



SAR  
Dipole Performance Measurement  
Report

EUT Type: SAR Validation Dipole and Waveguide

Model Name: DIP 0G835-332, DIP 1G800-329, DIP 1G900-333, DIP 2G450-335

Brand Name: SATIMO

Test Conclusion: Pass

Test Date: 14 Aug. 2019~16 Aug. 2019

Date of Issue: 17 Aug. 2019

Testing Engineer : Aaron Bu.  
(Aaron Bu)

Technical Manager : Jason Lu  
(Jason Lu)

Authorized Signatory : Vita Li  
(Vita Li)



Any reproduction of this document must be done in full. No single part of this document may be reproduced without permission from STS, All Test Data Presented in this report is only applicable to presented Test sample.



## 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<br>OCPG67 | 2018.12.01       | 2019.11.30       |
| Phantom1             | MVG          | SAM                 | SN 32/14<br>SAM115 | N/A              | N/A              |
| Phantom2             | MVG          | SAM                 | SN 32/14<br>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<br>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       |



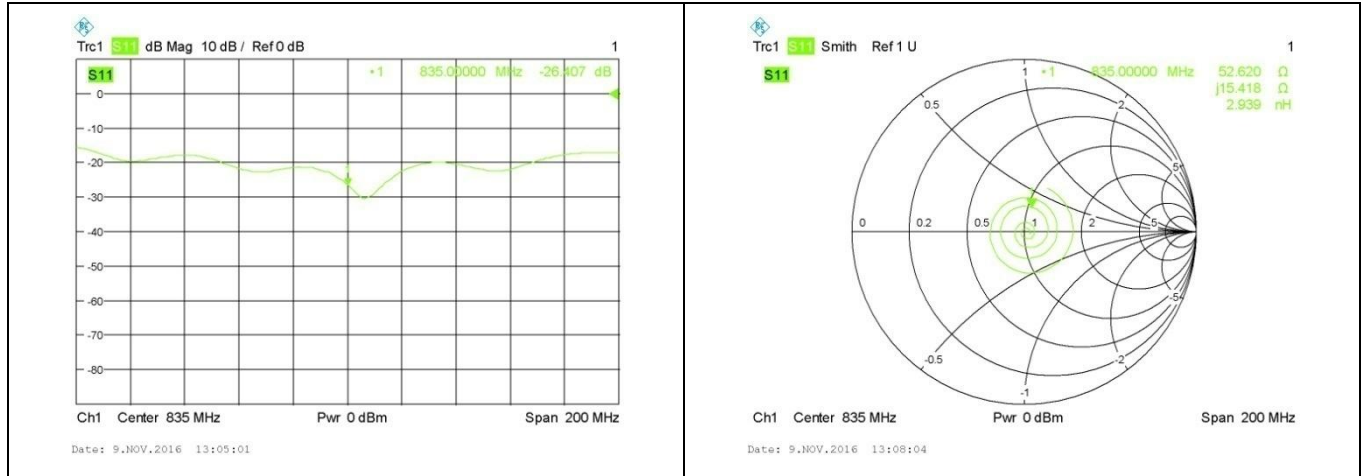
## 2.<Justification of the extended calibration>

| 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



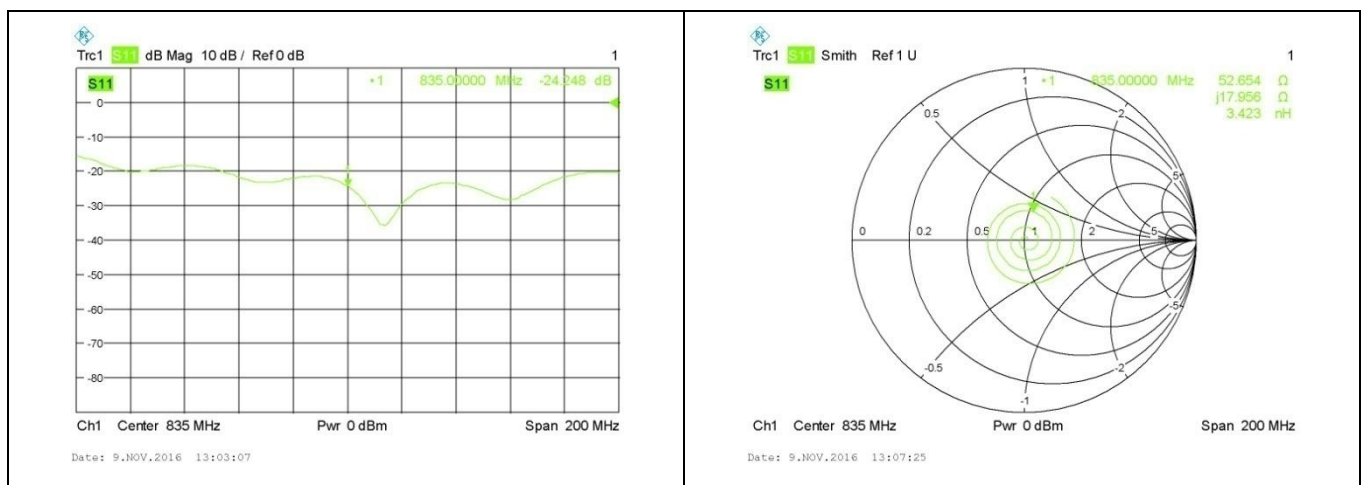


| Body 835 MHz        |                  |           |           |            |
|---------------------|------------------|-----------|-----------|------------|
| Date of Measurement | Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) |
| 2017.08.15          | -23.87           | -         | 49.0      | -          |
| 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



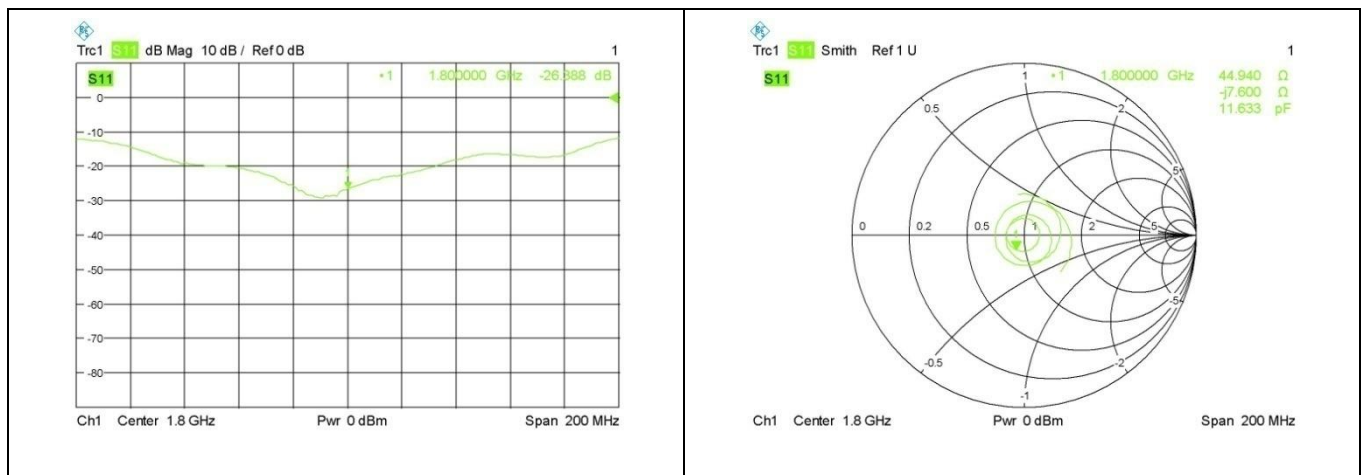


| Head 1800 MHz       |                  |           |           |            |
|---------------------|------------------|-----------|-----------|------------|
| Date of Measurement | Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) |
| 2017.08.15          | -29.51           | -         | 46.7      | -          |
| 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



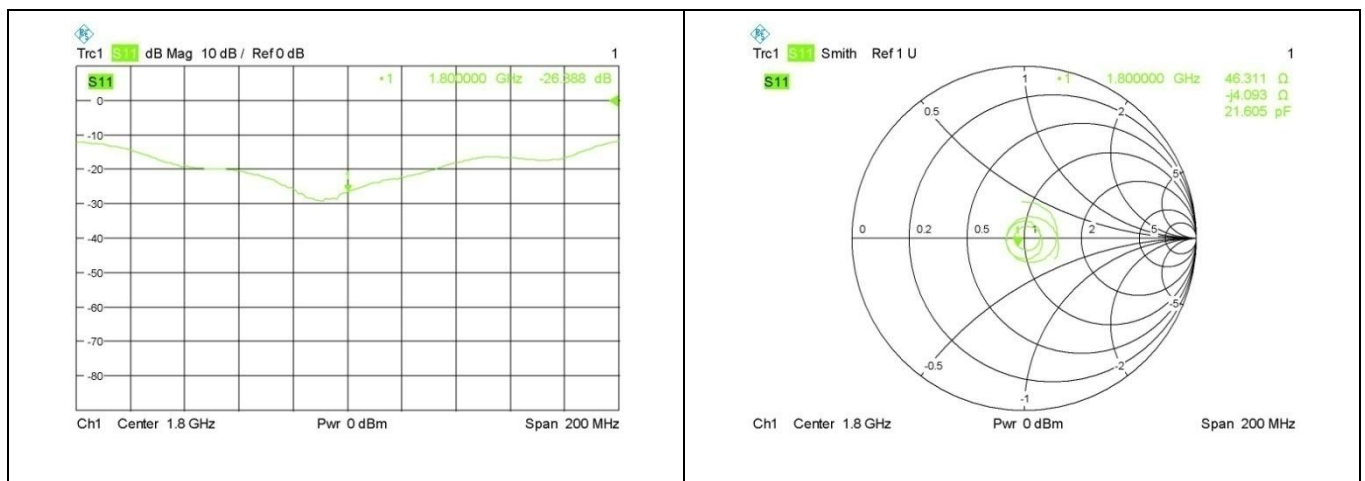


| Body 1800 MHz       |                  |           |           |            |
|---------------------|------------------|-----------|-----------|------------|
| Date of Measurement | Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) |
| 2017.08.15          | -24.59           | -         | 48.8      | -          |
| 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



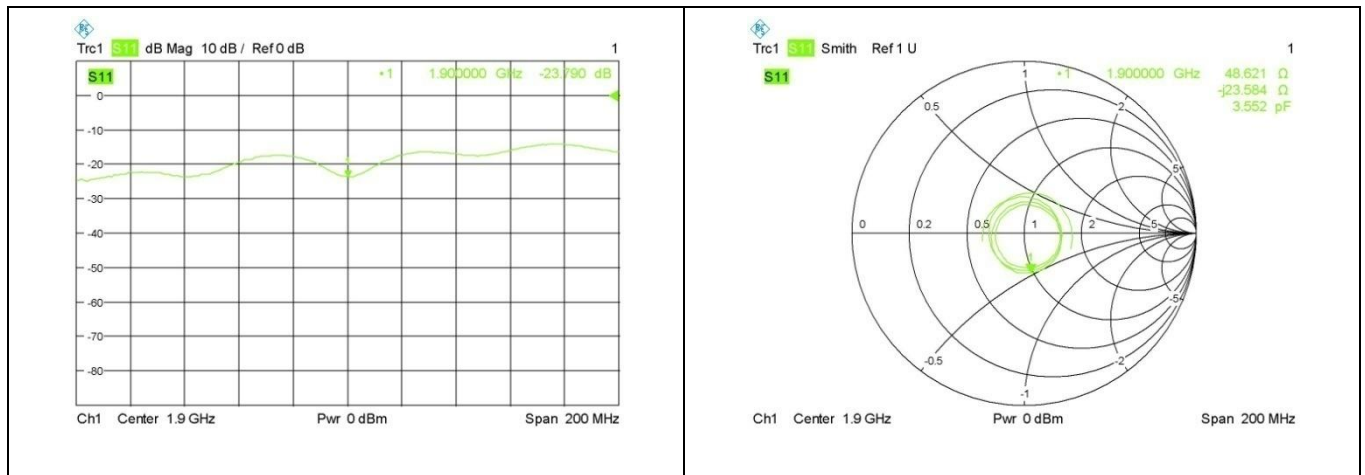


| Head 1900 MHz       |                  |           |           |            |
|---------------------|------------------|-----------|-----------|------------|
| Date of Measurement | Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) |
| 2017.08.15          | -23.68           | -         | 51.2      | -          |
| 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



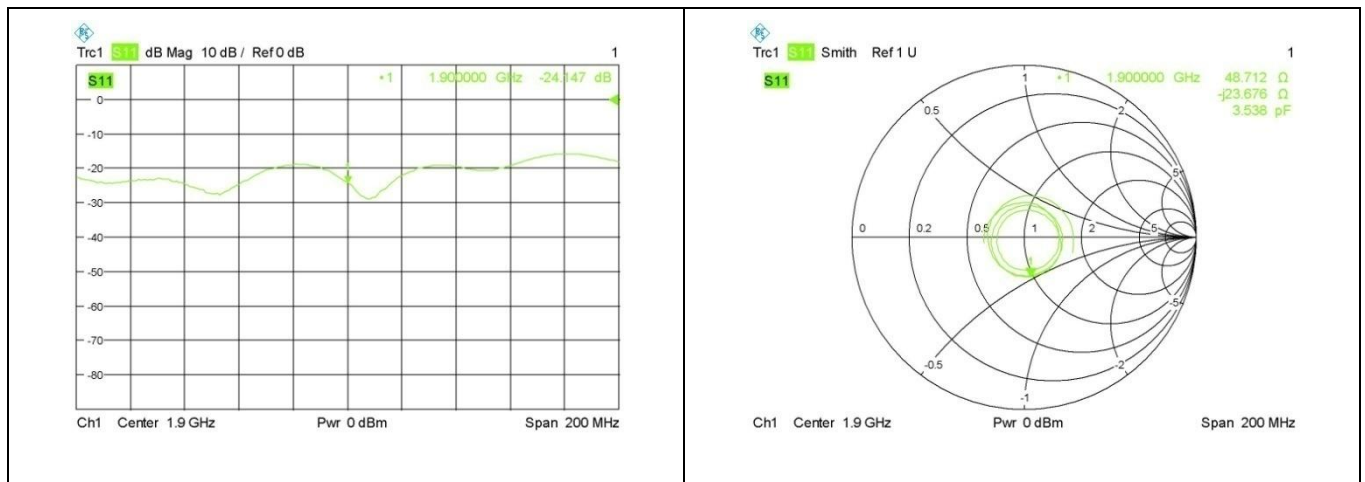


| Body 1900 MHz       |                  |           |           |            |
|---------------------|------------------|-----------|-----------|------------|
| Date of Measurement | Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) |
| 2017.08.15          | -20.22           | -         | 48.8      | -          |
| 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



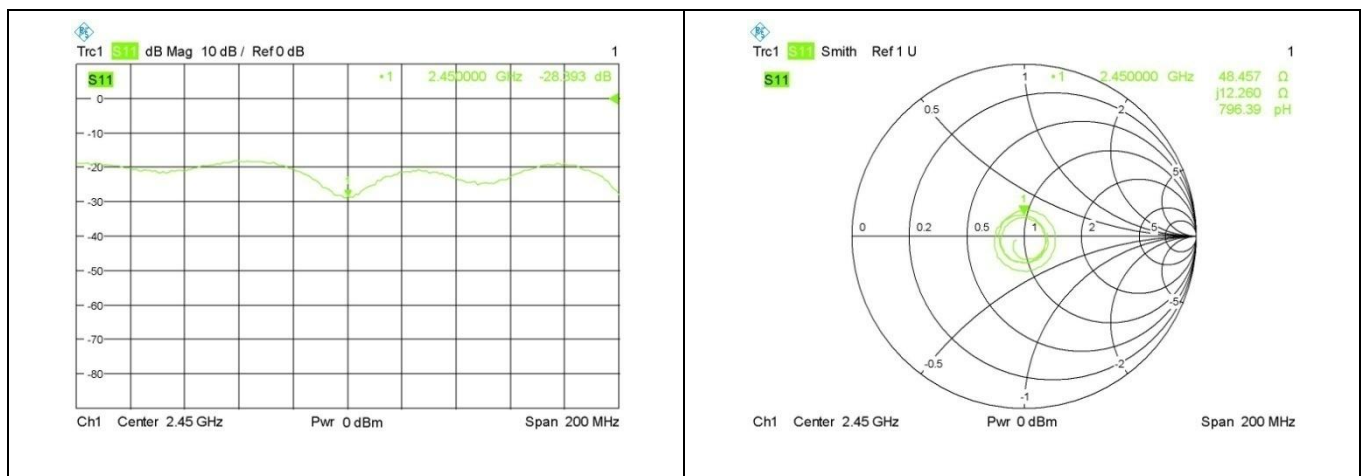


| Head 2450 MHz       |                  |           |           |            |
|---------------------|------------------|-----------|-----------|------------|
| Date of Measurement | Return Loss (dB) | Delta (%) | Impedance | Delta(ohm) |
| 2017.08.15          | -26.00           | -         | 46.1      | -          |
| 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

