



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

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Appendix E. 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>

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

<Head 1800MHz>

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

<Head 1900MHz>

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

<Head 2450MHz>

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

<Head 2600MHz>

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※※