 0.01 dB  
Peak SAR (extrapolated) = 32.1 W/kg  
**SAR(1 g) = 8.09 W/kg; SAR(10 g) = 2.29 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.4 mm  
Ratio of SAR at M2 to SAR at M1 = 65%  
Maximum value of SAR (measured) = 19.9 W/kg

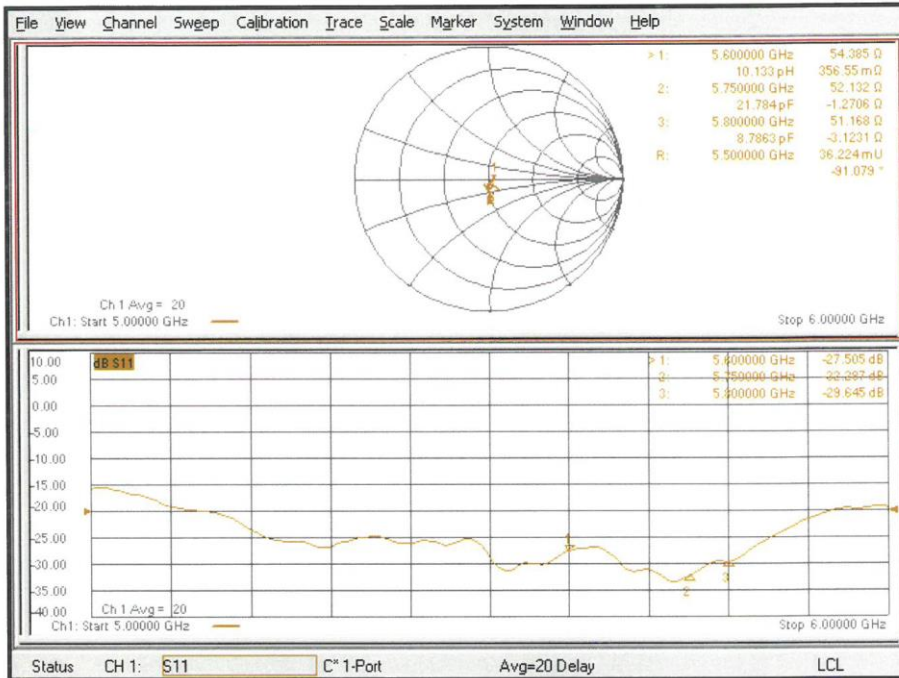
**Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5800 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm  
Reference Value = 75.77 V/m; Power Drift = 0.01 dB  
Peak SAR (extrapolated) = 32.8 W/kg  
**SAR(1 g) = 8.16 W/kg; SAR(10 g) = 2.28 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.2 mm  
Ratio of SAR at M2 to SAR at M1 = 64.8%  
Maximum value of SAR (measured) = 20.1 W/kg



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



Impedance Measurement Plot for Head TSL (5600, 5750, 5800 MHz)



**DASY5 Validation Report for Body TSL**

Date: 27.07.2020

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;  $\sigma = 5.46$  S/m;  $\epsilon_r = 47.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>,  
Medium parameters used: f = 5250 MHz;  $\sigma = 5.53$  S/m;  $\epsilon_r = 47.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>,  
Medium parameters used: f = 5300 MHz;  $\sigma = 5.6$  S/m;  $\epsilon_r = 47.6$ ;  $\rho = 1000$  kg/m<sup>3</sup>,  
Medium parameters used: f = 5500 MHz;  $\sigma = 5.87$  S/m;  $\epsilon_r = 47.2$ ;  $\rho = 1000$  kg/m<sup>3</sup>,  
Medium parameters used: f = 5600 MHz;  $\sigma = 6.01$  S/m;  $\epsilon_r = 47$ ;  $\rho = 1000$  kg/m<sup>3</sup>,  
Medium parameters used: f = 5750 MHz;  $\sigma = 6.22$  S/m;  $\epsilon_r = 46.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>,  
Medium parameters used: f = 5800 MHz;  $\sigma = 6.29$  S/m;  $\epsilon_r = 46.7$ ;  $\rho = 1000$  kg/m<sup>3</sup>  
Phantom section: Flat Section  
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

**DASY52 Configuration:**

- Probe: EX3DV4 - SN3503; ConvF(5.29, 5.29, 5.29) @ 5200 MHz, ConvF(5.26, 5.26, 5.26) @ 5250 MHz, ConvF(5.23, 5.23, 5.23) @ 5300 MHz, ConvF(4.84, 4.84, 4.84) @ 5500 MHz, ConvF(4.79, 4.79, 4.79) @ 5600 MHz, ConvF(4.66, 4.66, 4.66) @ 5750 MHz, ConvF(4.62, 4.62, 4.62) @ 5800 MHz; Calibrated: 31.12.2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 27.12.2019
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.4(1527); SEMCAD X 14.6.14(7483)

**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 = 67.58 V/m; Power Drift = -0.08 dB  
Peak SAR (extrapolated) = 27.8 W/kg  
**SAR(1 g) = 7.3 W/kg; SAR(10 g) = 2.04 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.2 mm  
Ratio of SAR at M2 to SAR at M1 = 67.4%  
Maximum value of SAR (measured) = 17.0 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 = 67.59 V/m; Power Drift = -0.08 dB  
Peak SAR (extrapolated) = 29.0 W/kg  
**SAR(1 g) = 7.45 W/kg; SAR(10 g) = 2.09 W/kg**  
Smallest distance from peaks to all points 3 dB below = 6.9 mm  
Ratio of SAR at M2 to SAR at M1 = 66.5%  
Maximum value of SAR (measured) = 17.4 W/kg

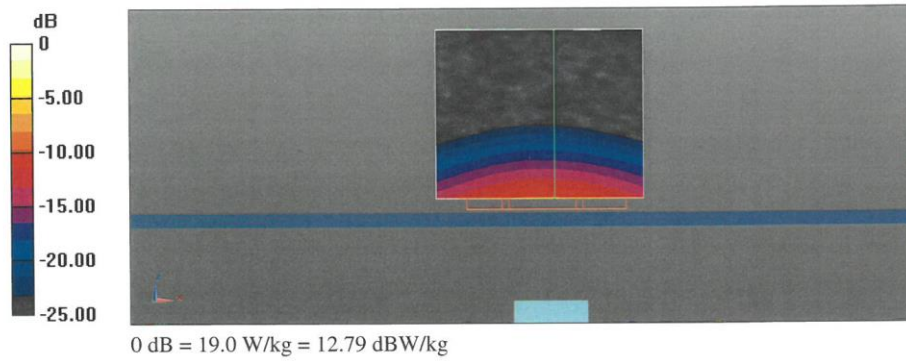
**Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5300 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm  
Reference Value = 67.12 V/m; Power Drift = -0.07 dB  
Peak SAR (extrapolated) = 29.1 W/kg  
**SAR(1 g) = 7.36 W/kg; SAR(10 g) = 2.06 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.2 mm  
Ratio of SAR at M2 to SAR at M1 = 66.1%  
Maximum value of SAR (measured) = 17.3 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 = 68.41 V/m; Power Drift = -0.05 dB  
Peak SAR (extrapolated) = 33.0 W/kg  
**SAR(1 g) = 7.86 W/kg; SAR(10 g) = 2.17 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.2 mm  
Ratio of SAR at M2 to SAR at M1 = 64.2%  
Maximum value of SAR (measured) = 19.0 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 = 67.25 V/m; Power Drift = -0.08 dB  
Peak SAR (extrapolated) = 33.2 W/kg  
**SAR(1 g) = 7.72 W/kg; SAR(10 g) = 2.15 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.2 mm  
Ratio of SAR at M2 to SAR at M1 = 63.4%  
Maximum value of SAR (measured) = 18.7 W/kg

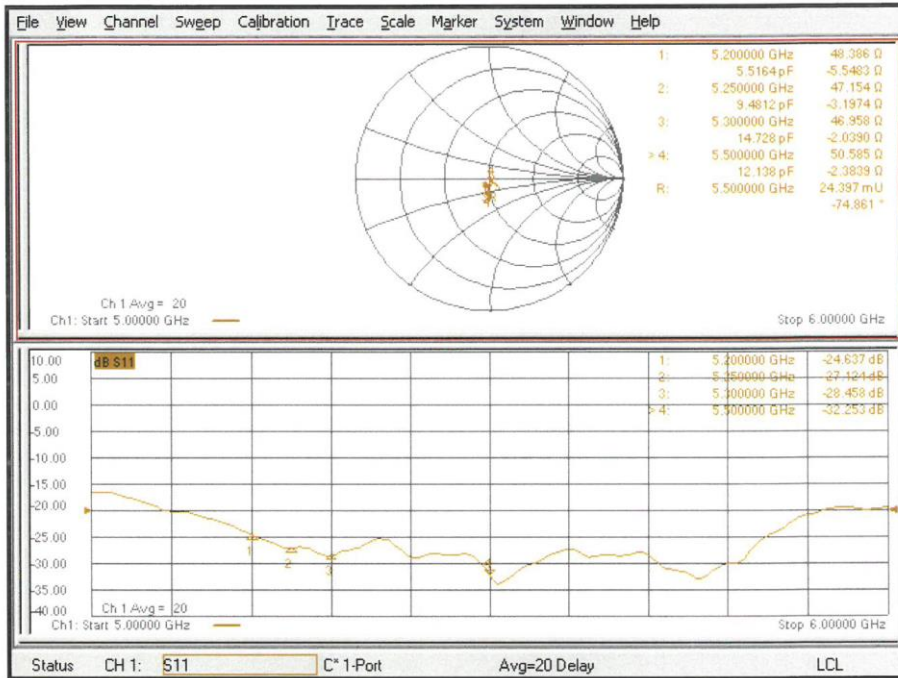
**Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5750 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm  
Reference Value = 65.67 V/m; Power Drift = -0.06 dB  
Peak SAR (extrapolated) = 34.2 W/kg  
**SAR(1 g) = 7.61 W/kg; SAR(10 g) = 2.11 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.2 mm  
Ratio of SAR at M2 to SAR at M1 = 62%  
Maximum value of SAR (measured) = 18.7 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 = 65.55 V/m; Power Drift = -0.06 dB  
Peak SAR (extrapolated) = 32.7 W/kg  
**SAR(1 g) = 7.42 W/kg; SAR(10 g) = 2.04 W/kg**  
Smallest distance from peaks to all points 3 dB below = 7.2 mm  
Ratio of SAR at M2 to SAR at M1 = 62.5%  
Maximum value of SAR (measured) = 18.2 W/kg

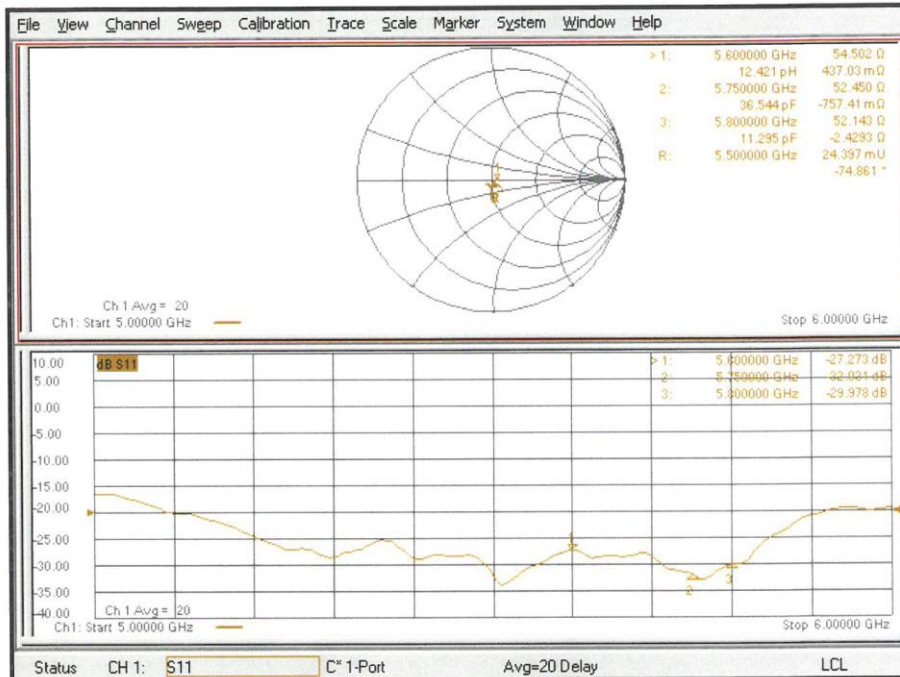




Impedance Measurement Plot for Body TSL (5200, 5250, 5300, 5500 MHz)



Impedance Measurement Plot for Body TSL (5600, 5750, 5800 MHz)



## ANNEX I Sensor Triggering Data Summary

Main Antenna:

SAR Sensor	Back(mm)	26(mm)
SAR Sensor	Front(mm)	22(mm)
SAR Sensor	Top(mm)	26(mm)
SAR Sensor	Left(mm)	13(mm)

WIFI Antenna(2.4G&5G):

SAR Sensor	Back(mm)	8(mm)
SAR Sensor	Front(mm)	14(mm)
SAR Sensor	Top(mm)	12(mm)

According to the above description, this device was tested by the manufacturer to determine the SAR sensor triggering distances for the front, rear, left edge and top edge for main antenna and front, rear, top edge for WIFI antenna of the device. The measured power state within  $\pm 5$ mm of the triggering points (or until touching the phantom) is included for rear and each applicable edge.

To ensure all production units are compliant it is necessary to test SAR at a distance 1mm less than the smallest distance from the device and SAR phantom with the device at maximum output power without power reduction.

We tested the level and got the different proximity sensor triggering distances for front, rear, left edge and top edge. But the manufacturer has declared 22mm(front), 26mm (rear), 26mm (top) / 13mm (left edge) are the most conservative triggering distance for main antenna and 8mm (rear) / 12mm (top edge) , 14mm(for front) for WiFi antenna. Therefore base on the most conservative triggering distances as above, additional SAR measurements were required at 21mm(front), 25mm (rear), 25mm (top), 12mm (left edge) for main antenna and 7mm (rear) / 11mm (top edge) , 13mm(for front)for wifi antenna.

### Main antenna

#### Rear

Moving device toward the phantom:

The power state											
Distance [mm]	31	30	29	28	27	26	25	24	23	22	21
Main antenna	Normal	Normal	Normal	Normal	Normal	Low	Low	Low	Low	Low	Low

Moving device away from the phantom:

The power state											
Distance [mm]	21	22	23	24	25	26	27	28	29	30	31
Main antenna	Low	Low	Low	Low	Low	Low	Normal	Normal	Normal	Normal	Normal

**Front**

Moving device toward the phantom:

The power state											
Distance [mm]	27	26	25	24	23	22	21	20	19	18	17
Main antenna	Normal	Normal	Normal	Normal	Normal	Low	Low	Low	Low	Low	Low

Moving device away from the phantom:

The power state											
Distance [mm]	17	18	19	20	21	22	23	24	25	26	27
Main antenna	Low	Low	Low	Low	Low	Low	Normal	Normal	Normal	Normal	Normal

**Top Edge**

Moving device toward the phantom:

The power state											
Distance [mm]	31	30	29	28	27	26	25	24	23	22	21
Main antenna	Normal	Normal	Normal	Normal	Normal	Low	Low	Low	Low	Low	Low

Moving device away from the phantom:

The power state											
Distance [mm]	21	22	23	24	25	26	27	28	29	30	31
Main antenna	Low	Low	Low	Low	Low	Low	Normal	Normal	Normal	Normal	Normal

**Left Edge**

Moving device toward the phantom:

The power state											
Distance [mm]	18	17	16	15	14	13	12	11	10	9	8
Main antenna	Normal	Normal	Normal	Normal	Normal	Low	Low	Low	Low	Low	Low

Moving device away from the phantom:

The power state											
Distance [mm]	8	9	10	11	12	13	14	15	16	17	18
Main antenna	Low	Low	Low	Low	Low	Low	Normal	Normal	Normal	Normal	Normal

**WiFi antenna**
**Rear**

Moving device toward the phantom:

The power state											
Distance [mm]	13	12	11	10	9	8	7	6	5	4	3
Main antenna	Normal	Normal	Normal	Normal	Normal	Low	Low	Low	Low	Low	Low

Moving device away from the phantom:

The power state											
Distance [mm]	3	4	5	6	7	8	9	10	11	12	13
Main antenna	Low	Low	Low	Low	Low	Low	Normal	Normal	Normal	Normal	Normal

**Top Edge**

Moving device toward the phantom:

The power state											
Distance [mm]	18	17	16	15	14	13	12	11	10	9	8
Main antenna	Normal	Normal	Normal	Normal	Normal	Low	Low	Low	Low	Low	Low

Moving device away from the phantom:

The power state											
Distance [mm]	8	9	10	11	12	13	14	15	16	17	18
Main antenna	Low	Low	Low	Low	Low	Low	Normal	Normal	Normal	Normal	Normal

**Front**

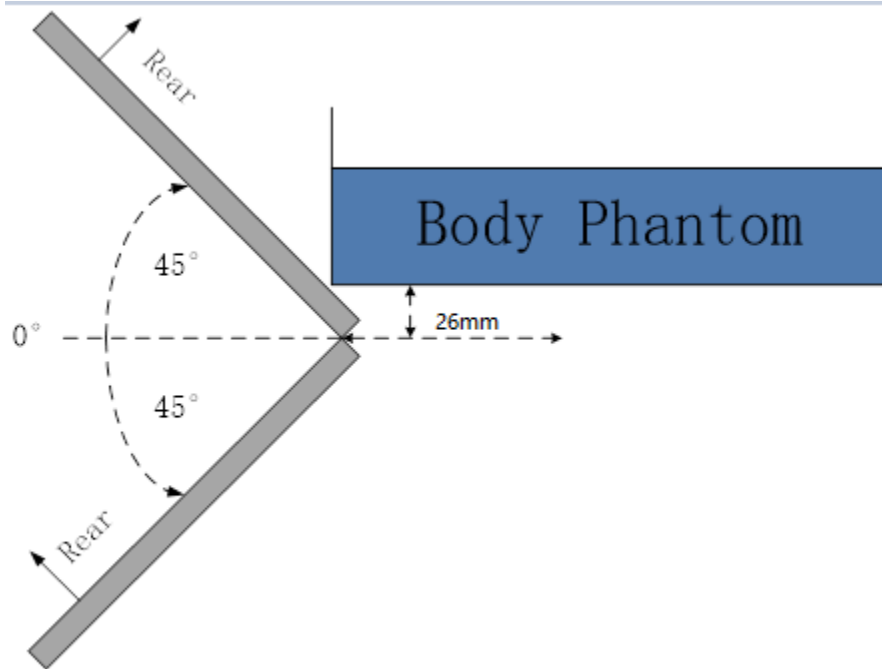
Moving device toward the phantom:

The power state											
Distance [mm]	19	18	17	16	15	14	13	12	11	10	9
Main antenna	Normal	Normal	Normal	Normal	Normal	Low	Low	Low	Low	Low	Low

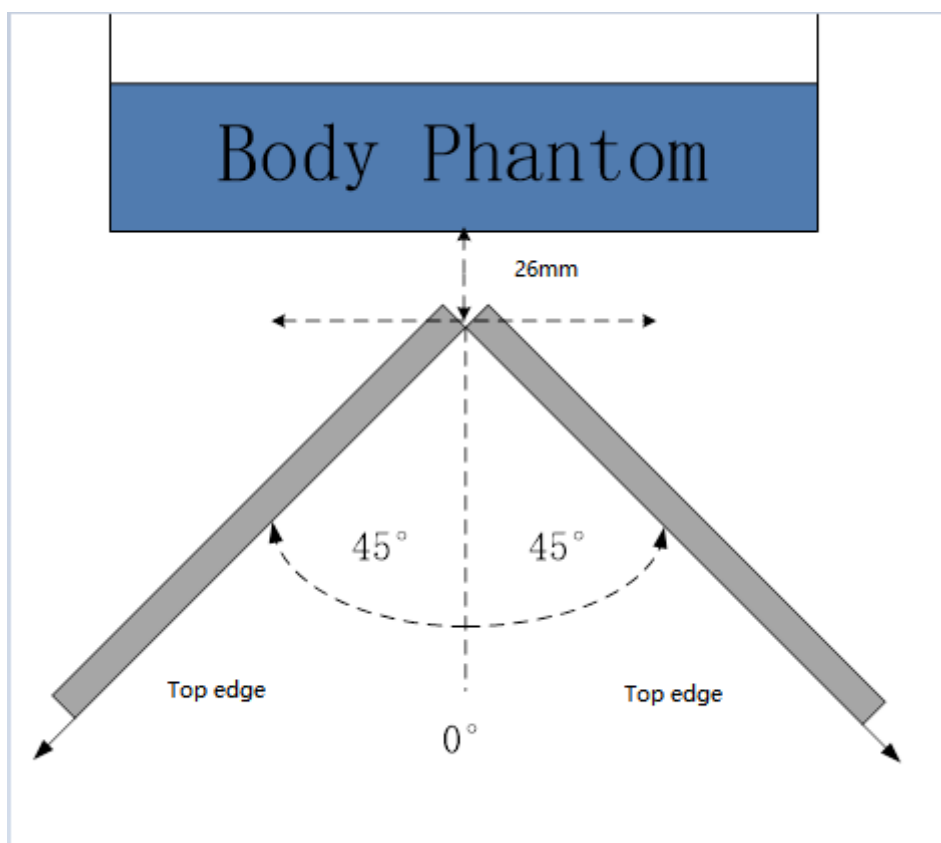
Moving device away from the phantom:

The power state											
Distance [mm]	9	10	11	12	13	14	15	16	17	18	19
Main antenna	Low	Low	Low	Low	Low	Low	Normal	Normal	Normal	Normal	Normal

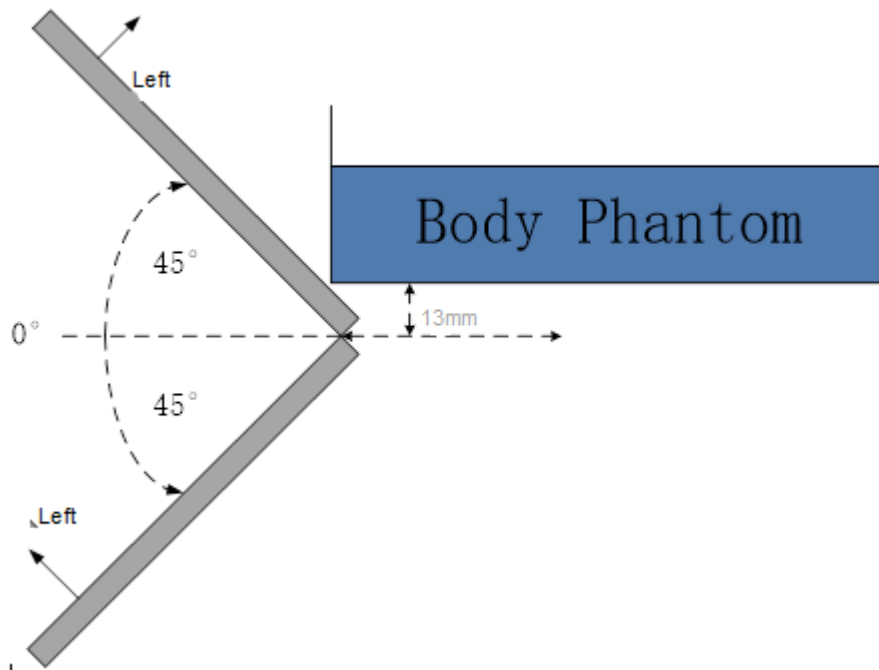
The influence of table tilt angles to proximity sensor triggering is determined by positioning each edge that contains a transmitting antenna, perpendicular to the flat phantom, at the smallest sensor triggering test distance by rotating the device around the edge next to the phantom in  $\leq 10^\circ$  increments until the tablet is  $\pm 45^\circ$  or more from the vertical position at  $0^\circ$ .



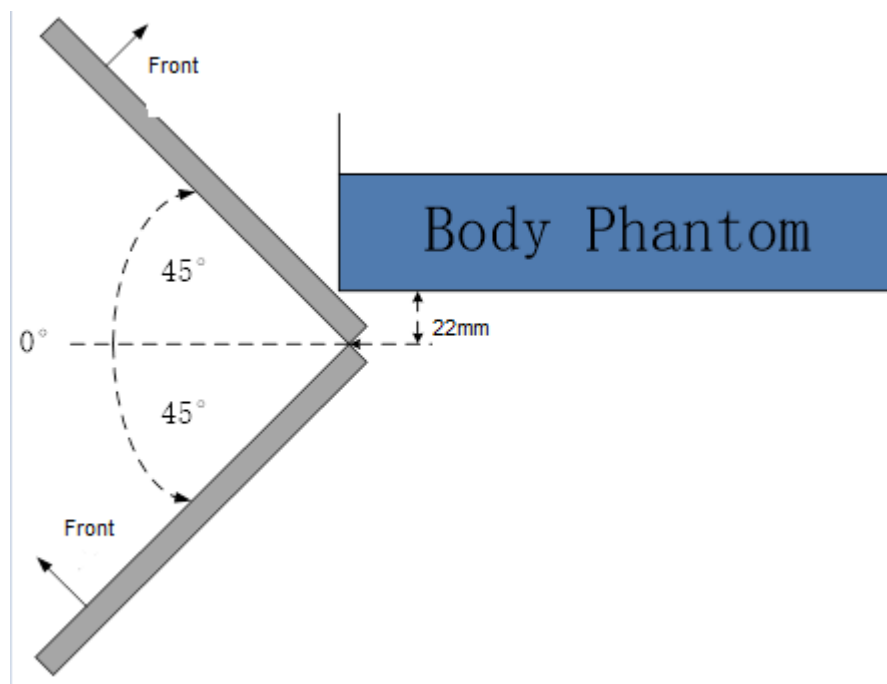
The rear evaluation for main antenna



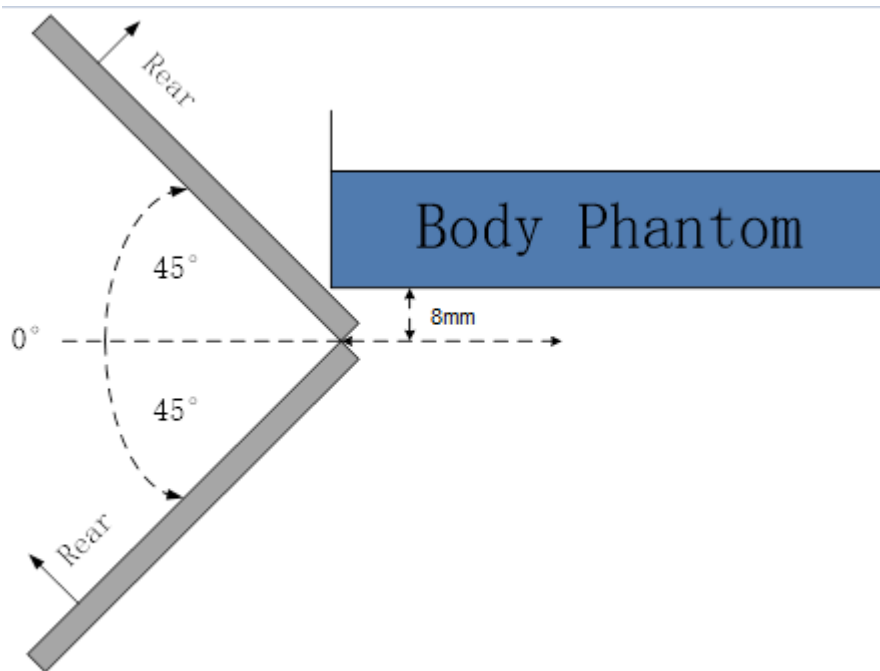
The top edge evaluation for main antenna



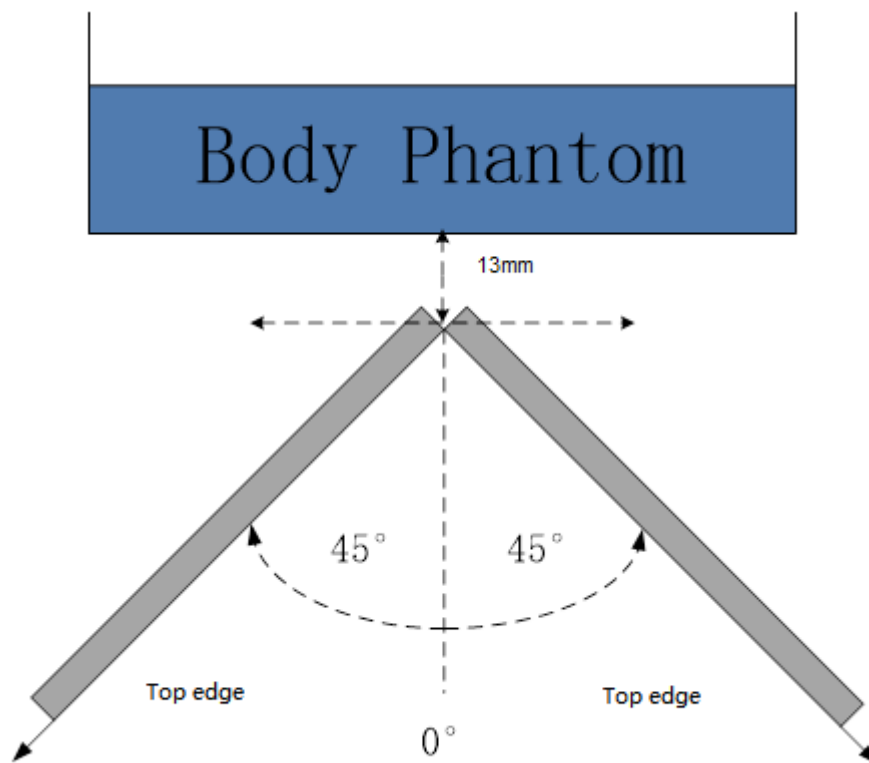
The Left edge evaluation for main antenna



The Front evaluation for main antenna

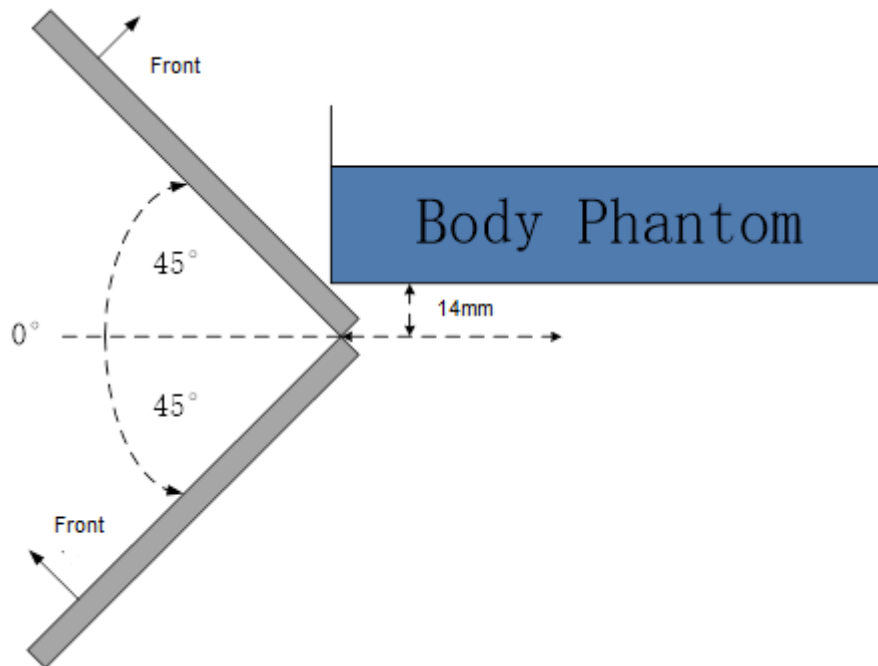


The rear evaluation for WIFI antenna



The top evaluation for WIFI antenna





#### The front evaluation for WIFI antenna

Based on the above evaluation, we come to the conclusion that the sensor triggering is not released and normal maximum output power is not restored within the  $\pm 45^\circ$  range at the smallest sensor triggering test distance declared by manufacturer.

**ANNEX J Accreditation Certificate**

United States Department of Commerce  
National Institute of Standards and Technology

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**Certificate of Accreditation to ISO/IEC 17025:2017**

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NVLAP LAB CODE: 600118-0

**Telecommunication Technology Labs, CAICT**  
Beijing  
China

*is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:*

**Electromagnetic Compatibility & Telecommunications**

*This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality  
management system (refer to joint ISO-ILAC-IAF Communique dated January 2009).*

2020-09-29 through 2021-09-30  
*Effective Dates*



  
*For the National Voluntary Laboratory Accreditation Program*