## 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 | 34.8 ± 6 % | 5.02 mho/m ± 6 % |
| **Head TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Head TSL at 5750 MHz

| **SAR averaged over 1 $cm^3$ (1 g) of Head TSL** | Condition | |
|---|---|---|
| SAR measured | 100 mW input power | 8.08 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | **80.4 W/kg ± 19.9 % (k=2)** |

| **SAR averaged over 10 $cm^3$ (10 g) of Head TSL** | condition | |
|---|---|---|
| SAR measured | 100 mW input power | 2.31 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | **23.0 W/kg ± 19.5 % (k=2)** |

## 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 | 34.7 ± 6 % | 5.07 mho/m ± 6 % |
| **Head TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Head TSL at 5800 MHz

| **SAR averaged over 1 $cm^3$ (1 g) of Head TSL** | Condition | |
|---|---|---|
| SAR measured | 100 mW input power | 8.14 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | **80.9 W/kg ± 19.9 % (k=2)** |

| **SAR averaged over 10 $cm^3$ (10 g) of Head TSL** | condition | |
|---|---|---|
| SAR measured | 100 mW input power | 2.30 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | **22.9 W/kg ± 19.5 % (k=2)** |

## 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 | 47.3 ± 6 % | 5.43 mho/m ± 6 % |
| **Body TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Body TSL at 5200 MHz

| **SAR averaged over 1 $cm^3$ (1 g) of Body TSL** | Condition | |
|---|---|---|
| SAR measured | 100 mW input power | 7.41 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **73.6 W/kg ± 19.9 % (k=2)** |

| **SAR averaged over 10 $cm^3$ (10 g) of Body TSL** | condition | |
|---|---|---|
| SAR measured | 100 mW input power | 2.08 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **20.6 W/kg ± 19.5 % (k=2)** |

## 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 | 47.2 ± 6 % | 5.49 mho/m ± 6 % |
| **Body TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Body TSL at 5250 MHz

| **SAR averaged over 1 $cm^3$ (1 g) of Body TSL** | Condition | |
|---|---|---|
| SAR measured | 100 mW input power | 7.67 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **76.2 W/kg ± 19.9 % (k=2)** |

| **SAR averaged over 10 $cm^3$ (10 g) of Body TSL** | condition | |
|---|---|---|
| SAR measured | 100 mW input power | 2.15 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **21.3 W/kg ± 19.5 % (k=2)** |

## 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 | 47.1 ± 6 % | 5.56 mho/m ± 6 % |
| **Body TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Body TSL at 5300 MHz

| **SAR averaged over 1 $cm^3$ (1 g) of Body TSL** | Condition | |
|---|---|---|
| SAR measured | 100 mW input power | 7.52 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **74.7 W/kg ± 19.9 % (k=2)** |

| **SAR averaged over 10 $cm^3$ (10 g) of Body TSL** | condition | |
|---|---|---|
| SAR measured | 100 mW input power | 2.13 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **21.1 W/kg ± 19.5 % (k=2)** |

## 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 | 46.7 ± 6 % | 5.83 mho/m ± 6 % |
| **Body TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Body TSL at 5500 MHz

| **SAR averaged over 1 $cm^3$ (1 g) of Body TSL** | Condition | |
|---|---|---|
| SAR measured | 100 mW input power | 8.00 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **79.5 W/kg ± 19.9 % (k=2)** |

| **SAR averaged over 10 $cm^3$ (10 g) of Body TSL** | condition | |
|---|---|---|
| SAR measured | 100 mW input power | 2.23 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **22.1 W/kg ± 19.5 % (k=2)** |



## 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 | 46.6 ± 6 % | 5.97 mho/m ± 6 % |
| **Body TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Body TSL at 5600 MHz

| **SAR averaged over 1 $cm^3$ (1 g) of Body TSL** | Condition | |
|---|---|---|
| SAR measured | 100 mW input power | 7.87 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **78.2 W/kg ± 19.9 % (k=2)** |

| **SAR averaged over 10 $cm^3$ (10 g) of Body TSL** | condition | |
|---|---|---|
| SAR measured | 100 mW input power | 2.22 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **22.0 W/kg ± 19.5 % (k=2)** |

## 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 | 46.3 ± 6 % | 6.17 mho/m ± 6 % |
| **Body TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Body TSL at 5750 MHz

| **SAR averaged over 1 $cm^3$ (1 g) of Body TSL** | Condition | |
|---|---|---|
| SAR measured | 100 mW input power | 7.79 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **77.4 W/kg ± 19.9 % (k=2)** |

| **SAR averaged over 10 $cm^3$ (10 g) of Body TSL** | condition | |
|---|---|---|
| SAR measured | 100 mW input power | 2.18 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **21.5 W/kg ± 19.5 % (k=2)** |



## 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; $\sigma$ = 4.46 S/m; $\varepsilon_r$ = 35.5; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5250 MHz; $\sigma$ = 4.51 S/m; $\varepsilon_r$ = 35.5; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5300 MHz; $\sigma$ = 4.56 S/m; $\varepsilon_r$ = 35.4; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5500 MHz; $\sigma$ = 4.76 S/m; $\varepsilon_r$ = 35.1; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5600 MHz; $\sigma$ = 4.86 S/m; $\varepsilon_r$ = 35; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5750 MHz; $\sigma$ = 5.02 S/m; $\varepsilon_r$ = 34.8; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5800 MHz; $\sigma$ = 5.07 S/m; $\varepsilon_r$ = 34.7; $\rho$ = 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

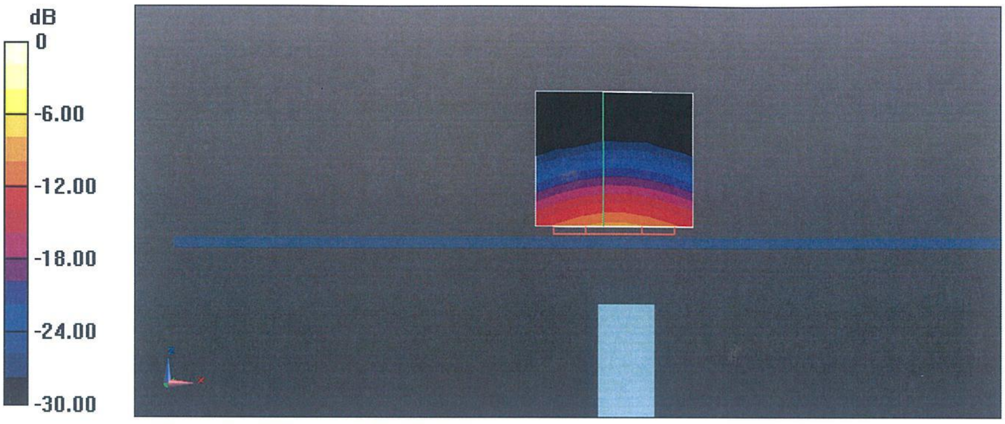
**Dipole Calibration for Head Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 75.03 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 31.0 W/kg
**SAR(1 g) = 8.49 W/kg; SAR(10 g) = 2.43 W/kg**
Maximum value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



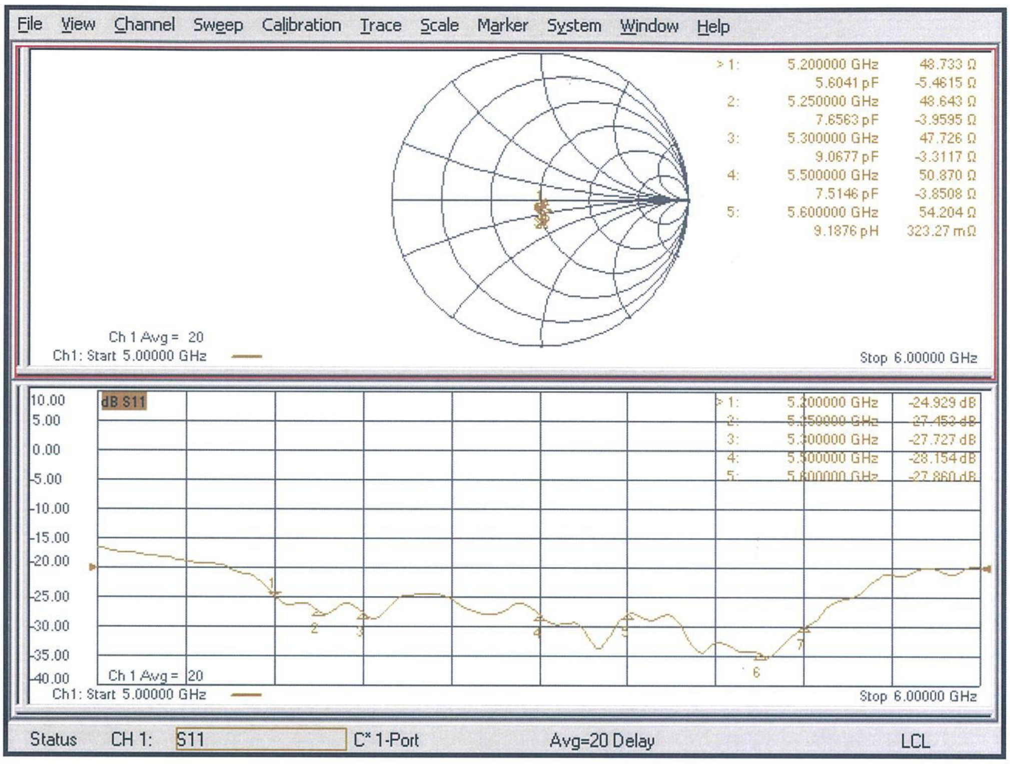



0 dB = 19.0 W/kg = 12.79 dBW/kg



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

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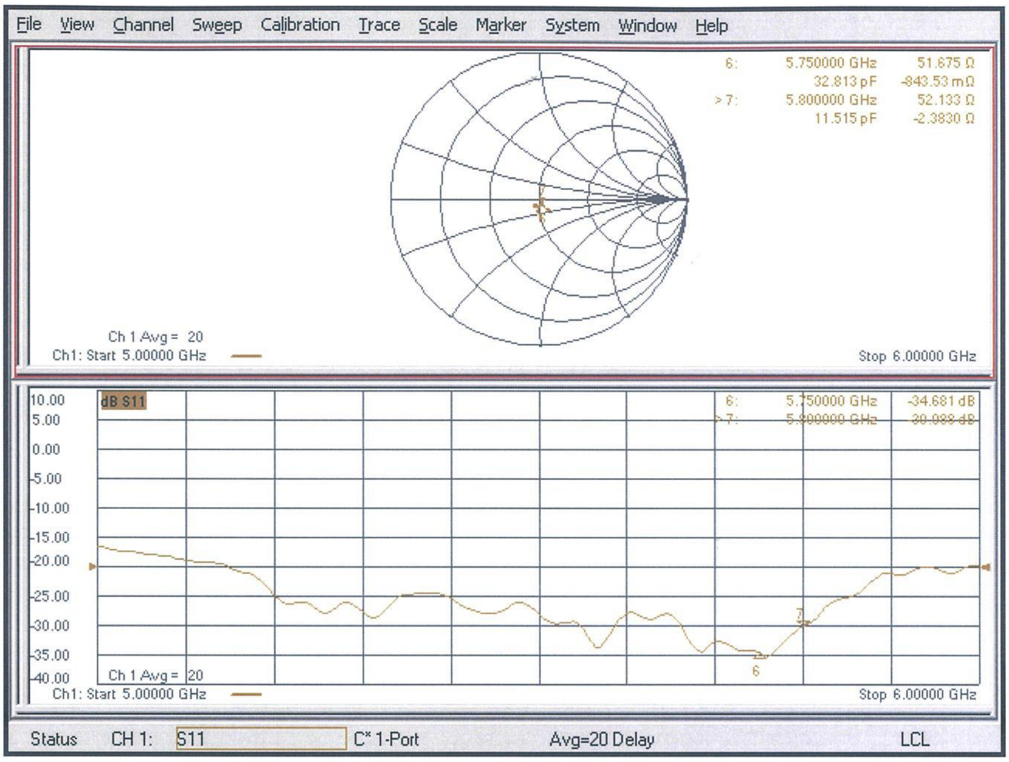
**Impedance Measurement Plot for Head TSL (5750, 5800 MHz)**




Certificate No: D5GHzV2-1060_Jul19 Page 18 of 23

## 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; $\sigma$ = 5.43 S/m; $\varepsilon_r$ = 47.3; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5250 MHz; $\sigma$ = 5.49 S/m; $\varepsilon_r$ = 47.2; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5300 MHz; $\sigma$ = 5.56 S/m; $\varepsilon_r$ = 47.1; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5500 MHz; $\sigma$ = 5.83 S/m; $\varepsilon_r$ = 46.7; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5600 MHz; $\sigma$ = 5.97 S/m; $\varepsilon_r$ = 46.6; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5750 MHz; $\sigma$ = 6.17 S/m; $\varepsilon_r$ = 46.3; $\rho$ = 1000 kg/m$^3$ ,
Medium parameters used: f = 5800 MHz; $\sigma$ = 6.24 S/m; $\varepsilon_r$ = 46.2; $\rho$ = 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

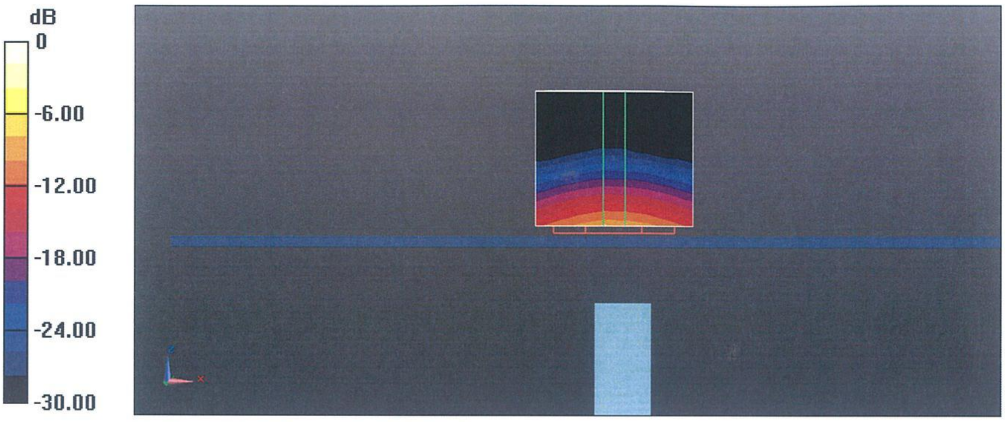
**Dipole Calibration for Body Tissue/Pin=100mW, dist=10mm, f=5600 MHz/Zoom Scan, dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 68.13 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 32.9 W/kg
**SAR(1 g) = 7.87 W/kg; SAR(10 g) = 2.22 W/kg**
Maximum value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



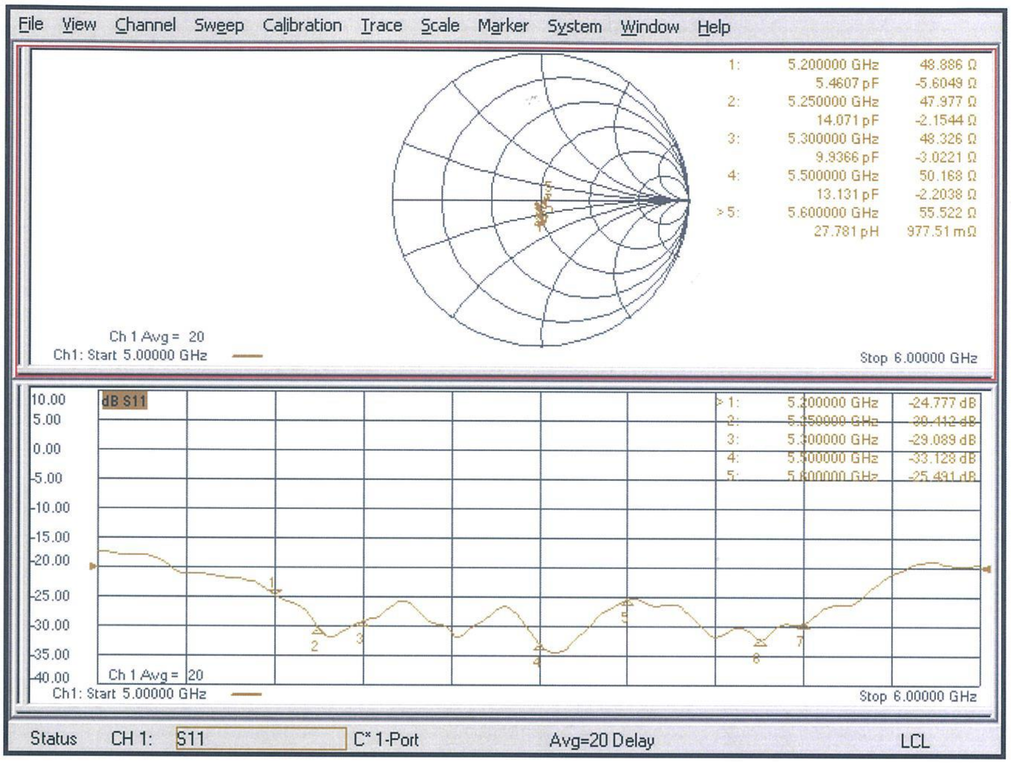


0 dB = 18.0 W/kg = 12.55 dBW/kg



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

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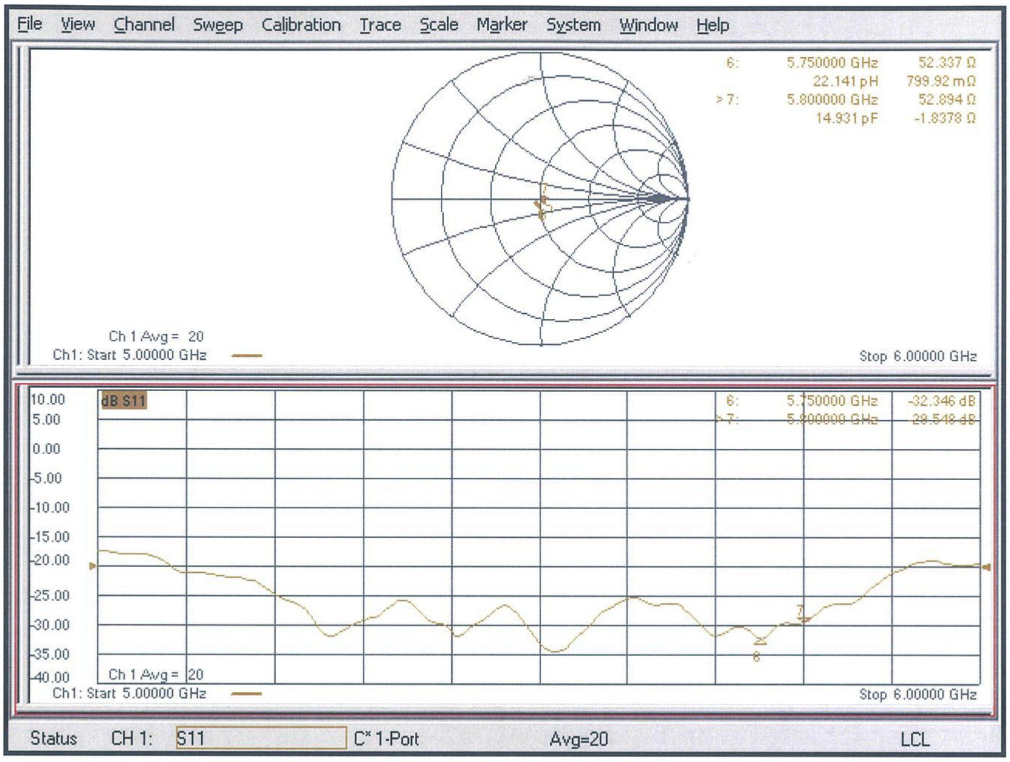
**Impedance Measurement Plot for Body TSL (5750, 5800 MHz)**





# ANNEX I Sensor Triggering Data Summary

| SAR Sensor Detect | Near | Far |
|---|---|---|
| Front | <=15mm | >15mm |
| Back | <=15mm | >15mm |
| Bottom | <=15mm | >15mm |

According to the above description, this device was tested by the manufacturer to determine the SAR sensor triggering distances for the rear, left edge and top edge of the device. The measured power state within ±5mm 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 power and got the different proximity sensor triggering distances for rear, left edge and top edge. But the manufacturer has declared 15mm (rear/bottom/front) are the most conservative triggering distance for main antenna. Therefore base on the most conservative triggering distances as above, additional SAR measurements were required at14mm (rear/bottom/front) for main antenna.

**Front/Rear/Bottom of main antenna**

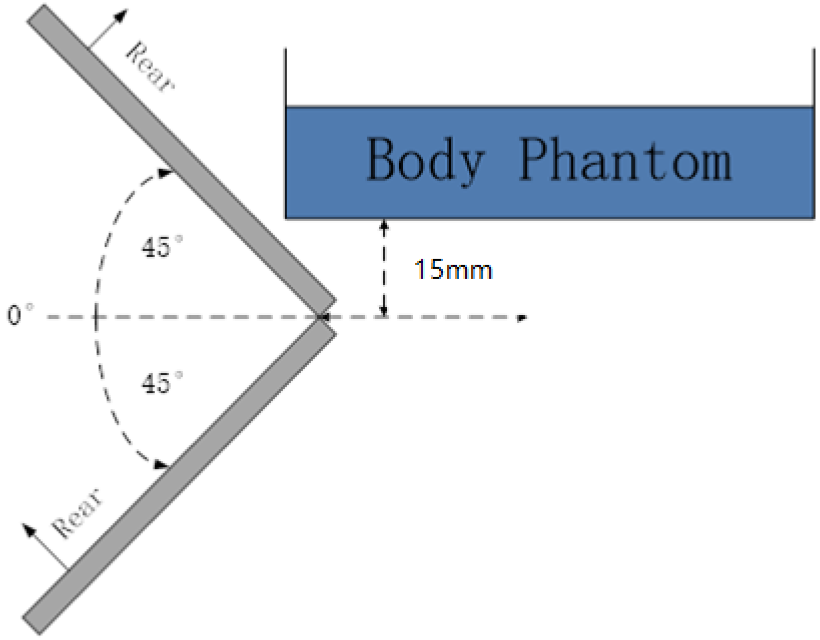
Moving device toward the phantom:

| The power state | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Distance [mm]** | **20** | **19** | **18** | **17** | **16** | **15** | **14** | **13** | **12** | **11** | **10** |
| Main antenna | Normal | Normal | Normal | Normal | Normal | Low | Low | Low | Low | Low | Low |

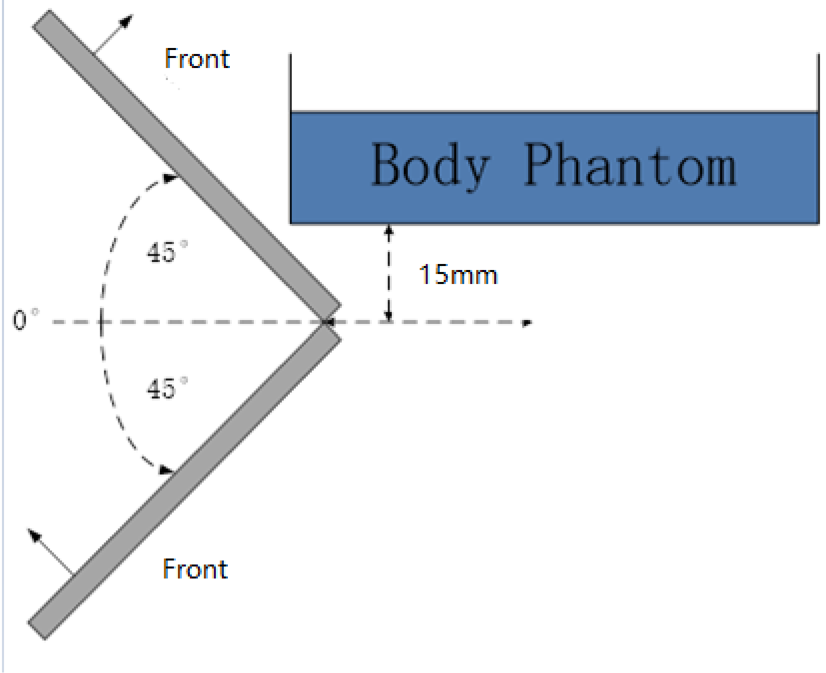
Moving device away from the phantom:

| The power state | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Distance [mm]** | **10** | **11** | **12** | **13** | **14** | **15** | **16** | **17** | **18** | **19** | **20** |
| Main antenna | Low | Low | Low | Low | Low | Low | Normal | Normal | Normal | Normal | Normal |

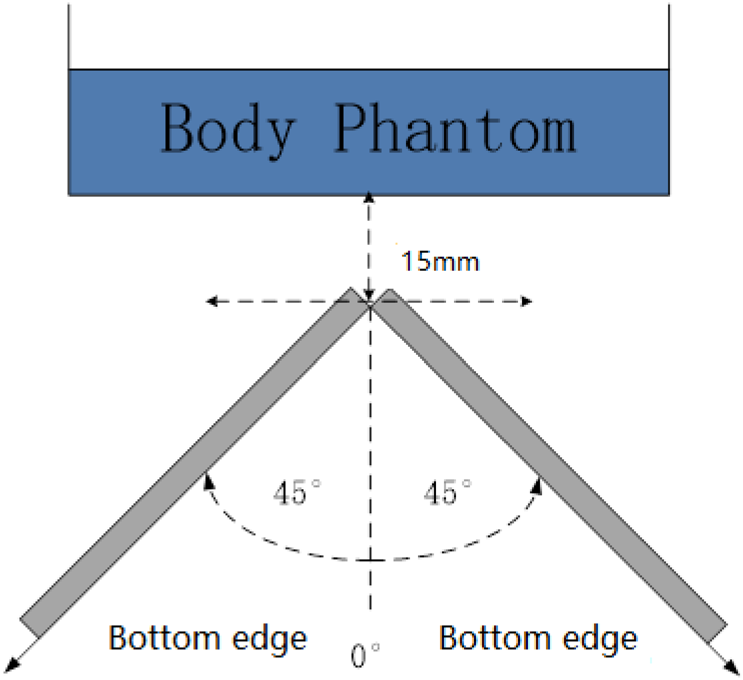
The influence of table tilt angles to proximity sensor triggering is determined by positioning each edge that contains a transmitting antenna, perpendicular to the flat phantom, at the smallest sensor triggering test distance by rotating the device around the edge next to the phantom in ≤ 10° increments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




**The Rear evaluation**




**The Front edge evaluation**




**The bottom edge evaluation**

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 ±45° range at the smallest sensor triggering test distance declared by manufacturer.

## ANNEX I Accreditation Certificate

**United States Department of Commerce**
**National Institute of Standards and Technology**

NVLAP®

# Certificate of Accreditation to ISO/IEC 17025:2005

**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 17025:2005. 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).*

2019-09-26 through 2020-09-30
*Effective Dates*

DEPARTMENT OF COMMERCE • UNITED STATES OF AMERICA

*For the National Voluntary Laboratory Accreditation Program*