



SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017  
& ANSI/NCSL Z540-1-1994

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CALIBRATION

Valid To: November 30, 2025

Certificate Number: 5546.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations<sup>1,4</sup>:

I. Electrical DC/Low Frequency

Parameter/Equipment	Range	CMC <sup>2,3</sup> ( $\pm$ )	Comments
DC Voltage – Source	(0 to 329.9999) mV (0 to 3.2999) V (0 to 32.9999) V (30 to 329.9999) V (100 to 1020) V	16 $\mu$ V/V + 1 $\mu$ V 9 $\mu$ V/V + 2 $\mu$ V 11 $\mu$ V/V + 20 $\mu$ V 15 $\mu$ V/V + 150 $\mu$ V 15 $\mu$ V/V + 1.5 mV	Fluke 5522A
DC Current – Source	(0 to 329.9999) $\mu$ A (0 to 3.299 99) mA (0 to 32.9999) mA (0 to 329.999) mA (0 to 1.099 99) A (1.1 to 2.999 999) A (0 to 10.9999) A (11 to 20.5) A	0.13 mA/A + 0.02 $\mu$ A 94 $\mu$ A/A + 0.05 $\mu$ A 79 $\mu$ A/A + 0.25 $\mu$ A 0.11 mA/A + 2.5 $\mu$ A 0.17 mA/A + 40 $\mu$ A 0.42 mA/A + 40 $\mu$ A 0.42 mA/A + 500 $\mu$ A 0.8 mA/A + 750 $\mu$ A	Fluke 5522A

Parameter/Equipment	Range	CMC <sup>2,3</sup> (±)	Comments
Electrical Calibration of Thermocouple Indicators			
Type J	(-210 to -100) °C (-100 to -30) °C (-30 to 150) °C (150 to 760) °C (760 to 1200) °C	0.21 °C 0.13 °C 0.12 °C 0.13 °C 0.18 °C	Fluke 5522A
Type K	(-200 to -100) °C (-100 to -25) °C (-25 to 120) °C (120 to 1000) °C (1000 to 1372) °C	0.26 °C 0.14 °C 0.13 °C 0.20 °C 0.31 °C	
Type T	(-250 to -150) °C (-150 to 0) °C (0 to 120) °C (120 to 400) °C	0.49 °C 0.19 °C 0.13 °C 0.11 °C	
Resistance – Source	0 to 10.9999 Ω 11 to 32.9999 Ω 33 to 109.9999 Ω 110 to 329.9999 Ω 330 Ω to 1.099 999 kΩ to 3.299 999 kΩ 3.3 to 10.999 99 kΩ 11 to 32.999 99 kΩ 33 to 109.9999 kΩ 110 to 329.999 99 kΩ 0.33 to 1.099 999 MΩ 1.1 to 3.299 999 MΩ 3.3 to 10.999 99 MΩ 11 to 32.999 99 MΩ 33 to 109.9999 MΩ 110 to 329.9999 MΩ 330 to 1100 MΩ	35 μΩ/Ω + 1 mΩ 25 μΩ/Ω + 1.5 mΩ 23 μΩ/Ω + 1.4 mΩ 25 μΩ/Ω + 2 mΩ 23 μΩ/Ω + 2 mΩ 24 μΩ/Ω + 20 mΩ 23 μΩ/Ω + 20 mΩ 24 μΩ/Ω + 0.2 Ω 24 μΩ/Ω + 0.2 Ω 26 μΩ/Ω + 2 Ω 26 μΩ/Ω + 2 Ω 50 μΩ/Ω + 30 Ω 0.10 mΩ/Ω + 50 Ω 0.21 mΩ/Ω + 2.5 kΩ 0.39 mΩ/Ω + 3 kΩ 2.4 mΩ/Ω + 0.1 MΩ 12 mΩ/Ω + 0.5 MΩ	Fluke 5522A

Parameter/Range	Frequency	CMC <sup>2,3</sup> (±)	Comments
AC Voltage – Generate			
(1 to 32.999) mV	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.61 mV/V + 6 µV 0.16 mV/V + 6 µV 0.18 mV/V + 6 µV 0.76 mV/V + 6 µV 2.6 mV/V + 12 µV 6.1 mV/V + 50 µV	Fluke 5522A
(33 to 329.999) mV	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.26 mV/V + 8 µV 0.11 mV/V + 8 µV 0.12 mV/V + 8 µV 0.26 mV/V + 8 µV 0.58 mV/V + 32 µV 1.5 mV/V + 70 µV	
(0.33 to 3.299 99) V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 500) kHz	0.25 mV/V + 50 µV 0.12 mV/V + 60 µV 0.15 mV/V + 60 µV 0.23 mV/V + 50 µV 0.52 mV/V + 130 µV 2.0 mV/V + 0.6 mV	
(3.3 to 32.9999) V	(10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	0.12 mV/V + 650 µV 0.12 mV/V + 600 µV 0.18 mV/V + 600 µV 0.26 mV/V + 600 µV 0.64 mV/V + 1.6 µV	
(33 to 329.999) V	45 Hz to 1 kHz (1 to 10) kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz	0.14 mV/V + 2 mV 0.14 mV/V + 6 mV 0.15 mV/V + 6 mV 0.19 mV/V + 6 mV 0.24 mV/V + 50 mV	
(330 to 1020) V	45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.24 mV/V + 10 mV 0.20 mV/V + 10 mV 0.24 mV/V + 10 mV	

Parameter/Range	Frequency	CMC <sup>2,3</sup> (±)	Comments
AC Current – Source			
(29.00 to 329.99) µA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	1.6 mA/A + 0.1 µA 1.2 mA/A + 0.1 µA 1.0 mA/A + 0.1 µA 2.4 mA/A + 0.15 µA 6.1 mA/A + 0.2 µA 13 mA/A + 0.4 µA	Fluke 5522A
(0.33 to 3.299 99) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	1.6 mA/A + 0.15 µA 0.97 mA/A + 0.15 µA 0.79 mA/A + 0.15 µA 1.6 mA/A + 0.2 µA 4.0 mA/A + 0.3 µA 7.9 mA/A + 0.6 µA	
(3.3 to 32.9999) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	1.4 mA/A + 2 µA 0.70 mA/A + 2 µA 0.34 mA/A + 2 µA 0.64 mA/A + 2 µA 1.6 mA/A + 3 µA 3.4 mA/A + 4 µA	
(33 to 329.999) mA	(10 to 20) Hz (20 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz (10 to 30) kHz	1.4 mA/A + 20 µA 0.70 mA/A + 20 µA 0.34 mA/A + 20 µA 0.82 mA/A + 50 µA 1.6 mA/A + 100 µA 3.4 mA/A + 200 µA	
(0.33 to 1.099 99) A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	1.5 mA/A + 100 µA 0.40 mA/A + 100 µA 4.7 mA/A + 1.0 mA 19 mA/A + 5.0 mA	
(1.1 to 2.999 99) A	(10 to 45) Hz 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	1.4 mA/A + 100 µA 0.53 mA/A + 100 µA 4.7 mA/A + 0.1 mA 19 mA/A + 0.5 mA	
(3 to 10.9999) A	(45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	0.52 mA/A + 0.2 mA 0.81 mA/A + 0.2 mA 23 mA/A + 0.2 mA	
(11 to 20.5) A	(45 to 100) Hz 100 Hz to 1 kHz (1 to 5) kHz	0.95 mA/A + 0.5 mA 1.2 mA/A + 0.5 mA 24 mA/A + 0.5 mA	

Parameter/Range	Frequency	CMC <sup>2,3</sup> (±)	Comments
Capacitance – Source			
(0.22 to 1.1) nF	10 Hz to 10 kHz	4.5 mF/F + 10 pF	
(1.1 to 3.3) nF	10 Hz to 3 kHz	4.0 mF/F + 10 pF	
(3.3 to 11) nF	10 Hz to 1 kHz	2.1 mF/F + 10 pF	
(11 to 110) nF	10 Hz to 1 kHz	2.1 mF/F + 10 pF	
(110 to 330) nF	10 Hz to 1 kHz	2.1 mF/F + 0.1 nF	
(0.33 to 1.1) µF	(10 to 600) Hz	2.0 mF/F + 0.1 nF	
(1.1 to 3.3) µF	(10 to 300) Hz	2.0 mF/F + 0.3 nF	
(3.3 to 11) µF	(10 to 150) Hz	2.1 mF/F + 10 nF	
(11 to 33) µF	(10 to 120) Hz	3.2 mF/F + 30 nF	
(33 to 110) µF	(10 to 80) Hz	3.7 mF/F + 0.1 µF	
(110 to 330) µF	(0 to 50) Hz	3.6 mF/F + 0.3 µF	
(0.33 to 1.1) mF	(0 to 20) Hz	3.6 mF/F + 1 µF	
(1.1 to 3.3) mF	(0 to 6) Hz	3.6 mF/F + 3 µF	
(3.3 to 11) mF	(0 to 2) Hz	3.5 mF/F + 10 µF	
(11 to 33) mF	(0 to 0.6) Hz	3.0 mF/F + 30 µF	
(33 to 110) mF	(0 to 0.2) Hz	8.6 mF/F + 0.1 mF	
Oscilloscopes			
Amplitude – DC			
50 Ω	(0 to 6.6) V	0.20 % + 40 µV	
1 MΩ	(0 to 130) V	0.04 % + 40 µV	Fluke 5522A
Amplitude – Square Wave			
50 Ω @ 1kHz	1 mV to 6.6 V (p-p)	1.6 % + 40 µV	
1 MΩ @ 1kHz	1 mV to 130 V (p-p)	0.08 % + 40 µV	
Leveled Sine Wave (ref 50 kHz)	50 kHz reference	2 % + 300 µV	
Amplitude (Absolute)	50 kHz to 100 MHz (100 to 300) MHz (300 to 600) MHz (600 to 1100) MHz	3.6 % + 300 µV 4.0 % + 300 µV 6.0 % + 300 µV 7.0 % + 300 µV	
Flatness (Relative to 50 kHz)	50 kHz to 100 MHz (100 to 300) MHz (300 to 600) MHz (600 to 1100) MHz	1.9 % + 100 µV 2.2 % + 100 µV 3.5 % + 100 µV 4.2 % + 100 µV	
Time Marker into 50Ω	2 ns to 20 ms 50 ms to 5 s	2.5 µs/s (1000t + 79) µs/s	t = time in seconds

Parameter/Equipment	Range	CMC <sup>2,3</sup> (±)	Comments
DC Voltage – Measure (Opt. 002)	(0 to 100) mV 100 mV to 1 V (1 to 10) V (10 to 100) V 100 V to 1 kV	2.8 µV/V + 300 nV 3.7 µV/V + 300 nV 3.7 µV/V + 500 nV 5.7 µV/V + 30 µV 6.3 µV/V + 100 µV	HP 3458A OPT 002
DC Current – Measure	(0 to 100) nA 100 nA to 1 µA (1 to 10) µA (10 to 100) µA 100 µA to 1 mA (1 to 10) mA (10 to 100) mA 100 mA to 1 A	50 µA/A + 40 pA 66 µA/A + 40 pA 27 µA/A + 100 pA 18 µA/A + 800 pA 19 µA/A + 5 nA 19 µA/A + 50 nA 31 µA/A + 500 nA 87 µA/A + 10 µA	HP 3458A OPT 002

Parameter/Range	Frequency	CMC <sup>2,3</sup> (±)	Comments
AC Voltage – Measure			
(1 to 10) mV	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 100) kHz (100 to 300) kHz 300 kHz to 4 MHz	290 µV/V + 3 µV 230 µV/V + 1.1 µV 290 µV/V + 1.1 µV 4.9 mV/V + 1.1 µV 31 mV/V + 1.1 µV 55 mV/V + 2 µV	HP 3458A OPT 002
(10 to 100) mV	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz (1 to 4) MHz (4 to 8) MHz (8 to 10) MHz	65 µV/V + 4 µV 64 µV/V + 2 µV 110 µV/V + 2 µV 400 µV/V + 2 µV 2.3 mV/V + 2 µV 7.8 mV/V + 10 µV 32 mV/V + 10 µV 32 mV/V + 70 µV 120 mV/V + 80 µV	
100 mV to 1 V	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz (1 to 4) MHz (4 to 8) MHz (8 to 10) MHz	58 µV/V + 40 µV 58 µV/V + 20 µV 110 µV/V + 20 µV 240 µV/V + 20 µV 630 µV/V + 20 µV 2.3 mV/V + 0.1 mV 7.8 mV/V + 0.1 mV 32 mV/V + 0.7 mV 32 mV/V + 0.8 mV 120 mV/V + 1 mV	

Parameter/Range	Frequency	CMC <sup>2,3</sup> (±)	Comments
AC Voltage – Measure (cont)			
(1 to 10) V	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz 300 kHz to 1 MHz	58 µV/V + 400 µV 60 µV/V + 200 µV 110 µV/V + 200 µV 240 µV/V + 200 µV 630 µV/V + 200 µV 2.3 mV/V + 1 mV 7.9 mV/V + 1 mV	HP 3458A OPT 002
(10 to 100) V	(1 to 40) Hz 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz	160 µV/V + 4 mV 170 µV/V + 2 mV 160 µV/V + 2 mV 270 µV/V + 2 mV 630 µV/V + 2 mV	
(100 to 700) V	(1 to 40) Hz 40 Hz to 1 kHz	0.32 mV/V + 40 mV 0.32 mV/V + 20 mV	
AC Current – Measure			
(5 to 100) µA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 1 kHz	3.7 mA/A + 30 nA 1.2 mA/A + 30 nA 530 µA/A + 30 nA 530 µA/A + 30 nA	HP 3458A OPT 002
100 µA to 1.0 mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 1 kHz	3.1 mA/A + 200 nA 1.2 mA/A + 200 nA 530 µA/A + 200 nA 530 µA/A + 200 nA	
(1 to 10) mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 1 kHz	3.1 mA/A + 2 µA 1.2 mA/A + 2 µA 500 µA/A + 2 µA 290 µA/A + 2 µA	
(10 to 100) mA	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 1 kHz	3.1 mA/A + 20 µA 1.2 mA/A + 20 µA 500 µA/A + 20 µA 290 µA/A + 20 µA	
100 mA to 1.0 A	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 1 kHz	3.1 mA/A + 200 µA 1.2 mA/A + 200 µA 510 µA/A + 200 µA 290 µA/A + 200 µA	
1 A	(10 to 20) Hz (20 to 45) Hz (45 to 100) Hz 100 Hz to 1 kHz	3.2 mA/A + 200 µA 1.3 mA/A + 200 µA 720 µA/A + 200 µA 910 µA/A + 200 µA	

Parameter/Equipment	Range	CMC <sup>2,3</sup> ( $\pm$ )	Comments
Resistance – Measure	(0 to 10) $\Omega$ (10 to 100) $\Omega$ 100 $\Omega$ to 1 k $\Omega$ (1 to 10) k $\Omega$ (10 to 100) k $\Omega$ 100 k $\Omega$ to 1 M $\Omega$ (1 to 10) M $\Omega$ (10 to 100) M $\Omega$ 100 M $\Omega$ to 1 G $\Omega$	13 $\mu\Omega/\Omega$ + 50 $\mu\Omega$ 12 $\mu\Omega/\Omega$ + 500 $\mu\Omega$ 11 $\mu\Omega/\Omega$ + 500 $\mu\Omega$ 10 $\mu\Omega/\Omega$ + 5 m $\Omega$ 11 $\mu\Omega/\Omega$ + 50 m $\Omega$ 17 $\mu\Omega/\Omega$ + 2 $\Omega$ 54 $\mu\Omega/\Omega$ + 100 $\Omega$ 460 $\mu\Omega/\Omega$ + 1 k $\Omega$ 3.9 m $\Omega/\Omega$ + 10 k $\Omega$	HP 3458A OPT 002

## II. Electrical – RF/Microwave

Parameter/Range	Frequency	CMC <sup>2,3,6</sup> ( $\pm$ )	Comments
RF Power – Generate			
> 10 dBm (10 to -10) dBm (-10 to -60) dBm -60 to -110 dBm	< 2 GHz	1.6 dB 0.5 dB 0.7 dB 1.1 dB	HP 83650B
> 10 dBm (10 to -10) dBm (-10 to -60) dBm -60 to -110 dBm	(2 to 20) GHz	1.7 dB 0.6 dB 0.8 dB 1.4 dB	
(10 to -10) dBm (-10 to -60) dBm -60 to -110 dBm	(> 20 to 40) GHz	0.8 dB 1.0 dB 1.4 dB	
(10 to -10) dBm (-10 to -60) dBm (-60 to -110) dBm	(40 to 50) GHz	1.4 dB 1.6 dB 2.0 dB	
Power Flatness	10 MHz to < 2 GHz (2.0 to 20) GHz (20.0 to 40) GHz (40.0 to 50) GHz	0.4 dB 0.5 dB 0.7 dB 1.3 dB	
AM Source Rate: 10 MHz to 50 GHz (0 to 100) %	DC to 100 kHz	5.0 %	

Parameter/Range	Frequency	CMC <sup>2, 3, 6</sup> (±)	Comments
RF Power – Generate (cont.)			
FM Source Rate: 1 MHz External Modulation Rate 10 MHz/B Sensitivity	40 MHz to 50 GHz	8.0 %	HP 83650B
RF Power – Measure			
(- 60 to -30) dBm (-30 to -20) dBm (-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	(9 to 100) kHz	2.1 dB 0.16 dB 0.14 dB 0.13 dB 0.13 dB 0.13 dB	N1914B & E9304-H18
(- 60 to -30) dBm (-30 to -20) dBm (-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	100 kHz to 500 MHz	2.1 dB 0.15 dB 0.15 dB 0.15 dB 0.13 dB 0.13 dB	
(- 60 to -30) dBm (-30 to -20) dBm (-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	500 MHz to 1.2 GHz	2.1 dB 0.16 dB 0.14 dB 0.13 dB 0.13 dB 0.13 dB	
(- 60 to -30) dBm (-30 to -20) dBm (-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	(1.2 to 6) GHz	2.1 dB 0.14 dB 0.14 dB 0.13 dB 0.13 dB 0.13 dB	
(- 60 to -30) dBm (-30 to -20) dBm (-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	(6 to 14) GHz	2.1 dB 0.14 dB 0.14 dB 0.13 dB 0.13 dB 0.13 dB	

Parameter/Range	Frequency	CMC <sup>2,3</sup> (±)	Comments
RF Power – Measure (cont.)			
(-60 to -30) dBm (-30 to -20) dBm (-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	(14 to 18) GHz	2.1 dB 0.14 dB 0.14 dB 0.13 dB 0.13 dB 0.13 dB	N1914B & E9304-H18
(-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	< 2 GHz	0.29 dB 0.08 dB 0.16 dB 0.13 dB	N1914B & 8487A
(-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	(2 to 18) GHz	0.16 dB 0.1 dB 0.11 dB 0.18 dB	
(-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	(26.5 to 33) GHz	0.14 dB 0.13 dB 0.19 dB 0.19 dB	
(-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	(33 to 40) GHz	0.18 dB 0.18 dB 0.22 dB 0.22 dB	
(-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	(40 to 45) GHz	0.21 dB 0.21 dB 0.25 dB 0.25 dB	
(-20 to -10) dBm (-10 to 0) dBm (0 to 10) dBm (10 to 20) dBm	(45 to 50) GHz	0.21 dB 0.21 dB 0.25 dB 0.25 dB	

Parameter/Range	Frequency	CMC <sup>2, 3, 6</sup> (±)	Comments
Phase Modulation – Measure			
Rate: 200 Hz to 10 kHz (w/11722A)	150 kHz to 10 MHz	5.0 %	8902A w/ 11722A & 11792A
Rate: 200 Hz to 20 kHz (w/11722A)	10 MHz to 1.3 GHz	3.8 %	
Rate: 200 Hz to 20 kHz (w/11792A)	(1.3 to 26.5) GHz	3.8 %	
RF Power – Measure			
(30 to -20) dBm w/11722A w/11792A	100 kHz to 2.6 GHz (2 to 26.5) GHz	0.072 dBm 0.077 dBm	8902A w/ 11722A & 11792A
RF Attenuation/ Insertion Loss –			
(0 to -10) dBm w/11722A w/11792A	2.5 MHz to 1.3 GHz (1.3 to 26.5) GHz	0.0027 dB 0.0027 dB	8902A w/ 11722A & 11792A
(-10 to -40) dBm w/11722A w/11792A	2.5 MHz to 1.3 GHz (1.3 to 26.5) GHz	0.088 dB 0.088 dB	
(-40 to -50) dBm w/11722A w/11792A	2.5 MHz to 1.3 GHz (1.3 to 26.5) GHz	0.18 dB 0.18 dB	
(-50 to -80) dBm w/11722A w/11792A	2.5 MHz to 1.3 GHz (1.3 to 26.5) GHz	0.18 dB 0.18 dB	
(-80 to -90) dBm w/11722A w/11792A	2.5 MHz to 1.3 GHz (1.3 to 26.5) GHz	0.29 dB 0.29 dB	
(-90 to -110) dBm w/11722A w/11792A	2.5 MHz to 1.3 GHz (1.3 to 26.5) GHz	0.32 dB 0.32 dB	
(-110 to -127) dBm w/11722A w/11792A	2.5 MHz to 1.3 GHz (1.3 to 26.5) GHz	0.49 dB 0.49 dB	

Parameter/Range	Frequency	CMC <sup>2, 3, 6</sup> (±)	Comments
Amplitude Modulation – Measure  Depths (5 to 99) %  Rate: 50 Hz to 10 kHz (w/11722A)  Rate: 20 Hz to 10 kHz (w/11722A)  Rate: 50 Hz to 50 kHz (w/11722A)  Rate: 20 Hz to 100 kHz (w/11722A)  Rate: 50 Hz to 50 kHz (w/11792A)  Rate: 20 Hz to 100 kHz (w/11792A)	150 kHz to 10 MHz  150 kHz to 10 MHz  10 MHz to 1.3 GHz  10 MHz to 1.3 GHz  (1.3 to 26.5) GHz  (1.3 to 26.5) GHz	2.5 %  3.7 %  1.3 %  3.7 %  1.3 %  3.7 %	8902A w/ 11722A & 11792A
Frequency Modulation – Measure  Deviation: ≤ 40 kHz Peak  Rate: 20 Hz to 10 kHz (w/11722A)  Deviation: ≤ 400 kHz Peak  Rate: 50 Hz to 100 kHz (w/11722A)  Rate: 20 Hz to 200 kHz (w/11722A)  Rate: 50 Hz to 100 kHz (w/11792A)  Rate: 20 Hz to 200 kHz (w/11792A)	150 kHz to 10 MHz  10 MHz to 1.3 GHz  10 MHz to 1.3 GHz  (1.3 to 26.5) GHz  (1.3 to 26.5) GHz	2.5 %  1.3 %  6.2 %  1.3 %  6.2 %	8902A w/ 11722A & 11792A

### III. Time & Frequency

Parameter/Equipment	Range	CMC <sup>2,5</sup> ( $\pm$ )	Comments
Frequency – Generate	100 $\mu$ Hz to 10 MHz 10 MHz to 50 GHz	1.6 $\mu$ Hz/Hz 2.8 x 1 <sup>e-7</sup> Hz/Hz	33120A 83650B
Frequency – Measure	1 Hz to 10 MHz 10 Hz to 46 GHz	78 $\mu$ Hz/Hz 1 x 1 <sup>e-7</sup> Hz/Hz	3458A 53152A

<sup>1</sup> This laboratory offers commercial calibration service.

<sup>2</sup> Calibration and Measurement Capability Uncertainty (CMC) is the smallest uncertainty of measurement that a laboratory can achieve within its scope of accreditation when performing more or less routine calibrations of nearly ideal measurement standards or nearly ideal measuring equipment. CMCs represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of  $k = 2$ . The actual measurement uncertainty of a specific calibration performed by the laboratory may be greater than the CMC due to the behavior of the customer's device and to influences from the circumstances of the specific calibration.

<sup>3</sup> The stated measured values are determined using the indicated instrument (see Comments). This capability is suitable for the calibration of the devices intended to measure or generate the measured value in the ranges indicated. CMC's are expressed as either a specific value that covers the full range or as a percent or fraction of the reading plus a fixed floor specification

<sup>4</sup> This scope meets A2LA's *P112 Flexible Scope Policy*.

<sup>5</sup> The type of instrument or material being calibrated is defined by the parameter. This indicates the laboratory is capable of calibrating instruments that measure or generate the values in the ranges indicated for the listed measurement parameter.

<sup>6</sup> In the statement of CMC, percentages are percentages of reading, unless otherwise indicated.