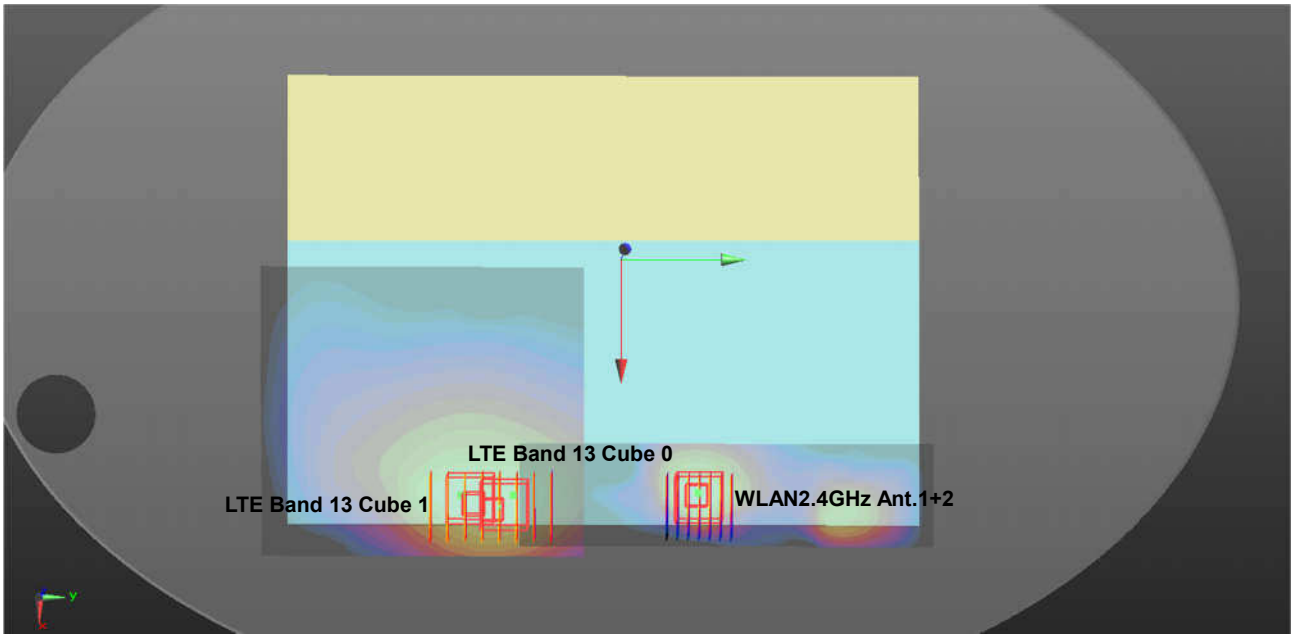
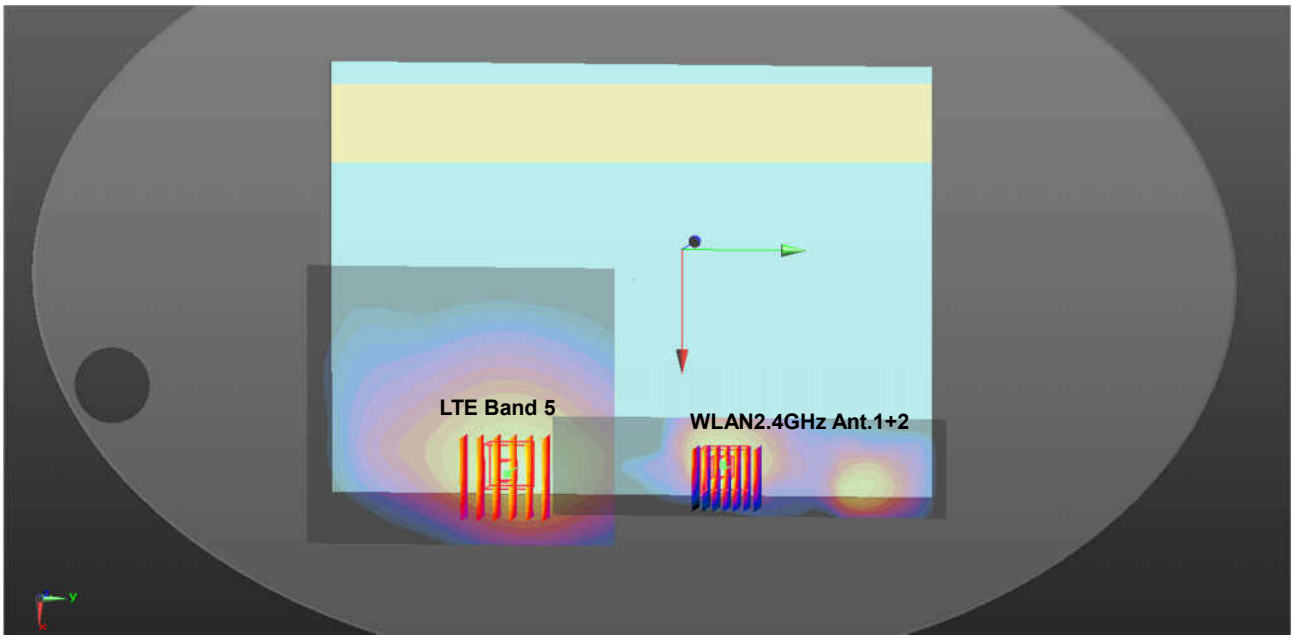
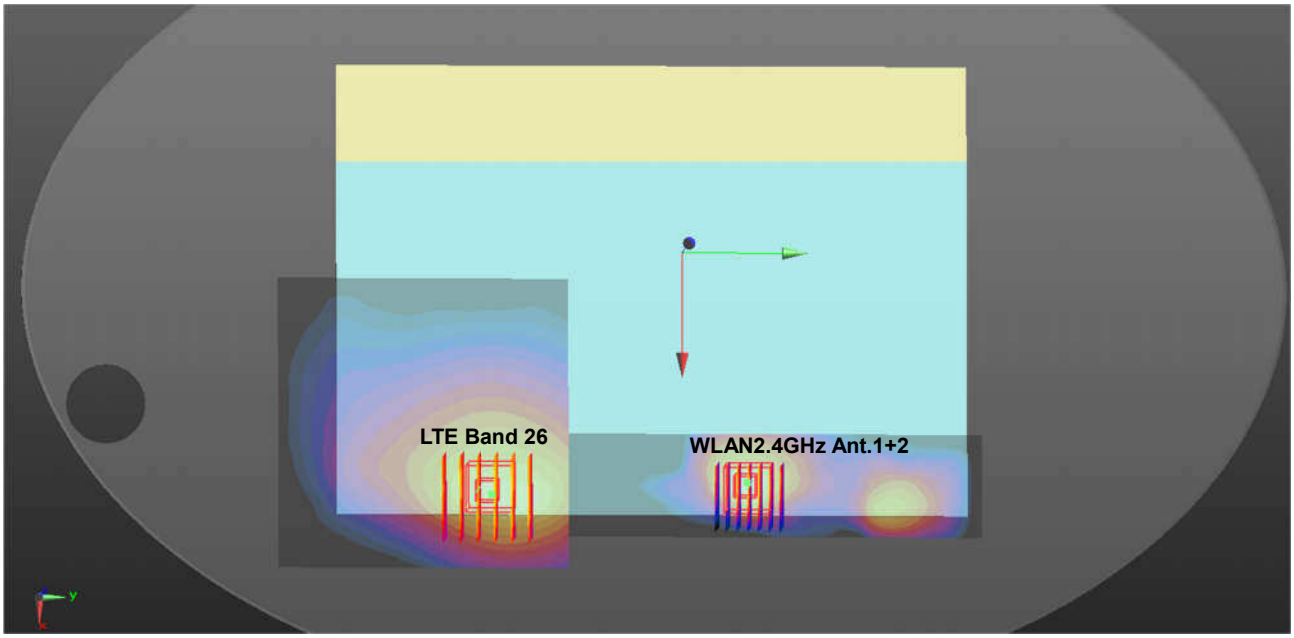
| Case #26 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 13 Cube 0 | Bottom Face | 0.848 | 0 | 9.85 | -5 | -0.34 | 91.1 | 1.92 | 0.03 | Not required |
| | WLAN2.4GHz Ant 1+2 | | 1.070 | 0 | 9.18 | 4.08 | -0.22 | | | | |
| | LTE Band 13 Cube 1 | | 0.802 | 0 | 9.16 | -5.15 | -0.31 | 92.3 | 1.87 | 0.03 | Not required |
| | WLAN2.4GHz Ant 1+2 | | 1.070 | 0 | 9.18 | 4.08 | -0.22 | | | | |



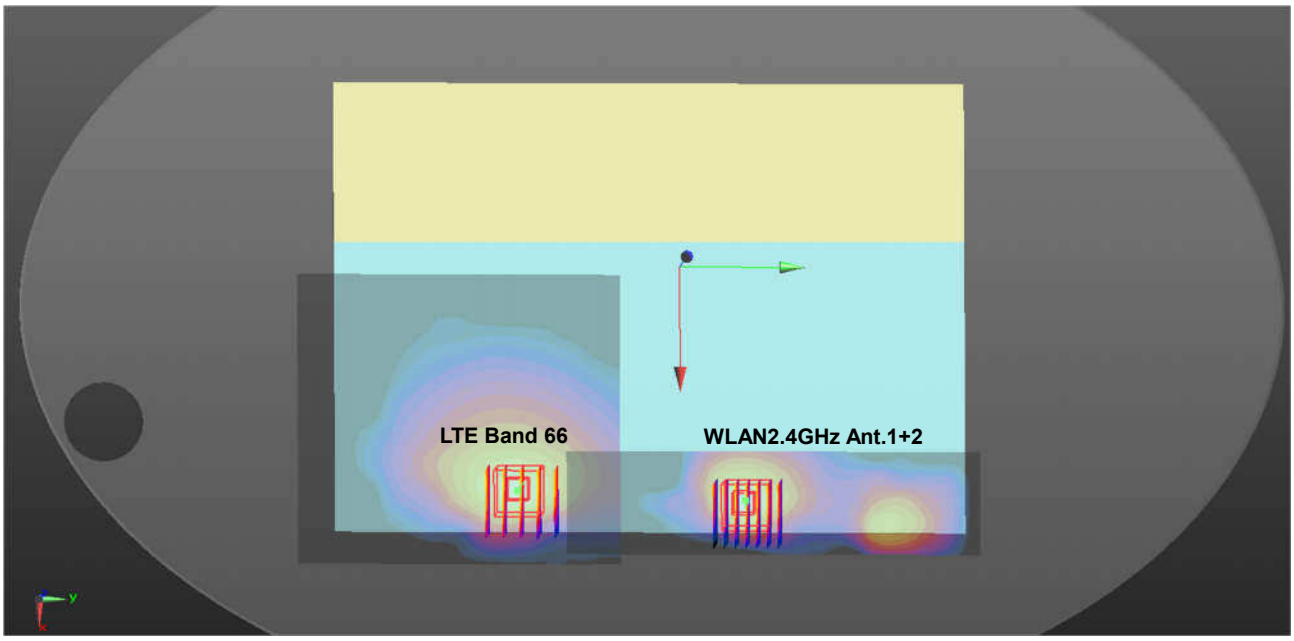

| Case #27 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 5 | Bottom Face | 0.874 | 0 | 9.45 | -6.63 | -0.3 | 107.1 | 1.94 | 0.02 | Not required |
| | WLAN2.4GHz Ant 1+2 | | 1.070 | 0 | 9.18 | 4.08 | -0.22 | | | | |



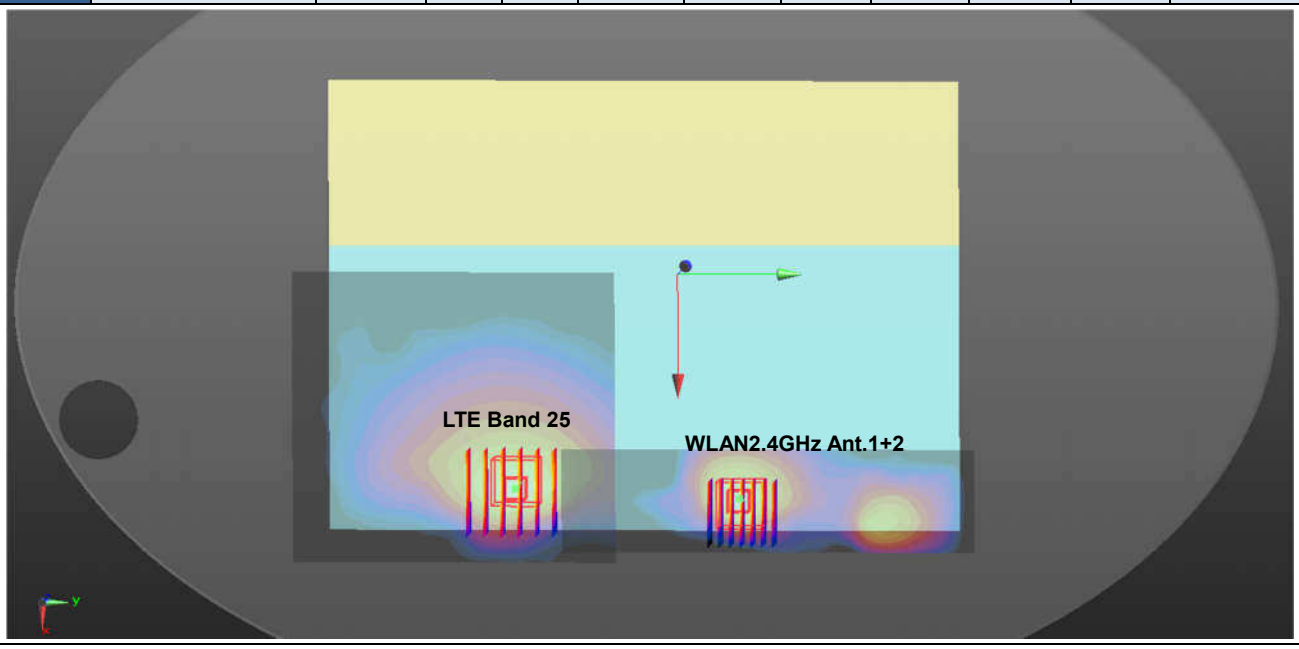
| Case #28 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 26 | Bottom Face | 0.731 | 0 | 9.45 | -8.14 | -0.4 | 122.2 | 1.80 | 0.02 | Not required |
| | WLAN2.4GHz Ant 1+2 | | 1.070 | 0 | 9.18 | 4.08 | -0.22 | | | | |



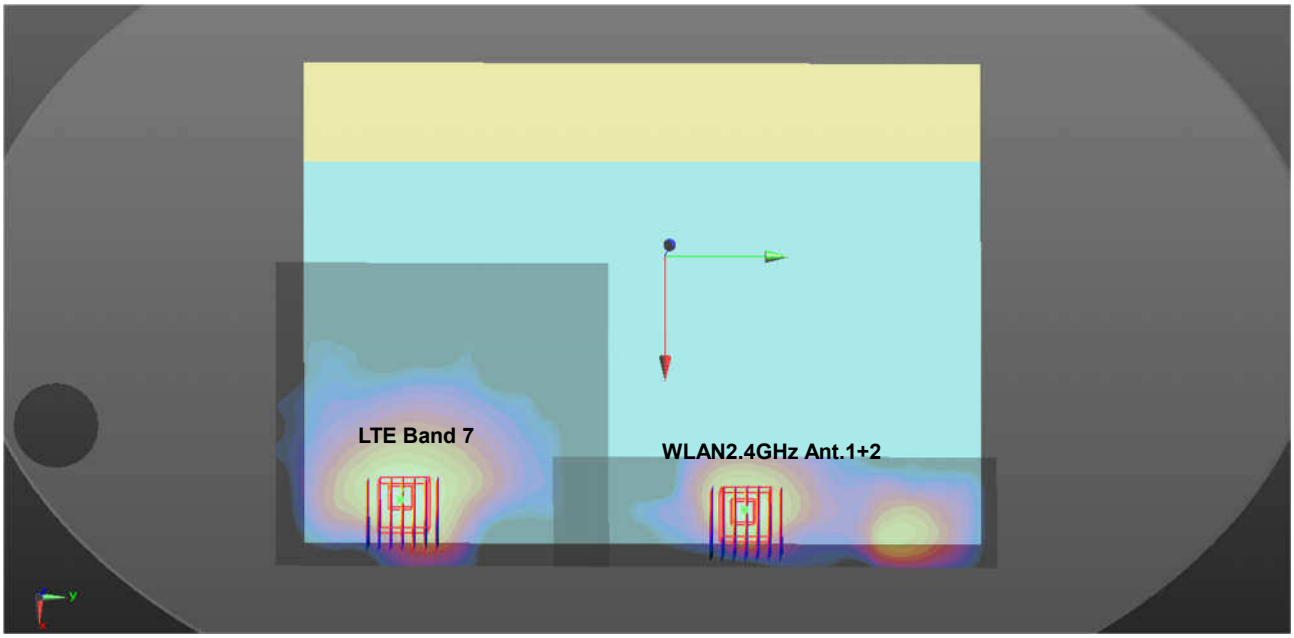

| Case #29 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 66 | Bottom Face | 0.869 | 0 | 8.77 | -6.52 | -0.39 | 106.1 | 1.94 | 0.03 | Not required |
| | WLAN2.4GHz Ant 1+2 | | 1.070 | 0 | 9.18 | 4.08 | -0.22 | | | | |



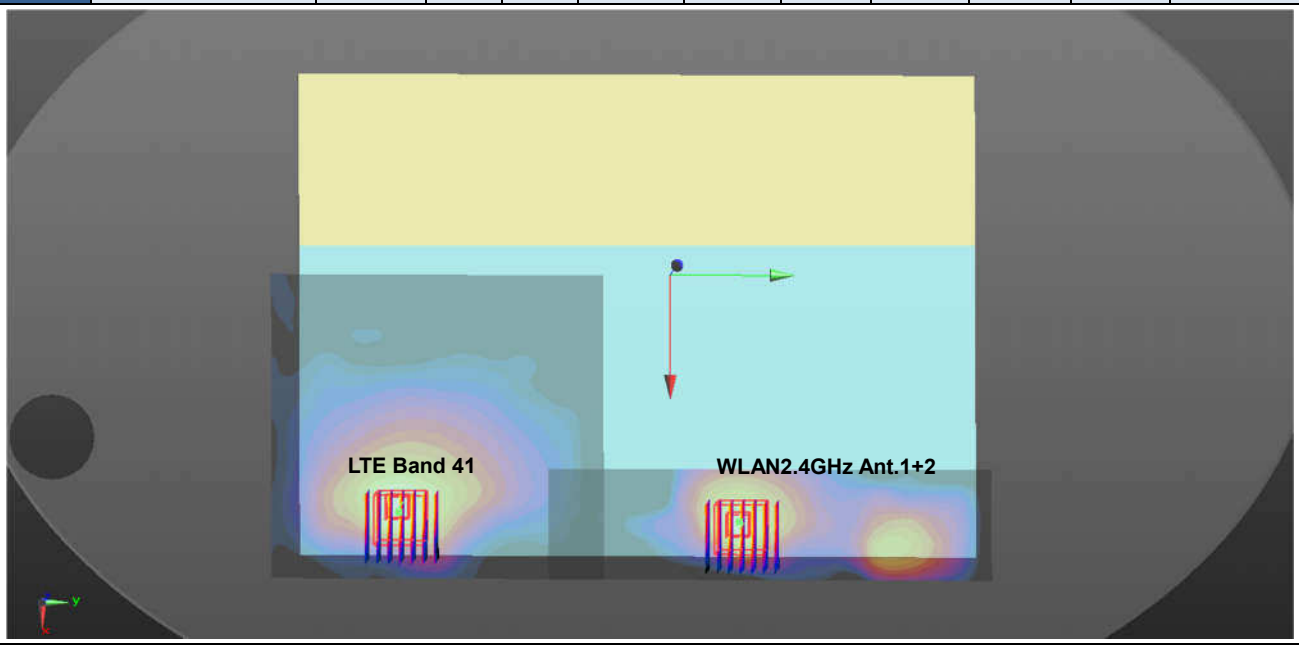
| Case #30 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 25 | Bottom Face | 0.992 | 0 | 8.77 | -6.21 | -0.4 | 103.0 | 2.06 | 0.03 | Not required |
| | WLAN2.4GHz Ant 1+2 | | 1.070 | 0 | 9.18 | 4.08 | -0.22 | | | | |



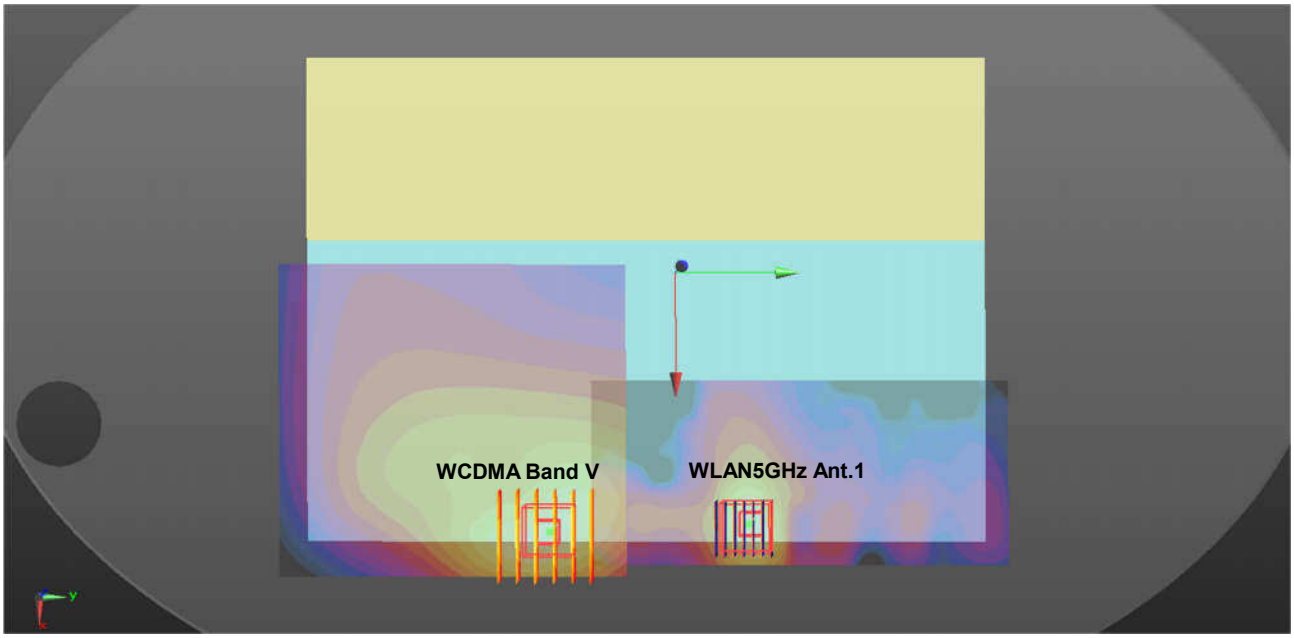

| Case #31 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 7 | Bottom Face | 1.116 | 0 | 8.72 | -10.9 | -0.27 | 149.9 | 2.19 | 0.02 | Not required |
| | WLAN2.4GHz Ant 1+2 | | 1.070 | 0 | 9.18 | 4.08 | -0.22 | | | | |



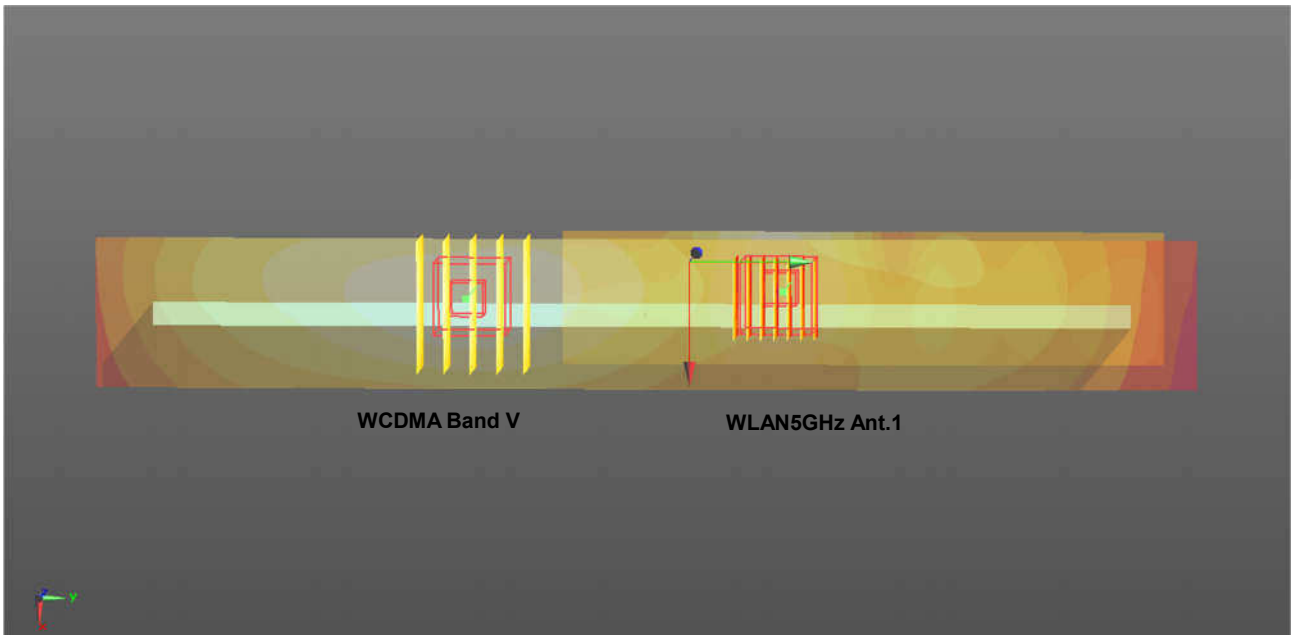
| Case #32 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 41 | Bottom Face | 0.939 | 0 | 8.52 | -10.78 | -0.36 | 148.8 | 2.01 | 0.02 | Not required |
| | WLAN2.4GHz Ant 1+2 | | 1.070 | 0 | 9.18 | 4.08 | -0.22 | | | | |



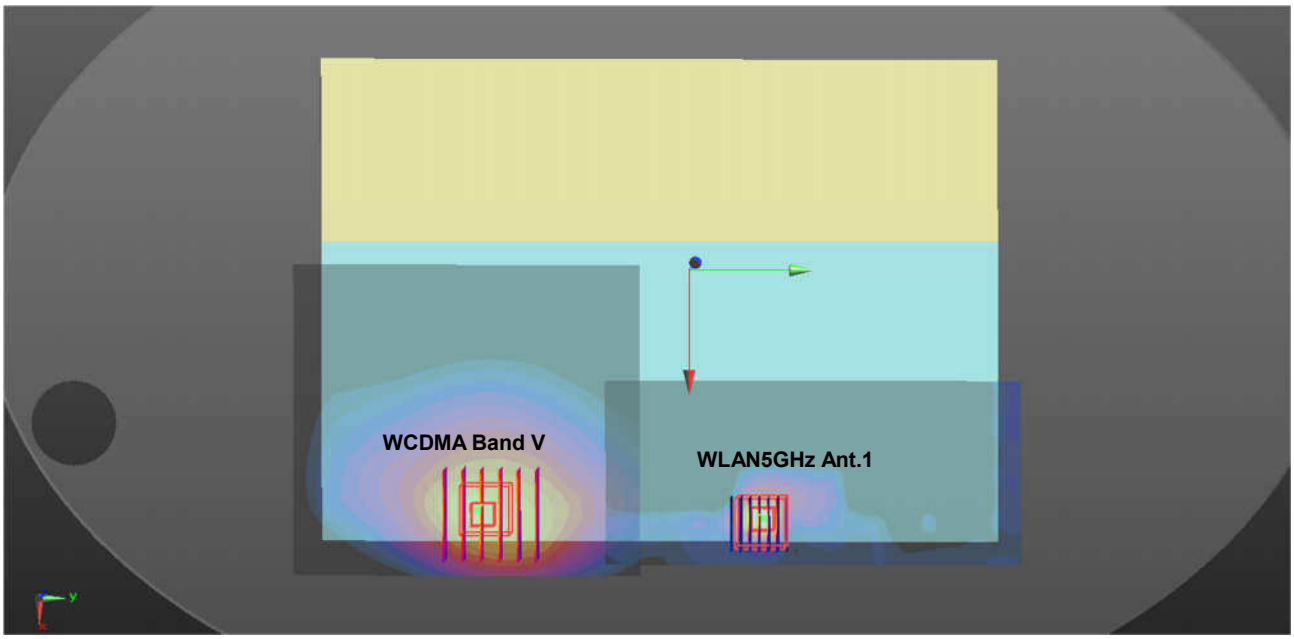

| Case #33 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA Band V | Bottom Face | 0.948 | 11 | 9.95 | -4.36 | -0.44 | 87.7 | 1.65 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.705 | 11 | 9.68 | 4.4 | -0.3 | | | | |



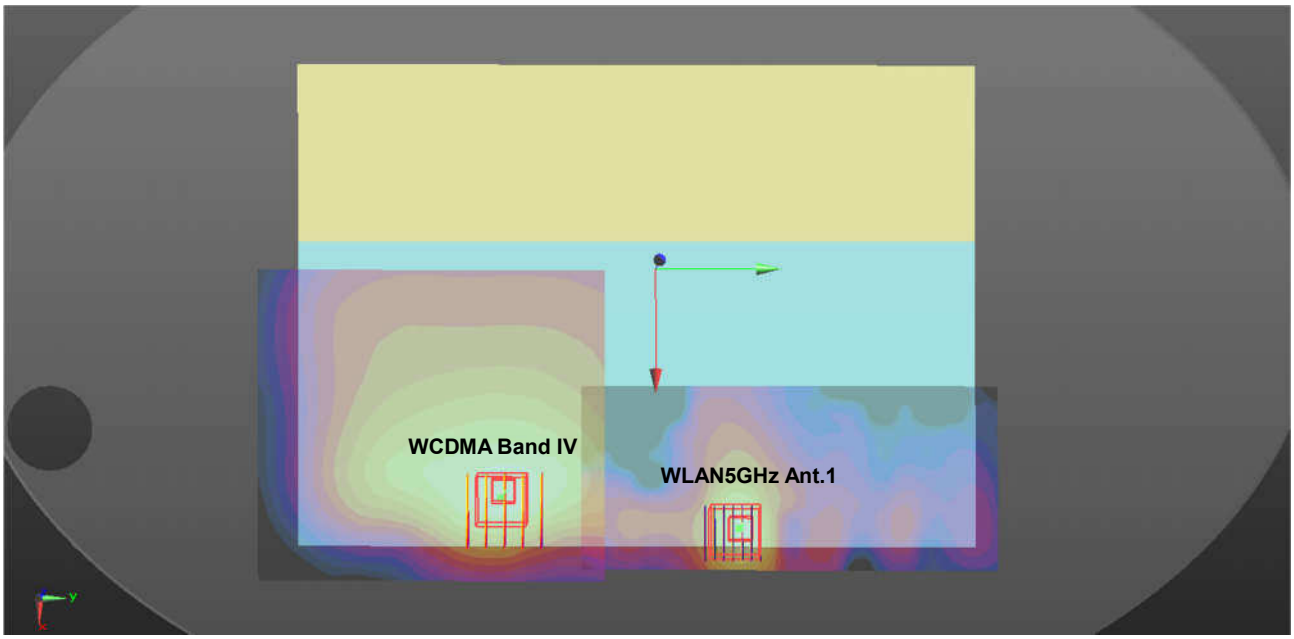
| Case #34 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA Band V | Edge 1 | 1.150 | 11 | -0.39 | -5.46 | -0.47 | 95.9 | 1.76 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.606 | 11 | -0.72 | 4.12 | -0.42 | | | | |



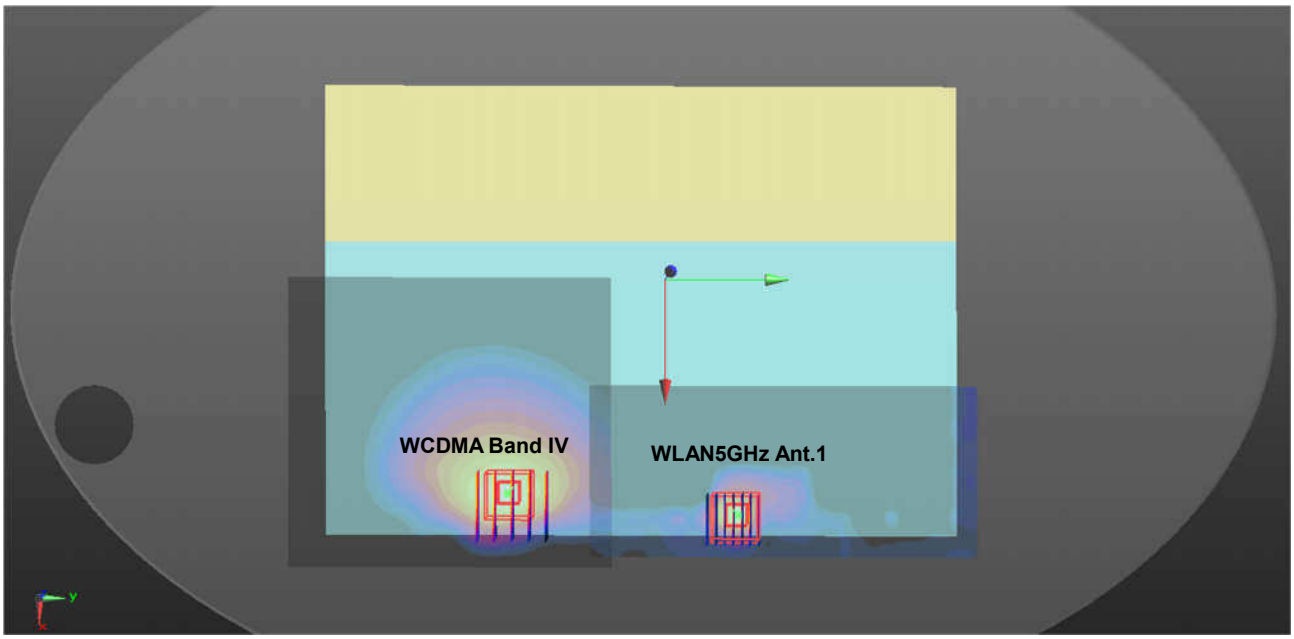

| Case #35 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA Band V | Bottom Face | 0.711 | 0 | 9.53 | -7.95 | -0.4 | 122.1 | 1.64 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |



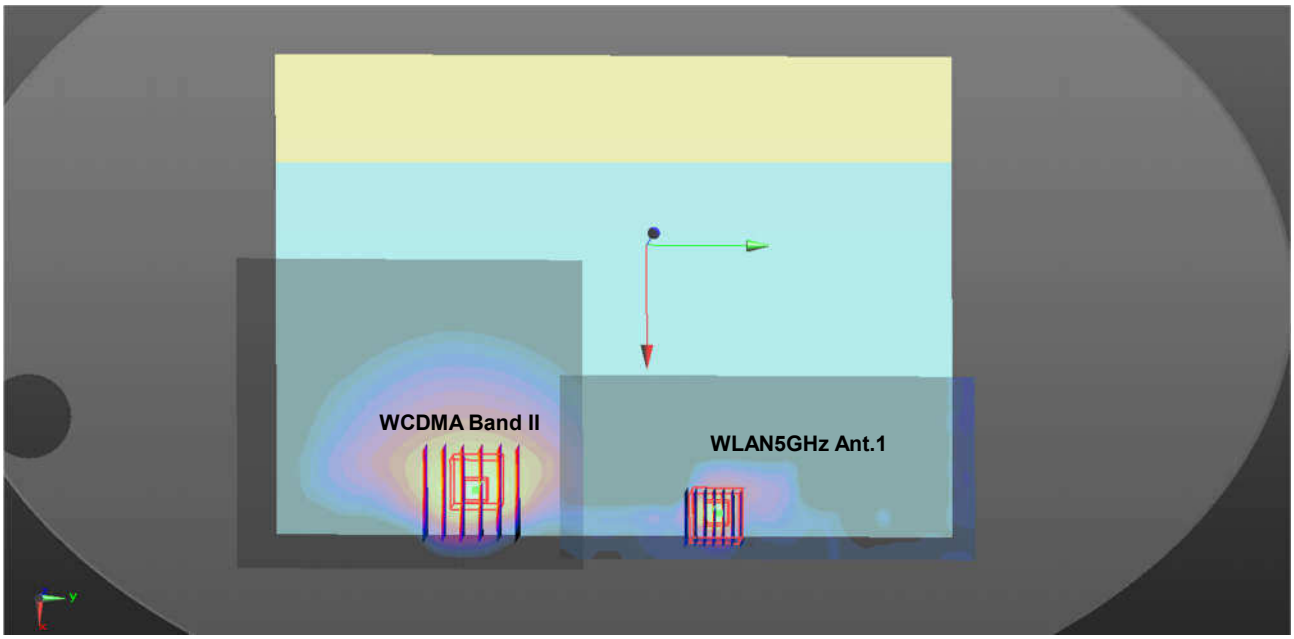
| Case #36 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA Band IV | Bottom Face | 1.092 | 11 | 8.14 | -6.06 | -0.44 | 105.7 | 1.80 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.705 | 11 | 9.68 | 4.4 | -0.3 | | | | |



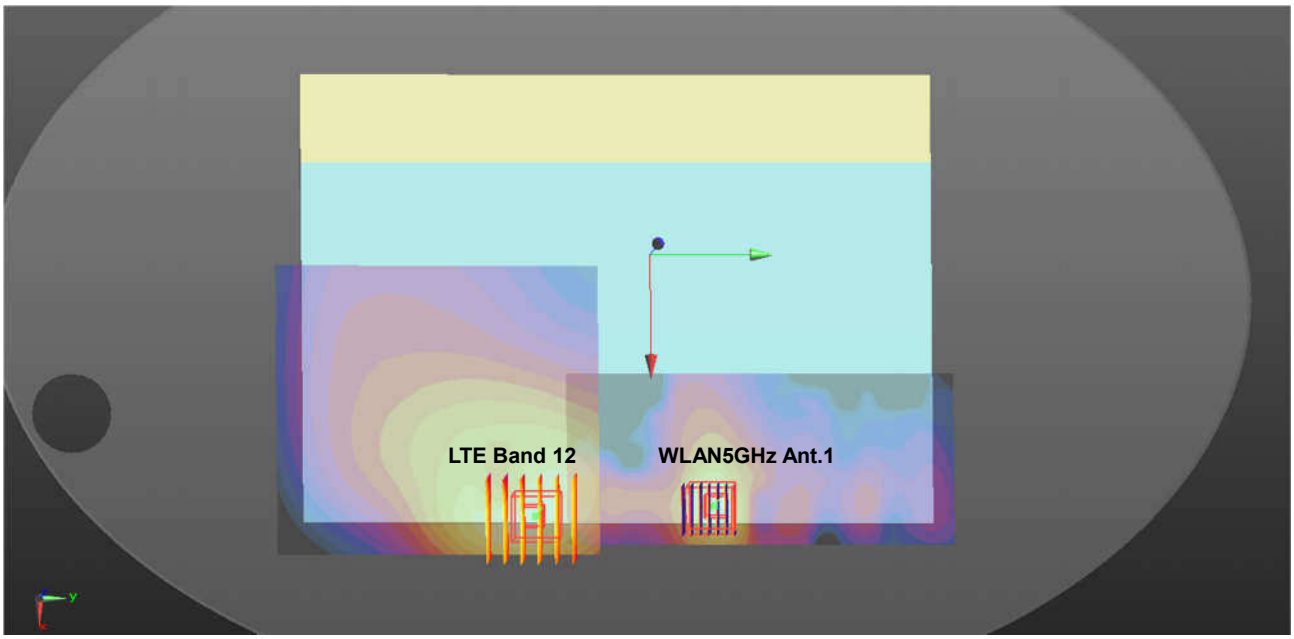

| Case #37 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA Band IV | Bottom Face | 1.054 | 0 | 8.77 | -6.52 | -0.38 | 108.1 | 1.98 | 0.03 | Not required |
| | WLAN5GHz Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |



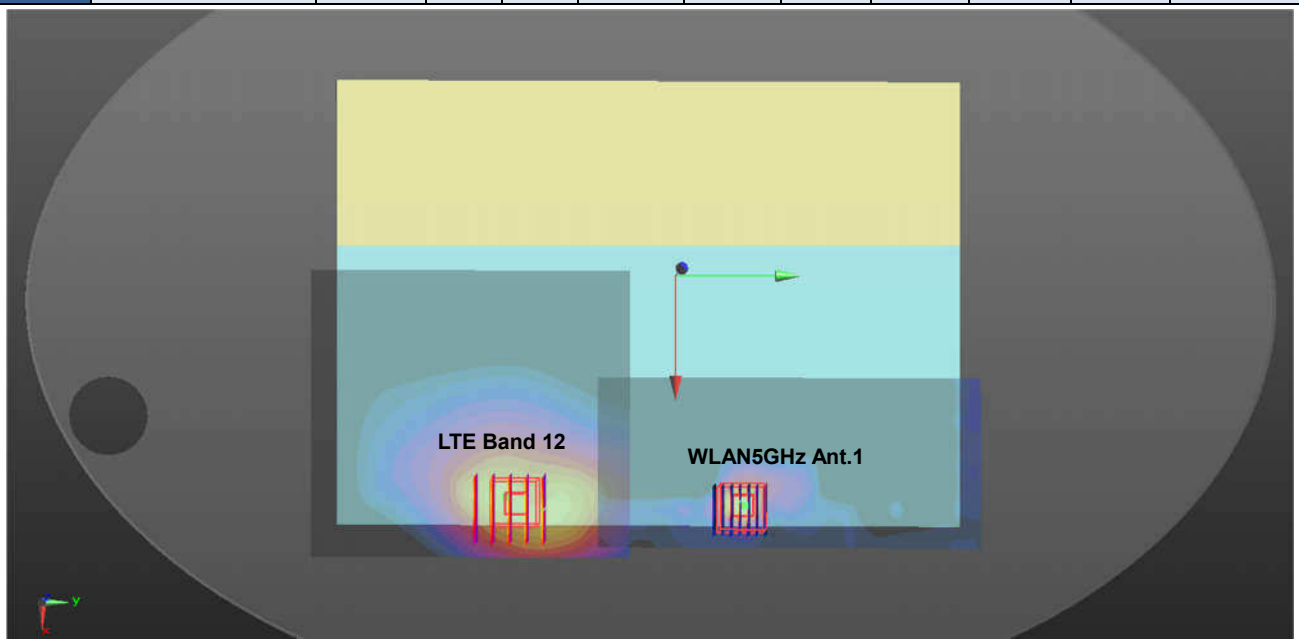
| Case #38 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA Band II | Bottom Face | 1.122 | 0 | 8.77 | -6.21 | -0.4 | 105.0 | 2.05 | 0.03 | Not required |
| | WLAN5GHz Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |



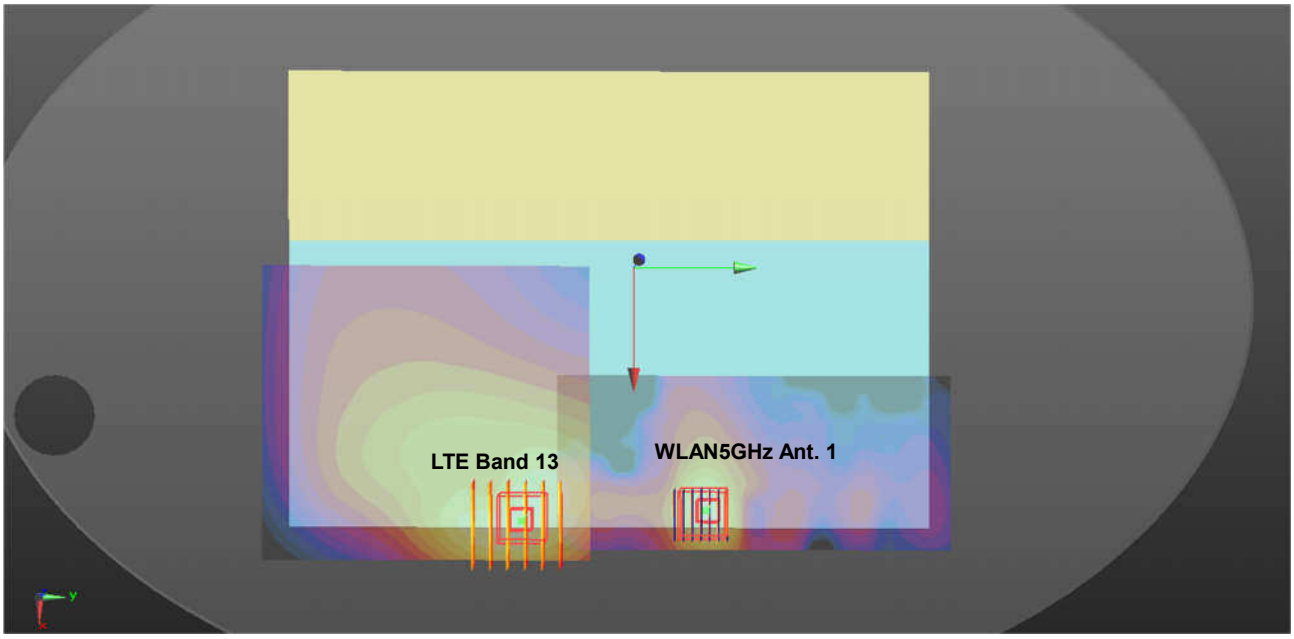

| Case #39 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 12 | Bottom Face | 0.895 | 11 | 10.1 | -4.06 | -0.43 | 84.7 | 1.60 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.705 | 11 | 9.68 | 4.4 | -0.3 | | | | |



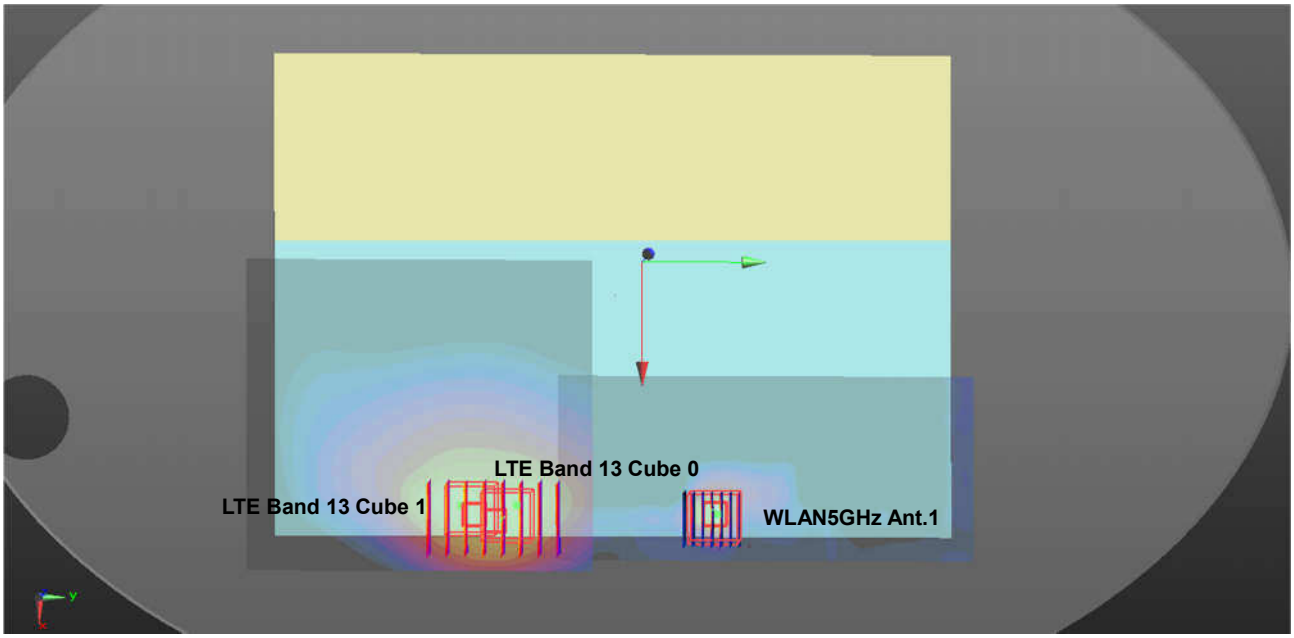
| Case #40 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 12 | Bottom Face | 0.763 | 0 | 9.85 | -5.15 | -0.4 | 94.2 | 1.69 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |



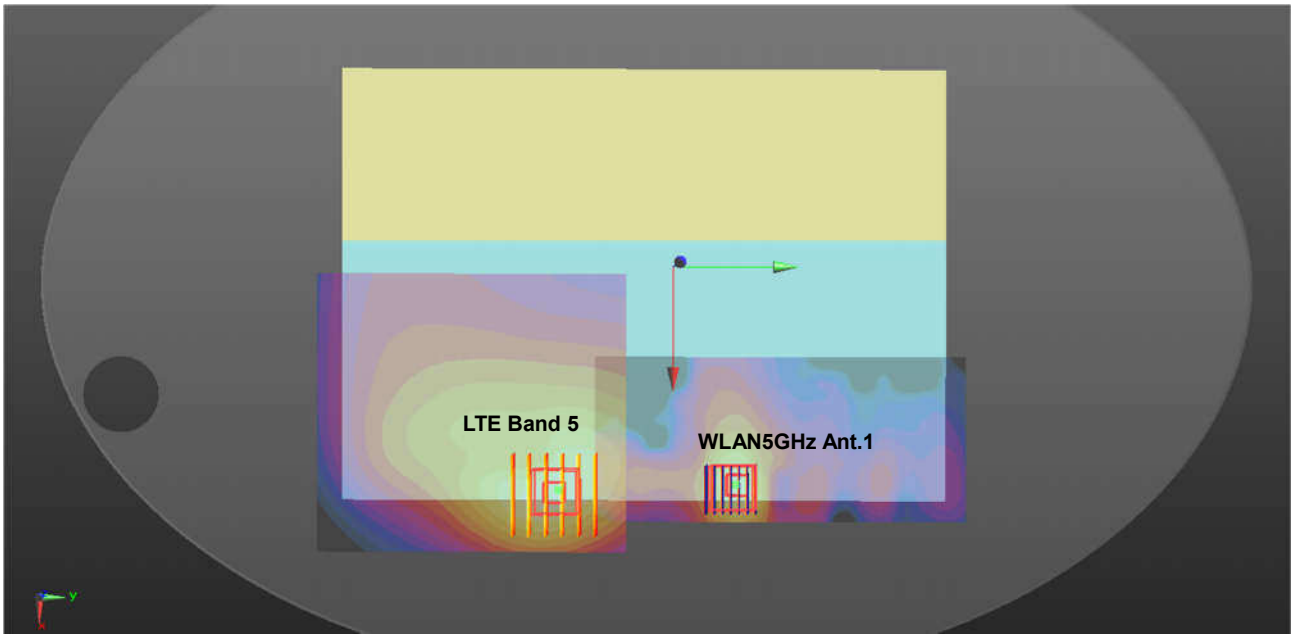

| Case #41 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 13 | Bottom Face | 0.958 | 11 | 9.94 | -4.05 | -0.44 | 84.6 | 1.66 | 0.03 | Not required |
| | WLAN5GHz Ant 1 | | 0.705 | 11 | 9.68 | 4.4 | -0.3 | | | | |



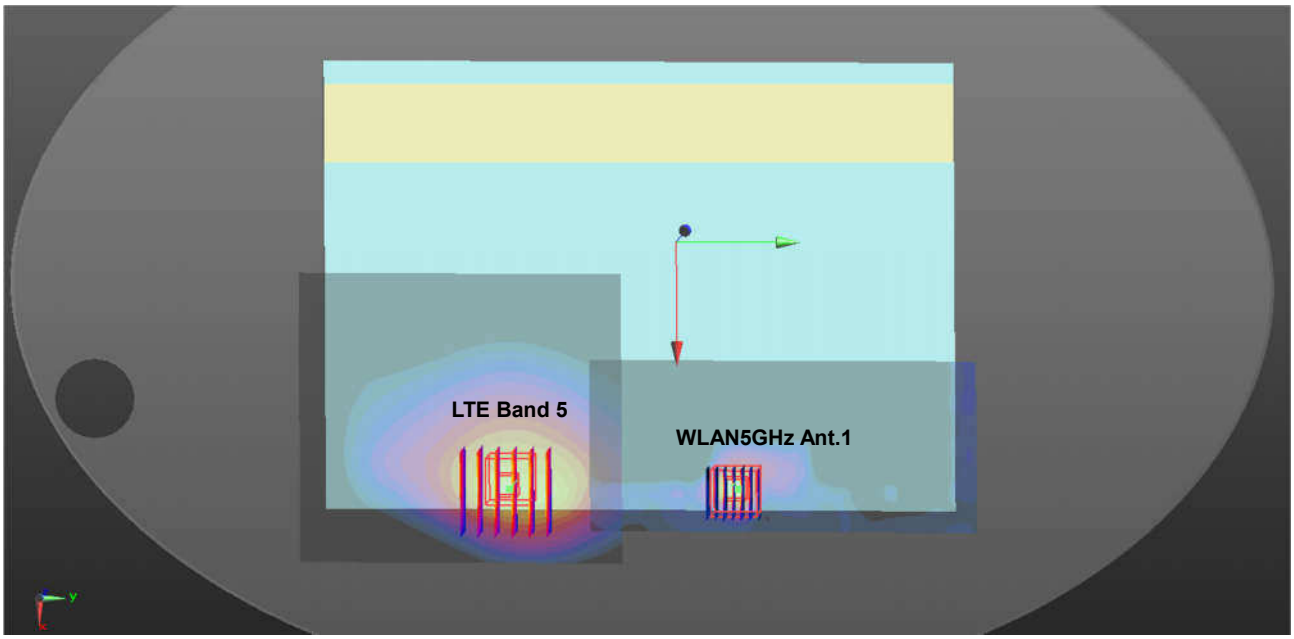
| | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Case #42 | LTE Band 13 Cube 0 | Bottom Face | 0.848 | 0 | 9.85 | -5 | -0.34 | 92.65 | 1.77 | 0.03 | Not required |
| | WLAN5GHz Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |
| | LTE Band 13 Cube 1 | | 0.802 | 0 | 9.16 | -5.15 | -0.31 | 94.19 | 1.73 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |



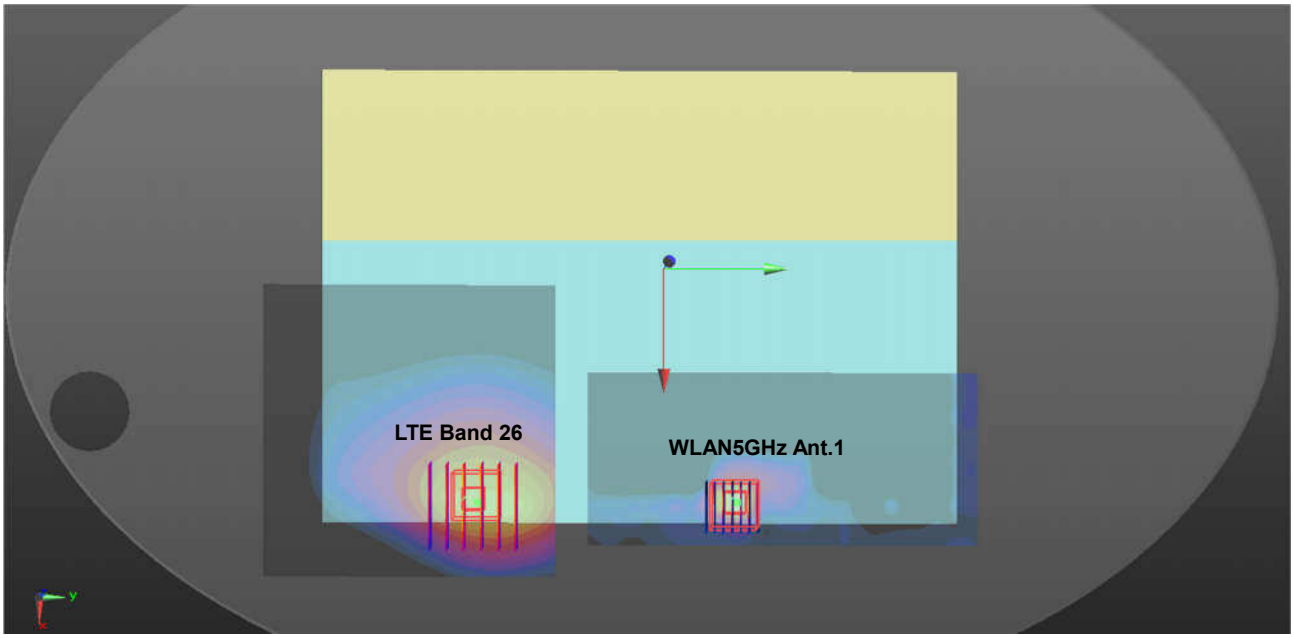

| | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Case #43 | LTE Band 5 | Bottom Face | 0.912 | 11 | 10.06 | -4.36 | -0.34 | 87.7 | 1.62 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.705 | 11 | 9.68 | 4.4 | -0.3 | | | | |



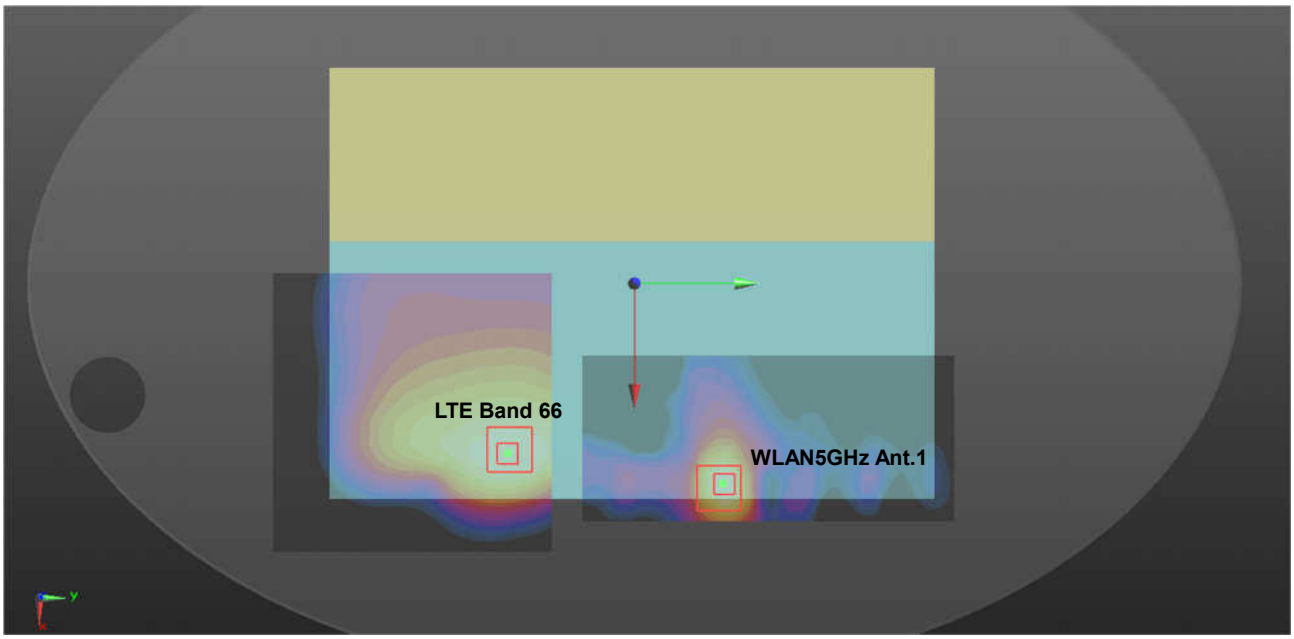
| Case #44 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 5 | Bottom Face | 0.874 | 0 | 9.45 | -6.63 | -0.3 | 108.9 | 1.80 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |



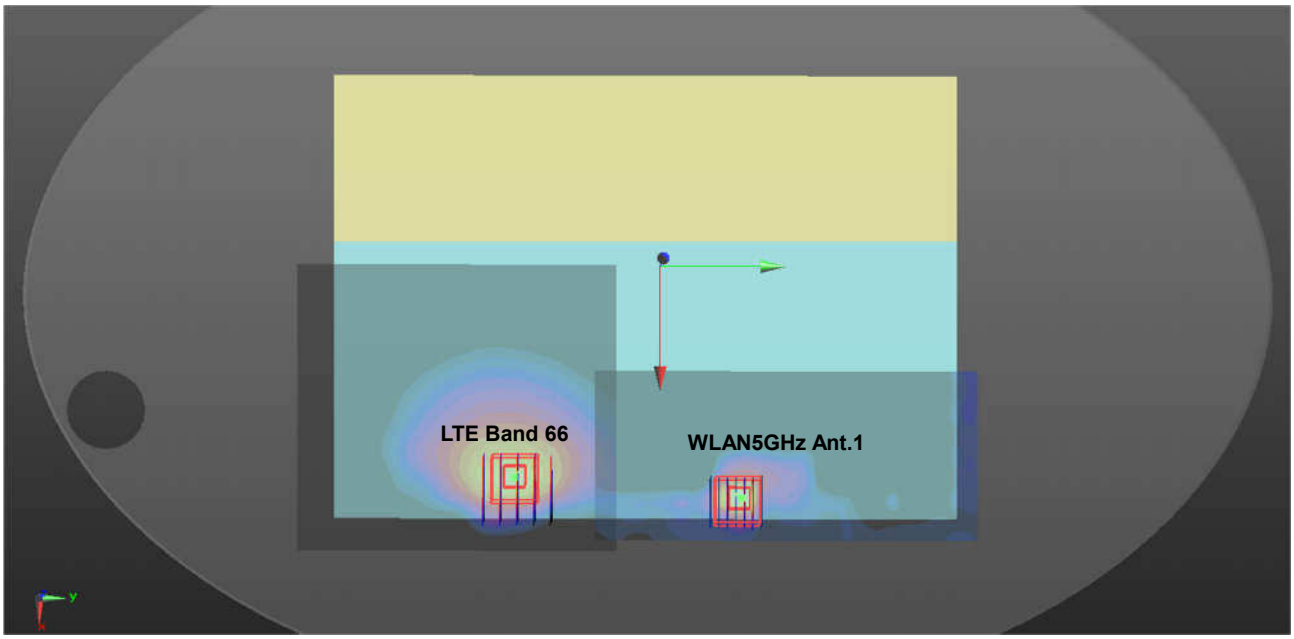

| Case #45 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 26 | Bottom Face | 0.731 | 0 | 9.45 | -8.14 | -0.4 | 124.0 | 1.66 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |



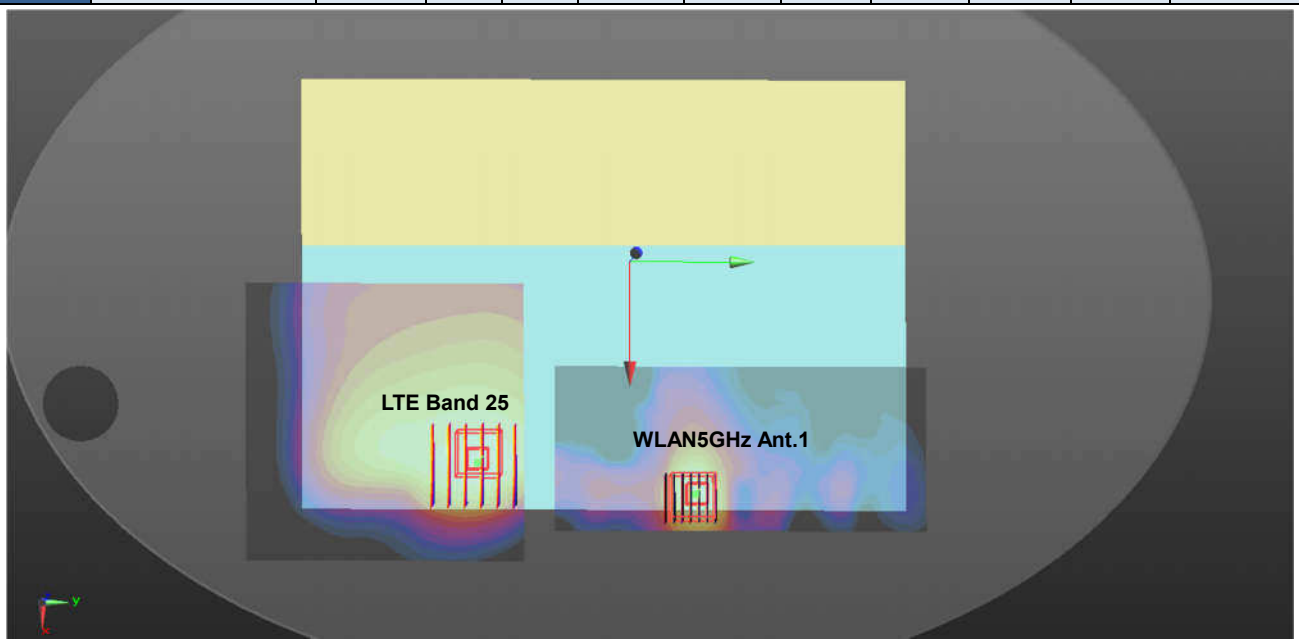
| Case #46 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 66 | Bottom Face | 1.091 | 11 | 8.42 | -6.32 | -0.44 | 107.9 | 1.80 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.705 | 11 | 9.68 | 4.4 | -0.3 | | | | |



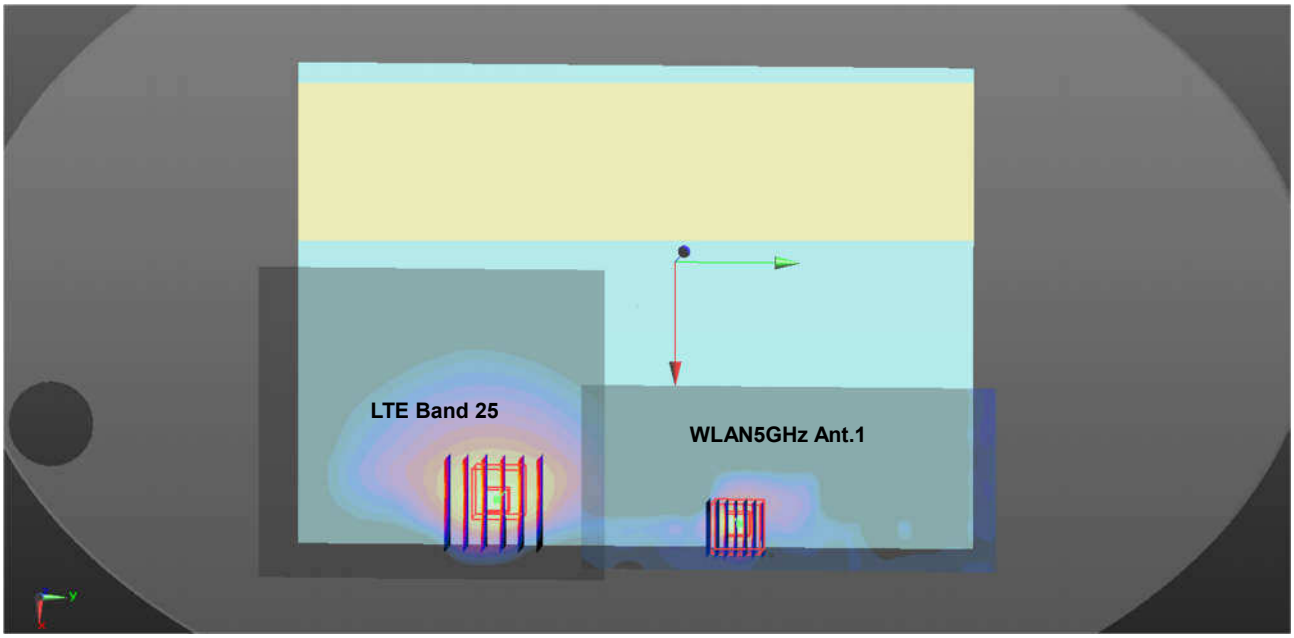

| Case #47 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 66 | Bottom Face | 0.869 | 0 | 8.77 | -6.52 | -0.39 | 108.1 | 1.79 | 0.02 | Not required |
| | WLAN5G Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |



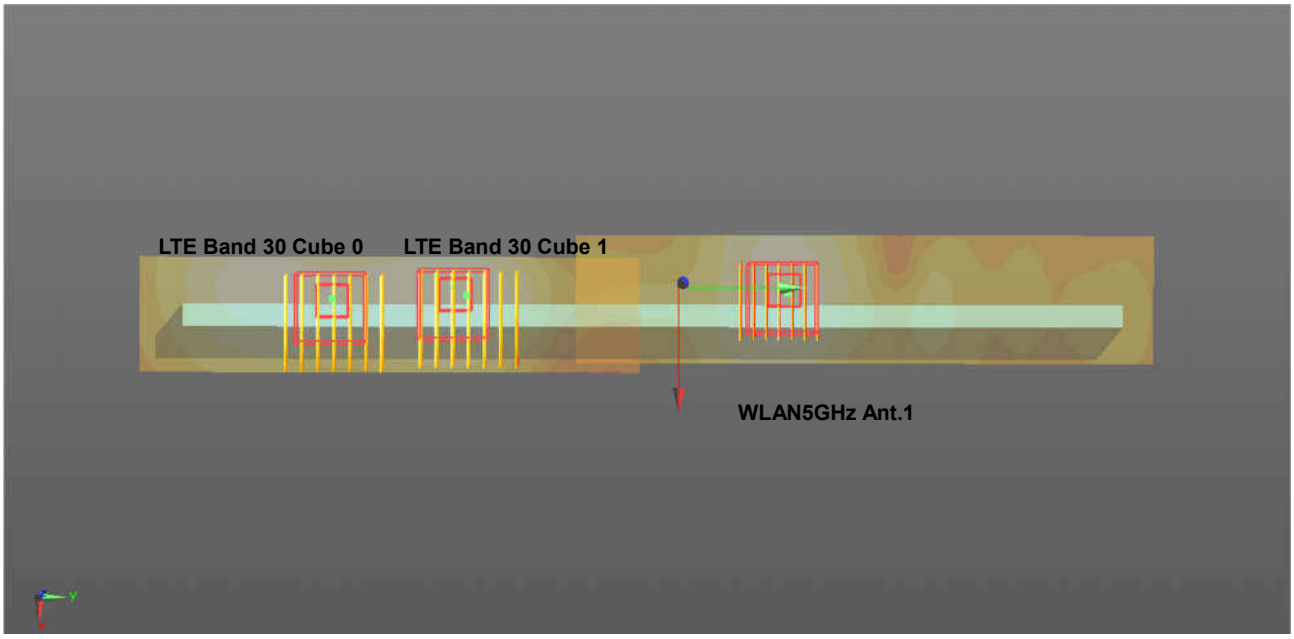
| Case #48 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 25 | Bottom Face | 0.915 | 11 | 8.26 | -6.47 | -0.43 | 109.6 | 1.62 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.705 | 11 | 9.68 | 4.4 | -0.3 | | | | |



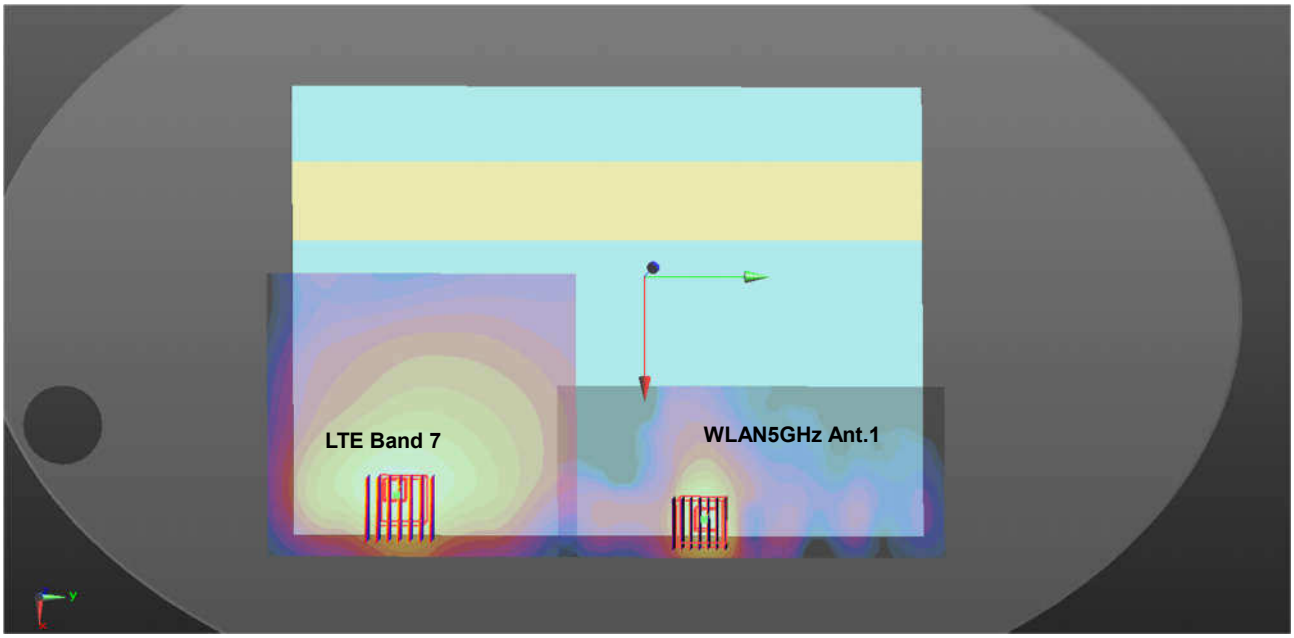

| Case #49 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 25 | Bottom Face | 0.992 | 0 | 8.77 | -6.21 | -0.4 | 105.0 | 1.92 | 0.03 | Not required |
| | WLAN5GHz Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |



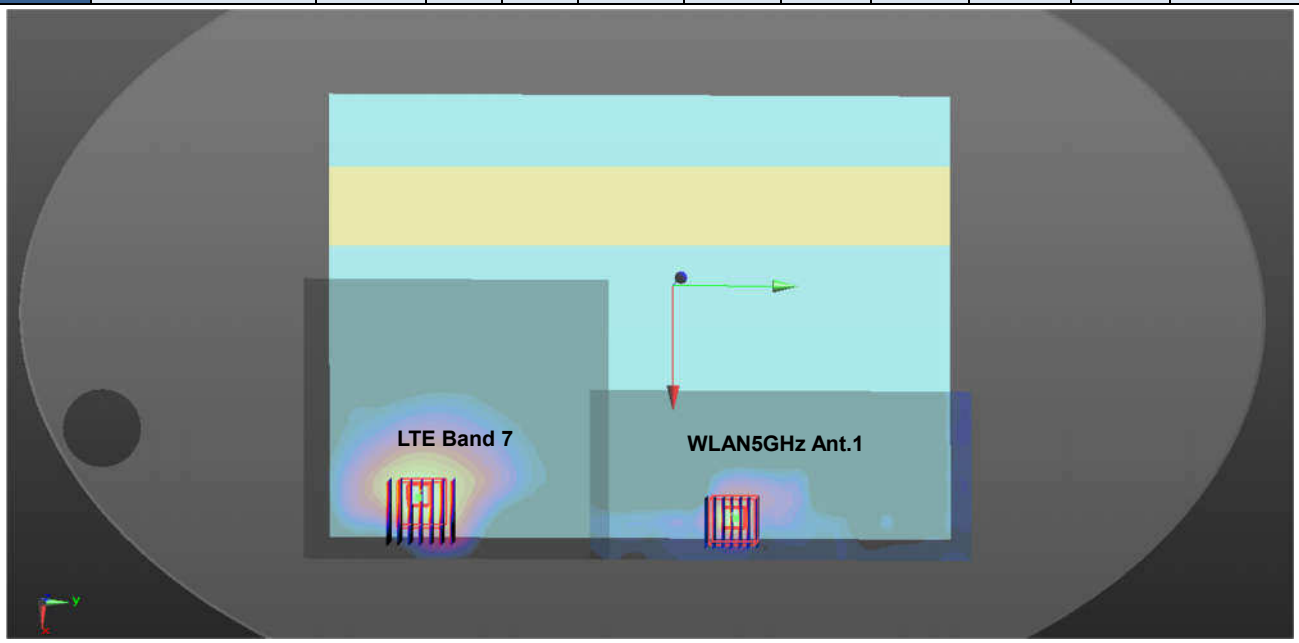
| Case #50 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 30 Cube 0 | Edge 1 | 1.192 | 11 | -0.38 | -10 | -0.39 | 141.2 | 1.80 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.606 | 11 | -0.72 | 4.12 | -0.42 | | | | |
| | LTE Band 30 Cube 1 | | 0.876 | 11 | -0.6 | -6.3 | -0.42 | 104.2 | 1.48 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.606 | 11 | -0.72 | 4.12 | -0.42 | | | | |



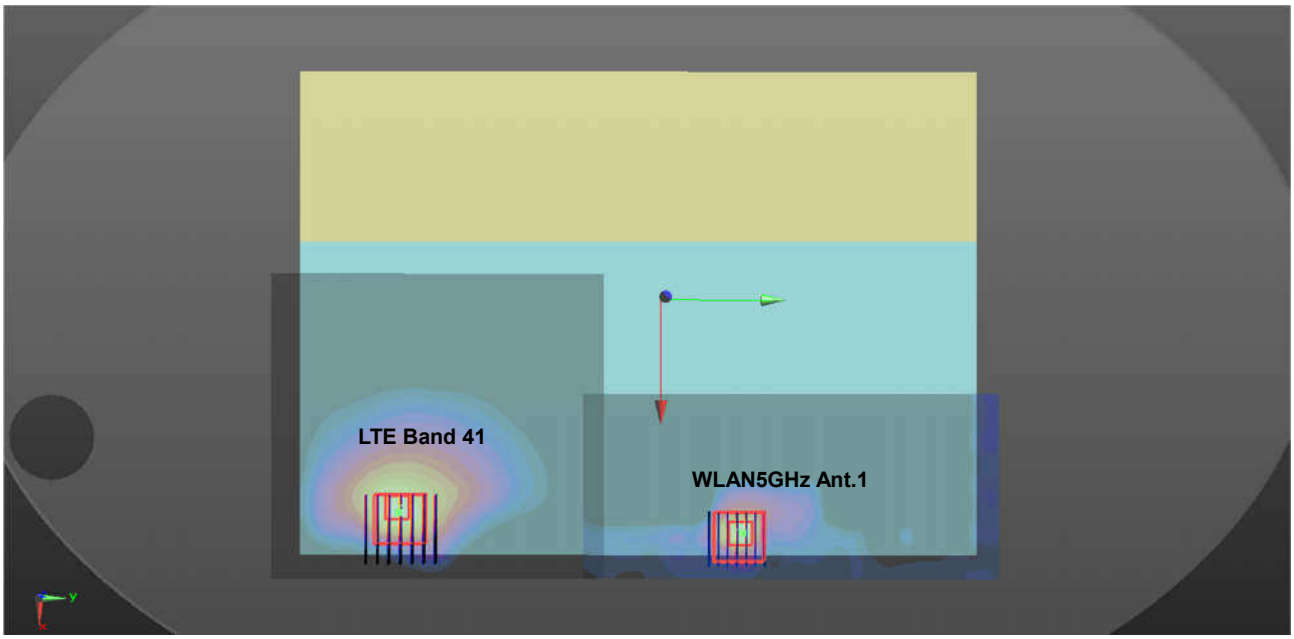

| Case #51 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 7 | Bottom Face | 0.953 | 11 | 8.52 | -10.3 | -0.4 | 147.5 | 1.66 | 0.01 | Not required |
| | WLAN5GHz Ant 1 | | 0.705 | 11 | 9.68 | 4.4 | -0.3 | | | | |



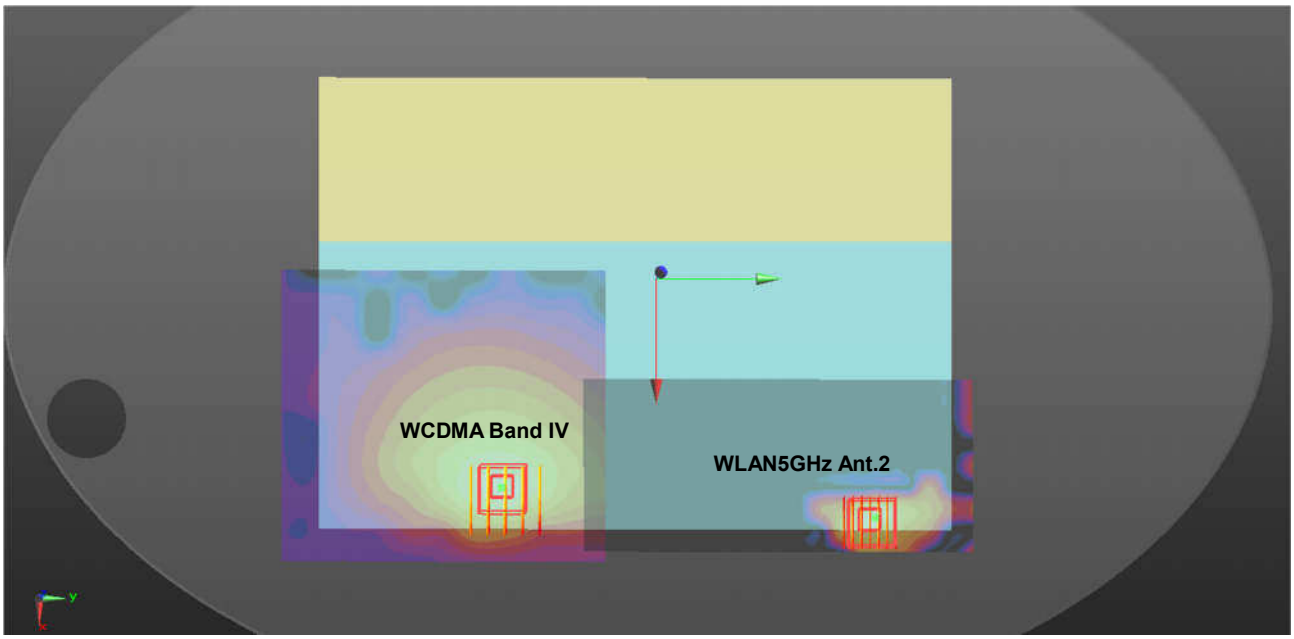
| Case #52 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 7 | Bottom Face | 1.116 | 0 | 8.72 | -10.9 | -0.27 | 151.8 | 2.04 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |



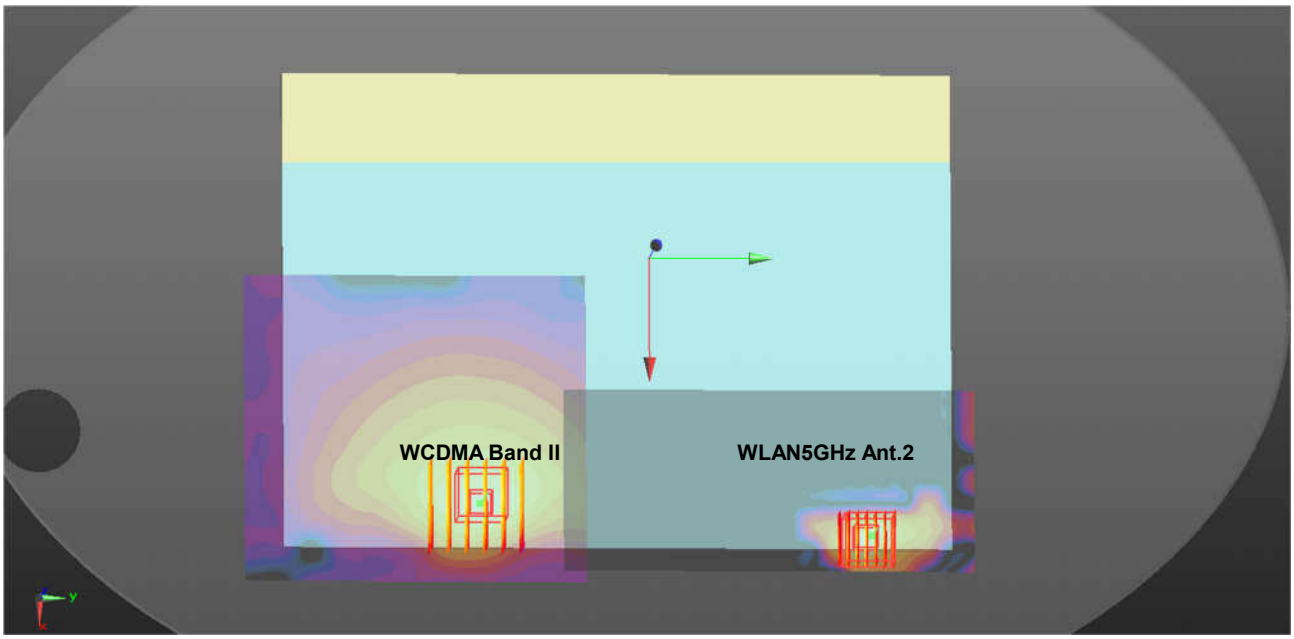

| Case #53 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 41 | Bottom Face | 0.939 | 0 | 8.52 | -10.78 | -0.36 | 150.8 | 1.86 | 0.02 | Not required |
| | WLAN5GHz Ant 1 | | 0.925 | 0 | 9.56 | 4.26 | -0.21 | | | | |



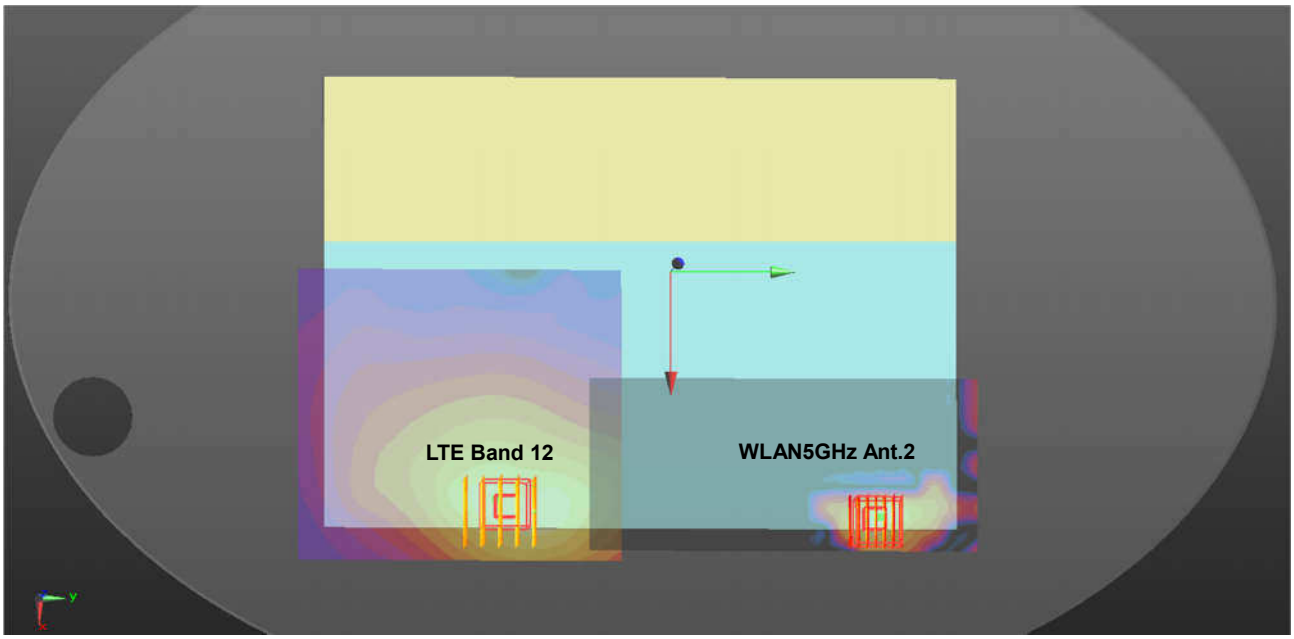
| Case #54 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA Band IV | Bottom Face | 1.054 | 0 | 8.77 | -6.52 | -0.38 | 178.1 | 1.92 | 0.01 | Not required |
| | WLAN5G Ant 2 | | 0.862 | 0 | 9.8 | 11.26 | -0.22 | | | | |



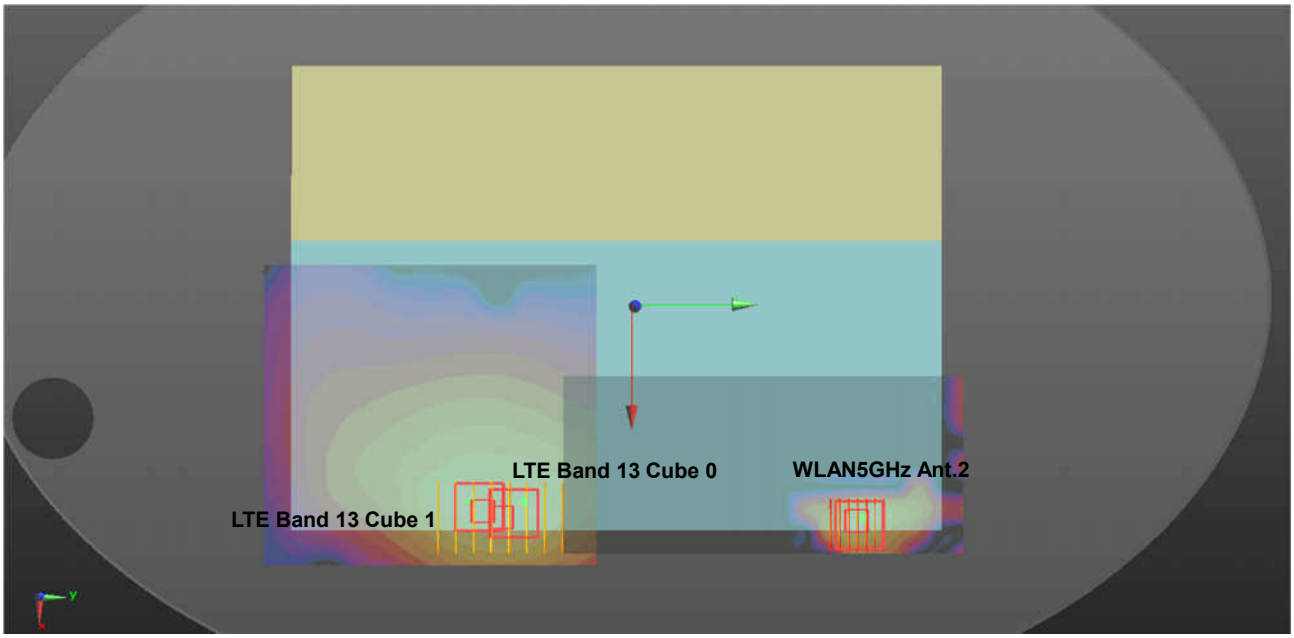

| Case #55 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA Band II | Bottom Face | 1.122 | 0 | 8.77 | -6.21 | -0.4 | 175.0 | 1.98 | 0.02 | Not required |
| | WLAN5GHz Ant 2 | | 0.862 | 0 | 9.8 | 11.26 | -0.22 | | | | |



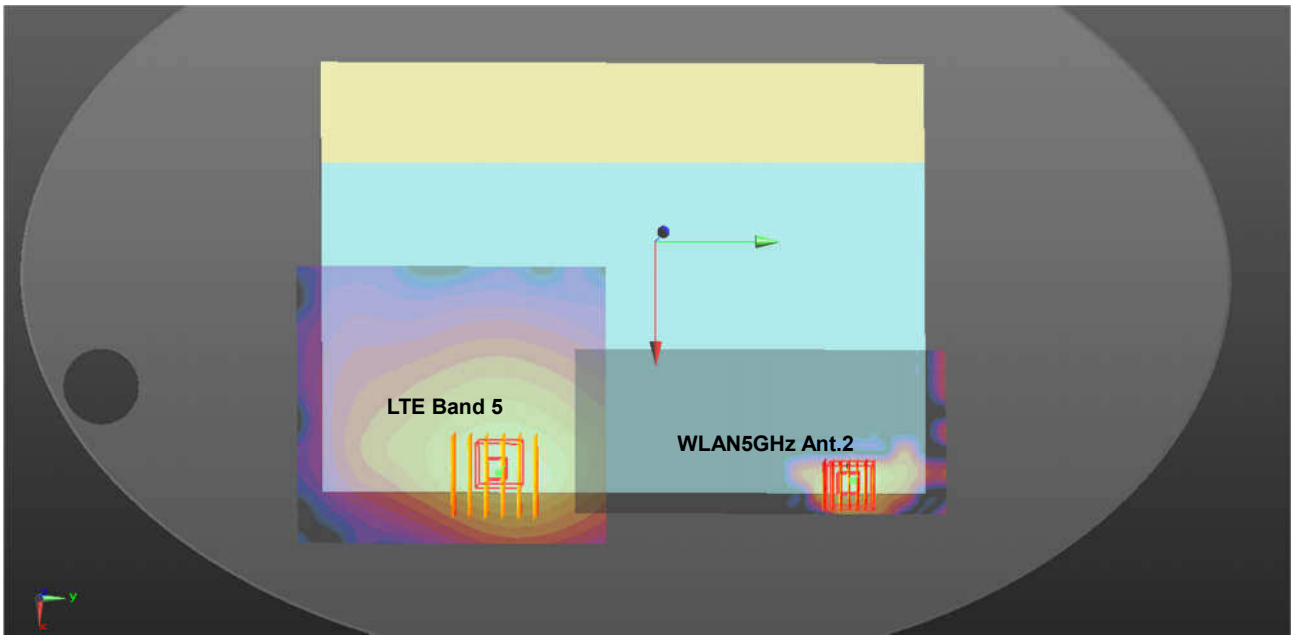
| Case #56 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 12 | Bottom Face | 0.763 | 0 | 9.85 | -5.15 | -0.4 | 164.1 | 1.63 | 0.01 | Not required |
| | WLAN5GHz Ant 2 | | 0.862 | 0 | 9.8 | 11.26 | -0.22 | | | | |



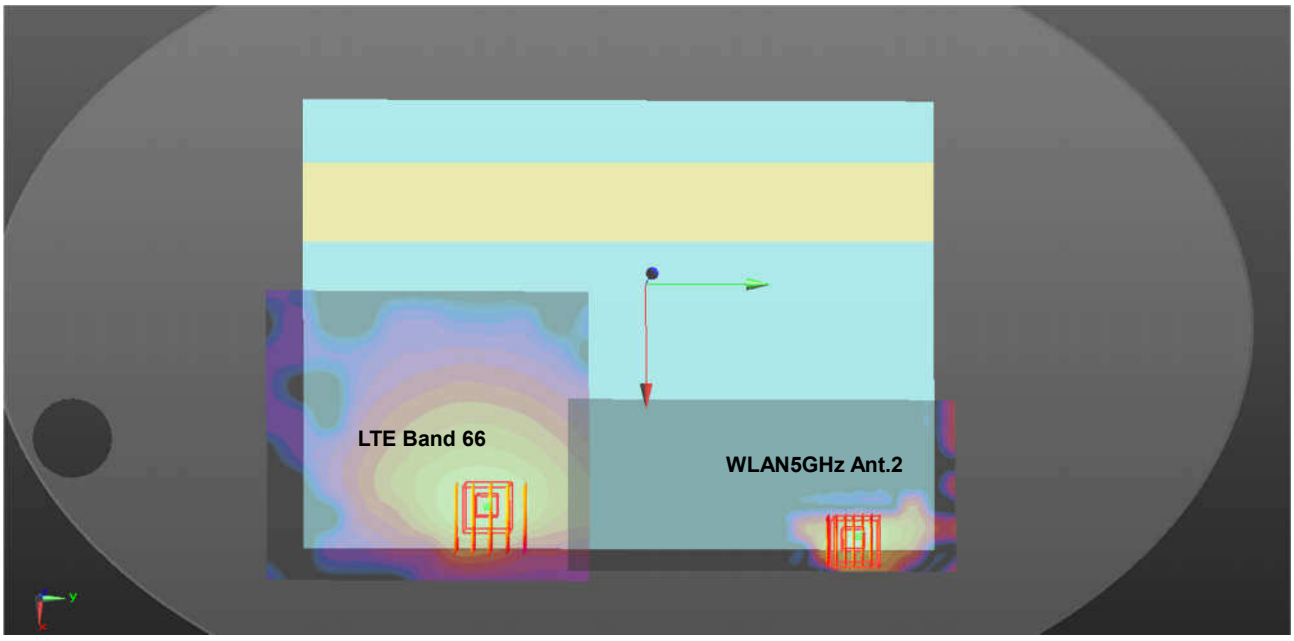

| Case #57 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 13 Cube 0 | Bottom Face | 0.848 | 0 | 9.85 | -5 | -0.34 | 162.6 | 1.71 | 0.01 | Not required |
| | WLAN5GHz Ant 2 | | 0.862 | 0 | 9.8 | 11.26 | -0.22 | | | | |
| | LTE Band 13 Cube 1 | | 0.802 | 0 | 9.16 | -5.15 | -0.31 | 164.23 | 1.66 | 0.01 | Not required |
| | WLAN5GHz Ant 2 | | 0.862 | 0 | 9.8 | 11.26 | -0.22 | | | | |



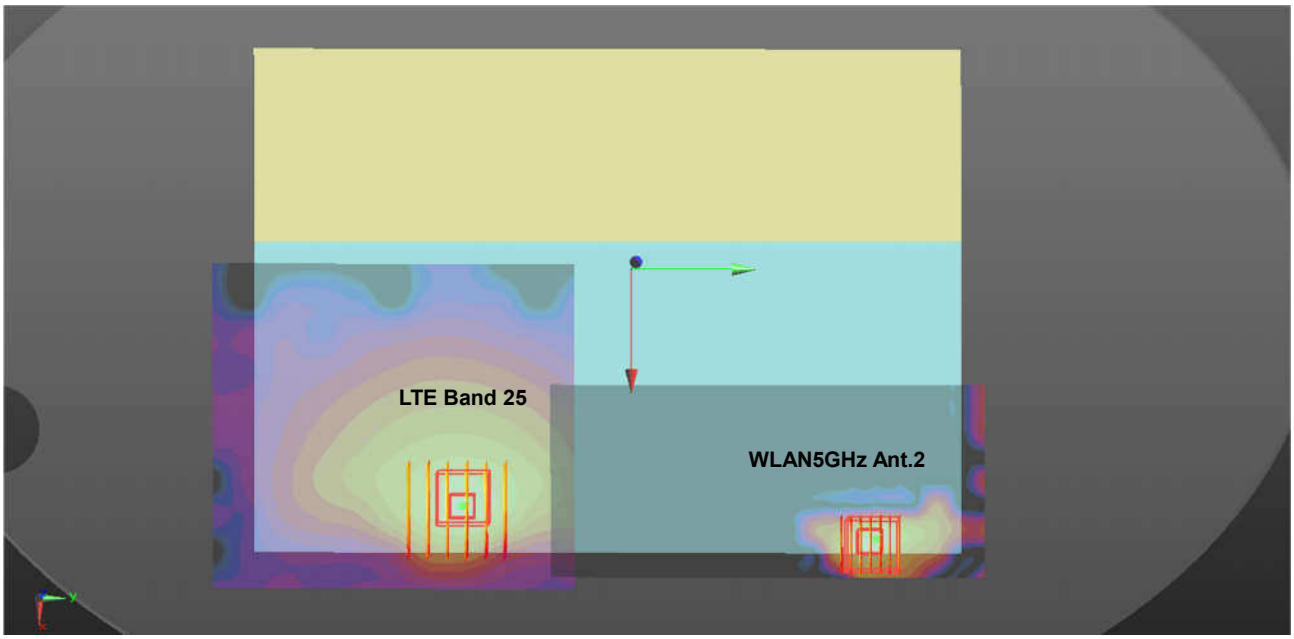
| Case #58 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 5 | Bottom Face | 0.874 | 0 | 9.45 | -6.63 | -0.3 | 178.9 | 1.74 | 0.01 | Not required |
| | WLAN5GHz Ant 2 | | 0.862 | 0 | 9.8 | 11.26 | -0.22 | | | | |



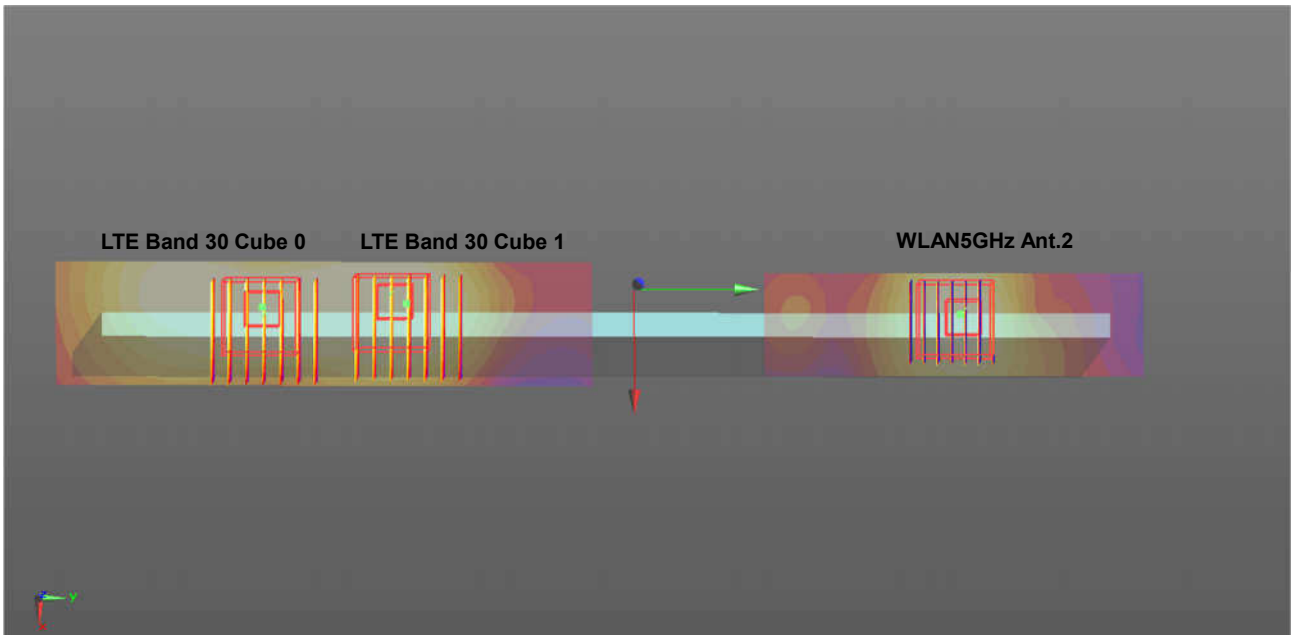

| Case #59 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 66 | Bottom Face | 0.869 | 0 | 8.77 | -6.52 | -0.39 | 178.1 | 1.73 | 0.01 | Not required |
| | WLAN5GHz Ant 2 | | 0.862 | 0 | 9.8 | 11.26 | -0.22 | | | | |



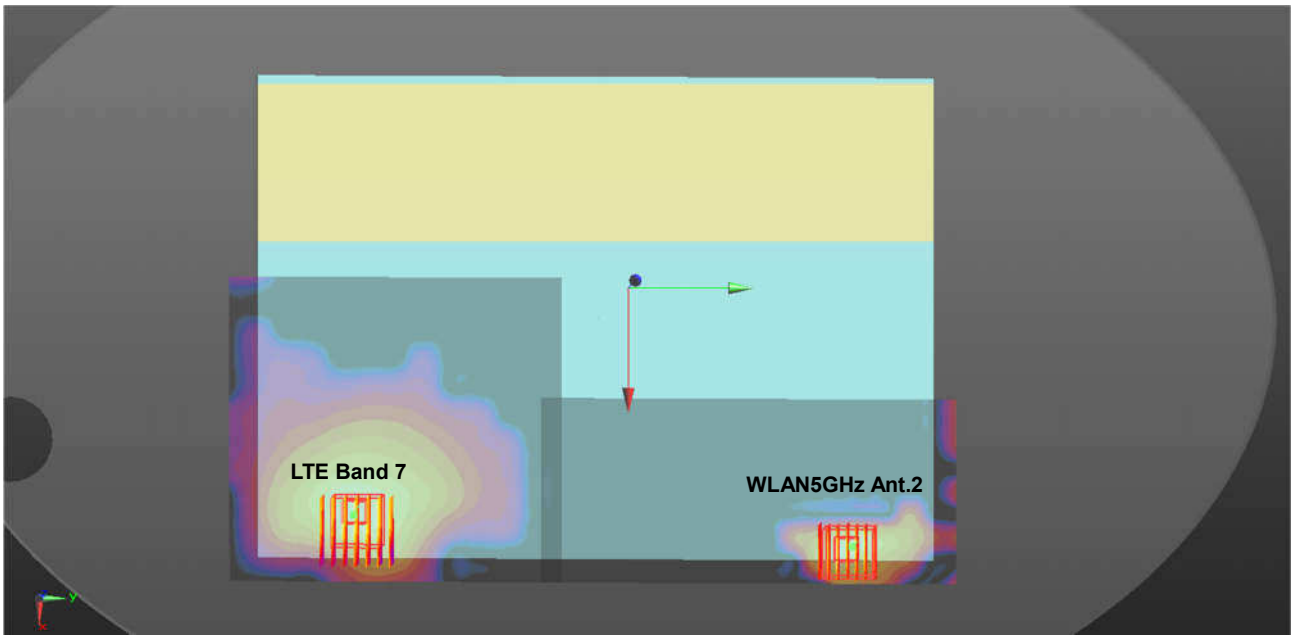
| Case #60 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 25 | Bottom Face | 0.992 | 0 | 8.77 | -6.21 | -0.4 | 175.0 | 1.85 | 0.01 | Not required |
| | WLAN5GHz Ant 2 | | 0.862 | 0 | 9.8 | 11.26 | -0.22 | | | | |



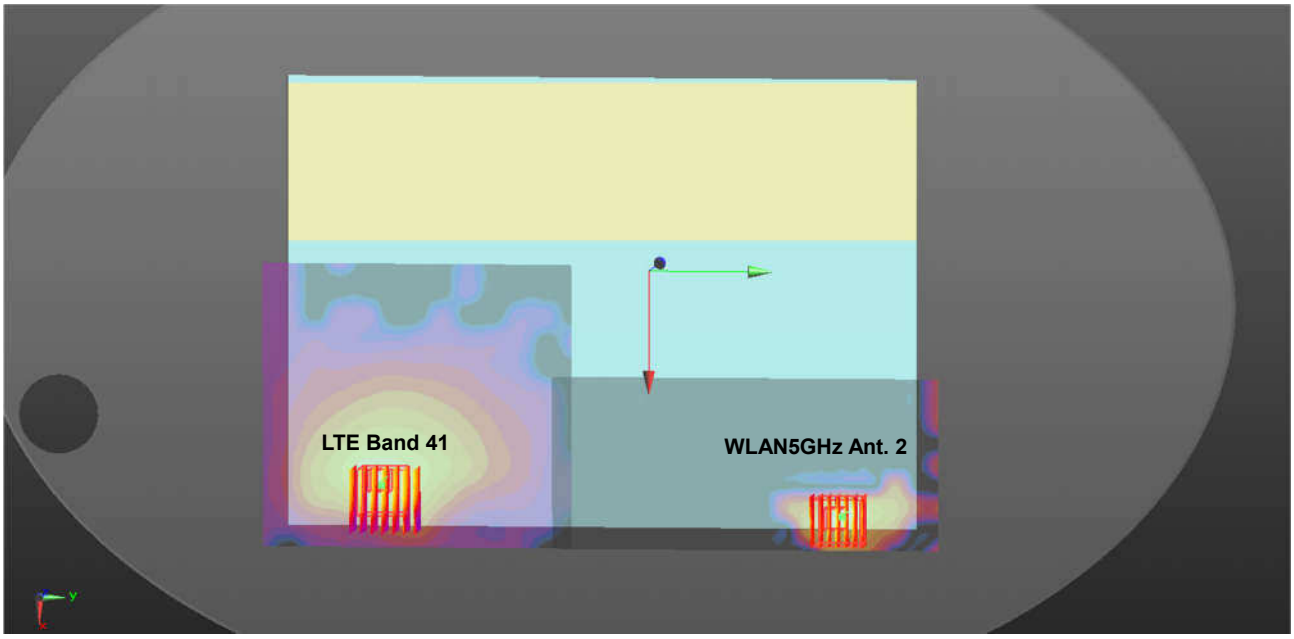

| Case #61 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 30 Cube 0 | Edge 1 | 1.192 | 11 | -0.38 | -10 | -0.39 | 203.0 | 1.61 | 0.01 | Not required |
| | WLAN5GHz Ant 2 | | 0.418 | 11 | -0.24 | 10.3 | -0.38 | | | | |
| | LTE Band 30 Cube 1 | | 0.876 | 11 | -0.6 | -6.3 | -0.42 | 166.0 | 1.29 | 0.01 | Not required |
| | WLAN5GHz Ant 2 | | 0.418 | 11 | -0.24 | 10.3 | -0.38 | | | | |



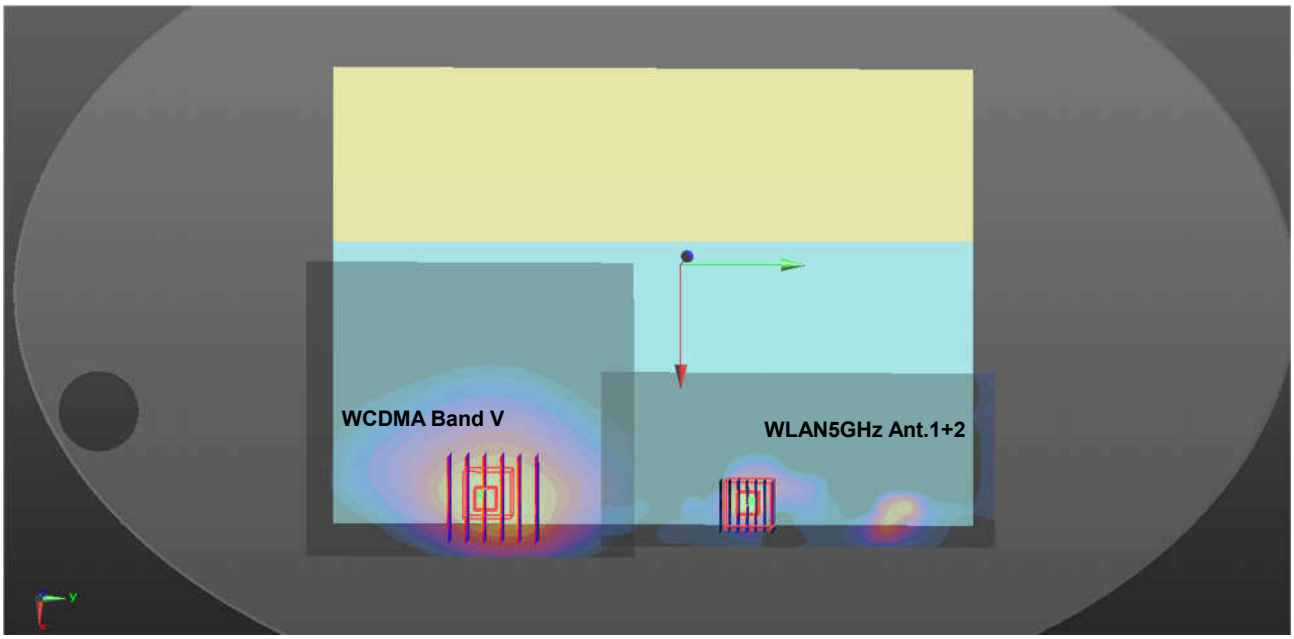
| Case #62 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 7 | Bottom Face | 1.116 | 0 | 8.72 | -10.9 | -0.27 | 221.9 | 1.98 | 0.01 | Not required |
| | WLAN5GHz Ant 2 | | 0.862 | 0 | 9.8 | 11.26 | -0.22 | | | | |



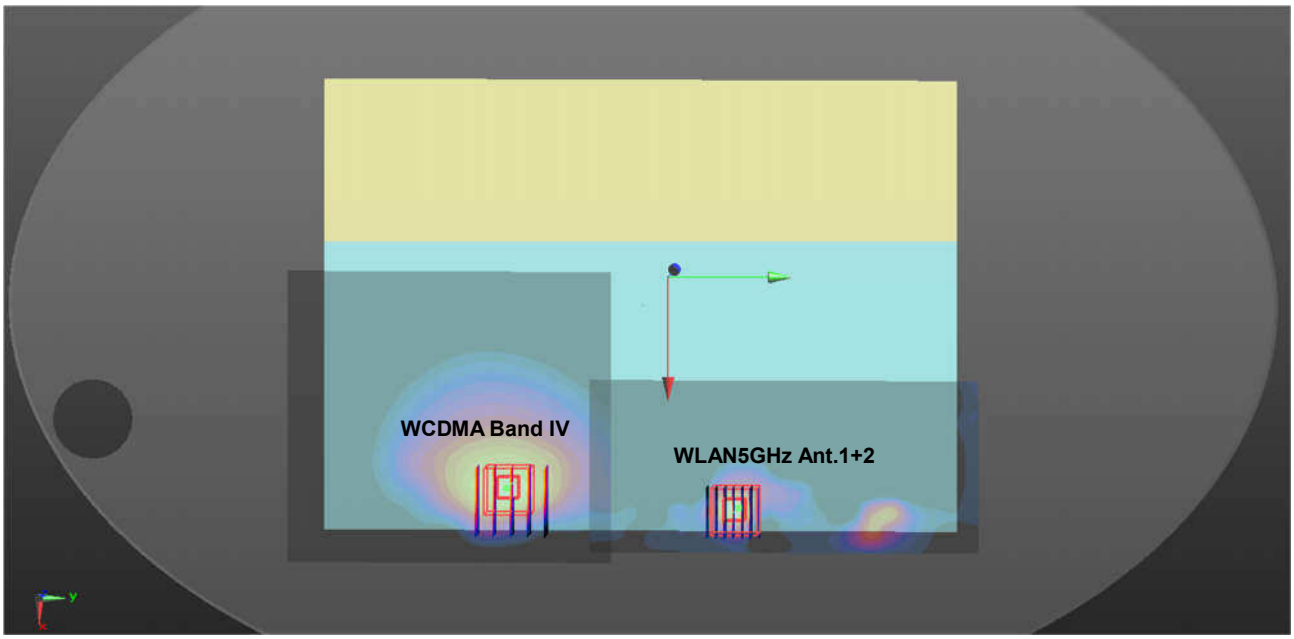

| Case #63 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 41 | Bottom Face | 0.939 | 0 | 8.52 | -10.78 | -0.36 | 220.8 | 1.80 | 0.01 | Not required |
| | WLAN5GHz Ant 2 | | 0.862 | 0 | 9.8 | 11.26 | -0.22 | | | | |



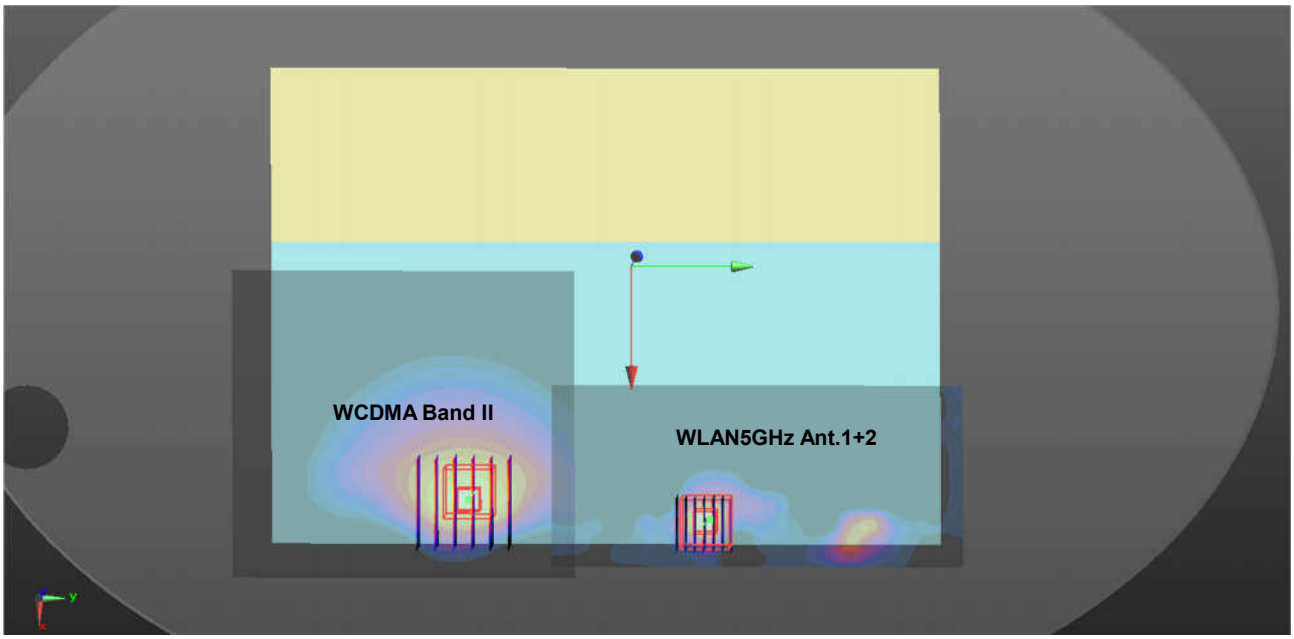
| Case #64 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA Band V | Bottom Face | 0.711 | 0 | 9.53 | -7.95 | -0.4 | 121.3 | 1.75 | 0.02 | Not required |
| | WLAN5GHz Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |



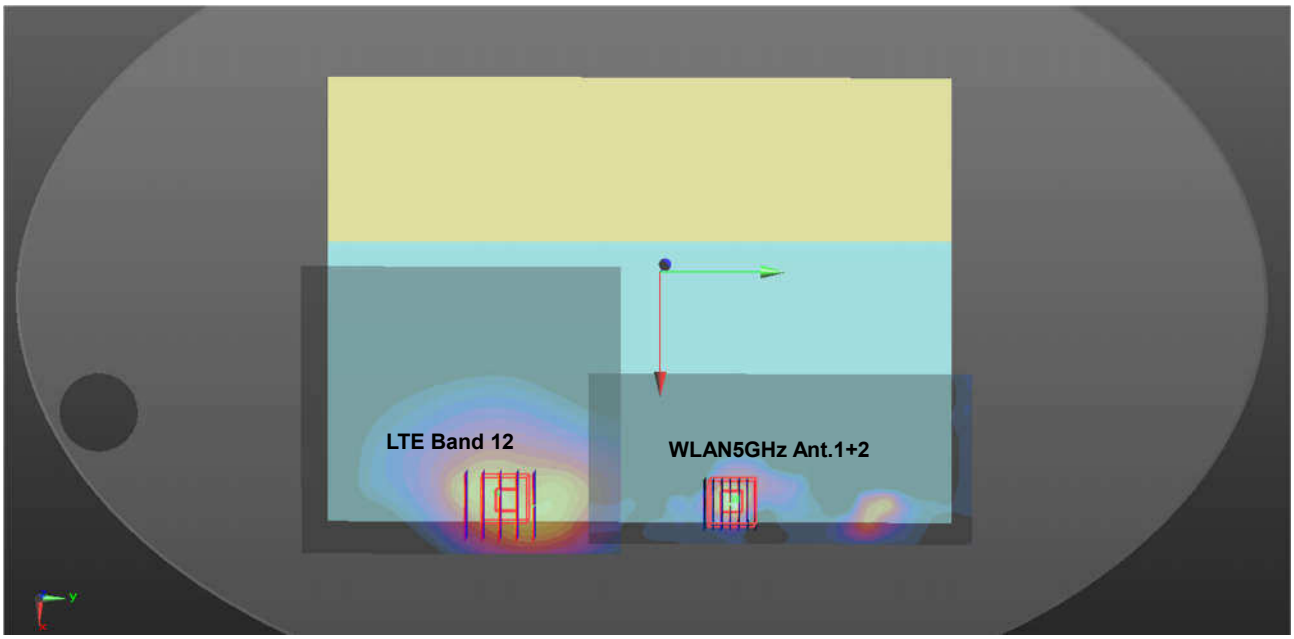

| Case #65 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA Band IV | Bottom Face | 1.054 | 0 | 8.77 | -6.52 | -0.38 | 107.3 | 2.09 | 0.03 | Not required |
| | WLAN5GHz Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |



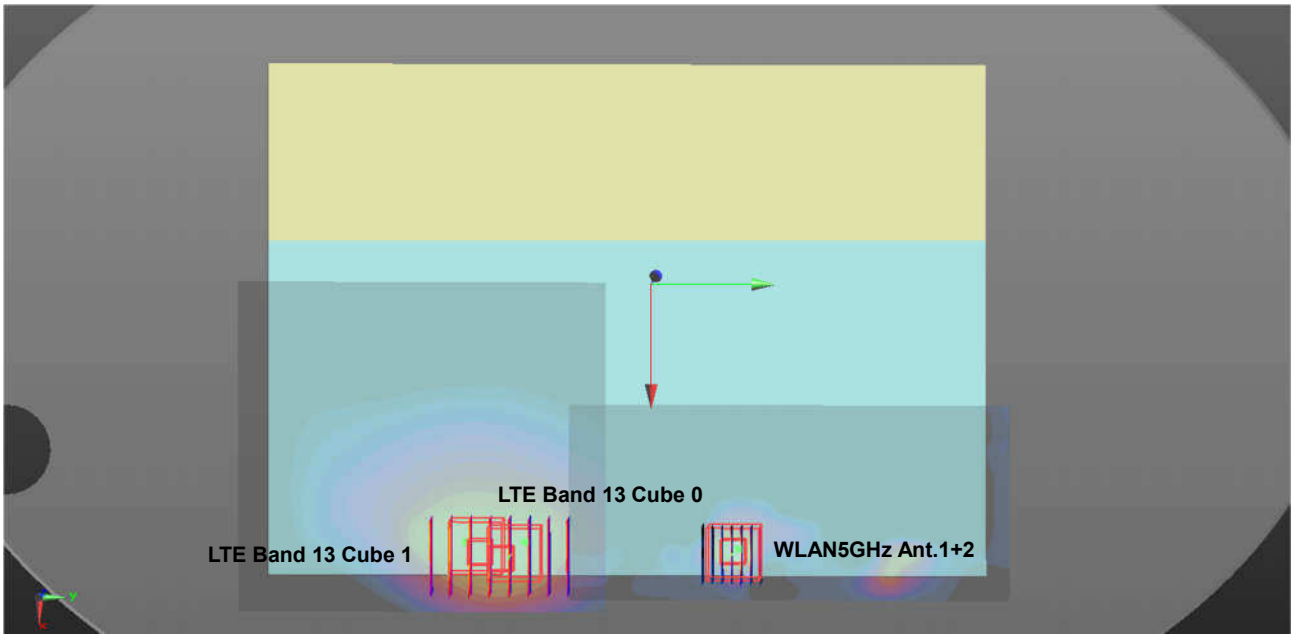
| Case #66 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | WCDMA Band II | Bottom Face | 1.122 | 0 | 8.77 | -6.21 | -0.4 | 104.2 | 2.16 | 0.03 | Not required |
| | WLAN5GHz Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |



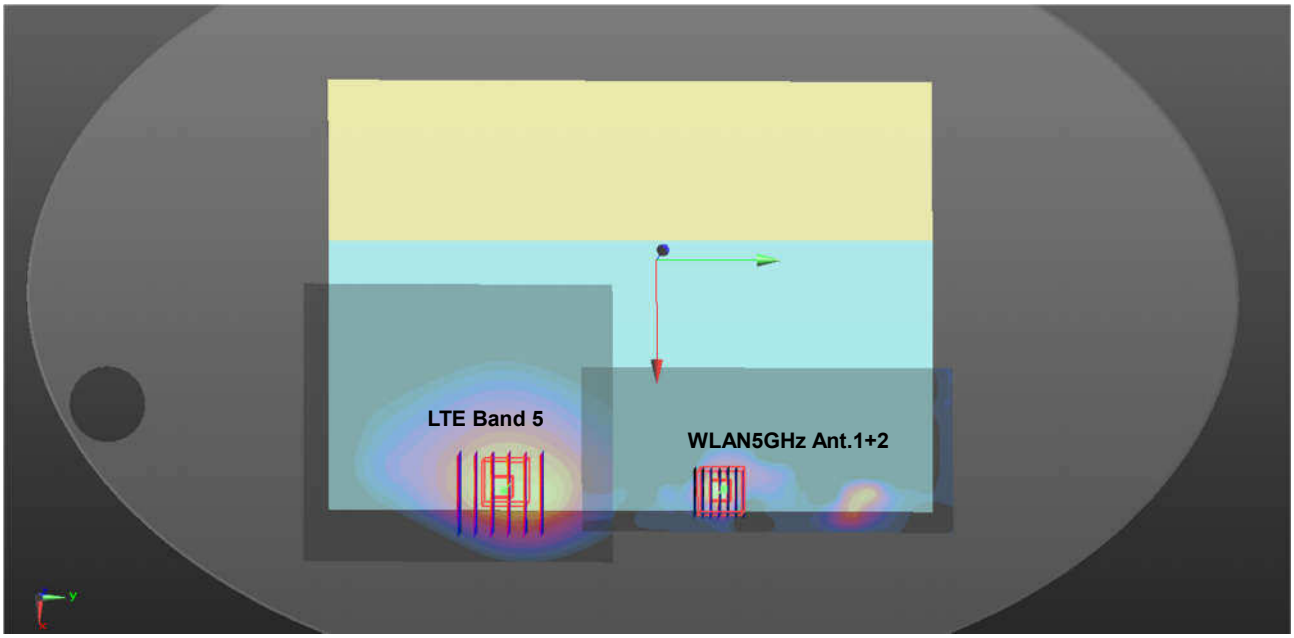

| Case #67 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 12 | Bottom Face | 0.763 | 0 | 9.85 | -5.15 | -0.4 | 93.4 | 1.80 | 0.03 | Not required |
| | WLAN5GHz Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |



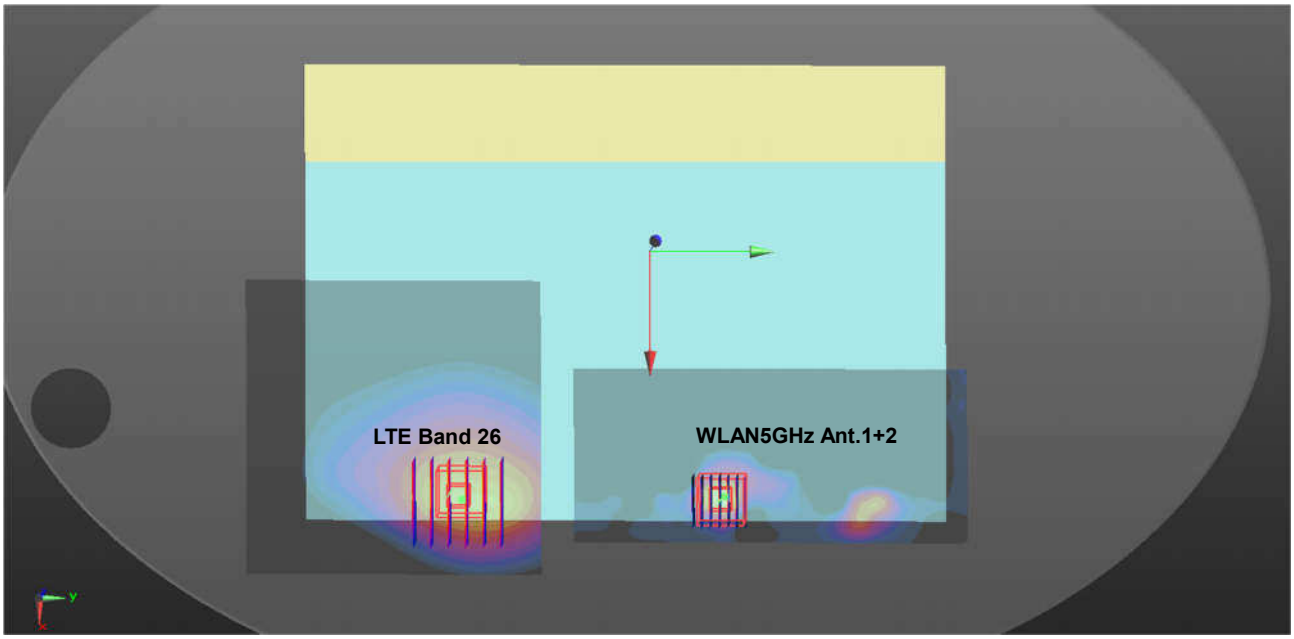
| | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Case #68 | LTE Band 13 Cube 0 | Bottom Face | 0.848 | 0 | 9.85 | -5 | -0.34 | 91.9 | 1.88 | 0.03 | Not required |
| | WLAN5GHz Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |
| | LTE Band 13 Cube 1 | | 0.802 | 0 | 9.16 | -5.15 | -0.31 | 93.38 | 1.84 | 0.03 | Not required |
| | WLAN5GHz Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |



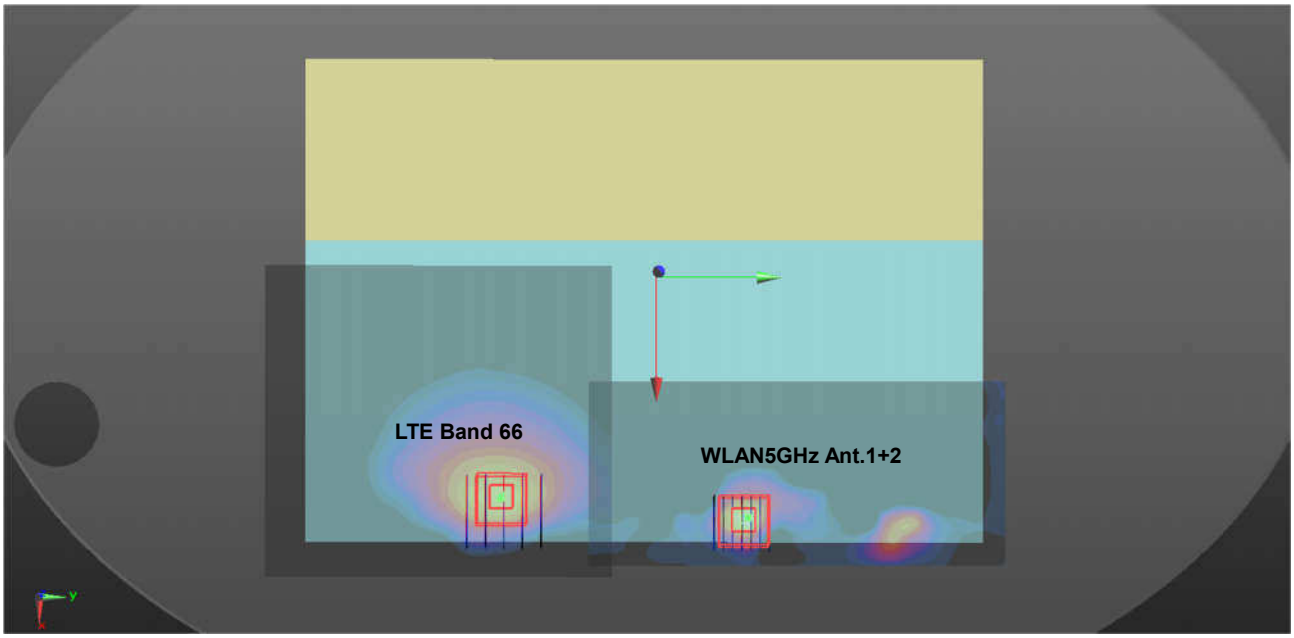

| | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Case #69 | LTE Band 5 | Bottom Face | 0.874 | 0 | 9.45 | -6.63 | -0.3 | 108.1 | 1.91 | 0.02 | Not required |
| | WLAN5GHz Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |



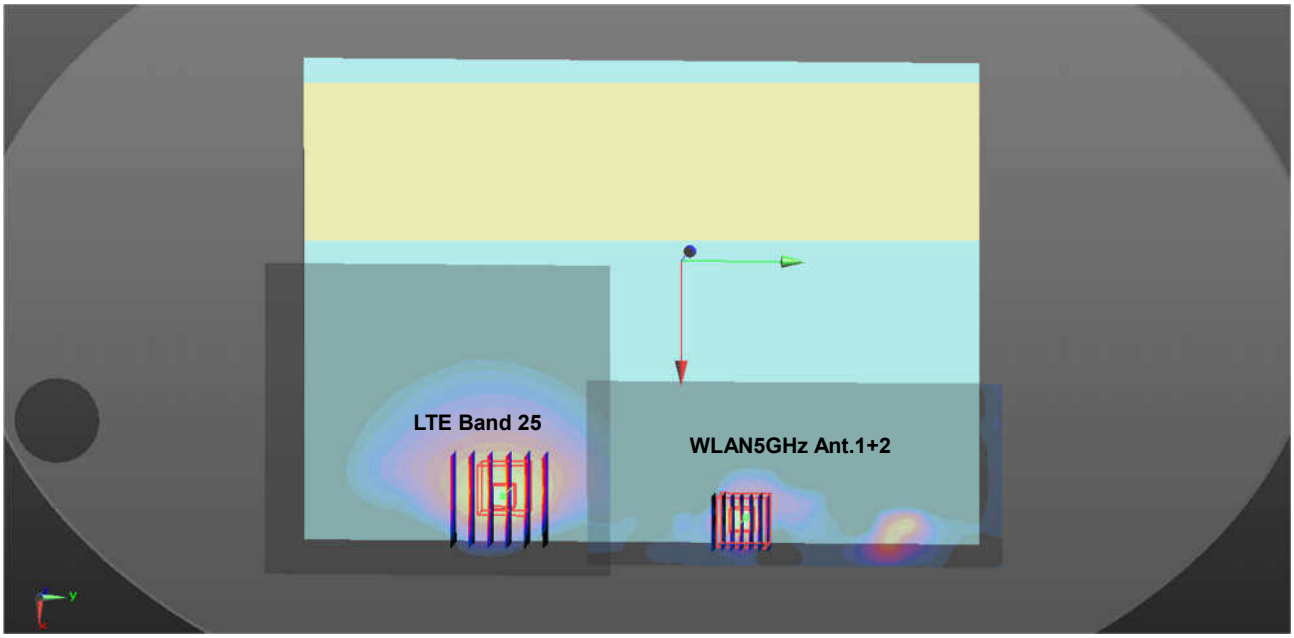
| Case #70 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 26 | Bottom Face | 0.731 | 0 | 9.45 | -8.14 | -0.4 | 123.2 | 1.77 | 0.02 | Not required |
| | WLAN5GHz Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |



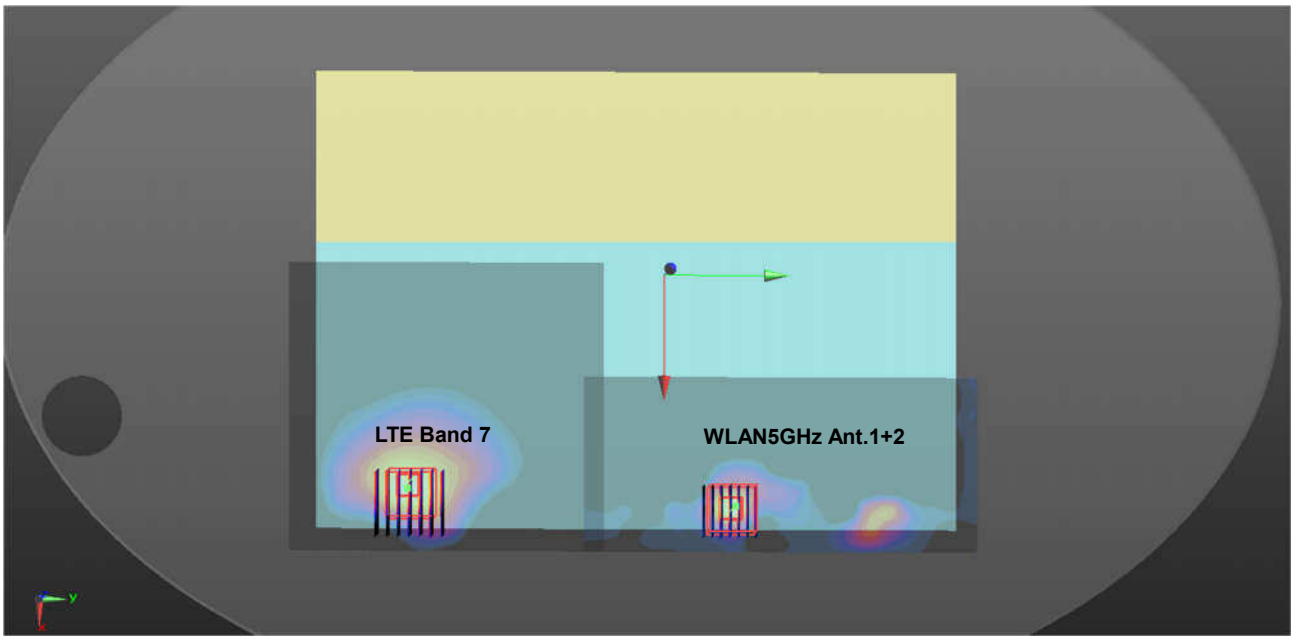

| Case #71 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 66 | Bottom Face | 0.869 | 0 | 8.77 | -6.52 | -0.39 | 107.3 | 1.90 | 0.02 | Not required |
| | WLAN5GHz Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |



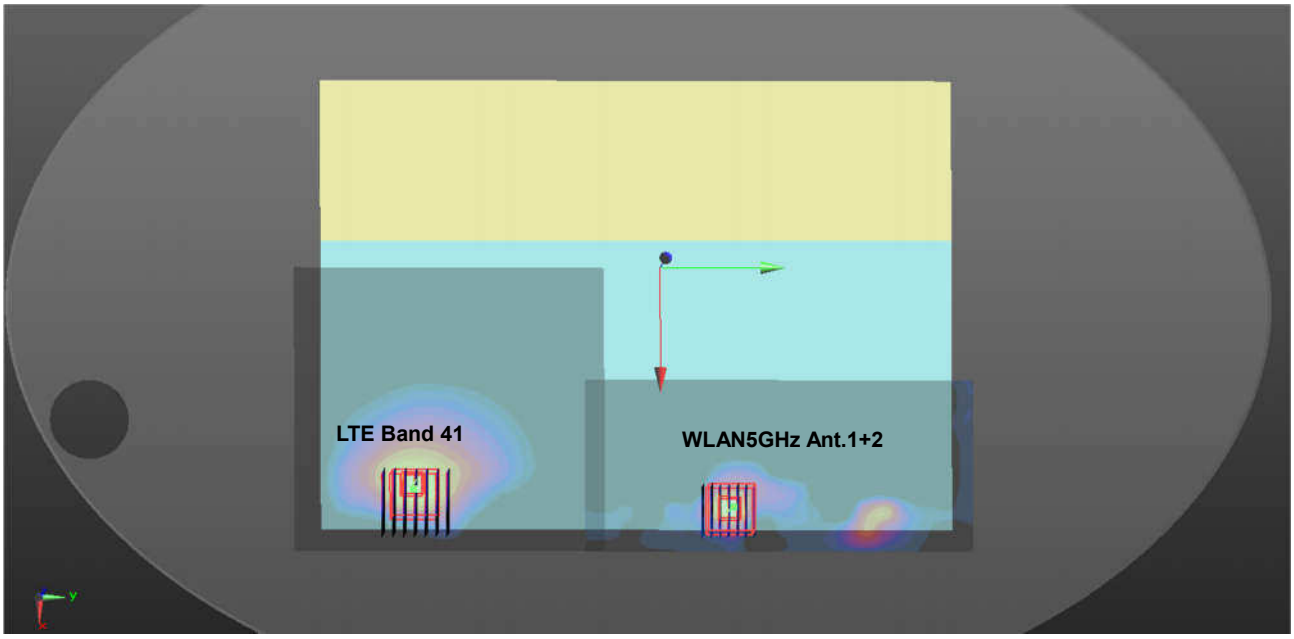
| Case #72 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 25 | Bottom Face | 0.992 | 0 | 8.77 | -6.21 | -0.4 | 104.2 | 2.03 | 0.03 | Not required |
| | WLAN5G Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |




| Case #73 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 7 | Bottom Face | 1.116 | 0 | 8.72 | -10.9 | -0.27 | 151.0 | 2.15 | 0.02 | Not required |
| | WLAN5GHz Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |



| Case #74 | Band | Position | SAR (W/kg) | Gap (mm) | SAR peak location (cm) X | Y | Z | 3D distance (mm) | Summed SAR (W/kg) | SPLSR Results | Simultaneous SAR |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | LTE Band 41 | Bottom Face | 0.939 | 0 | 8.52 | -10.78 | -0.36 | 150.0 | 1.97 | 0.02 | Not required |
| | WLAN5GHz Ant1+2 | | 1.035 | 0 | 9.54 | 4.18 | -0.21 | | | | |




**Test Engineer：** Kat Yin

# 17. Uncertainty Assessment

Per KDB 865664 D01 SAR measurement 100MHz to 6GHz, when the highest measured 1-g SAR within a frequency band is < 1.5 W/kg. The expanded SAR measurement uncertainty must be ≤ 30%, for a confidence interval of k = 2. If these conditions are met, extensive SAR measurement uncertainty analysis described in IEEE Std 1528-2013 is not required in SAR reports submitted for equipment approval. For this device, the highest measured 1-g SAR is less 1.5W/kg. Therefore, the measurement uncertainty table is not required in this report.

# 18. References


[1] FCC 47 CFR Part 2 “Frequency Allocations and Radio Treaty Matters; General Rules and Regulations”

[2] ANSI/IEEE Std. C95.1-1992, “IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz”, September 1992

[3] IEEE Std. 1528-2013, “IEEE Recommended Practice for Determining the Peak Spatial-Average Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques”, Sep 2013

[4] SPEAG DASY System Handbook

[5] FCC KDB 865664 D01 v01r04, "SAR Measurement Requirements for 100 MHz to 6 GHz", Aug 2015.

[6] FCC KDB 865664 D02 v01r02, “RF Exposure Compliance Reporting and Documentation Considerations” Oct 2015

[7] FCC KDB 447498 D01 v06, “Mobile and Portable Device RF Exposure Procedures and Equipment Authorization Policies”, Oct 2015

[8] FCC KDB 248227 D01 v02r02, “SAR Guidance for IEEE 802.11 (WiFi) Transmitters”, Oct 2015.

[9] FCC KDB 616217 D04 v01r02, “SAR Evaluation Considerations for Laptop, Notebook, Netbook and Tablet Computers”, Oct 2015

[10] FCC KDB 941225 D01 v03r01, “3G SAR MEAUREMENT PROCEDURES”, Oct 2015

[11] FCC KDB 941225 D05 v02r05, “SAR Evaluation Considerations for LTE Devices”, Dec 2015

[12] FCC KDB 941225 D05A v01r02, “Rel. 10 LTE SAR Test Guidance and KDB Inquiries”, Oct 2015

# Appendix A. Plots of System Performance Check

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/9

**System Check_Body_750MHz_20180209**

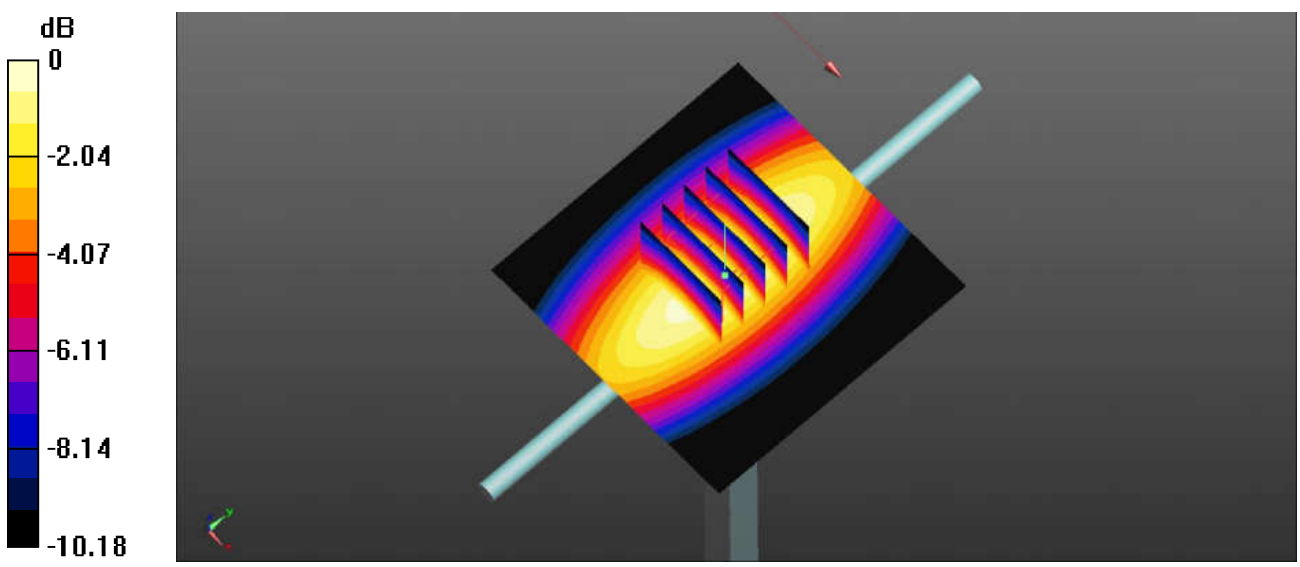
**DUT: D750V3_SN:1078**

Communication System: UID 0, CW; Frequency: 750 MHz;Duty Cycle: 1:1
Medium: MSL_750_Medium parameters used: f = 750 MHz; $\sigma$ = 0.959 S/m; $\varepsilon_r$ = 56.956; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.65, 10.65, 10.65); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.17 W/kg

**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 50.94 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 3.62 W/kg
**SAR(1 g) = 2.27 W/kg; SAR(10 g) = 1.57 W/kg**
Maximum value of SAR (measured) = 3.20 W/kg




0 dB = 3.20 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/10

**System Check_Body_835MHz_20180210**

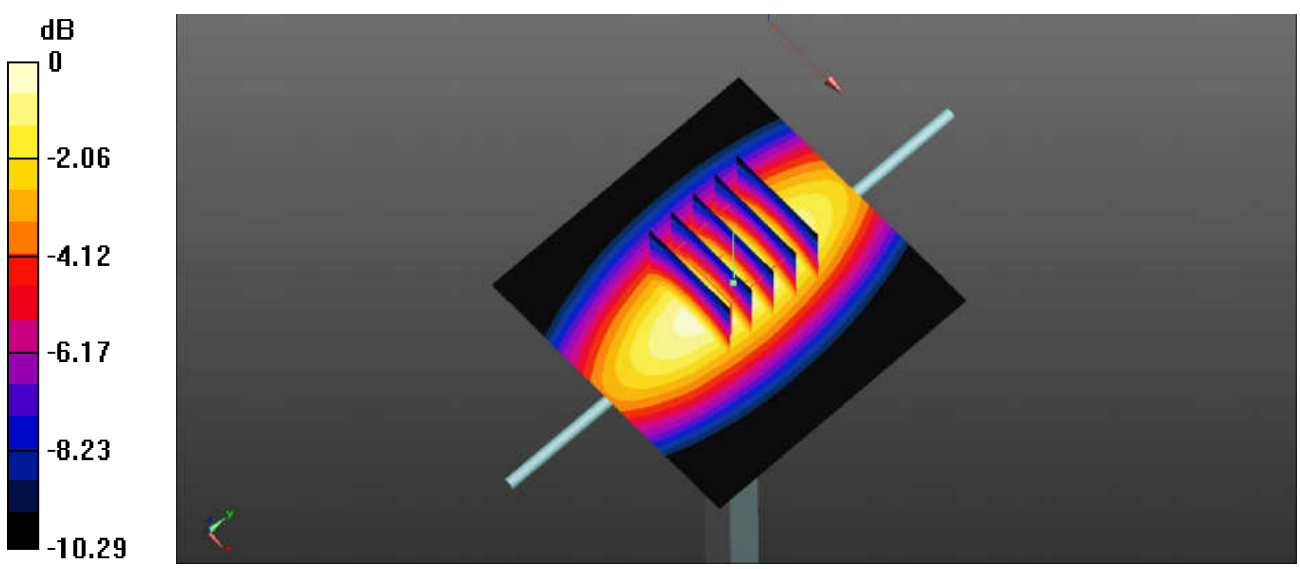
**DUT: D835V2_SN:4d120**

Communication System: UID 0, CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: MSL_835_Medium parameters used: f = 835 MHz; $\sigma$ = 0.999 S/m; $\varepsilon_r$ = 55.505; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.33, 10.33, 10.33); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 3.52 W/kg

**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 52.80 V/m; Power Drift = 0.02 dB
Peak SAR (extrapolated) = 3.96 W/kg
**SAR(1 g) = 2.57 W/kg; SAR(10 g) = 1.77 W/kg**
Maximum value of SAR (measured) = 3.54 W/kg




0 dB = 3.54 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/6

**System Check_Body_1750MHz_20180206**

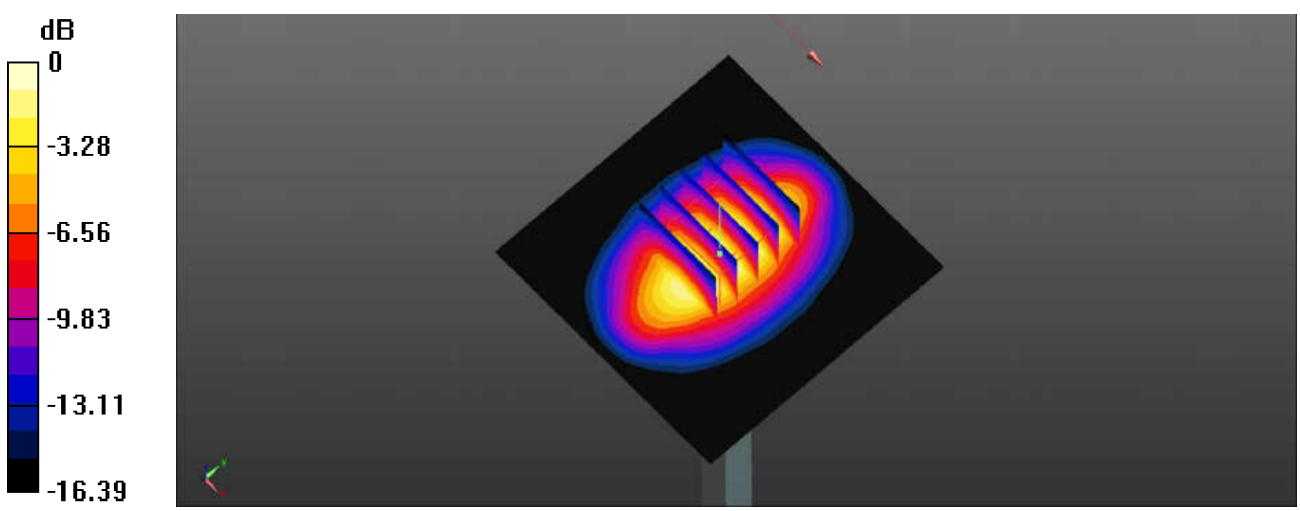
**DUT: D1750V2_SN:1023**

Communication System: UID 0, CW; Frequency: 1750 MHz;Duty Cycle: 1:1
Medium: MSL_1750_Medium parameters used: f = 1750 MHz; $\sigma$ = 1.514 S/m; $\varepsilon_r$ = 53.694; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.71, 8.71, 8.71); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 14.1 W/kg

**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 94.58 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 16.5 W/kg
**SAR(1 g) = 9.49 W/kg; SAR(10 g) = 5.11 W/kg**
Maximum value of SAR (measured) = 14.0 W/kg




0 dB = 14.0 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/8

**System Check_Body_1900MHz_20180208**

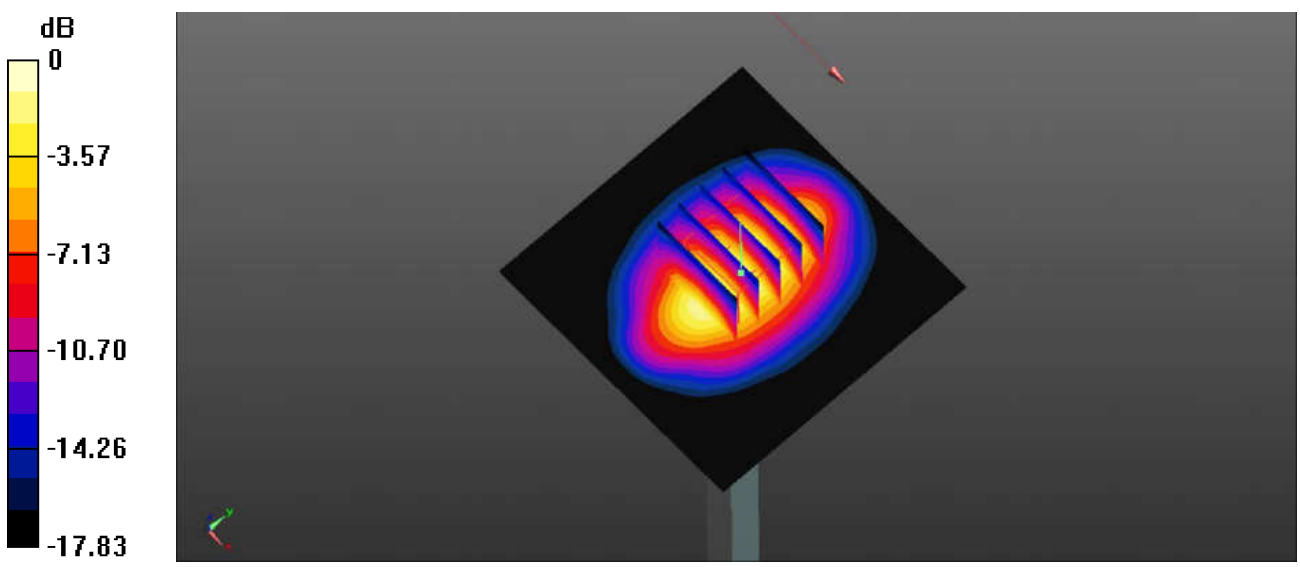
**DUT: D1900V2_SN:5d142**

Communication System: UID 0, CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: MSL_1900_Medium parameters used: f = 1900 MHz; $\sigma$ = 1.561 S/m; $\varepsilon_r$ = 53.103; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.3, 8.3, 8.3); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=250mW/Area Scan (61x61x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 15.9 W/kg

**Pin=250mW/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 85.24 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 18.9 W/kg
**SAR(1 g) = 10.4 W/kg; SAR(10 g) = 5.39 W/kg**
Maximum value of SAR (measured) = 15.9 W/kg




0 dB = 15.9 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/7

**System Check_Body_2300MHz_20180207**

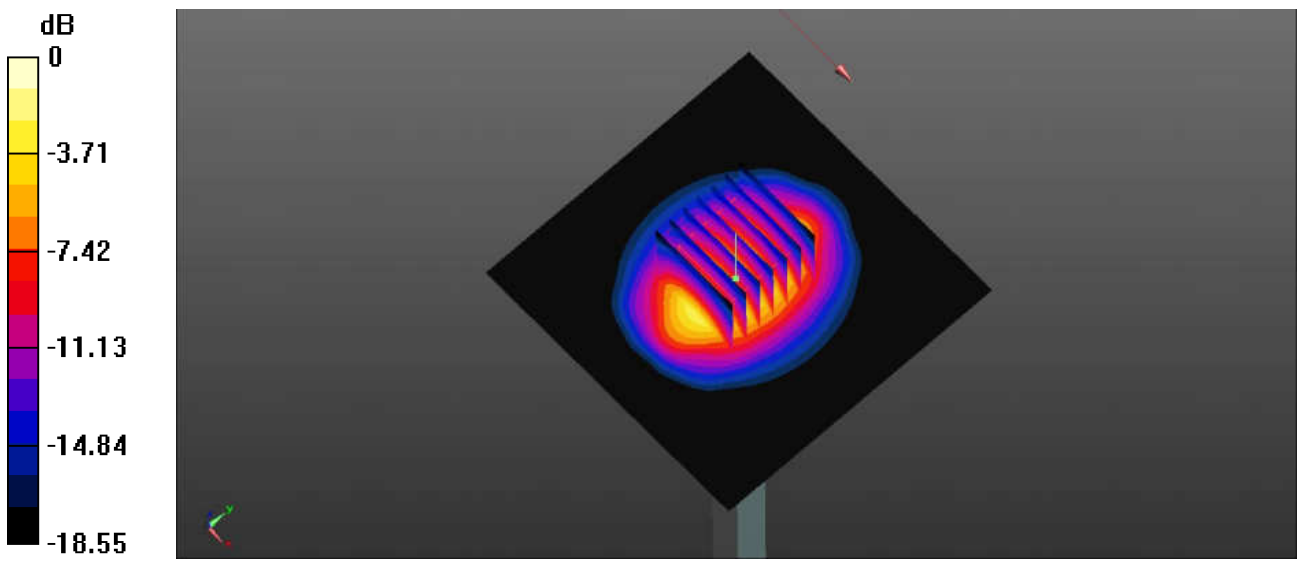
**DUT: D2300V2_SN:1055**

Communication System: UID 0, CW (0); Frequency: 2300 MHz;Duty Cycle: 1:1
Medium: MSL_2300_Medium parameters used: f = 2300 MHz; $\sigma$ = 1.766 S/m; $\varepsilon_r$ = 53.03; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.6 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.1, 8.1, 8.1); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=250mW/Area Scan (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 19.0 W/kg

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.77 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 22.9 W/kg
**SAR(1 g) = 12.1 W/kg; SAR(10 g) = 5.93 W/kg**
Maximum value of SAR (measured) = 19.2 W/kg




0 dB = 19.2 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/3/10

**System Check_Body_2450MHz_20180310**

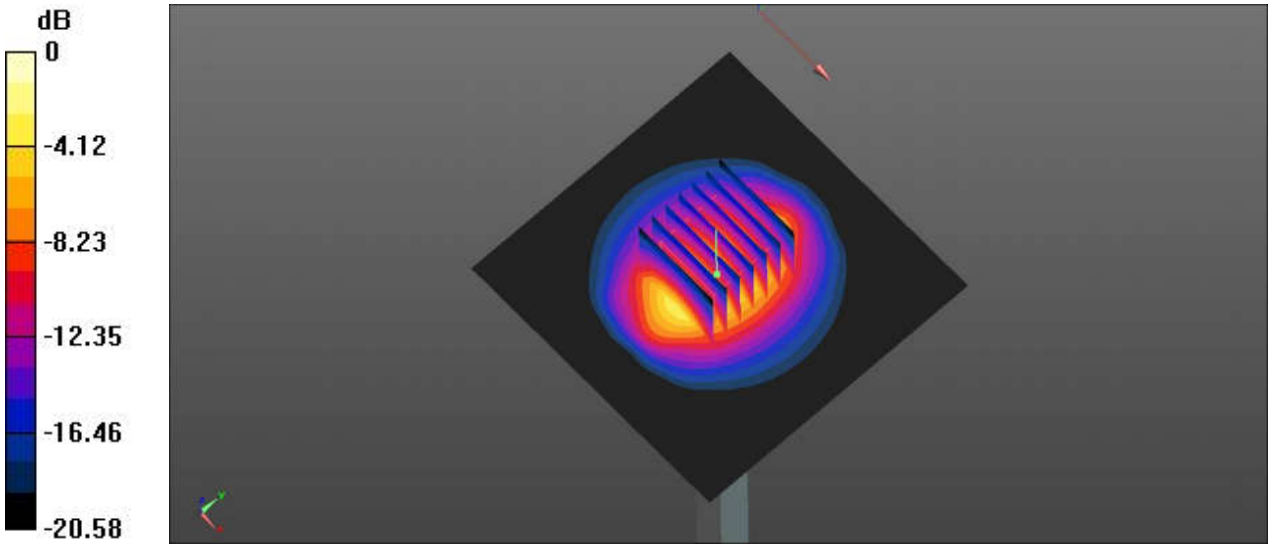
**DUT: D2450V2_SN:908**

Communication System: UID 0, CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: MSL_2450_Medium parameters used: f = 2450 MHz; $\sigma$ = 1.964 S/m; $\varepsilon_r$ = 52.5; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.99, 7.99, 7.99); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=250mW/Area Scan (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 21.6 W/kg

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 87.13 V/m; Power Drift = -0.02 dB
Peak SAR (extrapolated) = 26.4 W/kg
**SAR(1 g) = 13.3 W/kg; SAR(10 g) = 6.27 W/kg**
Maximum value of SAR (measured) = 21.8 W/kg




0 dB = 21.8 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/7

**System Check_Body_2600MHz_20180207**

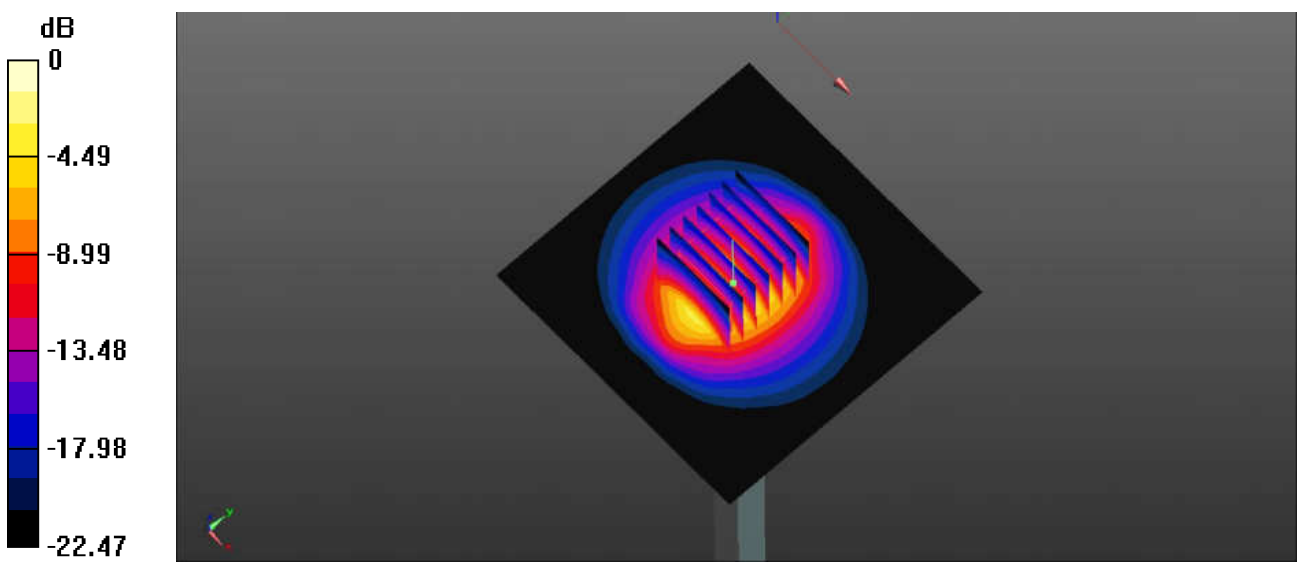
**DUT: D2600V2_SN:1112**

Communication System: UID 0, CW; Frequency: 2600 MHz;Duty Cycle: 1:1
Medium: MSL_2600_Medium parameters used: f = 2600 MHz; $\sigma$ = 2.171 S/m; $\varepsilon_r$ = 51.943; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.6 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.71, 7.71, 7.71); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=250mW/Area Scan (81x81x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 24.3 W/kg

**Pin=250mW/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 85.83 V/m; Power Drift = 0.03 dB
Peak SAR (extrapolated) = 30.5 W/kg
**SAR(1 g) = 14.1 W/kg; SAR(10 g) = 6.29 W/kg**
Maximum value of SAR (measured) = 24.4 W/kg




0 dB = 24.4 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/3/11

**System Check_Body_5200MHz_20180311**

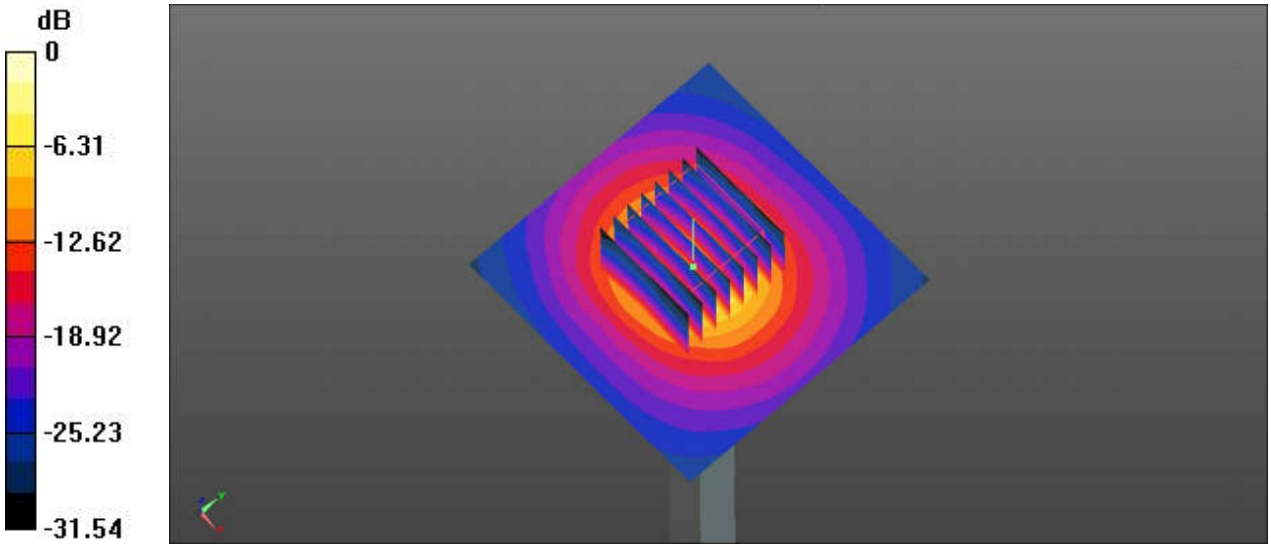
**DUT: D5GHzV2_SN:1128**

Communication System: UID 0, CW (0); Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: MSL_5200_Medium parameters used: f = 5200 MHz; $\sigma$ = 5.251 S/m; $\varepsilon_r$ = 49.528; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(5.41, 5.41, 5.41); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=100mw/Area Scan (71x71x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 16.0 W/kg

**Pin=100mw/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 38.23 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 28.6 W/kg
**SAR(1 g) = 6.88 W/kg; SAR(10 g) = 1.91 W/kg**
Maximum value of SAR (measured) = 16.5 W/kg




0 dB = 16.5 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/3/11

**System Check_Body_5300MHz_20180311**

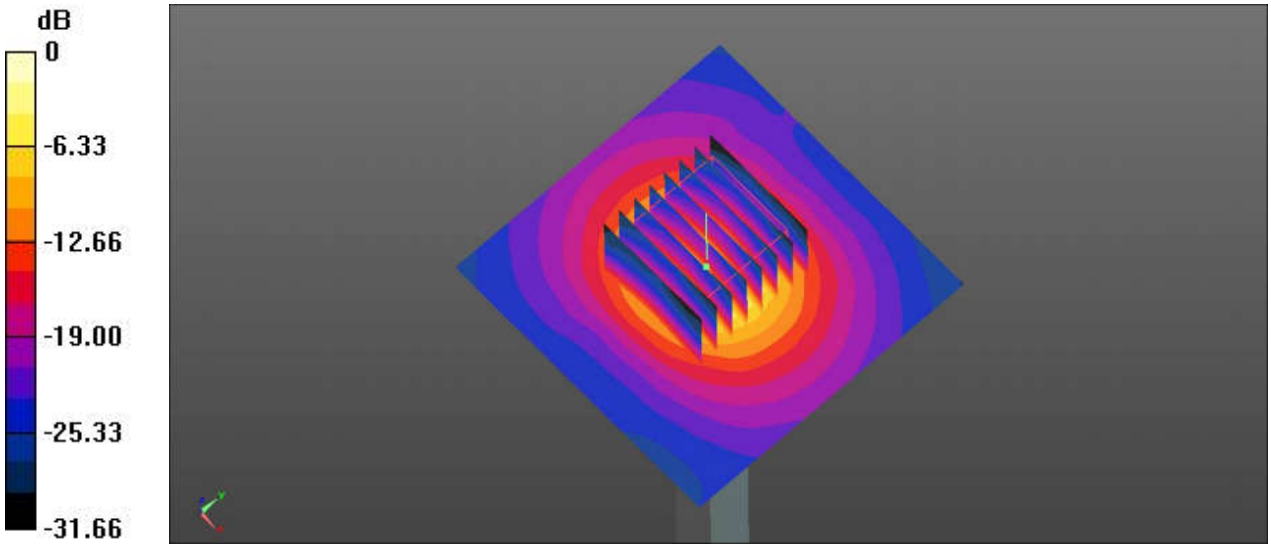
**DUT: D5GHzV2_SN:1128**

Communication System: UID 0, CW (0); Frequency: 5300 MHz;Duty Cycle: 1:1
Medium: MSL_5300_Medium parameters used: f = 5300 MHz; $\sigma$ = 5.377 S/m; $\varepsilon_r$ = 49.382; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(5.2, 5.2, 5.2); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=100mw/Area Scan (71x71x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.3 W/kg

**Pin=100mw/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 41.18 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 30.9 W/kg
**SAR(1 g) = 7.71 W/kg; SAR(10 g) = 2.18 W/kg**
Maximum value of SAR (measured) = 18.2 W/kg




0 dB = 18.2 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/3/11

**System Check_Body_5500MHz_20180311**

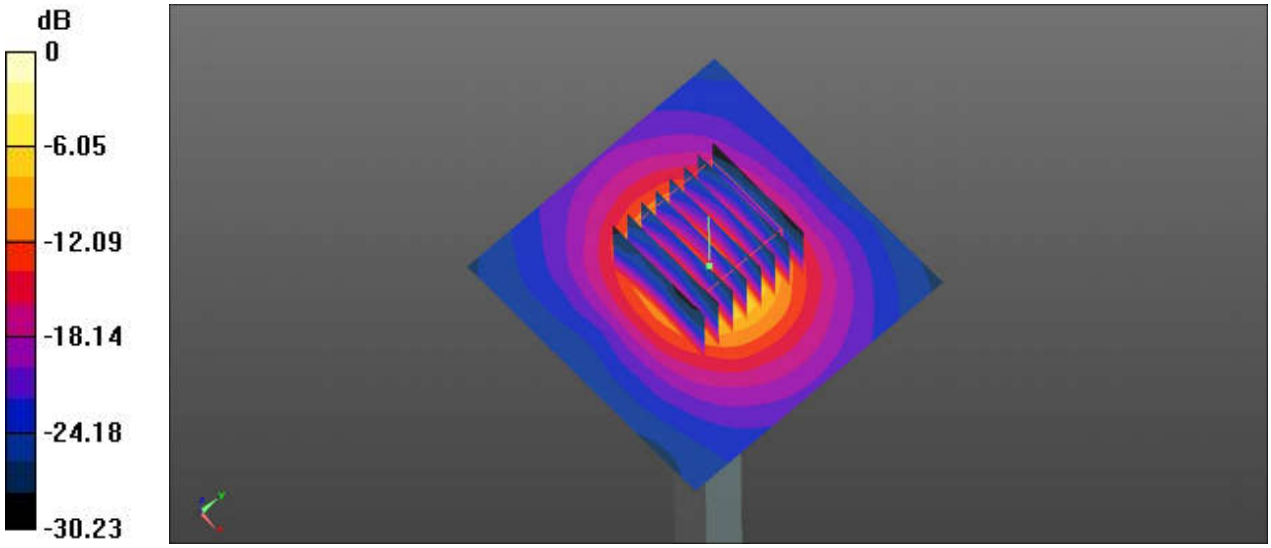
**DUT: D5GHzV2_SN:1128**

Communication System: UID 0, CW (0); Frequency: 5500 MHz;Duty Cycle: 1:1
Medium: MSL_5500_Medium parameters used: f = 5500 MHz; $\sigma$ = 5.63 S/m; $\varepsilon_r$ = 49.098; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(4.62, 4.62, 4.62); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=100mw/Area Scan (71x71x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.9 W/kg

**Pin=100mw/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 41.22 V/m; Power Drift = -0.03 dB
Peak SAR (extrapolated) = 31.9 W/kg
**SAR(1 g) = 8.18 W/kg; SAR(10 g) = 2.33 W/kg**
Maximum value of SAR (measured) = 20.1 W/kg




0 dB = 20.1 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/3/11

**System Check_Body_5600MHz_20180311**

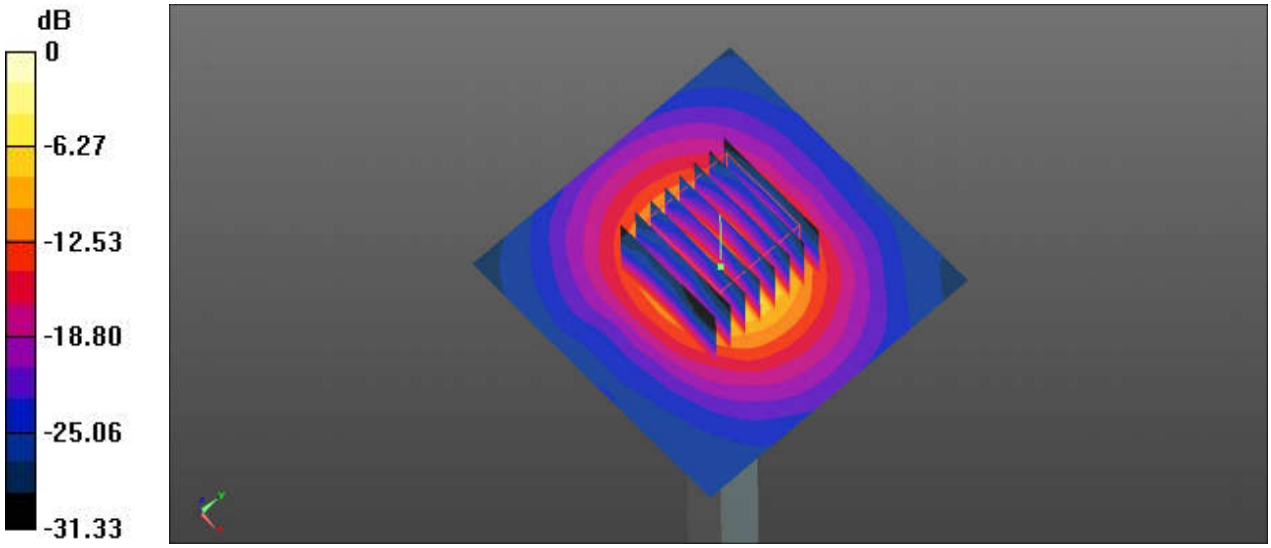
**DUT: D5GHzV2_SN:1128**

Communication System: UID 0, CW (0); Frequency: 5600 MHz;Duty Cycle: 1:1
Medium: MSL_5600_Medium parameters used: f = 5600 MHz; $\sigma$ = 5.767 S/m; $\varepsilon_r$ = 48.953; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(4.51, 4.51, 4.51); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=100mw/Area Scan (71x71x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 20.1 W/kg

**Pin=100mw/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 41.31 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 34.3 W/kg
**SAR(1 g) = 8.44 W/kg; SAR(10 g) = 2.41 W/kg**
Maximum value of SAR (measured) = 21.2 W/kg




0 dB = 21.2 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/3/11

**System Check_Body_5800MHz_20180311**

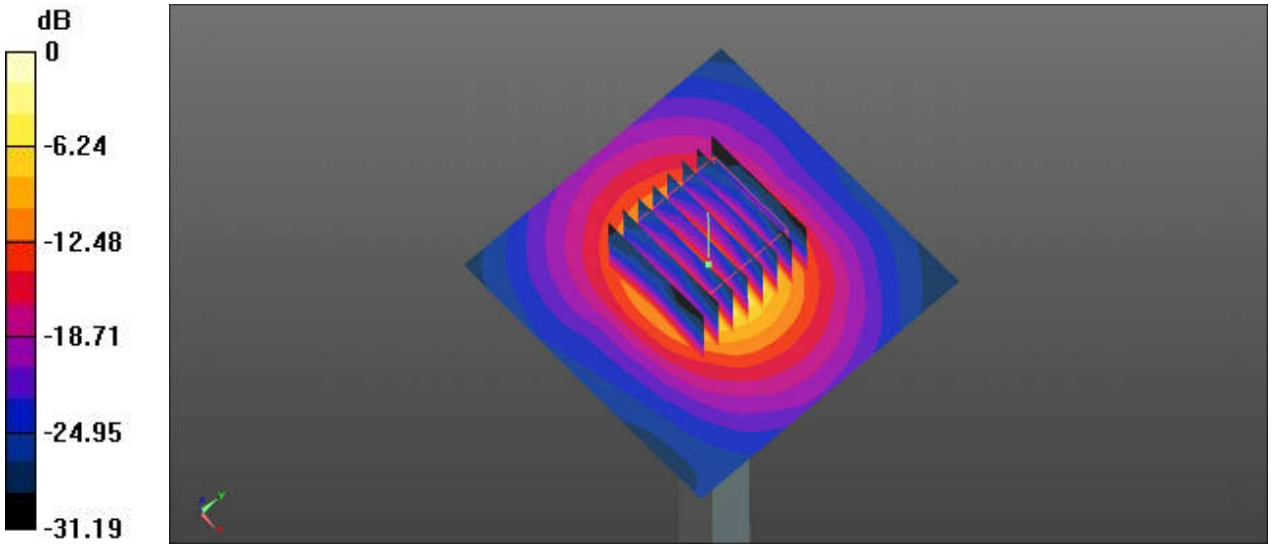
**DUT: D5GHzV2_SN:1128**

Communication System: UID 0, CW (0); Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: MSL_5800_Medium parameters used: f = 5800 MHz; $\sigma$ = 6.038 S/m; $\varepsilon_r$ = 48.684; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(4.64, 4.64, 4.64); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Pin=100mw/Area Scan (71x71x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 18.0 W/kg

**Pin=100mw/Zoom Scan (8x8x7)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 37.93 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 31.4 W/kg
**SAR(1 g) = 7.37 W/kg; SAR(10 g) = 2.09 W/kg**
Maximum value of SAR (measured) = 18.0 W/kg




0 dB = 18.0 W/kg

# Appendix B. Plots of High SAR Measurement

The plots are shown as follows.

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/10

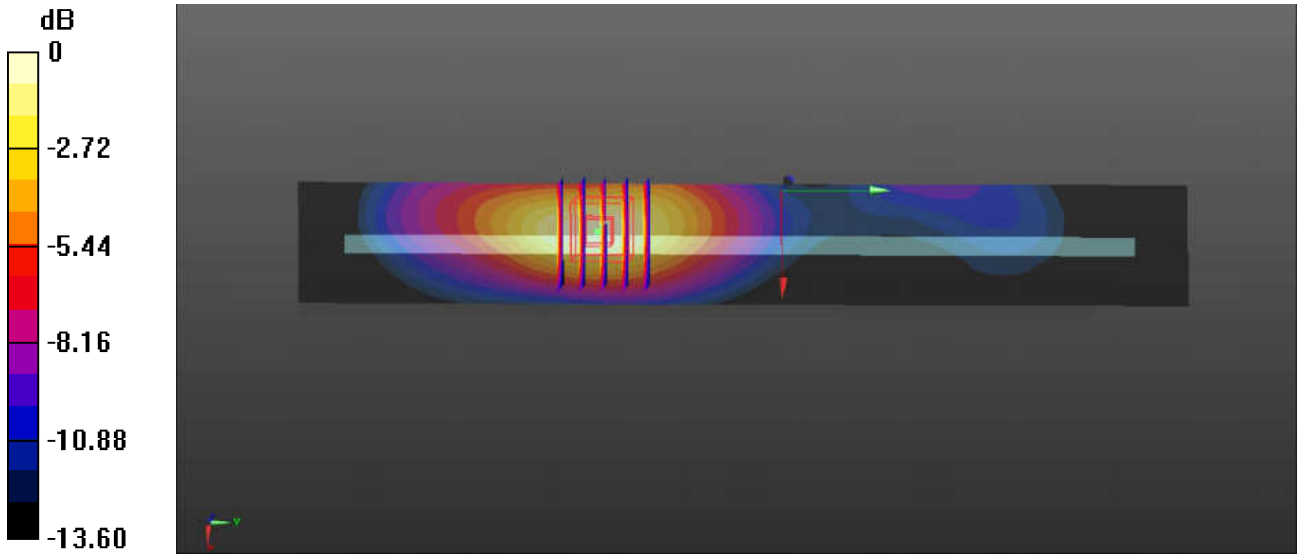
**#01-WCDMA Band V_RMC 12.2Kbps_Edge 1_11mm_Ch4233_Sensor off**

Communication System: UID 0, WCDMA (0); Frequency: 846.6 MHz;Duty Cycle: 1:1
Medium: MSL_835_Medium parameters used: f = 846.6 MHz; $\sigma$ = 1.009 S/m; $\varepsilon_r$ = 55.426; $\rho$ = 1000kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.33, 10.33, 10.33); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch4233/Area Scan (31x221x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.38 W/kg

**Ch4233/Zoom Scan (6x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.21 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.71 W/kg
**SAR(1 g) = 0.972 W/kg; SAR(10 g) = 0.590 W/kg**
Maximum value of SAR (measured) = 1.41 W/kg




0 dB = 1.41 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/6

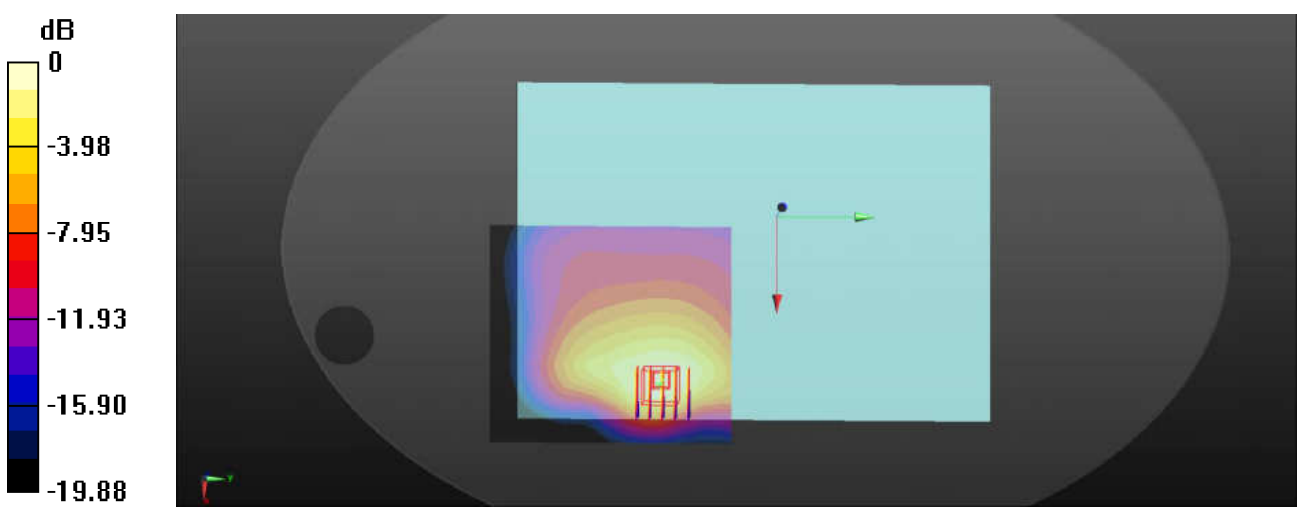
**#02-WCDMA Band IV_RMC 12.2Kbps_Bottom Face_11mm_Ch1312_Sensor off**

Communication System: UID 0, WCDMA (0); Frequency: 1712.4 MHz;Duty Cycle: 1:1
Medium: MSL_1750_Medium parameters used: f = 1712.4 MHz; $\sigma$ = 1.476 S/m; $\varepsilon_r$ = 53.811; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.71, 8.71, 8.71); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch1312/Area Scan (91x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.36 W/kg

**Ch1312/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.580 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.51 W/kg
**SAR(1 g) = 0.919 W/kg; SAR(10 g) = 0.526 W/kg**
Maximum value of SAR (measured) = 1.29 W/kg




0 dB = 1.29 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/8

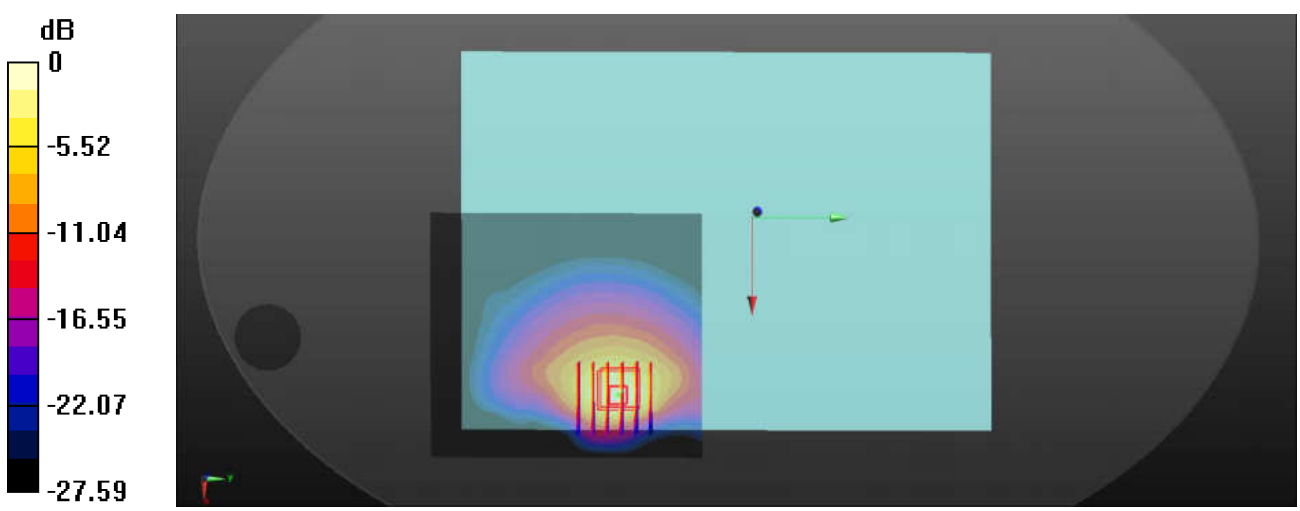
**#03-WCDMA Band II_RMC 12.2Kbps_Bottom Face_0mm_Ch9538_Sensor on**

Communication System: UID 0, WCDMA (0); Frequency: 1907.6 MHz;Duty Cycle: 1:1
Medium: MSL_1900_Medium parameters used: f = 1907.6 MHz; $\sigma$ = 1.57 S/m; $\varepsilon_r$ = 53.081; $\rho$ = 1000kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.3, 8.3, 8.3); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch9538/Area Scan (91x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.97 W/kg

**Ch9538/Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.8680 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 2.25 W/kg
**SAR(1 g) = 0.964 W/kg; SAR(10 g) = 0.451 W/kg**
Maximum value of SAR (measured) = 1.66 W/kg




0 dB = 1.66 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/9

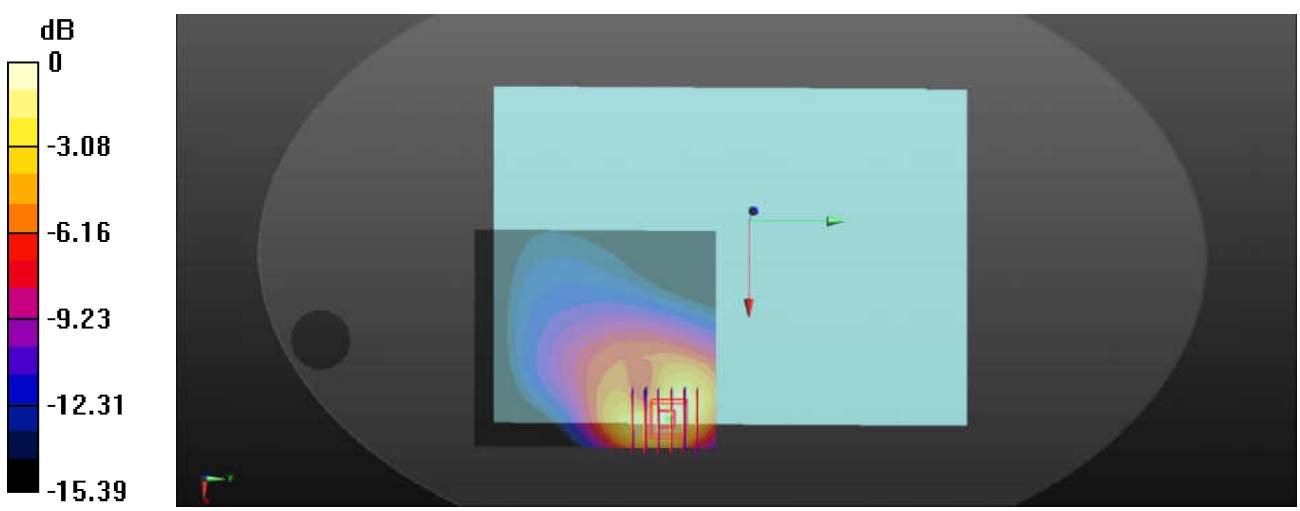
**#04-LTE Band 12_10M_QPSK_1RB_0offset_Bottom Face_11mm_Ch23095_Sensor off**

Communication System: UID 0, FDD-LTE (0); Frequency: 707.5 MHz;Duty Cycle: 1:1
Medium: MSL_750_Medium parameters used: f = 707.5 MHz; $\sigma$ = 0.932 S/m; $\varepsilon_r$ = 57.365; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.65, 10.65, 10.65); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch23095/Area Scan (91x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.21 W/kg

**Ch23095/Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.477 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 1.48 W/kg
**SAR(1 g) = 0.851 W/kg; SAR(10 g) = 0.506 W/kg**
Maximum value of SAR (measured) = 1.25 W/kg




0 dB = 1.25 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/9

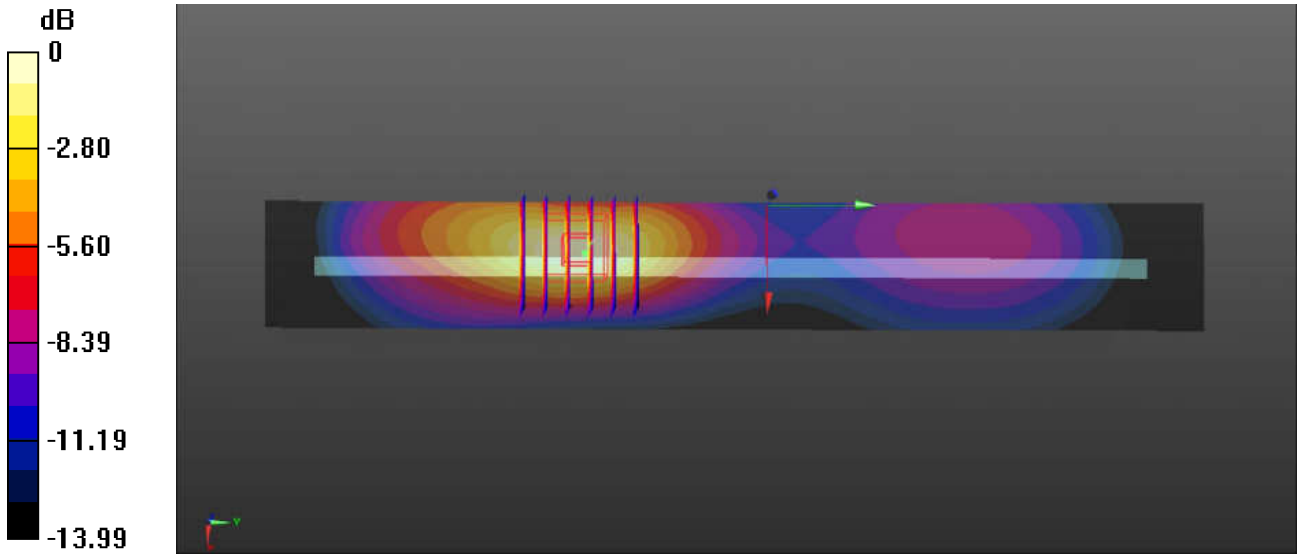
**#05-LTE Band 13_10M_QPSK_1RB_25offset_Edge 1_11mm_Ch23230_Sensor off**

Communication System: UID 0, FDD-LTE (0); Frequency: 782 MHz;Duty Cycle: 1:1
Medium: MSL_750_Medium parameters used: f = 782 MHz; $\sigma$ = 0.997 S/m; $\varepsilon_r$ = 56.56; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.8 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.65, 10.65, 10.65); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch23230/Area Scan (31x221x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.27 W/kg

**Ch23230/Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.77 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.55 W/kg
**SAR(1 g) = 0.893 W/kg; SAR(10 g) = 0.537 W/kg**
Maximum value of SAR (measured) = 1.29 W/kg




0 dB = 1.29 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/10

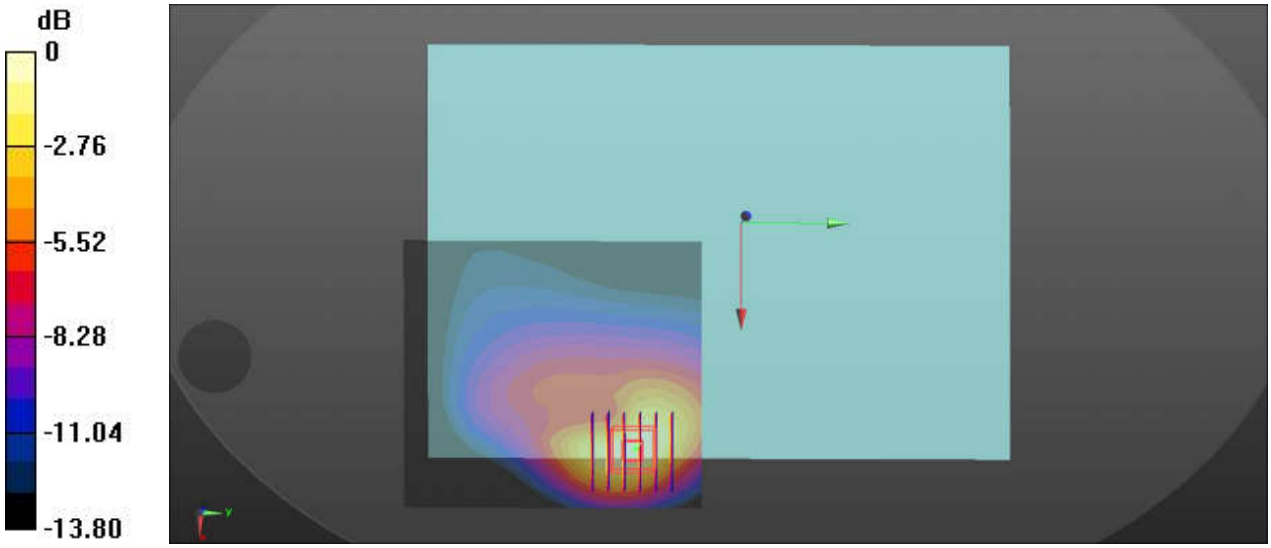
**#06-LTE Band 5_10M_QPSK_1RB_0offset_Bottom Face_11mm_Ch20525_Sensor off**

Communication System: UID 0, FDD-LTE (0); Frequency: 836.5 MHz;Duty Cycle: 1:1
Medium: MSL_835_Medium parameters used: f = 836.5 MHz; $\sigma$ = 1.001 S/m; $\varepsilon_r$ = 55.497; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.33, 10.33, 10.33); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch20525/Area Scan (91x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.28 W/kg

**Ch20525/Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.784 V/m; Power Drift = 0.04 dB
Peak SAR (extrapolated) = 1.51 W/kg
**SAR(1 g) = 0.869 W/kg; SAR(10 g) = 0.527 W/kg**
Maximum value of SAR (measured) = 1.26 W/kg




0 dB = 1.26 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/10

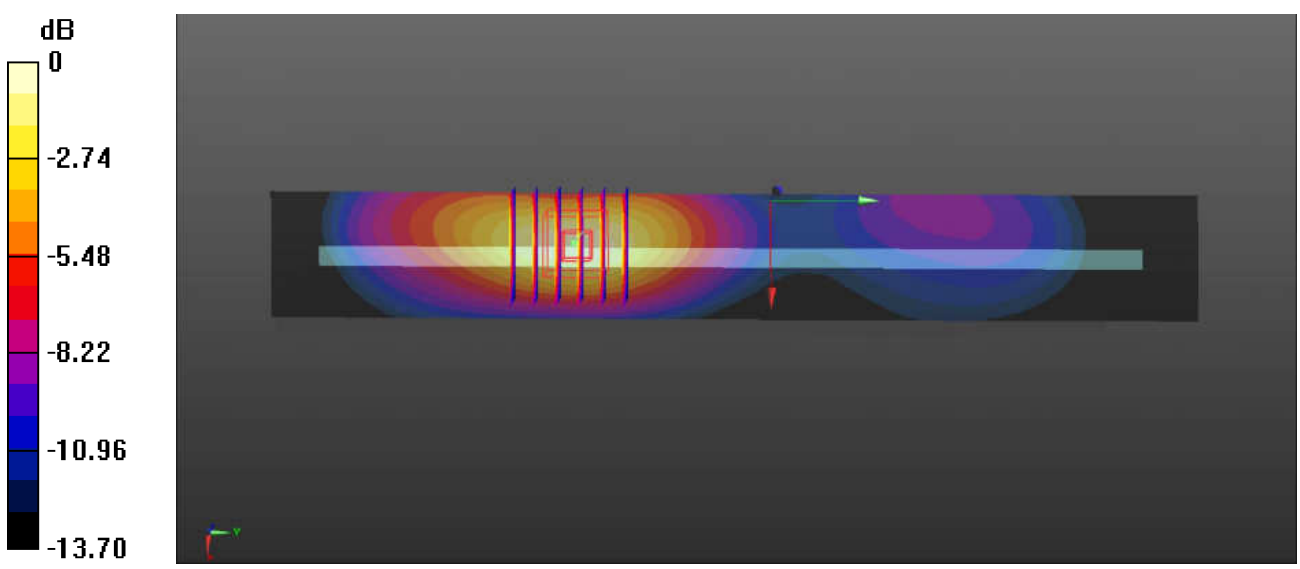
**#07-LTE Band 26_15M_QPSK_1RB_0offset_Edge 1_11mm_Ch26865_Sensor off**

Communication System: UID 0, FDD-LTE (0); Frequency: 831.5 MHz;Duty Cycle: 1:1
Medium: MSL_835_Medium parameters used: f = 831.5 MHz; $\sigma$ = 0.996 S/m; $\varepsilon_r$ = 55.526; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(10.33, 10.33, 10.33); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch26865/Area Scan (31x221x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 0.845 W/kg

**Ch26865/Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.500 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 1.05 W/kg
**SAR(1 g) = 0.612 W/kg; SAR(10 g) = 0.373 W/kg**
Maximum value of SAR (measured) = 0.868 W/kg




0 dB = 0.868 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/6

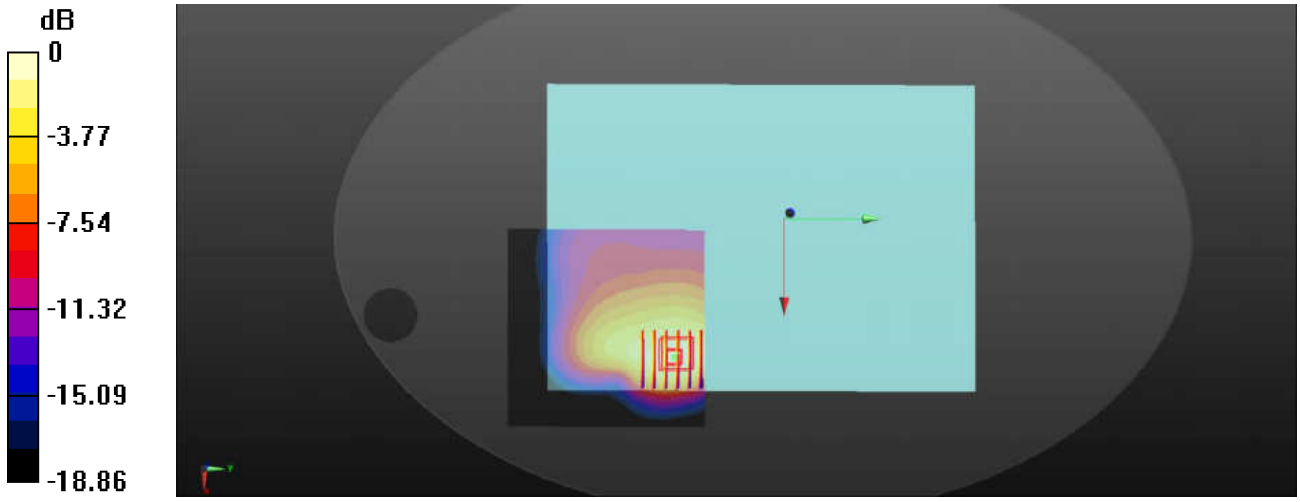
**#08-LTE Band 66_20M_QPSK_1RB_0offset_Bottom Face_11mm_Ch132322_Sensor off**

Communication System: UID 0, FDD-LTE (0); Frequency: 1745 MHz;Duty Cycle: 1:1
Medium: MSL_1750_Medium parameters used: f = 1745 MHz; $\sigma$ = 1.509 S/m; $\varepsilon_r$ = 53.712; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.71, 8.71, 8.71); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch132322/Area Scan (91x91x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.48 W/kg

**Ch132322/Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.592 V/m; Power Drift = 0.01 dB
Peak SAR (extrapolated) = 1.64 W/kg
**SAR(1 g) = 0.990 W/kg; SAR(10 g) = 0.609 W/kg**
Maximum value of SAR (measured) = 1.37 W/kg




0 dB = 1.37 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/8

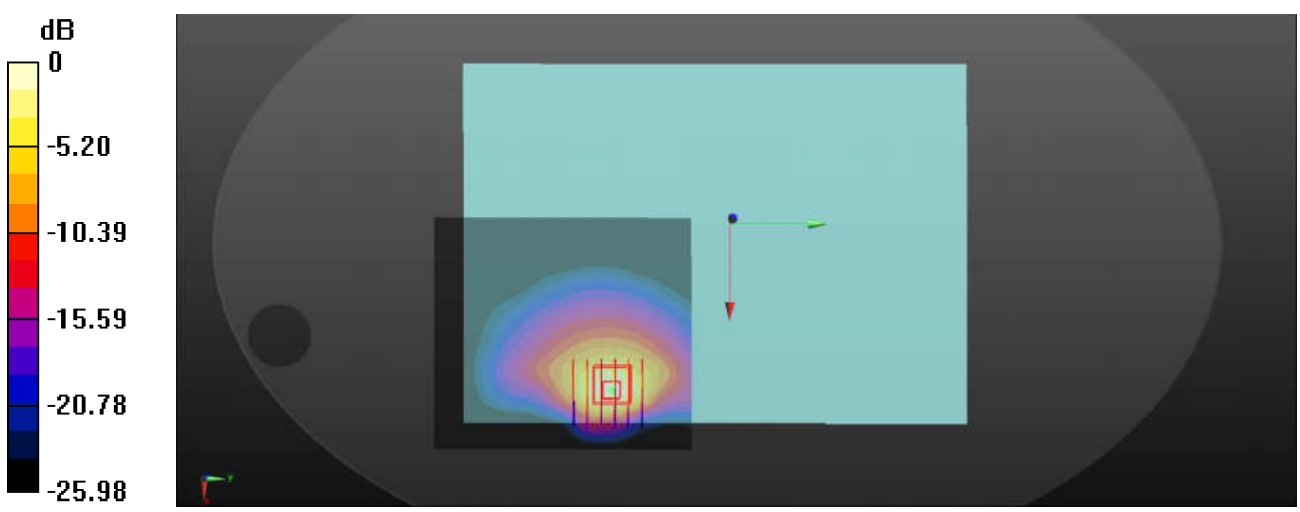
**#09-LTE Band 25_20M_QPSK_100RB_0offset_Bottom Face_0mm_Ch26590_Sensor on**

Communication System: UID 0, FDD-LTE (0); Frequency: 1905 MHz;Duty Cycle: 1:1
Medium: MSL_1900_Medium parameters used: f = 1905 MHz; $\sigma$ = 1.567 S/m; $\varepsilon_r$ = 53.089; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature ：22.3 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.3, 8.3, 8.3); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch26590/Area Scan (91x101x1):** Interpolated grid: dx=1.500 mm, dy=1.500 mm
Maximum value of SAR (interpolated) = 1.48 W/kg

**Ch26590/Zoom Scan (6x6x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.8280 V/m; Power Drift = -0.10 dB
Peak SAR (extrapolated) = 1.71 W/kg
**SAR(1 g) = 0.729 W/kg; SAR(10 g) = 0.341 W/kg**
Maximum value of SAR (measured) = 1.26 W/kg




0 dB = 1.26 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/7

**#10-LTE Band 30_10M_QPSK_1RB_0offset_Edge 1_11mm_Ch27710_Sensor off**

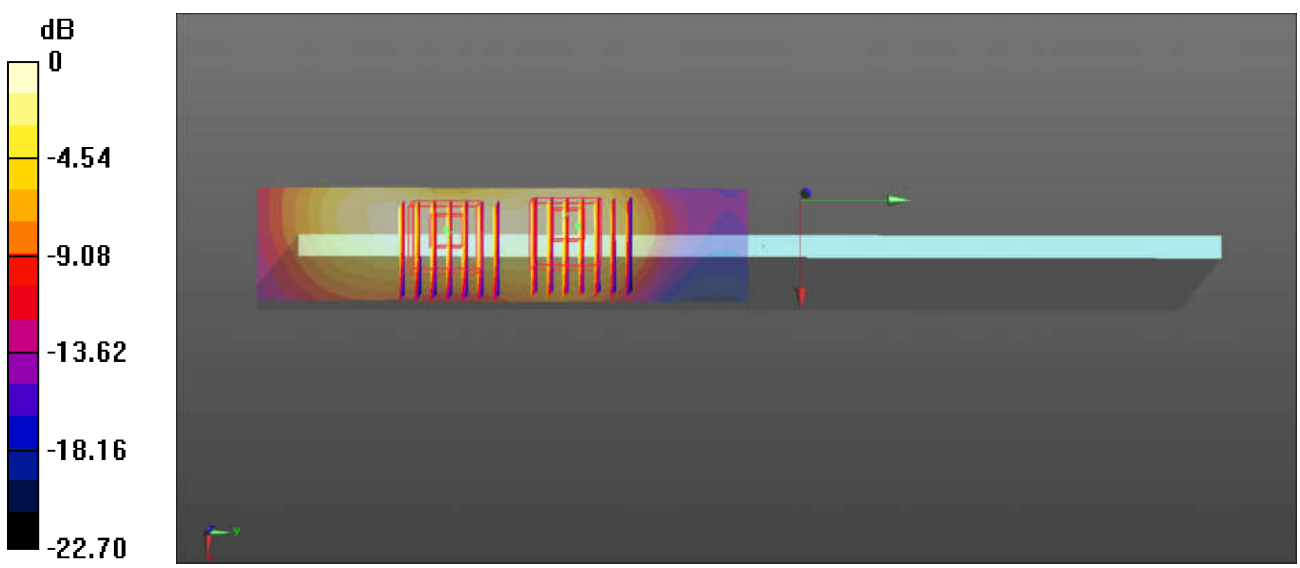
Communication System: UID 0, FDD-LTE (0); Frequency: 2310 MHz;Duty Cycle: 1:1
Medium: MSL_2300_Medium parameters used: f = 2310 MHz; $\sigma$ = 1.779 S/m; $\varepsilon_r$ = 52.995; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.6 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(8.1, 8.1, 8.1); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch27710/Area Scan (31x131x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.81 W/kg

**Ch27710/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.872 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 2.30 W/kg
**SAR(1 g) = 1.12 W/kg; SAR(10 g) = 0.511 W/kg**
Maximum value of SAR (measured) = 1.77 W/kg

**Ch27710/Zoom Scan (7x7x7)/Cube 1:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 3.872 V/m; Power Drift = 0.19 dB
Peak SAR (extrapolated) = 1.46 W/kg
**SAR(1 g) = 0.823 W/kg; SAR(10 g) = 0.433 W/kg**
Maximum value of SAR (measured) = 1.21 W/kg



0 dB = 1.21 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/7

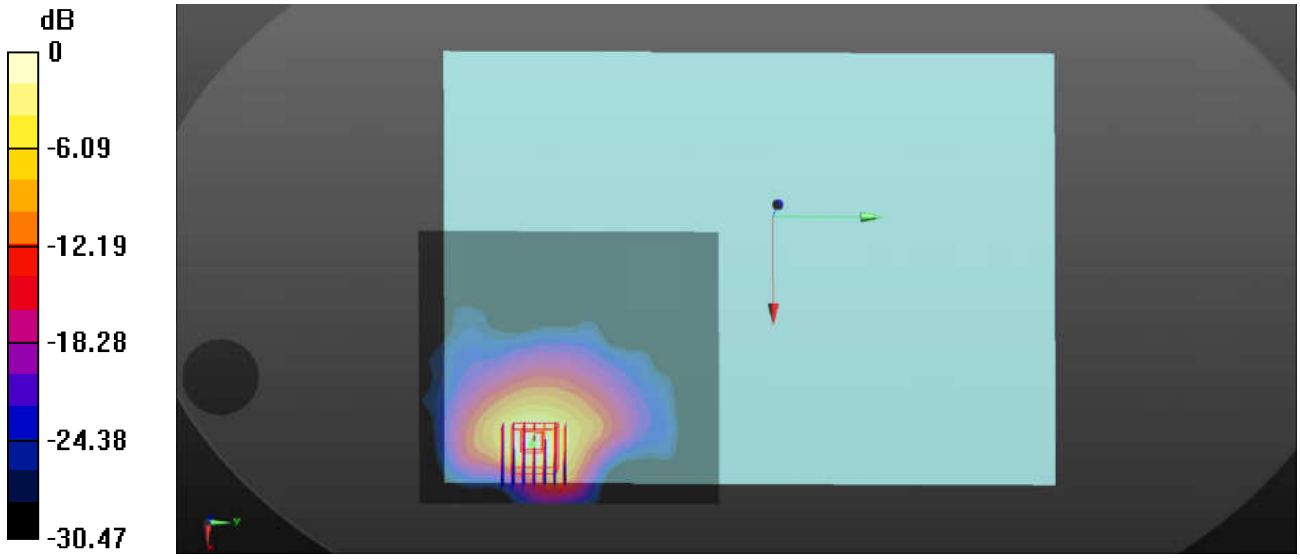
**#11-LTE Band 7_20M_QPSK_1RB_0offset_Bottom Face_0mm_Ch21350_Sensor on**

Communication System: UID 0, FDD-LTE (0); Frequency: 2560 MHz;Duty Cycle: 1:1
Medium: MSL_2600_Medium parameters used: f = 2560 MHz; $\sigma$ = 2.116 S/m; $\varepsilon_r$ = 52.095; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.6 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.71, 7.71, 7.71); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch21350/Area Scan (111x121x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 2.17 W/kg

**Ch21350/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.6990 V/m; Power Drift = 0.05 dB
Peak SAR (extrapolated) = 2.56 W/kg
**SAR(1 g) = 0.990 W/kg; SAR(10 g) = 0.354 W/kg**
Maximum value of SAR (measured) = 1.79 W/kg




0 dB = 1.79 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/2/7

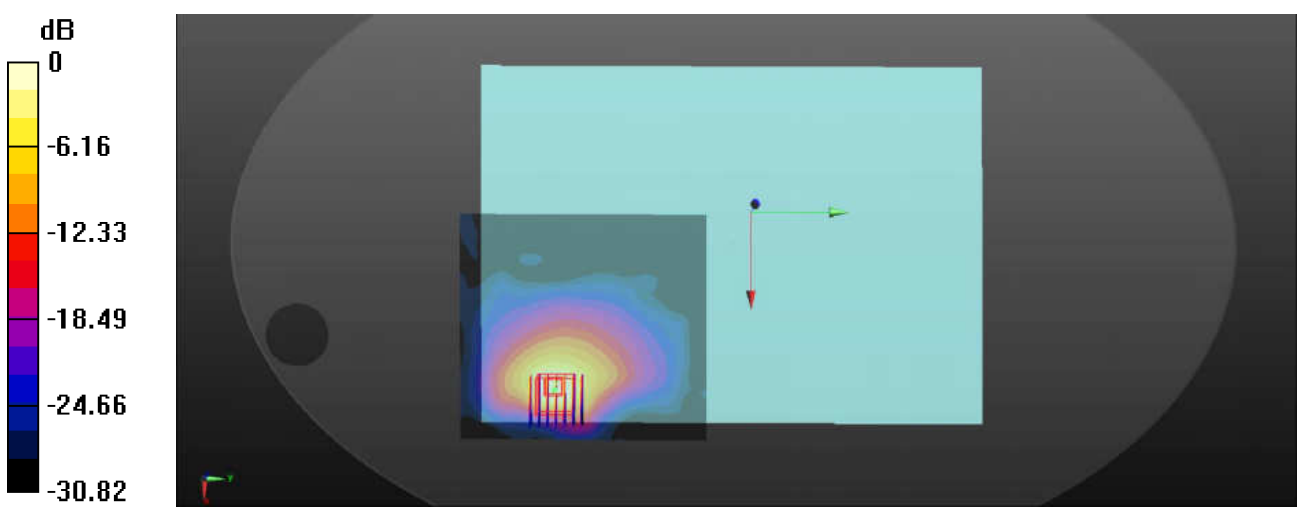
**#12-LTE Band 41_20M_QPSK_100RB_0offset_Bottom Face_0mm_Ch41490_Sensor on**

Communication System: UID 0, TDD-LTE (0); Frequency: 2680 MHz;Duty Cycle: 1:1.59
Medium: MSL_2600_Medium parameters used: f = 2680 MHz; $\sigma$ = 2.282 S/m; $\varepsilon_r$ = 51.641; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.6 ℃; Liquid Temperature ：22.6 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.71, 7.71, 7.71); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch41490/Area Scan (111x121x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.77 W/kg

**Ch41490/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.8960 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 2.07 W/kg
**SAR(1 g) = 0.796 W/kg; SAR(10 g) = 0.265 W/kg**
Maximum value of SAR (measured) = 1.47 W/kg




0 dB = 1.47 W/kg

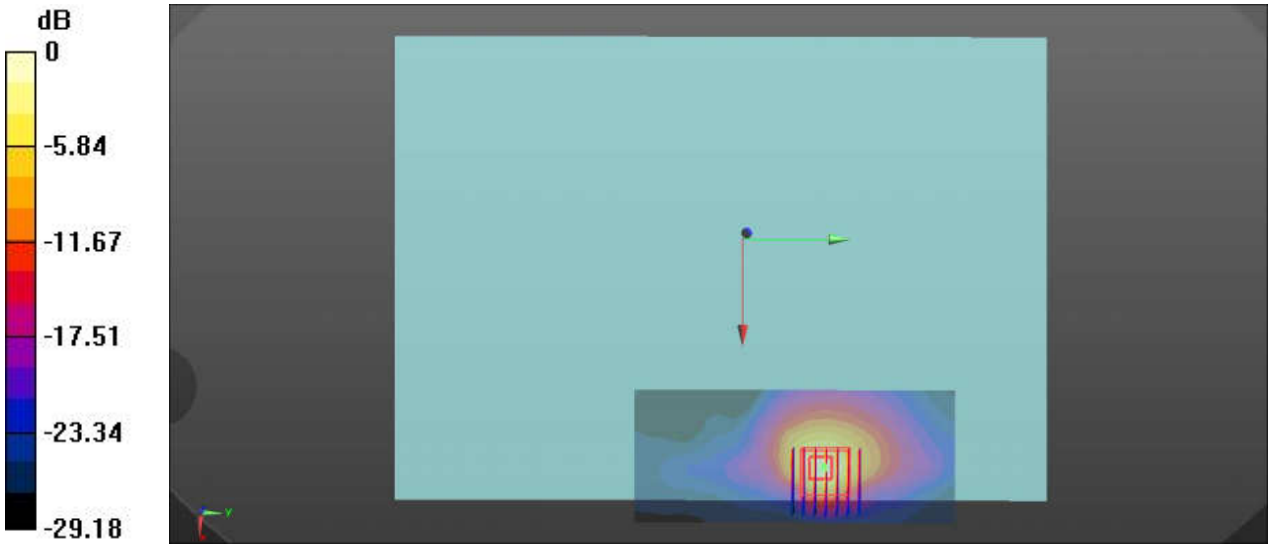
**#13-WLAN2.4GHz_802.11b 1Mbps_Bottom Face_0mm_Ch11_Ant 1_Sensor on**

Communication System: UID 0, 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1
Medium: MSL_2450_Medium parameters used: f = 2462 MHz; $\sigma$ = 1.98 S/m; $\varepsilon_r$ = 52.456; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.99, 7.99, 7.99); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch11/Area Scan (51x121x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.82 W/kg

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.268 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 2.31 W/kg
**SAR(1 g) = 0.825 W/kg; SAR(10 g) = 0.275 W/kg**
Maximum value of SAR (measured) = 1.56 W/kg




0 dB = 1.56 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/3/10

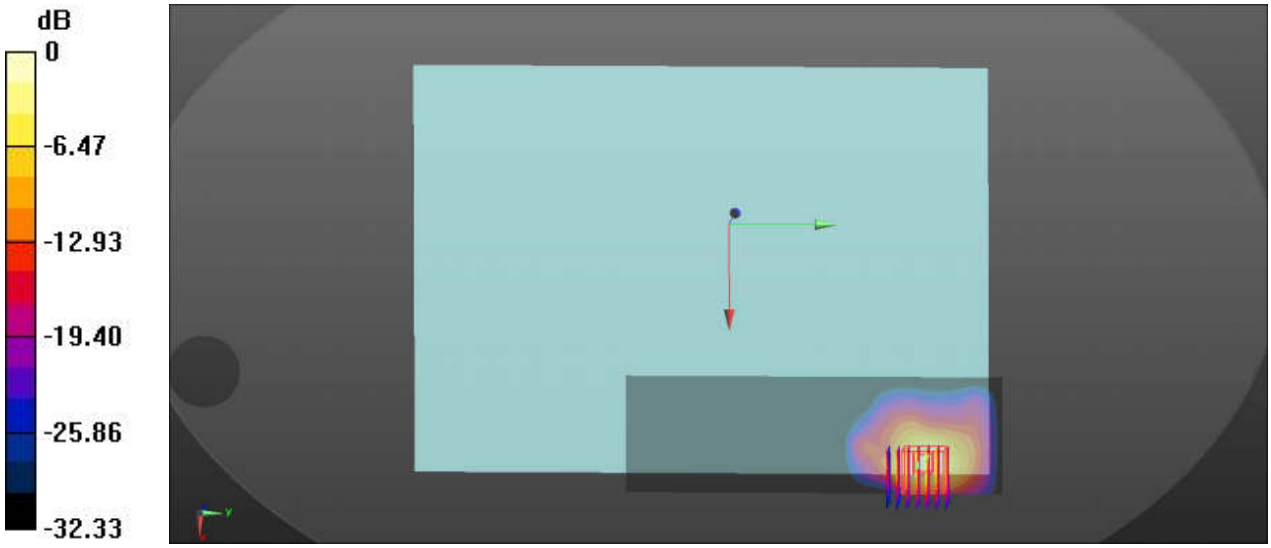
**#14-WLAN2.4GHz_802.11b 1Mbps_Bottom Face_0mm_Ch6_Ant 2_Sensor on**

Communication System: UID 0, 802.11b (0); Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: MSL_2450_Medium parameters used: f = 2437 MHz; $\sigma$ = 1.946 S/m; $\varepsilon_r$ = 52.547; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.99, 7.99, 7.99); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch6/Area Scan (51x161x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.85 W/kg

**Ch6/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.5750 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 2.17 W/kg
**SAR(1 g) = 0.866 W/kg; SAR(10 g) = 0.294 W/kg**
Maximum value of SAR (measured) = 1.62 W/kg




0 dB = 1.62 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/3/10

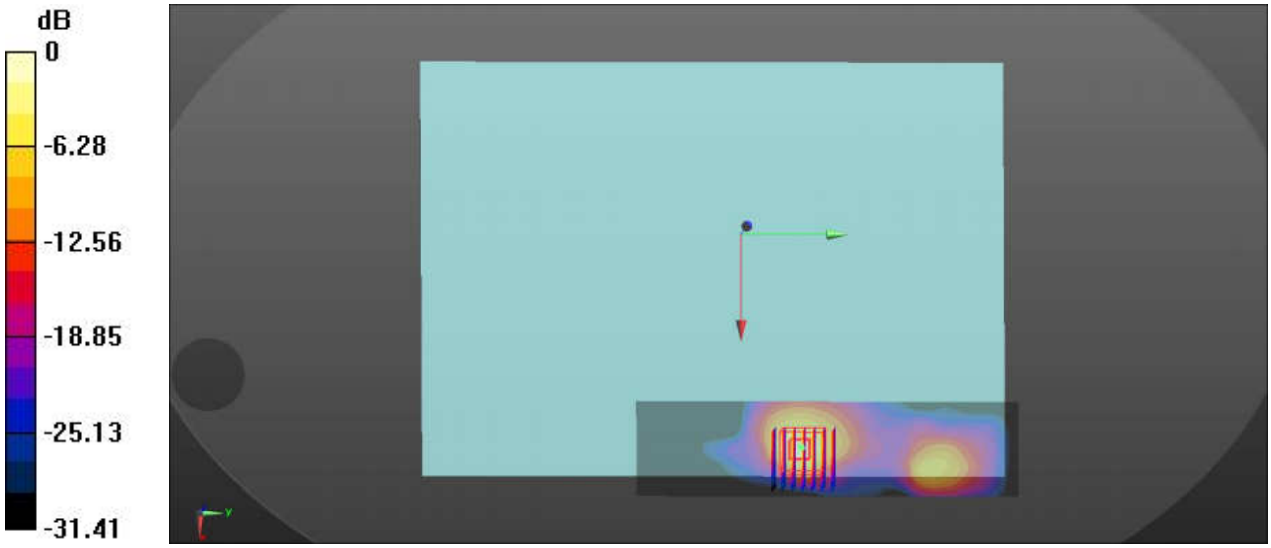
**#15-WLAN2.4GHz_802.11n HT20 MCS0_Bottom Face_0mm_Ch11_Ant 1+2_Sensor on**

Communication System: UID 0, 802.11b (0); Frequency: 2462 MHz;Duty Cycle: 1:1.056
Medium: MSL_2450_Medium parameters used: f = 2462 MHz; $\sigma$ = 1.98 S/m; $\varepsilon_r$ = 52.456; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.99, 7.99, 7.99); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch11/Area Scan (41x161x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 1.65 W/kg

**Ch11/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 0.2120 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 2.43 W/kg
**SAR(1 g) = 0.841 W/kg; SAR(10 g) = 0.278 W/kg**
Maximum value of SAR (measured) = 1.70 W/kg




0 dB = 1.70 W/kg

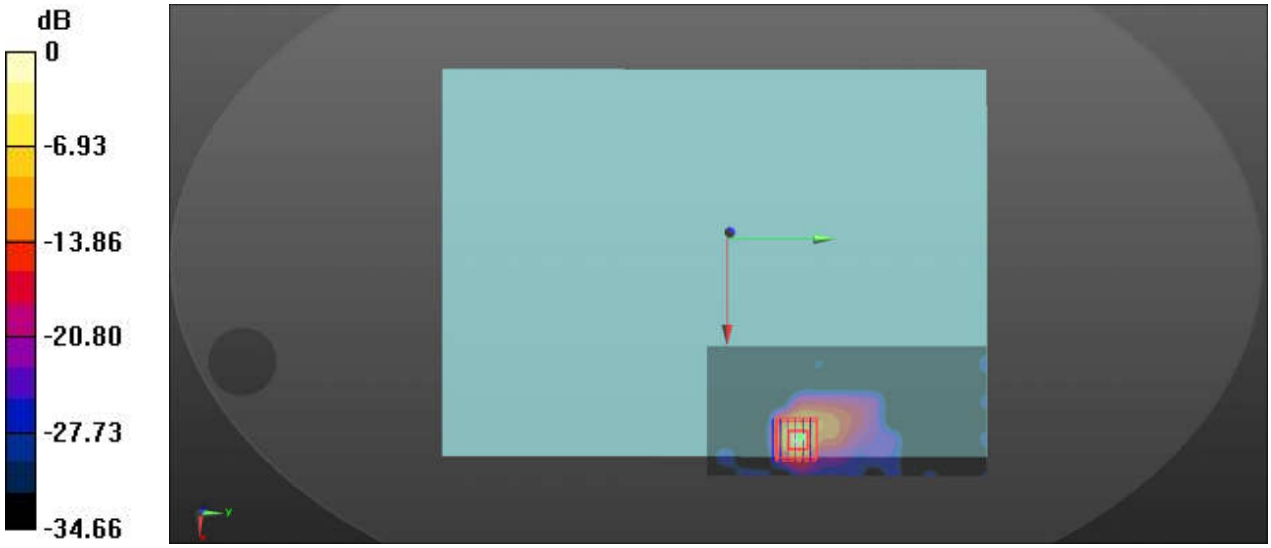
**#16_WLAN5.3GHz_802.11a 6Mbps_Bottom Face_0mm_Ch64_Ant 1_Sensor on**

Communication System: UID 0, 802.11a (0); Frequency: 5320 MHz;Duty Cycle: 1:1.048
Medium: MSL_5300_Medium parameters used: f = 5320 MHz; $\sigma$ = 5.436 S/m; $\varepsilon_r$ = 49.383; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(5.2, 5.2, 5.2); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch64/Area Scan (71x151x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.28 W/kg

**Ch64/Zoom Scan (7x7x16)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.273 V/m; Power Drift = -0.01 dB
Peak SAR (extrapolated) = 5.41 W/kg
**SAR(1 g) = 0.735 W/kg; SAR(10 g) = 0.135 W/kg**
Maximum value of SAR (measured) = 2.42 W/kg




0 dB = 2.42 W/kg

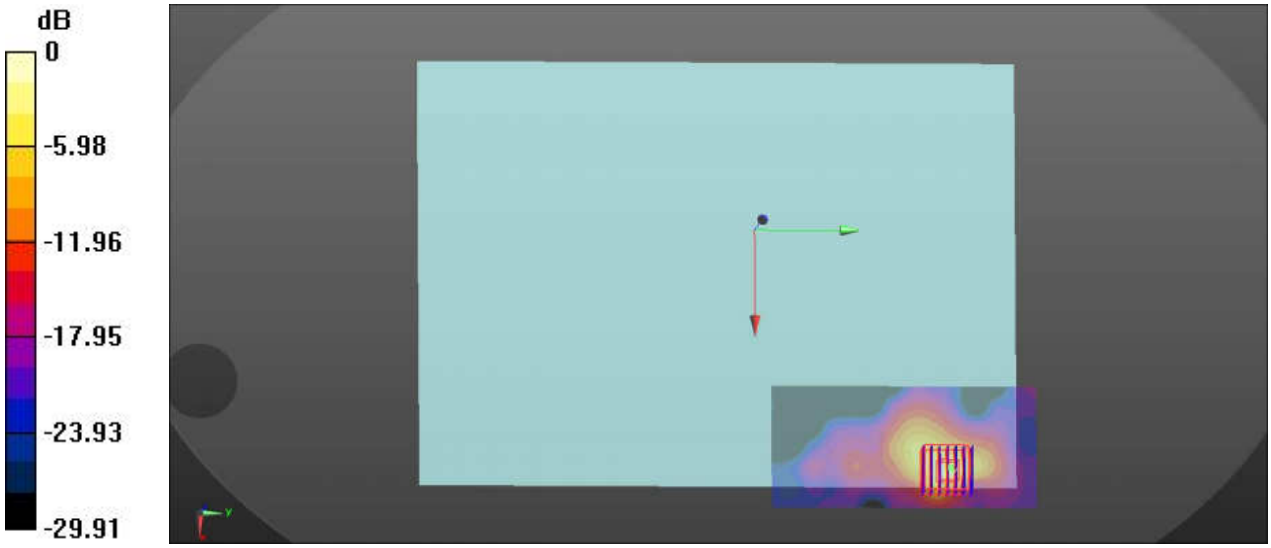
**#17_WLAN5.3GHz_802.11a 6Mbps_Bottom Face_0mm_Ch64_Ant 2_Sensor on**

Communication System: UID 0, 802.11a (0); Frequency: 5320 MHz;Duty Cycle: 1:1.051
Medium: MSL_5300_Medium parameters used: f = 5320 MHz; $\sigma$ = 5.436 S/m; $\varepsilon_r$ = 49.383; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(5.2, 5.2, 5.2); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch64/Area Scan (61x131x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.67 W/kg

**Ch64/Zoom Scan (7x7x16)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.219 V/m; Power Drift = 0.07 dB
Peak SAR (extrapolated) = 4.00 W/kg
**SAR(1 g) = 0.545 W/kg; SAR(10 g) = 0.156 W/kg**
Maximum value of SAR (measured) = 1.63 W/kg




0 dB = 1.63 W/kg

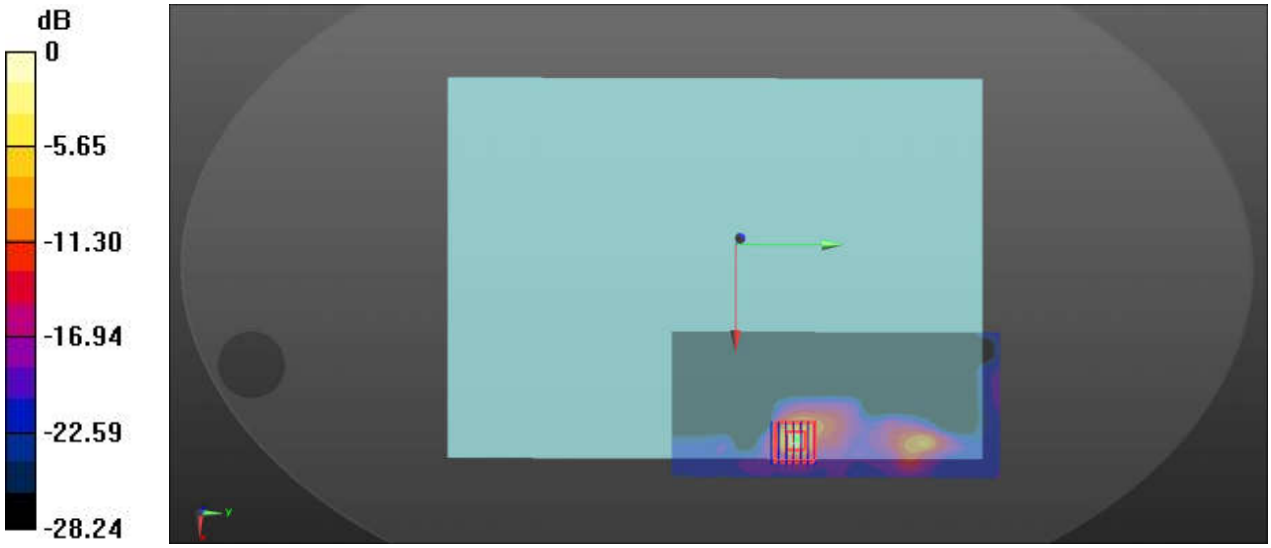
**#18_WLAN5.3GHz_802.11n-HT20 MCS0_Bottom Face_0mm_Ch64_Ant 1+2_Sensor on**

Communication System: UID 0, 802.11a (0); Frequency: 5320 MHz;Duty Cycle: 1:1.055
Medium: MSL_5300_Medium parameters used: f = 5320 MHz; $\sigma$ = 5.436 S/m; $\varepsilon_r$ = 49.383; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(5.2, 5.2, 5.2); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch64/Area Scan (81x181x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.89 W/kg

**Ch64/Zoom Scan (7x7x16)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.374 V/m; Power Drift = -0.09 dB
Peak SAR (extrapolated) = 4.82 W/kg
**SAR(1 g) = 0.641 W/kg; SAR(10 g) = 0.121 W/kg**
Maximum value of SAR (measured) = 1.90 W/kg




0 dB = 1.90 W/kg

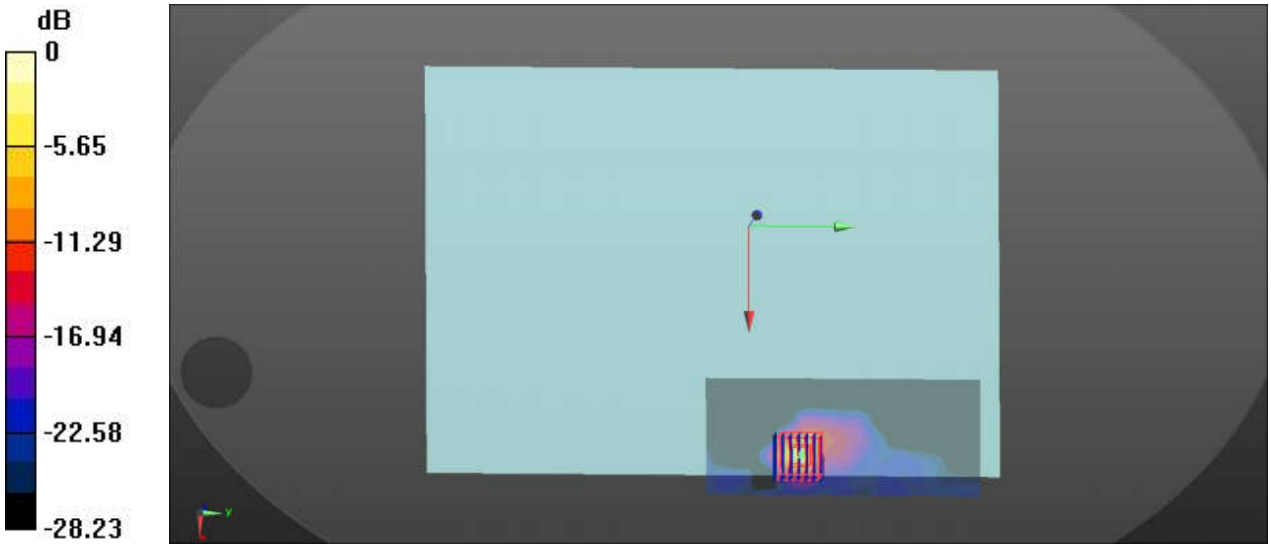
**#19_WLAN5.5GHz_802.11a 6Mbps_Bottom Face_0mm_Ch100_Ant 1_Sensor on**

Communication System: UID 0, 802.11a (0); Frequency: 5500 MHz;Duty Cycle: 1:1.048
Medium: MSL_5500_Medium parameters used: f = 5500 MHz; $\sigma$ = 5.63 S/m; $\varepsilon_r$ = 49.098; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(4.62, 4.62, 4.62); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch100/Area Scan (61x141x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.02 W/kg

**Ch100/Zoom Scan (7x7x16)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.207 V/m; Power Drift = -0.06 dB
Peak SAR (extrapolated) = 5.31 W/kg
**SAR(1 g) = 0.665 W/kg; SAR(10 g) = 0.118 W/kg**
Maximum value of SAR (measured) = 2.01 W/kg




0 dB = 2.01 W/kg

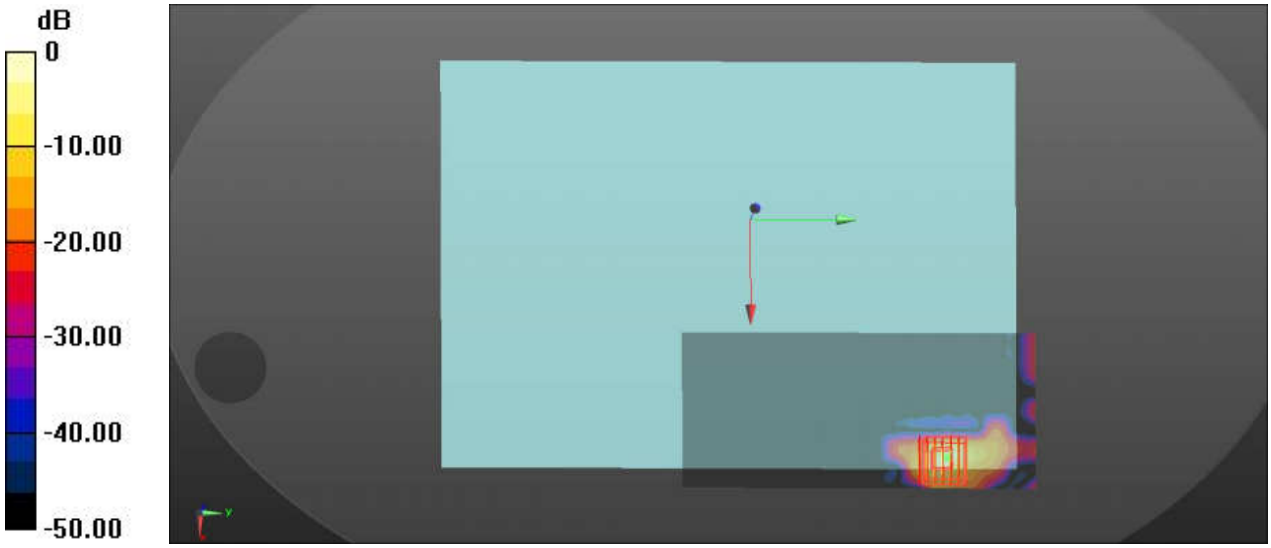
**#20-WLAN5.5GHz_802.11a 6Mbps_Bottom Face_0mm_Ch116_Ant 2_Sensor on**

Communication System: UID 0, 802.11a (0); Frequency: 5580 MHz;Duty Cycle: 1:1.051
Medium: MSL_5500_Medium parameters used: f = 5580 MHz; $\sigma$ = 5.738 S/m; $\varepsilon_r$ = 49.082; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(4.62, 4.62, 4.62); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch116/Area Scan (81x181x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.91 W/kg

**Ch116/Zoom Scan (7x7x16)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.040 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 5.26 W/kg
**SAR(1 g) = 0.760 W/kg; SAR(10 g) = 0.174 W/kg**
Maximum value of SAR (measured) = 2.56 W/kg




0 dB = 2.56 W/kg

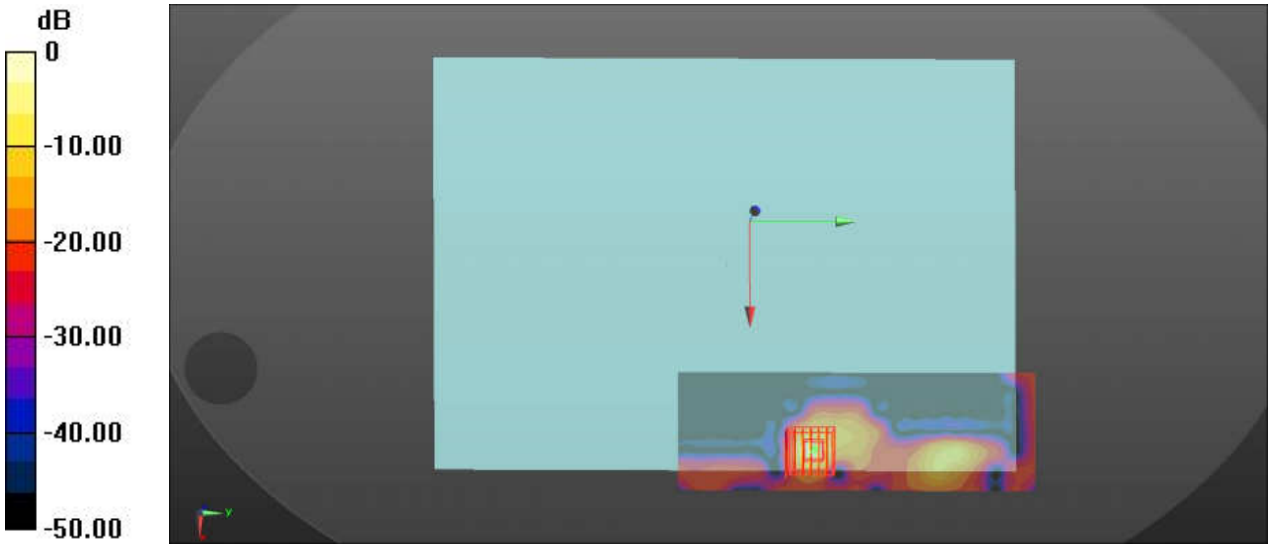
**#21_WLAN5.5GHz_802.11n-HT20 MCS0_Bottom Face_0mm_Ch100_Ant 1+2_Sensor on**

Communication System: UID 0, 802.11a (0); Frequency: 5500 MHz;Duty Cycle: 1:1.055
Medium: MSL_5500_Medium parameters used: f = 5500 MHz; $\sigma$ = 5.63 S/m; $\varepsilon_r$ = 49.098; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(4.62, 4.62, 4.62); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch100/Area Scan (61x181x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.01 W/kg

**Ch100/Zoom Scan (7x7x16)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.446 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 5.16 W/kg
**SAR(1 g) = 0.651 W/kg; SAR(10 g) = 0.117 W/kg**
Maximum value of SAR (measured) = 1.96 W/kg




0 dB = 1.96 W/kg

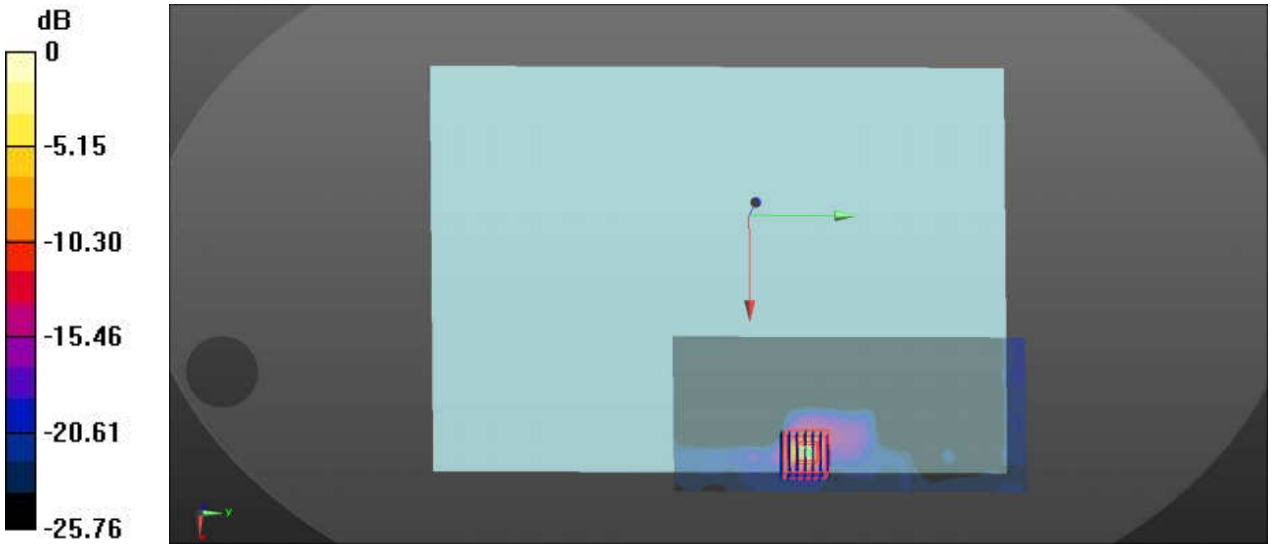
**#22-WLAN5.8GHz_802.11a 6Mbps_Bottom Face_0mm_Ch149_Ant 1_Sensor on**

Communication System: UID 0, 802.11a (0); Frequency: 5745 MHz;Duty Cycle: 1:1.048
Medium: MSL_5500_Medium parameters used: f = 5745 MHz; $\sigma$ = 6.017 S/m; $\varepsilon_r$ = 48.844; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(4.64, 4.64, 4.64); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch149/Area Scan (81x181x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.08 W/kg

**Ch149/Zoom Scan (7x7x16)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.384 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 5.37 W/kg
**SAR(1 g) = 0.676 W/kg; SAR(10 g) = 0.122 W/kg**
Maximum value of SAR (measured) = 2.30 W/kg




0 dB = 2.30 W/kg

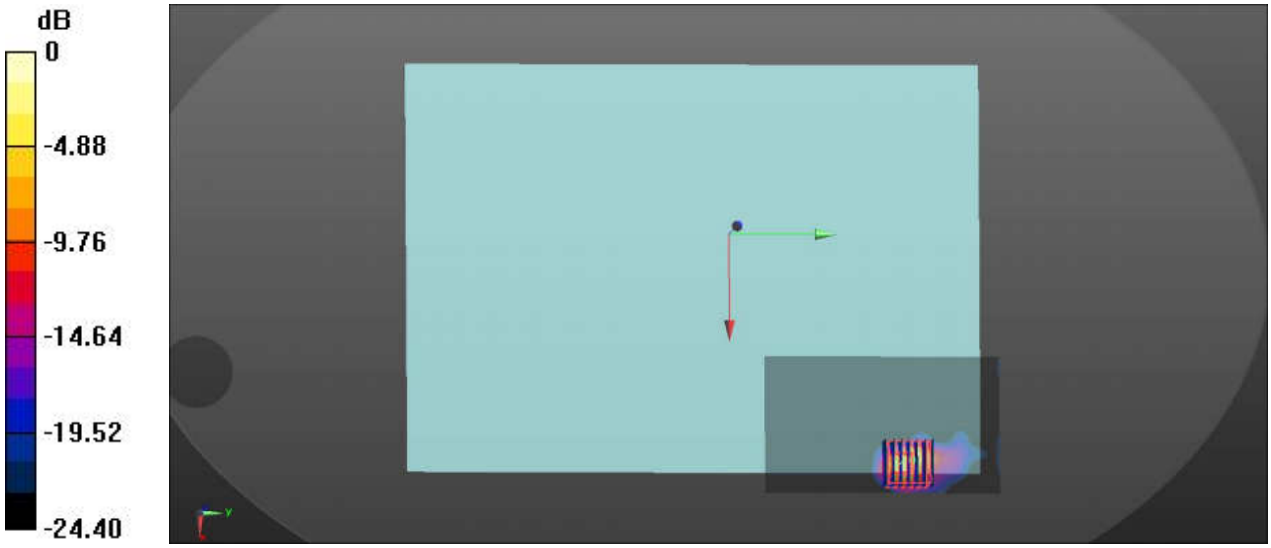
**#23-WLAN5.8GHz_802.11a 6Mbps_Bottom Face_0mm_Ch157_Ant 2_Sensor on**

Communication System: UID 0, 802.11a (0); Frequency: 5785 MHz;Duty Cycle: 1:1.051
Medium: MSL_5800_Medium parameters used: f = 5785 MHz; $\sigma$ = 6.019 S/m; $\varepsilon_r$ = 48.792; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(4.64, 4.64, 4.64); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch157/Area Scan (71x121x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 1.53 W/kg

**Ch157/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.090 V/m; Power Drift = 0.08 dB
Peak SAR (extrapolated) = 5.17 W/kg
**SAR(1 g) = 0.641 W/kg; SAR(10 g) = 0.139 W/kg**
Maximum value of SAR (measured) = 2.10 W/kg




0 dB = 2.10 W/kg

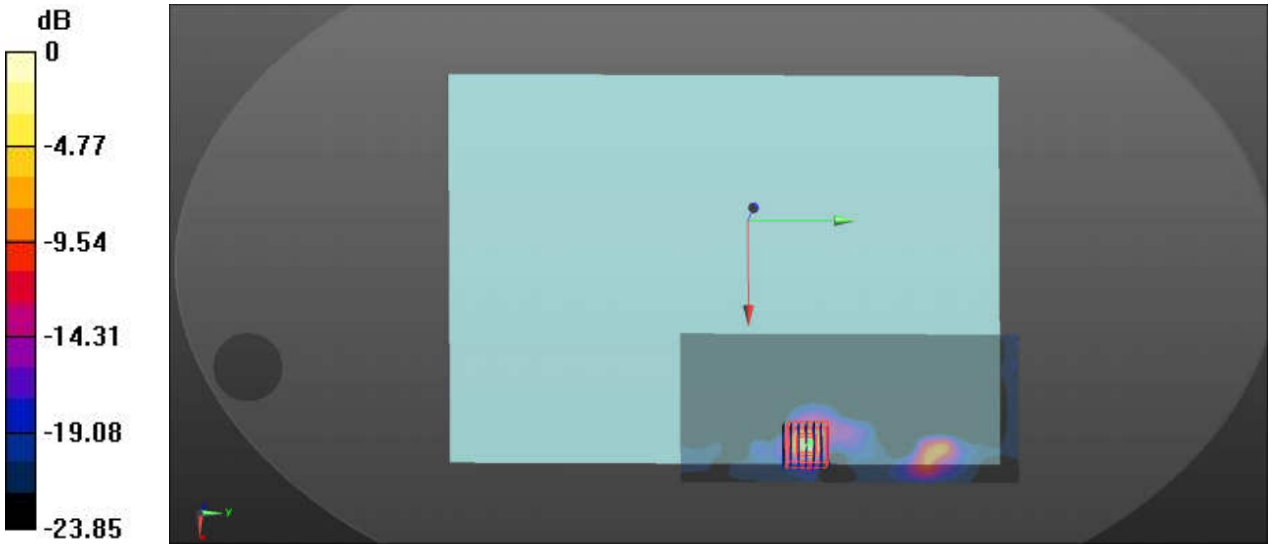
**#24-WLAN5.8GHz_802.11n-HT20 MCS0_Bottom Face_0mm_Ch157_Ant 1+2_Sensor on**

Communication System: UID 0, 802.11a (0); Frequency: 5785 MHz;Duty Cycle: 1:1.055
Medium: MSL_5800_Medium parameters used: f = 5785 MHz; $\sigma$ = 6.019 S/m; $\varepsilon_r$ = 48.792; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(4.64, 4.64, 4.64); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch157/Area Scan (81x181x1):** Interpolated grid: dx=1.000 mm, dy=1.000 mm
Maximum value of SAR (interpolated) = 2.39 W/kg

**Ch157/Zoom Scan (7x7x6)/Cube 0:** Measurement grid: dx=4mm, dy=4mm, dz=1.4mm
Reference Value = 1.353 V/m; Power Drift = -0.04 dB
Peak SAR (extrapolated) = 6.02 W/kg
**SAR(1 g) = 0.774 W/kg; SAR(10 g) = 0.143 W/kg**
Maximum value of SAR (measured) = 2.52 W/kg




0 dB = 2.52 W/kg

Test Laboratory: Sporton International Inc. SAR/HAC Testing Lab Date: 2018/3/10

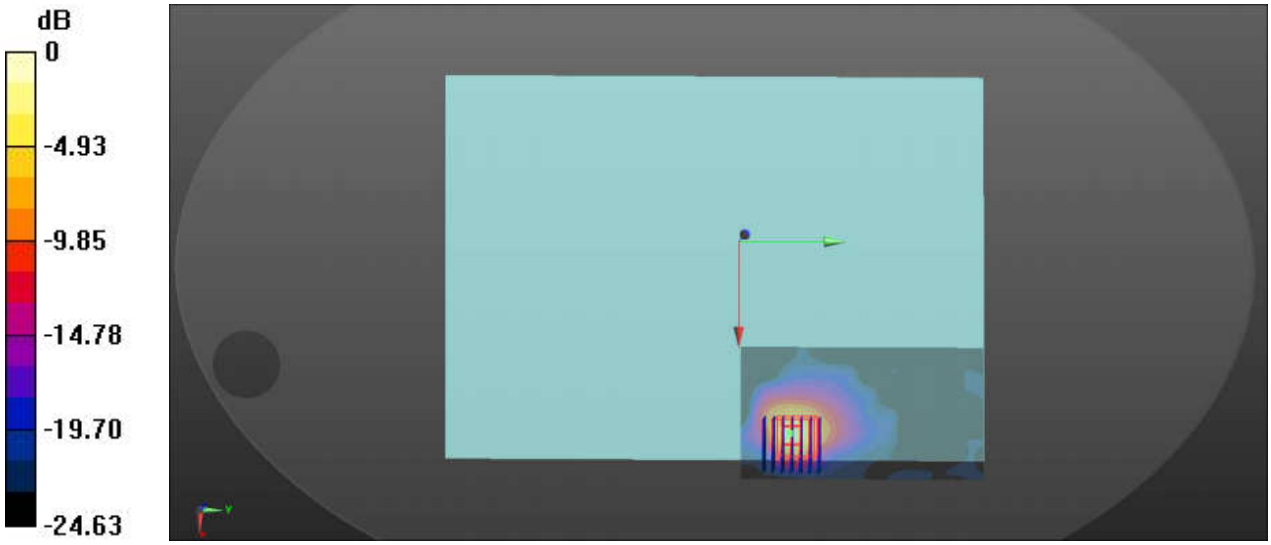
**#25_Bluetooth_1Mbps_Bottom Face_0mm_Ch78**

Communication System: UID 0, Bluetooth (0); Frequency: 2480 MHz;Duty Cycle: 1:1.301
Medium: MSL_2450_Medium parameters used: f = 2480 MHz; $\sigma$ = 2.003 S/m; $\varepsilon_r$ = 52.392; $\rho$ = 1000 kg/m$^3$
Ambient Temperature：23.5 ℃; Liquid Temperature：22.5 ℃

DASY5 Configuration:
- Probe: EX3DV4 - SN3935; ConvF(7.99, 7.99, 7.99); Calibrated: 2017/12/14;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn1358; Calibrated: 2017/10/24
- Phantom: ELI v5.0; Type: QDOVA002AA; Serial: TP:1201
- Measurement SW: DASY52, Version 52.8 (8); SEMCAD X Version 14.6.10 (7372)

**Ch78/Area Scan (61x111x1):** Interpolated grid: dx=1.200 mm, dy=1.200 mm
Maximum value of SAR (interpolated) = 0.458 W/kg

**Ch78/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.051 V/m; Power Drift = -0.05 dB
Peak SAR (extrapolated) = 0.618 W/kg
**SAR(1 g) = 0.214 W/kg; SAR(10 g) = 0.073 W/kg**
Maximum value of SAR (measured) = 0.448 W/kg




0 dB = 0.448 W/kg

# Appendix C. DASY Calibration Certificate

The DASY calibration certificates are shown as follows.

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

**S** Schweizerischer Kalibrierdienst
**C** Service suisse d'étalonnage
Servizio svizzero di taratura
**S** 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 0108**

**Client** **Auden**

**Certificate No: D750V3-1078_Jun17**

# CALIBRATION CERTIFICATE

| | |
|---|---|
| Object | D750V3 - SN:1078 |
| Calibration procedure(s) | QA CAL-05.v9<br>Calibration procedure for dipole validation kits above 700 MHz |
| Calibration date: | June 20, 2017 |

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 |
|---|---|---|---|
| Power meter NRP | SN: 104778 | 04-Apr-17 (No. 217-02521/02522) | Apr-18 |
| Power sensor NRP-Z91 | SN: 103244 | 04-Apr-17 (No. 217-02521) | Apr-18 |
| Power sensor NRP-Z91 | SN: 103245 | 04-Apr-17 (No. 217-02522) | Apr-18 |
| Reference 20 dB Attenuator | SN: 5058 (20k) | 07-Apr-17 (No. 217-02528) | Apr-18 |
| Type-N mismatch combination | SN: 5047.2 / 06327 | 07-Apr-17 (No. 217-02529) | Apr-18 |
| Reference Probe EX3DV4 | SN: 7349 | 31-May-17 (No. EX3-7349_May17) | May-18 |
| DAE4 | SN: 601 | 28-Mar-17 (No. DAE4-601_Mar17) | Mar-18 |

| Secondary Standards | ID # | Check Date (in house) | Scheduled Check |
|---|---|---|---|
| Power meter EPM-442A | SN: GB37480704 | 07-Oct-15 (in house check Oct-16) | In house check: Oct-18 |
| Power sensor HP 8481A | SN: US37292783 | 07-Oct-15 (in house check Oct-16) | In house check: Oct-18 |
| Power sensor HP 8481A | SN: MY41092317 | 07-Oct-15 (in house check Oct-16) | In house check: Oct-18 |
| RF generator R&S SMT-06 | SN: 100972 | 15-Jun-15 (in house check Oct-16) | In house check: Oct-18 |
| Network Analyzer HP 8753E | SN: US37390585 | 18-Oct-01 (in house check Oct-16) | In house check: Oct-17 |

| | Name | Function | Signature |
|---|---|---|---|
| Calibrated by: | Leif Klysner | Laboratory Technician | |
| Approved by: | Katja Pokovic | Technical Manager | |

Issued: June 27, 2017

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

## Glossary:

| | |
|---|---|
| TSL | tissue simulating liquid |
| ConvF | sensitivity in TSL / NORM x,y,z |
| N/A | not applicable or not measured |

## Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2013, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", June 2013
b) IEC 62209-1, "Measurement procedure for the assessment of Specific Absorption Rate (SAR) from hand-held and body-mounted devices used next to the ear (frequency range of 300 MHz to 6 GHz)", July 2016
c) IEC 62209-2, "Procedure to determine the Specific Absorption Rate (SAR) for wireless communication devices used in close proximity to the human body (frequency range of 30 MHz to 6 GHz)", March 2010
d) KDB 865664, "SAR Measurement Requirements for 100 MHz to 6 GHz"

## Additional Documentation:

e) DASY4/5 System Handbook

## Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

## Measurement Conditions

DASY system configuration, as far as not given on page 1.

| | | |
|---|---|---|
| **DASY Version** | DASY5 | V52.10.0 |
| **Extrapolation** | Advanced Extrapolation | |
| **Phantom** | Modular Flat Phantom | |
| **Distance Dipole Center - TSL** | 15 mm | with Spacer |
| **Zoom Scan Resolution** | dx, dy, dz = 5 mm | |
| **Frequency** | 750 MHz ± 1 MHz | |

## Head TSL parameters

The following parameters and calculations were applied.

| | **Temperature** | **Permittivity** | **Conductivity** |
|---|---|---|---|
| **Nominal Head TSL parameters** | 22.0 °C | 41.9 | 0.89 mho/m |
| **Measured Head TSL parameters** | (22.0 ± 0.2) °C | 41.2 ± 6 % | 0.91 mho/m ± 6 % |
| **Head TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Head TSL

| **SAR averaged over 1 cm³ (1 g) of Head TSL** | Condition | |
|---|---|---|
| SAR measured | 250 mW input power | 2.14 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | **8.39 W/kg ± 17.0 % (k=2)** |

| **SAR averaged over 10 cm³ (10 g) of Head TSL** | condition | |
|---|---|---|
| SAR measured | 250 mW input power | 1.39 W/kg |
| SAR for nominal Head TSL parameters | normalized to 1W | **5.47 W/kg ± 16.5 % (k=2)** |

## Body TSL parameters

The following parameters and calculations were applied.

| | **Temperature** | **Permittivity** | **Conductivity** |
|---|---|---|---|
| **Nominal Body TSL parameters** | 22.0 °C | 55.5 | 0.96 mho/m |
| **Measured Body TSL parameters** | (22.0 ± 0.2) °C | 54.8 ± 6 % | 0.97 mho/m ± 6 % |
| **Body TSL temperature change during test** | < 0.5 °C | ---- | ---- |

## SAR result with Body TSL

| **SAR averaged over 1 cm³ (1 g) of Body TSL** | Condition | |
|---|---|---|
| SAR measured | 250 mW input power | 2.19 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **8.67 W/kg ± 17.0 % (k=2)** |

| **SAR averaged over 10 cm³ (10 g) of Body TSL** | condition | |
|---|---|---|
| SAR measured | 250 mW input power | 1.44 W/kg |
| SAR for nominal Body TSL parameters | normalized to 1W | **5.71 W/kg ± 16.5 % (k=2)** |

## Appendix (Additional assessments outside the scope of SCS 0108)

### Antenna Parameters with Head TSL

| | |
|---|---|
| Impedance, transformed to feed point | 55.5 Ω + 0.0 jΩ |
| Return Loss | - 25.6 dB |

### Antenna Parameters with Body TSL

| | |
|---|---|
| Impedance, transformed to feed point | 51.0 Ω - 2.5 jΩ |
| Return Loss | - 31.5 dB |

### General Antenna Parameters and Design

| | |
|---|---|
| Electrical Delay (one direction) | 1.034 ns |

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals. On some of the dipoles, small end caps are added to the dipole arms in order to improve matching when loaded according to the position as explained in the "Measurement Conditions" paragraph. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

### Additional EUT Data

| | |
|---|---|
| Manufactured by | SPEAG |
| Manufactured on | November 15, 2012 |

## DASY5 Validation Report for Head TSL

Date: 20.06.2017

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 750 MHz; Type: D750V3; Serial: D750V3 - SN:1078**

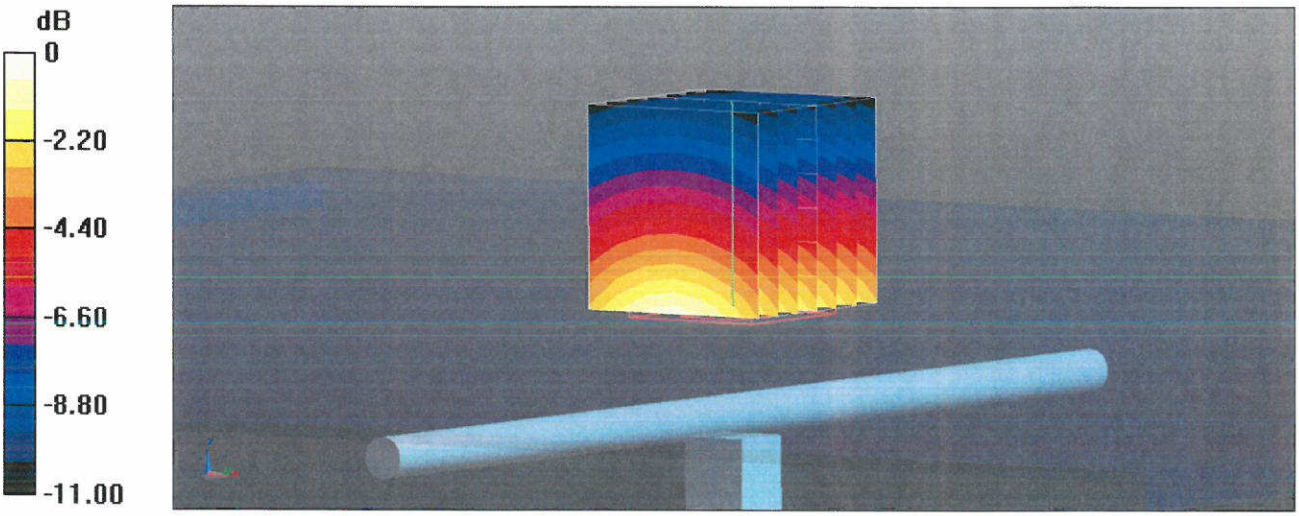
Communication System: UID 0 - CW; Frequency: 750 MHz
Medium parameters used: f = 750 MHz; $\sigma$ = 0.91 S/m; $\varepsilon_r$ = 41.2; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

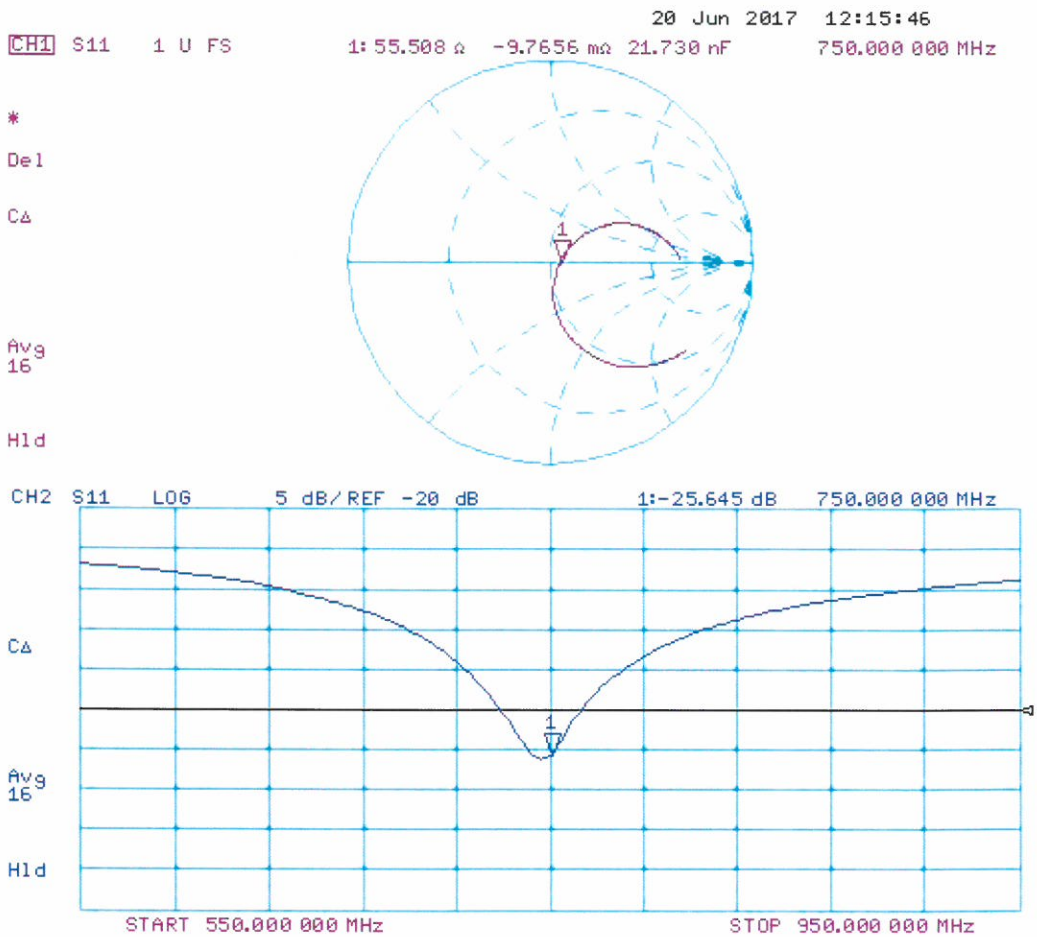
DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(10.49, 10.49, 10.49); Calibrated: 31.05.2017;
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 28.03.2017
- Phantom: Flat Phantom 4.9 (front); Type: QD 00L P49 AA; Serial: 1001
- DASY52 52.10.0(1446); SEMCAD X 14.6.10(7417)

### Dipole Calibration for Head Tissue/Pin=250 mW, d=15mm/Zoom Scan (7x7x7)/Cube 0:

Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 59.13 V/m; Power Drift = -0.00 dB
Peak SAR (extrapolated) = 3.27 W/kg
**SAR(1 g) = 2.14 W/kg; SAR(10 g) = 1.39 W/kg**
Maximum value of SAR (measured) = 2.89 W/kg




0 dB = 2.89 W/kg = 4.61 dBW/kg

## Impedance Measurement Plot for Head TSL