



Accredited Laboratory

A2LA has accredited

A. T. PARKER INC. DBA SOLAR ELECTRONICS

North Hollywood, CA

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 *General requirements for the competence of testing and calibration laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and R205 – Specific Requirements: Calibration Laboratory Accreditation Program. 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).



Presented this 19th day of February 2025.

A blue ink signature of Trace McInturff, written in a cursive style.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 7219.01
Valid to March 31, 2027

For the calibrations to which this accreditation applies, please refer to the laboratory's Calibration Scope of Accreditation.



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

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CALIBRATION

Valid To: March 31, 2027

Certificate Number: 7219.01

In recognition of the successful completion of the A2LA evaluation process (including an assessment of the organization's compliance with R205 – A2LA's Calibration Program Requirements), accreditation is granted to this laboratory to perform the following calibrations and dimensional inspections¹:

I. Electrical – RF/Microwave

Parameter/Equipment	Range	CMC ^{2,3} (±)	Comments
Transformers			
Insertion Loss – AC Port: (30 Hz to 250 kHz)	(- 7.0 to 0.1) dB	0.45 dB	MIL-STD-461/462 network analyzer, (KEYSIGHT E5061B)
Insertion Loss – Secondary: (30 Hz to 250 kHz)	(- 7.5 to - 0.4) dB	0.45 dB	
Current and Injection Probes			
Insertion Loss (dB): (20 Hz to 10 kHz) (10 kHz to 300 MHz) (300 kHz to 1 GHz)	(- 79.8 to - 71.5) dB (- 71.1 to - 17.8) dB (- 38.3 to - 13.8) dB	- 17 % - 11 dB - 0.16 % + 0.36 dB 1.8 dB	MIL-STD-461, MIL-STD-462 Notice 3, DO-160, network analyzer, (KEYSIGHT E5061B)
Correction Factor (dB): (20 Hz to 10 kHz) (10 kHz to 300 MHz) (300 kHz to 1 GHz)	(37.5 to 45.7) dB (- 16.2 to 37.1) dB (- 20.1 to 4.3) dB	16 % - 5.0 dB 0.16 % + 0.41 dB 1.8 dB	

Parameter/Equipment	Range	CMC ^{2,3} (±)	Comments
<p>LISNs</p> <p>Impedance Magnitude: 1 kHz to 150 MHz (150 to 400) MHz 400 MHz to 1 GHz</p> <p>Impedance Phase: (100 kHz to 10 MHz) (10 to 100) MHz (100 MHz to 1 GHz)</p> <p>Insertion Loss: (1 kHz to 1 GHz)</p> <p>Correction Factor: (1 kHz to 1 GHz)</p> <p>Isolation (dB): (1 kHz to 100 MHz)</p>	<p>(0 to 46.9) Ω (47.3 to 77.1) Ω (55.6 to 78.8) Ω</p> <p>(- 8.6 to 85.5) ° (- 1.0 to 8.0) ° (- 60.1 to 0.8) °</p> <p>(- 62.2 to - 0.5) dB</p> <p>(- 29.7 to 0.1) dB</p> <p>(- 70.5 to - 5.6) dB</p>	<p>0.15 % + 0.10 Ω 3.9 % - 1.7 Ω - 10 % + 11 Ω</p> <p>1.9 ° 0.39 ° 4.8 °</p> <p>0.42 dB</p> <p>0.68 dB</p> <p>0.42 dB</p>	<p>MIL-STD 461, MIL-STD 461 (alt. 5μH LISN from Appendix A), MIL-STD-462 Notice 3, DO-160, CISPR 16-1, CISPR 16-1-2, CISPR 25, FCC Part 15, FCC Part 18, DEF STAN 59-411 Part 3, ANSI C63.4(1992), ANSI C63.4(2003), ISO 7637-2, network analyzer, (KEYSIGHT E5061B plus calibration kit 85032E)</p>
<p>Calibration Fixtures</p> <p>VSWR – w/o Probe: (20 Hz to 500 MHz) (500 MHz to 1 GHz)</p> <p>VSWR – w/ Probe: (20 Hz to 500 MHz) (500 MHz to 1 GHz)</p>	<p>(1.0 to 2.1) lin (2.2 to 5.0) lin</p> <p>(1.0 to 1.6) lin (1.5 to 4.3) lin</p>	<p>4.0 % - 0.03 lin 0.51 lin</p> <p>1.9 % - 0.01 lin 21 % - 0.30 lin</p>	<p>MIL-STD-461, MIL-STD-462 Notice 3, DO-160, network analyzer, (KEYSIGHT E5061B)</p>
<p>Attenuators</p> <p>Insertion Loss: (100 Hz to 1 GHz)</p> <p>VSWR Input: (100 Hz to 1 GHz)</p> <p>VSWR Output: (100 Hz to 1 GHz)</p>	<p>(- 41.4 to - 39.9) dB</p> <p>(1.1 to 2.9) lin</p> <p>(1.1 to 1.9) lin</p>	<p>0.37 dB</p> <p>26 % - 0.26 lin</p> <p>100 % - 1.1 lin</p>	<p>MIL-STD-461, network analyzer, (KEYSIGHT E5061B and 85032E)</p>

Parameter/Equipment	Range	CMC ^{2,3} (\pm)	Comments
Feedthrough Capacitors Insertion Loss: (1 to 300) kHz (300 kHz to 1 MHz)	(- 52.2 to - 5.3) dB (- 80.0 to - 41.4) dB	0.51 dB 1.8 dB	MIL-STD 461, MIL-STD-462 Notice 3, DO-160, network analyzer, (E5061B plus 85032E)
Loop Antennas and Sensors Correction Factor (10 Hz to 2 kHz) (2 kHz to 1 MHz)	(63.5 to 80.0) dB (38.8 to 62.9) dB	12 % - 6.8 dB 0.49 % + 0.17 dB	MIL-STD-461 (RS101, RE101), network analyzer, (KEYSIGHT E5061B)
RF Couplers Insertion Loss: (10 kHz to 400 MHz)	(- 48.6 to - 38.5) dB	0.41 dB	MIL-STD-461, network analyzer, (KEYSIGHT E5061B plus 85032E)
Resistive Devices VSWR: (10 Hz to 1 GHz)	(1.0 to 1.4) lin	18 % - 0.17 lin	MIL-STD 461, network analyzer, (KEYSIGHT E5061B plus 85032E)

¹ This laboratory offers commercial calibration service.

² 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.

³ In the statement of CMC, percentages are to be read as percentage of reading, unless otherwise noted.