



財團法人全國認證基金會
Taiwan Accreditation Foundation

Certificate of Accreditation

(Certificate No : L0232-240102)

This is to certify that

I Pao Electronics Co., Ltd.

Calibration Center (Mass/Force Laboratory)

No. 2, Ln. 159, Jinxi Rd., Yangmei Dist., Taoyuan City 326, Taiwan

is accredited in respect of laboratory

Accreditation Criteria : ISO/IEC 17025:2017 ; CNS 17025:2018

Accreditation Number : 0232

Originally Accredited : June 01, 1996

Effective Period : February 03, 2023 to February 02, 2026

Accredited Scope : Calibration Field, see described in the Appendix

Yi-Ling Chen



Scan to verify

Yi-Ling Chen

President, Taiwan Accreditation Foundation

January 02, 2024

Accreditation Number : 0232
 Laboratory Head : CHEN, Cain-Yi

Mass/Force

calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable explanation	smallest uncertainty		
			minimum value	units	maximum value		units	value	units
KC1001 Weight (stainless steel)	Reference standards: Weight sets METTLER /1 mg~1 kg/E ₂ METTLER /2 kg~5 kg/E ₂ METTLER /10 kg/E ₂ METTLER /20 kg/E ₂	Weight Calibration Procedure (Document No.: MCP-009)	1	mg	1	mg	stainless steel	0.003	mg
			2	mg	2	mg	stainless steel	0.004	mg
			5	mg	5	mg	stainless steel	0.003	mg
			10	mg	10	mg	stainless steel	0.003	mg
			20	mg	20	mg	stainless steel	0.004	mg
			50	mg	50	mg	stainless steel	0.005	mg
			100	mg	100	mg	stainless steel	0.006	mg
			200	mg	200	mg	stainless steel	0.006	mg
			500	mg	500	mg	stainless steel	0.004	mg
			1	g	1	g	stainless steel	0.006	mg
			2	g	2	g	stainless steel	0.009	mg
			5	g	5	g	stainless steel	0.029	mg
			10	g	10	g	stainless steel	0.06	mg
			20	g	20	g	stainless steel	0.07	mg
			50	g	50	g	stainless steel	0.09	mg
100	g	100	g	stainless steel	0.07	mg			
200	g	200	g	stainless steel	0.10	mg			
500	g	500	g	stainless steel	0.3	mg			
1	kg	1	kg	stainless steel	0.3	mg			
2	kg	2	kg	stainless steel	7	mg			
5	kg	5	kg	stainless steel	0.006	g			
10	kg	10	kg	stainless steel	0.007	g			
20	kg	20	kg	stainless steel	0.008	g			

Approval Signatory: HSU, Chin-Lung; CHEN, Ren-Kai; CHEN, Cain-Yi



calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable	smallest uncertainty	
			minimum value	units	maximum value		units	value
KC1001 Weight (stainless steel, brass, cast iron)	Working standards: Weight set METTLER /1 mg~20 kg/E2	Weight Calibration Procedure (Document No: MCP-009)	1	mg	1	stainless steel	0.004	mg
			2	mg	2	stainless steel	0.005	mg
			5	mg	5	stainless steel	0.004	mg
			10	mg	10	stainless steel	0.004	mg
			20	mg	20	stainless steel	0.005	mg
			50	mg	50	stainless steel	0.006	mg
			100	mg	100	stainless steel	0.008	mg
			200	mg	200	stainless steel	0.008	mg
			500	mg	500	stainless steel	0.006	mg
			1	g	1	stainless steel	0.008	mg
			2	g	2	stainless steel	0.010	mg
			5	g	5	stainless steel	0.032	mg
			10	g	10	stainless steel	0.08	mg
			20	g	20	stainless steel	0.10	mg
			50	g	50	stainless steel	0.12	mg
			100	g	100	stainless steel	0.11	mg
			200	g	200	stainless steel	0.14	mg
			500	g	500	stainless steel	0.4	mg
			1	kg	1	stainless steel	0.4	mg
			2	kg	2	stainless steel	10	mg
5	kg	5	stainless steel	0.008	g			
10	kg	10	stainless steel	0.009	g			
20	kg	20	stainless steel	0.010	g			
1	g	1	brass	0.008	mg			
2	g	2	brass	0.010	mg			
5	g	5	brass	0.032	mg			
10	g	10	brass	0.08	mg			
20	g	20	brass	0.10	mg			
50	g	50	brass	0.12	mg			
100	g	100	brass	0.13	mg			
200	g	200	brass	0.19	mg			



The Appendix forms an integral part of this Certificate, which shall be invalid when use without the Appendix

calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable explanation	smallest uncertainty	
			minimum value	units	maximum value		units	value
KC1001 Weight (stainless steel, brass, cast iron)	Working standards: Weight set METTLER /1 mg~20 kg/E2	Weight Calibration Procedure (Document No: MCP-009)	500	g	500	g	0.5	mg
			1	kg	1	kg	0.8	mg
			2	kg	2	kg	10	mg
			5	kg	5	kg	0.009	g
			10	kg	10	kg	0.011	g
			20	kg	20	kg	0.017	g
			200	g	200	g	0.34	mg
			500	g	500	g	0.9	mg
			1	kg	1	kg	1.6	mg
			2	kg	2	kg	10	mg
			5	kg	5	kg	0.011	g
			10	kg	10	kg	0.018	g
			20	kg	20	kg	0.033	g
			Approval Signatory: SONG, Jun-Yu; HSU, Chin-Lung; CHEN, Ren-Kai; CHEN, Cain-Yi					
KC1002 Balance (on-site calibration included)	Working standards: Weight sets METTLER /1 mg~1 kg/E2 METTLER /1 kg~20 kg/E2 DER HER /1 mg~20 kg/E2	Self-formul Ate Calibration Procedure for Balance (Document No.: MCP-018)	1	mg	500	mg	0.036	mg
			>500	mg	5	g	0.048	mg
			1	mg	500	mg	0.05	mg
			>500	mg	10	g	0.08	mg
			>10	g	20	g	0.11	mg
			>20	g	50	g	0.17	mg
			>50	g	200	g	0.46	mg
			>300	g	500	g	1.1	mg
			>500	g	1	kg	1.8	mg
			100	mg	500	g	14	mg
			>500	g	5	kg	20	mg
			>5	kg	10	kg	0.021	g
			>10	kg	20	kg	0.033	g
			>20	kg	25	kg	0.042	g
50	g	2	kg	0.17	g			
>2	kg	10	kg	0.19	g			



calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable explanation	smallest uncertainty		
			minimum value	units	maximum value		units	value	units
KC1002 Balance (on-site calibration included)	Working standards: Weight sets METTLER/1 mg~1 kg/E2 METTLER/1 kg~20 kg/E2 DER HER/1 mg~20 kg/E2	Self-formul Ate Calibration Procedure for Balance (Document No.: MCP-018)	>10	kg	20	kg	Readability 5 mg	0.26	g
			>20	kg	30	kg	Readability 5 mg	0.35	g
			10	mg	20	g	Readability 0.1 mg	0.4	mg
			>20	g	300	g	Readability 0.1 mg	1.0	mg
Approval Signatory: HSU, Chin-Lung; CHEN, Ren-Kai; CHEN, Cain-Yi									
KC1004 Electronic weighing instrument (on-site calibration included)	Working standards: Weight sets METTLER/1 mg~1 kg/E2 METTLER/1 kg~20 kg/E2 METTLER/1 kg~5 kg/F1 DER HER/1 mg~20 kg/E2 DER HER/20 kg/F1 Toheng/10 kg~20 kg/F1	Self-formul Ate Calibration Procedure for Balance (Document No.: MCP-020)	50	g	60	kg	Readability 1 g	3	g
			100	g	75	kg	Readability 5 g	10	g
			500	g	150	kg	Readability 10 g	30	g
			500	g	300	kg	Readability 10 g	20	g
			1	kg	200	kg	Readability 50 g	0.10	kg
			>200	kg	400	kg	Readability 50 g	0.15	kg
Approval Signatory: HSU, Chin-Lung; CHEN, Ren-Kai; CHEN, Cain-Yi									



calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable	smallest uncertainty	
			minimum value	units	maximum value		units	value
KC1005 Weight (stainless steel, brass, cast iron)	Working standards: Weight set METTLER /1 mg~20 kg/E2	Weight Calibration Procedure (Document No: MCP-010)	1	mg	1	stainless steel	0.004	mg
			2	mg	2	stainless steel	0.005	mg
			5	mg	5	stainless steel	0.004	mg
			10	mg	10	stainless steel	0.004	mg
			20	mg	20	stainless steel	0.005	mg
			50	mg	50	stainless steel	0.006	mg
			100	mg	100	stainless steel	0.008	mg
			200	mg	200	stainless steel	0.008	mg
			500	mg	500	stainless steel	0.006	mg
			1	g	1	stainless steel	0.008	mg
			2	g	2	stainless steel	0.010	mg
			5	g	5	stainless steel	0.032	mg
			10	g	10	stainless steel	0.08	mg
			20	g	20	stainless steel	0.10	mg
			50	g	50	stainless steel	0.12	mg
			60	g	60	stainless steel	0.17	mg
			100	g	100	stainless steel	0.11	mg
			200	g	200	stainless steel	0.14	mg
			300	g	300	stainless steel	0.5	mg
			500	g	500	stainless steel	0.4	mg
			1	kg	1	stainless steel	0.4	mg
			2	kg	2	stainless steel	10	mg
			4	kg	4	stainless steel	25	mg
5	kg	5	stainless steel	0.008	g			
6	kg	6	stainless steel	0.011	g			
10	kg	10	stainless steel	0.009	g			
20	kg	20	stainless steel	0.010	g			
25	kg	25	stainless steel	0.014	g			
30	kg	30	stainless steel	0.17	g			
1	g	1	brass	0.008	mg			
2	g	2	brass	0.010	mg			



calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable explanation	smallest uncertainty		
			minimum value	units	maximum value		units	value	units
KC1005 Weight (stainless steel, brass, cast iron)	Working standards: Weight set METTLER /1 mg~20 kg/E2	Weight Calibration Procedure (Document No: MCP-010)	5	g	5	g	brass	0.032	mg
			10	g	10	g	brass	0.08	mg
			20	g	20	g	brass	0.10	mg
			50	g	50	g	brass	0.12	mg
			60	g	60	g	brass	0.18	mg
			100	g	100	g	brass	0.13	mg
			200	g	200	g	brass	0.19	mg
			300	g	300	g	brass	0.5	mg
			500	g	500	g	brass	0.5	mg
			1	kg	1	kg	brass	0.8	mg
			2	kg	2	kg	brass	10	mg
			4	kg	4	kg	brass	25	mg
			5	kg	5	kg	brass	0.009	g
			6	kg	6	kg	brass	0.012	g
			10	kg	10	kg	brass	0.011	g
			20	kg	20	kg	brass	0.017	g
			25	kg	25	kg	brass	0.022	g
			30	kg	30	kg	brass	0.17	g
			200	g	200	g	cast iron	0.34	mg
			300	g	300	g	cast iron	0.7	mg
500	g	500	g	cast iron	0.9	mg			
1	kg	1	kg	cast iron	1.6	mg			
2	kg	2	kg	cast iron	10	mg			
4	kg	4	kg	cast iron	26	mg			
5	kg	5	kg	cast iron	0.011	g			
6	kg	6	kg	cast iron	0.014	g			
10	kg	10	kg	cast iron	0.018	g			
20	kg	20	kg	cast iron	0.033	g			
25	kg	25	kg	cast iron	0.041	g			
30	kg	30	kg	cast iron	0.18	g			

Approval Signatory: HSU, Chin-Lung; CHEN, Ren-Kai; CHEN, Cain-Yi



calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable explanation	smallest uncertainty		
			minimum value	units	maximum value		units	value	units
KC4001 Torque wrench	Torque transducer /NORBAR/50615.LOG	Torque Wrench Calibration Procedure (Document No.: RCP-001) Program Reference Document: ISO 6789-1: 2017 ISO 6789-2: 2017	0.5	N·m	5	N·m	CW	3.4	%
	Torque transducer /NORBAR/50620.LOG		0.5	N·m	5	N·m	CCW	3.3	%
	Torque transducer /NORBAR/50624.LOG		5	N·m	25	N·m	CW	1.3	%
	Torque transducer /NORBAR/50624.LOG		5	N·m	25	N·m	CCW	1.5	%
	Torque transducer /NORBAR/50702.LOG		20	N·m	100	N·m	CW	1.8	%
	Torque transducer /NORBAR/50702.LOG		20	N·m	100	N·m	CCW	2.1	%
	Torque transducer /NORBAR/50766.LOG		50	N·m	250	N·m	CW	0.5	%
	Torque transducer /NORBAR/50766.LOG		50	N·m	250	N·m	CCW	0.7	%
	Torque Tool Tester /NORBAR/43215		200	N·m	1000	N·m	CW	0.4	%
	Torque Tool Tester /NORBAR/43215		200	N·m	1000	N·m	CCW	0.4	%
Approval Signatory: CHEN, Cain-Yi; HUANG, Feng-Yu; LIU, Tai-Chun									
KC4003 Torque sensor/ Torque transducer/ Torque gauge	Torque calibration beam /NORBAR/21400	Torque gauge Calibration Procedure (Document No.: RCP-002)	0.05	N·m	2	N·m	CW	0.0050	N·m
	Torque calibration beam /NORBAR/21420		0.05	N·m	2	N·m	CCW	0.0040	N·m
	Torque calibration beam /NORBAR/21420		0.5	N·m	5	N·m	CW	0.013	N·m
	Torque calibration beam /NORBAR/21428		0.5	N·m	5	N·m	CCW	0.014	N·m
	Gravity weight /NORBAR/0.5 N~100 N		5	N·m	25	N·m	CW	0.036	N·m
	Gravity weight /NORBAR/0.5 N~100 N		5	N·m	25	N·m	CCW	0.040	N·m
	Gravity weight /Dongheng/5 N~50 N		20	N·m	100	N·m	CW	0.24	N·m
	Gravity weight /Dongheng/5 N~50 N		20	N·m	100	N·m	CCW	0.32	N·m
	Gravity weight /Dongheng/5 N~50 N		50	N·m	250	N·m	CW	0.16	N·m
	Gravity weight /Dongheng/5 N~50 N		50	N·m	250	N·m	CCW	0.18	N·m
Gravity weight /Dongheng/5 N~50 N	100	N·m	500	N·m	CW	0.4	N·m		
Gravity weight /Dongheng/5 N~50 N	100	N·m	500	N·m	CCW	0.6	N·m		
Gravity weight /Dongheng/5 N~50 N	200	N·m	1000	N·m	CW	0.6	N·m		
Gravity weight /Dongheng/5 N~50 N	200	N·m	1000	N·m	CCW	0.6	N·m		
Approval Signatory: CHEN, Cain-Yi; HUANG, Feng-Yu									



calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable explanation	smallest uncertainty	
			minimum value	units	maximum value		value	units
KC4004 Torque calibrator/ Torque tester	Torque calibration beam /NORBAR /21400 Gravity weight /NORBAR /0.5 N~100 N Gravity weight /Dongheng /5 N~50 N	Torque gauge Calibration Procedure (Document No.: RCP-004)	0.05	N·m	2	CW	0.0050	N·m
			0.05	N·m	2		0.0040	N·m

Approval Signatory: CHEN, Cain-Yi; HUANG, Feng-Yu

Pressure/Vacuum								
calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable explanation	smallest uncertainty	
			minimum value	units	maximum value		value	units
KDI004 Pressure gauge (on-site calibration included) Digital pressure gauge (on-site calibration included)	Digital pressure gauge SI/PC6-PRO-0035-C-3	Pressure Gauge (Pneumatic) Calibration Procedure (Document No.: PCP-003)	20 (0.20)	kPa (kgf/cm ²)	100 (1.02)	pneumatic pressure gauge (gauge pressure)	2 (0.02)	kPa (kgf/cm ²)
			> 100 (>1.02)	kPa (kgf/cm ²)	1000 (10.2)		10 (0.1)	kPa (kgf/cm ²)
Digital pressure gauge (on-site calibration included)			> 1000 (>10.2)	kPa (kgf/cm ²)	3500 (35.7)	pneumatic pressure gauge (gauge pressure)	20 (0.2)	kPa (kgf/cm ²)
			20 (0.20)	kPa (kgf/cm ²)	3500 (35.7)		1.1 (0.011)	kPa (kgf/cm ²)

Approval Signatory: CHEN, Cain-Yi; HUANG, Feng-Yu



Chemical

calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable explanation	smallest uncertainty	
			minimum value	units	maximum value		units	value
KI9001 Volumetric flask	Balance METTLER TOLEDO /AX205 METTLER TOLEDO /PM5003 METTLER TOLEDO /KA30-3	Volumetric Flask Calibration Procedure (Document No.: MCP-032)	1	ml	1	ml	0.024	ml
			2	ml	2	ml	0.024	ml
			5	ml	5	ml	0.025	ml
			10	ml	10	ml	0.025	ml
			25	ml	25	ml	0.026	ml
			50	ml	50	ml	0.094	ml
			100	ml	100	ml	0.13	ml
			200	ml	200	ml	0.25	ml
			250	ml	250	ml	0.31	ml
			500	ml	500	ml	0.39	ml
			1000	ml	1000	ml	0.53	ml
2000	ml	2000	ml	0.62	ml			

Approval Signatory: CHEN, Ping-Ting; CHEN, Cain-Yi

calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable explanation	smallest uncertainty	
			minimum value	units	maximum value		units	value
KI9002 Pipette	Balance METTLER TOLEDO /AX205	Pipette Calibration Procedure (Document No.: MCP-033)	2	ml	2	ml	0.013	ml
			3	ml	3	ml	0.013	ml
			4	ml	4	ml	0.013	ml
			5	ml	5	ml	0.013	ml
			6	ml	6	ml	0.013	ml
			7	ml	7	ml	0.020	ml
			8	ml	8	ml	0.020	ml
			9	ml	9	ml	0.020	ml
			10	ml	10	ml	0.020	ml
			15	ml	15	ml	0.026	ml
			20	ml	20	ml	0.026	ml
25	ml	25	ml	0.026	ml			
30	ml	30	ml	0.028	ml			
50	ml	50	ml	0.029	ml			
100	ml	100	ml	0.035	ml			

Approval Signatory: CHEN, Ping-Ting; CHEN, Cain-Yi



calibration items	working standard brand /model	calibration method document name /no.	measurand level or range			measurement conditions /independent variable explanation	smallest uncertainty		
			minimum value	units	maximum value		units	value	units
KI9003 Micro pipette	Balance METTLER TOLEDO /AX205 METTLER TOLEDO /MT-5	Micro Pipette Calibration Procedure (Document No.: MCP-030)	1	µl	10	µl	duplicate 5 times	0.10	µl
			10	µl	100	µl	duplicate 5 times	0.6	µl
			20	µl	200	µl	duplicate 5 times	0.7	µl
			100	µl	1000	µl	duplicate 5 times	2	µl
			500	µl	5000	µl	duplicate 5 times	8	µl
			1000	µl	10000	µl	duplicate 5 times	12	µl
Approval Signatory: CHEN, Ping-Ting; CHEN, Cain-Yi									
KI9004 Standard tank	Balance METTLER TOLEDO /AX205 METTLER TOLEDO /PM5003 METTLER TOLEDO /KA30-3	Standard Tank Calibration Procedure (Document No.: MCP-031)	1	ml	5	ml		0.047	ml
			2	ml	10	ml		0.05	ml
			5	ml	25	ml		0.19	ml
			10	ml	50	ml		0.37	ml
			10	ml	100	ml		0.38	ml
			30	ml	250	ml		0.5	ml
50	ml	500	ml		0.6	ml			
100	ml	1000	ml		1.1	ml			
200	ml	2000	ml		3	ml			
500	ml	5000	ml		6	ml			
Approval Signatory: CHEN, Ping-Ting; CHEN, Cain-Yi									

Note: Smallest uncertainty represents an expanded uncertainty using a coverage factor approximately 95 % level of confidence. (Null Below)

