EMC TEST REPORT

For

Bravour Deutschland GmbH

TYPE(USB) C Charger

Test Model: TC-16

Additional Model No.: Please Refer To Page 9

Prepared for	:	Bravour Deutschland GmbH
Address	:	Alt-Heerdt 104, 40549 Düsseldorf, Deutschland

Prepared by	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
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Date of receipt of test sample	:	April 08, 2022
Number of tested samples	:	2
Sample No.	:	220408086A-1, 220408086A-2
Date of Test	:	April 08, 2022 ~ April 15, 2022
Date of Report	:	May 25, 2022

EMC TEST REPORT

EN 55032:2015+A11:2020

Electromagnetic compatibility of multimedia equipment - Emission Requirements

EN 55035:2017+A11: 2020

Electromagnetic compatibility of multimedia equipment – Immunity requirements

Report Reference No.	:	**LCSA052422073E**
Date of Issue.....	:	May 25, 2022
Testing Laboratory Name.....	:	**Shenzhen LCS Compliance Testing Laboratory Ltd.**
Address	:	Room 101, 201, Building A and Room 301, Building C, Juji Industrial Park, Yabianxueziwei, Shajing Street, Bao'an District, Shenzhen, Guangdong, China
Testing Location/ Procedure...	:	Full application of Harmonised standards ■ Partial application of Harmonised standards □ Other standard testing method □
Applicant's Name.....	:	**Bravour Deutschland GmbH**
Address	:	Alt-Heerdt 104, 40549 Düsseldorf, Deutschland
Test Specification		
Standard	:	EN 55032:2015+A11:2020 EN 55035:2017+A11: 2020 EN IEC 61000-3-2:2019 EN 61000-3-3: 2013+A1:2019
Test Report Form No.	:	LCSEMC-1.0
TRF Originator	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF.....	:	Dated 2011-03

Test Item Description.	:	**TYPE(USB) C Charger**
Trade Mark	:	BRAVOUR STAND OUT & IMPRESS
Test Model.....	:	TC-16
Ratings	:	Please Refer To Page 9
Result	:	**Positive**

Compiled by:	Supervised by:	Approved by:
Cindy Nie	Baron Wen	
Cindy Nie/ File administrators	Baron Wen/Technique principal	Gavin Liang/ Manager

EMC -- TEST REPORT

Test Report No. : LCSA052422073E	May 25, 2022 Date of issue

Test Model.....	**: TC-16**
EUT.....	: TYPE(USB) C Charger
Applicant.....	**: Bravour Deutschland GmbH**
Address.....	: Alt-Heerdt 104, 40549 Düsseldorf, Deutschland
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**: GULA (SHENZHEN) TECHNOLOGY CO., LTD.**
Address.....	: 4F, Longsheng Shidai Building, Gongye Road, Longhua District, Shenzhen, China
Telephone.....	: /
Fax.....	: /
Factory.....	**: GULA (SHENZHEN) TECHNOLOGY CO., LTD.**
Address.....	: 4F, Longsheng Shidai Building, Gongye Road, Longhua District, Shenzhen, China
Telephone.....	: /
Fax.....	: /

Test Result	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

Revision History

Revision	Issue Date	Revisions Content	Revised By
000	May 25, 2022	Initial Issue	/

Remark：

Original Test Report “LCS220408086AE” dated April 16, 2022.

The original report :

Applicant：GULA (SHENZHEN) TECHNOLOGY CO., LTD.

Address：4F, Longsheng Shidai Building, Gongye Road, Longhua District, Shenzhen, China

Trade Mark: LADAGOGO

Now change to：

Applicant：Bravour Deutschland GmbH

Address: Alt-Heerdt 104, 40549 Düsseldorf, Deutschland

Trade Mark: BRAVOUR STAND OUT & IMPRESS

This co-license test report is based on the test raw-data of original test report, after construction/information review and verification, no additional tests were considered necessary.

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Test Report Description Page

1. TEST STANDARDS

The tests were performed according to following standards:

EN 55032:2015+A11:2020 Electromagnetic compatibility of multimedia equipment - Emission Requirements
EN 55035:2017+A11: 2020 Electromagnetic compatibility of multimedia equipment – Immunity requirements
EN IEC 61000-3-2:2019 Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase)
EN 61000-3-3: 2013+A1:2019 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 ≤ 16 A per phase and not subject to conditional connection

2.SUMMARY OF STANDARDS AND RESULTS

2.1. Description of Standards and Results

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

Emission (EN 55032:2015+A11:2020)			
Description of Test Item	**Standard**	**Limits**	**Results**
Conducted disturbance at mains terminals	EN 55032:2015+A11:2020	Class B	PASS
Conducted disturbance at telecommunication port	EN 55032:2015+A11:2020	Class B	N/A
Radiated disturbance	EN 55032:2015+A11:2020	Class B	PASS
Harmonic current emissions	EN IEC 61000-3-2:2019	Class A	PASS
Voltage fluctuations & flicker	EN 61000-3-3: 2013+A1:2019	---------	PASS
Immunity (EN 55035:2017+A11: 2020)			
Description of Test Item	**Basic Standard**	**Performance Criteria**	**Results**
Electrostatic discharge (ESD)	EN 61000-4-2: 2009	B	PASS
Radio-frequency, Continuous radiated disturbance	EN 61000-4-3: 2006+A2: 2010	A	PASS
Electrical fast transient (EFT)	EN 61000-4-4: 2012	B	PASS
Surge (Input a.c. power ports)	EN 61000-4-5: 2014+A1: 2017	B	PASS
Surge (Telecommunication ports)		B	N/A
Radio-frequency, Continuous conducted disturbance	EN 61000-4-6: 2014+A1:2015	A	PASS
Power frequency magnetic field	EN 61000-4-8: 2010	A	PASS
Voltage dips, >95% reduction	EN IEC 61000-4-11:2020+AC: 2020	B	PASS
Voltage dips, 30% reduction		C	PASS
Voltage interruptions		C	PASS
***Note: N/A is an abbreviation for Not Applicable.			

Test mode:		
Mode	Working	Record

2.2. Description of Performance Criteria

General Performance Criteria
Examples of functions defined by the manufacturer to be evaluated during testing include, but are not limited to, the following:
– essential operational modes and states;

2.2.1. Performance criterion A
The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacture when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deriver from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

2.2.2. Performance criterion B
After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacture, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operation state or stored data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be deriver from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

2.2.3. Performance criterion C
Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacture’s instructions.

Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be loss.

3. GENERAL INFORMATION

3.1. Description of Device (EUT)

EUT : TYPE(USB) C Charger

Trade Mark : BRAVOUR STAND OUT & IMPRESS

Test Model : TC-16

Additional Model : TC-8, TC-10, TC-12, TC-20, TC-30,TC-32, TC-40, TC-1, TC-2, TC-3, TC-4, TC-5, TC-6, TC-7, TC-48, TH-7, TH-10,TH-12, TH-16, TH-20, TH-30, TH-1, TH-2, TH-3, TH-4, TH-5, TH-6, TH-7, TH-8, TH-9, TH-10

Model Declaration : PCB board, structure and internal of these model(s) are the same, So no additional models were tested

Power Supply : Input: 100-240V~, 50/60Hz, 500W
Output: 5V⎓3A, 9V⎓2A, 12V⎓1.7A, 15V⎓2.2A

Highest internal freq. : Fx≤108MHz

Highest internal frequency (Fx)	Highest measured frequency
Fx ≤ 108 MHz 108 MHz < Fx ≤ 500 MHz 500 MHz < Fx ≤ 1 GHz Fx > 1 GHz	1 GHz 2 GHz 5 GHz 5 × Fx up to a maximum of 6 GHz
NOTE 1 For FM and TV broadcast receivers, Fx is determined from the highest frequency generated or used excluding the local oscillator and tuned frequencies. NOTE 2 Fx is defined in EN 55032 Section 3.1.19. Where Fx is unknown, the radiated emission measurements shall be performed up to 6 GHz	

3.2. Support Equipment List

Name	Manufacturers	M/N	S/N
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3.3. Description of Test Facility

NVLAP Accreditation Code is 600167-0.
FCC Designation Number is CN5024.
CAB identifier is CN0071.
CNAS Registration Number is L4595.

3.4. Statement of The Measurement Uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

3.5. Measurement Uncertainty

Test	Parameters	Expanded uncertainty (U_{lab})	Expanded uncertainty (U_{cispr})
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 2.63 dB ± 2.35 dB	± 3.8 dB ± 3.4 dB
Power Disturbance	Level accuracy (30MHz to 300MHz)	± 2.90dB	± 4.5 dB
Electromagnetic Radiated Emission (3-loop)	Level accuracy (9kHz to 30MHz)	± 3.60 dB	± 3.3 dB
Radiated Emission	Level accuracy (9kHz to 30MHz)	± 3.68 dB	N/A
Radiated Emission	Level accuracy (30MHz to 1000MHz)	± 3.48 dB	± 5.3 dB
Radiated Emission	Level accuracy (above 1000MHz)	± 3.90 dB	± 5.2 dB
Mains Harmonic	Voltage	± 0.510%	N/A
Voltage Fluctuations & Flicker	Voltage	± 0.510%	N/A
EMF	/	± 21.59%	N/A
1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus. 2) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.			

4. MEASURING DEVICES AND TEST EQUIPMENT

LINE CONDUCTED EMISSION

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	EZ	EZ-EMC	/	N/A	N/A
2	EMI Test Receiver	R&S	ESR3	102312	2022-02-18	2023-02-17
3	Artificial Mains	R&S	ENV216	101119	2021-06-21	2022-06-20
4	Pulse Limiter	R&S	ESH3-Z2	102750-NB	2021-08-19	2022-08-18
5	Impedance Stabilization Network	TESEQ	ISN T800	45130	2021-11-16	2022-11-15

RADIATED DISTURBANCE

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	EMI Test Software	E3	E3-EMC	/	N/A	N/A
2	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2021-09-12	2024-09-11
3	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2021-09-05	2024-09-04
4	EMI Test Receiver	R&S	ESR3	102311	2021-08-19	2022-08-18
5	Broadband Preamplifier	/	BP-01M18G	P190501	2021-06-21	2022-06-20

VOLTAGE FLUCTUATION AND FLICKER/HARMONIC CURRENT EMISSIONS

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	HARMONICS&FLICKER MEASUREMENT SYSTEM	EVERFINE	HFM-3000	P630850CD141 1116	2022-02-08	2023-02-07
2	HARMONICS&FLICKER TESTING POWER SOURCE	EVERFINE	HFS-4000	P624486CD141 1124	2022-02-08	2023-02-07

RF ELECTROMAGNETIC FIELD)

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	ESG Vector Signal Generator	Agilent	E4438C	MY42081396	2021-06-11	2022-06-10
2	RF POWER AMPLIFIER	OPHIR	5225R	1052	NCR	NCR
3	RF POWER AMPLIFIER	OPHIR	5273F	1019	NCR	NCR
4	Stacked Broadband Log Periodic Antenna	SCHWARZBECK	STLP 9128	9128ES-145	NCR	NCR
5	Stacked Mikrowellen Log.-Per Antenna	SCHWARZBECK	STLP 9149	9149-484	NCR	NCR
6	Electric field probe	Narda S.TS./PMM	EP601	611WX80208	2021-06-29	2022-06-28
Note: NCR means no calibration requirement						

ELECTROSTATIC DISCHARGE

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	ESD Simulator	SCHLODER	SESD 230	604035	2021-07-28	2022-07-27

ELECTRICAL FAST TRANSIENT IMMUNITY

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Immunity Simulative Generator	EM TEST	UCS500-M4	0101-34	2021-06-21	2022-06-20

SURGES, LINE TO LINE AND LINE TO GROUND

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Immunity Simulative Generator	EM TEST	UCS500-M4	0101-34	2021-06-21	2022-06-20

RF COMMON MODE

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Simulator	FRANKONIA	CIT-10/75	A126A1195	2021-08-19	2022-08-18
2	CDN	FRANKONIA	CDN-M2+M3	A2210177	2021-06-21	2022-06-20
3	6dB Attenuator	FRANKONIA	DAM25W	1172040	2021-06-21	2022-06-20

MAGNETIC FIELD SUSCEPTIBILITY TEST

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Power frequency mag-field generator System	EVERFINE	EMS61000-8K	906003	2021-06-21	2022-06-20

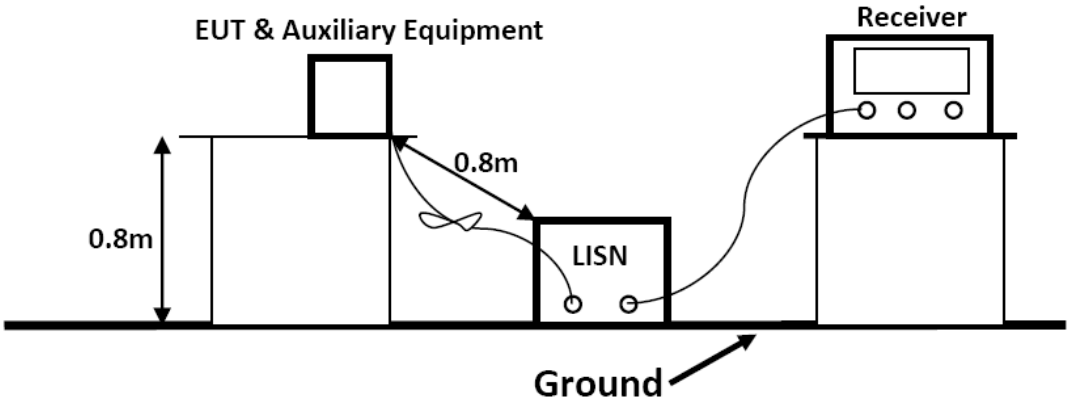
VOLTAGE DIPS/INTERRUPTIONS IMMUNITY TEST

Item	Equipment	Manufacturer	Model No.	Serial No.	Cal Date	Due Date
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2021-06-21	2022-06-20

5. TEST RESULTS

5.1. POWER LINE CONDUCTED EMISSION MEASUREMENT

5.1.1. Block Diagram of Test Setup



5.1.2. Test Standard

EN 55032:2015+A11:2020 Class B

Power Line Conducted Emission Limits (Class B)		
Frequency (MHz)	Limit (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0
NOTE1-The lower limit shall apply at the transition frequencies. NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.		

5.1.3. EUT Configuration on Test

The following equipments are installed on Power Line Conducted Emission Measurement to meet the EN 55032 requirement and operating regulations in a manner, which tends to maximize its emission characteristics in a normal application.

5.1.4. Operating Condition of EUT

5.1.4.1.Setup the EUT as shown on Section 5.1.1
5.1.4.2.Turn on the power of all equipments.
5.1.4.3.Let the EUT work in measuring mode(Working) and measure it.

5.1.5. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided 50-ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the EN 55032 regulations during conducted emission measurement.
The bandwidth of the field strength meter is set at 9kHz in 150kHz~30MHz.
The frequency range from 150kHz to 30MHz is investigated.

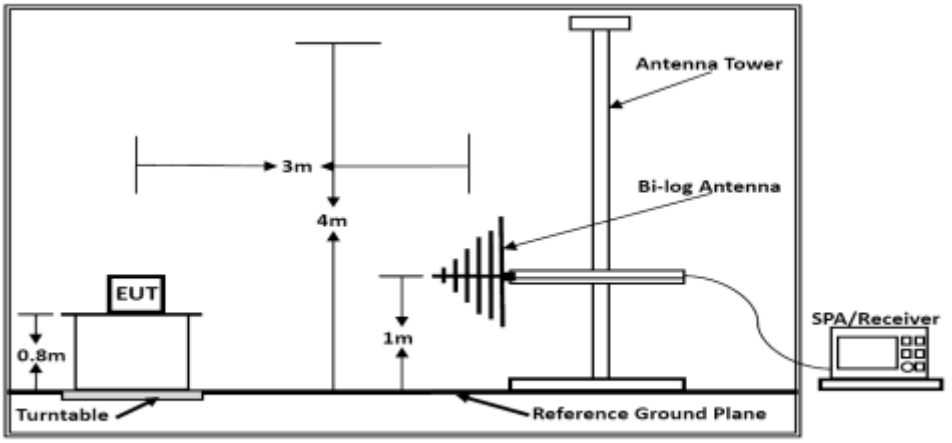
5.1.6. Test Results

PASS.

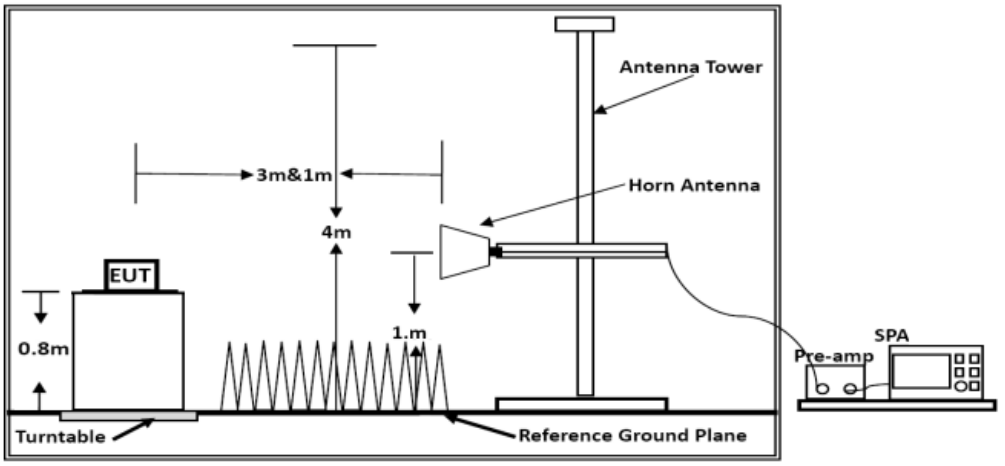
Refer to attached Annex B.1

5.2. RADIATED EMISSION MEASUREMENT

5.2.1. Block Diagram of Test Setup



Below 1GHz



Above 1GHz

5.2.2. Test Standard

EN 55032:2015+A11:2020 Class B

All emanations from a class B device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified below:

Limits for Radiated Emission Below 1GHz		
Frequency (MHz)	Distance (Meters)	Field Strengths Limit (dBμV/m)
30 ~ 230	3	40
230 ~ 1000	3	47
***Note: (1) The smaller limit shall apply at the combination point between two frequency bands. (2) Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the EUT.		

Limits for Radiated Emission Above 1GHz			
Frequency (MHz)	Distance (Meters)	Peak Limit (dBμV/m)	Average Limit (dBμV/m)
1000 ~ 3000	3	70	50
3000 ~ 6000	3	74	54
***Note: The lower limit applies at the transition frequency.			

5.2.3. EUT Configuration on Test

The EN 55032 regulations test method must be used to find the maximum emission during radiated emission measurement.

5.2.4. Operating Condition of EUT

5.2.4.1.Turn on the power.

5.2.4.2.Let the EUT work in the test mode(Working) and measure it.

5.2.5. Test Procedure

The EUT is placed on a turntable, which is 0.8 meter high above the ground. The turntable can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. By-log antenna is used as a receiving antenna. Both horizontal and vertical polarization of the antenna is set on test.

The bandwidth of the EMI test receiver is set at RBW/VBW=120kHz/300kHz.and the frequency range from 30MHz to 1000MHz is checked.

The bandwidth of the Spectrum analyzer is set at RBW/VBW=1MHz/3MHz and the frequency range from 1GHz to the frequency which about 5th carrier harmonic or 6GHz is checked.

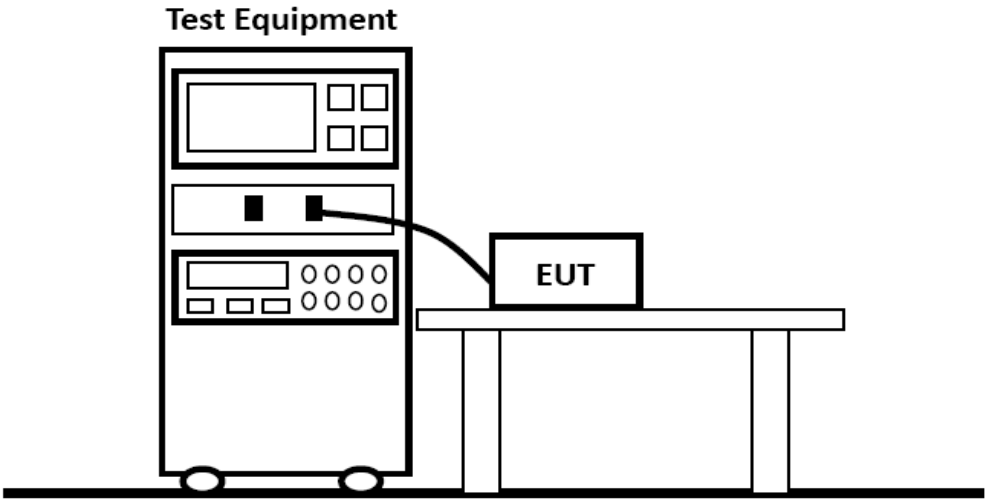
5.2.6. Test Results

PASS.

Refer to attached Annex B.2

5.3. HARMONIC CURRENT EMISSION MEASUREMENT

5.3.1. Block Diagram of Test Setup



5.3.2. Test Standard

EN IEC 61000-3-2:2019

5.3.3. Operating Condition of EUT

Same as Section 5.2.4, except the test setup replaced as Section 5.3.1.

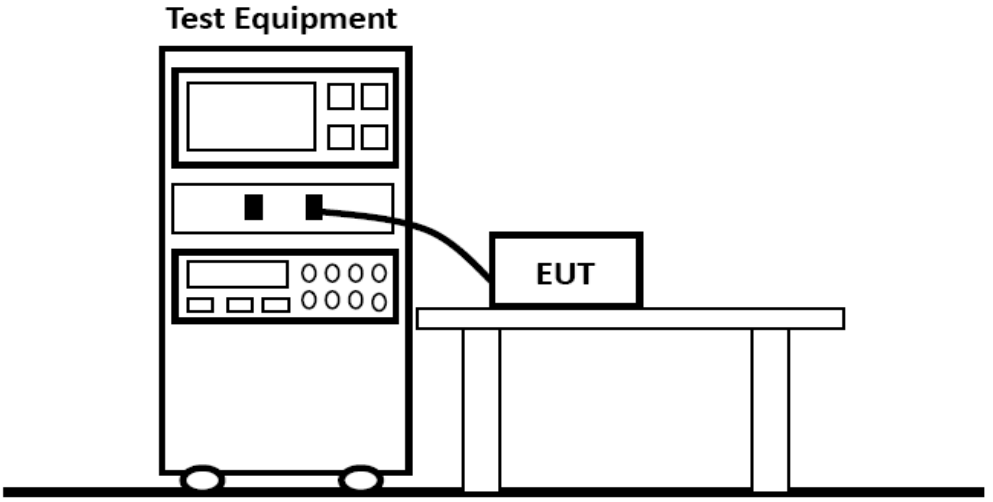
5.3.4. Test Results

PASS.

Refer to attached Annex B.3

5.4. VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

5.4.1. Block Diagram of Test Setup



5.4.2. Test Standard

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

5.4.3. Operating Condition of EUT

Same as Section 5.2.4, except the test setup replaced as Section 5.4.1.

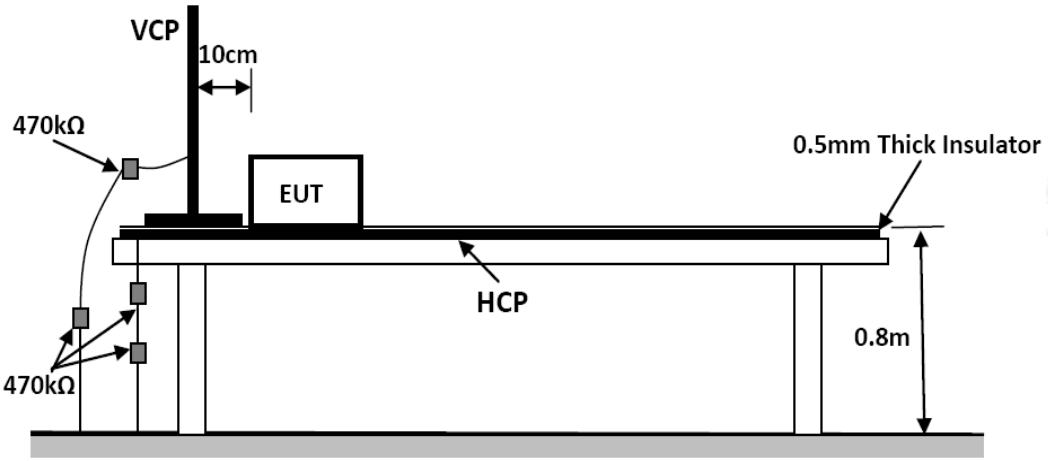
5.4.4. Test Results

PASS.

Refer to attached Annex B.4

5.5. ELECTROSTATIC DISCHARGE IMMUNITY TEST

5.5.1. Block Diagram of Test Setup



5.5.2. Test Standard

EN 55035:2017+A11: 2020 (EN 61000-4-2: 2009, Severity Level: 3 / Air Discharge: ±8KV, Level: 2 / Contact Discharge: ±4KV)

5.5.3. Severity Levels and Performance Criterion

5.5.3.1. Severity level

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

5.5.3.2. Performance Criterion

Performance Criterion: B

5.5.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.5.1.

5.5.5. Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section 5.1.4. Except the test set up replaced by Section 5.5.1.

5.5.6. Test Procedure

5.2.6.1. Air Discharge

This test is done on a non-conductive surfaces. The round discharge tip of the Electrostatic Discharge simulator shall be approached as fast as possible then to touch the EUT. After each discharge, the simulator shall be removed from the EUT. The simulator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed

5.2.6.2. Contact Discharge

All the procedure shall be same as air discharge, except using the acute discharge tip. The top end of the Electrostatic Discharge simulator is touch the EUT all the time when the simulator is re-triggered for a new single discharge and repeated 10 times for each pre-selected test point.

5.2.6.3. Indirect Discharge For Horizontal Coupling Plane

The vertical coupling plane(VCP) is placed 0.1m away from EUT. The top end of Electrostatic Discharge simulator should aim at the center of one border of the VCP for at least 25 times discharge.

5.2.6.4. Indirect Discharge For Vertical Coupling Plane

The top end of Electrostatic Discharge simulator should place at the point 0.1m away from EUT on the horizontal coupling plane(HCP). At least 25 times discharge should be done for every pre-selected point around EUT.

Record any performance degradation of the EUT during the test and judge the test result according to ce criterion.

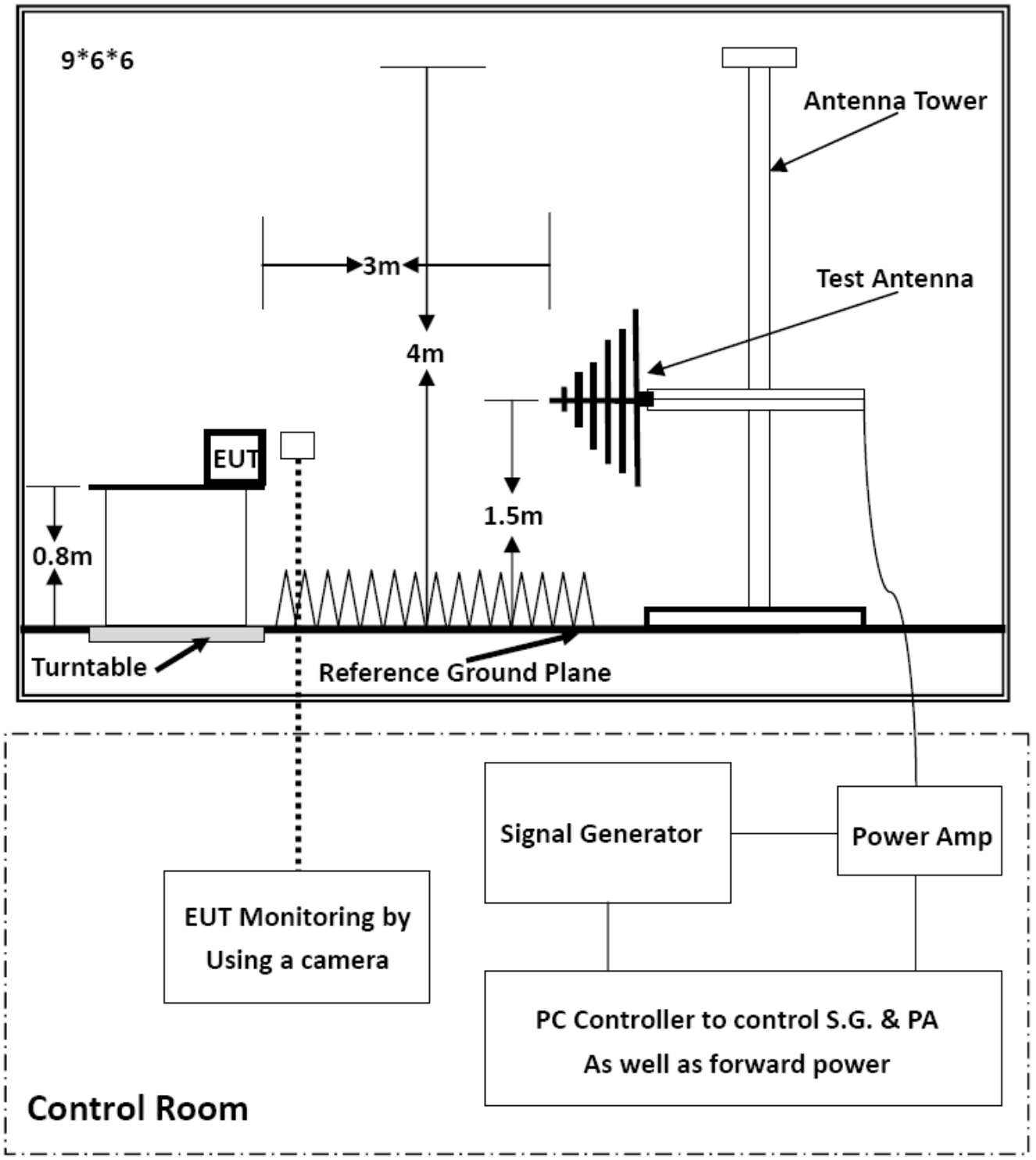
5.5.7. Test Results

PASS.

Refer to attached Annex B.5

5.6. RF FIELD STRENGTH SUSCEPTIBILITY TEST

5.6.1. Block Diagram of Test Setup



5.6.2. Test Standard

EN 55035:2017+A11: 2020 (EN 61000-4-3: 2006+A2: 2010 Severity Level: 2, 3V/m)

5.6.3. Severity Levels and Performance Criterion

5.6.3.1. Severity level

Level	Field Strength (V/m)
1	1
2	3
3	10
X	1

5.6.3.2. Performance Criterion
Performance Criterion: A

5.6.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.6.1.

5.6.5. Operating Condition of EUT

Same as radiated emission measurement, which is listed in Section 5.2..4, except the test setup replaced as Section 5.6.1.

5.6.6. Test Procedure

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

Condition of Test	Remark
Fielded Strength	3 V/m (Severity Level 2)
Radiated Signal	Unmodulated
Test Frequency Range (swept test)	80-1000MHz
Test Frequency (spot test)	1800MHz, 2600MHz, 3500MHz, 5000MHz
Dwell time of radiated	0.0015 decade/s
Waiting Time	3 Sec.

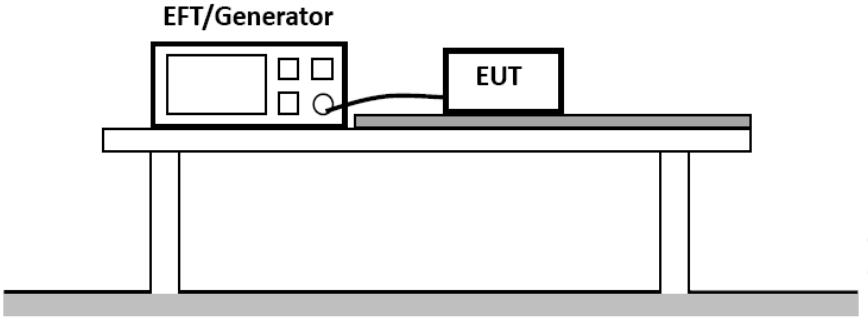
5.6.7. Test Results

PASS.

Refer to attached Annex B.6

5.7. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

5.7.1. Block Diagram of Test Setup



5.7.2. Test Standard

EN 55035:2017+A11: 2020 (EN 61000-4-4: 2012, Severity Level, Level 2: 1KV)

5.7.3. Severity Levels and Performance Criterion

5.7.3.1. Severity level

Open Circuit Output Test Voltage ±10%		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1	0.5 KV	0.25 KV
2	1 KV	0.5 KV
3	2 KV	1 KV
4	4 KV	2 KV
X	Special	Special

5.7.3.2. Performance Criterion

Performance Criterion: B

5.7.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.7.1.

5.7.5. Operating Condition of EUT

5.7.5.1. Setup the EUT as shown in Section 5.7.1.

5.7.5.2. Turn on the power of all equipments.

5.7.5.3. Let the EUT work in test mode(1) and measure it.

5.7.6. Test Procedure

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

5.7.6.1. For input and output AC power ports:
The EUT is connected to the power mains by using a coupling device, which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 1 mins.

5.7.6.2. For signal lines and control lines ports:
It's unnecessary to test.

5.7.6.3. For DC output line ports:
It's unnecessary to test.

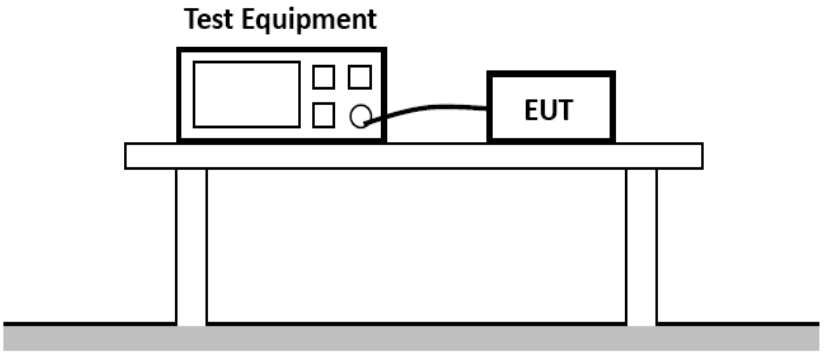
5.7.7. Test Results

PASS.

Refer to attached Annex B.7

5.8. SURGE IMMUNITY TEST

5.8.1. Block Diagram of Test Setup



5.8.2. Test Standard

EN 55035:2017+A11: 2020 (EN 61000-4-5: 2014+A1: 2017, Severity Level: Line to Line: Level 2, 1.0KV, Line to Earth: Level 3, 2.0KV)

5.8.3. Severity Levels and Performance Criterion

5.8.3.1. Severity level

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

5.8.3.2. Performance Criterion
Performance Criterion: B

5.8.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.8.1.

5.8.5. Operating Condition of EUT

5.8.5.1.Setup the EUT as shown in Section 5.8.1.
5.8.5.1.Turn on the power of all equipments.
5.8.5.1.Let the EUT work in test mode (1) and measure it.

5.8.6. Test Procedure

5.8.6.1. Set up the EUT and test generator as shown on Section 5.8.1.

5.8.6.2. For line to line coupling mode, provide a 1.0 KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.

5.8.6.3. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test.

5.8.6.4. Different phase angles are done individually.

5.8.6.5. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

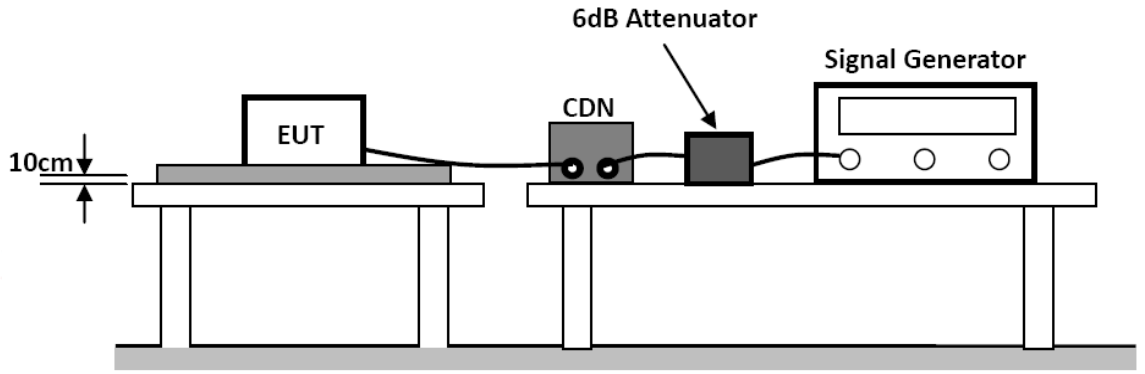
5.8.7. Test Results

PASS.

Refer to attached Annex B.8

5.9. INJECTED CURRENTS SUSCEPTIBILITY TEST

5.9.1. Block Diagram of Test Setup



5.9.2. Test Standard

EN 55035:2017+A11: 2020(EN 61000-4-6: 2014+A1:2015, Severity Level: Level 2, (0.15MHz ~ 80MHz))

5.9.3. Severity Levels and Performance Criterion

5.9.3.1. Severity level

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

5.9.3.2. Performance Criterion
Performance Criterion: A

5.9.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.9.1.

5.9.5. Operating Condition of EUT

5.9.5.1.Setup the EUT as shown in Section 5.9.1.
5.9.5.2.Turn on the power of all equipments.
5.9.5.3.Let the EUT work in test mode(1) and measure it.

5.9.6. Test Procedure

5.9.6.1. Set up the EUT, CDN and test generators as shown on Section 5.9.1.
5.9.6.2. Let the EUT work in test mode and measure it.
5.9.6.3. The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).
5.9.6.4. The disturbance signal described below is injected to EUT through CDN.
5.9.6.5. The EUT operates within its operational mode(s) under intended climatic conditions after power on.
5.9.6.6. The frequency range is swept from 150kHz to 10MHz using 3V signal level,10MHz to 30MHz using 3V to 1V signal level,30MHz to 80MHz using 1V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave.
5.9.6.7. The rate of sweep shall not exceed 1.5*10-3decades/s. where the frequency is swept incrementally; the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.
5.9.6.8. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

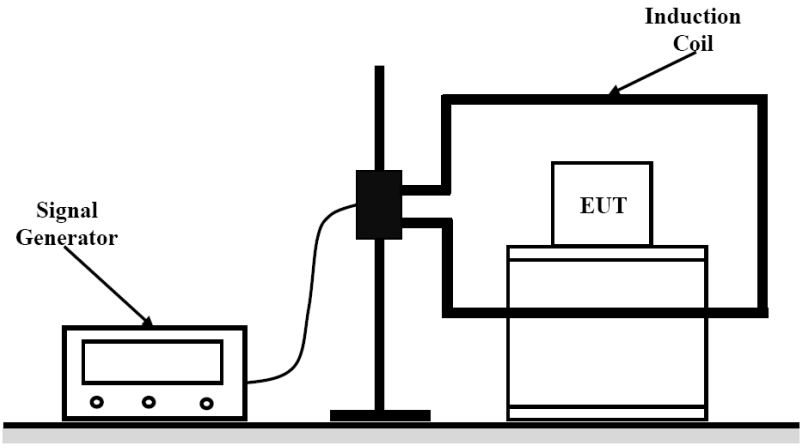
5.9.7. Test Results

PASS.

Refer to attached Annex B.9

5.10. MAGNETIC FIELD SUSCEPTIBILITY TEST

5.10.1. Block Diagram of Test Setup



5.10.2. Test Standard

EN 55035:2017+A11: 2020 (EN 61000-4-8: 2010, Severity Level: Level 1, 1A/m)

5.10.3. Severity Levels and Performance Criterion

5.10.3.1. Severity level

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

5.10.3.2. Performance Criterion

Performance Criterion: A

5.10.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.10.1.

5.10.5. Test Procedure

EUT is placed on an insulating support of 0.1m high above a table of 0.8m high. There is a minimum 1m*1m ground metallic plane put on this table. EUT is put in the center of the magnetic coil then two orientations of the magnetic coil, horizontal and vertical, shall be rotated in order to expose the EUT to the difference polarization magnetic field.

Record any performance degradation of the EUT during the test and judge the test result according to performance criterion.

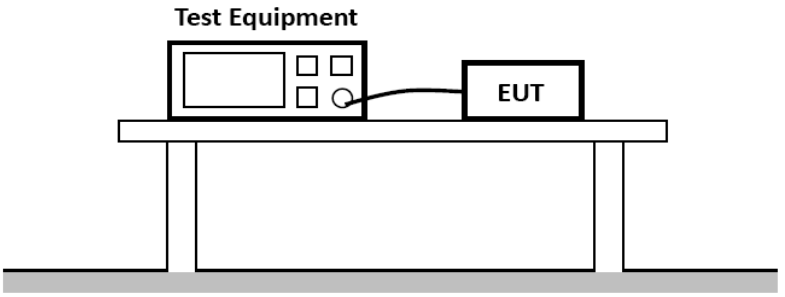
5.10.6. Test Results

PASS.

Refer to attached Annex B.10

5.11. VOLTAGE DIPS AND INTERRUPTIONS TEST

5.11.1. Block Diagram of Test Setup



5.11.2. Test Standard

EN 55035:2017+A11: 2020 (EN IEC 61000-4-11:2020+AC: 2020)

5.11.3. Severity Levels and Performance Criterion

5.11.3.1. Severity level

Test Level		
Voltage Reduction $\%U_T$	Voltage Dips $\%U_T$	Duration (in Period)
100	0	0.5
100	0	1
30	70	5
Voltage Reduction $\%U_T$	Voltage Dips $\%U_T$	Duration (in Period)
100	0	250

5.11.3.2. Performance Criterion

Performance Criterion: B&C

5.11.4. EUT Configuration on Test

The configuration of EUT is listed in Section 5.11.1.

5.11.5. Operating Condition of EUT

5.11.5.1. Setup the EUT as shown in Section 5.11.1.

5.11.5.2. Turn on the power of all equipments.

5.11.5.3. Let the EUT work in test mode (1) and measure it.

5.11.6. Test Procedure

5.11.6.1. Set up the EUT and test generator as shown on Section 5.11.1.

5.11.6.2. The interruptions are introduced at selected phase angles with specified duration.

5.11.6.3. Record any degradation of performance.

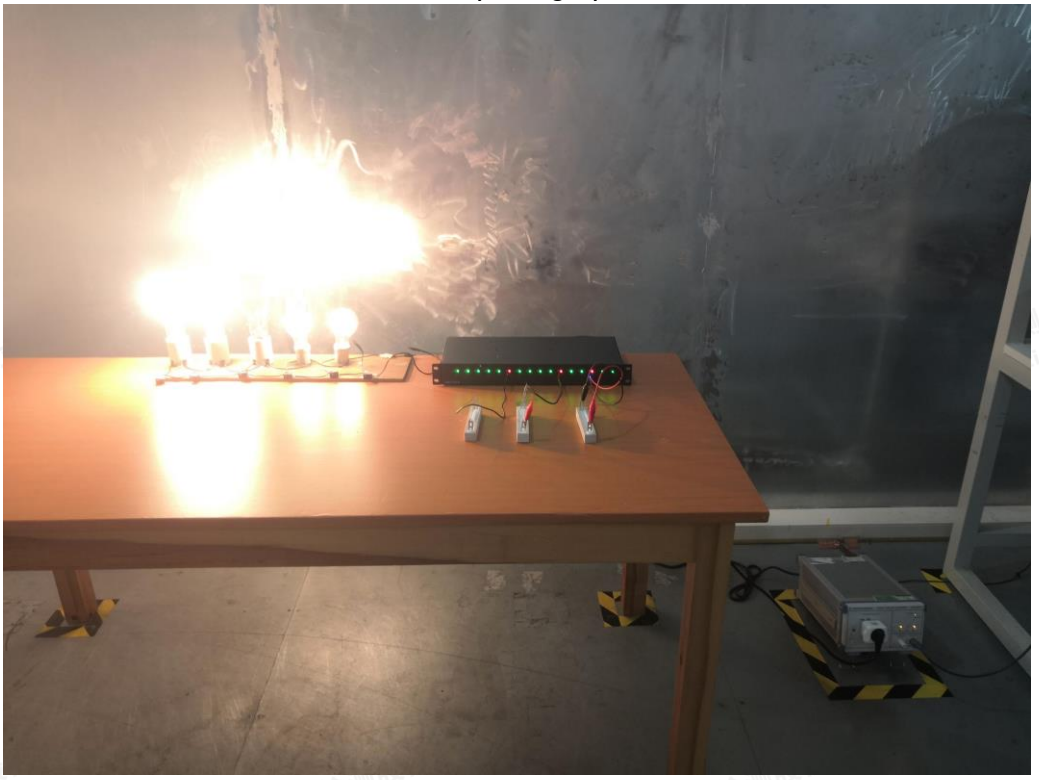
5.11.7. Test Results

PASS.

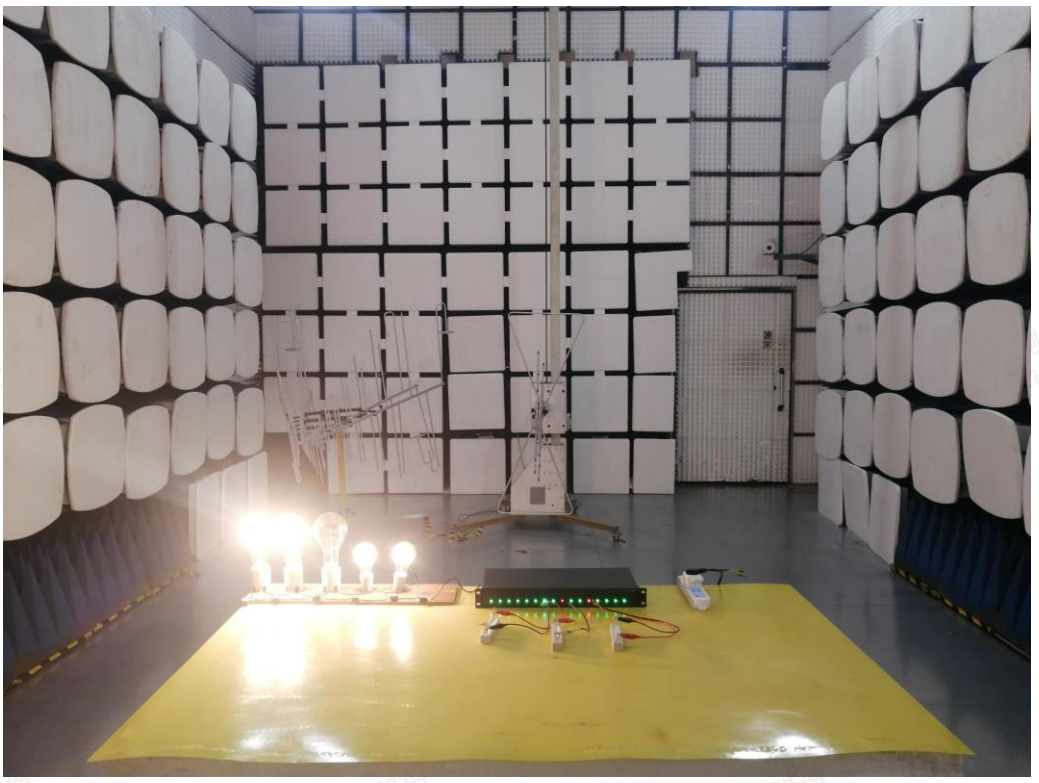
Refer to attached Annex B.11

Annex A

（Test photograph）



Test Setup Photo of Power Line Conducted Measurement

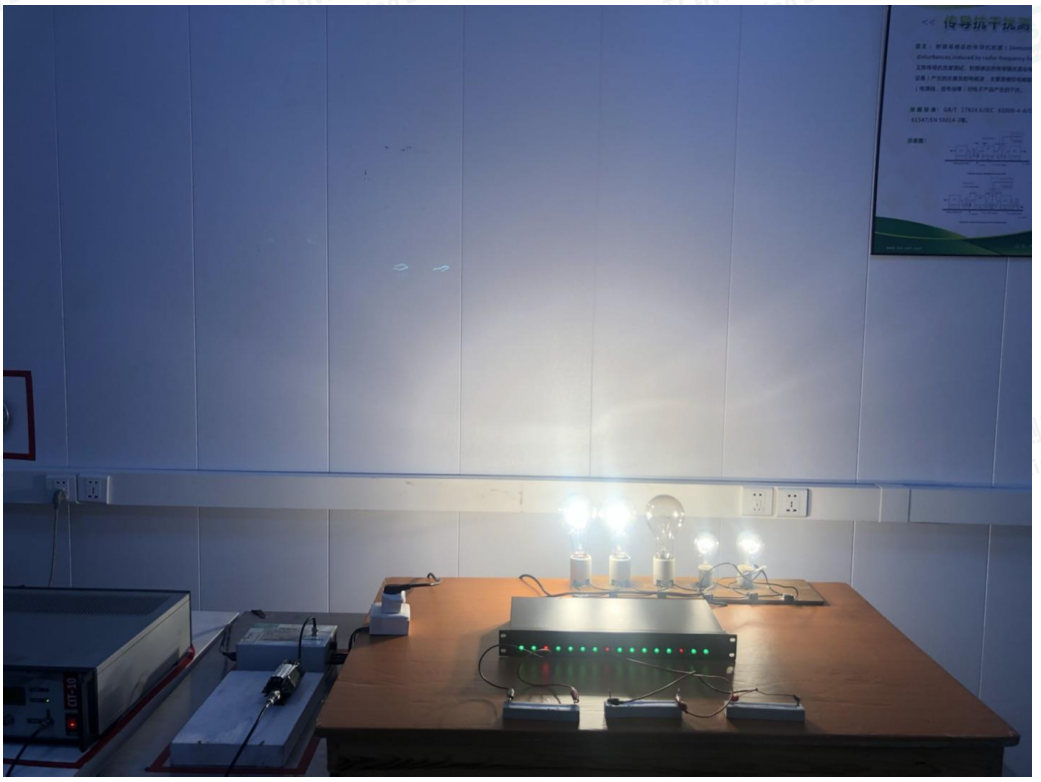


Test Setup Photo of Radiated Measurement (30MHz~1GHz)

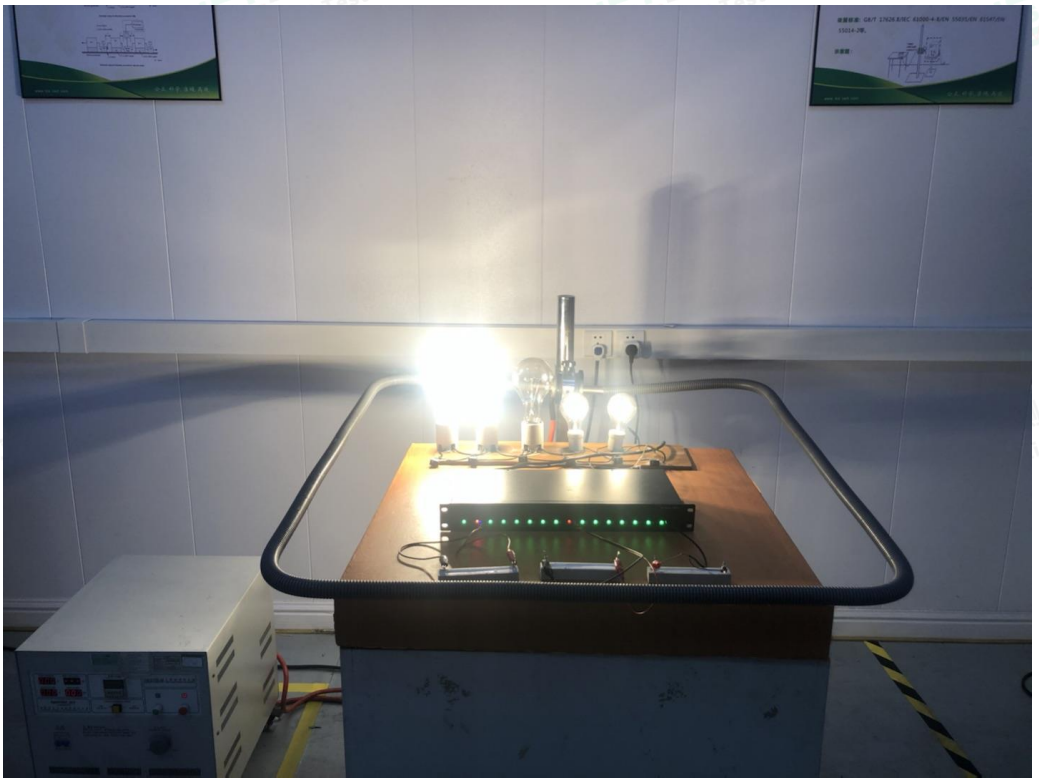
Test Setup Photo of Harmonic & Flicker Measurement

Test Setup Photo of Electrostatic Discharge Test

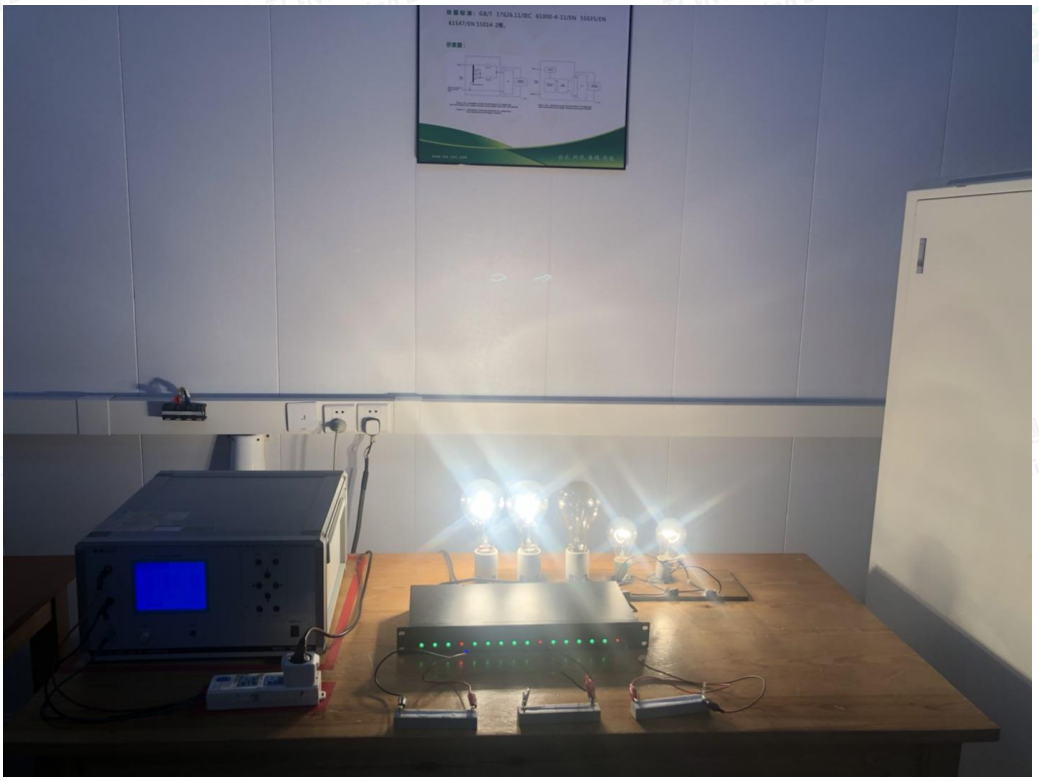
Photo of Electrical Fast Transient/Burst Test & Surge Immunity Test



Test Setup Photo of Injected Currents Susceptibility Test



Test Setup Photo of Magnetic Field Immunity Test



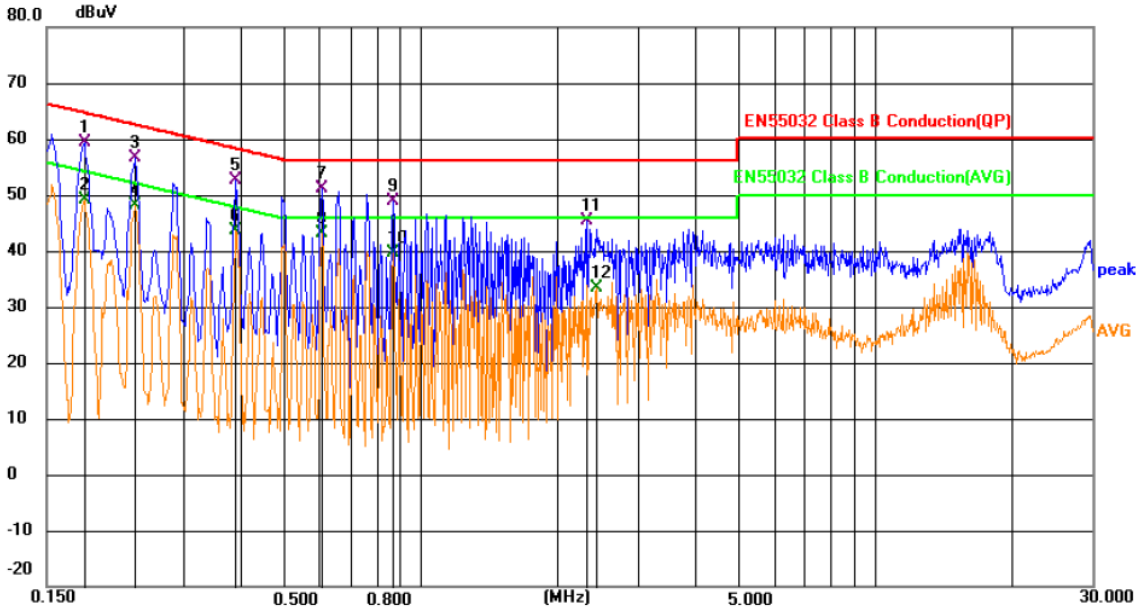
Test Setup Photo of Voltage Dips and Interruptions Test

ANNEX B

（Emission and Immunity test results）

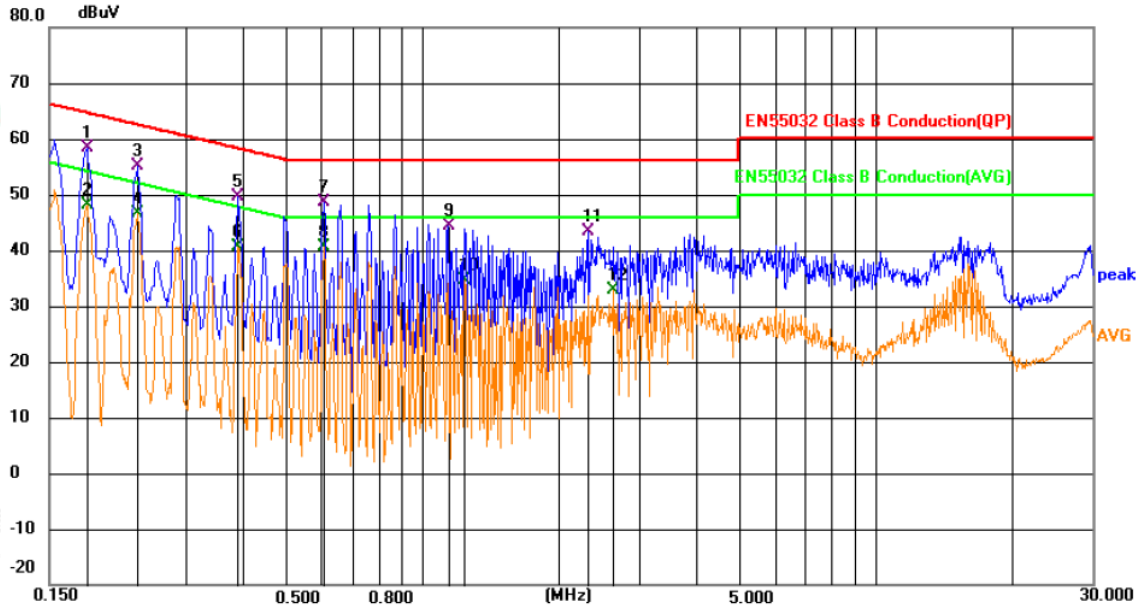
B.1 POWER LINE CONDUCTED EMISSION MEASUREMENT

Environmental Conditions:	22.5℃, 53.7% RH
Test Voltage:	AC 230V,50Hz
Test Model:	TC-16
Test Mode:	Working
Test Engineer:	Paul Xie
Pol:	Line
Detailed results are shown below	



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1816	39.80	19.63	59.43	64.41	-4.98	QP	
2		0.1816	29.60	19.63	49.23	54.41	-5.18	AVG	
3		0.2340	37.10	19.63	56.73	62.31	-5.58	QP	
4		0.2356	28.60	19.63	48.23	52.25	-4.02	AVG	
5		0.3930	33.06	19.63	52.69	58.00	-5.31	QP	
6		0.3930	24.11	19.63	43.74	48.00	-4.26	AVG	
7		0.6045	31.47	19.66	51.13	56.00	-4.87	QP	
8		0.6045	23.58	19.66	43.24	46.00	-2.76	AVG	
9		0.8700	29.24	19.64	48.88	56.00	-7.12	QP	
10		0.8700	19.98	19.64	39.62	46.00	-6.38	AVG	
11		2.3279	25.62	19.68	45.30	56.00	-10.70	QP	
12		2.4359	13.70	19.68	33.38	46.00	-12.62	AVG	

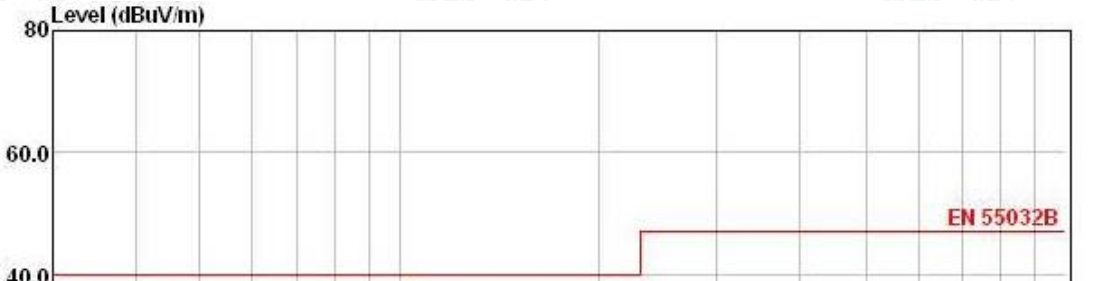
Environmental Conditions:	22.5℃, 53.7% RH
Test Voltage:	AC 230V,50Hz
Test Model:	TC-16
Test Mode:	Working
Test Engineer:	Paul Xie
Pol:	Neutral
Detailed results are shown below	



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1816	38.80	19.63	58.43	64.41	-5.98	QP	
2		0.1816	28.60	19.63	48.23	54.41	-6.18	AVG	
3		0.2340	35.60	19.63	55.23	62.31	-7.08	QP	
4		0.2340	27.00	19.63	46.63	52.31	-5.68	AVG	
5		0.3930	30.06	19.63	49.69	58.00	-8.31	QP	
6		0.3930	21.11	19.63	40.74	48.00	-7.26	AVG	
7		0.6045	28.97	19.66	48.63	56.00	-7.37	QP	
8		0.6045	21.08	19.66	40.74	46.00	-5.26	AVG	
9		1.1354	24.70	19.65	44.35	56.00	-11.65	QP	
10		1.2390	14.90	19.66	34.56	46.00	-11.44	AVG	
11		2.3279	23.62	19.68	43.30	56.00	-12.70	QP	
12		2.6476	13.20	19.68	32.88	46.00	-13.12	AVG	

B.2 Radiated Disturbance Test Results（30MHz to 1000MHz）

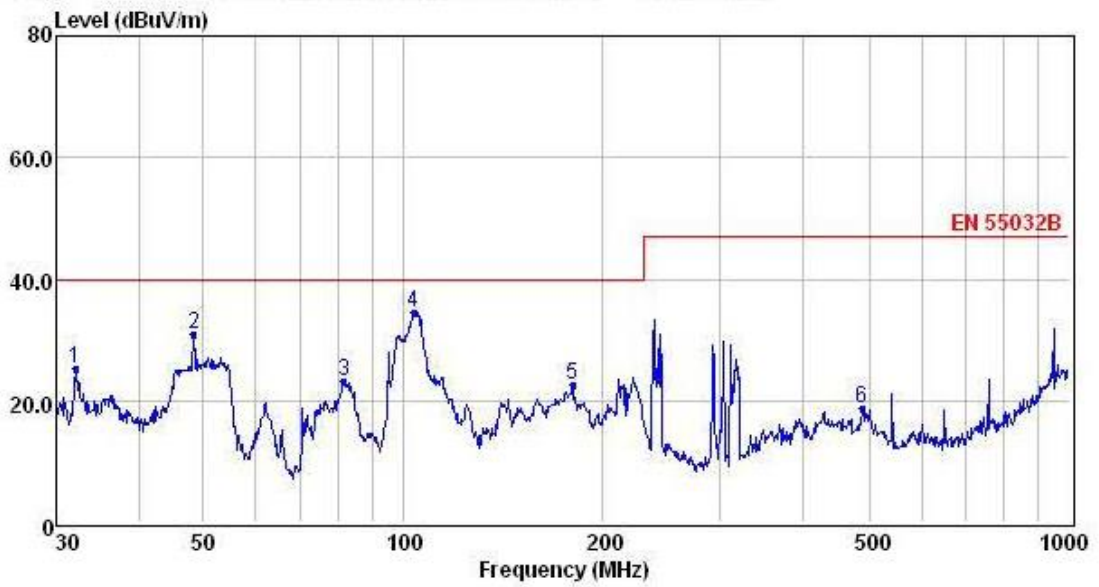
Environmental Conditions:	22.2℃, 52.8% RH
Test Voltage:	AC 230V,50Hz
Test Model:	TC-16
Test Mode:	Working
Test Engineer:	Li Bruce
Pol:	Vertical
Detailed results are shown below	



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	31.40	17.77	0.42	10.69	28.88	40.00	-11.12	QP
2	50.76	13.02	0.60	12.59	26.21	40.00	-13.79	QP
3	79.80	13.96	0.73	9.81	24.50	40.00	-15.50	QP
4	104.54	21.20	0.83	11.03	33.06	40.00	-6.94	QP
5	222.17	8.20	1.23	11.78	21.21	40.00	-18.79	QP
6	649.66	0.97	1.65	18.60	21.22	47.00	-25.78	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that are 20db below the official limit are not reported

Environmental Conditions:	22.2℃, 52.8% RH
Test Voltage:	AC 230V,50Hz
Test Model:	TC-16
Test Mode:	Working
Test Engineer:	Li Bruce
Pol:	Horizontal
Detailed results are shown below	



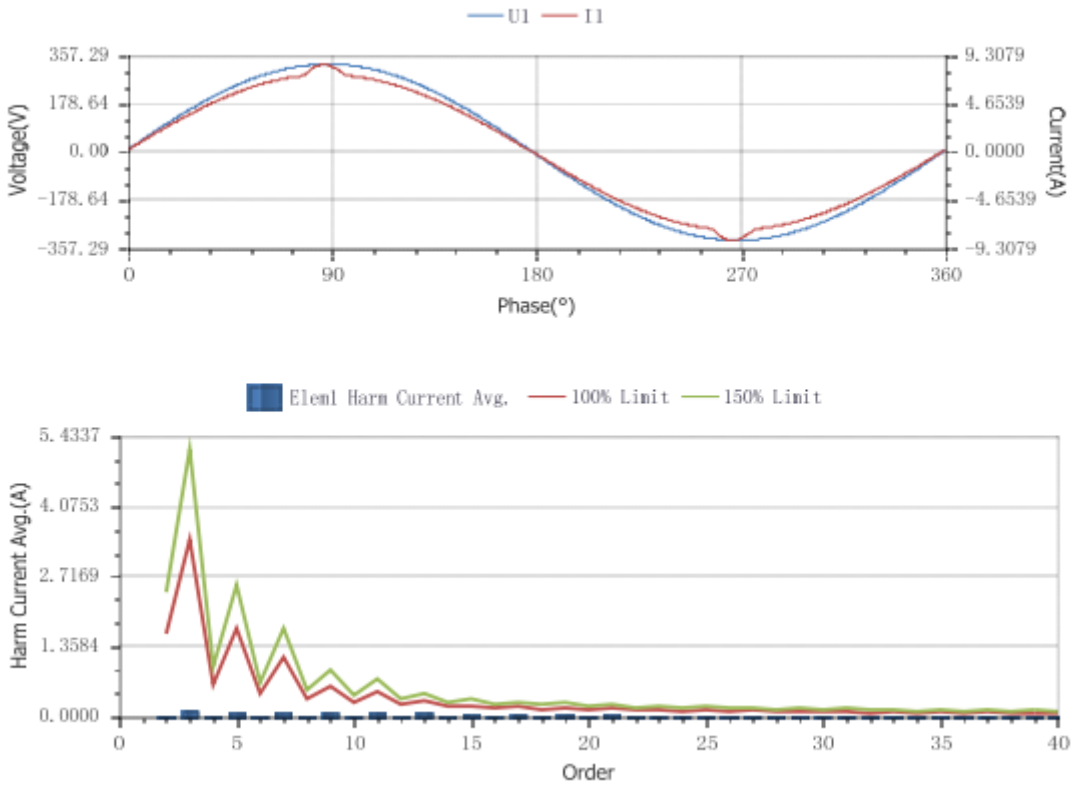
	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	32.07	13.98	0.43	10.73	25.14	40.00	-14.86	QP
2	48.33	18.11	0.59	12.21	30.91	40.00	-9.09	QP
3	81.50	12.80	0.74	9.75	23.29	40.00	-16.71	QP
4	103.81	22.75	0.82	10.97	34.54	40.00	-5.46	QP
5	180.02	11.72	1.14	9.80	22.66	40.00	-17.34	QP
6	489.03	0.69	1.49	16.57	18.75	47.00	-28.25	QP

Note: 1. All readings are Quasi-peak values.
2. Measured= Reading + Antenna Factor + Cable Loss
3. The emission that are 20db below the official limit are not reported

B.3 HARMONIC CURRENT EMISSION MEASUREMENT

Test Model	TC-16	Test Engineer	Hy Luo
Test Voltage	AC 230V/50Hz		

Customer : xxx Result : Pass



Customer : xxx Result : Pass

Total Current Harmonic ans Some Odd Harmonic Parameters

THC(A)	0.2068	THD(%)	3.85	POHC(A)	0.0326	POHC Limit(A)	0.3771

Maximum Value of Relevant Parameter During Test Period

Urms(V)	229.57	Freq(Hz)	50.000
Irms(A)	5.3702	Ipeak(A)	8.4601
I1(A)	5.3662	ICF	1.5770
P(W)	1231.9	λ	0.9992

Determination of Harmonics and Limits

Order(n)	Harmonics Current Avg.(A)	100% Limit(A)	Limit Percent(%)	Harmonics Current Max.(A)	150% Limit(A)	Limit Percent(%)	Result
2	0.0030	1.6200	0.19	0.0031	2.4300	0.13	Pass
3	0.0939	3.4500	2.72	0.0942	5.1750	1.82	Pass
4	0.0030	0.6450	0.47	0.0031	0.9675	0.32	Pass
5	0.0873	1.7100	5.11	0.0874	2.5650	3.41	Pass
6	0.0027	0.4500	0.60	0.0028	0.6750	0.41	Pass
7	0.0817	1.1550	7.07	0.0818	1.7325	4.72	Pass
8	0.0025	0.3450	0.72	0.0026	0.5175	0.50	Pass
9	0.0754	0.6000	12.57	0.0754	0.9000	8.38	Pass
10	0.0024	0.2760	0.87	0.0025	0.4140	0.60	Pass
11	0.0671	0.4950	13.56	0.0672	0.7425	9.05	Pass
12	0.0016	0.2300	0.70	0.0017	0.3450	0.49	Pass
13	0.0585	0.3150	18.57	0.0586	0.4725	12.40	Pass
14	0.0015	0.1971	0.76	0.0015	0.2957	0.51	Pass
15	0.0491	0.2250	21.82	0.0494	0.3375	14.64	Pass
16	0.0011	0.1725	0.64	0.0011	0.2588	0.43	Pass
17	0.0398	0.1985	20.05	0.0401	0.2978	13.47	Pass
18	0.0008	0.1533	0.52	0.0009	0.2300	0.39	Pass
19	0.0309	0.1776	17.40	0.0313	0.2664	11.75	Pass
20	0.0007	0.1380	0.51	0.0008	0.2070	0.39	Pass
21	0.0226	0.1607	14.06	0.0230	0.2411	9.54	Pass
22	0.0007	0.1255	0.56	0.0008	0.1882	0.43	Pass
23	0.0149	0.1467	10.16	0.0153	0.2201	6.95	Pass
24	0.0008	0.1150	0.70	0.0008	0.1725	0.46	Pass
25	0.0086	0.1350	6.37	0.0089	0.2025	4.40	Pass
26	0.0008	0.1062	0.75	0.0009	0.1592	0.57	Pass
27	0.0038	0.1250	3.04	0.0040	0.1875	2.13	Pass
28	0.0008	0.0986	0.81	0.0009	0.1479	0.61	Pass
29	0.0029	0.1164	2.49	0.0031	0.1746	1.78	Pass
30	0.0008	0.0920	0.87	0.0008	0.1380	0.58	Pass
31	0.0053	0.1089	4.87	0.0055	0.1633	3.37	Pass
32	0.0007	0.0863	0.81	0.0007	0.1294	0.54	Pass
33	0.0068	0.1023	6.65	0.0069	0.1534	4.50	Pass
34	0.0006	0.0812	0.74	0.0006	0.1218	0.49	Pass
35	0.0076	0.0964	7.88	0.0076	0.1446	5.26	Pass
36	0.0004	0.0767	0.52	0.0005	0.1150	0.43	Pass
37	0.0075	0.0912	8.22	0.0076	0.1368	5.56	Pass
38	0.0004	0.0726	0.55	0.0004	0.1089	0.37	Pass
39	0.0067	0.0865	7.75	0.0068	0.1298	5.24	Pass
40	0.0003	0.0690	0.43	0.0003	0.1035	0.29	Pass

Customer : xxx Result : Pass

Determination of Voltage Relevant Parameter During Test Period

Item	Nominal Value	Tested Value	Error Value	Allowable Error Value	Result
Urms (V)	230.00	229.56	0.44	±2.0%	Pass
Frequency (Hz)	50.000	49.999	0.001	±0.5%	Pass
CFU	1.4100	1.4154	0.0054	±0.01	Pass
Peak-Volt Phase	90.00	90.00	0.00	±3	Pass

Determination of Voltage Harmonics and Limits

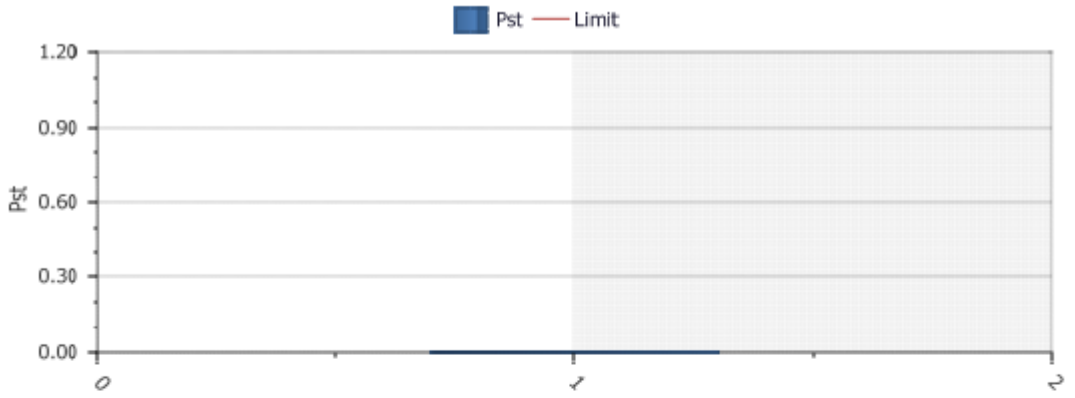
Order(n)	Uhdf	Limit(%)	Limit Percent(%)	Result
1	100%	---	---	---
2	0.01%	0.20	5.21%	Pass
3	0.01%	0.90	1.29%	Pass
4	0.00%	0.20	0.88%	Pass
5	0.00%	0.40	0.99%	Pass
6	0.00%	0.20	1.55%	Pass
7	0.01%	0.30	1.84%	Pass
8	0.00%	0.20	1.09%	Pass
9	0.01%	0.20	3.10%	Pass
10	0.01%	0.20	2.62%	Pass
11	0.00%	0.10	3.01%	Pass
12	0.01%	0.10	5.25%	Pass
13	0.00%	0.10	2.71%	Pass
14	0.00%	0.10	2.57%	Pass
15	0.00%	0.10	2.72%	Pass
16	0.00%	0.10	0.88%	Pass
17	0.00%	0.10	3.64%	Pass
18	0.00%	0.10	1.15%	Pass
19	0.00%	0.10	2.00%	Pass
20	0.00%	0.10	1.03%	Pass
21	0.00%	0.10	3.64%	Pass
22	0.00%	0.10	1.17%	Pass
23	0.00%	0.10	2.75%	Pass
24	0.00%	0.10	0.81%	Pass
25	0.00%	0.10	2.52%	Pass
26	0.00%	0.10	0.99%	Pass
27	0.00%	0.10	2.58%	Pass
28	0.00%	0.10	0.86%	Pass
29	0.00%	0.10	2.62%	Pass
30	0.00%	0.10	0.98%	Pass
31	0.00%	0.10	2.44%	Pass
32	0.00%	0.10	1.05%	Pass
33	0.00%	0.10	2.98%	Pass
34	0.00%	0.10	1.13%	Pass
35	0.00%	0.10	1.63%	Pass
36	0.00%	0.10	0.93%	Pass
37	0.00%	0.10	1.20%	Pass
38	0.00%	0.10	0.93%	Pass
39	0.00%	0.10	3.20%	Pass
40	0.00%	0.10	1.12%	Pass

B.4 VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

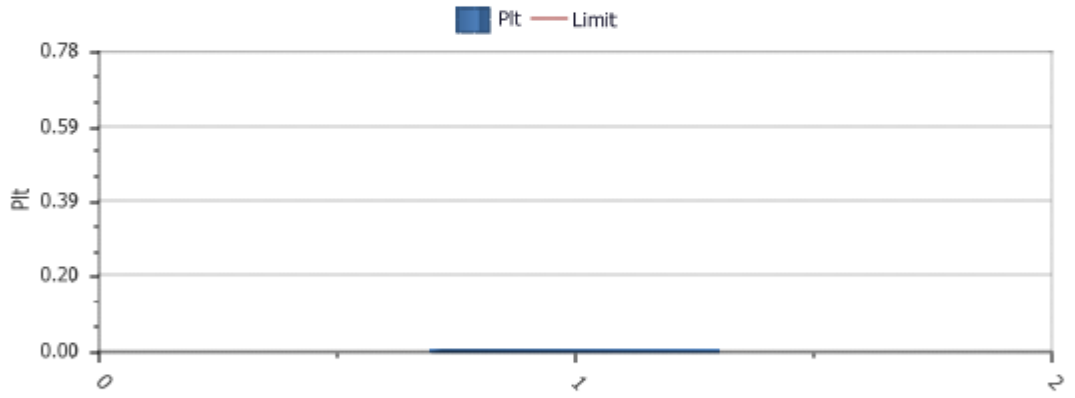
Test Model	TC-16	Test Engineer	Hy Luo
Test Voltage	AC 230V/50Hz		

Customer : xxx Result : PASS

Pst and Limit



Plt and Limit



Relevant Parameter and Judgement During Test Period

Vrms at the end of test(V)	227.42			
Error Max(%)		Test Limit(%)		
T-max(ms)	0.00	Test Limit(ms)	500	Pass
dc(%)	0.00	Test Limit(%)	3.30	Pass
dmax(%)	0.00	Test Limit(%)	4.00	Pass
Pst	0.00	Test Limit	1.00	Pass
Plt	0.00	Test Limit	0.65	Pass

B.5 ELECTROSTATIC DISCHARGE IMMUNITY TEST

Electrostatic Discharge Test Results			
Standard	☐ IEC 61000-4-2 ☑ EN 61000-4-2		
Applicant	Bravour Deutschland GmbH		
EUT	TYPE(USB) C Charger	**Temperature**	23.6℃
M/N	TC-16	**Humidity**	53.2%
Criterion	B	**Pressure**	1021mbar
Test Mode	Working	**Test Engineer**	Hy Luo

Air Discharge							
Test Points	**Test Levels**			**Results**			
	± 2kV	**± 4kV**	**± 8kV**	**Passed**	**Fail**	**Performance Criterion**	
Front	☒	☒	☒	☒	☐	☐A	☒B
Back	☒	☒	☒	☒	☐	☐A	☒B
Left	☒	☒	☒	☒	☐	☐A	☒B
Right	☒	☒	☒	☒	☐	☐A	☒B
Top	☒	☒	☒	☒	☐	☐A	☒B
Bottom	☒	☒	☒	☒	☐	☐A	☒B

Contact Discharge						
Test Points	**Test Levels**		**Results**			
	± 2 kV	**±4 kV**	**Passed**	**Fail**	**Performance Criterion**	
Front	☒	☒	☒	☐	☐A	☒B
Back	☒	☒	☒	☐	☐A	☒B
Left	☒	☒	☒	☐	☐A	☒B
Right	☒	☒	☒	☐	☐A	☒B
Top	☒	☒	☒	☐	☐A	☒B
Bottom	☒	☒	☒	☐	☐A	☒B

Discharge To Horizontal Coupling Plane						
Side of EUT	**Test Levels**		**Results**			
	± 2 kV	**± 4 kV**	**Passed**	**Fail**	**Performance Criterion**	
Front	☒	☒	☒	☐	☐A	☒B
Back	☒	☒	☒	☐	☐A	☒B
Left	☒	☒	☒	☐	☐A	☒B
Right	☒	☒	☒	☐	☐A	☒B

Discharge To Vertical Coupling Plane						
Side of EUT	**Test Levels**		**Results**			
	± 2 kV	**± 4 kV**	**Passed**	**Fail**	**Performance Criterion**	
Front	☒	☒	☒	☐	☐A	☒B
Back	☒	☒	☒	☐	☐A	☒B
Left	☒	☒	☒	☐	☐A	☒B
Right	☒	☒	☒	☐	☐A	☒B

B.6 RF FIELD STRENGTH SUSCEPTIBILITY TEST

RF Field Strength Susceptibility Test Results			
Standard	☐ IEC 61000-4-3 ☑ EN 61000-4-3		
Applicant	Bravour Deutschland GmbH		
EUT	TYPE(USB) C Charger	**Temperature**	24.8℃
M/N	TC-16	**Humidity**	53.7％
Field Strength	3 V/m	**Criterion**	A
Test Mode	Working	**Test Engineer**	Hy Luo
Test Frequency	80MHz to 1000MHz (swept test) 1800MHz, 2600MHz, 3500MHz, 5000MHz (spot test)		
Modulation	☐None ☐ Pulse ☑AM 1KHz 80%		
Steps	1%		

	Horizontal	Vertical
Front	PASS	PASS
Right	PASS	PASS
Rear	PASS	PASS
Left	PASS	PASS

Note：

B.7 ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

Electrical Fast Transient/Burst Test Results			
Standard	☐ IEC 61000-4-4 ☑ EN 61000-4-4		
Applicant	Bravour Deutschland GmbH		
EUT	TYPE(USB) C Charger	**Temperature**	23.7℃
M/N	TC-16	**Humidity**	52.8%
Test Mode	Working	**Criterion**	B
Test Engineer	Hy Luo		

Line	Test Voltage	Result (+)	Result (-)
L	1KV	PASS	PASS
N	1KV	PASS	PASS
PE	1KV	PASS	PASS
L-N	1KV	PASS	PASS
L-PE	1KV	PASS	PASS
N-PE	1KV	PASS	PASS
L-N-PE	1KV	PASS	PASS
Signal Line			
I/O Cable			

Note:

B.8 SURGE IMMUNITY TEST

Surge Immunity Test Result			
Standard	☐ IEC 61000-4-5 ☑ EN 61000-4-5		
Applicant	Bravour Deutschland GmbH		
EUT	TYPE(USB) C Charger	**Temperature**	22.6℃
M/N	TC-16	**Humidity**	53.6%
Test Mode	Working	**Criterion**	B
Test Engineer	Hy Luo		

Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (KV)	Result
L-N	+	90°	5	1.0	PASS
	-	270°	5	1.0	PASS
L-PE	+	90°	5	2.0	PASS
	-	270°	5	2.0	PASS
N-PE	+	90°	5	2.0	PASS
	-	270°	5	2.0	PASS
Signal Line					
Note					

B.9 INJECTED CURRENTS SUSCEPTIBILITY TEST

Injected Currents Susceptibility Test Results			
Standard	☐ IEC 61000-4-6 ☑ EN 61000-4-6		
Applicant	Bravour Deutschland GmbH		
EUT	TYPE(USB) C Charger	**Temperature**	24.5℃
M/N	TC-16	**Humidity**	54.8%
Test Mode	Working	**Criterion**	A
Test Engineer	Hy Luo		

Frequency Range (MHz)	Injected Position	Strength (Unmodulated)	Criterion	Result
0.15 ~ 10	AC Mains	3V	A	PASS
10 ~ 30		3V ~ 1V		
30 ~ 80		1V		

Note:

B.10 MAGNETIC FIELD SUSCEPTIBILITY TEST

Magnetic Field Immunity Test Result			
Standard	☐ IEC 61000-4-8 ☑ EN 61000-4-8		
Applicant	Bravour Deutschland GmbH		
EUT	TYPE(USB) C Charger	**Temperature**	23.9℃
M/N	TC-16	**Humidity**	54.6%
Test Mode	Working	**Criterion**	A
Test Engineer	Hy Luo		

Test Level (A/M)	Testing Duration	Coil Orientation	Criterion	Result
1	5 mins	X	A	PASS
1	5 mins	Y	A	PASS
1	5 mins	Z	A	PASS

Note:

B.11 VOLTAGE DIPS AND INTERRUPTIONS TEST

Voltage Dips And Interruptions Test Results			
Standard	☐ IEC 61000-4-11 ☑ EN 61000-4-11		
Applicant	Bravour Deutschland GmbH		
EUT	TYPE(USB) C Charger	**Temperature**	23.8℃
M/N	TC-16	**Humidity**	52.3%
Test Mode	Working	**Criterion**	B&C
Test Engineer	Hy Luo		

Test Level % U_T	Voltage Dips & Short Interruptions % U_T	Duration (in periods)	Criterion	Result
0	100	0.5P	B	PASS
70	30	25P	C	PASS
0	100	250P	C	PASS

Note:

ANNEX C

（External and internal photos of the EUT）

Fig. 1

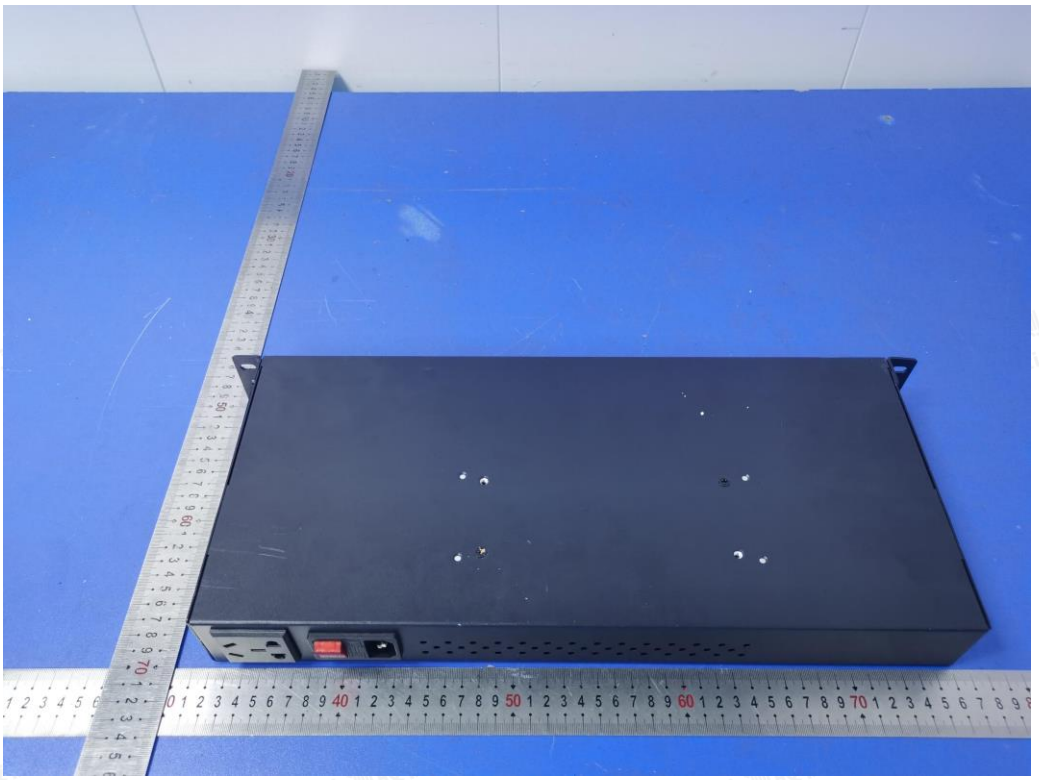


Fig. 2

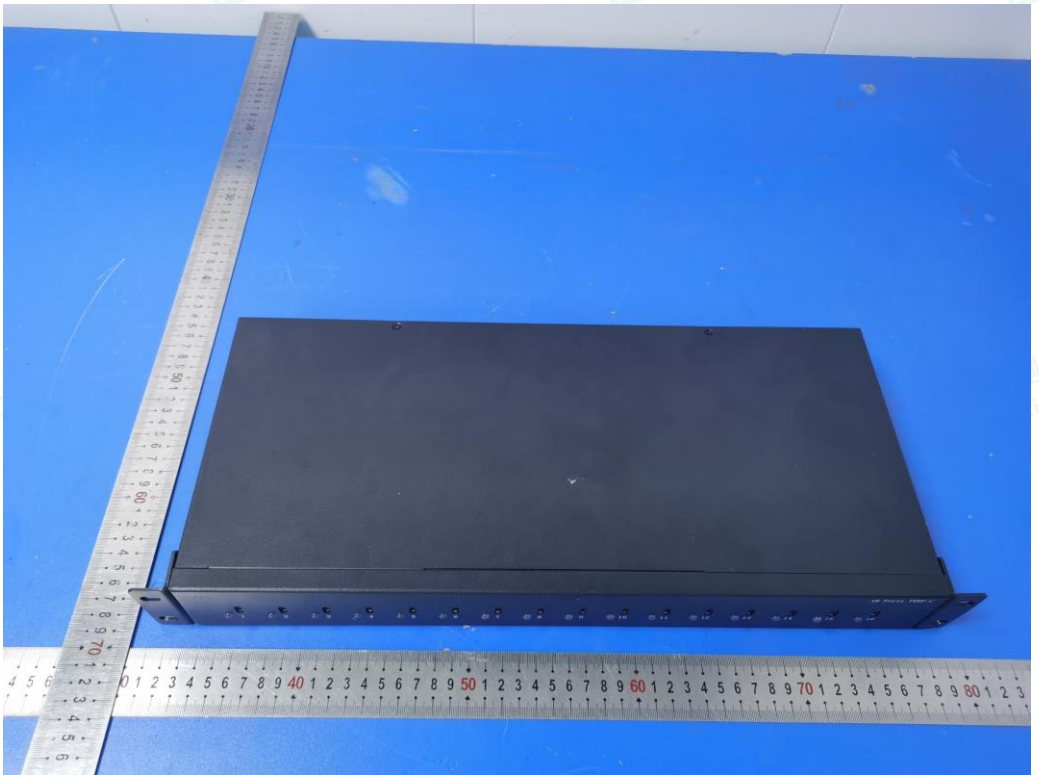


Fig. 3

Fig. 4

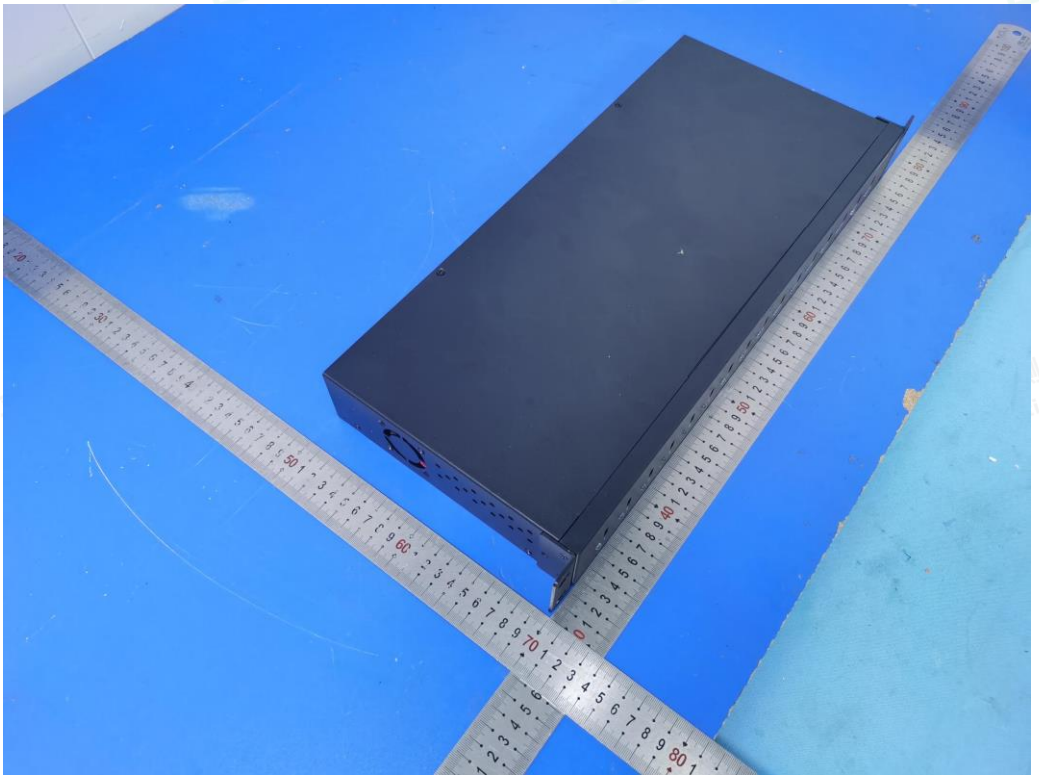


Fig. 5

Fig. 6

---------- THE END OF TEST REPORT ----------