Kalibrier-Zertifikat Calibration Certificate

MUSTER

Gegenstand Object	Signal Generator
Hersteller Manufacturer	Agilent
Typ Type description	E8257D
Serien Nr. Serial no.	12345
Inventar Nr. Inventory no.	---
Prüfmittel Nr. Test equipment no.	---
Equipment Nr. Equipment no.	12345678
Standort Location	---
Auftraggeber Customer	Mustermann GmbH DE-12345 Musterhausen
Kunden Nr. Customer ID no.	1234567
Auftrags Nr. Order no.	654321
Datum der Kalibrierung Date of calibration	19.05.2023
Datum der empfohlenen Rekalibrierung Date of the recommended re-calibration	19.05.2024
Konformitätsaussage Conformity	pass

Hiermit bestätigen wir, dass das durchführende Kalibrierlabor ein Managementsystem nach ISO 9001:2015, sowie ISO/IEC 17025:2018 eingeführt hat. Die Urkunden finden Sie auf www.testotis.de. Die für die Kalibrierung verwendeten Messeinrichtungen werden regelmäßig kalibriert und sind rückführbar auf die nationalen Normale der Physikalisch Technischen Bundesanstalt (PTB) Deutschlands oder auf andere nationale Normale. Wo keine nationalen Normale existieren, entspricht das Messverfahren den derzeit gültigen technischen Regeln und Normen. Die für diesen Vorgang angefertigte Dokumentation kann eingesehen werden. Alle erforderlichen Messdaten sind in diesem Kalibrier-Zertifikat aufgelistet.

Hereby we confirm that the performing calibration labratory is working with a management system according to ISO 9001:2015 and ISO/IEC 17025:2018. Accreditation certificates can be found under www.testotis.de. The measuring installations used for calibration are regularly calibrated and traceable to the national standards of the German Federal Physical Technical Institute (PTB) or other national standards. Should no national standards exist, the measuring procedure corresponds with the technical regulations and norms valid at the time of the measurement. The documents established for this procedure are available for viewing. All the necessary measured data can be found on the following page(s) of this calibration certificate.

[1]) Die erweiterte Messunsicherheit wurde nach EA-4/02 M:2022 mit einer Überdeckungswahrscheinlichkeit von 95% berechnet und enthält die Unsicherheit der Referenz, des Verfahrens sowie die Unsicherheit des Prüflings. Die Konformitätsaussage erfolgt nach der Entscheidungsregel 'Vertrauensniveau 50' .

[1]) The expanded measurement uncertainty was calculated according to EA-4/02 M:2022 with a coverage probability of 95% and contains the uncertainty of the reference, the method and the uncertainty of the unit under test. The statement of conformity is based on the decision rule 'confidence level 50' .

V 5.07 / DE

Stempel Seal

TESTO INDUSTRIAL SERVICES testo KIRCHZARTEN

Fachverantwortlicher Supervisor

Max Mustermann

Bearbeiter Technician

Martina Musterfrau

Kalibrier-Zertifikat Calibration Certificate

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Messeinrichtung Measuring equipment

Referenz Reference	Rückführung Traceability	Rekal. Next cal.	Zertifikat-Nr. Certificate-no.	EQ-Nr. EQ-no.
Power Sensor HP N8487A	15070-01-00 2023-03	2025-03	E233432	10954843
Frequenzzähler Agilent 53152A	GPS locked ---	---	Support device	10954848
Power Meter AGILENT DEUTSCHLAND GMBH E4417A	15070-01-01 2022-10	2023-10	E218462	11287008
Frequenzzähler HEWLETT PACKARD 5335A	GPS locked ---	---	Support device	11374124
Frequenznormal Fluke 910R	GPS locked ---	---	Support device	11846061
Power Sensor Keysight Technologies E9304A H18	15070-01-01 2022-11	2023-11	E219418	12451933
Swept CW Generator Agilent 83650L	GPS locked ---	---	Support Device	12716717
Measuring Receiver HEWLETT PACKARD 8902A	15070-01-00 2023-04	2024-04	E240929	12720936
Vector Signal Analyser Rohde & Schwarz FSV30	15070-01-01 2022-07	2023-07	E204449	13673912

Referenzzertifikate sind auf www.primasonline.com abrufbar Reference certificates are available at www.primasonline.com

Umgebungsbedingungen Ambient conditions

Temperatur Temperature (23 ± 1) °C
Relative Luftfeuchte Relative Humidity (20...70) %

Messverfahren Measuring procedure

Die Kalibrierung erfolgt nach Herstelleranweisung
The calibration is performed according to the manufacturer's procedure

Prüfprozedur Procedure E:AGILENT:E8257D:KIZ:HF-MP1:SG:IEEE / Rev.:1.6

Messergebnisse Measuring results

Seite Page 3 bis to 13

Besondere Bemerkungen Special remarks

Kalibrier-Zertifikat Calibration Certificate MUSTER

Bezugswert Reference value	Messbedingung Measuring condition	Angezeigter Wert UUT Indicated value UUT	Abweichung deviation	zulässige Abweichung allowed deviation	Ausnutzung der zul. Abw. in % Utilization of allowed dev. in %	Messunsicherheit (k=2) Measuring uncertainty (k=2)
Installed Options:						
- 50 GHz Frequency Range						
- Step Attenuator						
- High Output Power						
Output of Internal Reference						
Laboratory estimated Tolerance						
10.00000000 MHz		10.0000000 MHz	0.00000000 MHz	±0.0000005 MHz	0 % pass	0.12 Hz
Frequency Accuracy						
2.2222222215 GHz		2.222222222 GHz	0.0000000005 GHz	±0.000000001 GHz	50 % pass	2.4 Hz
3.3333333330 GHz		3.333333333 GHz	0.0000000000 GHz	±0.000000001 GHz	0 % pass	3.4 Hz
4.4444444435 GHz		4.444444444 GHz	0.0000000005 GHz	±0.000000001 GHz	50 % pass	4.5 Hz
5.5555555548 GHz		5.555555555 GHz	0.0000000002 GHz	±0.000000001 GHz	25 % pass	5.6 Hz
6.6666666653 GHz		6.666666666 GHz	0.0000000008 GHz	±0.000000001 GHz	75 % pass	6.7 Hz
7.7777777765 GHz		7.777777777 GHz	0.0000000005 GHz	±0.000000001 GHz	50 % pass	7.8 Hz
8.8888888878 GHz		8.888888888 GHz	0.0000000002 GHz	±0.000000001 GHz	25 % pass	8.9 Hz
9.9999999985 GHz		9.999999999 GHz	0.000000001 GHz	±0.000000001 GHz	50 % pass	10 Hz
9.9999999995 GHz		10.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	50 % pass	10 Hz
10.9999999995 GHz		11.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	50 % pass	11 Hz
11.9999999997 GHz		12.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	25 % pass	12 Hz
12.9999999995 GHz		13.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	50 % pass	13 Hz
13.9999999997 GHz		14.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	25 % pass	14 Hz
14.9999999997 GHz		15.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	25 % pass	15 Hz
15.9999999997 GHz		16.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	25 % pass	16 Hz
17.0000000000 GHz		17.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	0 % pass	17 Hz
17.9999999995 GHz		18.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	50 % pass	18 Hz
19.0000000000 GHz		19.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	0 % pass	19 Hz
19.9999999992 GHz		20.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	75 % pass	20 Hz
21.0000000000 GHz		21.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	0 % pass	21 Hz
21.9999999995 GHz		22.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	50 % pass	22 Hz
22.9999999992 GHz		23.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	75 % pass	23 Hz
23.9999999993 GHz		24.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	75 % pass	24 Hz
24.9999999993 GHz		25.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	75 % pass	25 Hz
25.9999999997 GHz		26.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	25 % pass	26 Hz
26.9999999997 GHz		27.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	25 % pass	27 Hz
28.0000000003 GHz		28.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	25 % pass	28 Hz
29.0000000000 GHz		29.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	0 % pass	29 Hz
29.9999999992 GHz		30.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	75 % pass	30 Hz
30.9999999992 GHz		31.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	75 % pass	31 Hz
31.7999999998 GHz		31.800000000 GHz	0.000000000 GHz	±0.000000001 GHz	25 % pass	32 Hz
33.9999999998 GHz		34.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	25 % pass	34 Hz

Kalibrier-Zertifikat Calibration Certificate MUSTER

Bezugswert Reference value	Messbedingung Measuring condition	Angezeigter Wert UUT Indicated value UUT	Abweichung deviation	zulässige Abweichung allowed deviation	Ausnutzung der zul. Abw. in % Utilization of allowed dev. in %	Messunsicherheit (k=2) Measuring uncertainty (k=2)
35.9999999995 GHz		36.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	50 % pass	36 Hz
37.9999999995 GHz		38.000000000 GHz	0.000000000 GHz	±0.000000001 GHz	50 % pass	38 Hz
39.9999999993 GHz		40.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	75 % pass	40 Hz
41.9999999995 GHz		42.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	50 % pass	42 Hz
43.9999999993 GHz		44.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	75 % pass	44 Hz
45.9999999993 GHz		46.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	75 % pass	46 Hz
47.9999999995 GHz		48.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	50 % pass	48 Hz
49.9999999993 GHz		50.000000000 GHz	0.000000001 GHz	±0.000000001 GHz	75 % pass	50 Hz

Maximum Leveled Power

1E1+1EU (filters off)

10.000 dBm	250 kHz	14.62 dBm	4.62 dB	-0/ +100 dB	---	pass	0.10 dB
10.000 dBm	1 MHz	15.47 dBm	5.47 dB	-0/ +100 dB	---	pass	0.10 dB
10.000 dBm	9 MHz	17.11 dBm	7.11 dB	-0/ +100 dB	---	pass	0.10 dB
10.000 dBm	10 MHz	17.24 dBm	7.24 dB	-0/ +100 dB	---	pass	0.10 dB
12.000 dBm	59 MHz	18.65 dBm	6.65 dB	-0/ +100 dB	---	pass	0.10 dB
17.000 dBm	200 MHz	19.41 dBm	2.41 dB	-0/ +100 dB	---	pass	0.10 dB
19.000 dBm	1000 MHz	23.09 dBm	4.09 dB	-0/ +100 dB	---	pass	0.10 dB
19.000 dBm	2000 MHz	23.03 dBm	4.03 dB	-0/ +100 dB	---	pass	0.10 dB
19.000 dBm	3000 MHz	23.22 dBm	4.22 dB	-0/ +100 dB	---	pass	0.10 dB
13.000 dBm	4000 MHz	23.81 dBm	10.81 dB	-0/ +100 dB	---	pass	0.10 dB
13.000 dBm	6000 MHz	24.73 dBm	11.73 dB	-0/ +100 dB	---	pass	0.10 dB
13.000 dBm	8000 MHz	23.64 dBm	10.64 dB	-0/ +100 dB	---	pass	0.10 dB
13.000 dBm	10000 MHz	22.74 dBm	9.74 dB	-0/ +100 dB	---	pass	0.10 dB
13.000 dBm	12000 MHz	22.11 dBm	9.11 dB	-0/ +100 dB	---	pass	0.10 dB
13.000 dBm	14000 MHz	21.44 dBm	8.44 dB	-0/ +100 dB	---	pass	0.10 dB
13.000 dBm	16000 MHz	19.10 dBm	6.10 dB	-0/ +100 dB	---	pass	0.10 dB
13.000 dBm	18000 MHz	19.79 dBm	6.79 dB	-0/ +100 dB	---	pass	0.10 dB
13.000 dBm	20000 MHz	19.95 dBm	6.95 dB	-0/ +100 dB	---	pass	0.10 dB
9.000 dBm	22000 MHz	20.12 dBm	11.12 dB	-0/ +100 dB	---	pass	0.10 dB
9.000 dBm	24000 MHz	18.00 dBm	9.00 dB	-0/ +100 dB	---	pass	0.10 dB
9.000 dBm	26000 MHz	19.16 dBm	10.16 dB	-0/ +100 dB	---	pass	0.10 dB
9.000 dBm	28000 MHz	18.52 dBm	9.52 dB	-0/ +100 dB	---	pass	0.10 dB
9.000 dBm	30000 MHz	15.88 dBm	6.88 dB	-0/ +100 dB	---	pass	0.10 dB
9.000 dBm	32000 MHz	14.98 dBm	5.98 dB	-0/ +100 dB	---	pass	0.20 dB
9.000 dBm	34000 MHz	14.45 dBm	5.45 dB	-0/ +100 dB	---	pass	0.20 dB
9.000 dBm	36000 MHz	13.28 dBm	4.28 dB	-0/ +100 dB	---	pass	0.20 dB
9.000 dBm	38000 MHz	13.80 dBm	4.80 dB	-0/ +100 dB	---	pass	0.20 dB
9.000 dBm	40000 MHz	11.69 dBm	2.69 dB	-0/ +100 dB	---	pass	0.20 dB
9.000 dBm	42000 MHz	13.82 dBm	4.82 dB	-0/ +100 dB	---	pass	0.20 dB
9.000 dBm	44000 MHz	14.59 dBm	5.59 dB	-0/ +100 dB	---	pass	0.20 dB
9.000 dBm	46000 MHz	14.82 dBm	5.82 dB	-0/ +100 dB	---	pass	0.20 dB

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9.000 dBm	48000 MHz	15.49 dBm	6.49 dB	-0/ +100 dB	---	pass	0.20 dB
9.000 dBm	50000 MHz	14.89 dBm	5.89 dB	-0/ +100 dB	---	pass	0.20 dB
Power Accuracy							
10.000 dBm	250 kHz	9.86 dBm	-0.14 dB	±0.6 dB	---	pass	0.10 dB
5.000 dBm	250 kHz	4.85 dBm	-0.15 dB	±0.6 dB	---	pass	0.10 dB
0.000 dBm	250 kHz	-0.14 dBm	-0.14 dB	±0.6 dB	---	pass	0.10 dB
10.000 dBm	1 MHz	9.85 dBm	-0.15 dB	±0.6 dB	---	pass	0.10 dB
5.000 dBm	1 MHz	4.85 dBm	-0.15 dB	±0.6 dB	---	pass	0.10 dB
0.000 dBm	1 MHz	-0.12 dBm	-0.12 dB	±0.6 dB	---	pass	0.10 dB
10.000 dBm	9.9 MHz	9.91 dBm	-0.09 dB	±0.6 dB	---	pass	0.10 dB
5.000 dBm	9.9 MHz	4.91 dBm	-0.09 dB	±0.6 dB	---	pass	0.10 dB
0.000 dBm	9.9 MHz	-0.07 dBm	-0.07 dB	±0.6 dB	---	pass	0.10 dB
10.000 dBm	10.1 MHz	9.90 dBm	-0.10 dB	±0.6 dB	---	pass	0.10 dB
5.000 dBm	10.1 MHz	4.90 dBm	-0.10 dB	±0.6 dB	---	pass	0.10 dB
0.000 dBm	10.1 MHz	-0.08 dBm	-0.08 dB	±0.6 dB	---	pass	0.10 dB
10.000 dBm	100 MHz	10.00 dBm	0.00 dB	±0.6 dB	---	pass	0.10 dB
5.000 dBm	100 MHz	4.98 dBm	-0.02 dB	±0.6 dB	---	pass	0.10 dB
0.000 dBm	100 MHz	-0.02 dBm	-0.02 dB	±0.6 dB	---	pass	0.10 dB
10.000 dBm	500 MHz	10.03 dBm	0.03 dB	±0.6 dB	---	pass	0.10 dB
5.000 dBm	500 MHz	4.99 dBm	-0.01 dB	±0.6 dB	---	pass	0.10 dB
0.000 dBm	500 MHz	-0.02 dBm	-0.02 dB	±0.6 dB	---	pass	0.10 dB
10.000 dBm	1 GHz	10.02 dBm	0.02 dB	±0.6 dB	---	pass	0.10 dB
5.000 dBm	1 GHz	4.99 dBm	-0.01 dB	±0.6 dB	---	pass	0.10 dB
0.000 dBm	1 GHz	-0.02 dBm	-0.02 dB	±0.6 dB	---	pass	0.10 dB
10.000 dBm	2 GHz	10.09 dBm	0.09 dB	±0.6 dB	---	pass	0.10 dB
5.000 dBm	2 GHz	5.02 dBm	0.02 dB	±0.6 dB	---	pass	0.10 dB
0.000 dBm	2 GHz	-0.02 dBm	-0.02 dB	±0.6 dB	---	pass	0.10 dB
10.000 dBm	3 GHz	10.09 dBm	0.09 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	3 GHz	5.07 dBm	0.07 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	3 GHz	0.05 dBm	0.05 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	4 GHz	10.00 dBm	0.00 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	4 GHz	4.99 dBm	-0.01 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	4 GHz	-0.04 dBm	-0.04 dB	±0.8 dB	---	pass	0.10 dB

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10.000 dBm	5 GHz	10.01 dBm	0.01 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	5 GHz	5.00 dBm	0.00 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	5 GHz	-0.02 dBm	-0.02 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	6 GHz	9.99 dBm	-0.01 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	6 GHz	4.98 dBm	-0.02 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	6 GHz	-0.04 dBm	-0.04 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	7 GHz	9.99 dBm	-0.01 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	7 GHz	4.99 dBm	-0.01 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	7 GHz	-0.03 dBm	-0.03 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	8 GHz	9.98 dBm	-0.02 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	8 GHz	4.97 dBm	-0.03 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	8 GHz	-0.05 dBm	-0.05 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	9 GHz	9.95 dBm	-0.05 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	9 GHz	4.95 dBm	-0.05 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	9 GHz	-0.07 dBm	-0.07 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	10 GHz	9.97 dBm	-0.03 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	10 GHz	4.96 dBm	-0.04 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	10 GHz	-0.05 dBm	-0.05 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	11 GHz	9.93 dBm	-0.07 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	11 GHz	4.93 dBm	-0.07 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	11 GHz	-0.09 dBm	-0.09 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	12 GHz	9.95 dBm	-0.05 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	12 GHz	4.95 dBm	-0.05 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	12 GHz	-0.06 dBm	-0.06 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	13 GHz	10.00 dBm	0.00 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	13 GHz	5.00 dBm	0.00 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	13 GHz	-0.02 dBm	-0.02 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	14 GHz	9.95 dBm	-0.05 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	14 GHz	4.96 dBm	-0.04 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	14 GHz	-0.06 dBm	-0.06 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	15 GHz	9.96 dBm	-0.04 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	15 GHz	4.96 dBm	-0.04 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	15 GHz	-0.06 dBm	-0.06 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	16 GHz	9.91 dBm	-0.09 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	16 GHz	4.91 dBm	-0.09 dB	±0.8 dB	---	pass	0.10 dB

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0.000 dBm	16 GHz	-0.11 dBm	-0.11 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	17 GHz	9.93 dBm	-0.07 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	17 GHz	4.94 dBm	-0.06 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	17 GHz	-0.07 dBm	-0.07 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	18 GHz	9.97 dBm	-0.03 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	18 GHz	4.98 dBm	-0.02 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	18 GHz	-0.04 dBm	-0.04 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	19 GHz	9.92 dBm	-0.08 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	19 GHz	4.93 dBm	-0.07 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	19 GHz	-0.08 dBm	-0.08 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	20 GHz	9.95 dBm	-0.05 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	20 GHz	4.97 dBm	-0.03 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	20 GHz	-0.04 dBm	-0.04 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	21 GHz	9.97 dBm	-0.03 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	21 GHz	4.99 dBm	-0.01 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	21 GHz	-0.03 dBm	-0.03 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	22 GHz	9.95 dBm	-0.05 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	22 GHz	4.98 dBm	-0.02 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	22 GHz	-0.03 dBm	-0.03 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	23 GHz	9.94 dBm	-0.06 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	23 GHz	4.97 dBm	-0.03 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	23 GHz	-0.04 dBm	-0.04 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	24 GHz	9.88 dBm	-0.12 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	24 GHz	4.91 dBm	-0.09 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	24 GHz	-0.09 dBm	-0.09 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	25 GHz	9.85 dBm	-0.15 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	25 GHz	4.89 dBm	-0.11 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	25 GHz	-0.11 dBm	-0.11 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	26 GHz	9.89 dBm	-0.11 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	26 GHz	4.92 dBm	-0.08 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	26 GHz	-0.08 dBm	-0.08 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	27 GHz	9.87 dBm	-0.13 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	27 GHz	4.92 dBm	-0.08 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	27 GHz	-0.08 dBm	-0.08 dB	±0.8 dB	---	pass	0.10 dB

Kalibrier-Zertifikat Calibration Certificate MUSTER

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10.000 dBm	28 GHz	9.86 dBm	-0.14 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	28 GHz	4.89 dBm	-0.11 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	28 GHz	-0.12 dBm	-0.12 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	29 GHz	9.77 dBm	-0.23 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	29 GHz	4.80 dBm	-0.20 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	29 GHz	-0.20 dBm	-0.20 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	30 GHz	9.90 dBm	-0.10 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	30 GHz	4.96 dBm	-0.04 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	30 GHz	-0.04 dBm	-0.04 dB	±0.8 dB	---	pass	0.10 dB
10.000 dBm	31 GHz	9.92 dBm	-0.08 dB	±0.8 dB	---	pass	0.10 dB
5.000 dBm	31 GHz	4.97 dBm	-0.03 dB	±0.8 dB	---	pass	0.10 dB
0.000 dBm	31 GHz	-0.03 dBm	-0.03 dB	±0.8 dB	---	pass	0.10 dB
9.000 dBm	35 GHz	8.77 dBm	-0.23 dB	±0.9 dB	---	pass	0.20 dB
5.000 dBm	35 GHz	4.82 dBm	-0.18 dB	±0.9 dB	---	pass	0.20 dB
0.000 dBm	35 GHz	-0.16 dBm	-0.16 dB	±0.9 dB	---	pass	0.20 dB
9.000 dBm	40 GHz	8.84 dBm	-0.16 dB	±0.9 dB	---	pass	0.20 dB
5.000 dBm	40 GHz	4.93 dBm	-0.07 dB	±0.9 dB	---	pass	0.20 dB
0.000 dBm	40 GHz	-0.03 dBm	-0.03 dB	±0.9 dB	---	pass	0.20 dB
9.000 dBm	45 GHz	8.94 dBm	-0.06 dB	±1.3 dB	---	pass	0.20 dB
5.000 dBm	45 GHz	5.03 dBm	0.03 dB	±1.3 dB	---	pass	0.20 dB
0.000 dBm	45 GHz	0.08 dBm	0.08 dB	±1.3 dB	---	pass	0.20 dB
9.000 dBm	50 GHz	8.62 dBm	-0.38 dB	±1.3 dB	---	pass	0.20 dB
5.000 dBm	50 GHz	4.77 dBm	-0.23 dB	±1.3 dB	---	pass	0.20 dB
0.000 dBm	50 GHz	-0.13 dBm	-0.13 dB	±1.3 dB	---	pass	0.20 dB
Low Power Accuracy **Option 1E1, Step Attenuator**							
-10.000 dBm	10.1 MHz	-10.01 dBm	-0.01 dB	±0.6 dB	---	pass	0.20 dB
-20.000 dBm	10.1 MHz	-19.99 dBm	0.01 dB	±0.7 dB	---	pass	0.20 dB
-30.000 dBm	10.1 MHz	-30.00 dBm	0.00 dB	±0.7 dB	---	pass	0.20 dB
-40.000 dBm	10.1 MHz	-39.98 dBm	0.02 dB	±0.7 dB	---	pass	0.20 dB
-50.000 dBm	10.1 MHz	-49.98 dBm	0.02 dB	±0.7 dB	---	pass	0.20 dB
-60.000 dBm	10.1 MHz	-59.96 dBm	0.04 dB	±0.7 dB	---	pass	0.20 dB
-70.000 dBm	10.1 MHz	-69.96 dBm	0.04 dB	±0.7 dB	---	pass	0.40 dB
-80.000 dBm	10.1 MHz	-79.98 dBm	0.02 dB	±0.8 dB	---	pass	0.40 dB
-90.000 dBm	10.1 MHz	-89.97 dBm	0.03 dB	±0.8 dB	---	pass	0.50 dB
-100.000 dBm	10.1 MHz	-99.91 dBm	0.09 dB	±1.4 dB	---	pass	0.60 dB

Kalibrier-Zertifikat Calibration Certificate MUSTER

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-10.000 dBm	1 GHz	-9.98 dBm	0.02 dB	±0.6 dB	---	pass	0.20 dB
-20.000 dBm	1 GHz	-19.97 dBm	0.03 dB	±0.7 dB	---	pass	0.20 dB
-30.000 dBm	1 GHz	-29.95 dBm	0.05 dB	±0.7 dB	---	pass	0.20 dB
-40.000 dBm	1 GHz	-39.98 dBm	0.02 dB	±0.7 dB	---	pass	0.20 dB
-50.000 dBm	1 GHz	-49.96 dBm	0.04 dB	±0.7 dB	---	pass	0.20 dB
-60.000 dBm	1 GHz	-59.97 dBm	0.03 dB	±0.7 dB	---	pass	0.20 dB
-70.000 dBm	1 GHz	-69.98 dBm	0.02 dB	±0.7 dB	---	pass	0.40 dB
-80.000 dBm	1 GHz	-79.99 dBm	0.01 dB	±0.8 dB	---	pass	0.40 dB
-90.000 dBm	1 GHz	-89.96 dBm	0.04 dB	±0.8 dB	---	pass	0.50 dB
-100.000 dBm	1 GHz	-99.94 dBm	0.06 dB	±1.4 dB	---	pass	0.60 dB
-10.000 dBm	2 GHz	-9.79 dBm	0.21 dB	±0.6 dB	---	pass	0.20 dB
-20.000 dBm	2 GHz	-19.77 dBm	0.23 dB	±0.7 dB	---	pass	0.20 dB
-30.000 dBm	2 GHz	-29.74 dBm	0.26 dB	±0.7 dB	---	pass	0.20 dB
-40.000 dBm	2 GHz	-39.76 dBm	0.24 dB	±0.7 dB	---	pass	0.20 dB
-50.000 dBm	2 GHz	-49.77 dBm	0.23 dB	±0.7 dB	---	pass	0.20 dB
-60.000 dBm	2 GHz	-59.78 dBm	0.22 dB	±0.7 dB	---	pass	0.20 dB
-70.000 dBm	2 GHz	-69.76 dBm	0.24 dB	±0.7 dB	---	pass	0.40 dB
-80.000 dBm	2 GHz	-79.79 dBm	0.21 dB	±0.8 dB	---	pass	0.40 dB
-90.000 dBm	2 GHz	-89.72 dBm	0.28 dB	±0.8 dB	---	pass	0.50 dB
-10.000 dBm	2.1 GHz	-9.84 dBm	0.16 dB	±0.8 dB	---	pass	0.20 dB
-20.000 dBm	2.1 GHz	-19.83 dBm	0.17 dB	±0.9 dB	---	pass	0.20 dB
-30.000 dBm	2.1 GHz	-29.82 dBm	0.18 dB	±0.9 dB	---	pass	0.20 dB
-40.000 dBm	2.1 GHz	-39.82 dBm	0.18 dB	±0.9 dB	---	pass	0.20 dB
-50.000 dBm	2.1 GHz	-49.85 dBm	0.15 dB	±0.9 dB	---	pass	0.20 dB
-60.000 dBm	2.1 GHz	-59.85 dBm	0.15 dB	±0.9 dB	---	pass	0.20 dB
-70.000 dBm	2.1 GHz	-69.85 dBm	0.15 dB	±0.9 dB	---	pass	0.40 dB
-80.000 dBm	2.1 GHz	-79.86 dBm	0.14 dB	±1 dB	---	pass	0.40 dB
-90.000 dBm	2.1 GHz	-89.83 dBm	0.17 dB	±1 dB	---	pass	0.50 dB
-100.000 dBm	2.1 GHz	-99.95 dBm	0.05 dB	±1.7 dB	---	pass	0.60 dB
-10.000 dBm	10 GHz	-9.82 dBm	0.18 dB	±0.8 dB	---	pass	0.20 dB
-20.000 dBm	10 GHz	-19.89 dBm	0.11 dB	±0.9 dB	---	pass	0.20 dB
-30.000 dBm	10 GHz	-29.88 dBm	0.12 dB	±0.9 dB	---	pass	0.20 dB
-40.000 dBm	10 GHz	-39.90 dBm	0.10 dB	±0.9 dB	---	pass	0.20 dB
-50.000 dBm	10 GHz	-49.89 dBm	0.11 dB	±0.9 dB	---	pass	0.20 dB
-60.000 dBm	10 GHz	-59.90 dBm	0.10 dB	±0.9 dB	---	pass	0.20 dB
-70.000 dBm	10 GHz	-69.90 dBm	0.10 dB	±0.9 dB	---	pass	0.40 dB
-80.000 dBm	10 GHz	-79.98 dBm	0.02 dB	±1 dB	---	pass	0.40 dB
-90.000 dBm	10 GHz	-89.96 dBm	0.04 dB	±1 dB	---	pass	0.50 dB
-100.000 dBm	10 GHz	-100.29 dBm	-0.29 dB	±1.7 dB	---	pass	0.60 dB
-10.000 dBm	15 GHz	-9.86 dBm	0.14 dB	±0.8 dB	---	pass	0.20 dB

Kalibrier-Zertifikat Calibration Certificate MUSTER

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-20.000 dBm	15 GHz	-19.85 dBm	0.15 dB	±0.9 dB	---	pass	0.20 dB
-30.000 dBm	15 GHz	-29.83 dBm	0.17 dB	±0.9 dB	---	pass	0.20 dB
-40.000 dBm	15 GHz	-39.84 dBm	0.16 dB	±0.9 dB	---	pass	0.20 dB
-50.000 dBm	15 GHz	-49.83 dBm	0.17 dB	±0.9 dB	---	pass	0.20 dB
-60.000 dBm	15 GHz	-59.84 dBm	0.16 dB	±0.9 dB	---	pass	0.20 dB
-70.000 dBm	15 GHz	-69.85 dBm	0.15 dB	±0.9 dB	---	pass	0.40 dB
-80.000 dBm	15 GHz	-79.92 dBm	0.08 dB	±1 dB	---	pass	0.40 dB
-90.000 dBm	15 GHz	-89.96 dBm	0.04 dB	±1 dB	---	pass	0.50 dB
-100.000 dBm	15 GHz	-100.06 dBm	-0.06 dB	±1.7 dB	---	pass	0.60 dB
-10.000 dBm	19.999 GHz	-9.80 dBm	0.20 dB	±0.8 dB	---	pass	0.20 dB
-20.000 dBm	19.999 GHz	-19.82 dBm	0.18 dB	±0.9 dB	---	pass	0.20 dB
-30.000 dBm	19.999 GHz	-29.82 dBm	0.18 dB	±0.9 dB	---	pass	0.20 dB
-40.000 dBm	19.999 GHz	-39.84 dBm	0.16 dB	±0.9 dB	---	pass	0.20 dB
-50.000 dBm	19.999 GHz	-49.83 dBm	0.17 dB	±0.9 dB	---	pass	0.20 dB
-60.000 dBm	19.999 GHz	-59.84 dBm	0.16 dB	±0.9 dB	---	pass	0.20 dB
-70.000 dBm	19.999 GHz	-69.86 dBm	0.14 dB	±0.9 dB	---	pass	0.40 dB
-80.000 dBm	19.999 GHz	-79.64 dBm	0.36 dB	±1 dB	---	pass	0.40 dB
-90.000 dBm	19.999 GHz	-89.78 dBm	0.22 dB	±1 dB	---	pass	0.50 dB
-100.000 dBm	19.999 GHz	-100.21 dBm	-0.21 dB	±1.7 dB	---	pass	0.60 dB
-10.000 dBm	26 GHz	-10.15 dBm	-0.15 dB	±0.8 dB	---	pass	0.20 dB
-20.000 dBm	26 GHz	-20.02 dBm	-0.02 dB	±0.9 dB	---	pass	0.20 dB
-30.000 dBm	26 GHz	-29.99 dBm	0.01 dB	±0.9 dB	---	pass	0.20 dB
-40.000 dBm	26 GHz	-40.03 dBm	-0.03 dB	±0.9 dB	---	pass	0.20 dB
-50.000 dBm	26 GHz	-49.99 dBm	0.01 dB	±0.9 dB	---	pass	0.20 dB
-60.000 dBm	26 GHz	-60.02 dBm	-0.02 dB	±0.9 dB	---	pass	0.20 dB
-70.000 dBm	26 GHz	-69.99 dBm	0.01 dB	±0.9 dB	---	pass	0.40 dB
-80.000 dBm	26 GHz	-80.12 dBm	-0.12 dB	±1 dB	---	pass	0.40 dB
-90.000 dBm	26 GHz	-90.18 dBm	-0.18 dB	±1 dB	---	pass	0.50 dB
-100.000 dBm	26 GHz	-101.24 dBm	-1.24 dB	±1.7 dB	---	pass	0.60 dB

Residual FM @ 0 dBm
Carrier Frequency = 1 GHz
U = 10 Hz
Tol < 10 Hz
Laboratory estimated Tolerance

Residual FM = 1 Hz pass

RF Generator Harmonic Levels
Power Level = 10 dBm
U = 1.2 dB

Kalibrier-Zertifikat Calibration Certificate MUSTER

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Tolerance < -25 dBc						
0.25MHz CW 2nd Harmonic = -27.87 dBc					pass	
0.25MHz CW 3rd Harmonic = -31.55 dBc					pass	
0.25MHz CW 1/2 Harmonic = -85.56 dBc					pass	
1MHz CW 2nd Harmonic = -34.25 dBc					pass	
1MHz CW 3rd Harmonic = -43.7 dBc					pass	
1MHz CW 1/2 Harmonic = -90.99 dBc					pass	
9.9MHz CW 2nd Harmonic = -39.71 dBc					pass	
9.9MHz CW 3rd Harmonic = -53.34 dBc					pass	
9.9MHz CW 1/2 Harmonic = -93.61 dBc					pass	
Tolerance < -28 dBc						
10.1MHz CW 2nd Harmonic = -39.77 dBc					pass	
10.1MHz CW 3rd Harmonic = -53.42 dBc					pass	
10.1MHz CW 1/2 Harmonic = -96.32 dBc					pass	
50MHz CW 2nd Harmonic = -46.43 dBc					pass	
50MHz CW 3rd Harmonic = -67.84 dBc					pass	
50MHz CW 1/2 Harmonic = -87.28 dBc					pass	
Tolerance < -30 dBc						
100MHz CW 2nd Harmonic = -59.31 dBc					pass	
100MHz CW 3rd Harmonic = -69.16 dBc					pass	
100MHz CW 1/2 Harmonic = -85.45 dBc					pass	
500MHz CW 2nd Harmonic = -36.73 dBc					pass	
500MHz CW 3rd Harmonic = -53.69 dBc					pass	
500MHz CW 1/2 Harmonic = -85.36 dBc					pass	
1000MHz CW 2nd Harmonic = -38.48 dBc					pass	
1000MHz CW 3rd Harmonic = -58.36 dBc					pass	
1000MHz CW 1/2 Harmonic = -84.09 dBc					pass	
1999MHz CW 2nd Harmonic = -75.95 dBc					pass	
1999MHz CW 3rd Harmonic = -78.56 dBc					pass	
1999MHz CW 1/2 Harmonic = -83.39 dBc					pass	
Tolerance < -55 dBc						
2001MHz CW 2nd Harmonic = -75.96 dBc					pass	
2001MHz CW 3rd Harmonic = -79.82 dBc					pass	
2001MHz CW 1/2 Harmonic = -87.29 dBc					pass	
4000MHz CW 2nd Harmonic = -76.73 dBc					pass	

Kalibrier-Zertifikat Calibration Certificate MUSTER

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4000MHz CW 3rd Harmonic = -79.18 dBc						pass	
4000MHz CW 1/2 Harmonic = -85.67 dBc						pass	
6000MHz CW 2nd Harmonic = -79.56 dBc						pass	
6000MHz CW 3rd Harmonic = -76.8 dBc						pass	
6000MHz CW 1/2 Harmonic = -83.18 dBc						pass	
8000MHz CW 2nd Harmonic = -75.63 dBc						pass	
8000MHz CW 3rd Harmonic = -79.15 dBc						pass	
8000MHz CW 1/2 Harmonic = -83.9 dBc						pass	
10000MHz CW 2nd Harmonic = -72.12 dBc						pass	
10000MHz CW 3rd Harmonic = -71.97 dBc						pass	
10000MHz CW 1/2 Harmonic = -81.21 dBc						pass	
12000MHz CW 2nd Harmonic = -75.9 dBc						pass	
12000MHz CW 3rd Harmonic = -76.05 dBc						pass	
12000MHz CW 1/2 Harmonic = -82.17 dBc						pass	
14000MHz CW 2nd Harmonic = -80 dBc						pass	
14000MHz CW 3rd Harmonic = -77.03 dBc						pass	
14000MHz CW 1/2 Harmonic = -81.3 dBc						pass	
16000MHz CW 2nd Harmonic = -60.35 dBc						pass	
16000MHz CW 3rd Harmonic = -61.56 dBc						pass	
16000MHz CW 1/2 Harmonic = -83.55 dBc						pass	
18000MHz CW 2nd Harmonic = -64.59 dBc						pass	
18000MHz CW 3rd Harmonic = -65.11 dBc						pass	
18000MHz CW 1/2 Harmonic = -66.13 dBc						pass	
20000MHz CW 2nd Harmonic = -66.01 dBc						pass	
20000MHz CW 3rd Harmonic = -67.49 dBc						pass	
20000MHz CW 1/2 Harmonic = -64.98 dBc						pass	
SSB Phase Noise U = 1.23 dB Laboratory estimated tolerance							
Carrier = 1 MHz, 20 kHz Sideband							
-115.000 dB		-118.47 dB	-3.5 dB	-200/ +0 dB	---	pass	2.2 dB
Carrier = 100 MHz, 20 kHz Sideband							
-115.000 dB		-119.46 dB	-4.5 dB	-200/ +0 dB	---	pass	2.2 dB

Kalibrier-Zertifikat Calibration Certificate MUSTER

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Carrier = 1000 MHz, 20 kHz Sideband							
-115.000 dB		-116.82 dB	-1.8 dB	-200/ +0 dB	---	pass	2.2 dB
Carrier = 10000 MHz, 20 kHz Sideband							
-110.000 dB		-112.07 dB	-2.1 dB	-200/ +0 dB	---	pass	2.2 dB
Carrier = 19999 MHz, 20 kHz Sideband							
-105.000 dB		-105.01 dB	0.0 dB	-200/ +0 dB	---	pass	2.2 dB

zulässige Abweichung gemäß Herstellerangabe.
allowed deviation in accordance with manufacturer.

Ausnutzung der zul. Abw. in % = |Abweichung| / zul. Abw.
Utilization of allowed dev. in % = |deviation| / allowed dev.

Die Angabe der Toleranzausnutzung in % ist bei logarithmischen Einheiten nicht sinnvoll und wird mit "---" entwertet.
The indication of the tolerance utilization in % is not applicable for logarithmic units and is invalidated with "---".