SCOPE OF ACCREDITATION TO ISO/IEC 17025:2017

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CALIBRATION

Valid To: February 29, 2028 Certificate Number: 2734.04

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[1, 8]:

I. Electrical – DC/Low Frequency

Parameter/Equipment	Range	CMC[2, 6] (±)	Comments
AC Resistance – Measure[3]	Up to 10 Ω	0.45 Ω	Agilent 33250A, 33610, Tektronix MDO3032, MDO32

Parameter/Equipment	Frequency	CMC[2, 6] (±)	Comments
AC Voltage – Measure[3] Fixed Points 100 mVrms	10 Hz to 20 kHz	0.12 % + 35 µV	Agilent 34401A, 34410A, 34465A

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II. Magnetic (Eddy Current Instrumentation – MIZ-8xiD Series & MIZ-200iD)

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Receiver Amplifier Linearity – Eddy Current Instrumentation[3]	(0 to 100) % of Full Scale	0.51 %	Agilent 33250A, 33600A
Receiver Quadrature – Eddy Current Instrumentation[3]	(0 to 360)°	0.024°	ZETEC ACM, Agilent 33250A, 33600A
Receiver Gain – Eddy Current Instrumentation[3]	Up to 80 dB	0.14 %	ZETEC ACM, Agilent 33250A, 33600A

Parameter/Equipment	Frequency	CMC[2, 4] (±)	Comments
Coil Driver Frequency – Eddy Current Instrumentation[3]	10 Hz to 6 MHz	0.12 %	ZETEC ACM, Agilent 53131A
Receiver Frequency Bandwidth – Eddy Current Instrumentation[3]	(8 to 5000) Hz	0.24 %	Agilent 33250A, 33600A

III. Time & Frequency

Parameter/Range	Frequency	CMC[2, 4, 7] (±)	Comments
Frequency – Measure[3] (10 to 100) mV_{rms}	40 Hz to 300 kHz	0.12 % + 250 µHz	Agilent 34401A, 34410A, 34465A

IV. Time & Frequency (Ultrasound Instrumentation – Dynaray Series)

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Receiver – Ultrasound Instrumentation[3]			
Frequency Response:	(0.225 to 20) MHz		
Low Cutoff		None, HP1M, HP2M, HP5M, HP10M, LP2M ≤2.2 % , All others ≤0.90 %	Agilent 33250A, 33600A, Tektronix MDO32, ZETEC attenuator 10040260, ZETEC ABUXE127A
High Cutoff		None, BP1-5M, HP1M, LP2M, LP5M, LP10M, LP15M ≤6.5 % , All others ≤1.9 %	
Bandwidth		None, HP1M, HP2M, HP10M, LP2M, LP15M ≤2.5 % , All others ≤1.0 %	
Center		None, ≤3.6 % , All others ≤1.8 %	
Linearity of Time Delays	Up to 50 µs	0.0063 %	
Gain Linearity	(0 to 80) dB	0.47 dB	
Channel Gain Variation	<1.5 dB (Zetec)	0.65 dB	
Linearity of Vertical Display	(0 to 28) dB rel.	0.53 %	
Equivalent Input Noise	<80 nV/√Hz	7.0 nV/√Hz	
Transmitter – Ultrasound Instrumentation[3]			
Voltage	(25 to 250) V	1.8 %	Agilent 33250A, 33600A, Tektronix MDO32, ZETEC ABUXE127A, 50 ohms/10W load
Rise Time	Up to 50 ns	0.78 ns	
Duration	(25 to 1000) ns	0.46 ns	
Linearity of Time Delays	Up to 50 µs	0.070 %	

V. Time & Frequency (Ultrasound Instrumentation – Zircon-15, Zircon-18, Topaz16, Topaz32, Quartz)

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Receiver – Ultrasound Instrumentation[3]			
Frequency Response – Zircon-15, Zircon-18, Topaz32, Quartz:	Zircon-15 (0.50 to 15) MHz Zircon-18, Topaz32, Quartz (0.50 to 18) MHz		
Phased Array			
Low Cutoff		≤0.70 %	Agilent 33250A &33600A, Tektronix MDO32, ZETEC attenuator 10040260, ZETEC 10040371 (ZIF) ZETEC 10059869 (IPEX)
High Cutoff		HP1M ≤3.2 % None, LP5M, LP10M, HP2M ≤2.4 % , all others ≤1.5 %	
Bandwidth		≤0.80 %	
Center		≤0.90 %	
Conventional			
Low Cutoff		≤0.70 %	
High Cutoff		HP1M ≤8.0 % , None, HP2M ≤5.2 % LP5M, LP10M, BP1-5M, BP2-10M ≤1.9 % All others ≤0.90 %	
Bandwidth		≤0.90 %	
Center		LP5M, HP1M ≤1.3 % All others ≤1.0 %	

Parameter/Equipment	Range	CMC[2, 4, 5] (±)	Comments
Receiver – Ultrasound Instrumentation[3] (cont)			
Frequency Response – Topaz16:			
Phased Array			
Low Cutoff	(0.50 to 18) MHz	≤0.80 %	Agilent 33250A & 33600A, Tektronix MDO32, ZETEC attenuator 10040260, ZETEC 10040371(ZIF), ZETEC 10059869 (IPEX)
High Cutoff		None, LP2M, LP5M, LP10M, HP1M, HP2M ≤2.3 % , All others ≤1.4 %	
Bandwidth		LP2M ≤1.1 % , All others ≤0.90 %	
Center		None, LP2M, LP5M ≤1.4 % , All others ≤1.0 %	
Conventional			
Low Cutoff		≤1.0 %	
High Cutoff		None, HP1M, HP2M ≤6.5 % LP2M, LP5M, LP10M, HP5M, BP1-5M, BP5-18M ≤3.0 % , All others ≤1.7 %	
Bandwidth		LP2M, BP5-18M, BP10-18M ≤1.6 % , All others ≤1.0 %	
Center		None, LP2M, BP5-18M ≤1.9 % , All others ≤1.0 %	
Linearity of Time Delays	Up to 20 µs	0.014 %	
Gain Linearity –			
Phased Array	(0 to 70) dB	0.29 dB	
Conventional	(0 to 70) dB	0.27 dB	

Parameter/Equipment	Range[5]	CMC[2, 4, 5] (±)	Comments
Receiver – Ultrasound Instrumentation[3] (cont)			
Channel Gain Variation –			
Phased Array	<1.5 dB (Zetec)	0.40 dB	Agilent 33250A & 33600A, Tektronix MDO32, ZETEC attenuator 10040260, ZETEC 10040371 (ZIF), ZETEC 10059869 (IPEX)
Conventional	<1.5 dB (Zetec)	0.38 dB	
Linearity of Vertical Display	28 dB rel.	0.36 %	
Equivalent Input Noise	<80 nV/√Hz	3.3 nV/√Hz	
Transmitter – Ultrasound Instrumentation[3]			
Voltage –			
Phased Array	(35 to 75) V	2.0 %	Agilent 33250A & 33600A, Tektronix MDO32, ZETEC 10040371 (ZIF), ZETEC 10059869 (IPEX)
Conventional	(50 to 200) V	2.6 %	
Rise Time –			
Phased Array	Up to 50 ns	0.57 ns	
Conventional	Up to 50 ns	0.34 ns	
Duration –			
Phased Array	(25 to 500) ns	0.63 ns	
Conventional	(25 to 500) ns	0.56 ns	
Linearity of Time Delays	Up to 20 µs	0.051 %	

VI. Time & Frequency (Ultrasound Instrumentation – Topaz64, Emerald64)

Parameter/Equipment	Range	CMC[2, 4] (±)	Comments
Receiver – Ultrasound Instrumentation[3]			
Frequency Response:	(0.50 to 18) MHz		
Phased Array			
Low Cutoff		HP0.6M, LP2M, LP5M, LP10M, HP1M, BP1-5M: <±6.5 % HP2M, BP1.8-7M, BP2-10M: <±3.4 % All others: <±1.7 %	Agilent 33250A, 33600A, Tektronix MDO3032, MDO32, ZETEC attenuator 10040260, ZETEC 10040371 (ZIF) ZETEC 10059869 (IPEX)
High Cutoff		HP0.6M, LP2M, LP5M, LP10M, BP1-5M: <±2.5 % All others: <±1.1 %	
Bandwidth		HP0.6M, LP2M, LP5M, BP1-5M, BP5-10M: <±3.6 % All others: <±1.9 %	
Center		HP0.6M, LP2M, LP5M, LP10M, BP1-5M, BP1.8-7M: < ±4.3 % All others: <±1.9 %	
Conventional			
Low Cutoff		LP2M, BP1-4M, BP1.1-4.5M, BP1.9-7.5M, BP5-20M, BP0.55-6M: <±4.2 % All others: <±3.0 %	
High Cutoff		LP2M, BP1-4M, HP3M: <±2.1 % All others: <±1.2 %	
Bandwidth		LP2M, BP1-4M, BP2-8M, BP5-20M, HP10M: <±3.1 % All others: <±2.0 %	
Center		LP2M, BP1-4M, BP1.1-4.5M, BP2-8M, HP10M, HP3M, BP0.55-6M: <±3.7 % All others: <±2.0 %	

Parameter/Equipment	Range	CMC[2, 4, 5] (±)	Comments
Receiver – Ultrasound Instrumentation[3] (cont)			
Linearity of Time Delays	Up to 20 µs	0.088 %	Agilent 33250A, Tektronix MDO3032, MDO32, ZETEC attenuator 10040260, ZETEC 10040371 (ZIF) ZETEC 10059869 (IPEX)
Gain Linearity –			
Phased Array	(0 to 70) dB	0.29 dB	
Conventional	(0 to 70) dB	0.27 dB	
Channel Gain Variation –			
Phased Array	<1.5 dB (Zetec)	0.41 dB	
Conventional	<1.5 dB (Zetec)	0.37 dB	
Linearity of Vertical Display	28 dB rel.	1.2 %	
Equivalent Input Noise	<80 nV/√Hz		
Phased Array		9.0 nV/√Hz	
Conventional		28 nV/√Hz	
Transmitter – Ultrasound Instrumentation[3]			
Voltage –			Agilent 33250A, Tektronix MDO3032, MDO32, ZETEC 10040371 (ZIF) ZETEC 10059869 (IPEX) 50 ohms/10W load
Phased Array	(10 to 75) V	2.2 %	
Conventional	(20 to 200) V	2.7 %	
Rise Time –			
Phased Array	Up to 50 ns	0.57 ns	
Conventional	Up to 50 ns	0.34 ns	
Duration –			
Phased Array	(25 to 500) ns	0.49 ns	
Conventional	(25 to 500) ns	0.57 ns	
Linearity of Time Delays	Up to 20 µs	0.056 %	

[1] This laboratory offers commercial 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] In the statement of CMC, percentages represent percent of reading unless otherwise noted.

[5] References to decibels (dB) refer to dB in voltage.

[6] 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. CMCs 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.

[7] 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.

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

Accredited Laboratory

A2LA has accredited

EDDYFI EUROPE SAS

Villebon Sur Yvette, FRANCE

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 5th day of February 2026.

Trace McInturff, Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 2734.04
Valid to February 29, 2028

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