
CERTIFICATE OF CALIBRATION



0183

ISSUED BY

FLUKE®

Fluke Precision Measurement Ltd
Hurricane Way, Norwich
Norfolk NR6 6JB, United Kingdom
Tel: +44(0)1603 256600 Fax: +44(0)1603 483670

Certificate No: SAMPLE
Issue Date: 01 Dec 2010
Page: 1 of 50
Signature:
Approved Signatory: Sample

Customer: Example Cal Cert

Description: RF Reference Source Comprising a Base Unit with Interchangeable
50 Ω and 75 Ω Leveling Heads

Instrument	Model Type	Serial Number
Base Unit	9640A-LPNX	96105xxxx
50 Ω Leveling Head	9640A-50	96105xxxx
75 Ω Leveling Head	(Refer to page 30 for details)	

Manufacturer: Fluke Precision Measurement Ltd
United Kingdom

Date of Receipt: 26 Nov 2010

Measurement Date: 26 Nov 2010

Job/Order No: Sample

This certificate records data recorded after adjustment of the instrument

The instrument has been calibrated in accordance with the manufacturer's Instrument User's Handbook using standards that are directly traceable to National Standards. The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor $k=2$, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with the International Guide To The Expression of Uncertainty in Measurement and is inclusive of the unit under test. The uncertainties relate only to the Measured Values and do not carry any implication regarding the long term stability of the instrument.

The Laboratory Quality Management system complies with the requirements of ISO/17025.

The measurements were made in a controlled environment at a temperature of $23.0 \pm 2.0^\circ\text{C}$ and a relative humidity of $40\% \pm 20\%$.

Certificate rev: 3.11

This certificate is issued in accordance with the laboratory accreditation requirements of the United Kingdom Accreditation Service. It provides traceability of measurement to recognized national standards, and to units of measurement realized at the National Physical Laboratory or other recognized national standards laboratories. This certificate may not be reproduced other than in full, except with the prior written approval of the issuing laboratory.

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Reporting Compliance With Specification

The following pages contain the calibration results with two further columns indicating the instrument performance relative to the stated specification.

The column headed '% of Spec' is the measured error as a percentage of the stated specification with no allowance being made for the calibration uncertainty.

The column headed 'Compliance With Spec' indicates compliance or otherwise with the stated specification taking into account the measurement uncertainty in accordance with UKAS publication M3003, section M3. The four possible conditions are indicated as follows:

<u>Indicator</u>	<u>Explanation</u>
Blank, No Indicator	The equipment complies with the stated specification at the measured points, due allowance having been made for the uncertainty of the measurements.
Pass*	The measurement result is inside the specification limit by a margin less than the measurement uncertainty; it is therefore not possible to state compliance based on the stated level of confidence. However the results indicate that compliance is more probable than non-compliance with the specification limit.
Fail*	The measurement result is outside the specification limit by a margin less than the measurement uncertainty; it is therefore not possible to state non-compliance based on the stated level of confidence. However the results indicate that non-compliance is more probable than compliance with the specification limit.
Fail	The equipment does not comply with the stated specification at the measured points, due allowance having been made for the uncertainty of the measurements.

Note: Result Headings annotated with a ** refer to parameters that are not UKAS accredited, and are included for completeness.

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The Following Results Apply to the Instrument When Fitted With the:

50 Ω Leveling Head

UUT Leveling Head Type: 9640A-50
UUT Leveling Head Serial No: 96105xxxx
Measurement Date: 26 Nov 2010

Standards Used:

System Instrument	Manufacturer	Model	Serial No.	Asset No.	Cal Due Date
Spectrum Analyzer	Rohde & Schwarz	FSU-26	100157/026	C1/676	27 Jul 2011
Power Meter	Rohde & Schwarz	NRVD	101021.002	TE2634	29 May 2012
Power Sensor	Rohde & Schwarz	NRV-Z51 / 50	100938/512	C1/682B	29 May 2011
Power Sensor	R&S	NRV-Z4 / 50	100294/242	C1/684B	29 May 2011
Timer/Counter	Fluke	PM6681	880686	C1/701B	29 May 2011
AC Voltmeter	Fluke	5790A	9380036	C1/778B	29 May 2011
Arb Waveform Gen	Wavetek	MODEL 195	177840	C1/688B	29 May 2011
RF Signal Gen Base	Fluke	9640A-LPNX	130761019	.	31 Dec 2010
RF Signal Gen Head	Fluke	9640A-50	130760954	.	31 Dec 2010
Reflection Bridge	HP	86205A	31400091	C1/695	29 May 2011
Phase Noise Jig	Fluke	PN-unit	1	C1/768	08 Jan 2011

Additional Information:

System Identification: System 2
Calibration System Software issue: 2.05
Test File Reference: Verify - LPNX - 50R head.ft
Result File name 50 Ω Measurements: 5xxxx_08.csv

Instrument Firmware Revision: 3.12

Specification Used:

Manufacturers User Handbook chapter 1, PN 3840280, 12/10

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Sine Output Level Accuracy - 50 Ω

Instrument Configuration: Mode, Sine, Ext Freq Reference, 50 Ω Leveling Head Connected

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (\pm dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
200 Hz	24.000	23.999	0.030	-4 %	0.002	
1.000 000 kHz	24.000	23.998	0.030	-5 %	0.002	
20.000 000 kHz	24.000	24.000	0.030	1 %	0.002	
100.000 000 kHz	24.000	24.003	0.030	10 %	0.002	
300.000 000 kHz	24.000	24.010	0.050	19 %	0.017	
1.000 000 000 MHz	24.000	24.011	0.050	21 %	0.017	
3.000 000 000 MHz	24.000	23.998	0.050	-3 %	0.018	
10.000 000 000 MHz	24.000	24.005	0.050	11 %	0.018	
13.000 000 000 MHz	24.000	24.005	0.050	10 %	0.018	
20.000 000 000 MHz	24.000	23.998	0.050	-4 %	0.030	
30.000 000 000 MHz	24.000	23.996	0.050	-7 %	0.030	
50.000 000 000 MHz	24.000	23.998	0.050	-5 %	0.030	
75.000 000 000 MHz	24.000	23.997	0.050	-6 %	0.030	
100.000 000 00 MHz	24.000	24.003	0.050	6 %	0.030	
125.000 000 00 MHz	24.000	23.997	0.050	-6 %	0.030	
200 Hz	16.000	15.996	0.030	-13 %	0.002	
1.000 000 kHz	16.000	15.996	0.030	-14 %	0.002	
20.000 000 kHz	16.000	15.995	0.030	-17 %	0.002	
100.000 000 kHz	16.000	16.002	0.030	5 %	0.002	
300.000 000 kHz	16.000	16.003	0.050	5 %	0.011	
1.000 000 00 MHz	16.000	16.008	0.050	16 %	0.011	
3.000 000 00 MHz	16.000	15.995	0.050	-10 %	0.012	
10.000 000 00 MHz	16.000	15.999	0.050	-1 %	0.012	
13.000 000 00 MHz	16.000	15.998	0.050	-5 %	0.012	
20.000 000 00 MHz	16.000	15.999	0.050	-3 %	0.019	
30.000 000 00 MHz	16.000	15.997	0.050	-6 %	0.019	
50.000 000 00 MHz	16.000	15.998	0.050	-4 %	0.027	
75.000 000 00 MHz	16.000	15.997	0.050	-5 %	0.027	
100.000 000 00 MHz	16.000	16.005	0.050	10 %	0.027	
150.000 000 00 MHz	16.000	15.999	0.070	-2 %	0.027	
250.000 000 00 MHz	16.000	16.000	0.070	-1 %	0.027	
300.000 000 00 MHz	16.000	16.005	0.070	6 %	0.027	
354.000 000 00 MHz	16.000	16.002	0.200	1 %	0.027	
454.000 000 00 MHz	16.000	16.003	0.200	2 %	0.040	
500.000 000 00 MHz	16.000	16.010	0.200	5 %	0.040	
624.999 999 99 MHz	16.000	16.002	0.200	1 %	0.040	
847.333 333 32 MHz	16.000	15.990	0.200	-5 %	0.040	
1.000 000 000 0 GHz	16.000	16.000	0.200	0 %	0.040	
1.250 000 000 0 GHz	16.000	16.004	0.200	2 %	0.040	
1.300 000 000 0 GHz	16.000	16.003	0.200	1 %	0.040	
1.400 000 000 0 GHz	16.000	15.997	0.200	-1 %	0.040	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (\pm dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
200 Hz	13.000	12.998	0.030	-5 %	0.002	
1.000 000 kHz	13.000	12.998	0.030	-6 %	0.002	
20.000 000 kHz	13.000	12.998	0.030	-8 %	0.002	
100.000 000 kHz	13.000	13.003	0.030	8 %	0.002	
300.000 000 kHz	13.000	13.001	0.050	2 %	0.011	
1.000 000 00 MHz	13.000	13.009	0.050	19 %	0.011	
3.000 000 00 MHz	13.000	12.997	0.050	-5 %	0.012	
10.000 000 00 MHz	13.000	12.998	0.050	-5 %	0.012	
13.000 000 00 MHz	13.000	12.996	0.050	-8 %	0.012	
20.000 000 00 MHz	13.000	12.997	0.050	-6 %	0.019	
30.000 000 00 MHz	13.000	12.995	0.050	-10 %	0.019	
50.000 000 00 MHz	13.000	12.997	0.050	-6 %	0.027	
75.000 000 00 MHz	13.000	12.995	0.050	-11 %	0.027	
100.000 000 00 MHz	13.000	13.002	0.050	4 %	0.027	
150.000 000 00 MHz	13.000	12.996	0.070	-6 %	0.027	
250.000 000 00 MHz	13.000	12.998	0.070	-3 %	0.027	
300.000 000 00 MHz	13.000	13.003	0.070	4 %	0.027	
354.000 000 00 MHz	13.000	13.000	0.200	0 %	0.027	
454.000 000 00 MHz	13.000	13.002	0.200	1 %	0.040	
500.000 000 00 MHz	13.000	13.009	0.200	4 %	0.040	
624.999 999 99 MHz	13.000	13.000	0.200	0 %	0.040	
847.333 333 32 MHz	13.000	12.990	0.200	-5 %	0.040	
1.000 000 000 0 GHz	13.000	13.000	0.200	0 %	0.040	
1.250 000 000 0 GHz	13.000	13.006	0.200	3 %	0.058	
1.300 000 000 0 GHz	13.000	13.005	0.200	3 %	0.058	
1.400 000 000 0 GHz	13.000	12.996	0.200	-2 %	0.058	
1.500 000 000 0 GHz	13.000	13.022	0.300	7 %	0.058	
1.900 000 000 0 GHz	13.000	12.987	0.300	-4 %	0.058	
2.000 000 000 0 GHz	13.000	13.017	0.300	6 %	0.058	
2.200 003 000 0 GHz	13.000	13.007	0.300	2 %	0.066	
2.399 997 000 0 GHz	13.000	12.990	0.300	-3 %	0.066	
2.600 003 000 0 GHz	13.000	13.022	0.300	7 %	0.067	
2.700 000 000 0 GHz	13.000	13.008	0.300	3 %	0.067	
2.800 003 000 0 GHz	13.000	12.978	0.300	-7 %	0.067	
3.000 000 000 0 GHz	13.000	12.969	0.300	-10 %	0.067	
3.200 003 000 0 GHz	13.000	13.003	0.300	1 %	0.111	
3.500 000 000 0 GHz	13.000	12.987	0.300	-4 %	0.111	
3.800 003 000 0 GHz	13.000	12.981	0.300	-6 %	0.111	
4.024 000 000 0 GHz	13.000	13.016	0.300	5 %	0.111	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (\pm dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
200 Hz	3.000	2.999	0.030	-5 %	0.002	
1.000 000 kHz	3.000	2.998	0.030	-5 %	0.002	
20.000 000 kHz	3.000	2.998	0.030	-8 %	0.002	
100.000 000 kHz	3.000	3.000	0.030	-1 %	0.002	
300.000 000 kHz	3.000	3.002	0.050	4 %	0.011	
1.000 000 00 MHz	3.000	3.009	0.050	17 %	0.011	
3.000 000 00 MHz	3.000	2.998	0.050	-5 %	0.012	
10.000 000 00 MHz	3.000	2.996	0.050	-8 %	0.012	
13.000 000 00 MHz	3.000	2.996	0.050	-8 %	0.012	
20.000 000 00 MHz	3.000	2.997	0.050	-6 %	0.019	
30.000 000 00 MHz	3.000	2.993	0.050	-13 %	0.019	
50.000 000 00 MHz	3.000	2.996	0.050	-7 %	0.027	
75.000 000 00 MHz	3.000	2.993	0.050	-14 %	0.027	
100.000 000 00 MHz	3.000	3.001	0.050	3 %	0.027	
150.000 000 00 MHz	3.000	2.996	0.070	-5 %	0.027	
250.000 000 00 MHz	3.000	2.995	0.070	-7 %	0.027	
300.000 000 00 MHz	3.000	2.998	0.070	-3 %	0.027	
354.000 000 00 MHz	3.000	2.994	0.200	-3 %	0.027	
454.000 000 00 MHz	3.000	2.993	0.200	-4 %	0.040	
500.000 000 00 MHz	3.000	2.998	0.200	-1 %	0.040	
624.999 999 99 MHz	3.000	2.996	0.200	-2 %	0.040	
847.333 333 32 MHz	3.000	3.006	0.200	3 %	0.040	
1.000 000 000 0 GHz	3.000	3.002	0.200	1 %	0.040	
1.250 000 000 0 GHz	3.000	3.002	0.200	1 %	0.058	
1.300 000 000 0 GHz	3.000	3.001	0.200	1 %	0.058	
1.400 000 000 0 GHz	3.000	2.998	0.200	-1 %	0.058	
1.500 000 000 0 GHz	3.000	3.019	0.300	6 %	0.058	
1.900 000 000 0 GHz	3.000	3.000	0.300	0 %	0.058	
2.000 000 000 0 GHz	3.000	3.031	0.300	10 %	0.058	
2.200 003 000 0 GHz	3.000	2.996	0.300	-1 %	0.066	
2.399 997 000 0 GHz	3.000	2.981	0.300	-6 %	0.066	
2.600 003 000 0 GHz	3.000	2.994	0.300	-2 %	0.067	
2.700 000 000 0 GHz	3.000	2.991	0.300	-3 %	0.067	
2.800 003 000 0 GHz	3.000	2.983	0.300	-6 %	0.067	
3.000 000 000 0 GHz	3.000	2.988	0.300	-4 %	0.067	
3.200 003 000 0 GHz	3.000	3.000	0.300	0 %	0.111	
3.500 000 000 0 GHz	3.000	2.987	0.300	-4 %	0.111	
3.800 003 000 0 GHz	3.000	2.994	0.300	-2 %	0.111	
4.024 000 000 0 GHz	3.000	3.023	0.300	8 %	0.111	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
200 Hz	-7.000	-7.002	0.030	-8 %	0.002	
1.000 000 kHz	-7.000	-7.002	0.030	-8 %	0.002	
20.000 000 kHz	-7.000	-7.003	0.030	-10 %	0.002	
100.000 000 kHz	-7.000	-6.998	0.030	7 %	0.002	
300.000 000 kHz	-7.000	-6.996	0.050	8 %	0.024	
1.000 000 00 MHz	-7.000	-6.985	0.050	31 %	0.023	
3.000 000 00 MHz	-7.000	-6.977	0.050	46 %	0.023	
10.000 000 00 MHz	-7.000	-6.997	0.050	6 %	0.023	
13.000 000 00 MHz	-7.000	-6.999	0.050	3 %	0.023	
20.000 000 00 MHz	-7.000	-7.002	0.050	-3 %	0.030	
30.000 000 00 MHz	-7.000	-7.003	0.050	-5 %	0.030	
50.000 000 00 MHz	-7.000	-7.000	0.050	0 %	0.029	
75.000 000 00 MHz	-7.000	-7.000	0.050	-1 %	0.029	
100.000 000 00 MHz	-7.000	-6.996	0.050	9 %	0.029	
150.000 000 00 MHz	-7.000	-7.004	0.070	-5 %	0.034	
250.000 000 00 MHz	-7.000	-7.012	0.070	-17 %	0.034	
300.000 000 00 MHz	-7.000	-7.012	0.070	-16 %	0.034	
354.000 000 00 MHz	-7.000	-7.014	0.200	-7 %	0.034	
454.000 000 00 MHz	-7.000	-7.011	0.200	-6 %	0.046	
500.000 000 00 MHz	-7.000	-7.006	0.200	-3 %	0.046	
624.999 999 99 MHz	-7.000	-7.006	0.200	-3 %	0.046	
847.333 333 32 MHz	-7.000	-7.010	0.200	-5 %	0.046	
1.000 000 000 0 GHz	-7.000	-7.003	0.200	-1 %	0.046	
1.250 000 000 0 GHz	-7.000	-6.989	0.200	5 %	0.065	
1.300 000 000 0 GHz	-7.000	-6.996	0.200	2 %	0.065	
1.400 000 000 0 GHz	-7.000	-7.018	0.200	-9 %	0.065	
1.500 000 000 0 GHz	-7.000	-7.003	0.300	-1 %	0.065	
1.900 000 000 0 GHz	-7.000	-7.036	0.300	-12 %	0.065	
2.000 000 000 0 GHz	-7.000	-7.028	0.300	-9 %	0.065	
2.200 003 000 0 GHz	-7.000	-7.013	0.300	-4 %	0.072	
2.399 997 000 0 GHz	-7.000	-7.038	0.300	-13 %	0.072	
2.600 003 000 0 GHz	-7.000	-7.018	0.300	-6 %	0.072	
2.700 000 000 0 GHz	-7.000	-7.030	0.300	-10 %	0.072	
2.800 003 000 0 GHz	-7.000	-7.055	0.300	-18 %	0.072	
3.000 000 000 0 GHz	-7.000	-7.049	0.300	-16 %	0.072	
3.200 003 000 0 GHz	-7.000	-7.021	0.300	-7 %	0.087	
3.500 000 000 0 GHz	-7.000	-7.034	0.300	-11 %	0.087	
3.800 003 000 0 GHz	-7.000	-7.122	0.300	-41 %	0.114	
4.024 000 000 0 GHz	-7.000	-7.025	0.300	-8 %	0.114	

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Sine Level cont:

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Frequency	Output Level (dBm)					
200 Hz	-17.000	-17.001	0.030	-3 %	0.003	
1.000 000 kHz	-17.000	-17.001	0.030	-3 %	0.003	
20.000 000 kHz	-17.000	-17.001	0.030	-4 %	0.003	
100.000 000 kHz	-17.000	-16.997	0.030	9 %	0.003	
300.000 000 kHz	-17.000	-16.995	0.050	10 %	0.024	
1.000 000 00 MHz	-17.000	-16.991	0.050	18 %	0.023	
3.000 000 00 MHz	-17.000	-16.996	0.050	8 %	0.023	
10.000 000 00 MHz	-17.000	-17.008	0.050	-15 %	0.023	
13.000 000 00 MHz	-17.000	-17.005	0.050	-11 %	0.023	
20.000 000 00 MHz	-17.000	-17.000	0.050	0 %	0.030	
30.000 000 00 MHz	-17.000	-17.000	0.050	-1 %	0.030	
50.000 000 00 MHz	-17.000	-17.000	0.050	0 %	0.029	
75.000 000 00 MHz	-17.000	-17.001	0.050	-2 %	0.029	
100.000 000 00 MHz	-17.000	-16.994	0.050	11 %	0.029	
150.000 000 00 MHz	-17.000	-16.999	0.070	1 %	0.034	
250.000 000 00 MHz	-17.000	-16.999	0.070	1 %	0.034	
300.000 000 00 MHz	-17.000	-16.998	0.070	3 %	0.034	
354.000 000 00 MHz	-17.000	-16.998	0.200	1 %	0.034	
454.000 000 00 MHz	-17.000	-16.997	0.200	2 %	0.046	
500.000 000 00 MHz	-17.000	-16.991	0.200	4 %	0.046	
624.999 999 99 MHz	-17.000	-16.997	0.200	1 %	0.046	
847.333 333 32 MHz	-17.000	-17.009	0.200	-5 %	0.046	
1.000 000 000 0 GHz	-17.000	-16.999	0.200	0 %	0.046	
1.250 000 000 0 GHz	-17.000	-16.998	0.200	1 %	0.065	
1.300 000 000 0 GHz	-17.000	-16.997	0.200	1 %	0.065	
1.400 000 000 0 GHz	-17.000	-17.001	0.200	0 %	0.065	
1.500 000 000 0 GHz	-17.000	-16.971	0.300	10 %	0.065	
1.900 000 000 0 GHz	-17.000	-17.032	0.300	-11 %	0.065	
2.000 000 000 0 GHz	-17.000	-17.003	0.300	-1 %	0.065	
2.200 003 000 0 GHz	-17.000	-16.993	0.300	2 %	0.072	
2.399 997 000 0 GHz	-17.000	-17.004	0.300	-1 %	0.072	
2.600 003 000 0 GHz	-17.000	-17.011	0.300	-4 %	0.072	
2.700 000 000 0 GHz	-17.000	-17.016	0.300	-5 %	0.072	
2.800 003 000 0 GHz	-17.000	-17.007	0.300	-2 %	0.072	
3.000 000 000 0 GHz	-17.000	-17.005	0.300	-2 %	0.072	
3.200 003 000 0 GHz	-17.000	-16.989	0.500	2 %	0.087	
3.500 000 000 0 GHz	-17.000	-17.006	0.500	-1 %	0.087	
3.800 003 000 0 GHz	-17.000	-17.009	0.500	-2 %	0.114	
4.024 000 000 0 GHz	-17.000	-16.987	0.500	3 %	0.114	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
200 Hz	-27.000	-27.003	0.030	-9 %	0.003	
1.000 000 kHz	-27.000	-27.003	0.030	-9 %	0.003	
20.000 000 kHz	-27.000	-27.003	0.030	-9 %	0.003	
100.000 000 kHz	-27.000	-26.998	0.030	5 %	0.004	
300.000 000 kHz	-27.000	-26.997	0.050	5 %	0.022	
1.000 000 00 MHz	-27.000	-26.992	0.050	15 %	0.021	
3.000 000 00 MHz	-27.000	-26.996	0.050	8 %	0.021	
10.000 000 00 MHz	-27.000	-27.008	0.050	-15 %	0.021	
13.000 000 00 MHz	-27.000	-27.004	0.050	-9 %	0.021	
20.000 000 00 MHz	-27.000	-27.000	0.050	-1 %	0.028	
30.000 000 00 MHz	-27.000	-27.000	0.050	-1 %	0.028	
50.000 000 00 MHz	-27.000	-26.998	0.050	4 %	0.027	
75.000 000 00 MHz	-27.000	-27.000	0.050	0 %	0.027	
100.000 000 00 MHz	-27.000	-26.993	0.050	13 %	0.027	
150.000 000 00 MHz	-27.000	-26.998	0.070	2 %	0.032	
250.000 000 00 MHz	-27.000	-26.998	0.070	2 %	0.033	
300.000 000 00 MHz	-27.000	-26.997	0.070	4 %	0.033	
354.000 000 00 MHz	-27.000	-26.999	0.200	1 %	0.033	
454.000 000 00 MHz	-27.000	-27.000	0.200	0 %	0.045	
500.000 000 00 MHz	-27.000	-26.994	0.200	3 %	0.045	
624.999 999 99 MHz	-27.000	-26.998	0.200	1 %	0.045	
847.333 333 32 MHz	-27.000	-27.009	0.200	-5 %	0.045	
1.000 000 000 0 GHz	-27.000	-26.999	0.200	0 %	0.045	
1.250 000 000 0 GHz	-27.000	-26.983	0.200	8 %	0.062	
1.300 000 000 0 GHz	-27.000	-26.986	0.200	7 %	0.062	
1.400 000 000 0 GHz	-27.000	-27.000	0.200	0 %	0.062	
1.500 000 000 0 GHz	-27.000	-26.978	0.300	7 %	0.062	
1.900 000 000 0 GHz	-27.000	-27.022	0.300	-7 %	0.062	
2.000 000 000 0 GHz	-27.000	-27.000	0.300	0 %	0.062	
2.200 003 000 0 GHz	-27.000	-26.998	0.300	1 %	0.070	
2.399 997 000 0 GHz	-27.000	-27.015	0.300	-5 %	0.070	
2.600 003 000 0 GHz	-27.000	-26.993	0.300	2 %	0.070	
2.700 000 000 0 GHz	-27.000	-26.997	0.300	1 %	0.070	
2.800 003 000 0 GHz	-27.000	-27.002	0.300	-1 %	0.070	
3.000 000 000 0 GHz	-27.000	-26.993	0.300	2 %	0.070	
3.200 003 000 0 GHz	-27.000	-26.981	0.500	4 %	0.085	
3.500 000 000 0 GHz	-27.000	-26.998	0.500	0 %	0.085	
3.800 003 000 0 GHz	-27.000	-26.995	0.500	1 %	0.112	
4.024 000 000 0 GHz	-27.000	-26.978	0.500	4 %	0.112	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
200 Hz	-37.000	-37.003	0.030	-9 %	0.004	
1.000 000 kHz	-37.000	-37.003	0.030	-9 %	0.004	
20.000 000 kHz	-37.000	-37.003	0.030	-9 %	0.004	
100.000 000 kHz	-37.000	-36.999	0.030	3 %	0.005	
300.000 000 kHz	-37.000	-36.996	0.050	8 %	0.022	
1.000 000 00 MHz	-37.000	-36.993	0.050	13 %	0.021	
3.000 000 00 MHz	-37.000	-36.996	0.050	8 %	0.021	
10.000 000 00 MHz	-37.000	-37.008	0.050	-16 %	0.021	
13.000 000 00 MHz	-37.000	-37.005	0.050	-9 %	0.021	
20.000 000 00 MHz	-37.000	-37.000	0.050	-1 %	0.028	
30.000 000 00 MHz	-37.000	-37.001	0.050	-3 %	0.028	
50.000 000 00 MHz	-37.000	-37.001	0.050	-2 %	0.028	
75.000 000 00 MHz	-37.000	-37.003	0.050	-6 %	0.028	
100.000 000 00 MHz	-37.000	-36.995	0.050	9 %	0.028	
150.000 000 00 MHz	-37.000	-36.999	0.070	1 %	0.033	
250.000 000 00 MHz	-37.000	-37.000	0.070	-1 %	0.033	
300.000 000 00 MHz	-37.000	-36.998	0.070	2 %	0.033	
354.000 000 00 MHz	-37.000	-37.000	0.200	0 %	0.033	
454.000 000 00 MHz	-37.000	-36.998	0.200	1 %	0.045	
500.000 000 00 MHz	-37.000	-36.992	0.200	4 %	0.045	
624.999 999 99 MHz	-37.000	-36.996	0.200	2 %	0.045	
847.333 333 32 MHz	-37.000	-37.006	0.200	-3 %	0.045	
1.000 000 000 0 GHz	-37.000	-37.001	0.200	0 %	0.045	
1.250 000 000 0 GHz	-37.000	-36.990	0.200	5 %	0.062	
1.300 000 000 0 GHz	-37.000	-36.991	0.200	4 %	0.062	
1.400 000 000 0 GHz	-37.000	-37.002	0.200	-1 %	0.062	
1.500 000 000 0 GHz	-37.000	-36.977	0.300	8 %	0.062	
1.900 000 000 0 GHz	-37.000	-37.028	0.300	-9 %	0.062	
2.000 000 000 0 GHz	-37.000	-37.002	0.300	-1 %	0.062	
2.200 003 000 0 GHz	-37.000	-36.994	0.300	2 %	0.070	
2.399 997 000 0 GHz	-37.000	-37.003	0.300	-1 %	0.070	
2.600 003 000 0 GHz	-37.000	-37.020	0.300	-7 %	0.070	
2.700 000 000 0 GHz	-37.000	-37.027	0.300	-9 %	0.070	
2.800 003 000 0 GHz	-37.000	-37.008	0.300	-3 %	0.070	
3.000 000 000 0 GHz	-37.000	-36.882	0.300	39 %	0.070	
3.200 003 000 0 GHz	-37.000	-37.028	0.500	-6 %	0.085	
3.500 000 000 0 GHz	-37.000	-37.008	0.500	-2 %	0.085	
3.800 003 000 0 GHz	-37.000	-37.002	0.500	0 %	0.112	
4.024 000 000 0 GHz	-37.000	-36.993	0.500	1 %	0.112	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
200 Hz	-47.000	-46.996	0.030	13 %	0.004	
1.000 000 kHz	-47.000	-46.996	0.030	13 %	0.004	
20.000 000 kHz	-47.000	-47.000	0.030	0 %	0.004	
100.000 000 kHz	-47.000	-46.999	0.030	5 %	0.006	
300.000 000 kHz	-47.000	-46.996	0.050	8 %	0.024	
1.000 000 00 MHz	-47.000	-46.997	0.050	6 %	0.023	
3.000 000 00 MHz	-47.000	-46.996	0.050	8 %	0.023	
10.000 000 00 MHz	-47.000	-47.008	0.050	-15 %	0.023	
13.000 000 00 MHz	-47.000	-47.005	0.050	-11 %	0.023	
20.000 000 00 MHz	-47.000	-47.002	0.050	-4 %	0.029	
30.000 000 00 MHz	-47.000	-47.007	0.050	-15 %	0.029	
50.000 000 00 MHz	-47.000	-47.004	0.050	-8 %	0.029	
75.000 000 00 MHz	-47.000	-47.004	0.050	-8 %	0.029	
100.000 000 00 MHz	-47.000	-46.998	0.050	4 %	0.029	
150.000 000 00 MHz	-47.000	-47.004	0.070	-6 %	0.034	
250.000 000 00 MHz	-47.000	-47.002	0.070	-3 %	0.034	
300.000 000 00 MHz	-47.000	-47.002	0.070	-3 %	0.034	
354.000 000 00 MHz	-47.000	-47.003	0.200	-1 %	0.034	
454.000 000 00 MHz	-47.000	-46.997	0.200	2 %	0.046	
500.000 000 00 MHz	-47.000	-46.990	0.200	5 %	0.046	
624.999 999 99 MHz	-47.000	-46.998	0.200	1 %	0.046	
847.333 333 32 MHz	-47.000	-47.015	0.200	-8 %	0.046	
1.000 000 000 0 GHz	-47.000	-47.003	0.200	-2 %	0.046	
1.250 000 000 0 GHz	-47.000	-46.993	0.200	3 %	0.063	
1.300 000 000 0 GHz	-47.000	-46.996	0.200	2 %	0.063	
1.400 000 000 0 GHz	-47.000	-47.005	0.200	-3 %	0.063	
1.500 000 000 0 GHz	-47.000	-46.978	0.300	7 %	0.063	
1.900 000 000 0 GHz	-47.000	-47.032	0.300	-11 %	0.063	
2.000 000 000 0 GHz	-47.000	-47.006	0.300	-2 %	0.063	
2.200 003 000 0 GHz	-47.000	-46.994	0.300	2 %	0.070	
2.399 997 000 0 GHz	-47.000	-47.003	0.300	-1 %	0.070	
2.600 003 000 0 GHz	-47.000	-47.001	0.300	0 %	0.070	
2.700 000 000 0 GHz	-47.000	-47.011	0.300	-4 %	0.070	
2.800 003 000 0 GHz	-47.000	-47.010	0.300	-3 %	0.070	
3.000 000 000 0 GHz	-47.000	-46.880	0.300	40 %	0.070	
3.200 003 000 0 GHz	-47.000	-47.010	0.500	-2 %	0.086	
3.500 000 000 0 GHz	-47.000	-47.006	0.500	-1 %	0.086	
3.800 003 000 0 GHz	-47.000	-46.998	0.500	0 %	0.112	
4.024 000 000 0 GHz	-47.000	-47.013	0.500	-3 %	0.112	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
100.000 000 kHz	-57.000	-56.989	0.200	6 %	0.030	
300.000 000 kHz	-57.000	-56.982	0.200	9 %	0.030	
1.000 000 00 MHz	-57.000	-56.987	0.200	7 %	0.030	
3.000 000 00 MHz	-57.000	-56.987	0.200	6 %	0.030	
10.000 000 00 MHz	-57.000	-57.013	0.100	-13 %	0.030	
13.000 000 00 MHz	-57.000	-57.014	0.100	-14 %	0.030	
20.000 000 00 MHz	-57.000	-57.020	0.100	-20 %	0.034	
30.000 000 00 MHz	-57.000	-57.024	0.100	-24 %	0.034	
50.000 000 00 MHz	-57.000	-57.022	0.100	-22 %	0.034	
75.000 000 00 MHz	-57.000	-57.020	0.100	-20 %	0.034	
100.000 000 00 MHz	-57.000	-57.012	0.100	-12 %	0.034	
150.000 000 00 MHz	-57.000	-57.019	0.100	-19 %	0.038	
250.000 000 00 MHz	-57.000	-57.025	0.100	-25 %	0.038	
300.000 000 00 MHz	-57.000	-57.027	0.100	-27 %	0.038	
354.000 000 00 MHz	-57.000	-57.023	0.400	-6 %	0.038	
454.000 000 00 MHz	-57.000	-57.007	0.400	-2 %	0.049	
500.000 000 00 MHz	-57.000	-56.996	0.400	1 %	0.049	
624.999 999 99 MHz	-57.000	-56.994	0.400	1 %	0.049	
847.333 333 32 MHz	-57.000	-57.011	0.400	-3 %	0.049	
1.000 000 000 0 GHz	-57.000	-57.002	0.400	0 %	0.050	
1.250 000 000 0 GHz	-57.000	-56.990	0.400	2 %	0.066	
1.300 000 000 0 GHz	-57.000	-56.990	0.400	2 %	0.066	
1.400 000 000 0 GHz	-57.000	-57.005	0.400	-1 %	0.066	
1.500 000 000 0 GHz	-57.000	-56.984	0.500	3 %	0.066	
1.900 000 000 0 GHz	-57.000	-57.025	0.500	-5 %	0.066	
2.000 000 000 0 GHz	-57.000	-57.004	0.500	-1 %	0.066	
2.200 003 000 0 GHz	-57.000	-57.002	0.500	0 %	0.078	
2.399 997 000 0 GHz	-57.000	-57.014	0.500	-3 %	0.078	
2.600 003 000 0 GHz	-57.000	-57.018	0.500	-4 %	0.078	
2.700 000 000 0 GHz	-57.000	-57.019	0.500	-4 %	0.078	
2.800 003 000 0 GHz	-57.000	-57.013	0.500	-3 %	0.078	
3.000 000 000 0 GHz	-57.000	-56.886	0.500	23 %	0.078	
3.200 003 000 0 GHz	-57.000	-56.993	0.500	1 %	0.092	
3.500 000 000 0 GHz	-57.000	-57.004	0.500	-1 %	0.092	
3.800 003 000 0 GHz	-57.000	-56.964	0.500	7 %	0.118	
4.024 000 000 0 GHz	-57.000	-57.078	0.500	-16 %	0.118	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
100.000 000 kHz	-66.000	-65.975	0.200	13 %	0.042	
300.000 000 kHz	-66.000	-65.978	0.200	11 %	0.042	
1.000 000 00 MHz	-66.000	-65.974	0.200	13 %	0.042	
3.000 000 00 MHz	-66.000	-65.975	0.200	12 %	0.035	
10.000 000 00 MHz	-66.000	-65.998	0.100	2 %	0.035	
13.000 000 00 MHz	-66.000	-65.999	0.100	1 %	0.035	
20.000 000 00 MHz	-66.000	-65.999	0.100	1 %	0.040	
30.000 000 00 MHz	-66.000	-65.982	0.100	18 %	0.040	
50.000 000 00 MHz	-66.000	-65.985	0.100	15 %	0.039	
75.000 000 00 MHz	-66.000	-66.009	0.100	-9 %	0.039	
100.000 000 00 MHz	-66.000	-66.007	0.100	-7 %	0.039	
150.000 000 00 MHz	-66.000	-65.991	0.100	9 %	0.043	
250.000 000 00 MHz	-66.000	-66.015	0.100	-15 %	0.043	
300.000 000 00 MHz	-66.000	-65.988	0.100	12 %	0.043	
354.000 000 00 MHz	-66.000	-66.060	0.400	-15 %	0.043	
454.000 000 00 MHz	-66.000	-65.994	0.400	2 %	0.064	
500.000 000 00 MHz	-66.000	-65.982	0.400	5 %	0.064	
624.999 999 99 MHz	-66.000	-65.953	0.400	12 %	0.064	
847.333 333 32 MHz	-66.000	-65.953	0.400	12 %	0.064	
1.000 000 000 0 GHz	-66.000	-65.985	0.400	4 %	0.078	
1.250 000 000 0 GHz	-66.000	-66.021	0.400	-5 %	0.105	
1.300 000 000 0 GHz	-66.000	-66.012	0.400	-3 %	0.105	
1.400 000 000 0 GHz	-66.000	-65.982	0.400	5 %	0.105	
1.500 000 000 0 GHz	-66.000	-66.162	0.500	-32 %	0.131	
1.900 000 000 0 GHz	-66.000	-65.961	0.500	8 %	0.131	
2.000 000 000 0 GHz	-66.000	-65.973	0.500	5 %	0.131	
2.200 003 000 0 GHz	-66.000	-66.019	0.500	-4 %	0.144	
2.399 997 000 0 GHz	-66.000	-65.960	0.500	8 %	0.144	
2.600 003 000 0 GHz	-66.000	-65.897	0.500	21 %	0.172	
2.700 000 000 0 GHz	-66.000	-65.878	0.500	24 %	0.172	
2.800 003 000 0 GHz	-66.000	-65.817	0.500	37 %	0.172	
3.000 000 000 0 GHz	-66.000	-65.911	0.500	18 %	0.172	
3.200 003 000 0 GHz	-66.000	-66.107	0.500	-21 %	0.179	
3.500 000 000 0 GHz	-66.000	-65.845	0.500	31 %	0.179	
3.800 003 000 0 GHz	-66.000	-65.733	0.500	53 %	0.194	
4.024 000 000 0 GHz	-66.000	-65.879	0.500	24 %	0.194	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
100.000 000 kHz	-75.000	-74.990	0.500	2 %	0.045	
300.000 000 kHz	-75.000	-74.984	0.500	3 %	0.038	
1.000 000 00 MHz	-75.000	-74.994	0.500	1 %	0.038	
3.000 000 00 MHz	-75.000	-74.982	0.500	4 %	0.038	
10.000 000 00 MHz	-75.000	-74.997	0.100	3 %	0.038	
13.000 000 00 MHz	-75.000	-75.006	0.100	-6 %	0.038	
20.000 000 00 MHz	-75.000	-75.012	0.100	-12 %	0.042	
30.000 000 00 MHz	-75.000	-75.001	0.100	-1 %	0.042	
50.000 000 00 MHz	-75.000	-74.996	0.100	4 %	0.041	
75.000 000 00 MHz	-75.000	-75.007	0.100	-7 %	0.041	
100.000 000 00 MHz	-75.000	-75.008	0.100	-8 %	0.041	
150.000 000 00 MHz	-75.000	-74.996	0.300	1 %	0.045	
250.000 000 00 MHz	-75.000	-75.017	0.300	-6 %	0.045	
300.000 000 00 MHz	-75.000	-74.996	0.300	1 %	0.045	
354.000 000 00 MHz	-75.000	-75.068	0.500	-14 %	0.045	
454.000 000 00 MHz	-75.000	-75.005	0.500	-1 %	0.065	
500.000 000 00 MHz	-75.000	-74.996	0.500	1 %	0.065	
624.999 999 99 MHz	-75.000	-74.962	0.500	8 %	0.065	
847.333 333 32 MHz	-75.000	-74.964	0.500	7 %	0.065	
1.000 000 000 0 GHz	-75.000	-74.994	0.500	1 %	0.080	
1.250 000 000 0 GHz	-75.000	-75.043	0.500	-9 %	0.106	
1.300 000 000 0 GHz	-75.000	-75.029	0.500	-6 %	0.106	
1.400 000 000 0 GHz	-75.000	-74.991	0.500	2 %	0.106	
1.500 000 000 0 GHz	-75.000	-75.176	1.000	-18 %	0.131	
1.900 000 000 0 GHz	-75.000	-74.972	1.000	3 %	0.131	
2.000 000 000 0 GHz	-75.000	-74.992	1.000	1 %	0.131	
2.200 003 000 0 GHz	-75.000	-75.023	1.000	-2 %	0.144	
2.399 997 000 0 GHz	-75.000	-74.980	1.000	2 %	0.144	
2.600 003 000 0 GHz	-75.000	-74.955	1.000	5 %	0.173	
2.700 000 000 0 GHz	-75.000	-74.963	1.000	4 %	0.173	
2.800 003 000 0 GHz	-75.000	-74.953	1.000	5 %	0.173	
3.000 000 000 0 GHz	-75.000	-74.839	1.000	16 %	0.173	
3.200 003 000 0 GHz	-75.000	-75.047	1.000	-5 %	0.180	
3.500 000 000 0 GHz	-75.000	-74.857	1.000	14 %	0.180	
3.800 003 000 0 GHz	-75.000	-74.758	1.000	24 %	0.195	
4.024 000 000 0 GHz	-75.000	-74.922	1.000	8 %	0.195	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
100.000 000 kHz	-85.000	-84.907	0.500	19 %	0.101	
300.000 000 kHz	-85.000	-85.027	0.500	-5 %	0.101	
1.000 000 00 MHz	-85.000	-84.964	0.500	7 %	0.101	
3.000 000 00 MHz	-85.000	-84.971	0.500	6 %	0.092	
10.000 000 00 MHz	-85.000	-85.014	0.300	-5 %	0.092	
13.000 000 00 MHz	-85.000	-85.024	0.300	-8 %	0.092	
20.000 000 00 MHz	-85.000	-85.000	0.300	0 %	0.064	
30.000 000 00 MHz	-85.000	-84.999	0.300	0 %	0.064	
50.000 000 00 MHz	-85.000	-84.983	0.300	6 %	0.064	
75.000 000 00 MHz	-85.000	-85.002	0.300	-1 %	0.064	
100.000 000 00 MHz	-85.000	-84.986	0.300	5 %	0.064	
150.000 000 00 MHz	-85.000	-84.956	0.500	9 %	0.067	
250.000 000 00 MHz	-85.000	-84.980	0.500	4 %	0.067	
300.000 000 00 MHz	-85.000	-84.955	0.500	9 %	0.067	
354.000 000 00 MHz	-85.000	-85.035	1.000	-4 %	0.067	
454.000 000 00 MHz	-85.000	-84.975	1.000	3 %	0.077	
500.000 000 00 MHz	-85.000	-84.963	1.000	4 %	0.077	
624.999 999 99 MHz	-85.000	-84.926	1.000	7 %	0.077	
847.333 333 32 MHz	-85.000	-84.964	1.000	4 %	0.077	
1.000 000 000 0 GHz	-85.000	-84.966	1.000	3 %	0.100	
1.250 000 000 0 GHz	-85.000	-85.010	1.000	-1 %	0.126	
1.300 000 000 0 GHz	-85.000	-85.013	1.000	-1 %	0.126	
1.400 000 000 0 GHz	-85.000	-84.975	1.000	2 %	0.126	
1.500 000 000 0 GHz	-85.000	-85.148	1.000	-15 %	0.152	
1.900 000 000 0 GHz	-85.000	-84.973	1.000	3 %	0.152	
2.000 000 000 0 GHz	-85.000	-84.980	1.000	2 %	0.152	
2.200 003 000 0 GHz	-85.000	-85.009	1.000	-1 %	0.175	
2.399 997 000 0 GHz	-85.000	-84.955	1.000	5 %	0.175	
2.600 003 000 0 GHz	-85.000	-84.882	1.000	12 %	0.175	
2.700 000 000 0 GHz	-85.000	-84.878	1.000	12 %	0.175	
2.800 003 000 0 GHz	-85.000	-84.880	1.000	12 %	0.175	
3.000 000 000 0 GHz	-85.000	-84.837	1.000	16 %	0.175	
3.200 003 000 0 GHz	-85.000	-85.075	1.000	-8 %	0.182	
3.500 000 000 0 GHz	-85.000	-84.859	1.000	14 %	0.182	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
10.000 000 00 MHz	-95.000	-95.014	0.700	-2 %	0.061	
13.000 000 00 MHz	-95.000	-95.025	0.700	-4 %	0.061	
20.000 000 00 MHz	-95.000	-95.023	0.700	-3 %	0.063	
30.000 000 00 MHz	-95.000	-95.003	0.700	0 %	0.063	
50.000 000 00 MHz	-95.000	-94.991	0.700	1 %	0.063	
75.000 000 00 MHz	-95.000	-95.006	0.700	-1 %	0.063	
100.000 000 00 MHz	-95.000	-95.018	0.700	-3 %	0.063	
150.000 000 00 MHz	-95.000	-94.980	1.500	1 %	0.065	
250.000 000 00 MHz	-95.000	-95.002	1.500	0 %	0.065	
300.000 000 00 MHz	-95.000	-94.967	1.500	2 %	0.065	
354.000 000 00 MHz	-95.000	-95.055	1.500	-4 %	0.065	
454.000 000 00 MHz	-95.000	-94.987	1.500	1 %	0.086	
500.000 000 00 MHz	-95.000	-94.979	1.500	1 %	0.086	
624.999 999 99 MHz	-95.000	-94.963	1.500	2 %	0.086	
847.333 333 32 MHz	-95.000	-94.962	1.500	3 %	0.086	
1.000 000 000 0 GHz	-95.000	-94.974	1.500	2 %	0.101	
1.250 000 000 0 GHz	-95.000	-95.013	1.500	-1 %	0.127	
1.300 000 000 0 GHz	-95.000	-95.006	1.500	0 %	0.127	
1.400 000 000 0 GHz	-95.000	-94.972	1.500	2 %	0.127	
1.500 000 000 0 GHz	-95.000	-95.149	1.500	-10 %	0.144	
1.900 000 000 0 GHz	-95.000	-94.951	1.500	3 %	0.144	
2.000 000 000 0 GHz	-95.000	-94.985	1.500	1 %	0.144	
2.200 003 000 0 GHz	-95.000	-95.062	1.500	-4 %	0.166	
2.399 997 000 0 GHz	-95.000	-94.975	1.500	2 %	0.166	
2.600 003 000 0 GHz	-95.000	-94.886	1.500	8 %	0.185	
2.700 000 000 0 GHz	-95.000	-94.852	1.500	10 %	0.185	
2.800 003 000 0 GHz	-95.000	-94.840	1.500	11 %	0.185	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
10.000 000 00 MHz	-105.000	-105.010	0.700	-1 %	0.112	
13.000 000 00 MHz	-105.000	-105.028	0.700	-4 %	0.112	
20.000 000 00 MHz	-105.000	-104.994	0.700	1 %	0.100	
30.000 000 00 MHz	-105.000	-104.992	0.700	1 %	0.100	
50.000 000 00 MHz	-105.000	-104.974	0.700	4 %	0.099	
75.000 000 00 MHz	-105.000	-105.000	0.700	0 %	0.099	
100.000 000 00 MHz	-105.000	-104.979	0.700	3 %	0.099	
150.000 000 00 MHz	-105.000	-104.953	1.500	3 %	0.101	
250.000 000 00 MHz	-105.000	-104.982	1.500	1 %	0.199	
300.000 000 00 MHz	-105.000	-104.958	1.500	3 %	0.199	
354.000 000 00 MHz	-105.000	-105.040	1.500	-3 %	0.199	
454.000 000 00 MHz	-105.000	-104.977	1.500	2 %	0.201	
500.000 000 00 MHz	-105.000	-104.954	1.500	3 %	0.201	
624.999 999 99 MHz	-105.000	-104.922	1.500	5 %	0.201	
847.333 333 32 MHz	-105.000	-104.942	1.500	4 %	0.201	
1.000 000 000 0 GHz	-105.000	-104.951	1.500	3 %	0.209	
1.250 000 000 0 GHz	-105.000	-105.084	1.500	-6 %	0.223	
1.300 000 000 0 GHz	-105.000	-104.999	1.500	0 %	0.223	
1.400 000 000 0 GHz	-105.000	-104.959	1.500	3 %	0.223	
1.500 000 000 0 GHz	-105.000	-105.139	1.500	-9 %	0.239	
1.900 000 000 0 GHz	-105.000	-104.957	1.500	3 %	0.239	
2.000 000 000 0 GHz	-105.000	-104.968	1.500	2 %	0.239	
2.200 003 000 0 GHz	-105.000	-105.003	1.500	0 %	0.254	
2.399 997 000 0 GHz	-105.000	-104.940	1.500	4 %	0.254	
2.600 003 000 0 GHz	-105.000	-104.879	1.500	8 %	0.254	
2.700 000 000 0 GHz	-105.000	-104.856	1.500	10 %	0.254	
2.800 003 000 0 GHz	-105.000	-104.802	1.500	13 %	0.254	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
10.000 000 00 MHz	-115.000	-115.023	0.700	-3 %	0.166	
13.000 000 00 MHz	-115.000	-115.020	0.700	-3 %	0.166	
20.000 000 00 MHz	-115.000	-115.025	0.700	-4 %	0.155	
30.000 000 00 MHz	-115.000	-114.989	0.700	2 %	0.155	
50.000 000 00 MHz	-115.000	-114.973	0.700	4 %	0.155	
75.000 000 00 MHz	-115.000	-115.001	0.700	0 %	0.155	
100.000 000 00 MHz	-115.000	-114.990	0.700	1 %	0.155	
150.000 000 00 MHz	-115.000	-114.959	1.500	3 %	0.156	
250.000 000 00 MHz	-115.000	-114.984	1.500	1 %	0.390	
300.000 000 00 MHz	-115.000	-114.992	1.500	1 %	0.390	
354.000 000 00 MHz	-115.000	-115.045	1.500	-3 %	0.390	
454.000 000 00 MHz	-115.000	-114.977	1.500	2 %	0.396	
500.000 000 00 MHz	-115.000	-114.977	1.500	2 %	0.396	
624.999 999 99 MHz	-115.000	-114.941	1.500	4 %	0.396	
847.333 333 32 MHz	-115.000	-114.904	1.500	6 %	0.396	
1.000 000 000 0 GHz	-115.000	-114.957	1.500	3 %	0.407	
1.250 000 000 0 GHz	-115.000	-115.145	1.500	-10 %	0.421	
1.300 000 000 0 GHz	-115.000	-115.014	1.500	-1 %	0.421	
1.400 000 000 0 GHz	-115.000	-114.945	1.500	4 %	0.421	
1.500 000 000 0 GHz	-115.000	-115.119	1.500	-8 %	0.429	
1.900 000 000 0 GHz	-115.000	-114.921	1.500	5 %	0.429	
2.000 000 000 0 GHz	-115.000	-114.947	1.500	4 %	0.429	
2.200 003 000 0 GHz	-115.000	-115.033	1.500	-2 %	0.431	
2.399 997 000 0 GHz	-115.000	-114.906	1.500	6 %	0.431	
2.600 003 000 0 GHz	-115.000	-114.819	1.500	12 %	0.445	
2.700 000 000 0 GHz	-115.000	-114.826	1.500	12 %	0.445	
2.800 003 000 0 GHz	-115.000	-114.801	1.500	13 %	0.445	

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Sine Level cont:

Instrument Settings		Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
Frequency	Output Level (dBm)					
10.000 000 00 MHz	-124.000	-123.939	0.700	9 %	0.205	
13.000 000 00 MHz	-124.000	-123.983	0.700	2 %	0.205	
20.000 000 00 MHz	-124.000	-124.026	0.700	-4 %	0.206	
30.000 000 00 MHz	-124.000	-123.979	0.700	3 %	0.206	
50.000 000 00 MHz	-124.000	-124.013	0.700	-2 %	0.206	
75.000 000 00 MHz	-124.000	-123.959	0.700	6 %	0.206	
100.000 000 00 MHz	-124.000	-123.951	0.700	7 %	0.206	
150.000 000 00 MHz	-124.000	-123.987	1.500	1 %	0.251	
250.000 000 00 MHz	-124.000	-124.013	1.500	-1 %	0.471	
300.000 000 00 MHz	-124.000	-123.984	1.500	1 %	0.471	
354.000 000 00 MHz	-124.000	-124.047	1.500	-3 %	0.471	
454.000 000 00 MHz	-124.000	-123.993	1.500	0 %	0.472	
500.000 000 00 MHz	-124.000	-123.960	1.500	3 %	0.472	
624.999 999 99 MHz	-124.000	-124.043	1.500	-3 %	0.472	
847.333 333 32 MHz	-124.000	-123.851	1.500	10 %	0.472	
1.000 000 000 0 GHz	-124.000	-123.885	1.500	8 %	0.472	
1.250 000 000 0 GHz	-124.000	-124.160	1.500	-11 %	0.484	
1.300 000 000 0 GHz	-124.000	-124.046	1.500	-3 %	0.484	
1.400 000 000 0 GHz	-124.000	-123.906	1.500	6 %	0.484	
1.500 000 000 0 GHz	-124.000	-124.165	1.500	-11 %	0.484	
1.900 000 000 0 GHz	-124.000	-123.949	1.500	3 %	0.484	
2.000 000 000 0 GHz	-124.000	-124.020	1.500	-1 %	0.484	
2.200 003 000 0 GHz	-124.000	-123.986	1.500	1 %	0.486	
2.399 997 000 0 GHz	-124.000	-124.016	1.500	-1 %	0.486	
2.600 003 000 0 GHz	-124.000	-123.838	1.500	11 %	0.486	
2.700 000 000 0 GHz	-124.000	-123.654	1.500	23 %	0.486	
2.800 003 000 0 GHz	-124.000	-124.106	1.500	-7 %	0.486	

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50 Ω Leveling Head - Attenuation Accuracy **

Instrument Configuration: Mode, Sine, Ext Freq Reference, 50 Ω Leveling Head Connected
Attenuation values are reported relative to an output Level setting of +16 dBm

Instrument Settings Frequency	Output Level Setting (dBm)	Measured Attenuation (dB)	Attenuation Error (dB)	Spec Limit (\pm dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
10.050 MHz	16.000	0.000	0.000			(Reference)	
10.050 MHz	13.000	3.002	0.002	0.020	9 %	0.007	
10.050 MHz	3.000	13.003	0.003	0.020	17 %	0.007	
10.050 MHz	-7.000	23.000	0.000	0.020	2 %	0.008	
10.050 MHz	-17.000	33.011	0.011	0.020	55 %	0.008	
10.050 MHz	-27.000	43.011	0.011	0.020	55 %	0.006	
10.050 MHz	-37.000	53.011	0.011	0.020	56 %	0.007	
10.050 MHz	-47.000	63.011	0.011	0.030	37 %	0.009	
10.050 MHz	-57.000	73.016	0.016	0.050	32 %	0.017	
10.050 MHz	-66.000	82.001	0.001	0.070	2 %	0.020	
10.050 MHz	-75.000	91.000	0.000	0.070	0 %	0.026	
10.050 MHz	-85.000	101.017	0.017	0.150	11 %	0.054	
10.050 MHz	-95.000	111.017	0.017	0.150	12 %	0.057	
50.050 MHz	16.000	0.000	0.000			(Reference)	
50.050 MHz	13.000	3.001	0.001	0.020	4 %	0.013	
50.050 MHz	3.000	13.001	0.001	0.020	7 %	0.013	
50.050 MHz	-7.000	22.996	-0.004	0.020	-18 %	0.008	
50.050 MHz	-17.000	32.996	-0.004	0.020	-20 %	0.008	
50.050 MHz	-27.000	42.994	-0.006	0.020	-30 %	0.006	
50.050 MHz	-37.000	52.997	-0.003	0.020	-14 %	0.007	
50.050 MHz	-47.000	63.000	0.000	0.030	0 %	0.009	
50.050 MHz	-57.000	73.018	0.018	0.050	35 %	0.019	
50.050 MHz	-66.000	81.982	-0.018	0.070	-26 %	0.022	
50.050 MHz	-75.000	90.992	-0.008	0.070	-11 %	0.027	
50.050 MHz	-85.000	100.979	-0.021	0.150	-14 %	0.055	
50.050 MHz	-95.000	110.987	-0.013	0.150	-9 %	0.057	
100.050 MHz	16.000	0.000	0.000			(Reference)	
100.050 MHz	13.000	3.003	0.003	0.020	14 %	0.013	
100.050 MHz	3.000	13.003	0.003	0.020	17 %	0.013	
100.050 MHz	-7.000	22.997	-0.003	0.020	-13 %	0.008	
100.050 MHz	-17.000	32.996	-0.004	0.020	-20 %	0.008	
100.050 MHz	-27.000	42.995	-0.005	0.020	-25 %	0.006	
100.050 MHz	-37.000	52.997	-0.003	0.020	-14 %	0.007	
100.050 MHz	-47.000	63.000	0.000	0.030	0 %	0.009	
100.050 MHz	-57.000	73.014	0.014	0.050	28 %	0.019	
100.050 MHz	-66.000	82.009	0.009	0.070	12 %	0.022	
100.050 MHz	-75.000	91.009	0.009	0.070	13 %	0.027	
100.050 MHz	-85.000	100.988	-0.012	0.150	-8 %	0.055	
100.050 MHz	-95.000	111.020	0.020	0.150	13 %	0.057	

** Refers to a parameter that is not UKAS accredited.

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50 Ω Leveling Head Output VSWR

Instrument Configuration: Mode, Sine, Ext Freq Reference, 50 Ω Leveling Head Connected

Instrument Settings		VSWR at UUT Output Level Setting	Spec Limit	Expanded Uncertainty (See Note) (\pm VSWR)	Compliance With Spec
Frequency	Output Level (dBm)				
1 MHz	13	1.034	1.100	0.040	
10 MHz	13	1.023	1.100	0.030	
100 MHz	13	1.040	1.100	0.030	
160 MHz	13	1.039	1.100	0.030	
240 MHz	13	1.036	1.100	0.030	
320 MHz	13	1.024	1.100	0.030	
400 MHz	13	1.031	1.100	0.030	
560 MHz	13	1.100	1.200	0.030	
640 MHz	13	1.124	1.200	0.030	
720 MHz	13	1.136	1.200	0.030	
800 MHz	13	1.130	1.200	0.030	
960 MHz	13	1.067	1.200	0.030	
1040 MHz	13	1.036	1.300	0.040	
1120 MHz	13	1.078	1.300	0.040	
1200 MHz	13	1.116	1.300	0.040	
1280 MHz	13	1.157	1.300	0.040	
1440 MHz	13	1.131	1.300	0.040	
1520 MHz	13	1.100	1.300	0.040	
1600 MHz	13	1.072	1.300	0.040	
1680 MHz	13	1.077	1.300	0.040	
1760 MHz	13	1.107	1.300	0.040	
1920 MHz	13	1.159	1.300	0.040	
2000 MHz	13	1.141	1.300	0.040	
2080 MHz	13	1.125	1.300	0.100	
2160 MHz	13	1.122	1.300	0.100	
2320 MHz	13	1.129	1.300	0.100	
2400 MHz	13	1.131	1.300	0.100	
2480 MHz	13	1.114	1.300	0.100	
2560 MHz	13	1.090	1.300	0.100	
2640 MHz	13	1.072	1.300	0.100	
2800 MHz	13	1.115	1.300	0.100	
2880 MHz	13	1.137	1.300	0.100	
2960 MHz	13	1.142	1.300	0.100	
3040 MHz	13	1.131	1.400	0.180	
3200 MHz	13	1.093	1.400	0.180	
3280 MHz	13	1.089	1.400	0.180	
3360 MHz	13	1.120	1.400	0.180	
3440 MHz	13	1.156	1.400	0.180	
3600 MHz	13	1.201	1.400	0.180	
3680 MHz	13	1.193	1.400	0.200	
3760 MHz	13	1.155	1.400	0.200	
3840 MHz	13	1.106	1.400	0.200	
3920 MHz	13	1.072	1.400	0.200	
4000 MHz	13	1.086	1.400	0.200	

Note: The uncertainty of measurement is dependent upon the magnitude of the measured VSWR, the uncertainty shown relates to a VSWR equal to the specification limit.

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Output VSWR cont:

Instrument Settings		VSWR at UUT Output Level Setting	Spec Limit	Expanded Uncertainty (See Note) (±VSWR)	Compliance With Spec
Frequency	Output Level (dBm)				
1 MHz	3	1.018	1.100	0.040	
10 MHz	3	1.006	1.100	0.030	
100 MHz	3	1.023	1.100	0.030	
160 MHz	3	1.032	1.100	0.030	
240 MHz	3	1.044	1.100	0.030	
320 MHz	3	1.055	1.100	0.030	
400 MHz	3	1.067	1.100	0.030	
560 MHz	3	1.086	1.200	0.030	
640 MHz	3	1.090	1.200	0.030	
720 MHz	3	1.088	1.200	0.030	
800 MHz	3	1.081	1.200	0.030	
960 MHz	3	1.053	1.200	0.030	
1040 MHz	3	1.045	1.300	0.040	
1120 MHz	3	1.043	1.300	0.040	
1200 MHz	3	1.040	1.300	0.040	
1280 MHz	3	1.038	1.300	0.040	
1440 MHz	3	1.028	1.300	0.040	
1520 MHz	3	1.034	1.300	0.040	
1600 MHz	3	1.048	1.300	0.040	
1680 MHz	3	1.063	1.300	0.040	
1760 MHz	3	1.072	1.300	0.040	
1920 MHz	3	1.071	1.300	0.040	
2000 MHz	3	1.060	1.300	0.040	
2080 MHz	3	1.049	1.300	0.100	
2160 MHz	3	1.041	1.300	0.100	
2320 MHz	3	1.048	1.300	0.100	
2400 MHz	3	1.061	1.300	0.100	
2480 MHz	3	1.077	1.300	0.100	
2560 MHz	3	1.095	1.300	0.100	
2640 MHz	3	1.111	1.300	0.100	
2800 MHz	3	1.124	1.300	0.100	
2880 MHz	3	1.118	1.300	0.100	
2960 MHz	3	1.105	1.300	0.100	
3040 MHz	3	1.088	1.400	0.180	
3200 MHz	3	1.052	1.400	0.180	
3280 MHz	3	1.036	1.400	0.180	
3360 MHz	3	1.021	1.400	0.180	
3440 MHz	3	1.014	1.400	0.180	
3600 MHz	3	1.068	1.400	0.180	
3680 MHz	3	1.111	1.400	0.200	
3760 MHz	3	1.157	1.400	0.200	
3840 MHz	3	1.203	1.400	0.200	
3920 MHz	3	1.244	1.400	0.200	
4000 MHz	3	1.274	1.400	0.200	

Note: The uncertainty of measurement is dependent upon the magnitude of the measured VSWR, the uncertainty shown relates to a VSWR equal to the specification limit.

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Output VSWR cont:

Instrument Settings		VSWR at UUT Output Level Setting	Spec Limit	Expanded Uncertainty (See Note) (±VSWR)	Compliance With Spec
Frequency	Output Level (dBm)				
1 MHz	-7	1.013	1.100	0.040	
10 MHz	-7	1.013	1.100	0.030	
100 MHz	-7	1.024	1.100	0.030	
160 MHz	-7	1.028	1.100	0.030	
240 MHz	-7	1.035	1.100	0.030	
320 MHz	-7	1.042	1.100	0.030	
400 MHz	-7	1.050	1.100	0.030	
560 MHz	-7	1.066	1.200	0.030	
640 MHz	-7	1.072	1.200	0.030	
720 MHz	-7	1.078	1.200	0.030	
800 MHz	-7	1.083	1.200	0.030	
960 MHz	-7	1.093	1.200	0.030	
1040 MHz	-7	1.097	1.300	0.040	
1120 MHz	-7	1.102	1.300	0.040	
1200 MHz	-7	1.106	1.300	0.040	
1280 MHz	-7	1.109	1.300	0.040	
1440 MHz	-7	1.112	1.300	0.040	
1520 MHz	-7	1.112	1.300	0.040	
1600 MHz	-7	1.110	1.300	0.040	
1680 MHz	-7	1.107	1.300	0.040	
1760 MHz	-7	1.101	1.300	0.040	
1920 MHz	-7	1.089	1.300	0.040	
2000 MHz	-7	1.082	1.300	0.040	
2080 MHz	-7	1.073	1.300	0.100	
2160 MHz	-7	1.065	1.300	0.100	
2320 MHz	-7	1.055	1.300	0.100	
2400 MHz	-7	1.056	1.300	0.100	
2480 MHz	-7	1.062	1.300	0.100	
2560 MHz	-7	1.072	1.300	0.100	
2640 MHz	-7	1.082	1.300	0.100	
2800 MHz	-7	1.104	1.300	0.100	
2880 MHz	-7	1.113	1.300	0.100	
2960 MHz	-7	1.121	1.300	0.100	
3040 MHz	-7	1.128	1.400	0.180	
3200 MHz	-7	1.139	1.400	0.180	
3280 MHz	-7	1.146	1.400	0.180	
3360 MHz	-7	1.154	1.400	0.180	
3440 MHz	-7	1.164	1.400	0.180	
3600 MHz	-7	1.190	1.400	0.180	
3680 MHz	-7	1.204	1.400	0.200	
3760 MHz	-7	1.215	1.400	0.200	
3840 MHz	-7	1.223	1.400	0.200	
3920 MHz	-7	1.226	1.400	0.200	
4000 MHz	-7	1.223	1.400	0.200	

Note: The uncertainty of measurement is dependent upon the magnitude of the measured VSWR, the uncertainty shown relates to a VSWR equal to the specification limit.

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Level Sine Frequency Accuracy

Instrument Configuration: Sine Function, Int Freq Reference, Output Level 13 dBm, 50 Ω Leveling Head Connected

Output Frequency Setting	Error (ppm)	Specification Limit (ppm)	% of Limit	Expanded Uncertainty (ppm)	Compliance With Spec
10.000 000 kHz	0.001	0.066	2 %	0.020	
1.000 000 00 MHz	-0.001	0.050	1 %	0.002	
10.000 000 00 MHz	-0.001	0.050	1 %	0.002	
30.000 000 00 MHz	-0.001	0.050	1 %	0.002	
50.000 000 00 MHz	-0.001	0.050	1 %	0.002	
100.000 000 00 MHz	-0.001	0.050	1 %	0.002	
251.500 000 00 MHz	-0.001	0.050	1 %	0.002	
500.000 000 00 MHz	-0.001	0.050	2 %	0.002	
503.000 000 00 MHz	-0.001	0.050	1 %	0.002	
1.000 000 000 0 GHz	-0.001	0.050	2 %	0.002	
1.006 000 000 0 GHz	-0.001	0.050	1 %	0.002	
2.000 000 000 0 GHz	-0.001	0.050	2 %	0.010	
2.012 000 000 0 GHz	-0.001	0.050	2 %	0.010	
2.716 200 000 1 GHz	-0.001	0.050	2 %	0.010	
4.000 000 000 0 GHz	-0.001	0.050	1 %	0.010	
4.024 000 000 0 GHz	-0.001	0.050	1 %	0.010	

Level Sine Spurious Signal Content **

Instrument Configuration: Sine Function, Ext Freq Reference, 50 Ω Leveling Head Connected

Instrument Settings Frequency	Output Level (dBm)	Maximum Spurious Signal Within ± 1 MHz Span		Specification Limit (dBc)	Expanded Uncertainty (See Note) (dB)	Compliance With Spec
		Frequency (GHz)	Level (dBc)			
2.100 000 GHz	4.600	0.000 000 000		-60	0.60	
2.199 997 GHz	4.600	2.200 003 001	-75.3	-60	0.60	
2.200 003 GHz	4.600	0.000 000 000		-60	0.60	
2.399 997 GHz	4.600	2.399 994 000	-72.4	-60	0.60	
2.600 003 GHz	4.600	0.000 000 000		-60	0.60	
2.700 000 GHz	4.600	0.000 000 000		-60	0.60	
2.799 997 GHz	4.600	0.000 000 000		-60	0.60	
2.800 003 GHz	4.600	2.800 000 000	-73.7	-60	0.60	
3.000 000 GHz	4.600	0.000 000 000		-60	0.60	
3.199 997 GHz	4.600	0.000 000 000		-60	0.60	
3.200 003 GHz	4.600	0.000 000 000		-60	0.60	
3.400 003 GHz	4.600	0.000 000 000		-60	0.60	
3.599 997 GHz	4.600	3.600 000 000	-75.3	-60	0.60	
3.800 003 GHz	4.600	3.800 000 000	-73.6	-60	1.00	
4.000 000 GHz	4.600	0.000 000 000		-60	1.00	

Note: The uncertainty of measurement of any spuri is dependent upon its actual signal level, the uncertainty shown relates to a spuri equal in level to the specification limit.

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Level Sine Harmonic Distortion **

Instrument Configuration: Sine Function, Ext Freq Reference, 50 Ω Leveling Head Connected

Instrument Settings Frequency	Output Level (dBm)	Harmonic Number	Harmonic Signal Level (dBc)	Specification Limit (dBc)	Expanded Uncertainty (See Note) (dB)	Compliance With Spec
20.000 000 kHz	24.000	2	-86.7	-60	0.6	
		3	-81.7	-60	0.6	
2.740 209 MHz	24.000	2	-72.9	-60	0.6	
		3	-66.8	-60	0.6	
5.500 000 MHz	24.000	2	-78.6	-60	0.6	
		3	-77.6	-60	0.6	
11.000 000 MHz	24.000	2	-79.5	-60	0.6	
		3	-73.5	-60	0.6	
22.000 000 MHz	24.000	2	-79.6	-60	0.6	
		3	-79.8	-60	0.6	
32.380 625 MHz	24.000	2	-79.1	-60	0.6	
		3	-71.5	-60	0.6	
44.000 000 MHz	24.000	2	-79.3	-60	0.6	
		3	-70.3	-60	0.6	
62.500 000 MHz	24.000	2	-78.2	-60	0.6	
		3	-68.3	-60	0.6	
65.000 000 MHz	24.000	2	-77.0	-60	0.6	
		3	-68.1	-60	0.6	
88.000 000 MHz	24.000	2	-81.5	-60	0.6	
		3	-68.6	-60	0.6	
125.000 000 MHz	24.000	2	-81.3	-60	0.6	
		3	-68.7	-60	0.6	
250.000 000 MHz	20.000	2	-72.3	-60	0.6	
		3	-77.3	-60	0.6	
354.000 000 MHz	20.000	2	-77.4	-60	0.6	
		3	-68.3	-60	0.6	
500.000 000 MHz	20.000	2	-81.5	-60	0.6	
		3	-74.1	-60	0.6	
714.000 000 MHz	20.000	2	-72.1	-60	0.6	
		3	-68.5	-60	0.6	
1 000.000 000 GHz	20.000	2	-76.3	-60	0.6	
		3	-62.3	-60	0.6	
1 400.000 000 GHz	20.000	2	-66.0	-55	0.6	
		3	-60.4	-55	0.6	
1 450.000 000 GHz	14.000	2	-76.7	-55	0.6	
		3	-60.8	-55	0.6	
1 800.000 000 GHz	14.000	2	-71.1	-55	0.6	
		3	-63.9	-55	0.6	
2 700.000 000 GHz	14.000	2	-70.9	-55	0.6	
		3	-63.9	-55	0.6	
4 024.000 000 GHz	14.000	2	-74.7	-55	1.0	
		3	-100.4	-55	1.0	

Note: The uncertainty of measurement of any harmonic is dependent upon its actual signal level, the uncertainty shown relates to a harmonic equal in level to the specification limit.

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Amplitude Modulation Rate Accuracy **

Instrument Configuration: AM Function, Carrier Level 10 dBm, Int Freq Reference, 50 Ω Leveling Head Connected

Instrument Settings	Modulation	Rate	Specification	% of	Expanded	Compliance
Carrier	Mod Depth	Rate	Limit	Limit	Uncertainty	With Spec
Frequency	(%)	(Hz)	(ppm)	(ppm)	(ppm)	
30.000 000 MHz	50	20 000	-0.022	50	0 %	0.18
	50	100 000	0.015	100	0 %	0.18

Amplitude Modulation Depth Accuracy **

Instrument Configuration: AM Function, Carrier Level 14 dBm, Int Freq Reference, 50 Ω Leveling Head Connected

Note: The Modulation Depth error and specification is expressed as a percentage of the depth setting.

Instrument Settings	Modulation	Modulation	Depth	Specification	% of	Expanded	Compliance
Carrier	Rate	Depth	Error	Limit	Limit	Uncertainty	With Spec
Frequency	(Hz)	(%)	(%)	(%)	(%)	(%)	
125.000 000 MHz	1 000	10	-0.11	4.00	3 %	1.00	
	1 000	50	-0.23	3.20	7 %	1.00	
	1 000	90	-0.39	3.11	13 %	1.00	
	100 000	10	-0.54	4.00	13 %	1.50	
	100 000	50	-0.46	3.20	14 %	1.50	
	100 000	90	-0.51	3.11	17 %	1.50	
1.000 000 GHz	1 000	10	-0.31	4.00	8 %	1.00	
	1 000	50	-0.35	3.20	11 %	1.00	
	1 000	90	-0.31	3.11	10 %	1.00	
	20 000	10	-0.45	4.00	11 %	1.50	
	20 000	50	-0.49	3.20	15 %	1.50	
	20 000	90	-0.38	3.11	12 %	1.50	

Amplitude Modulation Distortion **

Instrument Configuration: AM Function, Carrier Level 8 dBm, Int Freq Reference, 50 Ω Leveling Head Connected

Instrument Settings	Modulation	Modulation	Distortion	Specification	Expanded	Compliance
Carrier	Rate	Depth		Limit	Uncertainty	With Spec
Frequency	(Hz)	(%)	(dBc)	(dBc)	(dB)	
125.000 000 MHz	1 000	10	-60.6	-40.0	0.02	
	1 000	50	-64.9	-40.0	0.02	
	1 000	80	-54.7	-40.0	0.02	
	20 000	10	-59.6	-40.0	0.02	
	20 000	50	-71.1	-40.0	0.02	
	20 000	80	-56.2	-40.0	0.02	
1.000 000 GHz	1 000	10	-65.3	-40.0	0.02	
	1 000	50	-66.7	-40.0	0.02	
	1 000	80	-61.9	-40.0	0.02	
	20 000	10	-62.0	-40.0	0.02	
	20 000	50	-66.3	-40.0	0.02	
	20 000	80	-58.3	-40.0	0.02	

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FM Modulation Rate Accuracy **

Instrument Configuration: FM Function, Int Freq Reference, Carrier Level 13 dBm, 50 Ω Leveling Head Connected

Instrument Settings	Deviation	Modulation Rate	Rate Error	Specification Limit	% of Limit	Expanded Uncertainty	Compliance With Spec
Carrier Frequency	(kHz)	(Hz)	(ppm)	(ppm)		(ppm)	
62.500 000 MHz	30	400	2.376	275	1 %	0.18	
	30	10 000	-0.116	100	0 %	0.18	
	30	100 000	0.015	100	0 %	0.18	
	30	300 000	-0.060	33.3	0 %	0.18	

FM Deviation Accuracy **

Instrument Configuration: FM Function, Int Freq Reference, Carrier Level 13 dBm, 50 Ω Leveling Head Connected

Instrument Settings	Modulation Rate	Deviation	Deviation Error	Specification Limit	% of Limit	Expanded Uncertainty	Compliance With Spec
Carrier Frequency	(Hz)	(Hz)	(%)	(%)		(%)	
125.000 000 MHz	400	10 000	0.042	3.060	1 %	1.00	
	10 000	10 000	-0.007	3.002	0 %	1.00	
	100 000	10 000	-0.006	3.000	0 %	1.00	
	400	300 000	0.013	3.060	0 %	1.00	
	10 000	300 000	0.033	3.002	1 %	1.00	
	100 000	300 000	-0.050	3.000	2 %	1.00	
1.000 000 GHz	300 000	300 000	0.014	3.000	0 %	1.00	
	400	300 000	0.022	3.060	1 %	1.00	
	10 000	300 000	0.081	3.002	3 %	1.00	
	100 000	300 000	0.041	3.000	1 %	1.00	
	300 000	300 000	0.240	3.000	8 %	1.00	
	400	1 000 000	0.013	3.060	0 %	1.00	
	10 000	1 000 000	0.088	3.002	3 %	1.00	
100 000	1 000 000	0.084	3.000	3 %	1.00		
300 000	1 000 000	0.187	3.000	6 %	1.00		

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FM Distortion **

Instrument Configuration: FM Function, Int Freq Reference, Carrier Level 13 dBm, 50 Ω Leveling Head Connected

Instrument Settings Carrier Frequency	Modulation Rate (Hz)	Deviation (Hz)	Deviation Error (dBc)	Specification Limit (dBc)	Expanded Uncertainty (dB)	Compliance With Spec
125.000 000 MHz	400	300 000	-100.5	-40.0	0.02	
	10 000	300 000	-80.1	-40.0	0.02	
	100 000	300 000	-53.7	-20.0	0.02	
	300 000	300 000	-47.4	-10.5	0.02	
1.000 000 GHz	400	300 000	-99.3	-40.0	0.02	
	10 000	300 000	-74.6	-40.0	0.02	
	100 000	300 000	-54.5	-20.0	0.02	
	300 000	300 000	-44.9	-10.5	0.02	
	400	1 000 000	-93.8	-40.0	0.02	
	10 000	1 000 000	-68.4	-40.0	0.02	
	100 000	1 000 000	-48.3	-20.0	0.02	
	300 000	1 000 000	-38.5	-10.5	0.02	

Absolute Frequency Counter Accuracy

Option NOT Enabled

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Level Sine Phase Noise **

Instrument Configuration: Sine Function, Int Freq Reference, 50 Ω Leveling Head Connected

Instrument Settings Frequency	Output Level (dBm)	Offset Frequency	Measured Value (dBc/Hz)	Specification Limit (dBc/Hz)	Expanded Uncertainty (dB)	Compliance With Spec
500.000 000 MHz	13.000	3 Hz	-84.7			
		10 Hz	-96.7	-90	2.1	
		30 Hz	-104.9			
		100 Hz	-119.2	-111	2.1	
		300 Hz	-131.8			
		1 kHz	-141.0	-132	2.1	
		3 KHz	-146.3			
		10 kHz	-147.3	-139	2.1	
		30 KHz	-145.6			
		100 kHz	-146.6	-139	2.1	
		300 KHz	-153.2			
		1 MHz	-156.6	-150	2.1	
		3 MHz	-156.4			
		10 MHz	-157.2	-153	2.1	
1.000 000 000 0 GHz	13.000	3 Hz	-77.6			
		10 Hz	-88.4	-84	2.1	
		30 Hz	-97.0			
		100 Hz	-111.0	-105	2.1	
		300 Hz	-124.3			
		1 kHz	-133.2	-126	2.1	
		3 KHz	-138.6			
		10 kHz	-140.4	-134	2.1	
		30 KHz	-137.8			
		100 kHz	-138.5	-134	2.1	
		300 KHz	-146.7			
		1 MHz	-152.8	-148	2.1	
		3 MHz	-153.4			
		10 MHz	-153.5	-151	2.1	

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The Following Results Apply to the Instrument When Fitted With the:

75 Ω Leveling Head

UUT Leveling Head Type: 9640A-75
UUT Leveling Head Serial No: 96105xxxx
Measurement Date: 01 Dec 2010

Standards Used:

System Instrument	Manufacturer	Model	Serial No.	Asset No.	Cal Due Date
Spectrum Analyzer	Rohde & Schwarz	FSU-26	100158/026	C1/756	29-Mar-2011
Power Meter	Rohde & Schwarz	NRVD	101113.002	TE2749	29-Mar-2012
Power Sensor	R&S	NRV-Z3 / 75	100096/232	C1/752	29-Mar-2011
Timer/Counter	Fluke	PM6681	880685	C1/700B	29-Mar-2011
AC Voltmeter	Fluke	5790A	9540033	C1/788B	29-Mar-2011
Arb Waveform Gen	Wavetek	MODEL 195	177841	C1/689	29-Mar-2011
RF Signal Gen Base	Fluke	9640A-LPN	961056124	C1/797	19-Mar-2011
RF Signal Gen Head	Fluke	9640A-50	961055981	C1/797	19-Mar-2011
Reflection Bridge	HP	86207A	3140A00202	C1/697	29-Mar-2011

Additional Information:

System Identification: System 1
Calibration System Software issue: 2.05
Test File Reference: Verify - 75R head.ft
Result File name: 5xxxx_14.csv

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Sine Output Level Accuracy - 75Ω

Instrument Configuration: Mode, Sine, Ext Freq Reference, 75Ω Leveling Head Connected

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
200 Hz	18.000	17.998	0.060	-4 %	0.002	
1.000 000 kHz	18.000	17.997	0.060	-5 %	0.002	
20.000 000 kHz	18.000	17.993	0.060	-12 %	0.002	
100.000 000 kHz	18.000	18.003	0.060	5 %	0.002	
300.000 000 kHz	18.000	18.011	0.060	18 %	0.023	
1.000 000 00 MHz	18.000	17.994	0.060	-9 %	0.023	
3.000 000 00 MHz	18.000	17.990	0.060	-17 %	0.023	
10.000 000 00 MHz	18.000	17.997	0.060	-5 %	0.023	
13.000 000 00 MHz	18.000	17.998	0.060	-3 %	0.029	
20.000 000 00 MHz	18.000	18.000	0.060	1 %	0.029	
30.000 000 00 MHz	18.000	17.999	0.060	-1 %	0.029	
50.000 000 00 MHz	18.000	18.000	0.060	0 %	0.029	
75.000 000 00 MHz	18.000	18.003	0.060	5 %	0.029	
100.000 000 00 MHz	18.000	18.008	0.060	14 %	0.029	
125.000 000 00 MHz	18.000	18.005	0.060	8 %	0.029	
200 Hz	16.000	15.997	0.060	-5 %	0.002	
1.000 000 kHz	16.000	15.997	0.060	-6 %	0.002	
20.000 000 kHz	16.000	15.993	0.060	-12 %	0.002	
100.000 000 kHz	16.000	16.001	0.060	2 %	0.002	
300.000 000 kHz	16.000	16.008	0.060	14 %	0.023	
1.000 000 00 MHz	16.000	15.993	0.060	-11 %	0.023	
3.000 000 00 MHz	16.000	15.990	0.060	-17 %	0.023	
10.000 000 00 MHz	16.000	15.996	0.060	-7 %	0.023	
13.000 000 00 MHz	16.000	15.997	0.060	-5 %	0.029	
20.000 000 00 MHz	16.000	15.999	0.060	-2 %	0.029	
30.000 000 00 MHz	16.000	15.998	0.060	-4 %	0.029	
50.000 000 00 MHz	16.000	15.998	0.060	-4 %	0.029	
75.000 000 00 MHz	16.000	15.999	0.060	-1 %	0.029	
100.000 000 00 MHz	16.000	16.006	0.060	10 %	0.029	
125.000 000 00 MHz	16.000	16.001	0.060	2 %	0.029	

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
200 Hz	10.000	9.996	0.060	-7 %	0.002	
1.000 000 kHz	10.000	9.995	0.060	-8 %	0.002	
20.000 000 kHz	10.000	9.993	0.060	-12 %	0.002	
100.000 000 kHz	10.000	9.999	0.060	-1 %	0.002	
300.000 000 kHz	10.000	10.010	0.060	17 %	0.020	
1.000 000 00 MHz	10.000	10.002	0.060	3 %	0.020	
3.000 000 00 MHz	10.000	9.994	0.060	-10 %	0.020	
10.000 000 00 MHz	10.000	9.996	0.060	-6 %	0.020	
13.000 000 00 MHz	10.000	9.996	0.060	-7 %	0.027	
20.000 000 00 MHz	10.000	9.999	0.060	-2 %	0.027	
30.000 000 00 MHz	10.000	9.996	0.060	-7 %	0.027	
50.000 000 00 MHz	10.000	9.996	0.060	-7 %	0.027	
75.000 000 00 MHz	10.000	9.997	0.060	-5 %	0.027	
100.000 000 00 MHz	10.000	10.001	0.060	2 %	0.027	
125.000 000 00 MHz	10.000	10.000	0.060	0 %	0.027	
150.000 000 00 MHz	10.000	9.998	0.150	-1 %	0.029	
250.000 000 00 MHz	10.000	9.995	0.150	-3 %	0.029	
300.000 000 00 MHz	10.000	10.002	0.150	1 %	0.029	
354.000 000 00 MHz	10.000	10.000	0.250	0 %	0.044	
454.000 000 00 MHz	10.000	9.988	0.250	-5 %	0.044	
500.000 000 00 MHz	10.000	10.012	0.250	5 %	0.044	
624.999 999 99 MHz	10.000	10.005	0.250	2 %	0.044	
847.333 333 32 MHz	10.000	9.989	0.250	-5 %	0.044	
1.000 000 000 0 GHz	10.000	10.008	0.250	3 %	0.044	
1.100 000 000 0 GHz	10.000	10.020	0.250	8 %	0.064	
1.250 000 000 0 GHz	10.000	10.008	0.250	3 %	0.064	
1.300 000 000 0 GHz	10.000	10.001	0.250	0 %	0.064	
1.400 000 000 0 GHz	10.000	10.008	0.250	3 %	0.064	

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
200 Hz	7.000	6.998	0.060	-4 %	0.002	
1.000 000 kHz	7.000	6.998	0.060	-4 %	0.002	
20.000 000 kHz	7.000	6.995	0.060	-8 %	0.002	
100.000 000 kHz	7.000	7.000	0.060	0 %	0.002	
300.000 000 kHz	7.000	7.011	0.060	18 %	0.020	
1.000 000 00 MHz	7.000	7.004	0.060	7 %	0.020	
3.000 000 00 MHz	7.000	7.001	0.060	1 %	0.020	
10.000 000 00 MHz	7.000	6.996	0.060	-7 %	0.020	
13.000 000 00 MHz	7.000	6.995	0.060	-8 %	0.027	
20.000 000 00 MHz	7.000	6.997	0.060	-5 %	0.027	
30.000 000 00 MHz	7.000	6.995	0.060	-9 %	0.027	
50.000 000 00 MHz	7.000	6.994	0.060	-10 %	0.027	
75.000 000 00 MHz	7.000	6.994	0.060	-9 %	0.027	
100.000 000 00 MHz	7.000	7.000	0.060	-1 %	0.027	
125.000 000 00 MHz	7.000	7.001	0.060	1 %	0.027	
150.000 000 00 MHz	7.000	6.998	0.150	-1 %	0.029	
250.000 000 00 MHz	7.000	6.995	0.150	-3 %	0.029	
300.000 000 00 MHz	7.000	7.000	0.150	0 %	0.029	
354.000 000 00 MHz	7.000	6.998	0.250	-1 %	0.044	
454.000 000 00 MHz	7.000	6.987	0.250	-5 %	0.044	
500.000 000 00 MHz	7.000	7.011	0.250	4 %	0.044	
624.999 999 99 MHz	7.000	7.003	0.250	1 %	0.044	
847.333 333 32 MHz	7.000	6.990	0.250	-4 %	0.044	
1.000 000 000 0 GHz	7.000	7.008	0.250	3 %	0.044	
1.100 000 000 0 GHz	7.000	7.019	0.250	8 %	0.064	
1.250 000 000 0 GHz	7.000	7.012	0.250	5 %	0.064	
1.300 000 000 0 GHz	7.000	7.010	0.250	4 %	0.064	
1.400 000 000 0 GHz	7.000	7.009	0.250	4 %	0.064	
1.500 000 000 0 GHz	7.000	7.035	0.300	12 %	0.068	
1.707 449 105 0 GHz	7.000	7.016	0.300	5 %	0.068	
1.900 000 000 0 GHz	7.000	6.994	0.300	-2 %	0.068	
2.000 000 000 0 GHz	7.000	7.009	0.300	3 %	0.068	
2.200 003 000 0 GHz	7.000	7.050	0.300	17 %	0.124	
2.399 997 000 0 GHz	7.000	7.009	0.300	3 %	0.124	
2.600 003 000 0 GHz	7.000	6.975	0.300	-8 %	0.124	
2.700 000 000 0 GHz	7.000	6.976	0.300	-8 %	0.124	
2.800 003 000 0 GHz	7.000	7.006	0.300	2 %	0.124	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
200 Hz	-3.000	-3.003	0.060	-6 %	0.002	
1.000 000 kHz	-3.000	-3.003	0.060	-6 %	0.002	
20.000 000 kHz	-3.000	-3.005	0.060	-9 %	0.002	
100.000 000 kHz	-3.000	-3.004	0.060	-6 %	0.003	
300.000 000 kHz	-3.000	-2.993	0.060	12 %	0.020	
1.000 000 00 MHz	-3.000	-3.001	0.060	-1 %	0.020	
3.000 000 00 MHz	-3.000	-3.006	0.060	-10 %	0.020	
10.000 000 00 MHz	-3.000	-3.009	0.060	-15 %	0.020	
13.000 000 00 MHz	-3.000	-3.011	0.060	-18 %	0.027	
20.000 000 00 MHz	-3.000	-3.009	0.060	-14 %	0.027	
30.000 000 00 MHz	-3.000	-3.011	0.060	-19 %	0.027	
50.000 000 00 MHz	-3.000	-3.013	0.060	-21 %	0.027	
75.000 000 00 MHz	-3.000	-3.014	0.060	-23 %	0.027	
100.000 000 00 MHz	-3.000	-3.007	0.060	-12 %	0.027	
125.000 000 00 MHz	-3.000	-3.007	0.060	-12 %	0.027	
150.000 000 00 MHz	-3.000	-3.008	0.150	-5 %	0.029	
250.000 000 00 MHz	-3.000	-3.011	0.150	-7 %	0.029	
300.000 000 00 MHz	-3.000	-3.006	0.150	-4 %	0.029	
354.000 000 00 MHz	-3.000	-3.011	0.250	-4 %	0.044	
454.000 000 00 MHz	-3.000	-3.022	0.250	-9 %	0.044	
500.000 000 00 MHz	-3.000	-3.001	0.250	-1 %	0.044	
624.999 999 99 MHz	-3.000	-2.998	0.250	1 %	0.044	
847.333 333 32 MHz	-3.000	-2.990	0.250	4 %	0.044	
1.000 000 000 0 GHz	-3.000	-2.998	0.250	1 %	0.044	
1.100 000 000 0 GHz	-3.000	-3.001	0.250	0 %	0.064	
1.250 000 000 0 GHz	-3.000	-3.002	0.250	-1 %	0.064	
1.300 000 000 0 GHz	-3.000	-3.000	0.250	0 %	0.064	
1.400 000 000 0 GHz	-3.000	-2.998	0.250	1 %	0.064	
1.500 000 000 0 GHz	-3.000	-2.978	0.300	7 %	0.068	
1.707 449 105 0 GHz	-3.000	-2.996	0.300	1 %	0.068	
1.900 000 000 0 GHz	-3.000	-2.994	0.300	2 %	0.068	
2.000 000 000 0 GHz	-3.000	-2.994	0.300	2 %	0.068	
2.200 003 000 0 GHz	-3.000	-2.993	0.300	2 %	0.124	
2.399 997 000 0 GHz	-3.000	-2.983	0.300	6 %	0.124	
2.600 003 000 0 GHz	-3.000	-2.992	0.300	3 %	0.124	
2.700 000 000 0 GHz	-3.000	-2.988	0.300	4 %	0.124	
2.800 003 000 0 GHz	-3.000	-2.988	0.300	4 %	0.124	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
200 Hz	-13.000	-13.006	0.060	-9 %	0.003	
1.000 000 kHz	-13.000	-13.006	0.060	-10 %	0.003	
20.000 000 kHz	-13.000	-13.007	0.060	-12 %	0.003	
100.000 000 kHz	-13.000	-13.003	0.060	-5 %	0.003	
300.000 000 kHz	-13.000	-12.990	0.060	17 %	0.021	
1.000 000 00 MHz	-13.000	-13.001	0.060	-2 %	0.021	
3.000 000 00 MHz	-13.000	-13.003	0.060	-4 %	0.021	
10.000 000 00 MHz	-13.000	-13.005	0.060	-8 %	0.021	
13.000 000 00 MHz	-13.000	-13.007	0.060	-12 %	0.027	
20.000 000 00 MHz	-13.000	-13.006	0.060	-11 %	0.027	
30.000 000 00 MHz	-13.000	-13.009	0.060	-15 %	0.027	
50.000 000 00 MHz	-13.000	-13.009	0.060	-16 %	0.027	
75.000 000 00 MHz	-13.000	-13.009	0.060	-15 %	0.027	
100.000 000 00 MHz	-13.000	-13.004	0.060	-7 %	0.027	
125.000 000 00 MHz	-13.000	-13.005	0.060	-8 %	0.027	
150.000 000 00 MHz	-13.000	-13.004	0.150	-3 %	0.029	
250.000 000 00 MHz	-13.000	-13.009	0.150	-6 %	0.029	
300.000 000 00 MHz	-13.000	-13.002	0.150	-2 %	0.029	
354.000 000 00 MHz	-13.000	-13.004	0.250	-2 %	0.044	
454.000 000 00 MHz	-13.000	-13.016	0.250	-6 %	0.044	
500.000 000 00 MHz	-13.000	-12.992	0.250	3 %	0.044	
624.999 999 99 MHz	-13.000	-13.000	0.250	0 %	0.044	
847.333 333 32 MHz	-13.000	-13.014	0.250	-6 %	0.044	
1.000 000 000 0 GHz	-13.000	-12.999	0.250	0 %	0.044	
1.100 000 000 0 GHz	-13.000	-12.978	0.250	9 %	0.065	
1.250 000 000 0 GHz	-13.000	-12.961	0.250	16 %	0.065	
1.300 000 000 0 GHz	-13.000	-12.966	0.250	14 %	0.065	
1.400 000 000 0 GHz	-13.000	-12.994	0.250	2 %	0.065	
1.500 000 000 0 GHz	-13.000	-13.006	0.300	-2 %	0.068	
1.707 449 105 0 GHz	-13.000	-13.034	0.300	-11 %	0.068	
1.900 000 000 0 GHz	-13.000	-12.997	0.300	1 %	0.068	
2.000 000 000 0 GHz	-13.000	-12.996	0.300	1 %	0.068	
2.200 003 000 0 GHz	-13.000	-12.991	0.300	3 %	0.107	
2.399 997 000 0 GHz	-13.000	-12.995	0.300	2 %	0.107	
2.600 003 000 0 GHz	-13.000	-12.990	0.300	3 %	0.107	
2.700 000 000 0 GHz	-13.000	-12.983	0.300	6 %	0.107	
2.800 003 000 0 GHz	-13.000	-12.985	0.300	5 %	0.107	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
200 Hz	-23.000	-23.007	0.060	-12 %	0.003	
1.000 000 kHz	-23.000	-23.007	0.060	-12 %	0.003	
20.000 000 kHz	-23.000	-23.008	0.060	-14 %	0.003	
100.000 000 kHz	-23.000	-23.003	0.060	-4 %	0.004	
300.000 000 kHz	-23.000	-22.988	0.060	20 %	0.019	
1.000 000 00 MHz	-23.000	-23.001	0.060	-2 %	0.019	
3.000 000 00 MHz	-23.000	-23.001	0.060	-2 %	0.019	
10.000 000 00 MHz	-23.000	-23.003	0.060	-5 %	0.019	
13.000 000 00 MHz	-23.000	-23.004	0.060	-6 %	0.026	
20.000 000 00 MHz	-23.000	-23.005	0.060	-8 %	0.026	
30.000 000 00 MHz	-23.000	-23.006	0.060	-11 %	0.026	
50.000 000 00 MHz	-23.000	-23.008	0.060	-13 %	0.026	
75.000 000 00 MHz	-23.000	-23.008	0.060	-13 %	0.026	
100.000 000 00 MHz	-23.000	-23.001	0.060	-2 %	0.026	
125.000 000 00 MHz	-23.000	-23.002	0.060	-4 %	0.026	
150.000 000 00 MHz	-23.000	-22.999	0.150	0 %	0.028	
250.000 000 00 MHz	-23.000	-23.001	0.150	-1 %	0.028	
300.000 000 00 MHz	-23.000	-22.998	0.150	1 %	0.028	
354.000 000 00 MHz	-23.000	-22.998	0.250	1 %	0.043	
454.000 000 00 MHz	-23.000	-23.009	0.250	-3 %	0.043	
500.000 000 00 MHz	-23.000	-22.990	0.250	4 %	0.043	
624.999 999 99 MHz	-23.000	-22.997	0.250	1 %	0.043	
847.333 333 32 MHz	-23.000	-23.007	0.250	-3 %	0.043	
1.000 000 000 0 GHz	-23.000	-22.990	0.250	4 %	0.043	
1.100 000 000 0 GHz	-23.000	-22.982	0.250	7 %	0.062	
1.250 000 000 0 GHz	-23.000	-22.970	0.250	12 %	0.062	
1.300 000 000 0 GHz	-23.000	-22.971	0.250	11 %	0.062	
1.400 000 000 0 GHz	-23.000	-22.992	0.250	3 %	0.062	
1.500 000 000 0 GHz	-23.000	-22.972	0.300	9 %	0.067	
1.707 449 105 0 GHz	-23.000	-23.001	0.300	0 %	0.067	
1.900 000 000 0 GHz	-23.000	-22.995	0.300	2 %	0.067	
2.000 000 000 0 GHz	-23.000	-22.992	0.300	3 %	0.067	
2.200 003 000 0 GHz	-23.000	-22.977	0.300	8 %	0.106	
2.399 997 000 0 GHz	-23.000	-22.993	0.300	2 %	0.106	
2.600 003 000 0 GHz	-23.000	-22.960	0.300	13 %	0.106	
2.700 000 000 0 GHz	-23.000	-22.972	0.300	9 %	0.106	
2.800 003 000 0 GHz	-23.000	-22.974	0.300	9 %	0.106	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

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200 Hz	-33.000	-33.007	0.150	-5 %	0.004	
1.000 000 kHz	-33.000	-33.007	0.150	-5 %	0.004	
20.000 000 kHz	-33.000	-33.009	0.150	-6 %	0.004	
100.000 000 kHz	-33.000	-33.002	0.150	-2 %	0.005	
300.000 000 kHz	-33.000	-32.990	0.150	7 %	0.019	
1.000 000 00 MHz	-33.000	-33.003	0.150	-2 %	0.019	
3.000 000 00 MHz	-33.000	-33.002	0.150	-2 %	0.019	
10.000 000 00 MHz	-33.000	-33.003	0.150	-2 %	0.019	
13.000 000 00 MHz	-33.000	-33.004	0.150	-3 %	0.026	
20.000 000 00 MHz	-33.000	-33.004	0.150	-3 %	0.026	
30.000 000 00 MHz	-33.000	-33.005	0.150	-3 %	0.026	
50.000 000 00 MHz	-33.000	-33.006	0.150	-4 %	0.026	
75.000 000 00 MHz	-33.000	-33.007	0.150	-5 %	0.026	
100.000 000 00 MHz	-33.000	-33.001	0.150	-1 %	0.026	
125.000 000 00 MHz	-33.000	-33.003	0.150	-2 %	0.026	
150.000 000 00 MHz	-33.000	-32.999	0.150	1 %	0.028	
250.000 000 00 MHz	-33.000	-33.001	0.150	-1 %	0.028	
300.000 000 00 MHz	-33.000	-32.998	0.150	1 %	0.028	
354.000 000 00 MHz	-33.000	-33.000	0.500	0 %	0.043	
454.000 000 00 MHz	-33.000	-33.017	0.500	-3 %	0.043	
500.000 000 00 MHz	-33.000	-32.996	0.500	1 %	0.043	
624.999 999 99 MHz	-33.000	-32.997	0.500	1 %	0.043	
847.333 333 32 MHz	-33.000	-33.005	0.500	-1 %	0.043	
1.000 000 000 0 GHz	-33.000	-32.996	0.500	1 %	0.043	
1.100 000 000 0 GHz	-33.000	-32.987	0.500	3 %	0.062	
1.250 000 000 0 GHz	-33.000	-32.977	0.500	5 %	0.062	
1.300 000 000 0 GHz	-33.000	-32.979	0.500	4 %	0.062	
1.400 000 000 0 GHz	-33.000	-32.993	0.500	1 %	0.062	
1.500 000 000 0 GHz	-33.000	-32.984	0.500	3 %	0.067	
1.707 449 105 0 GHz	-33.000	-33.008	0.500	-2 %	0.067	
1.900 000 000 0 GHz	-33.000	-32.988	0.500	2 %	0.067	
2.000 000 000 0 GHz	-33.000	-32.981	0.500	4 %	0.067	
2.200 003 000 0 GHz	-33.000	-32.968	0.500	6 %	0.106	
2.399 997 000 0 GHz	-33.000	-32.992	0.500	2 %	0.106	
2.600 003 000 0 GHz	-33.000	-32.950	0.500	10 %	0.106	
2.700 000 000 0 GHz	-33.000	-32.964	0.500	7 %	0.106	
2.800 003 000 0 GHz	-33.000	-32.975	0.500	5 %	0.106	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
200 Hz	-43.000	-43.006	0.150	-4 %	0.004	
1.000 000 kHz	-43.000	-43.006	0.150	-4 %	0.004	
20.000 000 kHz	-43.000	-43.007	0.150	-5 %	0.004	
100.000 000 kHz	-43.000	-43.002	0.150	-2 %	0.005	
300.000 000 kHz	-43.000	-42.994	0.150	4 %	0.019	
1.000 000 00 MHz	-43.000	-43.005	0.150	-3 %	0.019	
3.000 000 00 MHz	-43.000	-43.001	0.150	-1 %	0.019	
10.000 000 00 MHz	-43.000	-43.002	0.150	-1 %	0.019	
13.000 000 00 MHz	-43.000	-43.005	0.150	-3 %	0.026	
20.000 000 00 MHz	-43.000	-43.008	0.150	-5 %	0.026	
30.000 000 00 MHz	-43.000	-43.007	0.150	-4 %	0.026	
50.000 000 00 MHz	-43.000	-43.008	0.150	-5 %	0.026	
75.000 000 00 MHz	-43.000	-43.010	0.150	-6 %	0.026	
100.000 000 00 MHz	-43.000	-43.002	0.150	-1 %	0.026	
125.000 000 00 MHz	-43.000	-43.004	0.150	-3 %	0.026	
150.000 000 00 MHz	-43.000	-43.000	0.150	0 %	0.028	
250.000 000 00 MHz	-43.000	-43.003	0.150	-2 %	0.028	
300.000 000 00 MHz	-43.000	-42.998	0.150	1 %	0.028	
354.000 000 00 MHz	-43.000	-42.998	0.500	0 %	0.043	
454.000 000 00 MHz	-43.000	-43.010	0.500	-2 %	0.043	
500.000 000 00 MHz	-43.000	-42.991	0.500	2 %	0.043	
624.999 999 99 MHz	-43.000	-42.998	0.500	0 %	0.043	
847.333 333 32 MHz	-43.000	-43.007	0.500	-1 %	0.043	
1.000 000 000 0 GHz	-43.000	-42.996	0.500	1 %	0.043	
1.100 000 000 0 GHz	-43.000	-42.985	0.500	3 %	0.062	
1.250 000 000 0 GHz	-43.000	-42.974	0.500	5 %	0.062	
1.300 000 000 0 GHz	-43.000	-42.975	0.500	5 %	0.062	
1.400 000 000 0 GHz	-43.000	-42.993	0.500	1 %	0.062	
1.500 000 000 0 GHz	-43.000	-42.982	0.500	4 %	0.067	
1.707 449 105 0 GHz	-43.000	-43.011	0.500	-2 %	0.067	
1.900 000 000 0 GHz	-43.000	-42.996	0.500	1 %	0.067	
2.000 000 000 0 GHz	-43.000	-42.992	0.500	2 %	0.067	
2.200 003 000 0 GHz	-43.000	-42.972	0.500	6 %	0.106	
2.399 997 000 0 GHz	-43.000	-43.009	0.500	-2 %	0.106	
2.600 003 000 0 GHz	-43.000	-42.964	0.500	7 %	0.106	
2.700 000 000 0 GHz	-43.000	-42.981	0.500	4 %	0.106	
2.800 003 000 0 GHz	-43.000	-42.995	0.500	1 %	0.106	

Note: Specifications for frequencies >2 GHz are typical.

CERTIFICATE OF CALIBRATION

Certificate No
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FLUKE PRECISION MEASUREMENT LTD HURRICANE WAY NORWICH NORFOLK NR6 6JB UNITED KINGDOM
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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
100.000 000 kHz	-53.000	-53.025	0.150	-17 %	0.005	
300.000 000 kHz	-53.000	-53.008	0.150	-6 %	0.047	
1.000 000 00 MHz	-53.000	-53.020	0.150	-13 %	0.047	
3.000 000 00 MHz	-53.000	-53.011	0.150	-7 %	0.047	
10.000 000 00 MHz	-53.000	-53.011	0.150	-7 %	0.047	
13.000 000 00 MHz	-53.000	-53.012	0.150	-8 %	0.050	
20.000 000 00 MHz	-53.000	-53.013	0.150	-9 %	0.050	
30.000 000 00 MHz	-53.000	-53.014	0.150	-10 %	0.050	
50.000 000 00 MHz	-53.000	-53.018	0.150	-12 %	0.050	
75.000 000 00 MHz	-53.000	-53.020	0.150	-14 %	0.050	
100.000 000 00 MHz	-53.000	-53.015	0.150	-10 %	0.050	
125.000 000 00 MHz	-53.000	-53.020	0.150	-13 %	0.050	
150.000 000 00 MHz	-53.000	-53.017	0.150	-11 %	0.052	
250.000 000 00 MHz	-53.000	-53.024	0.150	-16 %	0.052	
300.000 000 00 MHz	-53.000	-53.020	0.150	-13 %	0.052	
354.000 000 00 MHz	-53.000	-53.019	0.500	-4 %	0.061	
454.000 000 00 MHz	-53.000	-53.031	0.500	-6 %	0.061	
500.000 000 00 MHz	-53.000	-53.009	0.500	-2 %	0.061	
624.999 999 99 MHz	-53.000	-53.014	0.500	-3 %	0.061	
847.333 333 32 MHz	-53.000	-53.027	0.500	-5 %	0.061	
1.000 000 000 0 GHz	-53.000	-53.009	0.500	-2 %	0.061	
1.100 000 000 0 GHz	-53.000	-52.995	0.500	1 %	0.089	
1.250 000 000 0 GHz	-53.000	-52.988	0.500	2 %	0.089	
1.300 000 000 0 GHz	-53.000	-52.983	0.500	3 %	0.089	
1.400 000 000 0 GHz	-53.000	-53.004	0.500	-1 %	0.089	
1.500 000 000 0 GHz	-53.000	-52.993	0.500	1 %	0.090	
1.707 449 105 0 GHz	-53.000	-53.019	0.500	-4 %	0.090	
1.900 000 000 0 GHz	-53.000	-53.002	0.500	0 %	0.090	
2.000 000 000 0 GHz	-53.000	-52.998	0.500	0 %	0.090	
2.200 003 000 0 GHz	-53.000	-52.979	0.500	4 %	0.122	
2.399 997 000 0 GHz	-53.000	-53.032	0.500	-6 %	0.122	
2.600 003 000 0 GHz	-53.000	-52.972	0.500	6 %	0.122	
2.700 000 000 0 GHz	-53.000	-52.991	0.500	2 %	0.122	
2.800 003 000 0 GHz	-53.000	-53.010	0.500	-2 %	0.122	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
100.000 000 kHz	-63.000	-63.023	0.200	-12 %	0.045	
300.000 000 kHz	-63.000	-63.015	0.200	-8 %	0.047	
1.000 000 00 MHz	-63.000	-63.025	0.200	-13 %	0.047	
3.000 000 00 MHz	-63.000	-63.020	0.200	-10 %	0.047	
10.000 000 00 MHz	-63.000	-63.021	0.200	-10 %	0.047	
13.000 000 00 MHz	-63.000	-63.024	0.200	-12 %	0.050	
20.000 000 00 MHz	-63.000	-63.019	0.200	-9 %	0.050	
30.000 000 00 MHz	-63.000	-63.027	0.200	-14 %	0.050	
50.000 000 00 MHz	-63.000	-63.023	0.200	-12 %	0.050	
75.000 000 00 MHz	-63.000	-63.025	0.200	-12 %	0.050	
100.000 000 00 MHz	-63.000	-63.009	0.200	-4 %	0.050	
125.000 000 00 MHz	-63.000	-63.014	0.200	-7 %	0.050	
150.000 000 00 MHz	-63.000	-63.013	0.200	-7 %	0.052	
250.000 000 00 MHz	-63.000	-63.019	0.200	-9 %	0.052	
300.000 000 00 MHz	-63.000	-63.015	0.200	-8 %	0.052	
354.000 000 00 MHz	-63.000	-63.015	0.500	-3 %	0.061	
454.000 000 00 MHz	-63.000	-63.027	0.500	-5 %	0.061	
500.000 000 00 MHz	-63.000	-63.008	0.500	-2 %	0.061	
624.999 999 99 MHz	-63.000	-63.018	0.500	-4 %	0.061	
847.333 333 32 MHz	-63.000	-63.027	0.500	-5 %	0.061	
1.000 000 000 0 GHz	-63.000	-63.020	0.500	-4 %	0.061	
1.250 000 000 0 GHz	-63.000	-63.001	0.500	0 %	0.089	
1.300 000 000 0 GHz	-63.000	-62.992	0.500	2 %	0.089	
1.400 000 000 0 GHz	-63.000	-63.011	0.500	-2 %	0.089	
1.500 000 000 0 GHz	-63.000	-63.007	0.500	-1 %	0.090	
1.707 449 105 0 GHz	-63.000	-63.019	0.500	-4 %	0.090	
1.900 000 000 0 GHz	-63.000	-63.007	0.500	-1 %	0.090	
2.000 000 000 0 GHz	-63.000	-63.002	0.500	0 %	0.090	
2.200 003 000 0 GHz	-63.000	-62.990	0.500	2 %	0.122	
2.399 997 000 0 GHz	-63.000	-63.056	0.500	-11 %	0.122	
2.600 003 000 0 GHz	-63.000	-62.996	0.500	1 %	0.122	
2.700 000 000 0 GHz	-63.000	-62.999	0.500	0 %	0.122	
2.800 003 000 0 GHz	-63.000	-63.014	0.500	-3 %	0.122	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
100.000 000 kHz	-72.000	-71.994	0.200	3 %	0.046	
300.000 000 kHz	-72.000	-71.972	0.200	14 %	0.049	
1.000 000 00 MHz	-72.000	-72.001	0.200	0 %	0.049	
3.000 000 00 MHz	-72.000	-72.000	0.200	0 %	0.049	
10.000 000 00 MHz	-72.000	-71.997	0.200	1 %	0.049	
13.000 000 00 MHz	-72.000	-72.000	0.200	0 %	0.052	
20.000 000 00 MHz	-72.000	-72.004	0.200	-2 %	0.052	
30.000 000 00 MHz	-72.000	-71.989	0.200	6 %	0.052	
50.000 000 00 MHz	-72.000	-72.006	0.200	-3 %	0.052	
75.000 000 00 MHz	-72.000	-72.025	0.200	-13 %	0.052	
100.000 000 00 MHz	-72.000	-72.024	0.200	-12 %	0.052	
125.000 000 00 MHz	-72.000	-71.997	0.200	2 %	0.052	
150.000 000 00 MHz	-72.000	-71.999	0.200	0 %	0.053	
250.000 000 00 MHz	-72.000	-72.025	0.200	-13 %	0.053	
300.000 000 00 MHz	-72.000	-72.005	0.200	-3 %	0.053	
354.000 000 00 MHz	-72.000	-72.069	0.500	-14 %	0.063	
454.000 000 00 MHz	-72.000	-72.021	0.500	-4 %	0.063	
500.000 000 00 MHz	-72.000	-72.006	0.500	-1 %	0.063	
624.999 999 99 MHz	-72.000	-71.970	0.500	6 %	0.063	
847.333 333 32 MHz	-72.000	-71.978	0.500	4 %	0.063	
1.000 000 000 0 GHz	-72.000	-71.993	0.500	1 %	0.063	
1.250 000 000 0 GHz	-72.000	-72.061	0.500	-12 %	0.090	
1.300 000 000 0 GHz	-72.000	-72.040	0.500	-8 %	0.090	
1.400 000 000 0 GHz	-72.000	-71.998	0.500	0 %	0.090	
1.500 000 000 0 GHz	-72.000	-72.150	0.500	-30 %	0.091	
1.707 449 105 0 GHz	-72.000	-72.335	0.500	-67 %	0.091	
1.900 000 000 0 GHz	-72.000	-71.964	0.500	7 %	0.091	
2.000 000 000 0 GHz	-72.000	-71.991	0.500	2 %	0.091	
2.200 003 000 0 GHz	-72.000	-72.071	0.500	-14 %	0.123	
2.399 997 000 0 GHz	-72.000	-71.978	0.500	4 %	0.123	
2.600 003 000 0 GHz	-72.000	-71.985	0.500	3 %	0.123	
2.700 000 000 0 GHz	-72.000	-71.884	0.500	23 %	0.123	
2.800 003 000 0 GHz	-72.000	-71.845	0.500	31 %	0.123	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
100.000 000 kHz	-81.000	-81.020	0.700	-3 %	0.067	
300.000 000 kHz	-81.000	-80.998	0.700	0 %	0.069	
1.000 000 00 MHz	-81.000	-81.012	0.700	-2 %	0.069	
3.000 000 00 MHz	-81.000	-81.000	0.700	0 %	0.069	
10.000 000 00 MHz	-81.000	-81.014	0.700	-2 %	0.069	
13.000 000 00 MHz	-81.000	-81.013	0.700	-2 %	0.071	
20.000 000 00 MHz	-81.000	-81.005	0.700	-1 %	0.071	
30.000 000 00 MHz	-81.000	-81.002	0.700	0 %	0.071	
50.000 000 00 MHz	-81.000	-81.020	0.700	-3 %	0.071	
75.000 000 00 MHz	-81.000	-81.046	0.700	-7 %	0.071	
100.000 000 00 MHz	-81.000	-81.022	0.700	-3 %	0.071	
125.000 000 00 MHz	-81.000	-81.012	0.700	-2 %	0.071	
150.000 000 00 MHz	-81.000	-81.009	0.700	-1 %	0.072	
250.000 000 00 MHz	-81.000	-81.059	0.700	-8 %	0.072	
300.000 000 00 MHz	-81.000	-81.029	0.700	-4 %	0.072	
354.000 000 00 MHz	-81.000	-81.106	1.000	-11 %	0.079	
454.000 000 00 MHz	-81.000	-81.040	1.000	-4 %	0.079	
500.000 000 00 MHz	-81.000	-81.026	1.000	-3 %	0.079	
624.999 999 99 MHz	-81.000	-80.997	1.000	0 %	0.079	
847.333 333 32 MHz	-81.000	-80.997	1.000	0 %	0.079	
1.000 000 000 0 GHz	-81.000	-81.032	1.000	-3 %	0.079	
1.250 000 000 0 GHz	-81.000	-81.081	1.000	-8 %	0.123	
1.300 000 000 0 GHz	-81.000	-81.060	1.000	-6 %	0.123	
1.400 000 000 0 GHz	-81.000	-81.009	1.000	-1 %	0.123	
1.500 000 000 0 GHz	-81.000	-81.150	1.000	-15 %	0.124	
1.707 449 105 0 GHz	-81.000	-81.344	1.000	-34 %	0.124	
1.900 000 000 0 GHz	-81.000	-80.965	1.000	3 %	0.124	
2.000 000 000 0 GHz	-81.000	-80.980	1.000	2 %	0.124	
2.200 003 000 0 GHz	-81.000	-81.063	1.000	-6 %	0.149	
2.399 997 000 0 GHz	-81.000	-80.976	1.000	2 %	0.149	
2.600 003 000 0 GHz	-81.000	-81.066	1.000	-7 %	0.149	
2.700 000 000 0 GHz	-81.000	-80.954	1.000	5 %	0.149	
2.800 003 000 0 GHz	-81.000	-80.985	1.000	2 %	0.149	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
100.000 000 kHz	-91.000	-90.973	0.700	4 %	0.070	
300.000 000 kHz	-91.000	-90.987	0.700	2 %	0.072	
1.000 000 00 MHz	-91.000	-90.990	0.700	1 %	0.072	
3.000 000 00 MHz	-91.000	-90.995	0.700	1 %	0.072	
10.000 000 00 MHz	-91.000	-91.010	0.700	-1 %	0.072	
13.000 000 00 MHz	-91.000	-90.967	0.700	5 %	0.074	
20.000 000 00 MHz	-91.000	-90.997	0.700	0 %	0.074	
30.000 000 00 MHz	-91.000	-90.992	0.700	1 %	0.074	
50.000 000 00 MHz	-91.000	-91.006	0.700	-1 %	0.074	
75.000 000 00 MHz	-91.000	-91.031	0.700	-4 %	0.074	
100.000 000 00 MHz	-91.000	-91.033	0.700	-5 %	0.074	
125.000 000 00 MHz	-91.000	-91.026	0.700	-4 %	0.074	
150.000 000 00 MHz	-91.000	-91.017	0.700	-2 %	0.075	
250.000 000 00 MHz	-91.000	-91.018	0.700	-3 %	0.075	
300.000 000 00 MHz	-91.000	-91.000	0.700	0 %	0.075	
354.000 000 00 MHz	-91.000	-91.060	1.000	-6 %	0.082	
454.000 000 00 MHz	-91.000	-90.994	1.000	1 %	0.082	
500.000 000 00 MHz	-91.000	-90.997	1.000	0 %	0.082	
624.999 999 99 MHz	-91.000	-90.967	1.000	3 %	0.082	
847.333 333 32 MHz	-91.000	-90.950	1.000	5 %	0.082	
1.000 000 000 0 GHz	-91.000	-90.982	1.000	2 %	0.082	
1.250 000 000 0 GHz	-91.000	-91.079	1.000	-8 %	0.125	
1.300 000 000 0 GHz	-91.000	-91.054	1.000	-5 %	0.125	
1.400 000 000 0 GHz	-91.000	-90.992	1.000	1 %	0.125	
1.500 000 000 0 GHz	-91.000	-91.138	1.000	-14 %	0.126	
1.707 449 105 0 GHz	-91.000	-91.348	1.000	-35 %	0.126	
1.900 000 000 0 GHz	-91.000	-90.968	1.000	3 %	0.126	
2.000 000 000 0 GHz	-91.000	-90.968	1.000	3 %	0.126	
2.200 003 000 0 GHz	-91.000	-91.113	1.000	-11 %	0.151	
2.399 997 000 0 GHz	-91.000	-90.984	1.000	2 %	0.151	
2.600 003 000 0 GHz	-91.000	-91.015	1.000	-1 %	0.151	
2.700 000 000 0 GHz	-91.000	-90.885	1.000	12 %	0.151	
2.800 003 000 0 GHz	-91.000	-90.987	1.000	1 %	0.151	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
10.000 000 00 MHz	-101.000	-100.964	1.500	2 %	0.126	
13.000 000 00 MHz	-101.000	-100.967	1.500	2 %	0.127	
20.000 000 00 MHz	-101.000	-100.971	1.500	2 %	0.127	
30.000 000 00 MHz	-101.000	-100.965	1.500	2 %	0.127	
50.000 000 00 MHz	-101.000	-100.999	1.500	0 %	0.127	
75.000 000 00 MHz	-101.000	-101.021	1.500	-1 %	0.127	
100.000 000 00 MHz	-101.000	-101.012	1.500	-1 %	0.127	
125.000 000 00 MHz	-101.000	-100.994	1.500	0 %	0.127	
150.000 000 00 MHz	-101.000	-100.987	1.500	1 %	0.214	
250.000 000 00 MHz	-101.000	-101.032	1.500	-2 %	0.214	
300.000 000 00 MHz	-101.000	-100.995	1.500	0 %	0.214	
354.000 000 00 MHz	-101.000	-101.064	1.500	-4 %	0.217	
454.000 000 00 MHz	-101.000	-100.988	1.500	1 %	0.217	
500.000 000 00 MHz	-101.000	-100.976	1.500	2 %	0.217	
624.999 999 99 MHz	-101.000	-100.929	1.500	5 %	0.217	
847.333 333 32 MHz	-101.000	-100.944	1.500	4 %	0.217	
1.000 000 000 0 GHz	-101.000	-100.991	1.500	1 %	0.217	
1.250 000 000 0 GHz	-101.000	-101.084	1.500	-6 %	0.221	
1.300 000 000 0 GHz	-101.000	-101.039	1.500	-3 %	0.221	
1.400 000 000 0 GHz	-101.000	-100.998	1.500	0 %	0.221	
1.500 000 000 0 GHz	-101.000	-101.142	1.500	-9 %	0.222	
1.707 449 105 0 GHz	-101.000	-101.337	1.500	-22 %	0.222	
1.900 000 000 0 GHz	-101.000	-100.933	1.500	4 %	0.222	
2.000 000 000 0 GHz	-101.000	-100.948	1.500	3 %	0.222	
2.200 003 000 0 GHz	-101.000	-101.084	1.500	-6 %	0.238	
2.399 997 000 0 GHz	-101.000	-100.957	1.500	3 %	0.238	
2.600 003 000 0 GHz	-101.000	-100.946	1.500	4 %	0.238	
2.700 000 000 0 GHz	-101.000	-100.873	1.500	8 %	0.238	
2.800 003 000 0 GHz	-101.000	-100.868	1.500	9 %	0.238	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
10.000 000 00 MHz	-111.000	-110.991	1.500	1 %	0.247	
13.000 000 00 MHz	-111.000	-110.939	1.500	4 %	0.248	
20.000 000 00 MHz	-111.000	-110.985	1.500	1 %	0.248	
30.000 000 00 MHz	-111.000	-110.954	1.500	3 %	0.248	
50.000 000 00 MHz	-111.000	-111.005	1.500	0 %	0.248	
75.000 000 00 MHz	-111.000	-110.982	1.500	1 %	0.248	
100.000 000 00 MHz	-111.000	-111.021	1.500	-1 %	0.248	
125.000 000 00 MHz	-111.000	-111.020	1.500	-1 %	0.248	
150.000 000 00 MHz	-111.000	-111.003	1.500	0 %	0.438	
250.000 000 00 MHz	-111.000	-110.999	1.500	0 %	0.438	
300.000 000 00 MHz	-111.000	-111.001	1.500	0 %	0.438	
354.000 000 00 MHz	-111.000	-111.033	1.500	-2 %	0.439	
454.000 000 00 MHz	-111.000	-110.988	1.500	1 %	0.439	
500.000 000 00 MHz	-111.000	-110.993	1.500	0 %	0.439	
624.999 999 99 MHz	-111.000	-110.915	1.500	6 %	0.439	
847.333 333 32 MHz	-111.000	-110.912	1.500	6 %	0.439	
1.000 000 000 0 GHz	-111.000	-110.956	1.500	3 %	0.439	
1.250 000 000 0 GHz	-111.000	-111.069	1.500	-5 %	0.453	
1.300 000 000 0 GHz	-111.000	-111.016	1.500	-1 %	0.453	
1.400 000 000 0 GHz	-111.000	-110.980	1.500	1 %	0.453	
1.500 000 000 0 GHz	-111.000	-111.130	1.500	-9 %	0.454	
1.707 449 105 0 GHz	-111.000	-111.308	1.500	-21 %	0.454	
1.900 000 000 0 GHz	-111.000	-110.967	1.500	2 %	0.454	
2.000 000 000 0 GHz	-111.000	-110.956	1.500	3 %	0.454	
2.200 003 000 0 GHz	-111.000	-111.103	1.500	-7 %	0.462	
2.399 997 000 0 GHz	-111.000	-110.982	1.500	1 %	0.462	
2.600 003 000 0 GHz	-111.000	-111.004	1.500	0 %	0.462	
2.700 000 000 0 GHz	-111.000	-110.536	1.500	31 %	0.462	
2.800 003 000 0 GHz	-111.000	-110.929	1.500	5 %	0.462	

Note: Specifications for frequencies >2 GHz are typical.

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Sine Level cont:

Instrument Settings Frequency	Output Level (dBm)	Measured Value (dBm)	Spec Limit (±dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
10.000 000 00 MHz	-121.000	-120.996	1.500	0 %	0.248	
13.000 000 00 MHz	-121.000	-121.025	1.500	-2 %	0.249	
20.000 000 00 MHz	-121.000	-120.917	1.500	6 %	0.249	
30.000 000 00 MHz	-121.000	-120.908	1.500	6 %	0.249	
50.000 000 00 MHz	-121.000	-120.934	1.500	4 %	0.249	
75.000 000 00 MHz	-121.000	-120.957	1.500	3 %	0.249	
100.000 000 00 MHz	-121.000	-121.023	1.500	-2 %	0.249	
125.000 000 00 MHz	-121.000	-121.031	1.500	-2 %	0.249	
150.000 000 00 MHz	-121.000	-120.941	1.500	4 %	0.439	
250.000 000 00 MHz	-121.000	-121.041	1.500	-3 %	0.439	
300.000 000 00 MHz	-121.000	-120.974	1.500	2 %	0.439	
354.000 000 00 MHz	-121.000	-121.088	1.500	-6 %	0.440	
454.000 000 00 MHz	-121.000	-120.947	1.500	4 %	0.440	
500.000 000 00 MHz	-121.000	-121.042	1.500	-3 %	0.440	
624.999 999 99 MHz	-121.000	-120.992	1.500	1 %	0.440	
847.333 333 32 MHz	-121.000	-120.942	1.500	4 %	0.440	
1.000 000 000 0 GHz	-121.000	-120.998	1.500	0 %	0.440	
1.250 000 000 0 GHz	-121.000	-121.320	1.500	-21 %	0.453	
1.300 000 000 0 GHz	-121.000	-121.069	1.500	-5 %	0.453	
1.400 000 000 0 GHz	-121.000	-120.933	1.500	4 %	0.453	
1.500 000 000 0 GHz	-121.000	-121.132	1.500	-9 %	0.454	
1.707 449 105 0 GHz	-121.000	-121.288	1.500	-19 %	0.454	
1.900 000 000 0 GHz	-121.000	-120.867	1.500	9 %	0.454	
2.000 000 000 0 GHz	-121.000	-120.941	1.500	4 %	0.454	
2.200 003 000 0 GHz	-121.000	-121.175	1.500	-12 %	0.462	
2.399 997 000 0 GHz	-121.000	-120.957	1.500	3 %	0.462	
2.600 003 000 0 GHz	-121.000	-120.950	1.500	3 %	0.462	
2.700 000 000 0 GHz	-121.000	-121.603	1.500	-40 %	0.462	
2.800 003 000 0 GHz	-121.000	-120.846	1.500	10 %	0.462	

Note: Specifications for frequencies >2 GHz are typical.

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75 Ω Leveling Head - Attenuation Accuracy **

Instrument Configuration: Mode, Sine, Ext Freq Reference, 75 Ω Leveling Head Connected
Attenuation values are reported relative to an output setting of +10 dBm

Instrument Settings Frequency	Output Level Setting (dBm)	Measured Attenuation (dB)	Attenuation Error (dB)	Spec Limit (\pm dB)	Error as a % of Spec	Expanded Uncertainty (dB)	Compliance With Spec
10.050 MHz	10.000	0.000	0.000			(Reference)	
10.050 MHz	7.000	3.000	0.000	0.035	1 %	0.015	
10.050 MHz	-3.000	13.005	0.005	0.035	15 %	0.018	
10.050 MHz	-13.000	23.001	0.001	0.035	3 %	0.018	
10.050 MHz	-23.000	32.999	-0.001	0.035	-1 %	0.018	
10.050 MHz	-33.000	43.000	0.000	0.050	0 %	0.018	
10.050 MHz	-43.000	52.999	-0.001	0.050	-3 %	0.018	
10.050 MHz	-53.000	63.007	0.007	0.050	14 %	0.037	
10.050 MHz	-63.000	73.017	0.017	0.150	11 %	0.037	
10.050 MHz	-72.000	81.994	-0.006	0.150	-4 %	0.061	
10.050 MHz	-81.000	91.010	0.010	0.150	7 %	0.065	
10.050 MHz	-91.000	101.006	0.006	0.300	2 %	0.067	
10.050 MHz	-101.000	110.960	-0.040	0.300	-13 %	0.067	
50.050 MHz	10.000	0.000	0.000			(Reference)	
50.050 MHz	7.000	3.001	0.001	0.035	4 %	0.017	
50.050 MHz	-3.000	13.008	0.008	0.035	24 %	0.019	
50.050 MHz	-13.000	23.005	0.005	0.035	14 %	0.019	
50.050 MHz	-23.000	33.003	0.003	0.035	10 %	0.020	
50.050 MHz	-33.000	43.002	0.002	0.050	4 %	0.020	
50.050 MHz	-43.000	53.004	0.004	0.050	7 %	0.020	
50.050 MHz	-53.000	63.013	0.013	0.050	27 %	0.038	
50.050 MHz	-63.000	73.019	0.019	0.150	12 %	0.038	
50.050 MHz	-72.000	82.002	0.002	0.150	1 %	0.065	
50.050 MHz	-81.000	91.016	0.016	0.150	11 %	0.068	
50.050 MHz	-91.000	101.002	0.002	0.300	1 %	0.068	
50.050 MHz	-101.000	110.995	-0.005	0.300	-2 %	0.068	
100.050 MHz	10.000	0.000	0.000			(Reference)	
100.050 MHz	7.000	3.001	0.001	0.035	4 %	0.017	
100.050 MHz	-3.000	13.008	0.008	0.035	24 %	0.019	
100.050 MHz	-13.000	23.005	0.005	0.035	14 %	0.019	
100.050 MHz	-23.000	33.002	0.002	0.035	7 %	0.020	
100.050 MHz	-33.000	43.002	0.002	0.050	4 %	0.020	
100.050 MHz	-43.000	53.003	0.003	0.050	5 %	0.020	
100.050 MHz	-53.000	63.016	0.016	0.050	32 %	0.038	
100.050 MHz	-63.000	73.010	0.010	0.150	7 %	0.038	
100.050 MHz	-72.000	82.025	0.025	0.150	17 %	0.065	
100.050 MHz	-81.000	91.023	0.023	0.150	15 %	0.068	
100.050 MHz	-91.000	101.034	0.034	0.300	11 %	0.068	
100.050 MHz	-101.000	111.013	0.013	0.300	4 %	0.068	

** Refers to a parameter that is not UKAS accredited.

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75 Ω Leveling Head Output VSWR

Instrument Configuration: Mode, Sine, Ext Freq Reference, 50 Ω Leveling Head Connected

Instrument Settings		VSWR at UUT Output Level Setting	Spec Limit	Expanded Uncertainty (See Note) (\pm VSWR)	Compliance With Spec
Frequency	Output Level (dBm)				
1.000 MHz	7	1.013	1.100	0.040	
10.000 MHz	7	1.008	1.100	0.040	
60.000 MHz	7	1.007	1.100	0.030	
125.000 MHz	7	1.025	1.100	0.030	
200.000 MHz	7	1.035	1.100	0.030	
280.000 MHz	7	1.043	1.100	0.030	
320.000 MHz	7	1.046	1.100	0.030	
400.000 MHz	7	1.055	1.100	0.030	
480.000 MHz	7	1.071	1.100	0.030	
560.000 MHz	7	1.087	1.200	0.030	
600.000 MHz	7	1.093	1.200	0.030	
680.000 MHz	7	1.096	1.200	0.030	
760.000 MHz	7	1.089	1.200	0.030	
840.000 MHz	7	1.074	1.200	0.030	
920.000 MHz	7	1.067	1.200	0.030	
1000.000 MHz	7	1.085	1.200	0.030	
1080.000 MHz	7	1.119	1.300	0.030	
1160.000 MHz	7	1.150	1.300	0.030	
1200.000 MHz	7	1.160	1.300	0.030	
1280.000 MHz	7	1.170	1.300	0.030	
1320.000 MHz	7	1.169	1.300	0.060	
1400.000 MHz	7	1.154	1.300	0.060	
1480.000 MHz	7	1.132	1.300	0.060	
1560.000 MHz	7	1.121	1.300	0.060	
1640.000 MHz	7	1.137	1.300	0.060	
1720.000 MHz	7	1.168	1.300	0.060	
1760.000 MHz	7	1.188	1.300	0.060	
1800.000 MHz	7	1.207	1.300	0.060	
1880.000 MHz	7	1.231	1.300	0.060	
1920.000 MHz	7	1.237	1.300	0.060	
2000.000 MHz	7	1.234	1.300	0.060	

Note: The uncertainty of measurement is dependent upon the magnitude of the measured VSWR, the uncertainty shown relates to a VSWR equal to the specification limit.

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75 Ω Leveling Head Output VSWR

Instrument Configuration: Mode, Sine, Ext Freq Reference, 50 Ω Leveling Head Connected

Instrument Settings		VSWR at UUT Output Level Setting	Spec Limit	Expanded Uncertainty (See Note) (\pm VSWR)	Compliance With Spec
Frequency	Output Level (dBm)				
1.000 MHz	-3	1.013	1.100	0.040	
10.000 MHz	-3	1.008	1.100	0.040	
60.000 MHz	-3	1.005	1.100	0.030	
125.000 MHz	-3	1.018	1.100	0.030	
200.000 MHz	-3	1.031	1.100	0.030	
280.000 MHz	-3	1.043	1.100	0.030	
320.000 MHz	-3	1.049	1.100	0.030	
400.000 MHz	-3	1.060	1.100	0.030	
480.000 MHz	-3	1.070	1.100	0.030	
560.000 MHz	-3	1.077	1.200	0.030	
600.000 MHz	-3	1.080	1.200	0.030	
680.000 MHz	-3	1.084	1.200	0.030	
760.000 MHz	-3	1.085	1.200	0.030	
840.000 MHz	-3	1.086	1.200	0.030	
920.000 MHz	-3	1.089	1.200	0.030	
1000.000 MHz	-3	1.095	1.200	0.030	
1080.000 MHz	-3	1.104	1.300	0.030	
1160.000 MHz	-3	1.113	1.300	0.030	
1200.000 MHz	-3	1.118	1.300	0.030	
1280.000 MHz	-3	1.127	1.300	0.030	
1320.000 MHz	-3	1.131	1.300	0.060	
1400.000 MHz	-3	1.142	1.300	0.060	
1480.000 MHz	-3	1.155	1.300	0.060	
1560.000 MHz	-3	1.172	1.300	0.060	
1640.000 MHz	-3	1.189	1.300	0.060	
1720.000 MHz	-3	1.202	1.300	0.060	
1760.000 MHz	-3	1.209	1.300	0.060	
1800.000 MHz	-3	1.215	1.300	0.060	
1880.000 MHz	-3	1.223	1.300	0.060	
1920.000 MHz	-3	1.225	1.300	0.060	
2000.000 MHz	-3	1.228	1.300	0.060	

Note: The uncertainty of measurement is dependent upon the magnitude of the measured VSWR, the uncertainty shown relates to a VSWR equal to the specification limit.

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75 Ω Leveling Head Output VSWR

Instrument Configuration: Mode, Sine, Ext Freq Reference, 50 Ω Leveling Head Connected

Instrument Settings		VSWR at UUT Output Level Setting	Spec Limit	Expanded Uncertainty (See Note) (\pm VSWR)	Compliance With Spec
Frequency	Output Level (dBm)				
1.000 MHz	-13	1.014	1.100	0.040	
10.000 MHz	-13	1.005	1.100	0.040	
60.000 MHz	-13	1.006	1.100	0.030	
125.000 MHz	-13	1.015	1.100	0.030	
200.000 MHz	-13	1.026	1.100	0.030	
280.000 MHz	-13	1.037	1.100	0.030	
320.000 MHz	-13	1.042	1.100	0.030	
400.000 MHz	-13	1.053	1.100	0.030	
480.000 MHz	-13	1.065	1.100	0.030	
560.000 MHz	-13	1.076	1.200	0.030	
600.000 MHz	-13	1.081	1.200	0.030	
680.000 MHz	-13	1.092	1.200	0.030	
760.000 MHz	-13	1.101	1.200	0.030	
840.000 MHz	-13	1.110	1.200	0.030	
920.000 MHz	-13	1.118	1.200	0.030	
1000.000 MHz	-13	1.126	1.200	0.030	
1080.000 MHz	-13	1.133	1.300	0.030	
1160.000 MHz	-13	1.140	1.300	0.030	
1200.000 MHz	-13	1.143	1.300	0.030	
1280.000 MHz	-13	1.150	1.300	0.030	
1320.000 MHz	-13	1.154	1.300	0.060	
1400.000 MHz	-13	1.161	1.300	0.060	
1480.000 MHz	-13	1.168	1.300	0.060	
1560.000 MHz	-13	1.175	1.300	0.060	
1640.000 MHz	-13	1.183	1.300	0.060	
1720.000 MHz	-13	1.187	1.300	0.060	
1760.000 MHz	-13	1.190	1.300	0.060	
1800.000 MHz	-13	1.194	1.300	0.060	
1880.000 MHz	-13	1.201	1.300	0.060	
1920.000 MHz	-13	1.203	1.300	0.060	
2000.000 MHz	-13	1.209	1.300	0.060	

Note: The uncertainty of measurement is dependent upon the magnitude of the measured VSWR, the uncertainty shown relates to a VSWR equal to the specification limit.
