Test Laboratory: Sporton International Inc. SAR Testing Lab Date: 2015/1/22

P19 802.11a_Top Side_0cm_Ch157_Ant 0

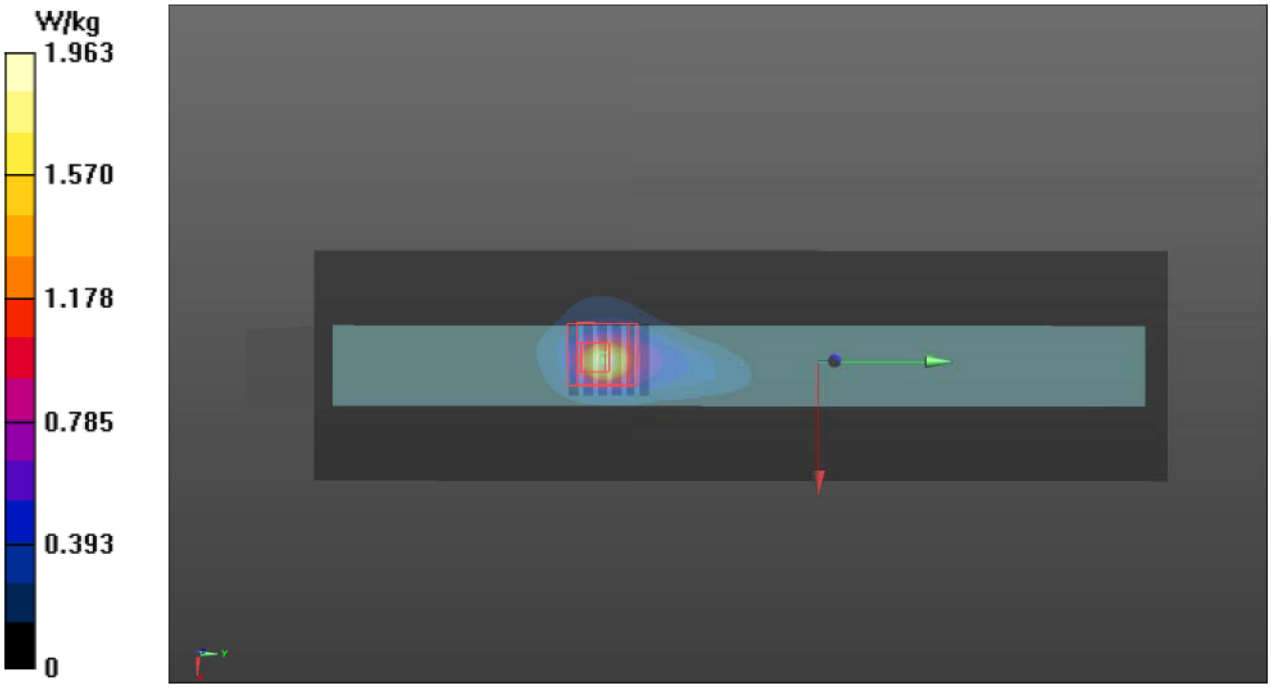
DUT: 510861

Communication System: WLAN_5G; Frequency: 5785 MHz;Duty Cycle: 1:1
Medium: B5G_150122 Medium parameters used: f = 5785 MHz; σ = 6.167 S/m; ε_r = 48.003; ρ = 1000 kg/m^3
Ambient Temperature：22.8 ℃; **Liquid Temperature**：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3976; ConvF(4.26, 4.26, 4.26); Calibrated: 2014/2/17;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1424; Calibrated: 2014/2/11
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1238
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch157/Area Scan (81x301x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.96 W/kg

Ch157/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 19.16 V/m; Power Drift = 0.06 dB
Peak SAR (extrapolated) = 9.13 W/kg
SAR(1 g) = 1.31 W/kg; SAR(10 g) = 0.326 W/kg
Maximum value of SAR (measured) = 2.66 W/kg



P20 802.11a_Bottom Side_0cm_Ch157_Ant 0

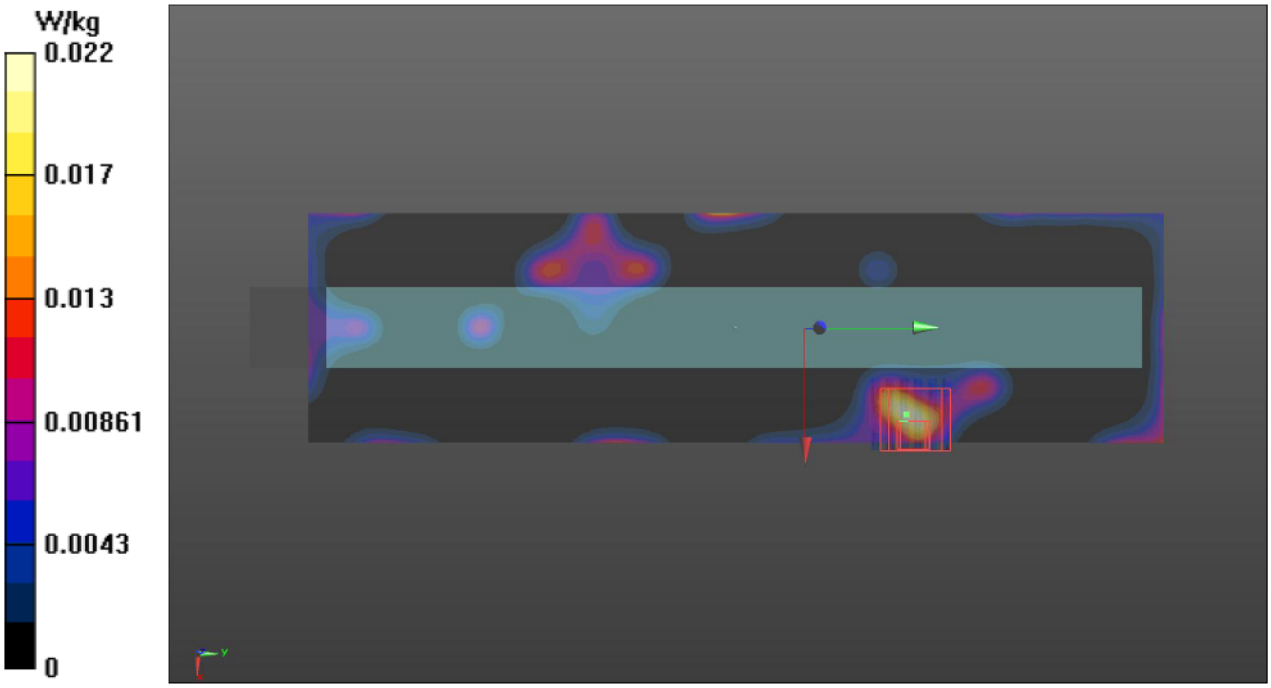
DUT: 510861

Communication System: WLAN_5G; Frequency: 5785 MHz;Duty Cycle: 1:1
Medium: B5G_150123 Medium parameters used: f = 5785 MHz; σ = 5.972 S/m; ε_r = 46.856; ρ = 1000 kg/m^3
Ambient Temperature：22.7 ℃; **Liquid Temperature**：21.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3976; ConvF(4.26, 4.26, 4.26); Calibrated: 2014/2/17;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1424; Calibrated: 2014/2/11
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1238
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch157/Area Scan (81x301x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0215 W/kg

Ch157/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 1.042 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 0.0180 W/kg
SAR(1 g) = 0.00156 W/kg; SAR(10 g) = 0.000709 W/kg
Maximum value of SAR (measured) = 0.00962 W/kg



Test Laboratory: Sporton International Inc. SAR Testing Lab Date: 2015/1/22

P31 802.11a_Top Side_0cm_Ch149_Ant 0

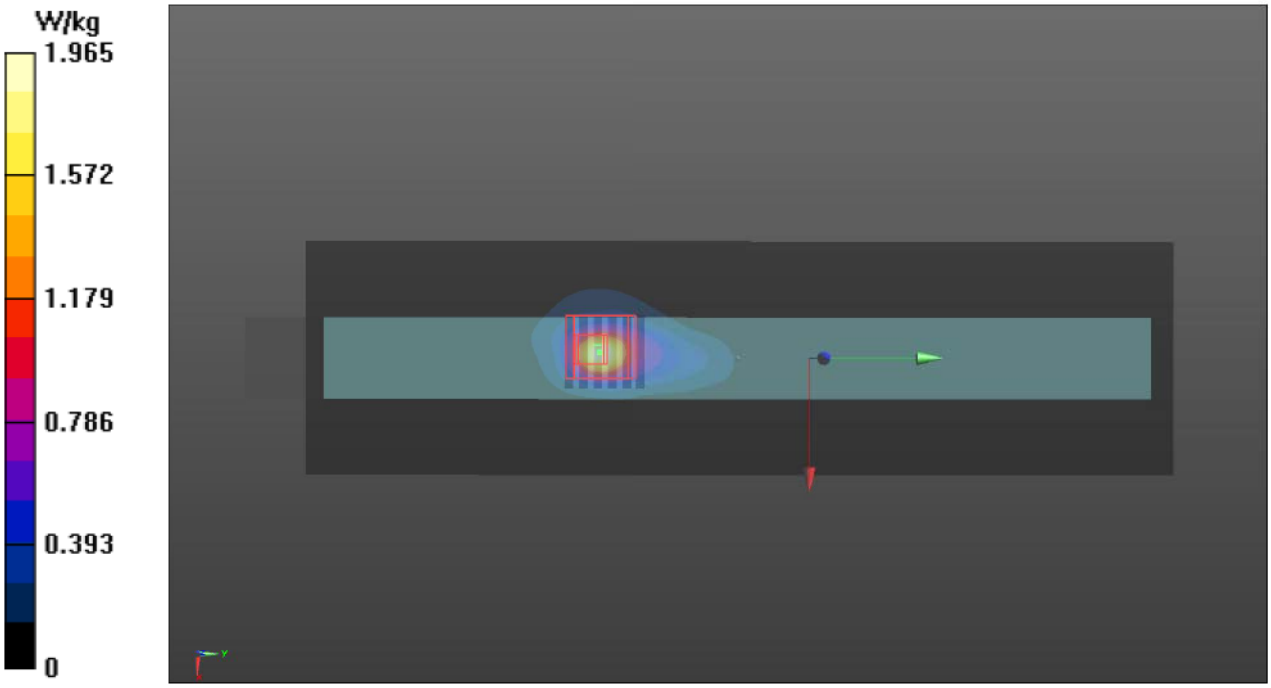
DUT: 510861

Communication System: WLAN_5G; Frequency: 5745 MHz;Duty Cycle: 1:1
Medium: B5G_150122 Medium parameters used: f = 5745 MHz; σ = 6.115 S/m; ε_r = 48.057; ρ = 1000 kg/m^3
Ambient Temperature：22.8 ℃; **Liquid Temperature**：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3976; ConvF(4.26, 4.26, 4.26); Calibrated: 2014/2/17;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1424; Calibrated: 2014/2/11
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1238
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch149/Area Scan (81x301x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.96 W/kg

Ch149/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 19.13 V/m; Power Drift = 0.10 dB
Peak SAR (extrapolated) = 6.89 W/kg
SAR(1 g) = 1.13 W/kg; SAR(10 g) = 0.296 W/kg
Maximum value of SAR (measured) = 2.43 W/kg



P32 802.11a_Top Side_0cm_Ch165_Ant 0

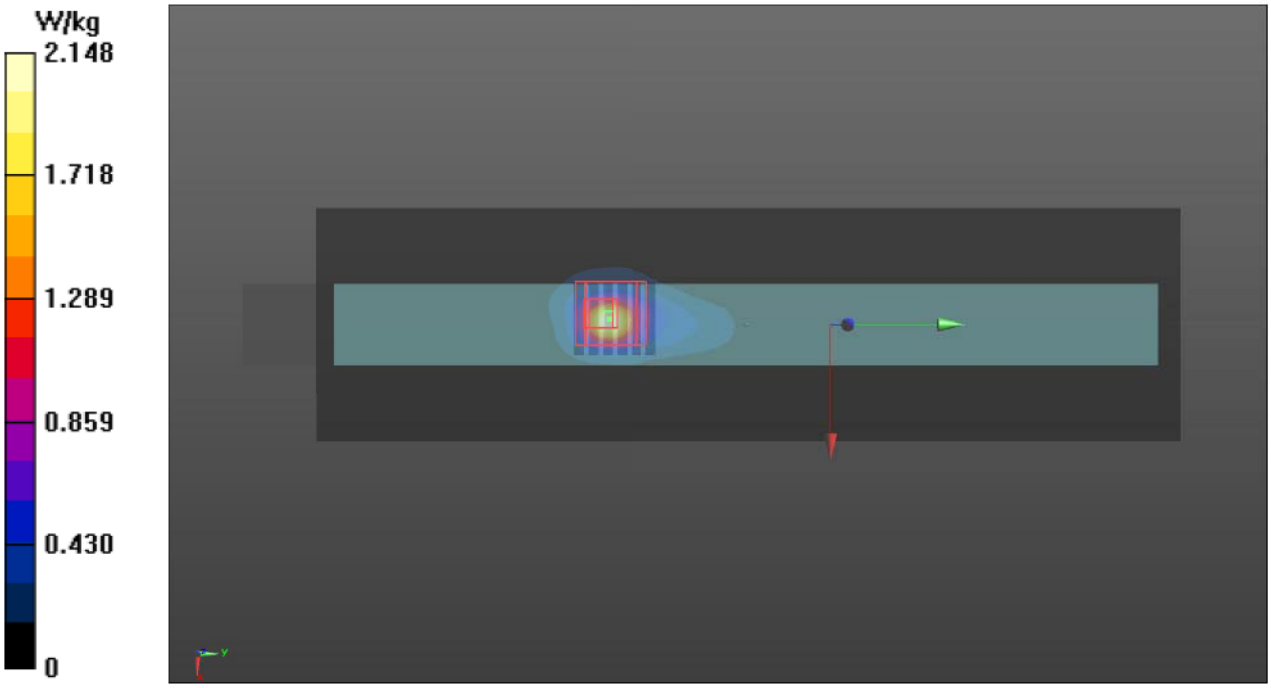
DUT: 510861

Communication System: WLAN_5G; Frequency: 5825 MHz;Duty Cycle: 1:1
Medium: B5G_150122 Medium parameters used: f = 5825 MHz; σ = 6.229 S/m; ε_r = 47.932; ρ = 1000 kg/m^3
Ambient Temperature：22.8 ℃; **Liquid Temperature**：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3976; ConvF(4.26, 4.26, 4.26); Calibrated: 2014/2/17;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1424; Calibrated: 2014/2/11
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1238
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch165/Area Scan (81x301x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.15 W/kg

Ch165/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 20.13 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 8.13 W/kg
SAR(1 g) = 1.35 W/kg; SAR(10 g) = 0.330 W/kg
Maximum value of SAR (measured) = 3.09 W/kg



Test Laboratory: Sporton International Inc. SAR Testing Lab Date: 2015/1/22

P33 802.11a_Top Side_0cm_Ch157_Ant 0

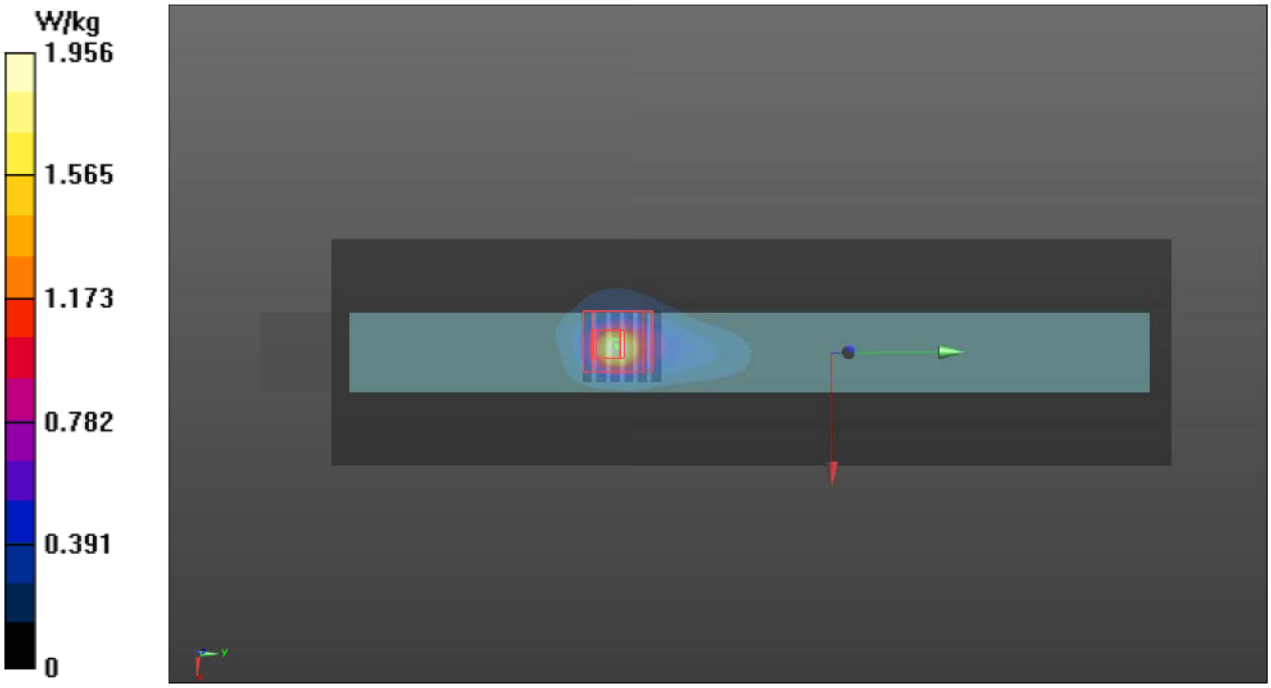
DUT: 510861

Communication System: WLAN_5G; Frequency: 5785 MHz;Duty Cycle: 1:1
Medium: B5G_150122 Medium parameters used: f = 5785 MHz; σ = 6.167 S/m; ε_r = 48.003; ρ = 1000 kg/m^3
Ambient Temperature：22.8 ℃; **Liquid Temperature**：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3976; ConvF(4.26, 4.26, 4.26); Calibrated: 2014/2/17;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1424; Calibrated: 2014/2/11
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1238
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch157/Area Scan (81x301x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.96 W/kg

Ch157/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 19.08 V/m; Power Drift = 0.09 dB
Peak SAR (extrapolated) = 7.25 W/kg
SAR(1 g) = 1.22 W/kg; SAR(10 g) = 0.305 W/kg
Maximum value of SAR (measured) = 2.86 W/kg



P26 802.11n_Rear Face_0cm_Ch159_Ant 0+1

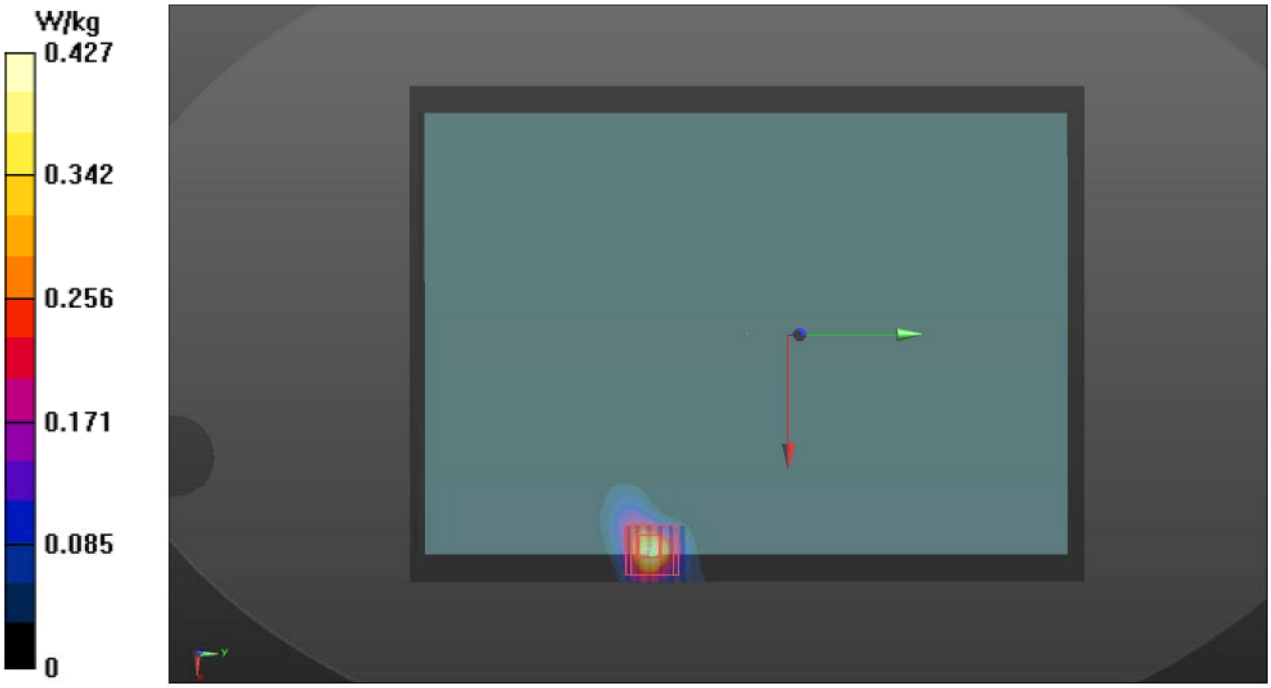
DUT: 510861

Communication System: WLAN_5G; Frequency: 5795 MHz;Duty Cycle: 1:1.128
Medium: B5G_150122 Medium parameters used: f = 5795 MHz; σ = 6.182 S/m; ε_r = 47.983; ρ = 1000 kg/m^3
Ambient Temperature：22.8 ℃; **Liquid Temperature**：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3976; ConvF(4.26, 4.26, 4.26); Calibrated: 2014/2/17;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1424; Calibrated: 2014/2/11
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1238
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch159/Area Scan (221x301x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.427 W/kg

Ch159/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 7.262 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 1.31 W/kg
SAR(1 g) = 0.262 W/kg; SAR(10 g) = 0.075 W/kg
Maximum value of SAR (measured) = 0.528 W/kg



Test Laboratory: Sporton International Inc. SAR Testing Lab Date: 2015/1/23

P27 802.11n_Left Side_0cm_Ch159_Ant 0+1

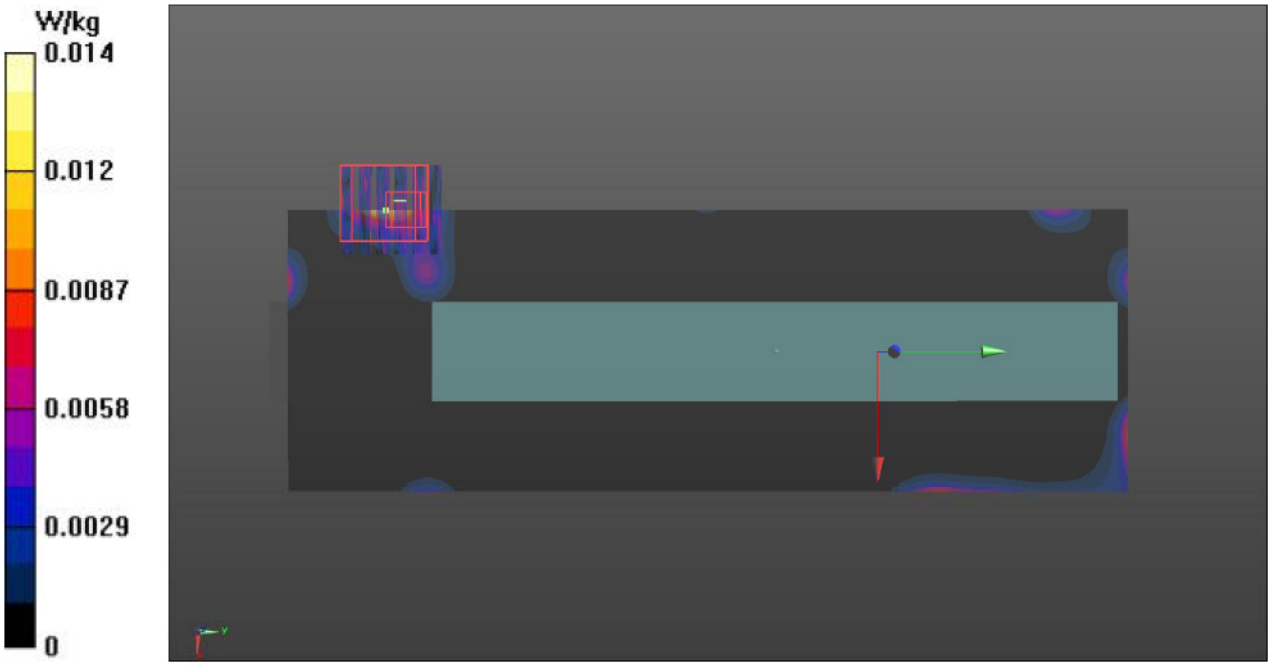
DUT: 510861

Communication System: WLAN_5G; Frequency: 5795 MHz;Duty Cycle: 1:1.128
Medium: B5G_150123 Medium parameters used: f = 5795 MHz; σ = 5.986 S/m; ε_r = 46.847; ρ = 1000 kg/m^3
Ambient Temperature：22.7 ℃; **Liquid Temperature**：21.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3976; ConvF(4.26, 4.26, 4.26); Calibrated: 2014/2/17;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1424; Calibrated: 2014/2/11
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1238
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch159/Area Scan (81x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0145 W/kg

Ch159/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 0.9930 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 0.0230 W/kg
SAR(1 g) = 0.0016 W/kg; SAR(10 g) = 0.000788 W/kg
Maximum value of SAR (measured) = 0.00972 W/kg



P28 802.11n_Right Side_0cm_Ch159_Ant 0+1

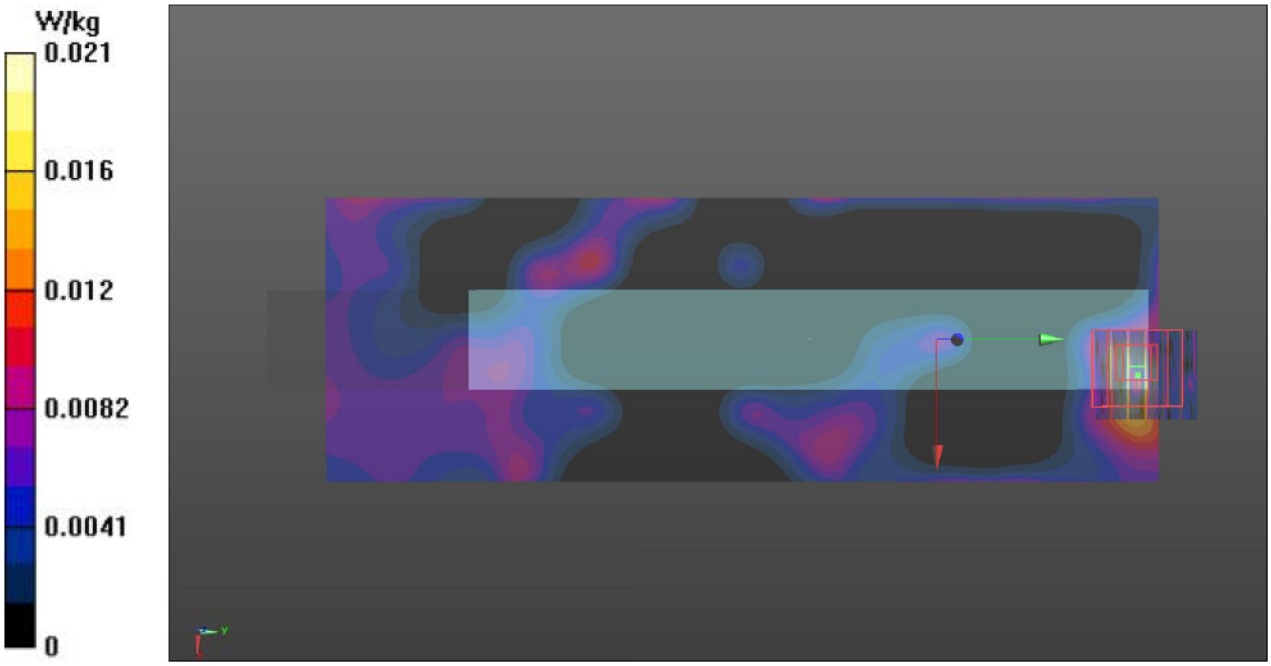
DUT: 510861

Communication System: WLAN_5G; Frequency: 5795 MHz;Duty Cycle: 1:1.128
Medium: B5G_150123 Medium parameters used: f = 5795 MHz; σ = 5.986 S/m; ε_r = 46.847; ρ = 1000 kg/m^3
Ambient Temperature：22.7 ℃; **Liquid Temperature**：21.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3976; ConvF(4.26, 4.26, 4.26); Calibrated: 2014/2/17;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1424; Calibrated: 2014/2/11
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1238
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch159/Area Scan (81x241x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.0205 W/kg

Ch159/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 1.220 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.0480 W/kg
SAR(1 g) = 0.0065 W/kg; SAR(10 g) = 0.00264 W/kg
Maximum value of SAR (measured) = 0.0164 W/kg



Test Laboratory: Sporton International Inc. SAR Testing Lab Date: 2015/1/22

P29 802.11n_Top Side_0cm_Ch159_Ant 0+1

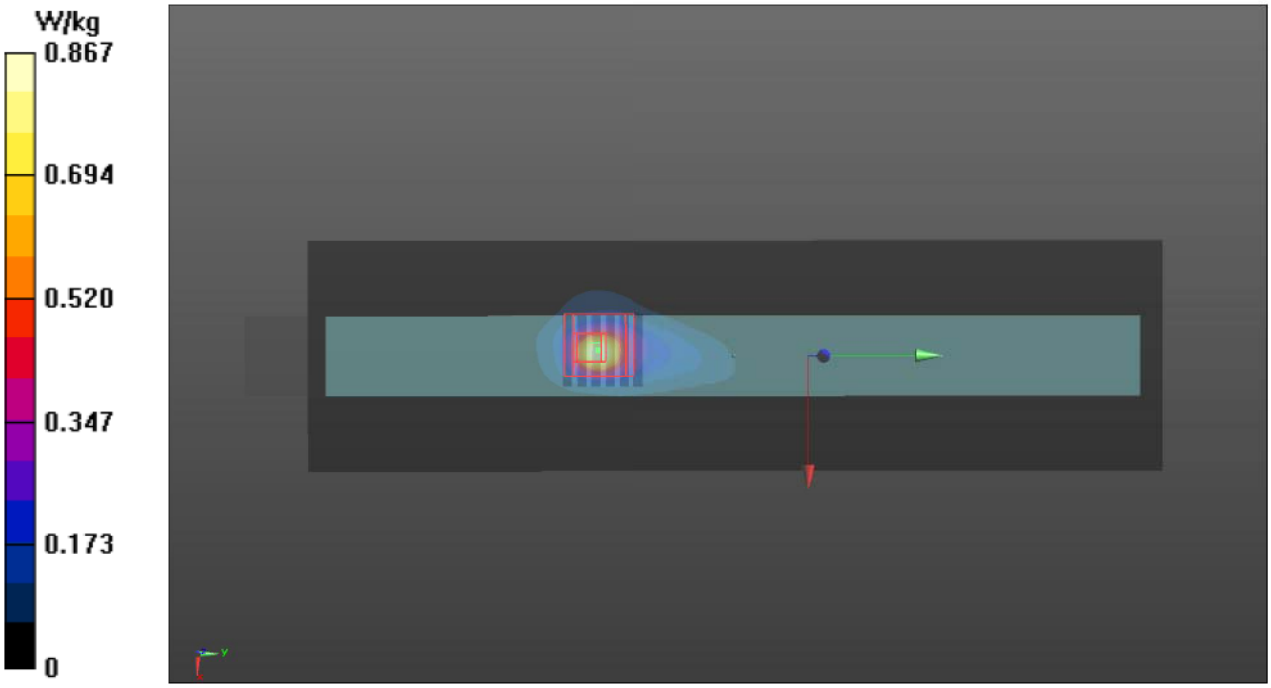
DUT: 510861

Communication System: WLAN_5G; Frequency: 5795 MHz;Duty Cycle: 1:1.128
Medium: B5G_150122 Medium parameters used: f = 5795 MHz; σ = 6.182 S/m; ε_r = 47.983; ρ = 1000 kg/m^3
Ambient Temperature：22.8 ℃; **Liquid Temperature**：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3976; ConvF(4.26, 4.26, 4.26); Calibrated: 2014/2/17;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1424; Calibrated: 2014/2/11
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1238
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch159/Area Scan (81x301x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.867 W/kg

Ch159/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 14.02 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 4.19 W/kg
SAR(1 g) = 0.636 W/kg; SAR(10 g) = 0.158 W/kg
Maximum value of SAR (measured) = 1.38 W/kg



Test Laboratory: Sporton International Inc. SAR Testing Lab Date: 2015/1/23

P30 802.11n_Bottom Side_0cm_Ch159_Ant 0+1

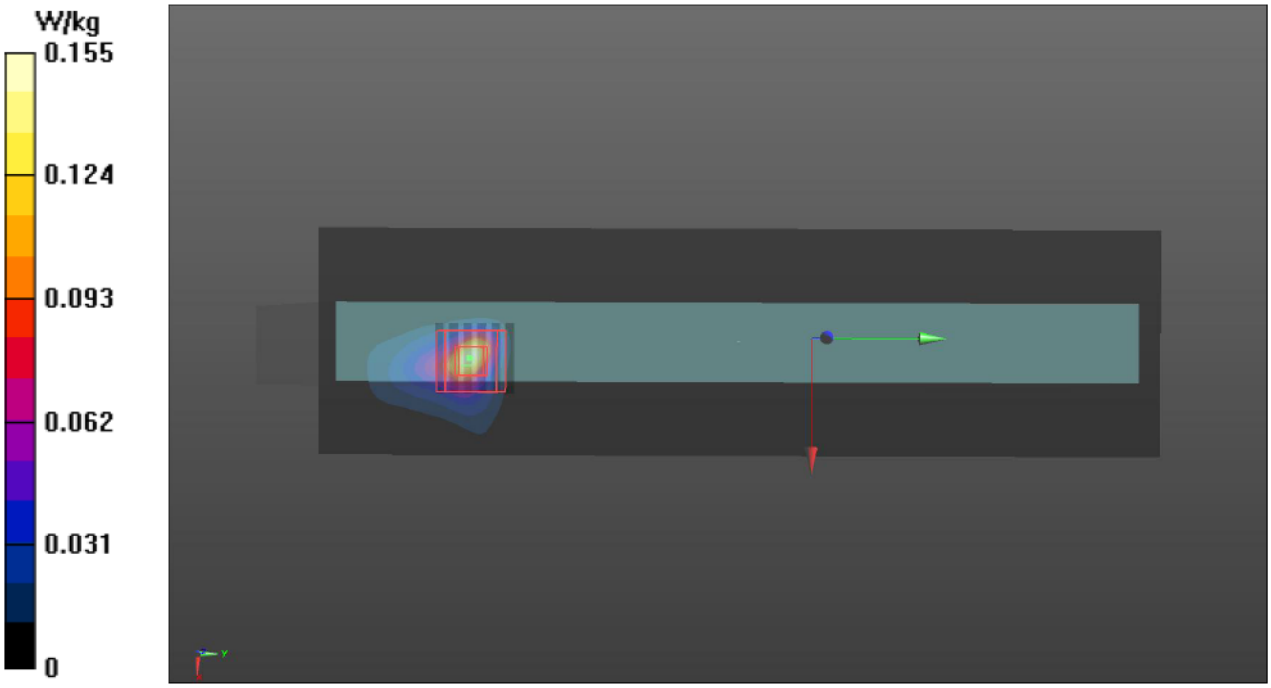
DUT: 510861

Communication System: WLAN_5G; Frequency: 5795 MHz;Duty Cycle: 1:1.128
Medium: B5G_150123 Medium parameters used: f = 5795 MHz; σ = 5.986 S/m; ε_r = 46.847; ρ = 1000 kg/m^3
Ambient Temperature：22.7 ℃; **Liquid Temperature**：21.9 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3976; ConvF(4.26, 4.26, 4.26); Calibrated: 2014/2/17;
- Sensor-Surface: 2mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1424; Calibrated: 2014/2/11
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1238
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7331)

Ch159/Area Scan (81x301x1): Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 0.155 W/kg

Ch159/Zoom Scan (6x6x12)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=2mm
Reference Value = 4.297 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 0.251 W/kg
SAR(1 g) = 0.057 W/kg; SAR(10 g) = 0.018 W/kg
Maximum value of SAR (measured) = 0.121 W/kg



Appendix C. DASY Calibration Certificate

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 44 245 9700, Fax +41 44 245 9779
info@speag.com, http://www.speag.com

IMPORTANT NOTICE

USAGE OF THE DAE 4

The DAE unit is a delicate, high precision instrument and requires careful treatment by the user. There are no serviceable parts inside the DAE. Special attention shall be given to the following points:

Battery Exchange: The battery cover of the DAE4 unit is closed using a screw, over tightening the screw may cause the threads inside the DAE to wear out.

Shipping of the DAE: Before shipping the DAE to SPEAG for calibration, remove the batteries and pack the DAE in an antistatic bag. This antistatic bag shall then be packed into a larger box or container which protects the DAE from impacts during transportation. The package shall be marked to indicate that a fragile instrument is inside.

E-Stop Failures: Touch detection may be malfunctioning due to broken magnets in the E-stop. Rough handling of the E-stop may lead to damage of these magnets. Touch and collision errors are often caused by dust and dirt accumulated in the E-stop. To prevent E-stop failure, the customer shall always mount the probe to the DAE carefully and keep the DAE unit in a non-dusty environment if not used for measurements.

Repair: Minor repairs are performed at no extra cost during the annual calibration. However, SPEAG reserves the right to charge for any repair especially if rough unprofessional handling caused the defect.

DASY Configuration Files: Since the exact values of the DAE input resistances, as measured during the calibration procedure of a DAE unit, are not used by the DASY software, a nominal value of 200 MOhm is given in the corresponding configuration file.

Important Note:
Warranty and calibration is void if the DAE unit is disassembled partly or fully by the Customer.

Important Note:
Never attempt to grease or oil the E-stop assembly. Cleaning and readjusting of the E-stop assembly is allowed by certified SPEAG personnel only and is part of the annual calibration procedure.

Important Note:
To prevent damage of the DAE probe connector pins, use great care when installing the probe to the DAE. Carefully connect the probe with the connector notch oriented in the mating position. Avoid any rotational movement of the probe body versus the DAE while turning the locking nut of the connector. The same care shall be used when disconnecting the probe from the DAE.

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

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
S Servizio svizzero di taratura
Swiss Calibration Service

Accredited by the Swiss Accreditation Service (SAS)
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client Sporton TW (Auden)

Certificate No: DAE4-1424_Feb14

CALIBRATION CERTIFICATE

Object	DAE4 - SD 000 D04 BM - SN: 1424
Calibration procedure(s)	QA CAL-06.v26 Calibration procedure for the data acquisition electronics (DAE)
Calibration date:	February 11, 2014

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
Keithley Multimeter Type 2001	SN: 0810278	01-Oct-13 (No:13976)	Oct-14
Secondary Standards	**ID #**	**Check Date (in house)**	**Scheduled Check**
Auto DAE Calibration Unit	SE UWS 053 AA 1001	07-Jan-14 (in house check)	In house check: Jan-15
Calibrator Box V2.1	SE UMS 006 AA 1002	07-Jan-14 (in house check)	In house check: Jan-15

	Name	Function	Signature
Calibrated by:	R.Mayoraz	Technician	
Approved by:	Fin Bomholt	Deputy Technical Manager	

Issued: February 11, 2014