

RFI GLOBAL SERVICES LTD., A UL COMPANY

Annual Lab Calibration

D2450V2- SN:725 Dipole (Asset No:1322)

Calibrated on : 02 July 2012

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Measurement Conditions:

Head TSL Parameters

	Temperature	Permittivity	Conductivity
Target Head TSL Parameters	22.0°C	39.20	1.80 mho/m
Measured Head TSL Parameters	23.1°C	38.18	1.80 mho/m

Body TSL Parameters

	Temperature	Permittivity	Conductivity
Target Body TSL Parameters	22.0°C	52.70	1.95 mho/m
Measured Body TSL Parameters	22.2°C	51.40	2.02 mho/m

APPENDIX 1

Antenna Parameters with Head TSL Measured At SAR lab

Impedance, transformed to feed point	47.27 Ω + 8.65j Ω
Return Loss	-20.37 dB

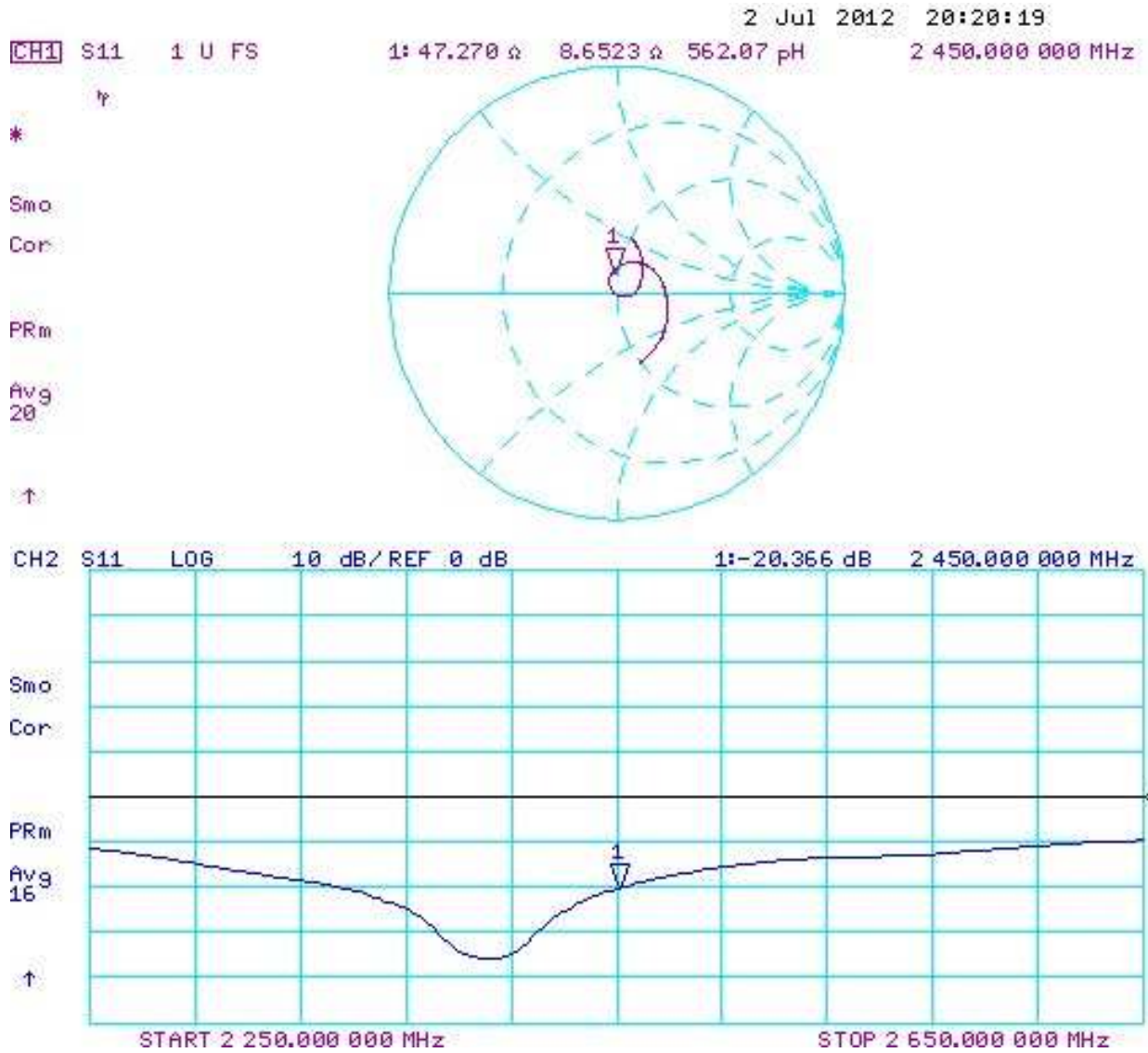
Antenna Parameters with Body TSL Measured At SAR lab

Impedance, transformed to feed point	48.52 + 8.7j Ω
Return Loss	-21.04 dB

Additional EUT Data

Manufactured By	SPEAG
Manufactured On	October 16, 2002

Impedance Measurement Plot for Head TSL



Impedance Measurement Plot for Body TSL

2 Jul 2012 19:53:48

CH1 S11 1 U FS 1: 48.520 Ω 8.7187 Ω 566.38 pF 2 450.000 000 MHz

γ

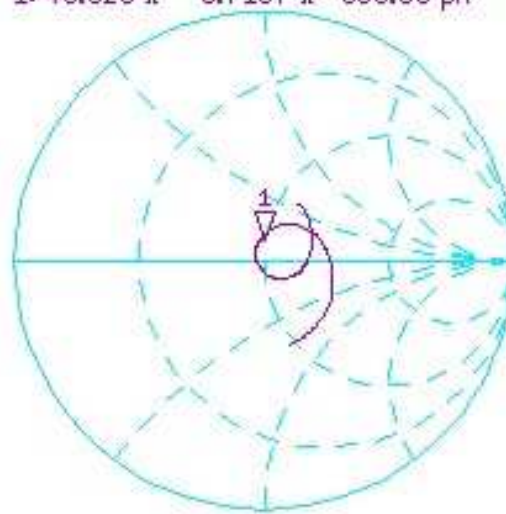
*

Smo

Cor

PRM

Avg
20



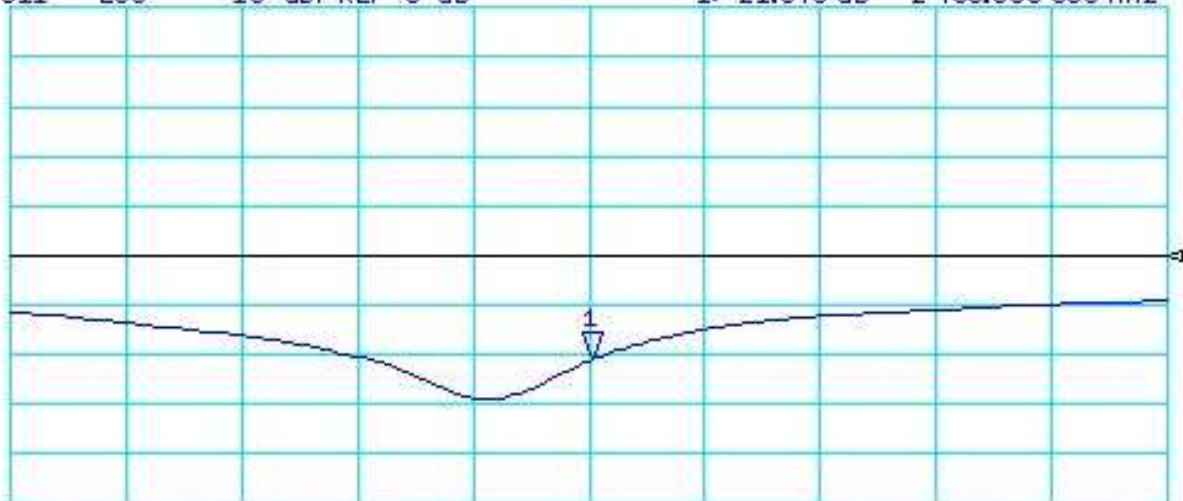
CH2 S11 LOG 10 dB/REF 0 dB 1: -21.040 dB 2 450.000 000 MHz

Smo

Cor

PRM

Avg
16



START 2 250.000 000 MHz

STOP 2 650.000 000 MHz

APPENDIX 2

Dipole Calibration History

Cal Date	Dipole Calibration History									
	Dipole SN: 725, Frequency 2450 MHz									
	Head Parameters					Body Parameters				
	1g (W/Kg)	10g (W/Kg)	Return loss (dB)	Real (Ω)	Imaginary (Ω)	1g (W/Kg)	10g (W/Kg)	Return loss (dB)	Real (Ω)	Imaginary (Ω)
02-July-12	Lab Annual Check of dipole		-20.37	47.27	8.65	Lab Annual Check of dipole		-21.04	48.52	8.72
08-Feb-11	52.90	24.70	-20.50	45.60	7.90	51.90	24.10	-20.20	49.50	9.70
08-Jan-09	52.10	24.30	-23.70	54.40	5.30	52.20	24.70	-23.40	49.00	6.70
17-Jan-07	53.30	24.80	-22.10	52.40	7.70	53.30	24.50	-21.80	47.80	7.70
04-Jan-05	54.5	24.70	-22.30	53.50	7.20	52.90	24.50	-22.20	48.50	7.50
17-Jan-03	54.70	24.50	-22.60	53.00	7.00	52.10	24.10	-21.70	49.00	8.10
Standard Deviation	1.10	0.20	1.28	3.66	1.14	0.59	0.27	1.08	0.58	1.04
 Mean Value 	53.50	24.60	21.93			52.48	24.38	21.72		
Relative standard deviation %	2.05%	0.81%	5.85%			1.13%	1.10%	4.97%		

Note:

- The dipole history shows that the measured SAR relative standard deviation was all less than 10% for the calibration period. The return loss relative standard deviation was all less than 10% or better than -20db. The real and imaginary impedance standard deviation is within 5 (Ω).