

APPENDIX F - RETURN LOSS AND IMPEDANCE MEASUREMENT

D750V3 - SN:1167 Extended Dipole Calibrations

Referring to KDB865664 D01, if dipoles are verified in return loss(< -20dB, within 20% of prior calibration), and in impedance(within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Test Equipment Information:

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Simulated Tissue Liquid Head	HBBL600-10000V6	SL AAH U16 BC (Batch:220809-1)	Each Time	/
Twin SAM	Twin SAM V5.0	1874	NCR	NCR
Network Analyzer	E5071C	MY46519680	2023/07/16	2024/07/15
Network Analyzer Calibration Kit	50 Ω	51026	NCR	NCR

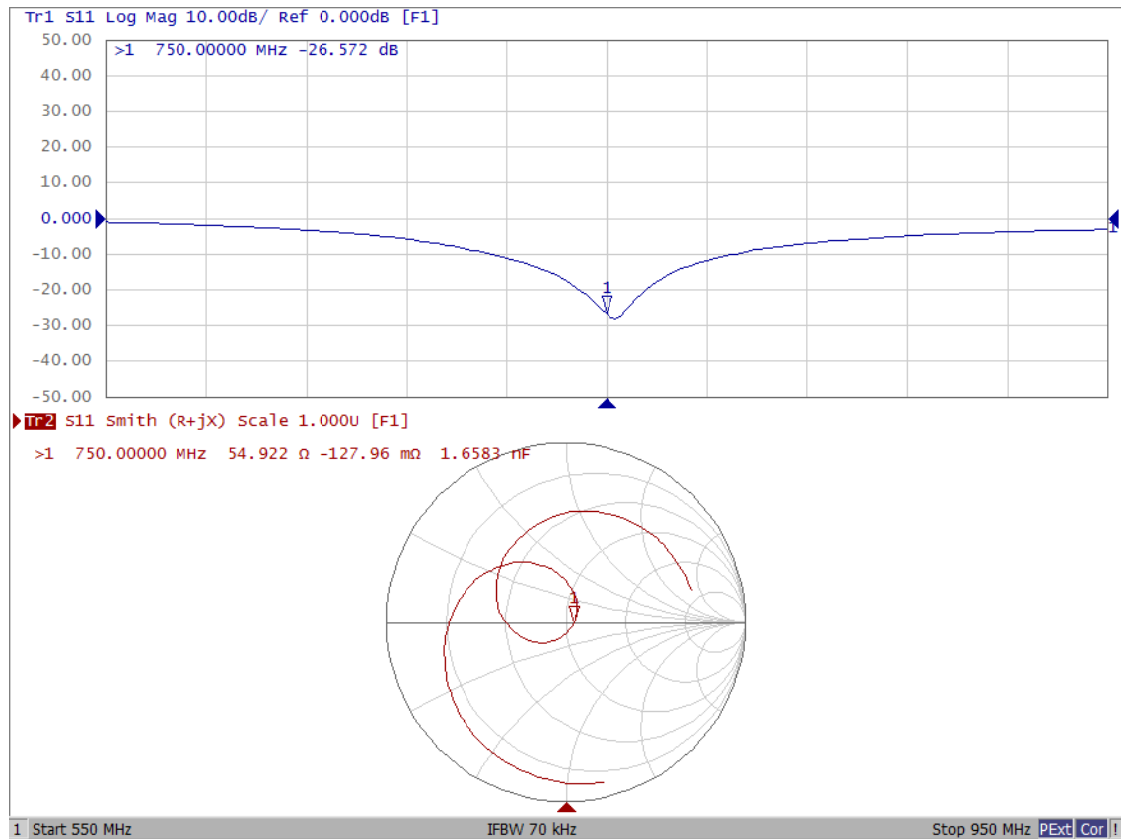
Justification of the extended calibration

D750V3 - SN:1167						
750MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/10/31 (Cal. Report)	-26.709	/	52.987	/	-3.7065	/
2023/10/30 (Extended)	-26.572	-0.51	54.922	1.935	-0.12796	3.57854

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.

Dipole Verification Data> D750V3 - SN:1167 (Date of Measurement: 2023/10/30)

750MHz - Head



	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	<i>Mark Dong</i>
Approved By:	Brave Lu	SAR Supervisor	<i>Brave Lu</i>

D750V3 - SN:1167 Extended Dipole Calibrations

Referring to KDB865664 D01, if dipoles are verified in return loss(< -20dB, within 20% of prior calibration), and in impedance(within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Test Equipment Information:

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Simulated Tissue Liquid Head	HBBL600-10000V6	SL AAH U16 BC (Batch:220809-1)	Each Time	/
Twin SAM	Twin SAM V5.0	1874	NCR	NCR
Network Analyzer	E5071C	MY46519680	2024/07/11	2025/07/10
Network Analyzer Calibration Kit	50 Ω	51026	NCR	NCR

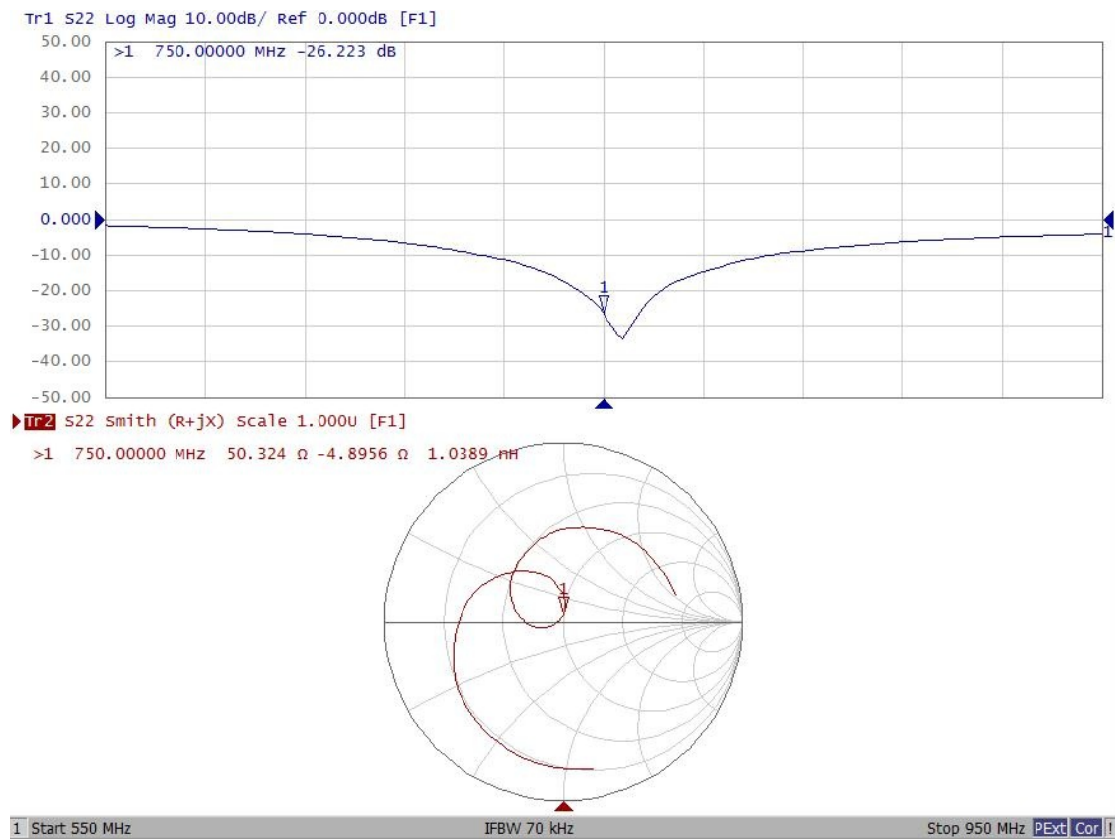
Justification of the extended calibration

D750V3 - SN:1167						
750MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/10/31 (Cal. Report)	-26.709	/	52.987	/	-3.7065	/
2024/10/30 (Extended)	-26.223	-1.82	50.324	-2.663	-4.8956	-1.1891

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.

Dipole Verification Data> D750V3 - SN:1167 (Date of Measurement: 2024/10/30)

750MHz - Head



	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	<i>Mark Dong</i>
Approved By:	Brave Lu	SAR Supervisor	<i>Brave Lu</i>

D1750V2 - SN:1141 Extended Dipole Calibrations

Referring to KDB865664 D01, if dipoles are verified in return loss(< -20dB, within 20% of prior calibration), and in impedance(within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Test Equipment Information:

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Simulated Tissue Liquid Head	HBBL600-10000V6	SL AAH U126 CA (Batch:250429-1)	N/A	N/A
Twin SAM	Twin SAM V5.0	1874	NCR	NCR
Network Analyzer	E5071C	MY46519680	2024/07/11	2025/07/10
Network Analyzer Calibration Kit	50 Ω	51026	NCR	NCR

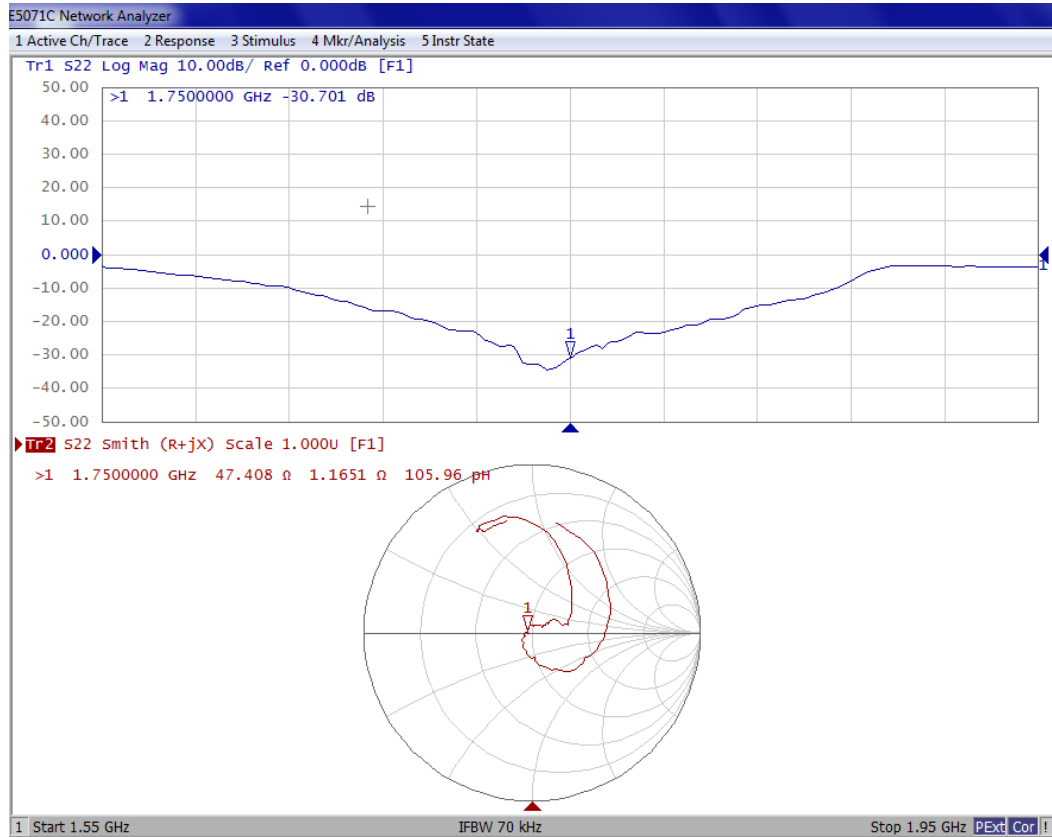
Justification of the extended calibration

D1750V2 - SN:1141						
1750MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2024/6/17 (Cal. Report)	-30.3	/	47.2	/	-0.96	/
2025/6/15 (Extended)	-30.7	1.32%	47.4	0.2	1.17	2.13

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.

Dipole Verification Data> D1750V2 - SN:1141 (Date of Measurement: 2025/6/15)

1750MHz - Head



	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	<i>Mark Dong</i>
Approved By:	Brave Lu	SAR Supervisor	<i>Brave Lu</i>

D1900V2 - SN:543 Extended Dipole Calibrations

Referring to KDB865664 D01, if dipoles are verified in return loss(< -20dB, within 20% of prior calibration), and in impedance(within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Test Equipment Information:

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Simulated Tissue Liquid Head	HBBL600-10000V6	SL AAH U16 BC (Batch:220809-1)	Each Time	/
Twin SAM	Twin SAM V5.0	1874	NCR	NCR
Network Analyzer	E5071C	MY46519680	2023/07/16	2024/07/15
Network Analyzer Calibration Kit	50 Ω	51026	NCR	NCR

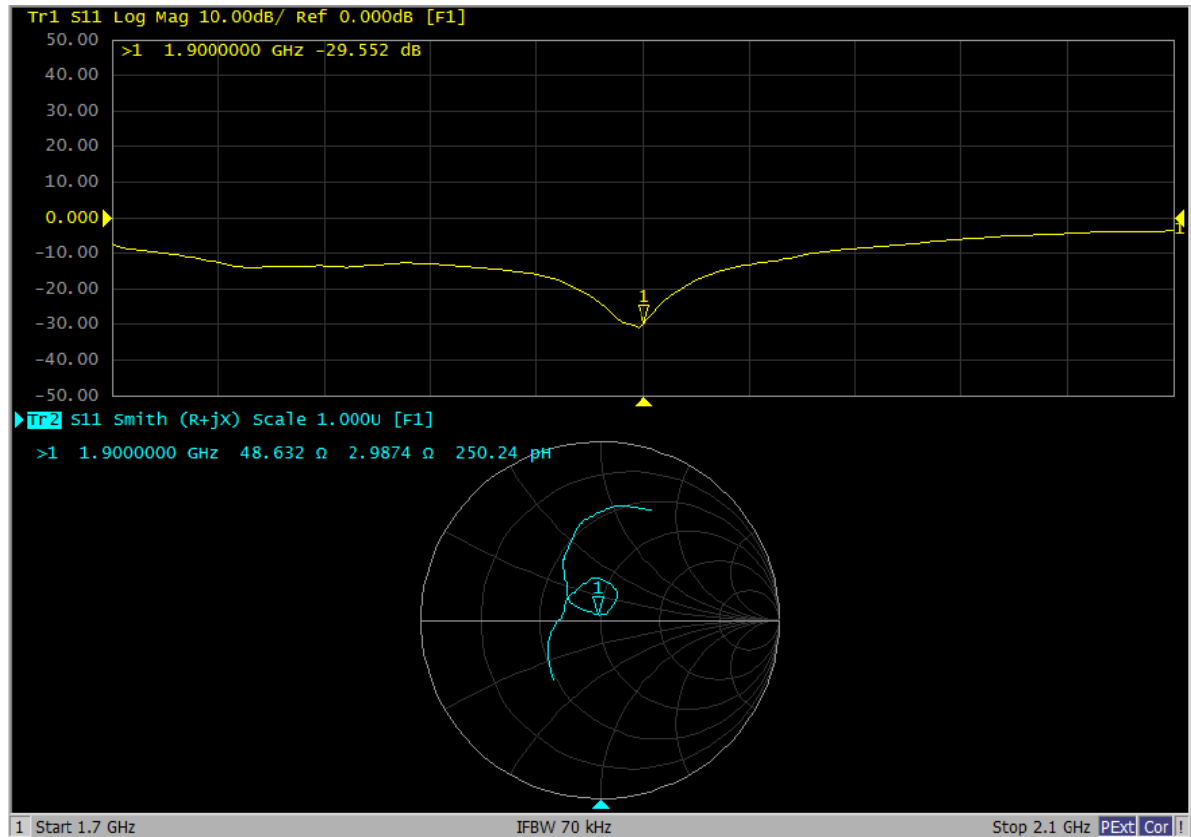
Justification of the extended calibration

D1900V2 - SN:543						
1900MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/11/2 (Cal. Report)	-28.189	/	49.908	/	3.8937	/
2023/11/1 (Extended)	-29.552	4.84	48.632	-1.276	2.9874	-0.9063

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.

Dipole Verification Data> D1900V2 - SN:543 (Date of Measurement: 2023/11/1)

1900MHz - Head



	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	<i>Mark Dong</i>
Approved By:	Brave Lu	SAR Supervisor	<i>Brave Lu</i>

D1900V2 - SN:543 Extended Dipole Calibrations

Referring to KDB865664 D01, if dipoles are verified in return loss(< -20dB, within 20% of prior calibration), and in impedance(within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Test Equipment Information:

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Simulated Tissue Liquid Head	HBBL600-10000V6	SL AAH U16 BC (Batch:220809-1)	Each Time	/
Twin SAM	Twin SAM V5.0	1874	NCR	NCR
Network Analyzer	E5071C	MY46519680	2024/07/11	2025/07/10
Network Analyzer Calibration Kit	50 Ω	51026	NCR	NCR

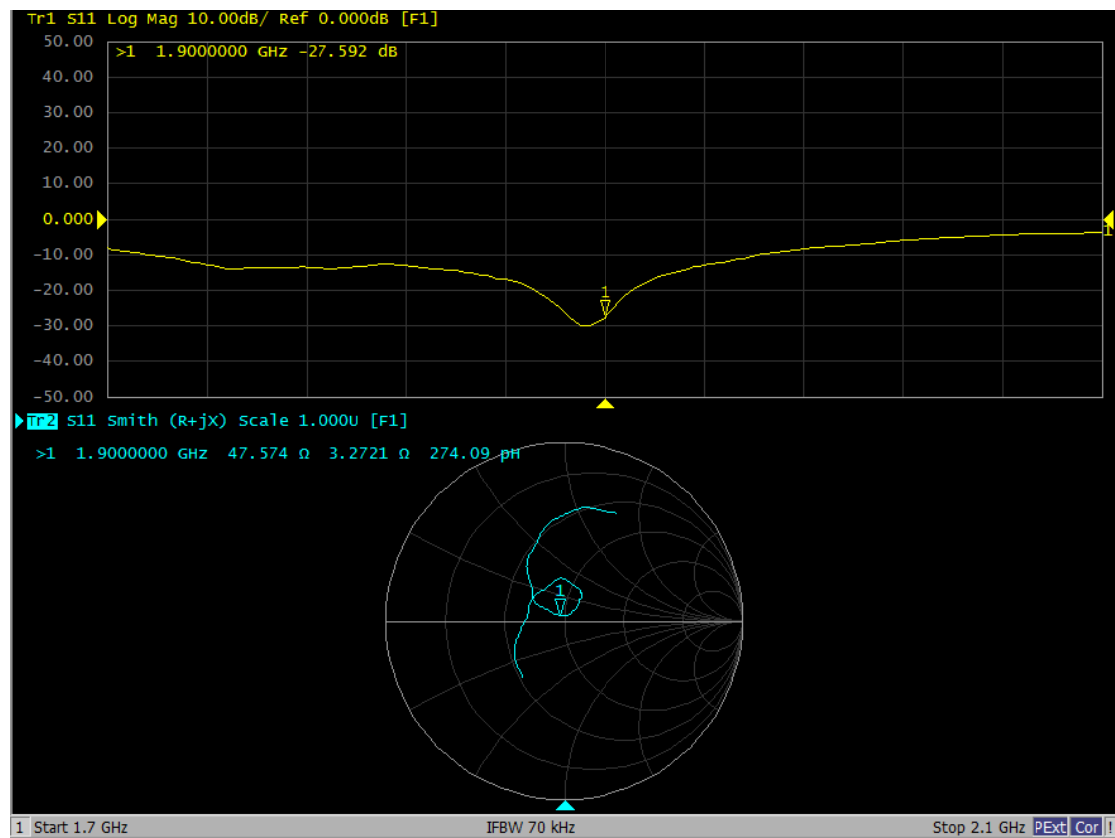
Justification of the extended calibration

D1900V2 - SN:543						
1900MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/11/2 (Cal. Report)	-28.189	/	49.908	/	3.8937	/
2024/11/1 (Extended)	-27.592	-2.12	47.574	-2.334	3.2721	-0.6216

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.

Dipole Verification Data> D1900V2 - SN:543 (Date of Measurement: 2024/11/1)

1900MHz - Head



	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	<i>Mark Dong</i>
Approved By:	Brave Lu	SAR Supervisor	<i>Brave Lu</i>

D2450V2 - SN:971 Extended Dipole Calibrations

Referring to KDB865664 D01, if dipoles are verified in return loss(< -20dB, within 20% of prior calibration), and in impedance(within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Test Equipment Information:

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Simulated Tissue Liquid Head	HBBL600-10000V6	SL AAH U126 CA (Batch:250429-1)	N/A	N/A
Twin SAM	Twin SAM V5.0	1874	NCR	NCR
Network Analyzer	E5071C	MY46519680	2024/07/11	2025/07/10
Network Analyzer Calibration Kit	50 Ω	51026	NCR	NCR

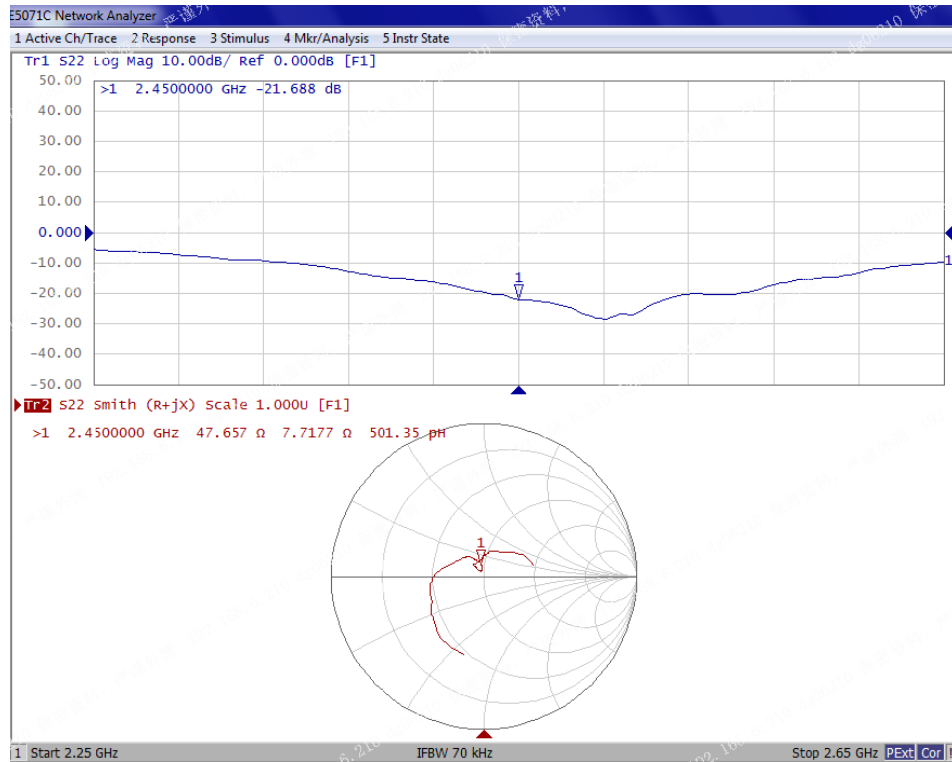
Justification of the extended calibration

D2450V2 - SN:971						
2450MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2024/6/15 (Cal. Report)	-23.0	/	52.3	/	6.84	/
2025/6/10 (Extended)	-21.69	5.7%	47.66	4.64	7.72	-0.88

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.

Dipole Verification Data> D2450V2 - SN:971 (Date of Measurement: 2025/6/10)

2450MHz - Head



	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	Mark Dong
Approved By:	Brave Lu	SAR Supervisor	Brave Lu

D2600V2 - SN:1132 Extended Dipole Calibrations

Referring to KDB 865664 D01, if dipoles are verified in return loss(< -20dB, within 20% of prior calibration), and in impedance(within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Test Equipment Information:

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Simulated Tissue Liquid Head	HBBL600-10000V6	SL AAH U16 BC (Batch:220809-1)	Each Time	/
Twin SAM	Twin SAM V5.0	1874	NCR	NCR
Network Analyzer	E5071C	MY46519680	2023/07/16	2024/07/15
Network Analyzer Calibration Kit	50 Ω	51026	NCR	NCR

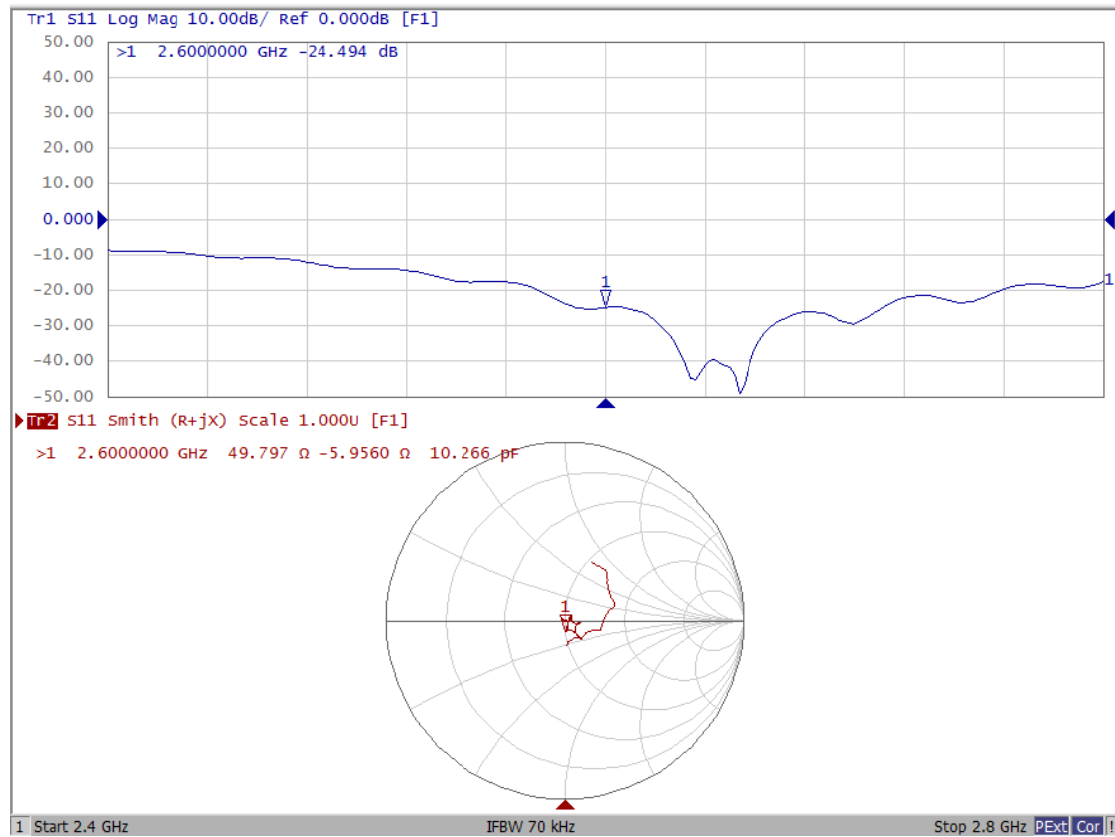
Justification of the extended calibration

D2600V2 - SN:1132						
2600MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/11/1 (Cal. Report)	-22.741	/	47.028	/	-6.4392	/
2023/10/31 (Extended)	-24.494	7.71	49.797	2.769	-5.9560	0.4832

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.

Dipole Verification Data> D2600V2 - SN:1132 (Date of Measurement: 2023/10/31)

2600MHz - Head



	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	<i>Mark Dong</i>
Approved By:	Brave Lu	SAR Supervisor	<i>Brave Lu</i>

D2600V2 - SN:1132 Extended Dipole Calibrations

Referring to KDB 865664 D01, if dipoles are verified in return loss(< -20dB, within 20% of prior calibration), and in impedance(within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Test Equipment Information:

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Simulated Tissue Liquid Head	HBBL600-10000V6	SL AAH U16 BC (Batch:220809-1)	Each Time	/
Twin SAM	Twin SAM V5.0	1874	NCR	NCR
Network Analyzer	E5071C	MY46519680	2024/07/11	2025/07/10
Network Analyzer Calibration Kit	50 Ω	51026	NCR	NCR

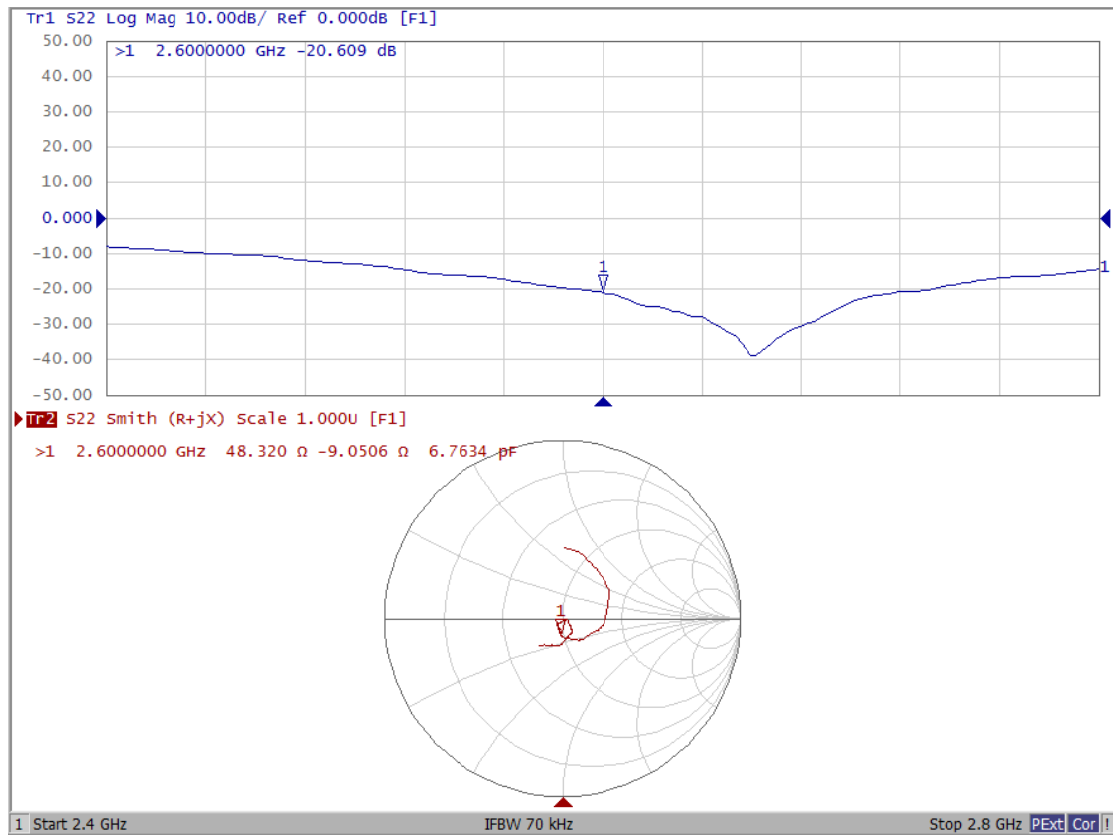
Justification of the extended calibration

D2600V2 - SN:1132						
2600MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/11/1 (Cal. Report)	-22.741	/	47.028	/	-6.4392	/
2024/10/31 (Extended)	-20.609	-9.38	48.320	1.292	-9.0506	-2.6114

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.

Dipole Verification Data> D2600V2 - SN:1132 (Date of Measurement: 2024/10/31)

2600MHz - Head



	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	<i>Mark Dong</i>
Approved By:	Brave Lu	SAR Supervisor	<i>Brave Lu</i>

D5GHzV2 - SN:1246 Extended Dipole Calibrations

Referring to KDB865664 D01, if dipoles are verified in return loss(< -20dB, within 20% of prior calibration), and in impedance(within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Test Equipment Information:

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Simulated Tissue Liquid Head	HBBL600-10000V6	SL AAH U16 BC (Batch:220809-1)	Each Time	/
Twin SAM	Twin SAM V5.0	1874	NCR	NCR
Network Analyzer	E5071C	MY46519680	2023/07/16	2024/07/15
Network Analyzer Calibration Kit	50 Ω	51026	NCR	NCR

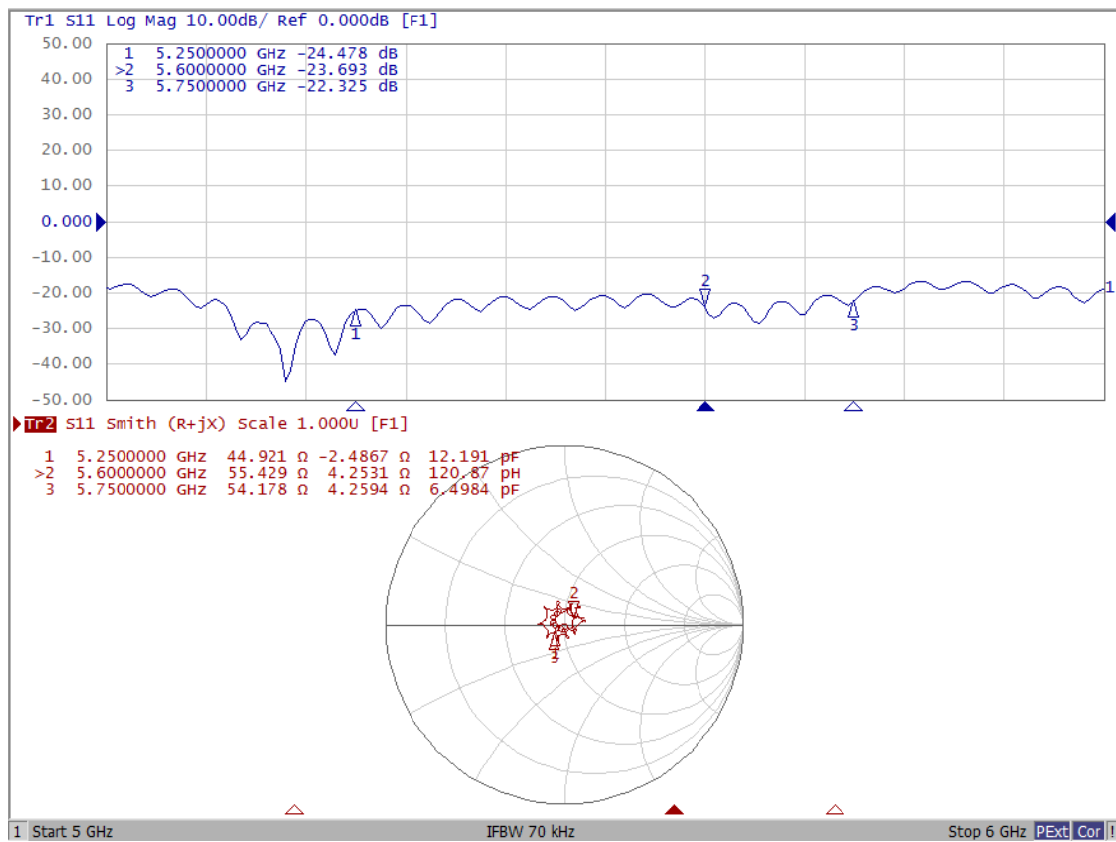
Justification of the extended calibration

D5GHzV2 - SN:1246						
5250MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/11/1 (Cal. Report)	-29.797	/	49.124	/	-3.0884	/
2023/10/31 (Extended)	-24.478	-17.85	44.921	-4.203	-2.4867	0.6017
5600MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/11/1 (Cal. Report)	-26.903	/	51.979	/	4.1641	/
2023/10/31 (Extended)	-23.693	-11.93	55.429	3.45	4.2531	0.089
5750MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/11/1 (Cal. Report)	-27.590	/	53.547	/	2.4705	/
2023/10/31 (Extended)	-22.325	-19.08	54.178	0.631	4.2594	1.7889

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.

Dipole Verification Data> D5GHzV2 - SN:1246 (Date of Measurement: 2023/10/31)

5250MHz/5600MHz/5750MHz - Head



	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	<i>Mark Dong</i>
Approved By:	Brave Lu	SAR Supervisor	<i>Brave Lu</i>

D5GHzV2 - SN:1246 Extended Dipole Calibrations

Referring to KDB865664 D01, if dipoles are verified in return loss(< -20dB, within 20% of prior calibration), and in impedance(within 5 ohm of prior calibration), the annual calibration is not necessary and the calibration interval can be extended.

Test Equipment Information:

Equipment	Model	S/N	Calibration Date	Calibration Due Date
Simulated Tissue Liquid Head	HBBL600-10000V6	SL AAH U16 BC (Batch:220809-1)	Each Time	/
Twin SAM	Twin SAM V5.0	1874	NCR	NCR
Network Analyzer	E5071C	MY46519680	2024/07/11	2025/07/10
Network Analyzer Calibration Kit	50 Ω	51026	NCR	NCR

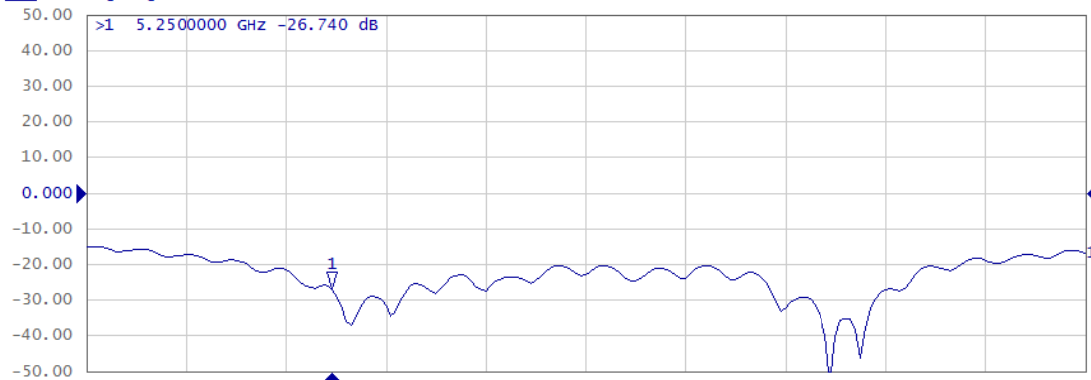
Justification of the extended calibration

D5GHzV2 - SN:1246						
5250MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/11/1 (Cal. Report)	-29.797	/	49.124	/	-3.0884	/
2024/10/31 (Extended)	-26.740	-10.26	45.701	-3.423	0.97942	4.06782
5600MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/11/1 (Cal. Report)	-26.903	/	51.979	/	4.1641	/
2024/10/31 (Extended)	-23.451	-12.83	54.620	2.641	5.3537	1.1896
5750MHz Head						
Date of Measurement	Return-Loss (dB)	Delta (%)	Real Impedance (ohm)	Delta (ohm)	Imaginary Impedance (ohm)	Delta (ohm)
2022/11/1 (Cal. Report)	-27.590	/	53.547	/	2.4705	/
2024/10/31 (Extended)	-26.795	-2.88	50.056	-3.491	4.5804	2.1099

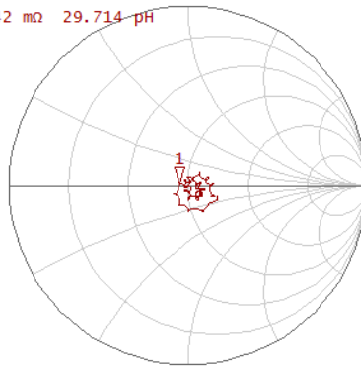
The return loss is <-20dB, within 20% of prior calibration; the impedance is within 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole Verification Data> D5GHzV2 - SN:1246 (Date of Measurement: 2024/10/31)**5250MHz - Head**

▶ Tr1 S22 Log Mag 10.00dB/ Ref 0.000dB [F1]



Tr2 S22 Smith (R+jX) Scale 1.000U [F1]

>1 5.250000 GHz 45.701 Ω 979.42 m Ω 29.714 pF

1 Start 5 GHz

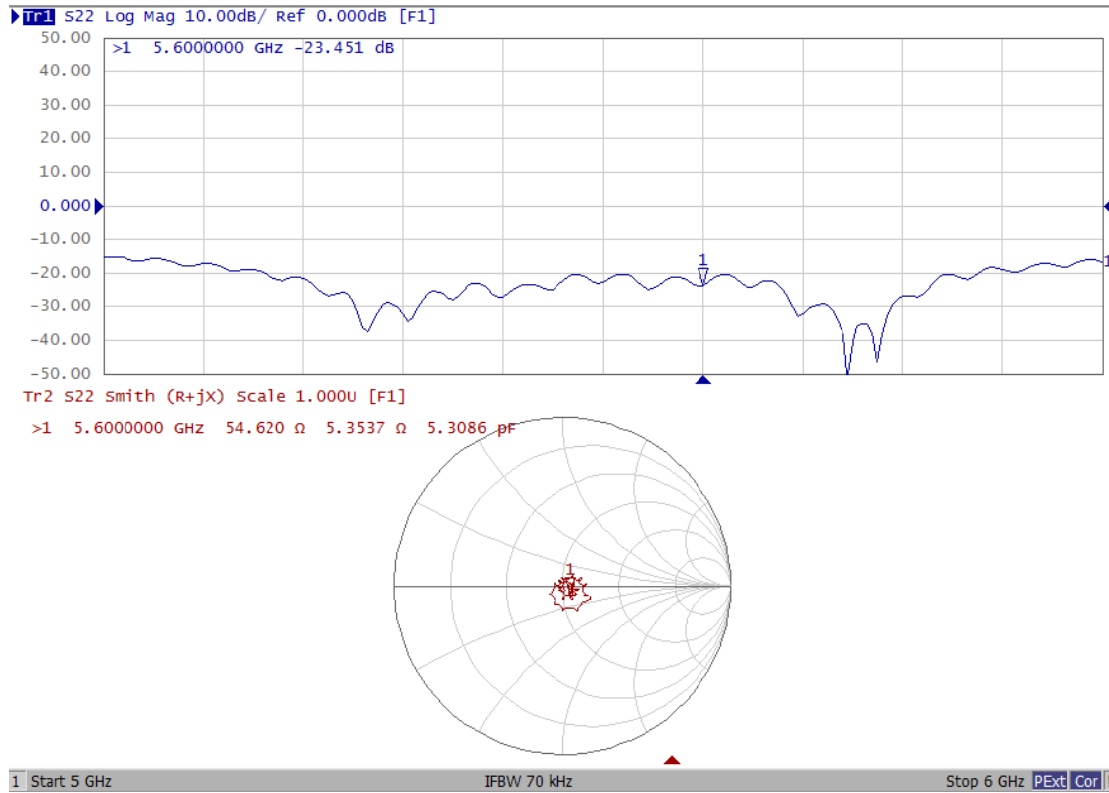
IFBW 70 kHz

Stop 6 GHz PExt Cor I

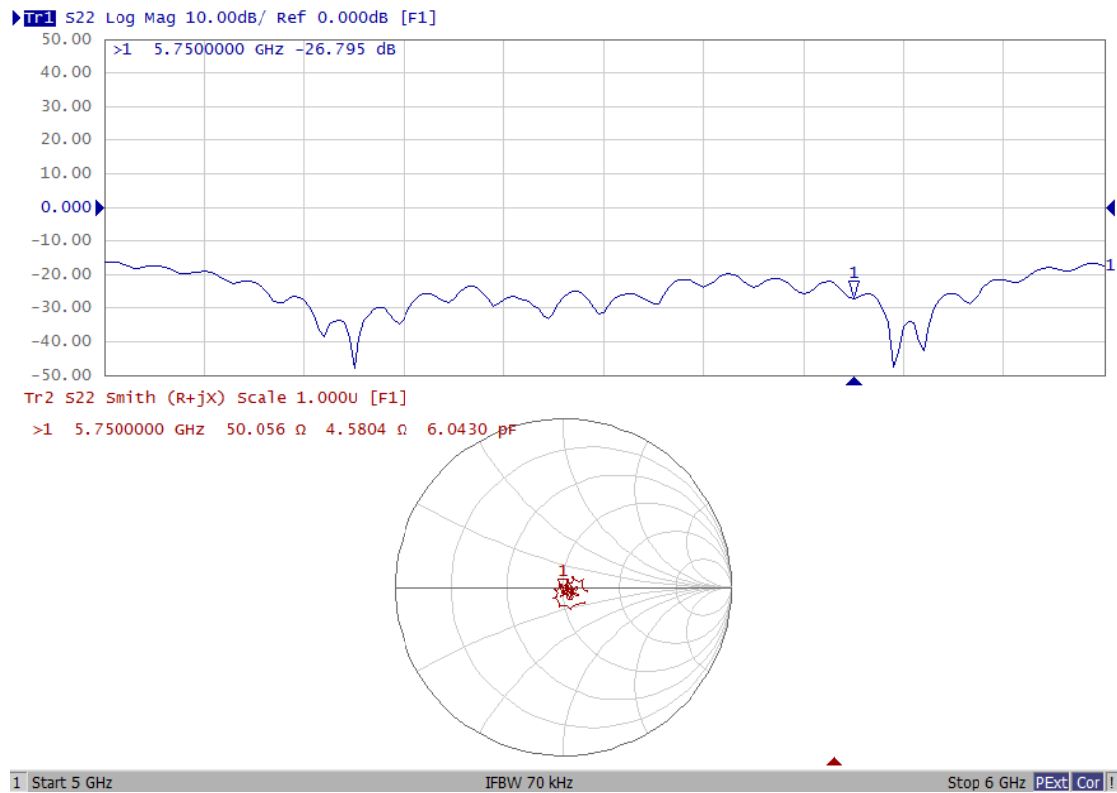
	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	Mark Dong
Approved By:	Brave Lu	SAR Supervisor	Brave Lu

Dipole Verification Data> D5GHzV2 - SN:1246 (Date of Measurement: 2024/10/31)

5600MHz - Head



	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	<i>Mark Dong</i>
Approved By:	Brave Lu	SAR Supervisor	<i>Brave Lu</i>

Dipole Verification Data> D5GHzV2 - SN:1246 (Date of Measurement: 2024/10/31)**5750MHz - Head**

	Name	Tilt	Signature
Calibrated By:	Mark Dong	SAR Engineer	<i>Mark Dong</i>
Approved By:	Brave Lu	SAR Supervisor	<i>Brave Lu</i>