



Appendix D

Plots of SAR Test Result

for SZEM1803002337CR



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Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

WIFI 802.11 b-Body Bottom CH1 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11b (0); Communication System Band: ISM 2.4GHz Band;
 Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.942 \text{ S/m}$; $\epsilon_r = 51.548$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/IEEE802.11b Body Bottom CH1 Main Antenna/Area Scan (11x18x1): Measurement
 grid: $dx=10\text{mm}$, $dy=10\text{mm}$
 Maximum value of SAR (measured) = 0.313 W/kg

WiFi 2.4GHz/IEEE802.11b Body Bottom CH1 Main Antenna/Zoom Scan (7x7x7)/Cube 0:

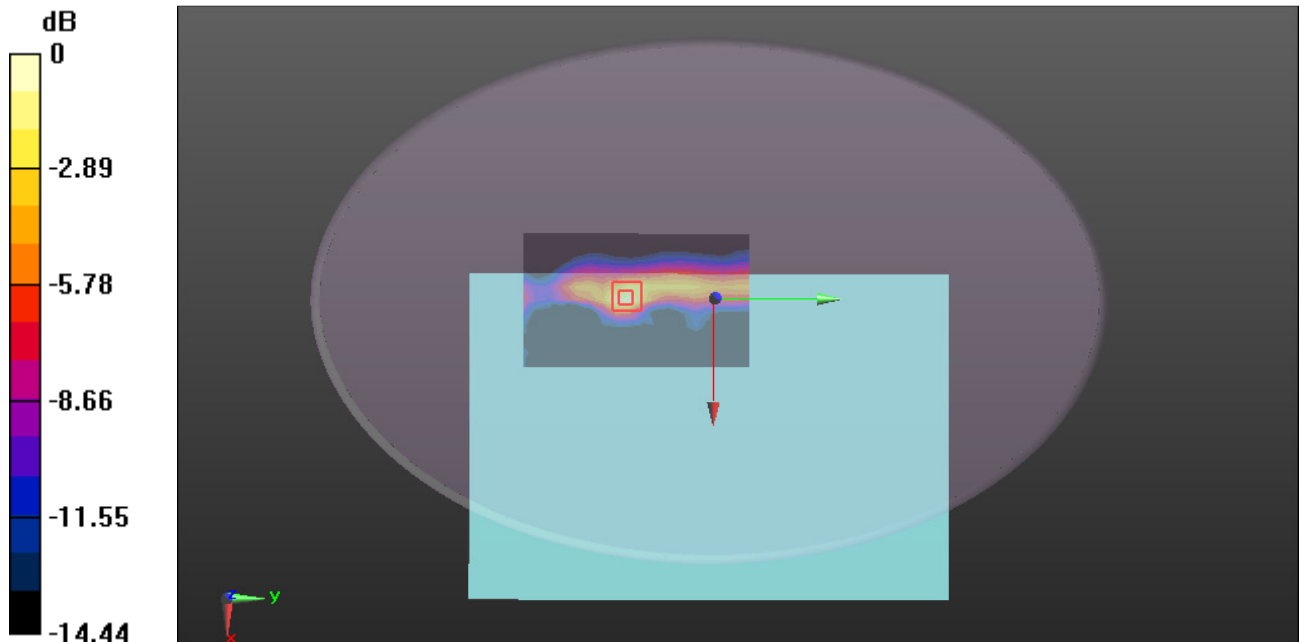
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 6.215 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.414 W/kg

SAR(1 g) = 0.205 W/kg; SAR(10 g) = 0.096 W/kg

Maximum value of SAR (measured) = 0.336 W/kg



0 dB = 0.336 W/kg = -4.74 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

WIFI 802.11 b-Body Bottom CH6 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11b (0); Communication System Band: ISM 2.4GHz Band;
 Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2437 \text{ MHz}$; $\sigma = 1.945 \text{ S/m}$; $\epsilon_r = 51.672$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C ; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/IEEE802.11b Body Bottom CH6 Main Antenna/Area Scan (11x18x1): Measurement
 grid: $dx=10\text{mm}$, $dy=10\text{mm}$
 Maximum value of SAR (measured) = 0.305 W/kg

WiFi 2.4GHz/IEEE802.11b Body Bottom CH6 Main Antenna/Zoom Scan (7x7x7)/Cube 0:

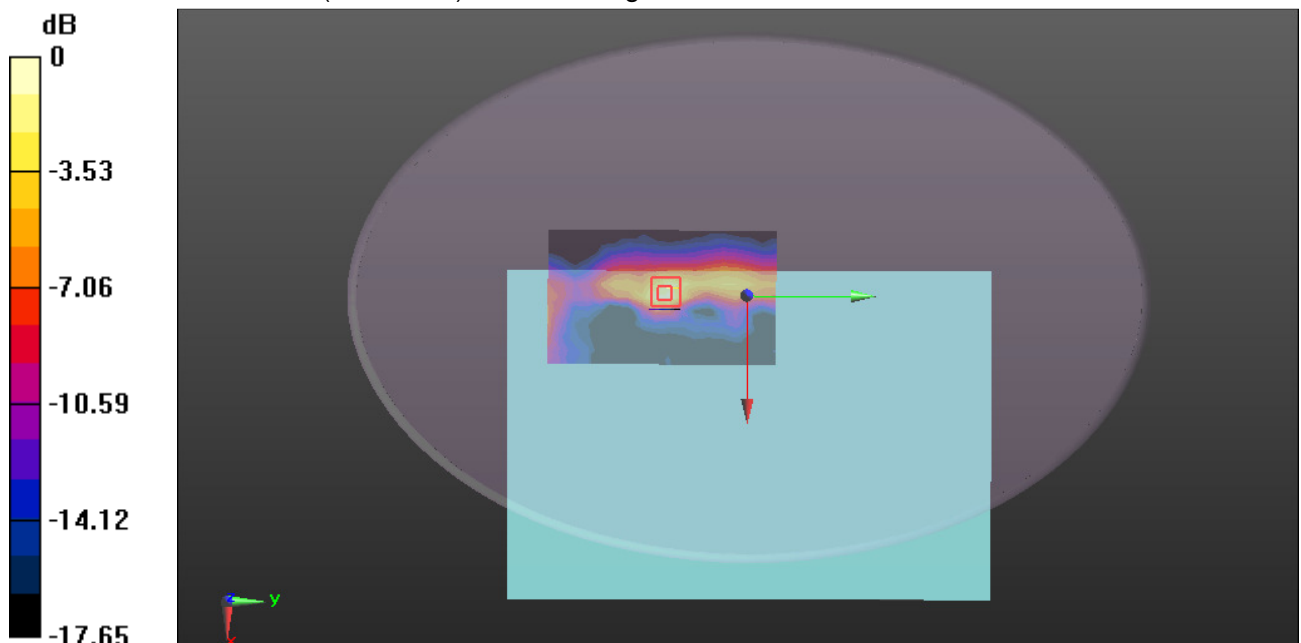
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 6.334 V/m ; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 0.438 W/kg

SAR(1 g) = 0.211 W/kg ; SAR(10 g) = 0.097 W/kg

Maximum value of SAR (measured) = 0.349 W/kg



0 dB = 0.349 W/kg = -4.57 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

WIFI 802.11 b-Body Bottom CH11 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11b (0); Communication System Band: ISM 2.4GHz Band;
 Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.953 \text{ S/m}$; $\epsilon_r = 51.601$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/IEEE802.11b Body Bottom CH11 Main Antenna/Area Scan (11x18x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.346 W/kg

WiFi 2.4GHz/IEEE802.11b Body Bottom CH11 Main Antenna/Zoom Scan (7x7x7)/Cube 0:

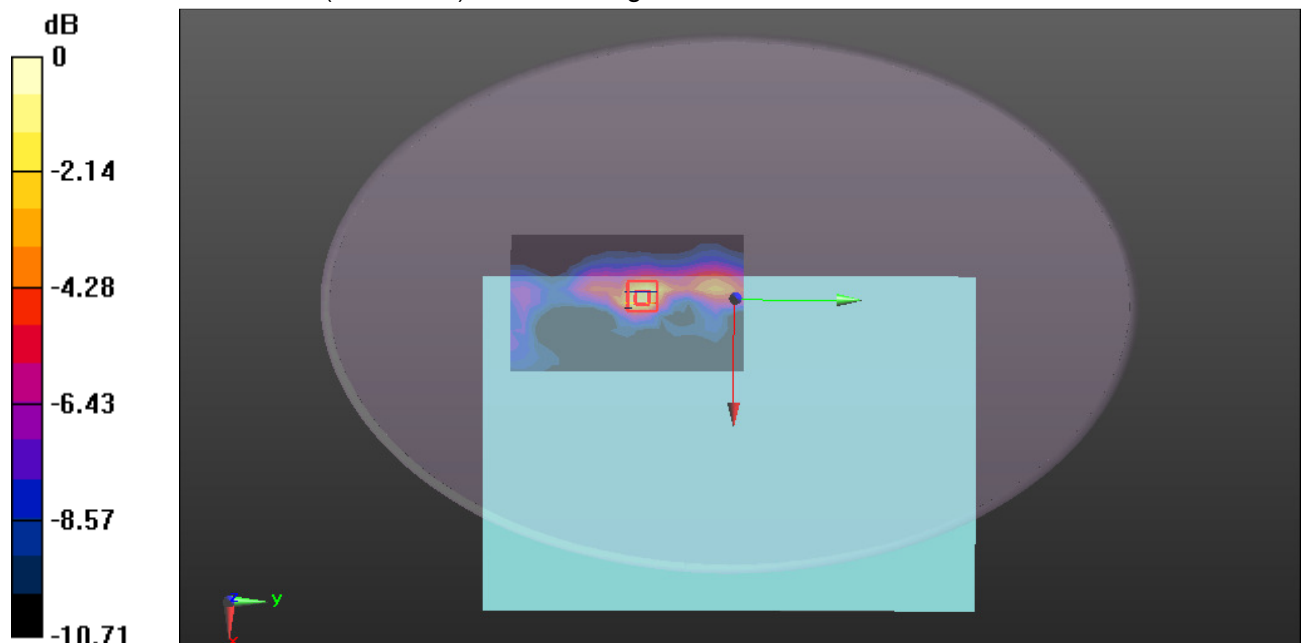
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 7.379 V/m; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.516 W/kg

SAR(1 g) = 0.265 W/kg; SAR(10 g) = 0.138 W/kg

Maximum value of SAR (measured) = 0.418 W/kg



0 dB = 0.418 W/kg = -3.79 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

WIFI 802.11 b-Body Bottom CH1 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11b (0); Communication System Band: ISM 2.4GHz Band;
 Frequency: 2412 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.942 \text{ S/m}$; $\epsilon_r = 51.548$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/IEEE802.11b Body Bottom CH1 Aux Antenna/Area Scan (11x15x1): Measurement
 grid: $dx=10\text{mm}$, $dy=10\text{mm}$
 Maximum value of SAR (measured) = 0.239 W/kg

WiFi 2.4GHz/IEEE802.11b Body Bottom CH1 Aux Antenna/Zoom Scan (7x7x7)/Cube 0:

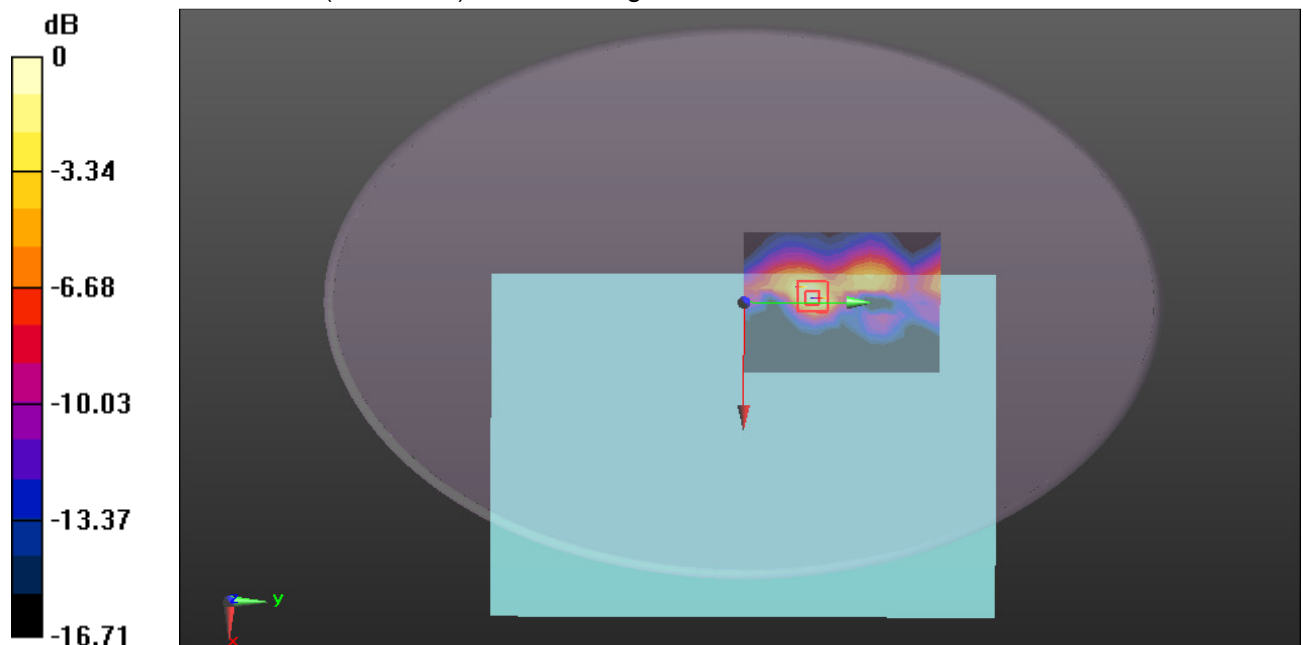
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 4.234 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 0.320 W/kg

SAR(1 g) = 0.150 W/kg; SAR(10 g) = 0.070 W/kg

Maximum value of SAR (measured) = 0.255 W/kg



0 dB = 0.255 W/kg = -5.93 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

WIFI 802.11 b-Body Bottom CH6 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11b (0); Communication System Band: ISM 2.4GHz Band;
 Frequency: 2437 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2437 \text{ MHz}$; $\sigma = 1.945 \text{ S/m}$; $\epsilon_r = 51.672$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/IEEE802.11b Body Bottom CH6 Aux Antenna/Area Scan (11x15x1): Measurement
 grid: $dx=10\text{mm}$, $dy=10\text{mm}$
 Maximum value of SAR (measured) = 0.291 W/kg

WiFi 2.4GHz/IEEE802.11b Body Bottom CH6 Aux Antenna/Zoom Scan (7x7x7)/Cube 0:

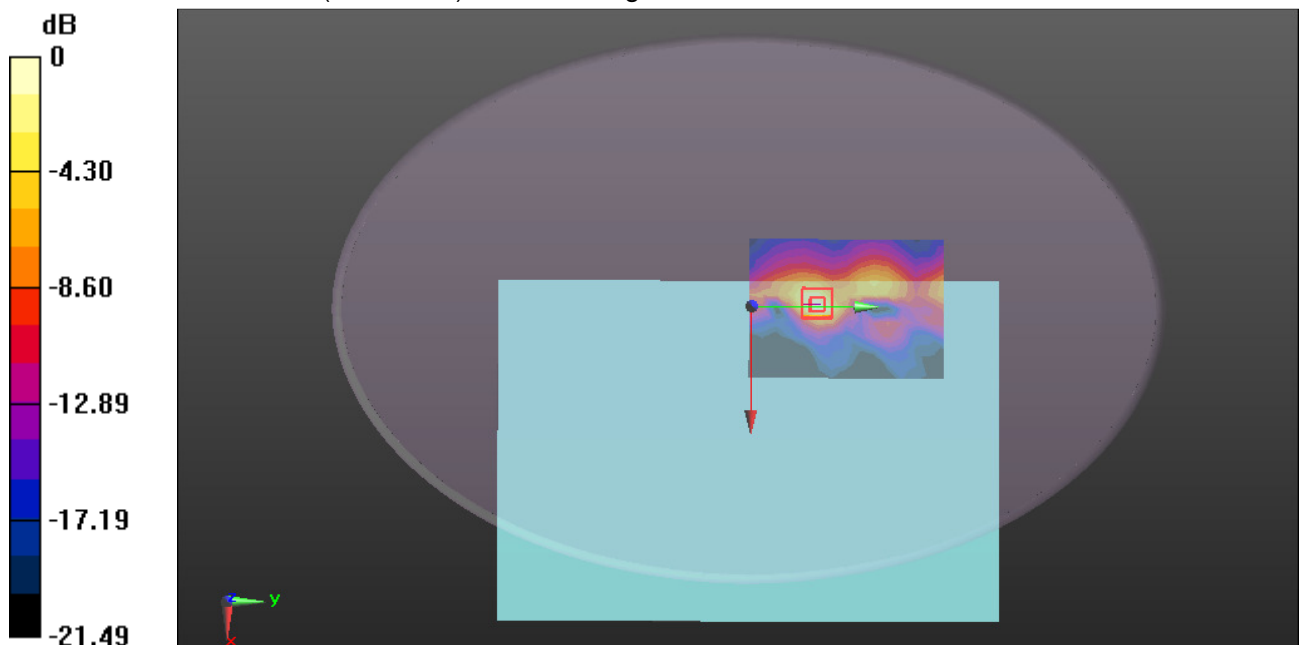
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 4.596 V/m; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.390 W/kg

SAR(1 g) = 0.180 W/kg; SAR(10 g) = 0.081 W/kg

Maximum value of SAR (measured) = 0.309 W/kg



0 dB = 0.309 W/kg = -5.10 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

WIFI 802.11 b-Body Bottom CH11 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11b (0); Communication System Band: ISM 2.4GHz Band;
 Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.953 \text{ S/m}$; $\epsilon_r = 51.601$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/IEEE802.11b Body Bottom CH11 Aux Antenna/Area Scan (11x15x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.328 W/kg

WiFi 2.4GHz/IEEE802.11b Body Bottom CH11 Aux Antenna/Zoom Scan (7x7x7)/Cube 0:

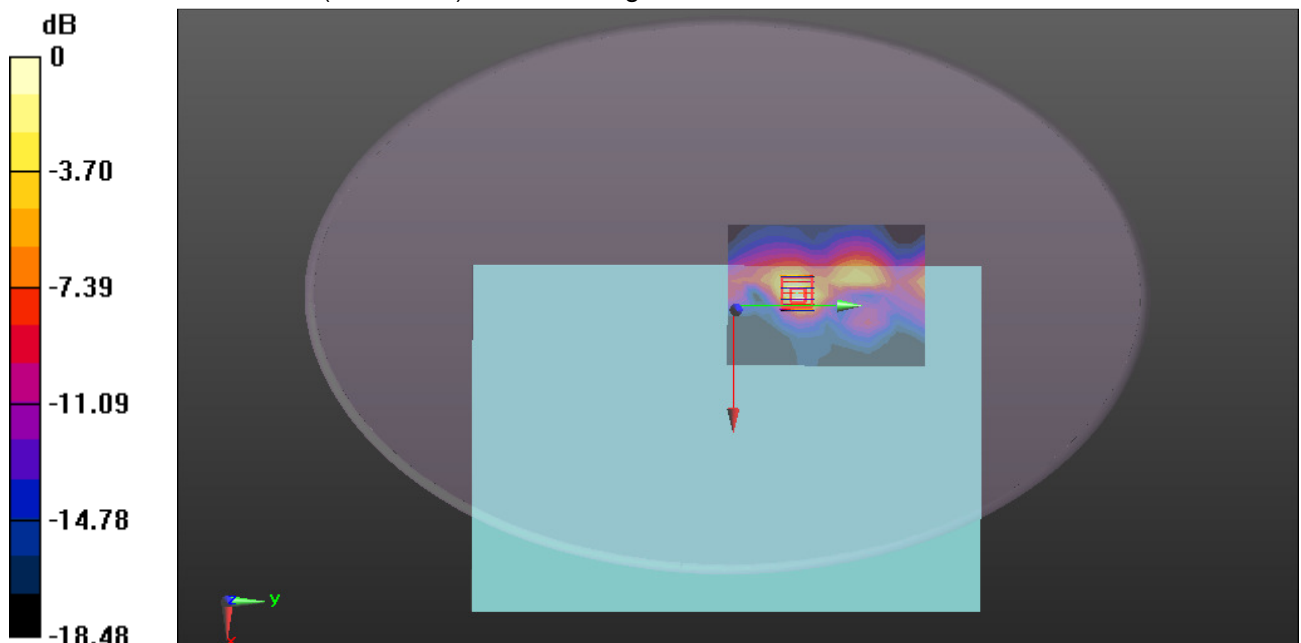
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 4.940 V/m; Power Drift = -0.14 dB

Peak SAR (extrapolated) = 0.415 W/kg

SAR(1 g) = 0.194 W/kg; SAR(10 g) = 0.087 W/kg

Maximum value of SAR (measured) = 0.322 W/kg



0 dB = 0.322 W/kg = -4.92 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

WIFI 802.11 b-Body Bottom CH11 Main Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11b (0); Communication System Band: ISM 2.4GHz Band;
 Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.953 \text{ S/m}$; $\epsilon_r = 51.601$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/IEEE802.11b Body Bottom CH11 Main Antenna/Area Scan (11x15x1): Measurement
 grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.188 W/kg

WiFi 2.4GHz/IEEE802.11b Body Bottom CH11 Main Antenna/Zoom Scan (7x7x7)/Cube 0:

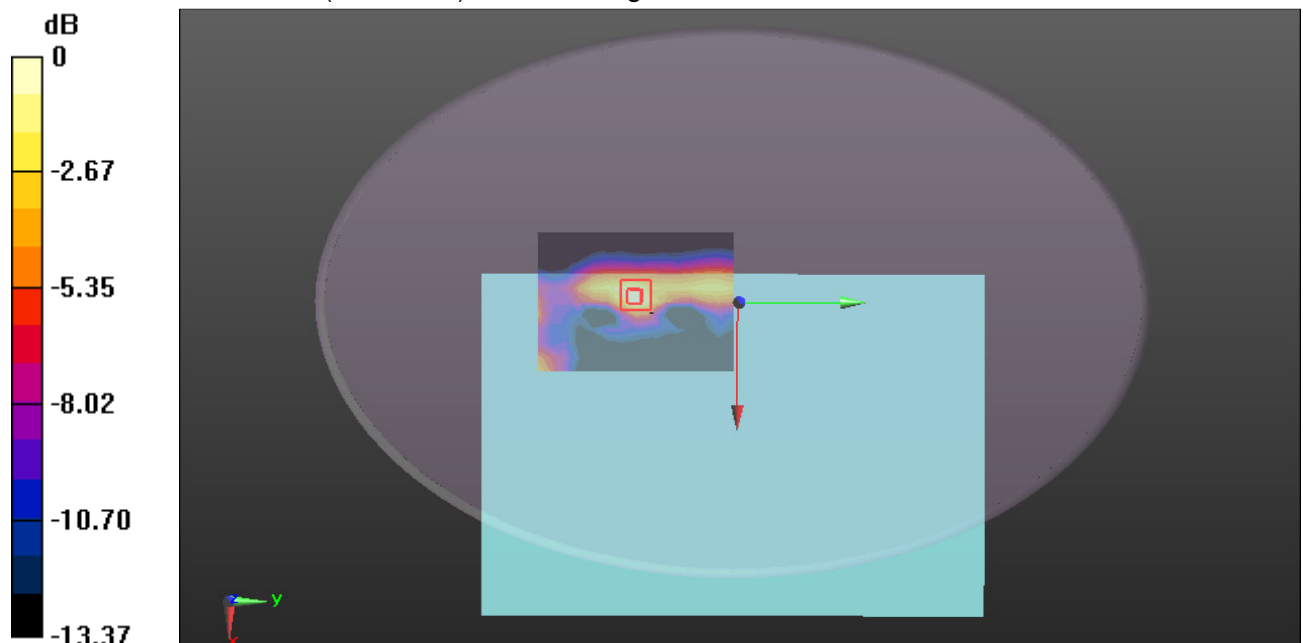
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 5.355 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.244 W/kg

SAR(1 g) = 0.116 W/kg; SAR(10 g) = 0.057 W/kg

Maximum value of SAR (measured) = 0.191 W/kg



0 dB = 0.191 W/kg = -7.19 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

WIFI 802.11 b-Body Bottom CH11 Aux Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11b (0); Communication System Band: ISM 2.4GHz Band;
 Frequency: 2462 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.953 \text{ S/m}$; $\epsilon_r = 51.601$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/IEEE802.11b Body Bottom CH11 Aux Antenna/Area Scan (11x15x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$
 Maximum value of SAR (measured) = 0.258 W/kg

WiFi 2.4GHz/IEEE802.11b Body Bottom CH11 Aux Antenna/Zoom Scan (7x7x7)/Cube 0:

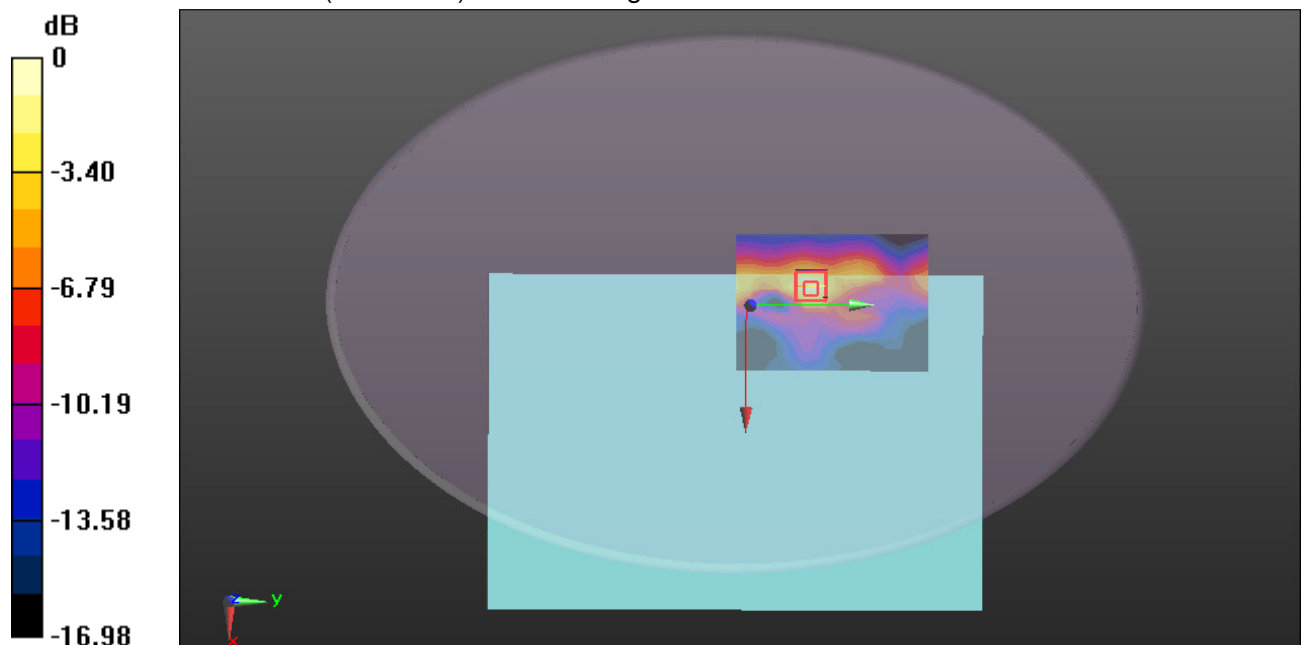
Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 5.732 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.355 W/kg

SAR(1 g) = 0.167 W/kg; SAR(10 g) = 0.077 W/kg

Maximum value of SAR (measured) = 0.274 W/kg



0 dB = 0.274 W/kg = -5.62 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

2.4G-Body Bottom CH00 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, Bluetooth (0); Communication System Band: ISM 2.4Ghz Band;

Frequency: 2402 MHz; Duty Cycle: 1:1

Medium parameters used (extrapolated): $f = 2402 \text{ MHz}$; $\sigma = 1.94 \text{ S/m}$; $\epsilon_r = 51.537$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/2.4G Body Bottom CH00 Main Antenna Southstar ANT/Area Scan (11x15x1):

Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

[Info: Extrapolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0722 W/kg

WiFi 2.4GHz/2.4G Body Bottom CH00 Main Antenna Southstar ANT/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

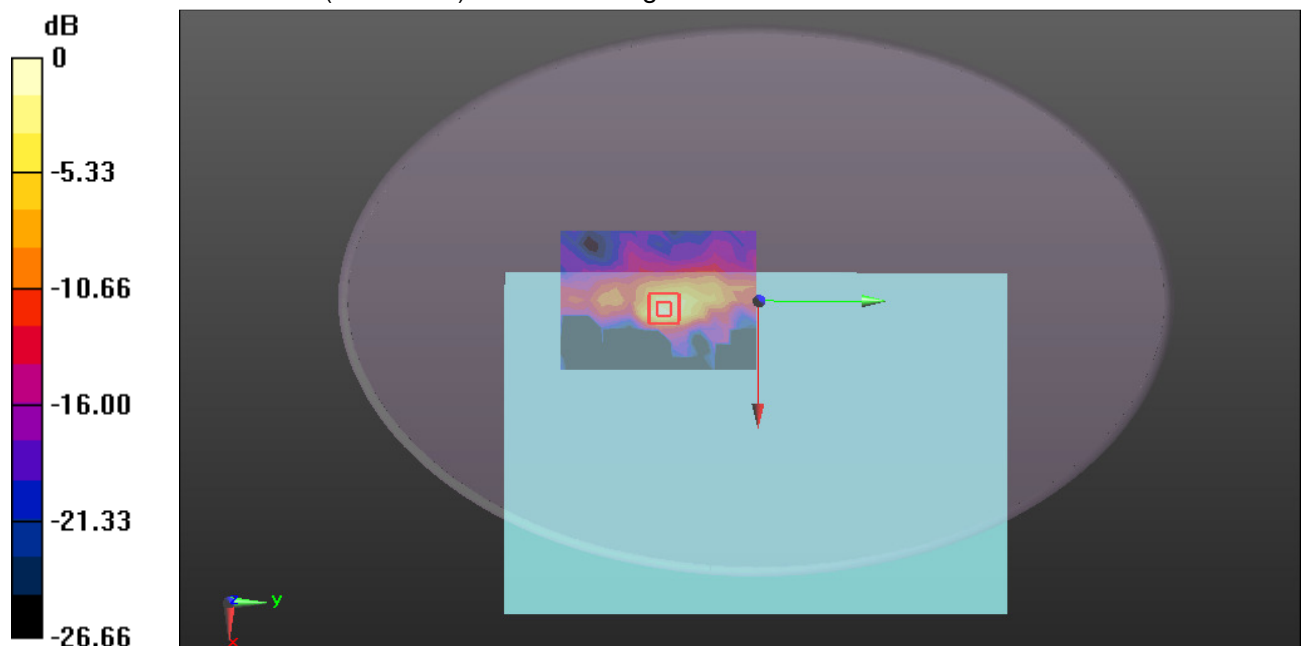
Reference Value = 1.630 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 0.184 W/kg

SAR(1 g) = 0.038 W/kg; SAR(10 g) = 0.013 W/kg

[Info: Extrapolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0886 W/kg



0 dB = 0.0886 W/kg = -10.53 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

2.4G-Body Bottom CH39 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, Bluetooth (0); Communication System Band: ISM 2.4Ghz Band;

Frequency: 2441 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 2441 \text{ MHz}$; $\sigma = 1.944 \text{ S/m}$; $\epsilon_r = 51.678$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/2.4G Body Bottom CH39 Main Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.0178 W/kg

WiFi 2.4GHz/2.4G Body Bottom CH39 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

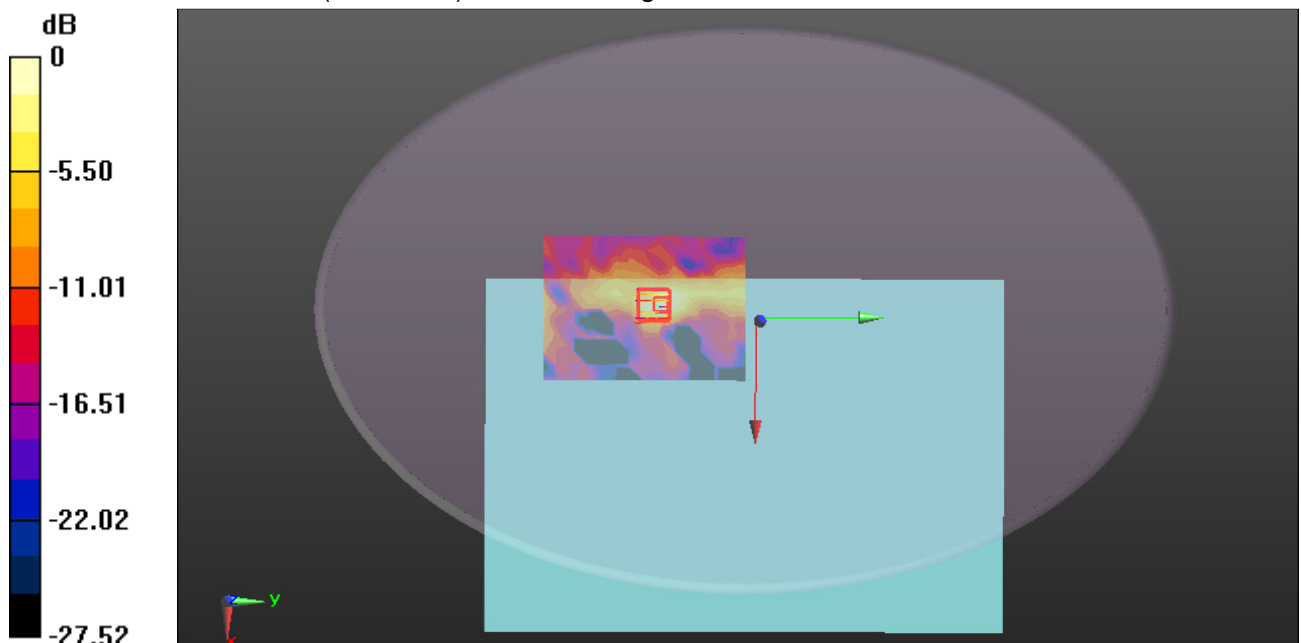
grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 1.272 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 0.0240 W/kg

SAR(1 g) = 0.012 W/kg; SAR(10 g) = 0.00469 W/kg

Maximum value of SAR (measured) = 0.0192 W/kg



0 dB = 0.0192 W/kg = -17.17 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

2.4G-Body Bottom CH78 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, Bluetooth (0); Communication System Band: ISM 2.4Ghz Band;

Frequency: 2480 MHz; Duty Cycle: 1:1

Medium parameters used (extrapolated): $f = 2480 \text{ MHz}$; $\sigma = 1.975 \text{ S/m}$; $\epsilon_r = 51.521$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/2.4G Body Bottom CH78 Main Antenna/Area Scan (11x15x1): Measurement grid:
 $dx=10\text{mm}$, $dy=10\text{mm}$

[Info: Extrapolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0220 W/kg

WiFi 2.4GHz/2.4G Body Bottom CH78 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

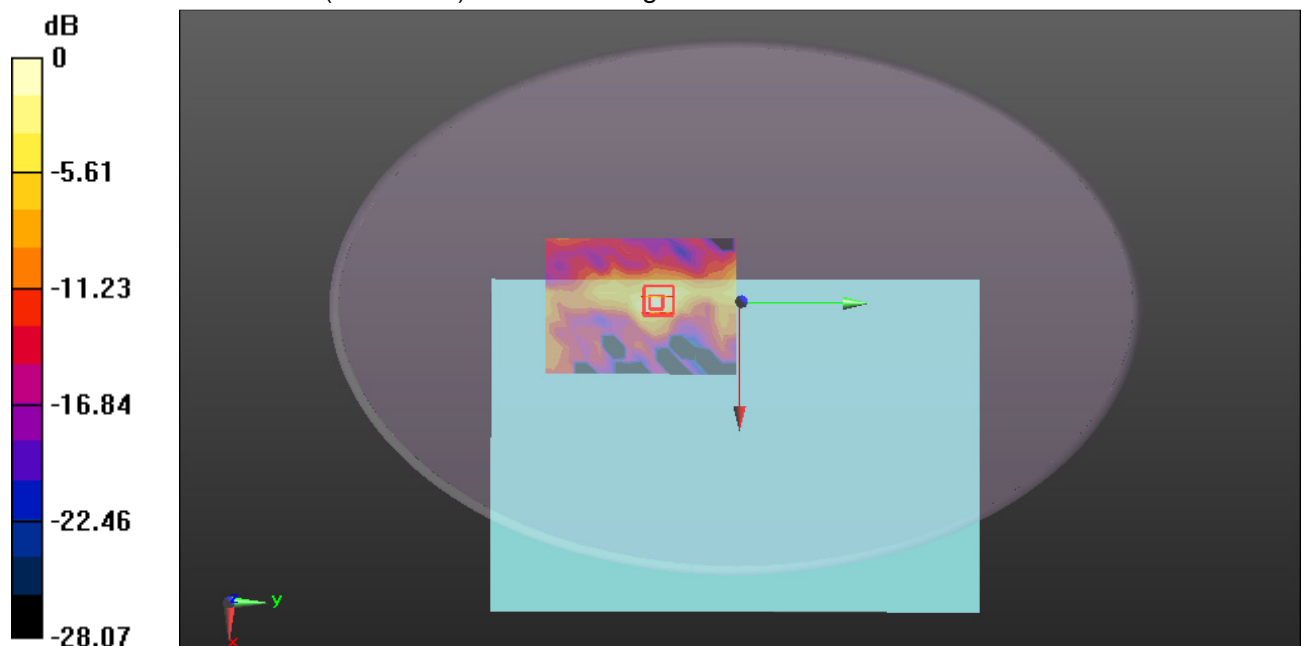
Reference Value = 1.381 V/m; Power Drift = 0.10 dB

Peak SAR (extrapolated) = 0.0290 W/kg

SAR(1 g) = 0.015 W/kg; SAR(10 g) = 0.00675 W/kg

[Info: Extrapolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.0238 W/kg



0 dB = 0.0238 W/kg = -16.23 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/22/2018

2.4G-Body Bottom CH00 Main Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, Bluetooth (0); Communication System Band: ISM 2.4Ghz Band;

Frequency: 2402 MHz; Duty Cycle: 1:1

Medium parameters used (extrapolated): $f = 2402 \text{ MHz}$; $\sigma = 1.94 \text{ S/m}$; $\epsilon_r = 51.537$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(7.32, 7.32, 7.32); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WiFi 2.4GHz/2.4G Body Bottom CH00 Main Antenna/Area Scan (11x15x1): Measurement grid:
 $dx=10\text{mm}$, $dy=10\text{mm}$

[Info: Extrapolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.00511 W/kg

WiFi 2.4GHz/2.4G Body Bottom CH00 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

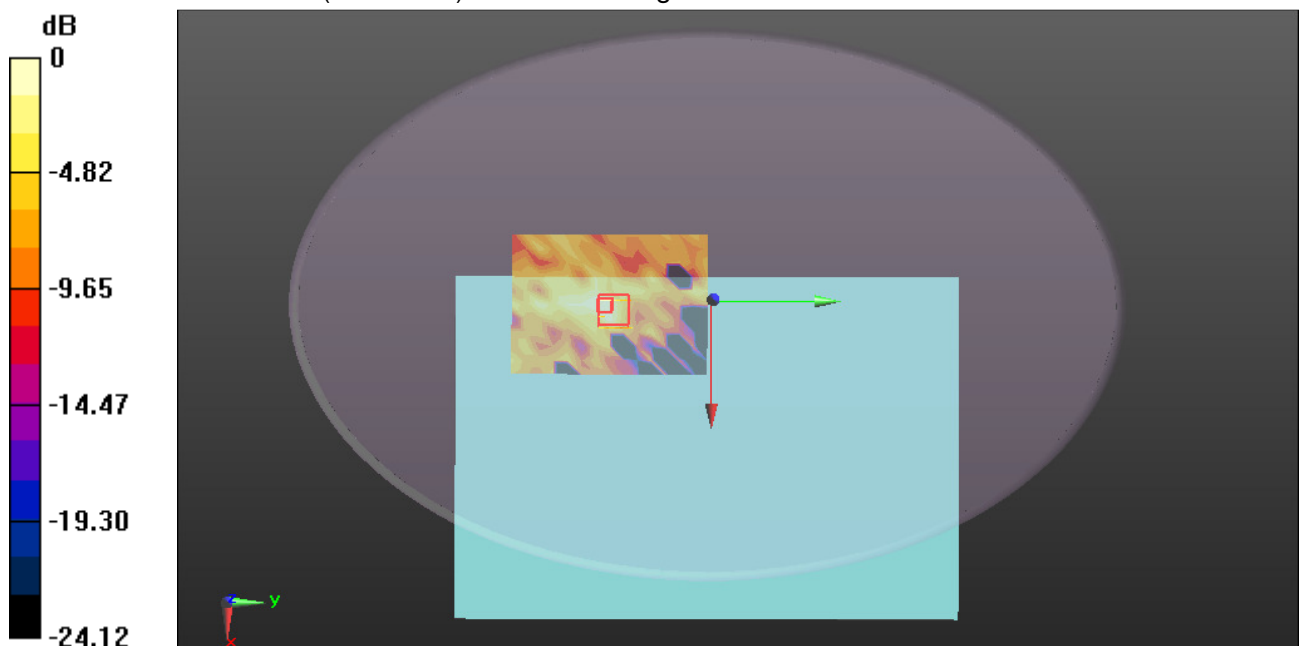
Reference Value = 0.5300 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 0.0170 W/kg

SAR(1 g) = 0.00308 W/kg; SAR(10 g) = 0.00123 W/kg

[Info: Extrapolated medium parameters used for SAR evaluation.](#)

Maximum value of SAR (measured) = 0.00466 W/kg



0 dB = 0.00466 W/kg = -23.32 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH52 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band II;

Frequency: 5260 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5260$ MHz; $\sigma = 5.438$ S/m; $\epsilon_r = 49.137$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.67, 4.67, 4.67); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH52 Main Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.672 W/kg

WIFI/IEEE802.11a Body Bottom CH52 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

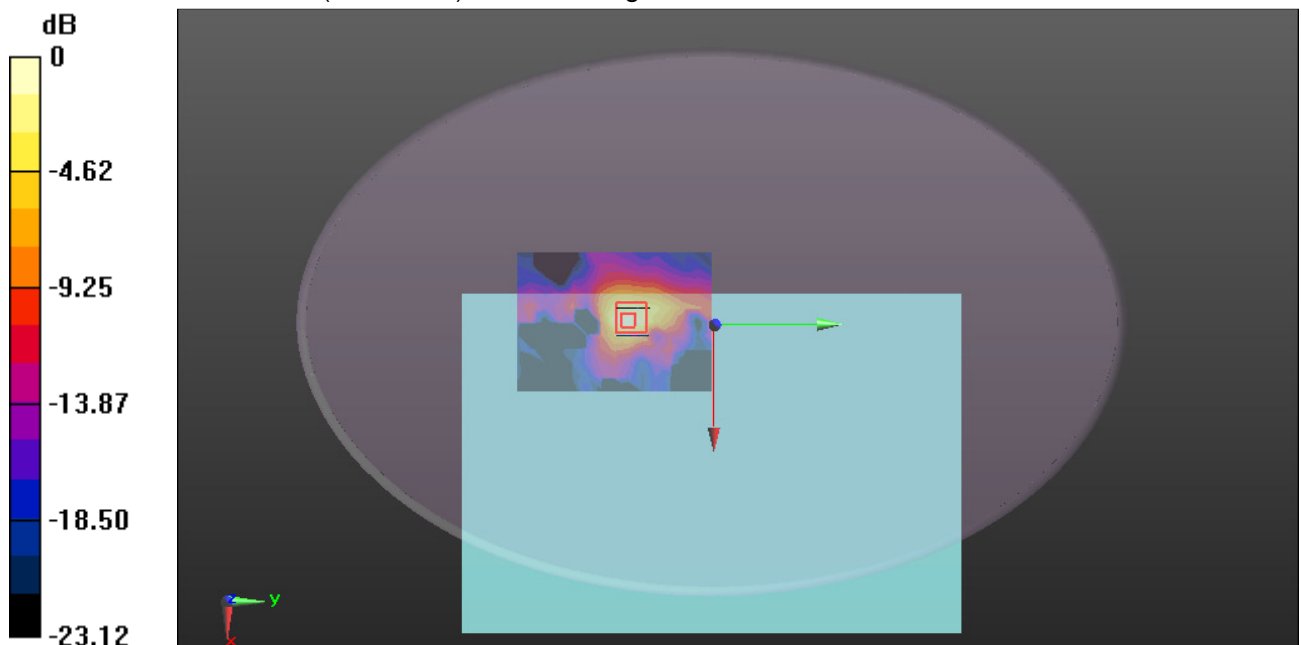
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 2.368 V/m; Power Drift = 0.03 dB

Peak SAR (extrapolated) = 1.29 W/kg

SAR(1 g) = 0.295 W/kg; SAR(10 g) = 0.105 W/kg

Maximum value of SAR (measured) = 0.688 W/kg



0 dB = 0.688 W/kg = -1.62 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH60 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band II;

Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5300$ MHz; $\sigma = 5.494$ S/m; $\epsilon_r = 48.888$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.67, 4.67, 4.67); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH60 Main Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.733 W/kg

WIFI/IEEE802.11a Body Bottom CH60 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

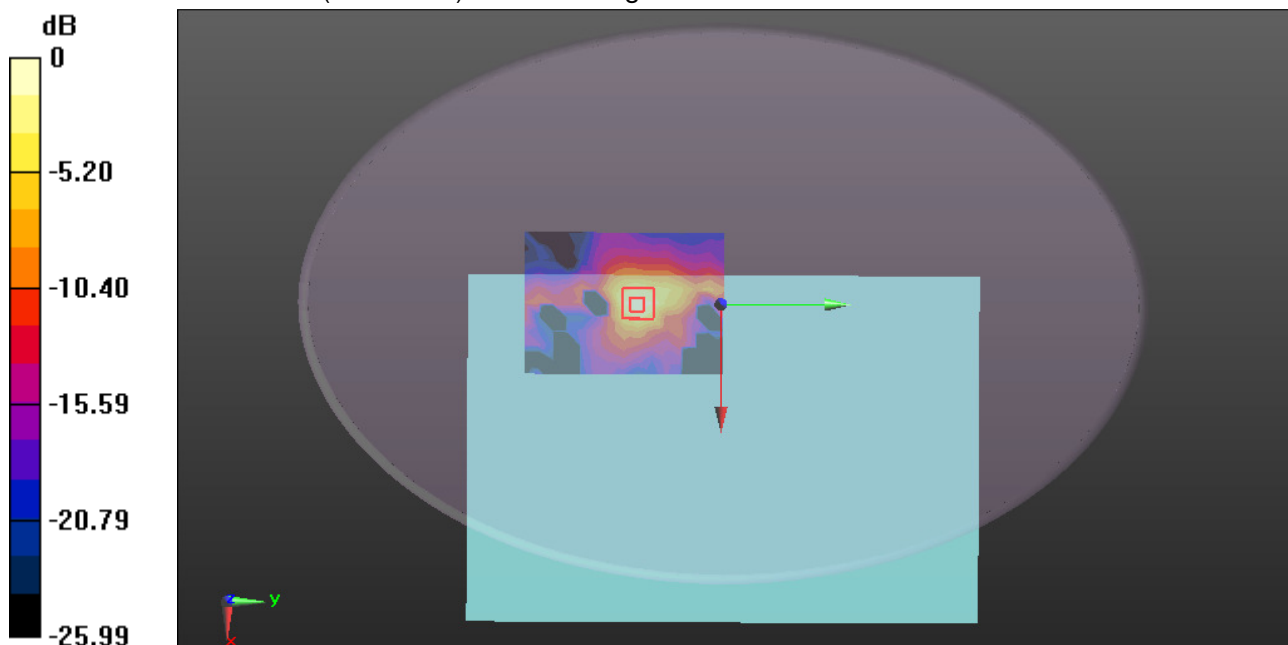
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 2.019 V/m; Power Drift = 0.15 dB

Peak SAR (extrapolated) = 1.39 W/kg

SAR(1 g) = 0.310 W/kg; SAR(10 g) = 0.111 W/kg

Maximum value of SAR (measured) = 0.720 W/kg



0 dB = 0.720 W/kg = -1.43 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH64 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band II;

Frequency: 5320 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5320$ MHz; $\sigma = 5.546$ S/m; $\epsilon_r = 48.869$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.67, 4.67, 4.67); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH64 Main Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.497 W/kg

WIFI/IEEE802.11a Body Bottom CH64 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

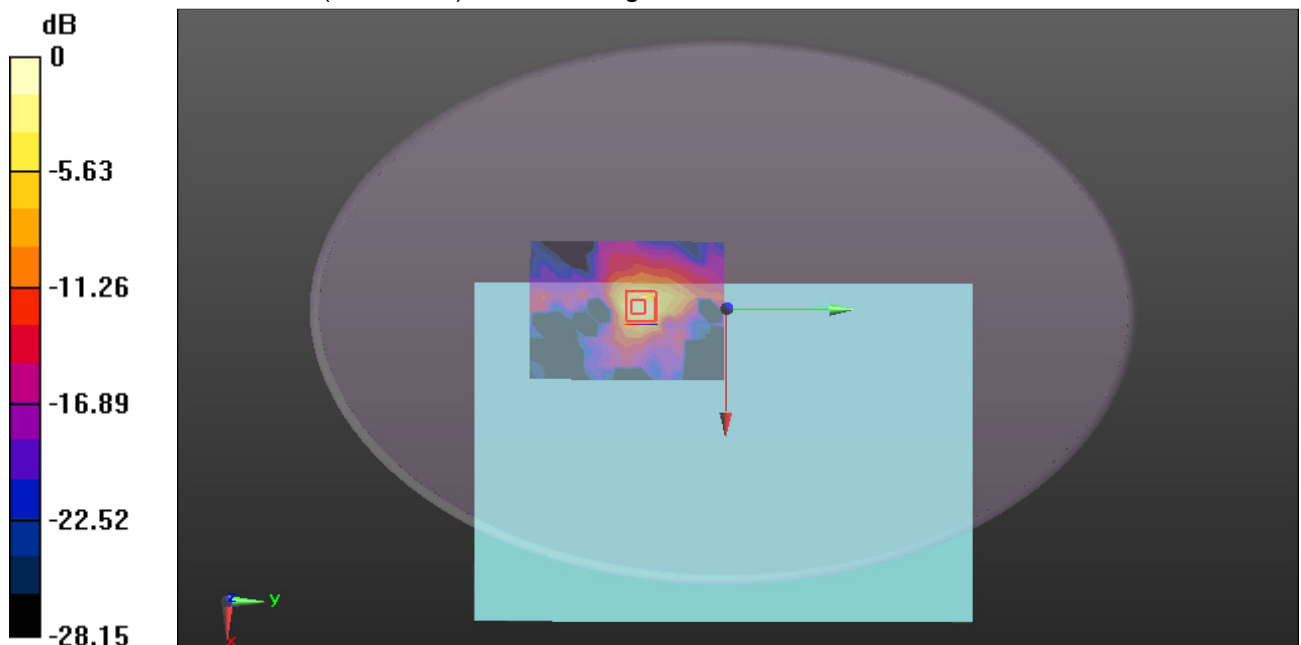
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 1.853 V/m; Power Drift = 0.09 dB

Peak SAR (extrapolated) = 1.33 W/kg

SAR(1 g) = 0.264 W/kg; SAR(10 g) = 0.086 W/kg

Maximum value of SAR (measured) = 0.689 W/kg



0 dB = 0.689 W/kg = -1.62 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH100 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band III;

Frequency: 5500 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5500$ MHz; $\sigma = 5.78$ S/m; $\epsilon_r = 48.751$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.26, 4.26, 4.26); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH100 Main Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.447 W/kg

WIFI/IEEE802.11a Body Bottom CH100 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

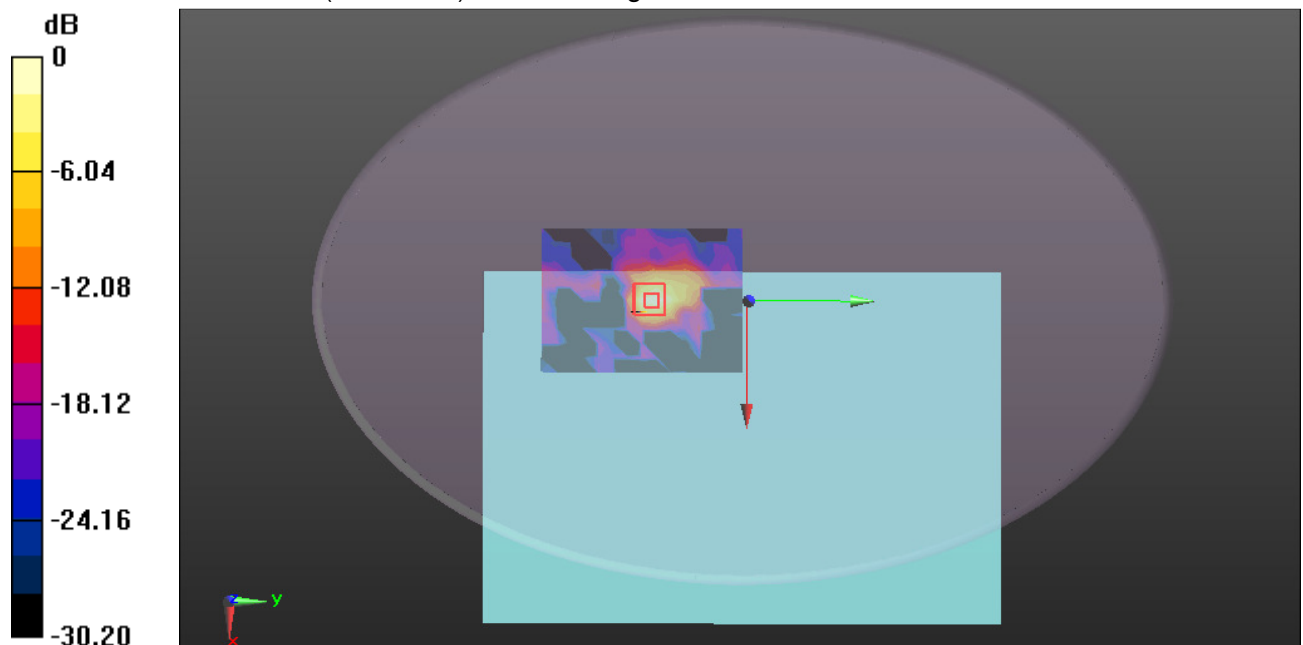
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 1.892 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 0.982 W/kg

SAR(1 g) = 0.185 W/kg; SAR(10 g) = 0.053 W/kg

Maximum value of SAR (measured) = 0.471 W/kg



0 dB = 0.471 W/kg = -3.27 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH116 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band III;

Frequency: 5580 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5580$ MHz; $\sigma = 5.869$ S/m; $\epsilon_r = 48.345$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.18, 4.18, 4.18); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH116 Main Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.636 W/kg

WIFI/IEEE802.11a Body Bottom CH116 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

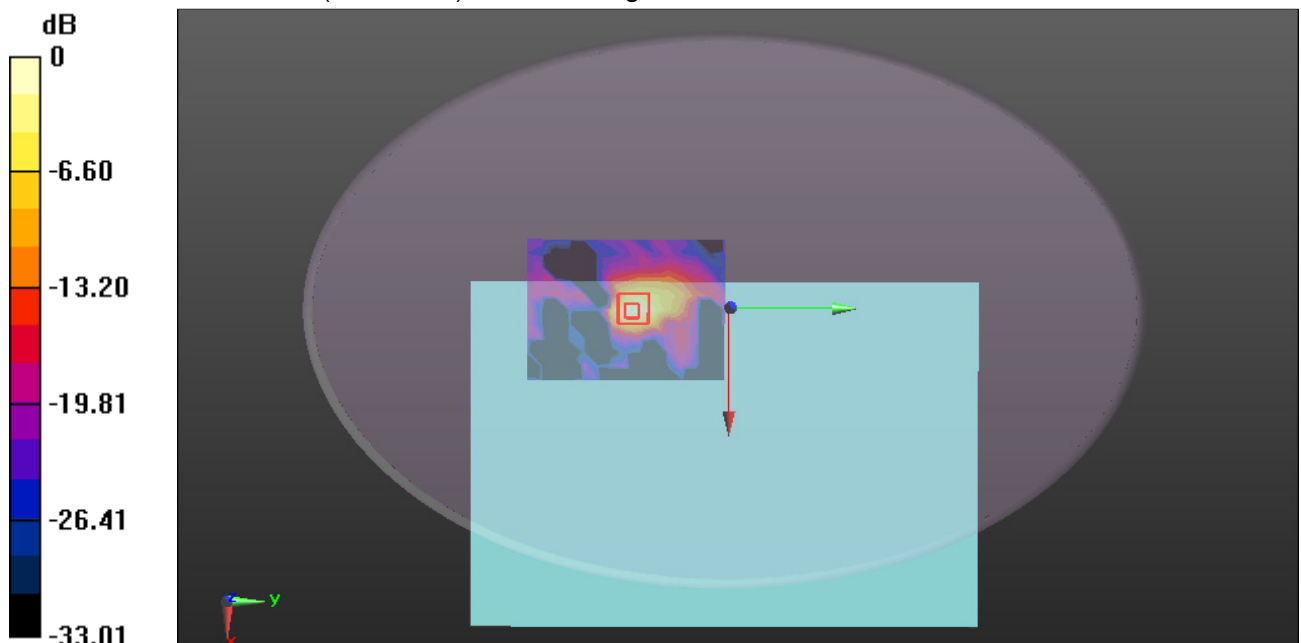
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 0.5630 V/m; Power Drift = 0.08 dB

Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.273 W/kg; SAR(10 g) = 0.078 W/kg

Maximum value of SAR (measured) = 0.718 W/kg



0 dB = 0.718 W/kg = -1.44 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH144 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band III;

Frequency: 5720 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5720 \text{ MHz}$; $\sigma = 6.092 \text{ S/m}$; $\epsilon_r = 48.05$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C ; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.45, 4.45, 4.45); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH144 Main Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.422 W/kg

WIFI/IEEE802.11a Body Bottom CH144 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

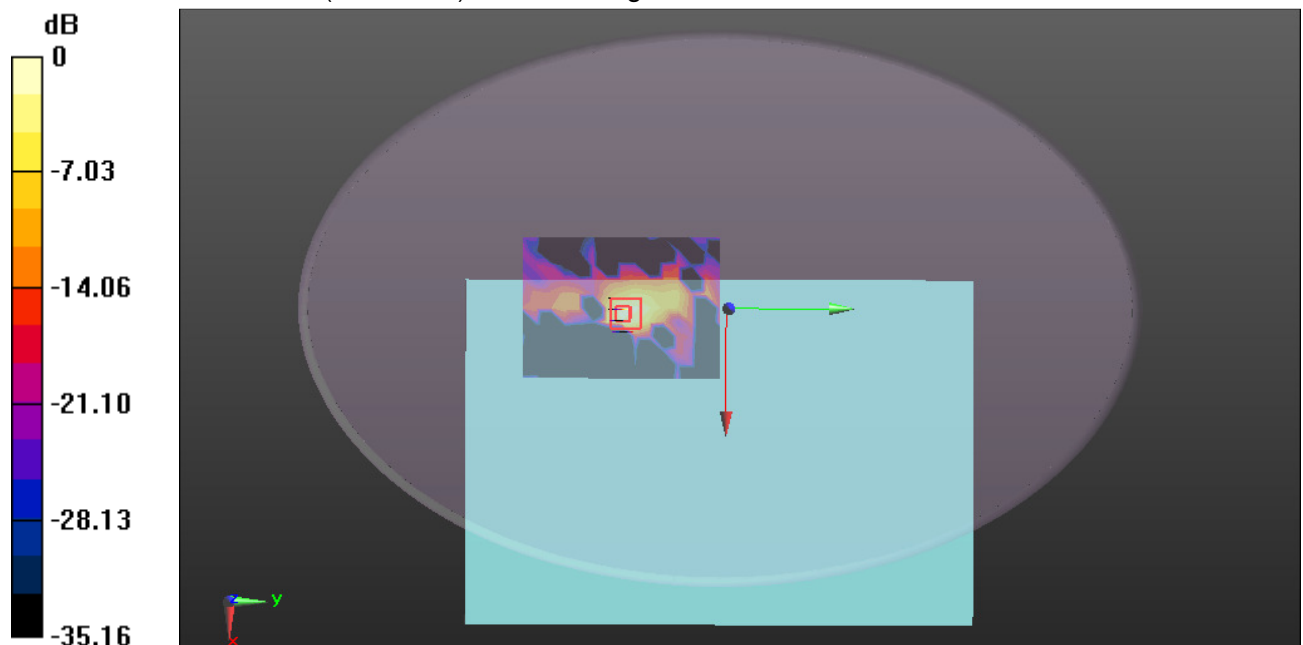
grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 1.424 V/m ; Power Drift = -0.10 dB

Peak SAR (extrapolated) = 0.966 W/kg

SAR(1 g) = 0.183 W/kg ; SAR(10 g) = 0.050 W/kg

Maximum value of SAR (measured) = 0.519 W/kg



0 dB = 0.519 W/kg = -2.85 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH149 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band IV;

Frequency: 5745 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5745 \text{ MHz}$; $\sigma = 6.147 \text{ S/m}$; $\epsilon_r = 48.049$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.45, 4.45, 4.45); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH149 Main Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.488 W/kg

WIFI/IEEE802.11a Body Bottom CH149 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

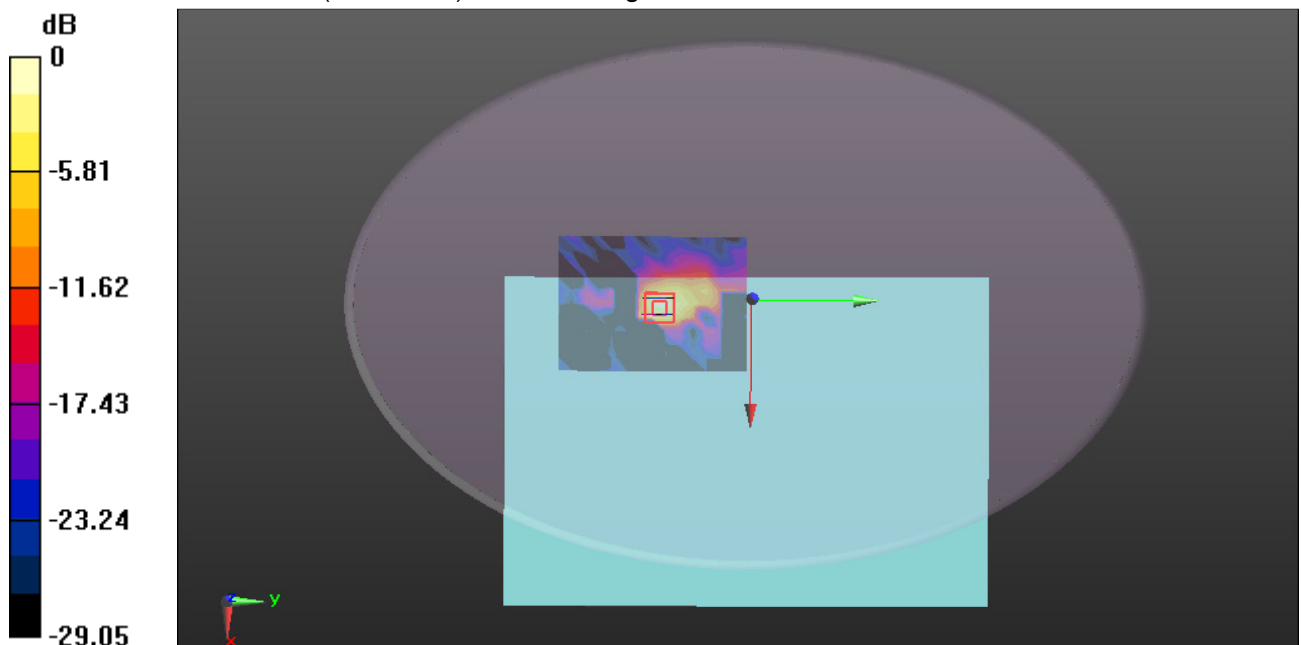
grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 0.9546 V/m; Power Drift = 0.11 dB

Peak SAR (extrapolated) = 1.00 W/kg

SAR(1 g) = 0.206 W/kg; SAR(10 g) = 0.058 W/kg

Maximum value of SAR (measured) = 0.556 W/kg



0 dB = 0.556 W/kg = -2.55 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH157 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band IV;

Frequency: 5785 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5785 \text{ MHz}$; $\sigma = 6.189 \text{ S/m}$; $\epsilon_r = 47.955$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C ; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.45, 4.45, 4.45); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH157 Main Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.430 W/kg

WIFI/IEEE802.11a Body Bottom CH157 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

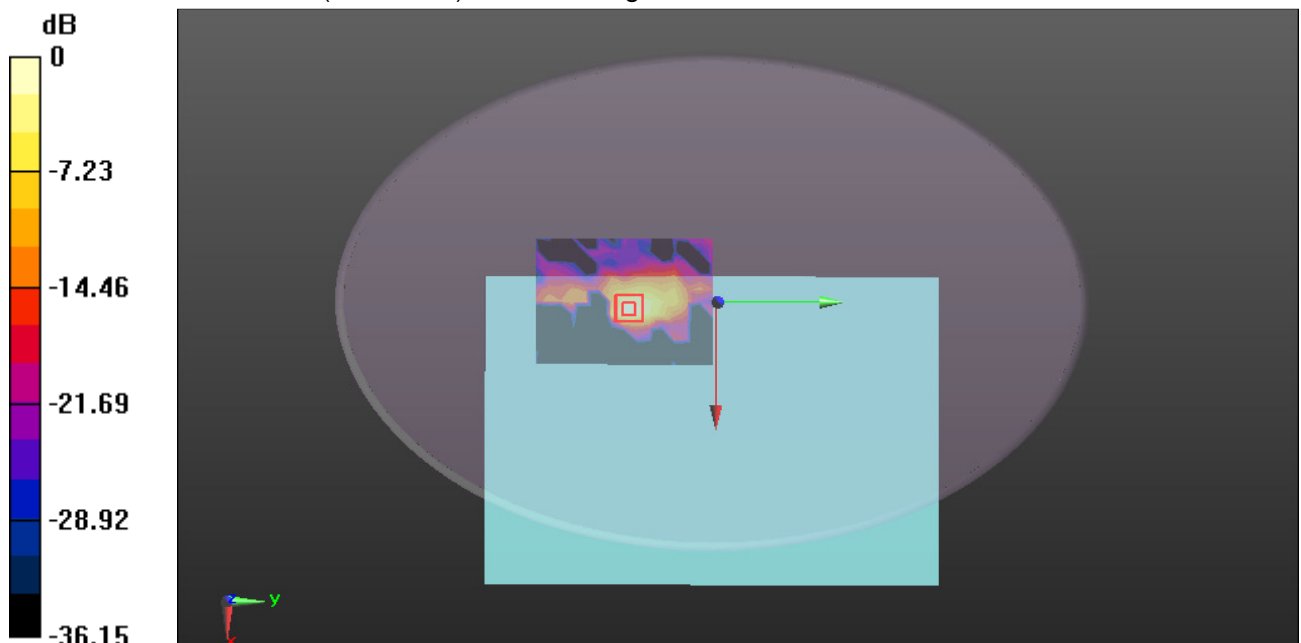
grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 0.4510 V/m ; Power Drift = 0.07 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.201 W/kg ; SAR(10 g) = 0.059 W/kg

Maximum value of SAR (measured) = 0.549 W/kg



0 dB = 0.549 W/kg = -2.60 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH165 Main Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band IV;

Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5825$ MHz; $\sigma = 6.252$ S/m; $\epsilon_r = 47.724$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.45, 4.45, 4.45); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH165 Main Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.500 W/kg

WIFI/IEEE802.11a Body Bottom CH165 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

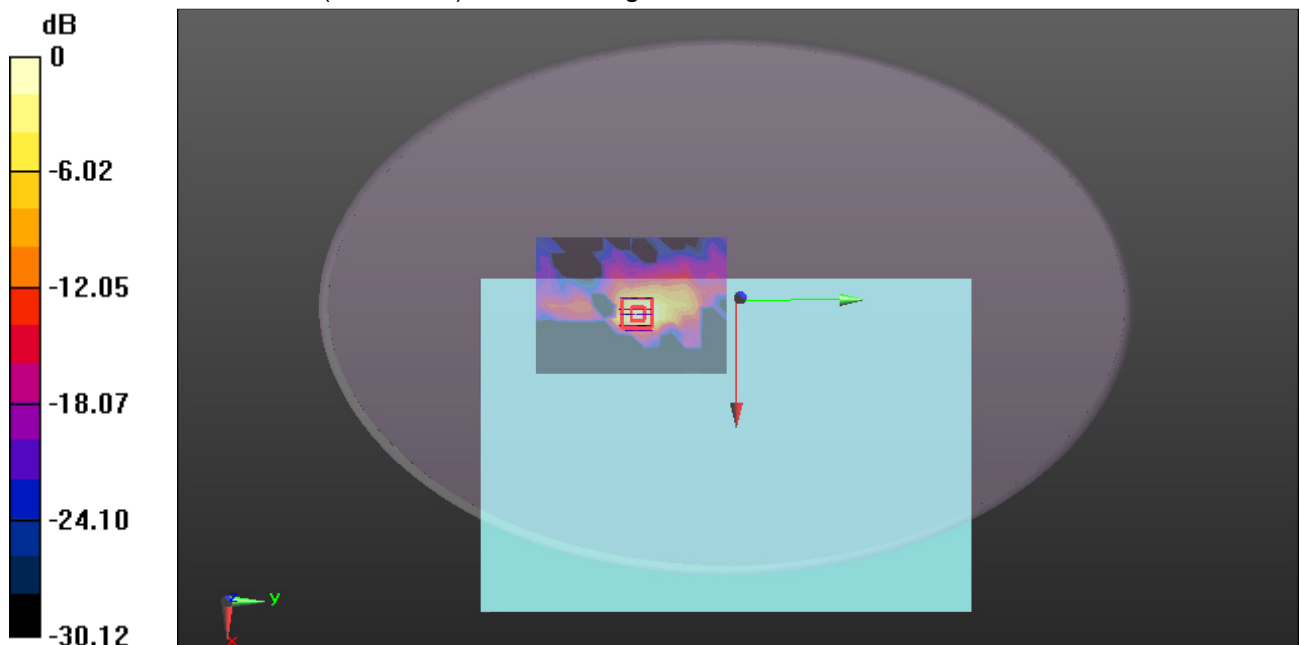
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 0.4890 V/m; Power Drift = 0.05 dB

Peak SAR (extrapolated) = 1.23 W/kg

SAR(1 g) = 0.216 W/kg; SAR(10 g) = 0.065 W/kg

Maximum value of SAR (measured) = 0.572 W/kg



0 dB = 0.572 W/kg = -2.43 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH52 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band II;

Frequency: 5260 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5260$ MHz; $\sigma = 5.438$ S/m; $\epsilon_r = 49.137$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.67, 4.67, 4.67); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH52 Aux Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.515 W/kg

WIFI/IEEE802.11a Body Bottom CH52 Aux Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

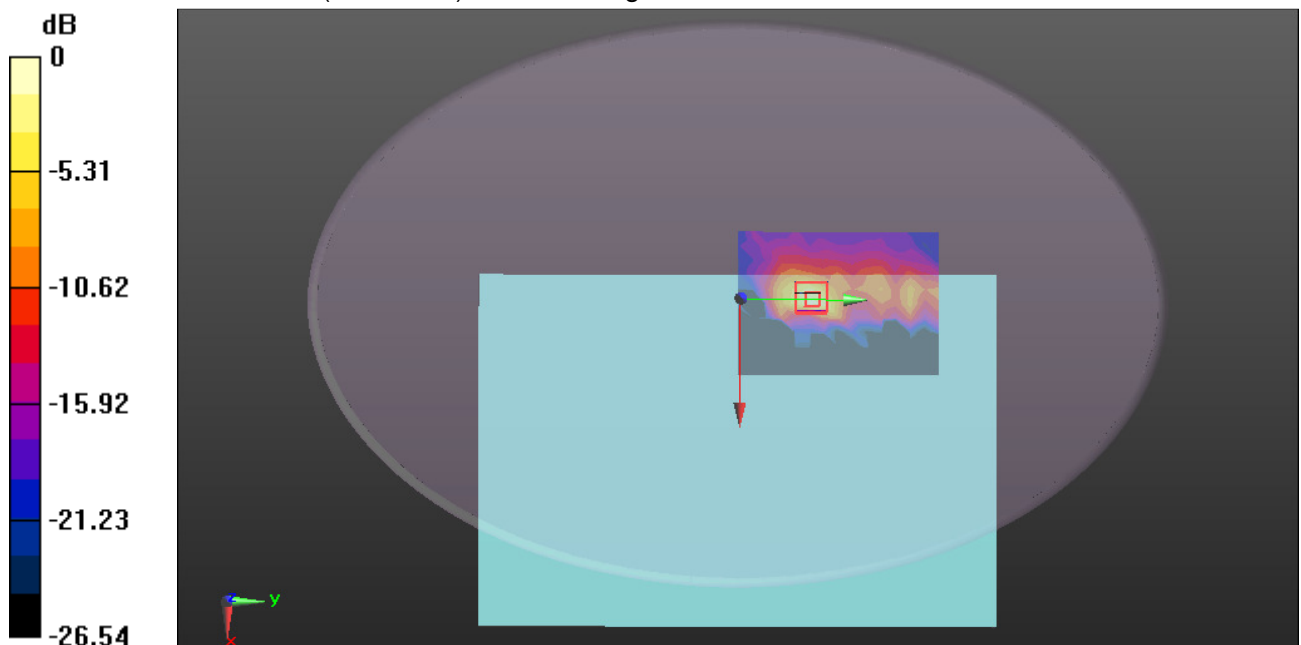
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 0.6151 V/m; Power Drift = -0.08 dB

Peak SAR (extrapolated) = 1.12 W/kg

SAR(1 g) = 0.251 W/kg; SAR(10 g) = 0.072 W/kg

Maximum value of SAR (measured) = 0.640 W/kg



0 dB = 0.640 W/kg = -1.94 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH60 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band II;

Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5300$ MHz; $\sigma = 5.494$ S/m; $\epsilon_r = 48.888$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.67, 4.67, 4.67); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH60 Aux Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.657 W/kg

WIFI/IEEE802.11a Body Bottom CH60 Aux Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

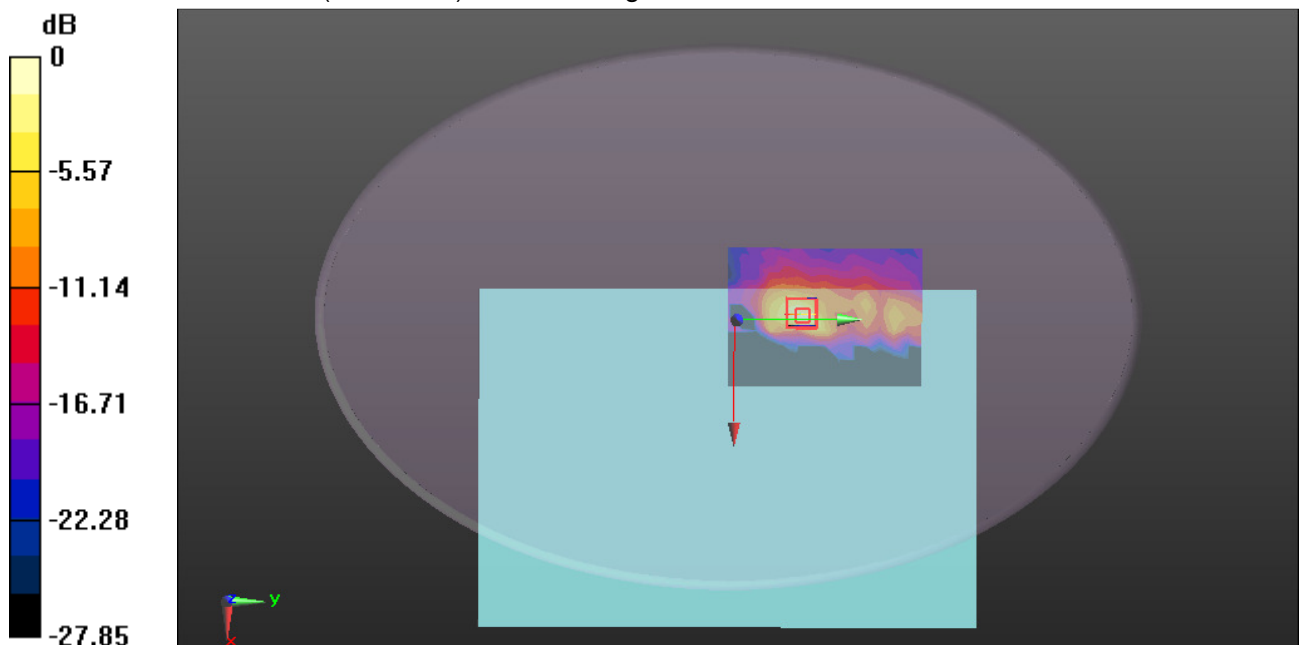
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 0.1270 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.24 W/kg

SAR(1 g) = 0.294 W/kg; SAR(10 g) = 0.085 W/kg

Maximum value of SAR (measured) = 0.710 W/kg



0 dB = 0.710 W/kg = -1.49 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH64 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band II;

Frequency: 5320 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5320$ MHz; $\sigma = 5.546$ S/m; $\epsilon_r = 48.869$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.67, 4.67, 4.67); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH64 Aux Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.650 W/kg

WIFI/IEEE802.11a Body Bottom CH64 Aux Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

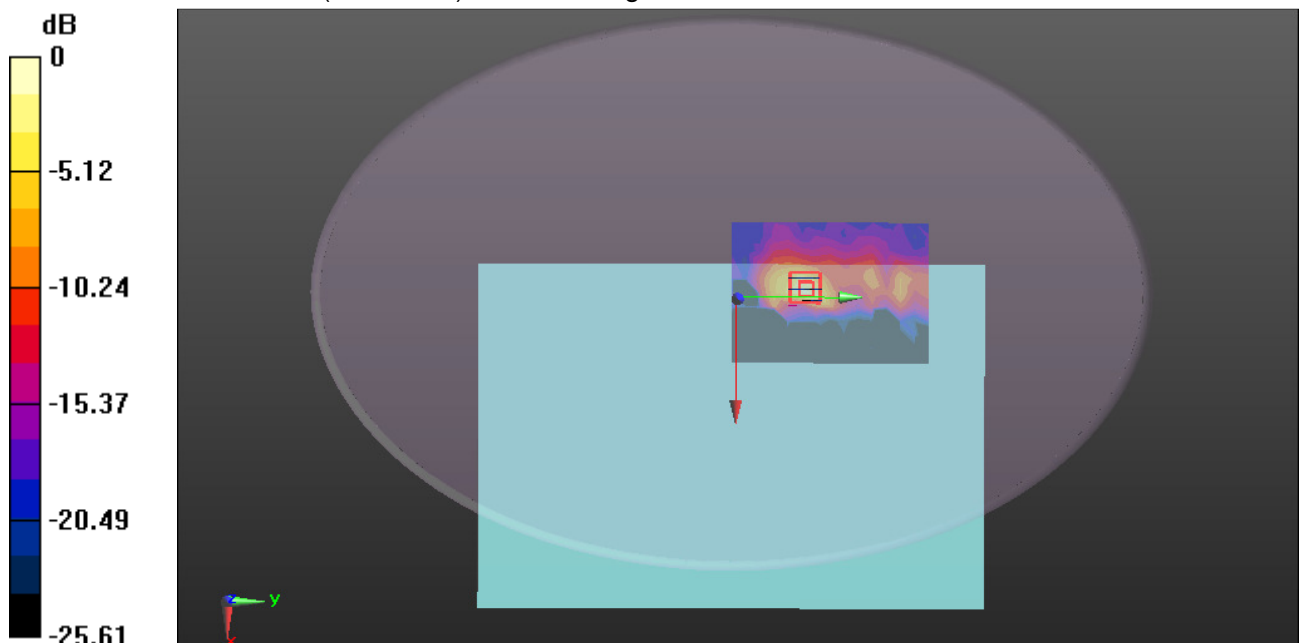
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 1.324 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 1.44 W/kg

SAR(1 g) = 0.321 W/kg; SAR(10 g) = 0.092 W/kg

Maximum value of SAR (measured) = 0.827 W/kg



0 dB = 0.827 W/kg = -0.82 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH100 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band III;

Frequency: 5500 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5500$ MHz; $\sigma = 5.78$ S/m; $\epsilon_r = 48.751$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.26, 4.26, 4.26); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH100 Aux Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.322 W/kg

WIFI/IEEE802.11a Body Bottom CH100 Aux Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

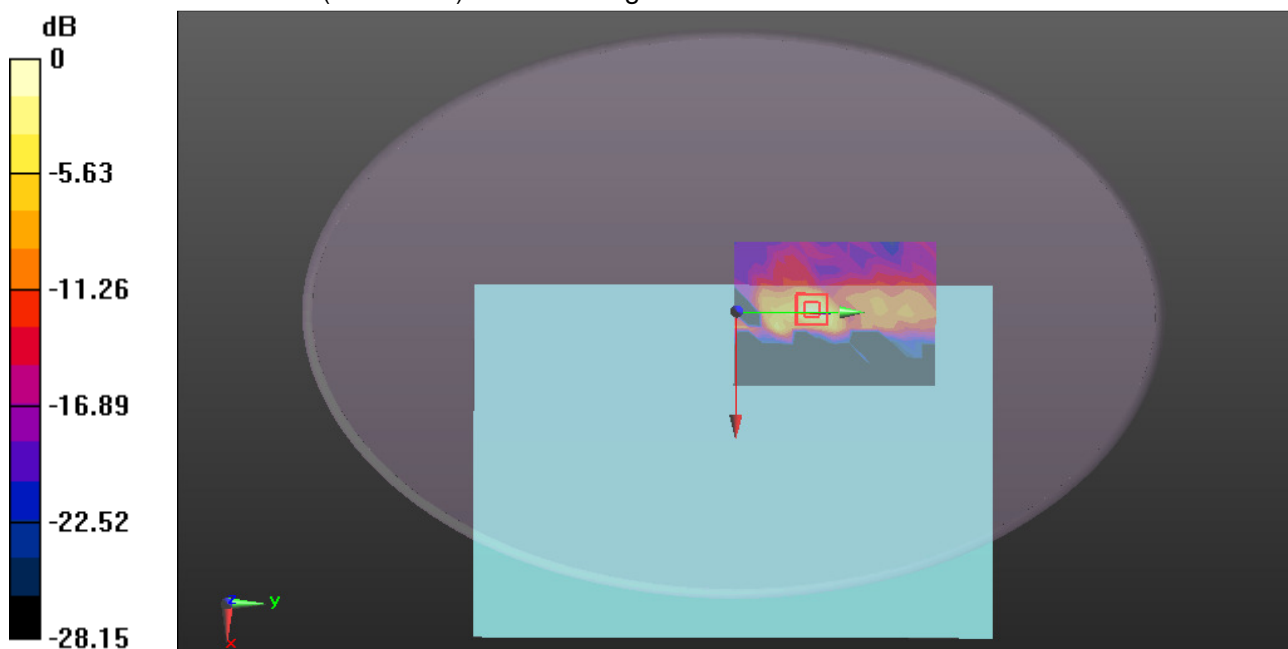
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 0.5060 V/m; Power Drift = 0.17 dB

Peak SAR (extrapolated) = 0.802 W/kg

SAR(1 g) = 0.152 W/kg; SAR(10 g) = 0.042 W/kg

Maximum value of SAR (measured) = 0.380 W/kg



0 dB = 0.380 W/kg = -4.20 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH128 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band III;

Frequency: 5640 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5640 \text{ MHz}$; $\sigma = 5.956 \text{ S/m}$; $\epsilon_r = 48.409$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C ; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.18, 4.18, 4.18); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH128 Aux Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.502 W/kg

WIFI/IEEE802.11a Body Bottom CH128 Aux Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

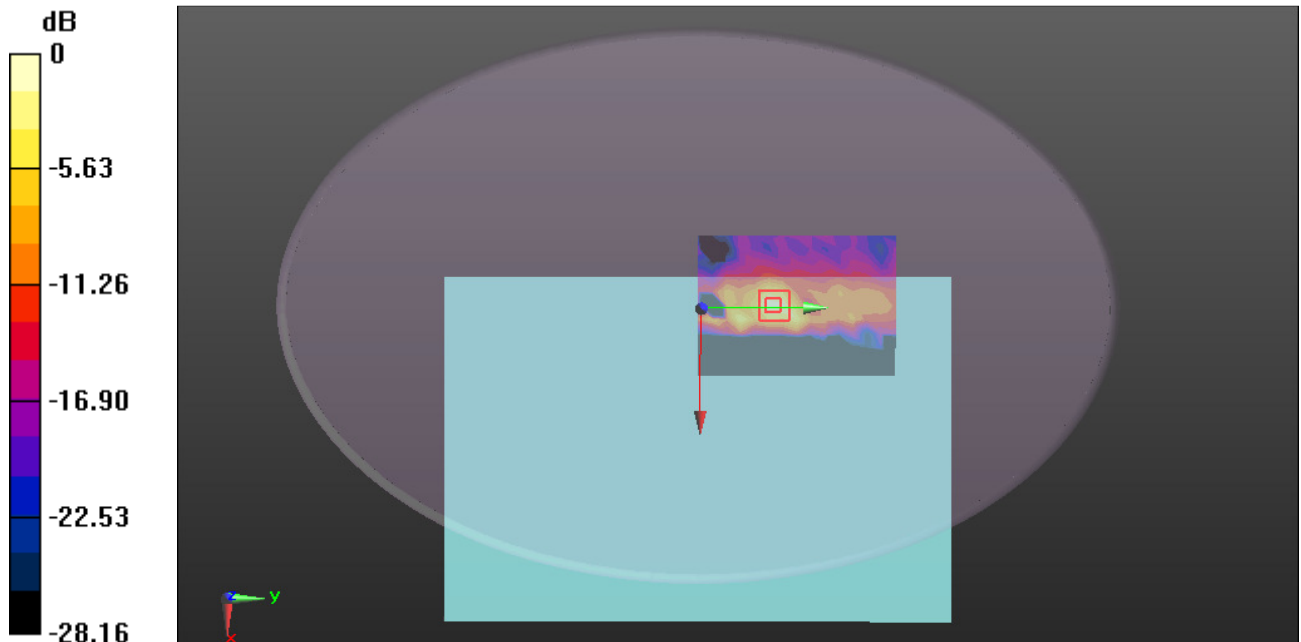
grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 0.1260 V/m ; Power Drift = 0.01 dB

Peak SAR (extrapolated) = 0.890 W/kg

SAR(1 g) = 0.209 W/kg ; SAR(10 g) = 0.062 W/kg

Maximum value of SAR (measured) = 0.510 W/kg



$0 \text{ dB} = 0.510 \text{ W/kg} = -2.92 \text{ dBW/kg}$

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH144 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band III;

Frequency: 5720 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5720$ MHz; $\sigma = 6.092$ S/m; $\epsilon_r = 48.05$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.45, 4.45, 4.45); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH144 Aux Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.374 W/kg

WIFI/IEEE802.11a Body Bottom CH144 Aux Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

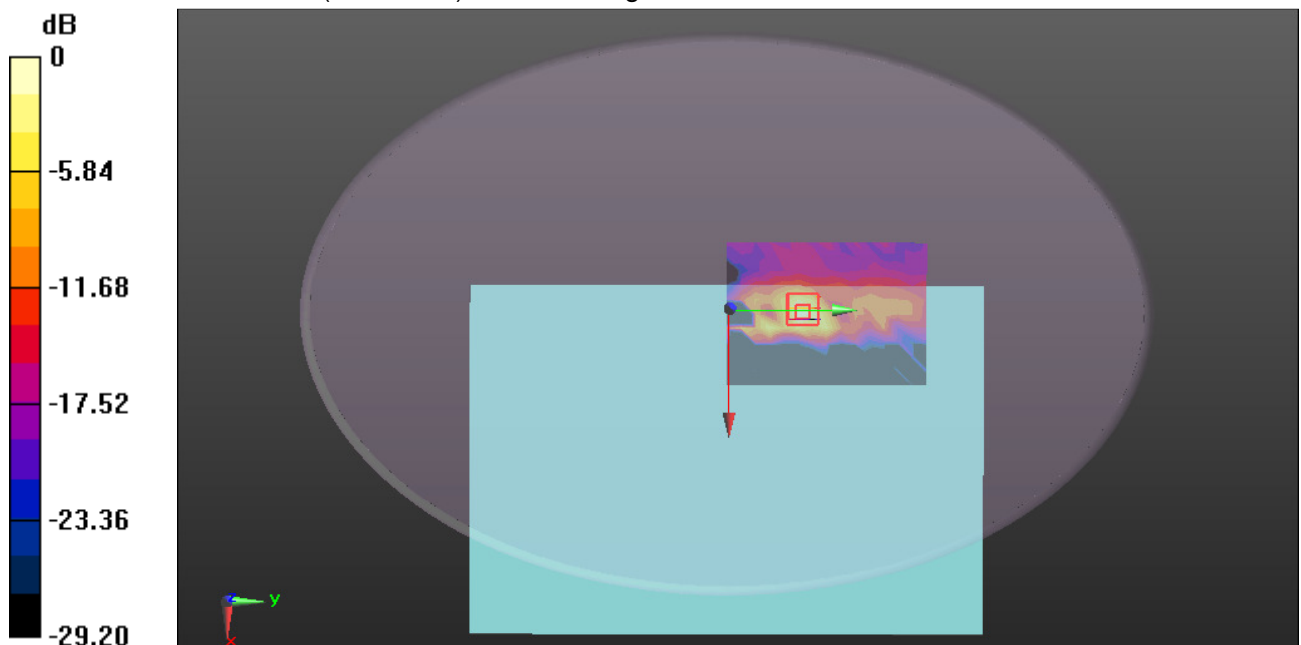
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 0.7512 V/m; Power Drift = 0.06 dB

Peak SAR (extrapolated) = 0.802 W/kg

SAR(1 g) = 0.165 W/kg; SAR(10 g) = 0.046 W/kg

Maximum value of SAR (measured) = 0.431 W/kg



0 dB = 0.431 W/kg = -3.66 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH149 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band IV;

Frequency: 5745 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5745 \text{ MHz}$; $\sigma = 6.147 \text{ S/m}$; $\epsilon_r = 48.049$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C ; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.45, 4.45, 4.45); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH149 Aux Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.474 W/kg

WIFI/IEEE802.11a Body Bottom CH149 Aux Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

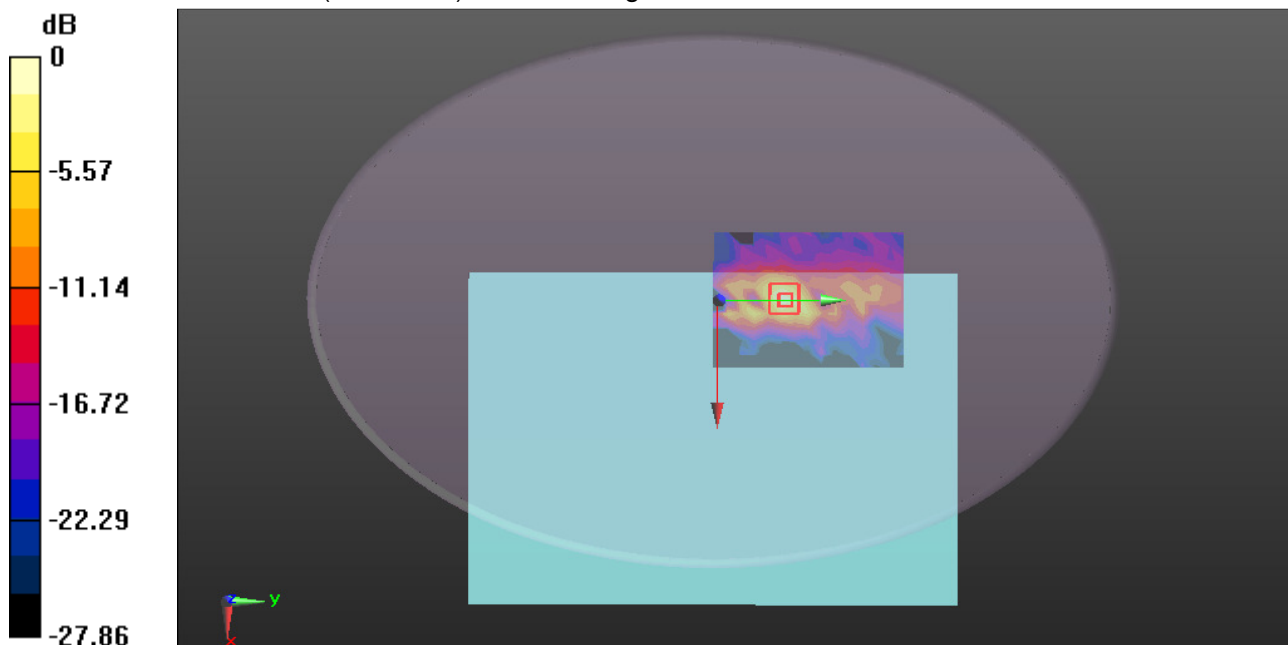
grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 0.7520 V/m ; Power Drift = -0.11 dB

Peak SAR (extrapolated) = 0.932 W/kg

SAR(1 g) = 0.187 W/kg ; SAR(10 g) = 0.053 W/kg

Maximum value of SAR (measured) = 0.497 W/kg



0 dB = 0.497 W/kg = -3.04 dBW/kg

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH157 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band IV;

Frequency: 5785 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5785 \text{ MHz}$; $\sigma = 6.189 \text{ S/m}$; $\epsilon_r = 47.955$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C ; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.45, 4.45, 4.45); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH157 Aux Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.413 W/kg

WIFI/IEEE802.11a Body Bottom CH157 Aux Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

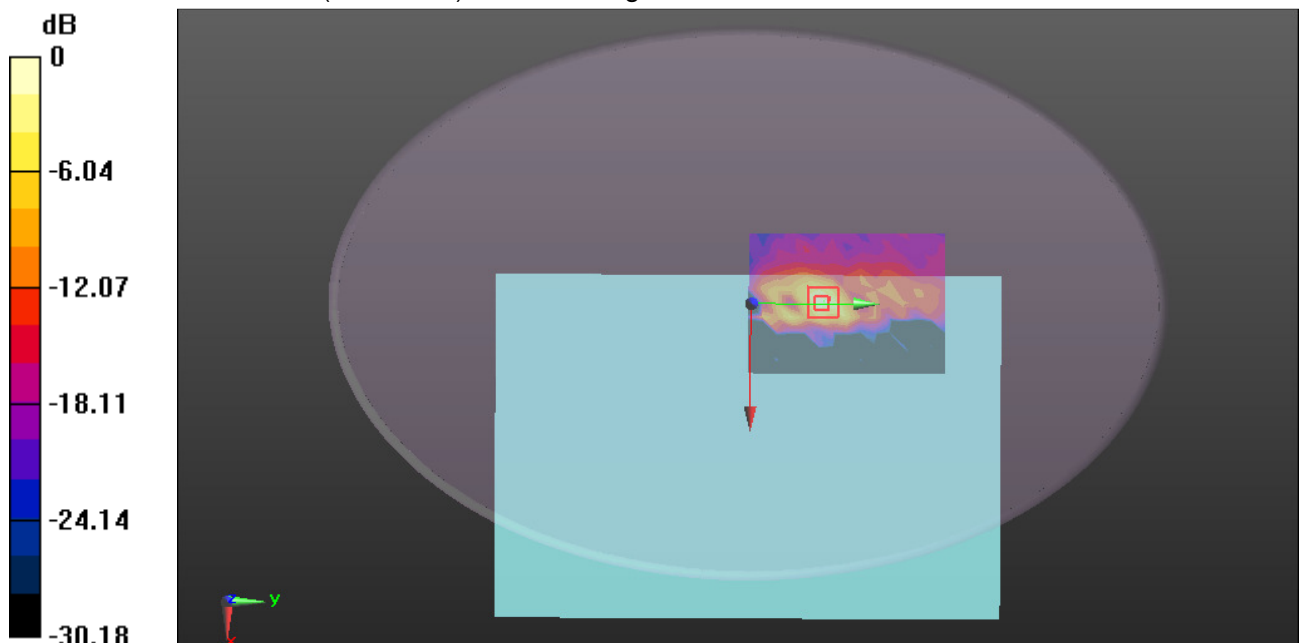
grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 0.6658 V/m ; Power Drift = 0.02 dB

Peak SAR (extrapolated) = 0.815 W/kg

SAR(1 g) = 0.166 W/kg ; SAR(10 g) = 0.045 W/kg

Maximum value of SAR (measured) = 0.435 W/kg



$0 \text{ dB} = 0.435 \text{ W/kg} = -3.62 \text{ dBW/kg}$

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH165 Aux Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band IV;

Frequency: 5825 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5825 \text{ MHz}$; $\sigma = 6.252 \text{ S/m}$; $\epsilon_r = 47.724$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C ; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASYS (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.45, 4.45, 4.45); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASYS 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH165 Aux Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.530 W/kg

WIFI/IEEE802.11a Body Bottom CH165 Aux Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

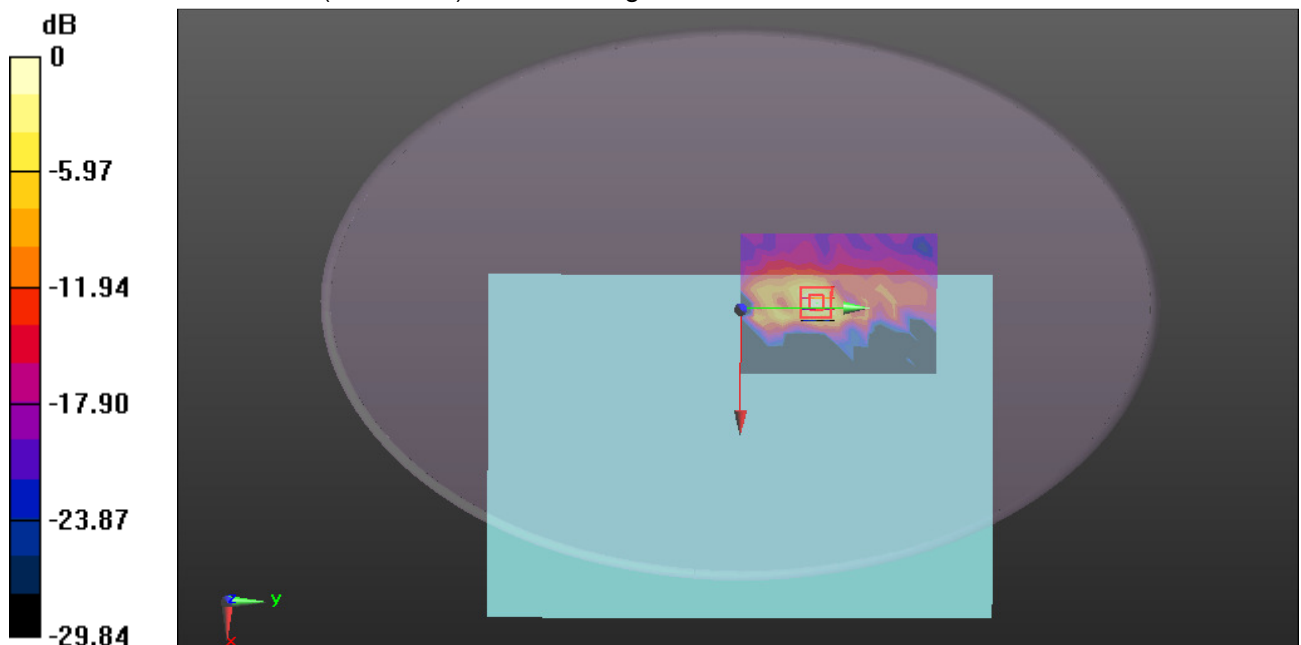
grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 0.9514 V/m ; Power Drift = 0.13 dB

Peak SAR (extrapolated) = 1.11 W/kg

SAR(1 g) = 0.222 W/kg ; SAR(10 g) = 0.060 W/kg

Maximum value of SAR (measured) = 0.588 W/kg



$0 \text{ dB} = 0.588 \text{ W/kg} = -2.31 \text{ dBW/kg}$

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH60 Main Antenna INPAQ ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band II;

Frequency: 5300 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5300 \text{ MHz}$; $\sigma = 5.494 \text{ S/m}$; $\epsilon_r = 48.888$; $\rho = 1000 \text{ kg/m}^3$

Room Ambient Temperature: 22°C ; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.67, 4.67, 4.67); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH60 Main Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (measured) = 0.467 W/kg

WIFI/IEEE802.11a Body Bottom CH60 Main Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

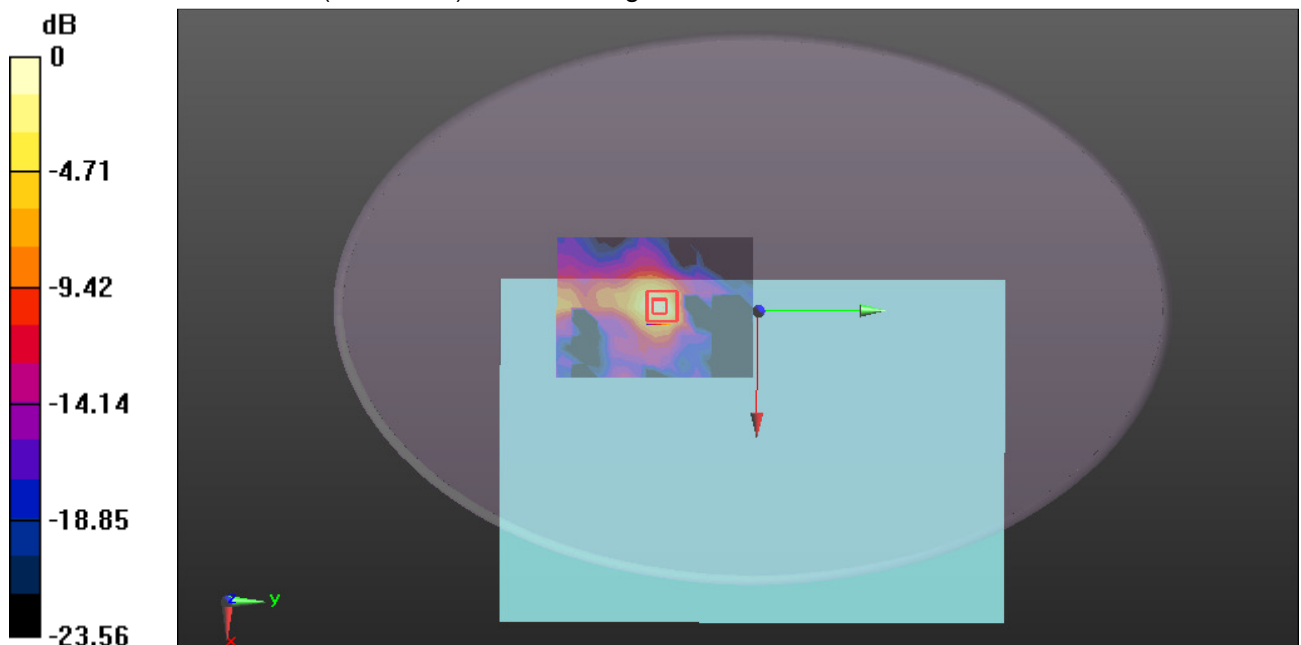
grid: $dx=4\text{mm}$, $dy=4\text{mm}$, $dz=1.4\text{mm}$

Reference Value = 1.221 V/m ; Power Drift = 0.12 dB

Peak SAR (extrapolated) = 0.906 W/kg

SAR(1 g) = 0.209 W/kg ; SAR(10 g) = 0.065 W/kg

Maximum value of SAR (measured) = 0.502 W/kg



$0 \text{ dB} = 0.502 \text{ W/kg} = -2.99 \text{ dBW/kg}$

Test Laboratory: Compliance Certification Services Inc.

Date: 3/23/2018

WIFI 802.11 a-Body Bottom CH64 Aux Antenna Southstar ANT

DUT: Notebook Computer; Type: Lenovo ideapad 330S-15IKB; Serial: N/A

Communication System: UID 0, IEEE 802.11 a (0); Communication System Band: 5G Band II;

Frequency: 5320 MHz; Duty Cycle: 1:1

Medium parameters used: $f = 5320$ MHz; $\sigma = 5.546$ S/m; $\epsilon_r = 48.869$; $\rho = 1000$ kg/m³

Room Ambient Temperature: 22°C; Liquid Temperature: 21.5°C

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

- Probe: EX3DV4 - SN3798; ConvF(4.67, 4.67, 4.67); Calibrated: 7/26/2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1245; Calibrated: 7/20/2017
- Phantom: ELI v4.0; Type: QDOVA001BB; Serial: TP:xxxx
- DASY52 52.8.8(1222);
- SEMCAD X Version 14.6.10 (7331)

WIFI/IEEE802.11a Body Bottom CH64 Aux Antenna/Area Scan (11x15x1): Measurement grid:

$dx=10$ mm, $dy=10$ mm

Maximum value of SAR (measured) = 0.448 W/kg

WIFI/IEEE802.11a Body Bottom CH64 Aux Antenna/Zoom Scan (7x7x7)/Cube 0: Measurement

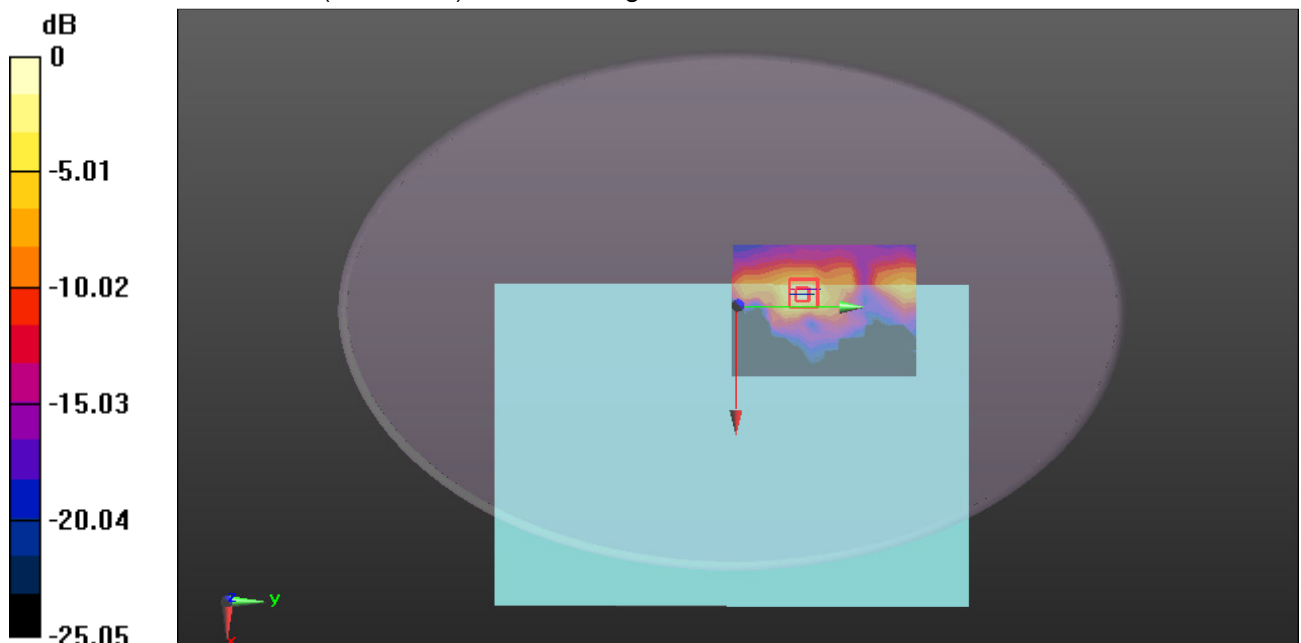
grid: $dx=4$ mm, $dy=4$ mm, $dz=1.4$ mm

Reference Value = 0.658 V/m; Power Drift = 0.04 dB

Peak SAR (extrapolated) = 1.04 W/kg

SAR(1 g) = 0.233 W/kg; SAR(10 g) = 0.077 W/kg

Maximum value of SAR (measured) = 0.570 W/kg



0 dB = 0.570 W/kg = -2.44 dBW/kg