EMC TEST REPORT

For

BORN ELECTRONICS LIMITED

POE switch

Test Model: BI808PE1G2F

Additional Model No.: BI804PG1G2F,BI808PGM2F, BI808GM2F, BI916PGM2F, BI916GM2F, BI808PGM 4F, BI604PE1E2F, BI808G8F, BI808PG2F, BI804PGM2F, BI604PE2F, BI804PG1D2F, BI912PGM4F, BI824GM8FC4F, BI924GM8FC4T

Prepared for	:	BORN ELECTRONICS LIMITED
Address	:	157 SIXTH AVENUE LONDON E12 5PT
Prepared by	:	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
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Date of receipt of test sample	:	August 28, 2019
Number of tested samples	:	1
Serial number	:	Prototype
Date of Test	:	August 28, 2019 ~ September 03, 2019
Date of Report	:	April 08, 2021

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EMC TEST REPORT

EN 55032: 2015

Electromagnetic compatibility of multimedia equipment - Emission Requirements

EN 55035: 2017

Electromagnetic compatibility of multimedia equipment – Immunity requirements

Report Reference No.	:	**LCS190812255AE200**
Date of Issue.....	:	April 08, 2021
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.....	:	**BORN ELECTRONICS LIMITED**
Address.....	:	157 SIXTH AVENUE LONDON E12 5PT
Test Specification		
Standard.....	:	EN 55032: 2015 EN 55035: 2017 EN 61000-3-2: 2014 EN 61000-3-3: 2013
Test Report Form No.....	:	LCSEMC-1.0
TRF Originator.....	:	Shenzhen LCS Compliance Testing Laboratory Ltd.
Master TRF.....	:	Dated 2011-03

Test Item Description.....	:	**POE switch**
Trade Mark.....	:	N/A
Test Model.....	:	BI808PE1G2F
Ratings.....	:	Input: DC 48-57V
Result	:	**Positive**

Compiled by:	Supervised by:	Approved by:
Lucky.xie	Tom . Wang	
Lucky Xie/ File administrators	Tom Wang/ Technique principal	Gavin Liang/ Manager

EMC -- TEST REPORT

Test Report No. : LCS190812255AE200	April 08, 2021 Date of issue

Test Model.....	: BI808PE1G2F
EUT.....	: POE switch
Applicant.....	**: BORN ELECTRONICS LIMITED**
Address.....	: 157 SIXTH AVENUE LONDON E12 5PT
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**: BORN ELECTRONICS LIMITED**
Address.....	: 157 SIXTH AVENUE LONDON E12 5PT
Telephone.....	: /
Fax.....	: /
Factory.....	**: BORN ELECTRONICS LIMITED**
Address.....	: 157 SIXTH AVENUE LONDON E12 5PT
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	Revised By
000	September 05, 2019	Initial Issue	Gavin Liang
100	April 08, 2021	Revised	Gavin Liang

lish“Remark：This report is based on the report No. LCS190812255AE. This report is invalid without the original report.

for changing the following information:

1.Changed applicant and Manufacturer and Factory to Born Electronics limited

2.Changed applicant address to 157 SIXTH AVENUE LONDON E12 5PT

3.Product model changed to BI808PE1G2F

4.Change trade Test Additional Model No to BI804PG1G2F, BI808PGM2F, BI808GM2F, BI916PGM2F, BI916GM2F, BI808PGM 4F, BI604PE1E2F, BI808G8F, BI808PG2F, BI804PGM2F, BI604PE2F, BI804PG1D2F, BI912PGM4F, BI824GM8FC4F, BI924GM8FC4T

5.Changed External and internal photos of the EUT

Other contents still remain the same with the previous one.

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Test Report Description Page

1. TEST STANDARDS

The tests were performed according to following standards:

EN 55032: 2015 Electromagnetic compatibility of multimedia equipment - Emission Requirements

EN 55035: 2017 Electromagnetic compatibility of multimedia equipment – Immunity requirements

EN 61000-3-2: 2014 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 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)			
Description of Test Item	**Standard**	**Limits**	**Results**
Conducted disturbance at mains terminals	EN 55032: 2015	Class A	PASS
Conducted disturbance at telecommunication port	EN 55032: 2015	Class A	PASS
Radiated disturbance	EN 55032: 2015	Class A	PASS
Harmonic current emissions	EN 61000-3-2: 2014	Class A	N/A
Voltage fluctuations & flicker	EN 61000-3-3: 2013	---------	PASS
Immunity (EN 55035: 2017)			
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	A	PASS
Power frequency magnetic field	EN 61000-4-8: 2010	A	PASS
Voltage dips, >95% reduction	EN 61000-4-11: 2004+A1: 2017	B	PASS
Voltage dips, 30% reduction		C	PASS
Voltage interruptions		C	PASS
***Note: N/A is an abbreviation for Not Applicable.			

Test mode:		
Mode 1	LAN Mode	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;
─ tests of all peripheral access (hard disks, floppy disks, printers, keyboard, mouse, etc.);
─ quality of software execution;
─ quality of data display and transmission;
─ quality of speech transmission.

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	:	POE switch
Trade Mark	:	N/A
Test Model	:	BI808PE1G2F
Additional Model	:	BI804PG1G2F,BI808PGM2F, BI808GM2F, BI916PGM2F, BI916GM2F, BI808PGM 4F, BI604PE1E2F, BI808G8F, BI808PG2F, BI804PGM2F, BI604PE2F, BI804PG1D2F, BI912PGM4F, BI824GM8FC4F, BI924GM8FC4T
Model Declaration	:	only for the annex models, with same sockets in minor difference, as color and appearance, less than 20 models in total
Power Supply	:	Input: DC 48-57V

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

Description	Manufacturer	Model	Serial Number
PC	DELL	vostro15-7570	---

3.3. Description of Test Facility

FCC Registration Number is 254912.
Industry Canada Registration Number is 9642A-1.
ESMD Registration Number is ARCB0108.
UL Registration Number is 100571-492.
TUV SUD Registration Number is SCN1081.
TUV RH Registration Number is UA 50296516-001
NVLAP Registration Code is 600167-0.

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
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

Test Item: Conducted Disturbance

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Software	AUDIX	E3	/	N/A
2	EMI Test Receiver	R&S	ESPI	101840	2019-06-11
3	Artificial Mains	R&S	ENV216	101288	2019-06-12
4	10dB Attenuator	SCHWARZBECK	MTS-IMP-136	261115-001-0032	2019-06-11
5	Impedance Stabilization Network	TESEQ	ISN T800	45130	2018-11-15

Test Item: Radiated Disturbance (Electric Field)

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Software	AUDIX	E3	/	N/A
2	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2019-06-12
3	Positioning Controller	MF	MF-7082	/	2019-06-12
4	By-log Antenna	SCHWARZBECK	VULB9163	9163-470	2019-07-25
5	Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-1925	2019-07-01
6	EMI Test Receiver	R&S	ESR 7	101181	2019-06-12
7	RS SPECTRUM ANALYZER	R&S	FSP40	100503	2018-11-15
8	Broadband Preamplifier	/	BP-01M18G	P190501	2019-07-01
9	RF Cable-R03m	Jye Bao	RG142	CB021	2019-06-12
10	RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	2019-06-12

Test Item: Harmonic Current

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power Analyzer Test System	Voltech	PM6000	20000670053	2019-06-12

Test Item: Voltage fluctuation and Flicker

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power Analyzer Test System	Voltech	PM6000	20000670053	2019-06-12

Test Item: Electrostatic Discharge

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ESD Simulator	SCHLODER	SESD 230	604035	2019-06-13

Test Item: RF Field Strength Susceptibility

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	RS Test Software	Tonscend	/	/	N/A
2	ESG Vector Signal Generator	Agilent	E4438C	MY42081396	2018-11-15
3	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2019-06-12
4	RF POWER AMPLIFIER	OPHIR	5225R	1052	NCR
5	RF POWER AMPLIFIER	OPHIR	5273F	1019	NCR
6	Stacked Broadband Log Periodic Antenna	SCHWARZBECK	STLP 9128	9128ES-145	NCR
7	Stacked Mikrowellen Log.-Per Antenna	SCHWARZBECK	STLP 9149	9149-484	NCR
8	Electric field probe	Narda S.TS./PMM	EP601	611WX80208	2019-03-25
Note: NCR means no calibration requirement					

Test Item: Electrical Fast Transient/Burst

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Immunity Simulative Generator	EM TEST	UCS500 M4	0101-34	2019-06-11

Test Item: Surge

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Immunity Simulative Generator	EM TEST	UCS500 M4	0101-34	2019-06-11

Test Item: Conducted Susceptibility

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Simulator	FRANKONIA	CIT-10/75	A126A1195	2019-06-11
2	CDN	FRANKONIA	CDN-M2+M3	A2210177	2019-06-11
3	6dB Attenuator	FRANKONIA	DAM25W	1172040	2019-06-11

Test Item: Power Frequency Magnetic Field Susceptibility

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power frequency mag-field generator System	EVERFINE	EMS61000-8K	906003	2019-06-11

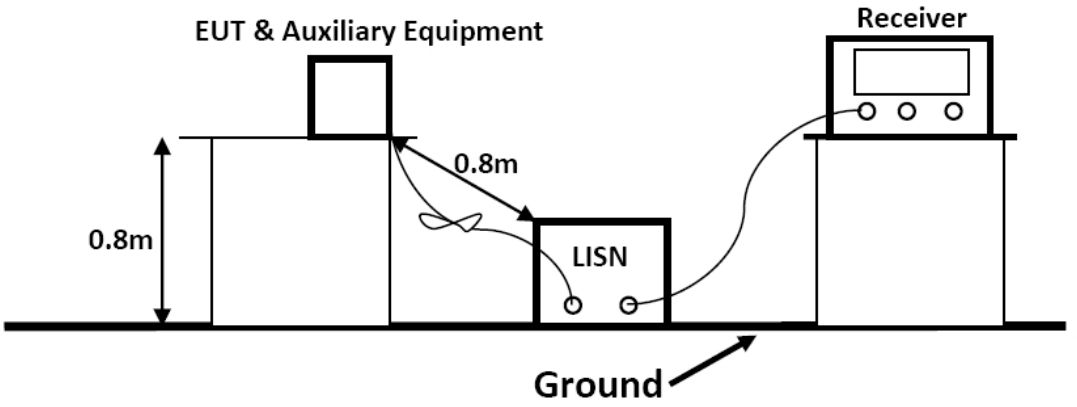
Test Item: Voltage Dips					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2019-06-11

Test Item: Voltage Short Interruptions					
Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2019-06-11

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 Class A

Power Line Conducted Emission Limits (Class A)		
Frequency (MHz)	Limit (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	79	66
0.50 ~ 30.00	73	60
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 1 and measure it.

5.1.5. Test Procedure

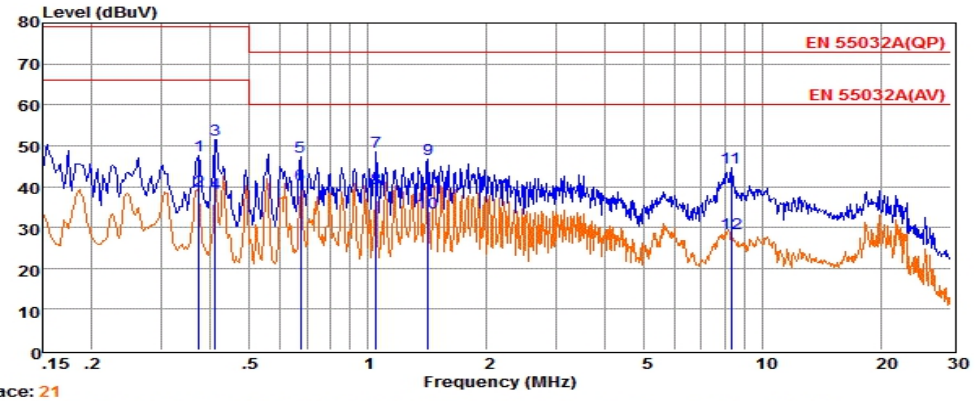
The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided 50-ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission 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.

The test result please refer to the next page.

Test Model	BI808PE1G2F	Test Mode	Mode 1
Environmental Conditions	23.6℃, 54.2% RH	Test Engineer	Jay Li
Pol.	Line	Test Voltage	AC 230V/50Hz

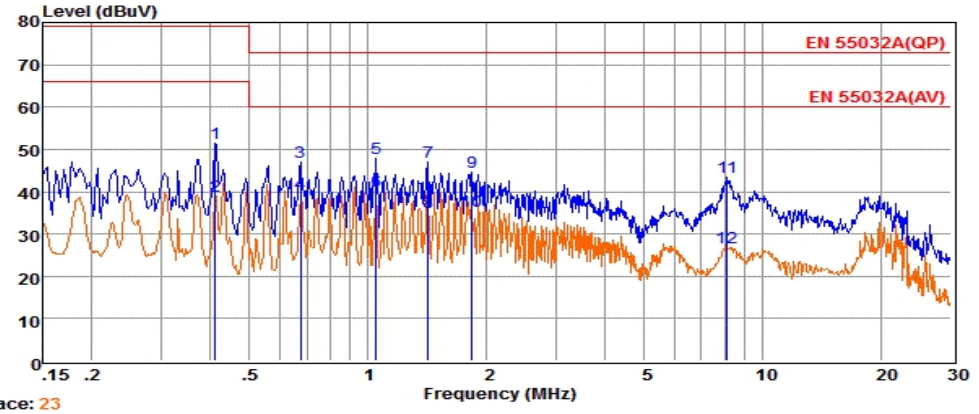


Trace: 21

	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.37	27.98	9.62	0.04	10.00	47.64	79.00	-31.36	QP
2	0.37	19.27	9.62	0.04	10.00	38.93	66.00	-27.07	Average
3	0.41	31.91	9.62	0.04	10.00	51.57	79.00	-27.43	QP
4	0.41	18.84	9.62	0.04	10.00	38.50	66.00	-27.50	Average
5	0.68	27.65	9.64	0.04	10.00	47.33	73.00	-25.67	QP
6	0.68	20.86	9.64	0.04	10.00	40.54	60.00	-19.46	Average
7	1.05	28.69	9.63	0.05	10.00	48.37	73.00	-24.63	QP
8	1.05	19.95	9.63	0.05	10.00	39.63	60.00	-20.37	Average
9	1.42	26.88	9.64	0.05	10.00	46.57	73.00	-26.43	QP
10	1.42	14.02	9.64	0.05	10.00	33.71	60.00	-26.29	Average
11	8.32	24.91	9.68	0.07	10.00	44.66	73.00	-28.34	QP
12	8.32	8.92	9.68	0.07	10.00	28.67	60.00	-31.33	Average

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

Test Model	BI808PE1G2F	Test Mode	Mode 1
Environmental Conditions	23.6℃, 54.2% RH	Test Engineer	Jay Li
Pol.	Neutral	Test Voltage	AC 230V/50Hz



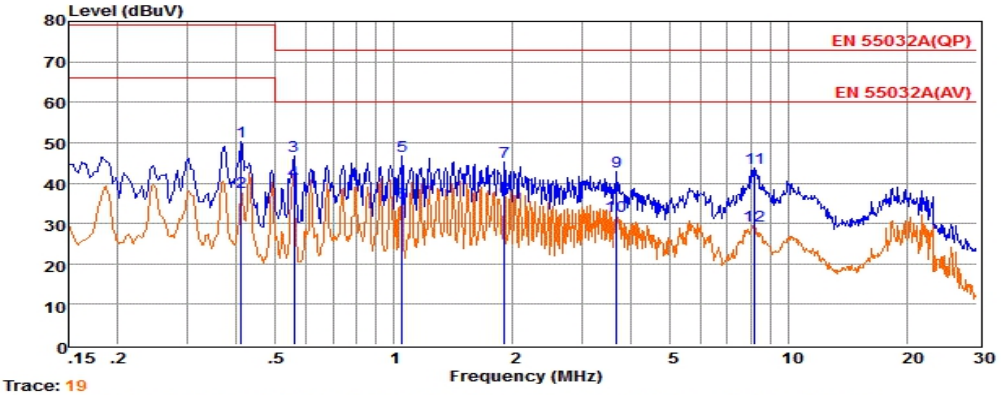
Trace: 23

	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.41	31.89	9.61	0.04	10.00	51.54	79.00	-27.46	QP
2	0.41	19.21	9.61	0.04	10.00	38.86	66.00	-27.14	Average
3	0.68	27.36	9.63	0.04	10.00	47.03	73.00	-25.97	QP
4	0.68	19.95	9.63	0.04	10.00	39.62	60.00	-20.38	Average
5	1.05	28.23	9.63	0.05	10.00	47.91	73.00	-25.09	QP
6	1.05	20.58	9.63	0.05	10.00	40.26	60.00	-19.74	Average
7	1.42	27.21	9.63	0.05	10.00	46.89	73.00	-26.11	QP
8	1.42	15.54	9.63	0.05	10.00	35.22	60.00	-24.78	Average
9	1.84	24.80	9.63	0.05	10.00	44.48	73.00	-28.52	QP
10	1.84	15.58	9.63	0.05	10.00	35.26	60.00	-24.74	Average
11	8.15	23.77	9.70	0.07	10.00	43.54	73.00	-29.46	QP
12	8.15	7.01	9.70	0.07	10.00	26.78	60.00	-33.22	Average

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

Note: Pre-Scan all mode, Thus record worse case mode result in this report.

Test Model	BI808PE1G2F	Test Mode	Mode 1
Environmental Conditions	23.6℃, 54.2% RH	Test Engineer	Jay Li
Pol.	Line	Test Voltage	AC 120V/60Hz

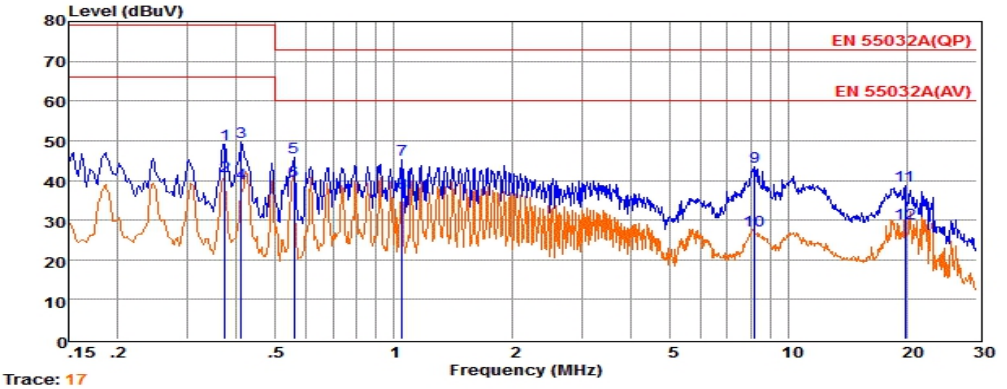


Trace: 19

	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.41	30.60	9.62	0.04	10.00	50.26	79.00	-28.74	QP
2	0.41	18.12	9.62	0.04	10.00	37.78	66.00	-28.22	Average
3	0.56	27.07	9.63	0.04	10.00	46.74	73.00	-26.26	QP
4	0.56	20.79	9.63	0.04	10.00	40.46	60.00	-19.54	Average
5	1.05	26.91	9.63	0.05	10.00	46.59	73.00	-26.41	QP
6	1.05	15.39	9.63	0.05	10.00	35.07	60.00	-24.93	Average
7	1.91	25.53	9.64	0.05	10.00	45.22	73.00	-27.78	QP
8	1.91	16.80	9.64	0.05	10.00	36.49	60.00	-23.51	Average
9	3.66	23.00	9.65	0.06	10.00	42.71	73.00	-30.29	QP
10	3.66	12.00	9.65	0.06	10.00	31.71	60.00	-28.29	Average
11	8.19	24.00	9.68	0.07	10.00	43.75	73.00	-29.25	QP
12	8.19	9.79	9.68	0.07	10.00	29.54	60.00	-30.46	Average

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

Test Model	BI808PE1G2F	Test Mode	Mode 1
Environmental Conditions	23.6℃, 54.2% RH	Test Engineer	Jay Li
Pol.	Neutral	Test Voltage	AC 120V/60Hz



Trace: 17

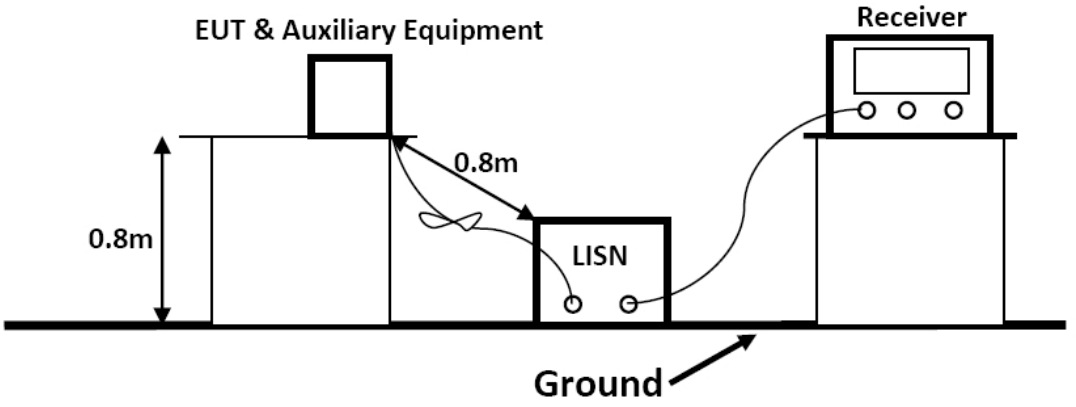
	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.37	29.56	9.61	0.04	10.00	49.21	79.00	-29.79	QP
2	0.37	21.27	9.61	0.04	10.00	40.92	66.00	-25.08	Average
3	0.41	30.05	9.61	0.04	10.00	49.70	79.00	-29.30	QP
4	0.41	19.67	9.61	0.04	10.00	39.32	66.00	-26.68	Average
5	0.56	26.28	9.62	0.04	10.00	45.94	73.00	-27.06	QP
6	0.56	20.23	9.62	0.04	10.00	39.89	60.00	-20.11	Average
7	1.05	25.47	9.63	0.05	10.00	45.15	73.00	-27.85	QP
8	1.05	17.19	9.63	0.05	10.00	36.87	60.00	-23.13	Average
9	8.19	23.77	9.70	0.07	10.00	43.54	73.00	-29.46	QP
10	8.19	7.53	9.70	0.07	10.00	27.30	60.00	-32.70	Average
11	19.74	18.66	9.88	0.12	10.00	38.66	73.00	-34.34	QP
12	19.74	9.23	9.88	0.12	10.00	29.23	60.00	-30.77	Average

Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

Note: Pre-Scan all mode, Thus record worse case mode result in this report.

5.2. TELECOMMUNICATION LINE CONDUCTED EMISSION MEASUREMENT

5.2.1. Block Diagram of Test Setup



5.2.2. Test Standard

EN 55032: 2015

Telecommunication Line Conducted Emission Limits (Class A)

Frequency (MHz)			Voltage Limit (dBμV)		Current Limit(dBμV)	
			Quasi-peak	Average	Quasi-peak	Average
0.15	~	0.50	97 ~87	84~74	53~43	40~30
0.50	~	30.00	87	74	43	30

NOTE 1-The limits decrease linearly with the logarithm of the frequency in the range 0,15 MHz to 0,5 MHz.

NOTE 2-The current and voltage disturbance limits are derived for use with an impedance stabilization network (ISN) which presents a common mode (asymmetric mode) impedance of 150 7 to the telecommunication port under test (conversion factor is 20 log10 150 / l = 44 dB).

5.2.3. 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.

5.2.4. Operating Condition of EUT

5.2.4.1.Setup the EUT as shown on Section 1.1
5.2.4.2.Turn on the power of all equipments.
5.2.4.3. Let the EUT work in measuring mode (1) and measure it.

5.2.5.Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the ISN through Line Impedance Stability Network (L.I.S.N). This provided 50-ohm coupling impedance for the tested equipments. Both sides of ISN are investigated to find out the maximum conducted emission according to the EN 55032 regulations during conducted emission measurement.

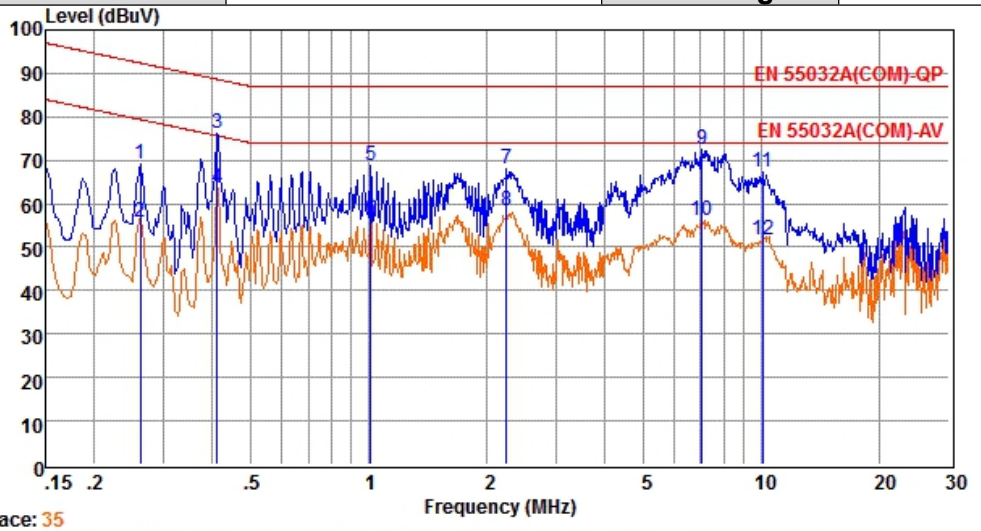
The bandwidth of the field strength meter is set at 9kHz in 150kHz~30MHz.

5.2.6.Test Results

PASS

The frequency range from 150kHz to 30MHz is investigated.

Test Model	BI808PE1G2F	**Test Mode**	Mode 1
Environmental Conditions	23.6℃, 54.2% RH	**Test Engineer**	Jay Li
Pol	/	**Test Voltage**	AC 230V/50Hz



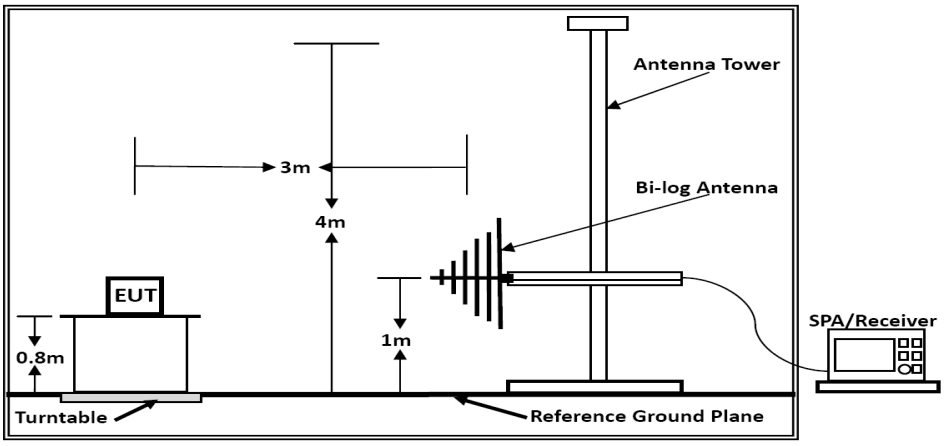
Trace: 35

	Freq	Reading	LISNFac	CabLos	Aux2Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.26	49.48	9.64	0.03	10.00	69.15	92.38	-23.23	QP
2	0.26	36.17	9.64	0.03	10.00	55.84	79.38	-23.54	Average
3	0.41	56.69	9.63	0.04	10.00	76.36	88.64	-12.28	QP
4	0.41	43.84	9.63	0.04	10.00	63.51	75.64	-12.13	Average
5	1.01	49.25	9.58	0.05	10.00	68.88	87.00	-18.12	QP
6	1.01	36.87	9.58	0.05	10.00	56.50	74.00	-17.50	Average
7	2.24	48.52	9.55	0.05	10.00	68.12	87.00	-18.88	QP
8	2.24	38.60	9.55	0.05	10.00	58.20	74.00	-15.80	Average
9	7.06	53.05	9.55	0.07	10.00	72.67	87.00	-14.33	QP
10	7.06	36.40	9.55	0.07	10.00	56.02	74.00	-17.98	Average
11	10.07	47.47	9.57	0.08	10.00	67.12	87.00	-19.88	QP
12	10.07	32.17	9.57	0.08	10.00	51.82	74.00	-22.18	Average

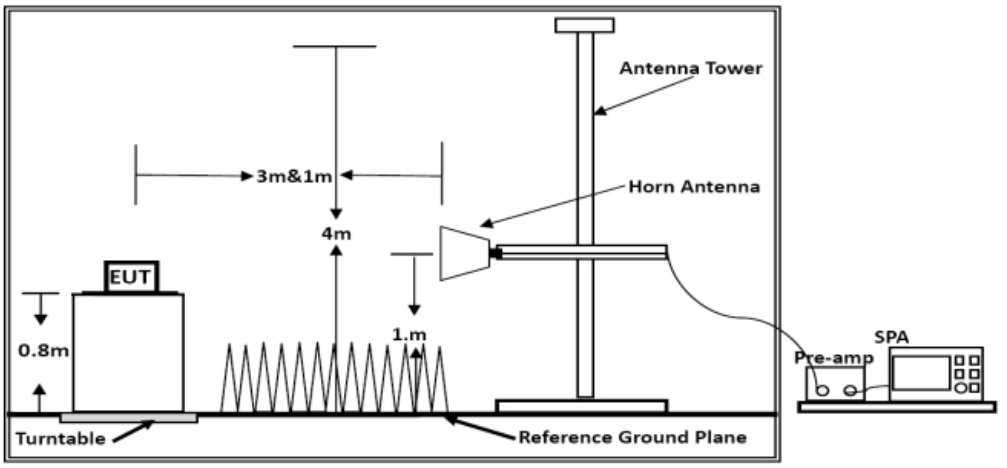
Remarks: 1. Measured = Reading + LISNFac + Cable Loss + Aux2 Fac.
2. The emission levels that are 20dB below the official limit are not reported.

5.3. RADIATED EMISSION MEASUREMENT

5.3.1. Block Diagram of Test Setup



Below 1GHz



Above 1GHz

5.3.2. Test Standard

EN 55032: 2015 Class A

All emanations from a class A 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	50
230 ~ 1000	3	57
***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	76	56
3000 ~ 6000	3	80	60
***Note: The lower limit applies at the transition frequency.			

5.3.3. EUT Configuration on Test

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

5.3.4. Operating Condition of EUT

5.3.4.1.Turn on the power.

5.3.4.2.Let the EUT work in the test Mode 1 and measure it.

5.3.5. 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/1000kHz.

The frequency range from 30MHz to 1000MHz is checked.

The bandwidth of the Spectrum analyzer is set at RBW/VBW=1MHz/3MHz.

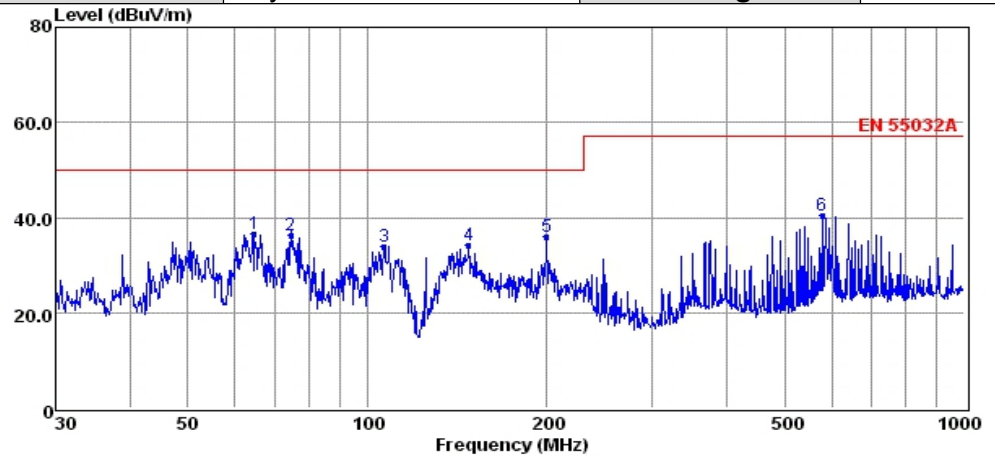
The frequency range from 1GHz to the frequency which about 5th carrier harmonic or 6GHz is checked.

5.3.6. Test Results

PASS.

The test result please refer to the next page.

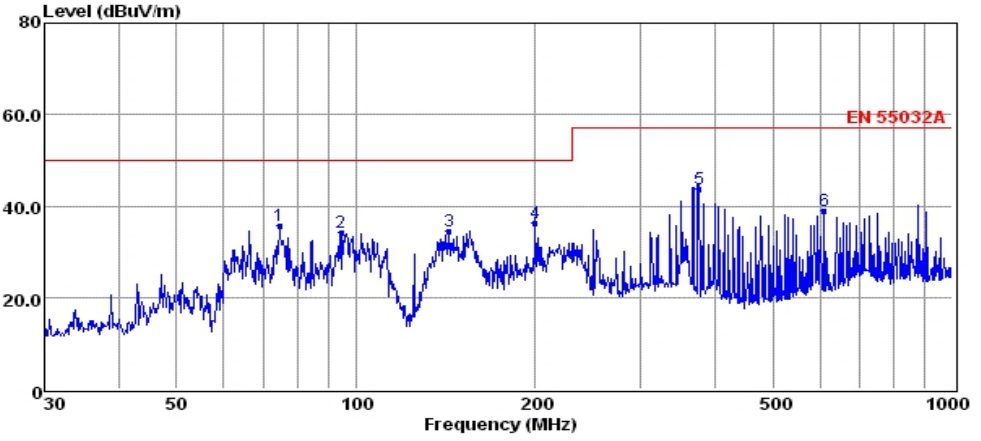
Test Model	BI808PE1G2F	Test Mode	Mode 1
Environmental Conditions	24.3℃, 52.6% RH	Detector Function	Quasi-peak
Pol.	Vertical	Distance	3m
Test Engineer	Jay Li	Test Voltage	AC 230V/50Hz



	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	64.66	25.29	0.52	10.84	36.65	50.00	-13.35	QP
2	74.40	27.71	0.54	7.90	36.15	50.00	-13.85	QP
3	106.76	20.68	0.68	12.54	33.90	50.00	-16.10	QP
4	147.92	25.01	0.86	8.25	34.12	50.00	-15.88	QP
5	199.99	24.55	0.84	10.57	35.96	50.00	-14.04	QP
6	578.67	20.90	1.44	18.05	40.39	57.00	-16.61	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

Test Model	BI808PE1G2F	Test Mode	Mode 1
Environmental Conditions	24.3℃, 52.6% RH	Detector Function	Quasi-peak
Pol.	Horizontal	Distance	3m
Test Engineer	Jay Li	Test Voltage	AC 230V/50Hz



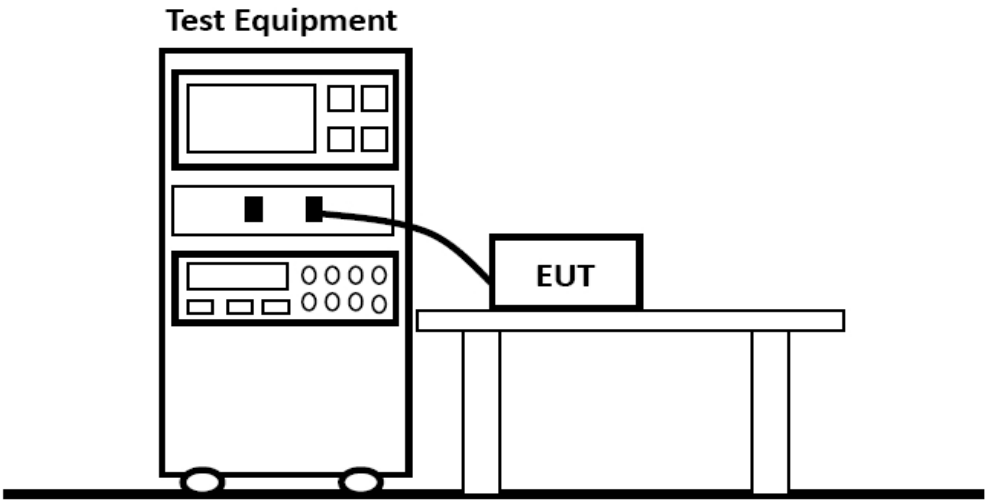
	Freq	Reading	CabLos	Antfac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB/m	dBuV/m	dBuV/m	dB	
1	74.40	27.16	0.54	7.90	35.60	50.00	-14.40	QP
2	94.43	20.86	0.58	12.73	34.17	50.00	-15.83	QP
3	143.33	25.69	0.71	8.21	34.61	50.00	-15.39	QP
4	199.99	24.99	0.84	10.57	36.40	50.00	-13.60	QP
5	375.94	28.12	1.10	14.56	43.78	57.00	-13.22	QP
6	609.92	19.01	1.45	18.49	38.95	57.00	-18.05	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

Note: Pre-Scan all mode, Thus record worse case mode result in this report.

5.4. HARMONIC CURRENT EMISSION MEASUREMENT

5.4.1. Block Diagram of Test Setup



5.4.2. Test Standard

EN 61000-3-2: 2014

5.4.3. Operating Condition of EUT

Same as Section 5.3.4, except the test setup replaced as Section 5.4.1.

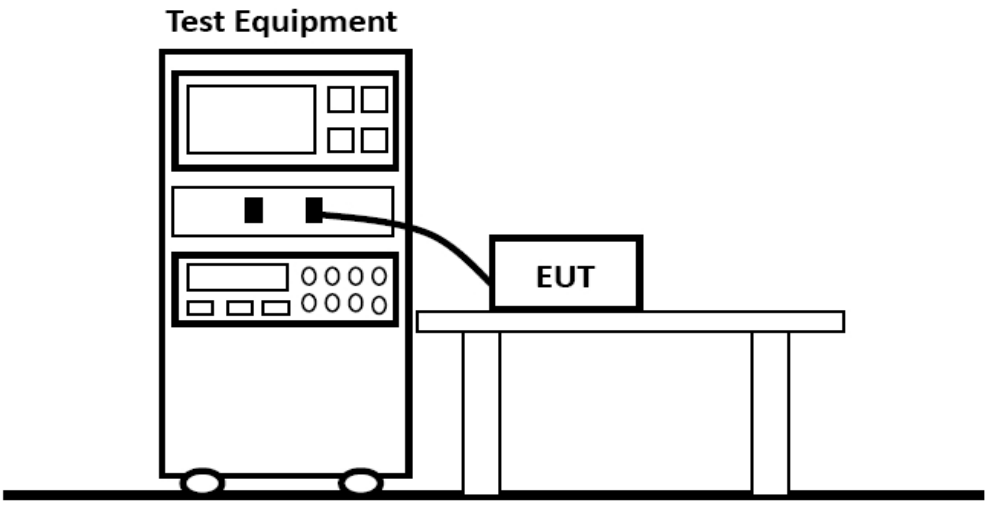
5.4.4. Test Results

N/A

Because the power of EUT is less than 75W, according to standard EN 61000-3-2, harmonic current is unnecessary to test.

5.5. VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

5.5.1. Block Diagram of Test Setup



5.5.2. Test Standard

EN 61000-3-3: 2013

5.5.3. Operating Condition of EUT

Same as Section 5.3.4, except the test setup replaced as Section 5.5.1.

5.5.4. Test Results

PASS.

Test Model	BI808PE1G2F	**Test Engineer**	Jay Li
Test Voltage	AC 230V/50Hz		

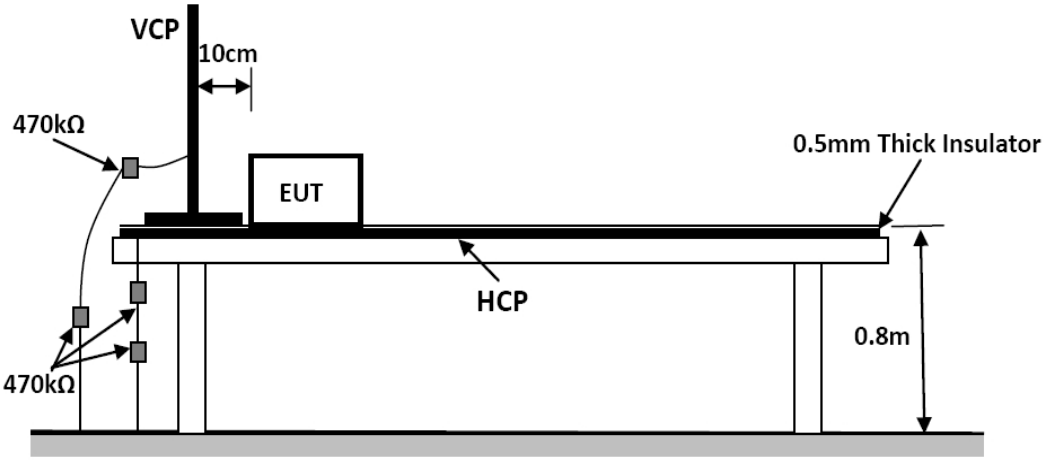
Overall Result: **PASS**

Notes:
Measurement method - Voltage

	Pst	dc (%)	dmax (%)	Tmax(> 3.3%)(ms)
Limit	1.000	3.300	4.000	500
Reading 1	0.089	0.006	0.185	0

5.6. ELECTROSTATIC DISCHARGE IMMUNITY TEST

5.6.1. Block Diagram of Test Setup



5.6.2. Test Standard

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

5.6.3. Severity Levels and Performance Criterion

5.6.3.1. 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

5.6.3.2. Performance Criterion
Performance Criterion: B

5.6.4. EUT Configuration on Test

The configuration of EUT is listed in Section 4.

5.6.5. Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section 5.1.1. Except the test set up replaced by Section 5.6.2.

5.6.6. Test Procedure

5.5.6.1. Air Discharge

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

5.5.6.2. Contact Discharge

All the procedure shall be same as Section 8.6.1. Except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

5.5.6.3. Indirect Discharge For Horizontal Coupling Plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

5.5.6.4. Indirect Discharge For Vertical Coupling Plane

At least 10 single discharge (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

5.6.7. Test Results

PASS.

The test result please refer to the next page.

Electrostatic Discharge Test Results

Standard	☐ IEC 61000-4-2 ☑ EN 61000-4-2		
Applicant	BORN ELECTRONICS LIMITED		
EUT	POE switch	**Temperature**	22.6℃
M/N	BI808PE1G2F	**Humidity**	54.6%
Criterion	B	**Pressure**	1021mbar
Test Mode	Mode 1	**Test Engineer**	Jay Li

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

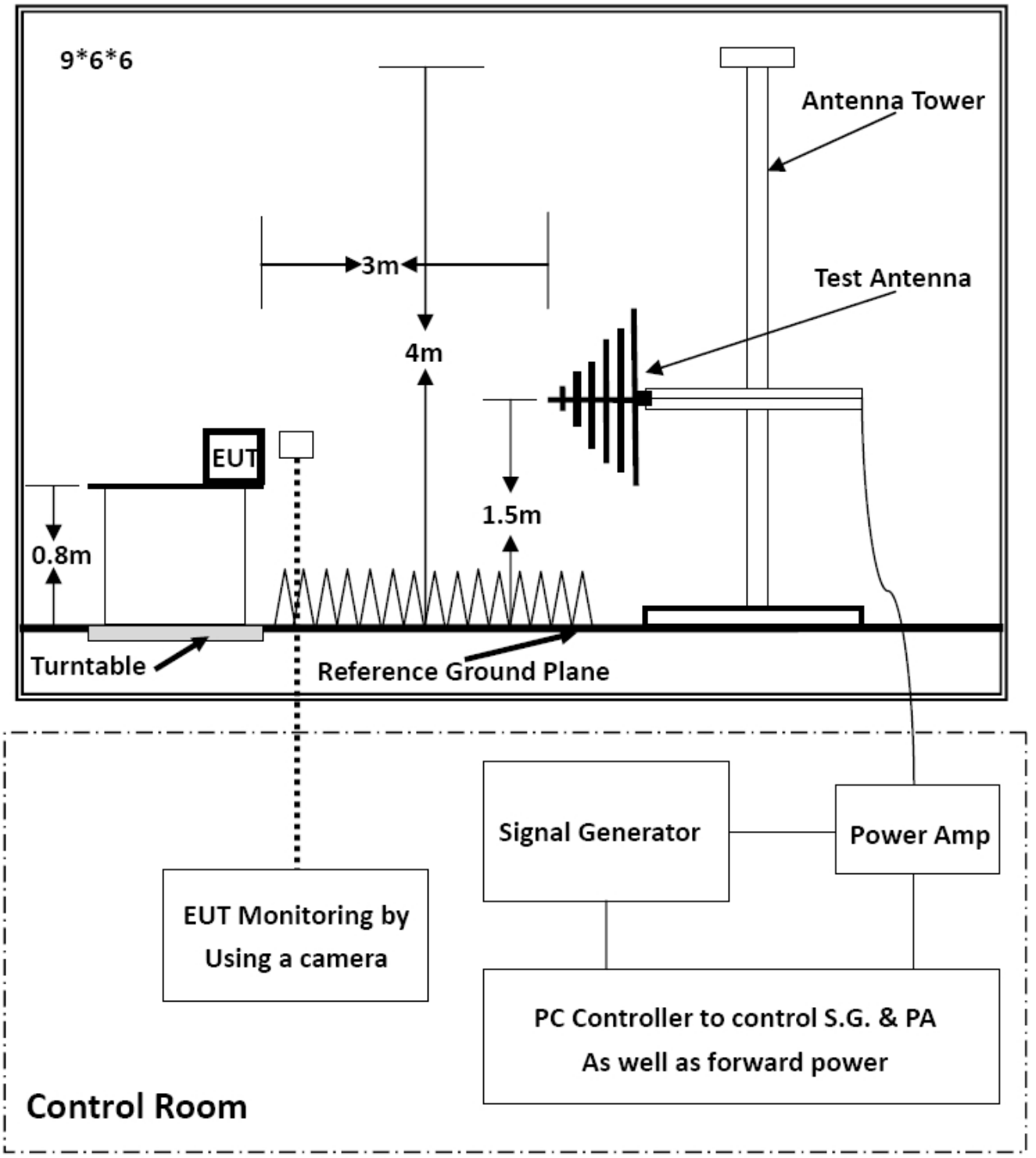
Side of EUT	Test Levels		Results		
	± 2 kV	± 4 kV	Passed	Fail	Performance Criterion
Front	☒	☒	☒	☐	☐A ☒B
Back	☒	☒	☒	☐	☐A ☒B
Left	☒	☒	☒	☐	☐A ☒B
Right	☒	☒	☒	☐	☐A ☒B

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

5.7. RF FIELD STRENGTH SUSCEPTIBILITY TEST

5.7.1. Block Diagram of Test Setup



5.7.2. Test Standard

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

5.7.3. Severity Levels and Performance Criterion

5.7.3.1. Severity level

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

5.7.3.2. Performance Criterion
Performance Criterion: A

5.7.4. EUT Configuration on Test

The configuration of EUT is listed in Section 4

5.7.5. Operating Condition of EUT

Same as radiated emission measurement, which is listed in Section 5.3.1, except the test setup replaced as Section 5.7.2.

5.7.6. 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.

5.7.7. Test Results

PASS.

The test result please refer to the next page.

RF Field Strength Susceptibility Test Results

Standard	☐ IEC 61000-4-3 ☑ EN 61000-4-3		
Applicant	BORN ELECTRONICS LIMITED		
EUT	POE switch	**Temperature**	23.8℃
M/N	BI808PE1G2F	**Humidity**	54.3%
Field Strength	3 V/m	**Criterion**	A
Test Mode	Mode 1	**Test Engineer**	Jay Li
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

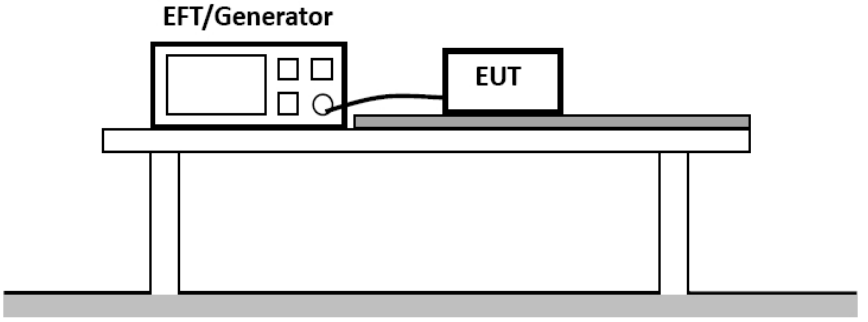
Test Equipment:

1. Signal Generator: 2031 (MARCONI)
2. Power Amplifier: 500A100 & 100W/1000M1 (A&R)
3. Power Antenna: 3108 (EMCO) & AT1080 (A&R)
4. Field Monitor: FM2000 (A&R)

Note:

5.8. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

5.8.1. Block Diagram of Test Setup



5.8.2. Test Standard

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

5.8.3. Severity Levels and Performance Criterion

5.8.3.1. 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

5.8.3.2. Performance Criterion

Performance Criterion: B

5.8.4. EUT Configuration on Test

The configuration of EUT is listed in Section 4

5.8.5. Operating Condition of EUT

5.8.5.1. Setup the EUT as shown in Section 5.8.1.

5.8.5.2. Turn on the power of all equipments.

5.8.5.3. Let the EUT work in test Mode 1 and measure it.

5.8.6. 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.

5.8.6.1. 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 2 mins.

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

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

5.8.7. Test Results

PASS.

The test result please refer to the next page.

Electrical Fast Transient/Burst Test Results

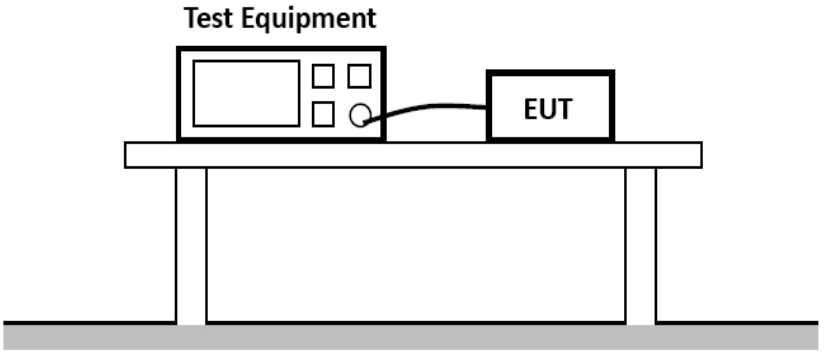
Standard	☐ IEC 61000-4-4 ☑ EN 61000-4-4		
Applicant	BORN ELECTRONICS LIMITED		
EUT	POE switch	**Temperature**	22.6℃
M/N	BI808PE1G2F	**Humidity**	54.6%
Test Mode	Mode 1	**Criterion**	B
Test Engineer	Jay Li		

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

Note:

5.9. SURGE IMMUNITY TEST

5.9.1. Block Diagram of Test Setup



5.9.2. Test Standard

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

5.9.3. Severity Levels and Performance Criterion

5.9.3.1. Severity level

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

5.9.3.2. Performance Criterion
Performance Criterion: B

5.9.4. EUT Configuration on Test

The configuration of EUT is listed in Section 4

5.9.5. Operating Condition of EUT

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

5.9.6. Test Procedure

5.9.6.1. Set up the EUT and test generator as shown on Section 5.9.1.

5.9.6.2. 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.

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

5.9.6.4. Different phase angles are done individually.

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

5.9.7. Test Results

PASS.

The test result please refer to the next page.

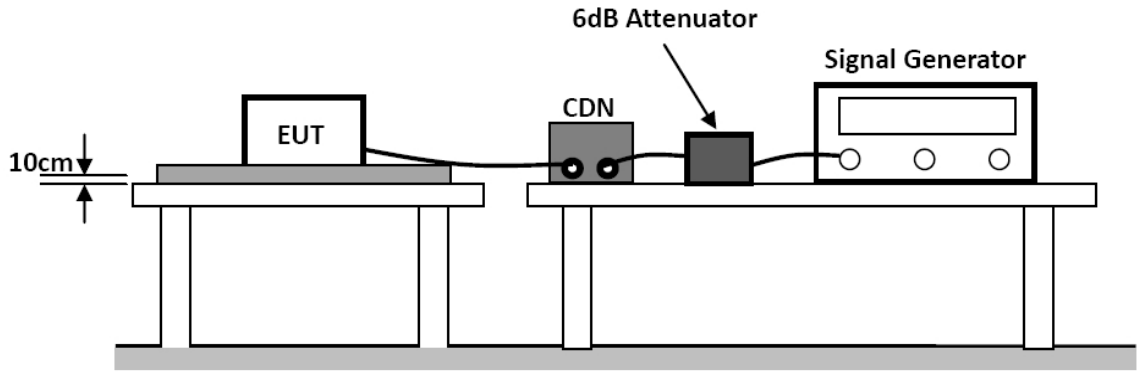
Surge Immunity Test Result

Standard	☐ IEC 61000-4-5 ☑ EN 61000-4-5		
Applicant	BORN ELECTRONICS LIMITED		
EUT	POE switch	**Temperature**	22.6℃
M/N	BI808PE1G2F	**Humidity**	54.6%
Test Mode	Mode 1	**Criterion**	B
Test Engineer	Jay Li		

Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (KV)	Result
L-N	+	0º, 90º, 180º, 270º	5	1.0	PASS
	-	0º, 90º, 180º, 270º	5	1.0	PASS
L-PE					
N-PE					
Signal Line					
Note					

5.10. INJECTED CURRENTS SUSCEPTIBILITY TEST

5.10.1. Block Diagram of Test Setup



5.10.2. Test Standard

EN 55035: 2017(EN 61000-4-6: 2014, Severity Level: Level 2, (0.15MHz ~ 80MHz))

5.10.3. Severity Levels and Performance Criterion

5.10.3.1. Severity level

Level	Field Strength (V)
1	1
2	3
3	10
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 4

5.10.5. Operating Condition of EUT

5.10.5.1.Setup the EUT as shown in Section 5.10.1.
5.10.5.2.Turn on the power of all equipments.
5.10.5.3.Let the EUT work in test Mode 1 and measure it.

5.10.6. Test Procedure

5.10.6.1. Set up the EUT, CDN and test generators as shown on Section 5.10.1.
5.10.6.2. Let the EUT work in test mode and measure it.
5.10.6.3. 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).
5.10.6.4. The disturbance signal described below is injected to EUT through CDN.
5.10.6.5. The EUT operates within its operational mode(s) under intended climatic conditions after power on.
5.10.6.6. 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.
5.10.6.7. 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.
5.10.6.8. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

5.10.7. Test Results

PASS.

The test result please refer to the next page.

Injected Currents Susceptibility Test Results

Standard	☐ IEC 61000-4-6 ☑ EN 61000-4-6		
Applicant	BORN ELECTRONICS LIMITED		
EUT	POE switch	**Temperature**	24.1℃
M/N	BI808PE1G2F	**Humidity**	53.1％
Test Mode	Mode 1	**Criterion**	A
Test Engineer	Jay Li		

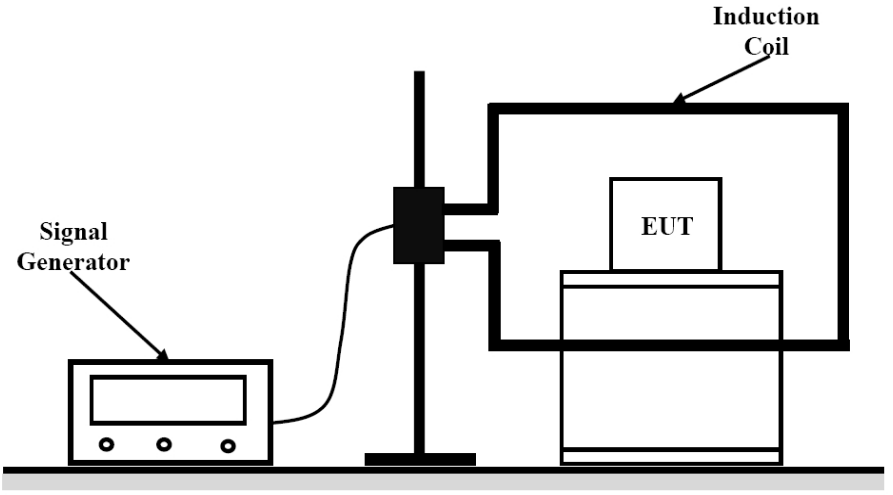
Frequency Range (MHz)	Injected Position	Strength (Unmodulated)	Criterion	Result
0.15 ~ 10	AC Mains	3V	A	PASS
10 ~ 30		3V ~ 1V		
30 ~ 80		1V		

Remark:
1. Modulation Signal:1kHz 80% AM
2. Measurement Equipment :
Simulator: CIT-10 (FRANKONIA)
CDN : ☑CDN-M2 (FRANKONIA)
☐CDN-M3 (FRANKONIA)

Note:

5.11. MAGNETIC FIELD SUSCEPTIBILITY TEST

5.11.1. Block Diagram of Test Setup



5.11.2. Test Standard

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

5.11.3. Severity Levels and Performance Criterion

5.11.3.1. Severity level

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

5.11.3.2. Performance Criterion
Performance Criterion: A

5.11.4. EUT Configuration on Test

The configuration of EUT is listed in Section 4

5.11.5. Test Procedure

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

5.11.6. Test Results

PASS.
The test result please refer to the next page.

Magnetic Field Immunity Test Result

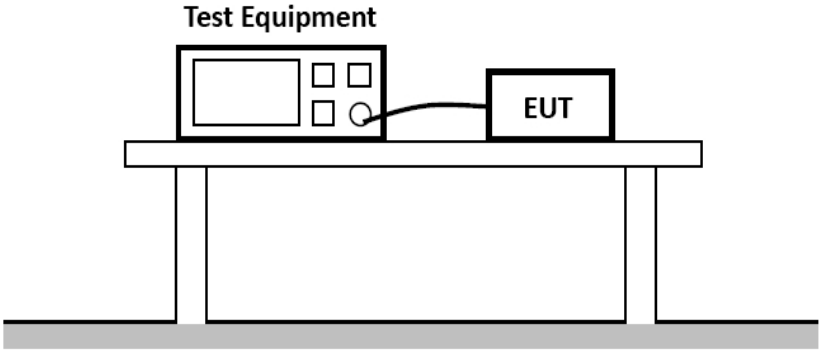
Standard	☐ IEC 61000-4-8 ☑ EN 61000-4-8		
Applicant	BORN ELECTRONICS LIMITED		
EUT	POE switch	**Temperature**	22.6℃
M/N	BI808PE1G2F	**Humidity**	54.6%
Test Mode	Mode 1	**Criterion**	A
Test Engineer	Jay Li		

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:

5.12. VOLTAGE DIPS AND INTERRUPTIONS TEST

5.12.1. Block Diagram of Test Setup



5.12.2. Test Standard

EN 55035: 2017 (EN 61000-4-11: 2004+A1: 2017)

5.12.3. Severity Levels and Performance Criterion

5.12.3.1. 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

5.12.3.2. Performance Criterion

Performance Criterion: B&C

5.12.4. EUT Configuration on Test

The configuration of EUT is listed in Section 4

5.12.5. Operating Condition of EUT

5.12.5.1. Setup the EUT as shown in Section 5.12.1.
5.12.5.2. Turn on the power of all equipments.
5.12.5.3. Let the EUT work in test mode and measure it.

5.12.6. Test Procedure

5.12.6.1. Set up the EUT and test generator as shown on Section 5.12.1.
5.12.6.2. The interruptions are introduced at selected phase angles with specified duration.
5.12.6.3. Record any degradation of performance.

5.12.7. Test Results

PASS.

The test result please refer to the next page.

Voltage Dips And Interruptions Test Results

Standard	☐ IEC 61000-4-11 ☑ EN 61000-4-11		
Applicant	BORN ELECTRONICS LIMITED		
EUT	POE switch	**Temperature**	22.6℃
M/N	BI808PE1G2F	**Humidity**	54.6%
Test Mode	Mode 1	**Criterion**	B&C
Test Engineer	Jay Li		

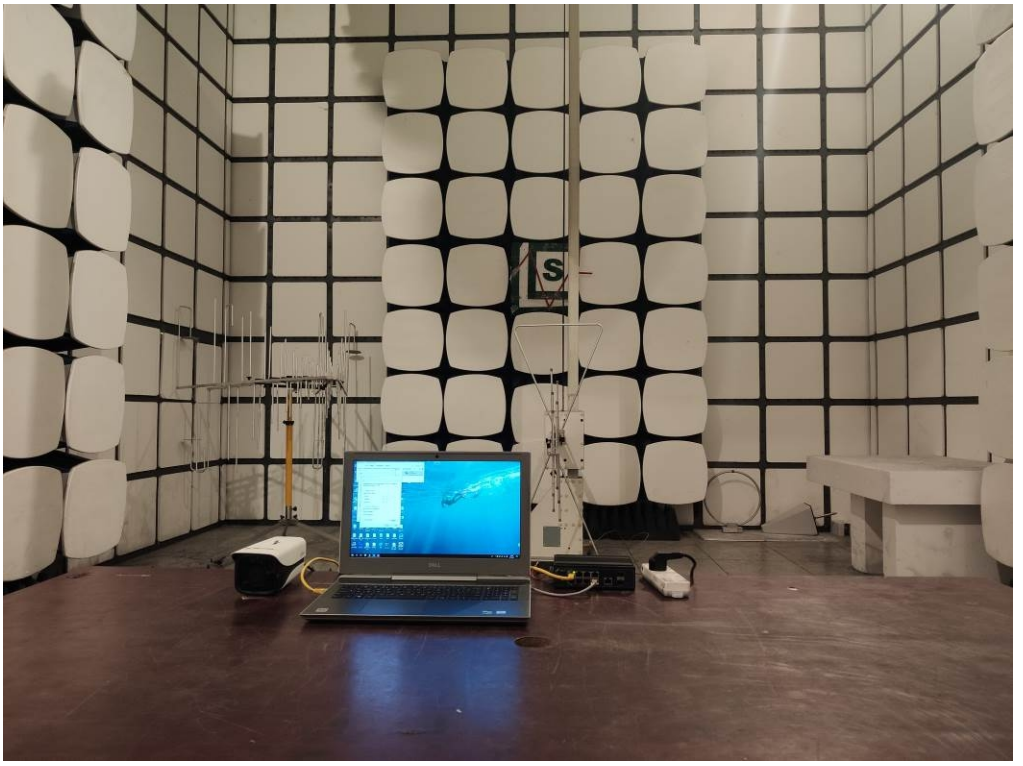
Test Level % U_T	**Voltage Dips & Short Interruptions % U_T**	**Duration (in periods)**	**Criterion**	**Result**
0	100	0.5P	B	PASS
70	30	25P	C	PASS
0	100	250P	C	PASS

Note:

6. PHOTOGRAPHS OF TEST SETUP

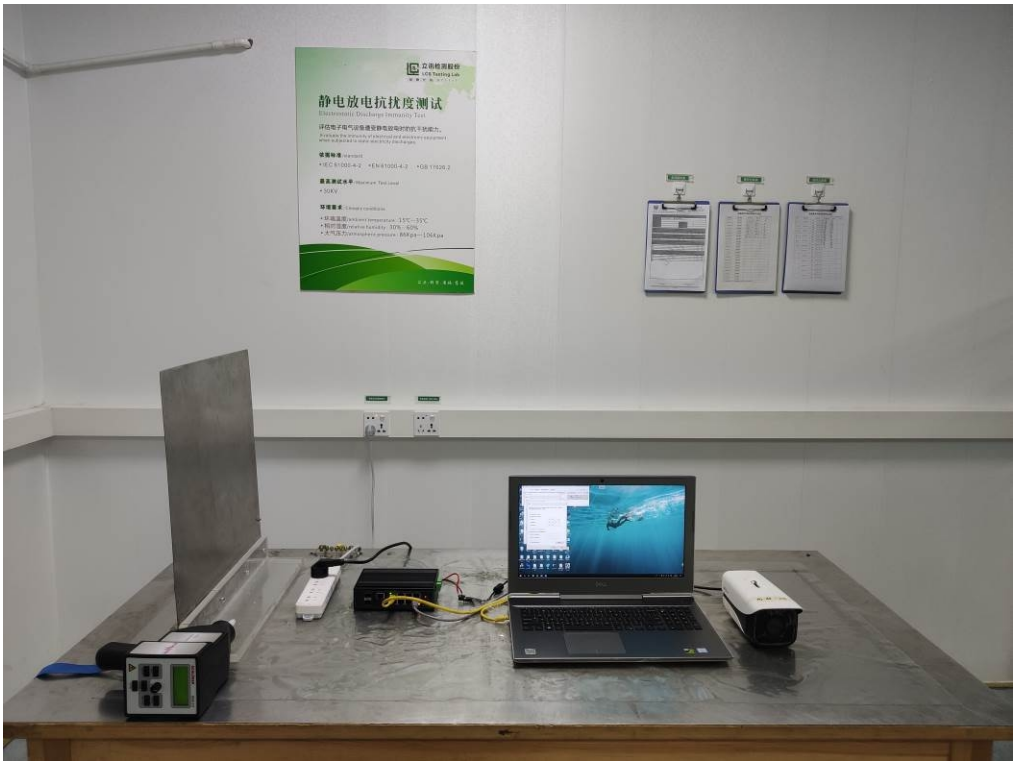
Test Setup Photo of Power Line Conducted Measurement

Test Setup Photo of Power Line Conducted Measurement

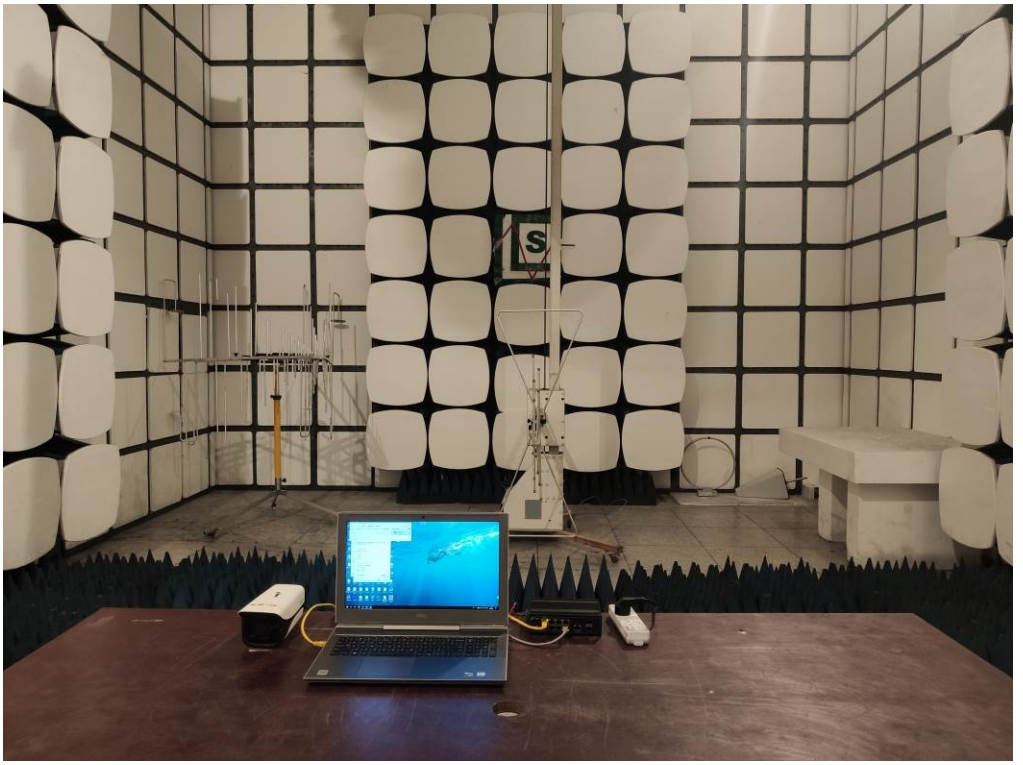


Test Setup Photo of Radiated Measurement (30MHz~1GHz)

Test Setup Photo of Harmonic & Flicker Measurement



Test Setup Photo of Electrostatic Discharge Test



Test Setup Photo of RF Electromagnetic Field Measurement

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

7. PHOTOGRAPHS OF THE EUT

Fig. 1

Fig. 2

Fig. 3

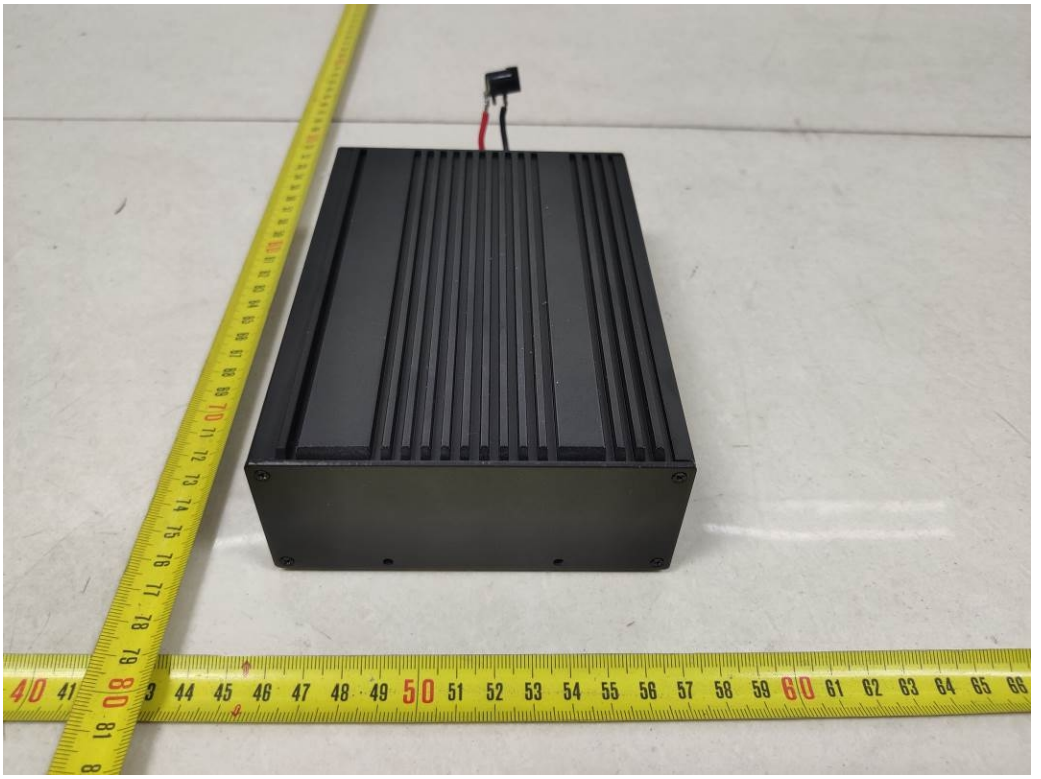


Fig. 4

Fig. 5

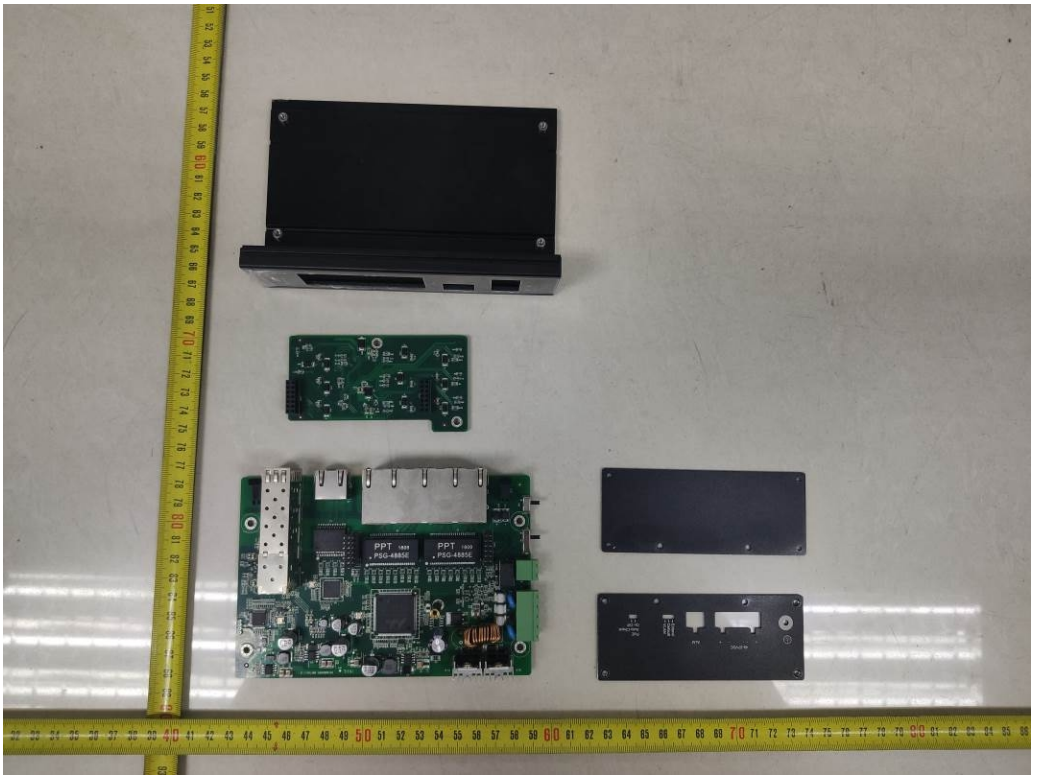


Fig. 6

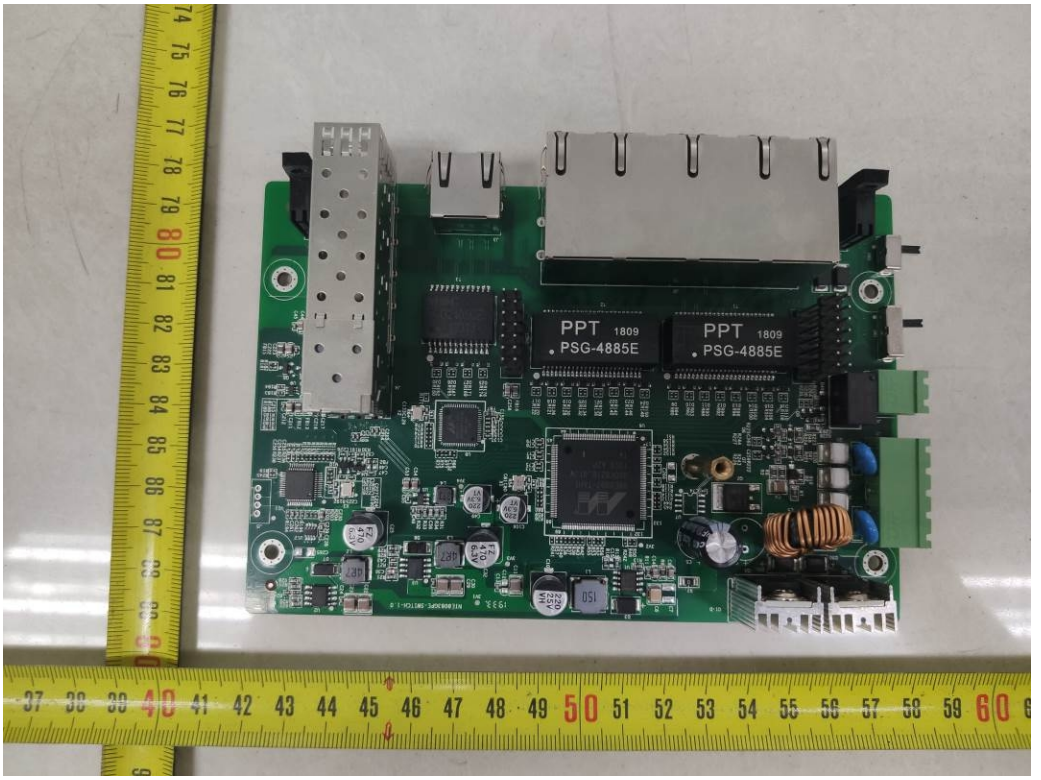


Fig. 7

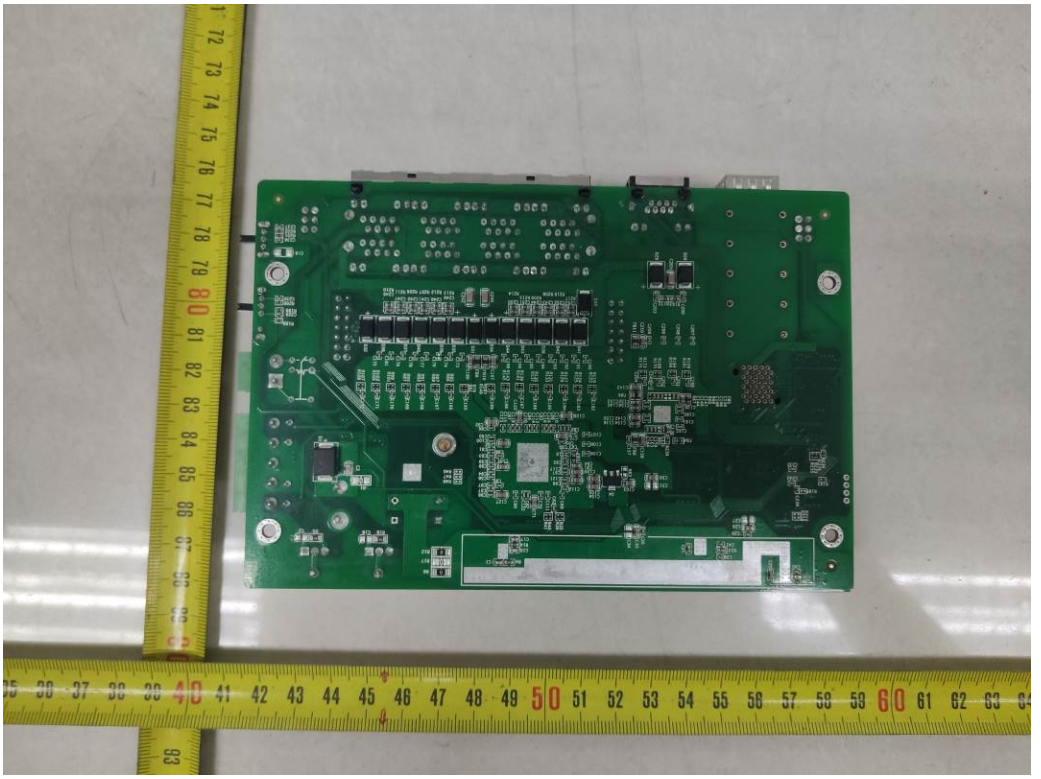


Fig. 8

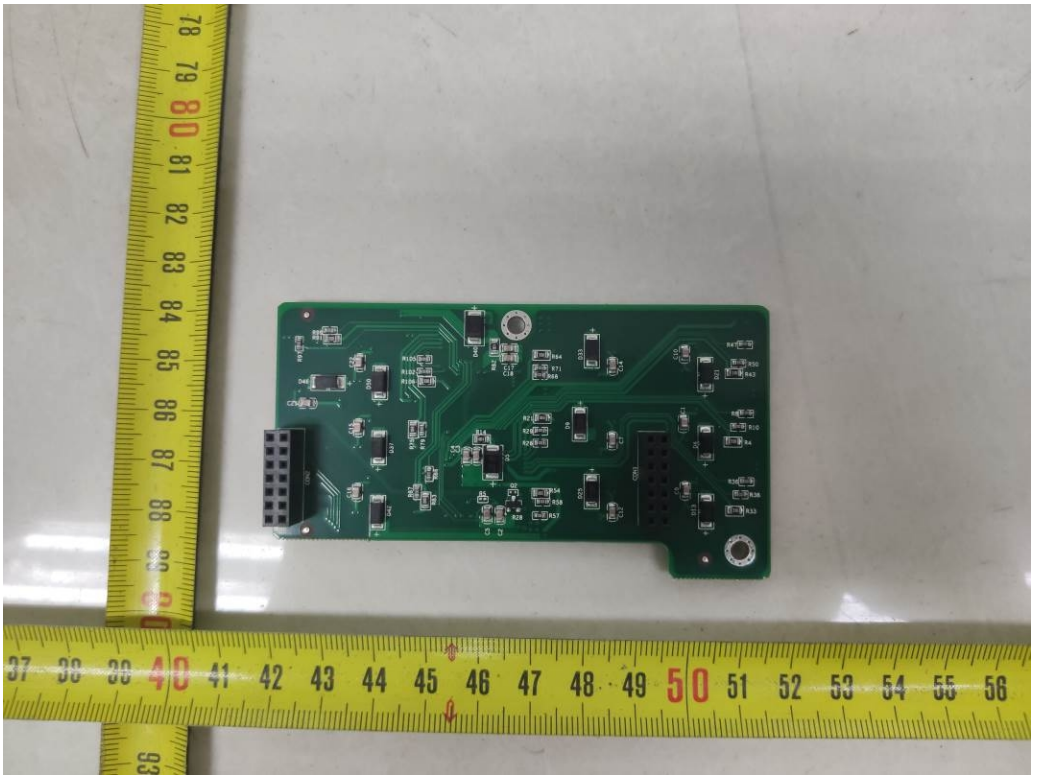


Fig. 9

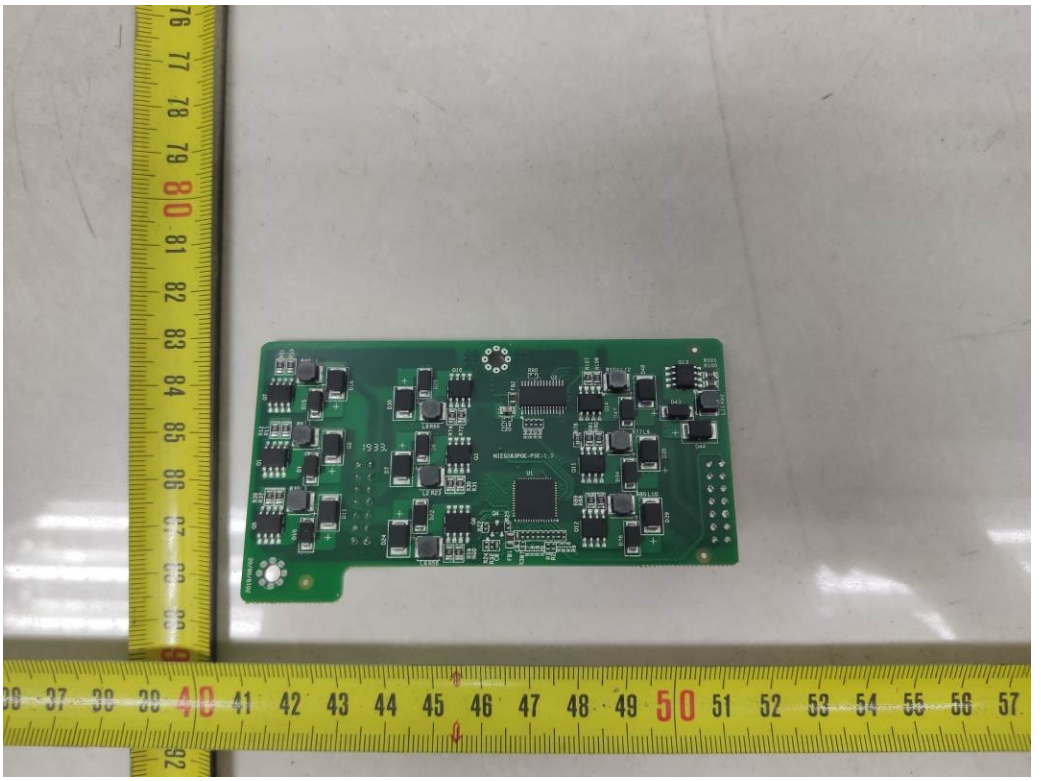


Fig. 10

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