



CERTIFICATE OF ACCREDITATION

The ANSI National Accreditation Board

Hereby attests that

ANKO ELECTRONICS
4091 E. La Palma Ave., Ste. N
Anaheim, CA 92807

Fulfills the requirements of

ISO/IEC 17025:2017

and national standard

ANSI/NCSL Z540-1-1994 (R2002)

In the field of

CALIBRATION

This certificate is valid only when accompanied by a current scope of accreditation document.
The current scope of accreditation can be verified at www.anab.org.

A handwritten signature in black ink, appearing to be 'J. Stine', is positioned above a horizontal line.

Jason Stine, Vice President

Expiry Date: 10 November 2026
Certificate Number: AC-2921



This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017.
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory
quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

AND

ANSI/NCSL Z540-1-1994 (R2002)

ANKO ELECTRONICS

4091 E. La Palma Ave., Ste. N

Anaheim, CA 92807

Jeff Blasko (714) 632-2780

CALIBRATION

Valid to: **November 10, 2026**

Certificate Number: **AC-2921**

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Voltage – Generate ¹	(0 to 329.999) mV (0 to 3.299 999) V (0 to 32.999 99) V (30 to 329.999 9) V (0.1 to 1) kV	6.5 μ V 33 μ V 0.35 mV 4.9 mV 16 mV	Direct Measurement: Fluke 5520A Multifunction Calibrator
DC Current – Generate ¹	(0 to 329.999) μ A (0.33 to 3.299 99) mA (3 to 32.999 9) mA (33 to 329.999) mA (0.33 to 1.099 99) A To 2.999 99) A (3 to 10.999 9) A (11 to 20.5) A	54 nA 0.29 μ A 2.8 μ A 28 μ A 0.2 mA 0.94 mA 4.7 mA 17 mA	Direct Measurement: Fluke 5520A Multifunction Calibrator
DC Voltage – Measure ¹	Up to 100 mV 100 mV to 1 V (1 to 10) V (10 to 100) V 100 V to 1 kV	1.4 μ V 7.9 μ V 75 μ V 1.1 mV 24 mV	Direct Measurement: Agilent 3458A, Option 002 8.5 Digit Multimeter
DC Current – Measure ¹	(0 to 100) μ A 100 μ A to 1 mA (1 to 10) mA (10 to 100) mA 100 mA to 1 A	4.1 nA 36 nA 0.37 μ A 5.6 μ A 0.15 mA	Direct Measurement: Agilent 3458A, Option 002 8.5 Digit Multimeter



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Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
DC Resistance – Generate ¹	(0 to 10.999 9) Ω	1.2 mΩ	Direct Measurement: Fluke 5520A Multifunction Calibrator
	(11 to 32.999 9) Ω	2 mΩ	
	(33 to 109.999 9) Ω	2.9 mΩ	
	(110 to 329.999 9) Ω	7.7 mΩ	
	(330 to 1.099 999) kΩ	25 mΩ	
	(1.1 to 3.299 999) kΩ	79 mΩ	
	(3.3 to 10.999 99) kΩ	0.25 Ω	
	(11 to 32.999 99) kΩ	0.79 Ω	
	(33 to 109.999 9) kΩ	2.5 Ω	
	(110 to 329.999 9) kΩ	8.8 Ω	
	330 kΩ to 1.099 999 MΩ	30 Ω	
	(1.1 to 3.299 999) MΩ	0.16 kΩ	
	(3.3 to 10.999 99) MΩ	1.1 kΩ	
	(11 to 32.999 9) MΩ	7.3 kΩ	
(33 to 109.999 9) MΩ	45 kΩ		
(110 to 329.999 9) MΩ	0.78 MΩ		
(330 to 1100) MΩ	13 MΩ		
DC Resistance – Measure ¹	(0 to 10) Ω	0.25 mΩ	Direct Measurement: Agilent 3458A, Option 002 8.5 Digit Multimeter
	(10 to 100) Ω	2.5 mΩ	
	100 Ω to 1 kΩ	14 mΩ	
	(1 to 10) kΩ	0.14 Ω	
	(10 to 100) kΩ	1.4 Ω	
	100 kΩ to 1 MΩ	21 Ω	
	(1 to 10) MΩ	0.74 kΩ	
(10 to 100) MΩ	62 kΩ		
AC Voltage – Generate ¹	(1 to 33) mV		Direct Measurement: Fluke 5520A Multifunction Calibrator
	(10 to 45) Hz	25 μV	
	45 Hz to 10 kHz	9.1 μV	
	(10 to 20) kHz	10 μV	
	(20 to 50) kHz	31 μV	
	(50 to 100) kHz	99 μV	
	(100 to 500) kHz	0.24 mV	
	(33 to 330) mV		
	(10 to 45) Hz	83 μV	
	45 Hz to 10 kHz	44 μV	
	(10 to 20) kHz	49 μV	
	(20 to 50) kHz	97 μV	
	(50 to 100) kHz	0.23 mV	
	(100 to 500) kHz	0.57 mV	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Generate ¹	(0.33 to 3.3) 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 (3.3 to 33) V (10 to 45) Hz 45 Hz to 10 kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (33 to 330) V 45 Hz to 1 kHz (1 to 10) kHz (10 to 20) kHz (20 to 50) kHz (50 to 100) kHz (330 to 1020) V 45 Hz to 1 kHz (1 to 5) kHz (5 to 10) kHz	0.81 mV 0.43 mV 0.54 mV 0.81 mV 1.9 mV 6.7 mV 8.2 mV 4.4 mV 6.7 mV 9.5 mV 24 mV 52 mV 57 mV 70 mV 87 mV 0.55 V 0.25 V 0.21 V 0.25 V	Direct Measurement: Fluke 5520A Multifunction Calibrator
AC Voltage – Measure ¹	(1 to 10) mV 40 Hz to 1 kHz (1 to 20) kHz (20 to 50) kHz (50 to 100) kHz (100 to 300) kHz (10 to 100) mV 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	4.5 μV 16 μV 5.5 μV 60 μV 0.47 mV 12 μV 20 μV 52 μV 0.1 mV 0.36 mV 1.7 mV	Direct Measurement: Agilent 3458A, Option 002 8.5 Digit Multimeter

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Voltage – Measure ¹	100 mV to 1 V		Direct Measurement: Agilent 3458A, Option 002 8.5 Digit Multimeter
	40 Hz to 1 kHz	0.12 mV	
	(1 to 20) kHz	0.19 mV	
	(20 to 50) kHz	0.39 mV	
	(50 to 100) kHz	0.97 mV	
	(100 to 300) kHz	3.5 mV	
	300 kHz to 1 MHz	12 mV	
	(1 to 2) MHz	20 mV	
	(1 to 10) V		
	(1 to 40 Hz	1.4 mV	
	40 Hz to 1 kHz	1.2 mV	
	(1 to 20) kHz	2 mV	
	(20 to 50) kHz	3.9 mV	
	(50 to 100) kHz	9.6 mV	
	(100 to 300) kHz	36 mV	
(10 to 100) V			
40 Hz to 1 kHz	26 mV		
(1 to 20) kHz	27 mV		
(20 to 50) kHz	44 mV		
(50 to 100) kHz	0.14 V		
(100 to 700) V			
40 Hz to 1 kHz	0.35 V		
AC Current – Generate ¹	(29 to 330) μ A		Direct Measurement: Fluke 5520A Multifunction Calibrator
	(10 to 20) Hz	0.6 μ A	
	(20 to 45) Hz	0.47 μ A	
	45 Hz to 1 kHz	0.4 μ A	
	(1 to 5) kHz	0.89 μ A	
	(5 to 10) kHz	2.2 μ A	
	(10 to 30) kHz	4.4 μ A	
	330 μ A to 3.3 mA		
	(10 to 20) Hz	5.3 μ A	
	(20 to 45) Hz	3.3 μ A	
	45 Hz to 1 kHz	2.7 μ A	
	(1 to 5) kHz	5.3 μ A	
	(5 to 10) kHz	13 μ A	
	(10 to 30) kHz	26 μ A	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Generate ¹	(3.3 to 33) mA		Direct Measurement: Fluke 5520A Multifunction Calibrator
	(10 to 20) Hz	48 μ A	
	(20 to 45) Hz	25 μ A	
	45 Hz to 1 kHz	13 μ A	
	(1 to 5) kHz	23 μ A	
	(5 to 10) kHz	54 μ A	
	(10 to 30) kHz	0.11 mA	
	(33 to 330) mA		
	(10 to 20) Hz	0.48 mA	
	(20 to 45) Hz	0.25 mA	
	45 Hz to 1 kHz	0.12 mA	
	(1 to 5) kHz	0.3 mA	
	(5 to 10) kHz	0.6 mA	
	(10 to 30) kHz	1.2 mA	
	330 mA to 1.09999 A		
	(10 to 45) Hz	1.6 mA	
	45 Hz to 1 kHz	0.52 mA	
	(1 to 5) kHz	5.9 mA	
	(5 to 10) kHz	25 mA	
	(1.1 to 2.99999) A		
	(10 to 45) Hz	4.4 mA	
	45 Hz to 1 kHz	1.7 mA	
	(1 to 5) kHz	15 mA	
	(5 to 10) kHz	62 mA	
(3 to 10.9999) A			
(45 to 100) Hz	7.2 mA		
100 Hz to 1 kHz	10 mA		
(1 to 5) kHz	0.26 A		
(11 to 20.5) A			
(45 to 100) Hz	23 mA		
100 Hz to 1 kHz	28 mA		
(1 to 5) kHz	0.48 A		

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
AC Current – Measure ¹	(0 to 100) μ A		Direct Measurement: Agilent 3458A, Option 002 8.5 Digit Multimeter
	10 Hz to 20 Hz	0.5 μ A	
	20 Hz to 45 Hz	0.21 μ A	
	45 Hz to 100 Hz	0.11 μ A	
	100 Hz to 1 kHz	0.11 μ A	
	100 μ A to 1 mA		
	(10 to 20) Hz	4.9 μ A	
	(20 to 45) Hz	2 μ A	
	(45 to 100) Hz	0.94 μ A	
	100 Hz to 5 kHz	0.59 μ A	
	(5 to 20) kHz	0.94 μ A	
	(20 to 50) kHz	5.1 μ A	
	(1 to 10) mA		
	(10 to 20) Hz	49 μ A	
	(20 to 45) Hz	20 μ A	
	(45 to 100) Hz	9.4 μ A	
	100 Hz to 5 kHz	5.9 μ A	
	(5 to 20) kHz	9.4 μ A	
	(20 to 50) kHz	51 μ A	
	(10 to 100) mA		
	(10 to 20) Hz	0.49 mA	
	(20 to 45) Hz	0.2 mA	
	(45 to 100) Hz	94 μ A	
	100 Hz to 5 kHz	59 μ A	
(5 to 20) kHz	94 μ A		
(20 to 50) kHz	0.51 mA		
100 mA to 1 A			
(10 to 20) Hz	4.9 mA		
(20 to 45) Hz	2.1 mA		
(45 to 100) Hz	1.2 mA		
100 Hz to 5 kHz	1.4 mA		
(5 to 20) kHz	3.7 mA		

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Electrical Stimulation of Thermocouple Indicating Devices – Generate/Measure	Type E (-250 to -100) °C	0.39 °C	Direct Measurement: Fluke 5520A Multifunction Calibrator
	(-100 to -25) °C	0.13 °C	
	(-25 to 350) °C	0.11 °C	
	(350 to 650) °C	0.13 °C	
	(650 to 1 000) °C	0.18 °C	
	Type J (-210 to -100) °C	0.21 °C	
	(-100 to -30) °C	0.13 °C	
	(-30 to 150) °C	0.11 °C	
	(150 to 760) °C	0.14 °C	
	(760 to 1 200) °C	0.18 °C	
	Type K (-200 to -100) °C	0.26 °C	
	(-100 to -25) °C	0.14 °C	
	(-25 to 120) °C	0.13 °C	
	(120 to 1 000) °C	0.21 °C	
	(1 000 to 1 372) °C	0.31 °C	
	Type S (0 to 250) °C	0.37 °C	
(250 to 1 000) °C	0.28 °C		
(1 000 to 1 400) °C	0.29 °C		
(1 400 to 1 767) °C	0.38 °C		
Type T (-250 to -150) °C	0.49 °C		
(150 to 0) °C	0.19 °C		
(0 to 120) °C	0.13 °C		
(120 to 400) °C	0.11 °C		
Capacitance – Generate ¹ (Simulation)	10 Hz to 3 kHz (0.4 to 3.299 99) nF	20 pF	Direct Measurement: Fluke 5520A Multifunction Calibrator
	10 Hz to 1 kHz (3.3 to 32.999 9) nF	0.14 nF	
	(33 to 329.999) nF	0.36 nF	
	(10 to 300) Hz (0.33 to 3.299 99) μF	8.3 nF	
	(10 to 120) Hz (3.3 to 32.999) μF	0.12 μF	
	Up to 50 Hz (33 to 329.999) μF	1.3 μF	
	Up to 6 Hz (0.33 to 3.299 99) mF	13 μF	

Electrical – DC/Low Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Oscilloscopes ¹			
Amplitude DC Signal 50 Ω load	(1 to 24.999) mV (25 to 109.99) mV 110 mV to 2.1999 V (2.2 to 6.6) V	78 μV 0.24 mV 4.4 mV 13 mV	Direct Measurement: Fluke 5522A/SC1100 Multifunction Calibrator
Amplitude DC Signal 1 MΩ Load	(1 to 24.999) mV (25 to 109.99) mV 110 mV to 2.1999 V (2.2 to 10.999) V (11 to 130) V	41 μV 74 μV 0.85 mV 4.3 mV 51 mV	
Rise Time	1 kHz to 2 MHz (200 to 300) ps 2 MHz to 10 MHz (200 to 350) ps	0.23 ns 0.23 ns	
Time Marker 50 Ω load	(1 to 5) ns 10 ns (20 to 50) ns 100 ns to 20 ms	9.7 fs 19 fs 97 fs 39 ns	
Leveled Sinewave Flatness into 50 Ω (Relative to 50 kHz)	5 mVp-p to 5 Vp-p 50 kHz to 100 MHz (100 to 300) MHz (300 to 600) MHz 5 mVp-p to 3.5 Vp-p (600 to 1 100) MHz	9.8 mV/V + 11 mV 1.4 mV/V + 11 mV 29 mV/V + 12 mV 34 mV/V + 13 mV	

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Calipers ^{1,2}	Up to 6 in	2 μin/in + 1.9 μin	Direct Measurement: Gage Blocks
Outside Micrometers ^{1,2}	Up to 6 in	2 μin/in + 1.9 μin	Direct Measurement: Gage Blocks
Height Gages ^{1,2}	Up to 12 in	890 μin	Direct Measurement: Caliper Checker, Surface Plate

Length – Dimensional Metrology

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Indicators ^{1,2} (Dial & Digital)	Up to 0.2 in	320 μ m	Direct Measurement: Dial Indicator Calibrator

Mass and Mass Related

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Hydraulic Gage Pressure – Measure ¹	(0 to 5) psi (0 to 100) psi (0 to 10 000) psi	0.001 6 psi 0.033 psi 3 psi	Comparison to Master Pressure Gages: Additel ADT681-02-005 Additel ADT681-02-100 Additel ADT681-02-GP10k

Thermodynamic

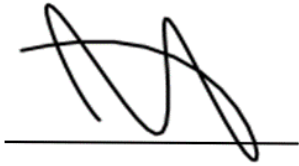
Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Relative Humidity Measuring Equipment	(15 to 75) % RH	1.5 %RH	Comparison to Vaisala M170/HMP77B Thermohygrometer
Temperature Measuring Equipment	22 °C	0.3 °C	Comparison to Vaisala M170/HMP77B Thermohygrometer

Time and Frequency

Parameter/Equipment	Range	Expanded Uncertainty of Measurement (+/-)	Reference Standard, Method, and/or Equipment
Frequency – Measuring Equipment	10 MHz	57 nHz/Hz	Comparison to Keysight 53132A, Local Reference Oscillator
Frequency – Measure	10 Hz to 225 MHz > 225 MHz to 3 GHz	2 Hz 7.1 Hz	Direct Measurement: Keysight 53132A Universal Counter

Calibration and Measurement Capability (CMC) is expressed in terms of the measurement parameter, measurement range, expanded uncertainty of measurement and reference standard, method, and/or equipment. The expanded uncertainty of measurement is expressed as the standard uncertainty of the measurement multiplied by a coverage factor of 2 ($k=2$), corresponding to a confidence level of approximately 95%.

- Notes:
1. On-site calibration service is available for this parameter, since on-site conditions are typically more variable than those in the laboratory, larger measurement uncertainties are expected on-site than what is reported on the accredited scope.
 2. The uncertainty presented here does not include the resolution of the unit under test. The resolution will be included in the reported measurement uncertainty at the time of calibration.
 3. Unless otherwise specified in the far-right column above, the laboratory utilizes internally written calibration procedures in the process of calibrating the parameters listed in this document.
 4. This scope is formatted as part of a single document including Certificate of Accreditation No. AC-2921.



Jason Stine, Vice President

