

EMC TEST REPORT

Report Number : E202606008-E01

Applicant Name : Jiangsu DINGS' Intelligent Control Technology Co., LTD

Product Name : PM Stepper Linear Actuator

Model Name : N36PB14AA05-001

Date of issue : 2026-06-23

Shanghai Long Test Technology Co., Ltd.



Tested by: Ma Mingxin Reviewed by: Liu Yongqiang Approved by: Yu Qilei

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1 GENERAL DISCLAIMER

- (1) The report is invalid if it is not stamped with the "special seal for testing" or "paging seal".
- (2) The report is invalid without the signature of the test, review and approval person.
- (3) The report is invalid after being redacted.
- (4) The report applies only to the sample being tested.
- (5) This report cannot be reproduced except in full, without prior written approval of the company.
- (6) Any dissent for the test report, please send the written notice within 15 days from the date of receipt of the report.
- (7) Items added with "*" means subcontracted inspection items, and items added with "☆" means testing items not within the scope of CNAS qualification recognition.
- (8) Only for scientific research, teaching or internal quality control without "CMA" seal, and is unlawful.
- (9) The sample(s) will be retained for three months after applicant received the test report.

2 REVISION RECORD

Report No.	Version	Issued Date	Description
E202606008-E01	Rev.01	2026-06-23	First edition

3 TEST LOCATION

Testing Laboratory : Shanghai Long Test Technology Co., Ltd.
Laboratory address : Room 110, Building 4, 3836 Zhaolou Road,
Minhang District, Shanghai
Phone : +86-021-67281282
Website : <http://www.longtest.ltd>



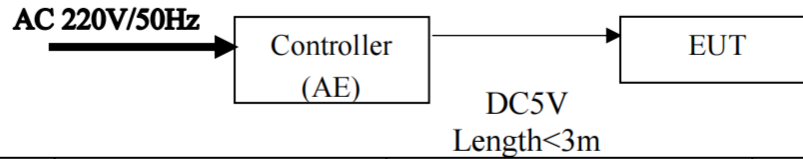
4 GENERAL INFORMATION

Name of applicant : Jiangsu DINGS' Intelligent Control Technology Co., LTD
Applicant's address : No. 2850, Luheng Road, Changzhou Economic Development Zone, Jiangsu, China
Manufacturer's name : Jiangsu DINGS' Intelligent Control Technology Co., LTD
Manufacturer's address : No. 2850, Luheng Road, Changzhou Economic Development Zone, Jiangsu, China
Type of Test : Entrusted Testing Type Testing
Testing Standard : EN IEC 61000-6-3:2021
(CISPR 16-2-3:2016+A1:2019+A2:2023, CISPR 16-2-1:2014+A1:2017)
IEC 61000-3-2:2018+A1:2020,
IEC 61000-3-3:2013+A1:2017+A2:2021
EN IEC 61000-6-1:2019
(IEC 61000-4-2:2008, IEC 61000-4-3:2020, IEC 61000-4-4:2012, IEC 61000-4-5:2014+A1:2017, IEC 61000-4-6:2023, IEC 61000-4-8:2009, IEC 61000-4-11:2020)
Test Result : Pass
Test Date : 2026-06-11~2026-06-17
Report Date : 2026-06-23

5 SAMPLE INFORMATION

Sample Name : PM Stepper Linear Actuator
Main Test Type : N36PB14AA05-001
Serial Model No. : /
Model Difference : /
Highest Clock Frequency : <108MHz
Test setup : Table-top Floor-standing Other:
Power Supply : DC5V
Test Mode : Running:Power on and working continuously.

6 BLOCK OF DIAGRAM



No.	Name	Type	Note
1	Controller	DS-2422-001	AE
2	Motor	PM Stepper Linear Actuator	EUT

7 TEST SUMMARY AND TECHNICAL INFORMATION

7.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description of Test Item		Standard(Method)	Test Requirement	Results
EMI	Radiated Disturbance	EN IEC 61000-6-3:2021 (CISPR 16-2-3:2016 +A1:2019+A2:2023)	Table 3	Pass
	Conducted Disturbance	EN IEC 61000-6-3:2021 (CISPR 16-2-1:2014+A1:2017)	Table 4	N/A
	Harmonic Current Emission	EN IEC 61000-6-3:2021 (IEC 61000-3-2:2018+A1:2020)	N/A	N/A
	Voltage Changes, Voltage Fluctuations and Flicker	EN IEC 61000-6-3:2021 (IEC 61000-3-3:2013+A1:2017+A2:2021)	N/A	N/A
Description of Test Item		Standard(Method)	Performance Criteria	Results
EMS	Electrostatic Discharge (ESD)	EN IEC 61000-6-1:2019 (IEC 61000-4-2:2008)	Table 1.4 B	Pass
	Radio frequency electromagnetic field	EN IEC 61000-6-1:2019 (IEC 61000-4-3:2020)	Table 1.2/3 A	Pass
	Fast Transients (EFT)	EN IEC 61000-6-1:2019 (IEC 61000-4-4:2012)	Table 4.5 B	N/A
	Surge Immunity	EN IEC 61000-6-1:2019 (IEC 61000-4-5:2014+A1:2017)	Table 4.4 B	N/A
	Radio frequency common mode	EN IEC 61000-6-1:2019 (IEC 61000-4-6:2023)	Table 4.1 A	N/A
	Power-frequency magnetic field	EN IEC 61000-6-1:2019 (IEC 61000-4-8:2009)	Table 1.1 A	Pass
	Voltage dips& Voltage interruptions	EN IEC 61000-6-1:2019 (IEC 61000-4-11:2020)	Table 4.2/3 B/C/C/C	N/A

N/A is an abbreviation for Not Applicable. The DC system of EUT is described as EN IEC 61000-6-3:2021 Table B1.7, and the length is less than 3m.

7.2 Description of Performance Criteria

A functional description and a definition of performance criteria, during or as a consequence of the EMC testing, shall be provided by the manufacturer and noted in the test report, based on the following criteria:

7.2.1 Performance criterion A

The EUT shall continue to operate as intended during and after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the EUT is used as intended. If the performance level is not specified by the manufacturer, this may be derived from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

7.2.2 Performance criterion B

The EUT shall continue to operate as intended after the test. No degradation of performance or loss of function is allowed below a performance level specified by the manufacturer, when the EUT is used as intended. The performance level may be replaced by a permissible loss of performance. However, during the test degradation of performance is allowed but no change of actual operating state or stored data is allowed. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, either of these may be derived from the product description and documentation and what the user may reasonably expect from the equipment if used as intended.

7.2.3 Performance criterion C

Temporary loss of function is allowed during the test, provided the function is self-recoverable or can be restored by the operation of the controls.

If, as a result of the application of the tests defined in this standard, the EUT becomes dangerous or unsafe, it shall be deemed to have failed the test.

7.3 Measurement Uncertainty

The uncertainty is calculated using the methods suggested in the "Guide to the Expression of Uncertainty in Measurement" (GUM) published by ISO.

Shielding1	Conducted emission (150KHz~30MHz): 2.72dB
Chamber1	Radiated emission (30MHz~200MHz): 3.96 dB (Horizontal)
	Radiated emission (30MHz~200MHz): 4.34 dB (Vertical)
	Radiated emission (200MHz~1000MHz): 4.20 dB (Horizontal)
	Radiated emission (200MHz~1000MHz): 5.08 dB (Vertical)
	Radiated emission (1GHz~6GHz): 5.32 dB
Chamber2	Radiated emission (30MHz~200MHz): 3.86 dB (Horizontal)
	Radiated emission (30MHz~200MHz): 4.16 dB (Vertical)
	Radiated emission (200MHz~1000MHz): 4.10 dB (Horizontal)
	Radiated emission (200MHz~1000MHz): 5.02 dB (Vertical)

Radiated emission for this report is tested in: Chamber1

7.4 Test Equipment

7.4.1 For Radiated Disturbance Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESR7	102672	2025.07.08	2026.07.07
2.	Antenna	SCHWARZB ECK	VULB 9162	00468	2025.07.28	2026.07.27
3.	Antenna	SCHWARZB ECK	VULB 9168	01527	2025.07.21	2026.07.20
4.	Preamplifier	ENNING	ENNING83 020	AL230001	2025.07.08	2026.07.07
5.	Software	Audix	e3	221118	/	/

7.4.2 For Electrostatic Discharge Immunity Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	ESD Simulator	ENNING	ESDE 30K	SX042301A3	2026.03.03	2027.03.02

7.4.3 For RF Electromagnetic Field Immunity Test

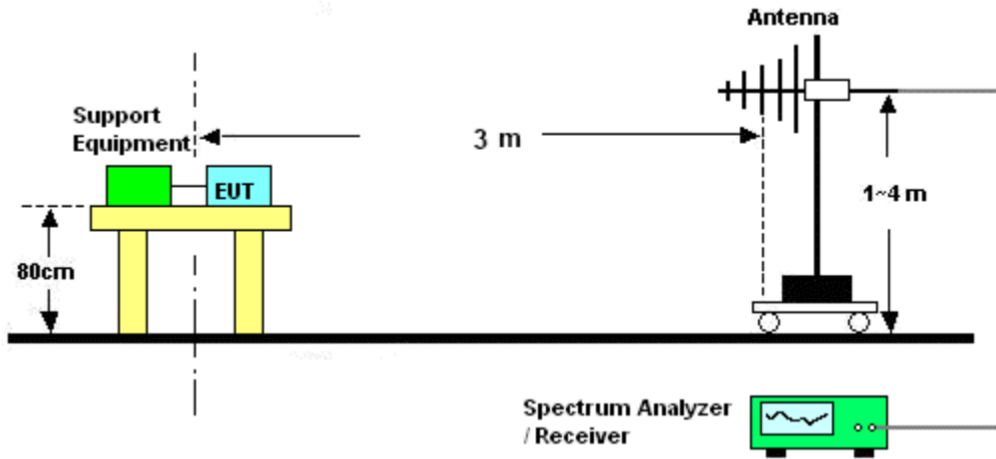
Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Power Amplifier	RFLIGHT	NTWPA- 00810500	22113305	2025.07.08	2026.07.07
2.	Power Amplifier	RFLIGHT	NTWPA- 1060100P	22093261	2025.07.08	2026.07.07
3.	Signal generator	KEYSIGHT	N5171B	MY61280228	2025.07.08	2026.07.07
4.	Antenna	SCHWARZB ECK	STLP 9149	00867	2025.07.21	2026.07.20
5.	Antenna	SCHWARZB ECK	STLP 9128E	3331	2025.07.21	2026.07.20
6.	Field Probe	Narda	EP-601	811ZX20729	2025.07.18	2026.07.17

7.4.4 For Power Frequency Magnetic Field Immunity Test

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Power frequency magnetic field generator	ENNING	PFME 1200	SX022301G1	2025.07.12	2026.07.11

8 RADIATED DISTURBANCE TEST

8.1 Block Diagram of Test Setup



8.2 Applicable Standard

EN IEC 61000-6-3:2021(CISPR 16-2-3:2016+A1:2019+A2:2023)

8.3 Limits for Radiated Disturbance

All devices shall not exceed the level of field strengths specified below:

Frequency (MHz)	Distance (m)	Field Strength Limits dB(μ V/m)
30 ~ 230	3	40
230 ~ 1000	3	47

NOTE 1 – The tighter limit applies at the edge between two frequency bands.
NOTE 2 – Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

8.4 EUT Configuration

The EUT and peripherals were installed as shown on Sec.8.1 and operating in a manner which tends to maximize its disturbance level in a normal application.

8.5 Test Procedure

The EUT and peripherals were placed upon a turntable 0.8 m above the horizontal metal ground plane. All cables leaving the tabletop EUT for a connection outside the test site shall be fitted with ferrite clamps placed on the floor at the point where the cable reaches the floor. The turntable rotated 360 degrees to determine the position of the maximum emission level. The

EUT was set 3 meters below 1 GHz away from the receiving antenna, which was mounted on an antenna tower. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna or horn Antenna) was used as receiving antenna. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of interface cables were manipulated during radiated test.

The bandwidth of Test Receiver R&S ESR was set at 120 kHz below 1GHz.

The frequency range from 30 MHz to 1000MHz was checked for the test modes.

8.6 Test Results

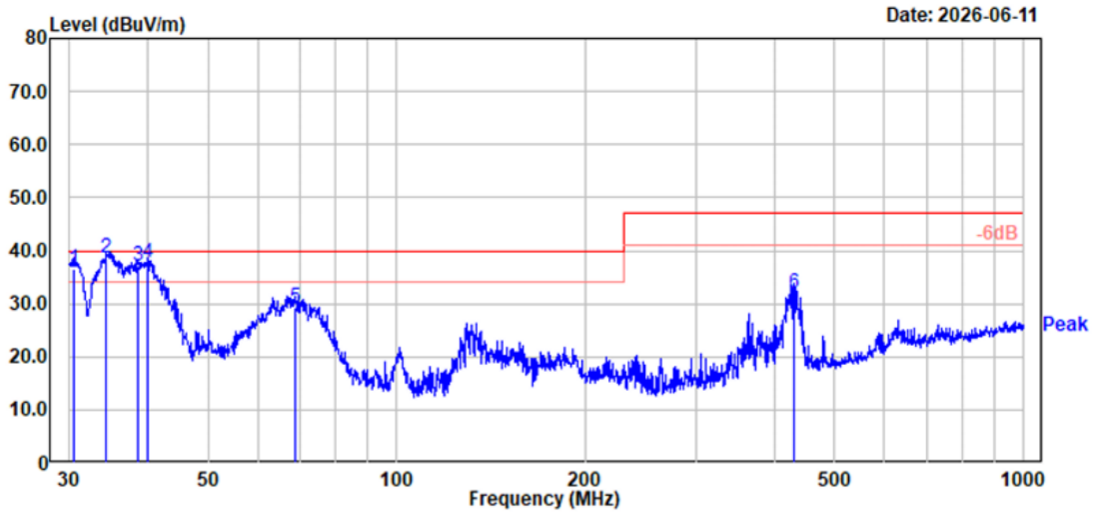
<PASS>

All the following records are the disturbance levels and the frequencies of the highest disturbances, and if the disturbance not reported below are too low against the prescribed limits.

NOTE 1 – All reading are Quasi-Peak values below or equal to 1GHz.

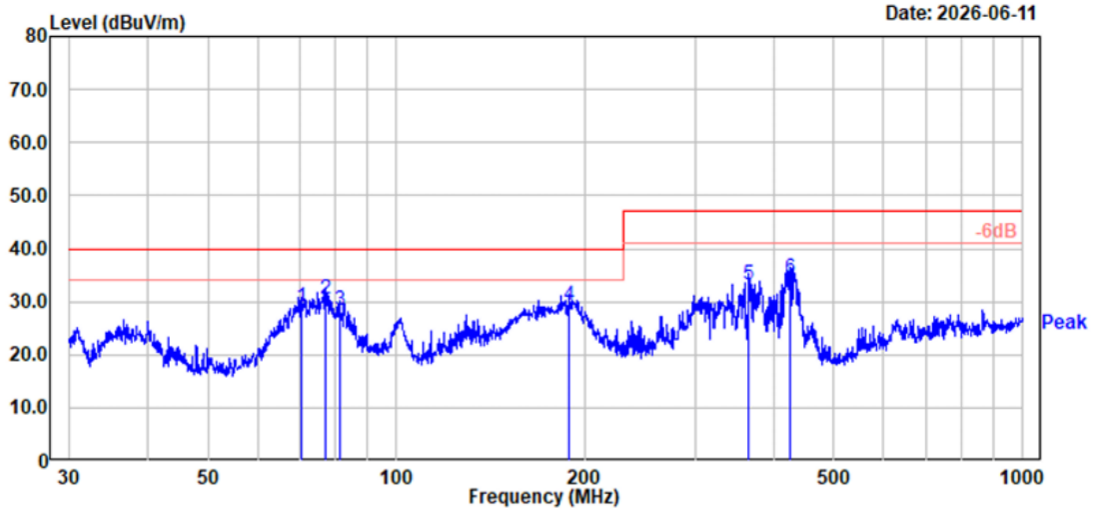
NOTE 2 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

TEST DATA



Site : RE #1
 Condition: 3m VULB9162-2025 Vertical
 : DET:Peak
 EUT :
 Mode :
 Note :

	Freq	Level	Read Level	Limit Line	Over Limit	Ant Factor	Cable Loss	Remark	APos	TPos
	MHz	dBuV/m	dBuV	dBuV/m	dB	dB/m	dB		cm	deg
1	30.531	36.67	23.76	40.00	-3.33	12.00	0.91	QP	100	129
2	34.376	38.74	25.10	40.00	-1.26	12.69	0.95	QP	100	114
3	38.571	37.18	22.74	40.00	-2.82	13.44	1.00	QP	100	0
4	40.080	37.66	22.94	40.00	-2.34	13.71	1.01	QP	100	0
5	68.832	29.36	17.18	40.00	-10.64	10.87	1.31	QP	100	77
6	430.277	31.86	13.44	47.00	-15.14	15.82	2.60	QP	100	330

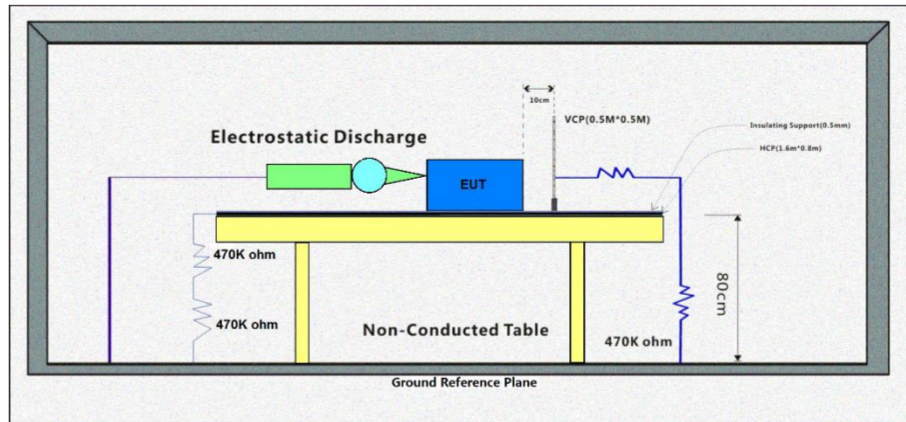


Site : RE #1
 Condition: 3m VULB9162-2025 Horizontal
 : DET:Peak
 EUT :
 Mode :
 Note :

	Freq	Level	Read Level	Limit Line	Over Limit	Ant Factor	Cable Loss	Remark	APos	TPos
	MHz	dBUV/m	dBuV	dBUV/m	dB	dB/m	dB		cm	deg
1	70.521	28.92	17.29	40.00	-11.08	10.30	1.33	QP	196	359
2	77.185	30.47	20.12	40.00	-9.53	8.96	1.39	QP	200	0
3	81.031	28.33	18.26	40.00	-11.67	8.64	1.43	QP	200	359
4	189.106	29.40	16.79	40.00	-10.60	10.72	1.89	QP	200	103
5	364.899	33.24	16.31	47.00	-13.76	14.53	2.40	QP	100	240
6	425.774	34.56	16.42	47.00	-12.44	15.56	2.58	QP	200	326

9 ELECTROSTATIC DISCHARGE IMMUNITY TEST

9.1 Block Diagram of Test Setup



9.2 Applicable Standard

EN IEC 61000-6-1:2019(IEC 61000-4-2:2008)

9.3 Severity Levels and Performance Criterion

9.3.1 Severity levels

Test Voltage			
Contact Discharge (kV)		Air Discharge (kV)	
<input type="checkbox"/>	2	<input type="checkbox"/>	2
<input checked="" type="checkbox"/>	4	<input type="checkbox"/>	4
<input type="checkbox"/>	6	<input checked="" type="checkbox"/>	8
<input type="checkbox"/>	8	<input type="checkbox"/>	15
<input type="checkbox"/>		<input type="checkbox"/>	

9.3.2 Performance criterion:

 A B C

9.4 EUT Configuration

The EUT and peripherals were installed as shown on Sec.9.1 and operating in a normal application.

9.5 Test Procedure

The test applied a non-conductive surface and a horizontal coupling plane on a wooden support, 0.8 m high, standing on the reference ground plane, which is a 2 m x 3 m metallic sheet with 1.5 mm thickness.

9.5.1 Contact Discharge

The tip of the discharge electrode should touch the EUT, before the discharge switch was operated. The EUT shall be exposed to at least 20 discharges, 10 each at negative and positive polarity, at a minimum of four test points (a minimum of 10 discharges at each point). One of the test points shall be subjected to at least 10 indirect discharges (contact) to the center of the front edge of the horizontal coupling plane. If no direct contact test points are available, then at least 20 indirect discharges shall be applied in the indirect mode (use of the Vertical Coupling Plane)

9.5.2 Vertical Coupling Plane (VCP)

More than 10 single discharges were applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5 m x 0.5 m, was placed parallel to, and positioned at a distance of 0.1 m from the EUT. Discharges were applied to the coupling plane, with this plane in sufficient different positions that all sides of the EUT were completely illuminated.

9.5.3 Air Discharge

The round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT. After each discharge, the ESD simulator (discharge electrode) was removed from the EUT. The simulator was then re-triggered for a new single discharge and applies more than 10 times on each reselected point. This procedure was repeated until the air discharge completed.

9.6 Test Results

<PASS>

Refer to the following pages.

For EMS tests, following test modes were selected to test.

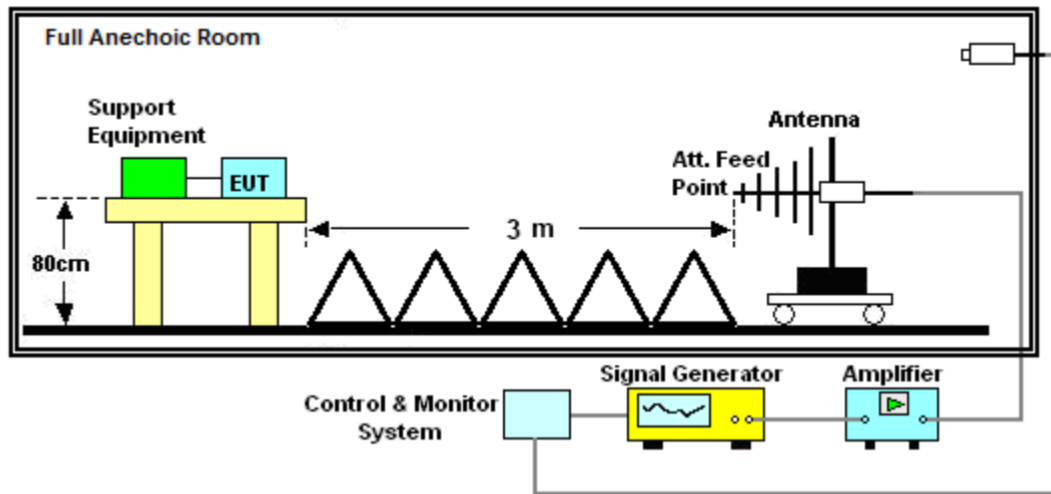
Electrostatic Discharge Immunity Test Result

Shanghai Long Test Technology Co.,Ltd.

Applicant	: Jiangsu DINGS' Intelligent Control Technology Co., LTD	Test Date	: 2026.06.17	
EUT	: PM Stepper Linear Actuator	Temperature	: 23.2°C	
M/N	: N36PB14AA05-001	Humidity	: 51%RH	
S/N	: /	Atmospheric Pressure	: 101.8 kPa	
Power Supply	: DC5V	Test Mode	: Running	
Contact Discharge Voltage: ± 4 kV		Air Discharge Voltage: ±2 kV, ± 4 kV, ± 8 kV		
Contact Discharge: For each point positive 10 times and negative 10 times discharge		Air Discharge: For each point positive 10 times and negative 10 times discharge		
Location		Point(s)	Kind	Result
1	HCP	4	C	A/PASS
2	VCP	4	C	A/PASS
3	Metal shell	8	C	A/PASS
4	Metal Screw	8	C	A/PASS
5	Metallic point	6	C	A/PASS
NOTE 1 – A (Air Discharge), C (Contact Discharge)				
NOTE 2 – VCP (Vertical Coupling Plane)				
Test result A indicates that there is no abnormality in the work.				

10 RF ELECTROMAGNETIC FIELD IMMUNITY TEST

10.1 Block Diagram of Test Setup



10.2 Applicable Standard

EN IEC 61000-6-1:2019(IEC 61000-4-3:2020)

10.3 Severity Levels and Performance Criterion

10.3.1 Severity levels

Frequency Range MHz	Field Strength V/m	Modulation	Dwell Time Sec.
80-1000	3	80% AM 1 kHz	3
1400-6000	34	80% AM 1 kHz	3

10.3.2 Performance criterion:

 A B C

10.4 EUT Configuration

The EUT and peripherals were installed as shown on Sec.10.1 and operating in a normal application.

10.5 Test Procedure

The EUT was placed on a wooden support, 0.8 m high, standing on the ground reference plane.

The power meter was used to measure the forward power. The EUT was set 3 m from the transmitting antenna. Both horizontal and vertical polarization of the antenna was set on test. Each side of the EUT was faced to the transmitting antenna and measured individually.

A CCD camera was put inside the chamber and through its display to monitor the operational

situation of the EUT to judge the EUT performance criterion during test.

10.6 Test Results

<PASS>

Refer to the following pages.

RF Field Strength Susceptibility Immunity Test Result

Shanghai Long Test Technology Co.,Ltd.

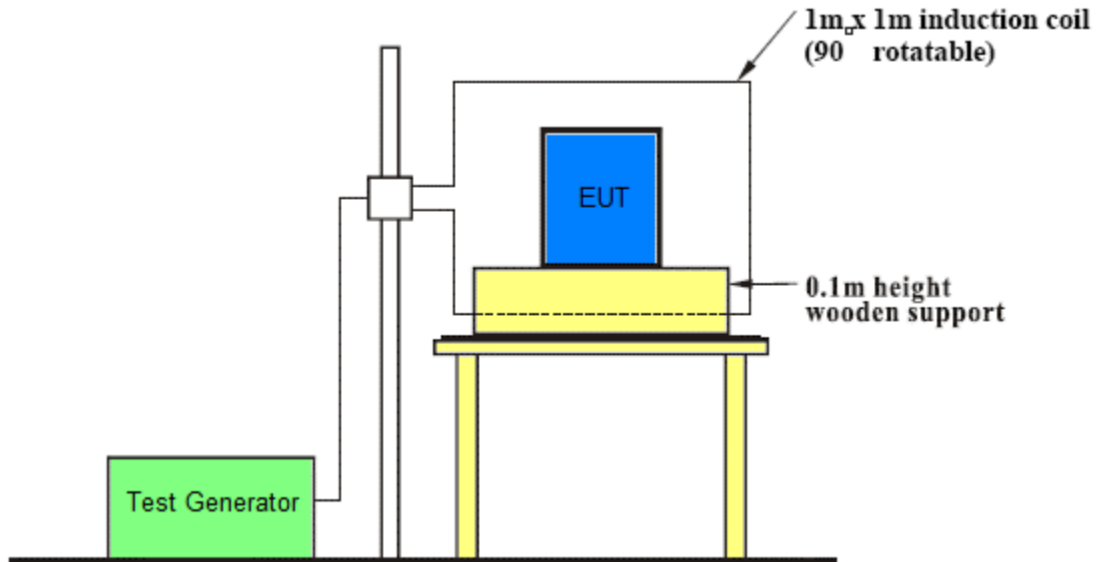
Applicant	Jiangsu DINGS' Intelligent Control Technology Co., LTD	Test Date	2026.06.17	
EUT	PM Stepper Linear Actuator	Temperature	23.1°C	
M/N	N36PB14AA05-001	Humidity	52%RH	
S/N	/	Atmospheric Pressure	101.8 kPa	
Power Supply	DC5V	Field Strength	3 V/m;	
Test Mode	Running	Modulation	<input type="checkbox"/> Pulse <input checked="" type="checkbox"/> AM	
Frequency Range	80 MHz to 1000 MHz		1400MHz to 6000 MHz	
Field Strength	3 V/m		3 V/m	
Modulation	80% AM 1 kHz		80% AM 1 kHz	
Steps	1 %		1 %	
Dwell Time	3 s		3 s	
Antenna Polarization	Horizontal	Vertical	Horizontal	Vertical
EUT Position	Front	A/PASS	A/PASS	A/PASS
	Rear	A/PASS	A/PASS	A/PASS
	Right	A/PASS	A/PASS	A/PASS
	Left	A/PASS	A/PASS	A/PASS

NOTE – “--” means the item is no applicable.

Test result A indicates that there is no abnormality in the work.

11 POWER FREQUENCY MAGNETIC FIELD IMMUNITY TEST

11.1 Block Diagram of Test Setup



11.2 Applicable Standard

EN IEC 61000-6-1:2019 (IEC 61000-4-8:2009)

11.3 Severity Levels and Performance Criterion

11.3.1 Severity level:

Test Level		Magnetic field strength A/m
<input type="checkbox"/>	1	1
<input checked="" type="checkbox"/>	2	3
<input type="checkbox"/>	3	10
<input type="checkbox"/>	4	30
<input type="checkbox"/>	5	100
<input type="checkbox"/>	X	Special

11.3.2 Performance criterion:

 A B C

11.4 EUT Configuration

The configuration of the EUT is refer to Sec. 11.1.

11.5 Test Procedure

The EUT placed on high 0.8m wooden support that above the ground reference plane which the min. size 1m × 1m and 1.2mm thickness metallic, and subjected to the test magnetic field by using the induction coil of standard dimensions (1m × 1m) for proximity method. The induction coil rotated by 90 degrees in order to expose the EUT to the test field with different orientations. All cables of EUT exposed to magnetic field for 1m of their length.

11.6 Test Results

<PASS>

Refer to the following pages.

Power Frequency Magnetic Field Immunity Test Result

Shanghai Long Test Technology Co.,Ltd.

Applicant	: Jiangsu DINGS' Intelligent Control Technology Co., LTD	Test Date	: 2026.06.17
EUT	: PM Stepper Linear Actuator	Temperature	: 23.1°C
M/N	: N36PB14AA05-001	Humidity	: 51%RH
S/N	: /	Atmospheric Pressure	: 101.8 kPa
Power Supply	: DC5V	Test Mode	: <u>Running</u>

Test Level (A/m)	Test Duration	Coil Orientation	Criterion	Result
3	120	Axis-X	A	A/PASS
3	120	Axis-Y	A	A/PASS
3	120	Axis-Z	A	A/PASS

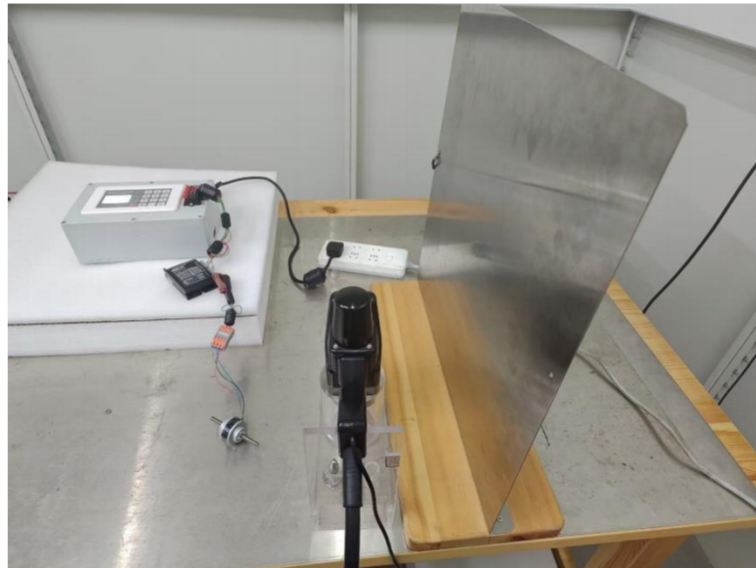
Test result A indicates that there is no abnormality in the work.

12 PHOTOGRAPH

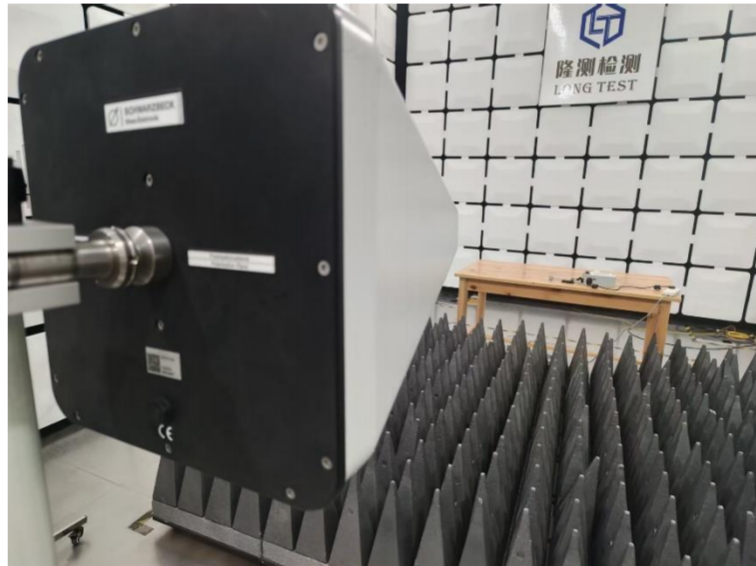
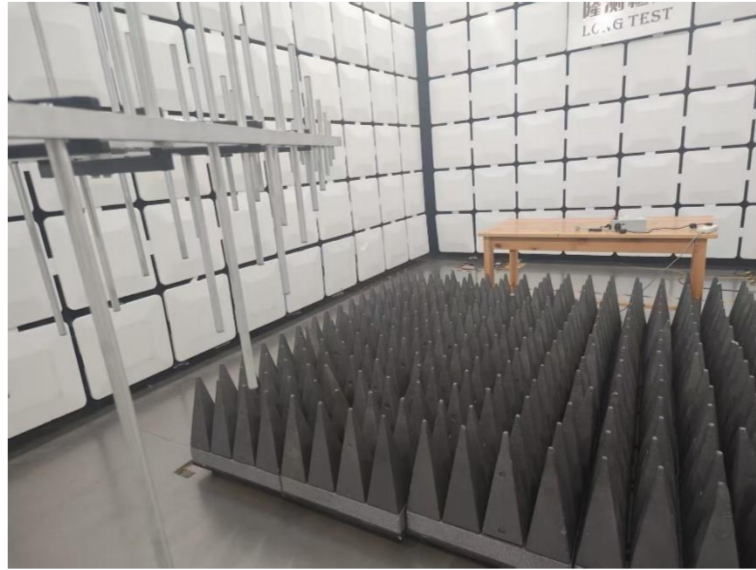
12.1 Radiated Disturbance Test



12.2 Electrostatic Discharge Immunity Test



12.3 Radio frequency electromagnetic fields Test

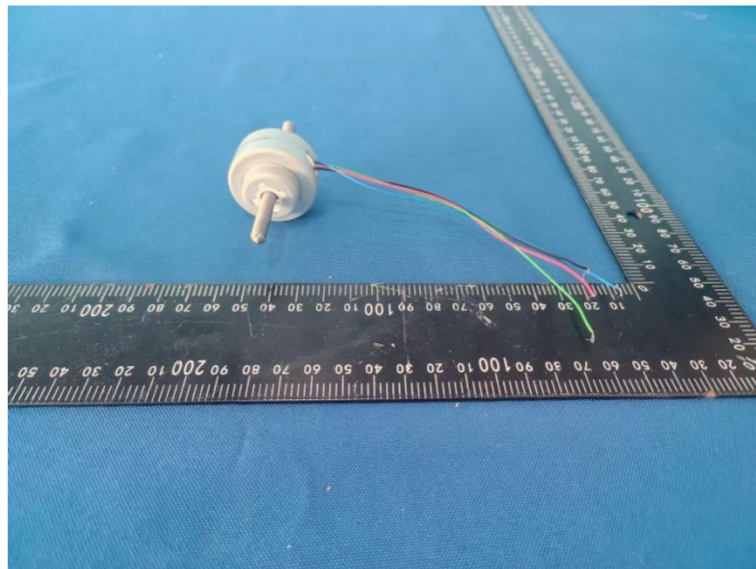
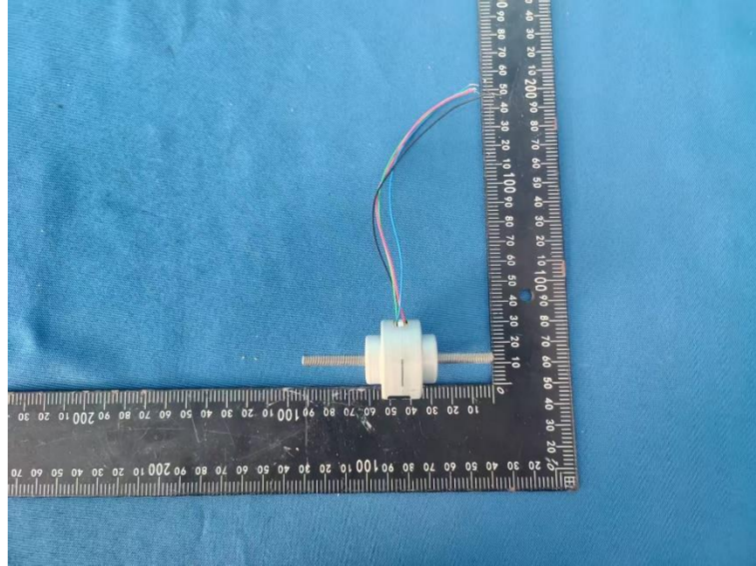


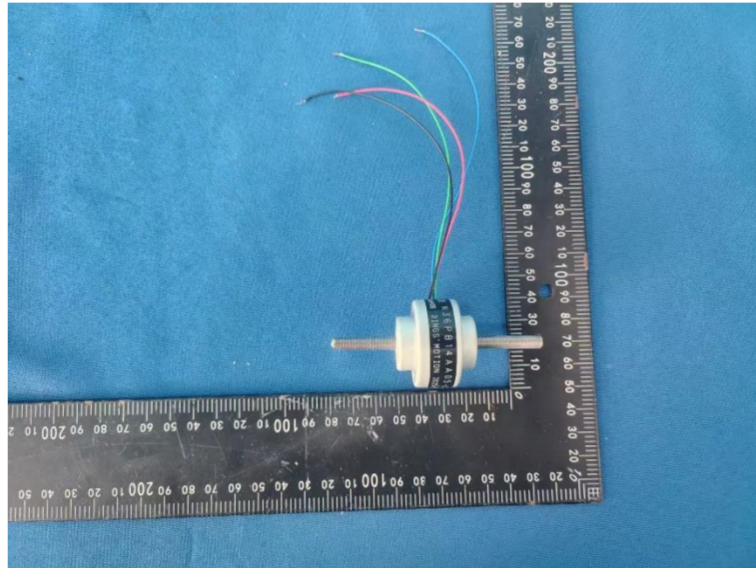
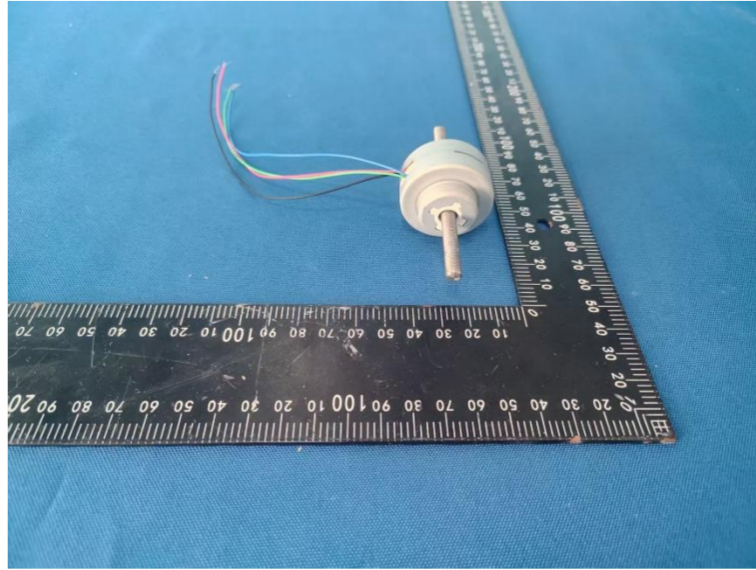
12.4 Power Frequency Magnetic Field Immunity Test



APPENDIX I

PHOTOGRAPHS OF EUT





-----The End-----