

| Frequency (MHz) | Return Loss (dB) | Requirement (dB) | Impedance |
|-----------------|------------------|------------------|-------------------------------|
| 5200 | -21.40 | -20 | $57.13 \Omega - 4.54 j\Omega$ |
| 5400 | -26.95 | -20 | $54.47 \Omega - 0.31 j\Omega$ |
| 5600 | -31.14 | -20 | $52.65 \Omega + 0.81 j\Omega$ |
| 5800 | -26.91 | -20 | $49.92 \Omega - 4.51 j\Omega$ |

6.3 MECHANICAL DIMENSIONS

| Frequency MHz | L mm | | h mm | | d mm | |
|---------------|------------------|----------|------------------|----------|-----------------|----------|
| | required | measured | required | measured | required | measured |
| 5000 to 6000 | $20.6 \pm 1\%$. | 20.78 | $40.3 \pm 1\%$. | 40.59 | $3.6 \pm 1\%$. | 3.59 |

7 VALIDATION MEASUREMENT

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements must be performed using a reference dipole meeting the fore mentioned return loss and mechanical dimension requirements. The validation measurement must be performed against a liquid filled flat phantom, with the phantom constructed as outlined in the fore mentioned standards. Per the standards, the dipole shall be positioned below the bottom of the phantom, with the dipole length centered and parallel to the longest dimension of the flat phantom, with the top surface of the dipole at the described distance from the bottom surface of the phantom.

7.1 HEAD LIQUID MEASUREMENT

| Frequency MHz | Relative permittivity (ϵ_r') | | Conductivity (σ) S/m | |
|---------------|---|----------|-------------------------------|----------|
| | required | measured | required | measured |
| 5000 | $36.2 \pm 10\%$ | | $4.45 \pm 10\%$ | |
| 5100 | $36.1 \pm 10\%$ | | $4.56 \pm 10\%$ | |
| 5200 | $36.0 \pm 10\%$ | 34.44 | $4.66 \pm 10\%$ | 4.64 |
| 5300 | $35.9 \pm 10\%$ | | $4.76 \pm 10\%$ | |
| 5400 | $35.8 \pm 10\%$ | 33.63 | $4.86 \pm 10\%$ | 4.88 |
| 5500 | $35.6 \pm 10\%$ | | $4.97 \pm 10\%$ | |
| 5600 | $35.5 \pm 10\%$ | 32.80 | $5.07 \pm 10\%$ | 5.12 |
| 5700 | $35.4 \pm 10\%$ | | $5.17 \pm 10\%$ | |
| 5800 | $35.3 \pm 10\%$ | 32.63 | $5.27 \pm 10\%$ | 5.31 |
| 5900 | $35.2 \pm 10\%$ | | $5.38 \pm 10\%$ | |
| 6000 | $35.1 \pm 10\%$ | | $5.48 \pm 10\%$ | |

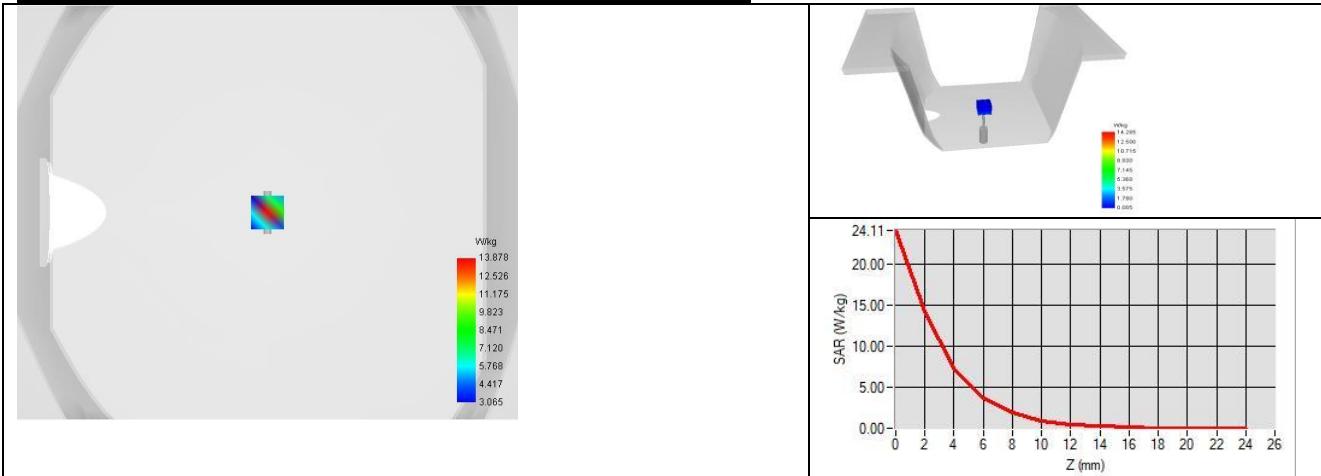
7.2 SAR MEASUREMENT RESULT WITH HEAD LIQUID

At those frequencies, the target SAR value can not be generic. Hereunder is the target SAR value defined by MVG, within the uncertainty for the system validation. All SAR values are normalized to 1 W net power. In bracket, the measured SAR is given with the used input power.

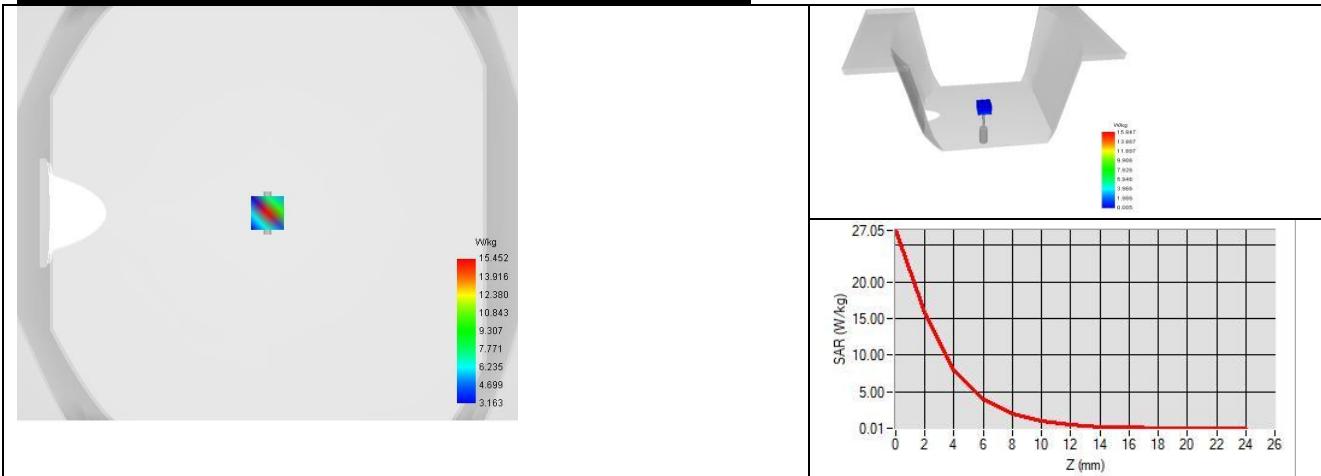
| | |
|------------------------------------|--|
| Software | OPENSAR V5 |
| Phantom | SN 13/09 SAM68 |
| Probe | SN 41/18 EPGO333 |
| Liquid | Head Liquid Values 5200 MHz: eps' :34.44 sigma : 4.64 Head Liquid Values 5400 MHz: eps' :33.63 sigma : 4.88 Head Liquid Values 5600 MHz: eps' :32.80 sigma : 5.12 Head Liquid Values 5800 MHz: eps' :32.63 sigma : 5.31 |
| Distance between dipole and liquid | 10 mm |
| Area scan resolution | dx=8mm/dy=8mm |
| Zoon Scan Resolution | dx=4mm/dy=4m/dz=2mm |
| Frequency | 5200 MHz 5400 MHz 5600 MHz 5800 MHz |
| Input power | 20 dBm |
| Liquid Temperature | 20 +/- 1 °C |
| Lab Temperature | 20 +/- 1 °C |
| Lab Humidity | 30-70 % |

| Frequency (MHz) | 1 g SAR (W/kg) | | 10 g SAR (W/kg) | |
|-----------------|----------------|--------------|-----------------|--------------|
| | required | measured | required | measured |
| 5200 | 76.50 | 73.88 (7.39) | 21.60 | 21.29 (2.13) |
| 5400 | - | 81.47 (8.15) | - | 23.23 (2.32) |
| 5600 | - | 78.71 (7.87) | - | 22.64 (2.26) |
| 5800 | 78.00 | 74.21 (7.42) | 21.90 | 21.50 (2.15) |

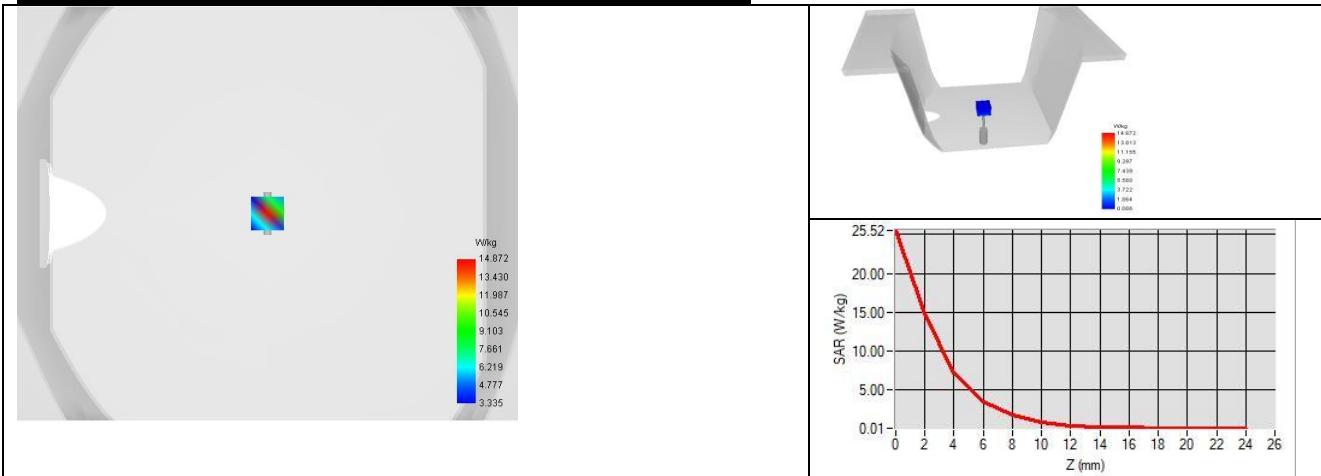
SAR MEASUREMENT PLOTS @ 5200 MHz



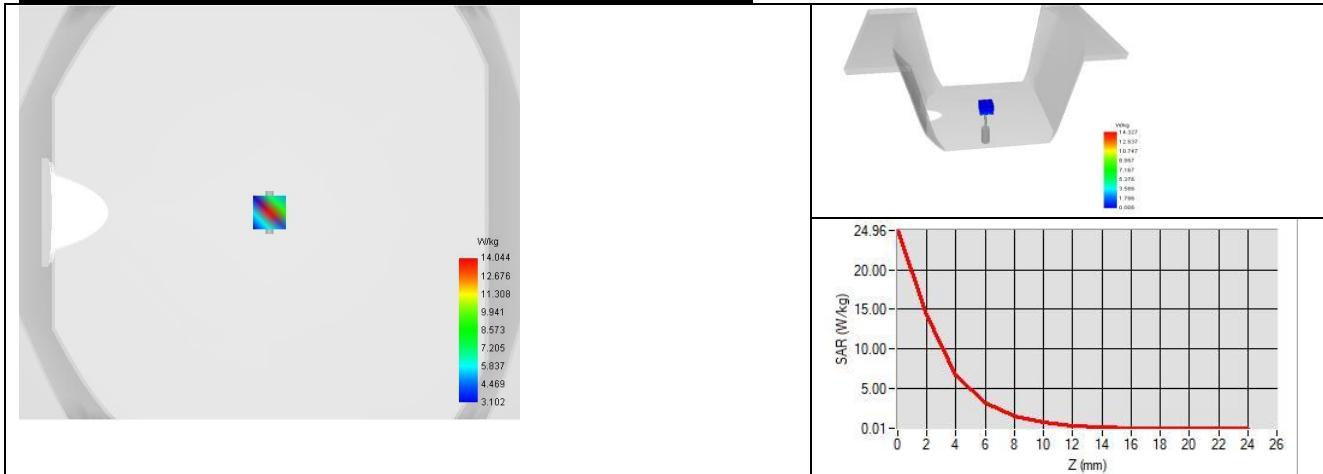
SAR MEASUREMENT PLOTS @ 5400 MHz



SAR MEASUREMENT PLOTS @ 5600 MHz



SAR MEASUREMENT PLOTS @ 5800 MHz



7.3 BODY LIQUID MEASUREMENT

| Frequency MHz | Relative permittivity (ϵ_r') | | Conductivity (σ) S/m | |
|------------------|---|----------|-------------------------------|----------|
| | required | measured | required | measured |
| 5200 | 49.0 \pm 10 % | 45.50 | 5.30 \pm 10 % | 5.63 |
| 5300 | 48.9 \pm 10 % | | 5.42 \pm 10 % | |
| 5400 | 48.7 \pm 10 % | 44.78 | 5.53 \pm 10 % | 5.95 |
| 5500 | 48.6 \pm 10 % | | 5.65 \pm 10 % | |
| 5600 | 48.5 \pm 10 % | 44.85 | 5.77 \pm 10 % | 6.26 |
| 5800 | 48.2 \pm 10 % | 44.45 | 6.00 \pm 10 % | 6.58 |

7.4 SAR MEASUREMENT RESULT WITH BODY LIQUID

| | |
|------------------------------------|--|
| Software | OPENSAR V5 |
| Phantom | SN 13/09 SAM68 |
| Probe | SN 41/18 EPGO333 |
| Liquid | Body Liquid Values 5200 MHz: ϵ_r' :45.50 sigma : 5.63 Body Liquid Values 5400 MHz: ϵ_r' :44.78 sigma : 5.95 Body Liquid Values 5600 MHz: ϵ_r' :44.85 sigma : 6.26 Body Liquid Values 5800 MHz: ϵ_r' :44.45 sigma : 6.58 |
| Distance between dipole and liquid | 10 mm |
| Area scan resolution | dx=8mm/dy=8mm |
| Zoon Scan Resolution | dx=4mm/dy=4m/dz=2mm |
| Frequency | 5200 MHz 5400 MHz 5600 MHz 5800 MHz |
| Input power | 20 dBm |
| Liquid Temperature | 20 \pm 1 °C |
| Lab Temperature | 20 \pm 1 °C |
| Lab Humidity | 30-70 % |

| Frequency (MHz) | 1 g SAR (W/kg) | 10 g SAR (W/kg) |
|-----------------|----------------|-----------------|
| | measured | measured |
| 5200 | 71.75 (7.18) | 20.38 (2.04) |
| 5400 | 75.93 (7.59) | 21.44 (2.14) |
| 5600 | 77.44 (7.74) | 22.16 (2.22) |
| 5800 | 69.01 (6.90) | 19.75 (1.97) |