

## Appendix C - Highest Measurement Plots

Test Laboratory: A Test Lab Techno Corp.

Date: 2022/2/8

**01\_WLAN 2.4 GHz\_802.11b\_Ch1\_Bottom Face\_0 mm\_ANT Main**

**DUT: TP3402Z**

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2412 MHz; Duty Cycle: 1:1.016

Medium parameters used:  $f = 2412$  MHz;  $\sigma = 1.75$  S/m;  $\epsilon_r = 39.49$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.28, 7.28, 7.28) @ 2412 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (71x71x1):** Interpolated grid:  $dx=1.200$  mm,  $dy=1.200$  mm

Maximum value of SAR (interpolated) = 1.59 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 25.98 V/m; Power Drift = 0.03 dB

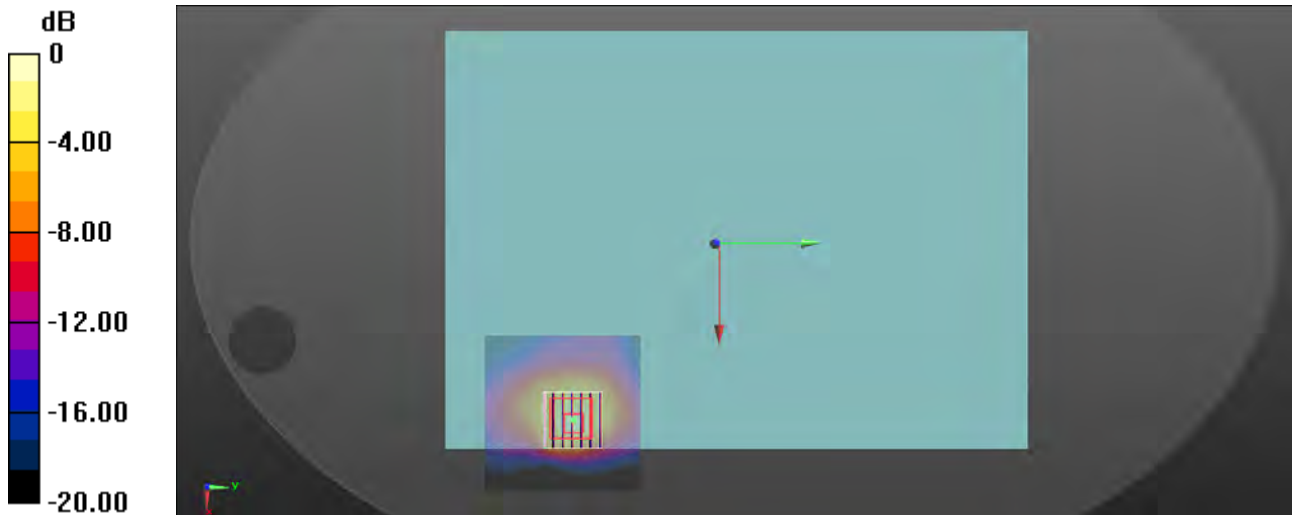
Peak SAR (extrapolated) = 2.10 W/kg

**SAR(1 g) = 0.825 W/kg; SAR(10 g) = 0.375 W/kg**

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

Ratio of SAR at M2 to SAR at M1 = 37.3%

Maximum value of SAR (measured) = 1.51 W/kg



0 dB = 1.51 W/kg = 1.79 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2022/2/8

**02\_WLAN 2.4 GHz\_802.11b\_Ch6\_Bottom Face\_0 mm\_ANT Aux**

**DUT: TP3402Z**

Communication System: UID 0, IEEE 802.11b (0); Frequency: 2437 MHz; Duty Cycle: 1:1.015

Medium parameters used (interpolated):  $f = 2437$  MHz;  $\sigma = 1.777$  S/m;  $\epsilon_r = 39.394$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.28, 7.28, 7.28) @ 2437 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (61x71x1):** Interpolated grid:  $dx=1.200$  mm,  $dy=1.200$  mm

Maximum value of SAR (interpolated) = 1.87 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 21.66 V/m; Power Drift = -0.12 dB

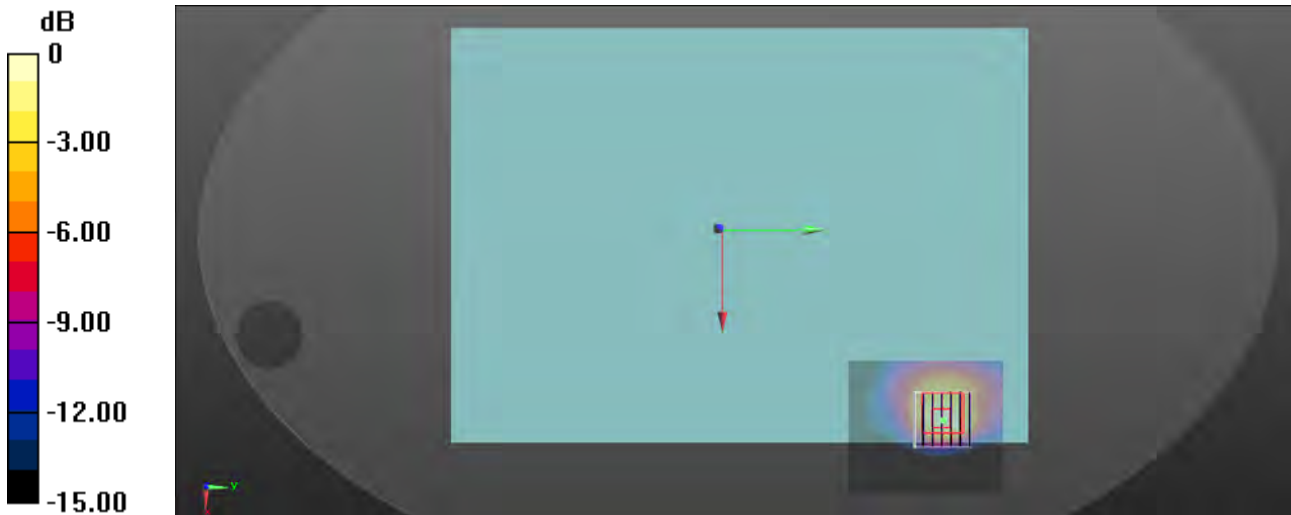
Peak SAR (extrapolated) = 2.14 W/kg

**SAR(1 g) = 0.861 W/kg; SAR(10 g) = 0.386 W/kg**

Smallest distance from peaks to all points 3 dB below = 8.1 mm

Ratio of SAR at M2 to SAR at M1 = 40.2%

Maximum value of SAR (measured) = 1.57 W/kg



0 dB = 1.57 W/kg = 1.96 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2022/2/8

**03\_Bluetooth\_GFSK\_Ch78\_Bottom Face\_0 mm\_ANT Aux**

**DUT: TP3402Z**

Communication System: UID 0, Bluetooth 3.0 (0); Frequency: 2480 MHz; Duty Cycle: 1:1.292

Medium parameters used:  $f = 2480$  MHz;  $\sigma = 1.823$  S/m;  $\epsilon_r = 39.23$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within: 2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(7.28, 7.28, 7.28) @ 2480 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (61x71x1):** Interpolated grid:  $dx=1.200$  mm,  $dy=1.200$  mm

Maximum value of SAR (interpolated) = 0.253 W/kg

**Zoom Scan (7x7x7)/Cube 0:** Measurement grid:  $dx=5$ mm,  $dy=5$ mm,  $dz=5$ mm

Reference Value = 9.120 V/m; Power Drift = -0.09 dB

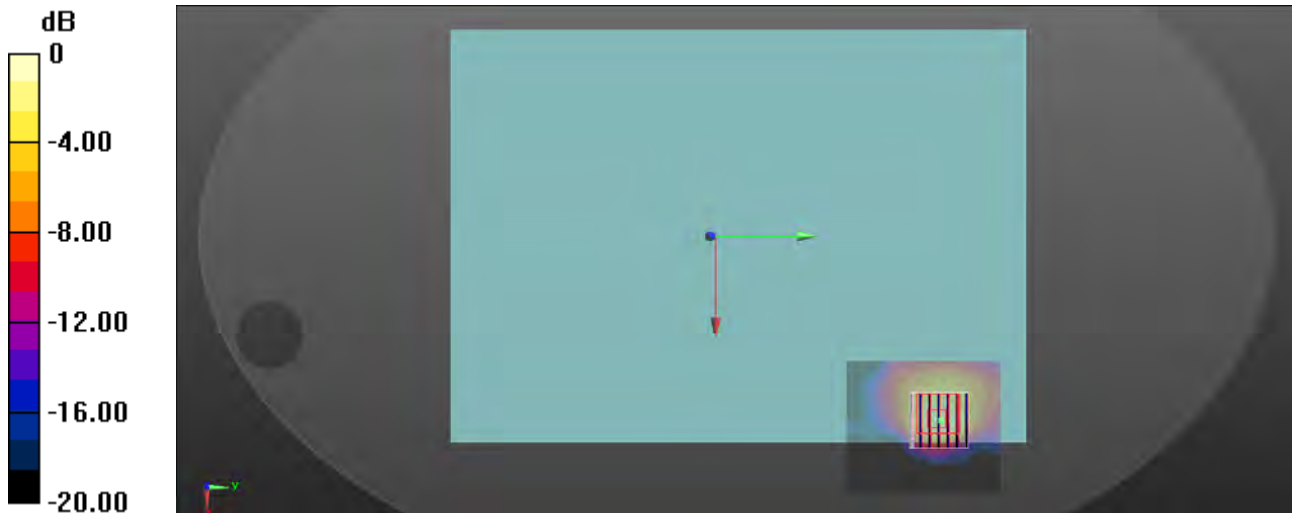
Peak SAR (extrapolated) = 0.294 W/kg

**SAR(1 g) = 0.113 W/kg; SAR(10 g) = 0.049 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.3 mm

Ratio of SAR at M2 to SAR at M1 = 38.9%

Maximum value of SAR (measured) = 0.207 W/kg



0 dB = 0.207 W/kg = -6.84 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2022/2/9

**04\_WLAN 5 GHz\_802.11ac VHT160\_Ch50\_Bottom Face\_0 mm\_ANT Main**

**DUT: TP3402Z**

Communication System: UID 0, IEEE 802.11ac(5GHz)VHT160 (0); Frequency: 5250 MHz;Duty Cycle: 1:1.019

Medium parameters used:  $f = 5250$  MHz;  $\sigma = 4.701$  S/m;  $\epsilon_r = 36.608$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(5.04, 5.04, 5.04) @ 5250 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (81x91x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 2.29 W/kg

**Zoom Scan (9x9x7)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=1.4$ mm

Reference Value = 13.43 V/m; Power Drift = -0.05 dB

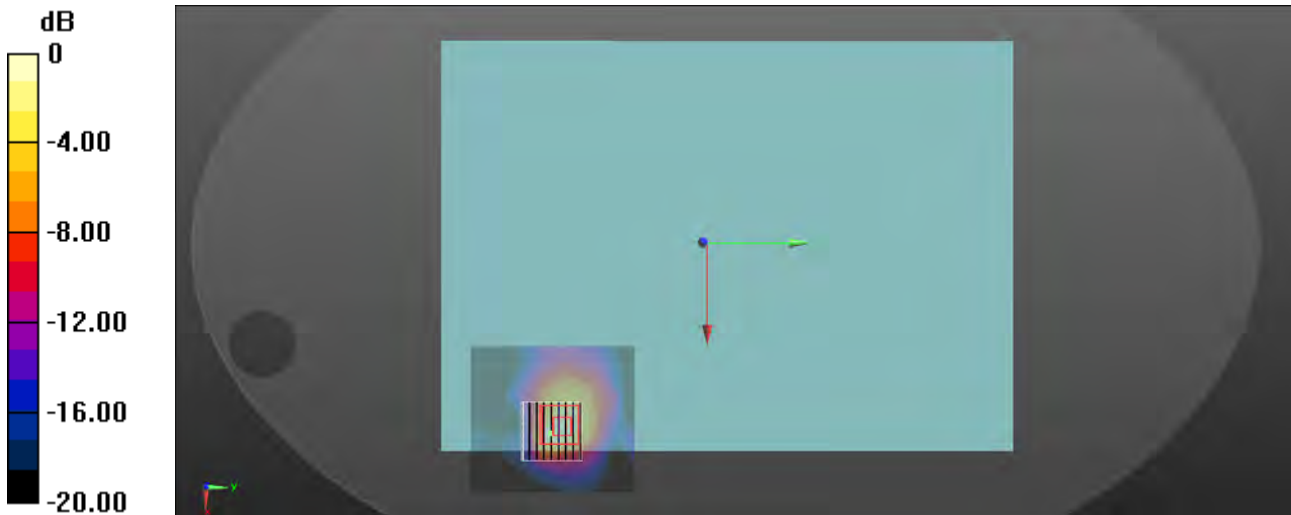
Peak SAR (extrapolated) = 3.73 W/kg

**SAR(1 g) = 0.843 W/kg; SAR(10 g) = 0.288 W/kg**

Smallest distance from peaks to all points 3 dB below = 6.8 mm

Ratio of SAR at M2 to SAR at M1 = 60.1%

Maximum value of SAR (measured) = 2.04 W/kg



0 dB = 2.04 W/kg = 3.10 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2022/2/9

**05\_WLAN 5 GHz\_802.11ac VHT80\_Ch58\_Bottom Face\_0 mm\_ANT Aux**

**DUT: TP3402Z**

Communication System: UID 0, IEEE 802.11ac(5GHz)VHT80 (0); Frequency: 5290 MHz;Duty Cycle: 1:1.014

Medium parameters used:  $f = 5290$  MHz;  $\sigma = 4.736$  S/m;  $\epsilon_r = 36.566$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(5.04, 5.04, 5.04) @ 5290 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (71x91x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 1.98 W/kg

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=1.4$ mm

Reference Value = 15.45 V/m; Power Drift = -0.16 dB

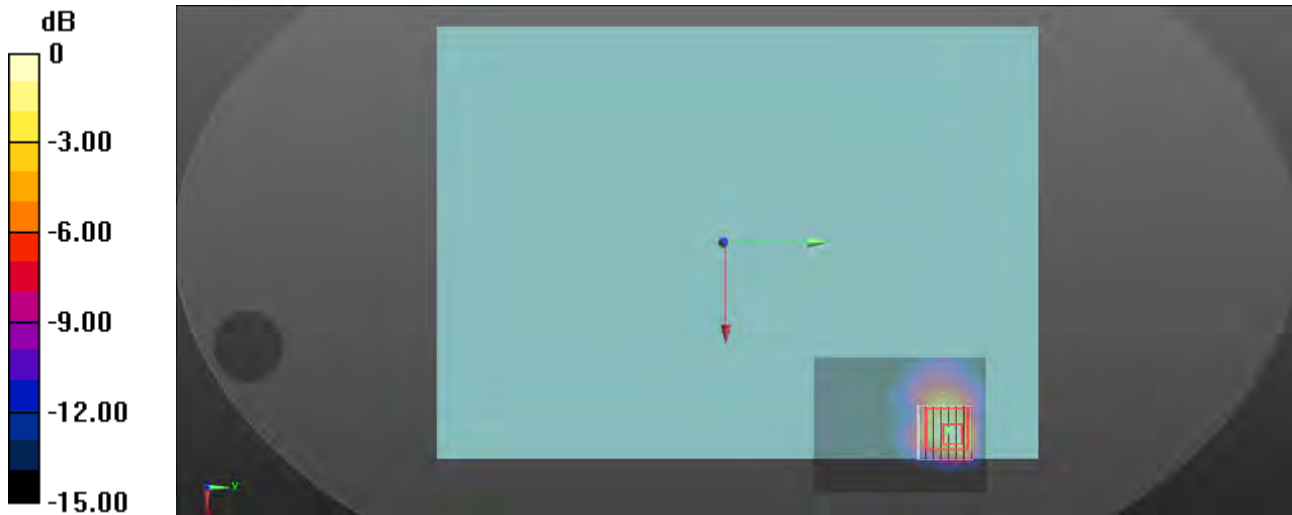
Peak SAR (extrapolated) = 3.39 W/kg

**SAR(1 g) = 0.816 W/kg; SAR(10 g) = 0.267 W/kg**

Smallest distance from peaks to all points 3 dB below = 5.4 mm

Ratio of SAR at M2 to SAR at M1 = 62.6%

Maximum value of SAR (measured) = 1.95 W/kg



0 dB = 1.95 W/kg = 2.90 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2022/2/9

**06\_WLAN 5 GHz\_802.11ac VHT80\_Ch138\_Bottom Face\_0 mm\_ANT Main**

**DUT: TP3402Z**

Communication System: UID 0, IEEE 802.11ac(5GHz)VHT80 (0); Frequency: 5690 MHz;Duty Cycle: 1:1.013

Medium parameters used:  $f = 5690$  MHz;  $\sigma = 5.241$  S/m;  $\epsilon_r = 35.817$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.64, 4.64, 4.64) @ 5690 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (81x91x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 2.28 W/kg

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=1.4$ mm

Reference Value = 14.29 V/m; Power Drift = -0.01 dB

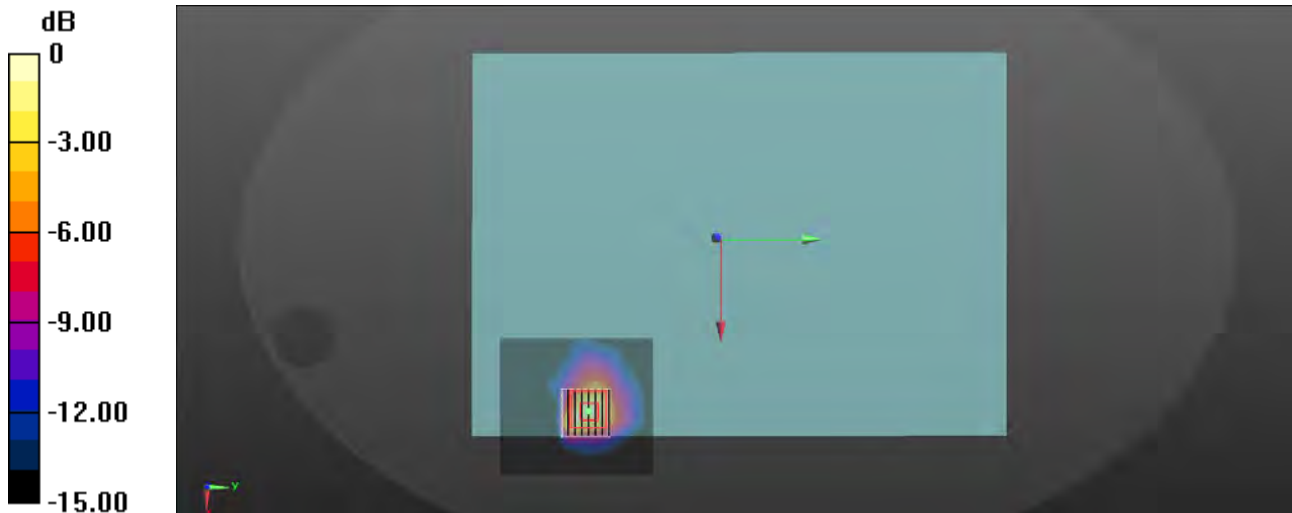
Peak SAR (extrapolated) = 4.98 W/kg

**SAR(1 g) = 0.972 W/kg; SAR(10 g) = 0.308 W/kg**

Smallest distance from peaks to all points 3 dB below = 6.4 mm

Ratio of SAR at M2 to SAR at M1 = 57.2%

Maximum value of SAR (measured) = 2.53 W/kg



0 dB = 2.53 W/kg = 4.03 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2022/2/9

**07\_WLAN 5 GHz\_802.11ac VHT80\_Ch138\_Bottom Face\_0 mm\_ANT Aux**

**DUT: TP3402Z**

Communication System: UID 0, IEEE 802.11ac(5GHz)VHT80 (0); Frequency: 5690 MHz;Duty Cycle: 1:1.014

Medium parameters used:  $f = 5690$  MHz;  $\sigma = 5.241$  S/m;  $\epsilon_r = 35.817$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.64, 4.64, 4.64) @ 5690 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (71x91x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 1.73 W/kg

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=1.4$ mm

Reference Value = 13.52 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 3.25 W/kg

**SAR(1 g) = 0.706 W/kg; SAR(10 g) = 0.227 W/kg**

Smallest distance from peaks to all points 3 dB below = 6.8 mm

Ratio of SAR at M2 to SAR at M1 = 59.3%

Maximum value of SAR (measured) = 1.83 W/kg



0 dB = 1.83 W/kg = 2.62 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2022/2/10

**08\_WLAN 5 GHz\_802.11ac VHT80\_Ch155\_Bottom Face\_0 mm\_ANT Main**

**DUT: TP3402Z**

Communication System: UID 0, IEEE 802.11ac(5GHz)VHT80 (0); Frequency: 5775 MHz;Duty Cycle: 1:1.013

Medium parameters used:  $f = 5775$  MHz;  $\sigma = 5.276$  S/m;  $\epsilon_r = 35.883$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.64, 4.64, 4.64) @ 5775 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASY52, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (81x91x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 2.34 W/kg

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=1.4$ mm

Reference Value = 14.05 V/m; Power Drift = -0.13 dB

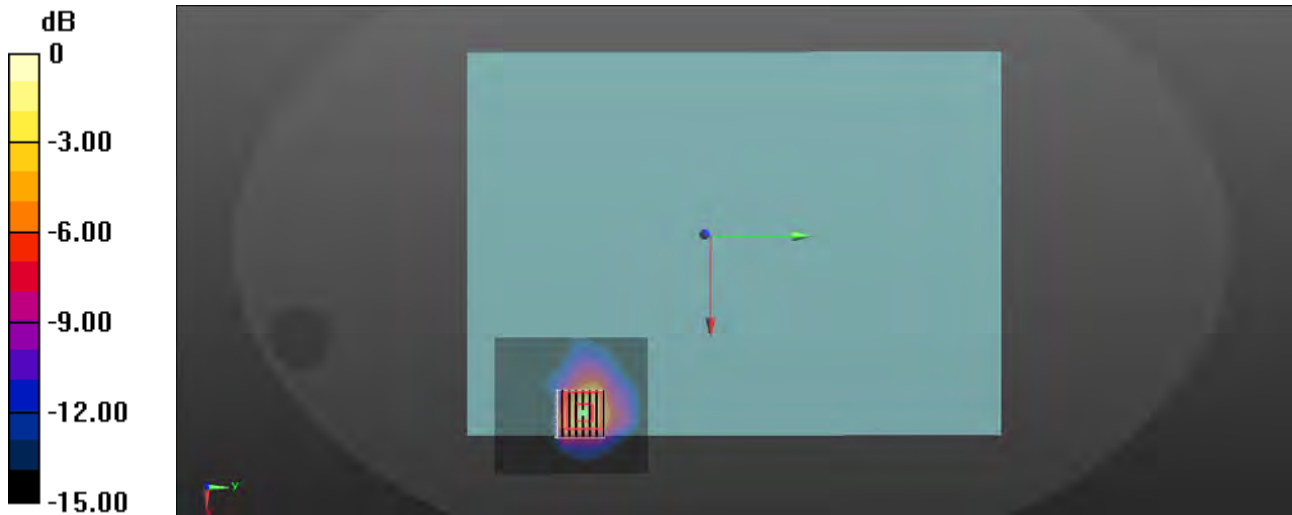
Peak SAR (extrapolated) = 4.94 W/kg

**SAR(1 g) = 0.970 W/kg; SAR(10 g) = 0.306 W/kg**

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

Ratio of SAR at M2 to SAR at M1 = 57.4%

Maximum value of SAR (measured) = 2.57 W/kg



0 dB = 2.57 W/kg = 4.10 dBW/kg

Test Laboratory: A Test Lab Techno Corp.

Date: 2022/2/10

**09\_WLAN 5 GHz\_802.11ac VHT80\_Ch155\_Bottom Face\_0 mm\_ANT Aux**

**DUT: TP3402Z**

Communication System: UID 0, IEEE 802.11ac(5GHz)VHT80 (0); Frequency: 5775 MHz;Duty Cycle: 1:1.014

Medium parameters used:  $f = 5775$  MHz;  $\sigma = 5.276$  S/m;  $\epsilon_r = 35.883$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Phantom section: Flat Section

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

DASY5.2 Configuration:

- Area Scan setting - Find Secondary Maximum Within:2.0dB and with a peak SAR value greater than 0.5 W/Kg
- Probe: EX3DV4 - SN3977; ConvF(4.64, 4.64, 4.64) @ 5775 MHz; Calibrated: 2021/7/26
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn779; Calibrated: 2021/7/30
- Phantom: ELI V4.0; Type: QD OVA 001 BB; Serial: 1036
- Measurement SW: DASYS2, Version 52.10 (4); SEMCAD X Version 14.6.14 (7501)

**Area Scan (71x91x1):** Interpolated grid:  $dx=1.000$  mm,  $dy=1.000$  mm

Maximum value of SAR (interpolated) = 1.97 W/kg

**Zoom Scan (8x8x7)/Cube 0:** Measurement grid:  $dx=4$ mm,  $dy=4$ mm,  $dz=1.4$ mm

Reference Value = 14.14 V/m; Power Drift = -0.06 dB

Peak SAR (extrapolated) = 3.67 W/kg

**SAR(1 g) = 0.752 W/kg; SAR(10 g) = 0.242 W/kg**

Smallest distance from peaks to all points 3 dB below = 7.4 mm

Ratio of SAR at M2 to SAR at M1 = 57.9%

Maximum value of SAR (measured) = 1.98 W/kg



0 dB = 1.98 W/kg = 2.97 dBW/kg