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# **Appendix for the Report**

## **Dosimetric Assessment of the Siemens M46 (FCC ID: PWX-M46) According to the FCC Requirements**

### **Conducted Power Measurements**

April 19, 2002  
**IMST GmbH**  
**Carl-Friedrich-Gauß-Str. 2**  
**D-47475 Kamp-Lintfort**

Customer  
Siemens Information and Communication Mobile LLC  
16745 West Bernardo Drive Suite 400  
San Diego-CA 92127

The test results only relate to the items tested.  
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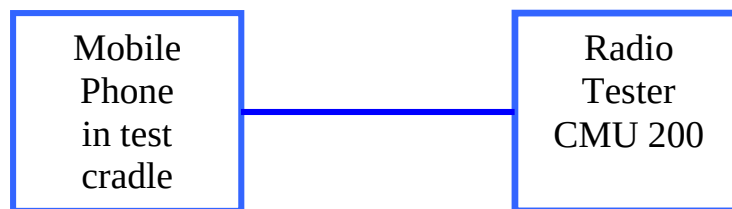
## 1 Executive Summary

The M46 is a new mobile phone from Siemens operating in the 1900 MHz frequency range. The device has an integrated antenna and the system concept used is the PCS 1900 standard.

The objective of the measurements done by IMST was the measurement of the Conducted Power in the PCS 1900 band (Power Level: 0).

## 2 Measurement Procedure

For the measurements a Rohde & Schwarz Radio Communication Tester CMU 200 was used. The output power was measured using a mobile phone test cradle with integrated RF connector and attached RF cable.



## 3 Measurement Results

| Averaged Burst Power<br>Channel 512<br>1850.20 MHz | Averaged Burst Power<br>Channel 661<br>1880.00 MHz | Averaged Burst Power<br>Channel 810<br>1909.80 MHz | Ambient<br>Temperature<br>[° C] |
|----------------------------------------------------|----------------------------------------------------|----------------------------------------------------|---------------------------------|
| 29.9 dBm                                           | 29.8 dBm                                           | 29.8 dBm                                           | 22                              |

Table 1: Conducted Power, PCS 1900, Siemens M46 (IMEI: 099999001234561).

## 4 Device under Test

MTE: Siemens M46, Production Line Unit  
 IMEI: 099999001234561  
 FCC ID: PWX-M46  
 Equipment class: Portable device  
 Power Class (PCS 1900): 1, tested with power level 0  
 Power supply: Internal Battery (Other batteries not available)  
 Antenna: Antenna Typ: integrated  
 Measured Standards: PCS 1900  
 Modulation: GMSK  
 TX range: PCS 1900 : 1850.2 MHz – 1909.8 MHz  
 RX range: PCS 1900 : 1930.2 MHz – 1989.8 MHz  
 Used TX Channels: PCS 1900: low: ch. 512, center: ch. 661, high: ch. 810

## 5 Test Equipment

| Test Equipment                | Model  | Serial Number | Last Calibration | Next Calibration |
|-------------------------------|--------|---------------|------------------|------------------|
| Radio Tester, Rohde & Schwarz | CMU200 | 837586/043    | 01/2002          | 01/2003          |

prepared by: 

André van den Bosch  
test engineer

reviewed by: 

Dipl.-Ing. Christoph Hennes  
quality assurance engineer

**IMST GmbH**  
 Carl-Friedrich-Gauß-Straße 2  
 D-47475 Kamp-Lintfort

Tel. +49- 2842-981 373  
 Fax +49- 2842-981 399  
 email: hennes@imst.de

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|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                      | <br><b>ROHDE &amp; SCHWARZ</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Kalibrierschein</b><br><i>Calibration Certificate</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                               |                                                                      | <b>Nummer 11-973278/001</b><br><i>Number</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Gegenstand</b><br><i>Object</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     | Radio Communication Tester                                           | <p>Dieser Kalibrierschein dokumentiert, daß der genannte Gegenstand nach festgelegten Vorgaben geprüft und gemessen wurde. Die Meßwerte liegen im Regelfall mit einer Wahrscheinlichkeit von annähernd 95 % im zugeordneten Wertebereich (Erweiterte Meßunsicherheit mit <math>k = 2</math>). Die Kalibrierung erfolgte mit Meßmitteln und Normen, die direkt oder indirekt durch Ableitung mittels anerkannter Kalibrierstechniken rückgeführt sind auf Normale der PTB/DKD oder anderer nationaler/internationaler Standards zur Darstellung der physikalischen Einheiten in Übereinstimmung mit dem Internationalen Einheitensystem (SI). Wenn keine Normale existieren, erfolgt die Rückführung auf Bezugsnormale der R&amp;S-Laboratorien.</p> <p>Grundsätze und Verfahren der Kalibrierung entsprechen ISO / IEC 17025. Das Bestätigungssystem für die verwendeten Meßmittel entspricht DIN ISO 10012-1. Das angewandte Qualitätsmanagement-System ist zertifiziert nach DIN EN ISO 9001.</p> <p>Dieser Kalibrierschein darf nur vollständig und unverändert weiterverbreitet werden. Kalibrierscheine ohne Signifizierungen sind ungültig. Für die Einhaltung einer angemessenen Frist zur Wiederholung der Kalibrierung ist der Benutzer verantwortlich.</p> <p>This calibration certificate documents, that the named item is tested and measured against defined specifications. Measurement results are located usually in the corresponding interval with a probability of approx. 95 % (coverage factor <math>k = 2</math>). Calibration is performed with test equipment and standards directly or indirectly traceable by means of approved calibration techniques to the PTB/DKD or other national/international standards, which realize the physical units of measurement according to the International System of Units (SI). In all cases where no national standards are available, measurements are referenced to standards of the R&amp;S laboratories.</p> <p>Principles and methods of calibration correspond with ISO / IEC 17025. The metrological confirmation system for the measuring equipment used is in compliance with DIN ISO 10012-1. The applied quality system is certified to DIN EN ISO 9001.</p> <p>This calibration certificate may not be reproduced other than in full. Calibration certificates without signatures are not valid. The user is obliged to have the object recalibrated at appropriate intervals.</p> |
| <b>Hersteller</b><br><i>Manufacturer</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | ROHDE & SCHWARZ                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Typ</b><br><i>Type</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | CMU 200                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Sach-Nr.</b><br><i>Ident. No.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | 1100.0008.02                                                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Serien-Nr.</b><br><i>Serial No.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 837586/043                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Auftraggeber</b><br><i>Customer</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | IMST GmbH<br><br>Carl-Friedrich-Gauss-Strasse<br>47475 Kamp-Lintfort |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Bestellung Nr.</b><br><i>Order No.</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Ort u. Datum d. Kalibrierung</b><br><i>Place and date of calibration</i>                                                                                                                                                                                                                                                                                                                                                                                                                                            | Kamp-Lintfort, 2002-01-17                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Umfang der Kalibrierung</b><br><i>Scope of calibration</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Standardkalibrierung                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Eingangsprüfung</b><br><i>Performance on receipt</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                                | innerhalb der Toleranz                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Kalibrierergebnis</b><br><i>Result of calibration</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                               | innerhalb der Toleranz                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Umfang des Kalibrierscheins</b><br><i>Extent of the certificate</i>                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 46 Seiten                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Ausstellungsdatum</b><br><i>Date of issue</i><br><br>2002-01-17                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                      | <b>Laborleitung</b><br><i>Head of laboratory</i><br><br><br>Bakker                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |                                                                      | <b>Bearbeiter</b><br><i>Person responsible</i><br><br><br>Schwagereit                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| ROHDE & SCHWARZ GmbH & Co. KG Werk Köln · Graf-Zeppelin-Str. 18 · D-51147 Köln · Telefon (02203) 49-0 · Telefax (02203) 49-51384<br>Geschäftsführung: Dipl.-Ing. Dipl.-Wirtsch.-Ing. Friedrich Schwarz (Vorsitzender), Dipl.-Ing. (FH) Reinhard Bruckner, Dipl.-Ing. Hans Wagner<br>Sitz München · Registeramt: HRA 16 270 · Persönlich haftender Gesellschafter: RUSEG Verwaltungs-GmbH · Sitz München · Registeramt: AG München HRB 7 534<br><a href="http://www.rohde-schwarz.com">http://www.rohde-schwarz.com</a> |                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

|        |                            |                 |               |
|--------|----------------------------|-----------------|---------------|
| Object | Radio Communication Tester |                 |               |
| Type   | CMU 200                    | Serial No.      | 837586/043    |
| Date   | 2002-01-17                 | Ident No.       | 1100.0008.02  |
| Page   | 2 of 46                    | Certificate No. | 11-973278/001 |



|                                                      |                                               |                                                                |             |
|------------------------------------------------------|-----------------------------------------------|----------------------------------------------------------------|-------------|
| Kalibrieranweisung<br><i>Calibration instruction</i> | PD 757.4318.25                                | Eingangsdatum<br><i>Date of receipt</i>                        | 2002-01-17  |
| Umgebungstemperatur<br><i>Ambient temperature</i>    | (23 ± 3) °C                                   | Rel. Luftfeuchte<br><i>Relative humidity</i>                   | (40 ± 20) % |
| Eingebaute Optionen<br><i>Options</i>                | K21,K22,K23,B21,B52,B62,<br>FMR5, 64 MB, ntx1 | Empfohlenes Kal.-Intervall<br><i>Recommended cal. interval</i> | 12 Monate   |

| Verwendete Gebrauchsnormale<br><i>Working Standards used</i> |                    |                                 |                                               |                                |
|--------------------------------------------------------------|--------------------|---------------------------------|-----------------------------------------------|--------------------------------|
| Gegenstand<br><i>Object</i>                                  | Typ<br><i>Type</i> | Serien-Nr.<br><i>Serial No.</i> | Kalibrierschein Nr.<br><i>Certificate No.</i> | Kalibr. bis<br><i>Cal. due</i> |
| Signal Generator                                             | SMIQ 06B           | 834606/020                      | 5169-DKD-K-00201-01-06                        | 2003-06                        |
| System Panel Rack                                            | SPR 2000           | 958177/003                      | 5182-DKD-K-00201-02-01                        | 2003-01                        |
| Modulationsanalyzer                                          | FMB                | 832410/005                      | 4844-DKD-K-00201-01-02                        | 2002-02                        |
| Spectrum Analyzer                                            | FSIQ 26            | 834768/002                      | 4989-DKD-K-00201-01-04                        | 2002-04                        |
| Power Meter                                                  | NRVS               | 838892/002                      | 4915-DKD-K-00201-01-03                        | 2003-03                        |
| Power Splitter                                               | RVZ                | 836016/014                      | K00-586                                       | 2002-07                        |
| VSWR Bridge                                                  | ZRC                | 839112/001                      | K01-444                                       | 2002-11                        |

|                             |                         |
|-----------------------------|-------------------------|
| Anmerkungen<br><i>Notes</i> | Firmware Version: V3.00 |
|-----------------------------|-------------------------|