

## Appendix C: System Performance Check

Report Date : 07-Jun-2013  
By Operator : Dino Chen  
DUT : Dipole  
Frequency : 2450.00 MHz  
Max. Transmit Pwr : 1 W

### APREL ALSAS-10U System Description

#### Phantom Data

Name : Universal Phantom  
Type : ALS-P-UP-1

#### Tissue Data

Type : Body  
Frequency : 2450.00 MHz

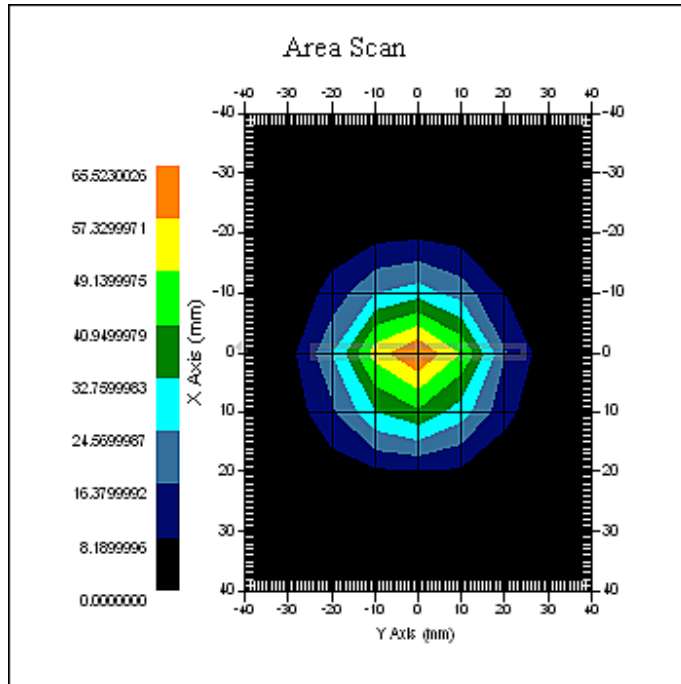
#### Probe Data

Name : E-field Probe  
Model : ALS-E-020  
Serial No. : 266  
Last Calib. Date : 20-Aug-2012

#### Measurement Data

Crest Factor : 1  
Scan Type : Complete  
Tissue Temp. : 22.00 °C  
Ambient Temp. : 21.70 °C  
Area Scan : 9x9x1 : Measurement x=10mm, y=10mm, z=4mm  
Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm  
Separation : 1cm





1 gram SAR value : 53.112 W/kg  
10 gram SAR value : 25.083 W/kg  
Area Scan Peak SAR : 65.339 W/kg  
Zoom Scan Peak SAR : 104.09 W/kg

## Electrical Calibration

Electrical Calibration			
Test	Result	Validation	Difference
S11	-16.32dB	-16.62dB	1.8%
Impedance	10.33 $\Omega$	13.97 $\Omega$	3.64 $\Omega$

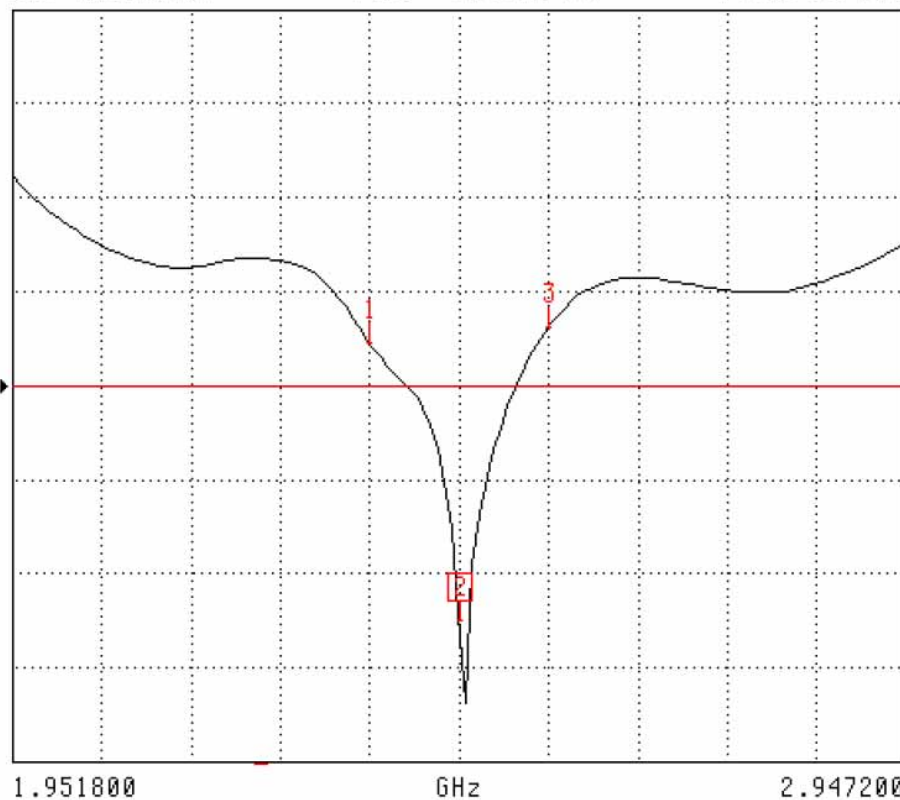
## S11 Parameter Return Loss –Cal. report

S11 FORWARD REFLECTION

LOG MAGNITUDE

REF = -20.000 dB

8.000 dB/DIV



CH 1 - S11

0.0000 mm REF

0.000 dB OFFS

0.00° OFFS

MARKER 2

2.450000 GHz

-40.028 dB

MARKER TO MAX

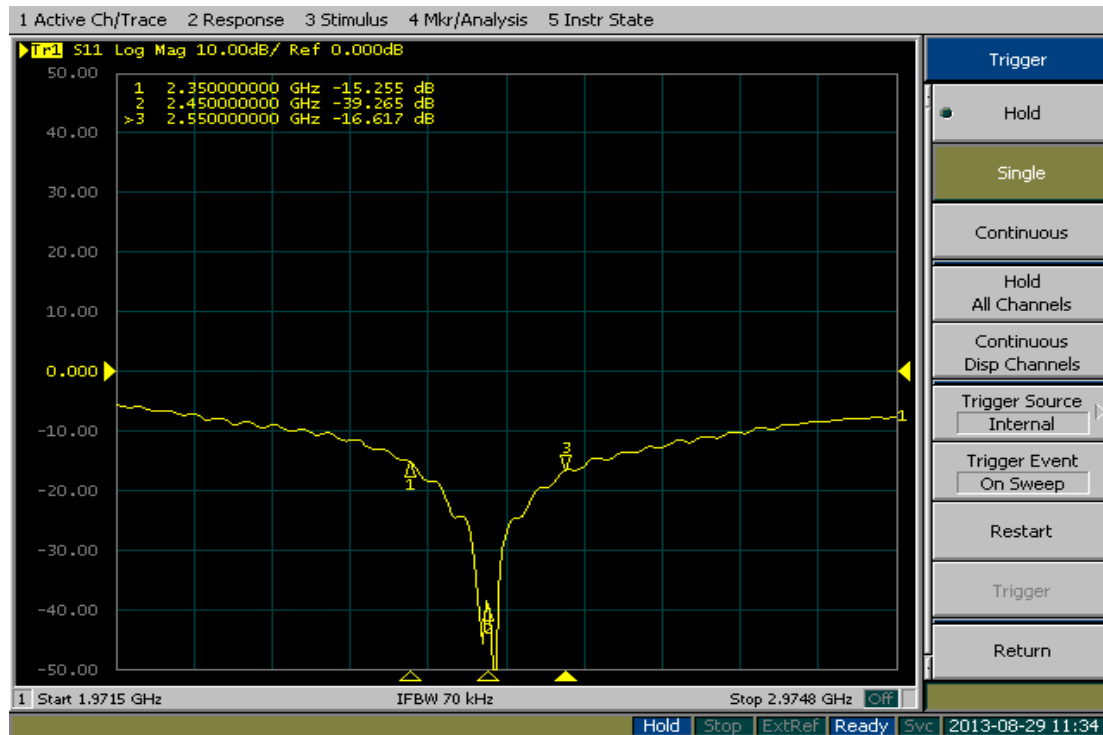
MARKER TO MIN

**1** 2.350000 GHz  
-16.322 dB

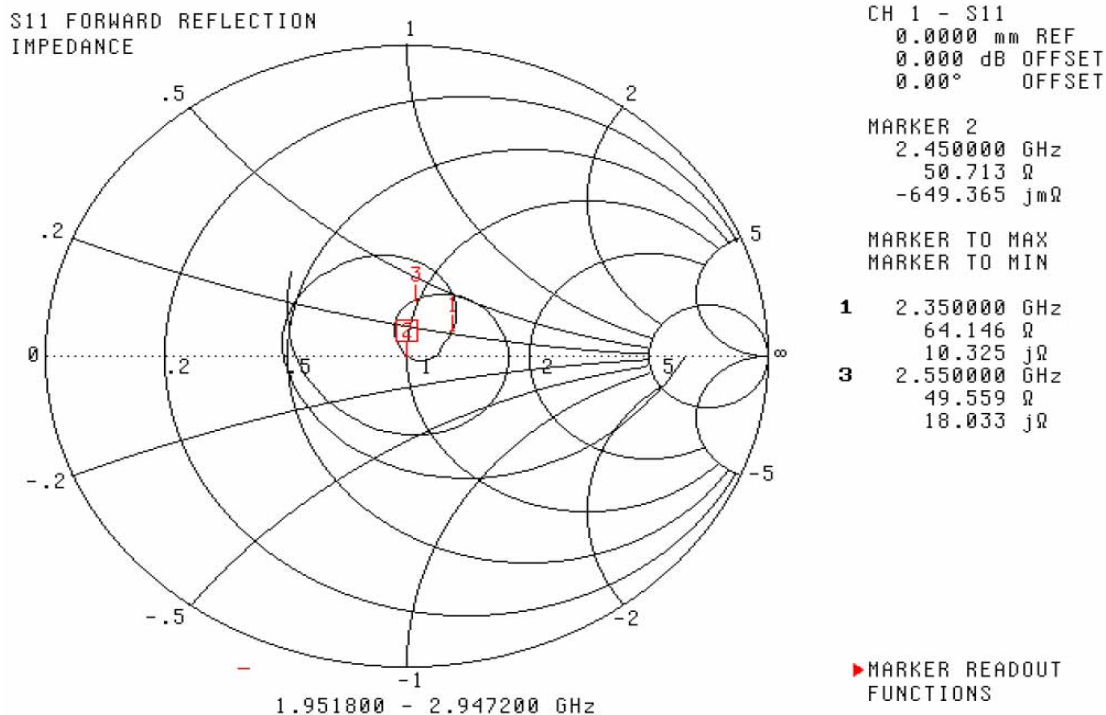
**3** 2.550000 GHz  
-14.976 dB

MARKER READOUT  
FUNCTIONS

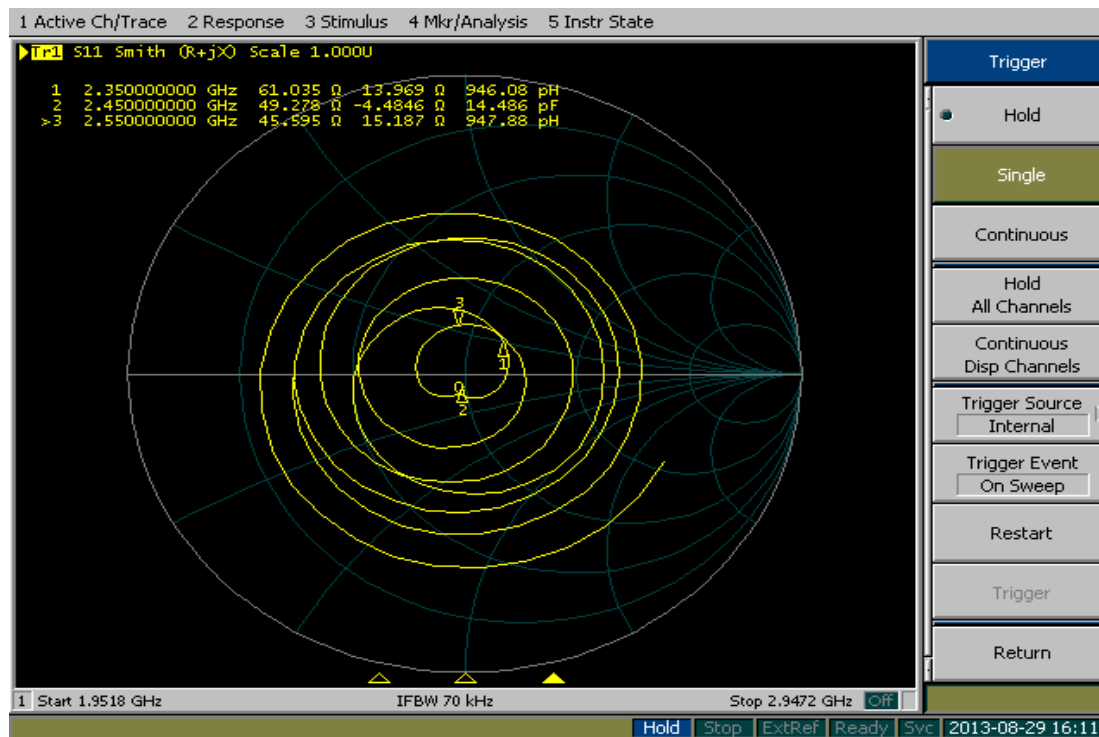
## S11 Parameter Return Loss –Self Check, Date 08/29/2013



## Smith Chart Dipole Impedance –Cal. Report



Smith Chart Dipole Impedance –self check, Date 08/29/2013



## Appendix C: System Performance Check

Report Date : 11-Jun-2013  
By Operator : Dino Chen  
DUT : Dipole  
Frequency : 5200.00 MHz  
Max. Transmit Pwr : 1 W

### APREL ALSAS-10U System Description

#### Phantom Data

Name : Universal Phantom  
Type : ALS-P-UP-1

#### Tissue Data

Type : Body  
Frequency : 5200.00 MHz

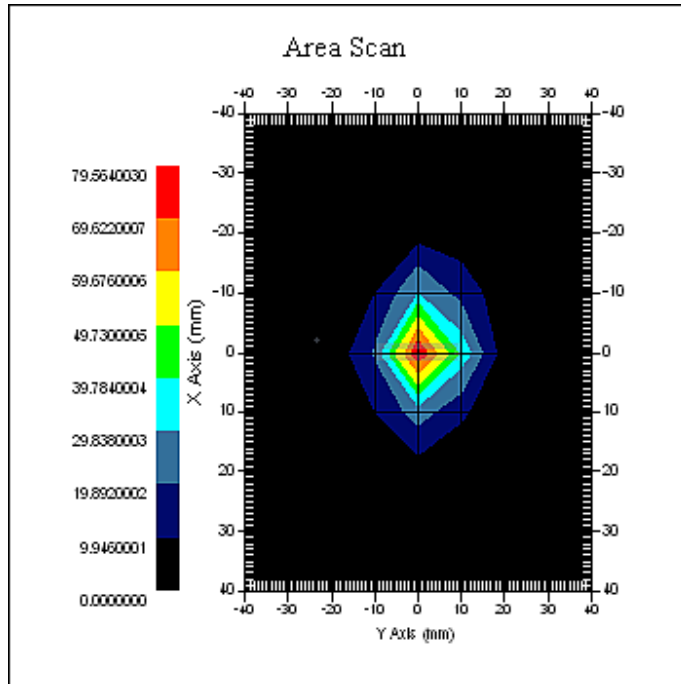
#### Probe Data

Name : E-field Probe  
Model : ALS-E-020  
Serial No. : 266  
Last Calib. Date : 20-Aug-2012

#### Measurement Data

Crest Factor : 1  
Scan Type : Complete  
Tissue Temp. : 22.00 °C  
Ambient Temp. : 21.70 °C  
Area Scan : 9x9x1 : Measurement x=10mm, y=10mm, z=4mm  
Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm  
Separation : 1cm



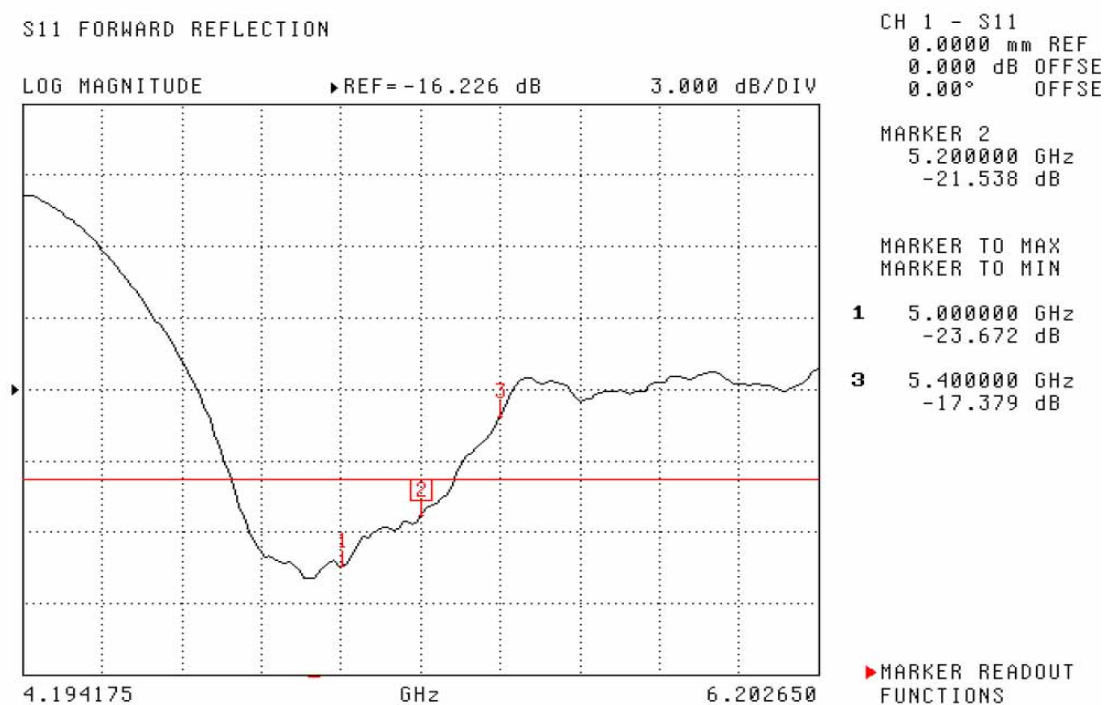


1 gram SAR value : 69.311 W/kg  
10 gram SAR value : 22.089 W/kg  
Area Scan Peak SAR : 79.482 W/kg  
Zoom Scan Peak SAR : 188.662 W/kg

## Electrical Calibration

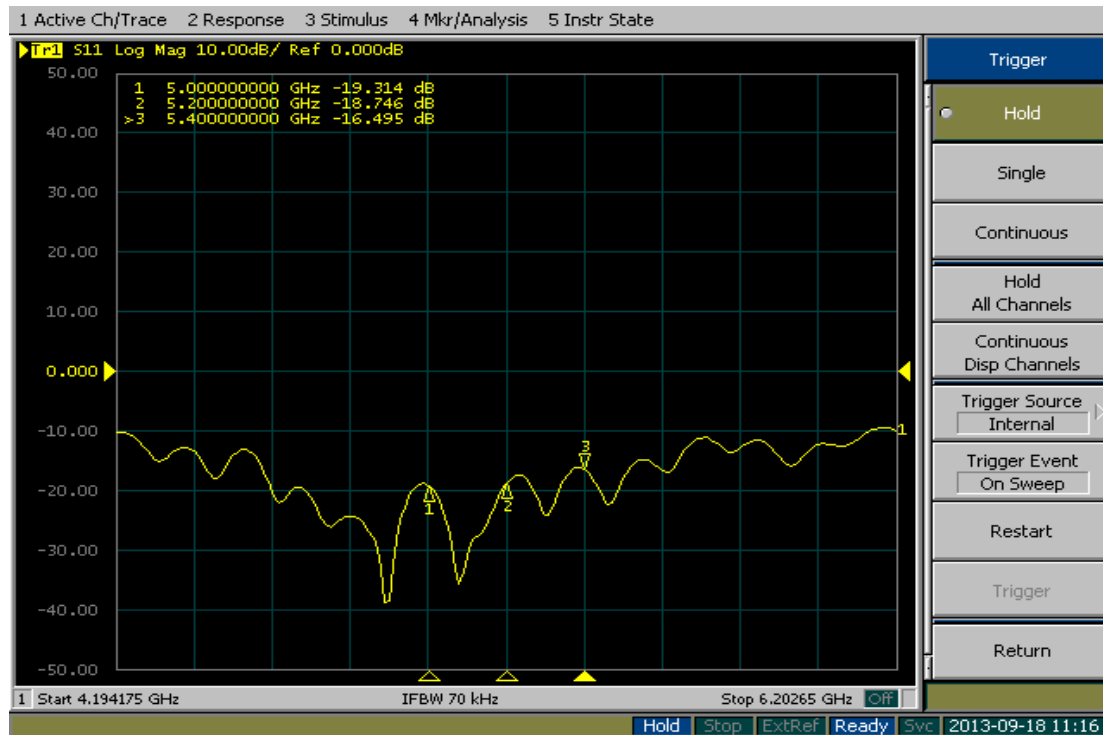
Electrical Calibration			
Test	Result	Validation	Diference
S11	-23.67	-19.31dB	18.41%
Impedance	51.17 $\Omega$	53.93 $\Omega$	2.76 $\Omega$

## S11 Parameter Return Loss –Cal. report

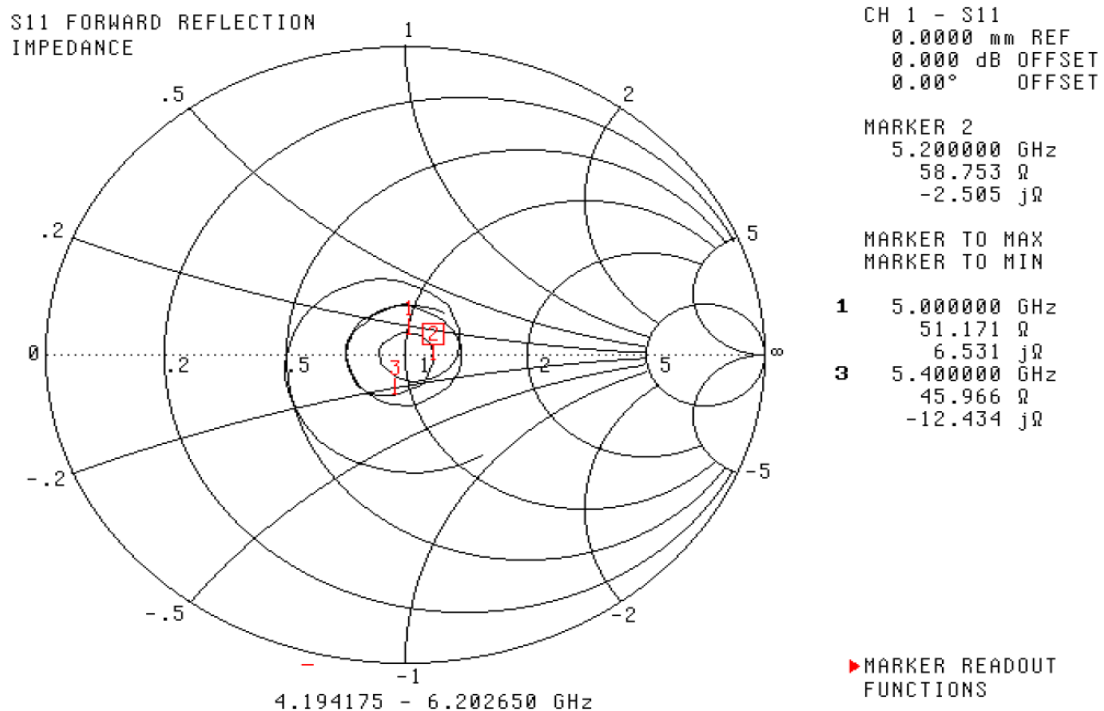




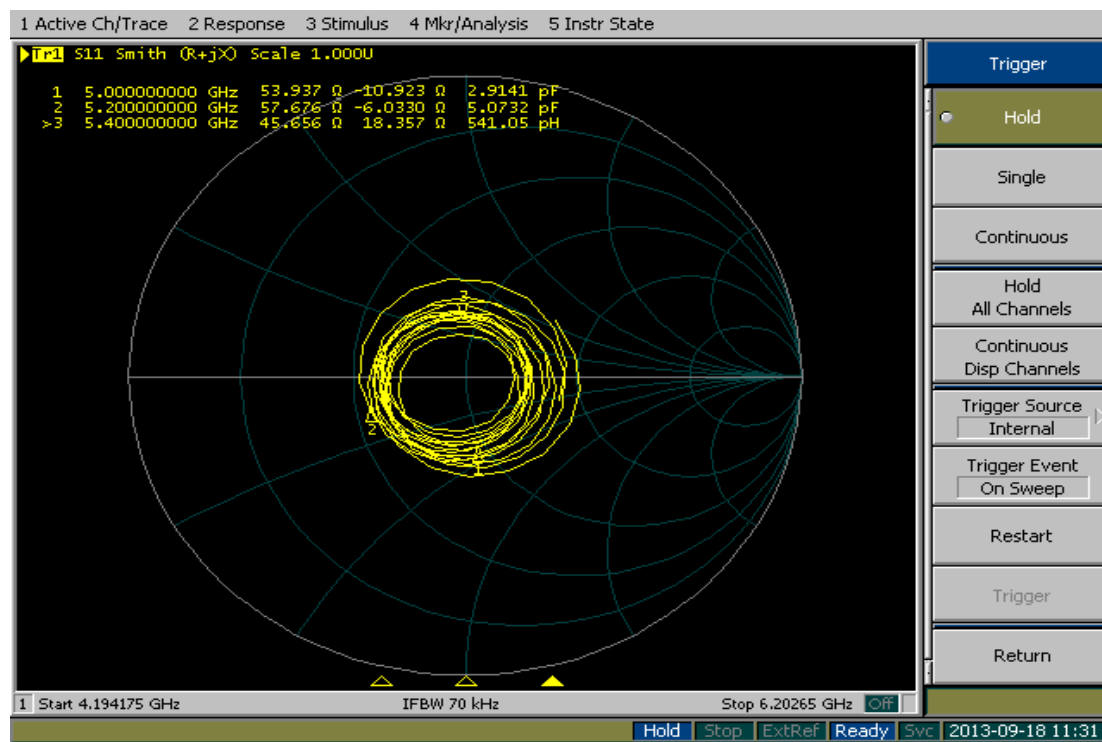
# S11 Parameter Return Loss –Self Check, Date 09/18/2013



## Smith Chart Dipole Impedance –Cal. Report



Smith Chart Dipole Impedance –self check, Date 09/18/2013



## Appendix C: System Performance Check

Report Date : 11-Jun-2013  
By Operator : Dino Chen  
DUT : Dipole  
Frequency : 5600.00 MHz  
Max. Transmit Pwr : 1 W

### APREL ALSAS-10U System Description

#### Phantom Data

Name : Universal Phantom  
Type : ALS-P-UP-1

#### Tissue Data

Type : Body  
Frequency : 5600.00 MHz

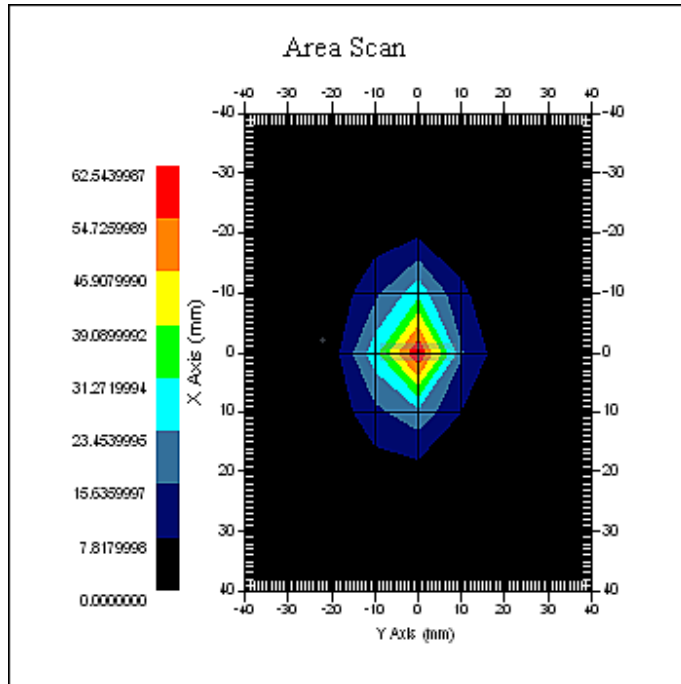
#### Probe Data

Name : E-field Probe  
Model : ALS-E-020  
Serial No. : 266  
Last Calib. Date : 20-Aug-2012

#### Measurement Data

Crest Factor : 1  
Scan Type : Complete  
Tissue Temp. : 22.00 °C  
Ambient Temp. : 21.70 °C  
Area Scan : 9x9x1 : Measurement x=10mm, y=10mm, z=4mm  
Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm  
Separation : 1cm





1 gram SAR value : 65.273 W/kg  
10 gram SAR value : 21.348 W/kg  
Area Scan Peak SAR : 62.544 W/kg  
Zoom Scan Peak SAR : 181.334 W/kg

## Electrical Calibration

Electrical Calibration			
Test	Result	Validation	Diference
S11	-26.727dB	-27.783dB	3.95%
Impedance	53.674 $\Omega$	51.579 $\Omega$	-2.09 $\Omega$

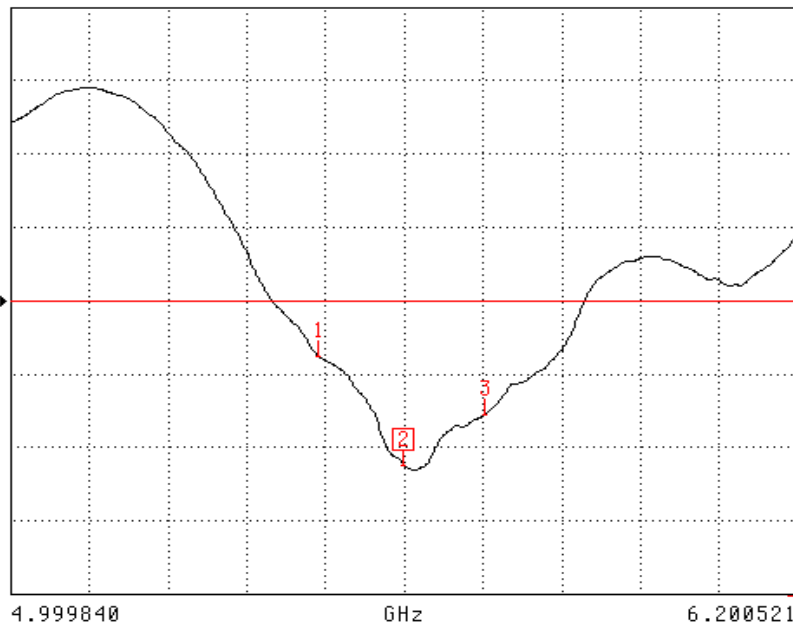
## S11 Parameter Return Loss –Cal. report

S11 FORWARD REFLECTION

LOG MAGNITUDE

REF = -20.000 dB

3.000 dB/DIV



CH 1 - S11  
0.0000 mm REF  
0.000 dB OFFSET  
0.00° OFFSET

MARKER 2  
5.600000 GHz  
-26.727 dB

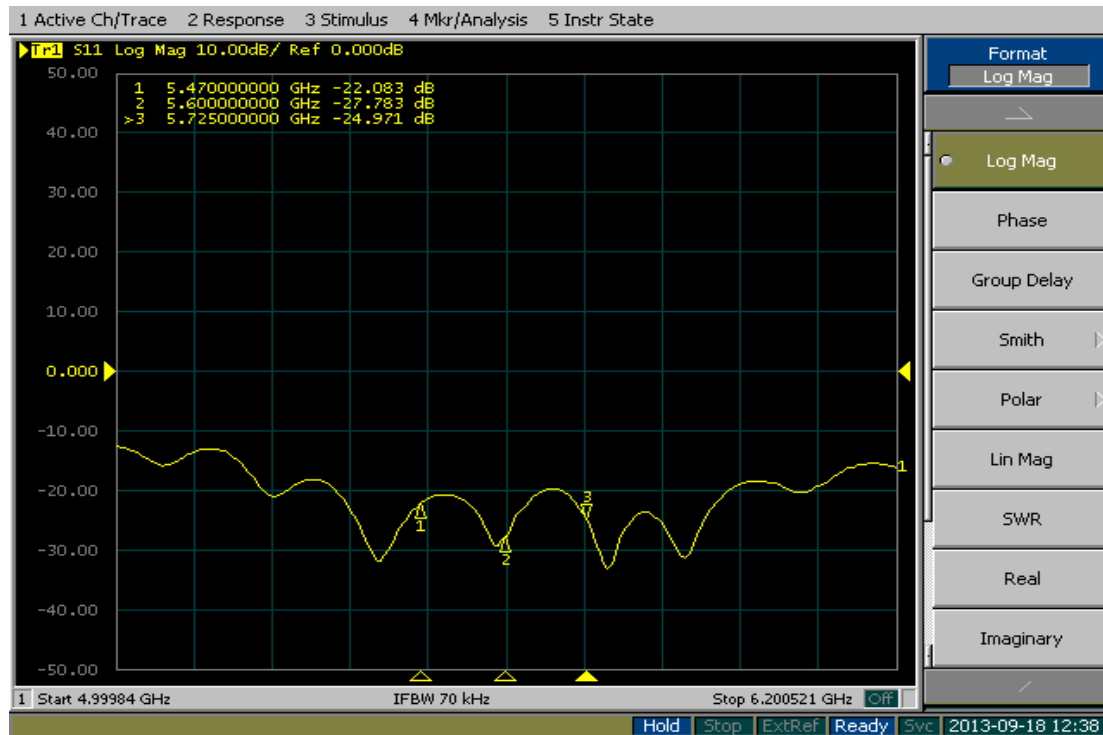
MARKER TO MAX  
MARKER TO MIN

1 5.470000 GHz  
-22.294 dB

3 5.725000 GHz  
-24.651 dB

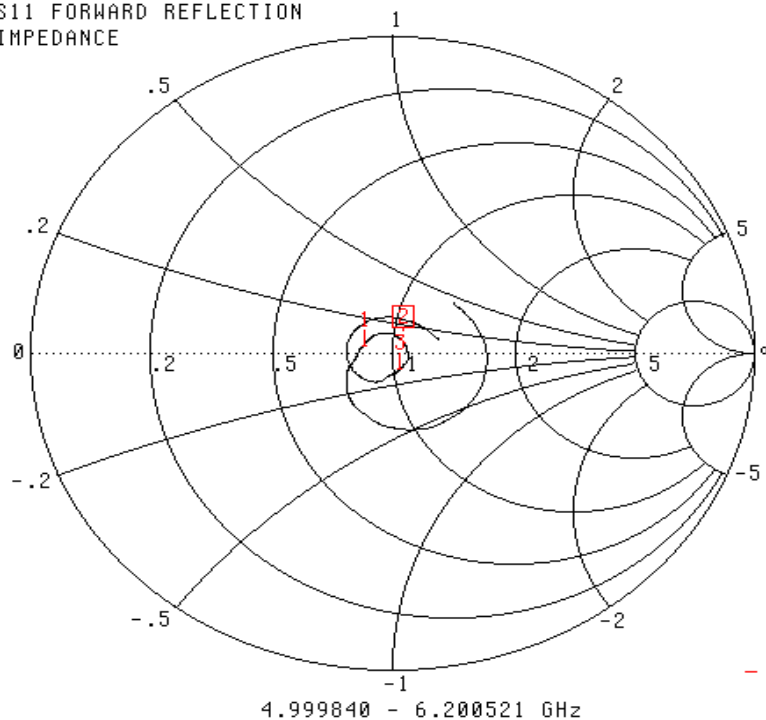
MARKER READOUT  
FUNCTIONS

# S11 Parameter Return Loss –Self Check, Date 09/18/2013



## Smith Chart Dipole Impedance –Cal. Report

S11 FORWARD REFLECTION  
IMPEDANCE



CH 1 - S11  
0.0000 mm REF  
0.000 dB OFFSET  
0.00° OFFSET

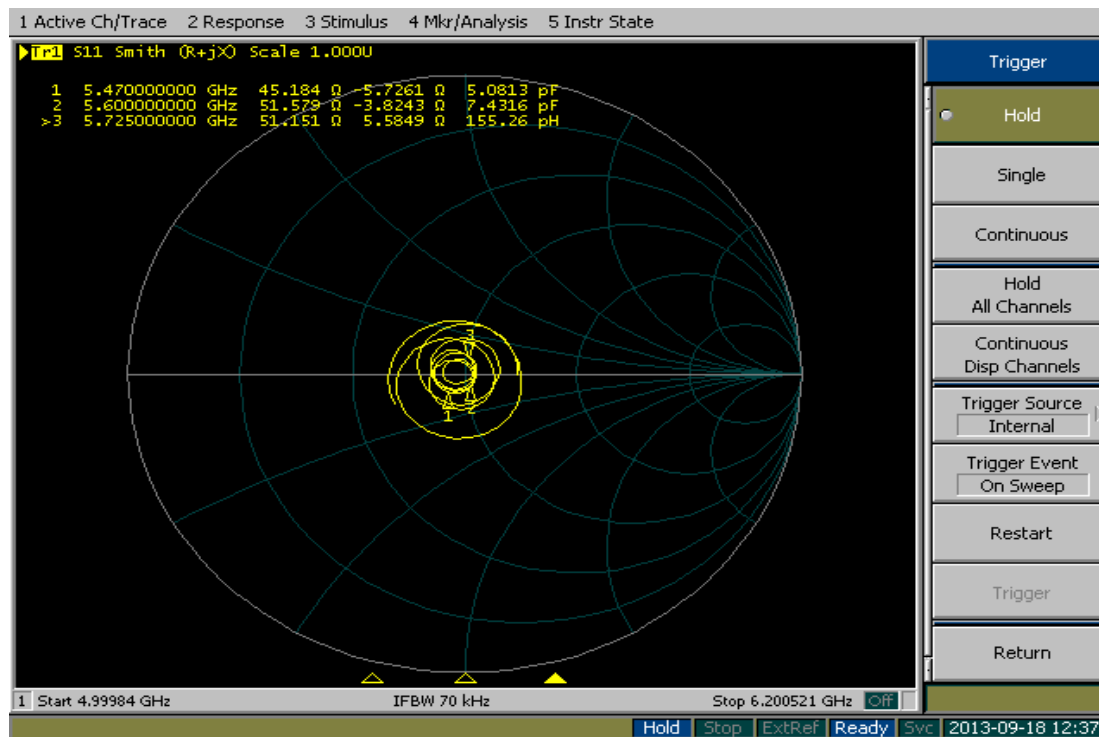
▶ MARKER 2  
5.600000 GHz  
53.674 Ω  
3.054 jΩ

MARKER TO MAX  
MARKER TO MIN

1	5.470000 GHz	43.059 Ω	1.704 jΩ
3	5.725000 GHz	52.418 Ω	-5.473 jΩ

MARKER READOUT  
FUNCTIONS

Smith Chart Dipole Impedance –self check, Date 09/18/2013



## Appendix C: System Performance Check

Report Date : 11-Jun-2013  
By Operator : Dino Chen  
DUT : Dipole  
Frequency : 5800.00 MHz  
Max. Transmit Pwr : 1 W

### APREL ALSAS-10U System Description

#### Phantom Data

Name : Universal Phantom  
Type : ALS-P-UP-1

#### Tissue Data

Type : Body  
Frequency : 5800.00 MHz

#### Probe Data

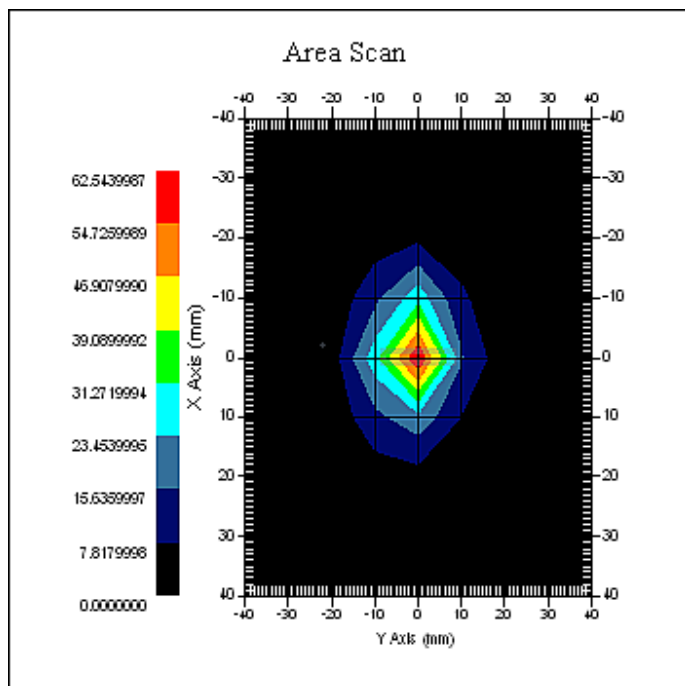
Name : E-field Probe  
Model : ALS-E-020  
Serial No. : 266  
Last Calib. Date : 20-Aug-2012

#### Measurement Data

Crest Factor : 1  
Scan Type : Complete  
Tissue Temp. : 22.00 °C  
Ambient Temp. : 21.70 °C  
Area Scan : 9x9x1 : Measurement x=10mm, y=10mm, z=4mm  
Zoom Scan : 5x5x8 : Measurement x=8mm, y=8mm, z=4mm  
Separation : 1cm







1 gram SAR value : 58.478 W/kg  
 10 gram SAR value : 20.117 W/kg  
 Area Scan Peak SAR : 62.641 W/kg  
 Zoom Scan Peak SAR : 162.059 W/kg

## Electrical Calibration

Electrical Calibration			
Test	Result	Validation	Diference
S11	-17.11dB	-17.45dB	1.98%
Impedance	49.33 $\Omega$	47.85 $\Omega$	-1.48 $\Omega$

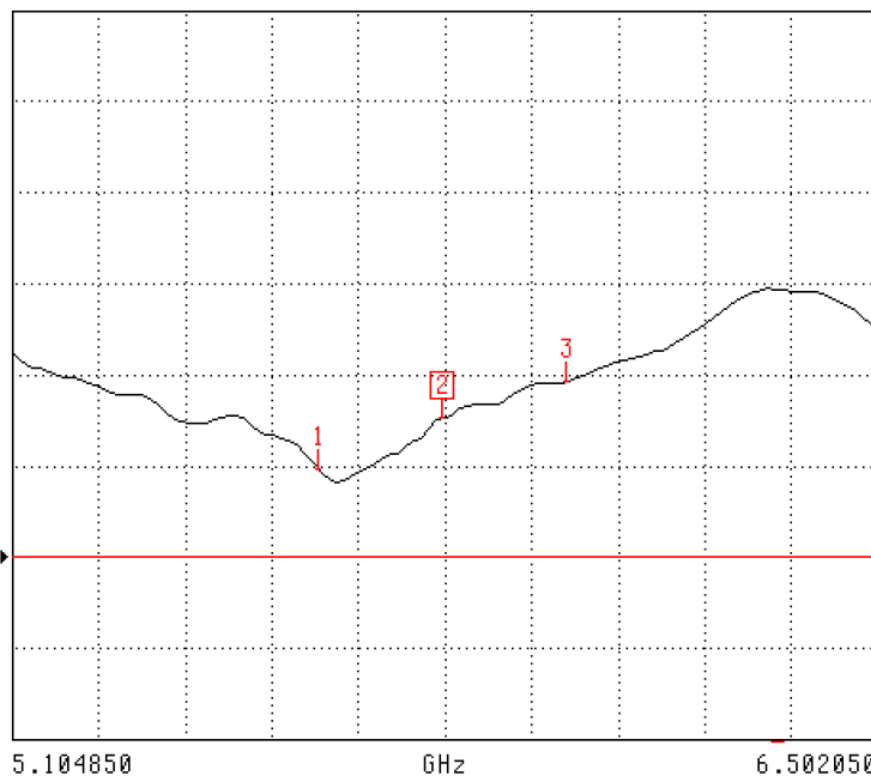
## S11 Parameter Return Loss –Cal. report

S11 FORWARD REFLECTION

LOG MAGNITUDE

REF=-20.000 dB

3.000 dB/DIV



CH 1 - S11

0.0000 mm REF

0.000 dB OFFSET

0.00° OFFSET

MARKER 2

5.800000 GHz

-15.442 dB

MARKER TO MAX

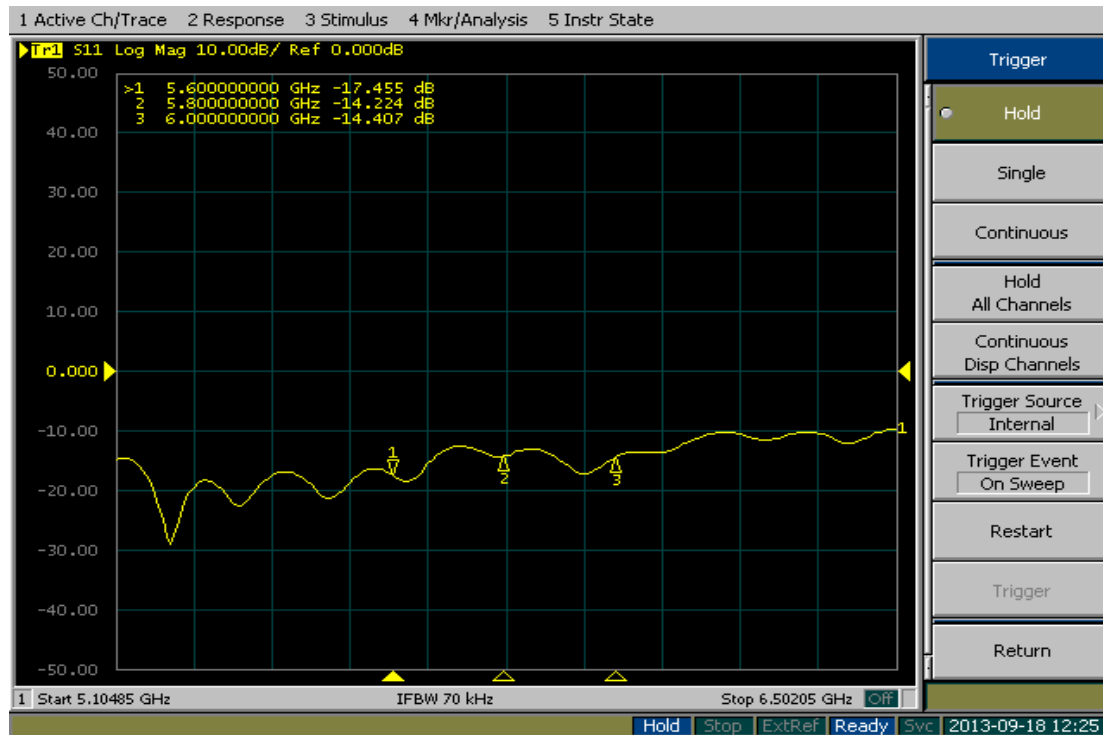
MARKER TO MIN

**1** 5.600000 GHz  
-17.111 dB

**3** 6.000000 GHz  
-14.221 dB

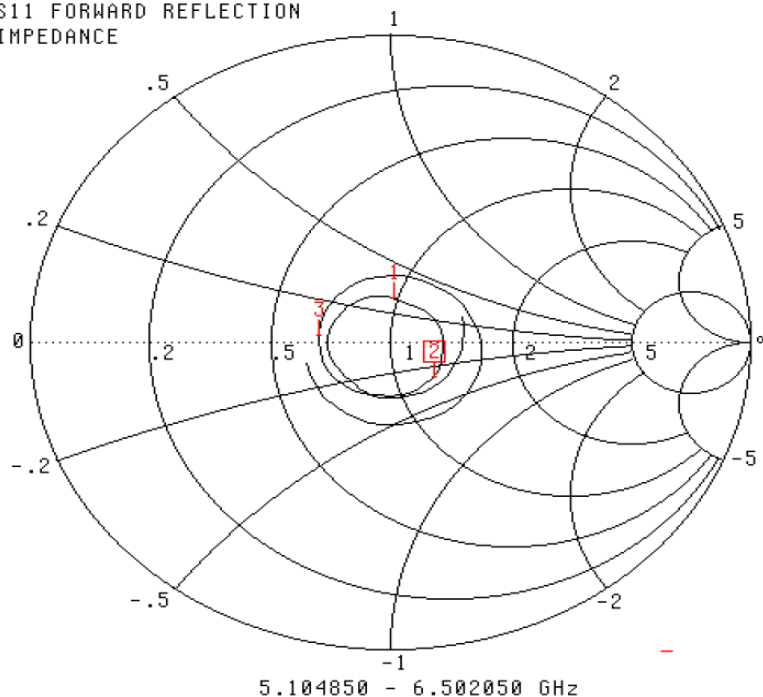
MARKER READOUT  
FUNCTIONS

# S11 Parameter Return Loss –Self Check, Date 09/18/2013



## Smith Chart Dipole Impedance –Cal. Report

S11 FORWARD REFLECTION  
IMPEDANCE



CH 1 - S11  
0.0000 mm REF  
0.000 dB OFFSET  
0.00° OFFSET

MARKER 2  
5.800000 GHz  
62.174  $\Omega$   
-14.681 j $\Omega$

MARKER TO MAX  
MARKER TO MIN

1	5.600000 GHz	49.327 $\Omega$	13.945 j $\Omega$
3	6.000000 GHz	33.788 $\Omega$	1.296 j $\Omega$

▶ MARKER READOUT  
FUNCTIONS

Smith Chart Dipole Impedance –self check, Date 09/18/2013

