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Letňany, 199 00 Pra

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of Accreditation No. 3

4/2022 of 11/07/2022

Work  
place

Calibration  
procedure  
identification

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Cali

lowest expanded  
measurement uncertainty  
specified<sup>2</sup>

- 14 % ± μV
- 29 % ± μV
- 56 % ± μV
- 13 % +0 μV
- 16 % + 20 μV
- 32 % + 20 μV
- .085 %
- .042 %
- .038 %
- .050 %
- 0.12 %
- 0.18 %
- 0.25 %
- 0.49 %
- .050 %
- .018 %
- .085 %
- .013 %
- .015 %
- .078 %
- 0.19 %
- 0.32 %
- .049 %
- .018 %
- .0075 %

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N EN ISO/IEC 17025

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Nominal range		Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle
unit	max unit			
V	to 220 V	<input type="checkbox"/> kHz to 50 kHz <input type="checkbox"/> kHz to 100 kHz <input type="checkbox"/> kHz to 300 kHz <input checked="" type="checkbox"/> 50 kHz to 500 kHz <input type="checkbox"/> 50 kHz to 1 MHz <input type="checkbox"/> Hz to 20 Hz <input type="checkbox"/> Hz to 40 Hz <input type="checkbox"/> Hz to 20 kHz <input type="checkbox"/> to 50 kHz <input type="checkbox"/> kHz to 100 kHz <input type="checkbox"/> Hz to 1 kHz	0.013 % 0.022 % 0.060 % 0.19 % 0.33 % 0.049 % 0.018 % 0.0085 % 0.015 % 0.028 % 0.023 %	Direct measurement by a standard multimeter
mV	to 12 mV	kHz	4.5 μV	Direct measurement by a standard multimeter
mV	to 120 mV	kHz	11 μV	
mV	to 12 V	<input type="checkbox"/> Hz to 1 kHz <input type="checkbox"/> kHz to 20 kHz <input type="checkbox"/> kHz to 50 kHz <input type="checkbox"/> kHz to 100 kHz <input type="checkbox"/> Hz to 20 kHz <input type="checkbox"/> kHz to 50 kHz <input type="checkbox"/> kHz to 100 kHz <input type="checkbox"/> Hz to 20 kHz	0.027 % 0.030 % 0.043 % 0.096 % 0.035 % 0.048 % 0.14 %	
V	to 120 V	<input type="checkbox"/> kHz to 50 kHz <input type="checkbox"/> kHz to 100 kHz <input type="checkbox"/> Hz to 20 kHz	0.048 % 0.14 % 0.075 %	
V	to 700 V	<input type="checkbox"/> Hz to 20 kHz	0.075 %	

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Laboratory  
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unit	meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration procedure identification <sup>3</sup>	Work place
µA		0.0040 % + 6 nA	LIII-004	
nA		0.0032 % + 7 nA		
nA		0.0050 %		
nA		0.0069 %		
µA		0.013 %		
µA		0.47 nA	LIII-004	
µA		0.30 nA		
µA		0.0097 %		
nA		0.0064 %		
nA		0.0064 %		
nA		0.0077 %		
µA		0.021 %		
µA		0.029 %		
µA		0.030 %		
µA		0.031 %		
µA		0.032 %		
µA		0.038 %		

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Calibration  
procedure  
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Work  
place

11-002

nominal range	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle
A to 220 $\mu$ A	10 Hz to 40 Hz 10 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	0.041 % + 18 nA 0.036 % + 8 nA 0.047 % + 12 nA 0.11 % + 65 nA	Direct generation by a current calibrator
A to 2.2 mA	10 Hz to 40 Hz 10 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	0.059 % 0.049 % 0.095 % 0.39 %	
A to 22 mA	10 Hz to 40 Hz 10 Hz to 1 kHz 1 kHz to 5 kHz 5 to 10 kHz	0.045 % 0.031 % 0.057 % 0.32 %	
A to 220 mA	10 Hz to 40 Hz 10 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	0.045 % 0.028 % 0.046 % 0.15 %	
A to 2.2 A	20 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	0.046 % 0.083 % 0.70 %	

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Nominal range		Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration procedure identification <sup>3</sup>	Work place
unit	max unit				
0 μA	to 120 μA	45 Hz to 1 kHz	82 nA	LIII-002	Direct measurement a standard ohmmeter
0 μA	to 1,2 mA	45 Hz to 5 kHz	0,49 μA		
2 mA	to 12 mA	45 Hz to 5 kHz	0,26 %		
2 mA	to 120 mA	45 Hz to 5 kHz	0,26 %		
0 mA	to 1 A	45 Hz to 5 kHz	0,28 %		
0 Ω	to 0,1 Ω		68 μΩ	LIII-006	Direct measurement a standard ohmmeter
1 Ω	to 1 Ω		0,0020 %		
1 Ω	to 10 Ω		0,0020 %		
0 Ω	to 100 Ω		0,0060 %		
0 Ω	to 1 kΩ		0,0014 %		
1 kΩ	to 10 kΩ		0,0014 %		
0 kΩ	to 100 kΩ		0,0014 %		
0 kΩ	to 1 MΩ		0,0032 %		
1 MΩ	to 10 MΩ		0,015 %		
0 MΩ	to 100 MΩ		0,083 %		
0 MΩ	to 1 GΩ		0,87 %		
1 Ω			0,0087 %		
1,9 Ω			0,0096 %		
10 Ω			0,0022 %		
19 Ω			0,0022 %		
100 Ω			0,0010 %		
Direct generation by resistance calibrator				LIII-006	

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Ord. number <sup>1)</sup>	Calibrated quantity / Subject of calibration	Nominal range min unit      max unit	Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2)</sup>	Calibration principle	Calibration procedure identification <sup>3)</sup>	Work place
		190 Ω		0.0011 %			
		1 kΩ		0.00080 %			
		1.9 kΩ		0.00086 %			
		10 kΩ		0.00078 %			
		19 kΩ		0.00079 %			
		100 kΩ		0.0011 %			
		190 kΩ		0.0011 %			
		1 MΩ		0.0019 %			
		1.9 MΩ		0.0021 %			
		10 MΩ		0.0039 %			
		19 MΩ		0.0047 %			
		100 MΩ		0.012 %			
11*	AC resistance meters	100 mΩ	20 Ω	0.08 %	Direct generation using an AC resistance standard	LIII-070	
			60 Hz	0.08 %			
			100 Hz	0.06 %			
			1 kHz	0.06 %			
			10 kHz	0.15 %			
			100 kHz	1.1 %			
		1 Ω	20 Hz	0.02 %			
			60 Hz	0.02 %			
			100 Hz	0.02 %			
			1 kHz	0.02 %			
			10 kHz	0.02 %			
			100 kHz	0.11 %			



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Calibration principle

Calibration  
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Calibration  
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Calibration principle

Direct measurement  
by a standard LCR  
meter

LIII-071

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Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work place
to 100 Hz	0.12 %			
: to 10 kHz	0.11 %			
: to 100 kHz	0.11 %			
to 100 Hz	0.12 %			
: to 10 kHz	0.12 %			
: to 100 kHz	0.12 %			
to 100 Hz	0.10 %			
: to 10 kHz	0.08 %			
: to 100 kHz	0.09 %			
to 100 Hz	0.11 %			
: to 10 kHz	0.09 %			
: to 100 kHz	0.10 %			
to 100 Hz	0.05 %			
: to 10 kHz	0.05 %			
: to 100 kHz	0.06 %			
to 100 Hz	0.06 %			
: to 10 kHz	0.06 %			
: to 100 kHz	0.06 %			
to 100 Hz	0.06 %			
: to 10 kHz	0.05 %			
: to 100 kHz	0.05 %			
to 100	0.06 %			
: to 10	0.06 %			
: to 10	0.06 %			

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Ord. number	Calibrated quantity / Subject of calibration	Nominal range		Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work place
		min	max					
		unit	unit	unit				
		10 kΩ	± 5 %	20 Hz to 100 Hz	0.05 %			
				100 Hz to 10 kHz	0.05 %			
				10 kHz to 100 kHz	0.05 %			
		10 kΩ	to 100 kΩ	20 Hz to 100 Hz	0.06 %			
				100 Hz to 10 kHz	0.06 %			
				10 z to 100 kHz	0.21 %			
		100 kΩ	± 5 %	20 Hz to 100 Hz	0.05 %			
				100 Hz to 10 kHz	0.05 %			
				10 kHz to 100 kHz	0.21 %			
		100 kΩ	to 1 MΩ	20 Hz to 100 Hz	0.08 %			
				100 Hz to 10 kHz	0.07 %			
				10 kHz to 100 kHz	0.61 %			
		1 MΩ	± 5 %	20 z to 100 Hz	0.08 %			
				100 Hz to 10 kHz	0.07 %			
				10 kHz to 100 kHz	0.61 %			
		1 MΩ	to 10 MΩ	20 Hz to 100 Hz	0.18 %			
				100 Hz to 10 kHz	0.81 %			
		10 MΩ	± 5 %	20 Hz to 100 Hz	0.17 %			
				100 Hz to 10 kHz	0.81 %			
13*	Amplitude modulation depth / signal sources	10 %	to 90 %	Carrier fre 150		Direct measurement using a standard modulation analyzer	LIII-050	
				Modulation frequency z to 50 Hz to 50 kHz	2.7 %			
				o 50 Hz	3.8 %			
				0 100 kHz	1.6 %			
				0 100 kHz	3.8 %			

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Table 9

Lowest expanded  
measurement uncertainty  
specified<sup>2</sup>

2.6 %  
1.5 %  
6.1 %

0.04 % (abs.)  
0.11 % (abs.)  
0.15 % (abs.)  
0.32 % (abs.)  
0.42 % (abs.)  
0.90 % (abs.)  
4.2 % (abs.)  
9.0 % (abs.)

0.010 (abs.)  
0.006 (abs.)  
0.009 (abs.)  
0.011 (abs.)  
0.029 (abs.)  
0.030 (abs.)

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Calibration procedure identification	Work place
LIII-051	
LIII-056	
LIII-055	

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Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work place
z to 50 MHz	0.011 (abs.)			
Hz to 2 GHz	0.006 (abs.)			
z to 5 GHz	0.009 (abs.)			
z to 6 GHz	0.011 (abs.)			
z to 13 GHz	0.029 (abs.)			
Hz to 18 GHz	0.030 (abs.)			
z to 50 MHz	0.011 (abs.)			
Hz to 1 GHz	0.006 (abs.)			
z to 2 GHz	0.007 (abs.)			
z to 4 GHz	0.009 (abs.)			
z to 5 GHz	0.010 (abs.)			
z to 6 G	0.011 (abs.)			
z to 11 GHz	0.029 (abs.)			
Hz to 18 GHz	0.030 (abs.)			
z to 300 kHz	0.016 (abs.)			
Hz to 50 MHz	0.017 (abs.)			
Hz to 1 Hz	0.007 (abs.)			
Hz to 2 GHz	0.008 (abs.)			
z to 4 GHz	0.010 (abs.)			
z to 5 GHz	0.011 (abs.)			
z to 6 GHz	0.012 (abs.)			
z to 11 GHz	0.029 (abs.)			
Hz to 13 GHz	0.030 (abs.)			
Hz to 18 GHz	0.031 (abs.)			

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Units of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work place
kHz	0.016 (abs.)			
MHz	0.017 (abs.)			
GHz	0.010 (abs.)			
Hz	0.011 (abs.)			
Hz	0.013 (abs.)			
Hz	0.014 (abs.)			
Hz	0.031 (abs.)			
Hz	0.032 (abs.)			
Hz	0.020 (abs.)			
MHz	0.023 (abs.)			
Hz	0.015 (abs.)			
Hz	0.016 (abs.)			
Hz	0.017 (abs.)			
Hz	0.018 (abs.)			
Hz	0.033 (abs.)			
Hz	0.034 (abs.)			
Hz	0.020 (abs.)			
MHz	0.023 (abs.)			
Hz	0.021 (abs.)			
Hz	0.022 (abs.)			
Hz	0.023 (abs.)			
Hz	0.024 (abs.)			
Hz	0.036 (abs.)			
Hz	0.037 (abs.)			

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7 (abs.)  
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Calibration procedure identification	Work place	Calibration principle	Lowest expanded measurement uncertainty specified <sup>2</sup>	Parameter(s) of the meas. quantity	Nominal range		Unit
					min	max	
			0.018 (abs.)	1 GHz to 2 GHz			
			0.019 (abs.)	2 GHz to 4 GHz			
			0.021 (abs.)	4 GHz to 5 GHz			
			0.022 (abs.)	5 GHz to 6 GHz			
			0.047 (abs.)	6 GHz to 19 GHz			
			0.048 (abs.)	19 GHz to 26.5 GHz			
			0.021 (abs.)	50 MHz to 500 MHz	0.4	0.5	
			0.022 (abs.)	500 MHz to 1 GHz			
			0.024 (abs.)	1 GHz to 3 GHz			
			0.025 (abs.)	3 GHz to 4 GHz			
			0.026 (abs.)	4 GHz to 5 GHz			
			0.027 (abs.)	5 GHz to 6 GHz			
			0.049 (abs.)	6 GHz to 10 GHz			
			0.050 (abs.)	10 GHz to 20 GHz			
			0.051 (abs.)	20 GHz to 26.5 GHz			
			0.029 (abs.)	50 MHz to 250 MHz	0.5	0.6	
			0.030 (abs.)	250 MHz to 1 GHz			
			0.032 (abs.)	1 GHz to 3 GHz			
			0.033 (abs.)	3 GHz to 4 GHz			
			0.034 (abs.)	4 GHz to 5 GHz			
			0.035 (abs.)	5 GHz to 6 GHz			
			0.054 (abs.)	6 GHz to 20 GHz			

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Symbol of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Work place
Z	0,090 (abs.)	[unclear]	
Z	0,080 (abs.)	[unclear]	
Z	0,083 (abs.)	[unclear]	
Z	0,084 (abs.)	[unclear]	
Z	0,094 (abs.)	[unclear]	
Z	0,11 (abs.)	[unclear]	
Z	0,010 (abs.)	[unclear]	
Z	0,011 (abs.)	[unclear]	
Z	0,012 (abs.)	[unclear]	
Z	0,013 (abs.)	[unclear]	
Z	0,014 (abs.)	[unclear]	
Z	0,016 (abs.)	[unclear]	
Z	0,017 (abs.)	[unclear]	
Z	0,018 (abs.)	[unclear]	
Z	0,021 (abs.)	[unclear]	
Z	0,022 (abs.)	[unclear]	
Z	0,024 (abs.)	[unclear]	
Z	0,020 (abs.)	[unclear]	
Z	0,023 (abs.)	[unclear]	
Z	0,021 (abs.)	[unclear]	
Z	0,031 (abs.)	[unclear]	

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- 5 (abs.)
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- 7 (abs.)
- 8 (abs.)
- 1 (abs.)
- 2 (abs.)
- 4 (abs.)
- 0 (abs.)
- 3 (abs.)
- 1 (abs.)
- 1 (abs.)
- 6 (abs.)
- 0 (abs.)
- 2 (abs.)
- 3 (abs.)
- 4 (abs.)
- 6 (abs.)
- 8 (abs.)
- 7 (abs.)
- 9 (abs.)
- 1 (abs.)
- 2 (abs.)

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Calibration procedure identification	Work place	Calibration principle	Lowest expanded measurement uncertainty specified <sup>2</sup>	of the meas. quantity
			0.024 (abs.)	
			0.020 (abs.)	
			0.023 (abs.)	
			0.022 (abs.)	
			0.032 (abs.)	
			0.036 (abs.)	
			0.011 (abs.)	
			0.012 (abs.)	
			0.013 (abs.)	
			0.015 (abs.)	
			0.016 (abs.)	
			0.017 (abs.)	
			0.019 (abs.)	
			0.020 (abs.)	
			0.023 (abs.)	
			0.025 (abs.)	
			0.022 (abs.)	
			0.025 (abs.)	
			0.024 (abs.)	
			0.033 (abs.)	
			0.037 (abs.)	
			0.011 (abs.)	
			0.013 (abs.)	
			0.014 (abs.)	
			0.015 (abs.)	
			0.017 (abs.)	

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Parameter(s) of the meas. quantity

Lowest expanded  
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Calibration principle

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unit

0.5

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0.6

20 GHz to 22 GHz

22 GHz to 26 GHz

26 GHz to 30 GHz

30 GHz to 34 GHz

34 GHz to 36 GHz

36 GHz to 39 GHz

39 GHz to 40 GHz

40 GHz to 43 GHz

43 GHz to 44 GHz

44 GHz to 47 GHz

47 GHz to 50 GHz

50 MHz to 2 GHz

2 GHz to 3 GHz

3 GHz to 12 GHz

12 GHz to 14 GHz

14 GHz to 20

20 GHz to 26 GHz

26 GHz to 30 GHz

30 GHz to 34 GHz

34 GHz to 35 GHz

35 GHz to 36 GHz

36 GHz to 39 GHz

39 GHz to 40

40 GHz to 45

0.022 (abs.)

0.021 (abs.)

0.023 (abs.)

0.025 (abs.)

0.026 (abs.)

0.028 (abs.)

0.024 (abs.)

0.029 (abs.)

0.028 (abs.)

0.036 (abs.)

0.040 (abs.)

0.011 (abs.)

0.014 (abs.)

0.015 (abs.)

0.016 (abs.)

0.018 (abs.)

0.026 (abs.)

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0.029 (abs.)

0.030 (abs.)

0.029 (abs.)

0.031 (abs.)

0.028 (abs.)

0.035 (abs.)

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Quantity	Calibration principle	Calibration procedure identification <sup>3</sup>	Work place
(abs.)			
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of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification	Work place
Hz	0.012 (abs.)	ii		
	0.013 (abs.)			
	0.019 (abs.)			
	0.020 (abs.)			
	0.021 (abs.)			
	0.022 (abs.)			
	0.023 (abs.)			
	0.022 (abs.)			
	0.039 (abs.)			
	0.040 (abs.)			
	0.041 (abs.)			
	0.042 (abs.)			
	0.043 (abs.)			
	0.041 (abs.)			
	0.053 (abs.)			
	0.052 (abs.)			
	0.057 (abs.)			
	0.060 (abs.)			
Hz	0.013 (abs.)			
	0.014 (abs.)			
	0.022 (abs.)			
	0.023 (abs.)			
	0.024 (abs.)			
	0.023 (abs.)			



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Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work place
30 GHz	0.058 (abs.)			
36 GHz	0.060 (abs.)			
39 GHz	0.061 (abs.)			
40 GHz	0.059 (abs.)			
43 GHz	0.078 (abs.)			
44 GHz	0.077 (abs.)			
47 GHz	0.080 (abs.)			
50 GHz	0.083 (abs.)			
30 MHz	2.0 %	Comparison with a standard HF wattmeter	LIII-052	
54 GHz	1.6 %			
GHZ	1.7 %			
GHZ	2.1 %			
GHZ	2.0 %			
GHZ	2.2 %			
1 GHz	2.3 %			
12 GHz	2.5 %			
13 GHz	2.6 %			
15 GHz	2.7 %			
16 GHz	2.5 %			
17 GHz	2.9 %			
18 GHz	4.3 %			

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Accreditation No. 344/2022 of 11/07/2022

Metech s.r.o.  
on Laboratory  
střany, 199 00 Praha

the meas. quantity

Work  
place

est expanded  
ment uncertainty  
specified<sup>2</sup>

Calibration principle

Calibration  
procedure  
identification<sup>3</sup>

- .4 %
- .5 %
- .6 %
- .8 %
- .9 %
- .9 %
- .6 %
- .0 %
- .0 %
- .1 %
- .2 %
- .3 %
- .7 %
- .6 %
- .6 %
- .7 %
- .8 %
- .8 %
- ..5 %
- ..6 %
- ..7 %
- ..8 %

11/07/2022

Calibration  
procedure  
identification  
place  
Work  
place

nt LIII-054  
LIII-059  
nt LIII-054

integral  
integration

standard  
uncertainty  
 $u_c$

10 mW

12 dB  
14 dB  
20 dB  
23 dB  
29 dB

SHU-PRO

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 on Laboratory  
 etňany, 199 00 Praha 9

of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work place
	0.13 dB			
	0.14 dB			
	0.19 dB			
z	0.20 dB			
z	0.21 dB			
z	0.23 dB			
z	0.24 dB			
-Hz	0.28 dB			
	0.15 dB			
-Hz	0.33 dB			
	0.23 dB			
Hz	0.41 dB	Measurement by a selective HF signal meter	LIII-057	
Hz	0.11 dB			
	0.14 dB			
	0.15 dB			
	0.20 dB			
	0.20 dB			
	0.20 dB			
	0.25 dB			
	0.37 dB			
	0.56 dB			

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meas. quantity m

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itation No. 344/2022 of 11/07/2

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Work  
place

Cali  
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Calibration principle

ded  
ertainty

0 dB

5 dB

Measurement by a  
circuit analyzer

8 dB

4 dB

5 dB

4 dB

5 dB

4 dB

5 dB

5 dB

5 dB

5 dB

5 dB

5 dB

5 dB

5 dB

5 dB

5 dB

5 dB

5 dB

5 dB

5 dB

5 dB

5 dB

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Instrument Metech s.r.o.  
Calibration Laboratory  
767, Letňany, 199 00 Praha

Character(s) of the meas. quantity

- 50 MHz
- 3 GHz
- GHz
- 1 GHz
- 18 GHz
- 50 MHz
- 3 GHz
- GHz
- 1 GHz
- 18 GHz
- 50 MHz
- 3 GHz
- GHz
- 1 GHz
- 18 GHz
- 50 MHz

integral part of  
certification No. 344/2022 of 11/07/2022

Expanded uncertainty 2	Calibration principle	Calibration procedure identification 3	Work place
17 dB			
18 dB			
14 dB			
16 dB			
17 dB			
22 dB			
12 dB			
11 dB			
17 dB			
20 dB			
22 dB			
27 dB			
16 dB			
20 dB			
24 dB			
30 dB			
32 dB			
27 dB			
25 dB			
28 dB			
32 dB			
47 dB			

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certification No. 344/2022 of 11/07/2022

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Metech s.r.o. p  
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řtany, 199 00

of the meas. quantity

Expanded uncertainty $k=2$	Calibration principle	Calibration procedure identification	Work place
0,37 dB			
0,50 dB			
0,85 dB			
0,06 dB			
0,14 dB			
0,15 dB			
0,43 dB			
0,07 dB			
0,14 dB			
0,15 dB			
0,16 dB			
0,43 dB			
0,09 dB			
0,15 dB			
0,17 dB			
0,18 dB			
0,44 dB			
0,13 dB			
0,12 dB			
0,17 dB			

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ended certainty 2	Calibration	Calibration procedure identification 3	Work place
18 dB			
20 dB			
22 dB			
23 dB			
16 dB			
19 dB			
7 dB			
6 dB			
20 dB			
11 dB			
24 dB			
0 dB			
51 dB			
16 dB			
17 dB			
15 dB			
18 dB			
12 dB			
17 dB			
18 dB			
18 dB			



Calibration  
procedure  
location  
3  
Work  
place

Quantity Calibration principle

3  
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 Calibration Laboratory  
 67, Letňany, 199 00 Praha 9

Unit(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work place
1) GHz	0.38 dB			
1) GHz	0.41 dB			
1) GHz	0.59 dB			
1) GHz	0.60 dB			
1) GHz	0.25 dB			
1) GHz	0.25 dB			
1) GHz	0.28 dB			
1) GHz	0.32 dB			
1) GHz	0.47 dB			
1) GHz	0.55 dB			
1) GHz	0.63 dB			
1) GHz	0.65 dB			
1) GHz	1.2 dB			
1) GHz	0.56 dB			
1) GHz	0.44 dB			
1) GHz	0.46 dB			
1) GHz	0.50 dB			
1) GHz	0.85 dB			
1) GHz	1.3 dB			
1) GHz	1.4 dB			
1) GHz	3.5 dB			

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17025:2018:

Element Metech s.r.o.

Calibration Laboratory

Toužimská 767, Letňany, 199 00 Praha 9

Subject of min unit Nominal quantity	Parameter(s) of the meas. quantity	Unit	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work place
F	60 Hz	F	1.1 %	Direct generation using a capacity standard	L.III-070	
	100 Hz		0.18 %			
	1 kHz		0.08 %			
	10 kHz		0.05 %			
	100 Z	Z	0.05 %			
	60 Hz	F	0.16 %			
	100 Hz		0.11 %			
	1 kHz		0.06 %			
	10 kHz		0.05 %			
	100 kHz		0.05 %			
F	60 Hz	F	0.05 %			
	100 Hz		0.05 %			
	1 kHz		0.05 %			
	10 kHz		0.05 %			
F	60 Hz	F	0.05 %			
	100 Hz		0.05 %			
	1 kHz		0.05 %			
	10 kHz		0.05 %			
F	60 Hz	F	0.05 %			
	100 Hz		0.05 %			
	1 kHz		0.05 %			
	10 kHz		0.05 %			
F	60 Hz	F	0.05 %			
	100 Hz		0.05 %			
	1 kHz		0.05 %			
	10 kHz		0.05 %			
F	60 Hz	F	0.06 %			
	100 Hz		0.05 %			
	1 kHz		0.05 %			
	10 kHz		0.04 %			

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Units of the meas. quantity:  $m^3$

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Expanded uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work place
3 %	Direct measurement using a standard RLC bridge	LIII-071	
3 %			
3 %			
1 %			
3 %			
3 %			
3 %			
3 %			
3 %			
3 %			
3 %			
3 %			
3 %			
3 %			
3 %			

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lZ  
Hz  
kHz  
lZ  
Hz

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 Calibration Laboratory  
 Letňany, 199 00 Praha 9

) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle
Z	0.16 %	
Hz	0.11 %	
Hz	0.05 %	
Z	0.20 %	
Hz	0.15 %	
Hz	0.06 %	
Z	0.06 %	
Hz	0.06 %	
Z	0.05 %	
Z	0.07 %	
Hz	0.06 %	
Hz	0.06 %	
Z	0.06 %	
Hz	0.06 %	
Z	0.07 %	
Z	0.09 %	
Z	0.06 %	
Z	0.06 %	
Z	0.07 %	
Z	0.07 %	
Z	0.06 %	
Z	0.06 %	
Z	0.09 %	
Z	0.10 %	



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Parameter(s) of the meas. quantity	Lowest expanded measurement uncertainty specified <sup>2</sup>	Calibration principle	Calibration procedure identification <sup>3</sup>	Work place
0 Hz	0.08 %			
0 kHz	0.10 %			
0 Hz	0.13 %			
0 kHz	0.76 %			
0 Hz	0.12 %			
0 kHz	0.69 %			
		Direct generation using an inductance standard	LIII-070	
	0.21 %			
	0.21 %			
	0.21 %			
	0.21 %			
	0.11 %			
	0.11 %			
	0.11 %			
	0.11 %			
	0.11 %			
	0.15 %			
	0.08 %			
	0.08 %			
	0.08 %			
	0.05 %			
	0.06 %			

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Expanded  
uncertainty  
evaluated  
by  
method  
3

Work  
place

Calibration  
procedure  
identification

Calibration principle

Direct measurement  
using a standard RLC  
bridge

L111-071

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aboratory  
ny, 199 00 Praha 9

Lowest expanded  
measurement  
uncertainty  
specified<sup>2</sup>

- 2.0 · 10<sup>-3</sup>
- 2.0 · 10<sup>-4</sup>
- 2.0 · 10<sup>-5</sup>
- 2.0 · 10<sup>-6</sup>
- 2.0 · 10<sup>-7</sup>
- 2.0 · 10<sup>-8</sup>
- 2.0 · 10<sup>-9</sup>
- 7.0 · 10<sup>-10</sup>
- 5.0 · 10<sup>-10</sup>
- 5.0 · 10<sup>-10</sup>
- 2.0 · 10<sup>-9</sup>
- 2.0 · 10<sup>-10</sup>
- 2.0 · 10<sup>-12</sup>
- 2.0 · 10<sup>-3</sup>
- 2.0 · 10<sup>-4</sup>
- 2.0 · 10<sup>-5</sup>
- 2.0 · 10<sup>-6</sup>
- 2.0 · 10<sup>-7</sup>
- 2.0 · 10<sup>-8</sup>
- 10<sup>-9</sup>
- 10<sup>-10</sup>

Calibration procedure identification <sup>3</sup>	Work-place
LIII-053	
Calibration principle ent by a reference counter	
GPS receiver standard frequency	

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Para 9

Standard  
uncertainty  
 $u^2$

Calibration  
procedure  
identification  
place  
3

Calibration principle

Direct measurement by a reference counter LIII-053

15 ns

Laboratory premises.

In the case of the respective uncertainty. If not stated otherwise, its coverage probability is approx. 95%.  
If the measurement is carried out outside the laboratory premises, the measurement uncertainty may be affected.  
If the calibration procedure is not dated, the latest edition of the specified procedure is