Examination Certificate of SiCT

CERTIFICATE

of Conformity

EC Council Directive 2014/30/EU

Certificate No.: XK2112013042C

Applicant	:	**Hubei Fangnuo Technology Co., Ltd** North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China
Manufacturer	:	**Hubei Fangnuo Technology Co., Ltd** North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China
Product	:	**laminator**
Model No.	:	**FN333, FN335, FN336, FN337, FN338, FNL001, FNL002, FNL003, FNL004, FNL005, FNL006, FNL007, FNL008, FNL009, FNL010, FNL011, FNL012, FNL013, FNL014, FNL015**
Brand Name	:	**N/A**
Test Standard	:	**EN 55014-1:2017+A11:2020** **EN 55014-2:2021** **EN IEC 61000-3-2: 2019** **EN 61000-3-3:2013+A1:2019**

The certificate of conformity is based on an evaluation of a sample of the above mentioned product. Technical report is at the applicant disposal. This is to certify the tested sample that is in conformity with all provisions of above EMC directive. It is only valid in connection with the test report number XK2112013042E.

The certificate does not imply the assessment of the production and does not permit using the SiCT's logo without permission.

CE

Authorized Signer: Andy Wang

Andy Wang/Manag

Date: **December 21, 2021**

Shenzhen SiCT Technology Co., Ltd. SiCTLab

Shenzhen SiCT Technology Co., Ltd.

4F, Building A, EDerH Industrial District, Fukang Community, Longhua Subdistrict, Longhua District, Shenzhen, Guangdong, P. R. China

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EN 55014-1:2017+A11:2020
EN 55014-2:2015
EN IEC 61000-3-2:2019
EN 61000-3-3:2013+A1:2019
Test Report
For
Hubei Fangnuo Technology Co., Ltd
North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China

Product Name:	laminator
Type/Model No.:	FN333, FN335, FN336, FN337, FN338, FNL001, FNL002, FNL003, FNL004, FNL005, FNL006, FNL007, FNL008, FNL009, FNL010, FNL011, FNL012, FNL013, FNL014, FNL015
Prepared By:	**Shenzhen SiCT Technology Co., Ltd.** 4F, Building A, EDerH Industrial District, Fukang Community, Longhua, Subdistrict, Longhua District, Shenzhen, Guangdong, P. R. China
Report Number:	XK2112013042E
Tested Date:	December 15~21, 2021
Issued Date:	December 21, 2021
Tested By:	Smile Xu /

Reviewed By: Nina Li
EMC Technical Supervisor

Approved By: Andy Wang
EMC Technical Manager

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1- GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

Client Information

Applicant:	Hubei Fangnuo Technology Co., Ltd
Address of applicant:	North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China
Manufacturer:	Hubei Fangnuo Technology Co., Ltd
Address of Manufacturer:	North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China

General Description of E.U.T

EUT Name:	laminator
Trade Mark:	/
Model No.:	FN333, FN335, FN336, FN337, FN338, FNL001, FNL002, FNL003, FNL004, FNL005, FNL006, FNL007, FNL008, FNL009, FNL010, FNL011, FNL012, FNL013, FNL014, FNL015
Power Supply:	Input Volage:AC100-240V 50/60Hz Input current: 1.37A POWER：300w

Remark: * The test data gathered are from the production sample provided by the manufacturer.

1.2 Test Standards

The following Declaration of Conformity report of EUT is prepared in accordance with

EN 55014-1: 2017

EN 55014-2: 2015

EN IEC 61000-3-2:2019

EN 61000-3-3:2013+A1:2019

Reference Standards:

EN 61000-4-2:2009

EN 61000-4-3:2006+A2:2010

EN 61000-4-4:2012

EN 61000-4-5:2014+A1:2017

EN 61000-4-6:2014+AC:2015

EN 61000-4-11:2004+A1:2017

The objective of the manufacturer is to demonstrate compliance with the described standards above.

1.3 Test Summary

Table 1:

Standard	Test Items	Status
EN 55014-1: 2017	Conducted Emission (150kHz to 30MHz)	☒
	Radiated Disturbances (30MHz to 1000MHz)	☒

Table 2:

Standard	Test Items	Status
EN IEC 61000-3-2:2019	Harmonic Current Test	☒
EN 61000-3-3:2013+A1:2019	Voltage Fluctuations and Flicker Test	☒

Table 3:

Standard	Test Items	Status
EN 55014-2: 2015	Test items as below listed	☒
EN 61000-4-2:2009	Electrostatic discharge Immunity	☒
EN 61000-4-3:2006+A2:2010	Radiated Susceptibility (80MHz to 1GHz)	☒
EN 61000-4-4:2012	Electrical Fast Transient/Burst Immunity	☒
EN 61000-4-5:2014+A1:2017	Surge Immunity	☒
EN 61000-4-6:2014+AC:2015	Conducted Susceptibility (150kHz to 230MHz)	☒
EN 61000-4-11:2004+A1:2017	Voltage Dips, Short Interruptions Immunity	☒

Note: ☒ Indicates that the test is applicable, ☐ Indicates that the test is not applicable
(1) Not applicable, Applicable only to CPE xDSL ports.

1.4 Test Methodology

All measurements contained in this report were conducted with CISPR 16-1-1: 2019, Radio disturbance and immunity measuring apparatus – Measuring apparatus, and CISPR 16-2-3: 2010, Method of measurement of disturbances and immunity.

1.5 Test Facility

The measurement Radiated Susceptibility was performed at Shenzhen SiCT Technology Co., Ltd. at 4F, Building A, EDerH Industrial District, Fukang Community, Longhua, Subdistrict, Longhua District, Shenzhen, Guangdong, P. R. China

1.6 Test Equipment List and Details

CONDUCTED EMISSION

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	LISN	R&S	ENV216	101334	Apr. 2,2021	Apr. 1,2022	1 year
2	LISN	SCHWARZBECK	NNLK 8129	8129267	Apr. 2,2021	Apr. 1,2022	1 year
3	Pulse Limiter	SCHWARZBECK	VTSD 9561F	9716	Apr. 2,2021	Apr. 1,2022	1 year
4	50Ω SWITCH	ANRITSU CORP	MP59B	6200983704	Apr. 2,2021	Apr. 1,2022	1 year
5	TEST CABLE	N/A	C01	N/A	Apr. 2,2021	Apr. 1,2022	1 year
6	TEST CABLE	N/A	C02	N/A	Apr. 2,2021	Apr. 1,2022	1 year
7	TEST CABLE	N/A	C03	N/A	Apr. 2,2021	Apr. 1,2022	1 year
8	EMI Test Receiver	R&S	ESCI	101318	Apr. 2,2021	Apr. 1,2022	1 year
9	Passive Voltage Probe	ESH2-Z3	R&S	100173	Apr. 2,2021	Apr. 1,2022	1 year
10	Triple-Loop Antenna	EVERFINE	LIA-2	11020016	Apr. 2,2021	Apr. 1,2022	1 year
11	Absorbing Clamp	R&S	MDS-21	100423	Apr. 2,2021	Apr. 1,2022	1 year

RADIATED TEST SITE

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Bilog Antenna	TESEQ	CBL6111D	31437	Apr. 2,2021	Apr. 1,2022	1 year
2	Test Cable	N/A	R-01	N/A	Apr. 2,2021	Apr. 1,2022	1 year
3	Test Cable	N/A	R-02	N/A	Apr. 2,2021	Apr. 1,2022	1 year
4	EMI Test Receiver	Rohde&Schwarz	ESVD	847312/008	Apr. 2,2021	Apr. 1,2022	1 year
5	Antenna Mast	EM	SC100_1	N/A	N/A	N/A	N/A
6	Turn Table	EM	SC100	060533	N/A	N/A	N/A
7	50Ω Switch	Anritsu Corp	MP59B	6200983705	Apr. 2,2021	Apr. 1,2022	1 year
8	SPECTRUM ANALYZE	Aglient	E4407B	160400005	Apr. 2,2021	Apr. 1,2022	1 year

	R						
9	HORN ANTENNA	EM	EM-AH-10180	2011071402	Apr. 2,2021	Apr. 1,2022	1 year
10	AMPLIFIER	EM	EM-30180	060536	Apr. 2,2021	Apr. 1,2022	1 year

HARMONICS AND FILCK

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Harmonic & Flicker	EM TEST	DPA500	0303-08	Apr. 2,2021	Apr. 1,2022	1 year
2	AC Power Source	EM TEST	ACS500	0203-06	Apr. 2,2021	Apr. 1,2022	1 year

ESD

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	ESD TEST GENERATOR	SCHAFFNER	NSG438	858	Apr. 2,2021	Apr. 1,2022	1 year

RS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Signal Generator	R&S	SMT 06	832080/007	Apr. 2,2021	Apr. 1,2022	1 year
2	Log-Bicon Antenna	Schwarzbeck	VULB9161	4022	Apr. 2,2021	Apr. 1,2022	1 year
3	Power Amplifier	AR	150W1000M1	320946	Apr. 2,2021	Apr. 1,2022	1 year
4	Microwave Horn Antenna	AR	AT4002A	321467	Apr. 2,2021	Apr. 1,2022	1 year
5	Power Amplifier	AR	25S1G4A	308598	Apr. 2,2021	Apr. 1,2022	1 year

SURGE, EFT/BURST, VOLTAGE INTERRUPTION/DIPS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Surge Generator	EVERFINE	EMS61000-5A	1101002	Apr. 2,2021	Apr. 1,2022	1 year
2	DIPS Generator	EVERFINE	EMS61000-11K	1011002	Apr. 2,2021	Apr. 1,2022	1 year
3	EFT/B Generator	EVERFINE	EMS61000-4A-V2	1012005	Apr. 2,2021	Apr. 1,2022	1 year

1.7 DESCRIPTION OF TEST MODES

Pretest Mode	Description
Mode 1	Running

For Conducted Test	
Final Test Mode	Description
Mode 1	Running

For Radiated Test	
Final Test Mode	Description
Mode 1	Running

For EMS Test	
Final Test Mode	Description
Mode 1	Running

2- SYSTEM TEST CONFIGURATION

2.1 Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

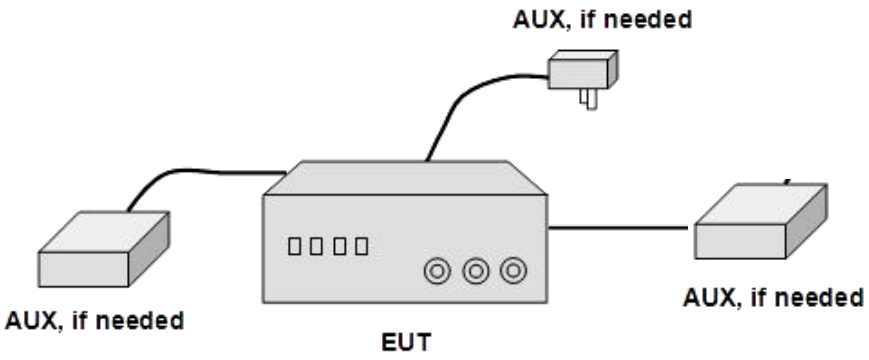
2.2 EUT Exercise Software

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software offered by manufacture, can let the EUT being Charge

2.3 Basic Configuration of Test System

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the Operating Instructions.

Immunity: The equipment under test (EUT) was configured to the representative operating mode and conditions.



2.4 General Description of Test Auxiliary

EUT Cable List and Details			
Cable Description	Length (m)	Shielded/Unshielded	With / Without Ferrite
/	/	/	/
/	/	/	/

3- CONDUCTED DISTURBANCE AT THE MAINS TERMINALS

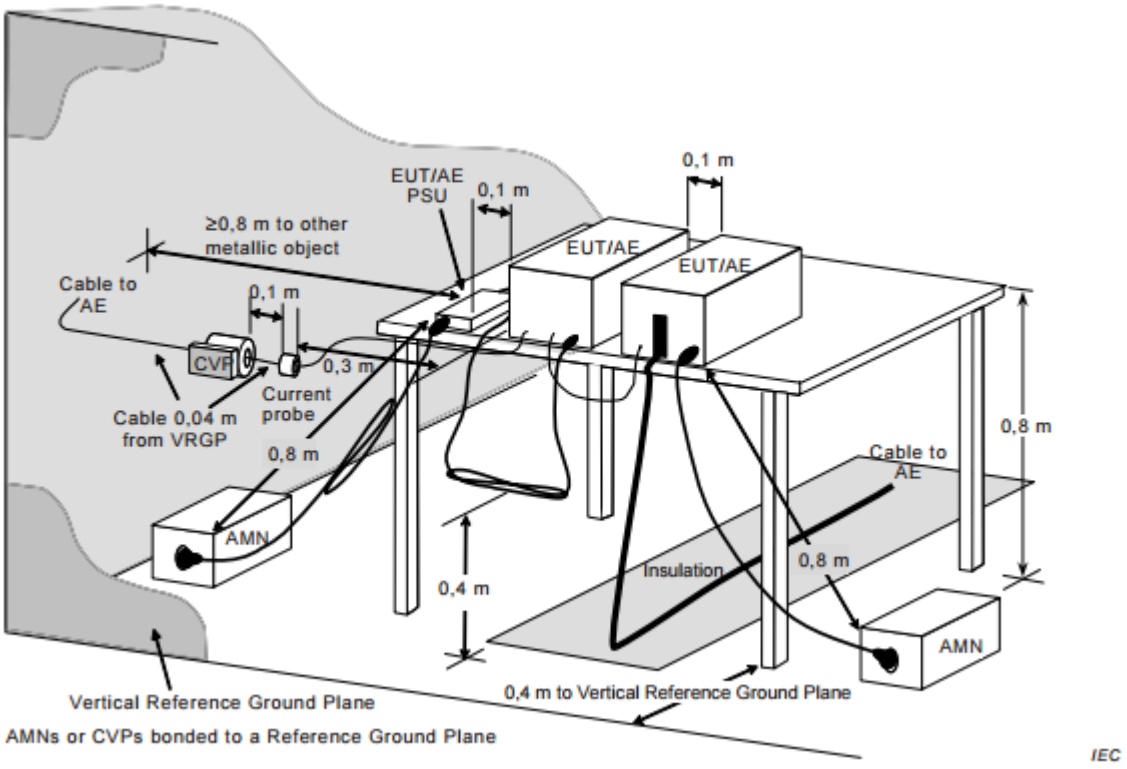
3.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ±2.7 dB.

3.2 POWER LINE CONDUCTED EMISSION(Frequency Range 150KHz-30MHz)

Frequency Range (MHz)	At mains terminals		At load terminals and additional terminals	
	Quasi-peak (dBuV)	Average (dBuV)	Quasi-peak (dBuV)	Average (dBuV)
0.15 -0.5	66 - 56 *	56 - 46 *	80.00	70.00
0.50 -5.0	56.00	46.00	74.00	64.00
5.0 -30.0	60.00	50.00	74.00	64.00

3.3 EUT Setup



The setup of EUT is according with CISPR 16-1-1: 2019, CISPR 16-2-3: 2010 measurement procedure. The specification used was the EN 55014-1 limits.

The EUT was placed center and the back edge of the test table.

The AV cables were draped along the test table and bundled to 30-40cm in the middle.

The spacing between the peripherals was 10 cm.
Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

3.4 Instrument Setup

The test receiver was set with the following configurations:

Test Receiver Setting:

Frequency Range……150 KHz to 30 MHz
Detector……..Peak & Quasi-Peak & Average
Sweep Speed……Auto
IF Band Width……..9 KHz

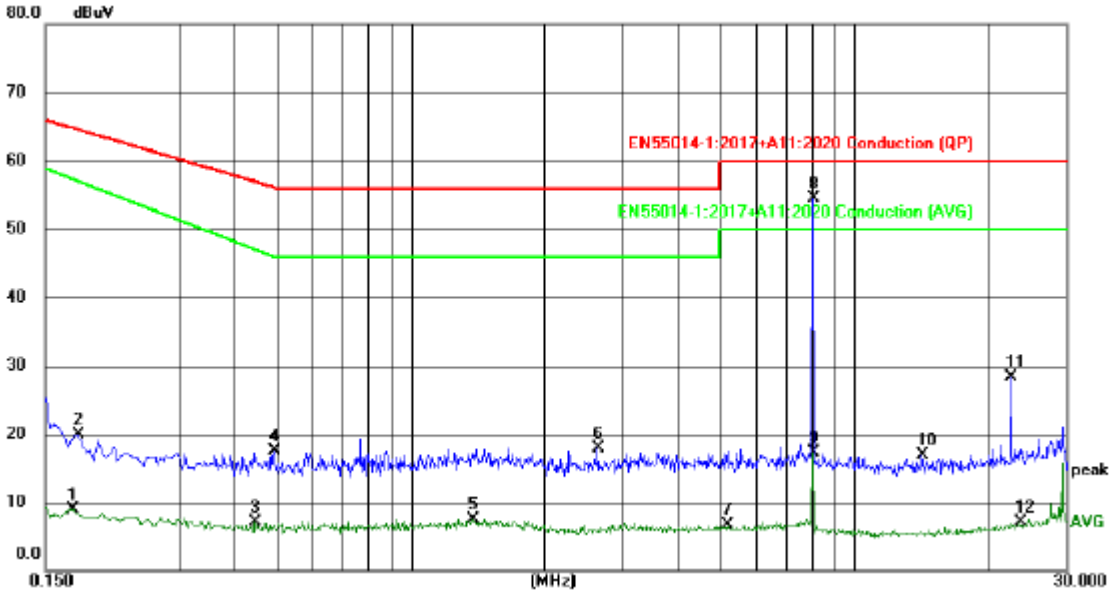
3.5 Test Procedure

1. During the conducted emission test, the EUT power cord was connected to the auxiliary outlet of the first Artificial Mains.
2. Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance using all installation combination.
3. All data was recorded in the peak detection mode. Quasi-peak and Average readings were only performed when an emission was found to be marginal (within -10 dBμV of specification limits). Quasi-peak readings are distinguished with a "QP". Average readings are distinguished with a "AV".

3.6 Test Detail

EUT：	laminator	Model Name：	FN333
Temperature	24 ℃	Relative Humidity:	55%
Pressure：	1025hPa	Test Line :	N
Test Mode	Mode1	Test Voltage:	AC230V/50Hz

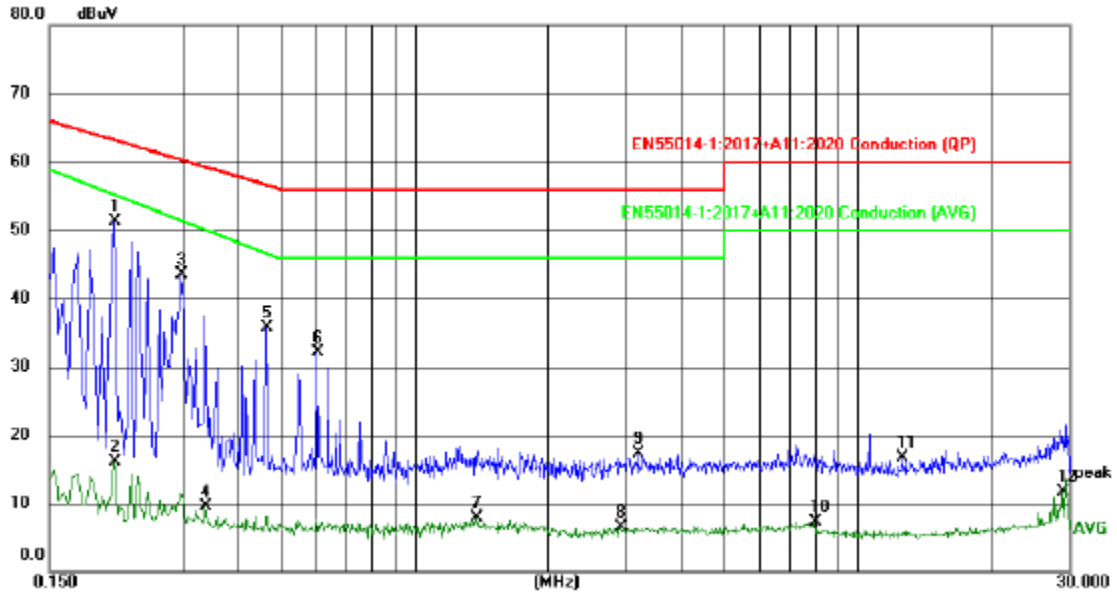
Conduction Emission Test Detail



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1722	-0.79	9.63	8.84	57.51	-48.67	AVG	
2		0.1780	10.26	9.70	19.96	64.58	-44.62	QP	
3		0.4460	-2.77	9.86	7.09	47.23	-40.14	AVG	
4		0.4900	7.60	9.88	17.48	56.17	-38.69	QP	
5		1.3740	-2.67	10.19	7.52	46.00	-38.48	AVG	
6		2.6460	7.58	10.23	17.81	56.00	-38.19	QP	
7		5.1820	-3.57	10.18	6.61	50.00	-43.39	AVG	
8	*	8.0620	44.27	10.33	54.60	60.00	-5.40	QP	
9		8.0620	7.05	10.33	17.38	50.00	-32.62	AVG	
10		14.1460	6.52	10.42	16.94	60.00	-43.06	QP	
11		22.4340	17.50	10.83	28.33	60.00	-31.67	QP	
12		23.6100	-3.86	10.92	7.06	50.00	-42.94	AVG	

Conduction Emission Test Detail

EUT：	laminator	Model Name：	FN333
Temperature	24 ℃	Relative Humidity:	55%
Pressure：	1025hPa	Test Line :	L
Test Mode	Mode1	Test Voltage:	AC230V/50Hz



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.2100	41.31	9.93	51.24	63.21	-11.97	QP	
2		0.2100	6.16	9.93	16.09	55.37	-39.28	AVG	
3		0.2980	33.33	10.17	43.50	60.30	-16.80	QP	
4		0.3380	-0.70	10.11	9.41	50.23	-40.82	AVG	
5		0.4660	25.59	10.07	35.66	56.58	-20.92	QP	
6		0.6020	21.88	10.14	32.02	56.00	-23.98	QP	
7		1.3780	-2.52	10.38	7.86	46.00	-38.14	AVG	
8		2.9140	-4.04	10.61	6.57	46.00	-39.43	AVG	
9		3.2020	6.75	10.58	17.33	56.00	-38.67	QP	
10		7.9940	-3.25	10.48	7.23	50.00	-42.77	AVG	
11		12.6420	6.10	10.57	16.67	60.00	-43.33	QP	
12		29.0420	0.44	11.21	11.65	50.00	-38.35	AVG	

4- RADIATED DISTURBANCES

4.1 Measurement Uncertainty

Test Site: 3m SAC

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is as below table.

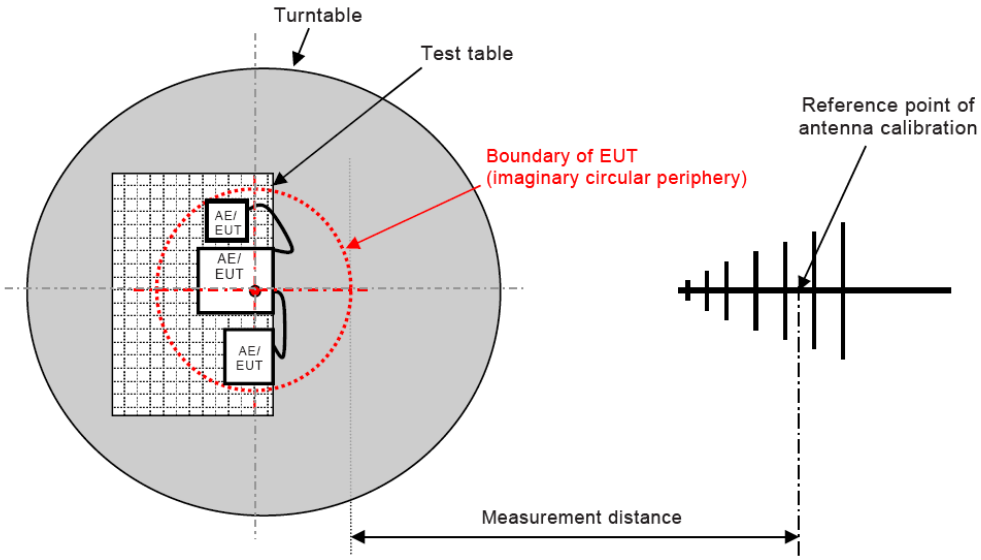
Measurement	Frequency Range	Expanded Uncertainty (k=2)	Ucispr
Radiated Emissions, 3m	30-200MHz HP	3.6 dB	6.3 dB
Radiated Emissions, 3m	30-200MHz VP	4.5 dB	6.3 dB
Radiated Emissions, 3m	200-1000MHz HP	3.7 dB	6.3 dB
Radiated Emissions, 3m	200-1000MHz VP	3.7 dB	6.3 dB
Radiated Emissions, 3m	1-26 GHz	5.4 dB	5.5 dB

As shown in the table above our radiated emissions U_{lab} is less than the corresponding U_{CISPR} reference value in CISPR 16-4-2 Table 1, hence the compliance of the product is only based on the measured value, and no measurement uncertainty correction is required, based on CISPR 22 and CISPR 11 (for 2006 and later revisions) Clause 11.

4.2 LIMITS OF DISTURBANCE POWER MEASUREMENT(Below 1000MHz)

FREQUENCY (MHz)	At 10m	At 3m
	dBuV/m	dBuV/m
30 – 230	30	40
230 – 1000	37	47

4.3 EUT Setup



The radiated emission tests were performed in the open area 3-meter test site, using the setup accordance with the CISPR 16-1-1: 2019, CISPR 16-2-3: 2010. The specification used was EN 55014-1: 2017+A11: 2020

The EUT was placed on the center of the test table.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

4.4 Test Receiver Setup

According to EN 55014-1: 2017+A11: 2020 rules, the frequency was investigated from 30 to 1000 MHz. During the radiated emission test, the test receiver was set with the following configurations:

Detector……..Peak & Quasi-Peak
IF Band Width……...120KHz
Frequency Range……30MHz to 1000MHz
Turntable Rotated……0 to 360 degrees

Antenna Position:

Height……1m to 4m
Polarity……....Horizontal and Vertical

4.5 Test Procedure

1. Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.
2. All data was recorded in the peak detection mode. Quasi-peak readings performed only when an emission was found to be marginal (within -10 dBμV of specification limits), and are distinguished with a "QP" in the data table.

4.6 Corrected Amplitude & Margin Calculation

Sample Calculation:

The field strength is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain (if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CF - AG
Where FS = Field Strength in dBμV/m
RA = Receiver Amplitude (including preamplifier) in dBμV
CF = Cable Attenuation Factor in dB
AF = Antenna Factor in
dB AG = Amplifier Gain
in dB
In the following table(s), the reading shown on the data table reflects the preamplifier gain. An example for the calculations in the following table is as follows.

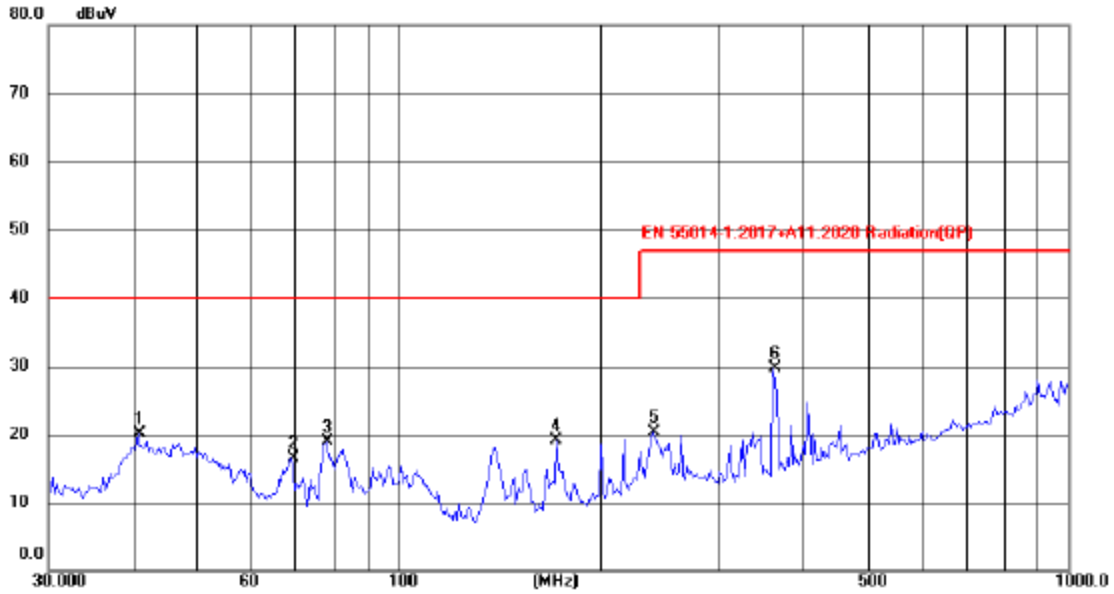
Assume a receiver reading of 52.0 dBμV is obtained. The antenna factor of 7.4 dB and cable factor of 1.6 dB is added.
The amplifier gain of 29 dB is subtracted, giving a field strength of 32 dBμV/m. This value in dBμV/m was converted to its corresponding level in V/m.

RA = 52.0
dBμV AF = 7.4
dB/m
CF = 1.6 dB
AG = 29.0 dB
FS = 32 dBμV/m
To convert from dBμV toμV or mV the following was
used: UF = $10^{(NF / 20)}$
where UF = Net Reading inμV
NF = Net Reading in dBμV

4.7 Test Detail

Radiated Emission Test Detail of Below 1GHz

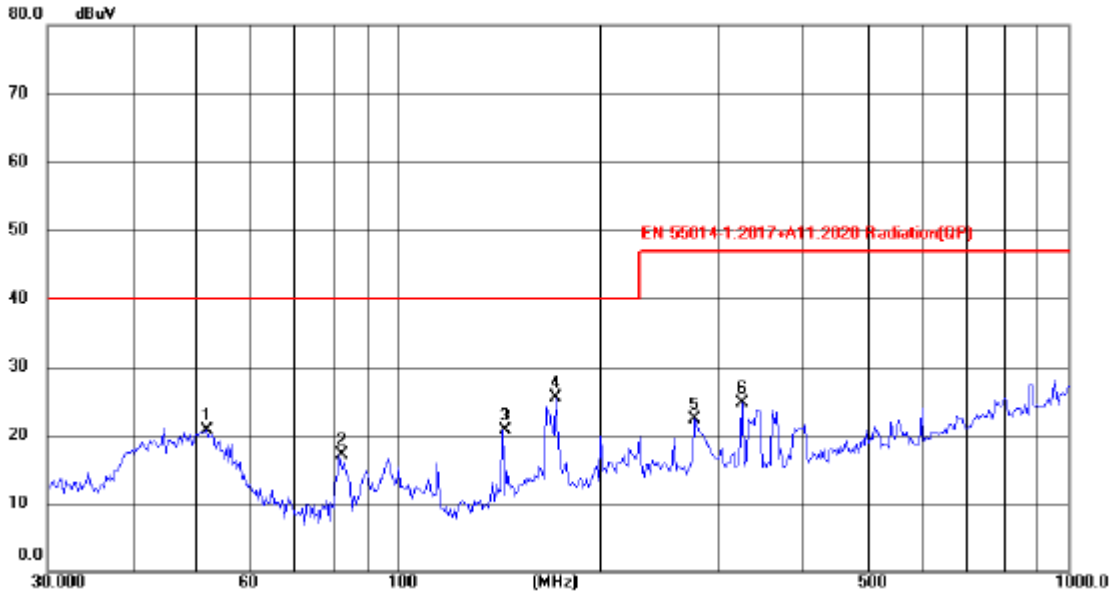
EUT：	laminator	Model Name：	FN333
Temperature	24 ℃	Relative Humidity:	55%
Pressure：	1025hPa	Test Detail :	Vertical
Test Mode	Mode1	Test Voltage:	AC230V/50Hz



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree	Comment
1		40.8446	34.34	-14.33	20.01	40.00	-19.99	QP			
2		69.1141	33.95	-17.46	16.49	40.00	-23.51	QP			
3		77.8654	38.10	-19.22	18.88	40.00	-21.12	QP			
4		171.9946	36.58	-17.54	19.04	40.00	-20.96	QP			
5		239.1473	34.52	-14.15	20.37	47.00	-26.63	QP			
6	*	361.7139	40.93	-11.30	29.63	47.00	-17.37	QP			

Radiated Emission Test Detail of Below 1GHz

EUT：	laminator	Model Name：	FN333
Temperature	24 ℃	Relative Humidity:	55%
Pressure：	1025hPa	Test Detail :	Vertical
Test Mode	Mode1	Test Voltage:	AC230V/50Hz



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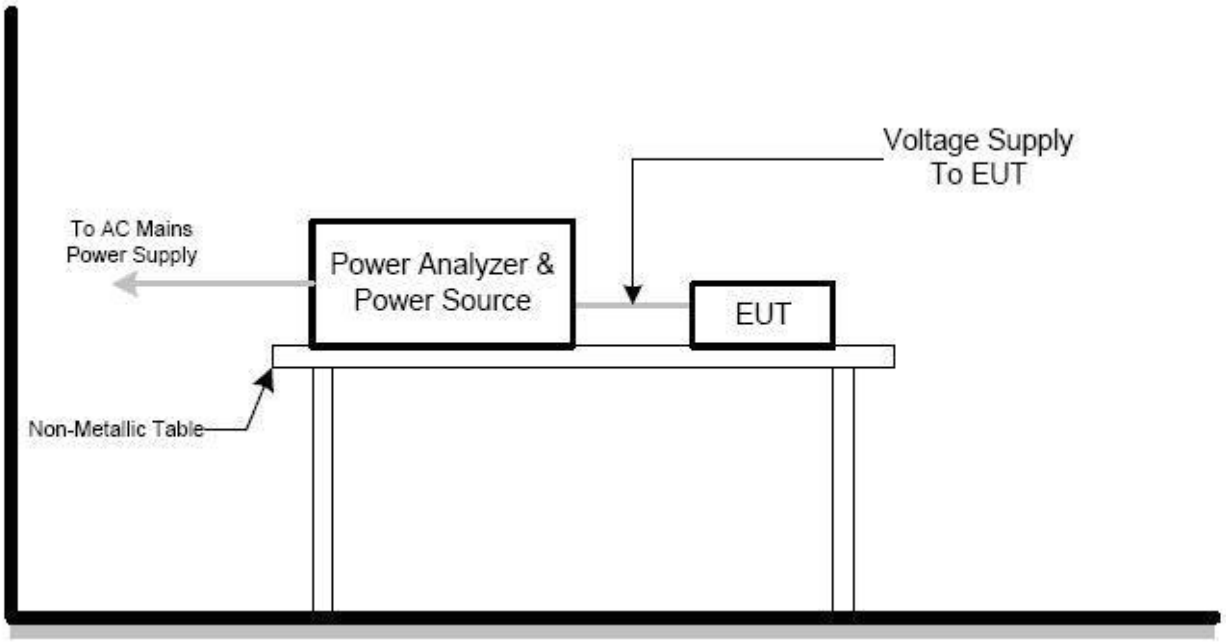
No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree	Comment
1		51.8430	29.86	-9.09	20.77	40.00	-19.23	QP			
2		81.7833	35.58	-18.47	17.11	40.00	-22.89	QP			
3		143.3261	39.23	-18.49	20.74	40.00	-19.26	QP			
4	*	171.9946	42.73	-17.28	25.45	40.00	-14.55	QP			
5		277.0935	35.56	-13.21	22.35	47.00	-24.65	QP			
6		325.5958	37.00	-12.22	24.78	47.00	-22.22	QP			

5– HARMONIC CURRENT TEST

5.1 Application of Harmonic Current Emission

Compliance to these standards ensures that tested equipment will not generate harmonic currents at levels that cause unacceptable degradation of the main environment. This directly contributes to meeting compatibility levels established in other EMC standards, which defines compatibility levels for low-frequency conducted disturbances in low-voltage supply systems.

5.2 Block Diagram of Test Setup:



5.3 Test Procedure:

1. The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the maximum harmonic components under normal operating conditions for each successive harmonic component in turn.
2. The correspondent test program of test instrument to measure the current harmonics emanated from EUT is chosen. The measure time shall be not less than the time necessary for the EUT to be exercised.

5.4 Test Result: pass

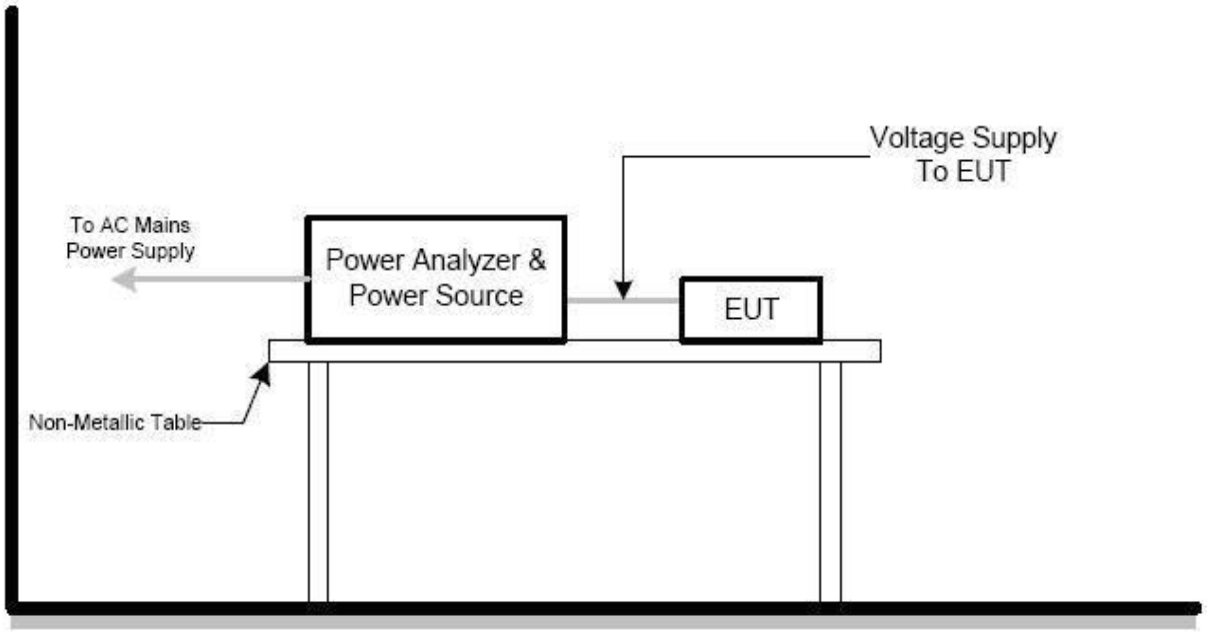
6 – VOLTAGE FLUCTUATIONS AND FLICKER TEST

6.1 Application and Limit of Voltage Fluctuations and Flicker Test

Compliance to these standards ensures that tested equipment will not generate flickers and voltage change at levels that cause unacceptable degradation of the main environment. This directly contributes to meeting compatibility levels established in other EMC standards, which defines compatibility levels for low-frequency conducted disturbances in low-voltage supply systems.

Tests	Limits		Descriptions
	IEC555-3	IEC/EN 61000-3-3	
Pst	≤ 1.0, Tp= 10 min.	≤ 1.0, Tp= 10 min.	Short Term Flicker Indicator
Plt	N/A	≤ 0.65, Tp=2 hr.	Long Term Flicker Indicator
dc	≤ 3%	≤ 3.3%	Relative Steady-State V-Chang
dmax	≤ 4%	≤ 4%	Maximum Relative V-change
d (t)	N/A	≤ 3.3% for > 500 ms	Relative V-change characteristic

6.2 Block Diagram of Test Setup:



6.3 Test Procedure:

1. The EUT was placed on the top of a wooden table 0.8 meters above the ground and operated to produce the most unfavorable sequence of voltage changes under normal operating conditions.
2. During the flick measurement, the measure time shall include that part of whole operation cycle in which the EUT produce the most unfavorable sequence of voltage changes. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.

6.4 Test Result: PASS

Maximum Flicker results			
Test Item	**EUT values**	**Limit**	**Result**
Pst	0.36	1.00	PASS
dc [%]	0.12	3.30	PASS
dmax [%]	2.78	4.00	PASS
dt [s]	0.32	0.50	PASS

7- IMMUNITY TEST

7.1 General Description

Product Standard	EN 55014-2	
Basic Standard, Specification, and Performance Criterion required	EN 61000-4-2	Electrostatic Discharge – ESD: ±8kV air discharge, ±4kV Contact discharge, Performance Criterion B
	EN 61000-4-3	Radio-Frequency Electromagnetic Field Susceptibility Test – RS: 80 ~ 1000 MHz, 3V/m, 80% AM (1kHz), Performance Criterion A
	EN 61000-4-4	Electrical Fast Transient/Burst - EFT, Power line: ±1kV, Signal line: ±0.5kV, Performance Criterion B
	EN 61000-4-5	Surge Immunity Test: 1.2/50 us Open Circuit Voltage, 8 /20 us Short Circuit Current, Power Line: line to line ±1 kV, line to ground ±2 kV Signal line: line to ground: outdoor: 1kV indoor: ±0.5kV Performance Criterion B
	EN 61000-4-6	Conducted Radio Frequency Disturbances Test – CS: 0.15 ~ 230MHz, 3Vrms, 80% AM, 1kHz, Performance Criterion A
	EN 61000-4-11	Voltage Dips: 1) 0% residual for 0.5 cycle, Performance Criterion C 2) 40% residual for 10 cycles(50Hz), 12 cycles(60Hz), Performance Criterion C 3) 70% residual for 25 cycles(50Hz), 30 cycles(60Hz), Performance Criterion C

7.2 The phenomena allowed during and after test in each criterion are clearly stated in the following table

Performance criteria		
Criteria	**During test**	**After test**
A	Shall operate as intended. May show degradation of performance (see note1). Shall be no loss of function. Shall be no unintentional transmissions.	Shall operate as intended. Shall be no degradation of performance (see note 2). Shall be no loss of function. Shall be no loss of stored data or user programmable functions.
B	May show loss of function (one or more). May show degradation of performance (see note 1). No unintentional transmissions.	Functions shall be self-recoverable. Shall operate as intended after recovering. Shall be no degradation of performance (see note 2). Shall be no loss of stored data or user programmable functions.
C	May be loss of function (one or more).	Functions shall be recoverable by the operator. Shall operate as intended after recovering. Shall be no degradation of performance (see note 2).

NOTE 1:
Degradation of performance during the test is understood as a degradation to a level not below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect from the apparatus if used as intended.

NOTE 2:
No degradation of performance after the test is understood as no degradation below a minimum performance level specified by the manufacturer for the use of the apparatus as intended. In some cases the specified minimum performance level may be replaced by a permissible degradation of performance. After the test no change of actual operating data or user retrievable data is allowed. If the minimum performance level or the permissible performance degradation is not specified by the manufacturer then either of these may be derived from the product description and documentation (including leaflets and advertising) and what the user may reasonably expect form the apparatus if used as intended.

7.3 Deviations from the standard

No deviations from EN 55014-2 were made when performing the tests described in this report.

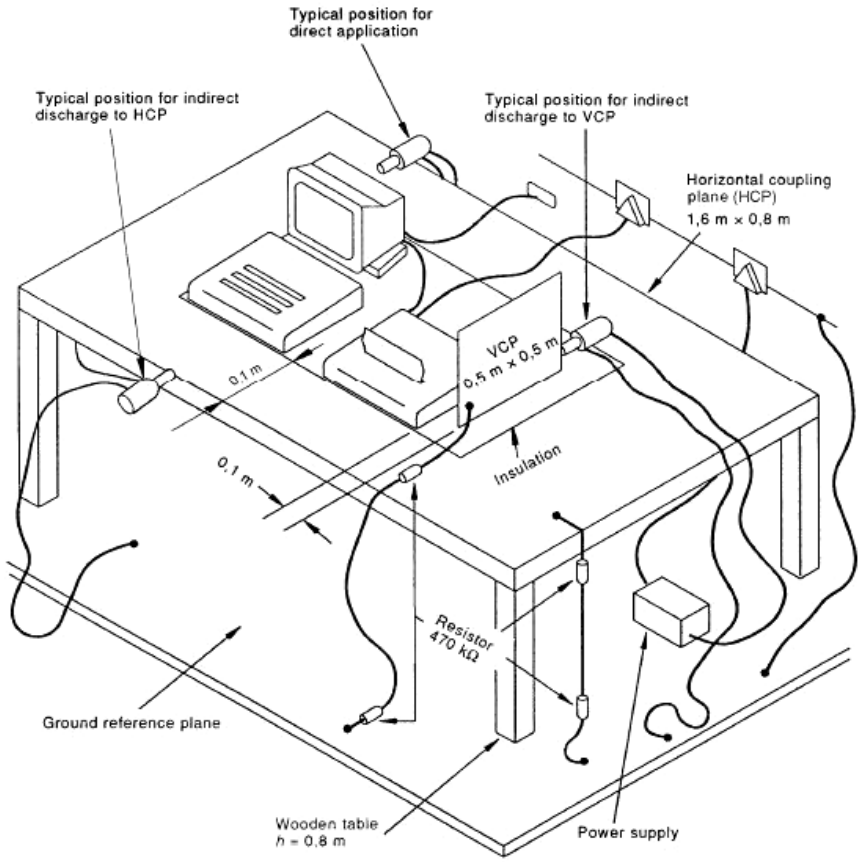
8- IMMUNITY TEST RESULTS

8.1 Electrostatic Discharge Immunity Test

8.1.1 Test Specification

Basic Standard:	EN 61000-4-2:2009
Test Level:	± 8 kV (Air Discharge) ± 4 kV (Contact Discharge) ± 4 kV (Indirect Contact HCP) ± 4 kV (Indirect Contact VCP)
Temperature:	25.1 (℃)
Humidity:	55 (%RH)
Barometric Pressure:	990~1030 (mbar)
Operating Mode:	Mode1

8.1.2 Test Setup



8.1.3 Test Procedure

1. Electrostatic discharges were applied only to those points and surfaces of the EUT that are accessible to users during Full load.
2. The test was performed with at least ten single discharges on the pre-selected points in the most sensitive polarity.
3. The time interval between two successive single discharges was at least 1 second.
4. The ESD generator was held perpendicularly to the surface to which the discharge was applied and the return cable was at least 0.2 meters from the EUT.
5. Contact discharges were applied to the non-insulating coating, with the pointed tip of the generator penetrating the coating and contacting the conducting substrate.
6. Air discharges were applied with the round discharge tip of the discharge electrode approaching the EUT as fast as possible (without causing mechanical damage) to touch the EUT. After each discharge, the ESD generator was removed from the EUT and re-triggered for a new single discharge. The test was repeated until all discharges were complete.
7. At least ten single discharges (in the most sensitive polarity) were applied to the Horizontal Coupling Plane at points on each side of the EUT. The ESD generator was positioned horizontally at a distance of 0.1 meters from the EUT with the discharge electrode touching the HCP.
8. At least ten single discharges (in the most sensitive polarity) were applied to the center of one vertical edge of the Vertical Coupling Plane in sufficiently different positions that the four faces of the EUT were completely illuminated. The VCP (dimensions 0.5m x 0.5m) was placed vertically to and 0.1 meters from the EUT.

8.1.4 Performance Criterion Required & Test Result

Table 1: Electrostatic Discharge Immunity (Air Discharge)

Test Level			Test Points	Observation Performance	Criterion Required
±2 kV	±4kV	±8kV			
☒	☒	☒	Gap	B	B
☒	☒	☒	Key	B	B
☐	☐	☐	/	/	/
☐	☐	☐	/	/	/

Table 2: Electrostatic Discharge Immunity (Direct Contact)

Test Level			Test Points	Observation Performance	Criterion Required
±2 kV	±4kV	±8kV			
☐	☒	☐	/	B	/
☐	☒	☐	/	B	/

Table 3: Electrostatic Discharge Immunity (Indirect Contact HCP)

Test Level			Test Points	Observation Performance	Criterion Required
±2 kV	±4kV	±8kV			
☐	☒	☐	Front Side	B	B
☐	☒	☐	Back Side	B	B
☐	☒	☐	Left Side	B	B
☐	☒	☐	Right Side	B	B

Table 4: Electrostatic Discharge Immunity (Indirect Contact VCP)

Test Level			Test Points	Observation Performance	Criterion Required
±2 kV	±4kV	±8kV			
☐	☒	☐	Front Side	B	B
☐	☒	☐	Back Side	B	B
☐	☒	☐	Left Side	B	B
☐	☒	☐	Right Side	B	B

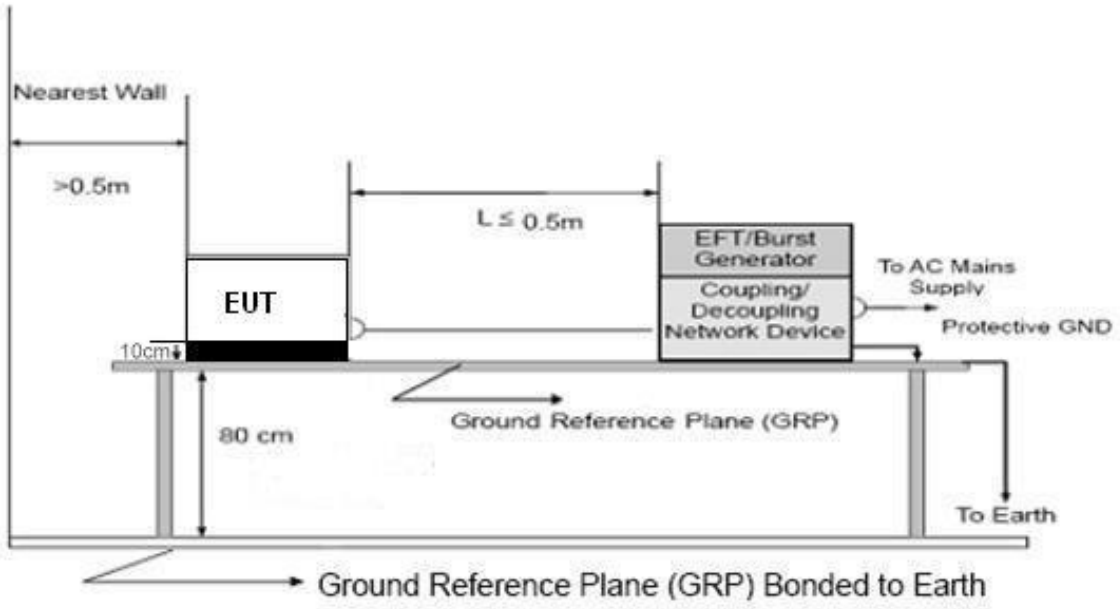
Test Result: Pass

8.2 Electrical Fast Transient/Burst Immunity Test

8.2.1 Test Specification

Basic Standard :	EN 61000-4-4:2012
Test Level:	±1 kV for AC Power Line ±0.5 kV for Communication Line (If applicable)
Impulse Frequency:	5kHz
Impulse Wave-shape:	5/50ns
Burst Duration:	15ms
Burst Period:	300ms
Test Duration:	1 min.
Temperature:	24.5 (℃)
Humidity:	52(%RH)
Barometric Pressure:	990~1030 (mbar)
Operating Mode:	Mode1

8.2.2 Test Setup



8.2.3 Test Procedure

1. Both positive and negative polarity discharges were applied.
2. The length of the “hot wire” from the coaxial output of the EFT generator to the terminals on the EUT should be 0.5m.
3. The duration time of each test sequential was 1 minute.
4. The field strength level was 3V/m.
5. The transient/burst waveform was in accordance with EN 61000-4-4, 5/50ns.

8.2.4 Performance Criterion Required & Test Result

Voltage	Test Points	Observation Performance	Criterion Required
±1kV	L	B	B
±1kV	N	B	B
±1kV	L+N+PE	B	B

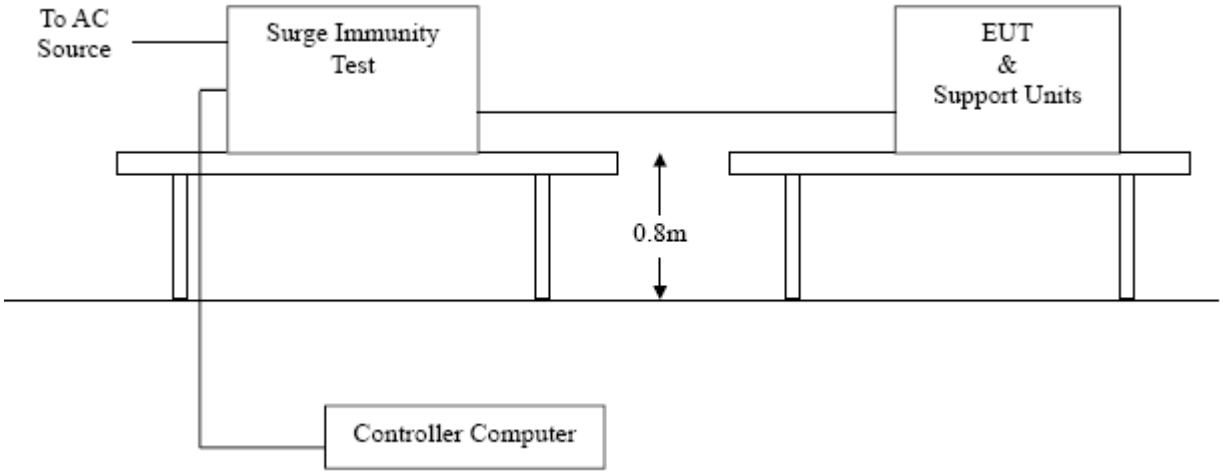
Test Result: PASS

8.3 Surge Immunity Test

8.3.1 Test Specification

Basic Standard :	EN 61000-4-5:2014+A1:2017
Test Level:	± 1 kV (Line to Line) for AC Power Line ± 1, 2 kV (Line(s) to Ground) for AC Power Line
Wave-Shape:	Combination Wave 1.2/50 us Open Circuit Voltage 8/20 us Short Circuit Current
Generator Impedance:	42 ohm between signal line and ground 2 ohm between networks
Phase Angle:	90°/270°
Pulse Repetition Rate:	1 time / min
Number of Tests:	5 positive and 5 negative at selected points
Temperature:	24.5(℃)
Humidity:	52 (%RH)
Barometric Pressure:	990~1030 (mbar)
Operating Mode:	Mode1

8.3.2 Test Setup



8.3.3 Test Procedure

1. For EUT power supply:
   The surge is applied to the EUT power supply terminals via the capacitive coupling network. Decoupling networks are required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines, and to provide sufficient decoupling impedance to the surge wave. The power cord between the EUT and the coupling/decoupling networks was shorter than 2 meters in length.
2. For test applied to unshielded unsymmetrically operated interconnection lines of EUT: (If applicable)
   The surge was applied to the lines via the capacitive coupling. The coupling / decoupling networks didn't influence the specified functional conditions of the EUT. The interconnection line between the EUT and the coupling/decoupling networks was shorter than 2 meters in length.

8.3.4 Performance Criterion Required & Test Result

Voltage	Test Points	Observation Performance	Criterion Required
±1kV	L-N	B	B
±2kV	L-PE	B	B
±2kV	N-PE	B	B

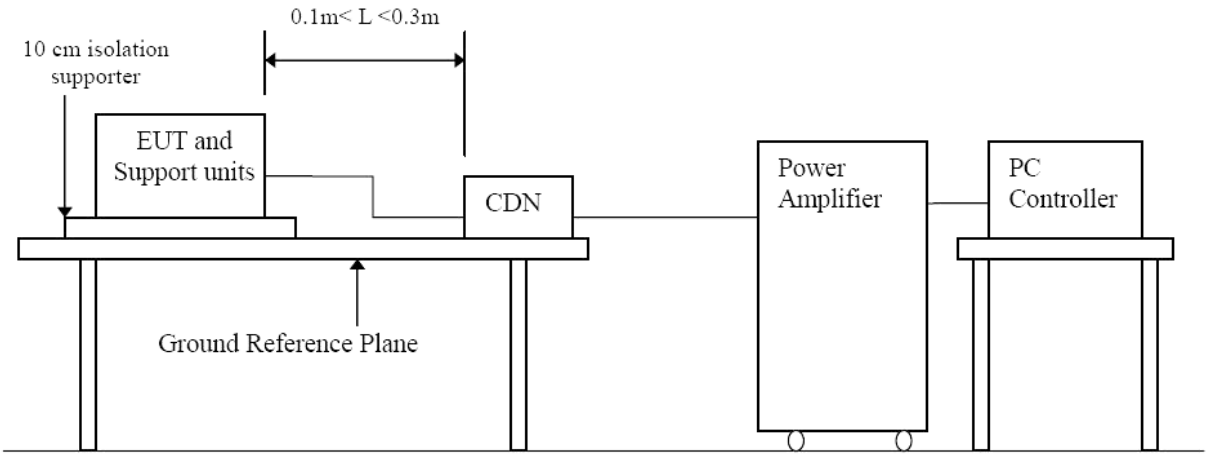
Test Result: PASS

8.4 Conducted Susceptibility Test

8.4.1 Test Specification

Basic Standard:	EN 61000-4-6:2014+AC:2015
Test Level:	3Vr.m.s
Frequency Range:	0.15~230MHz (MHz)
Modulation:	Amplitude 80%, 1kHz sinewave
Frequency Step:	1 % of preceding frequency value
Temperature:	24.5 (℃)
Humidity:	52 (%RH)
Barometric Pressure:	990~1030 (mbar)
Operating Mode:	Mode1

8.4.2 Test Setup



8.4.3 Test Procedure

1. The test was performed with the test generator connected to each of the coupling and decoupling devices in turn, while the other non-excited RF input ports of the coupling devices are terminated by a 50-ohm load resistor.
2. The frequency range was swept from 150 kHz to 230 MHz, using the signal level established during the setting process and with a disturbance signal of 80 % amplitude. The signal was modulated with a 1 kHz sine wave, pausing to adjust the RF signal level or the switch coupling devices as necessary. The sweep rate was 1.5 x 10-3 decades/s. Where the frequency range is swept incrementally, the step size was 1 % of preceding frequency value from 150 kHz to 230 MHz.

3. The dwell time at each frequency was less than the time necessary for the EUT to be exercised, and able to respond. Sensitive frequencies such as clock frequency(ies) and harmonics or frequencies of dominant interest, was analyzed separately.
4. Attempts was made to fully exercise the EUT during testing, and to fully interrogate all exercise modes selected for susceptibility.

8.4.4 Performance Criterion Required & Test Result

Frequency Band (MHz)	Voltage (Vrms)	Test Points	Observation Performance	Criterion Required
0.15-230	3	L-N	A	A

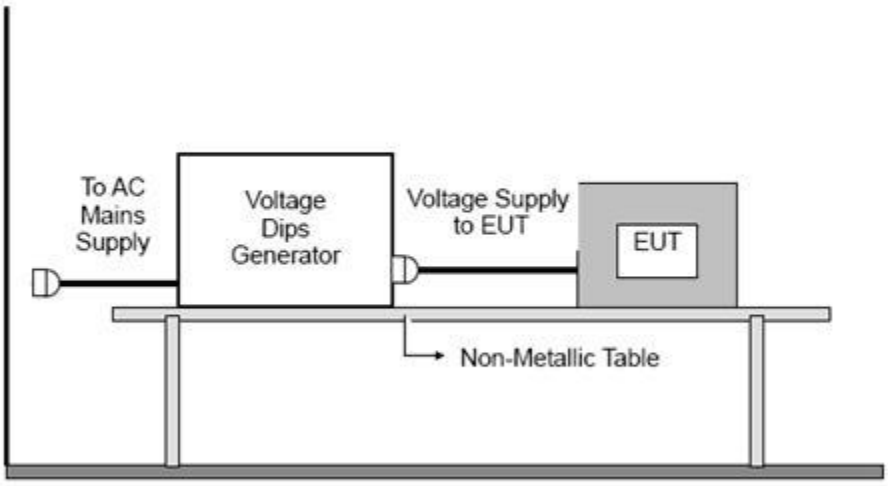
Test Result: PASS

8.5 Voltage Dips, Short Interruptions Immunity Tests

8.5.1 Test Specification

Basic Standard:	EN 61000-4-11:2004+A1:2017
Test Level:	Voltage Dips: 1) 0% residual voltage for 0.5 cycle for 50/60Hz. 2) 70% residual voltage for 10/12 cycles for 50/60Hz. Voltage Interruptions: 3) 0% residual voltage for 25/30 cycles for 50/60Hz.
Interval between event:	10 seconds
Phase Angle:	0°/180°
Test cycle:	3 times
Temperature:	24.5(℃)
Humidity:	52(%RH)
Barometric Pressure:	990~1030 (mbar)
Operating Mode:	Mode1

8.5.2 Test Setup



8.5.3 Test Procedure

The EUT was tested for each selected combination of test levels and duration with a sequence of 3 dips/interruptions with intervals of 10s (between each test event). Each representative mode of operation shall be tested. Abrupt changes in supply voltage shall occur at zero crossings of the voltage waveform.

8.5.4 Performance Criterion Required & Test Result

Ut: 230V AC, 60Hz			
Voltage (% Residual)	**Duration (Period)**	**Observation Performance**	**Criterion Required**
0	0.5	B	B
40	12	B	B
70	30	B	B
95	250	C	C

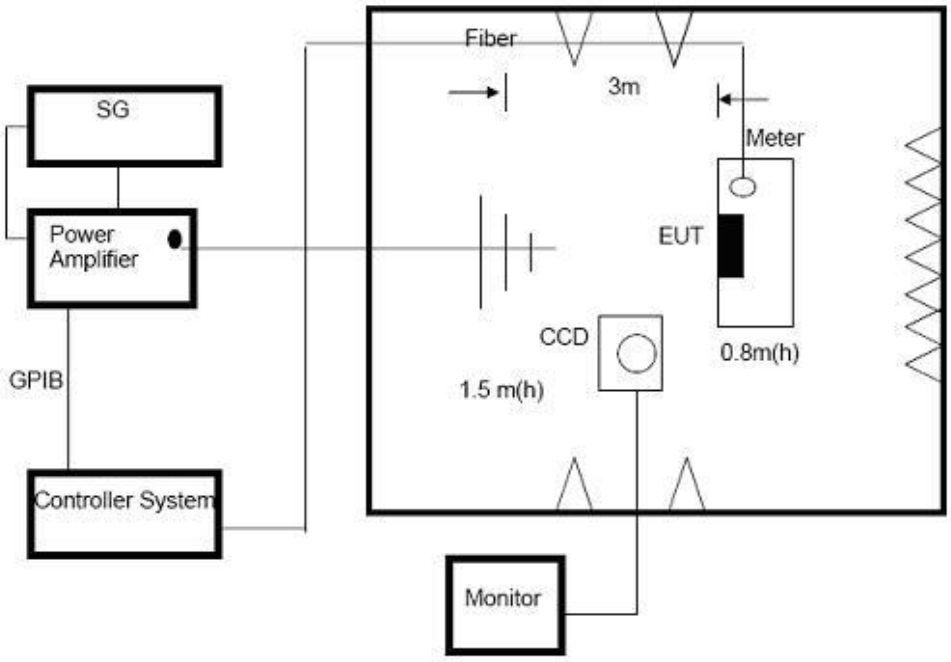
Test Result: PASS

8.6 Radiated Susceptibility Test

8.6.1 Test Specification

Basic Standard:	EN 61000-4-3:2006+A2:2010
Frequency Range:	80~1000MHz
Modulation:	Amplitude 80%, 1kHz sinewave
Test Level:	3V/m
Temperature:	24.5 (℃)
Humidity:	52 (%RH)
Barometric Pressure:	990~1030 (mbar)
Operating Mode:	Mode1

8.6.2 Test Setup



8.6.3 Test Procedure

1. The testing was performed in a fully-anechoic chamber.
2. The frequency range is swept from 80 MHz to 1000 MHz, with the signal 80% amplitude modulated with a 1kHz sine wave.
3. The dwell time at each frequency shall not be less than the time necessary for the EUT to be exercised and to respond, but shall in no case be less than 0,5s.
4. The field strength level was 3V/m.

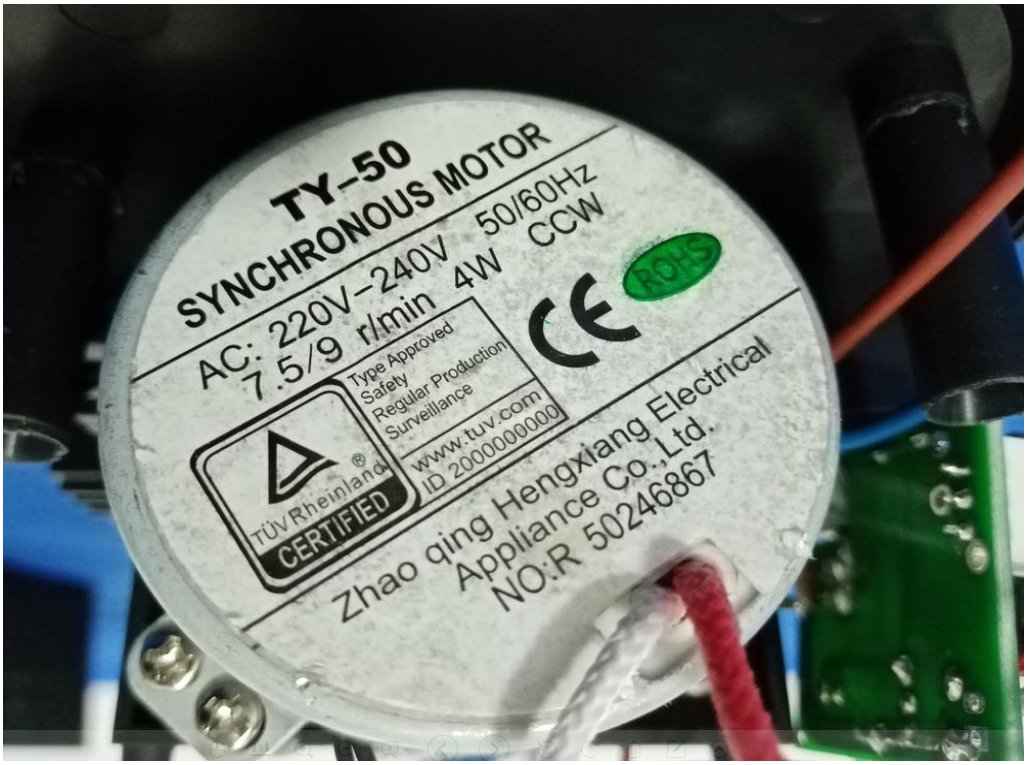
5. The test was performed with the EUT exposed to both vertically and horizontally polarized fields on each of the four sides.

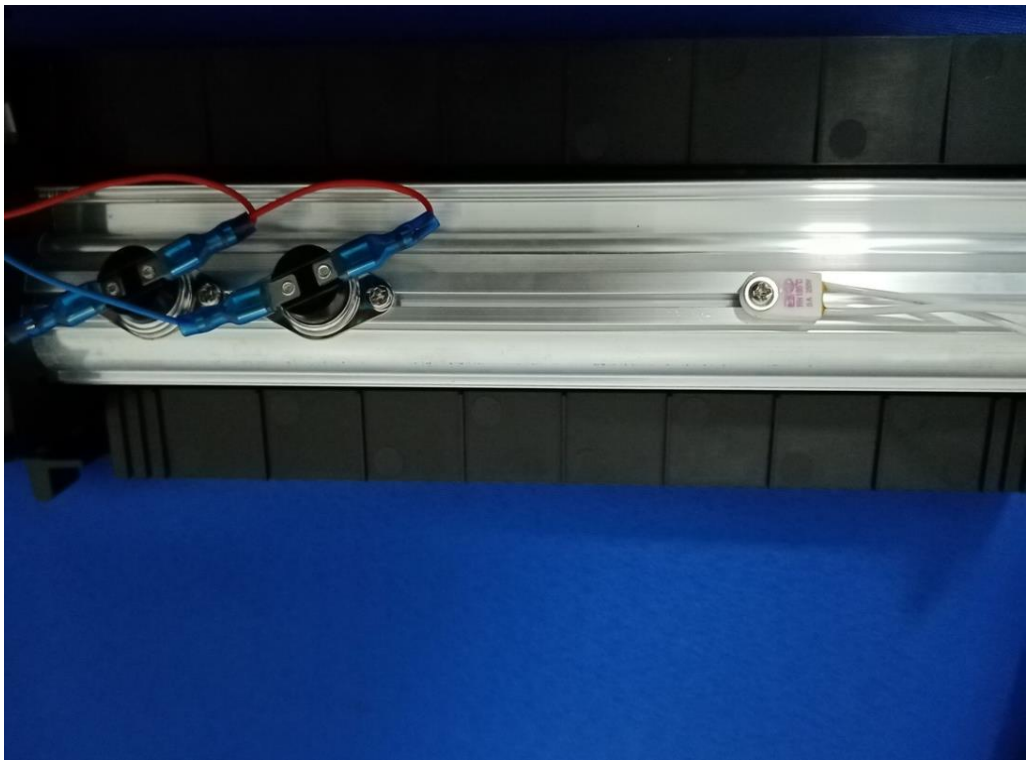
8.6.4 Performance Criterion Required & Test Result

Frequency Band (MHz)	Test Level	Test Points	Observation Performance	Criterion Required
80-1000	3V/m	Front Side	A	A
80-1000	3V/m	Rear Side	A	A
80-1000	3V/m	Left Side	A	A
80-1000	3V/m	Right Side	A	A

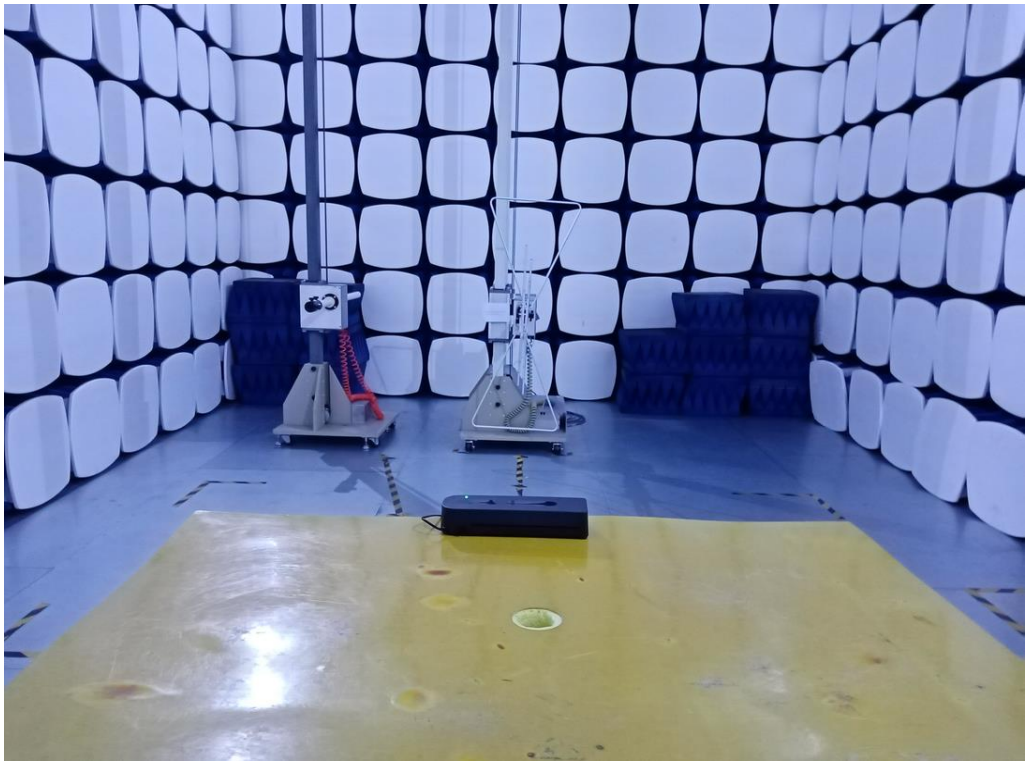
Test Result: Pass

APPENDIX A - EUT PHOTOGRAPHS


TY-50
SYNCHRONOUS MOTOR
AC: 220V-240V 50/60Hz
7.5/9 r/min 4W CCW
Type Approved
Safety
Regular Production
Surveillance
www.tuv.com
ID 2000000000
TÜV Rheinland
CERTIFIED
ROHS
Zhao qing Hengxiang Electrical
Appliance Co.,Ltd.
NO:R 50246867



APPENDIX B - TEST SETUP PHOTOGRAPHS



******* END OF REPORT *******

Examination Certificate of SiCT

Supplier's Declaration of Conformity

Certificate No.: XK2112013044C

Applicant	:	**Hubei Fangnuo Technology Co., Ltd** North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China
Manufacturer	:	**Hubei Fangnuo Technology Co., Ltd** North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China
Product	:	**laminator**
Model Number	:	**FN333, FN335, FN336, FN337, FN338, FNL001, FNL002, FNL003, FNL004, FNL005, FNL006, FNL007, FNL008, FNL009, FNL010, FNL011, FNL012, FNL013, FNL014, FNL015**
Trademark	:	**N/A**
Test Standard	:	**FCC Part 15, Subpart B** **ANSI C63.4: 2014**

The certificate of conformity is based on an evaluation of a sample of the above mentioned product. Technical report is at the applicant disposal. This is to certify the tested sample that is in conformity with all provisions of above FCC standard. It is only valid in connection with the test report number XK2112013044F.

The certificate does not imply the assessment of the production and does not permit using the SiCT's logo without permission.

Authorized Signer: Andy Wang

Andy Wang/Manager

Date: **December 21, 2021**

Shenzhen SiCT Technology Co., Ltd.
4F, Building A, EDerH Industrial District, Fukang Community, Longhua Subdistrict, Longhua District, Shenzhen, Guangdong, P. R. China
E-mail: info@sict-lab.com.cn Http:// www.sict-lab.com.cn

Test Report of FCC CFR 47 Part 15 Subpart B
On Behalf of

Hubei Fangnuo Technology Co., Ltd
North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China

Product Name:	laminator
Model/Type No.:	FN333, FN335, FN336, FN337, FN338, FNL001, FNL002, FNL003, FNL004, FNL005, FNL006, FNL007, FNL008, FNL009, FNL010, FNL011, FNL012, FNL013, FNL014, FNL015
Prepared By:	**Shenzhen SiCT Technology Co., Ltd.** 4F, Building A, EDerH Industrial District, Fukang Community, Longhua, Subdistrict, Longhua District, Shenzhen, Guangdong, P. R. China
Report Number:	XK2112013044F
Tested Date:	December 15~21, 2021
Issued Date:	December 21, 2021
Project Engineer:	Smile Xu /

Reviewed By: Nina Li — Nina Li, EMC Technical Manager

Approved By: Andy Wang — Andy Wang, EMC General Manager

TABLE OF CONTENTS

1- GENERAL INFORMATION

1.1 Product Description for Equipment under Test (EUT)

Client Information

Applicant:	Hubei Fangnuo Technology Co., Ltd
Address of applicant:	North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China
Manufacturer:	Hubei Fangnuo Technology Co., Ltd
Address of Manufacturer:	North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China

General Description of E.U.T

EUT Name:	laminator
Trade Mark:	N/A
Test Model:	FN333, FN335, FN336, FN337, FN338, FNL001, FNL002, FNL003, FNL004, FNL005, FNL006, FNL007, FNL008, FNL009, FNL010, FNL011, FNL012, FNL013, FNL014, FNL015
Operating Mode.:	Running
Power Supply:	Input Volage:AC120V 60Hz Input current: 1.37A Power：300W
Product Class:	☐ Class A, apply to Class A limits ☒ Class B, apply to Class B limits

Remark:
* The test data gathered are from the production sample provided by the manufacturer.

1.2 Test Standards

The following Declaration of Conformity report of EUT is prepared in accordance with

FCC PART15 Subpart B

This test report based on the Electromagnetic Interference (EMI) tests performed on the EUT. The EMI measurements were performed according to the measurement procedure described in ANSI C63.4 - 2014.

The tests were performed in order to determine compliance with FCC Part 15, Subpart B, section 15.107 and section 15.109 rules.

The objective of the manufacturer is to demonstrate compliance with the described standards above.

1.3 Test Summary

Table 1:

Standard	Test Items	Status
Section 15.107	Conducted Emission (150KHz to 30MHz)	☒
Section 15.109	Radiation Emission (30MHz to 1000MHz)	☒
	Radiation Emission (1GHz to 6GHz)	☐

Note: ☒ Indicates that the test is applicable, ☐ Indicates that the test is not applicable

1.4 Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 - 2014, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz. Radiated testing was performed at an antenna to EUT distance 3 meters.

1.5 Test Facility

The measurement Radiated Susceptibility was performed at Shenzhen SiCT Technology Co., Ltd. at 4F, Building A, EDerH Industrial District, Fukang Community, Longhua, Subdistrict, Longhua District, Shenzhen, Guangdong, P. R. China

1.6 Test Equipment List and Details

Radiation Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	LISN	R&S	ENV216	101334	Apr. 2,2021	Apr. 1,2022	1 year
2	LISN	SCHWARZBECK	NNLK 8129	8129267	Apr. 2,2021	Apr. 1,2022	1 year
3	Pulse Limiter	SCHWARZBECK	VTSD 9561F	9716	Apr. 2,2021	Apr. 1,2022	1 year
4	50Ω SWITCH	ANRITSU CORP	MP59B	6200983704	Apr. 2,2021	Apr. 1,2022	1 year
5	TEST CABLE	N/A	C01	N/A	Apr. 2,2021	Apr. 1,2022	1 year
6	TEST CABLE	N/A	C02	N/A	Apr. 2,2021	Apr. 1,2022	1 year
7	TEST CABLE	N/A	C03	N/A	Apr. 2,2021	Apr. 1,2022	1 year
8	EMI Test Receiver	R&S	ESCI	101318	Apr. 2,2021	Apr. 1,2022	1 year
9	Passive Voltage Probe	ESK108-Z3	R&S	100173	Apr. 2,2021	Apr. 1,2022	1 year
10	Triple-Loop Antenna	EVERFINE	LIA-2	11020016	Apr. 2,2021	Apr. 1,2022	1 year
11	Absorbing Clamp	R&S	MDS-21	100423	Apr. 2,2021	Apr. 1,2022	1 year

Conduction Test equipment

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	Bilog Antenna	TESEQ	CBL6111D	31437	Apr. 2,2021	Apr. 1,2022	1 year
2	Test Cable	N/A	R-01	N/A	Apr. 2,2021	Apr. 1,2022	1 year
3	Test Cable	N/A	R-02	N/A	Apr. 2,2021	Apr. 1,2022	1 year
4	EMI Test Receiver	Rohde&Schwarz	ESVD	847312/008	Apr. 2,2021	Apr. 1,2022	1 year
5	Antenna Mast	EM	SC100_1	N/A	N/A	N/A	N/A
6	Turn Table	EM	SC100	060533	N/A	N/A	N/A
7	50Ω Switch	Anritsu Corp	MP59B	6200983705	Apr. 2,2021	Apr. 1,2022	1 year
8	SPECTRUM ANALYZER	Aglient	E4407B	160400005	Apr. 2,2021	Apr. 1,2022	1 year

9	HORN ANTENNA	EM	EM-AH-10180	2011071402	Apr. 2,2021	Apr. 1,2022	1 year
10	AMPLIFIER	EM	EM-30180	060536	Apr. 2,2021	Apr. 1,2022	1 year

1.7 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	Running

For Conducted Test	
Final Test Mode	Description
Mode 1	Running

For Radiated Test	
Final Test Mode	Description
Mode 1	Running

2- SYSTEM TEST CONFIGURATION

2.1 Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

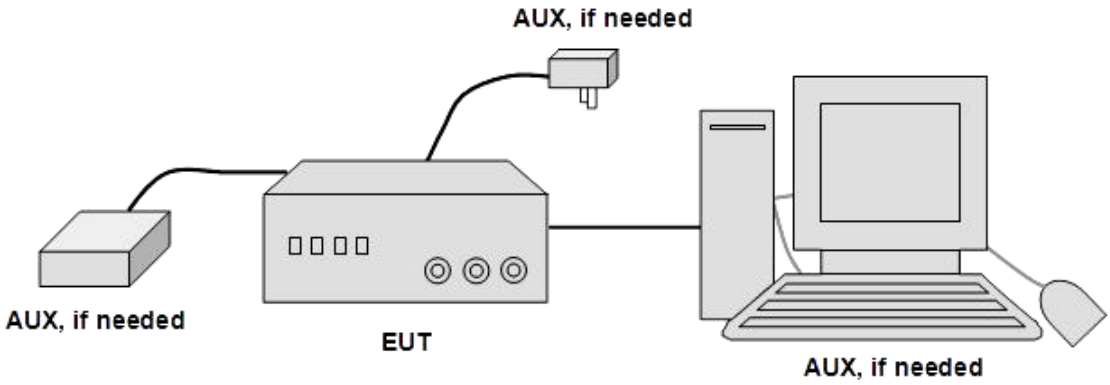
2.2 EUT Exercise Software

The EUT exercising program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to a typical use. The software offered by manufacture, can let the EUT being normal operation.

2.3 Basic Configuration of Test System and General Test Procedures

Conducted Emissions: The EUT is placed on the table, which is 0.8 m above ground plane. According to the requirements in Section 7.1 of ANSI C63.4-2014.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak detector mode.

Radiated Emissions: The EUT is a placed on as turntable, which is 0.8 m above ground plane. The turntable shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna, which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the maximum emissions, exploratory radiated emission measurements were made according to the requirements in Section 13.1.4.1 of ANSI C63.4-2014.



2.4 DESCRIPTION TEST PERIPHERAL AND EUT PERIPHERAL

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Auxiliary Equipment List and Details			
Description	Manufacturer	Model	Serial Number
/	/	/	/
/	/	/	/

3- CONDUCTED EMISSION

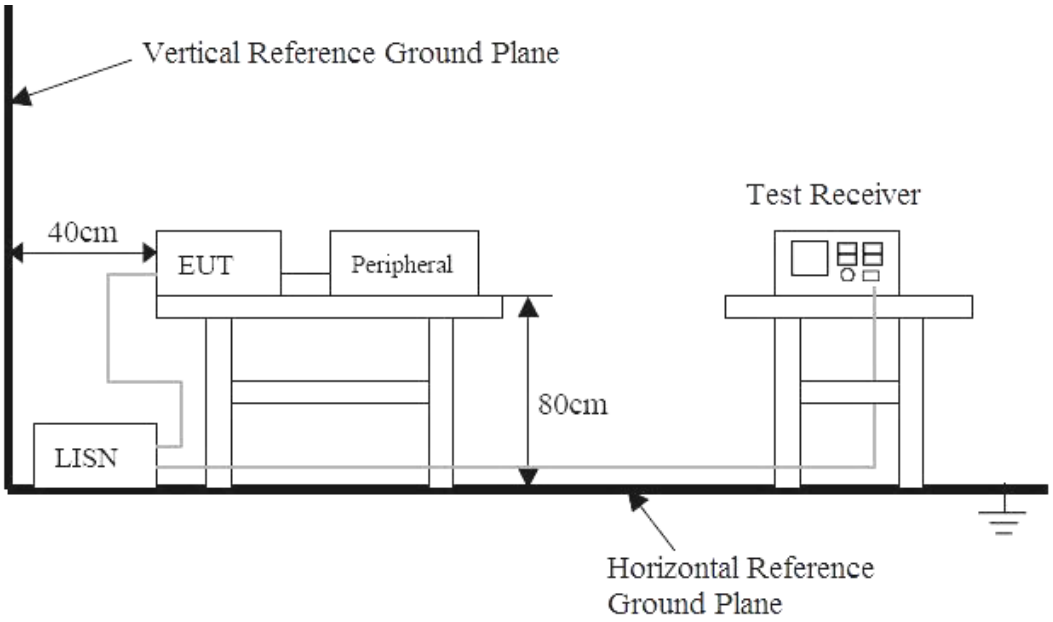
3.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, and LISN.The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of any conducted emissions measurement is ±2.7 dB.

3.2 Limit of Conducted Emission

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 -0.5	79.00	66.00	66 - 56 *	56 - 46 *
0.50 -5.0	73.00	60.00	56.00	46.00
5.0 -30.0	73.00	60.00	60.00	50.00

3.3 EUT Setup



The setup of EUT is according with ANSI C63.4-2014 measurement procedure. The specification used was the FCC Rules and Regulations Part 15 Subpart B Section 15.107 Class B limits.

The EUT was placed center and the back edge of the test table.

The AV cables were draped along the test table and bundled to 30-40cm in the middle.

The spacing between the peripherals was 10 cm.
Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

3.4 Instrument Setup

The test receiver was set with the following configurations:

Test Receiver Setting:

Frequency Range……150 KHz to 30 MHz
Detector……..Peak & Quasi-Peak & Average
Sweep Speed……Auto
IF Band Width……..9 KHz

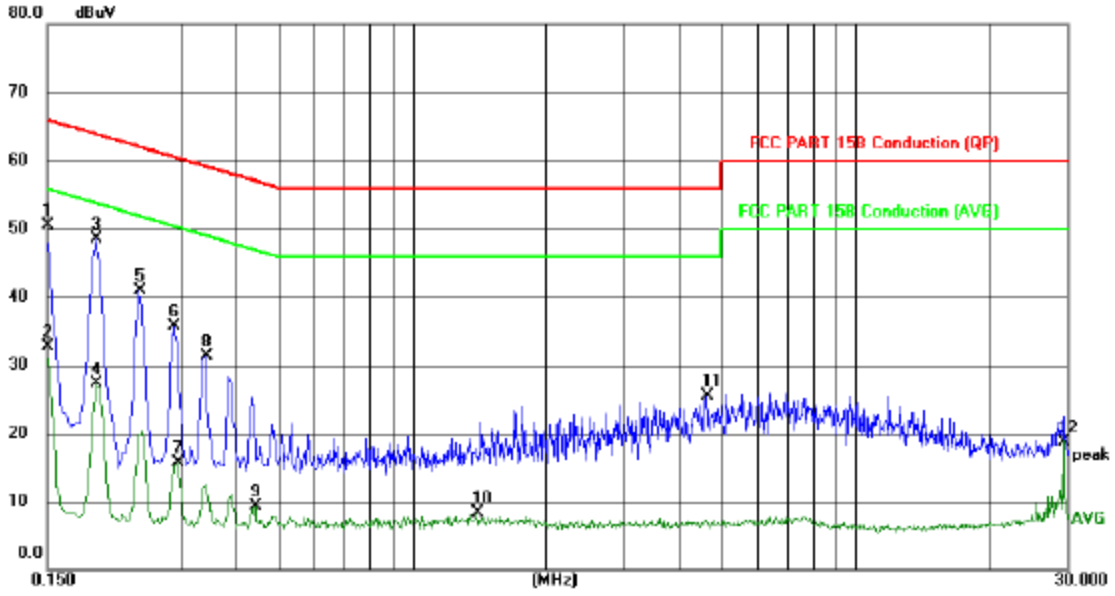
3.5 Test Procedure

1. During the conducted emission test, the EUT power cord was connected to the auxiliary outlet of the first Artificial Mains.
2. Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance using all installation combination.
3. All data was recorded in the peak detection mode. Quasi-peak and Average readings were only performed when an emission was found to be marginal (within -10 dBμV of specification limits). Quasi-peak readings are distinguished with a "QP". Average readings are distinguished with a "AV".

3.6 Test Detail

Conducted Emission Test Detail

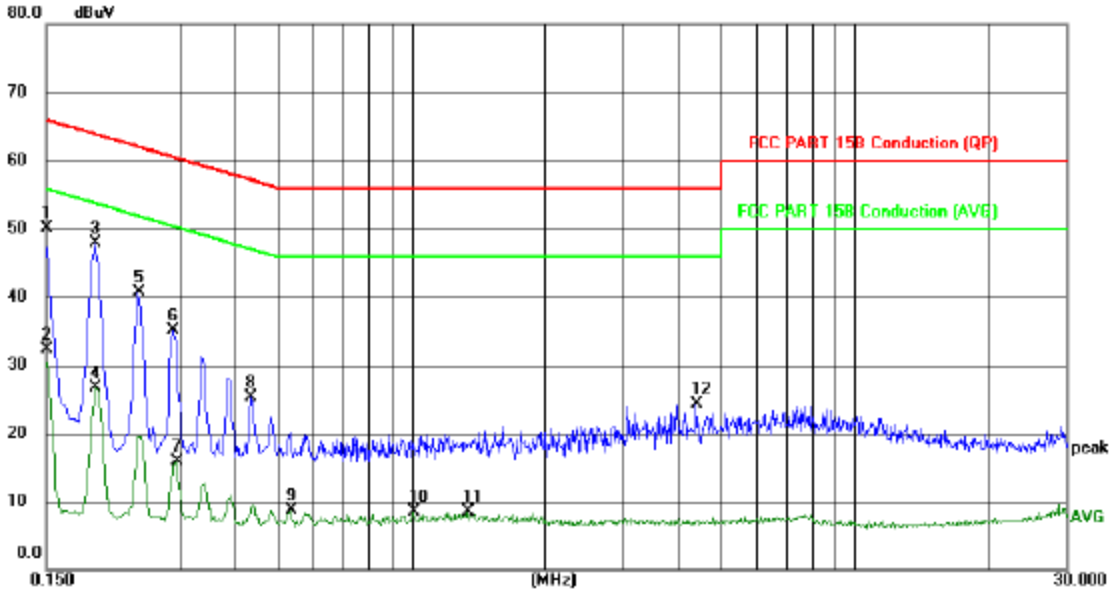
EUT:	laminator	Model Name:	FN333
Temperature	24 ℃	Relative Humidity:	55%
Pressure:	1025hPa	Test Line:	L
Test Mode	Mode1	Test Voltage:	AC120V



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	41.00	9.60	50.60	66.00	-15.40	peak	
2		0.1500	23.19	9.60	32.79	56.00	-23.21	AVG	
3		0.1940	38.56	9.85	48.41	63.86	-15.45	peak	
4		0.1940	17.37	9.85	27.22	53.86	-26.64	AVG	
5		0.2420	30.72	10.09	40.81	62.03	-21.22	peak	
6		0.2900	25.59	10.16	35.75	60.52	-24.77	peak	
7		0.2940	5.54	10.17	15.71	50.41	-34.70	AVG	
8		0.3420	21.13	10.11	31.24	59.15	-27.91	peak	
9		0.4420	-0.81	10.06	9.25	47.02	-37.77	AVG	
10		1.3980	-2.09	10.39	8.30	46.00	-37.70	AVG	
11		4.6140	15.17	10.33	25.50	56.00	-30.50	peak	
12		29.4900	7.58	11.22	18.80	50.00	-31.20	AVG	

Conducted Emission Test Detail

EUT：	laminator	Model Name：	FN333
Temperature	24 ℃	Relative Humidity：	55%
Pressure：	1025hPa	Test Line:	N
Test Mode	Mode1	Test Voltage:	AC120V



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1500	40.79	9.28	50.07	66.00	-15.93	peak	
2		0.1500	23.09	9.28	32.37	56.00	-23.63	AVG	
3		0.1940	37.93	9.89	47.82	63.86	-16.04	peak	
4		0.1940	16.78	9.89	26.67	53.86	-27.19	AVG	
5		0.2420	30.77	9.97	40.74	62.03	-21.29	peak	
6		0.2900	25.23	9.95	35.18	60.52	-25.34	peak	
7		0.2940	5.97	9.96	15.93	50.41	-34.48	AVG	
8		0.4340	15.44	9.85	25.29	57.18	-31.89	peak	
9		0.5340	-1.26	9.90	8.64	46.00	-37.36	AVG	
10		1.0100	-1.43	9.89	8.46	46.00	-37.54	AVG	
11		1.3420	-1.66	10.14	8.48	46.00	-37.52	AVG	
12		4.4060	14.14	10.20	24.34	56.00	-31.66	peak	

4- RADIATED EMISSION

4.1 Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

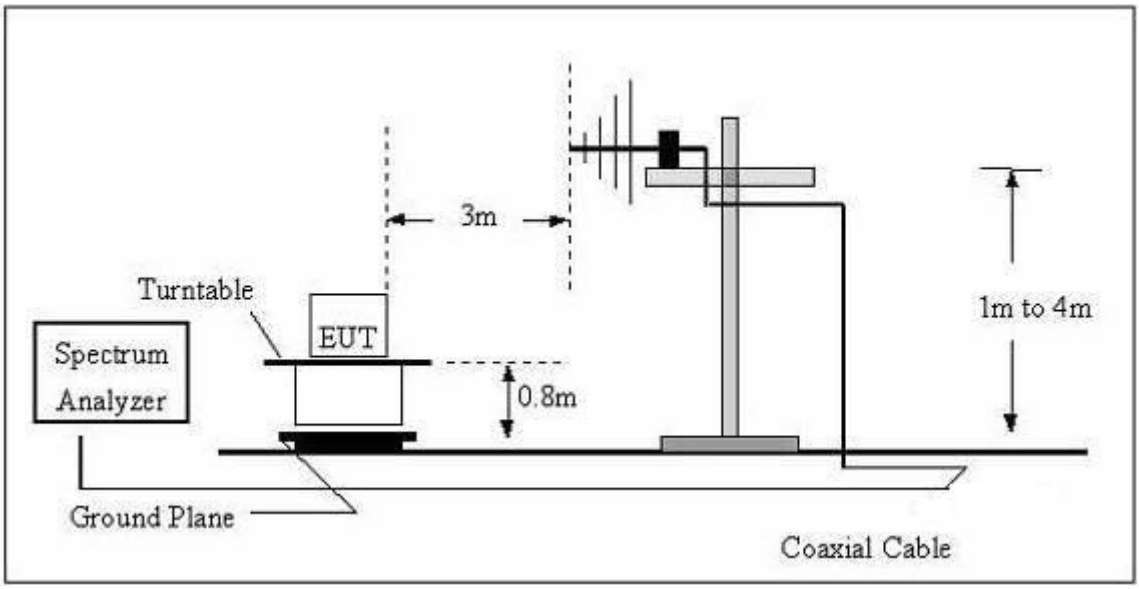
The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is ±4.5 dB.

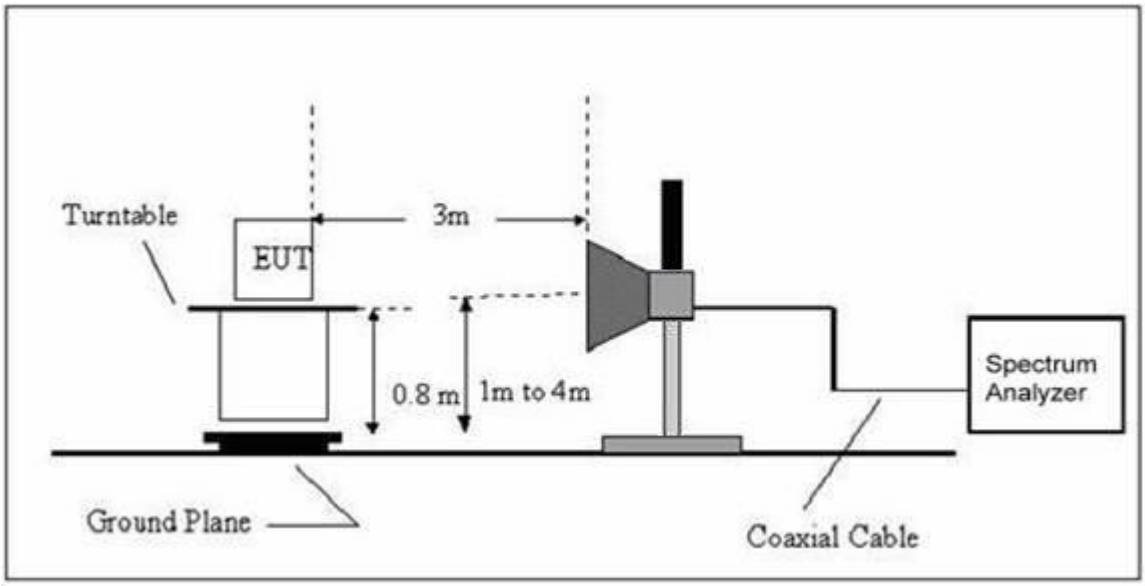
4.2 Limit of Radiated Emission

FREQUENCY (MHz)	Class A (at 10m)	Class B (at 3m)
	dBuV/m	dBuV/m
30 ~ 88	39.0	40.0
88 ~ 216	43.5	43.5
216 ~ 960	46.5	46.0
Above 960	49.5	54.0

Above 1GHz Class B Equipment Limits			
Frequency (GHz)	Distance (Meters)	Average (dBμV/m)	Peak (dBμV/m)
1 ~ 6	3	54	74
NOTE 1 The lower limit shall apply at the transition frequency.			

4.3 EUT Setup





The radiated emission tests were performed in the in the 3-meter anechoic chamber, using the setup accordance with the AANSI C63.4-2014. The specification used was the FCC Part 15 Subpart B Section 15.109 limits.

The EUT was placed on the center of the test table.

Maximum emission emitted from EUT was determined by manipulating the EUT, support equipment, interconnecting cables and varying the mode of operation and the levels in the final result of the test were recorded with the EUT running in the operating mode that maximum emission was emitted.

4.4 Test Receiver Setup

The test receiver was set with the following configurations:

Test Receiver Setting below 1000MHz:

Detector……..Peak & Quasi-Peak
IF Band Width……..120KHz
Frequency Range……30MHz to 1000MHz
Turntable Rotated……0 to 360 degrees

Test Receiver Setting above 1000MHz:

Detector……..Peak & Average
IF Band Width……..1MHz
Frequency Range……1000MHz to 6000MHz
Turntable Rotated……0 to 360 degrees
Antenna Position:

Height……1m to 4m
Polarity……..Horizontal and Vertical

4.5 Test Procedure

1. Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.
2. All data was recorded in the peak detection mode. Quasi-peak readings performed only when an emission was found to be marginal (within -10 dBμV of specification limits), and are distinguished with a "QP" in the data table.

4.6 Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Factor, and subtracting the Amplifier Gain from the Amplitude reading. The basic equation is as follows:

Corr. Ampl. = Indicated Reading + Antenna Factor + Cable Factor - Amplifier Gain

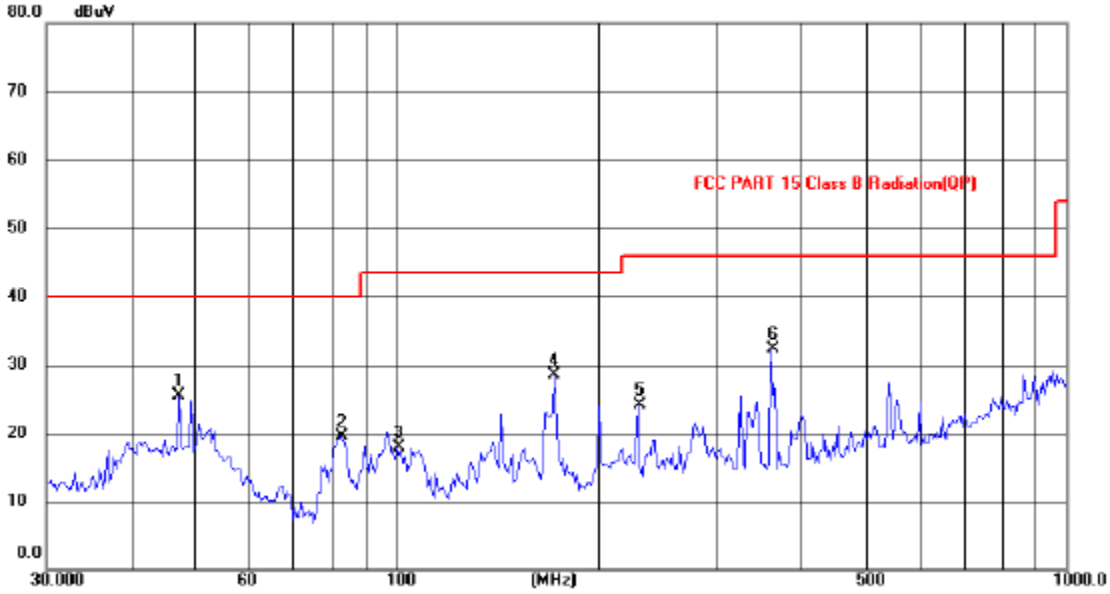
The “Margin” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dBμV means the emission is 7dBμV below the maximum limit for Class B. The equation for margin calculation is as follows:

Margin = Limit – Corr. Ampl.

4.7 Test Detail

Radiated Emission Test Detail of Below 1GHz

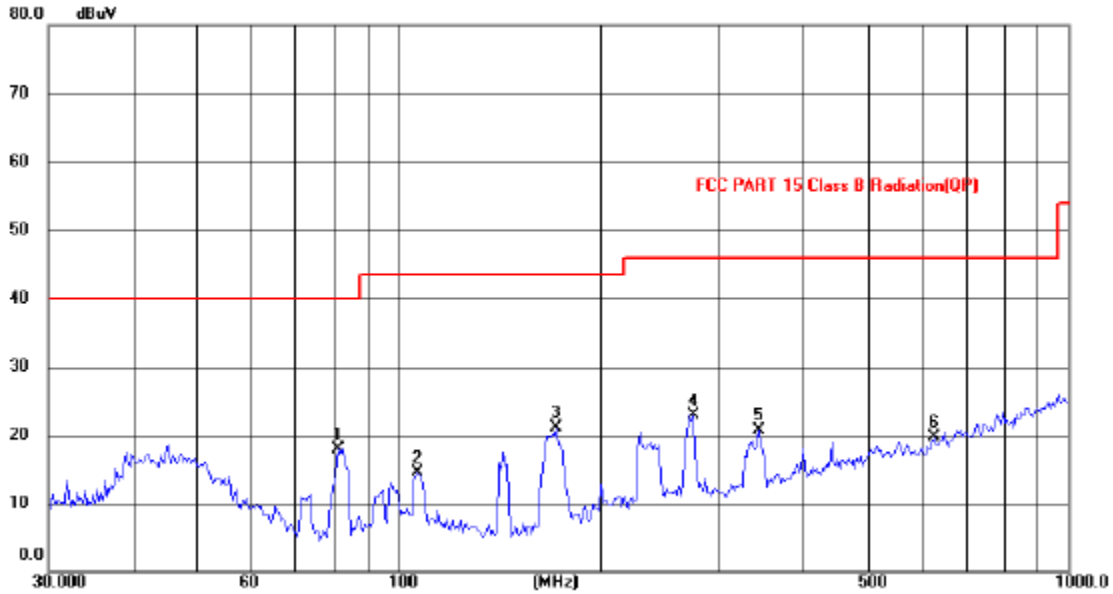
EUT：	laminator	Model Name：	FN333
Temperature	24 ℃	Relative Humidity：	55%
Pressure：	1025hPa	Test Polarity :	Horizontal
Test Mode	Mode1	Test Voltage:	AC120V



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree	Comment
1		47.3255	33.38	-7.83	25.55	40.00	-14.45	QP			
2		82.3589	37.87	-18.37	19.50	40.00	-20.50	QP			
3		100.2286	33.02	-15.12	17.90	43.50	-25.60	QP			
4		171.9946	45.84	-17.28	28.56	43.50	-14.94	QP			
5		229.2931	38.80	-14.60	24.20	46.00	-21.80	QP			
6	*	361.7139	43.99	-11.63	32.36	46.00	-13.64	QP			

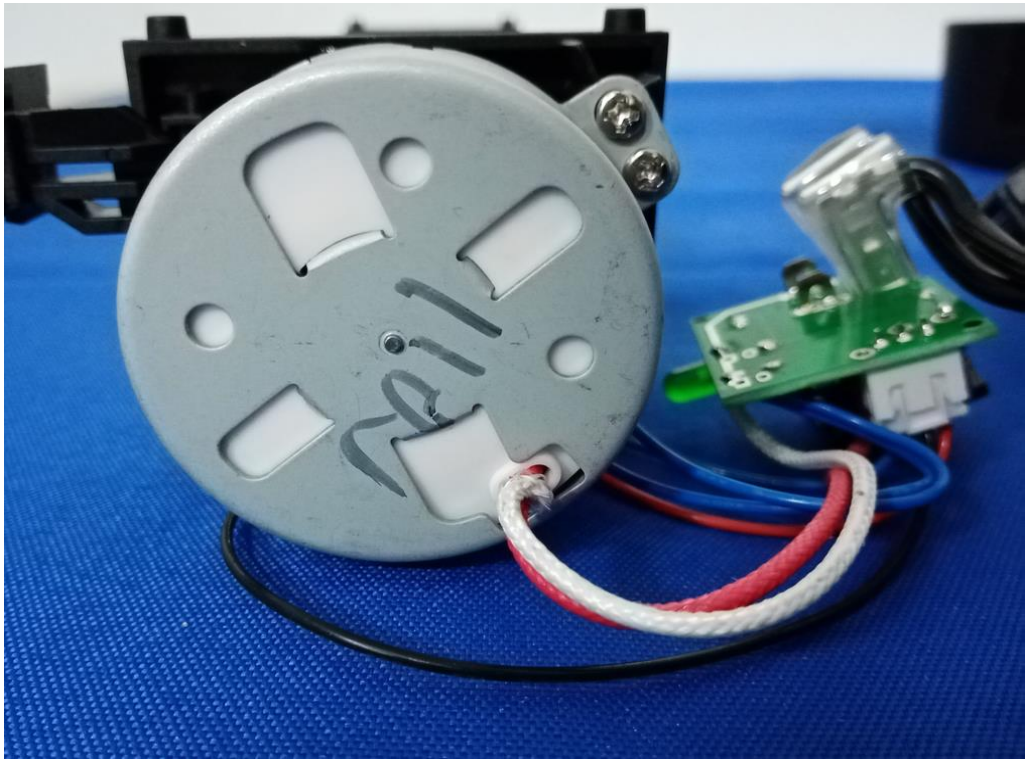
Radiated Emission Test Detail of Below 1GHz

EUT：	laminator	Model Name：	FN333
Temperature	24 ℃	Relative Humidity：	55%
Pressure：	1025hPa	Test Polarity :	Vertical
Test Mode	Mode1	Test Voltage:	AC120V

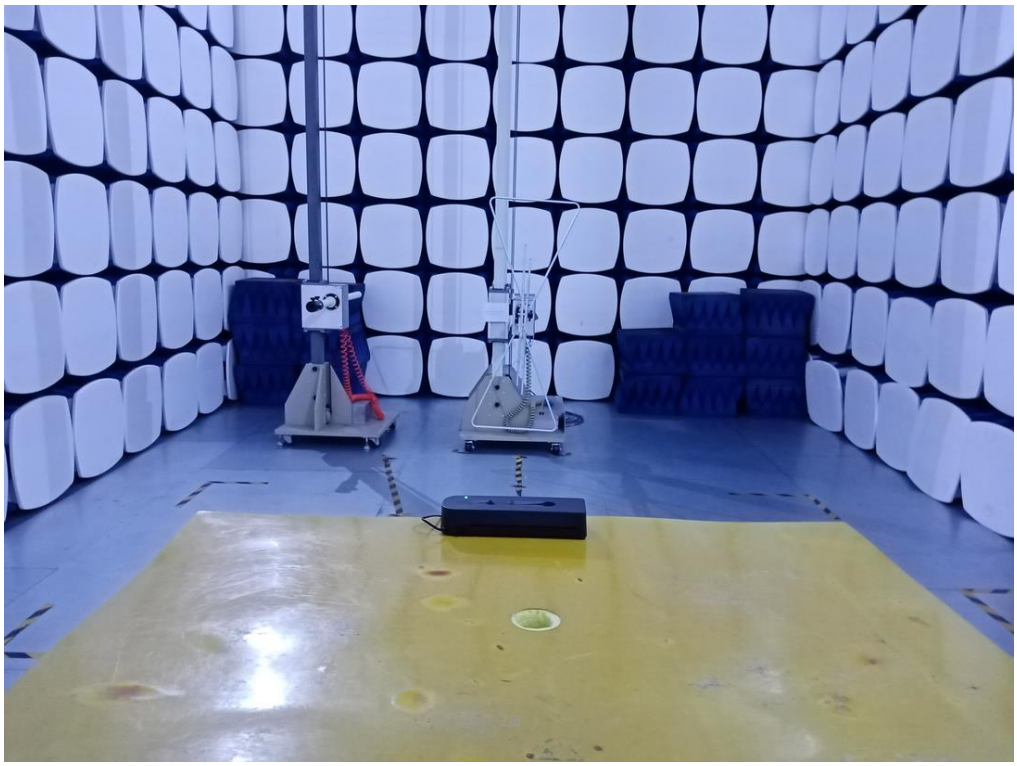


No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	cm	degree	Comment
1	*	81.2117	37.32	-19.32	18.00	40.00	-22.00	QP			
2		106.7587	29.90	-15.42	14.48	43.50	-29.02	QP			
3		171.9946	38.71	-17.54	21.17	43.50	-22.33	QP			
4		275.1570	36.19	-13.31	22.88	46.00	-23.12	QP			
5		344.3855	32.36	-11.58	20.78	46.00	-25.22	QP			
6		629.4772	25.58	-5.83	19.75	46.00	-26.25	QP			

APPENDIX B – EUT PHOTOGRAPHS



APPENDIX B - TEST SETUP PHOTOGRAPHS



※※※※※ **END OF REPORT** ※※※※※

Examination Certificate of SiCT

CERTIFICATE

of Conformity

UKCA Directive
Electromagnetic Compatibility Regulations 2016

Certificate No.: XK2112013045C

Applicant	:	**Hubei Fangnuo Technology Co., Ltd** North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China
Manufacturer	:	**Hubei Fangnuo Technology Co., Ltd** North Jinghan Street, Xintan Town, Honghu City, Wuhan Economic and Technological Development Zone, Hubei Province, China
Product	:	**laminator**
Model No.	:	**FN333, FN335, FN336, FN337, FN338, FNL001, FNL002, FNL003, FNL004, FNL005, FNL006, FNL007, FNL008, FNL009, FNL010, FNL011, FNL012, FNL013, FNL014, FNL015**
Brand Name	:	**/**
Test Standard	:	**BS EN 55014-1:2017+A11:2020** **BS EN 55014-2:2020** **BS EN IEC 61000-3-2:2019** **BS EN 61000-3-3-2013+A1:2019**

The certificate of conformity is based on an evaluation of a sample of the above mentioned product. Technical report is at the applicant disposal. This is to certify the tested sample that is in conformity with the regulation Electromagnetic Compatibility Regulations 2016 in relation to England and Wales and Scotland. It is only valid in connection with the test report number XK2112013045E.

The certificate does not imply the assessment of the production and does not permit using the SiCT's logo without permission.

UKCA

Authorized Signer: Andy Wang
Andy Wang/Manager
Date: **December 21, 2021**

Shenzhen SiCT Technology Co., Ltd.

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