

SCOPE OF ACCREDITATION TO ISO/IEC 17025:2005
& ANSI/NCSL Z540-1-1994

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CALIBRATION

Valid To: September 30, 2010

Certificate Number: 2273.01

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations¹:

I. Electrical – DC/Low Frequency

Parameter/Equipment	Range	Best Uncertainty ^{2,3} (±)	Comments
ESD Simulators –			Verification of generator conformance to the waveform parameters and levels of:
Contact Voltage	200 V to 30 kV ± 5 %	2.0 %	IEC 61000-4-2, EN 61000-4-2, IEC 801-2, ISO TR 10605, ISO 10605, SAE J1113 -13, ANSI C63.16, FORD ES-XW7T-1A278-AC, GMW 3097, DC-10614, DC-11224 Brandenburg HV meter 139D (up to 40kV, 30G Ohm input impedance), TEK TDS 7104 with Schaffner MD102 ESD target
Rise Time	(0.7 to 1) ns	83 ps	
Peak Current	(7.5 to 112.5) A ± 10 %	4.0 %	
30 ns Current	(4 to 60) A ± 30 %	7.0 %	
60 ns Current	(2 to 30) A	11 %	
RC Time Constant	600 ns ± 130 ns	15 ns	
	300 ns ± 60 ns	5 ns	

Parameter/Equipment	Range	Best Uncertainty ^{2,3} (±)	Comments
EFT/Burst Generator –			Verification of generator conformance to the waveform parameters and levels of:
Voltage	20 V to 8 kV	2.2 %	IEC 61000-4-4, EN 61000-4-4, GR 1089 CORE, ANSI C37.90, ISO 7637-2
Rise Time	5 ns ± 20 %	2.3 %	
Pulse Width	(35 to 200) ns	2.4 %	
Burst Duration	(0.5 to 20) ms	0.7 %	
Burst Period	(100 to 300) ms	0.7 %	
Repetition Rate	1 kHz to 1 MHz	0.7 %	
			Tektronix TDS 5052B Schaffner CAS 3025 attenuator set
Transient Generator –			Verification of generator conformance to the waveform parameters and levels of:
Front/Rise Time – Open Circuit Short Circuit	1 µs to 10 ms (1 to 100) µs	2.1 %	IEC 61000-4-5, EN 61000-4-5, IEC 61000-4-9, IEC 61000-4-12, ANSI C62.41, UL1449, ISO7637-2, ITU Rec K.17, K.20, K.21, GR1089CORE
Pulse Width – Open Circuit Short Circuit	1 µs to 1000 ms 1 µs to 1 ms	2.5 %	
Open Circuit Voltage	10 V to 8 kV	2.6 %	
Short Circuit Current	1 A to 4 kA	2.4 %	
Repetition Rate	(0.1 to 100) s	0.7 %	
Ring/Oscillatory Wave – Rise Time Frequency Current	(0.5 to 1.5) µs 5 kHz to 1 MHz 1 A to 4 kA	2.1 % 0.7 % 2.4 %	
			Tektronix TDS 5052B Schaffner MD 200

Parameter/Equipment	Range	Best Uncertainty ^{2, 3} (\pm)	Comments
PQT			Verification of generator conformance to the waveform parameters and levels of:
Output Voltage	Up to 260 V AC or DC	0.33 %	IEC 61000-4-11, EN 61000-4-11
Phase Angle	(0 to 359) $^{\circ}$	1.2 %	
Pulse Rise/Fall Time	(1 to 5) ns	1.2 %	Tektronix TDS 5052B
DC Voltage – Measure	10 mV to 1000 V	0.12 %	HP 34401A
DC Current – Measure	10 mA to 3.0 A	0.17 %	HP 34401A
Resistance – Measure	0 Ω to 100 k Ω	1.5 % + 4 m Ω	HP 34401A 4-wire measurement
AC Voltage – Measure			
10 Hz to 100 kHz	10 mV to 750 V	1.4 %	HP 34401A
	(1 to 100) V	2.6 %	Tektronix TDS 5052B, Schaffner MD 200
AC Current – Measure			
10 Hz to 5 kHz	10 mA to 1.0 A (1.0 to 3.0) A	0.86 % + 0.4 mA 0.86 %	HP 34401A
	10 mA to 100 A	2.4 %	Tektronix TDS 5052B, Pearson 101
Frequency – Measure	100 Hz to 1 MHz	0.7 %	Tektronix TDS 5052B, Pearson 101

¹ This laboratory offers commercial calibration service.

² “Best Uncertainty” 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 of nearly ideal measuring equipment. Best uncertainties represent expanded uncertainties expressed at approximately the 95 % level of confidence, usually using a coverage factor of $k = 2$. The best uncertainty of a specific calibration performed by the laboratory may be greater than the best uncertainty due to the behavior of the customer’s device and to influences from the circumstances of the specific calibration.

³ In the statement of Best Uncertainty, all percentages are stated as percent of reading.



THE AMERICAN ASSOCIATION FOR
LABORATORY ACCREDITATION

ACCREDITED LABORATORY

A2LA has accredited

TESEQ INC.

Edison, NJ

for technical competence in the field of

Calibration

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 *General Requirements for the Competence of Testing and Calibration Laboratories*. This laboratory also meets the requirements of ANSI/NCSL Z540-1-1994 and any additional program requirements in the field of calibration. 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 18 June 2005*).



Presented this 28th day of October 2008.

A handwritten signature in cursive script, reading "Peter Abney".

President
For the Accreditation Council
Certificate Number 2273.01
Valid to September 30, 2010
Revised: August 31, 2010

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