EMC TEST REPORT

Product Name	:	Vacuum Homogenizing Emulsifier
Model Number	:	ZT-A-5000L
Supplementary Model(s)		ZT-A-5L~5000L,ZT-B-5L~5000L,ZT-C-5L~5000L, ZT-D-5L~5000L, ZT-E-1L, ZT-E-2L, ZT-E-3L
Trade Mark	:	
Prepared for	:	Yangzhou ZhiTong Machinery Co., Ltd.
Address	:	No.95, Xingqu Road, Chengnan New Area, Gaoyou, Jiangsu Province,China
Prepared by	:	SHENZHEN YES TESTING TECHNOLOGY CO., LTD.
Address	:	5 Building. ZhongGangxing Science and Technology Park, Shiyan Street, Bao'an District, Shenzhen, China
Report Number	:	YST2107300034FR
Date(s) of Tests	:	July 22, 2021 to July 30, 2021
Date of issue	:	July 30, 2021

Note:*This report applies to above tested sample only and s hall not be reproduced in part without written approval of SHENZHEN YES TESTING TECHNOLOGY CO., LTD.*

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Test Report Description Page

1. GENERAL INFORMATION

1.1.Description of Device (EUT)

Product Name	:	Vacuum Homogenizing Emulsifier
Model Number	:	ZT-A-5L~5000L
Supplementary Model(s)		ZT-B-5L~5000L, ZT-C-5L~5000L, ZT-D-5L~5000L, ZT-E-1L, ZT-E-2L, ZT-E-3L
Test Voltage	:	AC 230V/50Hz
Rating	:	AC 220-240V, 50/60Hz, 11KW
Test Mode	:	Normal Working
Applicant	:	Yangzhou ZhiTong Machinery Co., Ltd.
Address	:	No.95, Xingqu Road, Chengnan New Area, Gaoyou, Jiangsu Province, China
Manufacturer	:	Yangzhou ZhiTong Machinery Co., Ltd.
Address	:	No.95, Xingqu Road, Chengnan New Area, Gaoyou, Jiangsu Province, China
Test Standards	:	EN IEC 61000-6-4: 2019 EN IEC 61000-6-2: 2019 EN IEC 61000-3-11: 2019 EN 61000-3-12: 2011
Test Result	:	PASS
Test Engineer	:	Denny Liu
Reviewed By	:	

2. SUMMARY OF TEST RESULT

EMISSION		
Description of Test Item	Standard	Results
Conducted Emissions	EN IEC 61000-6-4: 2019	Pass
Radiated Emissions (Below 1 GHz)	EN IEC 61000-6-4: 2019	Pass
Harmonic Current Emissions	EN 61000-3-12: 2011	Pass
Voltage Fluctuation and Flicker	EN IEC 61000-3-11: 2019	Pass
IMMUNITY		
Description of Test Item	Standard	Results
Electrostatic Discharge (ESD)	EN 61000-4-2: 2008	Pass
Radio-Frequency, Continuous Radiated Disturbance	EN IEC 61000-4-3: 2020	Pass
EFT/B Immunity	EN 61000-4-4: 2012	Pass
Surge Immunity	EN 61000-4-5: 2014/A1: 2017	Pass
Immunity Test of Conducted Disturbance Induced by RF Field	EN 61000-4-6: 2014	Pass
Magnetic Field Immunity Test	EN 61000-4-8: 2010	Pass
Voltage Dips, >95% Reduction	EN IEC 61000-4-11: 2020	Pass
Voltage Dips, 30% Reduction		Pass
Voltage Interruptions		Pass

2.1.Measurement Uncertainty

Test Item		Uncertainty
Conducted Emission Uncertainty	:	2.08dB(9K-150KHz) 2.42dB(150K-30MHz)
Radiated Emission Uncertainty (3m Chamber)	:	3.32dB (30M~1GHz Polarize: H) 3.24dB (30M~1GHz Polarize: V)
Uncertainty for Flicker test	:	0.07%
Uncertainty for Harmonic test	:	1.8%
Uncertainty for C/S Test	:	1.45(Using CDN Test) 2.37(Using EM Clamp Test)
Uncertainty for R/S Test	:	2.10dB(80MHz-200MHz) 1.76dB(200MHz-1000MHz)
Uncertainty for test site temperature and humidity	:	0.6℃ 4%

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1.Conducted Emission Measurement for AC and DC

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Test Receiver	Rohde& Schwarz	ESCI	100137	May 21, 2020	1 Year
2	L.I.S.N.	Rohde& Schwarz	ENV216	101209	May 21, 2020	1 Year
3	RF Switching Unit	CDS	RSU-M2	38401	May 21, 2020	1 Year
4	V-Network	Rohde& Schwarz	ESH3-Z6	101101	May 21, 2020	1 Year
5	V-Network	Rohde& Schwarz	ESH3-Z6	101102	May 21, 2020	1 Year

3.2.TELECOM terminals Disturbance Voltage Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Test Receiver	Rohde & Schwarz	ESCI	101045	May 16, 2020	1 Year
2	AMN	Teseq GmbH	ISN T800	30327	March 12, 2021	1 Year
3	AMN	Teseq GmbH	T8-CAT6	32186	March 12, 2021	1 Year

3.3.For 3m Radiated Emission Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	EMI Test Receiver	Rohde & Schwarz	ESCI	101415	May 21, 2020	1 Year
2	Bilog Antenna	Schwarzbeck	VULB9163	141	May 21, 2020	1 Year
3	Power Amplifier	HP	8447F	OPTH64	May 26, 2020	1 Year
4	Cable	N/A	CIL02	A0783566	May 21, 2020	1 Year
5	Cable	N/A	RG 223/U	525178	May 21, 2020	1 Year
6	Cable	N/A	RG 223/U	525179	May 21, 2020	1 Year
7	Signal Analyzer	R&S	FSV30	103039	May 26, 2020	1 Year
8	Horn Antenna	Schwarzbeck	BBHA9120D	1272	May 26, 2020	1 Year
9	High frequency horn antenna	Schwarzbeck	BBHA9170	9170-567	May 21, 2020	1 Year
10	Power Amplifier	LUNAR EM	LNA1G18-40	J10100000081	May 21, 2020	1 Year
11	Cable	N/A	CBL-26	D1245	May 21, 2020	1 Year
12	Cable	N/A	CBL-26	D8503	May 21, 2020	1 Year
13	Cable	N/A	CBL-26	N/A	May 21, 2020	1 Year

3.4.For Harmonic Current / Flicker Measurement

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	AC Frequency Conversion Power	Teseq	100-CTS-230-TESQ	1804A03259	May 21, 2020	1 Year
2	Power Frequency Test System	Teseq	5001IX-CTS-400-SCH	1805A03008	May 21, 2020	1 Year

3.5.For Electrostatic Discharge Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	ESD Tester	TESEQ	NSG 437	409	May 26, 2020	1 Year
2	Impulse Module	TESEQ AG	IN NSG 438A A 4380-150pF/330Ohm	403-550/1712	May 21, 2020	1 Year
3	Impulse Module	TESEQ AG	INA 4553-330pF/330Ohm	403-588/1912	May 21, 2020	1 Year
4	Impulse Module	TESEQ AG	INA 4381-150pF/2kOhm	403-564/1812	May 21, 2020	1 Year
5	Impulse Module	TESEQ AG	INA 4382-330pF/2kOhm	403-565/1912	May 21, 2020	1 Year

3.6.For Radio-frequency, Electromagnetic Field Immunity

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Signal Generator	Agilent	N5181A	MY50145187	May 20, 2020	1 Year
2	RF Power Meter. Dual Channel	BOONTON	4232A	10539	May 21, 2020	1 Year
3	50ohm Diode Power Sensor	BOONTON	51011EMC	34236/34238	May 21, 2020	1 Year
4	Field Strength Meter	DARE	RSS1006A	10I00037SO22	May 21, 2020	1 Year
5	50ohm Diode Power Sensor	BOONTON	51011EMC	36164	May 21, 2020	1 Year
6	Power Amplifier	MILMEGA	80RF1000-175	1059345	May 20, 2020	1 Year
7	Power Amplifier	MILMEGA	AS0102-55	1018770	May 20, 2020	1 Year
8	Power Amplifier	MILMEGA	AS1860-50	1059346	May 20, 2020	1 Year
9	Log.-Per. Antenna	SCHWARZBECK	VULP 9118E	811	May 21, 2020	1 Year
10	Broad-Band Horn Antenna	SCHWARZBECK	STLP 9149	9149-227	May 21, 2020	1 Year
11	Multi-function interface system	DARE	CTR1009B	12I00250SNO72	N/A	N/A
12	Automatic switch group	DARE	RSW1004A	N/A	N/A	N/A

3.7.For Electrical Fast Transient / Burst Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Burst Tester	HAEFELY	PEFT4010	080981-16	May 16, 2020	1Year
2	Coupling Clamp	HAEFELY	IP-4A	147147	May 17, 2020	1Year
3	Three phase CDN	Teseq	CDN 163	202	May 17, 2020	1 Year
4	Three in one	HTEC	HCOMPACT7	190305	May 22, 2020	1 Year

3.8.For Surge Immunity Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Surge Controller	HAEFELY	Psurge 8000	174031	May 16, 2020	1Year
2	Impulse Module	HAEFELY	PIM 100	174124	May 17, 2020	1Year
3	Coupling Decoupling Filter	HAEFELY	PCD 130	172181	May 17, 2020	1Year
4	Coupling Module	HAEFELY	PCD122	174354	May 16, 2020	1Year
5	Surge Impulse Module	HAEFELY	PIM 120	174435	May 16, 2020	1Year
6	Coupling Module	HAEFELY	PCD 126A	174387	May 16, 2020	1Year
7	Impulse Module	HAEFELY	PIM 110	174391	May 17, 2020	1Year
8	Three in one	HTEC	HCOMPACT7	190305	May 21, 2020	1 Year

3.9.For Immunity Test of Conducted Disturbance Induced by RF Field

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Continuous Wave Simulator	EMTEST	CWS500C	0900-12	May 19, 2020	1 Year
2	EM Injection Clamp	EMTEST	F-2031-23MM	368	May 17, 2020	1 Year
3	Attenuator	EMTEST	100W 6dB DC-3G	/	May 16, 2020	1 Year
4	Signal Generator	R&S	SMB100A	103041	May 16, 2020	1 Year
5	CDN	LUTHI	CDN L-801 M2/M3	2606	May 16, 2020	1 Year
6	Power meter	AGILENT	E4418B	MY45102886	May 16, 2020	1 Year

3.10.For Magnetic Field Immunity Test

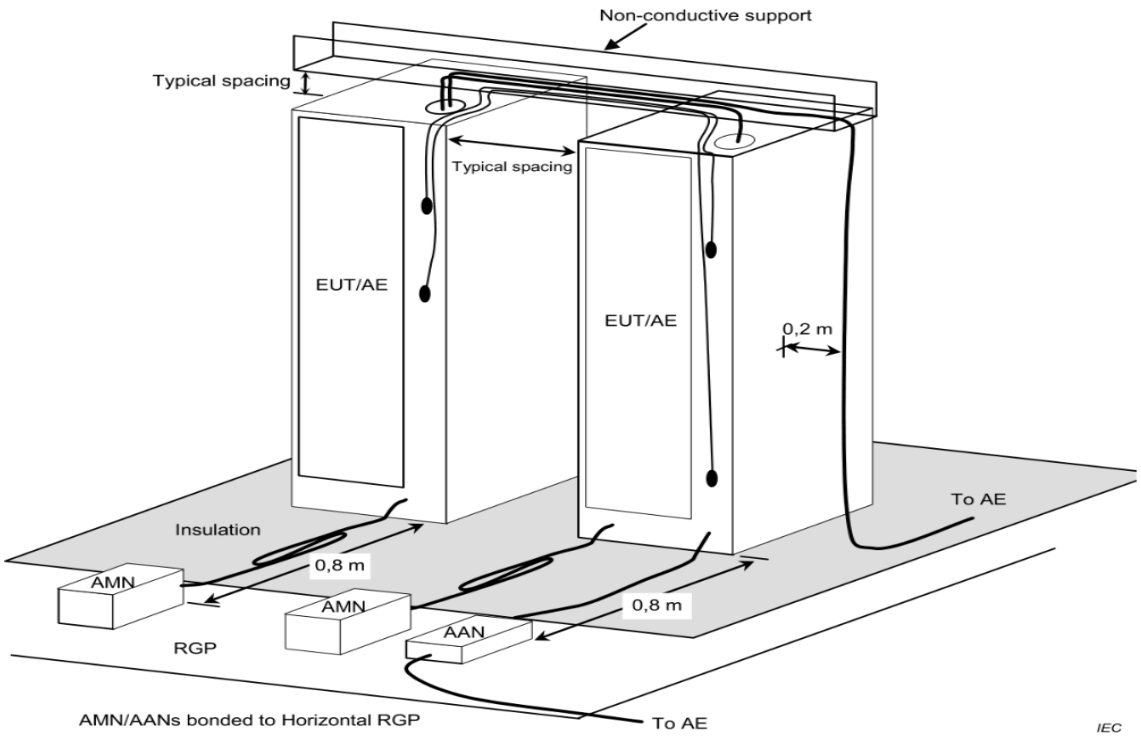
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Magnetic Field Tester	HAEFELY	MAG100	250040.1	May 16, 2020	1 Year

3.11.For Voltage Dips and Interruptions Test

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1	Three in one	HTEC	HCOMPACT7	190305	May 21, 2020	1 Year
2	Dips module	HTEC	HV1P16T	190302	May 21, 2020	1 Year

4. CONDUCTED EMISSIONS

4.1.Block Diagram of Test Setup



(EUT: Vacuum Homogenizing Emulsifier)

4.2.Measuring Standard

EN IEC 61000-6-4

4.3.Conducted Emission Limits

Power Line Conducted Emission Limits

Applicable to 1. AC mains power ports				
Table clause	**Frequency range** MHz	**Coupling device**	**Detector type / bandwidth**	**dB(μV)**
4.1	0,15 to 0,5	AMN	Quasi Peak / 9 kHz	79
	0,5 to 30			73
	0,15 to 0,5	AMN	Average / 9 kHz	66
	0,5 to 30			60

4.4.EUT Configuration on Measurement

The following equipment are installed on Conducted Emission Measurement to meet EN IEC 61000-6-4 requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

4.5.Operating Condition of EUT

Operating Condition of EUT are listed in section 2.1.

4.6.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided a 50ohm coupling impedance for the tested equipment. Both sides of AC line are investigated to find out the maximum conducted emission according to the EN IEC 61000-6-4 regulations during conducted emission measurement.
The bandwidth of the Receiver (R&S ESCI) is set at 9kHz in 150kHz~30MHz and 200Hz in 9kHz~150kHz.
The frequency range from 150kHz to 30MHz is investigated.
The results were obtained from the following equation

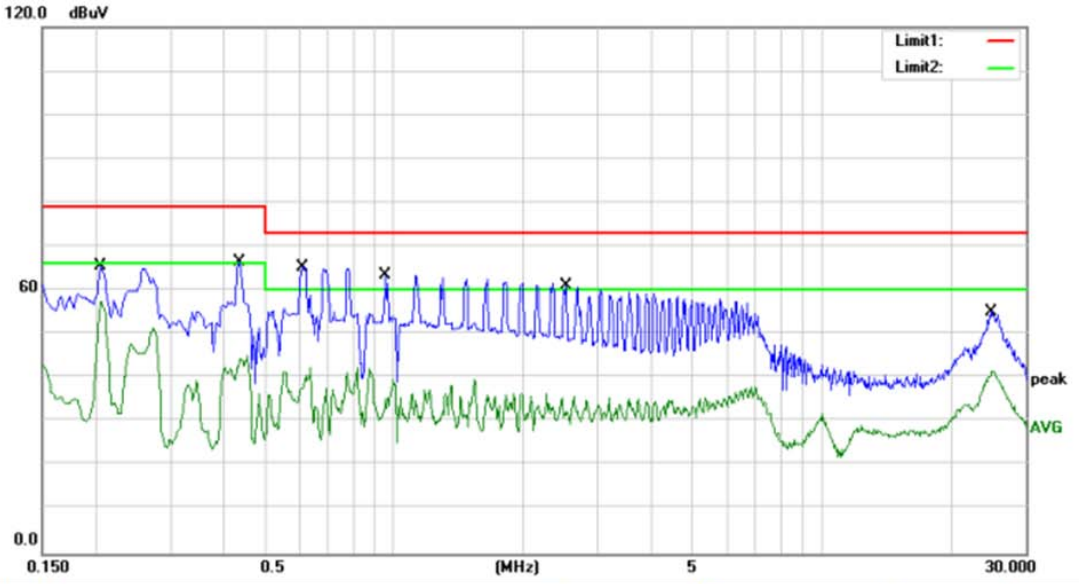
Result dB(uV):

Measurement Level dB(uV)= LISN factor(dB) +Cable Loss(dB) +Reading LeveldB(uV)
Note: LISN factor(dB) and Cable Loss(dB) are included Reading dB(uV) in test software.

Over(dB)= Emission Level dB(uV)- Limit dB(uV)

4.7.Measuring Results

PASS.



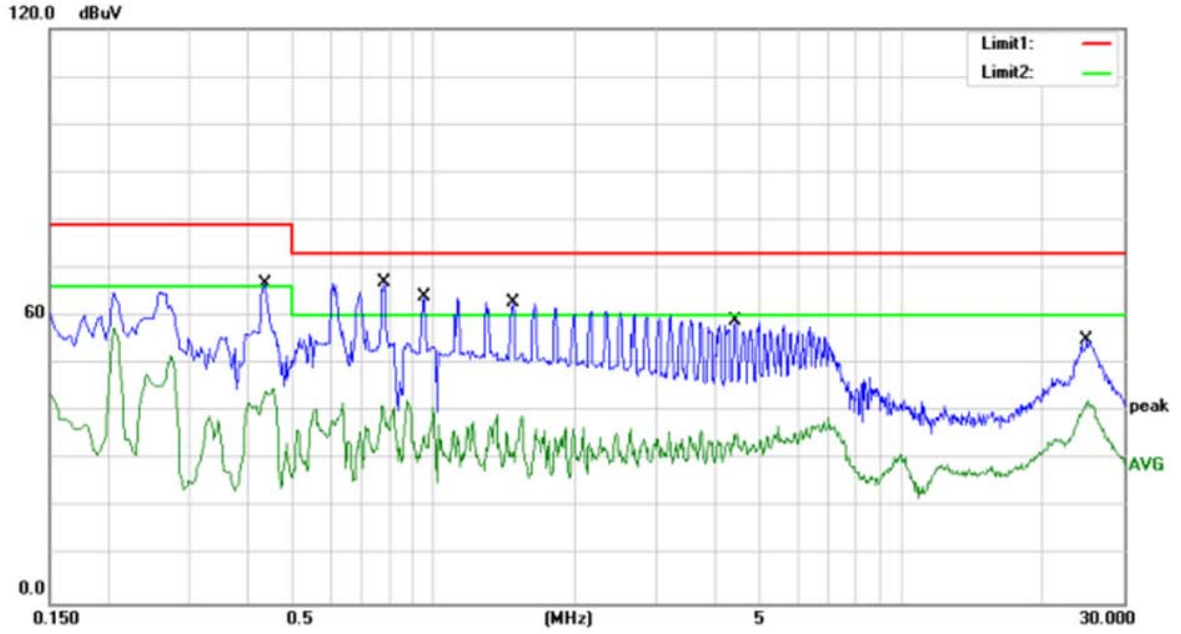
Site site #1 Phase: L1 Temperature: 25.6

Mode: Mode A

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2060	55.10	10.43	65.53	79.00	-13.47	QP	
2		0.2060	47.12	10.43	57.55	66.00	-8.45	AVG	
3		0.4340	56.23	10.20	66.43	79.00	-12.57	QP	
4		0.4340	35.03	10.20	45.23	66.00	-20.77	AVG	
5	*	0.6100	55.06	10.13	65.19	73.00	-7.81	QP	
6		0.6100	32.25	10.13	42.38	60.00	-17.62	AVG	
7		0.9540	53.38	10.12	63.50	73.00	-9.50	QP	
8		0.9540	29.52	10.12	39.64	60.00	-20.36	AVG	
9		2.5340	51.03	10.09	61.12	73.00	-11.88	QP	
10		2.5340	25.61	10.09	35.70	60.00	-24.30	AVG	
11		24.8180	44.99	10.02	55.01	73.00	-17.99	QP	
12		25.0180	31.64	10.02	41.66	60.00	-18.34	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator:



Site site #1 Phase: N Temperature: 25.6

Mode: Mode A

Note:

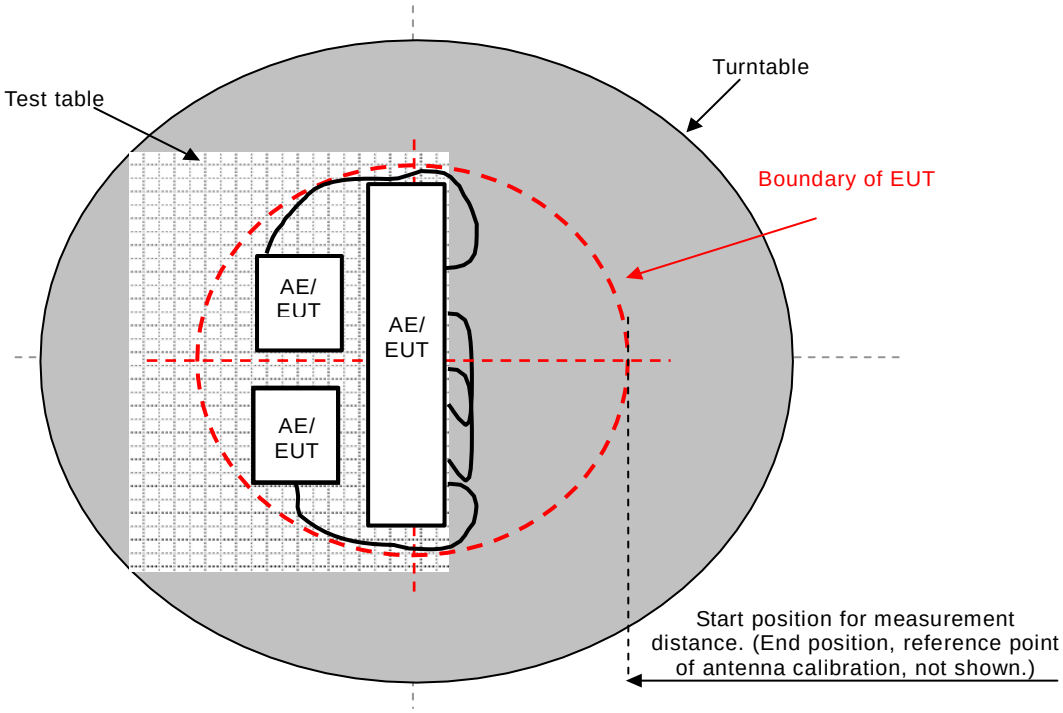
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.4340	56.66	10.20	66.86	79.00	-12.14	QP	
2		0.4340	34.70	10.20	44.90	66.00	-21.10	AVG	
3		0.7820	31.19	10.12	41.31	60.00	-18.69	AVG	
4	*	0.7820	56.80	10.12	66.92	73.00	-6.08	QP	
5		0.9500	31.03	10.12	41.15	60.00	-18.85	AVG	
6		0.9500	53.98	10.12	64.10	73.00	-8.90	QP	
7		1.4740	29.19	10.11	39.30	60.00	-20.70	AVG	
8		1.4740	52.63	10.11	62.74	73.00	-10.26	QP	
9		4.4220	48.79	10.06	58.85	73.00	-14.15	QP	
10		4.4220	26.99	10.06	37.05	60.00	-22.95	AVG	
11		25.0260	45.15	10.02	55.17	73.00	-17.83	QP	
12		25.0260	32.29	10.02	42.31	60.00	-17.69	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator:

5. RADIATED EMISSIONS

5.1.Block Diagram of Test Setup

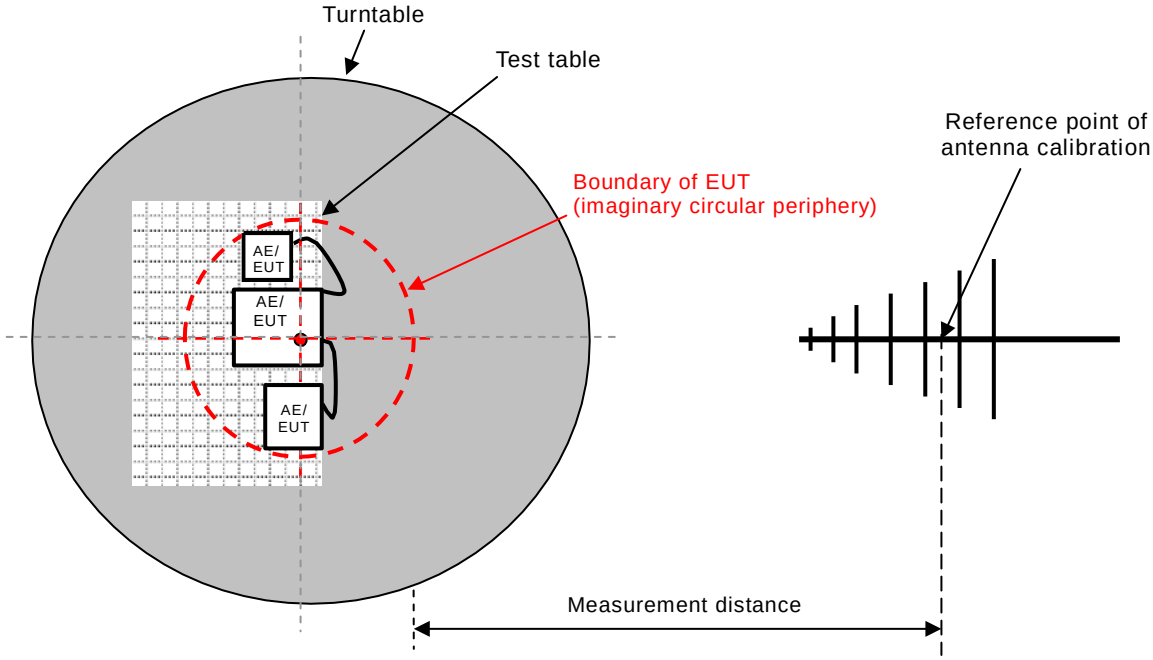
5.1.1.Block diagram of EUT System



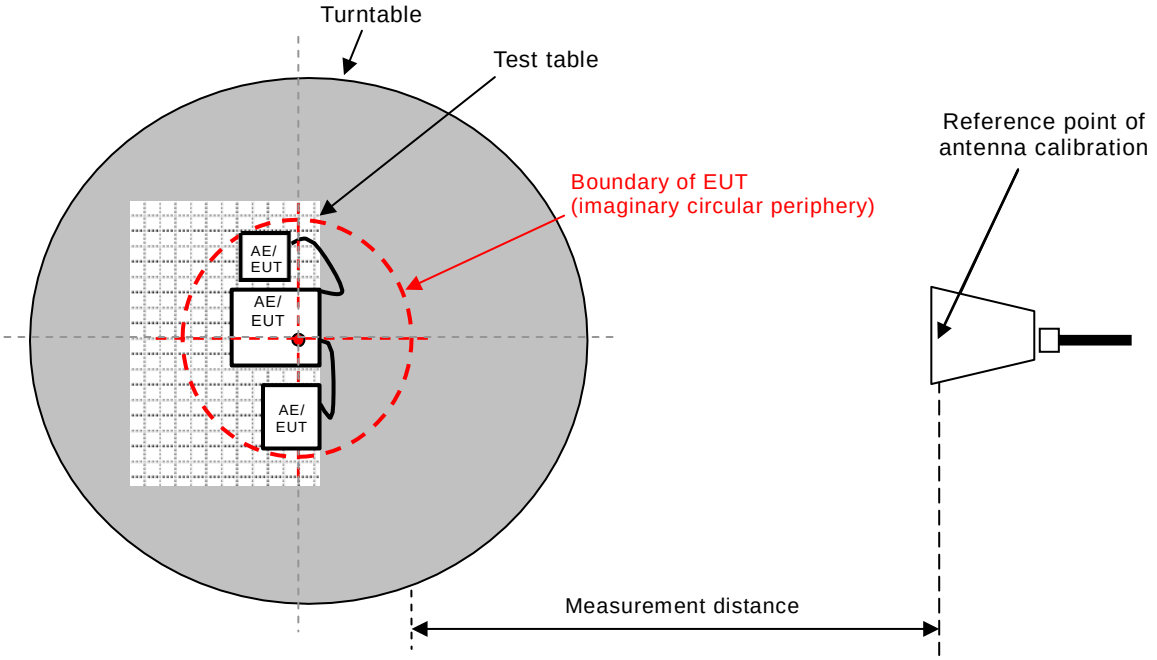
(EUT: Vacuum Homogenizing Emulsifier)

5.1.2.Block diagram of test setup (In chamber)

Below 1GHz



Above 1GHz



(EUT: Vacuum Homogenizing Emulsifier)

5.2.Measuring Standard

EN IEC 61000-6-4

5.3.Radiated Emission Limits

Any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

Table clause	**Frequency range** MHz	**Measurement**			**limits** dB(μV/m)
		Facility (see Table 3)	**Distance** m	**Detector type /bandwidth**	
3.1	30 to 230	OATS/SAC	3	Quasi Peak / 120 kHz	50
	230 to 1 000				57

5.4.EUT Configuration on Measurement

The EN IEC 61000-6-4 regulations test method must be used to find the maximum emission during radiated emission measurement.

5.5.Operating Condition of EUT

Operating Condition of EUT is listed in section 2.1.

5.6.Test Procedure

The EUT is placed on a turntable which is 0.8 meter high above the ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 and 10 meters away from the receiving antenna that is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna (calibrated by Dipole Antenna) and horn antenna are used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test.

ResultdB(uV/m):

Measurement Level dB(uV/m)= Antenna factor(dB) –Amp Factor +Cable Loss(dB) +Reading Level dB(uV)

Note: Antenna factor(dB) and Cable Loss(dB) are included Correct factor(dB) in test software.

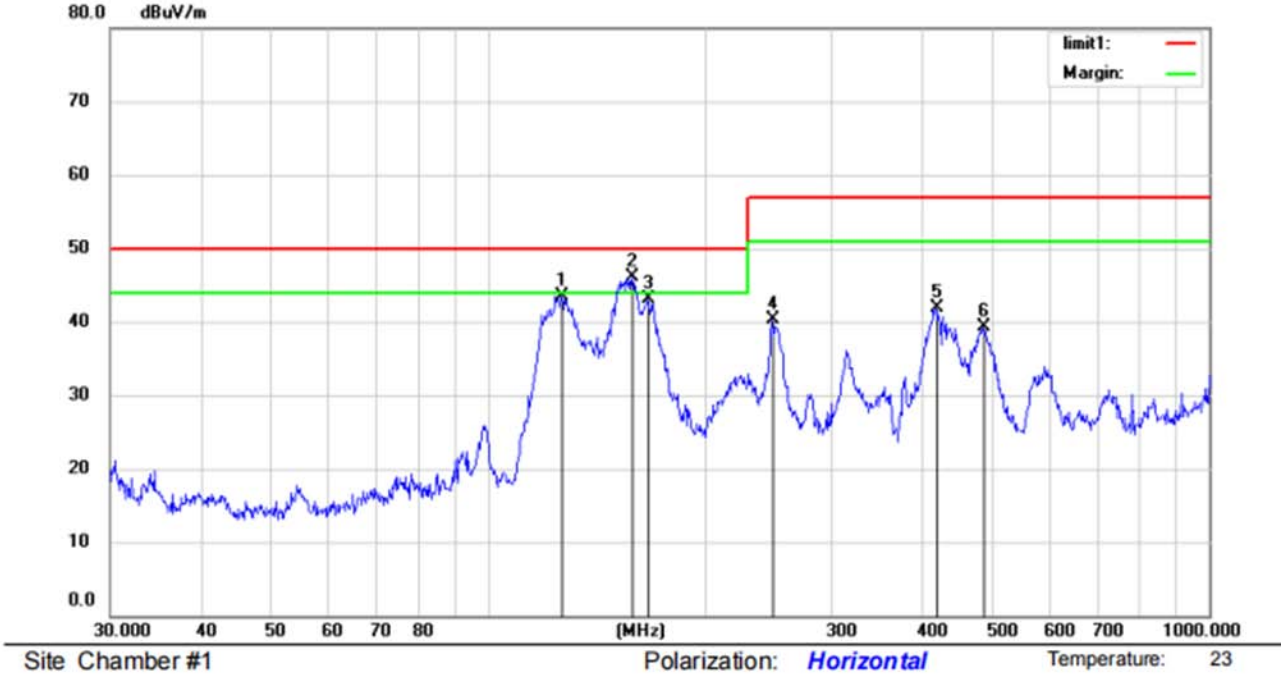
Margin QP(db)=Reading Level dB(uV/m)- Limit dB(uV/m) for 30~1GHz
Over(dB)= Emission Level dB(uV/m)- Limit dB(uV/m) for above 1GHz

The bandwidth of the Receiver is set at 120 kHz (For 30MHz to 1000MHz).
The resolution bandwidth of the receiver RS FSV40 was set at 1MHz ((For above 1GHz.).
The frequency range for 1GHz to 6GHz was checked with peak and average detector, measurement distance is 3m in 3m Anechoic chamber.

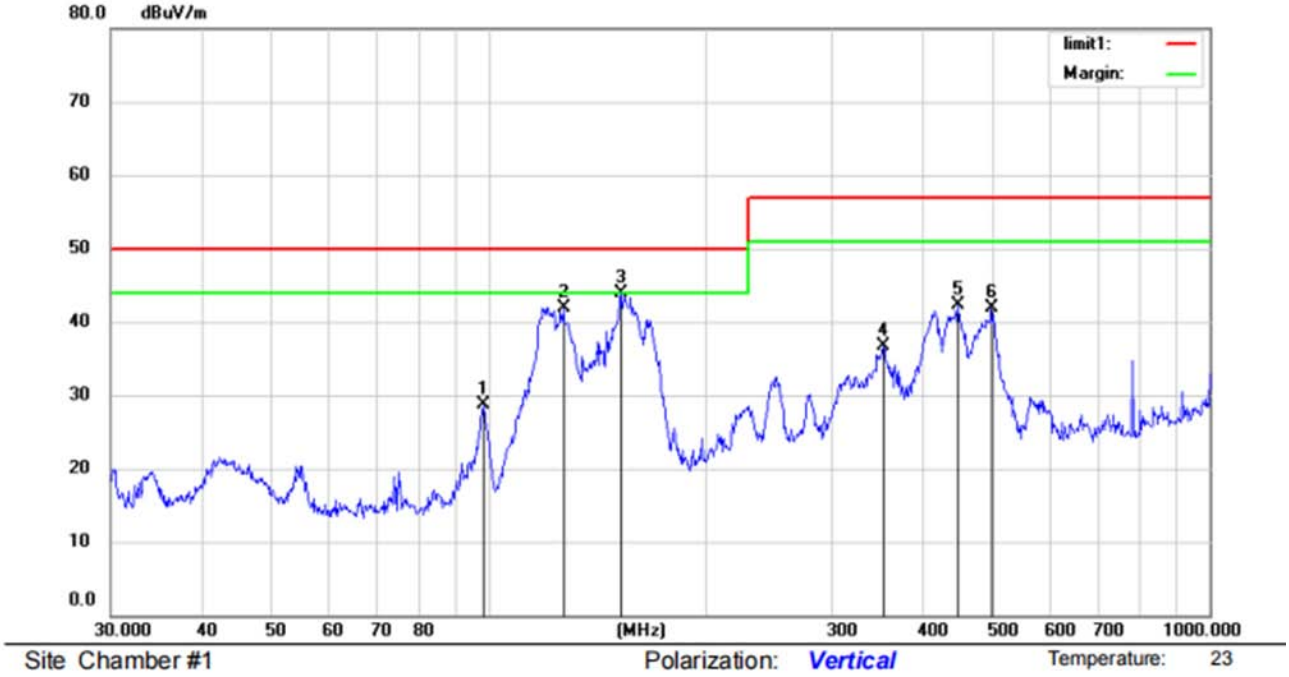
The frequency range for 30MHz to 1GHz was checked with Quasi-peak detector, measurement distance is 10m in 10m semi-chamber.

5.7.Measuring Results

PASS.



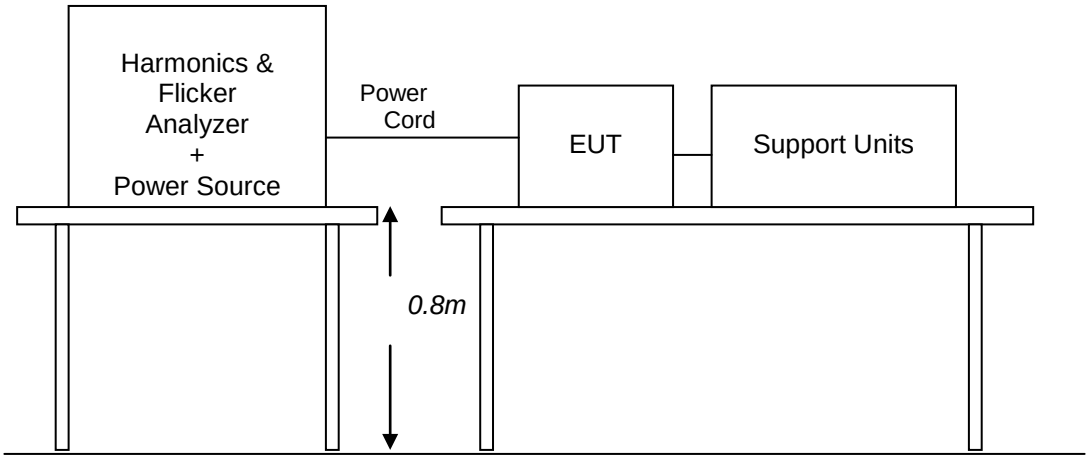
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		126.3286	62.78	-19.26	43.52	50.00	-6.48	QP			
2	*	158.6677	64.87	-18.69	46.18	50.00	-3.82	QP			
3		166.6514	61.48	-18.31	43.17	50.00	-6.83	QP			
4		247.6820	54.72	-14.48	40.24	57.00	-16.76	QP			
5		417.6411	53.54	-11.66	41.88	57.00	-15.12	QP			
6		485.6093	49.59	-10.25	39.34	57.00	-17.66	QP			



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1		98.4866	47.89	-19.12	28.77	50.00	-21.23	QP			
2		127.2176	61.28	-19.29	41.99	50.00	-8.01	QP			
3	*	152.6641	63.10	-19.21	43.89	50.00	-6.11	QP			
4		352.9433	48.67	-11.89	36.78	57.00	-20.22	QP			
5		447.9822	53.03	-10.80	42.23	57.00	-14.77	QP			
6		497.6765	52.05	-10.08	41.97	57.00	-15.03	QP			

6. HARMONIC CURRENT EMISSION MEASUREMENT

6.1.Block Diagram of Test Setup



(EUT: Vacuum Homogenizing Emulsifier)

6.2.Measuring Standard

EN 61000-3-12

6.3.Operation Condition of EUT

Operating Condition of EUT are listed in section 2.1.

6.4.Measuring Results

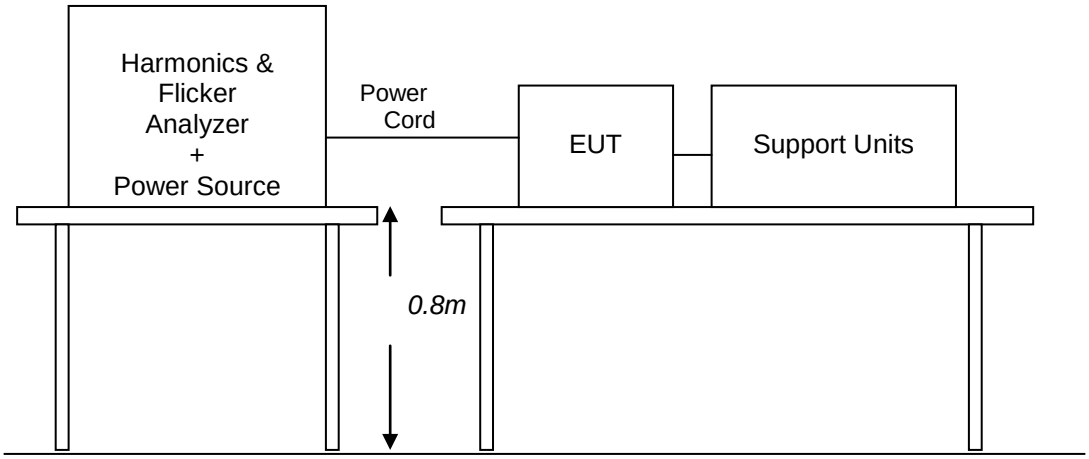
PASS.

Current Test Result Summary (Run time)

Harm#	Harms(avg)	100%Limit	%of Limit	Harms(max)	150%Limit	%of Limit	Status
2	0.005	1.080	N/A	0.006	1.620	N/A	Pass
3	0.030	2.300	1.3	0.031	3.450	0.9	Pass
4	0.002	0.430	N/A	0.003	0.645	N/A	Pass
5	0.007	1.140	N/A	0.008	1.710	N/A	Pass
6	0.001	0.300	N/A	0.002	0.450	N/A	Pass
7	0.010	0.770	N/A	0.011	1.155	N/A	Pass
8	0.001	0.230	N/A	0.002	0.345	N/A	Pass
9	0.014	0.400	3.6	0.015	0.600	2.5	Pass
10	0.001	0.184	N/A	0.001	0.276	N/A	Pass
11	0.010	0.330	N/A	0.010	0.495	N/A	Pass
12	0.001	0.153	N/A	0.001	0.230	N/A	Pass
13	0.014	0.210	6.6	0.014	0.315	4.5	Pass
14	0.001	0.131	N/A	0.001	0.197	N/A	Pass
15	0.006	0.150	N/A	0.006	0.225	N/A	Pass
16	0.001	0.115	N/A	0.001	0.173	N/A	Pass
17	0.001	0.132	N/A	0.002	0.198	N/A	Pass
18	0.001	0.102	N/A	0.001	0.153	N/A	Pass
19	0.015	0.118	12.8	0.016	0.178	8.8	Pass
20	0.001	0.092	N/A	0.001	0.138	N/A	Pass
21	0.020	0.107	18.5	0.020	0.161	12.6	Pass
22	0.001	0.084	N/A	0.001	0.125	N/A	Pass
23	0.023	0.098	23.9	0.024	0.147	16.2	Pass
24	0.001	0.077	N/A	0.002	0.115	N/A	Pass
25	0.008	0.090	N/A	0.011	0.135	N/A	Pass
26	0.002	0.071	N/A	0.003	0.107	N/A	Pass
27	0.009	0.083	N/A	0.010	0.125	N/A	Pass
28	0.007	0.066	N/A	0.007	0.099	N/A	Pass
29	0.028	0.078	35.9	0.029	0.116	24.8	Pass
30	0.004	0.061	N/A	0.004	0.092	N/A	Pass
31	0.017	0.073	23.3	0.019	0.109	17.8	Pass
32	0.007	0.058	N/A	0.007	0.086	N/A	Pass
33	0.009	0.068	N/A	0.012	0.102	N/A	Pass
34	0.002	0.054	N/A	0.003	0.081	N/A	Pass
35	0.008	0.064	N/A	0.009	0.096	N/A	Pass
36	0.001	0.051	N/A	0.001	0.077	N/A	Pass
37	0.006	0.061	N/A	0.007	0.091	N/A	Pass
38	0.001	0.048	N/A	0.001	0.073	N/A	Pass
39	0.013	0.058	22.2	0.013	0.087	15.6	Pass
40	0.001	0.046	N/A	0.001	0.069	N/A	Pass

7. VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

7.1.Block Diagram of Test Setup



(EUT: Vacuum Homogenizing Emulsifier)

7.2.Measuring Standard

EN IEC 61000-3-11

7.3.Operation Condition of EUT

Operating Condition of EUT are listed in section 2.1.

7.4.Measuring Results

PASS.

8. IMMUNITY PERFORMANCE CRITERIA DESCRIPTION

Performance Level

A functional description and a definition of specific performance criteria, during or as a consequence of immunity testing of equipment under test (EUT), shall be provided by the manufacturer and noted in the test report.
For EN IEC 61000-6-2

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.

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 levelspecified 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.

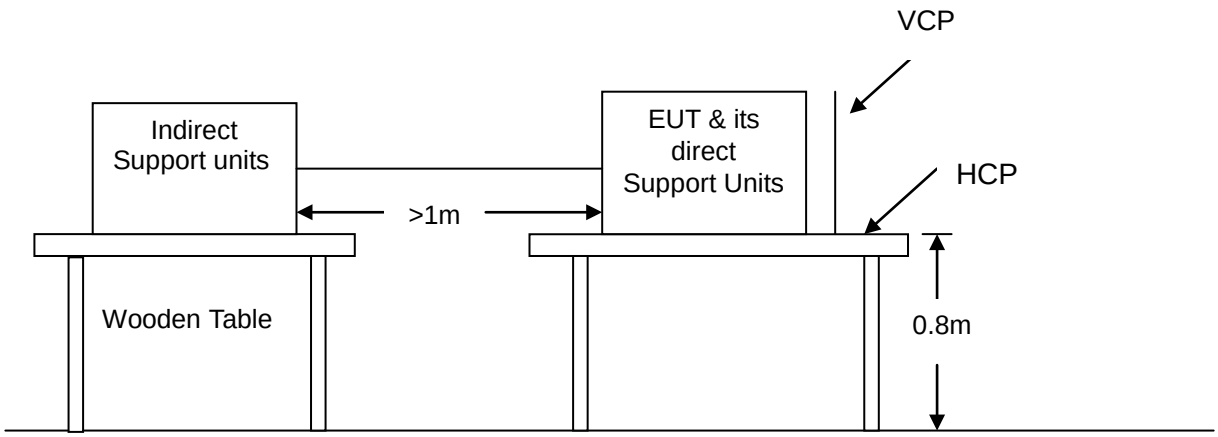
Criterion C:

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.

9. ELECTROSTATIC DISCHARGE IMMUNITY TEST

9.1.Block Diagram of Test Setup



(EUT: Vacuum Homogenizing Emulsifier)

9.2.Test Standard

EN IEC 61000-6-2
(IEC 61000-4-2:2008 Severity Level: 3 / Air Discharge: ±8 kV;
Level: 2 / Contact Discharge: ±4 kV)

9.3.Severity Levels and Performance Criterion

9.3.1.Severity level

Level	Test Voltage Contact Discharge (kV)	Test Voltage Air Discharge (kV)
1	±2	±2
2	±4	±4
3	±6	±8
4	±8	±15
X	Special	Special

9.3.2.Performance criterion: B

9.4.Operating Condition of EUT

Operating Condition of EUT are listed in section 2.1.

9.5.Test Procedure

9.5.1.Air Discharge:

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 20 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

9.5.2.Contact Discharge:

All the procedure shall be same as Section 10.5.1. Except that the tip of the
discharge electrode shall touch the EUT before the discharge switch is operated.

9.5.3.Indirect discharge for horizontal coupling plane

At least 25 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

9.5.4.Indirect discharge for vertical coupling plane

At least 25 singles discharge (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m×0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

9.6.Test Results

PASS.

Please refer to the following pages.

Electrostatic Discharge Test Results

SHENZHEN YES TESTING TECHNOLOGY CO., LTD.

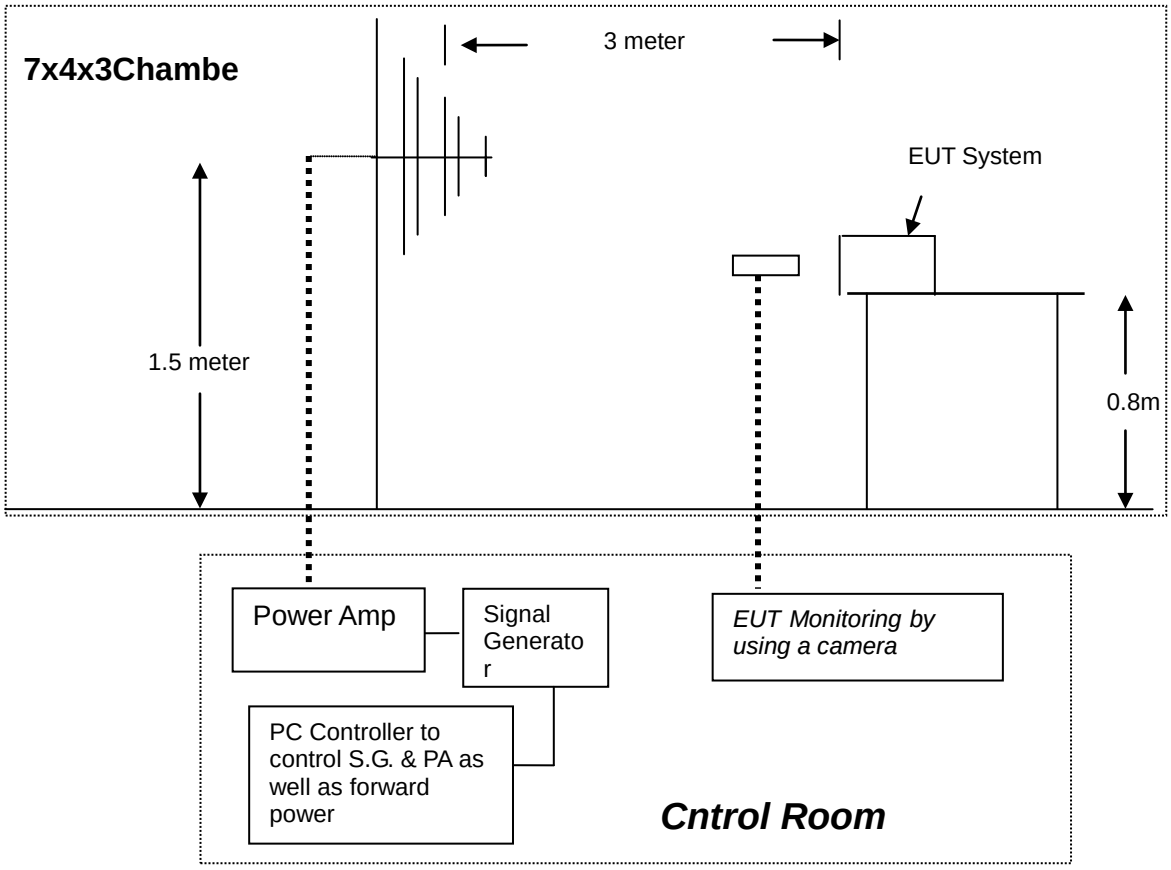
Applicant:	Yangzhou ZhiTong Machinery Co., Ltd.		
EUT:	Vacuum Homogenizing Emulsifier	Test Date:	July 25, 2021
M/N:	ZT-A-5000L	Temperature:	24.1℃
Power Supply:	AC 230V/50Hz	Humidity:	48%
Air discharge:	± 8.0 kV	Test Mode:	Normal Working
Contact discharge:	± 4.0 kV	Criterion:	B
Test engineer:	Denny		

Location	Test Level				**Kind** AD-Air Discharge CD-Contact Discharge	**Result**
	±4 kV	± 8 kV	kV	kV		
VCP	A	/	/	/	CD	Pass
HCP	A	/	/	/	CD	Pass
Metal	A	/	/	/	CD	Pass
Screw	A	/	/	/	CD	Pass
AC Cable	/	A	/	/	AD	Pass
Button	/	A	/	/	AD	Pass

Note:

10.RADIO-FREQUENCY, ELECTROMAGNETIC FIELD IMMUNITY

10.1.Block Diagram of Test Setup



(EUT: Vacuum Homogenizing Emulsifier)

10.2.Test Standard

EN IEC 61000-6-2
(EN IEC 61000-4-3:2020, Severity Level: 2, 3V/m; Severity Level: 3, 10 V/m)

10.3.Severity Levels and Performance Criterion

10.3.1.Severity Levels

Level	Field Strength V/m
1.	1
2.	3
3.	10
X	Special

10.3.2.Performance Criterion: A

10.4.Operating Condition of EUT

Operating Condition of EUT are listed in section 2.1.

10.5.Test Procedure

The EUT are placed on a table that is 0.8 meter high above the ground. The EUT is set 3 meters away from the transmitting antenna that is mounted on an antenna tower. Both horizontal and vertical polarization of the antenna is set on test. Each of the four sides of the EUT must be faced this transmitting antenna and measured individually.
In order to judge the EUT performance, a CCD camera is used to monitor it.
All the scanning conditions are as following:

Condition of Test	Remark
1. Fielded Strength	10V/m (Severity Level 3)
2. Radiated Signal	Modulated
3. Scanning Frequency	80~6000MHz
4. Sweep time of radiated	0.0015 Decade/s
5. Dwell Time	3 Sec.
6. Steps	1 % of fundamental

10.6.Test Results

PASS.

Please refer to the following page.

Radio-Frequency, Electromagnetic Field Immunity

SHENZHEN YES TESTING TECHNOLOGY CO., LTD.

Applicant :	Yangzhou ZhiTong Machinery Co., Ltd.		
EUT :	Vacuum Homogenizing Emulsifier	Test Date :	July 26, 2021
M/N :	ZT-A-5000L	Temperature :	22.6℃
Field Strength :	10 V/m	Humidity :	50%
Power Supply :	AC 230V/50Hz	Criterion :	A
Test Mode :	Normal Working	Frequency Range :	80 to 1000MHz
Test engineer:	Denny		

Modulation: ☐ None ☐ Pulse ☒ AM 1kHz 80%

	Frequency Rang 1: 80~ 1000MHz		Frequency Rang 2:	
Steps	1%			
	Horizontal	Vertical	Horizontal	Vertical
Front	A	A	/	/
Right	A	A	/	/
Rear	A	A	/	/
Left	A	A	/	/

Note: The frequency range is scanned as specified. However, when specified in Annex A, an additional comprehensive functional test shall be carried out at a limited number of frequencies. The selected frequencies are: 80, 120, 160, 230, 434, 460, 600, 863 and 900MHz

Radio-Frequency, Electromagnetic Field Immunity

SHENZHEN YES TESTING TECHNOLOGY CO., LTD.

Applicant :	Yangzhou ZhiTong Machinery Co., Ltd.		
EUT :	Vacuum Homogenizing Emulsifier	Test Date :	July 26, 2021
M/N :	ZT-A-5000L	Temperature :	22.6℃
Field Strength :	3 V/m	Humidity :	50%
Power Supply :	AC 230V/50Hz	Criterion :	A
Test Mode :	Normal Working	Frequency Range :	1400 to 6000MHz
Test engineer:	Denny		

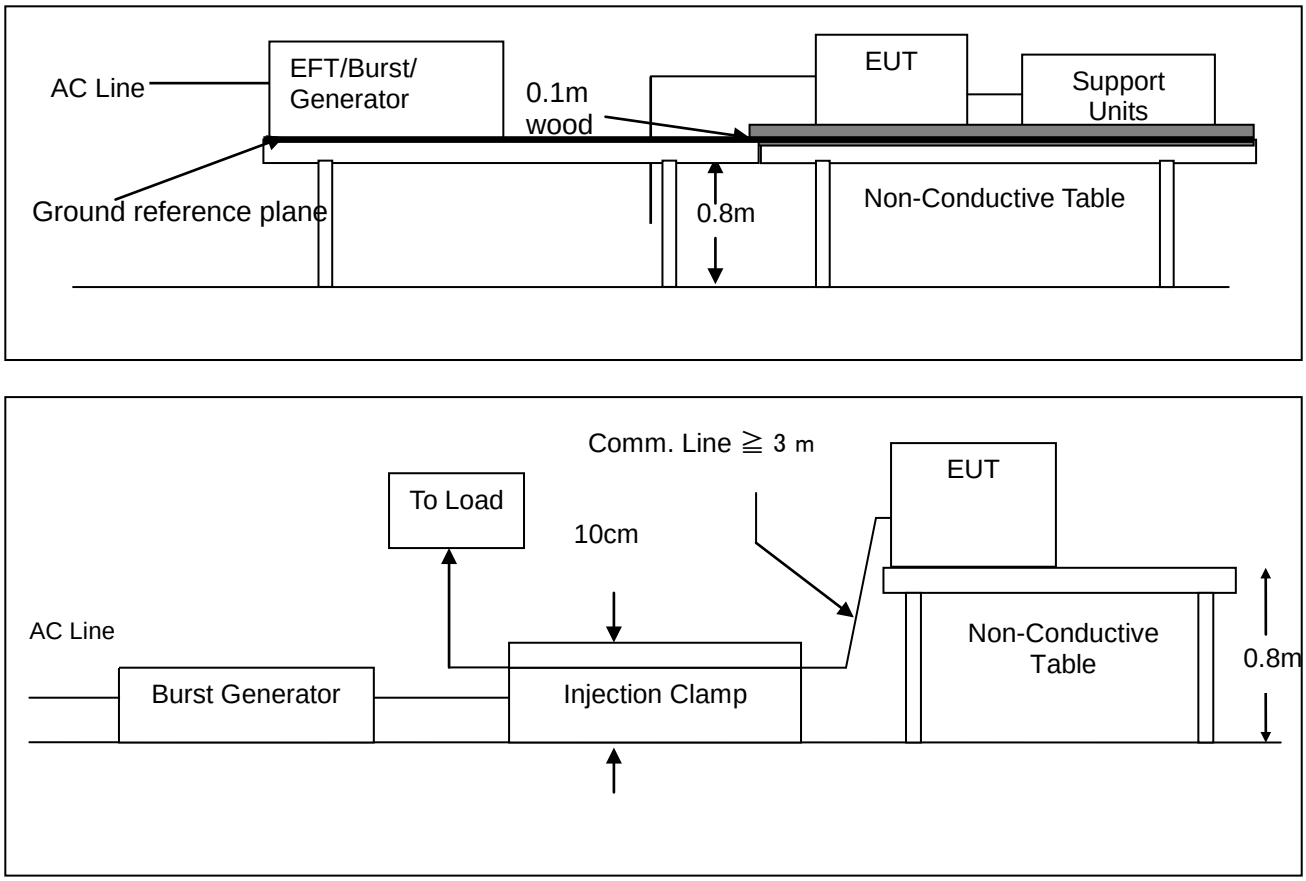
Modulation: ☐ None ☐ Pulse ☒ AM 1kHz 80%

	Frequency Rang 1: 1400~6000MHz		Frequency Rang 2:	
Steps	1%			
	Horizontal	Vertical	Horizontal	Vertical
Front	A	A	/	/
Right	A	A	/	/
Rear	A	A	/	/
Left	A	A	/	/

Note:

11.ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

11.1.Block Diagram of Test Setup



(EUT: Vacuum Homogenizing Emulsifier)

11.2.Test Standard

EN IEC 61000-6-2
(EN 61000-4-4:2012, Severity Level 3: Power Lines 2 kV)

11.3.Severity Levels and Performance Criterion

11.3.1.Severity level

Open Circuit Output Test Voltage ±10%		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1	0.5 kV	0.25 kV

2	1 kV	0.5 kV
3	2 kV	1 kV
4	4 kV	2 kV
X	Special	Special

11.3.2.Performance criterion: B

11.4.Operating Condition of EUT

Operating Condition of EUT are listed in section 2.1.

11.5.Test Procedure

The EUT is put on the table that is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

11.5.1.For input and output AC power ports:

The EUT is connected to the power mains by using a coupling device that couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

11.5.2.For signal lines and control lines ports:

The EUT is connected to laptop, and by using a coupling device which couples the EFT interference signal to signal lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

11.5.3.For DC output line ports:

It’s unnecessary to test.

11.6.Test Results

PASS.

Please refer to the following page.

Electrical Fast Transient/Burst Test Results

SHENZHEN YES TESTING TECHNOLOGY CO., LTD.

Applicant :	Yangzhou ZhiTong Machinery Co., Ltd.		
EUT :	Vacuum Homogenizing Emulsifier	Test Date :	July 27, 2021
M/N :	ZT-A-5000L	Temperature :	22.6℃
Input Voltage :	AC 230V/50Hz	Humidity :	57.5
Test Engineer :	Denny	Criterion:	B

Operation Mode: Normal Working

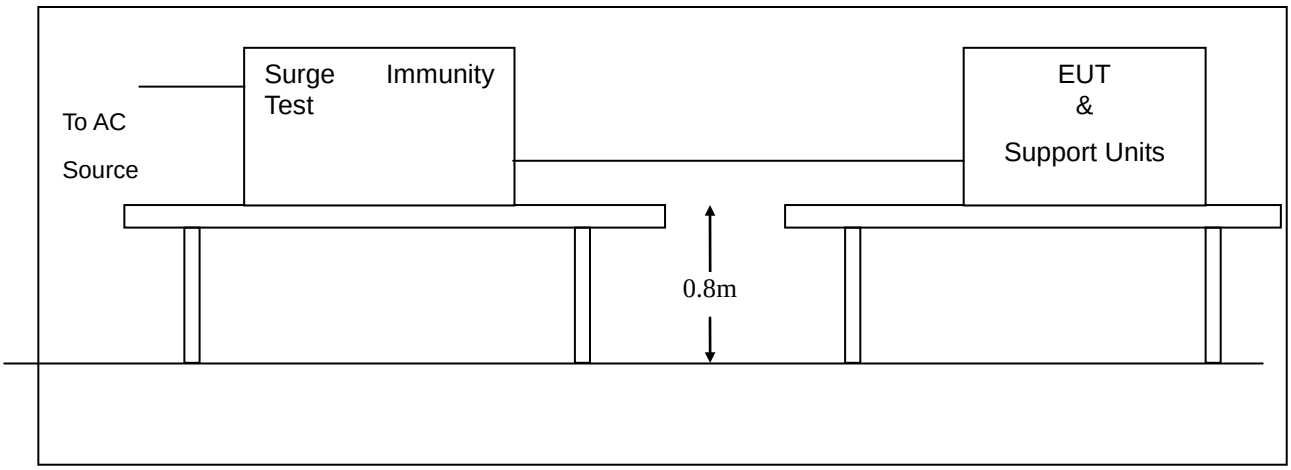
Line : ☐☒ AC Mains ☐ DC Line	Line : ☐☐ Signal ☐☐ I/O Cable
Coupling : ☒ Direct	Coupling : ☐☐ Capacitive
Test Time : 120s	

Line	Test Voltage	Result(+)	Result(-)
L	2 kV	A	A
N	2 kV	A	A
PE	2 kV	A	A
L、N	2 kV	A	A
L、PE	2 kV	A	A
N、PE	2 kV	A	A
L、N、PE	2 kV	A	A
DC Line	/	/	/
Signal Line	/	/	/

Note:

12.SURGE IMMUNITY TEST

12.1.Block Diagram of Test Setup



(EUT: Vacuum Homogenizing Emulsifier)

12.2.Test Standard

EN IEC 61000-6-2
(EN 61000-4-5:2014/A1:2017, Severity Level**:** Line to Line: Level 2, 1.0 kV; Line to earth, Level 3, 2.0 kV)

12.3.Severity Levels and Performance Criterion

12.3.1.Severity level

Severity Level	Open-Circuit Test Voltage kV
1	0.5
2	1.0
3	2.0
4	4.0
*	Special

12.3.2.Performance criterion: B

12.4.Operating Condition of EUT

Operating Condition of EUT are listed in section 2.1.

12.5.Test Procedure

1) Set up the EUT and test generator as shown on Section 13.1.2.
2) AC mains: For line to line coupling mode, provide a 1.0 kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points. For line to Earth coupling mode, provide a 2.0 kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points. For signal line coupling mode, provide a 1.0 kV 10/700us voltage surge (at open-circuit condition) to EUT selected points. DC line: For line to line coupling mode, provide a 0.5 kV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.
3) At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.
4) Different phase angles are done individually.
5) Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

12.6.Test Results

PASS.

Please refer to the following page.

Surge Immunity Test Results

SHENZHEN YES TESTING TECHNOLOGY CO., LTD.

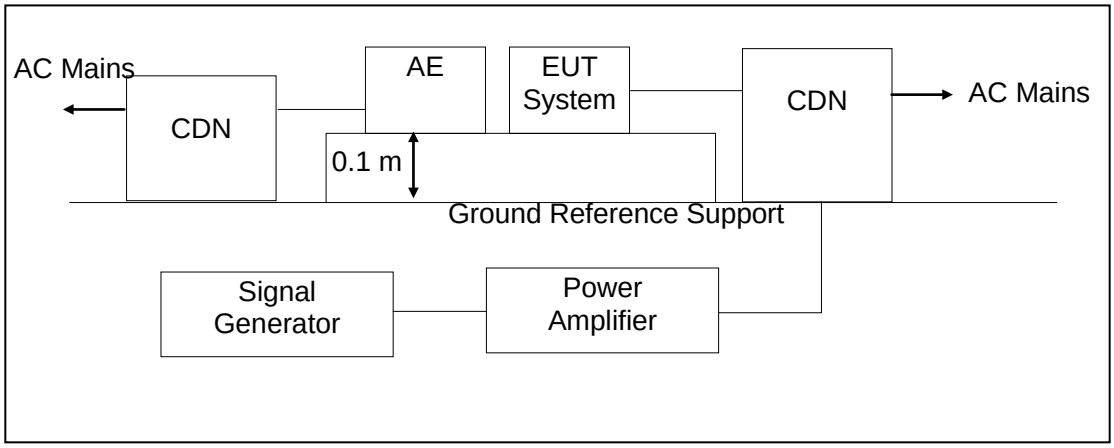
Applicant :	Yangzhou ZhiTong Machinery Co., Ltd.		
EUT :	Vacuum Homogenizing Emulsifier	Test Date :	July 27, 2021
M/N :	ZT-A-5000L	Temperature :	22.6℃
Power Supply :	AC 230V/50Hz	Humidity :	50%
Test Mode :	Normal Working	Criterion :	B
Test engineer :	Denny		

Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (kV)	Result
L-N	±	0°	10	1.0	A
	±	90°	10	1.0	A
	±	180°	10	1.0	A
	±	270°	10	1.0	A
L-PE	±	0°	10	2.0	A
	±	90°	10	2.0	A
	±	180°	10	2.0	A
	±	270°	10	2.0	A
N-PE	±	0°	10	2.0	A
	±	90°	10	2.0	A
	±	180°	10	2.0	A
	±	270°	10	2.0	A
DC power ports (Line to Line)	±	/	/	/	/
DC power ports (Line to reference ground)	±	/	/	/	/
Signal Line	±	/	/	/	/

Note:

13.IMMUNITY TEST OF CONDUCTED DISTURBANCE INDUCED BY RF FIELD

13.1.Block Diagram of Test Setup



(EUT: Vacuum Homogenizing Emulsifier)

13.2.Test Standard

EN IEC 61000-6-2
(EN 61000-4-6: 2014, Power Lines Severity Level: Level 3, 10V (r.m.s.), 0.15MHz ~ 80MHz)

13.3.Severity Levels and Performance Criterion

13.3.1.Severity level

Level	Field Strength V
1	1
2	3
3	10
X	Special

13.3.2.Performance criterion: A

13.4.Operating Condition of EUT

Operating Condition of EUT are listed in section 2.1.

13.5.Test Procedure

1) Set up the EUT, CDN and test generators as shown on Section 14.1.2.
2) Let the EUT work in test mode and measure it.
3) The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
4) The EUT are placed on an insulating support 0.1m high above a ground reference plane. EM-Clamp is placed on the ground plane about 0.3m from EUT.
5) The disturbance signal described below is injected to EUT through CDN.
6) The EUT operates within its operational mode(s) under intended climatic conditions after power on.
7) The frequency range is swept from 150kHz to80MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave.
8) The rate of sweep shall not exceed $1.5*10^{-3}$decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
9) According to CISPR 24 an additional functional test shall be carried out at the following frequencies: 0.2,1,7.1, 13, 56, 21,27,12 and 40.68MHz

13.6.Test Results

PASS.

Please refer to the following page.

Immunity Test of Conducted Disturbance Induced by RF Field Test Results

SHENZHEN YES TESTING TECHNOLOGY CO., LTD.

Applicant :	Yangzhou ZhiTong Machinery Co., Ltd.		
EUT :	Vacuum Homogenizing Emulsifier	Test Date :	July 28, 2021
M/N :	ZT-A-5000L	Temperature :	22.6℃
Power Supply :	AC 230V/50Hz	Humidity :	57.5
Test Engineer :	Denny		

Test Mode: Normal Working

Frequency Range	Injected Position	Strength (Unmodulated)	Criterion	Result
0.15 ~ 80	AC Mains	10V	A	A
0.15 ~ 80	DC Line	/	/	/
0.15 ~ 80	Signal line	/	/	/

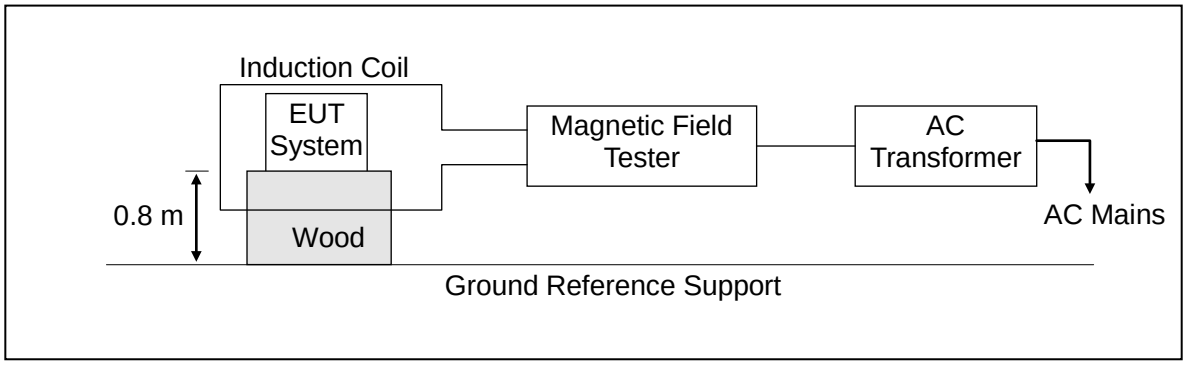
Test Mode : N/A

Frequency Range (MHz)	Injected Position	Strength (Unmodulated)	Criterion	Result

Remark : 1. Modulation Signal:1kHz 80% AM

14.MAGNETIC FIELD SUSCEPTIBILITY TEST

14.1.Block Diagram of Test Setup



(EUT: Vacuum Homogenizing Emulsifier)

14.2.Test Standard

EN IEC 61000-6-2
(EN 61000-4-8:2010, Severity Level: Level 4, 30 A/m)

14.3.Severity Levels and Performance Criterion

14.3.1.Severity Levels

Level	Field Strength A/m
1	1
2	3
3	10
4	30
5	100
X	Special

14.3.2.Performance Criterion: A

14.4.Operating Condition of EUT

Operating Condition of EUT are listed in section 2.1.

14.5.Test Procedure

The EUT is placed in the middle of a induction coil (1*1m), under which is a 1*1*0.1m (high) table, this small table is also placed on a larger table, 0.8 m above the ground. Both horizontal and vertical polarization of the induction coil is set on test, so that each side of the EUT is affected by the magnetic field. Also can reach the same aim by change the position of the EUT.

14.6.Test Results

PASS.

Please refer to the following page.

Magnetic Field Immunity Test Results

SHENZHEN YES TESTING TECHNOLOGY CO., LTD.

Applicant :	Yangzhou ZhiTong Machinery Co., Ltd.		
EUT :	Vacuum Homogenizing Emulsifier	Test Date :	July 28, 2021
M/N :	ZT-A-5000L	Temperature :	22.6℃
Input Voltage :	AC 230V/50Hz	Humidity :	57.5
Test Engineer :	Denny	Criterion:	A

Operation Mode: Normal Working

Test Level (A/m)	Testing Duration	Coil Orientation	Criterion	Result
30	5 mins	X	A	A
30	5 mins	Y	A	A
30	5 mins	Z	A	A

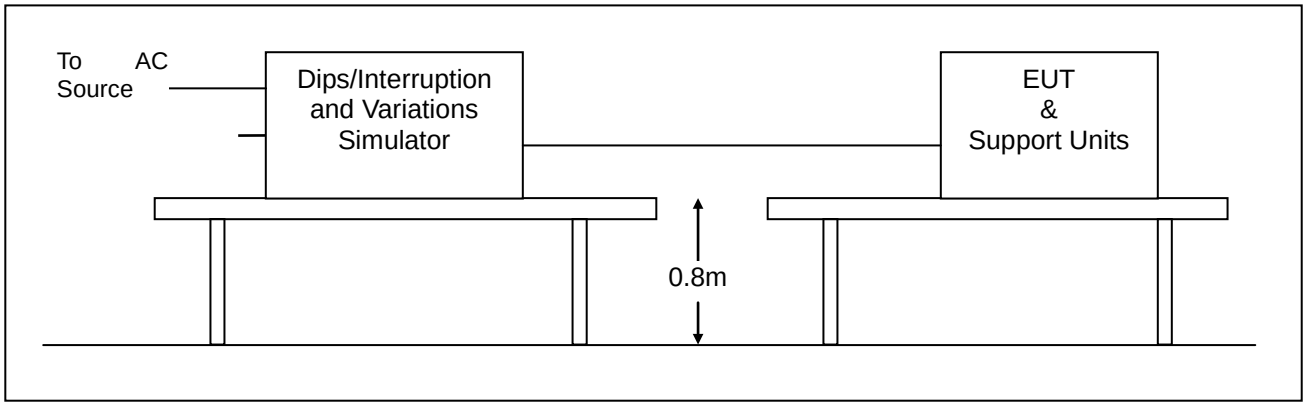
Test Mode : N/A

Test Level (A/m)	Testing Duration	Coil Orientation	Criterion	Result

Note:

15.VOLTAGE DIPS AND INTERRUPTIONS TEST

15.1.Block Diagram of Test Setup



(EUT: Vacuum Homogenizing Emulsifier)

15.2.Test Standard

EN IEC 61000-6-2
(EN IEC 61000-4-11:2020)

15.3.Severity Levels and Performance Criterion

15.3.1.Severity level

Test Level %UT	Voltage dip and short interruptions %UT	Duration (in period)	Performance criterion
0	100	1	B
40	60	10	B
70	30	25	B
0	100	250	C

15.3.2.Performance criterion: B&C

15.4.Operating Condition of EUT

Operating Condition of EUT are listed in section 2.1.

15.5.Test Procedure

1) Set up the EUT and test generator as shown on Section 13.1.
2) The interruption is introduced at selected phase angles with specified duration.
3) Record any degradation of performance.

15.6.Test Results

PASS.

Please refer to the following page.

Voltage Dips and Interruptions Test Results

SHENZHEN YES TESTING TECHNOLOGY CO., LTD.

Applicant :	Yangzhou ZhiTong Machinery Co., Ltd.		
EUT :	Vacuum Homogenizing Emulsifier	Test Date :	July 28, 2021
M/N :	ZT-A-5000L	Temperature :	22.6℃
Power Supply :	AC 240V / 50Hz	Humidity :	50%
Test Engineer :	Denny		

Test Mode: Normal Working

Test Level % U_T	Voltage Dips & Short Interruptions % U_T	Duration (in periods)	Phase Angle	Criterion ☐A ☐☒B ☒C ☐☐D	Result
0	100	1P	0°-360°	B	A
40	60	10P	0°-360°	B	A
70	30	25P	0°-360°	B	A
0	100	250	0°	C	C*

Note: * Means EUT Shut down, lost function. It should be recoverable by operator.

APPENDIX I
(Photos of EUT)

----------The end----------