

**COMOSAR Dipole 2450 MHz  
Calibration Report**



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Issue: B

Date: 2012/10/05

**DIPOLE 2450 MHZ CALIBRATION REPORT**

Prepared By: LUC Jérôme, SATIMO  
Project Description: SAR TEST BENCH  
Prepared For (End User): Shenzhen Morlab Communication Technology

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**DIPOLE 2450 MHz CALIBRATION REPORT**

**DATE:** 19/02/2009

**REFERENCE:** SN 36/08 DIPJ103

**OBJECT:** COMOSAR IEEE REFERENCE DIPOLE

**MANUFACTURER:** SATIMO

**SERIAL NUMBER:** SN 36/08 DIPJ103

**CUSTOMER:** Shenzhen Morlab Communication Technology

**CONTRACT:** PF2130108b\_SAR\_Morlab

**DATE OF CALIBRATION:** 05/10/2012

**WARRANTY:**

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Date

Oct. 05, 2012

SAR TEAM MANAGER

JG

**SATIMO Bretagne**  
Technopôle Brest Iroise  
Zone du Vernis  
225 rue Pierre Rivoalon  
29200 BREST

# COMOSAR Dipole 2450 MHz Calibration Report



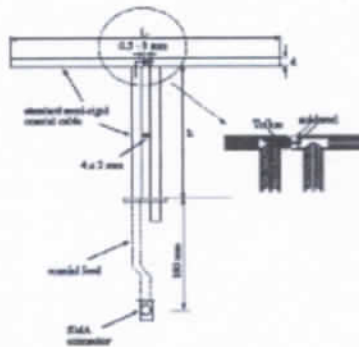
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## PRODUCT DESCRIPTION



Dimension: L=51.5 mm/ h=30.4mm / d=3.6 mm

## CALIBRATION TEST EQUIPMENT

| TYPE                    | IDENTIFICATION           | DATE OF CALIBRATIO |
|-------------------------|--------------------------|--------------------|
| Vector Network Analyzer | HP8753D (SN: 5410A08882) | 09-12-2012         |

## MEASUREMENT PROCEDURE

We placed the dipole under the flat part of SAM phantom fill with 2450 MHz head and body liquid.

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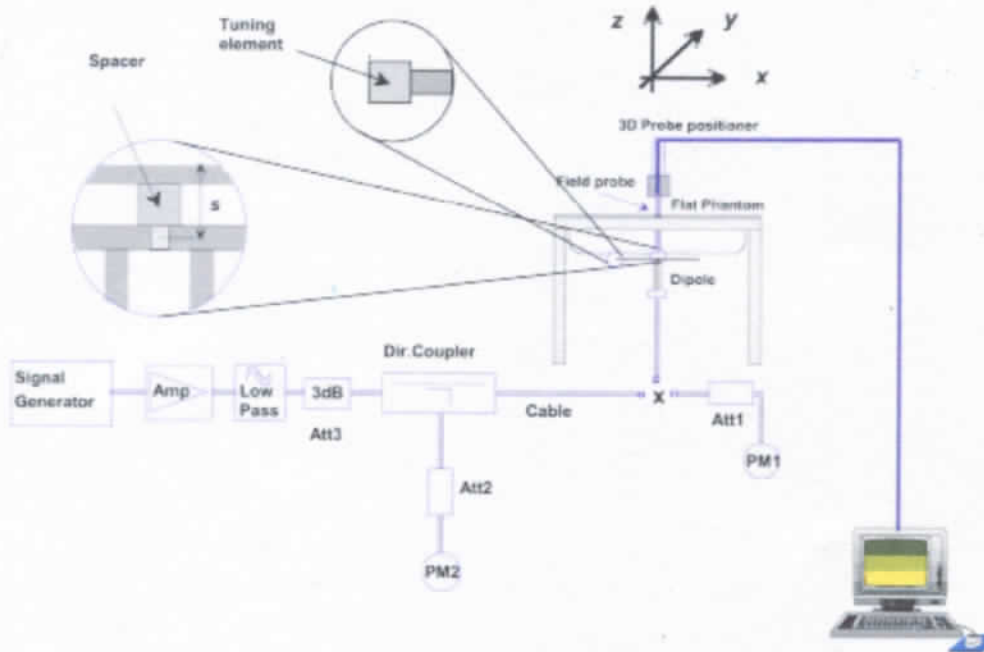


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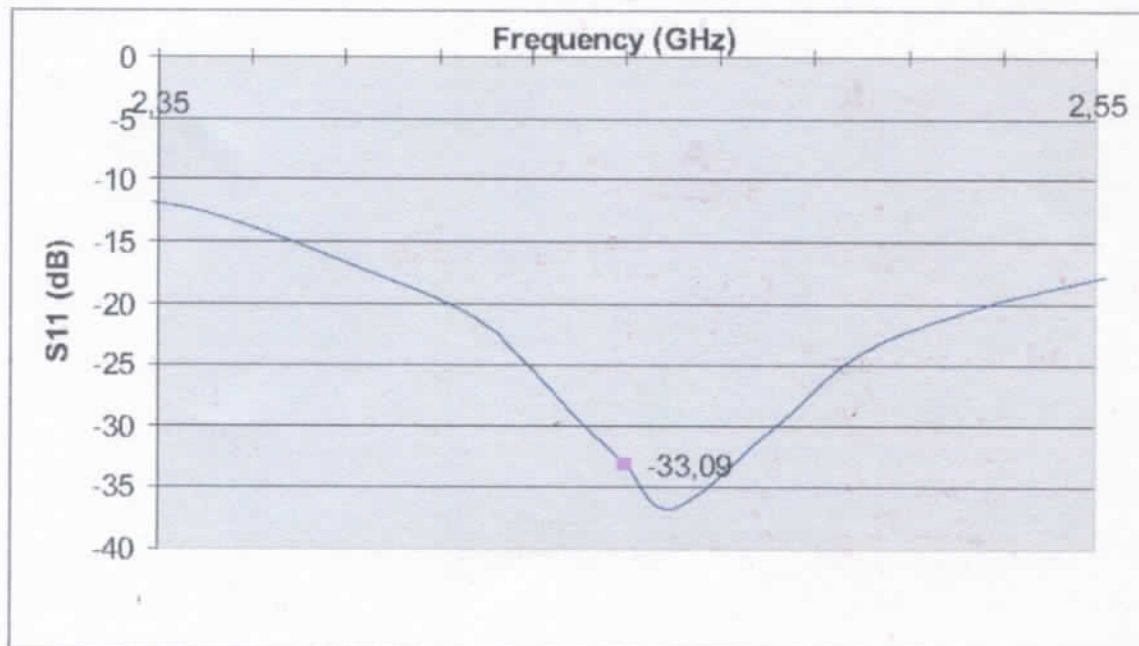
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Calibration was performed according to IEEE Std P1528-2003 and OET bulletin 65 Supplement C (Ed. 01-01)

VSWR at 2450 MHz: -33.09 dB.



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## SAR MEASUREMENT EQUIPEMENT Head

|                         |  |                                 |
|-------------------------|--|---------------------------------|
| <b>Voltmeter</b>        | Keithley (2000, SN:1000572)                            | Date of calibration: 01-07-2012 |
| <b>Signal generator</b> | Rohde&Schwarz (SML_03, SN:101868)                      | Date of calibration: 15-11-2011 |
| <b>Power amplifier</b>  | Nuclétudes (ALB216, SN:10800)                          | Date of calibration: 24-10-2011 |
| <b>Power meter</b>      | Rohde&Schwarz (NRVD, SN:101066)                        | Date of calibration: 04-07-2012 |
| <b>Probe</b>            | SATIMO Bretagne (SN:EP37)<br>CF (39.563,33.614,37.677) | Date of calibration: 04-10-2012 |

## SAR MEASUREMENT CONDITION

|   |   |
|---|---|
| <b>Software</b>   | OpenSAR V3  |
| <b>Phantom</b>  | SATIMO Bretagne (SN: SN_20_07_SAM42)  |
| <b>Liquid</b>   | SATIMO Bretagne (Last Calibration: 05-10-12)<br>Head Liquid Values: eps' : 39,20 sigma : 1,80 |
| <b>Distance between the center of the dipole and the liquid (set with a spacer)</b> | 10 mm   |
| <b>Area scan resolution</b>   | dx=8mm/dy=8mm   |
| <b>Zoom scan resolution</b>   | dx=8mm/dy=8m/dz=5mm   |
| <b>Frequency</b>  | 2450 MHz  |
| <b>Input power</b>  | 30 dBm  |
| <b>Expanded uncertainty (K=1)</b>   | 8.09%   |

## SAR MEASUREMENT RESULT

|                  |            |            |
|------------------|------------|------------|
|                  | 10g        | 1g         |
| SAR measured     | 22,82 W/Kg | 50,45 W/Kg |
| Liquid : HL      | - 4,92 %   | -3,72 %    |
| Input power : 1W |            |            |



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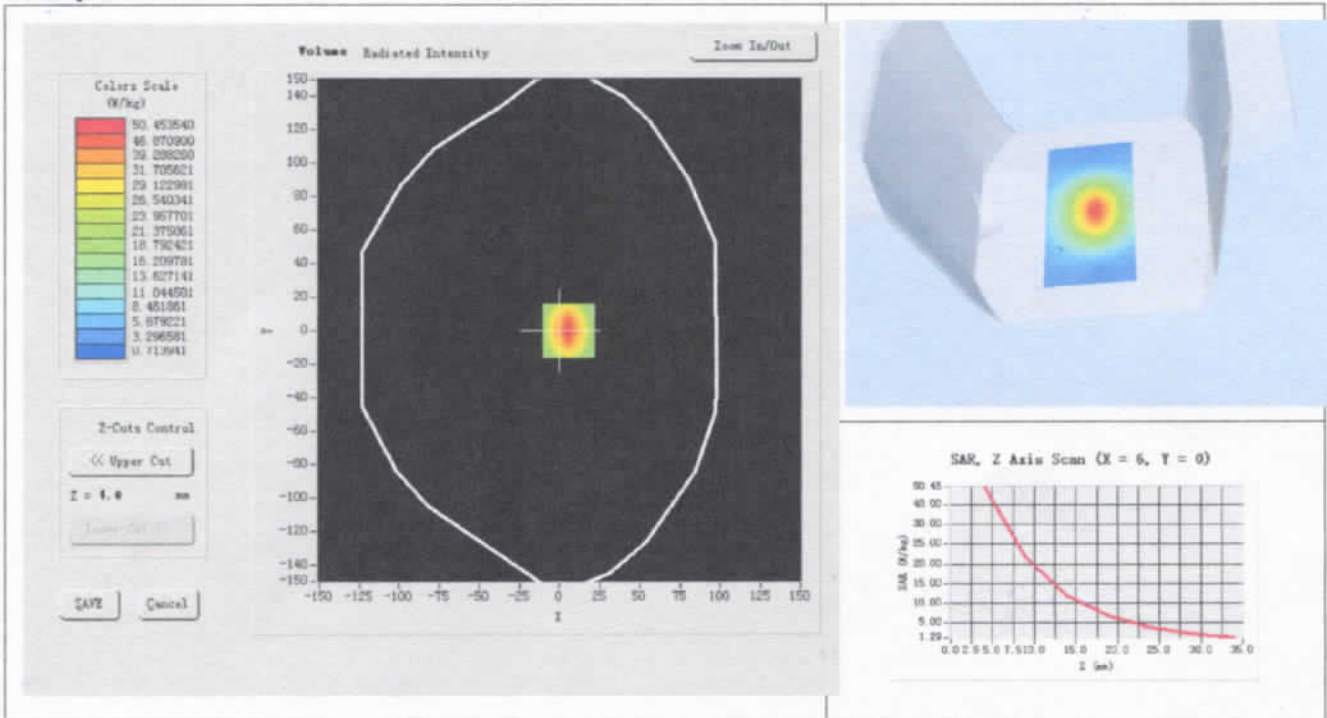
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## SAR MEASUREMENT PLOTS

Body:



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## SAR MEASUREMENT EQUIPEMENT Body

|                         |  |                                 |
|-------------------------|--|---------------------------------|
| <b>Voltmeter</b>        | Keithley (2000, SN:1000572)                            | Date of calibration: 01-07-2012 |
| <b>Signal generator</b> | Rohde&Schwarz (SML_03, SN:101868)                      | Date of calibration: 15-11-2011 |
| <b>Power amplifier</b>  | Nuclétudes (ALB216, SN:10800)                          | Date of calibration: 24-10-2011 |
| <b>Power meter</b>      | Rohde&Schwarz (NRVD, SN:101066)                        | Date of calibration: 04-07-2012 |
| <b>Probe</b>            | SATIMO Bretagne (SN:EP37)<br>CF (39.772,33.946,37.835) | Date of calibration: 04-10-2012 |

## SAR MEASUREMENT CONDITION

|   |   |
|---|---|
| <b>Software</b>   | OpenSAR V3  |
| <b>Phantom</b>  | SATIMO Bretagne (SN: SN_20_07_SAM42)  |
| <b>Liquid</b>   | SATIMO Bretagne (Last Calibration: 05-10-12)<br>Body Liquid Values: eps' : 52,50 sigma : 1,78 |
| <b>Distance between the center of the dipole and the liquid (set with a spacer)</b> | 10 mm   |
| <b>Area scan resolution</b>   | dx=8mm/dy=8mm   |
| <b>Zoom scan resolution</b>   | dx=8mm/dy=8m/dz=5mm   |
| <b>Frequency</b>  | 2450 MHz  |
| <b>Input power</b>  | 30 dBm  |
| <b>Expanded uncertainty (K=1)</b>   | 8.09%   |

## SAR MEASUREMENT RESULT

|                  | 10g               | 1g                |
|------------------|-------------------|-------------------|
| SAR measured     | <b>23,38 W/Kg</b> | <b>53,59 W/Kg</b> |
| Liquid : BL      | - 2,58 %          | +2,27 %           |
| Input power : 1W |                   |                   |

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## SAR MEASUREMENT PLOTS

Body:

