SAR
Dipole Performance Measurement Report

EUT Type：	SAR Validation Dipole and Waveguide
Model Name：	DIP0G750-331, DIP0G835-332, DIP1G800-329, DIP1G900-333, DIP 2G450-335, DIP2G600-336, WGA32
Brand Name:	SATIMO
Test Conclusion：	Pass
Test Date：	14 Aug. 2019~16 Aug. 2019
Date of Issue：	17 Aug. 2019

Testing Engineer   **:**

(Aaron Bu)

Technical Manager   **:**

(Jason Lu)

Authorized Signatory **:**

(Vita Li)

1. Equipment List

Kind of Equipment	Manufacturer	Type No.	Serial No.	Last Calibration	Calibrated Until
PC	Acer	N/A	N/A	N/A	N/A
E-Field Probe	MVG	SSE5	SN 14/16 EP309	2018.12.13	2019.12.12
Dielectric Probe Kit	MVG	SCLMP	SN 32/14 OCPG67	2018.12.01	2019.11.30
Phantom1	MVG	SAM	SN 32/14 SAM115	N/A	N/A
Phantom2	MVG	SAM	SN 32/14 SAM116	N/A	N/A
Attenuator	Agilent	99899	DC-18GHz	N/A	N/A
Directional coupler	Narda	4226-20	3305	N/A	N/A
Network Analyzer	Agilent	8753ES	US38432810	2019.03.02	2020.03.01
Multi Meter	Keithley	Multi Meter 2000	4050073	2018.10.13	2019.10.12
Signal Generator	Agilent	N5182A	MY50140530	2018.10.16	2019.10.15
Power Amplifier	DESAY	ZHL-42W	9638	2018.10.13	2019.10.12
Power Meter	R&S	NRP	100510	2018.10.26	2019.10.25
Power Sensor	R&S	NRP-Z11	101919	2018.10.13	2019.10.12
Power Sensor	Agilent	E9301A	MY41497725	2018.10.13	2019.10.12
hygrothermograph	MiEO	HH660	N/A	2018.10.15	2019.10.14

# 2.<Justification of the extended calibration>

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.

Head 750 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-25.42	-	55.1	-
2018.08.15	-23.45	-7.75	55.84	0.74
2019.08.14	-23.25	-0.85	56.98	1.14

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.
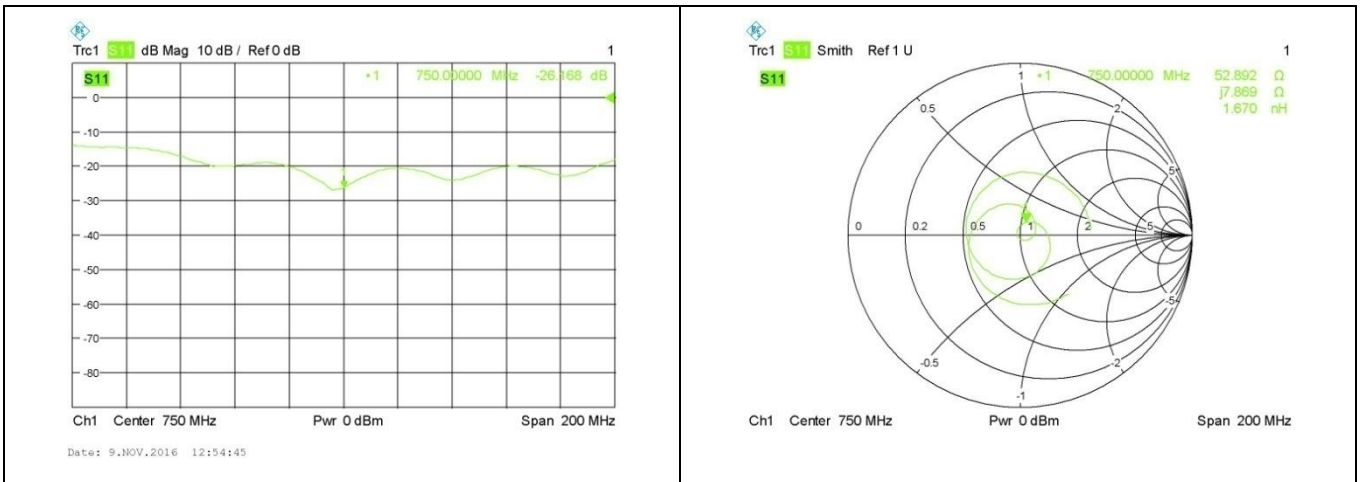
<Dipole Verification Data>

Head 750 MHz
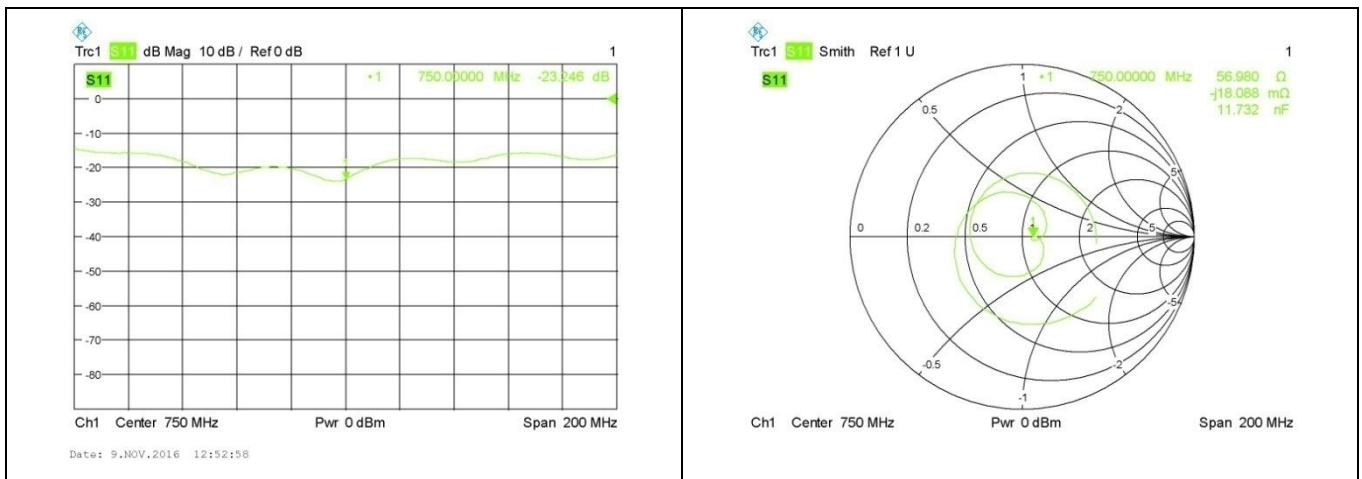
	Body 750 MHz			
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-27.21	-	51.3	-
2018.08.15	-26.44	-2.82	51.50	0.20
2019.08.14	-26.17	-1.02	52.89	1.39

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.
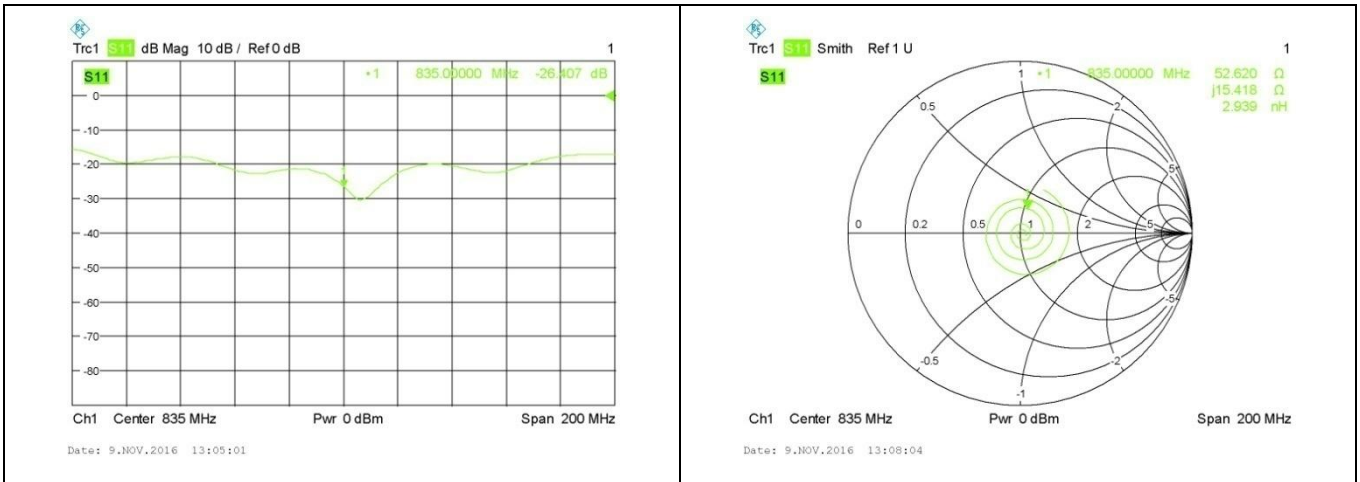
<Dipole Verification Data>

Body 750 MHz

Head 835 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-28.11	-	51.6	-
2018.08.15	-27.05	-3.77	54.69	3.09
2019.08.14	-26.41	-2.37	52.62	-2.07

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.
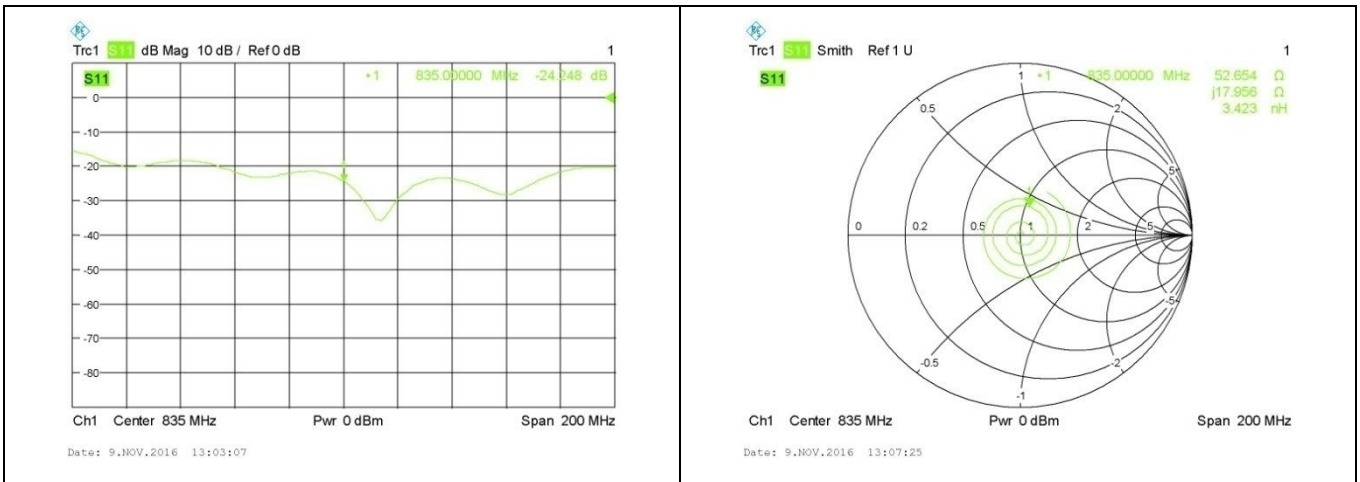
<Dipole Verification Data>

Head 835MHz

Body 835 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-23.87	-	49.0	-
2018.08.15	-22.21	-6.95	52.59	3.59
2019.08.14	-24.25	9.19	52.65	0.06

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.
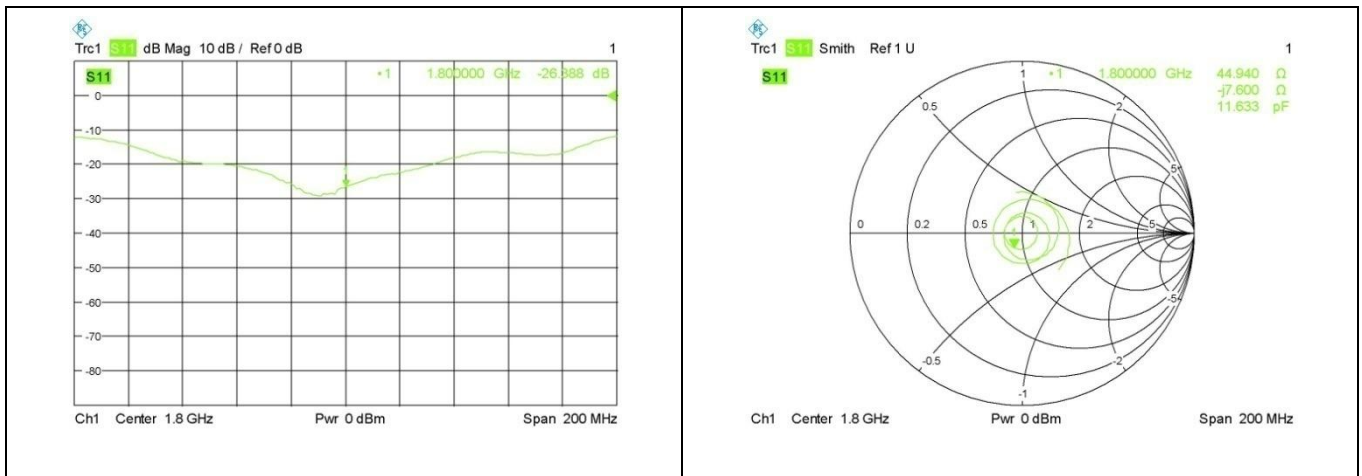
<Dipole Verification Data>

Body 835MHz

Head 1800 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-29.51	-	46.7	-
2018.08.16	-25.32	-14.2	45.24	-1.46
2019.08.15	-26.39	4.23	44.94	-0.30

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.
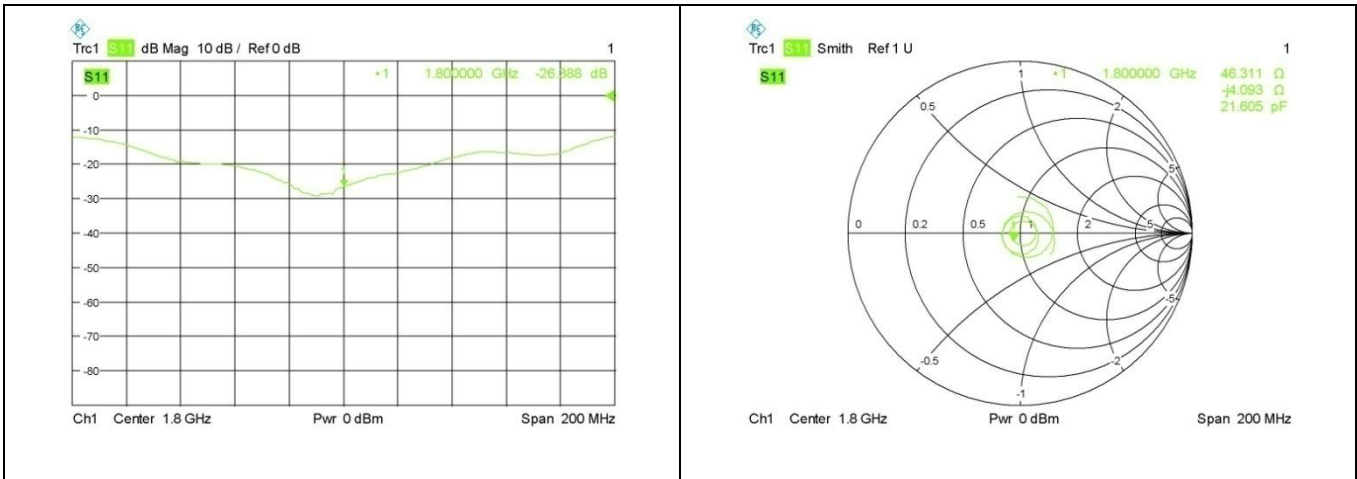
<Dipole Verification Data>

Head 1800 MHz

Body 1800 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-24.59	-	48.8	-
2018.08.16	-24.95	1.46	45.42	-3.38
2019.08.15	-26.77	7.29	46.31	0.79

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.
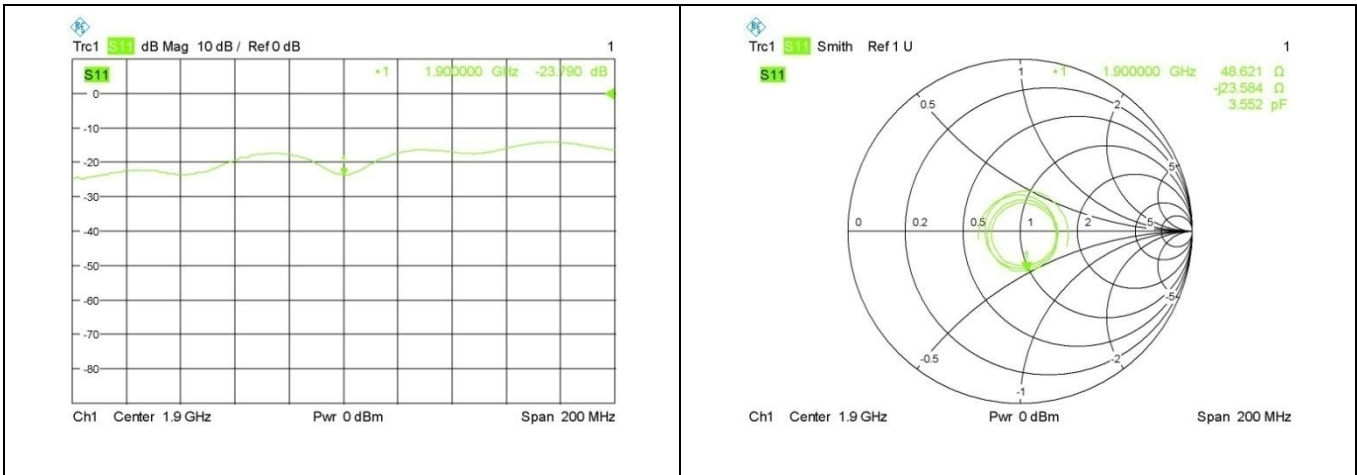
<Dipole Verification Data>

Body 1800 MHz

Head 1900 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-23.68	-	51.2	-
2018.08.16	-25.00	5.57	47.12	-4.08
2019.08.15	-23.79	-4.84	48.62	1.50

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.
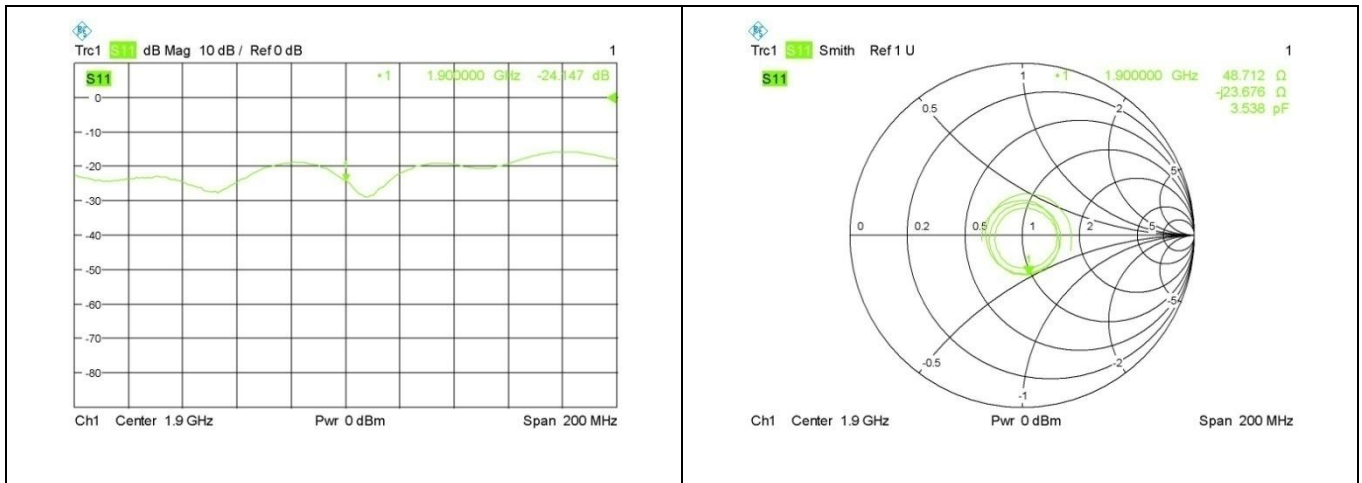
<Dipole Verification Data>

Head 1900 MHz

Body 1900 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-20.22	-	48.8	-
2018.08.16	-23.26	15.03	47.11	-1.79
2019.08.15	-24.15	3.83	48.71	1.60

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.
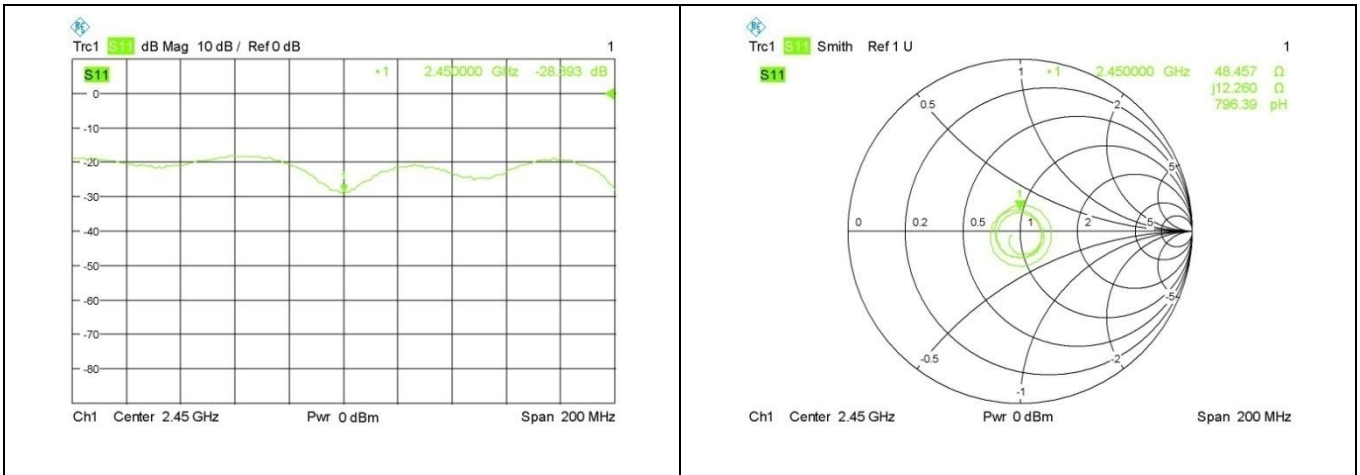
<Dipole Verification Data>

Body 1900 MHz

Head 2450 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-26.00	-	46.1	-
2018.08.16	-29.56	13.69	47.53	1.43
2019.08.16	-28.39	-3.96	48.46	0.93

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.
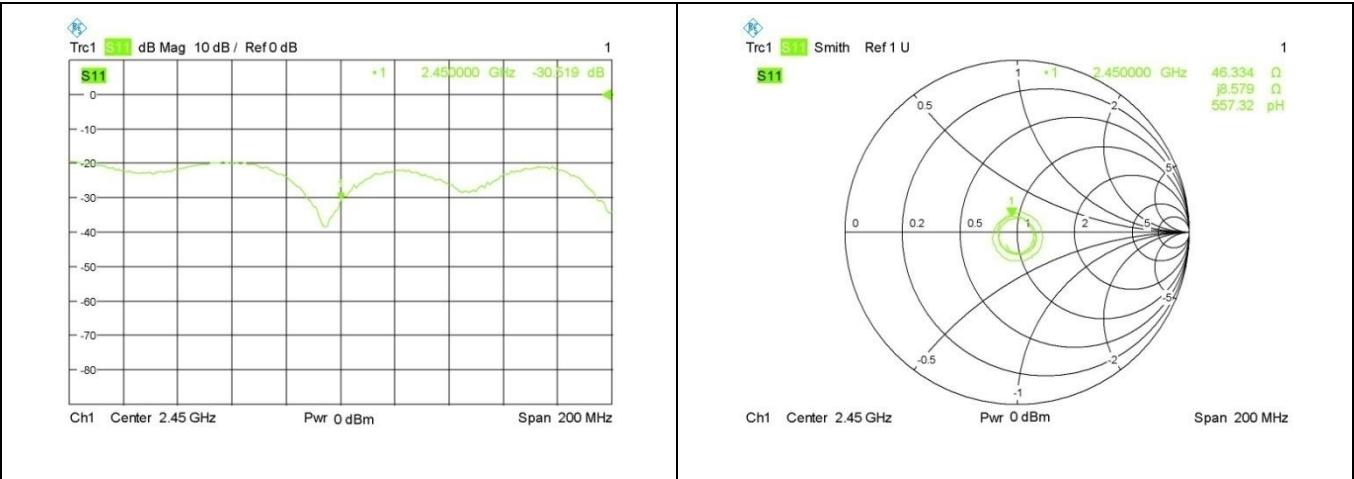
<Dipole Verification Data>

Head 2450 MHz

Body 2450 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-32.75	-	48.8	-
2018.08.16	-31.06	-5.16	45.61	-3.19
2019.08.16	-30.52	-1.74	46.33	0.72

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.

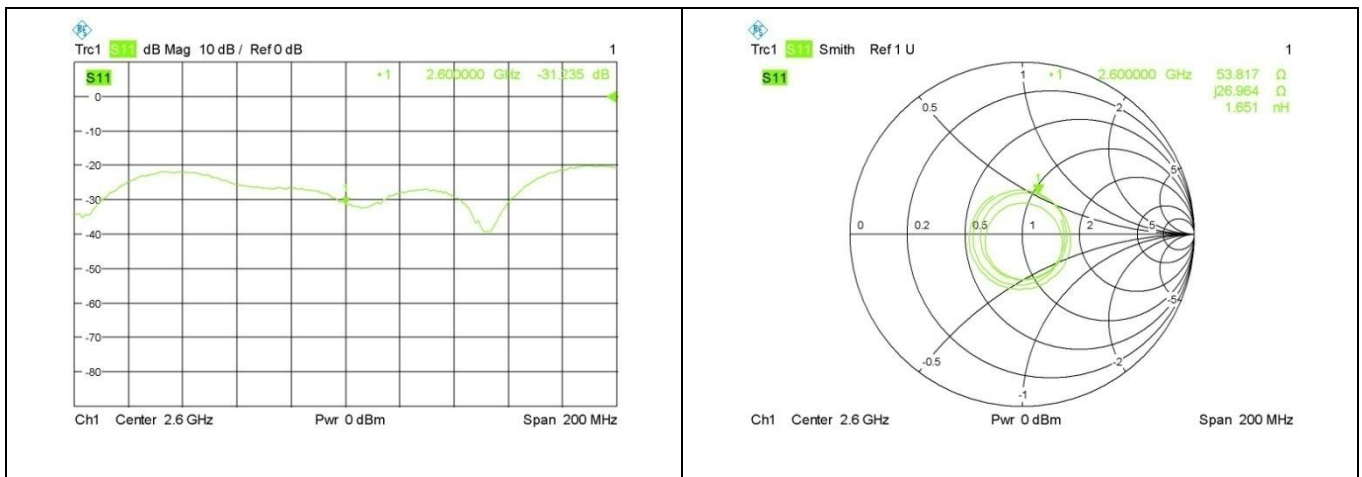<Dipole Verification Data>

Body 2450 MHz

Head 2600 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-34.35	-	50.2	-
2018.08.16	-31.25	-9.02	53.76	3.56
2019.08.16	-31.54	0.93	53.82	0.06

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.

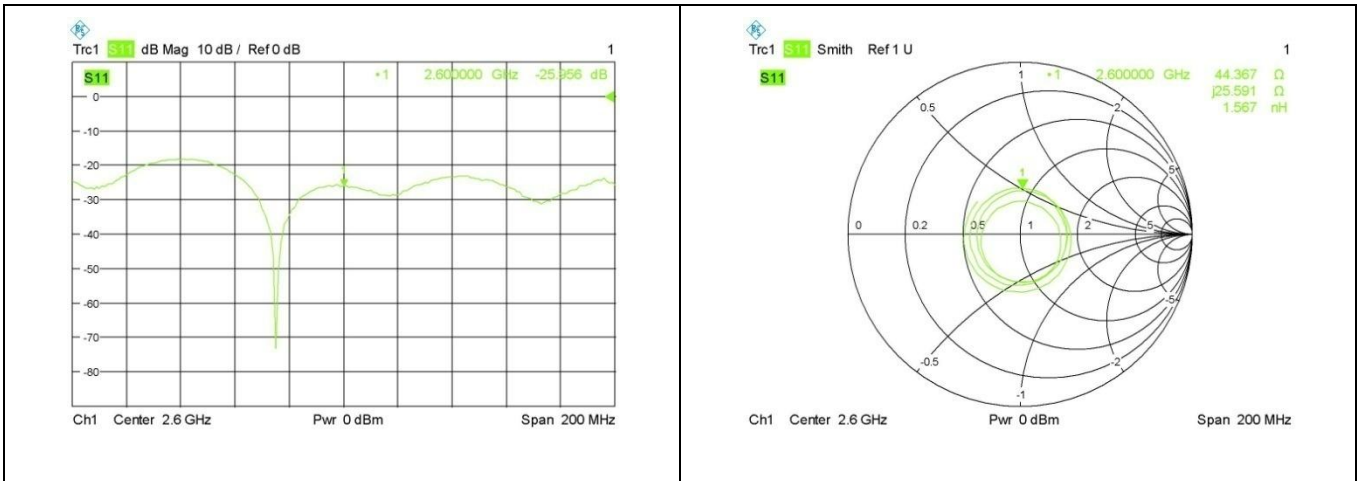<Dipole Verification Data>

Head 2600 MHz

Body 2600 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	-24.18	-	45.7	-
2018.08.16	-23.36	-7.52	46.79	1.09
2019.08.16	-23.02	-1.46	44.37	-2.42

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.

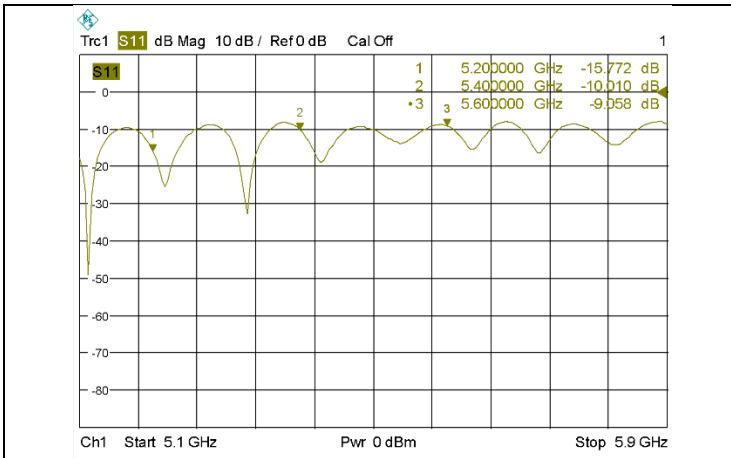<Dipole Verification Data>

Body 2600 MHz

Head 5000 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	< -8.24	-	-	-
2018.08.16	-10.25	-	-	-
2019.08.16	-15.77			

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

<Dipole Verification Data>

Head 5000MHz

Body 5000 MHz				
Date of Measurement	Return Loss (dB)	Delta (%)	Impedance	Delta(ohm)
2017.08.15	< -13.94	-	-	-
2018.08.16	-14.41	-	-	-
2019.08.16	-14.61			

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

<Dipole Verification Data>

Body 5000MHz