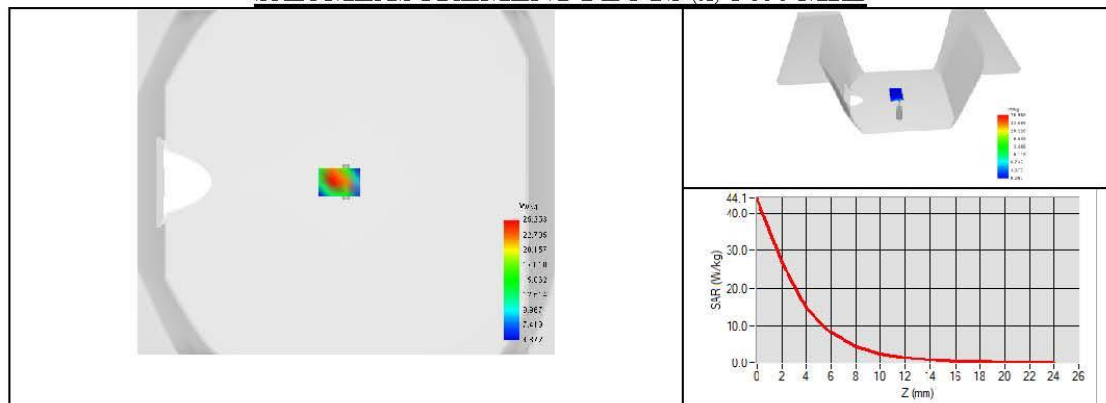




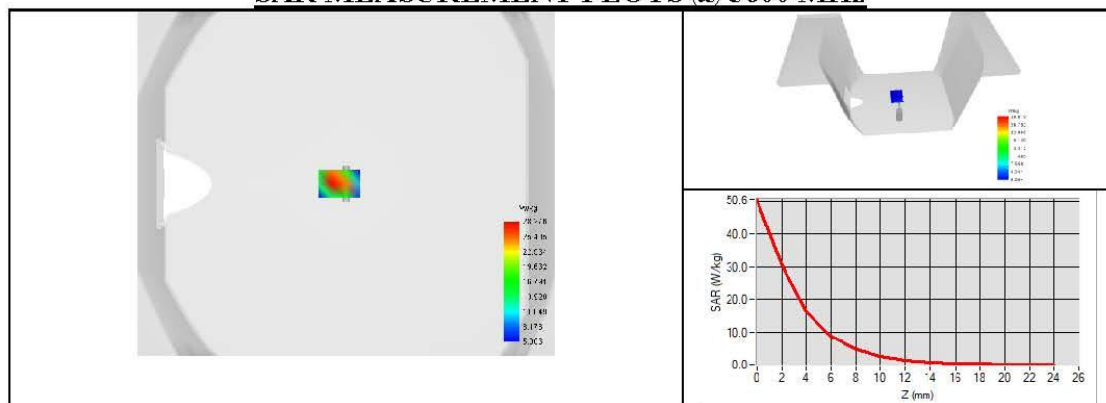
## SAR REFERENCE WAVEGUIDE CALIBRATION REPORT

Ref: ACR.53.31.24.BES.A

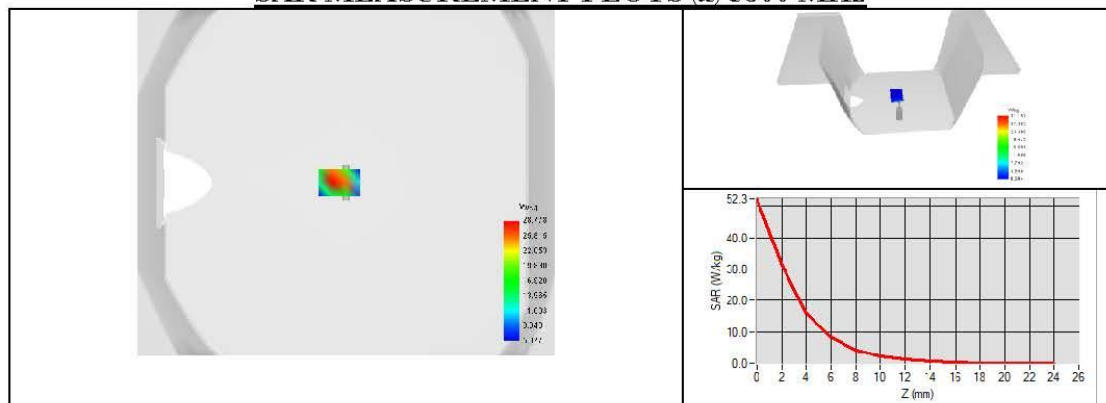
### SAR MEASUREMENT PLOTS @ 5400 MHz



### 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-EPGO-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

**<Justification of the extended calibration>**

If dipoles are verified in return loss ( $<-20\text{dB}$ , within 20% of prior calibration for below 3GHz, and  $<-8\text{dB}$ , 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 835MHz>**

S11 parameter (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-42.84	-	50.50	-	Feb. 21, 2024

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

**<Head 1800MHz>**

S11 parameter (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-24.53	-	44.80	-	Feb. 21, 2024

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

**<Head 1900MHz>**

S11 parameter (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-23.28	-	46.20	-	Feb. 21, 2024

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

**<Head 2450MHz>**

S11 parameter (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-29.27	-	53.60	-	Feb. 21, 2024

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

**<Head 2600MHz>**

S11 parameter (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-25.57	-	54.50	-	Feb. 21, 2024

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

## &lt;Head 5200MHz&gt;

S11 parameter (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-9.64	-	25.80	-	Feb. 21, 2024

The return loss is <-8dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

## &lt;Head 5800MHz&gt;

S11 parameter (dB)	Delta (%)	Impedance	Delta(ohm)	Date of Measurement
-14.91	-	38.53	-	Feb. 21, 2024

The return loss is <-8dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

END