


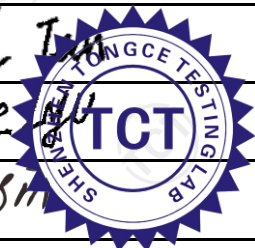


EMC TEST REPORT

Radio Frequency Devices - Unintentional Radiators

Test Report No.:	TCT260109E018	
Date of issue	Jan. 16, 2026	
Testing laboratory.....:	SHENZHEN TONGCE TESTING LAB	
Testing location/ address.....:	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China	
Applicant's name	Suzhou Aotulai Precision Intelligent Manufacturing Co., Ltd.	
Address.....:	No. 269 Xinfeng Road, Xukou Town, Wuzhong District, Suzhou City, Jiangsu Province, China	
Manufacturer's name.....:	Suzhou Aotulai Precision Intelligent Manufacturing Co., Ltd.	
Address.....:	No. 269 Xinfeng Road, Xukou Town, Wuzhong District, Suzhou City, Jiangsu Province, China	
Standard(s)	FCC 47 CFR Part 15 Subpart B	
Test item description	Automotive Smoke Leak Detector	
Trade Mark.....:	Autoline Pro	
Model/Type reference	S1, S11, S12, S13, S14	
Rating(s)	DC 12 V	
Date of receipt of test item.....:	Jan. 09, 2026	
Date (s) of performance of test:	Jan. 09, 2026 ~ Jan. 16, 2026	
Tested by (+signature).....:	Carol TAN	
Check by (+signature)	Howie LYU	
Approved by (+signature)	Tomsin	



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1. General Product Information

1.1.EUT description

Test item description	Automotive Smoke Leak Detector
Model/Type reference	S1
Rating(s)	DC 12 V
Highest internal frequency F_x	<input checked="" type="checkbox"/> $F_x \leq 108$ MHz <input type="checkbox"/> 108 MHz < $F_x \leq 500$ MHz <input type="checkbox"/> 500 MHz < $F_x \leq 1$ GHz <input type="checkbox"/> $F_x > 1$ GHz
DC Line	<input type="checkbox"/> Shielded <input checked="" type="checkbox"/> Unshielded <input type="checkbox"/> Detachable <input checked="" type="checkbox"/> Un-detachable <input type="checkbox"/> No applicable <input checked="" type="checkbox"/> Length: 4.8 m

1.2.Model(s) list

No.	Model No.	Tested with
1	S1	<input checked="" type="checkbox"/>
Other models	S11, S12, S13, S14	<input type="checkbox"/>

Note: S1 is tested model, other models are derivative models. The models are identical in circuit and PCB layout, only different on the model names. So the test data of S1 can represent the remaining models.

2. Test Information

2.1.EUT operation mode(s)

Mode #	Operating mode description	Test voltage
1	Normal	DC 12 V
2	EVAP O-I PSI	DC 12 V

Test worst operating mode	
Radiated emission	Mode 2
Remark: The worst measurement data and graphical presentation show in this report.	

2.2.Special accessories and auxiliary equipment

Product Type	Manufacturer	Model No.	Serial No.
/	/	/	/

Auxiliary cable description

Port name	Specified length(m)	Shielded	Unshielded
/	/	/	/

2.3.Configuration of system under test



(EUT: Automotive Smoke Leak Detector)

2.4. General test conditions

Environmental reference conditions

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment.

The climatic conditions during the tests were within the following limits:

Temperature	Humidity	Atmospheric pressure
15 °C – 35 °C	30 % - 60 %	86 kPa – 106 kPa

If explicitly required in the basic standard or applied product standard the climatic values are recorded and documented separately in this test report.

Measurement uncertainties

Test Item	Uncertainty
Uncertainty for Disturbance voltage at the mains terminals	3.32 dB
Uncertainty for Radiated emission (30 MHz to 1 GHz)	4.86 dB
Uncertainty for Radiated emission (above 1 GHz)	4.91 dB

The overall measurement uncertainty of a measurement is defined as the range of which can be supposed that it contains the true value with a specified probability.

This probability is 95 % for the generally specified measurement uncertainty (so-called expanded measurement uncertainty).

The limits for emission measurements and the Test levels for immunity tests in the applied standards were defined taking into consideration the accuracy limits for measurement and testing equipment required by the Basic standards.

All measurement and test results of the EMC laboratory of SHENZHEN TONGCE TESTING LAB fulfil the requirements for measurement uncertainties according to the standards applied.

Decision rule for statement(s) of conformity is based on simple acceptance specified in Clause 4.3.3 in IEC Guide 115:2023.

3. Test Result Summary

FCC 47 CFR Part 15 Subpart B	
Requirement – Test case	Verdict
Classification Class (<input type="checkbox"/> A <input checked="" type="checkbox"/> B)	—
Disturbance voltage at the mains terminals	N/A
Radiated emission	Pass
Remark:---	

Test case verdicts	
- Test case does not apply to the test object	N/A
- Test object does meet the requirement.....	P (Pass)
- Test object does not meet the requirement	F (Fail)

4. List of Test Equipment

Equipment	Manufacturer	Model No.	Serial No.	Cal. Due
Disturbance voltage at mains terminals				
EMI Test Receiver	R&S	ESCI3	100898	2026/06/25
Line Impedance Stabilisation Network(LISN)	Schwarzbeck	NSLK 8126	8126453	2026/01/20
10db Attenuator	R&S	ESH3-Z2	102720	2026/12/14
844 Shielded room	SKET	8m*4m*4m	CR4	2027/06/26
Test software	EZ EMC	EMEC-3A1	1.1.4.2	/
Radiated emission (30 MHz to 1 GHz)				
Broadband Antenna	Schwarzbeck	VULB 9168	01197	2026/01/23
EMI Test Receiver	R&S	ESCI7	100529	2026/01/20
Pre-amplifier	HP	8447D	2727A05017	2026/06/25
3m Anechoic Chamber	SKET	9m*6m*6m	SA01	2027/06/12
Test software	EZ EMC	FA-03A2 RE+	1.1.4.2	/
Radiated emission (above 1 GHz)				
Horn Antenna	Schwarzbeck	BBHA 9120 D	02372	2026/01/23
Horn Antenna	Schwarzbeck	BBHA 9170	00956	2026/01/23
Signal Analyzer	R&S	FSQ40	200061	2026/06/25
Pre-amplifier	SKET	LNPA_0118G-45	SK2021012102	2026/01/20
Pre-amplifier	SKET	LNPA_1840G-50	SK202109203500	2026/04/10
#3 3m Anechoic Chamber	SKET	9m*6m*6m	SA03	2027/05/29
Test software	EZ EMC	FA-03A2 RE+	1.1.4.2	/

5. Test Conditions and Results

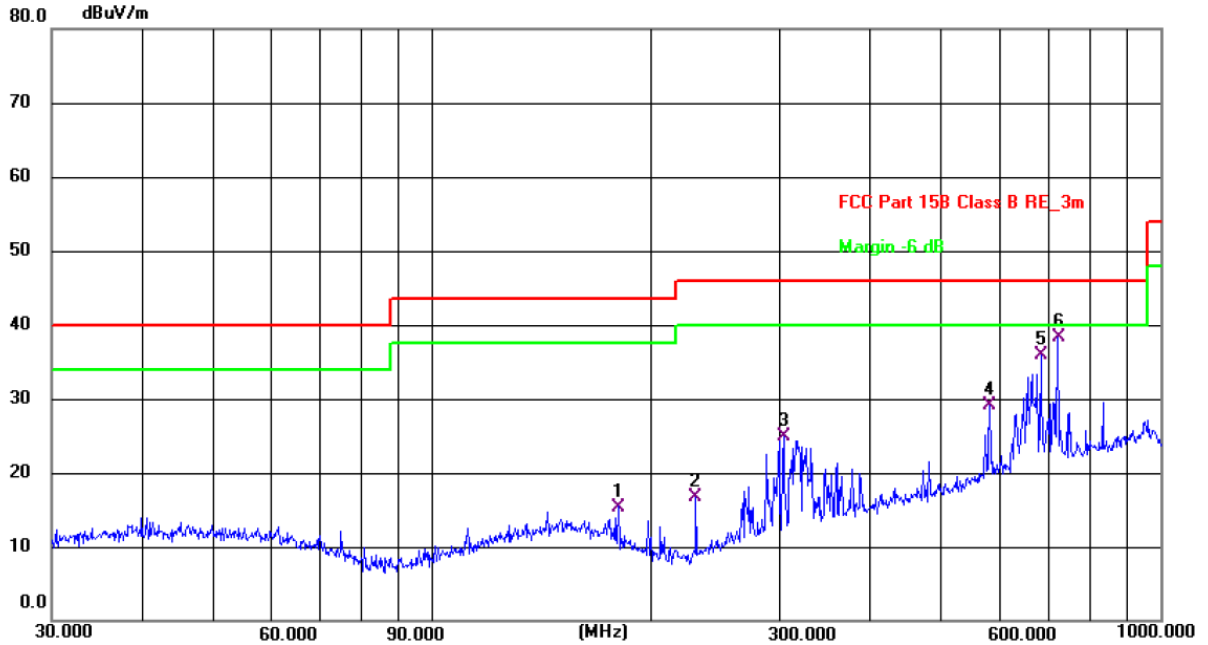
5.1. Disturbance voltage at mains terminals

Test requirement	FCC 47 CFR Part 15 Subpart B		
Basic standard	ANSI C63.4: 2014+A1:2017		
Test frequency range..	150 kHz to 30 MHz		
Limits.....	Limits for Class A		
	Frequency (MHz)	dBμV Quasi-peak	dBμV Average
	0.15 to 0.5	79	66
	0.5 to 30	73	60
	Limits for Class B		
	Frequency (MHz)	dBμV Quasi-peak	dBμV Average
	0.15 to 0.5	66 to 56	56 to 46
	0.5 to 5	56	46
	5 to 30	60	50
	Test method.....	The AMN placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane. This distance was between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment were at least 0.8 m from the AMN. All power was connected to the system through Artificial Mains Network (AMN).	
Ambient temperature..	/		
Relative humidity	/		
Test location	/		
Test model(s)	/		
EUT operation mode..	/		
Test results	N/A		
Remark.....	According to the electrical construction of the EUT, there is no AC terminal incorporated. Therefore this test is not applicable for this EUT.		

5.2. Radiated emission

Test requirement	FCC 47 CFR Part 15 Subpart B				
Basic standard	ANSI C63.4: 2014+A1:2017				
Test frequency range.:	30 MHz to 40 GHz				
Limits.....	Frequency (MHz)	3 m measurement distance			
		Quasi-peak (dB μ V/m)			
		Class A		Class B	
	30 to 88	49		40	
	88 to 216	53.5		43.5	
	216 to 960	56.4		46	
	960 to 1000	59.5		54	
	Frequency (MHz)	3 m measurement distance			
		Class A		Class B	
		Peak (dB μ V/m)	Average (dB μ V/m)	Peak (dB μ V/m)	Average (dB μ V/m)
Above 1000		79.5	59.5	74	54
Test method.....	Measurements were made in a 3-meter semi-anechoic chamber that complies to CISPR 16. Preliminary (peak) measurements were performed at an antenna to EUT separation distance of 3 meters with the receive antenna located at 1 to 4-meter height in both horizontal and vertical polarities. Final measurements (quasi-peak) were then performed by rotating the EUT 360° and adjusting the receive antenna height from 1 to 4-meters. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable.				
Ambient temperature.:	23.7 °C				
Relative humidity	52 %				
Test location	2101 & 2201, Zhenchang Factory, Renshan Industrial Zone, Fuhai Subdistrict, Bao'an District, Shenzhen, Guangdong, 518103, People's Republic of China				
Test model(s)	S1				
EUT operation mode..:	Mode 1				
Test results	Pass				
Remark.....	/				

Measurement data and Graphical presentation of the result

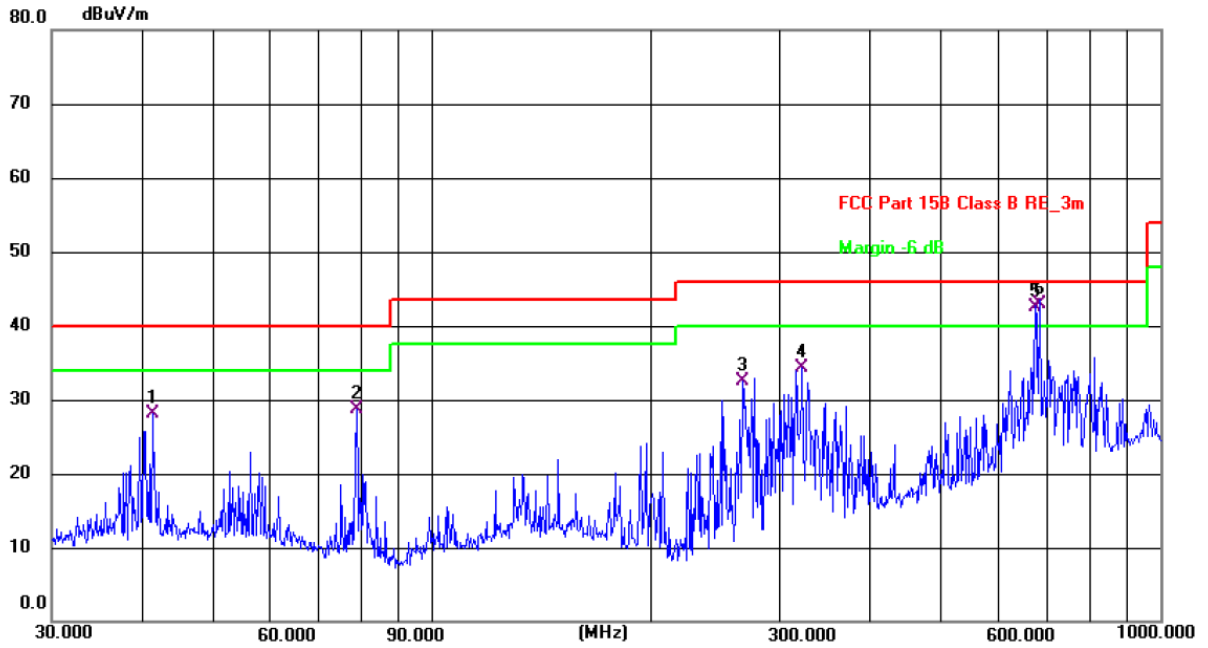


Site: 3m Anechoic Chamber1 Polarization: **Horizontal** Temperature: 23.7(C) Humidity: 52 %

Limit: FCC Part 15B Class B RE_3m

Power: DC 12 V

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	180.0164	28.89	-13.49	15.40	43.50	-28.10	QP	P	
2	230.5021	31.09	-14.43	16.66	46.00	-29.34	QP	P	
3	303.9431	35.55	-10.71	24.84	46.00	-21.16	QP	P	
4	583.7649	34.54	-5.40	29.14	46.00	-16.86	QP	P	
5	686.8495	39.89	-3.95	35.94	46.00	-10.06	QP	P	
6 *	722.3587	41.86	-3.47	38.39	46.00	-7.61	QP	P	



Site: 3m Anechoic Chamber1 Polarization: **Vertical** Temperature: 23.7(C) Humidity: 52 %

Limit: FCC Part 15B Class B RE_3m Power: DC 12 V

No.	Frequency (MHz)	Reading (dBuV)	Factor (dB/m)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	P/F	Remark
1	41.2946	40.09	-12.07	28.02	40.00	-11.98	QP	P	
2	78.7578	44.58	-15.97	28.61	40.00	-11.39	QP	P	
3	267.0767	45.01	-12.44	32.57	46.00	-13.43	QP	P	
4	322.6125	44.65	-10.28	34.37	46.00	-11.63	QP	P	
5 !	673.4343	46.40	-3.80	42.60	46.00	-3.40	QP	P	
6 *	683.8454	47.00	-4.00	43.00	46.00	-3.00	QP	P	

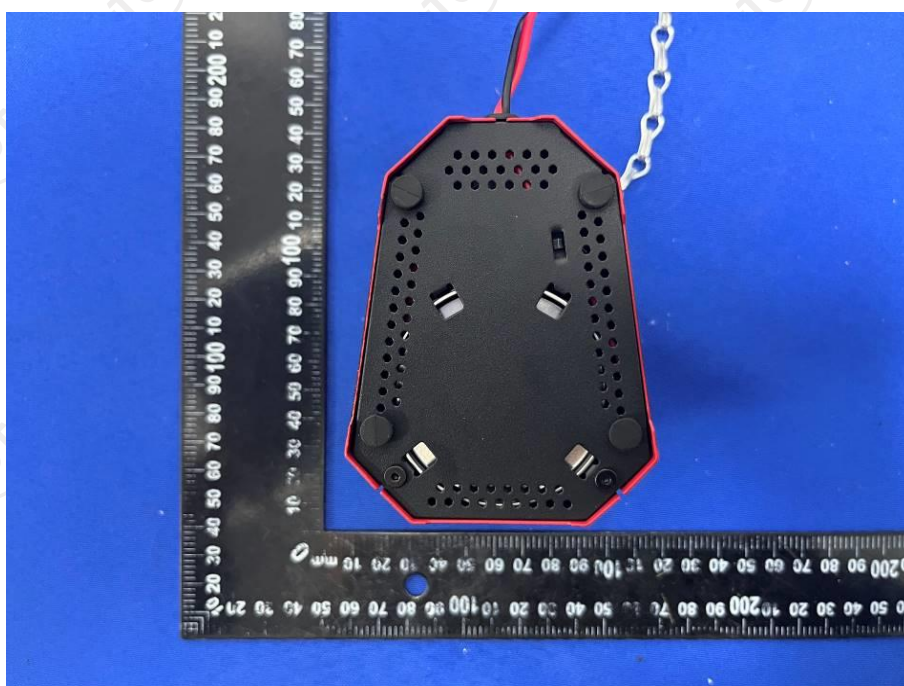
6. Test set-up photo

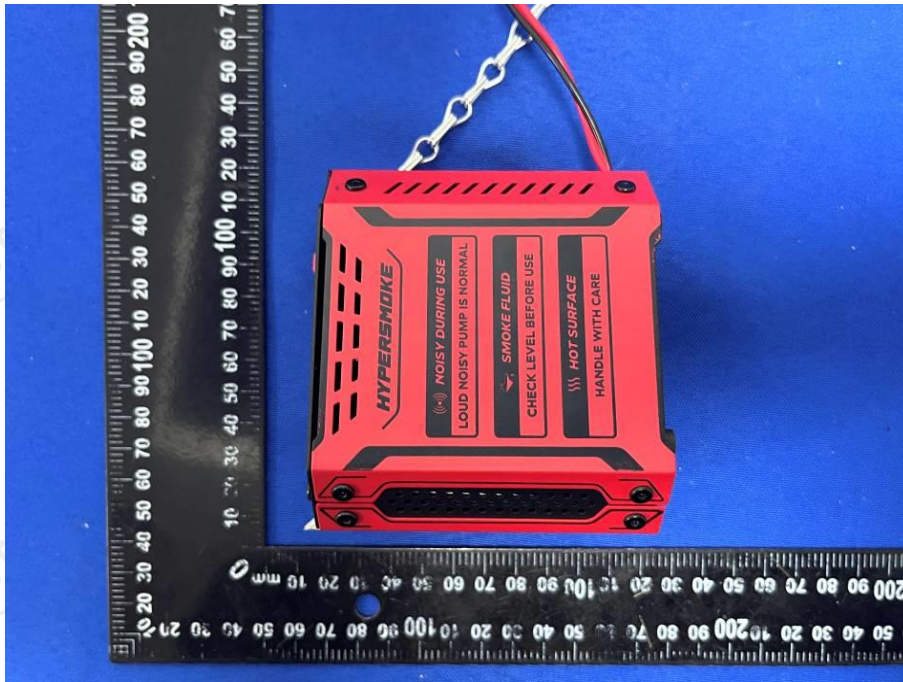
Radiated emission (30 MHz to 1 GHz) Test View

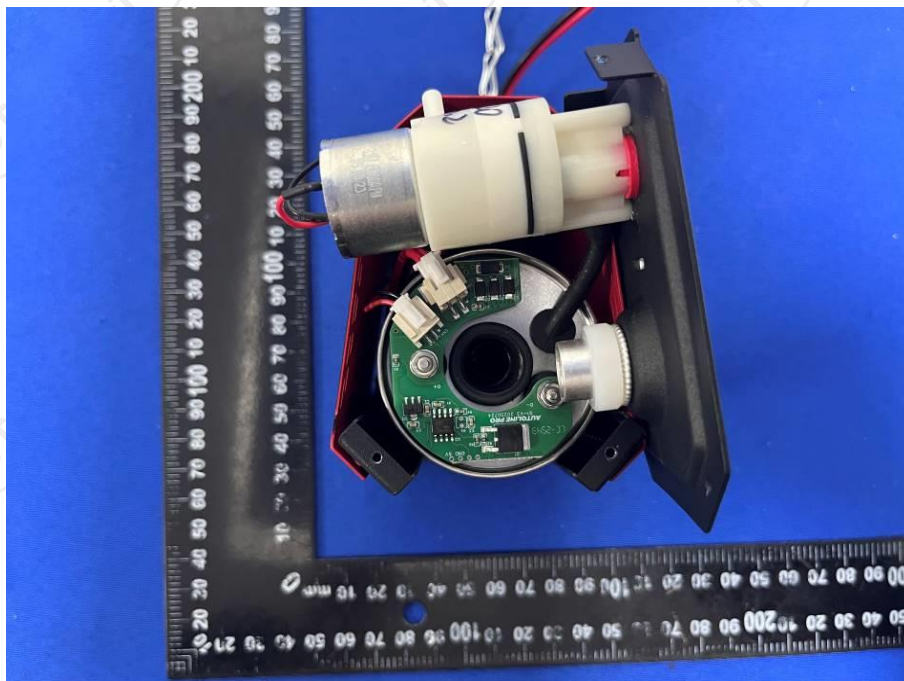


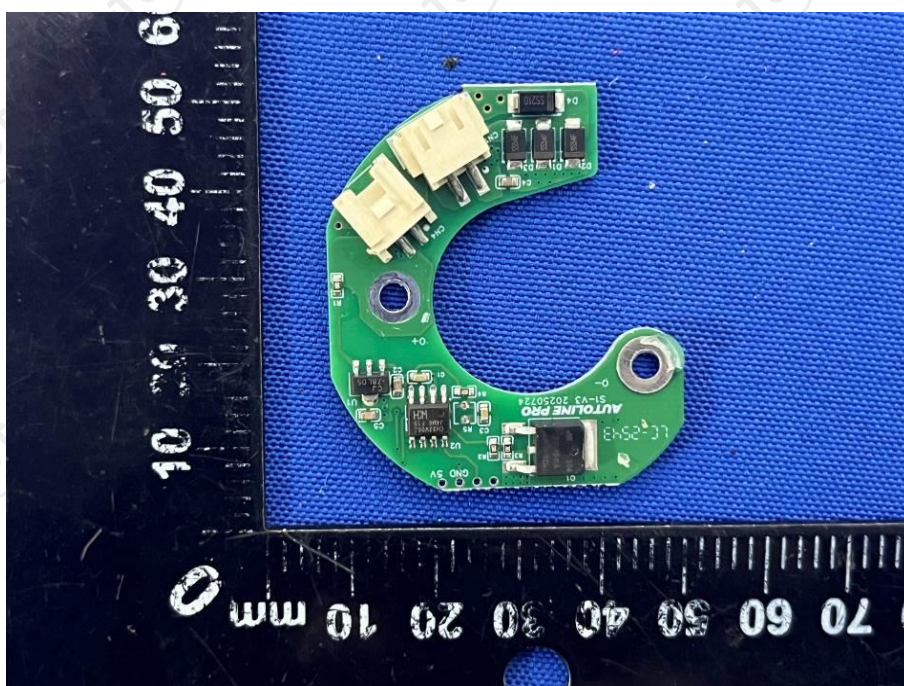
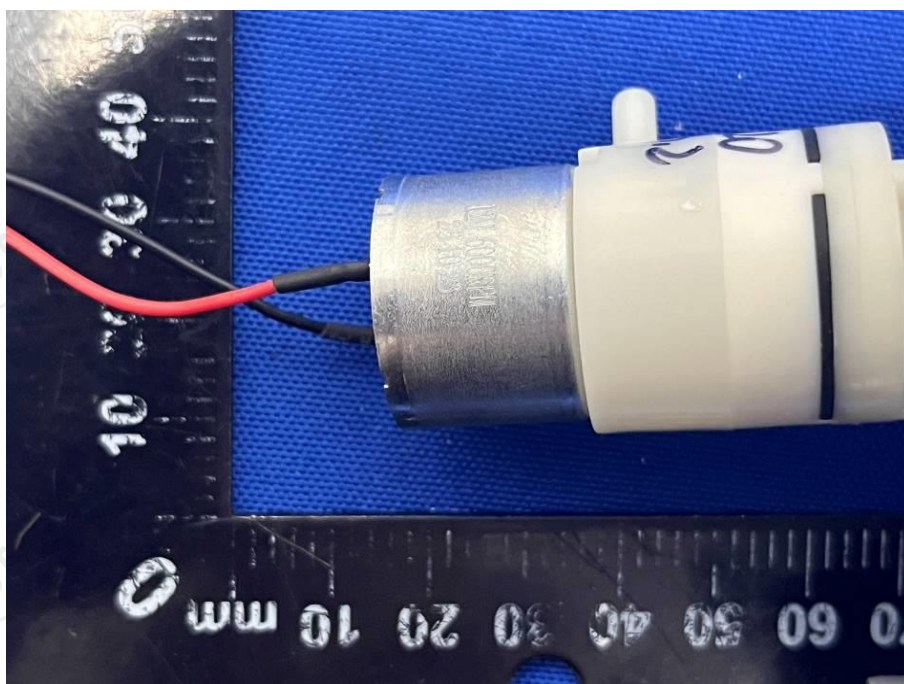
7. Photo of the EUT

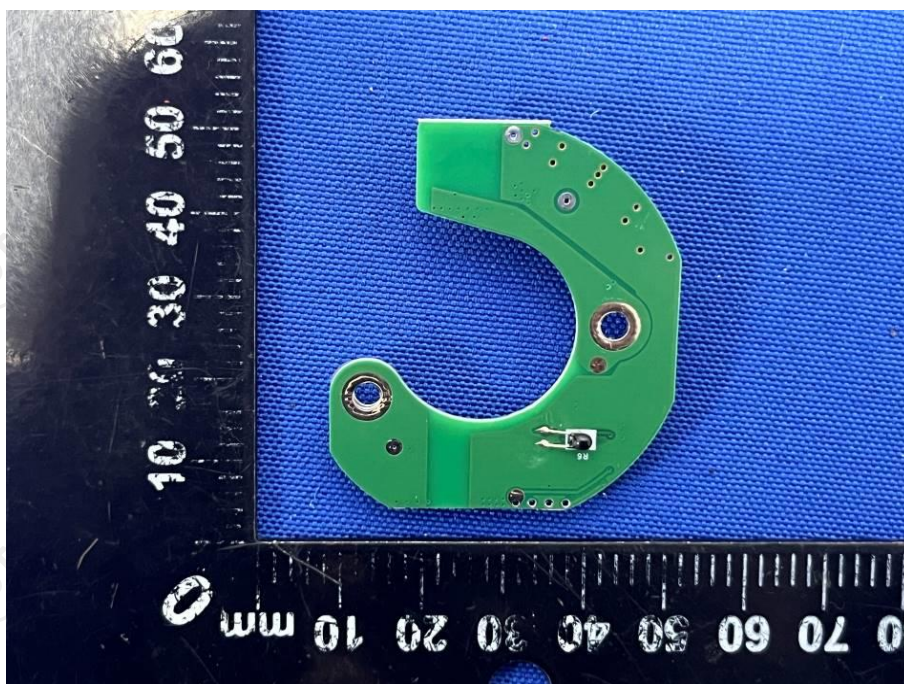












*******End of report*******