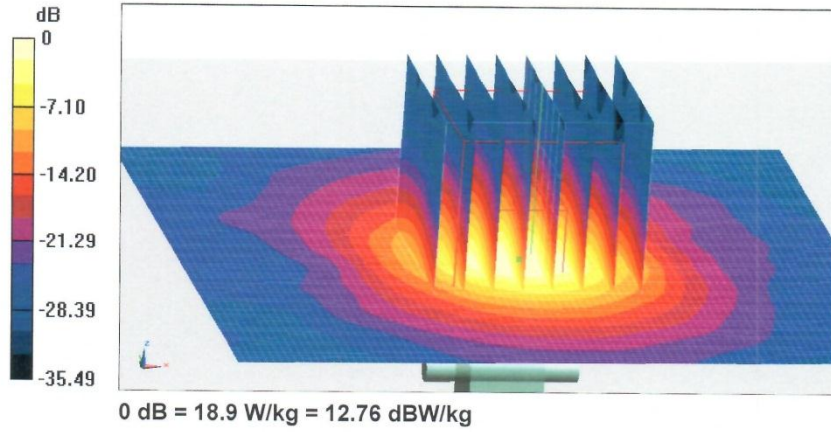




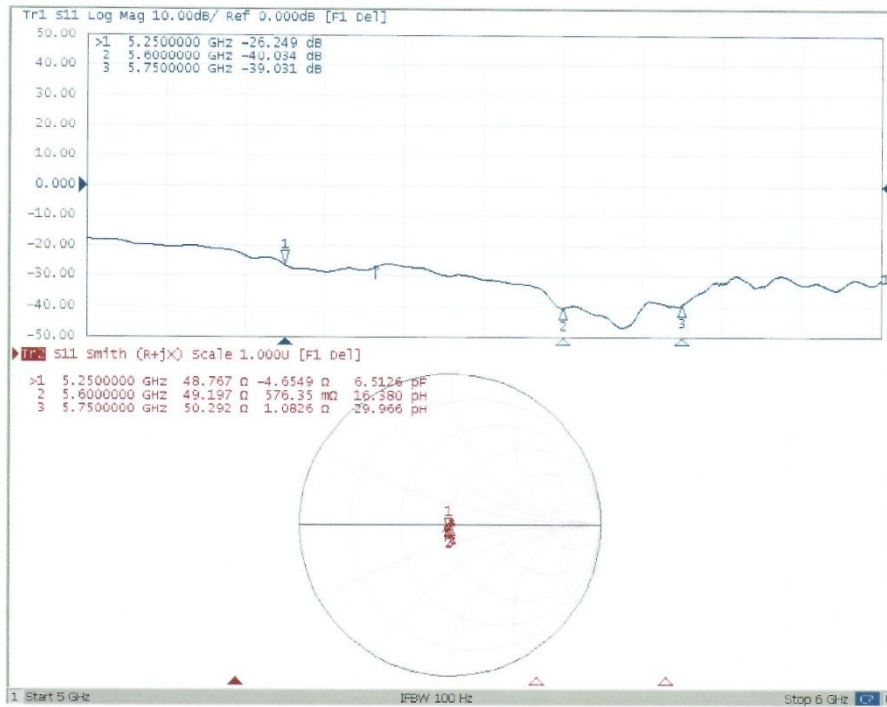
Add: No.51 Xueyuan Road, Haidian District, Beijing, 100191, China  
Tel: +86-10-62304633-2512 Fax: +86-10-62304633-2504  
E-mail: cttl@chinattl.com http://www.chinattl.cn

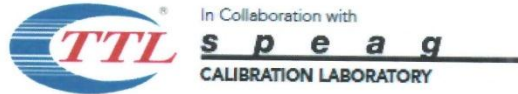




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### Impedance Measurement Plot for Head TSL





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**DASY5 Validation Report for Body TSL**

Date: 08.29.2019

Test Laboratory: CTTL, Beijing, China

**DUT: Dipole 5GHz; Type: D5GHzV2; Serial: D5GHzV2 - SN: 1238**Communication System: CW; Frequency: 5250 MHz, Frequency: 5600 MHz,  
Frequency: 5750 MHz,Medium parameters used:  $f = 5250$  MHz;  $\sigma = 5.402$  S/m;  $\epsilon_r = 48.05$ ;  $\rho = 1000$   
kg/m<sup>3</sup>, Medium parameters used:  $f = 5600$  MHz;  $\sigma = 5.703$  S/m;  $\epsilon_r = 47.61$ ;  $\rho =$   
1000 kg/m<sup>3</sup>, Medium parameters used:  $f = 5750$  MHz;  $\sigma = 5.782$  S/m;  $\epsilon_r = 47.49$ ;  $\rho =$   
1000 kg/m<sup>3</sup>,

Phantom section: Right Section

## DASY5 Configuration:

- Probe: EX3DV4 - SN3617; ConvF(4.76, 4.76, 4.76) @ 5250 MHz; ConvF(4.23, 4.23, 4.23) @ 5600 MHz; ConvF(4.36, 4.36, 4.36) @ 5750 MHz; Calibrated: 1/31/2019
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1555; Calibrated: 8/22/2019
- Phantom: MFP\_V5.1C ; Type: QD 000 P51CA; Serial: 1062
- Measurement SW: DASY52, Version 52.10 (2); SEMCAD X Version 14.6.12 (7470)

**Dipole Calibration /Pin=100mW, d=10mm, f=5250 MHz/Zoom Scan,****dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 54.85 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 27.5 W/kg

**SAR(1 g) = 7.17 W/kg; SAR(10 g) = 2.04 W/kg**

Maximum value of SAR (measured) = 16.4 W/kg

**Dipole Calibration /Pin=100mW, d=10mm, f=5600 MHz/Zoom Scan,****dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 56.17 V/m; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 32.3 W/kg

**SAR(1 g) = 7.62 W/kg; SAR(10 g) = 2.18 W/kg**

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

**Dipole Calibration /Pin=100mW, d=10mm, f=5750 MHz/Zoom Scan,****dist=1.4mm (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm

Reference Value = 55.47 V/m; Power Drift = 0.04 dB

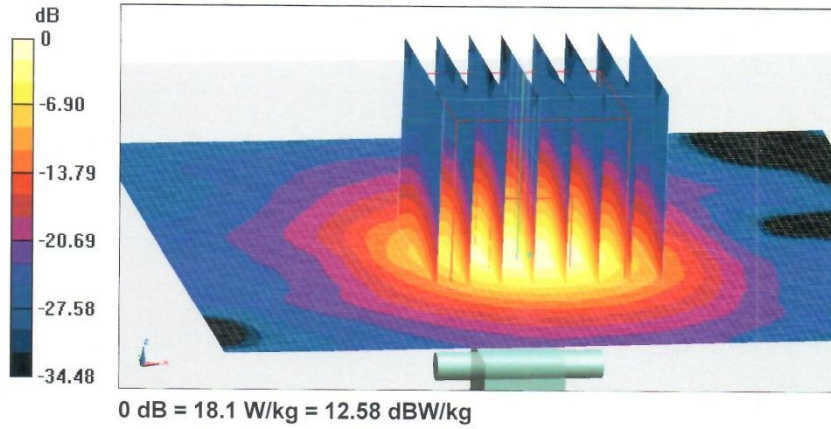
Peak SAR (extrapolated) = 33.2 W/kg

**SAR(1 g) = 7.39 W/kg; SAR(10 g) = 2.1 W/kg**

Maximum value of SAR (measured) = 18.1 W/kg



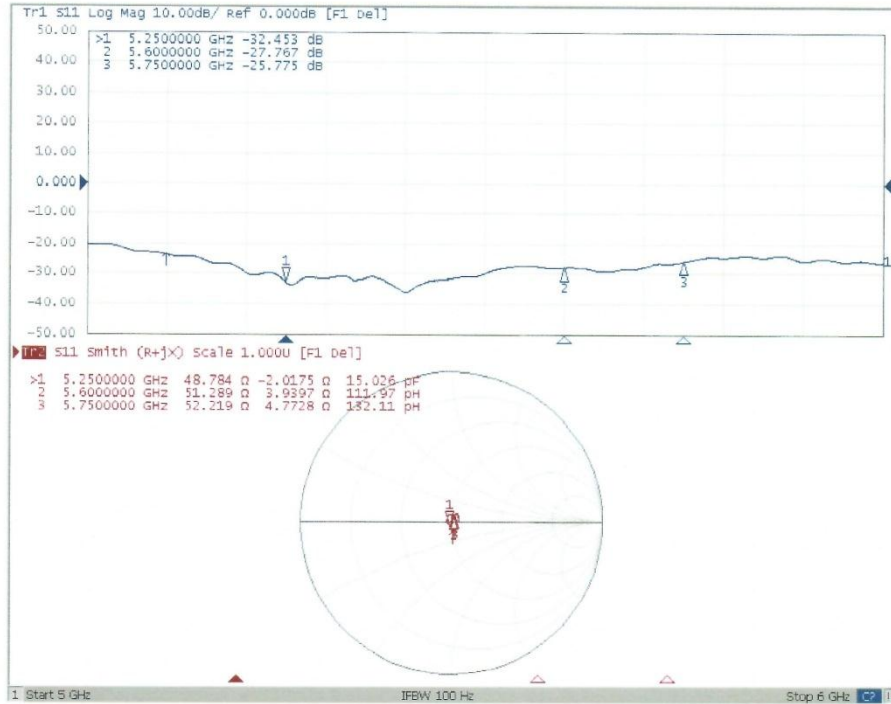
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**Impedance Measurement Plot for Body TSL**



## ANNEX J: Extended Calibration SAR Dipole

Referring to KDB865664 D01, if dipoles are verified in return loss (<-20dBm, within 20% of prior calibration), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Justification of Extended Calibration SAR Dipole D750V3– serial no.1163

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2019-09-03	-26.9	/	50.5	/	-4.53	/
2020-09-01	-25.8	4.1	51.2	0.7	-4.29	0.24

Justification of Extended Calibration SAR Dipole D835V2– serial no.4d057

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2018-10-09	-27.7	/	49.6	/	-4.08	/
2019-10-06	-26.9	2.9	50.1	0.5	-3.95	0.13
2020-10-05	-25.4	8.3	56.7	1.8	-2.15	0.15

Justification of Extended Calibration SAR Dipole D1750V2– serial no. 1152

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2019-08-30	-38.1	/	49.1	/	-0.84	/
2020-08-28	-36.5	4.2	50.2	1.1	-0.49	0.35

Justification of Extended Calibration SAR Dipole D1900V2– serial no. 5d088

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2018-10-24	-23.2	/	52.7	/	6.63	/
2019-10-22	-22.9	1.3	53.5	0.8	6.86	0.23
2020-10-20	-20.7	10.8	54.4	1.7	6.95	0.32



Justification of Extended Calibration SAR Dipole D2450V2– serial no. 873

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2018-10-26	-28.0	/	53.5	/	2.11	/
2019-10-22	-27.3	2.5	54.4	0.9	2.29	0.18
2020-10-20	-24.9	11.1	55.1	1.6	2.46	0.35

Justification of Extended Calibration SAR Dipole D2550V2– serial no.1010

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
2018-08-24	-25.7	/	54.9	/	-2.30	/
2019-08-22	-24.8	3.5	55.8	0.9	-2.22	0.08
2020-08-20	-23.2	9.7	56.4	1.5	-2.13	0.17

Justification of Extended Calibration SAR Dipole D5GHzV2– serial no.1238

Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (johm)	Delta (johm)
5250MHz						
2019-08-29	-26.2	/	48.8	/	-4.65	/
2020-08-28	-25.1	4.2	49.7	0.9	-4.26	0.39
5600MHz						
2019-08-29	-40.0	/	49.2	/	0.58	/
2020-08-28	-38.1	4.8	50.3	1.1	0.85	0.27
5750MHz						
2019-08-29	-39.0	/	50.3	/	1.08	/
2020-08-28	-37.7	3.3	51.1	0.8	1.44	0.36

The Return-Loss is <-20dB, and within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the value result should support extended cabration.



## ANNEX K: Sensor Triggering Data Summary

Per FCC KDB Publication 616217 D04, this device was tested by the manufacturer to determine the proximity sensor triggering distances for all applicable sides and edges of the device. The measured output power at distances within  $\pm 5$  mm of the triggering points (or until touching the phantom) is included for back side and each applicable edge per Step i) in Section 6.2 of the KDB. The technical descriptions in the filing contain the complete set of triggering data required by Section 6 of FCC KDB Publication 616217 D04.

To ensure all production units are compliant, it is necessary to test SAR at a distance 1 mm less than the smallest distance between the device and SAR phantom with the device at the maximum output power (without power reduction). These SAR tests are included in addition to the SAR tests for the device touching the SAR phantom (at the reduced output power level).

We tested the power and got the different proximity sensor triggering distances for rear side, top side and right side. The manufacturer has declared 15mm is the most conservative triggering distance for main antenna with rear side, 15mm distance for top side and 7mm distance for right side.

The operational description contains information explaining how this device remains compliant in the event of a sensor malfunction.

### Main Antenna

#### Rear Side

Moving device toward the phantom:

Distance(mm)	20	19	18	17	16	15	14	13	12	11	10
Main Antenna	/	/	/	/	/	16.44	16.43	16.45	16.42	16.45	16.44

Moving device away from the phantom:

Distance(mm)	20	19	18	17	16	15	14	13	12	11	10
Main Antenna	23.34	23.36	23.37	23.35	23.36	/	/	/	/	/	/

Based on the most conservative measured triggering distance of 15 mm, additional SAR measurements were required at 14 mm from the Rear side for the above modes.

#### Top Side

Moving device toward the phantom:

Distance(mm)	20	19	18	17	16	15	14	13	12	11	10
Main Antenna	/	/	/	/	/	16.45	16.42	16.43	16.44	16.45	16.43

Moving device away from the phantom:

Distance(mm)	20	19	18	17	16	15	14	13	12	11	10
Main Antenna	23.36	23.37	23.34	23.36	23.35	/	/	/	/	/	/

Based on the most conservative measured triggering distance of 15 mm, additional SAR measurements were required at 14 mm from the Top side for the above modes.





**Right Side**

Moving device toward the phantom:

Distance(mm)	11	10	10	9	8	7	6	5	4	3	2
Main Antenna	/	/	/	/	/	16.45	16.45	16.44	16.43	16.44	16.42

Moving device away from the phantom:

Distance(mm)	11	10	10	9	8	7	6	5	4	3	2
Main Antenna	23.35	23.36	23.37	23.35	23.34	/	/	/	/	/	/

Based on the most conservative measured triggering distance of 7 mm, additional SAR measurements were required at 6 mm from the Right side for the above modes.

**\*\*\*END OF REPORT\*\*\***