


Scope of Accreditation

 Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K	ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı Accreditation Nr : AB-0041-K Revision : 01 Tarih: 25-Eylül-2009	
	Kalibrasyon Laboratuvarı	
	Address Sincan Organize Sanayi Bölgesi Büyük Selçuklu Bulvarı No:2/A 06930 ANKARA / TÜRKİYE	Phone : 0 312 267 32 43 Fax : 0 312 267 17 61 E-Mail : eldas@eldas.com.tr Website : www.eldas.com.tr

Measured Quantity Instrument or Gauge	Range	Measurement Conditions	Calibration and Measurement Capability Expanded Uncertainty (k=2) (±)	Açıklamalar
ELECTRICAL DC Voltage U For measuring devices	1mV to <329,9999mV 0,33V to <3,299999V 3,3V to <32,99999V 33V to <329,9999V 330V to <1020V		$6.10^{-6}.U + 2\mu V$ $2.10^{-5}.U + 8\mu V$ $2.10^{-5}.U + 74\mu V$ $3.10^{-5}.U + 1mV$ $4.10^{-6}.U + 5mV$	FLUKE 5520A U: Applied Voltage At onsite with mobile system and laboratory
DC Current I For measuring devices	30 μA to <329,999 μA 0,33mA to <3,2999 mA 3,3mA to <32,9999mA 33mA to <329,999mA 0,33A to 2,99999A 3A to 20A 10A to 16,4999A 16,5A to 149,999A 150A to 1000A		$2.10^{-4}.I + 24nA$ $1.10^{-4}.I + 99nA$ $1.10^{-4}.I + 1\mu A$ $1.10^{-4}.I + 7\mu A$ $4.10^{-4}.I + 0,1mA$ $2.10^{-4}.I + 0,3mA$ $1.10^{-3}.I + 3mA$ $3.10^{-3}.I + 18mA$ $3.10^{-3}.I + 66mA$	FLUKE 5520A At onsite with mobile system and laboratory I: Applied current 50 winding coil 50 winding coil 50 winding coil
AC Voltage U For measuring devices	33mV to 329,999mV 0,33V to 3,29999V	10 Hz to 45 Hz 45 Hz to 10 kHz 10kHz to 20 kHz 20kHz to 50 kHz 50kHz to 100 kHz 100kHz to 500 kHz	$3,0.10^{-5}.U + 29\mu V$ $2.10^{-4}.U + 17\mu V$ $2.10^{-4}.U + 17\mu V$ $4.10^{-4}.U + 25\mu V$ $3.10^{-4}.U + 68\mu V$ $2.10^{-3}.U + 0,1mV$ $3.10^{-4}.U + 0,2mV$ $2.10^{-4}.U + 0,1mV$ $2.10^{-4}.U + 52\mu V$ $3.10^{-4}.U + 0,2mV$ $7.10^{-4}.U + 0,4mV$ $2.10^{-3}.U + 2mV$	FLUKE 5520A U: Applied Voltage At onsite with mobile system and laboratory FLUKE 5520A U: Applied Voltage At onsite with mobile system and laboratory

Scope of Accreditation

 Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K	ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı Akreditasyon No: AB-0041-K Revizyon No: 01 Tarih: 25-Eylül-2009
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Measured Quantity Instrument or Gauge	Range	Measurement Conditions	Calibration and Measurement Capability Expanded Uncertainty (k=2) (±)	Açıklamalar
	3,3V to 32,9999V	10 Hz to 45 Hz 45 Hz to 10 kHz 10kHz to 20 kHz 20kHz to 50 kHz 50kHz to 100 kHz	3.10 ⁻⁴ .U +2mV 2.10 ⁻⁴ .U +2mV 3.10 ⁻⁴ .U +2mV 4.10 ⁻⁴ .U +2mV 1.10 ⁻³ .U +6mV	
	33V to 329,999V	45 Hz to 1 kHz 1 kHz to 10 kHz 10kHz to 20 kHz 20kHz to 50 kHz 50kHz to 100 kHz	2.10 ⁻⁴ .U +12mV 2.10 ⁻³ .U +15mV 3.10 ⁻⁴ .U +17mV 4.10 ⁻⁴ .U +19mV 2.10 ⁻³ .U +0,1V	
	330V to 1020V	45 Hz to 1 kHz 1 kHz to 5 kHz 5 kHz to 10 kHz	2.10 ⁻⁴ .U +0,2V 5.10 ⁻⁵ .U +0,1V 3.10 ⁻⁴ .U +0,1V	
AC Current I	29µA to 329,99µA	10 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 5 kHz	2.10 ⁻³ .I +0,2µA 2.10 ⁻³ .I +0,2µA 3.10 ⁻³ .I +0,3µA	FLUKE 5520A I: Applied Current At onsite with mobile system and laboratory
	0,33mA to 3,2999mA	10 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 5 kHz	1.10 ⁻³ .I +2µA 2.10 ⁻³ .I +1µA 2.10 ⁻³ .I +1µA	50 winding coil
	3,3mA to 32,999mA	10 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 5 kHz	8.10 ⁻⁴ .I +10µA 4.10 ⁻⁴ .I +5µA 8.10 ⁻⁴ .I +6µA	50 winding coil
	33mA to 329,999mA	10 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 5 kHz	8.10 ⁻⁴ .I +0,1mA 4.10 ⁻⁴ .I +0,5mA 1.10 ⁻³ .I +0,1mA	50 winding coil

Scope of Accreditation

 Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K	ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı Akreditasyon No: AB-0041-K Revizyon No: 01 Tarih: 25-Eylül-2009
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	0,33A to 2,9999A	10 Hz to 45 Hz 45 Hz to 1 kHz 1 kHz to 5 kHz	$2 \cdot 10^{-3} \cdot I + 1 \text{ mA}$ $6 \cdot 10^{-4} \cdot I + 1 \text{ mA}$ $6 \cdot 10^{-3} \cdot I + 4 \text{ mA}$	
	3A to 20A	45 Hz to 1 kHz 1 kHz to 5 kHz	$2 \cdot 10^{-3} \cdot I + 11 \text{ mA}$ $3 \cdot 10^{-2} \cdot I + 0,1 \text{ A}$	
	10A to 16,4999A	45 Hz to 400 Hz	$8 \cdot 10^{-3} \cdot I + 0,1 \text{ mA}$	
	16,5A to 149,999A	45 Hz to 400 Hz	$1 \cdot 10^{-2} \cdot I + 30 \text{ mA}$	
	150A to 1000A	45 Hz to 400 Hz	$1 \cdot 10^{-2} \cdot I + 0,1 \text{ A}$	
DC Voltage U For source devices	10mV to 100mV		$5 \cdot 10^{-5} \cdot U + 6 \mu\text{V}$	AGILENT 34401A U: Measured Voltage At onsite with mobile system and laboratory
	0,1V to 1V		$2 \cdot 10^{-5} \cdot U + 66 \mu\text{V}$	
	1V to 10V		$3 \cdot 10^{-5} \cdot U + 0,2 \text{ mV}$	
	10V to 100V		$4 \cdot 10^{-5} \cdot U + 3 \text{ mV}$	
	100V to 1000V			
AC Voltage U For source devices	33mV to 100mV	45 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300kHz	$7 \cdot 10^{-3} \cdot U + 0,1 \text{ mV}$ $7 \cdot 10^{-3} \cdot U + 0,1 \text{ mV}$ $8 \cdot 10^{-3} \cdot U + 0,3 \text{ mV}$ $1 \cdot 10^{-2} \cdot U + 0,7 \text{ mV}$	AGILENT 34401A U: Measured Voltage At onsite with mobile system and laboratory
	0,1 V to <1 V	45 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300kHz	$5 \cdot 10^{-4} \cdot U + 1 \text{ mV}$ $1 \cdot 10^{-3} \cdot U + 1 \text{ mV}$ $6 \cdot 10^{-3} \cdot U + 2 \text{ mV}$ $1 \cdot 10^{-2} \cdot U + 3 \text{ mV}$	
	1 V to < 10 V	45 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz 100 kHz to 300kHz	$5 \cdot 10^{-4} \cdot U + 8 \text{ mV}$ $2 \cdot 10^{-3} \cdot U + 10 \text{ mV}$ $6 \cdot 10^{-3} \cdot U + 17 \text{ mV}$ $1 \cdot 10^{-2} \cdot U + 32 \text{ mV}$	
	10 V to < 100 V	45 Hz to 20 kHz 20 kHz to 50 kHz 50 kHz to 100 kHz	$6 \cdot 10^{-4} \cdot U + 42 \text{ mV}$ $2 \cdot 10^{-3} \cdot U + 75 \text{ mV}$ $7 \cdot 10^{-3} \cdot U + 0,2 \text{ V}$	

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 Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K	ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı Akreditasyon No: AB-0041-K Revizyon No: 01 Tarih: 25-Eylül-2009
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Measured Quantity Instrument or Gauge	Range	Measurement Conditions	Calibration and Measurement Capability Expanded Uncertainty (k=2) (±)	Açıklamalar
	100 V to < 750 V	45 Hz to 20 kHz 20 kHz to 50 kHz	$6 \cdot 10^{-4} \cdot U + 0,3V$ $1 \cdot 10^{-3} \cdot U + 0,6V$	
AC Current A For source devices	10mA to <100mA 0,1A to <1A 1A to <3A 3A to <20A 0,5A to <120A	10Hz-5kHz 10Hz-5kHz 10Hz-5kHz 10Hz-5kHz 40Hz-60Hz	$1 \cdot 10^{-3} \cdot I + 95\mu A$ $2 \cdot 10^{-3} \cdot I + 0,6mA$ $3 \cdot 10^{-4} \cdot I + 3mA$ $3 \cdot 10^{-5} \cdot I + 14mA$ 0,3 %	AGILENT 34401A I: Measured current with current shunt Zera and TPZ308
DC Current A For source devices	1mA to <10mA 10mA to <100mA 0,1A to <1A 1A to <3A 3A to <20A		$5 \cdot 10^{-4} \cdot I + 3\mu A$ $6 \cdot 10^{-4} \cdot I + 12\mu A$ $2 \cdot 10^{-3} \cdot I + 0,2mA$ $9 \cdot 10^{-4} \cdot I + 3mA$ $2 \cdot 10^{-4} \cdot I + 8mA$	AGILENT 34401A I: Measured current At onsite with mobile system and laboratory with current shunt
Resistance R For measuring devices	1Ω to 32,9999 Ω 33Ω to 329.9999 Ω 0,33kΩ to 3,29999 kΩ 3,3kΩ to 32,9999 kΩ 33kΩ to 329.9999 kΩ 0,33 MΩ to 3,2999 MΩ 3,3MΩ to 32,9999MΩ 33MΩ to 329,999MΩ 330 MΩ to 1100MΩ		$2 \cdot 10^{-5} \cdot R + 2m\Omega$ $3 \cdot 10^{-5} \cdot R + 3m\Omega$ $3 \cdot 10^{-5} \cdot R + 27m\Omega$ $3 \cdot 10^{-5} \cdot R + 0,3\Omega$ $3 \cdot 10^{-5} \cdot R + 3\Omega$ $6 \cdot 10^{-5} \cdot R + 40\Omega$ $2 \cdot 10^{-4} \cdot R + 3k\Omega$ $3 \cdot 10^{-3} \cdot R + 0,2M\Omega$ $1 \cdot 10^{-2} \cdot R + 6M\Omega$	FLUKE 5520A R: Applied Resistance At onsite with mobile system and laboratory

Annex of the Certificate (Page 5/13)

Scope of Accreditation

 Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K	ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı Akreditasyon No: AB-0041-K Revizyon No: 01 Tarih: 25-Eylül-2009
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Measured Quantity Instrument or Gauge	Range	Measurement Conditions	Calibration and Measurement Capability Expanded Uncertainty (k=2) (±)	Açıklamalar
Resistance R For source devices	10Ω to < 100Ω	4 Wire Measure (Up to 100kΩ)	9.10 ⁻⁵ .R +8mΩ	AGILENT 34401A R: Measuring Resistance In air with comparison metod At onsite with mobile system and laboratory
	100Ω to < 1kΩ		9.10 ⁻⁵ .R +49mΩ	
	1kΩ to < 10kΩ	2 Wire Measure	2.10 ⁻⁴ .R +0,2Ω	
	10kΩ to < 100kΩ		1.10 ⁻⁴ .R +3Ω	
	100kΩ to < 1MΩ		9.10 ⁻⁵ .R +24Ω	
	1MΩ to < 10MΩ		4.10 ⁻⁴ .R +0,6kΩ	
	10MΩ to < 100MΩ		9.10 ⁻³ .R +10kΩ	
Oscilloscope Horizontal Deflection	2ns 5ns 10ns 20ns 50ns 100ns to < 20ms 50ms to < 5s		6.10 ⁻¹⁵ s 2.10 ⁻¹⁴ s 3.10 ⁻¹⁴ s 2.10 ⁻¹⁴ s 6.10 ⁻¹⁴ s 1.10 ⁻⁶ .T+0,3 ps 1.10 ⁻³ .T+87 μs	Waveform: sinus T=Time Waveform: sawtooth At onsite with mobile system and laboratory
	Bandwith	50kHz ile < 100MHz 100MHz ile < 300MHz 300MHz ile < 600MHz	5mV ile 5,5V 50Ω	%4 %4 %6 Fluke5520A-SC600 At onsite with mobile system and laboratory
Vertical Deflection	1mV to <100 mV 100mV to <1V 1V to <10V 10V to <130V	DC- 1MΩ 1kHz	1.10 ⁻⁴ .U +50μV 6.10 ⁻⁴ .U +61μV 6.10 ⁻⁴ .U +0,6mV 4.10 ⁻⁴ .U +6mV	Fluke5520A-SC600 At onsite with mobile system and laboratory
	1mV to <100 mV 100mV to <1V 1V to <6,6V	DC- 50Ω 1kHz	3.10 ⁻³ .U +52μV 3.10 ⁻³ .U +0,4mV 2.10 ⁻³ .U +3mV	
	1mVpp to <100 mVpp 100mVpp to <1Vpp 1Vpp to <10Vpp 10Vpp to <130Vpp	1MΩ	1.10 ⁻⁴ .Upp +50μVpp 6.10 ⁻⁴ .Upp +61μVpp 6.10 ⁻⁴ .Upp +1mVpp 9.10 ⁻⁴ .Upp +12mVpp	
	1mV ile <100 mV 100mV ile <1V 1V ile <6,6V	50Ω	4.10 ⁻³ .U +51μV 3.10 ⁻³ .U +0,4mV 2.10 ⁻³ .U +4mV	

Annex of the Certificate (Page 6/13)

Scope of Accreditation

 <p>Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K</p>	<p>ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı</p> <p>Akreditasyon No: AB-0041-K Revizyon No: 01 Tarih: 25-Eylül-2009</p>
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Measured Quantity Instrument or Gauge	Range	Measurement Conditions	Calibration and Measurement Capability Expanded Uncertainty (k=2) (±)	Açıklamalar
DC Power P For measuring devices	0,1mW to < 10,9W	V=0,33V - 330V I=0,33mA -33mA	$3 \cdot 10^{-4} \cdot P + 33nW$	FLUKE 5520A P: Applied Power At onsite with mobile system and laboratory
	10,9mW to < 0,99kW	V=0,33V - 330V I=33mA -3A	$45 \cdot 10^{-4} \cdot P + 4\mu W$	
	0,99W to < 6,6kW	V=0,33V - 330V I=3A -20A	$2 \cdot 10^{-3} \cdot P + 0,8mW$	
	6,6W to < 49,5kW	V=0,33V - 330V I=20A -150A	$2 \cdot 10^{-5} \cdot P + 0,2mW$	50 winding coil
	49,5W to < 330kW	V=0,33V - 330V I=150A -1000A	$2 \cdot 10^{-5} \cdot P + 2mW$	50 winding coil
AC Power P For measuring devices	0,1mW ile < 10,9W (V=0,33V - 330V I=0,33mA -33mA)	PF=1	$6 \cdot 10^{-4} \cdot P + 1\mu W$	45Hz to 1kHz At onsite with mobile system and laboratory
		PF=0,866	$3 \cdot 10^{-3} \cdot P + 1\mu W$	
		PF=0,5	$2 \cdot 10^{-2} \cdot P + 1\mu W$	
	10,9mW ile < 0,99kW (V=0,33V - 330V I=33mA -3A)	PF=1	$8 \cdot 10^{-4} \cdot P + 1\mu W$	
		PF=0,866	$3 \cdot 10^{-3} \cdot P + 1\mu W$	
		PF=0,5	$2 \cdot 10^{-2} \cdot P + 1\mu W$	
	0,99W ile < 6,6kW (V=0,33V - 330V I=3A -20A)	PF=1	$3 \cdot 10^{-3} \cdot P + 4mW$	
		PF=0,866	$4 \cdot 10^{-3} \cdot P + 3mW$	
		PF=0,5	$2 \cdot 10^{-2} \cdot P + 4mW$	
	6,6W ile < 49,5kW (V=0,33V - 330V I=20A -150A)	PF=1	$4 \cdot 10^{-4} \cdot P + 10mW$	45Hz to 400Hz 50 winding coil
		PF=0,866	$4 \cdot 10^{-4} \cdot P + 9mW$	
		PF=0,5	$3 \cdot 10^{-4} \cdot P + 5mW$	
	49,5W ile < 330kW (V=0,33V - 330V I=150A -1000A)	PF=1	$3 \cdot 10^{-4} \cdot P + 38mW$	

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 Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K	ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı Akreditasyon No: AB-0041-K Revizyon No: 01 Tarih: 25-Eylül-2009
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		PF=0,866	$3 \cdot 10^{-4} \cdot P + 32 \text{mW}$	
		PF=0,5	$3 \cdot 10^{-4} \cdot P + 19 \text{mW}$	
AC Power P For source devices	11W - 1320W 110W- 26400W	50mA-6A / 40V-300V 40Hz - 60Hz	$\pm 0,3 \cdot P$ $\pm 0,3 \cdot P$	With Zera TPZ308 Clamp P: Measured Power At onsite with mobile system and laboratory
Capacitor F For measuring devices	0,19nF to 10,999 nF 11nF to 329,999 nF 0,33µF to 32,9999 µF 33µF to 329,999 µF 0,33mF to 32,999mF 33mF to 110mF	1kHz 1kHz 100Hz 50Hz 50Hz	$3 \cdot 10^{-3} \cdot F + 13 \text{pF}$ $4 \cdot 10^{-3} \cdot F + 0,1 \text{nF}$ $6 \cdot 10^{-3} \cdot F + 2 \text{nF}$ $6 \cdot 10^{-3} \cdot F + 0,3 \mu\text{F}$ $1 \cdot 10^{-2} \cdot F + 3 \mu\text{F}$	FLUKE 5520A F: Applied Capacitors At onsite with mobile system and laboratory
Cosφ metre For measuring devices	Phase Angle = 0° 90° Power Factor = 1- 0	33mV-1000V 3,3mA-20A 10 Hz ile 65 Hz	$2 \cdot 10^{-1} \text{ °}$	FLUKE 5520A At onsite with mobile system and laboratory
		0,33V-1000V 33mA-3A 65 Hz ile 500	$3 \cdot 10^{-1} \text{ °}$	
		0,33V-1000V 33mA-20A 500 Hz ile 1 kHz	$6 \cdot 10^{-1} \text{ °}$	
		3,3V-1000V 33mA-3A 1kHz ile 5 kHz	3 °	
		3,3V-1000V 33mA-0,33A 5 kHz 10 kHz	6 °	
		3,3V-1000V 33mA-0,33A 10 kHz 30 kHz	12 °	

Scope of Accreditation

 Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K	ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı Akreditasyon No: AB-0041-K Revizyon No: 01 Tarih: 25-Eylül-2009
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Measured Quantity Instrument or Gauge	Range	Measurement Conditions	Calibration and Measurement Capability Expanded Uncertainty (k=2) (±)	Açıklamalar
Cosφ metre For source devices	Phase Angle = 0° 90° Power Factor = 1- 0	50mA-6A / 40V-300V 0,5A-120A / 40V-300V 40Hz - 60Hz	2.10 ⁻¹ ° 2.10 ⁻¹ °	With Zera TPZ308 Clamp At onsite with mobile system and laboratory
Frequency For measuring devices	10Hz to < 9,999kHz 10kHz to < 3,3 GHz	t=1s t=10s t=100s t=1s t=10s t=100s	5,6.10 ⁻¹⁰ 2,8.10 ⁻¹⁰ 8,0.10 ⁻¹¹ 2,8.10 ⁻¹⁰ 1,5.10 ⁻¹⁰ 6,4.10 ⁻¹¹	FLUKE 5520A & GPS Controlled Rubidium Reference R&S SML03 & GPS Controlled Rubidium Reference
Frequency For source devices	10 Hz to 500MHz 500MHz to 5,7GHz 5,7GHz to 11,3GHz 11,3GHz to 20GHz	t=1s t=10s t=100s t=1s t=10s t=100s t=1s t=10s t=100s t=1s t=10s t=100s	5,6.10 ⁻¹⁰ 2,8.10 ⁻¹⁰ 8,0.10 ⁻¹¹ 2,8.10 ⁻¹⁰ 1,5.10 ⁻¹⁰ 6,4.10 ⁻¹¹ 1,1.10 ⁻¹⁰ 7,5.10 ⁻¹¹ 5,9.10 ⁻¹¹ 8,3.10 ⁻¹¹ 6,5.10 ⁻¹¹ 5,9.10 ⁻¹¹	HP5350B & GPS Controlled Rubidium Reference
LISN Line Impedance Stabilization Networks (Artificial Network)	Fr.(10 kHz -30 MHz) Imp.(5 Ω - 60 Ω) Ins.Loss (0 - 10 dB)	Impedance 10 kHz-25 kHz 25 kHz-15 MHz 15 MHz -30 MHz Insertion Loss 9 kHz-25 kHz 25 kHz-15 MHz 15 MHz-30 MHz	4,37 % 0,44 dB	ANSI C63.4 ESCI Receiver, SML03 Signal Generator, Network Analyzer
RF AMPLIFICATOR (RF Gain Meas.)	Fr.(9 kHz -3 GHz) (-30 dBm)-(60 dBm) (1μW)-(1000W)		0,7 dB	ESCI Receiver, SML03 Signal Generator, RF Power Meter
RF ATTENUATOR	Fr.(9 kHz -3 GHz) Ins.Loss (0dB-100dB)	Insertion Loss Method	0,7 dB	ESCI Receiver, SML03 Signal Generator

Scope of Accreditation

 <p>Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K</p>	<p>ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı</p> <p>Akreditasyon No: AB-0041-K Revizyon No: 01 Tarih: 25-Eylül-2009</p>
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<p>ESD</p> <p>Simulators Electrostatic Discharge</p> <p>Contact Voltage</p> <p>Rise Time</p> <p>Peak Current</p> <p>30 ns Current</p> <p>60 ns Current</p>	<p>200 V - 30 kV ±5 %</p> <p>(0,7-1) ns</p> <p>(7,5-112,5)A ±10 %</p> <p>(4 - 60)A ±30%</p>		<p>4,10 %</p>	<p>IEC 61000-4-2</p> <p>EN 61000-4-2</p> <p>ANSI C63.16</p> <p>ESD Target, Oscilloscope</p>
<p>POWER FAIL</p> <p>Output Voltage</p> <p>Phase Angle</p> <p>Pulse/Rise/Fall Time</p>	<p>Up to 260 V AC or DC</p> <p>(0 - 359)°</p>		<p>3,89 %</p>	<p>IEC 61000-4-11</p> <p>EN 61000-4-11</p> <p>Oscilloscope</p>

Scope of Accreditation

 <p>Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K</p>	<p>ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı</p> <p>Akreditasyon No: AB-0041-K Revizyon No: 01 Tarih: 25-Eylül-2009</p>
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<p>SURGE TRANSIENT GENERATOR Pulse/Rise Time</p> <p>Open Circuit</p> <p>Short Circuit</p> <p>Pulse Width</p> <p>Open Circuit</p> <p>Short Circuit</p> <p>Voltage Open Circuit Current Short Circuit</p>	<p>1 µs - 1000 ms</p> <p>(1 - 100) µs</p> <p>1 µs - 1000 ms</p> <p>1 µs - 1ms</p> <p>10 V - 8 kV</p> <p>1 A - 4 kA</p>		2,87 %	<p>IEC 61000-4-5</p> <p>EN 61000-4-5</p> <p>ANSI C62,41</p> <p>Oscilloscope,</p> <p>Current Probe,</p> <p>Voltage Probe</p>
<p>CDN</p> <p>Coupling Decoupling Network</p>	<p>Fr.(10 kHz -300 Mhz)</p> <p>Imp.(50Ω - 250Ω)</p>	Impedance	5,5%	<p>EC 61000-4-6</p> <p>EN 61000-4-6</p> <p>ESCI Receiver, SML03 Signal Generator, Network Analyzer</p>
RF POWER METER	Fr.(9 kHz -3,3 Ghz) +10 dBm to -70 dBm		0,5 dB	SML03 Signal Generator
<p>EFT/BURST GENERATOR Voltage</p> <p>Rise Time</p> <p>Pulse Width</p> <p>BURST Duration</p> <p>BURST Period</p>	<p>20V - 8 Kv</p> <p>5 ns± 20%</p> <p>(35-200) ns</p> <p>(0,5-20) ms</p> <p>(100-300) ms</p>		6,94%	<p>IEC 61000-4-4</p> <p>EN 61000-4-4</p> <p>ANSI C37.90</p>

Scope of Accreditation

 <p>Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K</p>	<p>ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı</p> <p>Akreditasyon No: AB-0041-K Revizyon No: 01 Tarih: 25-Eylül-2009</p>
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Measured Quantity Instrument or Gauge	Range	Measurement Conditions	Calibration and Measurement Capability Expanded Uncertainty (k=2) (±)	Açıklamalar
DIMENSIONAL Calipers	Int., Ext. and Depth Measurements up to 300 mm	Partition Value 0,01 0,02 0,05	L=(m) (14μ+14L)	DKD-R 4.3 Section 9.1 Documents prepared in accordance with the calibration procedure
Micrometer	Outside diameter up to 300 mm	Partition Value 0,001 0,01	L=(m) (3,6μm+3,6*L)	DKD-R4-3 Section 10.1 Documents prepared in accordance with the calibration procedure
Dial gauge	Up to 25 mm	Partition Value 0,01	6,5 μm	VDI/VDE/VDQ 2618 Section 11.1 Documents prepared in accordance with the calibration procedure
Linear height gages	Up to 300 mm	Partition Value 0,01	(15 μm + 14 L), L=[m]	VDI/VDE/DGQ 2618 Section 9.3 DKD-R4-3 Section 16.1 Documents prepared in accordance with the calibration procedure
PRESSURE Relative Pressure	-0,085 Mpa -0,1 Mpa 0,1 Mpa 3,5 Mpa	Gas	400 pa	DKD R6-1 Documents prepared in accordance with the calibration procedure at Lab. and onsite
	3 Mpa 35 Mpa	Hydraulic	80 kPa	
SCALES Calibration of non-automatic electronic scales	Up to 200 g	With E2 class mass	2·10 ⁻⁶	Scale calibration is done in place(onsite) , with EA 10/18 procedure.
	Up to 1000 g	With F1 class mass	2·10 ⁻⁵	
	Up to 300 kg	With M1 class mass	1·10 ⁻⁴	
TEMPERATURE Thermocouple TC (mV to Temp.)	-30°C to 80°C	Type J, K, E, N, T in Liquid bath	0,18°C	Including the ice point uncertainties EA-10/08 and R20.19 prepared in accordance with standards at onsite with mobile system and laboratory
		Type R and S in Liquid bath	0,57°C	
	50 oC to 400 oC	Type J, K, E, N, T Dry air in the oven	0,33°C	
		Type R and S Dry air in the oven	0,63°C	

Scope of Accreditation

 <p>Kalibrasyon TS EN ISO/IEC 17025 AB-0041-K</p>	<p>ELDAŞ Elektrik Elektronik Sanayi Ve Ticaret A. Ş. Kalibrasyon Laboratuvarı</p> <p>Akreditasyon No: AB-0041-K Revizyon No: 01 Tarih: 25-Eylül-2009</p>
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Measured Quantity Instrument or Gauge	Range	Measurement Conditions	Calibration and Measurement Capability Expanded Uncertainty (k=2) (±)	Açıklamalar
Platinum Resistance Thermometers PRT (ohm to Temp.)	-30°C to 80°C	In Liquid bath	0,14°C	Including the ice point uncertainties IEC 751 prepared in accordance with standards at onsite with mobile system and laboratory
	50°C to 100°C	Dry air in the oven	0,25°C	
	100 °C to 200°C	Dry air in the oven	0,30°C	
	200°C to 400°C	Dry air in the oven	0,35°C	
Ovens (Incubator, Etuve, Deep freeze, Air conditioners, Ice fridge)	-40°C to 200°C	The climate in the volume of distribution. accuracy, stability and distribution detection at 9 measuring points (Uniformity)	0,7°C	DKD-R 5-7 prepared in accordance with standards at onsite with mobile system and laboratory
Temperature indicator meters	-200°C +1200°C	E Tipi Isıl Çift Sensörlü	0,17°C	Electrical simulation use 5520A multi calibrator EA-10/11 prepared in accordance with standards at onsite with mobile system and laboratory
	-200°C +800°C	J Tipi Isıl Çift Sensörlü	0,17°C	
	-200°C +1372°C	K Tipi Isıl Çift Sensörlü	0,30°C	
	0°C +1200°C	N Tipi Isıl Çift Sensörlü	0,22°C	
	0°C +1200°C	R Tipi Isıl Çift Sensörlü	0,43°C	
	0°C +1500°C	S Tipi Isıl Çift Sensörlü	0,47°C	
	-200°C +300°C	T Tipi Isıl Çift Sensörlü	0,17°C	
	-200°C + 100°C	Direnç Termometresi Sensörlü	0,08°C	

Scope of Accreditation

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Measured Quantity Instrument or Gauge	Range	Measurement Conditions	Calibration and Measurement Capability Expanded Uncertainty (k=2) (±)	Açıklamalar
	100°C + 800°C	Direnç Termometresi Sensörlü	0,27°C	
Liquid in glass thermometers	-30°C to 80°C	In Liquid bath	0,12°C	SK_KT07 prepared in accordance with directive at onsite with mobile system and laboratory
Ash oven	500°C - 1200°C	Axial temperature distribution	2,3°C	DKD-R 5-7 prepared in accordance with standards at onsite with mobile system and laboratory
HUMIDITY (Digital and Analog Humiditymeters)	11%rH	Ambient temperature 23 oC ± 3 oC	2,7%rH	SK_KT09 prepared in accordance with directive at onsite with mobile system and laboratory
	50%rH	Ambient temperature 23 oC ± 3 oC	2,8%rH	
	90%rH	Ambient temperature 23 oC ± 3 oC	3,5%rH	

End of Scope

Atakan BAŞTÜRK
Secretary General