SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

JEL LIMITED
3032 Nakabyo, Abiko-City
Chiba-Prefecture, JAPAN 270-1121,
Sho Kitagawa Phone: +81 3 3452 2668
Email: s.kitagawa@qses.co.jp

CALIBRATION

Valid To: August 31, 2025 Certificate Number: 0952.04

In recognition of the successful completion of the A2LA evaluation process, accreditation is granted to this laboratory to perform the following calibrations[1, 8]:

I. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC[2, 7, 9, 10] (±)	Comments
DC Voltage – Generate[3]	(1 to 220) mV (0.22 to 2.2) V (2.2 to 1000) V	0.0029 % 0.001 % 0.0053 %	Calibrator
DC Current – Generate[3]	10 µA to 2.2 A 10 mA to 36 A	0.04 % 0.29 %	Calibrator
Resistance – Generate[3]	(0.1 to 1111.21) Ω 1 kΩ to 111.11 MΩ	0.52 % 0.23 %	Decade resistance box

Parameter/Range	Frequency	CMC[2, 7, 9, 10] (±)	Comments
AC Voltage – Generate[3]			
(1.0 to 2.2) mV	50 Hz to 10 kHz	0.62 %	Calibrator
(2.2 to 22) mV	50 Hz to 10 kHz	0.21 %	
(22 to 220) mV	50 Hz to 10 kHz	0.084 %	
(0.22 to 2.2) V	20 Hz to 100 kHz	0.054 %	
(2.2 to 22) V	20 Hz to 100 kHz	0.064 %	
(22 to 220) V	20 Hz to 100 kHz	0.26 %	
(220 to 1000) V	50 Hz to 1 kHz	0.18 %	
AC Current – Generate[3]			
(100 to 220) µA	(50 to 60) Hz	0.11 %	Calibrator
(0.22 to 220) mA	(50 to 60) Hz	0.065 %	
(0.22 to 2.2) A	(50 to 60) Hz	0.58 %	
100 mA to 60 A	(50 or 60) Hz	0.31 %	

Parameter/Equipment	Range	CMC[2, 7, 9, 10] (±)	Comments
AC Power Source[3] – Measure			
Frequency Accuracy	DC to 800 Hz	0.016 %	DMM
Voltage Accuracy	(1 to 700) V	0.063 %	DMM
Distortion	20 Hz to 20 kHz	2.4 %	Audio analyzer
DC Power Source[3] – Measure			
Output Voltage Accuracy	1 mV to 1000 V	0.026 %	DMM
Voltage Drop	DC (0.22 to 2.2) V	0.002 %	

Parameter/Equipment	Range	CMC[2, 7, 10] (±)	Comments
ESD Simulator – (Contact Discharge)			
Rise Time / Fall Time	(0.5 to 1.2) ns	0.017 ns	IEC 61000-4-2 ISO 10605
Peak Current, Current at 30/60 ns	Up to 30 A, (2 to 8) kV	1.5 %	Oscilloscope
EFT/Burst Generator[3] –			
Peak Voltage	250 V to 5 kV	3.3 %	IEC 61000-4-4, oscilloscope
Rise Time	5 ns	4.8 %	
Pulse Duration	50 ns	0.5 %	
Pulse Repetition Frequency	(5 to 100) kHz	0.26 %	
Burst Period	300 ms	0.21 %	
Burst Duration	15 ms 0.75 ms	0.17 % 0.17 %	
Capacitive Clamp[3] –			
Peak Voltage	2 kV (set voltage)	3.3 %	IEC 61000-4-4, oscilloscope
Rise time	5 ns	4.8 %	
Pulse Duration	50 ns	0.5 %	

Parameter/Equipment	Range	CMC[2, 7, 10] (±)	Comments
Surge Generator[3] –			
Open Circuit:			
Peak Voltage	(0.5, 1, 2, 4) kV	3.8 %	EN 61000-4-5, oscilloscope
Front Time	1.2 µs	10 %	
Duration	50 µs	0.067 %	
Time to Half Value	50 µs	0.067 %	
Short Circuit:			
Peak Current	10 A to 2 kA	3.7 %	
Front Time	8 µs	1.5 %	
Duration	20 µs	0.1 %	
Time to Half Value	20 µs	0.1 %	
CDN Section Phase Shifting	50 Hz, 60 Hz	0.079 °	

Parameter/Range	Frequency	CMC[2, 7, 10] (±)	Comments
DIP/Interruption Simulator[3] –			
Output Voltage – (0 to 500) $V_{(rms)}$	DC to 400 Hz	0.64 %	IEC 61000-4-11 (2004, 2020) DMM
Repetition Time – 10 s	DC to 400 Hz	0.36 %	Oscilloscope
Event Time – (0 to 5000) ms	DC to 400 Hz	0.36 %	
Phase Shifting – (0 to 360) °	DC to 400 Hz	0.3°	
Rising Time/Falling Time – (1 to 5) µs	DC to 400 Hz	2.7 %	
Overshoot & Undershoot Voltage – Less Than 5 % of Rated Voltage (Ut)	DC to 400 Hz	3.3 %	

Parameter/Range	Frequency	CMC[2, 7, 9, 10] (±)	Comments
Magnetic Field Strength Meter –			
Magnetic Field Strength (1 to 100) A/m	(50 or 60) Hz	0.42 %	Magnetic field meter
Audio Generator / Function Generator[3] –			
Frequency Accuracy Sine Wave	1 Hz to 2 MHz	0.017 %	Frequency counter
Amplitude Accuracy Sine Wave	3 Hz to 300 kHz	0.54 %	DMM
Distortion Sine Wave	20 Hz to 20 kHz	2.4 %	Audio analyzer
Rise/Fall Time Square & Triangle Form Wave	DC to 2 MHz	1.9 ns	Oscilloscope
Voltage Accuracy	DC to 2 MHz	2 %	DMM
Duty Cycle	DC to 2 MHz	2 %	Oscilloscope
Oscilloscope[3] –			
DC Output Voltage	DC 1 mV to 100 V	0.02 %	DMM
Time Interval Accuracy	DC to 2 GHz	0.23 %	Signal generator
Input Impedance	DC to 2 GHz	0.45 %	DMM
DC Voltage Measurement Accuracy	DC 1 mV to 100 V	1.3 %	Calibrator
Bandwidth	DC to 2 GHz	0.12 dB	Signal generator, Power sensor & power meter
Trigger Sensitivity	DC to 2 GHz	26 %	Signal generator
Offset Gain	DC 1 mV to 100 V	0.47 %	DMM
DC Gain	DC 1 mV to 100 V	0.47 %	DMM

II. Electrical – RF/Microwave

Parameter/Equipment	Frequency	CMC[2, 7] (±)	Comments
Reflection Coefficient[3] – VSWR	9 kHz to 10 MHz 10 MHz to 40 GHz	0.19 lin 0.13 lin	Network analyzer with calibration kit
Insertion Loss[3] –	9 kHz to 10 MHz 10 MHz to 18 GHz (18 to 40) GHz	0.36 dB 0.18 dB 0.49 dB	Network analyzer with calibration kit
Coaxial Cable[3] –			
Cable Loss	9 kHz to 10 MHz 10 MHz to 18 GHz (18 to 40) GHz	0.08 dB 0.22 dB 0.58 dB	Network analyzer with calibration kit
Attenuator[3] –			
Attenuation	9 kHz to 10 MHz 10 MHz to 18 GHz (18 to 40) GHz	0.09 dB 0.22 dB 0.56 dB	Network analyzer with calibration kit
Antenna Factor –			
Biconical Antennas[6]	(30 to 200) MHz	0.77 dB	ANSI C63.5 (SSM), network analyzer with calibration kit
	(30 to 200) MHz	1.1 dB	ANSI C63.5 (RAM), spectrum analyzer
Log Periodic Antennas[6] (Excluding GSCF)	(200 to 1000) MHz	1.3 dB	ANSI C63.5 (SSM), network analyzer with calibration kit
	(300 to 1000) MHz	1.4 dB	ANSI C63.5 (RAM), spectrum analyzer
Dipole Antenna[6]	(30 to 300) MHz (300 to 1000) MHz	1.1 dB 1.2 dB	ANSI C63.5 (RAM) spectrum analyzer

Parameter/Equipment	Frequency	CMC[2, 7] (±)	Comments
Antenna Factor (cont)–			
Horn Antennas[6]	(1 to 18) GHz	1.7 dB	ANSI C63.5 (SSM), network analyzer with calibration kit
Monopole Antenna	100 kHz to 30 MHz	0.54 dB	CISPR 25, CISPR 16-1-6, (ECSM), network analyzer with calibration kit
Antenna Balance/Symmetry	(30 to 300) MHz	0.31 dB	CISPR 16-1-6, ANSI C63.5, network analyzer with calibration kit
Antenna Cross-Polarization	(200 to 1000) MHz (1 to 18) GHz	0.36 dB 2.9 dB	CISPR 16-1-6, network analyzer with calibration kit
NSA for Open Area Test Site & Alternative Test Site[3] –	(30 to 200) MHz 200 MHz to 1 GHz	2.8 dB 2.4 dB	ANSI C63.4a network analyzer with calibration kit
Site-VSWR for Open Area Test Site & Alternative Test Site[3] –	(1 to 18) GHz	2.9 dB	CISPR 16-1-4, network analyzer with calibration kit
LISN[3]–			
Impedance	9 kHz to 30 MHz	0.85 Ω	CISPR 16-1-2, ANSI C63.4, network analyzer with calibration kit
Phase	9 kHz to 30 MHz	1.1 deg.	
Isolation	9 kHz to 30 MHz	0.3 dB	
Voltage Division Factor	9 kHz to 30 MHz	0.061 dB	

Parameter/Equipment	Frequency	CMC[2, 5, 7] (±)	Comments
ISN (Impedance Stabilization Network)[3] –			
Termination Impedance	(0.1 to 80) MHz	1.3 Ω	CISPR 16-1-2, CISPR 32, network analyzer with calibration kit
Phase of Basic Network for Asymmetric Disturbance	(0.1 to 80) MHz	1.1°	
Voltage Division Factor	(0.1 to 80) MHz	0.63 dB	
Insertion Loss	(0.1 to 80) MHz	0.61 dB	
Decoupling Attenuation	(0.1 to 80) MHz	1.2 dB	
Longitudinal Conversion Loss (LCL)	(0.1 to 80) MHz	0.31 dB	
Asymmetric Attenuation	(0.1 to 80) MHz	1.3 dB	
Amplifier[3] –			
Gain & Linearity	9 kHz to 10 MHz 10 MHz to 18 GHz (18 to 26.5) GHz	0.23 dB + *M* 0.39 dB + *M* 0.9 dB + *M*	Network analyzer with calibration kit
Harmonic Distortion	100 kHz to 1.8 GHz	1.8 dB + *M*	Spectrum analyzer
Absorbing Clamp –			
Clamp Factor	(30 to 300) MHz (300 to 1000) MHz	3.2 dB 3.5 dB	Original method CISPR 16-1-3
Decoupling Factor DF	(30 to 300) MHz	0.57 dB	CISPR 16-1-3
Decoupling Factor DR	(30 to 300) MHz	0.58 dB	CISPR 16-1-3
CDN[3] –			
Coupling Factor	100 kHz to 230 MHz	0.28 dB	IEC 61000-4-6, network analyzer with calibration kit
Impedance	100 kHz to 230 MHz	0.64 Ω	

Parameter/Equipment	Frequency	CMC[2, 5, 7, 9] (±)	Comments
Impedance[3] – Measure, 50 Ω Termination	9 kHz to 10 MHz 10 MHz to 18 GHz (18 to 40) GHz	0.12 Ω 0.28 Ω 0.69 Ω	Network analyzer with calibration kit
EM Clamp[3] –			
Coupling Factor	100 kHz to 230 MHz	0.65 dB	IEC 61000-4-6, Network analyzer with calibration kit
Impedance	100 kHz to 230 MHz	2.5 Ω	
Decoupling	100 kHz to 230 MHz	1.5 dB	

Parameter/Equipment	Range	CMC[2, 5, 7] (±)	Comments
CISPR Pulse Generator[3, 4] –			
Impulse Area	Band A Band B Band C & D	45 nVs 1.1 nVs 0.17 nVs	Oscilloscope with delay line
Impulse Bandwidth	Band A Band B Band C & D	2 ns 0.04 ns 0.023 ns	Oscilloscope with delay line
Null Point Frequency	Band A Band B Band C & D	0.046 MHz 3.5 MHz 41 MHz	Spectrum analyzer
Flatness of Spectrum Amplitude	Band A Band B Band C & D	0.44 dB 0.44 dB 0.56 dB	Spectrum analyzer
Pulse Repetition Frequency	Band A Band B Band C & D	0.0005 Hz 0.0009 Hz 0.000 75 Hz	Frequency counter
Source Errors for Sinewave Output for CISPR Checks (@ 60 dBµV)	(1, 10, & 100) MHz	0.11 dB	Power sensor & power meter

Parameter/Equipment	Range	CMC[2, 7, 10] (±)	Comments
EMI Receiver[3] –			
Input Impedance	Band A Band B Band C Band D	2.3 % 1 % 1 % 1 %	CISPR16-1-1, ANSI C63.2, network analyzer with calibration kit
Pulse Response	Band A Band B Band C Band D	0.62 dB 0.62 dB 0.69 dB 0.69 dB	Signal generator, frequency standard, CISPR pulse generator, power meter, power sensor
Relative Pulse Response	Band A Band B Band C Band D	0.58 dB 0.58 dB 0.58 dB 0.58 dB	CISPR pulse generator, attenuator
Sine-Wave Accuracy	Band A Band B Band C Band D Band E	0.42 dB 0.42 dB 0.42 dB 0.42 dB 0.56 dB	Signal generator, power meter, power sensor
Selectivity, 6 dB Bandwidth	Band A Band B Band C Band D Band E	1.4 Hz 0.012 kHz 0.11 kHz 0.31 kHz 1 kHz	Signal generator, attenuator
Intermediate Frequency Rejection Ratio	Band A Band B Band C Band D Band E	1.4 dB 1.4 dB 1.5 dB 1.5 dB 1.9 dB	Signal generator, attenuator
Image Frequency Rejection Ratio	Band A Band B Band C Band D Band E	1.4 dB 1.4 dB 1.5 dB 1.5 dB 1.9 dB	Signal generator, attenuator

Parameter/Equipment	Range	CMC[2, 7, 10] (±)	Comments
EMI Receiver[3] – (cont)			
Spurious Frequency Rejection Ratio	Band A Band B Band C Band D Band E	1.4 dB 1.4 dB 1.5 dB 1.5 dB 1.9 dB	Signal generator, attenuator
Peak Detector Verification	Band A Band B Band C Band D	0.59 dB 0.59 dB 0.67 dB 0.67 dB	CISPR pulse generator
Average Detector Verification	Band A Band B Band C Band D	0.6 dB 0.6 dB 0.66 dB 0.66 dB	CISPR pulse generator
RMS Detector Verification	Band A Band B Band C Band D	0.59 dB 0.59 dB 0.66 dB 0.66 dB	CISPR pulse generator
Response to Intermittent, Unsteady & Drifting Narrowband Disturbances	Band A Band B Band C Band D	0.85 dB 0.85 dB 0.85 dB 0.85 dB	Signal generator
Impulse Bandwidth Measurement (EMI Receiver & Spectrum Analyzer)	< 1 MHz 1 MHz resolution bandwidth	1.4 kHz	Signal generator
Input Impedance on CISPR Band E	(1 to 18) GHz	3.1 %	Network analyzer with calibration kit

Parameter/Range	Frequency	CMC[2, 5, 7, 10] (±)	Comments
Signal Generator[3] –			
Frequency Accuracy	9 kHz to 1 GHz (1 to 18) GHz (18 to 40) GHz	5.9×10^{-10} Hz/Hz 1×10^{-10} Hz/Hz 7.8×10^{-11} Hz/Hz	Frequency counter, frequency standard
Reference Frequency Accuracy	10 MHz	7.8×10^{-11} Hz/Hz	Frequency counter, frequency standard
Level Accuracy	9 kHz to 1 GHz	0.28 dB + *M*	Power meter & power sensor
	(1 to 18) GHz	0.46 dB + *M*	Power meter & power sensor
(≥-30 dBm)	(18 to 40) GHz	0.57 dB + *M*	Power meter & power sensor
(<-30 dBm)	(18 to 40) GHz	0.91 dB + *M*	Power meter & power sensor
AM Depth	(1 to 100) % Depth	1.9 %	Spectrum analyzer
Attenuator Setting Accuracy	9 kHz to 1 GHz (1 to 18) GHz (18 to 40) GHz	1.9 dB 1.6 dB 1.9 dB	Spectrum analyzer
Harmonic Distortion	9 kHz to 1 GHz (1 to 18) GHz (18 to 40) GHz	1.7 dB 1.9 dB 3 dB	Spectrum analyzer
AM Frequency Deviation	20 Hz to 100 kHz	0.059 %	Spectrum analyzer
Spectrum Analyzer[3] –			
10 MHz Output Frequency Accuracy	10 MHz	0.1 Hz	Rubidium oscillator, counter
10 MHz Reference Frequency Accuracy	10 MHz	0.1 Hz	
Marker Readout Accuracy	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.2 % 0.2 %	Synthesized generator
Frequency Span Accuracy	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.47 % 0.47 %	
Frequency Readout Accuracy	9 kHz to 40 GHz	0.0013 %	
Noise Sidebands (<50 kHz Offset)	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.2 dB 1 dB	

Parameter/Equipment	Frequency	CMC[2, 5, 7] (±)	Comments
Spectrum Analyzer[3] –			
Spurious Responses	9 kHz to 40 GHz	2.3 dB	Synthesized generator
Residual FM	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.7 dB 1 dB	
Display Scale Fidelity	9 kHz to 18 GHz	0.24 dB	Synthesized generator, step attenuators
Input Attenuation Switching Uncertainty	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.33 dB 0.46 dB	
Reference Level Accuracy	9 kHz to 18 GHz	0.76 dB + *M*	Synthesized generator, power meter w/ sensor, step attenuators
Resolution Bandwidth Switching Uncertainty	9 kHz to 26.5 GHz	0.14 dB	Synthesized generator, attenuator
Absolute Amplitude Accuracy	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.66 dB + *M* 0.31 dB + *M*	Power meter w/ sensor, splitter, attenuator
Resolution Bandwidth Accuracy	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.4 dB 0.4 dB	Synthesized generator, power meter w/ sensor, splitter
Residual Response	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.4 dB 0.43 dB	Termination
Displayed Average Noise Level	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.26 dB 0.44 dB	Terminations
Frequency Response/Flatness	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.52 dB 0.28 dB	Synthesized generator, power meter with sensor
Tracking Generator Level Flatness	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.5 dB 0.5 dB	
Overall Absolute Amplitude Accuracy	9 kHz to 26.5 GHz (26.5 to 40) GHz	0.63 dB 0.31 dB	Synthesized generator, power meter w/ sensor, step attenuators

Parameter/Equipment	Frequency	CMC[2, 7, 10] (±)	Comments
Network Analyzer[3] –			
Frequency Accuracy	9 kHz to 6 GHz (6 to 40) GHz	1.3×10^{-8} Hz/Hz 1.7×10^{-8} Hz/Hz	Rubidium oscillator, counter
Level Accuracy /Level Flatness	9 kHz to 6 GHz (6 to 40) GHz	0.25 dB 1 dB	Power meter & sensor
Power Linearity	9 kHz to 6 GHz (6 to 40) GHz	0.56 dB 1.1 dB	Power meter & sensor
Harmonics	9 kHz to 6 GHz	0.43 dB	Spectrum analyzer
Noise Level / Input Cross Talk	9 kHz to 6 GHz	2 dB	
Noise Level	(6 to 40) GHz	3.7 dB	
Input Impedance	9 kHz to 6 GHz (6 to 40) GHz	1.2 dB 2.3 dB	Network analyzer
Absolute Amplitude Accuracy	9 kHz to 6 GHz	0.46 dB	Power meter & sensor
Dynamic Accuracy			
Magnitude Ratio	9 kHz to 6 GHz	0.5 dB	Power meter & sensor
Phase	9 kHz to 6 GHz	3.9°	
Current Probe, Current Injection Probe, Fixture[3] –	9 kHz to 230 MHz	0.45 dB	CISPR 16-1-2, network analyzer with calibration kit
Transfer Impedance or Coupling Factor	230 MHz to 1 GHz	0.21 dB	
	(1 to 2.1) GHz	0.21 dB	
ESD Target –			
Flatness of Measurement Chain	30 kHz to 3 GHz (3 to 4) GHz	0.53 dB 0.29 dB	IEC 61000-4-2, network analyzer with calibration kit
Transfer Impedance Zsys	(0.1 to 10) MHz Nominal 50 Ω	0.065 %	DMM

Parameter/Range	Frequency	CMC[2, 7, 10] (±)	Comments
Directional Couplers[3] –			
Insertion Loss / Coupling Factor / Directivity	9 kHz to 1 GHz (1 to 18) GHz (18 to 40) GHz	0.07 dB 0.24 dB 0.62 dB	Network analyzer with calibration kit
Power Sensor[3] –			
Level Accuracy:			
(-60 to 0) dBm	9 kHz to 10 MHz	4.7 %	Power meter & reference power sensor
(-70 to 0) dBm	10 MHz to 4 GHz (4 to 6) GHz (6 to 18) GHz	5.1 % 5.7 % 6.8 %	
(-30 to 0) dBm	(18 to 26.5) GHz (26.5 to 40) GHz	6.3 % 12 %	
(-70 to -30) dBm	(18 to 26.5) GHz (26.5 to 40) GHz	6.6 % 18 %	

Parameter/Equipment	Range	CMC[2, 10] (±)	Comments
Power Meter[3] –			
Instrument Accuracy	3 µW to 110 mW	0.34 %	Range calibrator
Reference Power	50 MHz	0.33 %	Coaxial thermistor mount

III. Time & Frequency

Parameter/Equipment	Range	CMC[2, 9, 10] (±)	Comments
Frequency – Generate	10 MHz	$1x10^{-11}$ Hz/Hz (daily)	Rubidium oscillator
Frequency[3] – Generate	0.1 Hz to 2 MHz	0.023 % Hz/Hz	Signal generator

[1] This laboratory offers commercial calibration service and field 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] Field calibration service is available for this calibration. Please note the actual measurement uncertainties achievable on a customer's site can normally be expected to be larger than the CMC found on the A2LA Scope. Allowance must be made for aspects such as the environment at the place of calibration and for other possible adverse effects such as those caused by transportation of the calibration equipment. The usual allowance for the actual uncertainty introduced by the item being calibrated, (e.g. resolution) must also be considered and this, on its own, could result in the actual measurement uncertainty achievable on a customer's site being larger than the CMC.

[4] For CISPR Pulse Generator calibrations, CMCs are based on Schwarzbeck IGUU 2916.

[5] In the statement of CMC, *M* is the Mismatch error. Uncertainty does not include mismatch error due to connections of the device to other devices in actual use. Mismatch uncertainties, due to the reflection coefficient of the device to be calibrated, are to be included in the overall measurement uncertainty, The approach of determining expanded uncertainties at approximately the 95% level of confidence, (using a coverage factor of k = 2) is to be applied for this calculation as well.

[6] CMC does not include DUT error due to connections of the device to other devices in actual use. The approach of determining expanded uncertainties at approximately the 95% level of confidence, (using a coverage factor of k = 2) is to be applied for DUT error as well.

[7] The contributions from the existing device are not included in the CMC claim.

[8] This scope meets A2LA's *P112 – Flexible Scope Policy*.

[9] 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.

[10] In the statement of CMC, the value is defined as the percentage of reading unless otherwise noted.

Accredited Laboratory

A2LA has accredited

JEL LIMITED

Abiko-City, Chiba-Prefecture, JAPAN

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 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 11th day of December 2023.

Mr. Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 0952.04
Valid to August 31, 2025

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