

**COMOSAR Dipole 835 MHz  
Calibration Report**



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Issue: B

Date: 2012/10/05

**DIPOLE 835 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 835 MHz CALIBRATION REPORT

**DATE:** 19/02/2009

**REFERENCE:** SN 36/08 DIPCC99

**OBJECT:** COMOSAR IEEE REFERENCE DIPOLE

**MANUFACTURER:** SATIMO

**SERIAL NUMBER:** SN 36/08 DIPCC99

**CUSTOMER:** Shenzhen Morlab Communication Technology

**CONTRACT:** PF2130108b\_SAR\_Morlab

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

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Date

04.05.2012

SAR TEAM MANAGER

JS

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

# COMOSAR Dipole 835 MHz Calibration Report



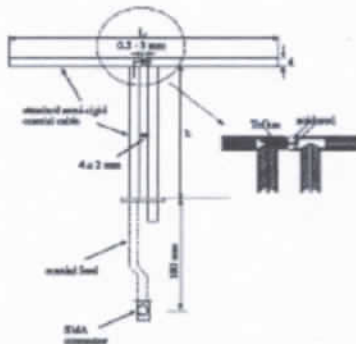
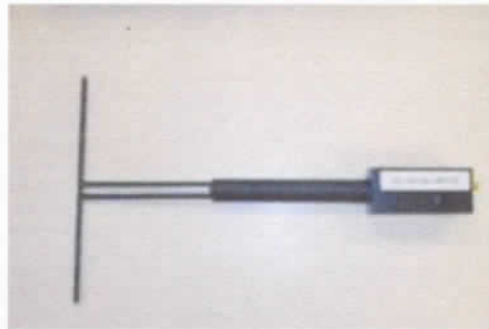
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## PRODUCT DESCRIPTION



Dimension: L=161 mm / h=89.8mm / d=3.6 mm

## CALIBRATION TEST EQUIPMENT

| TYPE                    | IDENTIFICATION           | DATE OF CALIBRATION |
|-------------------------|--------------------------|---------------------|
| Vector Network Analyzer | HP8753D (SN: 5410A08882) | 9-12-2012           |

## MEASUREMENT PROCEDURE

We placed the dipole under the flat part of SAM phantom fill with 835 MHz head and body liquid.

# COMOSAR Dipole 835 MHz

## Calibration Report

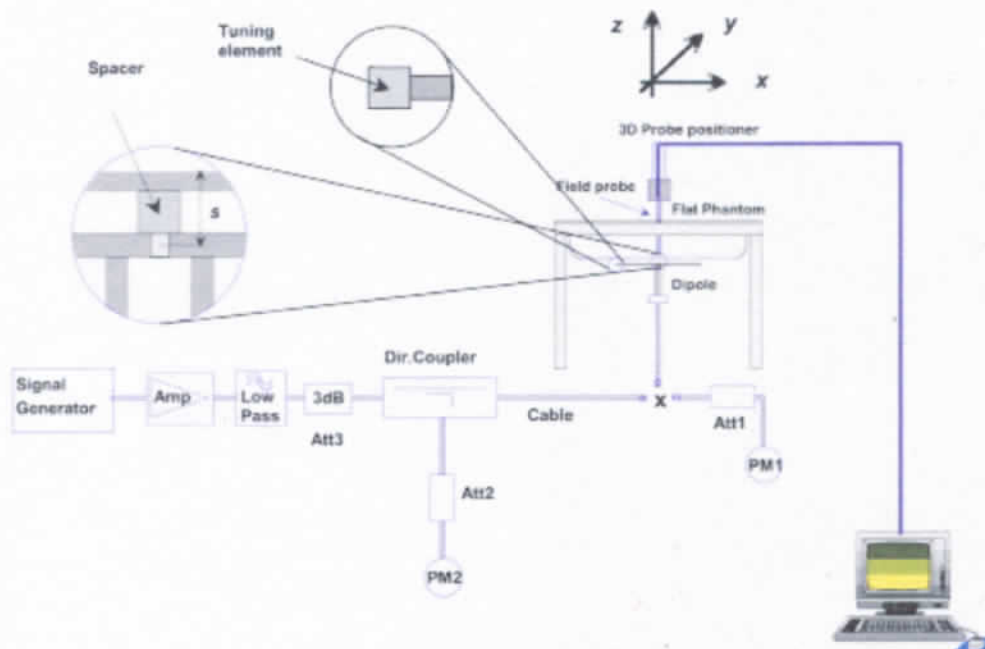


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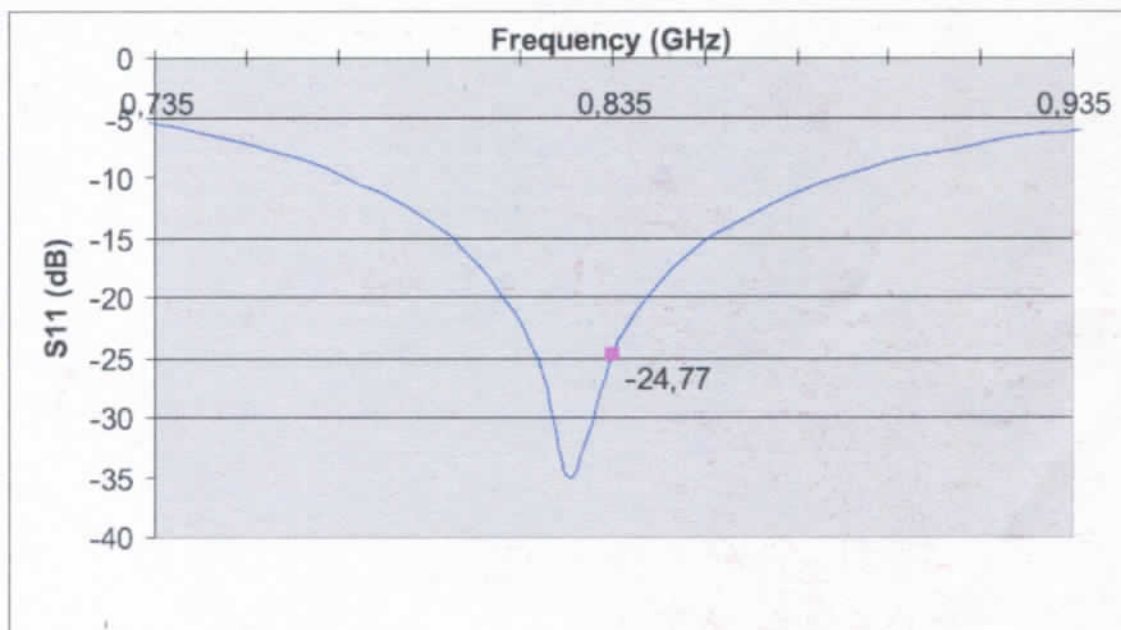
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Calibration was performed according to IEEE Std P1528-2003 and OET bulletin 65 Supplement C (Ed. 01-01)

VSWR at 835 MHz: -24.77 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 (28.479,25.214,27.196) | 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' : 41,20 sigma : 0,872 |
| <b>Distance between the center of the dipole and the liquid (set with a spacer)</b> | 15 mm                                                                                          |
| <b>Area scan resolution</b>                                                         | dx=8mm/dy=8mm                                                                                  |
| <b>Zoom scan resolution</b>                                                         | dx=8mm/dy=8m/dz=5mm                                                                            |
| <b>Frequency</b>                                                                    | 835 MHz                                                                                        |
| <b>Input power</b>                                                                  | 30 dBm                                                                                         |
| <b>Expanded uncertainty (K=1)</b>                                                   | 8.09%                                                                                          |

### SAR MEASUREMENT RESULT

|                  |           |           |
|------------------|-----------|-----------|
|                  | 10g       | 1g        |
| SAR measured     | 6,41 W/Kg | 9,74 W/Kg |
| Liquid : HL      | + 3,39 %  | + 2,53 %  |
| Input power : 1W |           |           |

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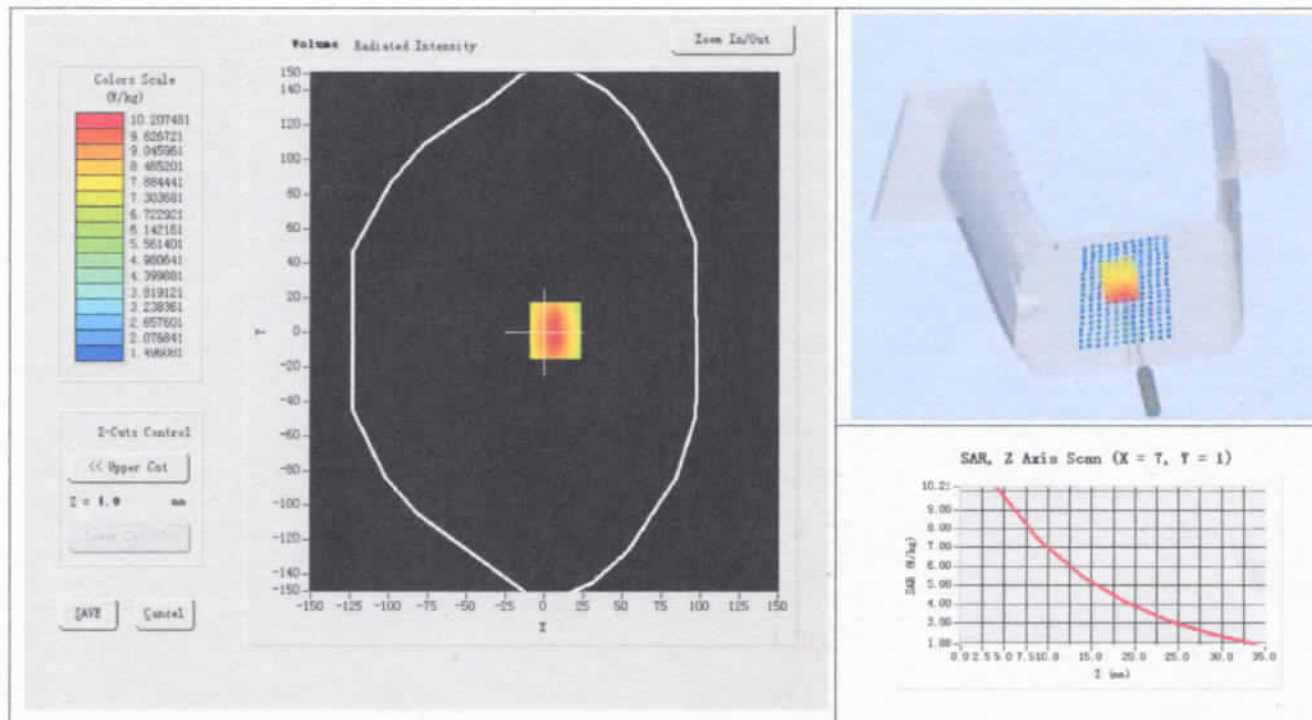
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### SAR MEASUREMENT PLOTS

Head:



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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 (28.559,25.681,27.588) | 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' : 55,20 sigma : 0,970 |
| <b>Distance between the center of the dipole and the liquid (set with a spacer)</b> | 15 mm                                                                                          |
| <b>Area scan resolution</b>                                                         | dx=8mm/dy=8mm                                                                                  |
| <b>Zoom scan resolution</b>                                                         | dx=8mm/dy=8m/dz=5mm                                                                            |
| <b>Frequency</b>                                                                    | 835 MHz                                                                                        |
| <b>Input power</b>                                                                  | 30 dBm                                                                                         |
| <b>Expanded uncertainty (K=1)</b>                                                   | 8.09%                                                                                          |

### SAR MEASUREMENT RESULT

|                  | 10g              | 1g               |
|------------------|------------------|------------------|
| SAR measured     | <b>6,37 W/Kg</b> | <b>9,88 W/Kg</b> |
| Liquid : HL      | <b>+ 2,74 %</b>  | <b>+ 4,00 %</b>  |
| Input power : 1W |                  |                  |

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### SAR MEASUREMENT PLOTS

Body:

