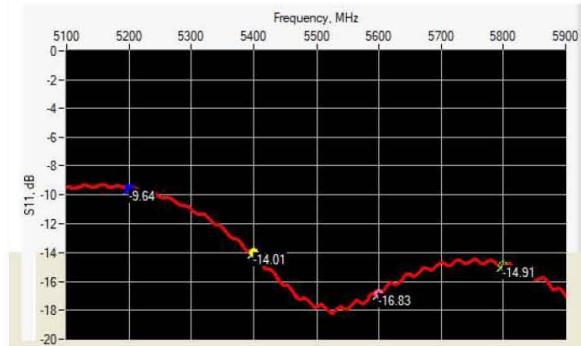




SAR REFERENCE WAVEGUIDE CALIBRATION REPORT

Ref: ACR.53.31.24.BES.A

6.2 S11 PARAMETER6.2.1 S11 parameter In Head Liquid

| Frequency (MHz) | S11 parameter (dB) | Requirement (dB) | Impedance |
|-----------------|--------------------|------------------|--------------------------------|
| 5200 | -9.64 | -8 | $25.80 \Omega - 6.58 j\Omega$ |
| 5400 | -14.01 | -8 | $51.53 \Omega + 20.60 j\Omega$ |
| 5600 | -16.83 | -8 | $44.12 \Omega - 12.35 j\Omega$ |
| 5800 | -14.91 | -8 | $38.53 \Omega + 11.21 j\Omega$ |

6.3 SAR

The IEC/IEEE 62209-1528 and FCC KDB865664 D01 standards state that the system validation measurements must be performed using a reference waveguide meeting the fore mentioned return loss and mechanical dimension requirements. The validation measurement must be performed with the matching layer placed in the open end of the waveguide, with the waveguide and matching layer in direct contact with the phantom shell.

6.3.1 SAR With Head Liquid

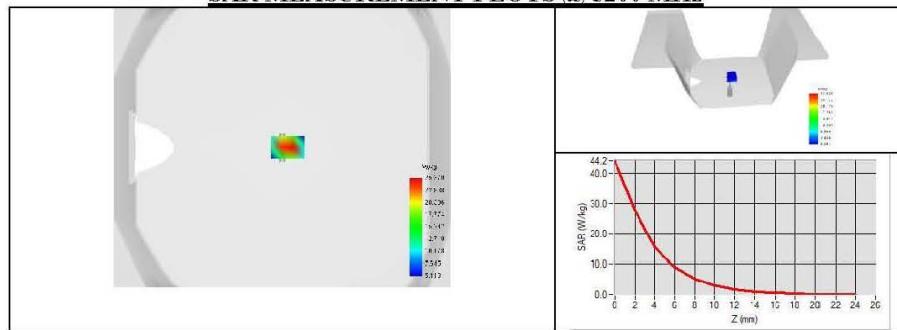
At those frequencies, the target SAR value can not be generic. Hereunder is the target SAR value defined by MVG, within the uncertainty for the system validation. All SAR values are normalized to 1 W net power. In bracket, the measured SAR is given with the used input power.


SAR REFERENCE WAVEGUIDE CALIBRATION REPORT

Ref: ACR.53.31.24.BES.A

| | |
|----------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Software | OPENSAR V5 |
| Phantom | SN 13/09 SAM68 |
| Probe | 3523-EPGO-429 |
| Liquid | Head Liquid Values 5200 MHz: $\epsilon' = 34.16$ sigma : 4.42 Head Liquid Values 5400 MHz: $\epsilon' = 33.63$ sigma : 4.64 Head Liquid Values 5600 MHz: $\epsilon' = 33.12$ sigma : 4.87 Head Liquid Values 5800 MHz: $\epsilon' = 32.57$ sigma : 5.12 |
| Distance between dipole waveguide and liquid | 0 mm |
| Area scan resolution | $dx = 8\text{mm}/dy = 8\text{mm}$ |
| Zoon Scan Resolution | $dx = 4\text{mm}/dy = 4\text{m}/dz = 2\text{mm}$ |
| 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 normalized to 1W | Target normalized to 1W | Measured | Measured normalized to 1W | Target normalized to 1W |
| 5200 | 16.26 | 162.59 | 159.00 | 5.62 | 56.21 | 56.90 |
| 5400 | 15.98 | 159.81 | 166.40 | 5.50 | 55.00 | 58.43 |
| 5600 | 17.91 | 179.15 | 173.80 | 6.10 | 61.01 | 59.97 |
| 5800 | 18.22 | 182.20 | 181.20 | 6.13 | 61.32 | 61.50 |

SAR MEASUREMENT PLOTS @ 5200 MHz


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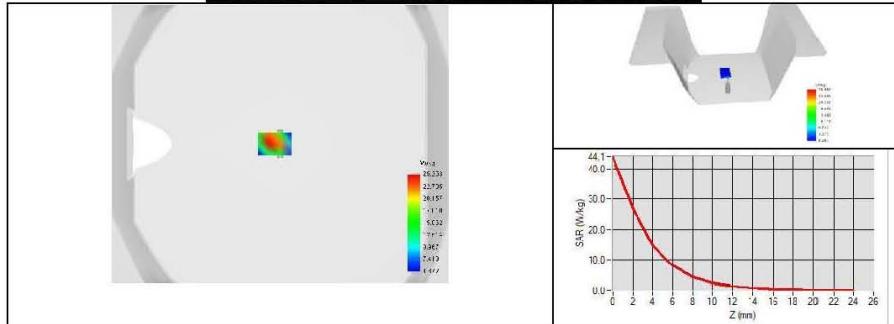
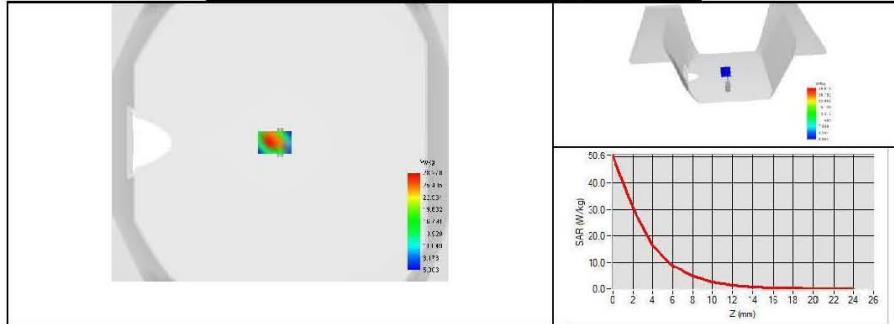
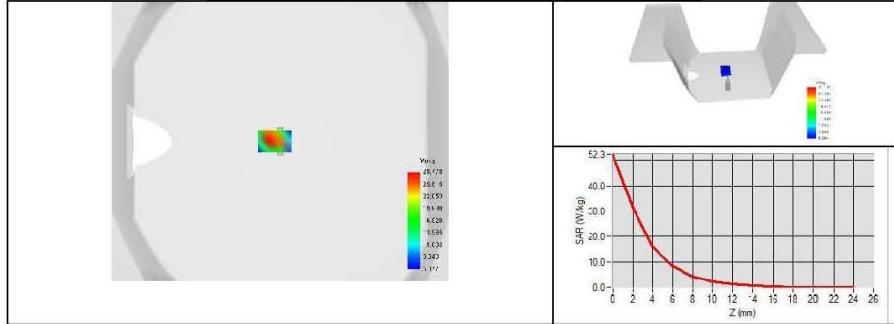
Template_ACR.DDD.N.YY.MVGB.ISSUE_SAR Reference Waveguide v1

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SAR MEASUREMENT PLOTS @ 5400 MHz**SAR MEASUREMENT PLOTS @ 5600 MHz****SAR MEASUREMENT PLOTS @ 5800 MHz**



SAR REFERENCE WAVEGUIDE CALIBRATION REPORT

Ref : ACR.53.31.24.BES A

7 LIST OF EQUIPMENT

| Equipment Summary Sheet | | | | |
|------------------------------------|-------------------------|--------------------|-----------------------------------------------|-----------------------------------------------|
| Equipment Description | Manufacturer / Model | Identification No. | Current Calibration Date | Next Calibration Date |
| SAM Phantom | MVG | SN 13/09 SAM68 | Validated. No cal required. | Validated. No cal required. |
| COMOSAR Test Bench | Version 3 | NA | Validated. No cal required. | Validated. No cal required. |
| Network Analyzer | Rohde & Schwarz ZVM | 100203 | 08/2021 | 08/2024 |
| Network Analyzer – Calibration kit | Rohde & Schwarz ZV-Z235 | 101223 | 07/2022 | 07/2025 |
| Calipers | Mitutoyo | SN 0009732 | 11/2022 | 11/2025 |
| Reference Probe | MVG | 3623-EGPO-431 | 11/2023 | 11/2024 |
| Multimeter | Keithley 2000 | 4013982 | 02/2023 | 02/2026 |
| Signal Generator | Rohde & Schwarz SMB | 106589 | 03/2022 | 03/2025 |
| Amplifier | MVG | MODU-023-C-0002 | Characterized prior to test. No cal required. | Characterized prior to test. No cal required. |
| Power Meter | NI-USB 5680 | 170100013 | 06/2021 | 06/2024 |
| Power Meter | Keysight U2000A | SN: MY62340002 | 10/2022 | 10/2025 |
| Directional Coupler | Krytar 158020 | 131467 | Characterized prior to test. No cal required. | Characterized prior to test. No cal required. |
| Temperature / Humidity Sensor | Testo 184 H1 | 44225320 | 06/2021 | 06/2024 |

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Appendix E. Justification of the extended calibration

If dipoles are verified in return loss (<-20dB, within 20% of prior calibration for below 3GHz, and <-8dB, within 20% of prior calibration for 5GHz to 6GHz), and in impedance (within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

<Head 750MHz>

| Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) | Date of Measurement |
|------------------|-----------|-----------|------------|---------------------|
| -29.73 | - | 52.5 | - | Feb. 21, 2024 |
| -29.642 | 0.30 | 52.998 | 0.498 | Feb. 20, 2025 |

The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 835MHz>

| Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) | Date of Measurement |
|------------------|-----------|-----------|------------|---------------------|
| -42.84 | - | 50.5 | - | Feb. 21, 2024 |
| -42.803 | 0.09 | 50.592 | 0.092 | Feb. 20, 2025 |

The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 1800MHz>

| Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) | Date of Measurement |
|------------------|-----------|-----------|------------|---------------------|
| -24.53 | - | 44.8 | - | Feb. 21, 2024 |
| -24.545 | 0.06 | 44.809 | 0.009 | Feb. 20, 2025 |

The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 1900MHz>

| Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) | Date of Measurement |
|------------------|-----------|-----------|------------|---------------------|
| -23.28 | - | 46.2 | - | Feb. 21, 2024 |
| -23.518 | 1.02 | 46.516 | 0.316 | Feb. 20, 2025 |

The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 2450MHz>

| Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) | Date of Measurement |
|------------------|-----------|-----------|------------|---------------------|
| -29.27 | - | 53.6 | - | Feb. 21, 2024 |
| -29.39 | 0.41 | 53.742 | 0.142 | Feb. 20, 2025 |

The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 2600MHz>

| Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) | Date of Measurement |
|------------------|-----------|-----------|------------|---------------------|
| -25.57 | - | 54.5 | - | Feb. 21, 2024 |
| -25.248 | 1.26 | 54.653 | 0.153 | Feb. 20, 2025 |

The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 5200MHz>

| Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) | Date of Measurement |
|------------------|-----------|-----------|------------|---------------------|
| -9.64 | - | 25.80 | - | Feb. 21, 2024 |
| -9.1819 | 4.75 | 25.891 | 0.091 | Feb. 20, 2025 |

The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

<Head 5800MHz>

| Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) | Date of Measurement |
|------------------|-----------|-----------|------------|---------------------|
| -14.91 | - | 38.53 | - | Feb. 21, 2024 |
| -14.349 | 3.76 | 38.715 | 0.185 | Feb. 20, 2025 |

The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

※※END OF THE REPORT※※