TEST REPORT

中国认可
国际互认
检测
TESTING
CNAS L0262

Test Report No.: 20181011321

Applicant:	VTC Electronics (Shanghai) Corp.
Manufacturer:	VTC Electronics (Shanghai) Corp.
Factory:	VTC Electronics (Shanghai) Corp.
Name of the sample：	Indome Camera
Brand Name:	/
Model:	DE-NB10WT2812/DE-NB22WC2812/DF-NB12WCF280T/ DK-NB12DCF280CT/DK-NB22WC2812/MD4A417028F12

Test standard:
See page 2 General product information

Test Result: PASS

Date of test: Dec. 20, 2018 to Dec. 24, 2018

Tested by: Cheng Zhaoping **Checked by:** He Fei

Approved by: Qin Feng **Date:** Jan. 11, 2019

Issued By: Jiangsu Electronic Information Product Quality Supervision & Inspection Institute

LAB Address: No.100 Jinshui Road, WuXi, Jiangsu, P.R.China

检验检测专用章

Test item description:

Model/Type reference:	DE-NB10WT2812/DE-NB22WC2812/DF-NB12WCF280T DK-NB12DCF280CT/DK-NB22WC2812/MD4A417028F12
Ratings:	Input: 100~240VAC, 50-60Hz, 0.7A, DC output: 12V, 2A Input:AC220-230V, 50Hz, Output: AC24V, 3000mA

Possible test case verdicts:

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

General product information:

Test standard:

EN55032: 2015+AC: 2016 Electromagnetic compatibility of multimedia equipment -Emission requirements

EN55011:2016 Industrial, scientific and medical equipment – Radio-frequency disturbance characteristics – Limits and methods of measurement

EN55024: 2010 Information technology equipment - Immunity characteristics - Limits and methods of measurement

EN50130-4:2011 Alarm systems – Part 4: Electromagnetic compatibility – Product family standard: Immunity requirements for components of fire, intruder, hold up, CCTV, access control and social alarm systems

IEC61000-4-2:2008 Electromagnetic compatibility (EMC) Part 4-2: Testing and measurement techniques-Electrostatic discharge immunity test

IEC61000-4-3:2010 Electromagnetic compatibility (EMC) Part-4-3: Testing and measurement techniques - Radiated radio-frequency electromagnetic field immunity test

IEC61000-4-4:2012 Electromagnetic compatibility (EMC) Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test

IEC61000-4-5:2014 Electromagnetic compatibility (EMC) Part 4-5: Testing and measurement techniques – Surge immunity test

IEC61000-4-6:2013 Electromagnetic compatibility (EMC) Part-4-6: Testing and measurement techniques – Immunity to conducted disturbances induced by radio-frequency fields

IEC61000-4-8:2009 Electromagnetic compatibility (EMC) Part-4-8: Testing and measurement techniques – Power frequency magnetic field immunity test

IEC61000-4-11:2004 Electromagnetic compatibility (EMC) Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests

EN61000-3-2:2014 Electromagnetic compatibility (EMC) Part 3-2: Limits-Limitation For harmonic current emissions (equipment input current <=16A per phase)

EN61000-3-3:2013 Electromagnetic compatibility (EMC) Part 3-3: Limits-Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current<=16A par phase and not subject to conditional connection

STATEMENT

1.This test report is invalid if it is without special inspection seal of the test laboratory.

2.This test report is invalid if altered or without compilation and audit or not signed by the authorized signature.

3.This test report shall not be reproduced in full or partial without the written consent of Jiangsu Electronic Information Product Quality Supervision and Inspection Institute.

4. The information about the samples in the report is provided by the customer, who is responsible for its authenticity. The test results are only responsible for the tested samples.

5. The agency does not bear legal liability to the data provided by the customer.

6. If you have any question or comment, please bring them to our attention within 15 days fromthe date of report receipt.(Please lodge them to the assignment department if the task is consigned by the government.)

7. In this test report, EN55032: 2015+AC: 2016, EN55011:2016 and EN50130-4:2011standard are not approved by CNAS.

8. In this test report, XXX project is a subcontracted project. The sub-contractor has been approved by CNAS.(the certificate number is XXXX) (when applicable)

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1 CLIENT INFORMATION

Applicant: VTC Electronics (Shanghai) Corp.

Company name: VTC Electronics (Shanghai) Corp.

Brand Name: /

Address: No.255, JinChang Road, Anting JiaDing District, Shanghai

Telephone Number: 86-021-39508955

Facsimile Number: /

Contact Person: Lu Junchao

2 EQUIPMENT UNDER TEST (EUT)

2.1 Identification of EUT

Type of Equipment: Indome Camera

Trade Name: /

Model No.: DE-NB10WT2812/DE-NB22WC2812/DF-NB12WCF280T
DK-NB12DCF280CT/DK-NB22WC2812/MD4A417028F12

Rating: Input: 100~240VAC, 50-60Hz, 0.7A, DC output: 12V, 2A
Input: AC220-230V, 50Hz, Output: AC24V, 3000mA

Receipt Date of Sample: Nov. 22, 2018

2.2 Additional information about the EUT

The corresponding relationship between the manufacturer internal model and the official model of the EUTs is as follows:

manufacturer internal model	official model
DE-NAABWCV1AC	DE-NB10WC2812
DE-NAABWTV1AC	DE-NB10WT2812
DE-NAABWTV3AC	DE-NB10WT2406
DF-NAA1WCF4AA	DF-NB12WCF280T
DF-NAA1WCF1AA	DF-NB12WCF360T
DF-NAA1WTF4AA	DF-NB12WTF280T

DF-NAA1WCV1AC	DF-NB12WC2812T
DF-NAA1WTV1AC	DF-NB12WT2812T
DK-NAA1WCF4AB	DK-NB12DCF280CT
DK-NAADWCV1AA	MD4A417028F12
DK-NAADBCV1AA	MD4A417028F12B

The difference between them is as follows:

EUT Model	Power Board model	Rating
DE-NB10WT2812	V711-DES70-000	DC 12V
DF-NB12WCF280T	N/A	DC 12V
DK-NB12DCF280CT	V711-52612-CF1	DC 12V
MD4A417028F12	V711-52622-CF2	AC 24V/DC 12V

The EUTs DE-NB10WT2812, DF-NB12WCF280T and DK-NB12DCF280CT are rated DC12V, 2A, supplied by an adapter AX024-12ADF. The EUT DK-NB12DCF280CT is rated AC24V, 3000mA, supplied by an adapter WT043001390.

In this report，the product DK-NB12DCF280CT is performed to main test.

3 TEST SPECIFICATIONS

3.1 Standards

EN55032: 2015+AC: 2016 Electromagnetic compatibility of multimedia equipment - Emission requirements

EN55024: 2010 Information technology equipment ---- Immunity characteristics ---- Limits and methods of measurement

IEC61000-4-2:2008 Electromagnetic compatibility (EMC) Part 4-2: Testing and measurement techniques-Electrostatic discharge immunity test

IEC61000-4-3:2010 Electromagnetic compatibility (EMC) Part-4-3: Testing and measurement techniques - Radiated radio-frequency electromagnetic field immunity test

IEC61000-4-4:2012 Electromagnetic compatibility (EMC) Part 4-4: Testing and measurement techniques – Electrical fast transient/burst immunity test

IEC61000-4-5:2014 Electromagnetic compatibility (EMC) Part 4-5: Testing and measurement techniques – Surge immunity test

IEC61000-4-6:2013 Electromagnetic compatibility (EMC) Part-4-6: Testing and measurement techniques – Immunity to conducted disturbances induced by radio-frequency fields

IEC61000-4-8:2009 Electromagnetic compatibility (EMC) Part-4-8: Testing and measurement techniques – Power frequency magnetic field immunity test

IEC61000-4-11:2004 Electromagnetic compatibility (EMC) Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests

EN61000-3-2:2014 Electromagnetic compatibility (EMC) Part 3-2: Limits-Limitation For harmonic current emissions (equipment input current <=16A per phase)

EN61000-3-3:2013 Electromagnetic compatibility (EMC) Part 3-3: Limits-Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current<=16A par phase and not subject to conditional connection

3.2 Additions, deviations and exclusions from standards

No additions, deviations or exclusions have been made from standard.

3.3 Purpose of the test

To determine if whether the equipment under test fulfils the EMC requirement of the standards stated section 3.1

3.4 Test Summary

Item	Test procedure	Specification	Performance criterion	Results
Surges	IEC61000-4-5:2014 EN55024:2010 EN50130-4:2011	1kV differential mode 2kV common mode	B	Pass
Electrostatic discharge	IEC61000-4-2:2009 EN55024:2010 EN50130-4:2011	4kV (contact discharge) 8kV (air discharge)	B	Pass
Fast transients bursts susceptibility test	IEC61000-4-4:2012 EN55024:2010 EN50130-4:2011	1kV Power port	B	Pass
Radio-frequency continuous conducted	IEC61000-4-6:2013 EN55024:2010 EN50130-4:2011	0.15-80MHz 3V 80%AM (1kHz)	A	Pass

Radio-frequency electromagnetic field	IEC61000-4-3:2010 EN55024:2010 EN50130-4:2011	80-1000MHz 3V/m 80%AM (1kHz)	A	Pass
Conducted disturbance	EN55032:2015+AC:2016 EN55011:2016	Class B	N/A	Pass
Radiated disturbance (3M Semi-anechoic chamber)	EN55032:2015+AC:2016 EN55011:2016	Class B	N/A	Pass
Voltage dips,short interruptions and voltage variations	IEC61000-4-11:2004 EN55024:2010 EN50130-4:2011	>95% reduction 0,5 periods	B	Pass
		60% reduction 25 periods	B	Pass
		>95% reduction 250 periods	C	Pass
Radio-frequency magnetic field	IEC61000-4-8:2009 EN55024:2010 EN50130-4:2011	1A/m (r.m.s)	A	Pass
Harmonic current	EN61000-3-2:2014	Class A	N/A	N/A
Voltage fluctuation and flicker	EN61000-3-3:2013	Clause 5	N/A	Pass

3.5 Environmental Conditions

Temperature: 16.3~23.2℃ Humidity: 38.8~52.0% Atmospheric pressure: 100.4kPa

3.6 Test equipments

No	Item	Type	Serial No.	Manufacture	Calibrated Due
1	Shielded room	PB-4.4m×7.9m×2.8m	PB-04	P.R.China	2019-2-7
2	Semi-anechoic chamber	FACT-3	601	LINDGREN	2019-2-24
3	Shielded room	PB-7.7m×3.5m×3.3m	PB-06	P.R.China	2019-2-7
4	Semi-anechoic chamber	RFD-F/A-100	4400	LINDGREN	2019-4-29
5	Shielded room	PB-4.95m×4m×3.3m	PB-05	P.R.China	2019-2-7
6	EMI test receiver	ESCI7	100820	R&S	2019-2-24
7	EMI test receiver	ESU	100186	R&S	2019-4-29
8	Artificial mains	ENV216	100497	R&S	2019-2-24
9	BILOG antenna	3142C	00098968	ETS	2020-5-22
10	Static discharge tester	ONYX	181979	HAEFELY	2019-8-30

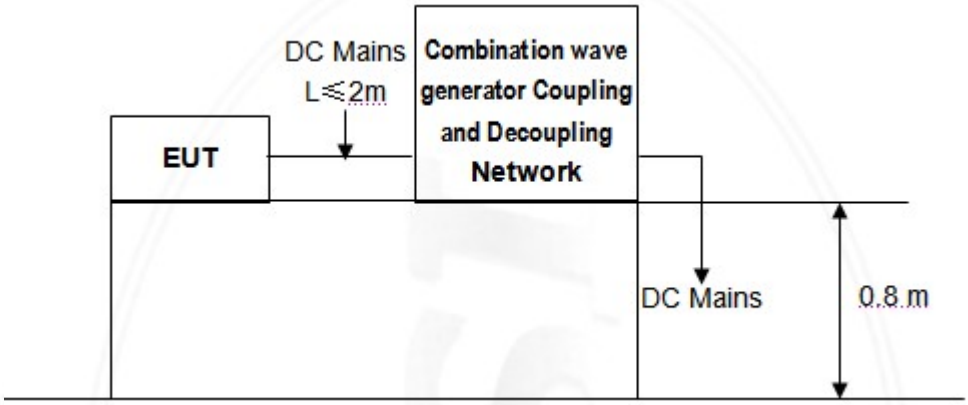
11	TS9980 test system	TS9980	1014.4074.02	R&S	2019-6-8
12	RS test system	/	/	R&S	2019-5-8
13	Multi function test system	AXOS5	181909	HAEFELY	2019-4-2
14	Magnetic field test system	MAG100.1	080938-04	HAEFELY	2019-4-7
15	Power frequency interference test system	PHF555	081457-04	/	2019-7-10
16		DPA500	V0626101549	/	2019-7-10
17	Preamplifier	BBV 9745	BBV 9745 #42	Schwarzbeck	2019-4-29
18	Horn antenna	BBHA 9120D	1274	Schwarzbeck	2020-5-22

NOTE: R&S ROHDE&SCHWARZ

4 Test requirement / Results

4.1 Surges

4.1.1Test set-up



(For the actual test configuration, please refer to the related item – Photographs of the Test Configuration)

The EUT was placed on a non-metallic support 0,8m above a reference ground plane and was put into operation according to the specified operating mode.

4.1.2 Test conditions& Result

4.1.2.1 Power Input terminal

Test part: Power Input terminal

Test port: L-N

Test voltage: 1.0kV, 1.2/50μs (Tr /Td)

Polarity/times: 5 negative pulse; 5 positive pulse

Repetition rate: 60sec

Test phenomenon: Normal performance

Criteria: B

Result：Pass

Test part: Power Input terminal

Test port: L-PE, N-PE

Test voltage: 2.0kV, 1.2/50μs (Tr /Td)

Polarity/times: 5 negative pulse; 5 positive pulse

Repetition rate: 60sec

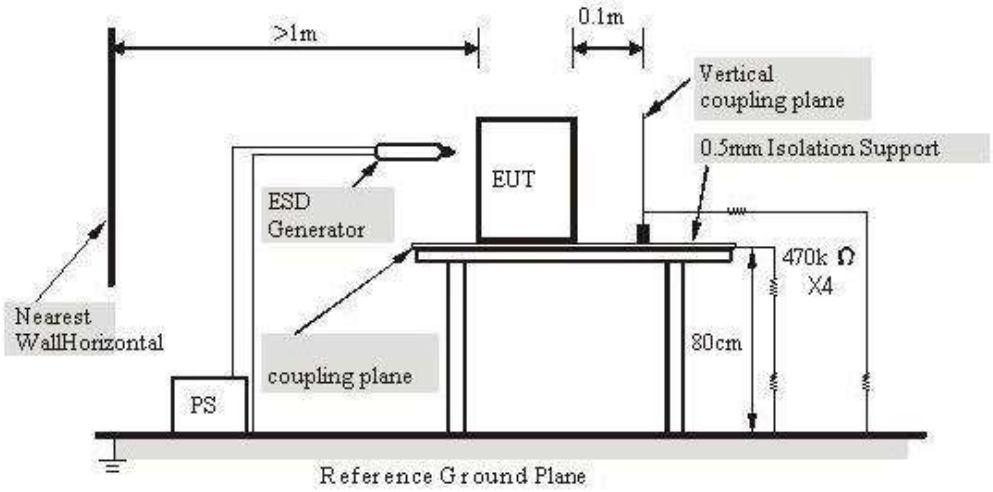
Test phenomenon: Normal performance

Criteria: B

Result：Pass

4.2 Electrostatic discharge

4.2.1Test set-up



(For the actual test configuration, please refer to the related item – Photographs of the Test Configuration)

TABLE-TOP EQUIPMENT

The configuration consisted of a wooden table 0.8 meters high standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system. A Horizontal Coupling Plane (1.6m x 0.8m) was placed on the table and attached to the GRP by means of a cable with 940kΩtotal impedance. The equipment under test, was installed in a representative system as described in section 7 of IEC 61000-4-2, and its cables were placed on the HCP and isolated by an insulating support of 0.5mm thickness. A distance of 1-meter minimum was provided between the EUT and the walls of the laboratory and any other metallic structure.

FLOOR-STANDING EQUIPMENT

The equipment under test was installed in a representative system as described in section 7 of IEC61000-4-2, and its cables were isolated from the Ground Reference Plane by an insulating support of 0.1-meter thickness. The GRP consisted of a sheet of aluminum that is at least 0.25mm thick, and 2.5 meters square connected to the protective grounding system and extended at least 0.5 meters from the EUT on all sides.

4.2.2 Test conditions& Result

Discharge method: Air Discharge

Discharge voltage: 8 kV

Discharge times: 20 discharges at each test point

(10 at negative polarity and 10 at positive polarity)

Discharge port: Nonmetallic enclosure

Test phenomenon: Normal performance

Criterion: B

Result：Pass

Discharge method: Indirect Contact discharge

Discharge voltage: 4 kV

Discharge times: 20 discharges at each test point

(10 at negative polarity and 10 at positive polarity)

Discharge port: Horizontal coupled plates / Vertical coupled plates

Test phenomenon: Normal performance

Criterion: B

Result：Pass

Discharge method: Direct Contact discharge

Discharge voltage: 4 kV

Discharge times: 20 discharges at each test point

(10 at negative polarity and 10 at positive polarity)

Discharge port: Accessible metallic enclosure

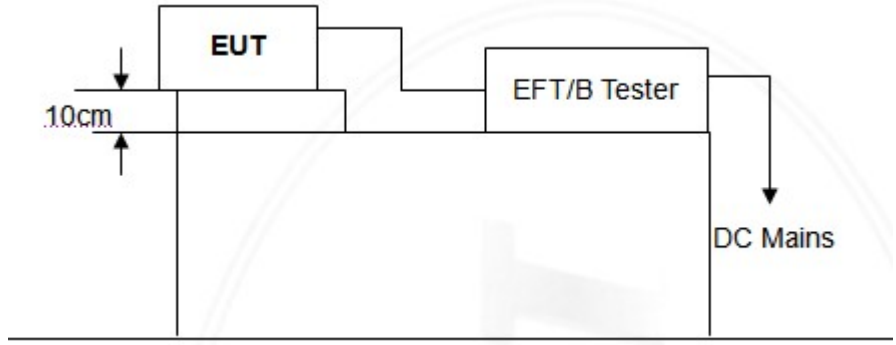
Test phenomenon: Normal performance

Criterion: B

Result：Pass

4.3 Fast transients bursts susceptibility test

4.3.1Test set-up



(For the actual test configuration, please refer to the related item – Photographs of the Test Configuration)

TABLETOP EQUIPMENT

The configuration consisted of a wooden table (0.8m high) standing on the Ground Reference Plane. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system. A minimum distance of 0.5m was provided between the EUT and the walls of the laboratory or any other metallic structure.

FLOOR STANDING EQUIPMENT

The EUT installed in a representative system as described in section 7 of IEC 61000-4-4 and its cables, were isolated from the Ground Reference Plane by an insulating support that is 0.1-meter thick. The GRP consisted of a sheet of aluminum (at least 0.25mm thick and 2.5m square) connected to the protective grounding system.

4.3.2 Test conditions& Result

4.3.2.1 Power input terminal

Test part: Power Input terminal

Test port: L-Ground、 N-Ground、LN-Ground

Test setting: 1.0kV (peak); 5/50ns (Tr/Td); 5 kHz

Test time: 1min each at negative and positive polarity

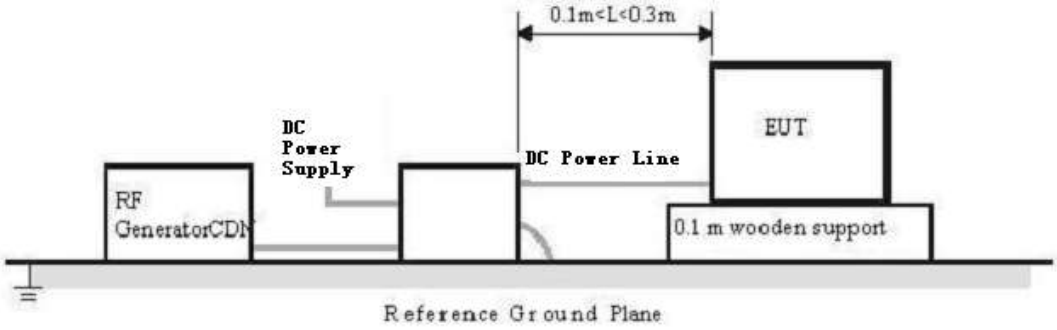
Test phenomenon: Normal performance.

Criterion: B

Result: Pass

4.4 Radio-frequency continuous conducted

4.4.1 Test set-up



(For the actual test configuration, please refer to the related item – Photographs of the Test Configuration)

The EUT was placed on a non-metallic support 0,1m above a reference ground place (RGP) with the coupling / decoupling networks (CDN) placed 0,3m from the EUT on the RGP.

<or if clamp is used>

The injection clamp was placed 0,3m from the EUT on the RGP.

4.4.2 Test conditions& Result

4.4.2.1 Power Input terminal

Test part: Power Input terminal

Test port: Positive- Negative

Level (e.m.f.): 3V (r.m.s.)

Frequency range: 0.15MHz—80MHz

Amplitude modulation signal: 80% AM (1kHz)

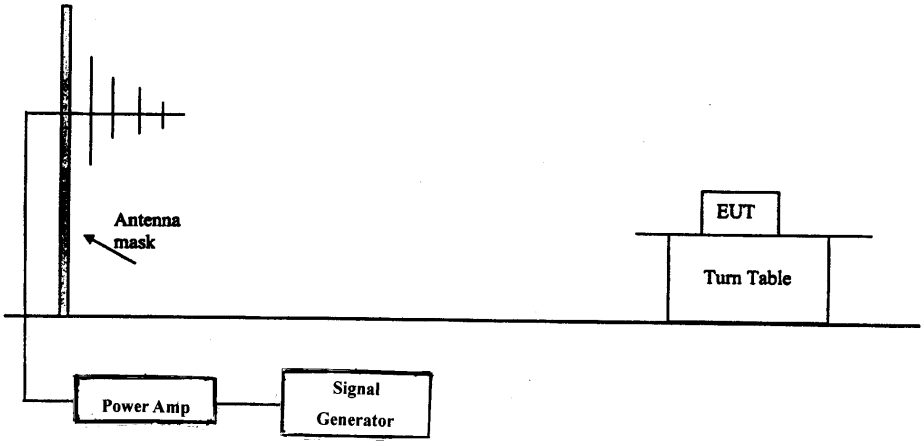
Test phenomenon: Normal performance.

Criterion: A

Result： Pass

4.5 Radio-frequency electromagnetic field

4.5.1 Test set-up



(For the actual test configuration, please refer to the related item – Photographs of the Test Configuration)

4.5.2 Test conditions& Result

Level (e.m.f.): 3V/m

Frequency range: 80MHz—1000MHz

Amplitude modulation signal: 80% AM (1 kHz)

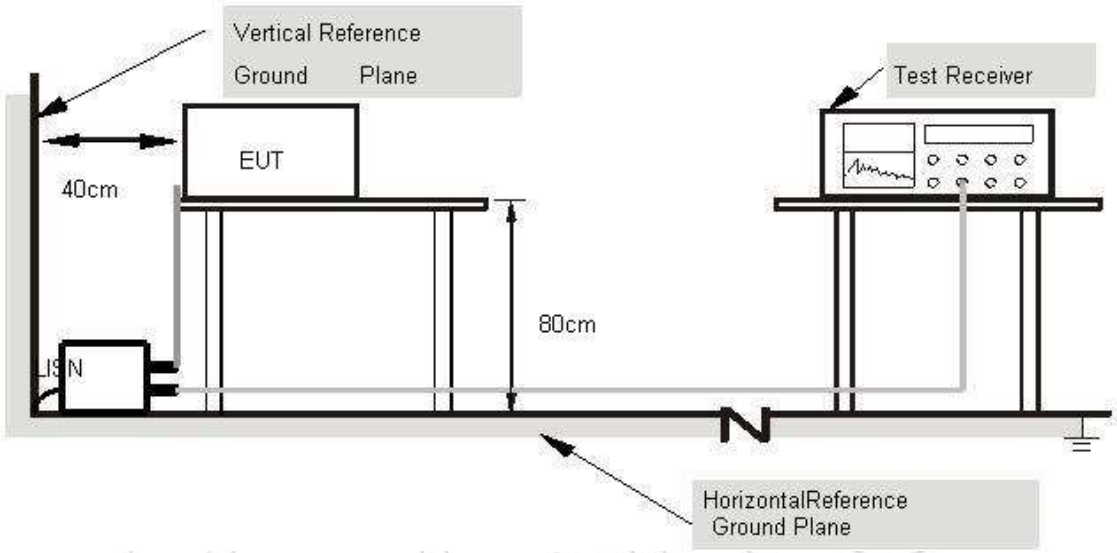
Test phenomenon: Normal performance

Criterion: A

Result：Pass

4.6 Conducted disturbance

4.6.1Test set-up



(For the actual test configuration, please refer to the related item – Photographs of the Test Configuration)

The mains terminal disturbance voltage was measured with the equipment under test (EUT) in a screened room.

The EUT was placed on a 0,8m high non-metallic table above a 2m by 2m in size ground reference plane (GRP), and keeps a distance of at least 0.8m from any of the other metallic surface.

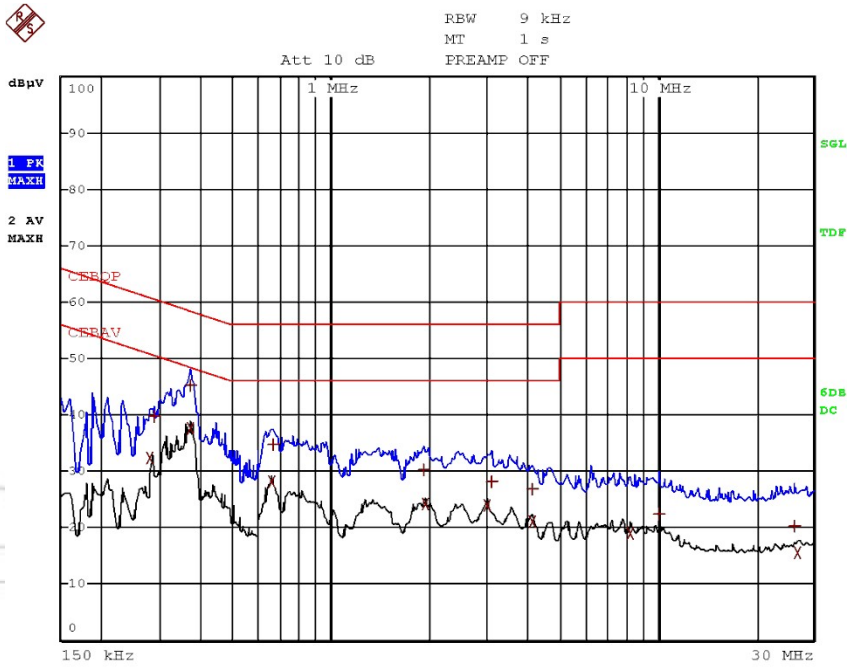
The mains lead was arranged to follow the shortest possible path between the receiver and artificial mains network on the ground. The mains lead in excess of 0,8 m separating the equipment under test from the artificial mains network was folded back and forth parallel to the lead so as to form a bundle with a length of 0,3 m to 0,4 m. Earthing of the EUT if provided with a safety earth connection, shall be made to the earth terminal provided on the artificial mains network with the shortest possible lead.

Amplitude measurements were performed with a quasi-peak detector and, if required, with an average detector.

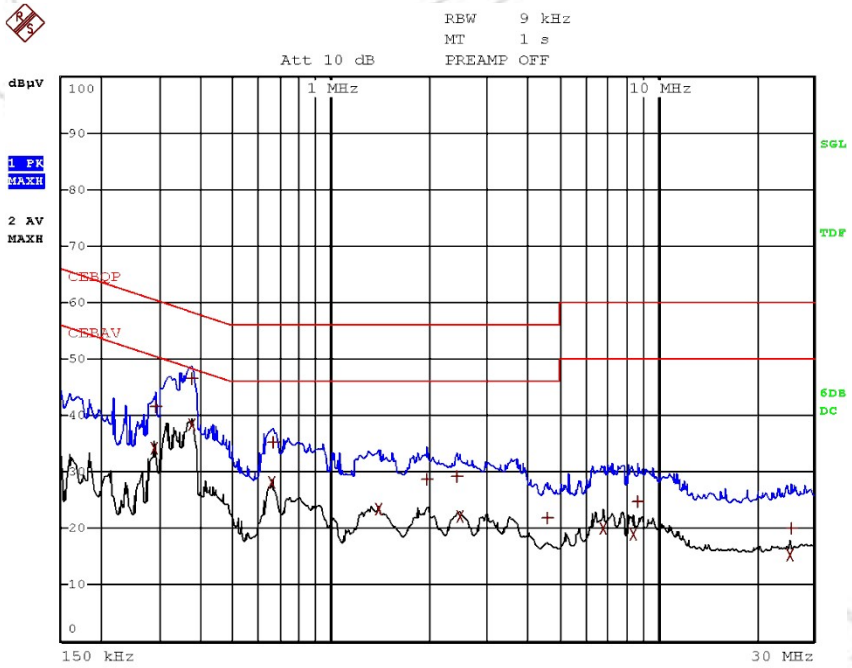
4.6.2 Test curve:

EUT model: DE-NB10WT2812

L:

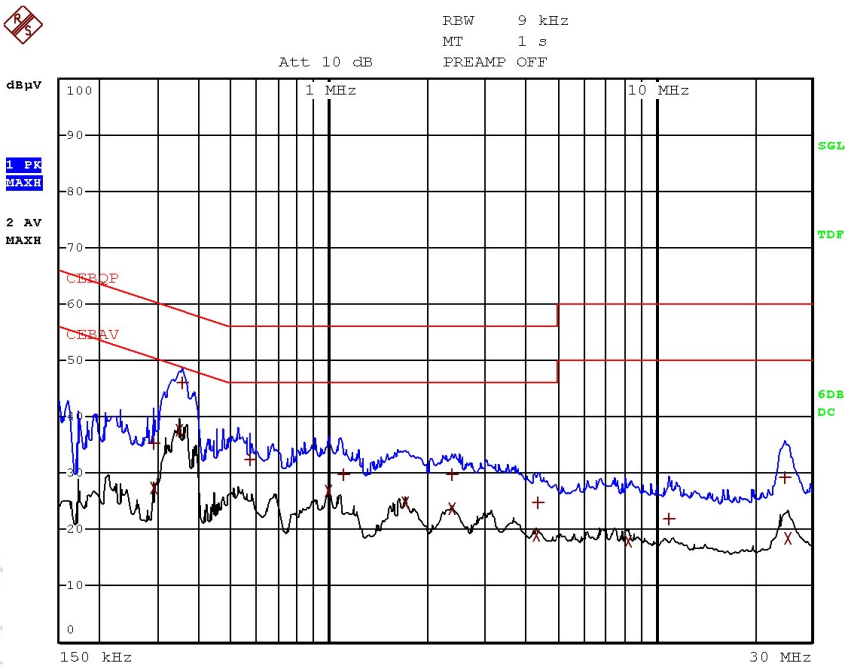


N:



EUT model: DF- NB12WCF280T

L:



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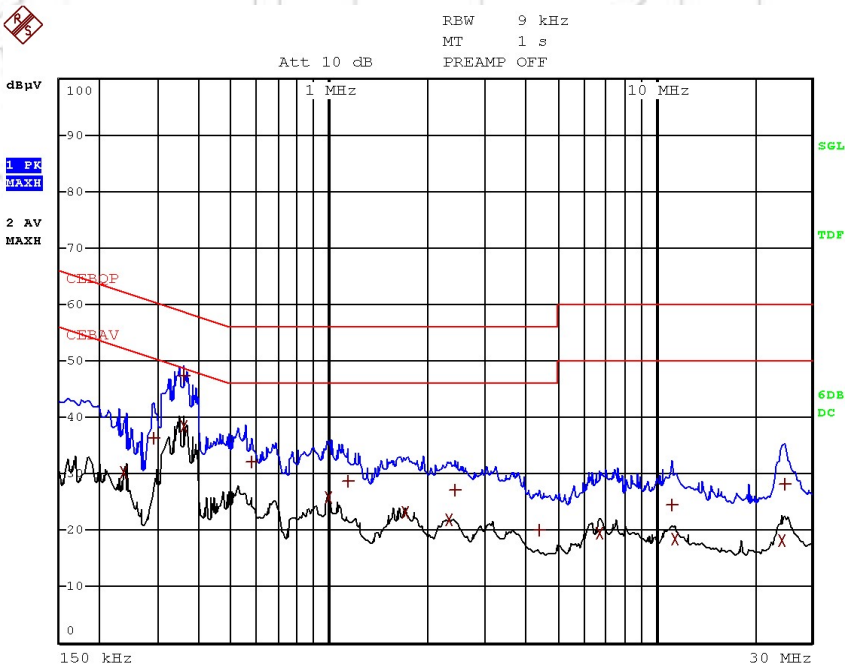
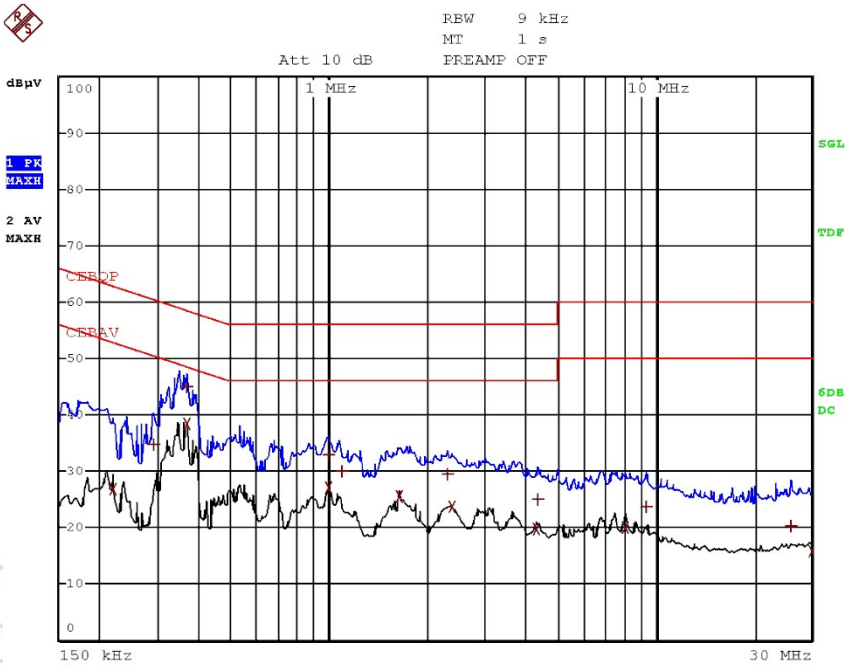


EUT model: DK-NB12DCF280CT

L:



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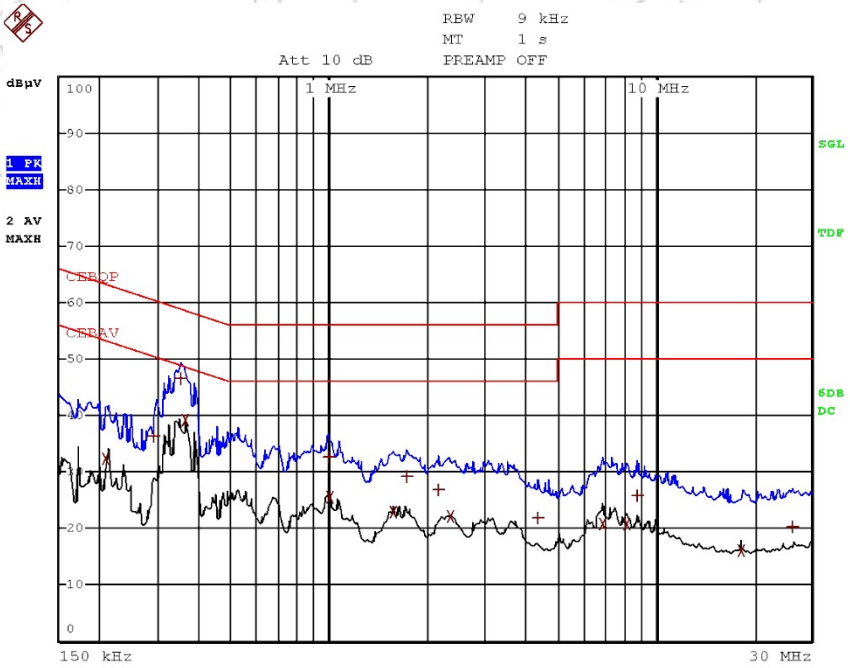
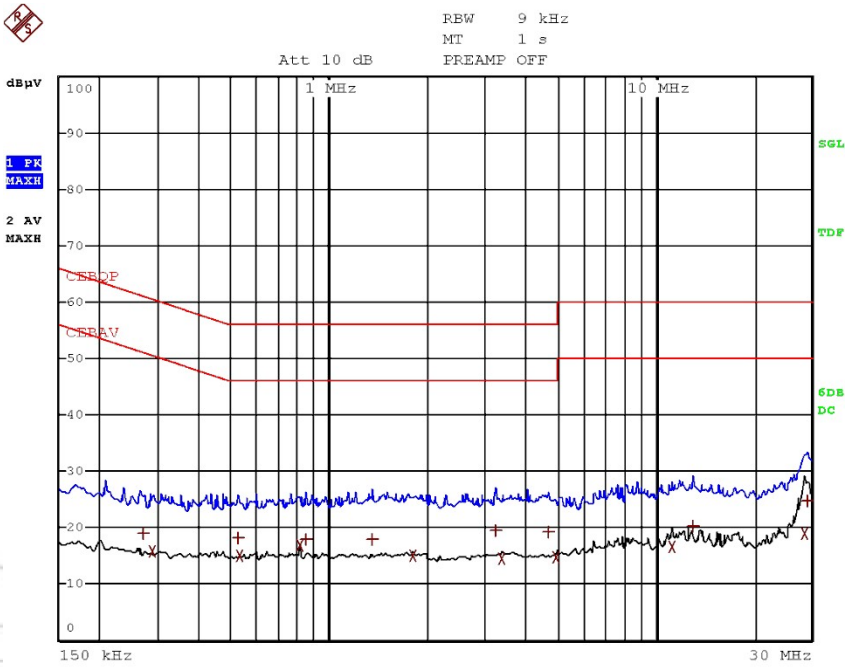
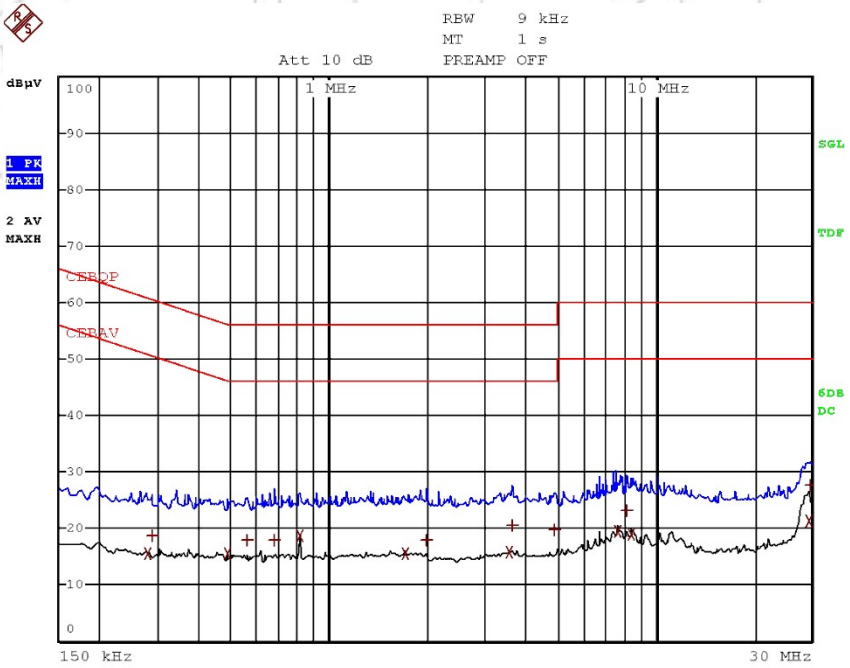


EUT model: MD4A417028F12

L:



N:



4.6.3 Test data:

EUT model: DE-NB10WT2812

Conducted disturbance test data

Quasi-Peak(dB μ V)			Average(dB μ V)		
Frequency (MHz)	Limits (dB μ V)	Result (dB μ V)	Frequency (MHz)	Limits (dB μ V)	Result (dB μ V)
0.3740	58.4	46.6	0.3740	48.4	38.6
0.2900	60.5	41.7	0.2860	50.6	34.3
0.6620	56.0	35.2	0.6580	46.0	28.2

NOTE: The test frequency obtained by the test curve

Result：Pass

EUT model: DF-NB12WCF280T

Conducted disturbance test data

Quasi-Peak(dB μ V)			Average(dB μ V)		
Frequency (MHz)	Limits (dB μ V)	Result (dB μ V)	Frequency (MHz)	Limits (dB μ V)	Result (dB μ V)
0.3580	58.8	47.5	0.3580	48.8	38.5
0.5780	56.0	32.3	0.9940	46.0	25.8
0.2900	60.5	36.3	0.2380	52.2	30.3

NOTE: The test frequency obtained by the test curve

Result：Pass

EUT model: DK-NB12DCF280CT

Conducted disturbance test data

Quasi-Peak(dB μ V)			Average(dB μ V)		
Frequency (MHz)	Limits (dB μ V)	Result (dB μ V)	Frequency (MHz)	Limits (dB μ V)	Result (dB μ V)
0.3500	59.0	46.6	0.3620	48.7	39.4
0.9940	56.0	32.8	1.0020	46.0	25.5
0.2900	60.5	36.3	0.2100	53.2	32.4

NOTE: The test frequency obtained by the test curve

Result：Pass

EUT model: MD4A417028F12

Conducted disturbance test data

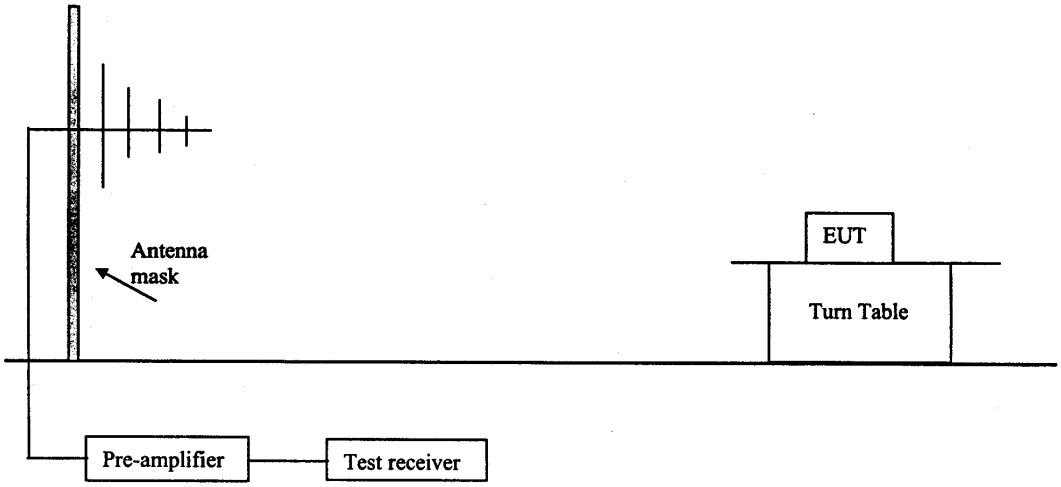
Quasi-Peak(dB μ V)			Average(dB μ V)		
Frequency (MHz)	Limits (dB μ V)	Result (dB μ V)	Frequency (MHz)	Limits (dB μ V)	Result (dB μ V)
0.15~0.5	66.0~56.0	<36.0	0.15~0.5	56.0~46.0	<26.0
0.5~5	56.0	<36.0	0.5~5	46.0	<26.0
5~30	60.0	<40.0	5~30	50.0	<30.0

NOTE: The test frequency obtained by the test curve

Result：Pass

4.7 Radiated disturbance (3 m Semi-anechoic chamber)

4.7.1Test set-up



(For the actual test configuration, please refer to the related item – Photographs of the Test Configuration)

The measurement was applied in a semi-anechoic shielded chamber.

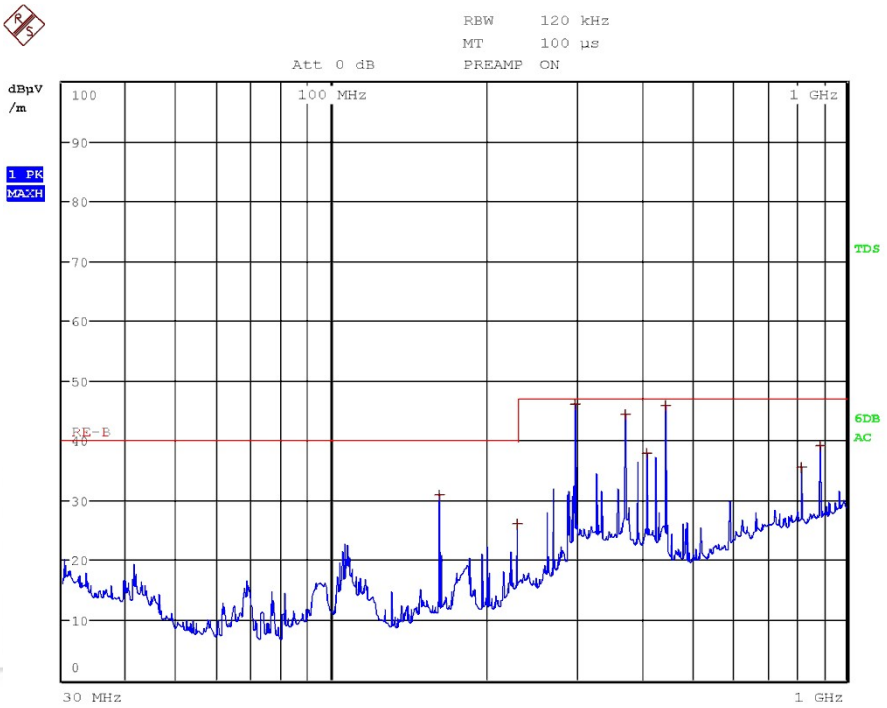
The EUT and simulators were placed on a 0,8m high wooden turntable above the horizontal metal ground plane. The turntable can rotate 360 degrees in a horizontal plane. The EUT was set 3 meters away from the measuring antenna which was mounted on an antenna mask. The antenna can move up and down from 1 meter to 4 meters. The center of the measuring antenna and the center of receiver under test was in the same vertical plane. The mains cable was placed in the same plane and with the excess length folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0,3 m and 0,4 m at the mains-plug end.

Broadband antenna was used as receiving antenna. Both horizontal and vertical polarization of the antenna were set on measurement.

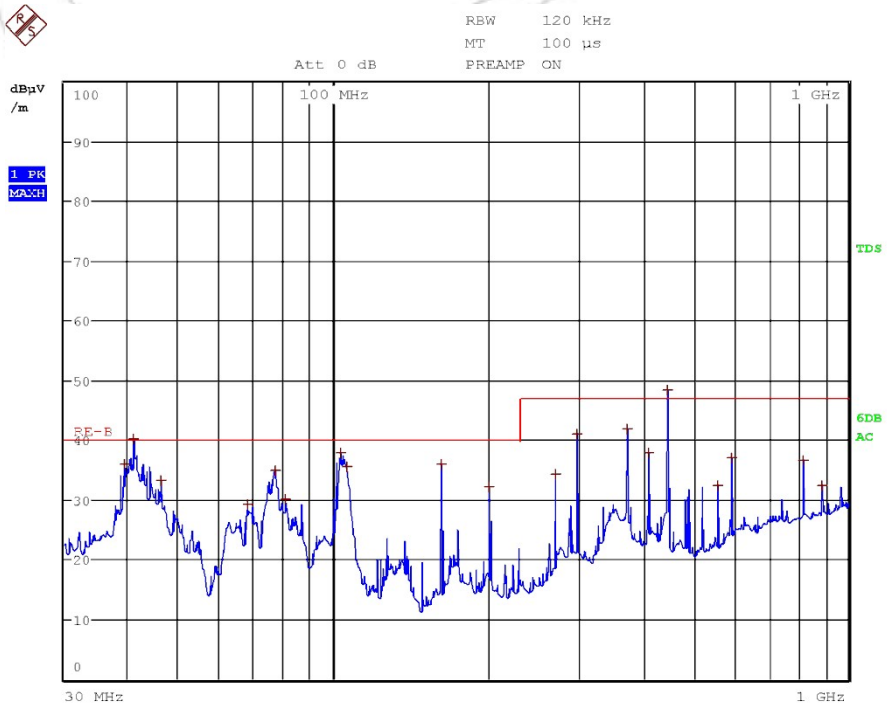
4.7.2 Test curve:

Radiated emissions at frequencies up to 1 GHz

Horizontal:

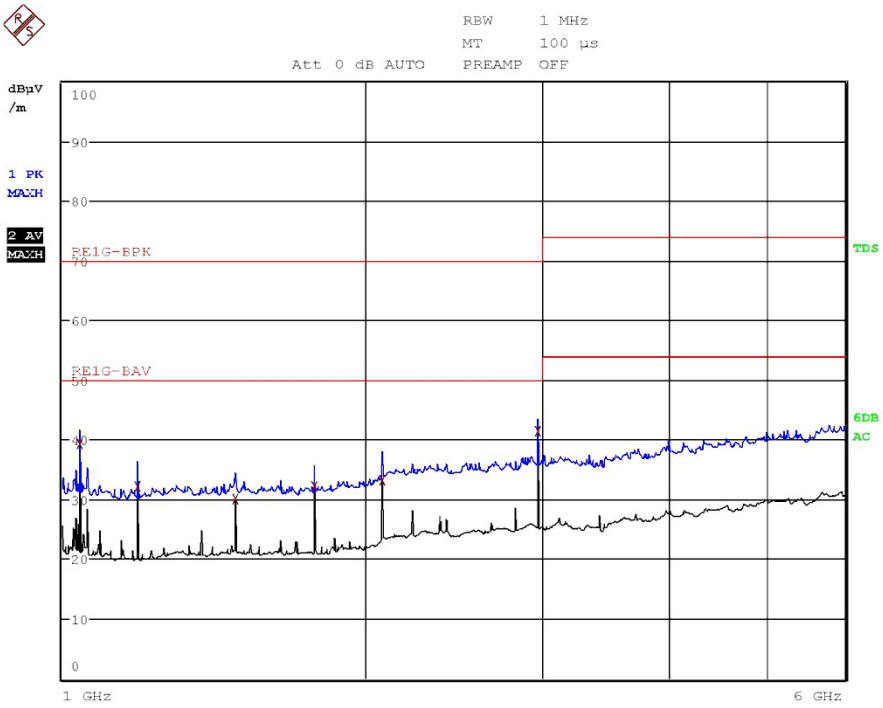


Vertical:

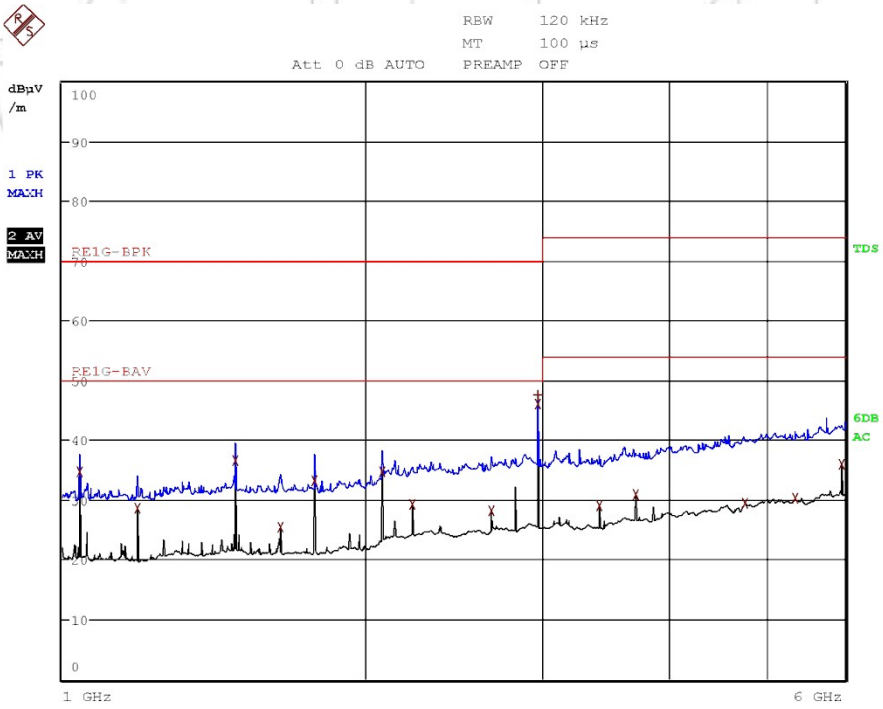


Radiated emissions at frequencies above 1 GHz

Horizontal:



Vertical:



4.7.3 Test data:

Test data at frequencies up to 1 GHz

Frequency（MHz）	polarization（Horizontal/ Vertical）	The height of antenna（cm）	The angle of turntable（°）	Test data(QP)（dBμv/m）	Limits(QP)（dBμv/m）
297.00	Horizontal	100.0	50.1	43.5	47.0
371.24	Horizontal	100.0	10.3	44.6	47.0
445.48	Horizontal	100.0	23.5	44.8	47.0
40.76	Vertical	100.0	0	32.3	40.0
102.96	Vertical	100.0	45.5	34.8	40.0
445.48	Vertical	100.0	52.8	44..7	47.0

NOTE: The test frequency obtained by the test curve

Test data at frequencies above 1 GHz

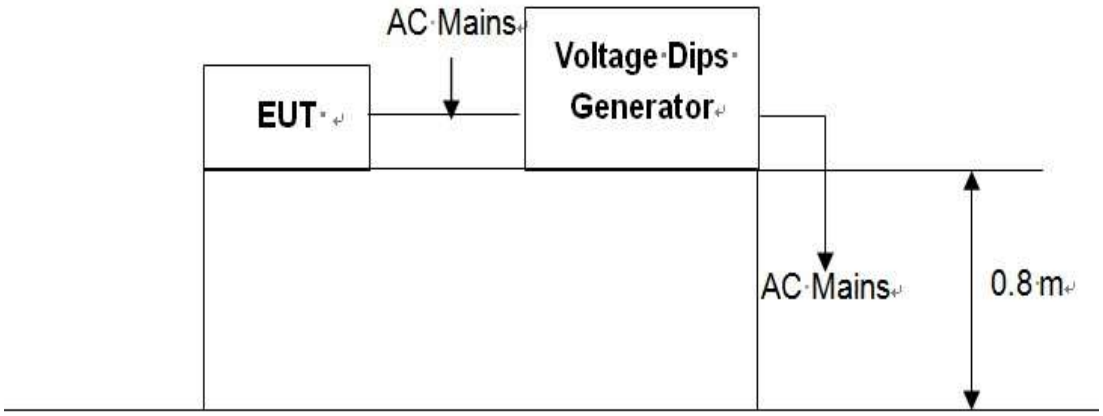
Frequency（GHz）	polarization（Horizontal/ Vertical）	The height of antenna（cm）	The angle of turntable（°）	Limits(AV)（dBμv/m）	Test data(AV)（dBμv/m）	Limits(PK)（dBμv/m）	Test data(PK)（dBμv/m）
1.0396	Horizontal	100.0	0	50.0	39.3	70.0	<50.0
2.0792	Horizontal	100.0	0	50.0	33.2	70.0	<50.0
2.9700	Horizontal	100.0	0	50.0	41.4	70.0	<50.0
1.4852	Vertical	100.0	0	50.0	36.6	70.0	<50.0
2.0792	Vertical	100.0	0	50.0	34.7	70.0	<50.0
2.9700	Vertical	100.0	0	50.0	46.1	70.0	<50.0

NOTE: The test frequency obtained by the test curve

Result: Pass

4.8 Voltage dips, Short interruptions and Voltage variations

4.8.1Test set-up



(For the actual test configuration, please refer to the related item – Photographs of the Test Configuration)

The shortest possible mains cable is used, unless otherwise specified by the manufacturer.

4.8.2 Test conditions& Result

Number of pulses: 3 circles at each level

Recovery time between pulses: 10s

4.8.3 Test data

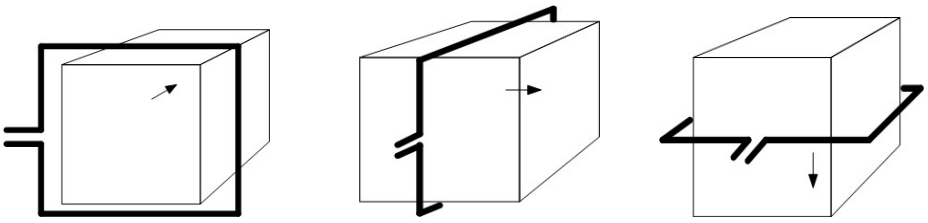
No.	Test Level [%]	Phase [°]	T event	Results	Remarks
1	0	0,90,180,270	0.5P	Pass	B
2	70	0,90,180,270	25P	Pass	B
3	0	0,90,180,270	250P	Pass	C

Result: Pass

4.9 Power frequency magnetic fields

4.9.1Test set-up

X: Y: Z:



(For the actual test configuration, please refer to the related item – Photographs of the Test Configuration)

The EUT was placed at the centre of the table.

TABLETOP EQUIPMENT

The equipment shall be subjected to the test magnetic field by using the induction coil of standard dimension (1 m x 1 m). The induction coil shall then be rotated by 90 degrees in order to expose the EUT to the test field with different orientations.

FLOOR-STANDING EQUIPMENT

The equipment shall be subjected to the test magnetic field by using induction coils of suitable dimensions. The test shall be repeated by moving and shifting the induction coils, in order to test the whole volume of the EUT for each orthogonal direction. The test shall be repeated with the coil shifted to different positions along the side of the EUT, in steps corresponding to 50 % of the shortest side of the coil. The induction coil shall then be rotated by 90 degrees in order to expose the EUT to the test field with different orientations.

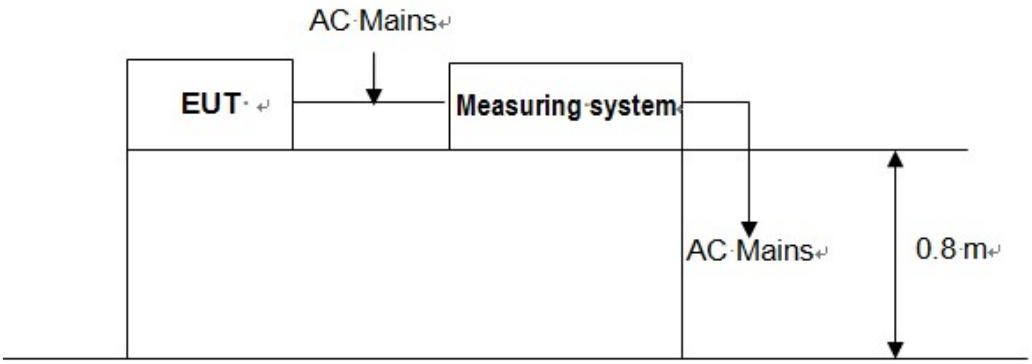
4.9.2 Test data

No.	Test Level[A/m]	Direction	Results	Remarks
1	1	X	Pass	A
		Y	Pass	
		Z	Pass	

Result: Pass

4.10 Harmonic Current

4.10.1Test set-up



(For the actual test configuration, please refer to the related item – Photographs of the Test Configuration)

Harmonics of the fundamental current were measured up to 40 order harmonics using a digital power meter with an analogue output and frequency analyzer which was integrated in the harmonic & flicker test system. 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.

The classification of EUT is according to section 5 of EN 61000-3-2.

The EUT is classified as follows:

Class A: Balanced three-phase equipment, Household appliances excluding equip-

ment as Class D, Tools excluding portable tools, Dimmers for incandescent lamps, audio equipment, equipment not specified in one of the three other classes.

Class B: Portable tools.; Arc welding equipment which is not professional equipment

Class C: Lighting equipment.

Class D: Equipment having a specified power less than or equal to 600 W of the following types: Personal computers and personal computer monitors and television receivers.

The measurements were carried out under steady conditions .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.

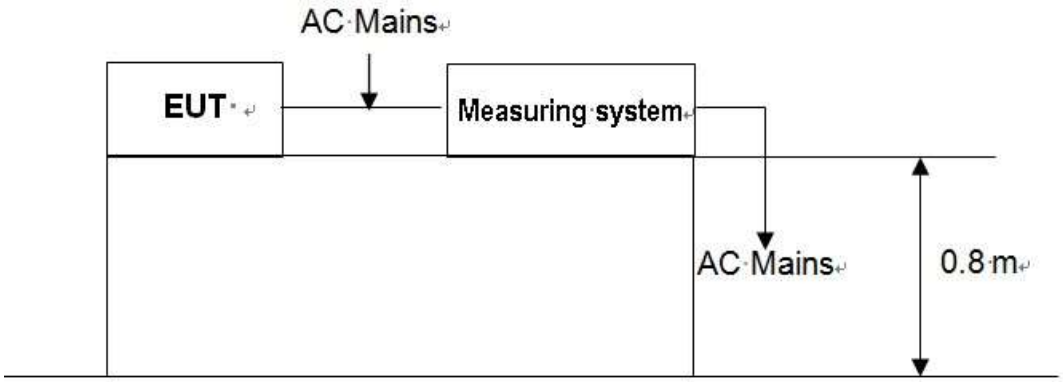
4.10.2 Test data

Equipment category:	Class A
Test Voltage:	AC 220V,50Hz
Test duration:	2.5min
Harmonic order:	2-40th
Active input power:	2.09W
Power factor:	0.377

Result: N/A

4.11 Voltage fluctuation and flicker

4.11.1Test set-up



(For the actual test configuration, please refer to the related item – Photographs of the Test Configuration)

Definition

Flicker: impression of unsteadiness of visual sensation induced by a lighting stimulus whose luminance or spectral distribution fluctuates with time.

Pst: Short-term flicker indicator The flicker severity evaluated over a short period (in minutes); Pst=1 is the conventional threshold of irritability

Plt: long-term flicker indicator; the flicker severity evaluated over a long period (a few hours) Using successive Pst values.

dc: the relative steady-state voltage change

dmax: the maximum relative voltage change

d(t): the value during a voltage change

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.

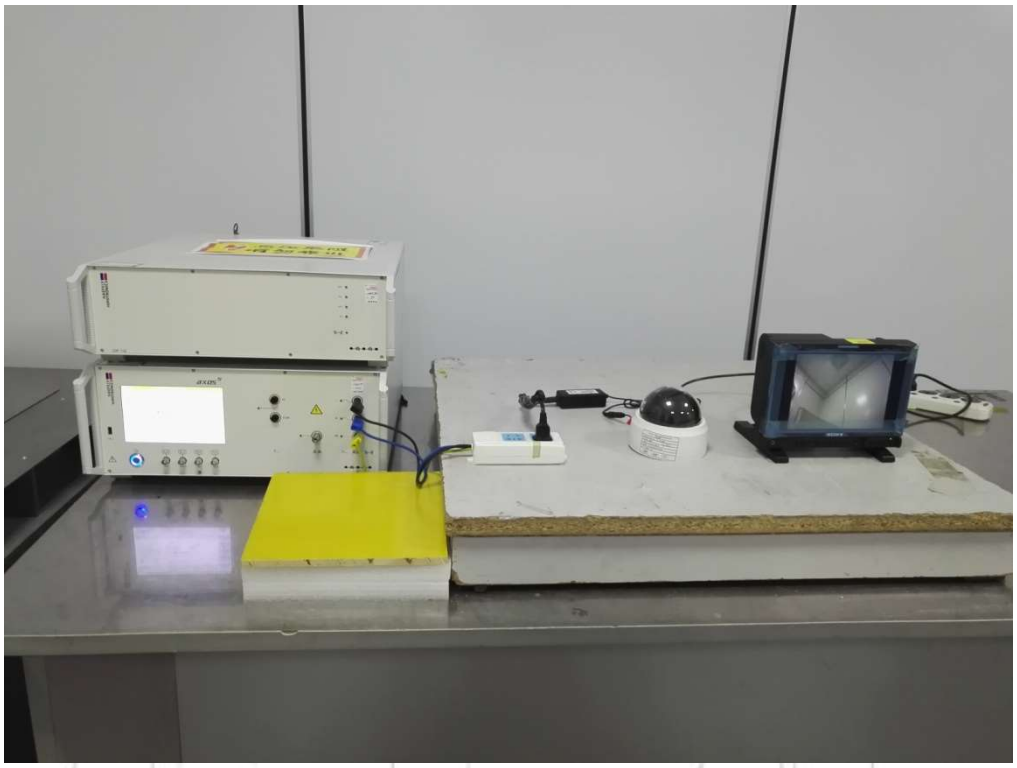
During the flick measurement, the measure time shall include that part of whole operation cycle in which the EUT produce the most unfavorable sequence of voltage changes. The observation period for short-term flicker indicator is 10 minutes and the observation period for long-term flicker indicator is 2 hours.

4.11.2Test data

	EUT values	Limit	Result
Pst	0.036	1.00	PASS
Plt	0.036	0.65	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.106	4.00	PASS
dt [s]	0.000	0.50	PASS

Result: Pass

5 Test set-up chart

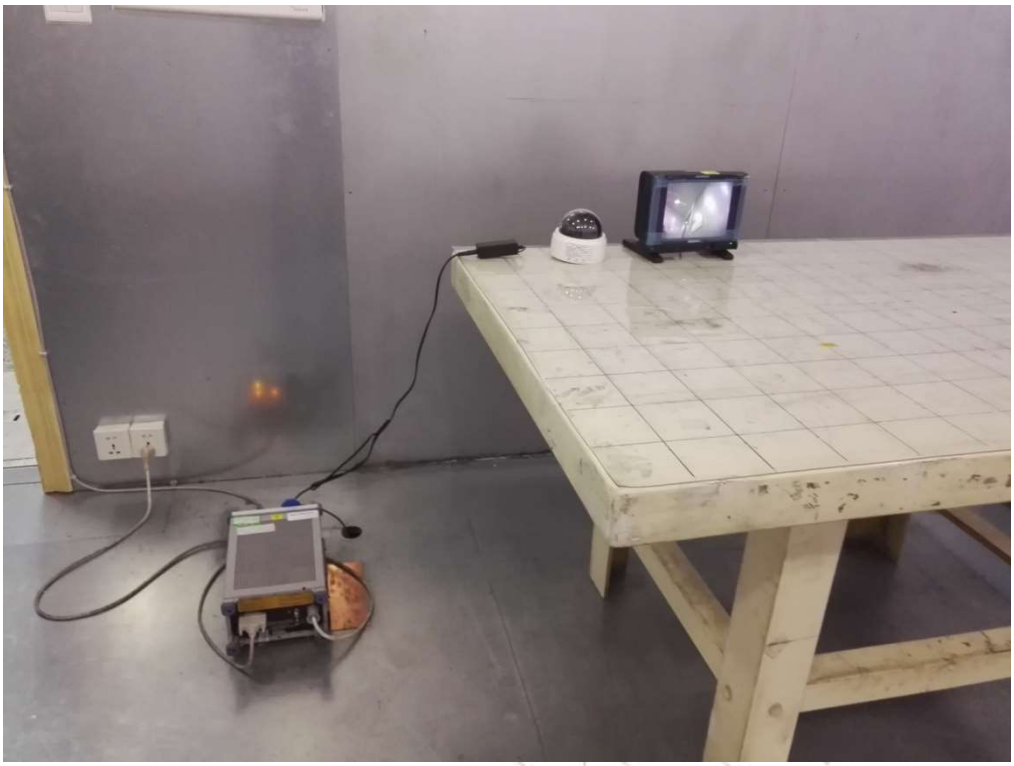


Photograph 1- Surges、Voltage dips, Short interruptions and Voltage variations、Fast transients bursts susceptibility test

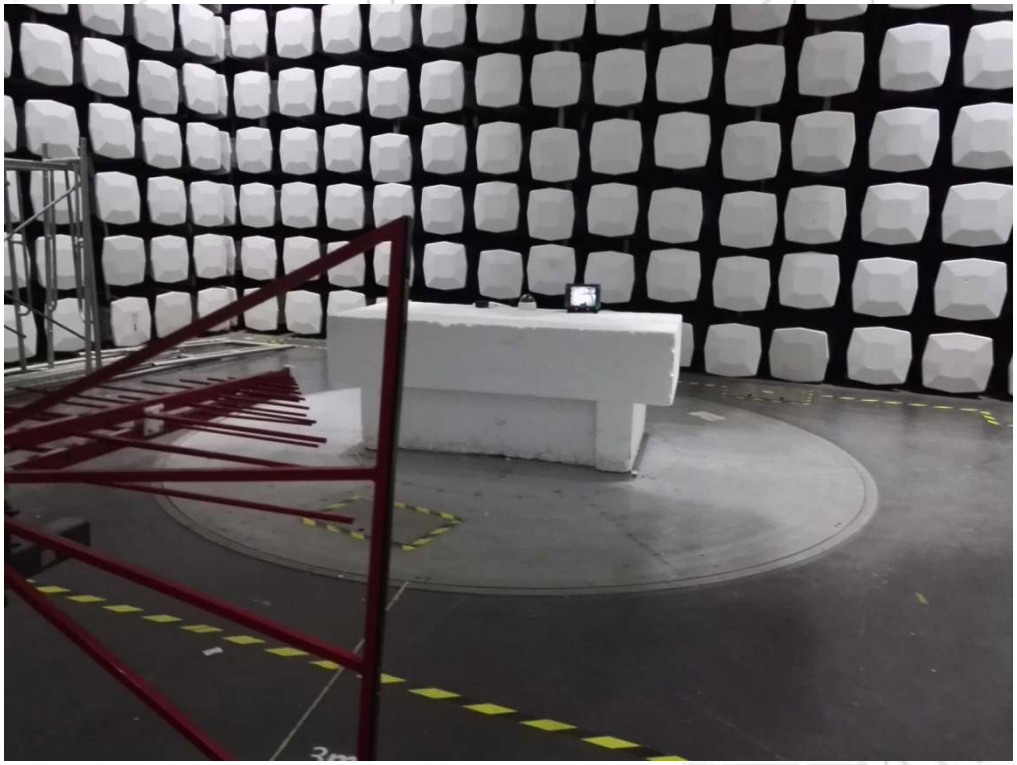
Photograph 2- Electrostatic discharge

Photograph 3- Radio-frequency continuous conducted

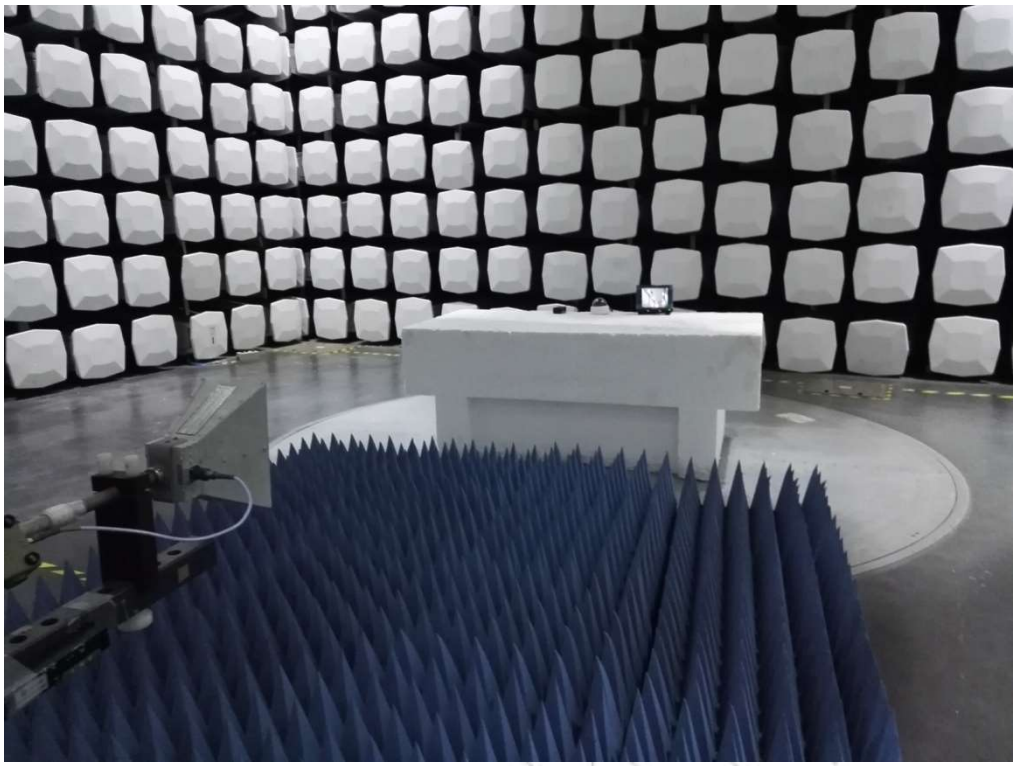
Photograph 4- Radio-frequency electromagnetic field



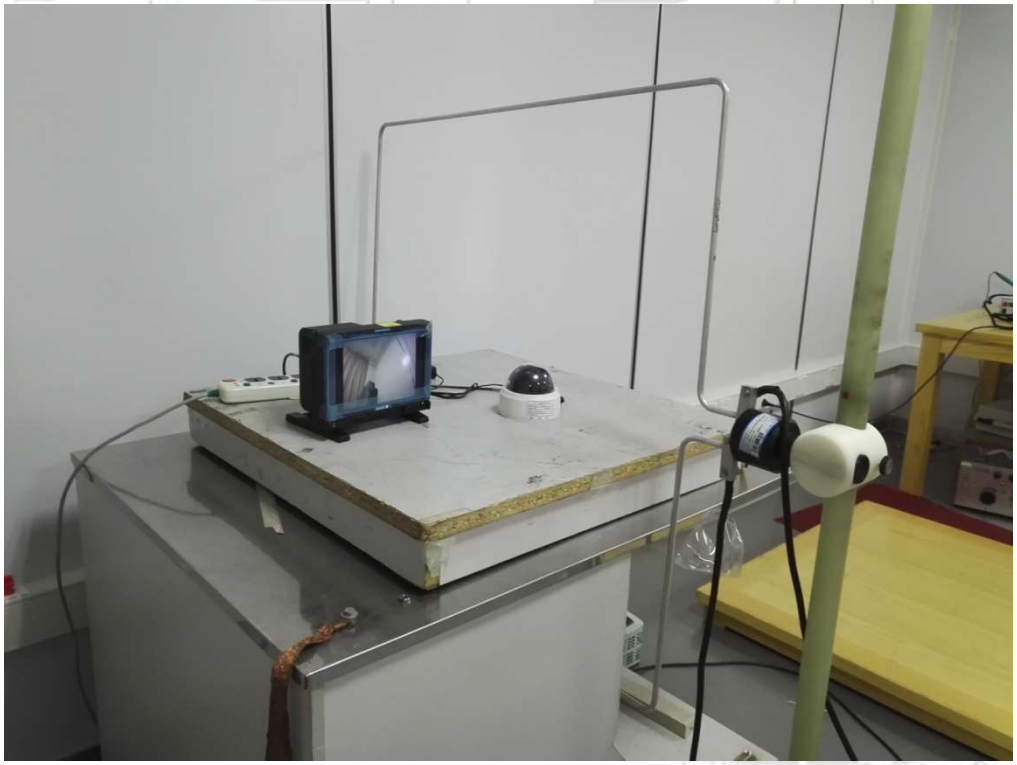
Photograph 5-conducted disturbance



Photograph 6-Radiated disturbance



Photograph 7-Radiated disturbance



Photograph 8- Radio-frequency magnetic field

Photograph 9- Harmonic Current, Voltage fluctuation and flicker

Photograph 10- Adapter (DC12V)

Photograph 11- Adapter (AC24V)