

Important Product Records

e. g. Calibration Certificate, License Keys List

Service that adds value

- | Worldwide
- | Local and personalized
- | Customized and flexible
- | Uncompromising quality
- | Long-term dependability



ROHDE & SCHWARZ



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1 / 1

MLD

Material No.

1173.6506.02

Serial No.

102419

GU DCV – ZP DCV – PAPIERAUSDRUCK

DCV – ZP



ROHDE & SCHWARZ

Calibration Certificate

Certificate Number 20-502371

Kalibrierschein

Zertifikatsnummer

Unit Data

Item **TSML-CW RADIO NETWORK ANALYZER**
Gegenstand

Manufacturer **ROHDE & SCHWARZ**
Hersteller

Type **TSML-CW**
Typ

Material Number **1153.6000.15** Serial Number **100126**
Materialnummer Seriennummer

Asset Number
Inventarnummer

Order Data

Customer
Auftraggeber

Order Number **0000292442**
Bestellnummer

Date of Receipt **2014-08-12**
Eingangdatum

Performance

Place and Date of Calibration
Ort und Datum der Kalibrierung

Memmingen, 2014-08-12

Scope of Calibration
Umfang der Kalibrierung

Standard Calibration

Statement of Compliance
(Incoming)
Konformitätsaussage
(Anlieferung)

New device

Statement of Compliance
(Outgoing)
Konformitätsaussage
(Auslieferung)

Measurement results within specifications

Extent of Calibration Documents
Umfang des Kalibrierdokuments

**2 Pages Calibration Certificate
5 Pages Outgoing Results**

Ref. No. 20-502371

Cal.	Custom. Due Date
2014-08-12	

ROHDE & SCHWARZ

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 $k = 2$).

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 standards are available, measurements are referenced to standards of the R&S laboratories.

Principles and methods of calibration correspond and are conformant with EN ISO/IEC 17025, ANSI/NCSL Z540.1-1994 and ANSI/NCSL Z540.3-2006. The applied quality system is certified to EN ISO 9001.

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.

Dieser Kalibrierschein dokumentiert, dass der genannte Gegenstand nach festgelegten Vorgaben geprüft und gemessen wurde. Die Messwerte lagen im Regelfall mit einer Wahrscheinlichkeit von annähernd 95% im zugeordneten Werteintervall (Erweiterte Messunsicherheit mit $k = 2$).

Die Kalibrierung erfolgte mit Messmitteln und Normalen, die direkt oder indirekt durch Ableitung mittels anerkannter Kalibriertechniken 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&S-Laboratorien.

Grundsätze und Verfahren der Kalibrierung beziehen sich auf und entsprechen EN ISO/IEC 17025, ANSI/NCSL Z540.1-1994 und ANSI/NCSL Z540.3-2006.

Das angewandte Qualitätsmanagement-System ist zertifiziert nach EN ISO 9001. 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.

Rohde & Schwarz Messgerätebau GmbH

Date of Issue
Ausstellungsdatum

2014-08-12

Head of Laboratory
Laborleitung

Steigmüller

Person Responsible
Bearbeiter

Gerald Nickel

Page 1/2
ver9815/MB0707

Calibration Method 1153.6000.01-T- 08.01
Kalibrieranweisung

Relative Humidity 20%-60%
Relative Luftfeuchte

Ambient Temperature (23 ⁺⁷₋₃) °C
Umgebungstemperatur

Working standards used (having a significant effect on the accuracy)

Verwendete Gebrauchsnormale (mit signifikantem Einfluss auf die Genauigkeit)

Item Gegenstand	Type Typ	Serial Number Seriennummer	Calibration Certificate Number Kalibrierscheinnummer	Cal. Due Kalibr. bis
Average Power Sensor Vector Signal Generator	NRP-Z11 SMIQ06B	100473 838341/040	0410-D-K-15195-01-00-2013-07 0082-DKD-K-15195-2013-05	2015-07-31 2016-04-30

Conformity statements take the measurement uncertainties into account.

Die Konformitätsaussagen berücksichtigen die Messunsicherheiten.

Notes

Anmerkungen

Installed options are included in calibration. Depending on installed options, numbers of pages of the record are not consecutive.

Outgoing Results

Designation:	Radio Network Analyzer
Type:	TSML-CW
Material No.:	1153.6000.15
Serial No.:	100126
Referring to Test Documentation:	1153.6000.01-T-08.01

Test Department:	ME1A
Name:	Nickel
Date:	2014-08-12



Type TSML-CW
Test System T10010
Temperature (23 -3/+7)°C
File 1153.6000.15_100126_10-.MF
Page 2 / 5

Serial No. 100126
Material No. 1153.6000.15
Date 2014-08-12



Table of contents

Software used for measurement	3
1. Protocol	4

Type TSML-CW
Test System T10010
Temperature (23 -3/+7)°C
File 1153.6000.15_100126_10-.MF
Page 3 / 5

Serial No. 100126
Material No. 1153.6000.15
Date 2014-08-12



Software used for measurement

Item	Type	Version	Remark
Suite	Setup	V10.10	Test Management Software G5
Test Program (010121_)	Component	V08.01	

Type TSML-CW
Test System T10010
Temperature (23-3/+7)°C
File 1153.6000.15_100126_10-MF
Page 4 / 5

Serial No. 100126
Material No. 1153.6000.15
Date 2014-08-12



1. Protocol

Report generated with mask: Skript5_TSML-CW

Begin:-----

Program Version 7.00
Calibration Version 1.04

Auto Power On Mode O.K.

Power Off Mode O.K.

IEEE1394 Communication O.K.

IF-Filter Adjustment O.K.

Level Calibration O.K.

Bandwidth 3dB IF-Filter 4.443 MHz
Valid Range 4.275 MHz to 4.725 MHz

Level Accuracy
Start Frequency 0080 MHz
Stop Frequency 3921 MHz
Frequency Step 0001 MHz
Calculation Interval 0500 MHz

Amplifier Setting Pre-Amp on, IF-Amp 15db
Input Power -50.00 dBm

Frequency	Measured Accuracy [dB/100]				
-----	Average	Max	Frequ. [MHz]	Rated	Uncertainty
0080...0500 MHz	+/-00	+03	0101	+/-70	+/-30
0501...1000 MHz	+/-00	+02	0528	+/-70	+/-30
1001...1500 MHz	+/-00	+02	1061	+/-70	+/-30
1501...2000 MHz	+/-00	-03	1974	+/-70	+/-30
2001...2500 MHz	+/-00	-02	2029	+/-70	+/-30
2501...3000 MHz	+/-00	-02	2589	+/-70	+/-30
3001...3500 MHz	+/-00	-02	3008	+/-70	+/-30
3501...4000 MHz	+/-00	-02	3584	+/-70	+/-30

Amplifier Setting Pre-Amp off, IF-Amp 15db
Input Power -40.00 dBm

Frequency	Measured Accuracy [dB/100]				
-----	Average	Max	Frequ. [MHz]	Rated	Uncertainty
0080...0500 MHz	+/-00	+03	0402	+/-70	+/-30
0501...1000 MHz	+/-00	+02	0751	+/-70	+/-30
1001...1500 MHz	+/-00	+02	1027	+/-70	+/-30
1501...2000 MHz	+/-00	+03	1602	+/-70	+/-30
2001...2500 MHz	+/-00	-02	2019	+/-70	+/-30
2501...3000 MHz	+/-00	-03	2778	+/-70	+/-30
3001...3500 MHz	+/-00	+03	3057	+/-70	+/-30
3501...4000 MHz	+/-00	+02	3511	+/-70	+/-30

Type TSML-CW
Test System T10010
Temperature (23-3/+7)°C
File 1153.6000.15_100126_10-MF
Page 5 / 5

Serial No. 100126
Material No. 1153.6000.15
Date 2014-08-12



Amplifier Setting Pre-Amp off, IF-Amp 5db
Input Power -30.00 dBm

Frequency -----	Measured Accuracy [dB/100]		Frequ. [MHz]	Rated	Uncertainty
	Average	Max			
0080...0500 MHz	+/-01	+04	0324	+/-70	+/-30
0501...1000 MHz	+/-01	+04	0564	+/-70	+/-30
1001...1500 MHz	+/-01	+05	1099	+/-70	+/-30
1501...2000 MHz	+/-01	-06	1819	+/-70	+/-30
2001...2500 MHz	+/-02	-06	2244	+/-70	+/-30
2501...3000 MHz	+/-03	+10	2962	+/-70	+/-30
3001...3500 MHz	+/-03	-10	3118	+/-70	+/-30
3501...4000 MHz	+/-04	+12	3846	+/-70	+/-30

Amplifier Setting Pre-Amp off, IF-Amp off
Input Power -25.00 dBm

Frequency -----	Measured Accuracy [dB/100]		Frequ. [MHz]	Rated	Uncertainty
	Average	Max			
0080...0500 MHz	+/-01	-04	0241	+/-70	+/-30
0501...1000 MHz	+/-03	-08	0726	+/-70	+/-30
1001...1500 MHz	+/-03	-10	1246	+/-70	+/-30
1501...2000 MHz	+/-02	-11	1878	+/-70	+/-30
2001...2500 MHz	+/-07	-23	2361	+/-70	+/-30
2501...3000 MHz	+/-07	-21	2836	+/-70	+/-30
3001...3500 MHz	+/-04	-19	3297	+/-70	+/-30
3501...4000 MHz	+/-02	-06	3801	+/-70	+/-30

Amplifier Setting Low Level Meas: Pre-Amp on, IF-Amp 15db
Input Power -69.70 dBm

Frequency -----	Measured Accuracy [dB/100]		Frequ. [MHz]	Rated	Uncertainty
	Average	Max			
0080...0500 MHz	+/-05	+19	0402	+/-70	+/-70
0501...1000 MHz	+/-05	+11	0584	+/-70	+/-70
1001...1500 MHz	+/-04	+12	1233	+/-70	+/-70
1501...2000 MHz	+/-02	+09	1744	+/-70	+/-70
2001...2500 MHz	+/-02	+11	2349	+/-70	+/-70
2501...3000 MHz	+/-02	-10	2753	+/-70	+/-110
3001...3500 MHz	+/-02	+13	3264	+/-70	+/-110
3501...4000 MHz	+/-02	-15	3525	+/-70	+/-110

Filter Calibration O.K.

End:-----