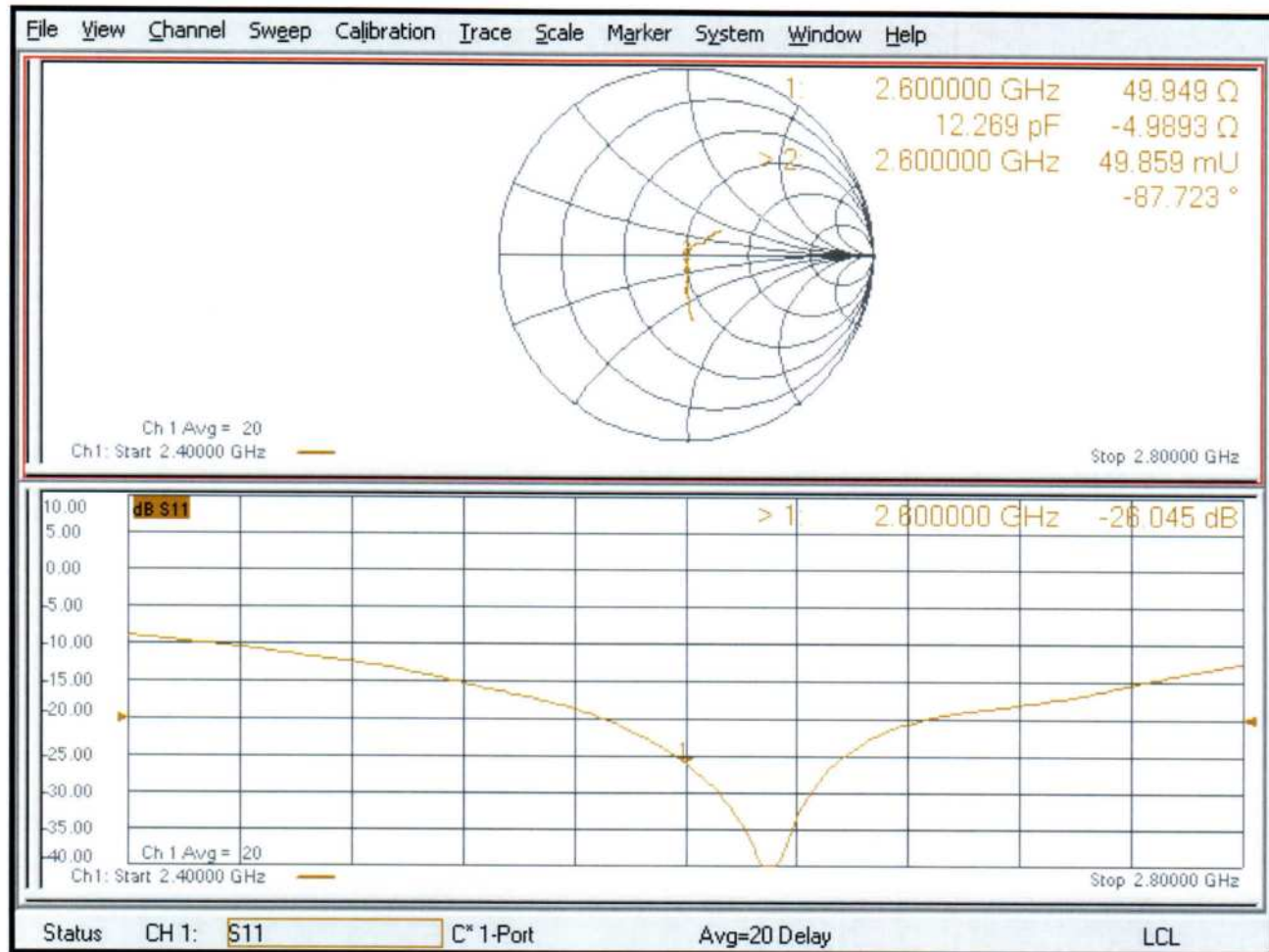


Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date: 17.09.2018

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2600 MHz; Type: D2600V2; Serial: D2600V2 - SN:1032

Communication System: UID 0 - CW; Frequency: 2600 MHz

Medium parameters used: $f = 2600$ MHz; $\sigma = 2.18$ S/m; $\epsilon_r = 51.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2011)

DASY52 Configuration:

- Probe: EX3DV4 - SN7349; ConvF(7.81, 7.81, 7.81) @ 2600 MHz; Calibrated: 30.12.2017
- Sensor-Surface: 1.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 26.10.2017
- Phantom: Flat Phantom 5.0 (back); Type: QD 000 P50 AA; Serial: 1002
- DASY52 52.10.1(1476); SEMCAD X 14.6.11(7439)

Dipole Calibration for Body Tissue/Pin=250 mW, d=10mm/Zoom Scan (7x7x7)/Cube 0:

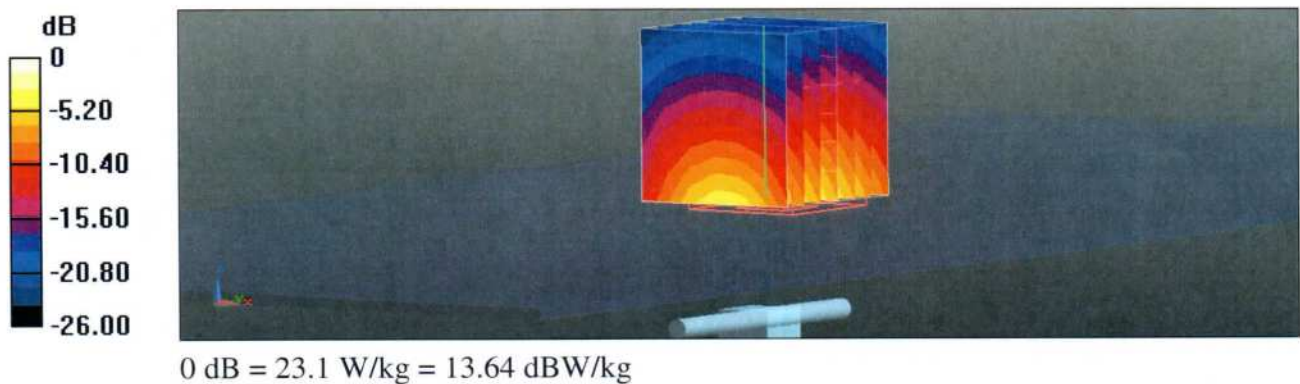
Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 108.8 V/m; Power Drift = -0.08 dB

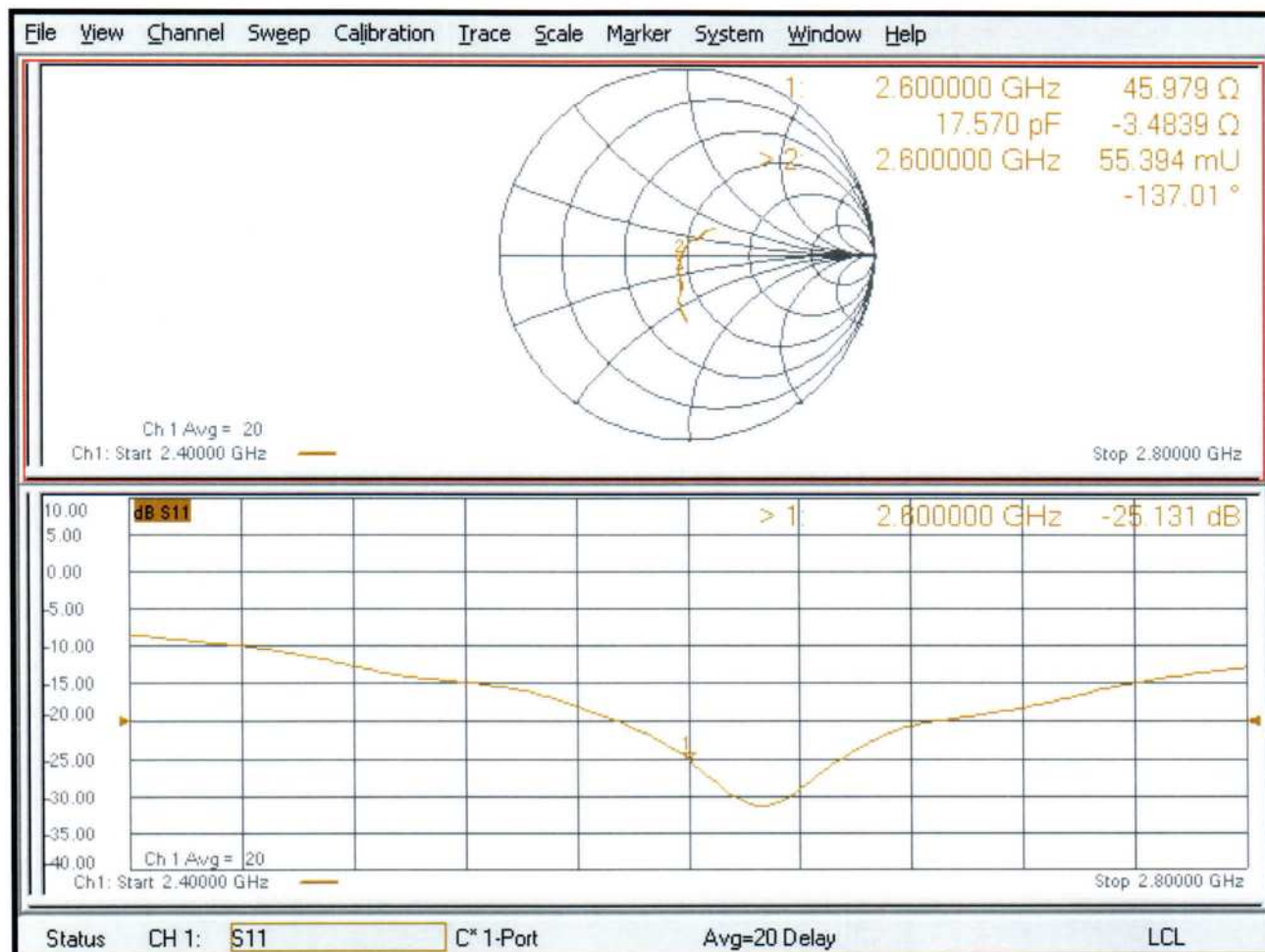
Peak SAR (extrapolated) = 29.0 W/kg

SAR(1 g) = 13.9 W/kg; SAR(10 g) = 6.17 W/kg

Maximum value of SAR (measured) = 23.1 W/kg



Impedance Measurement Plot for Body TSL

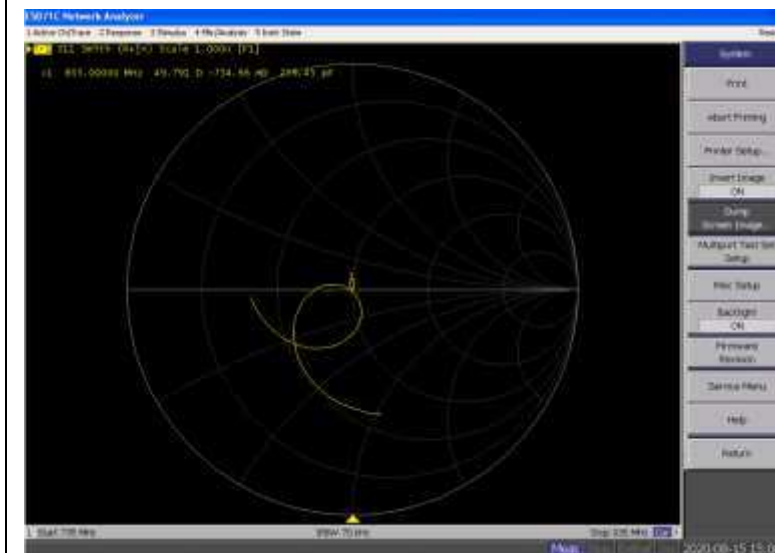


Justification of the extended calibration of Dipole D835V2 SN:4d126

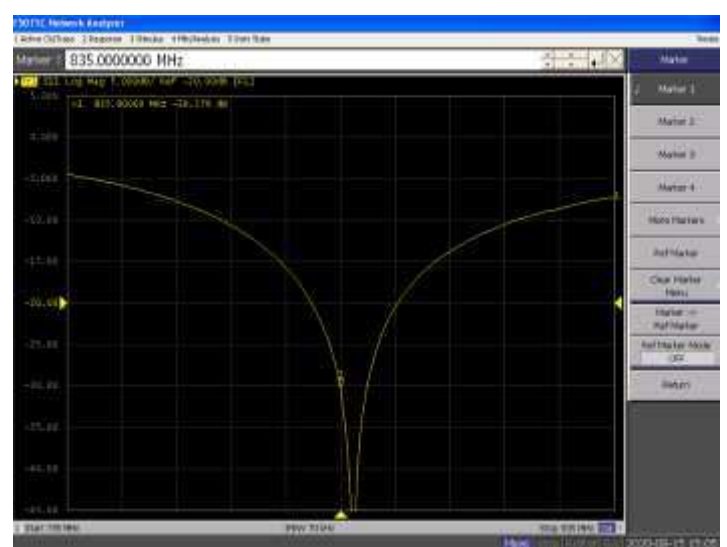
Per KDB 865664, we have Measured the Impedance and Return Loss as below, and the return loss is <-20dB, with 20% of prior calibration; the real or imaginary parts of the impedance is with 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole SN	Tissue Type	Target Tissue		Measured Tissue		Deviation		Ambient Temp	Test Date	Test Engineer
		Impedance transformed to feed point	Return Loss(dB)	Impedance transformed to feed point	Return Loss	$\Delta(5\Omega)$	$\Delta(\text{With in } \pm 20\%)$			
4d126	835MHz Head	49.5 Ω -1.9j Ω	-34.3	49.8 Ω -0.7j Ω	-30.3	R=0.3 Ω , X=1.2j Ω	-11.7%	22°C	2020/8/15	Zeng yongguang
4d126	835MHz Body	45.4 Ω -0.4j Ω	-26.3	48.4 Ω -4.5j Ω	-26.6	R=3.0 Ω , X=-4.1j Ω	1.1%	22°C	2020/8/15	Zeng yongguang

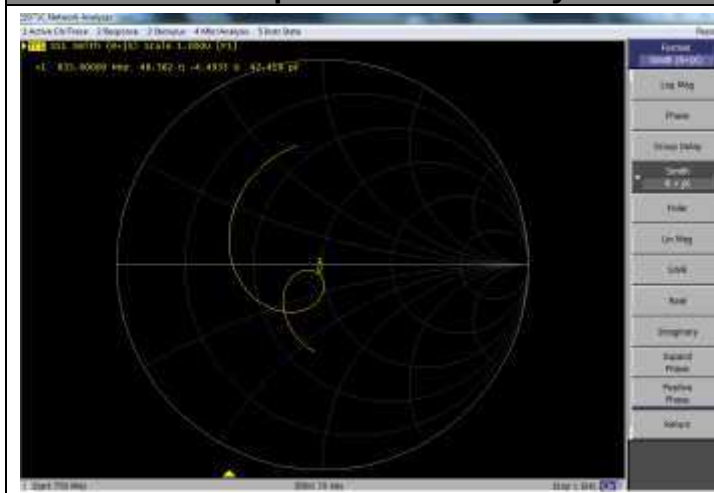
Impedance Test-Head



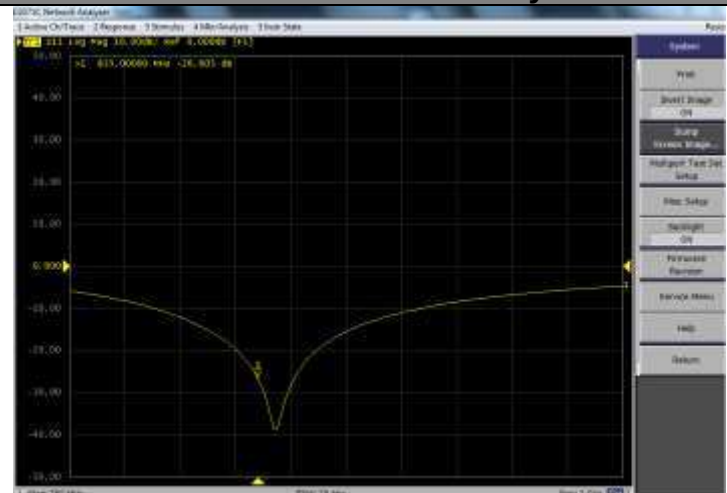
Return Loss Test-Head



Impedance Test-Body



Return Loss Test-Body



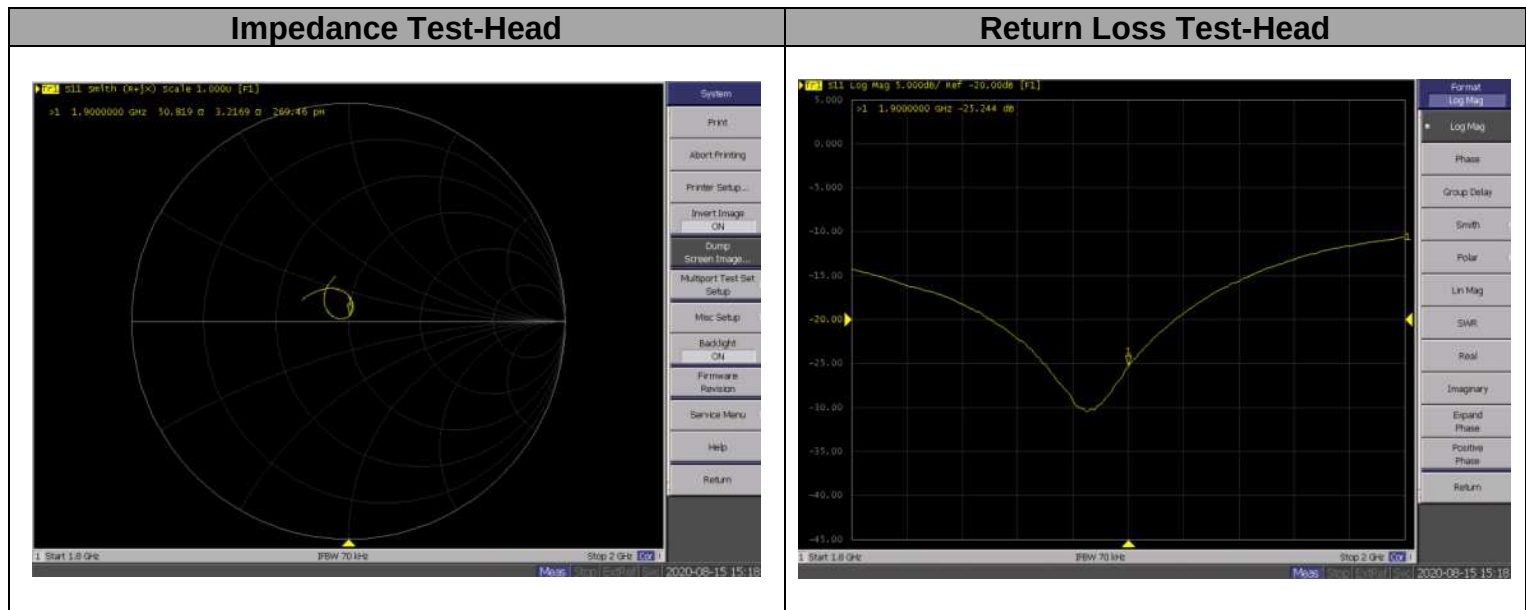
Self-confirmation results:

- After self-confirmation, the performance meets the requirements and can continue to be used. (PASS)
- After self-confirmation, the performance exceeds the deviation, and suspend to use. (Fail)

Justification of the extended calibration of Dipole D1900V2 SN:5d091

Per KDB 865664, we have Measured the Impedance and Return Loss as below, and the return loss is <- 20dB, with 20% of prior calibration; the real or imaginary parts of the impedance is with 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole SN	Tissue Type	Target Tissue		Measured Tissue		Deviation		Ambient Temp	Test Date	Test Engineer
		Impedance transformed to feed point	Return Loss(dB)	Impedance transformed to feed point	Return Loss(dB)	$\Delta(5\Omega)$	$\Delta(\text{With in } +/- 20\%)$			
5d091	1900MHz Head	$50.6\Omega + 5.0j\Omega$	-26.1	$50.8\Omega + 3.2j\Omega$	-25.2	$R=0.2\Omega$ $X=-1.8j\Omega$	-3.4%	22°C	2020/8/15	Zeng yongguang



Self-confirmation results:

- After self-confirmation, the performance meets the requirements and can continue to be used. (PASS)
- After self-confirmation, the performance exceeds the deviation, and suspend to use. (Fail)

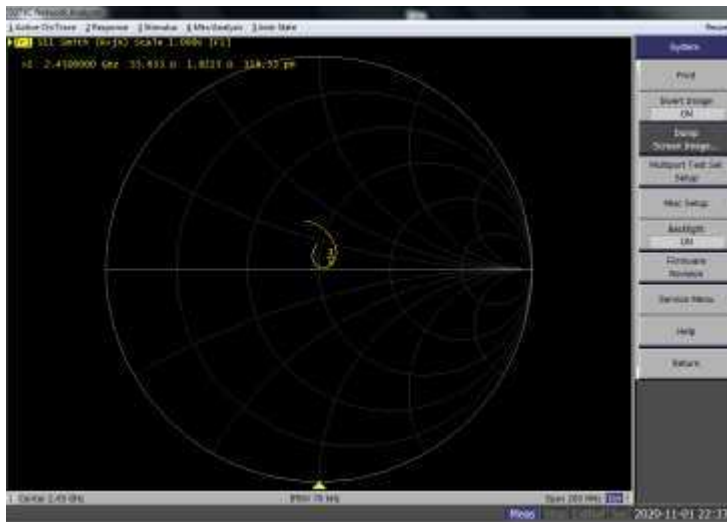
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Justification of the extended calibration of Dipole D2450V2 SN:860

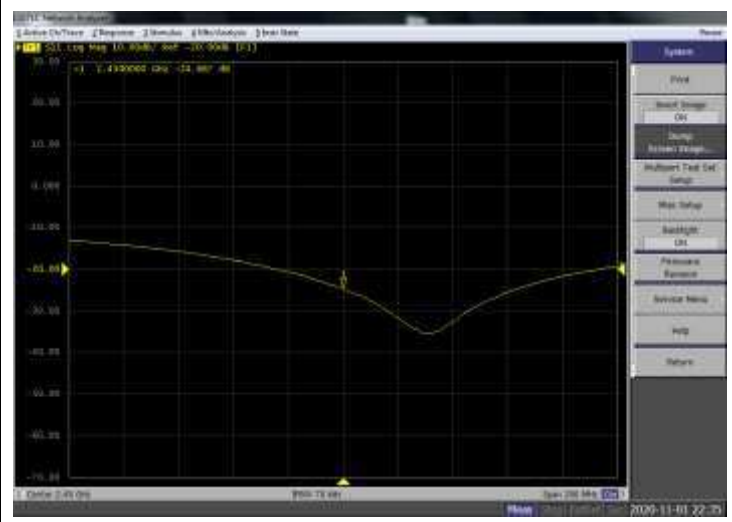
Per KDB 865664, we have Measured the Impedance and Return Loss as below, and the return loss is <-20dB, with 20% of prior calibration; the real or imaginary parts of the impedance is with 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole SN	Tissue Type	Target Tissue		Measured Tissue		Deviation		Ambient Temp	Test Date	Test Engineer
		Impedance transformed to feed point	Return Loss(dB)	Impedance transformed to feed point	Return Loss(dB)	$\Delta(5\Omega)$	$\Delta(\text{With in } \pm 20\%)$			
860	2450MHz Head	$55.0\Omega + 4.0j\Omega$	-24.3	$55.6\Omega + 1.8j\Omega$	-24.7	$R=0.6\Omega$, $X=-2.2j\Omega$	1.6%	22°C	2020/11/01	Zeng yongguang

Impedance Test-Head



Return Loss Test-Head



Self-confirmation results:

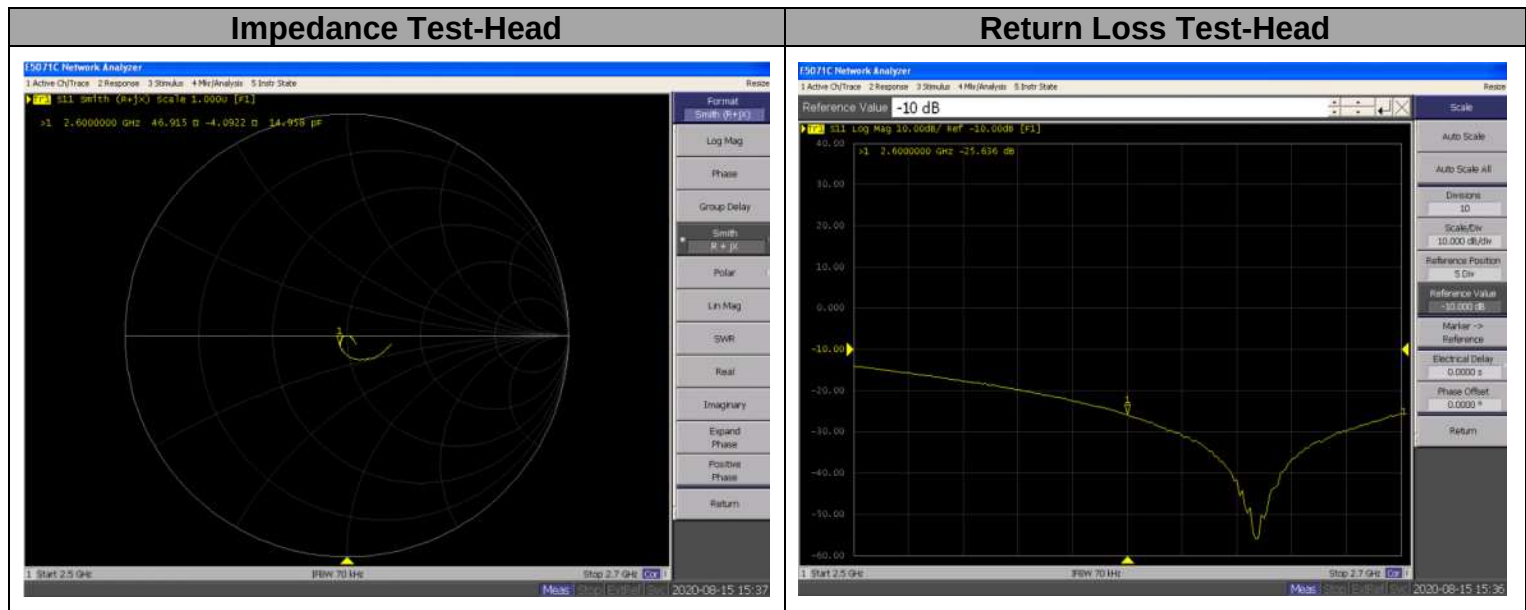
- After self-confirmation, the performance meets the requirements and can continue to be used. (PASS)
- After self-confirmation, the performance exceeds the deviation, and suspend to use. (Fail)

-----END-----

Justification of the extended calibration of Dipole D2600V2 SN:1032

Per KDB 865664, we have Measured the Impedance and Return Loss as below, and the return loss is <- 20dB, with 20% of prior calibration; the real or imaginary parts of the impedance is with 5 ohm of prior calibration. Therefore the verification result should support extended calibration.

Dipole SN	Tissue Type	Target Tissue		Measured Tissue		Deviation		Ambient Temp	Test Date	Test Engineer
		Impedance transformed to feed point	Return Loss(dB)	Impedance transformed to feed point	Return Loss(dB)	$\Delta(5\Omega)$	$\Delta(\text{With in } \pm 20\%)$			
1032	2600MHz Head	49.9 Ω -5.0j Ω	-26.0	46.9 Ω -4.1j Ω	-25.6	R=-3.0 Ω , X=0.9j Ω	-1.5%	22°C	2020/8/15	Zeng yongguang



Self-confirmation results:

- After self-confirmation, the performance meets the requirements and can continue to be used. (PASS)
- After self-confirmation, the performance exceeds the deviation, and suspend to use. (Fail)

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