



# TEST REPORT

**Application No.:** SHEM1905012857AT  
**Applicant:** Hangzhou Hikvision Digital Technology Co., Ltd.  
**Address of Applicant:** No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China  
**Manufacturer:** Hangzhou Hikvision Digital Technology Co., Ltd.  
**Address of Manufacturer:** No. 555 Qianmo Road, Binjiang District, Hangzhou 310052, China  
**Factory:** 1, Hangzhou Hikvision Technology Co., Ltd.  
 2, Hangzhou Hikvision Electronics Co., Ltd.  
 3, Chongqing Hikvision technology Co., LTD.  
**Address of Factory:** 1, No. 700, Dongliu Road, Binjiang District, Hangzhou City, Zhejiang, 310052, China  
 2, No. 299, Qiushi Road, Tonglu Economic Development Zone, Tonglu County, Hangzhou, Zhejiang, 310052, China.  
 3, No. 118, Haikang Road, Area C, Jianqiao Industrial Park, Dadukou District, Chongqing, 401325, China

**Equipment Under Test (EUT):**  
**EUT Name:** Network Camera  
**Model No.:** Refer to Page 2  
 ☐ Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.  
**Trade mark:** HIKVISION  
**Standard(s) :** EN 55032:2015, EN 50130-4:2011 +A1:2014  
 EN 61000-3-2:2014, EN 61000-3-3:2013  
**Date of Receipt:** 2019-04-12  
**Date of Test:** 2019-04-12 to 2019-04-18  
**Date of Issue:** 2019-05-08

<b>Test Result:</b>	<b>Pass*</b>
---------------------	--------------

\* In the configuration tested, the EUT complied with the standards specified above.

The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.



Parlan Zhan  
E&E Section Manager

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of SGS International Electrical Approvals or testing done by SGS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by SGS International Electrical Approvals in writing.



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## Model No.:

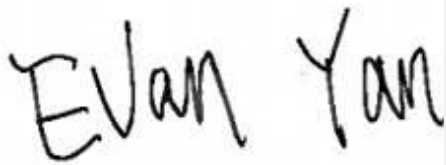

DS-2XM63C5G0-IVS, DS-2XM63C5G0-IVSUHK, DS-2XM63C5G0-IVSCKV, DS-2XM63C5G0-IVSUVS,  
DS-2XM63C5G0-IVSKVO, DS-2XM63C5G0-IVSHUN, DS-2XM63C5G0-IV, DS-2XM63C5G0-IVUHK,  
DS-2XM63C5G0-IVCKV, DS-2XM63C5G0-IVUVS, DS-2XM63C5G0-IVKVO, DS-2XM63C5G0-IVHUN,  
DS-2XM63C5G0-IVM, DS-2XM63C5G0-IVMUHK, DS-2XM63C5G0-IVMCKV, DS-2XM63C5G0-IVMUVS, DS-  
2XM63C5G0-IVMKVO, DS-2XM63C5G0-IVMHUN, DS-2XM63C5G0-IVM/ND,  
DS-2XM63C5G0-IVM/NDUHK, DS-2XM63C5G0-IVM/NDCKV, DS-2XM63C5G0-IVM/NDUVS,  
DS-2XM63C5G0-IVM/NDKVO, DS-2XM63C5G0-IVM/NDHUN, DS-2XM6365G0-IVS,  
DS-2XM6365G0-IVSUHK, DS-2XM6365G0-IVSCKV, DS-2XM6365G0-IVSUVS, DS-2XM6365G0-IVSKVO,  
DS-2XM6365G0-IVSHUN, DS-2XM6365G0-IV, DS-2XM6365G0-IVUHK, DS-2XM6365G0-IVCKV,  
DS-2XM6365G0-IVUVS, DS-2XM6365G0-IVKVO, DS-2XM6365G0-IVHUN, DS-2XM6365G0-IVM,  
DS-2XM6365G0-IVMUHK, DS-2XM6365G0-IVMCKV, DS-2XM6365G0-IVMUVS, DS-2XM6365G0-IVMKVO,  
DS-2XM6365G0-IVMHUN, DS-2XM6365G0-IVM/ND, DS-2XM6365G0-IVM/NDUHK,  
DS-2XM6365G0-IVM/NDCKV, DS-2XM6365G0-IVM/NDUVS, DS-2XM6365G0-IVM/NDKVO,  
DS-2XM6365G0-IVM/NDHUN



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Revision Record			
Version	Description	Date	Remark
00	Original	2019-05-08	/

<b>Authorized for issue by:</b>			
			
		<hr/>	
		<b>Evan Yan /Project Engineer</b>	
			
		<hr/>	
		<b>Bruce Tang /Reviewer</b>	

## 2 Test Summary

<b>Emission Part</b>				
<b>Item</b>	<b>Standard</b>	<b>Method</b>	<b>Requirement</b>	<b>Result</b>
Conducted Emissions at Mains Terminals (150kHz-30MHz)	EN 55032:2015	EN 55032:2015	Class B	Pass
Asymmetric Mode Conducted Emissions (150kHz-30MHz)	EN 55032:2015	EN 55032:2015	Class B	Pass
Radiated Emissions (30MHz-1GHz)	EN 55032:2015	EN 55032:2015	Class B	Pass
Radiated Emissions (above 1GHz)	EN 55032:2015	EN 55032:2015	Class B	Pass
Harmonic Current Emission	EN 61000-3-2:2014	EN 61000-3-2:2014	Class A	N/A*
Voltage Fluctuations and Flicker	EN 61000-3-3:2013	EN 61000-3-3:2013	Clause 5 of EN 61000-3-3	Pass
<b>Immunity Part</b>				
<b>Item</b>	<b>Standard</b>	<b>Method</b>	<b>Requirement</b>	<b>Result</b>
Electrostatic Discharge	EN 50130-4:2011 +A1:2014	EN 61000-4-2:2009	6kV Contact Discharge 2,4,8kV Air Discharge	Pass
Electrical Fast Transients/Burst at Power Port	EN 50130-4:2011 +A1:2014	EN 61000-4-4:2012	2kV 5/50ns Tr/Td 100kHz Repetition Frequency	Pass
Electrical Fast Transients/Burst at Signal Port	EN 50130-4:2011 +A1:2014	EN 61000-4-4:2012	1kV 5/50ns Tr/Td 100kHz Repetition Frequency	Pass
Surge at Power Port	EN 50130-4:2011 +A1:2014	EN 61000-4-5:2014	1.2/50µs Tr/Td 0.5,1kV Line to Line 0.5,1,2kV Line to Ground	Pass
Surge at Signal Port	EN 50130-4:2011 +A1:2014	EN 61000-4-5:2014	1.2/50µs Tr/Td 0.5,1kV Line to Ground	Pass
Voltage Dips and Interruptions	EN 50130-4:2011 +A1:2014	EN 61000-4-11:2004	80 % UT for 250per 70 % UT for 25per 40 % UT for 10per 0 % UT for 250per UT is Supply Voltage	Pass
Mains Supply Voltage Variations-Conditioning	EN 50130-4:2011 +A1:2014	EN 50130-4:2011+A1:2014	Unom+10% Unom-15%	Pass
Radiated Immunity(80MHz-2.7GHz)	EN 50130-4:2011 +A1:2014	EN 61000-4-3:2006 +A1:2008+A2:2010	10V/m, 80%, 1kHz sinusoidal Amp. Mod.	Pass
Conducted Immunity at Power Port (150kHz-100MHz)	EN 50130-4:2011 +A1:2014	EN 61000-4-6:2014	10Vrms (emf),80%,1kHz sinusoidal Amp. Mod.	Pass



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Conducted Immunity at Signal Port (150kHz-100MHz)	EN 50130-4:2011 +A1:2014	EN 61000-4-6:2014	10Vrms (emf),80%,1kHz sinusoidal Amp. Mod.	Pass
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N/A\*: Not applicable. Please refer to Section 6.5 of this report for details.

InternalSource	UpperFrequency
Below 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5 times the highest frequency or 6 GHz, whichever is less

### Note1: Declaration of EUT Family Grouping:

There are series models mentioned in this report and they are the similar in electrical and electronic characters. Only the model DS-2XM63C5G0-IVS was tested since their differences are model number.

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## 4 General Information

### 4.1 Details of E.U.T.

Power supply:	DC24V or PoE
Cables:	Interface: Power*1, Lan*1

### 4.2 Description of Support Units

Description	Manufacturer	Model No.
Notebook	HP	HP ProBook 440 G5
Notebook	Lenovo	ThinkPad L440
Power Adapter	CWT	KPL-060M-VI AC100-240V 50/60Hz 1.7A max, input DC24V 2.5A 60W output (external power supply)
POE Injector	SUPLET	LAS60-57CN-RJ45: AC100~240V 50/60Hz 2Amax, DC56V 60W output. (external power supply)
LAN Cable	Hikvision	EIA/TIA-568B,2 CAT,5E,2m

### 4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conducted Emission at mains port using AMN	±2.6dB (9kHz to 150kHz)
		±2.3dB (150kHz to 30MHz)
2	Conducted Emission at mains port using VP	±1.9 dB (9kHz to 30MHz)
3	Conducted Emission at telecommunication port using AAN	±4.1 dB (150kHz to 30MHz)
4	Radiated Power	±3.0dB
5	Radiated emission	±4.4dB (30MHz-1GHz)
		±4.8dB (1GHz-6GHz)
		±5.2dB (6GHz-18GHz)

Note: The measurement uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



#### 4.4 Test Location

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. E&E Lab  
588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China  
Tel: +86 21 6191 5666 Fax: +86 21 6191 5678  
sub-contracted

Hangzhou Hikvision Digital Technology Co., Ltd

No.555 Qianmo Road, Binjiang District, Hangzhou 310052, China

#### 4.5 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **CNAS (No. CNAS L0599)**

CNAS has accredited SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. to ISO/IEC 17025:2005 General Requirements for the Competence of Testing and Calibration Laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

• **NVLAP (Certificate No. 201034-0)**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. is accredited by the National Voluntary Laboratory Accreditation Program(NVLAP). Certificate No. 201034-0.

• **FCC –Designation Number: CN5033**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been recognized as an accredited testing laboratory.

Designation Number: CN5033. Test Firm Registration Number: 479755.

• **Innovation, Science and Economic Development Canada**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. EMC Laboratory has been recognized by ISED as an accredited testing laboratory.

IC Registration No.: 8617A-1. CAB Identifier: CN0020.

• **VCCI (Member No.: 3061)**

The 3m Semi-anechoic chamber and Shielded Room of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-13868, C-14336, T-12221, G-10830 respectively.

#### 4.6 Deviation from Standards

None

#### 4.7 Abnormalities from Standard Conditions

None

#### 4.8 Monitoring of EUT for All Immunity Test

Visual: work status and video quality

## 5 Equipment List

<b>Conducted Emissions at Mains Terminals</b>					
Equipment	Manufacturer	Model NO	Serial NO.	Cal Date	Cal Due Date
EMI test Receiver	R&S	ESR3	101831	2018/5/15	2019/5/14
Line impedance stabilization network	R&S	ENV216	10107	2018/5/15	2019/5/14
<b>Radiated Emission</b>					
Equipment	Manufacturer	Model NO	Serial NO.	Cal Date	Cal Due Date
EMI test Receiver	R&S	ESU26	100499	2018/12/11	2019/12/11
PRE-Amplifier	Connphy	CLN-1G18G-4030-S	517002	2018/8/30	2019/8/30
TRLIOG Broad Band Antenna	Schwarzbeck	VULB 9168	796	2017/7/10	2019/7/10
Horn antenna	Schwarzbeck	BBHA 9120D	7794	2017/8/19	2019/8/19
<b>Voltage Fluctuations and Flicker</b>					
Equipment	Manufacturer	Model NO	Serial NO.	Cal Date	Cal Due Date
Harmonic & Flicker analyzer	TESEQ	NSG1007	1438A04118-1	2018/5/15	2019/5/14
AC power source	TESEQ	CCN1000-1	1438A04118-1	2018/5/15	2019/5/14
<b>Electrostatic Discharge</b>					
Equipment	Manufacturer	Model NO	Serial NO.	Cal Date	Cal Due Date
Electrostatic Discharge Simulator	TESEQ	NSG 437	1254	2018/7/4	2019/7/3
<b>EFT</b>					
Equipment	Manufacturer	Model NO	Serial NO.	Cal Date	Cal Due Date
Immunity Test system	TESEQ	NSG3040	2173	2018/5/15	2019/5/14
Capacitive coupling clamp	TESEQ	CDN 3425	1928	2018/5/15	2019/5/14
<b>Surge</b>					
Immunity Test system	TESEQ	NSG3060	1716	2018/5/15	2019/5/14
Data coupling network	TESEQ	CDN 117M	38777	2018/5/15	2019/5/14
Power coupling network	TESEQ	CDN 3061-S16	1513	2018/5/15	2019/5/14
Immunity Test system	3C test	SG-728G	EC0630906	2018/11/09	2019/11/08
Immunity Test system	3C test	SG-5006G	EC5580932	2018/11/09	2019/11/08
Data coupling network	3C test	SGN-C3	EC5620903	2018/11/09	2019/11/08
Power coupling network	3C test	SGN-5010G	EC5590919	2018/11/09	2019/11/08
Data coupling network	3C test	SGN-C2	EC5620903	2018/11/09	2019/11/08
<b>CS</b>					
Immunity Test system	TESEQ	NSG 4070C-0	47944	2019/4/3	2020/4/2



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CDN	TESEQ	CDN M016	50365	2019/4/3	2020/4/2
Coupling clamp	TESEQ	KEMZ 801A	50113	2019/4/3	2020/4/2
<b>RS</b>					
Signal generator	keysight	N5181A	MY50146343	2018/11/09	2019/11/08
Power meter	keysight	N1914A	MY55336002	2018/11/09	2019/11/08
Amplifier	milmege	80RF1000-500	1069892	2018/11/09	2019/11/08
Amplifier	milmege	AS0827-230	1069893	2018/11/09	2019/11/08
Antenna	Schwarzbeck	STLP9128E	9128E7#3009	/	/
Antenna	Schwarzbeck	STLP 9149	9149-349	/	/
<b>DIP &amp; Mains Supply Voltage Variations -conditioning</b>					
Immunity Test system	TESEQ	NSG3040	2173	2018/5/15	2019/5/14
	TESEQ	VAR 3005-D16	2018	2018/5/15	2019/5/14
<b>Other</b>					
Equipment	Manufacturer	Model NO	Serial NO.	Cal Date	Cal Due Date
Temperature&humidity recorder	PINYI	HTC-1	/	2018/7/19	2019/7/18
Pressure meter	YIOU	BY-2003P	E01406062	2018/11/27	2019/11/26

## 6 Emission Test Results

### 6.1 Conducted Emissions at Mains Terminals (150kHz-30MHz)

Test Requirement:	EN 55032:2015
Test Method:	EN 55032:2015
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz	66dB(μV)-56dB(μV) quasi-peak, 56dB(μV)-46dB(μV) average
0.5M-5MHz	56dB(μV) quasi-peak, 46dB(μV) average
5M-30MHz	60dB(μV) quasi-peak, 50dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

#### 6.1.1 E.U.T. Operation

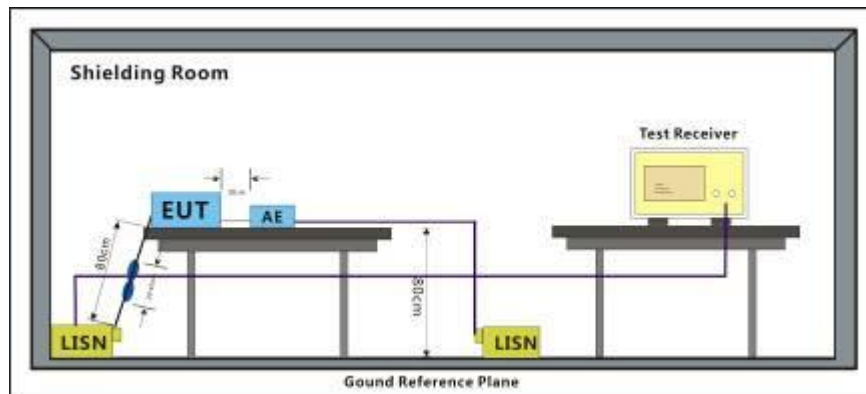
Operating Environment:

Temperature: 26 °C      Humidity: 58 % RH      Atmospheric Pressure: 1022.2 mbar

Test mode: a: Typical configuration: DC24V Power supply network preview.

b: Typical configuration: POE Power supply network preview.

#### 6.1.2 Test Setup Diagram

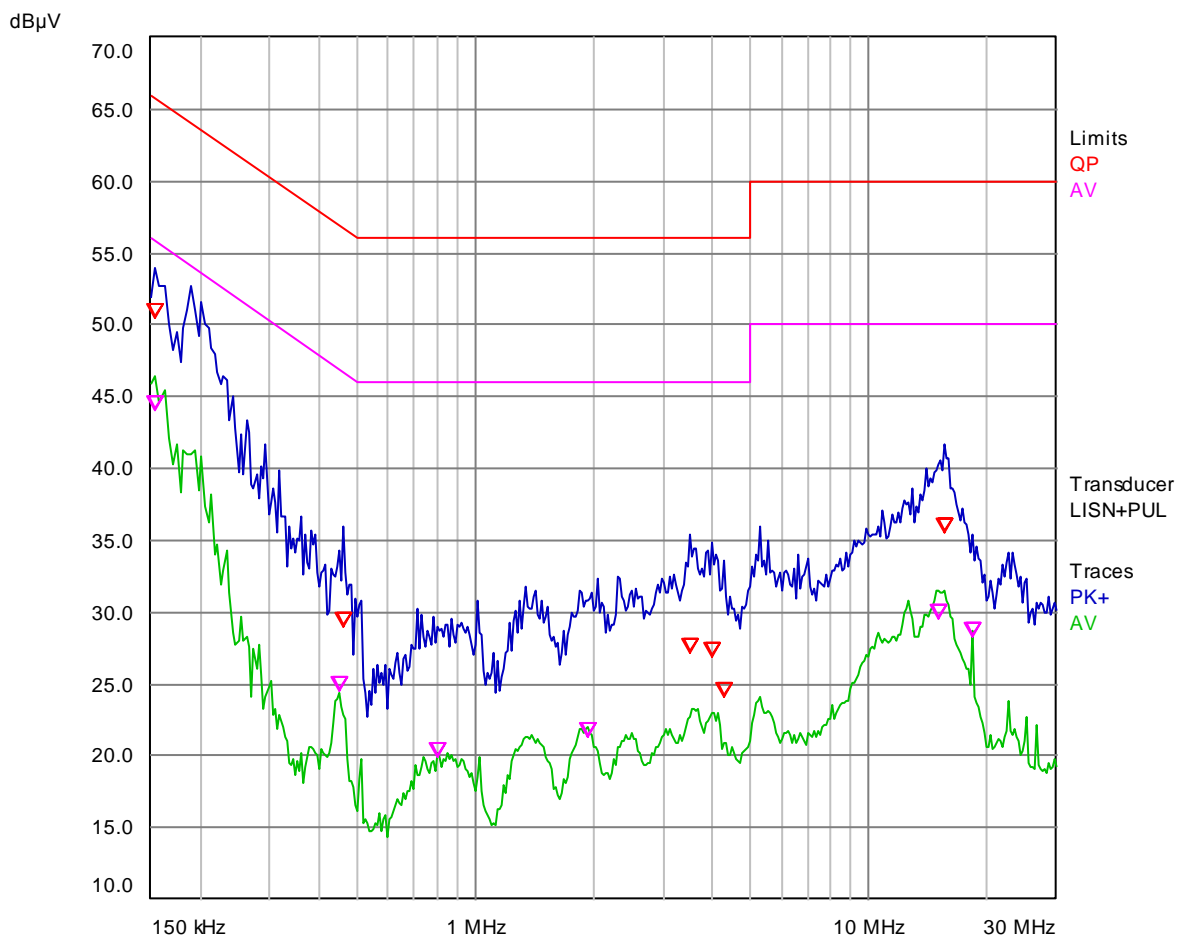


#### 6.1.3 Measurement Data

An initial pre-scan was performed with peak detector. Quasi-Peak or Average measurement were performed at the frequencies with maximized peak emission were detected.

Notes : Emission Level=Read Level + LISN Factor + Cable Loss

Mode:a; Line:Live Line



## Final Measurement Results

Trace	Frequency (MHz)	Level (dBµV)	Limit (dBµV)	Delta Limit (dB)	Comment
1 QP	0.154	50.53	65.78	-15.25	L1 / on
2 CA	0.154	44.00	55.78	-11.78	L1 / on
2 CA	0.45	24.48	46.88	-22.40	L1 / on
1 QP	0.462	28.99	56.66	-27.67	L1 / on
2 CA	0.802	19.93	46.00	-26.07	L1 / on
2 CA	1.942	21.29	46.00	-24.71	L1 / on
1 QP	3.502	27.20	56.00	-28.80	L1 / on
1 QP	3.99	26.94	56.00	-29.06	L1 / on
1 QP	4.286	24.08	56.00	-31.92	L1 / on
2 CA	14.938	29.58	50.00	-20.42	L1 / on
1 QP	15.594	35.54	60.00	-24.46	L1 / on
2 CA	18.43	28.35	50.00	-21.65	L1 / on

\* = limit exceeded

Mode:a; Line:Neutral Line

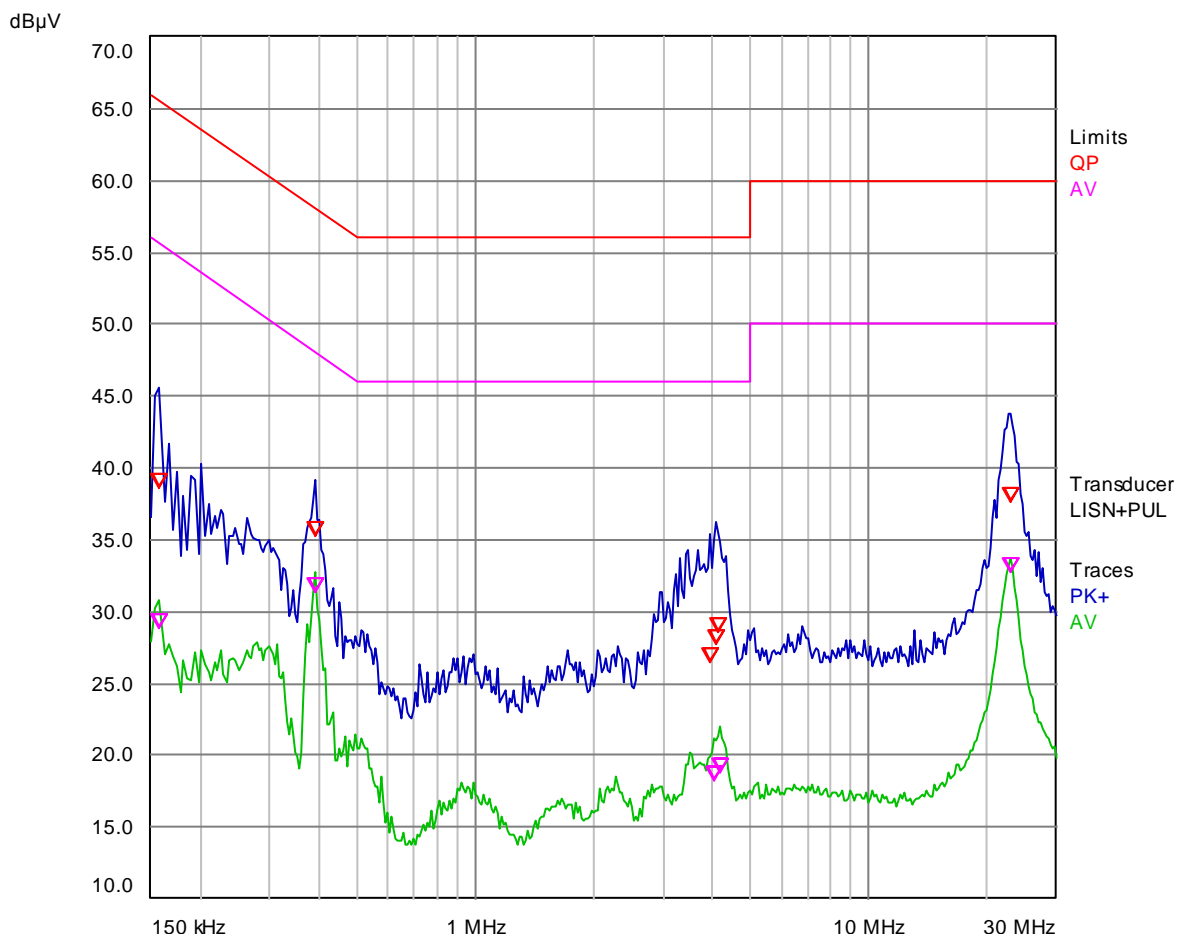


### Final Measurement Results

Trace	Frequency (MHz)	Level ( dBµV)	Limit ( dBµV)	Delta Limit (dB)	Comment
1 QP	0.158	49.13	65.57	-16.44	N / on
2 CA	0.158	42.73	55.57	-12.84	N / on
1 QP	0.198	48.71	63.69	-14.98	N / on
2 CA	0.446	23.73	46.95	-23.22	N / on
1 QP	0.45	29.74	56.88	-27.14	N / on
2 CA	0.81	19.84	46.00	-26.16	N / on
1 QP	1.822	25.37	56.00	-30.63	N / on
1 QP	3.61	27.51	56.00	-28.49	N / on
2 CA	12.542	30.56	50.00	-19.44	N / on
2 CA	15.302	30.06	50.00	-19.94	N / on
1 QP	15.31	35.58	60.00	-24.42	N / on

\* = limit exceeded

Mode:b; Line:Live Line

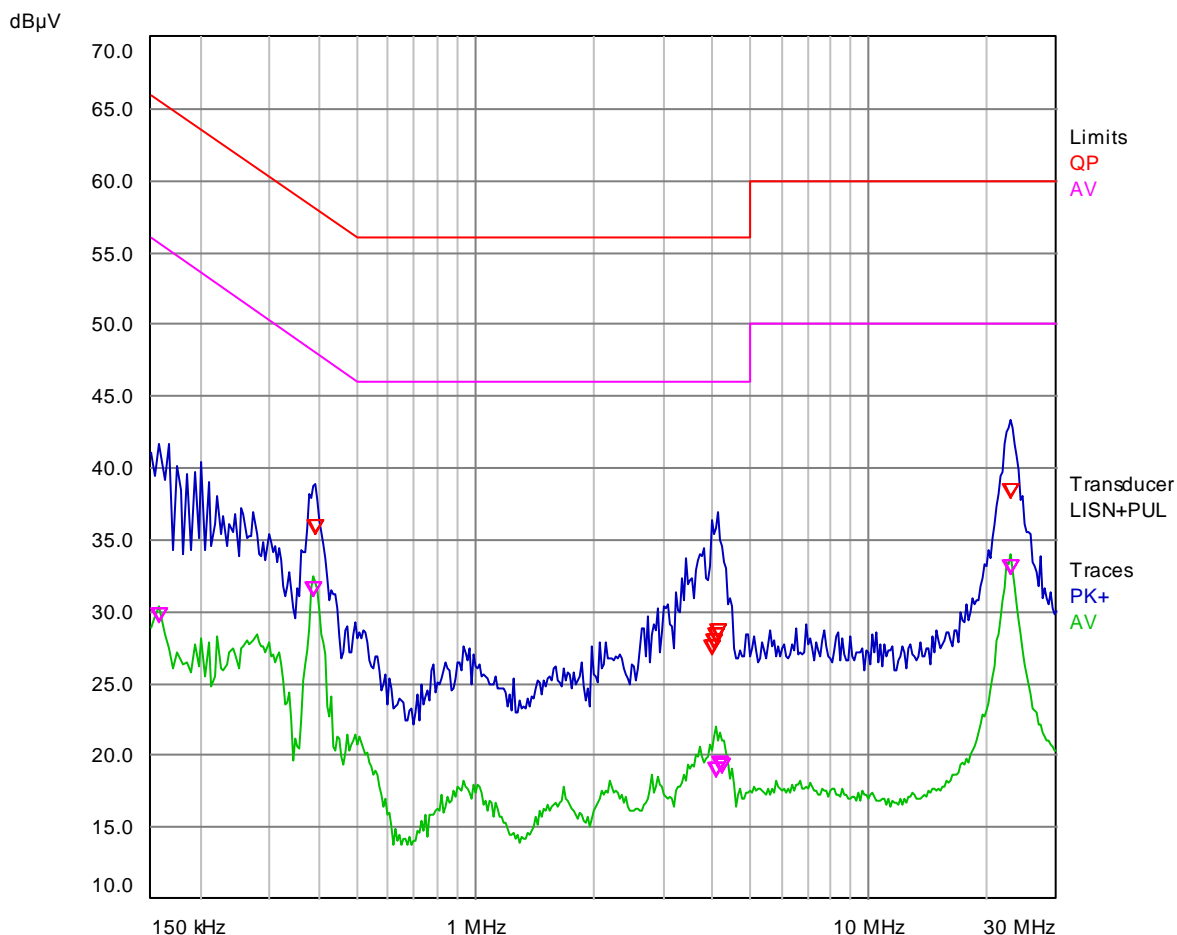


### Final Measurement Results

Trace	Frequency (MHz)	Level ( dBµV)	Limit ( dBµV)	Delta Limit (dB)	Comment
1 QP	0.158	38.67	65.57	-26.90	L1 / on
2 CA	0.158	28.86	55.57	-26.71	L1 / on
1 QP	0.39	35.24	58.06	-22.82	L1 / on
2 CA	0.39	31.31	48.06	-16.75	L1 / on
1 QP	3.962	26.45	56.00	-29.55	L1 / on
2 CA	4.05	18.17	46.00	-27.83	L1 / on
1 QP	4.094	27.76	56.00	-28.24	L1 / on
1 QP	4.146	28.50	56.00	-27.50	L1 / on
2 CA	4.166	18.79	46.00	-27.21	L1 / on
2 CA	22.826	32.73	50.00	-17.27	L1 / on
1 QP	23.014	37.67	60.00	-22.33	L1 / on

\* = limit exceeded

Mode:b; Line:Neutral Line



### Final Measurement Results

Trace	Frequency (MHz)	Level ( dBµV)	Limit ( dBµV)	Delta Limit (dB)	Comment
2 CA	0.158	29.21	55.57	-26.36	N / on
2 CA	0.386	31.13	48.15	-17.02	N / on
1 QP	0.394	35.40	57.98	-22.58	N / on
1 QP	4.018	26.96	56.00	-29.04	N / on
1 QP	4.046	27.45	56.00	-28.55	N / on
1 QP	4.078	27.91	56.00	-28.09	N / on
2 CA	4.09	18.54	46.00	-27.46	N / on
1 QP	4.15	28.10	56.00	-27.90	N / on
2 CA	4.178	18.89	46.00	-27.11	N / on
2 CA	4.242	18.84	46.00	-27.16	N / on
2 CA	22.91	32.58	50.00	-17.42	N / on
1 QP	22.934	37.89	60.00	-22.11	N / on

\* = limit exceeded



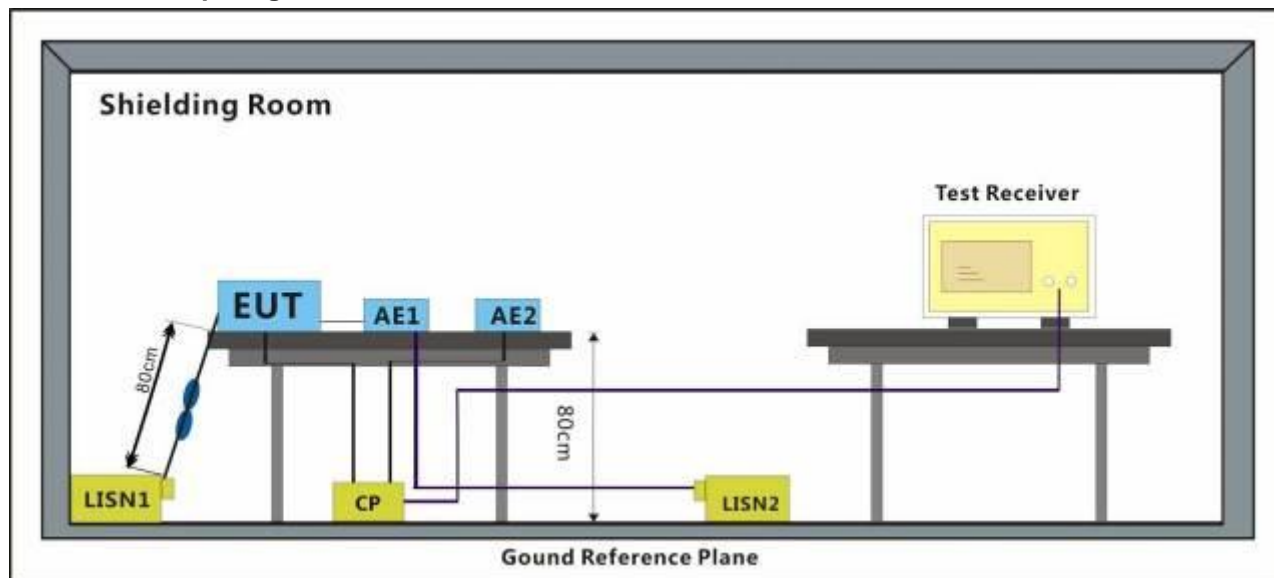
## 6.2 Asymmetric Mode Conducted Emissions (150kHz-30MHz)

Test Requirement:	EN 55032:2015
Test Method:	EN 55032:2015
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz(Voltage)	84-74(dBμV) quasi-peak; 74-64(dBμV) average
0.5M-30MHz(Voltage)	74(dBμV) quasi-peak; 64(dBμV) average
0.15M-0.5MHz(Current)	40-30(dBμV) quasi-peak; 30-20(dBμV) average
0.5M-30MHz(Current)	30(dBμV) quasi-peak; 20(dBμV) average
Detector:	9kHz resolution bandwidth 0.15M to 30MHz
Remark:	The voltage measured shall be corrected at each frequency of interest as follows: if the current margin with respect to the current limit is $\leq 6$ dB, the actual current margin shall be subtracted from the measured voltage; if the current margin with respect to the current limit is $> 6$ dB, 6 dB shall be subtracted from the measured voltage.

### 6.2.1 E.U.T. Operation

Operating Environment:	
Temperature:	26 °C      Humidity: 58 % RH      Atmospheric Pressure: 1022.2 mbar
Test mode	a: Typical configuration: DC24V Power supply network preview. b: Typical configuration: POE Power supply network preview.

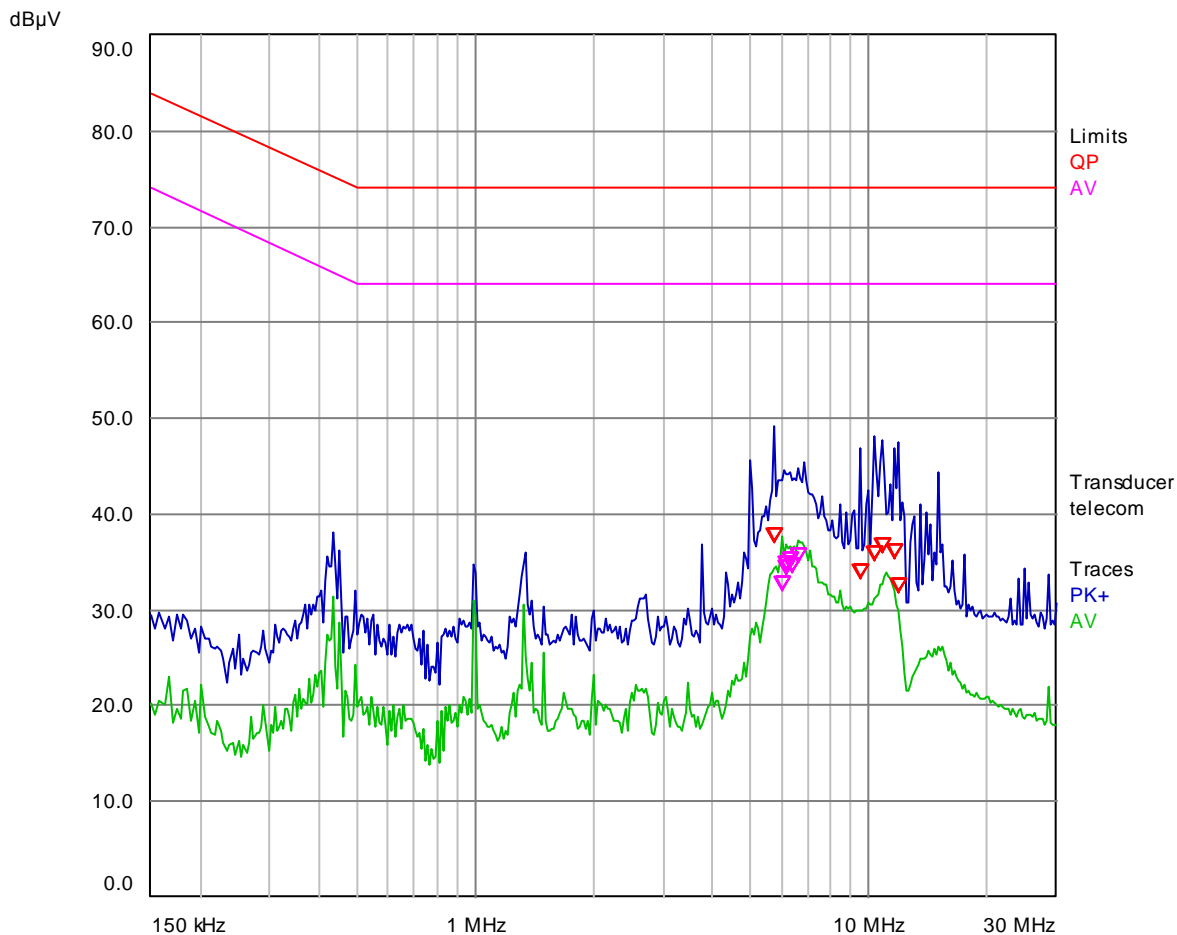
### 6.2.2 Test Setup Diagram



### 6.2.3 Measurement Data

Notes : Emission Level=Read Level + LISN Factor + Cable Loss

Mode a :  
10Mbps

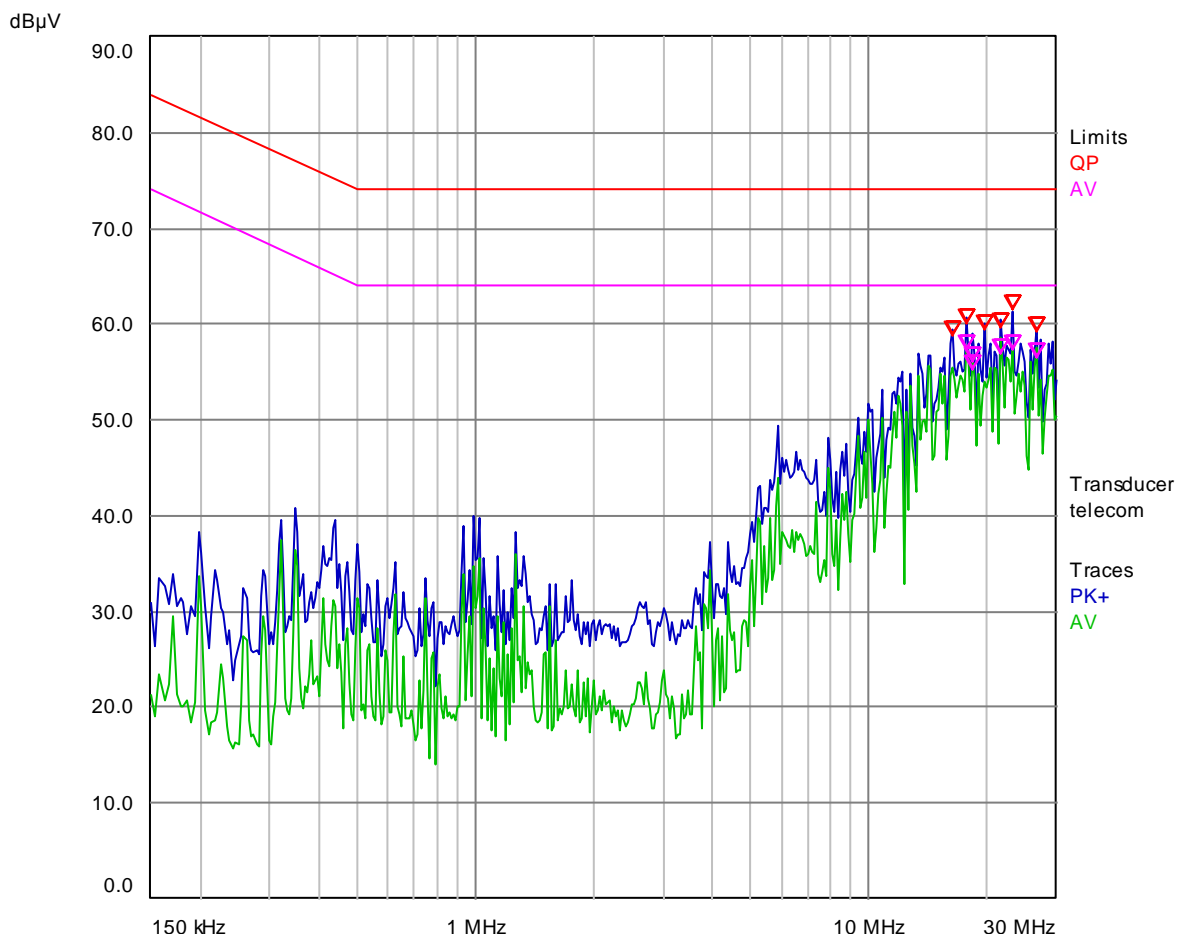


### Final Measurement Results

Trace	Frequency (MHz)	Level ( dBµV)	Limit ( dBµV)	Delta Limit (dB)
1 QP	5.726	37.10	74.00	-36.90
2 CA	6.034	31.99	64.00	-32.01
2 CA	6.138	33.62	64.00	-30.38
2 CA	6.194	34.19	64.00	-29.81
2 CA	6.298	34.51	64.00	-29.49
2 CA	6.422	33.85	64.00	-30.15
2 CA	6.626	35.02	64.00	-28.98
1 QP	9.458	33.24	74.00	-40.76
1 QP	10.278	35.06	74.00	-38.94
1 QP	10.846	36.04	74.00	-37.96
1 QP	11.574	35.36	74.00	-38.64
1 QP	11.938	31.90	74.00	-42.10

\* = limit exceeded

100Mbps

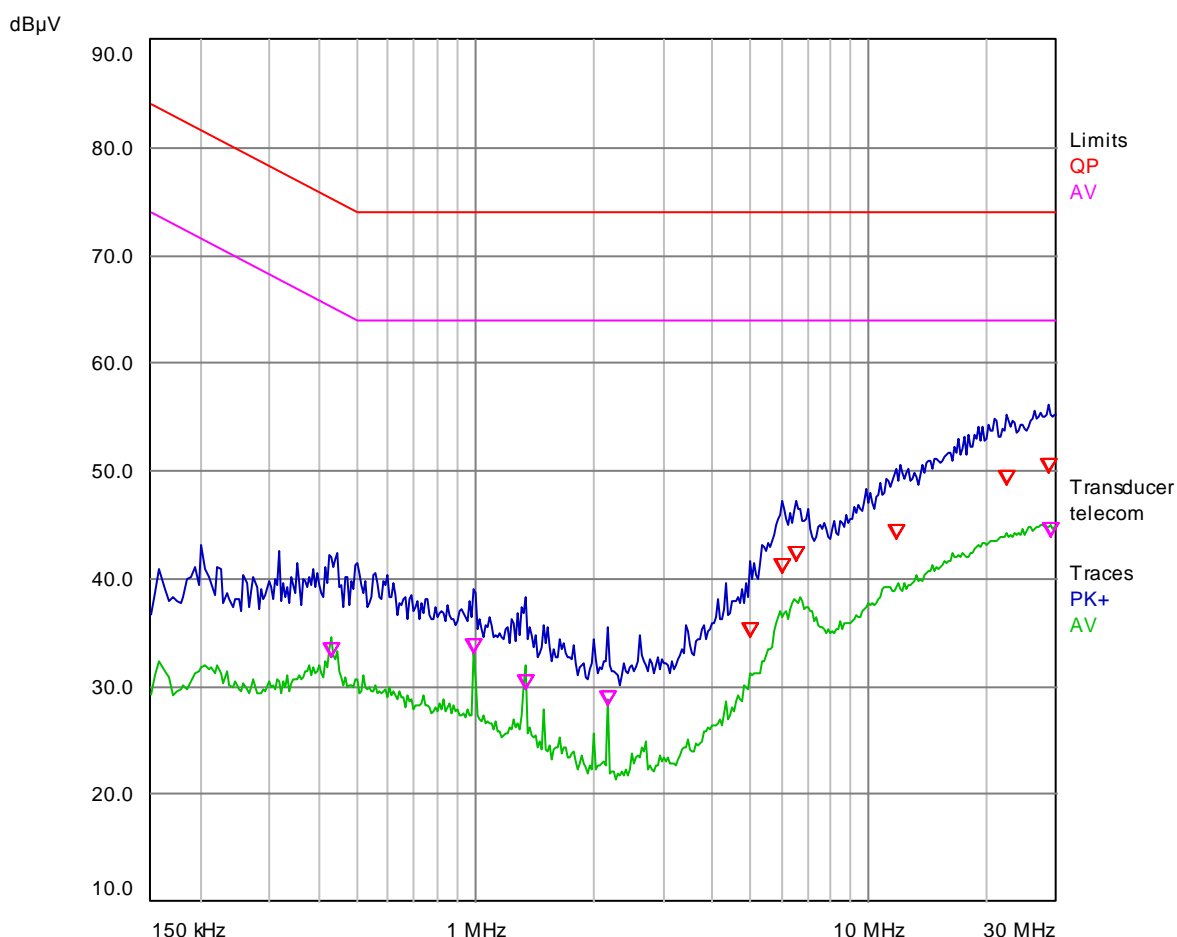


**Final Measurement Results**

Trace	Frequency (MHz)	Level ( dBµV)	Limit ( dBµV)	Delta Limit (dB)
1 QP	16.226	58.82	74.00	-15.18
1 QP	17.694	60.03	74.00	-13.97
2 CA	17.694	57.39	64.00	-6.61
2 CA	18.246	56.02	64.00	-7.98
2 CA	18.302	55.18	64.00	-8.82
1 QP	19.71	59.55	74.00	-14.45
1 QP	21.662	59.72	74.00	-14.28
2 CA	21.662	56.88	64.00	-7.12
2 CA	23.126	57.26	64.00	-6.74
1 QP	23.13	61.58	74.00	-12.42
1 QP	26.61	59.19	74.00	-14.81
2 CA	26.61	56.61	64.00	-7.39

\* = limit exceeded

1000Mbps

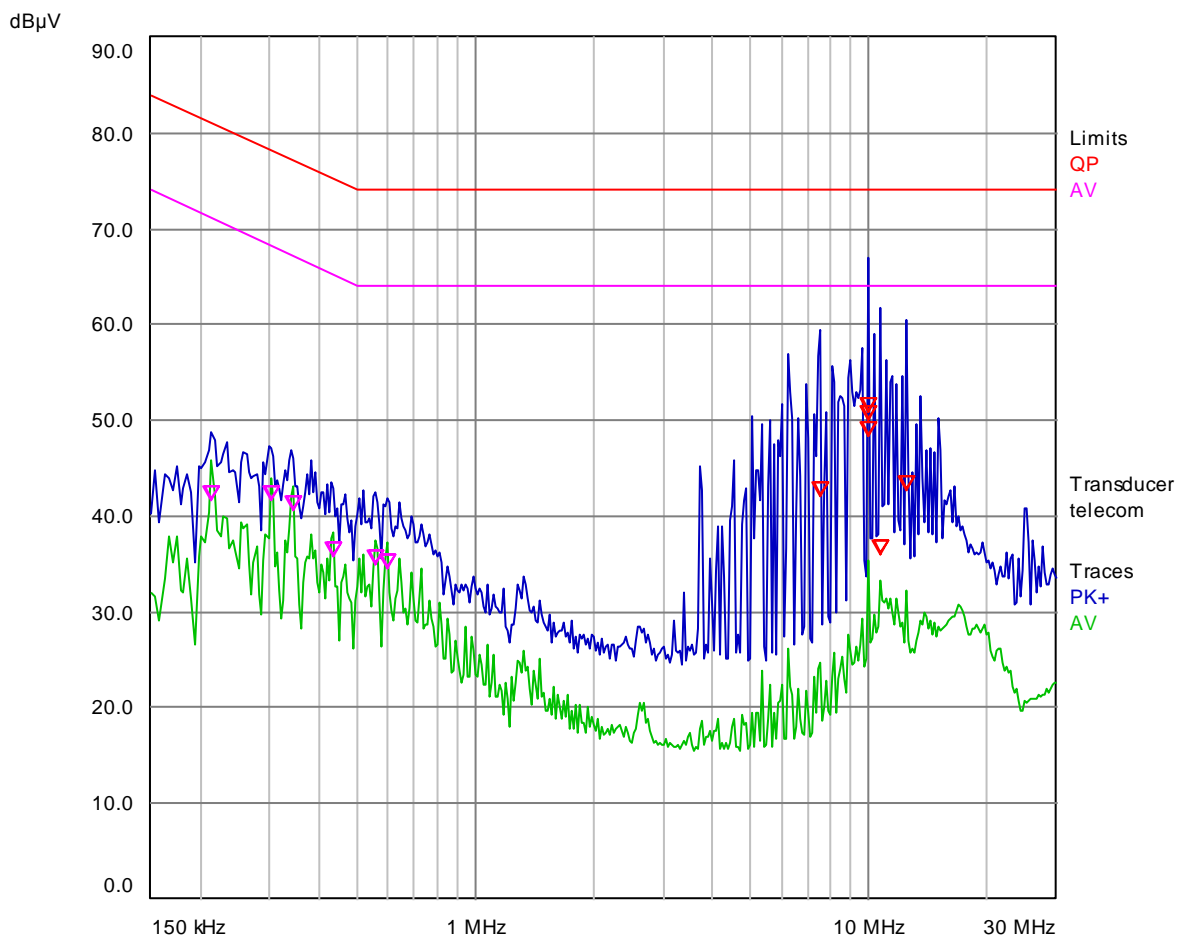


### Final Measurement Results

Trace	Frequency (MHz)	Level ( dBµV)	Limit ( dBµV)	Delta Limit (dB)
2 CA	0.43	32.62	65.25	-32.63
2 CA	0.994	33.06	64.00	-30.94
2 CA	1.338	29.66	64.00	-34.34
2 CA	2.17	28.16	64.00	-35.84
1 QP	4.99	34.52	74.00	-39.48
1 QP	6.018	40.53	74.00	-33.47
1 QP	6.534	41.64	74.00	-32.36
1 QP	11.782	43.72	74.00	-30.28
1 QP	22.266	48.65	74.00	-25.35
1 QP	28.494	49.73	74.00	-24.27
2 CA	28.95	43.94	64.00	-20.06

\* = limit exceeded

Mode b:  
10Mbps

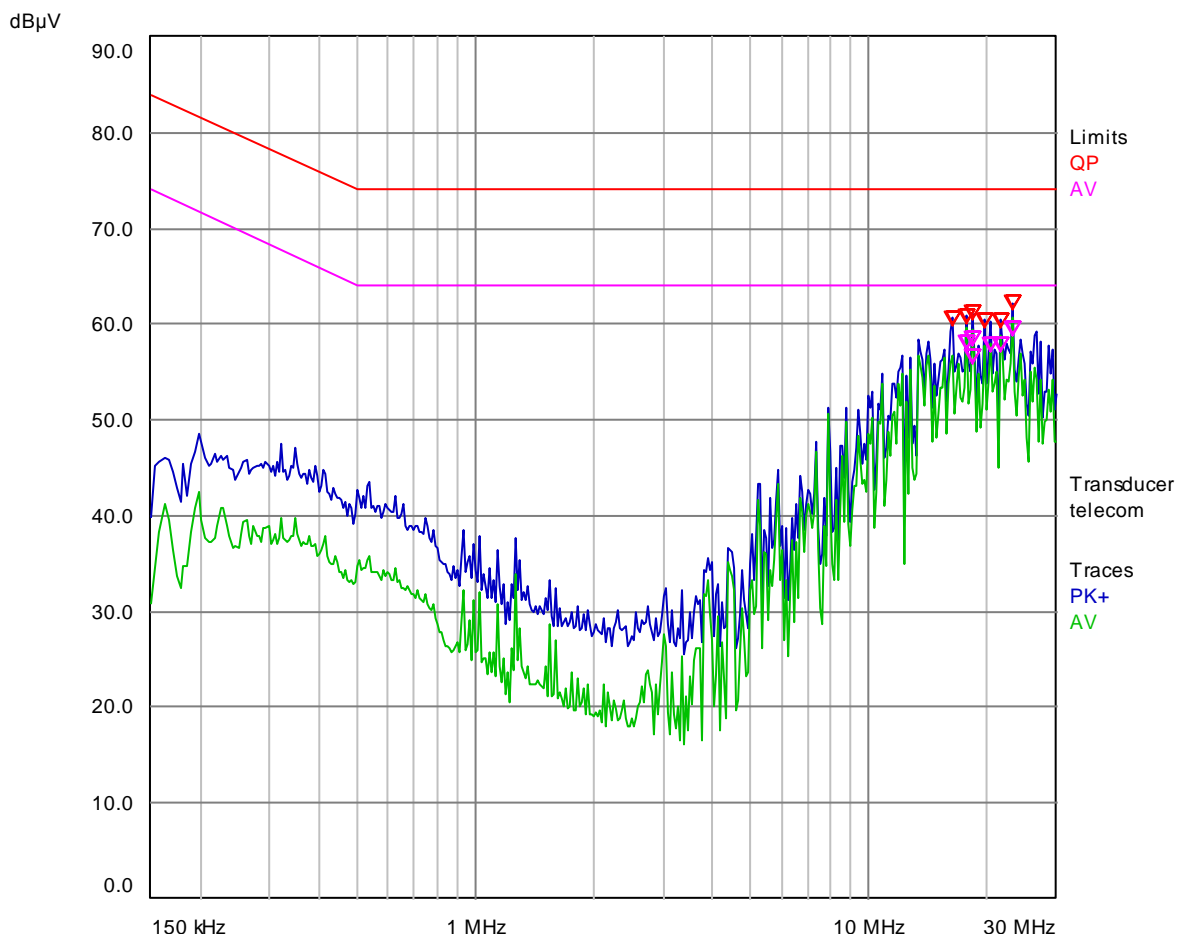


### Final Measurement Results

Trace	Frequency (MHz)	Level ( dBµV)	Limit ( dBµV)	Delta Limit (dB)
2 CA	0.214	41.63	71.05	-29.42
2 CA	0.302	41.64	68.19	-26.55
2 CA	0.346	40.63	67.06	-26.43
2 CA	0.434	35.79	65.18	-29.39
2 CA	0.558	35.00	64.00	-29.00
2 CA	0.598	34.62	64.00	-29.38
1 QP	7.514	42.17	74.00	-31.83
1 QP	9.974	50.89	74.00	-23.11
1 QP	9.986	48.43	74.00	-25.57
1 QP	10.01	49.99	74.00	-24.01
1 QP	10.742	36.04	74.00	-37.96
1 QP	12.49	42.77	74.00	-31.23

\* = limit exceeded

100Mbps

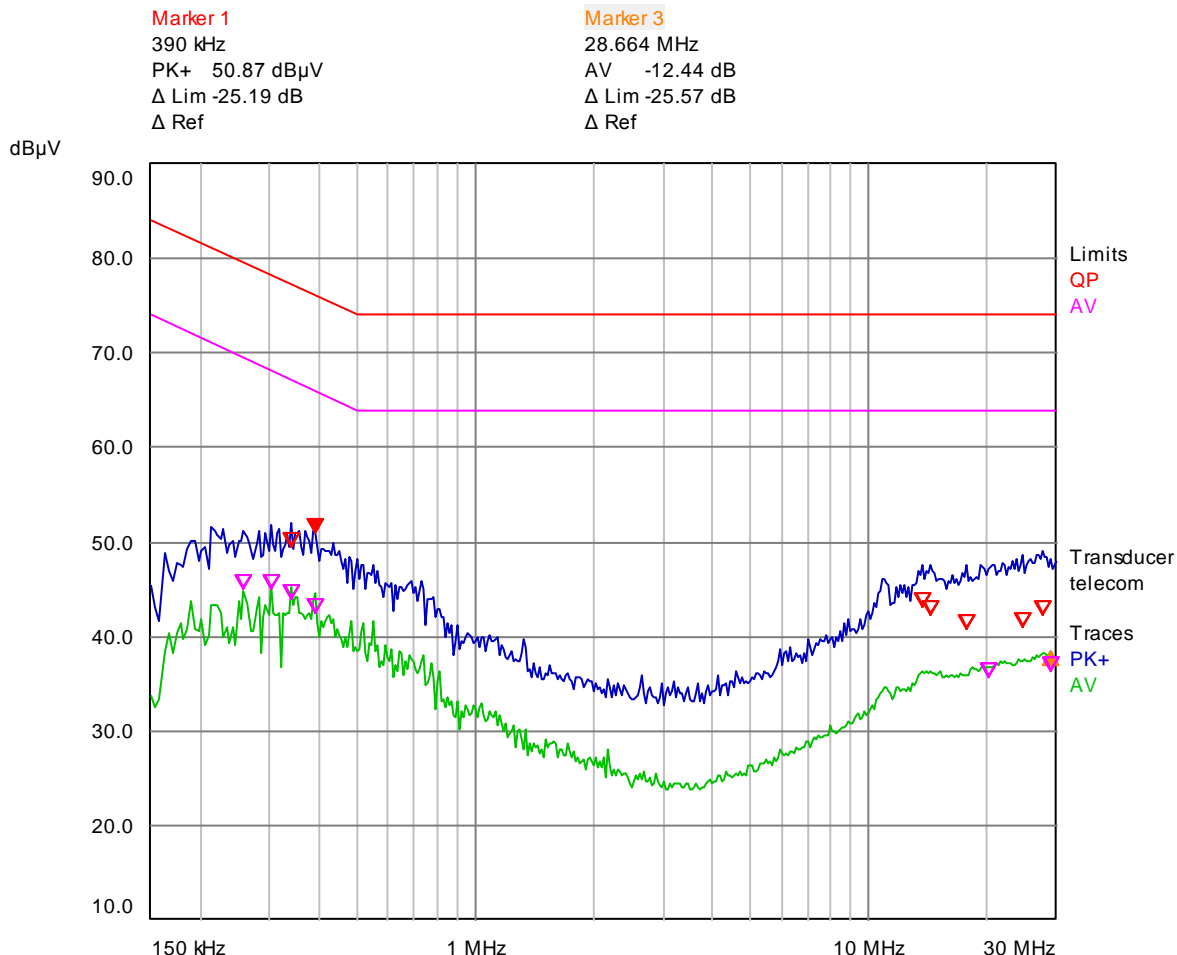


**Final Measurement Results**

Trace	Frequency (MHz)	Level ( dB $\mu$ V)	Limit ( dB $\mu$ V)	Delta Limit (dB)
1 QP	16.23	59.88	74.00	-14.12
1 QP	17.694	60.13	74.00	-13.87
2 CA	17.694	57.42	64.00	-6.58
1 QP	18.242	60.48	74.00	-13.52
2 CA	18.242	57.74	64.00	-6.26
2 CA	18.366	55.81	64.00	-8.19
1 QP	19.71	59.56	74.00	-14.44
2 CA	20.258	57.04	64.00	-6.96
1 QP	21.662	59.70	74.00	-14.30
2 CA	21.662	57.12	64.00	-6.88
1 QP	23.13	61.52	74.00	-12.48
2 CA	23.13	58.77	64.00	-5.23

\* = limit exceeded

1000Mbps



### Final Measurement Results

Trace	Frequency (MHz)	Level (dBµV)	Limit (dBµV)	Delta Limit (dB)
2 CA	0.258	44.94	69.50	-24.56
2 CA	0.302	44.93	68.19	-23.26
1 QP	0.342	49.51	77.15	-27.64
2 CA	0.342	43.94	67.15	-23.21
2 CA	0.394	42.44	65.98	-23.54
1 QP	13.734	43.10	74.00	-30.90
1 QP	14.282	42.31	74.00	-31.69
1 QP	17.742	40.67	74.00	-33.33
2 CA	20.074	35.70	64.00	-28.30
1 QP	24.498	40.97	74.00	-33.03
1 QP	27.514	42.18	74.00	-31.82
2 CA	29.054	36.36	64.00	-27.64

\* = limit exceeded

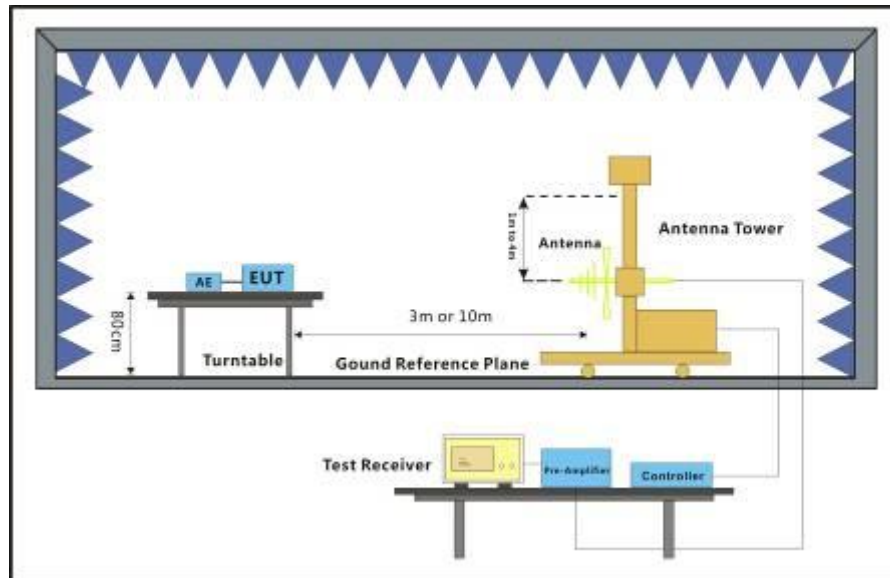
### 6.3 Radiated Emissions (30MHz-1GHz)

Test Requirement:	EN 55032:2015
Test Method:	EN 55032:2015
Frequency Range:	30MHz to 1GHz
Limit:	
30MHz-230MHz	40 dB(μV/m) quasi-peak
230MHz-1GHz	47 dB(μV/m) quasi-peak
Detector:	Peak for pre-scan (120kHz resolution bandwidth) 30M to 1000MHz

#### 6.3.1 E.U.T. Operation

Operating Environment:			
Temperature:	23 °C	Humidity:	57 % RH
		Atmospheric Pressure:	1022 mbar
Test mode:	a: Typical configuration: DC24V Power supply network preview.		
	b: Typical configuration: POE Power supply network preview.		

#### 6.3.2 Test Setup Diagram



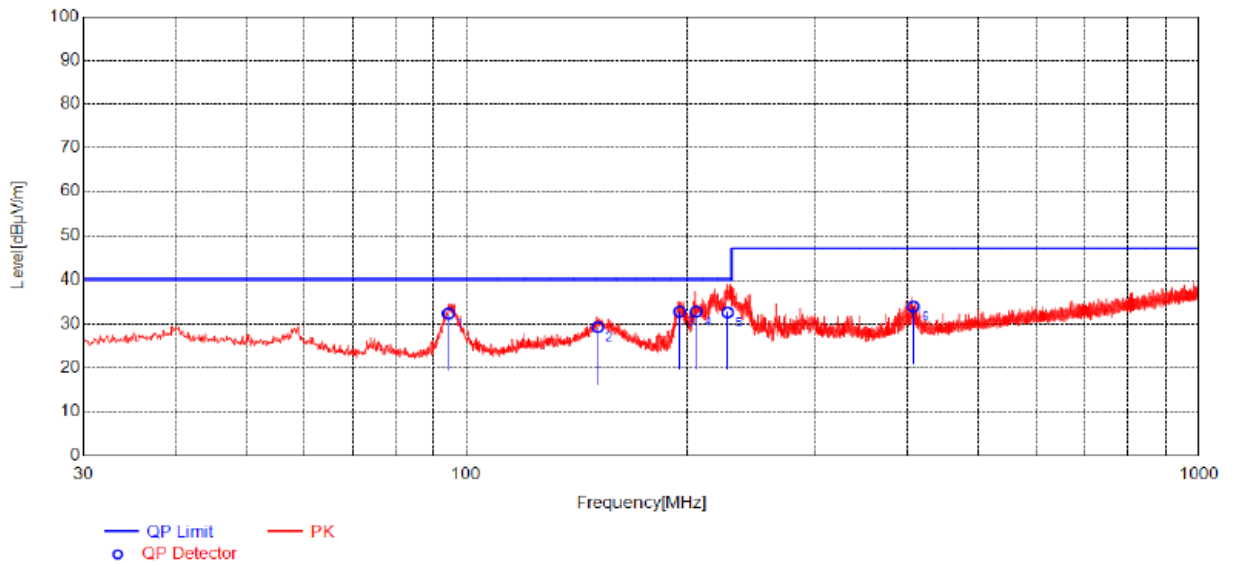
#### 6.3.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

Notes : Emission Level=Read Level + Antenna Factor + Cable Loss – Preamp Factor



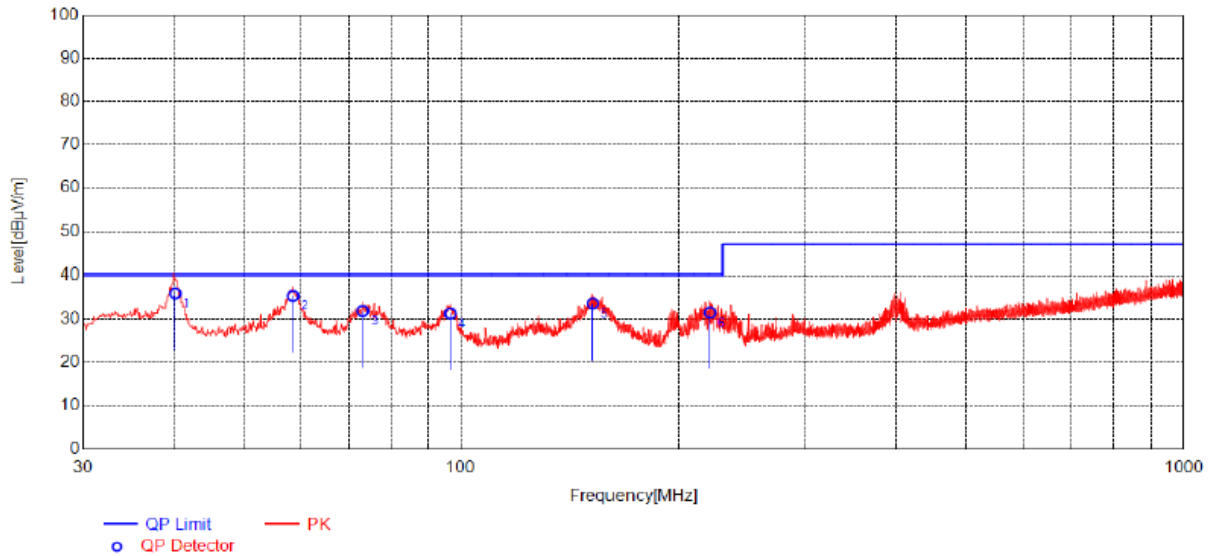
Mode:a, Polarization:Horizontal



### Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBµV/m]	QP Limit [dBµV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	94.3838	10.43	32.45	40.00	7.55	200	18	Horizontal
2	151.0075	15.20	29.34	40.00	10.66	200	35	Horizontal
3	195.3850	11.12	32.90	40.00	7.10	100	174	Horizontal
4	205.7869	11.10	32.91	40.00	7.09	113.3	156.3	Horizontal
5	227.0350	11.82	32.72	40.00	7.28	177	21.1	Horizontal
6	407.3300	16.17	34.06	47.00	12.94	100	256	Horizontal

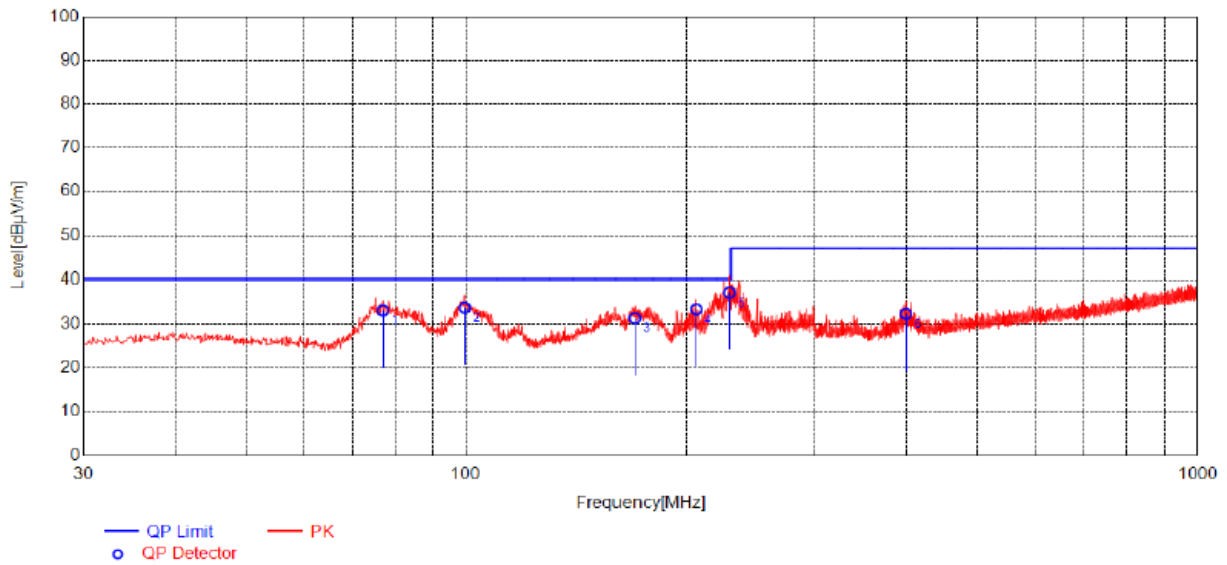
Mode a: Polarization:Vertical



### Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	40.1872	15.08	35.98	40.00	4.02	125	299.2	Vertical
2	58.4938	13.49	35.42	40.00	4.58	100	256	Vertical
3	73.0438	10.70	31.90	40.00	8.10	100	114	Vertical
4	96.5663	10.50	31.32	40.00	8.68	100	68	Vertical
5	152.0988	15.24	33.63	40.00	6.37	100	243	Vertical
6	220.8475	11.61	31.52	40.00	8.48	100	324	Vertical

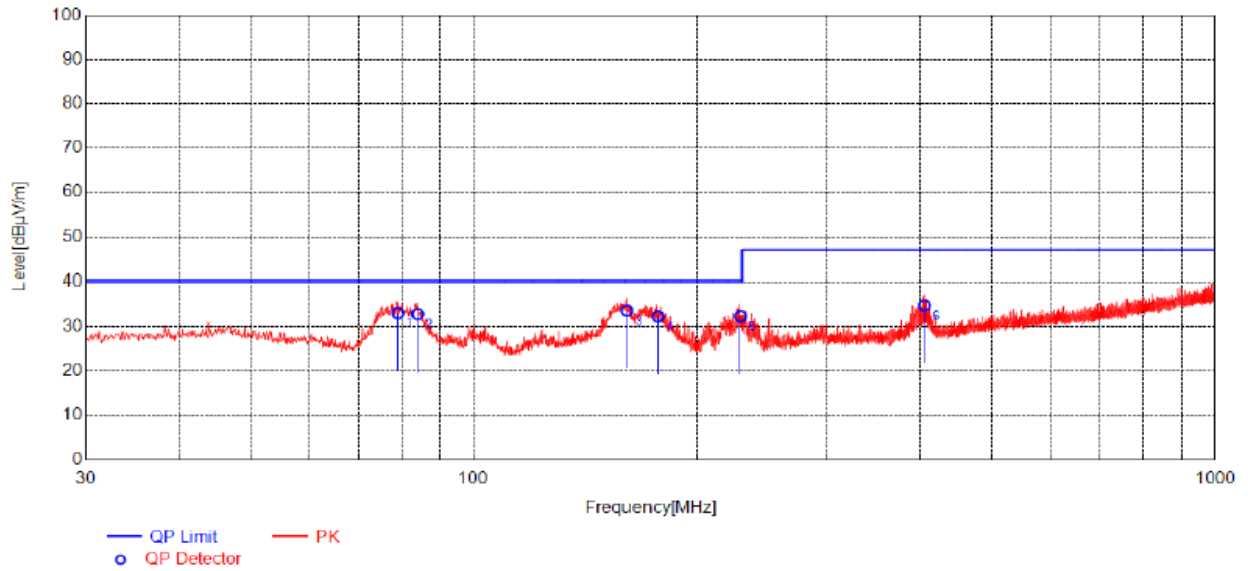
Mode b; Polarization:Horizontal



### Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	76.9238	10.31	33.14	40.00	6.86	200	177	Horizontal
2	99.4763	10.58	33.78	40.00	6.22	200	27	Horizontal
3	170.0438	14.09	31.40	40.00	8.60	200	199	Horizontal
4	206.2975	11.11	33.43	40.00	6.57	100	168	Horizontal
5	228.9792	11.89	37.23	40.00	2.77	114.9	115.7	Horizontal
6	399.2063	15.95	32.37	47.00	14.63	100	259	Horizontal

Mode b; Polarization:Vertical



### Final Data List

NO.	Freq. [MHz]	Factor [dB]	QP Value [dBμV/m]	QP Limit [dBμV/m]	QP Margin [dB]	Height [cm]	Angle [°]	Polarity
1	78.9850	10.10	33.07	40.00	6.93	200	325	Vertical
2	83.9563	10.12	32.87	40.00	7.13	200	104	Vertical
3	160.8288	15.20	33.67	40.00	6.33	100	14	Vertical
4	177.0763	13.04	32.33	40.00	7.67	100	30	Vertical
5	228.8500	11.88	32.37	40.00	7.63	100	236	Vertical
6	405.0263	16.10	34.84	47.00	12.16	100	211	Vertical

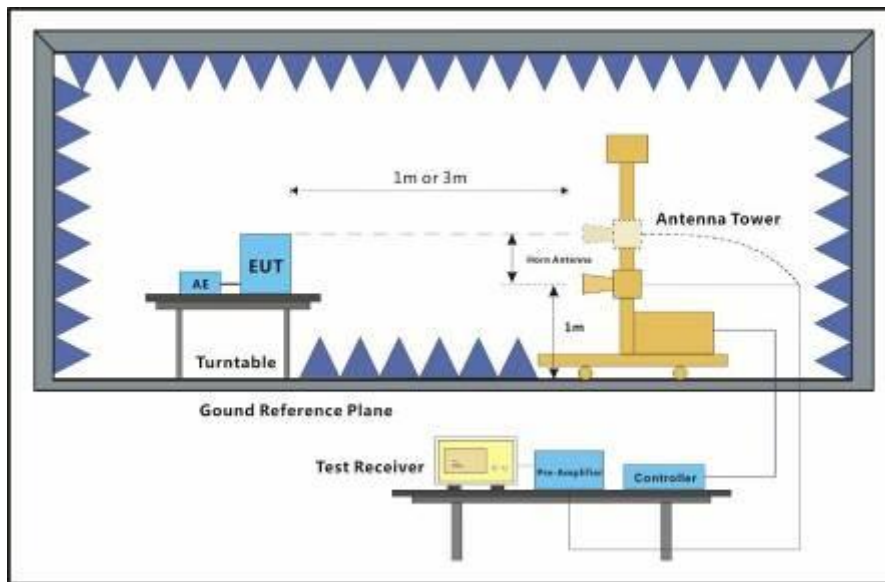
### 6.4 Radiated Emissions (above 1GHz)

Test Requirement:	EN 55032:2015
Test Method:	EN 55032:2015
Frequency Range:	Above 1GHz
Measurement Distance:	3m
Limit:	
1GHz-3GHz	70 dB(μV/m) peak, 50 dB(μV/m) average
3GHz-6GHz	74 dB(μV/m) peak, 54dB(μV/m) average
Detector:	Peak for pre-scan (1000kHz resolution bandwidth) 1000M to 6000MHz

#### 6.4.1 E.U.T. Operation

Operating Environment:			
Temperature:	23 °C	Humidity:	57 % RH
		Atmospheric Pressure:	1022 mbar
Test mode	a: Typical configuration: DC24V Power supply network preview.		
	b: Typical configuration: POE Power supply network preview.		

#### 6.4.2 Test Setup Diagram

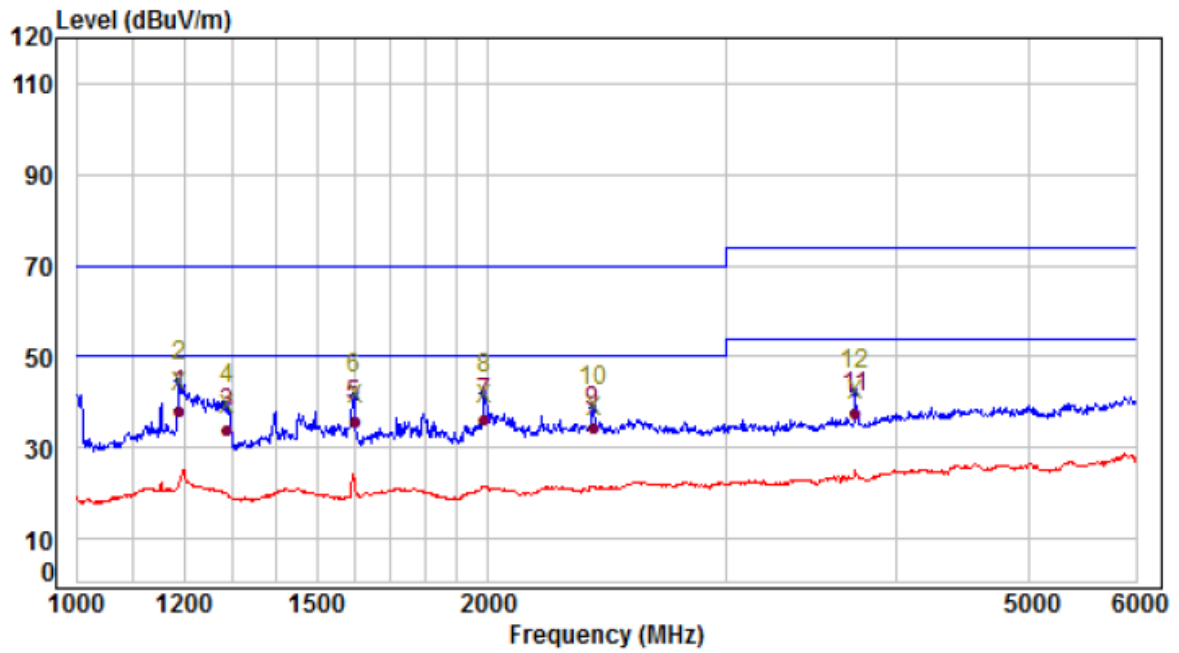


#### 6.4.3 Measurement Data

An initial pre-scan was performed in the chamber using the spectrum analyser in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by BiConiLog antenna with 2 orthogonal polarities.

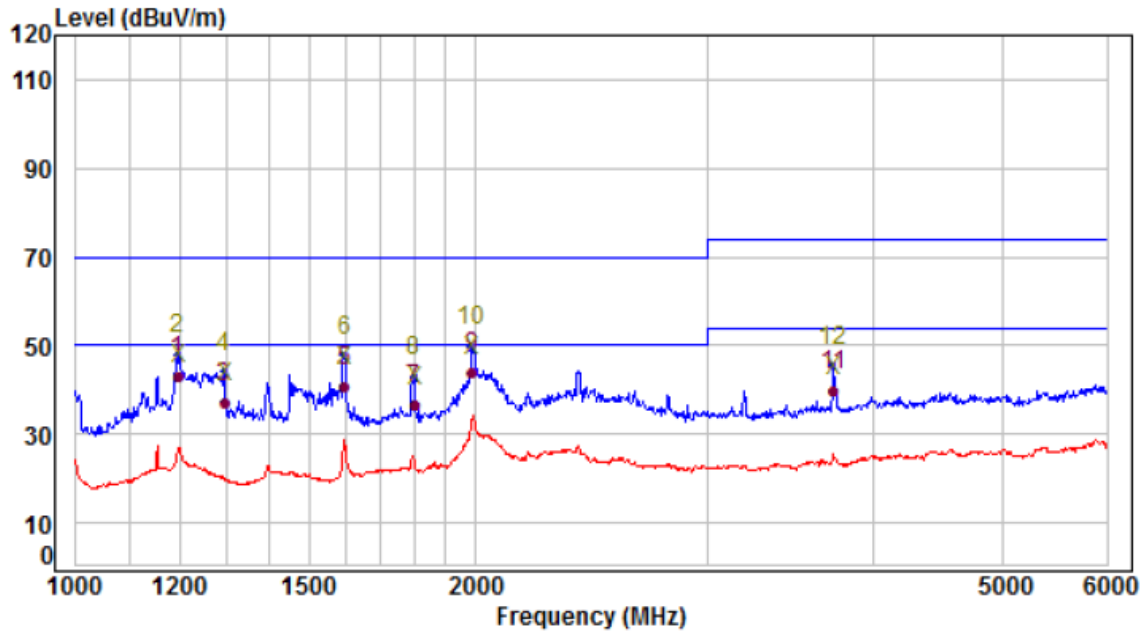
Notes : Emission Level=Read Level + Antenna Factor + Cable Loss – Preamp Factor

Mode:a; Polarization:Horizontal



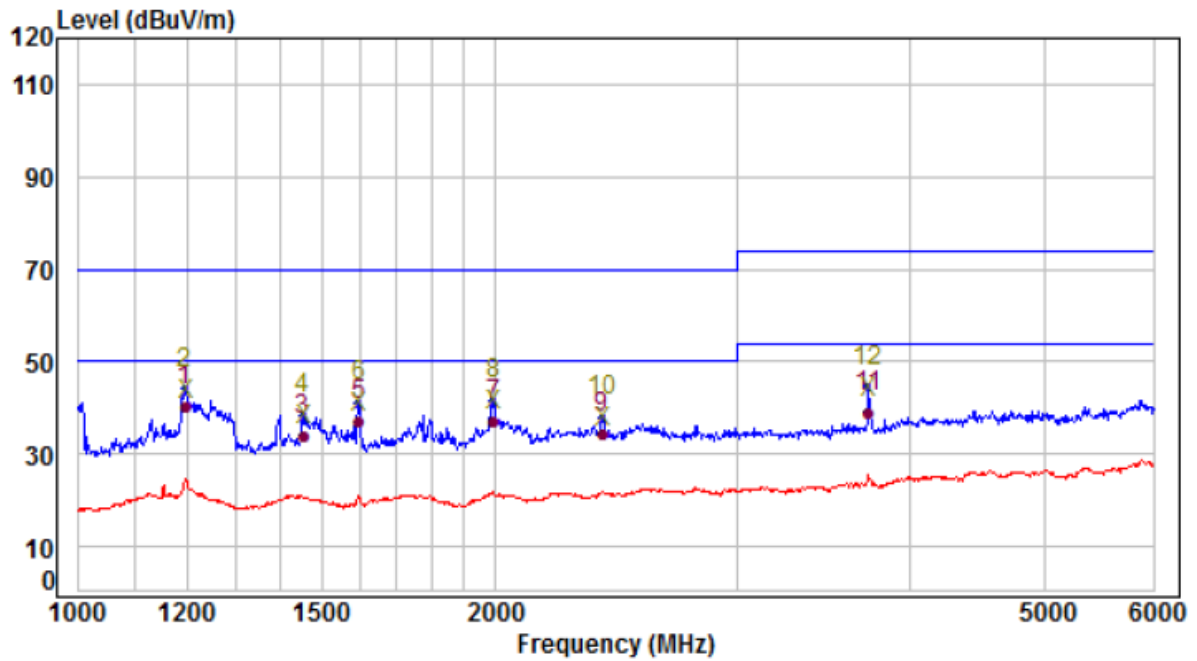
No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (°)
1	1187.688	-15.09	53.21	38.12	50	11.88	Average	100	58
2	1187.688	-15.09	59.7	44.61	70	25.39	Peak	100	58
3	1287.417	-14.69	48.64	33.95	50	16.05	Average	100	94
4	1287.417	-14.69	54.18	39.49	70	30.51	Peak	100	94
5	1599.1	-13.98	50.01	36.03	50	13.97	Average	100	66
6	1599.1	-13.98	55.57	41.59	70	28.41	Peak	100	66
7	1989.803	-13.2	49.25	36.05	50	13.95	Average	100	46
8	1989.803	-13.2	55.15	41.95	70	28.05	Peak	100	46
9	2393.094	-12.08	46.52	34.44	50	15.56	Average	200	257
10	2393.094	-12.08	51.01	38.93	70	31.07	Peak	200	257
11	3731.996	-9.31	47.1	37.79	54	16.21	Average	100	265
12	3731.996	-9.31	51.88	42.57	74	31.43	Peak	100	265

Mode:a; Polarization:Vertical



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (°)
1	1194.09	-15.12	58.23	43.11	50	6.89	Average	200	95
2	1194.09	-15.12	63.03	47.91	70	22.09	Peak	200	95
3	1294.356	-14.68	52.01	37.33	50	12.67	Average	100	103
4	1294.356	-14.68	58.78	44.1	70	25.9	Peak	100	103
5	1596.237	-13.98	55.02	41.04	50	8.96	Average	200	360
6	1596.237	-13.98	61.76	47.78	70	22.22	Peak	200	360
7	1799.839	-13.15	50.04	36.89	50	13.11	Average	100	16
8	1799.839	-13.15	56.1	42.95	70	27.05	Peak	100	16
9	1989.803	-13.2	57.01	43.81	50	6.19	Average	100	20
10	1989.803	-13.2	63.14	49.94	70	20.06	Peak	100	20
11	3731.996	-9.31	49.04	39.73	54	14.27	Average	100	215
12	3731.996	-9.31	54.93	45.62	74	28.38	Peak	100	215

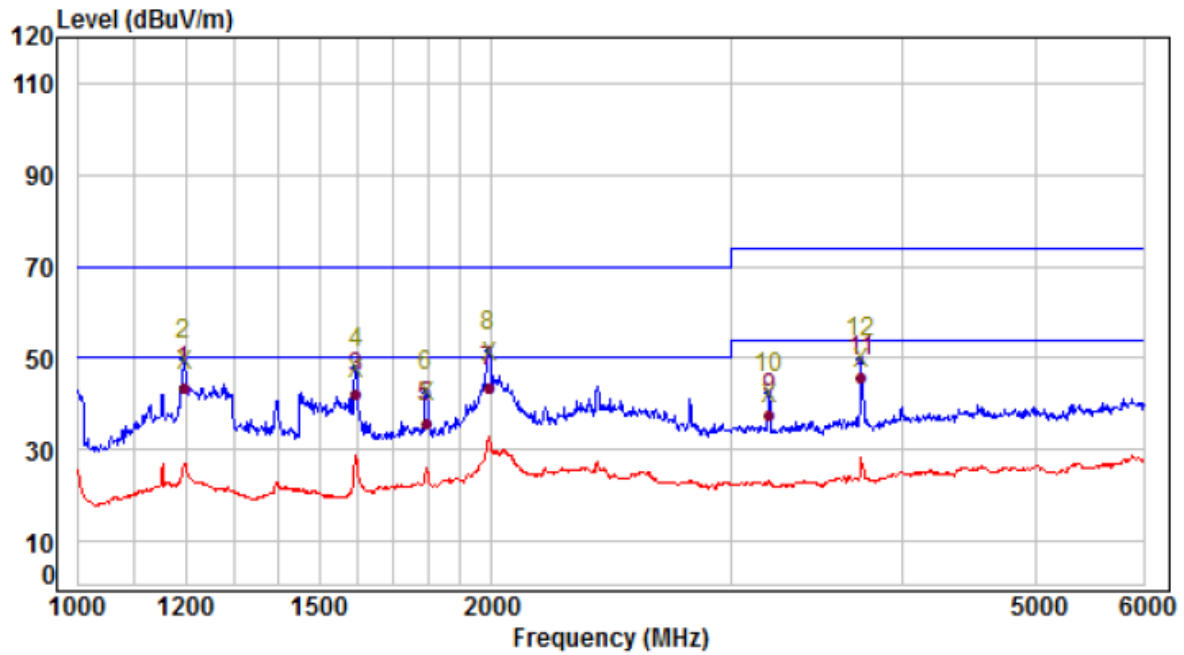
Mode b; Polarization:Horizontal



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (°)
1	1194.09	-15.12	55.32	40.2	50	9.8	Average	100	25
2	1194.09	-15.12	59.35	44.23	70	25.77	Peak	100	25
3	1454.232	-14.02	48.14	34.12	50	15.88	Average	100	115
4	1454.232	-14.02	52.44	38.42	70	31.58	Peak	100	115
5	1596.237	-13.98	51.03	37.05	50	12.95	Average	100	65
6	1596.237	-13.98	55.07	41.09	70	28.91	Peak	100	65
7	1996.946	-13.24	50.24	37	50	13	Average	200	48
8	1996.946	-13.24	54.78	41.54	70	28.46	Peak	200	48
9	2393.094	-12.08	46.52	34.44	50	15.56	Average	100	119
10	2393.094	-12.08	50.03	37.95	70	32.05	Peak	100	119
11	3731.996	-9.31	48.36	39.05	54	14.95	Average	200	63
12	3731.996	-9.31	53.94	44.63	74	29.37	Peak	200	63



Mode b; Polarization:Vertical



No.	Frequency (MHz)	Factor (dB/m)	Reading (dBUV)	Level (dBUV/m)	Limit (dBUV/m)	Margin (dB)	Detector	Height (cm)	Azimuth (°)
1	1194.09	-15.12	58.87	43.75	50	6.25	Average	200	181
2	1194.09	-15.12	64.73	49.61	70	20.39	Peak	200	181
3	1596.237	-13.98	56.22	42.24	50	7.76	Average	100	1
4	1596.237	-13.98	61.88	47.9	70	22.1	Peak	100	1
5	1793.401	-13.25	48.96	35.71	50	14.29	Average	100	10
6	1793.401	-13.25	55.79	42.54	70	27.46	Peak	100	10
7	1993.371	-13.22	56.98	43.76	50	6.24	Average	100	18
8	1993.371	-13.22	64.64	51.42	70	18.58	Peak	100	18
9	3193.317	-10.79	48.24	37.45	54	16.55	Average	100	122
10	3193.317	-10.79	53.18	42.39	74	31.61	Peak	100	122
11	3731.996	-9.31	54.95	45.64	54	8.36	Average	100	225
12	3731.996	-9.31	59.24	49.93	74	24.07	Peak	100	225



## **6.5 Harmonic Current Emission**

Test Requirement: EN 61000-3-2:2014  
Test Method: EN 61000-3-2:2014  
Frequency Range: 100Hz to 2kHz

### **6.5.1 Measurement Data**

There is no need for Harmonics test to be performed on this product (rated power is less than 75W) in accordance with EN 61000-3-2:2014.

For further details, please refer to Clause 7 of EN 61000-3-2 which states:

"For the following categories of equipment, limits are not specified in this standard.- equipment with a rated power of 75W or less, other than lighting equipment."

## 6.6 Voltage Fluctuations and Flicker

Test Requirement: EN 61000-3-3:2013

Test Method: EN 61000-3-3:2013

### 6.6.1 E.U.T. Operation

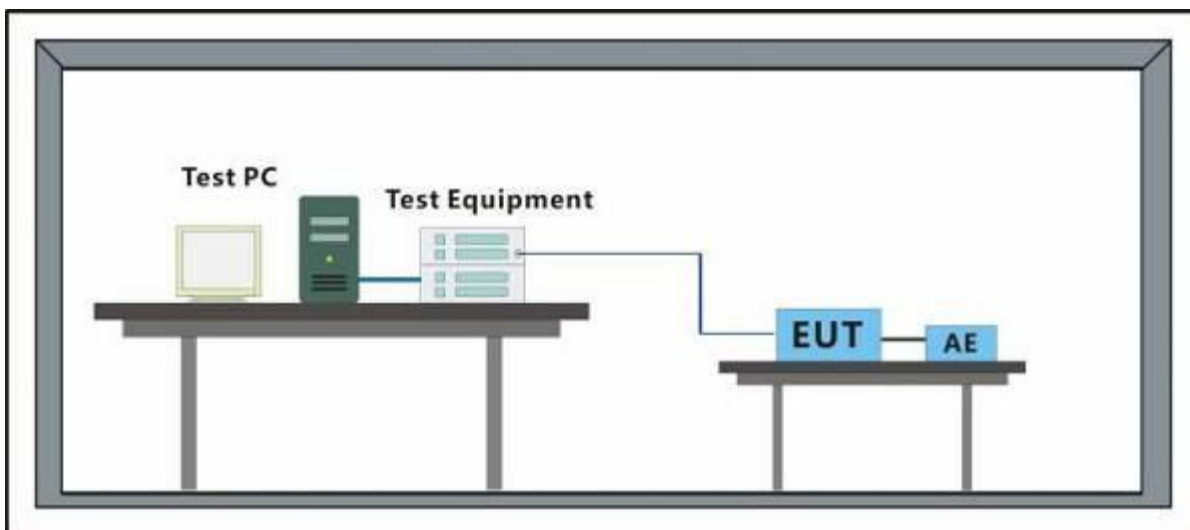
Operating Environment:

Temperature: 23 °C Humidity: 55 % RH Atmospheric Pressure: 1019 mbar

Test mode: a: Typical configuration: DC24V Power supply network preview.

b: Typical configuration: POE Power supply network preview.

### 6.6.2 Test Setup Diagram



### 6.6.3 Measurement Data

Mode:a

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.82			
Highest dt (%):	0.00	Test limit (%):	N/A	N/A
T-max (mS):	0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.03	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.273	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.119	Test limit:	0.650	Pass

Mode:b

Parameter values recorded during the test:

Vrms at the end of test (Volt):	229.84			
Highest dt (%):	0.00	Test limit (%):	N/A	N/A
T-max (mS):	0	Test limit (mS):	500.0	Pass
Highest dc (%):	0.00	Test limit (%):	3.30	Pass
Highest dmax (%):	0.04	Test limit (%):	4.00	Pass
Highest Pst (10 min. period):	0.261	Test limit:	1.000	Pass
Highest Plt (2 hr. period):	0.114	Test limit:	0.650	Pass



## **7 Immunity Test Results**

### **7.1 Performance Criteria Description in EN 50130-4:2011 +A1:2014**

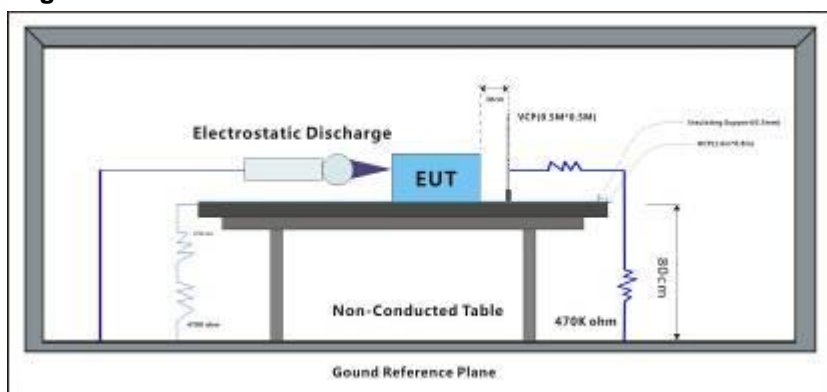
There shall be no damage, malfunction or change of status due to the conditioning. Flickering of an indicator during the application of the discharges is permissible, providing that there is no residual change in the EUT or any change in outputs, which could be interpreted by associated equipment as a change.

For further details, please refer to Clause 7.4, 8.4, 9.4, 10.4, 11.4, 12.4 and 13.4, of EN 50130-4.

## 7.2 Electrostatic Discharge

Test Requirement: EN 50130-4:2011 +A1:2014  
 Test Method: EN 61000-4-2:2009  
 Number of Discharge: Minimum 10 times at each test point for Air Discharge  
 Minimum 50 times at each test point for Contact or VCP & HCP Discharge  
 Discharge Mode: Single Discharge  
 Discharge Period: 1 second minimum

### 7.2.1 Test Setup Diagram



### 7.2.2 E.U.T. Operation

Operating Environment:  
 Temperature: 19.8 °C Humidity: 58 % RH Atmospheric Pressure: 1022.2 mbar  
 Test mode:  
 a: Typical configuration: DC24V Power supply network preview.  
 b: Typical configuration: POE Power supply network preview.

### 7.2.3 Test Results:

Observations: Test Point:  
 1. All insulated enclosure and seams.  
 2. All accessible metal parts of the enclosure.  
 3. All side

Discharge type	Level (kV)	Polarity	Test Point	Result / Observations
Air Discharge	2,4,8	+	1	Pass
Air Discharge	2,4,8	-	1	Pass
Contact Discharge	6	+	2	Pass
Contact Discharge	6	-	2	Pass
Horizontal Coupling	6	+	3	Pass
Horizontal Coupling	6	-	3	Pass
Vertical Coupling	6	+	3	Pass
Vertical Coupling	6	-	3	Pass

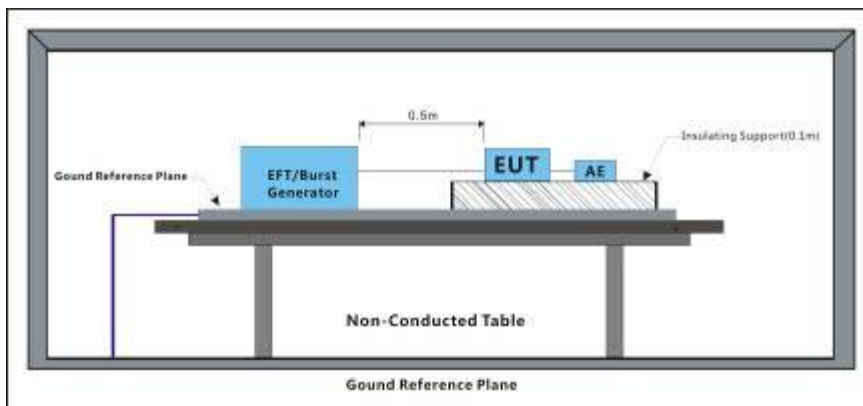
### Results:

- The EUT working normal, before the conditioning.
- Monitor the EUT during the conditioning period there was no status change has occurred, during the conditioning.
- No degradation in the performance of the EUT was observed, after the conditioning.

**7.3 Electrical Fast Transients/Burst at Power Port**

Test Requirement: EN 50130-4:2011 +A1:2014  
 Test Method: EN 61000-4-4:2012  
 Repetition Frequency: 100kHz  
 Burst Period: 300ms  
 Test Duration: 1 minute per level & polarity

**7.3.1 Test Setup Diagram**



**7.3.2 E.U.T. Operation**

Operating Environment:  
 Temperature: 24 °C Humidity: 58 % RH Atmospheric Pressure: 1022.2 mbar  
 Test mode: a: Typical configuration: DC24V Power supply network preview.  
 b: Typical configuration: POE Power supply network preview.

**7.3.3 Test Results:**

Test Line	Level (kV)	Polarity	CDN/Clamp	Result / Observations
AC power port	2	+	CDN	Pass
AC power port	2	-	CDN	Pass

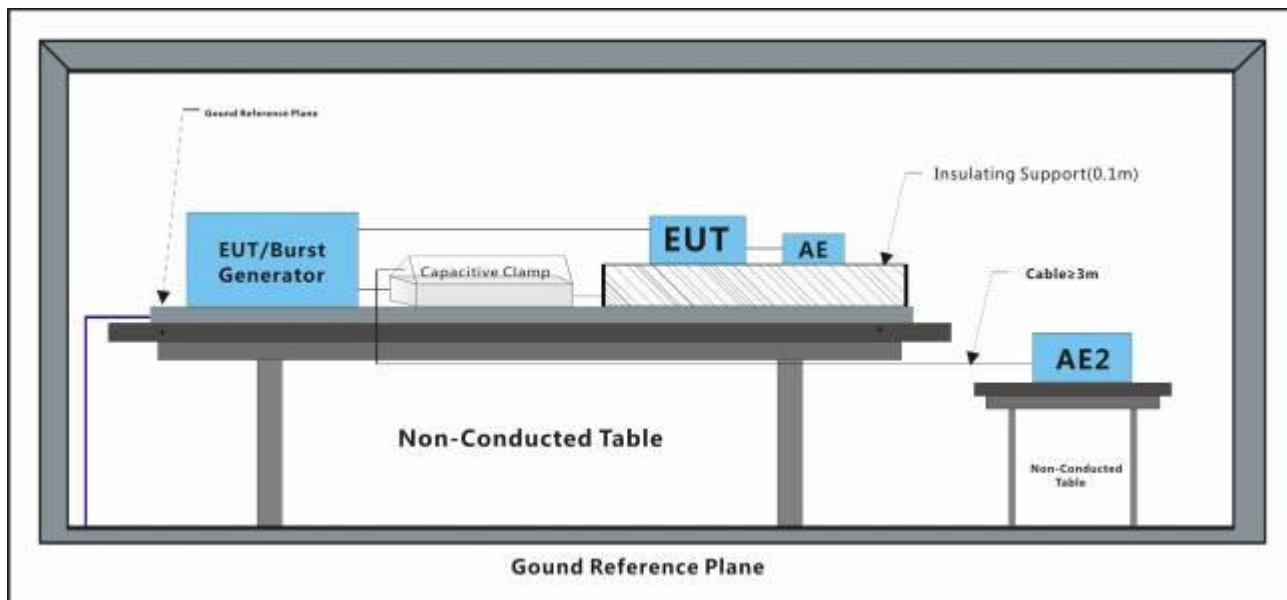
**Results:**

1. The EUT working normal, before the conditioning.
2. Monitor the EUT during the conditioning period there was no status change has occurred, during the conditioning.
3. No degradation in the performance of the EUT was observed, after the conditioning.

### 7.4 Electrical Fast Transients/Burst at Signal Port

Test Requirement: EN 50130-4:2011 +A1:2014  
 Test Method: EN 61000-4-4:2012  
 Repetition Frequency: 100kHz  
 Burst Period: 300ms  
 Test Duration: 1 minute per level & polarity

#### 7.4.1 Test Setup Diagram



#### 7.4.2 E.U.T. Operation

Operating Environment:  
 Temperature: 24 °C Humidity: 58 % RH Atmospheric Pressure: 1022.2 mbar  
 Test mode: a: Typical configuration: DC24V Power supply network preview.  
 b: Typical configuration: POE Power supply network preview.

#### 7.4.3 Test Results:

Port	Level (kV)	Polarity	CDN/Clamp	Result / Observations
Signal port	1	+	Clamp	Pass
Signal port	1	-	Clamp	Pass

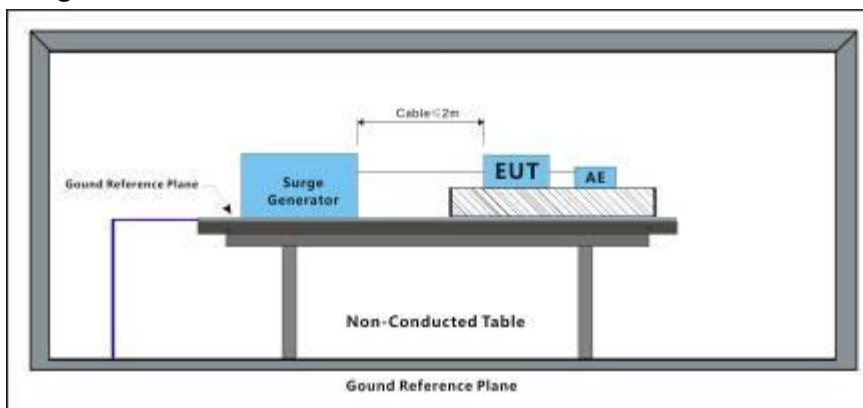
#### Results:

1. The EUT working normal, before the conditioning.
2. Monitor the EUT during the conditioning period there was no status change has occurred, during the conditioning.
3. No degradation in the performance of the EUT was observed, after the conditioning.

### 7.5 Surge at Power Port

Test Requirement: EN 50130-4:2011 +A1:2014  
 Test Method: EN 61000-4-5:2014  
 Interval: 60s between each surge  
 No. of surges: 5 positive, 5 negative

#### 7.5.1 Test Setup Diagram



#### 7.5.2 E.U.T. Operation

Operating Environment:  
 Temperature: 23 °C Humidity: 56 % RH Atmospheric Pressure: 1022.2 mbar  
 Test mode: a: Typical configuration: DC24V Power supply network preview.  
 b: Typical configuration: POE Power supply network preview.

#### 7.5.3 Test Results:

Test Line	Level (kV)	Polarity	Phase (deg)	Result / Observations
L-N	0.5,1	+	0°	Pass
L-N	0.5,1	-	0°	Pass
L-N	0.5,1	+	90°	Pass
L-N	0.5,1	-	90°	Pass
L-N	0.5,1	+	180°	Pass
L-N	0.5,1	-	180°	Pass
L-N	0.5,1	+	270°	Pass
L-N	0.5,1	-	270°	Pass
L-PE	0.5,1,2	+	0°	Pass
L-PE	0.5,1,2	-	0°	Pass
L-PE	0.5,1,2	+	90°	Pass
L-PE	0.5,1,2	-	90°	Pass
L-PE	0.5,1,2	+	180°	Pass
L-PE	0.5,1,2	-	180°	Pass
L-PE	0.5,1,2	+	270°	Pass
L-PE	0.5,1,2	-	270°	Pass
N-PE	0.5,1,2	+	0°	Pass
N-PE	0.5,1,2	-	0°	Pass
N-PE	0.5,1,2	+	90°	Pass
N-PE	0.5,1,2	-	90°	Pass
N-PE	0.5,1,2	+	180°	Pass
N-PE	0.5,1,2	-	180°	Pass





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N-PE	0.5,1,2	+	270°	Pass
N-PE	0.5,1,2	-	270°	Pass

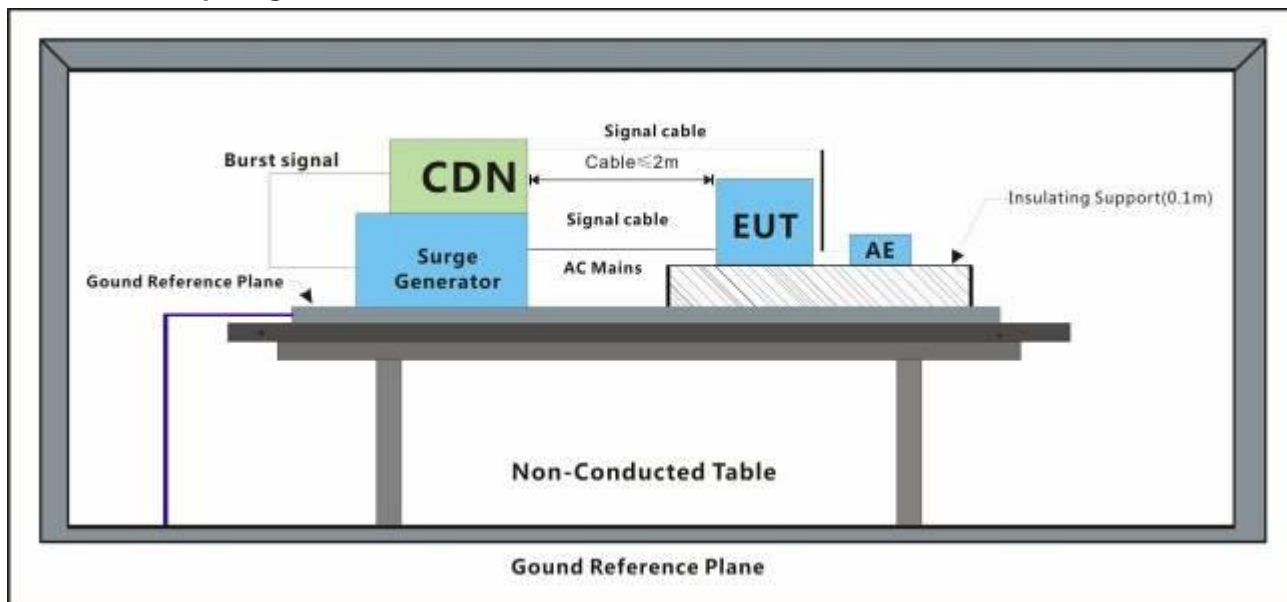
## Results:

1. The EUT working normal, before the conditioning.
2. Monitor the EUT during the conditioning period there was no status change has occurred, during the conditioning.
3. No degradation in the performance of the EUT was observed, after the conditioning.

## 7.6 Surge at Signal Port

Test Requirement: EN 50130-4:2011 +A1:2014  
Test Method: EN 61000-4-5:2014

### 7.6.1 Test Setup Diagram



### 7.6.2 E.U.T. Operation

Operating Environment:

Temperature: 23 °C Humidity: 56 % RH Atmospheric Pressure: 1022.2 mbar

Test mode: a: Typical configuration: DC24V Power supply network preview.

b: Typical configuration: POE Power supply network preview.

### 7.6.3 Test Results:

Port	Line	Level (kV)	Polarity	Result / Observations
Signal port	Line-Ground	0.5	+	Pass
Signal port	Line-Ground	0.5	-	Pass
Signal port	Line-Ground	1	+	Pass
Signal port	Line-Ground	1	-	Pass

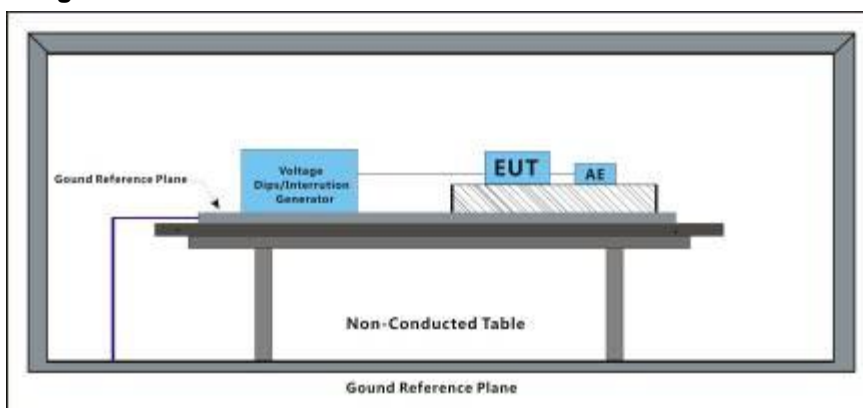
#### Results:

1. The EUT working normal, before the conditioning.
2. Monitor the EUT during the conditioning period there was no status change has occurred, during the conditioning.
3. No degradation in the performance of the EUT was observed, after the conditioning.

### 7.7 Voltage Dips and Interruptions

Test Requirement: EN 50130-4:2011 +A1:2014  
 Test Method: EN 61000-4-11:2004  
 Performance Criterion: 0% of UT (Supply Voltage) for 250 Periods; 40% of UT for 10 Periods; 70% of UT for 25 Periods; 80% of UT for 250 Periods;  
 No. of Dips / Interruptions: 3 per Level  
 Time between dropout 10s

#### 7.7.1 Test Setup Diagram



#### 7.7.2 E.U.T. Operation

Operating Environment:  
 Temperature: 24 °C Humidity: 58 % RH Atmospheric Pressure: 1012.5 mbar  
 Test mode: a: Typical configuration: DC24V Power supply network preview.  
 b: Typical configuration: POE Power supply network preview.

#### 7.7.3 Test Results:

Level % UT	Phase (deg)	Duration	No. of Dips / Interruptions	Result / Observations
80	0°	250 Cycles	3	Pass
80	180°	250 Cycles	3	Pass
70	0°	25 Cycles	3	Pass
70	180°	25 Cycles	3	Pass
40	0°	10 Cycles	3	Pass
40	180°	10 Cycles	3	Pass
0	0°	250 Cycles	3	Pass
0	180°	250 Cycles	3	Pass

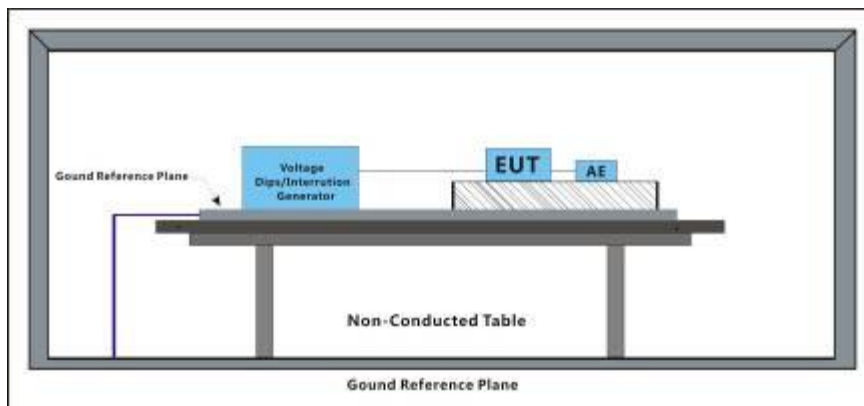
#### Results:

- The EUT working normal, before the conditioning.
- Monitor the EUT during the conditioning period :  
 80%UT Lasts for 250 cycles: During the test, No degradation in the performance of the EUT was observed  
 70%UT Lasts for 25 cycles: During the test, No degradation in the performance of the EUT was observed  
 40%UT Lasts for 10 cycles: During the test, No degradation in the performance of the EUT was observed  
 0%UT Lasts for 250 cycles: During the test , the Sample restart, after the test , all the functions recovery automatically
- No degradation in the performance of the EUT was observed, after the conditioning.

## 7.8 Mains Supply Voltage Variations-Conditioning

Test Requirement:	EN 50130-4:2011 +A1:2014
Test Method:	EN 50130-4:2011+A1:2014
Voltage max.:	AC 264V (U <sub>max</sub> : U <sub>nom</sub> + 10%)
Voltage min.:	AC 85V (U <sub>min</sub> : U <sub>nom</sub> - 15%)
Unom Voltage:	AC 230V

### 7.8.1 Test Setup Diagram



### 7.8.2 E.U.T. Operation

Operating Environment:			
Temperature:	25 °C	Humidity:	58 % RH
		Atmospheric Pressure:	1012.5 mbar
Test mode:	a: Typical configuration: DC24V Power supply network preview.		
	b: Typical configuration: POE Power supply network preview.		

### 7.8.3 Test Results:Pass

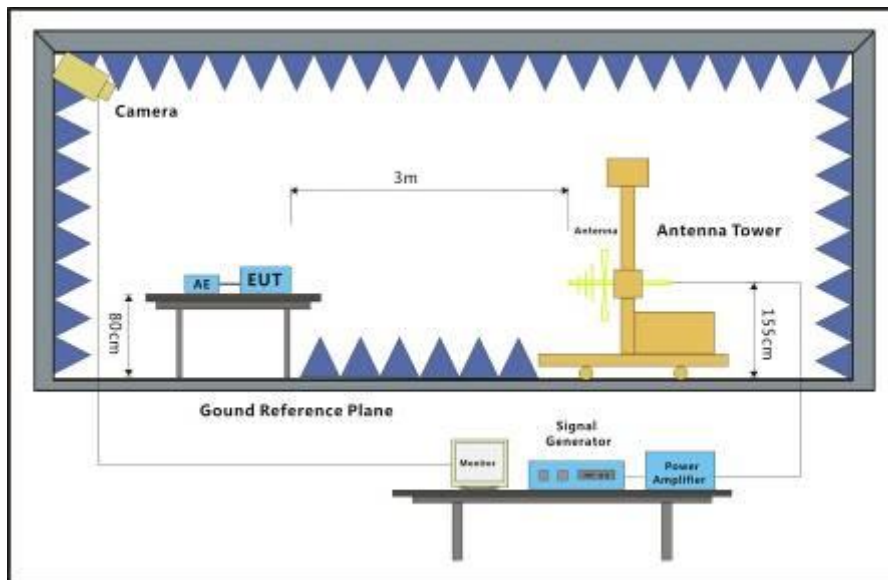
#### Test phenomenon description for the EUT:

1. The EUT working normal, before the conditioning.
2. Monitor the EUT during the conditioning period and detected no any changes in states, during the conditioning.
3. No degradation in the performance of the EUT was observed, after the conditioning.

### 7.9 Radiated Immunity(80MHz-2.7GHz)

Test Requirement: EN 50130-4:2011 +A1:2014  
 Test Method: EN 61000-4-3:2006 +A1:2008+A2:2010  
 Modulation: 80%, 1 kHz Amplitude Modulation & 0.5s ON 0.5s OFF Pulse Modulation

#### 7.9.1 Test Setup Diagram



#### 7.9.2 E.U.T. Operation

Operating Environment:  
 Temperature: 21.3 °C      Humidity: 49 % RH      Atmospheric Pressure: 1020.2 mbar  
 Test mode: a: Typical configuration: DC24V Power supply network preview.  
 b: Typical configuration: POE Power supply network preview.

#### 7.9.3 Test Results:

Frequency	Level (V/m)	EUT Face	Dwell time	Result / Observations
80MHz-2.7GHz	10	Front/ Back/ Left/ Right/ Top/ Underside	3s	Pass
80MHz-2.7GHz	3	Front/ Back/ Left/ Right/ Top/ Underside	3s	Pass
80MHz-2.7GHz	1	Front/ Back/ Left/ Right/ Top/ Underside	3s	Pass

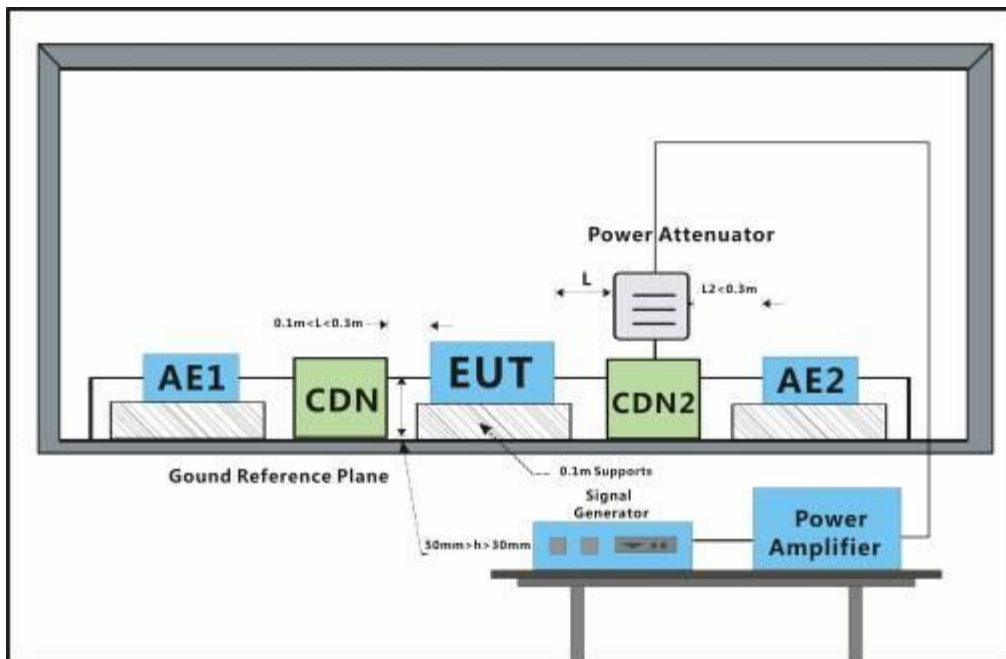
#### Results:

- The EUT working normal, before the conditioning.
- Monitor the EUT during the conditioning period:
  - 10V/M: During the test, No degradation in the performance of the EUT was observed
  - 3V/M: During the test, No degradation in the performance of the EUT was observed
  - 1V/M: During the test, No degradation in the performance of the EUT was observed
- No degradation in the performance of the EUT was observed, after the conditioning.

### 7.10 Conducted Immunity at Power Port (150kHz-100MHz)

Test Requirement: EN 50130-4:2011 +A1:2014  
 Test Method: EN 61000-4-6:2014  
 Modulation: 80%, 1 kHz Amplitude Modulation & 0.5s ON 0.5s OFF Pulse Modulation

#### 7.10.1 Test Setup Diagram



#### 7.10.2 E.U.T. Operation

Operating Environment:  
 Temperature: 21.4 °C Humidity: 47 % RH Atmospheric Pressure: 1021.2 mbar  
 Test mode: a: Typical configuration: DC24V Power supply network preview.  
 b: Typical configuration: POE Power supply network preview.

#### 7.10.3 Test Results:

Cable port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
AC power port	10	CDN	3s	Pass
AC power port	3	CDN	3s	Pass
AC power port	1	CDN	3s	Pass

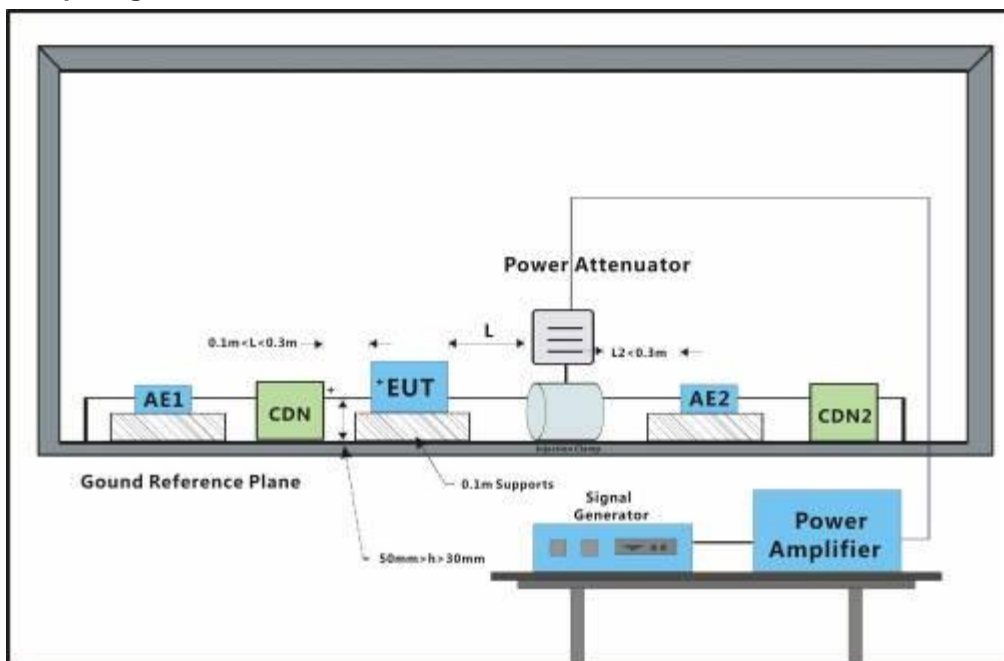
#### Results:

- The EUT working normal, before the conditioning.
- Monitor the EUT during the conditioning period:
  - 10V: During the test, no degradation in the performance of the EUT was observed.
  - 3V: During the test, no degradation in the performance of the EUT was observed.
  - 1V: During the test, no degradation in the performance of the EUT was observed.
- No degradation in the performance of the EUT was observed, after the conditioning.

### 7.11 Conducted Immunity at Signal Port (150kHz-100MHz)

Test Requirement: EN 50130-4:2011 +A1:2014  
 Test Method: EN 61000-4-6:2014  
 Modulation: 80%, 1 kHz Amplitude Modulation & 0.5s ON 0.5s OFF Pulse Modulation

#### 7.11.1 Test Setup Diagram



#### 7.11.2 E.U.T. Operation

Operating Environment:  
 Temperature: 21.4 °C Humidity: 47 % RH Atmospheric Pressure: 1021.2 mbar  
 Test mode: a: Typical configuration: DC24V Power supply network preview.  
 b: Typical configuration: POE Power supply network preview.

#### 7.11.3 Test Results:

Port	Level (Vrms)	CDN/Clamp	Dwell time	Result / Observations
Signal port	10	Clamp	3s	Pass <sup>1)</sup>
Signal port	3	Clamp	3s	Pass <sup>2)</sup>
Signal port	1	Clamp	3s	Pass*

#### Results:

- The EUT working normal, before the conditioning.
- Monitor the EUT during the conditioning period:

TVI Video out:

- 10V: During the test, no degradation in the performance of the EUT was observed.
  - 3V: During the test, no degradation in the performance of the EUT was observed
  - 1V: During the test, no degradation in the performance of the EUT was observed
- No degradation in the performance of the EUT was observed, after the conditioning.

## 8 Photographs

### 8.1 Conducted Emissions at Mains Terminals (150kHz-30MHz) Test Setup





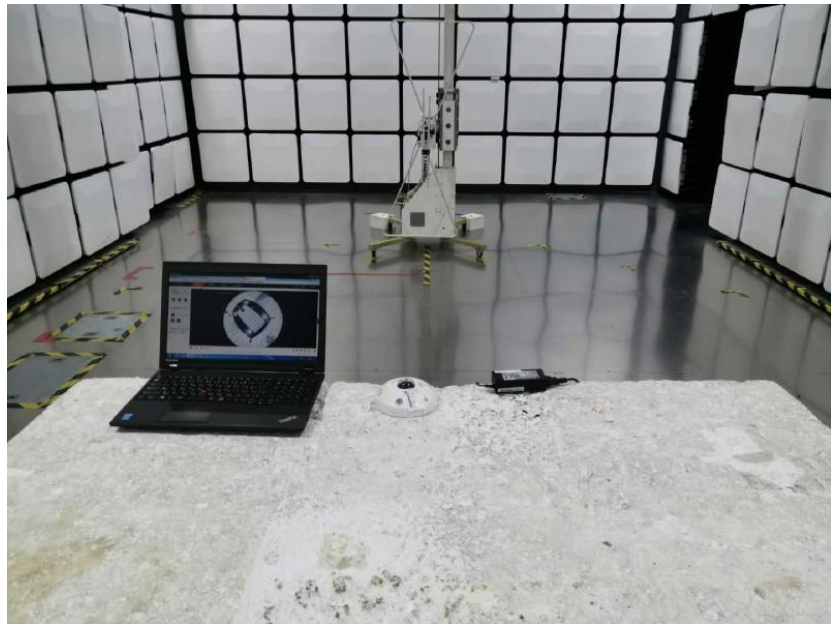
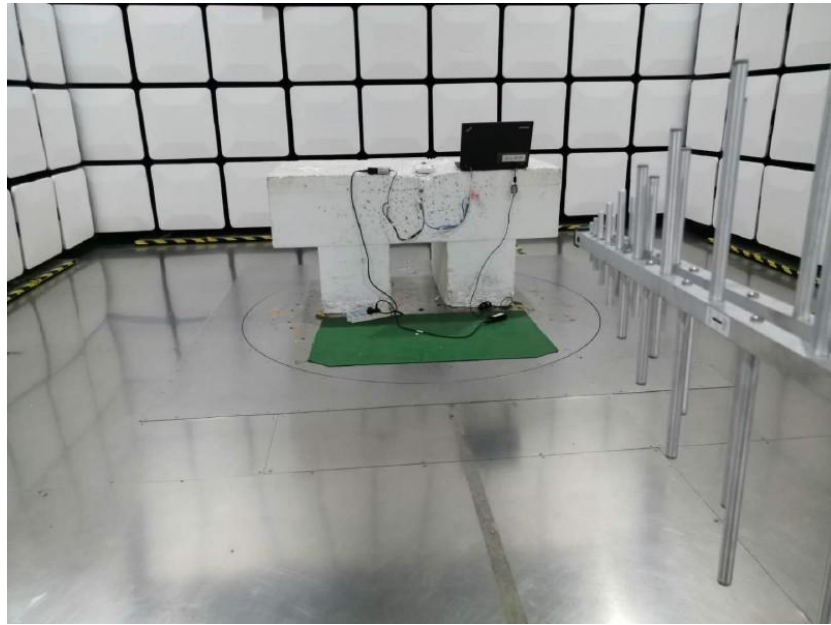


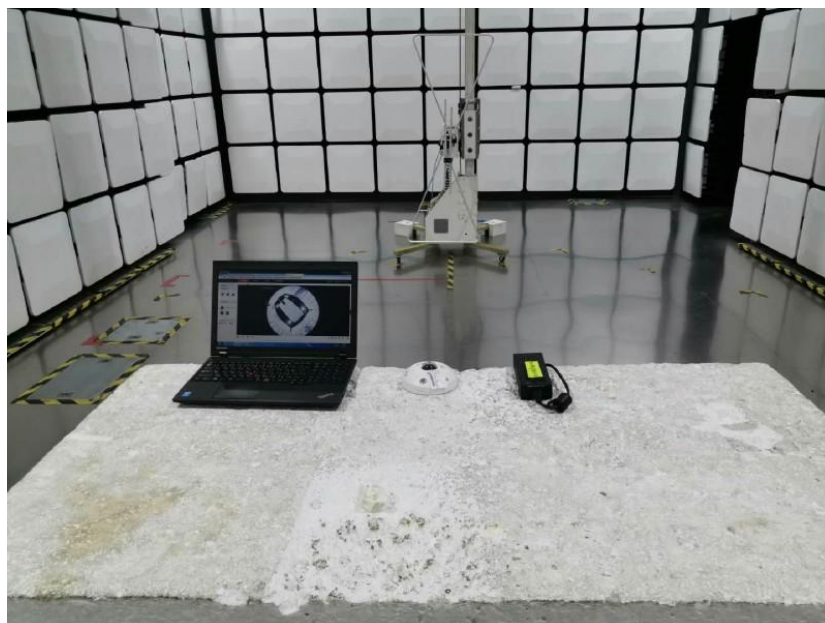
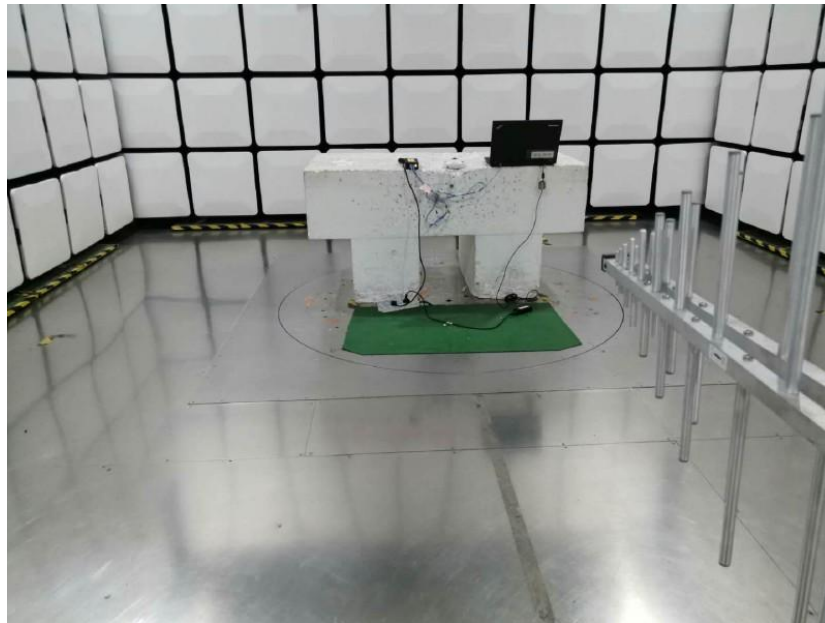
**8.2 Asymmetric Mode Conducted Emissions (150kHz-30MHz) Test Setup**



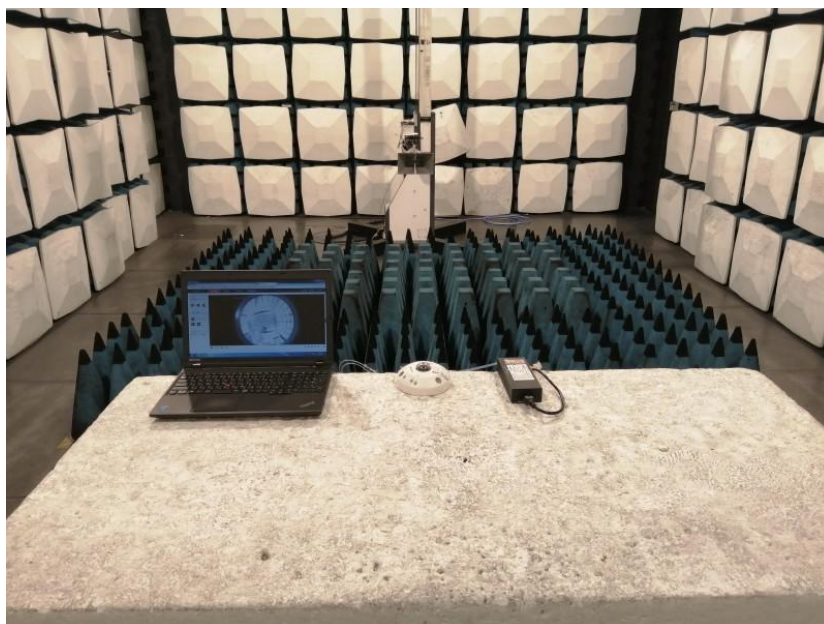
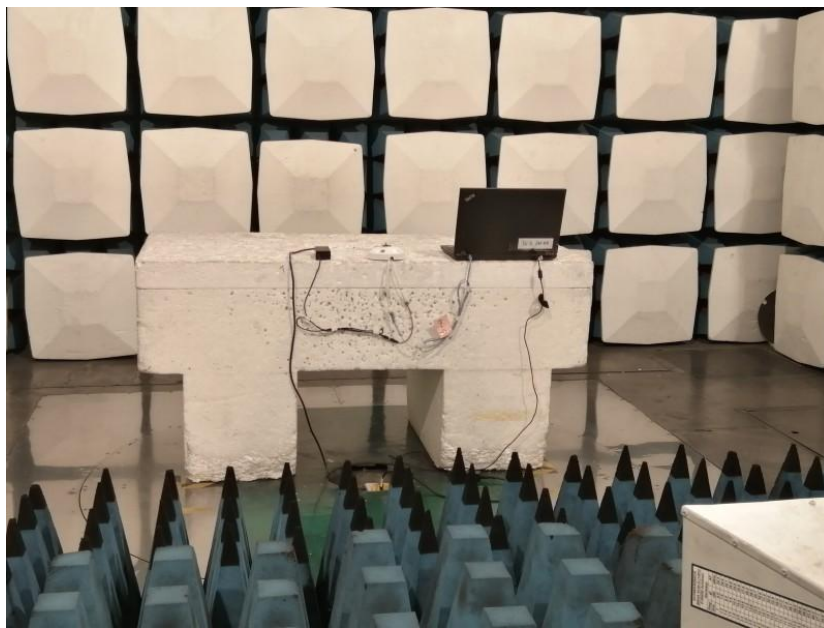


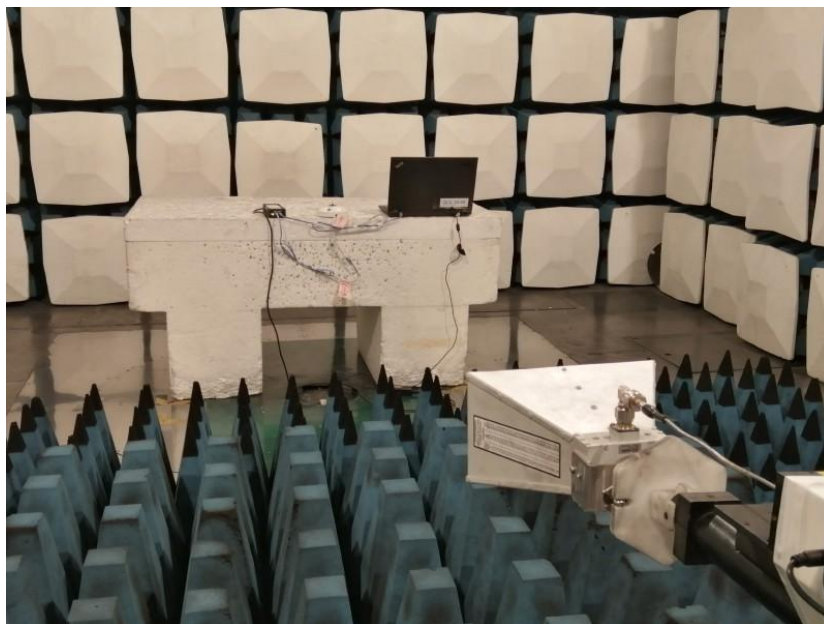
### 8.3 Radiated Emissions (30MHz-1GHz) Test Setup



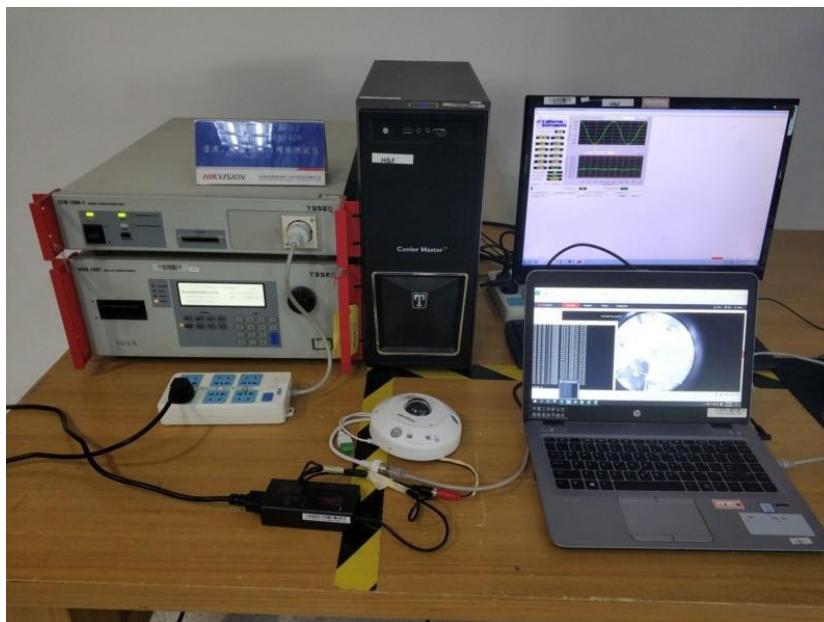


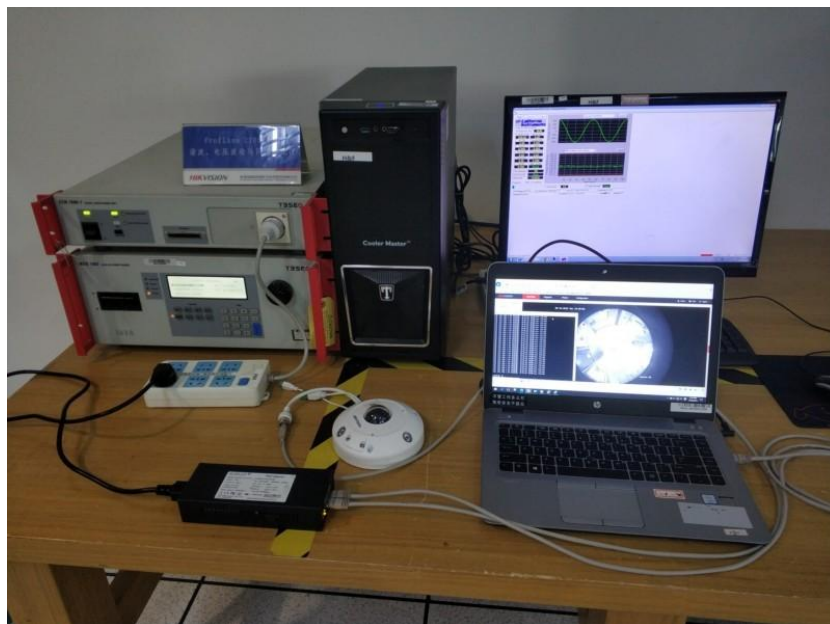
### 8.4 Radiated Emissions (above 1GHz) Test Setup



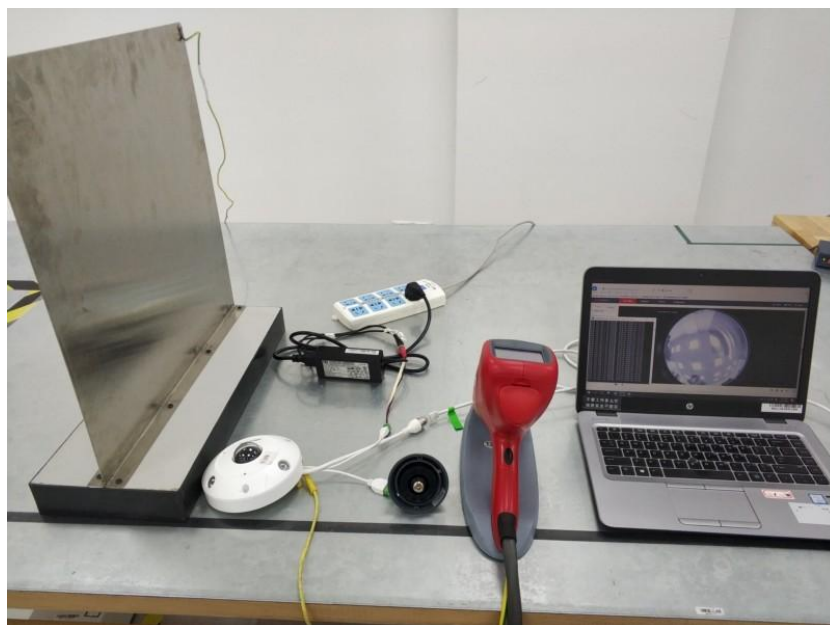


### 8.5 Voltage Fluctuations and Flicker Test Setup

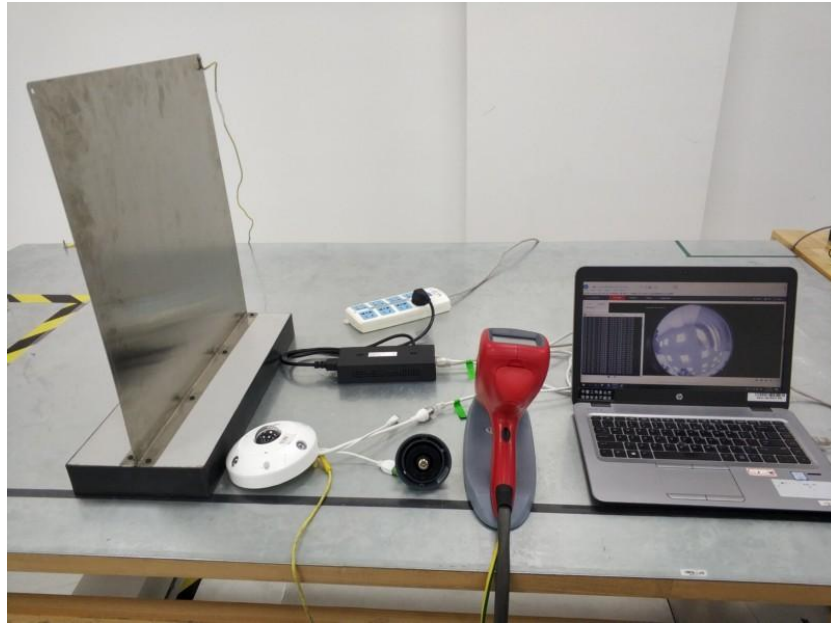




### 8.6 Electrostatic Discharge Test Setup







**8.7 Radiated Immunity (80MHz-2.7GHz) Test Setup**







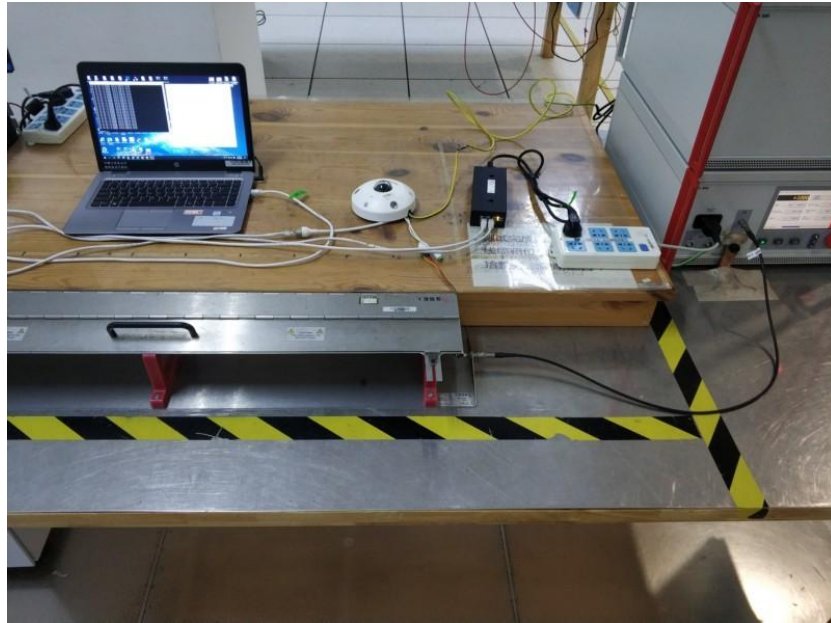
### 8.8 Electrical Fast Transients/Burst at Power Port Test Setup





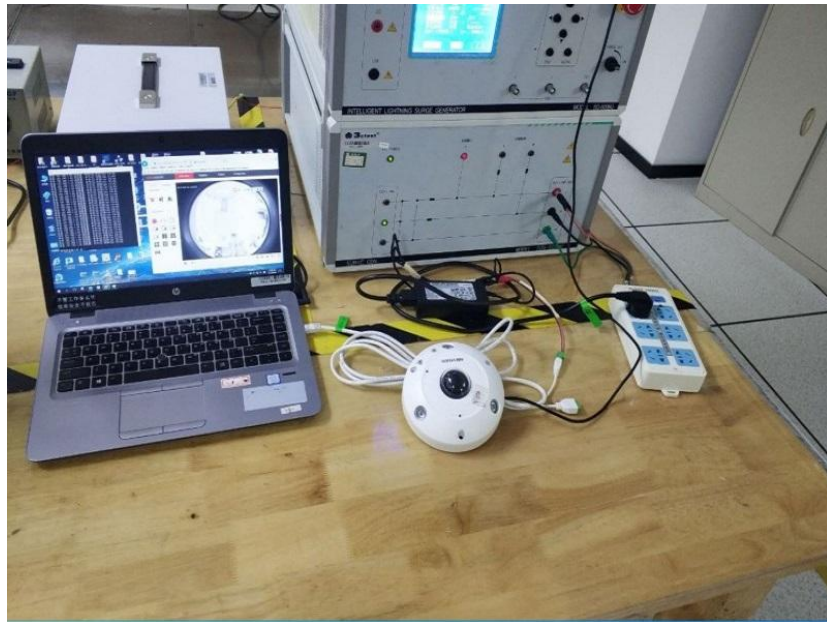
**8.9 Electrical Fast Transients/Burst at Signal Port Test Setup**

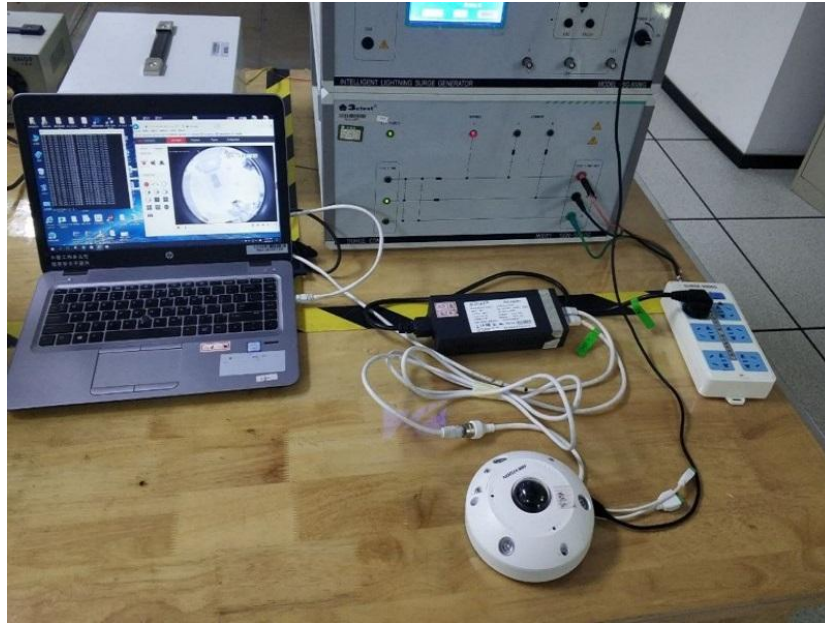




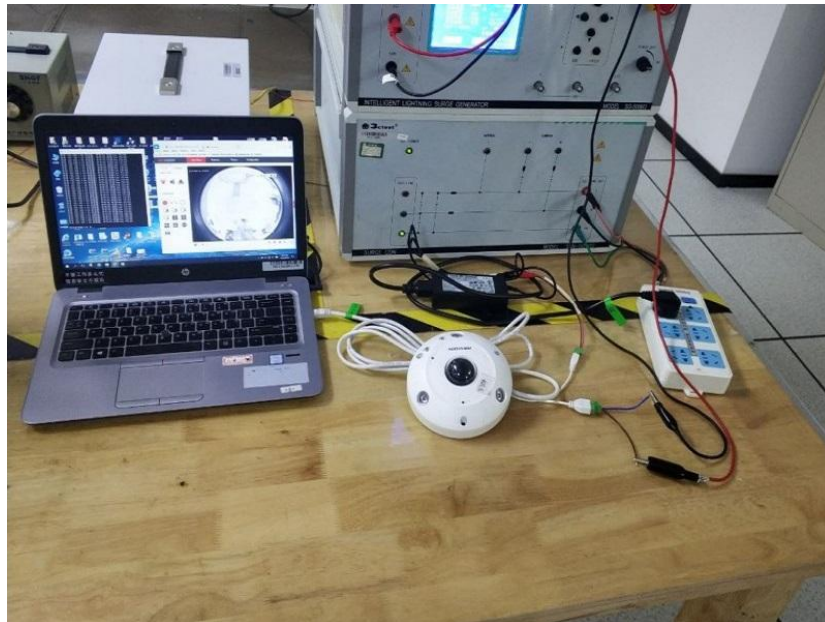


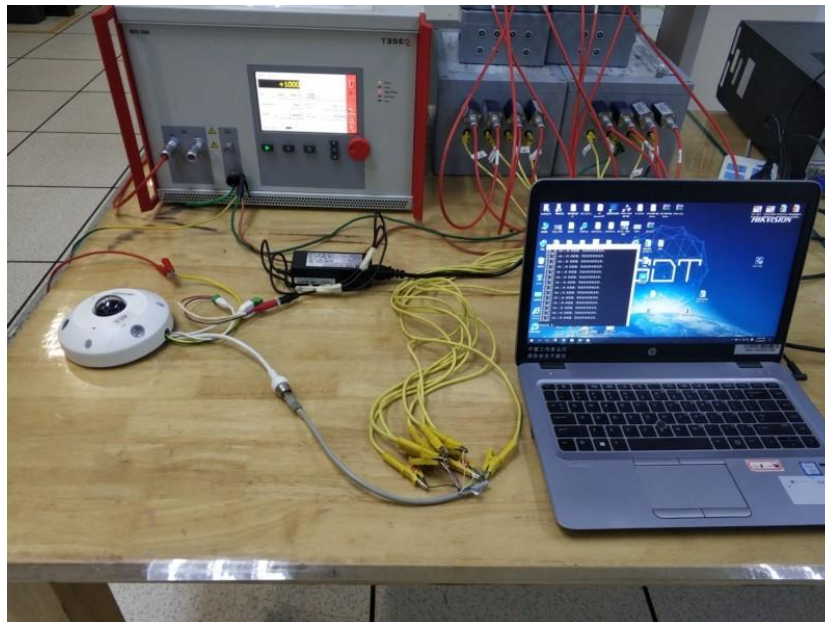
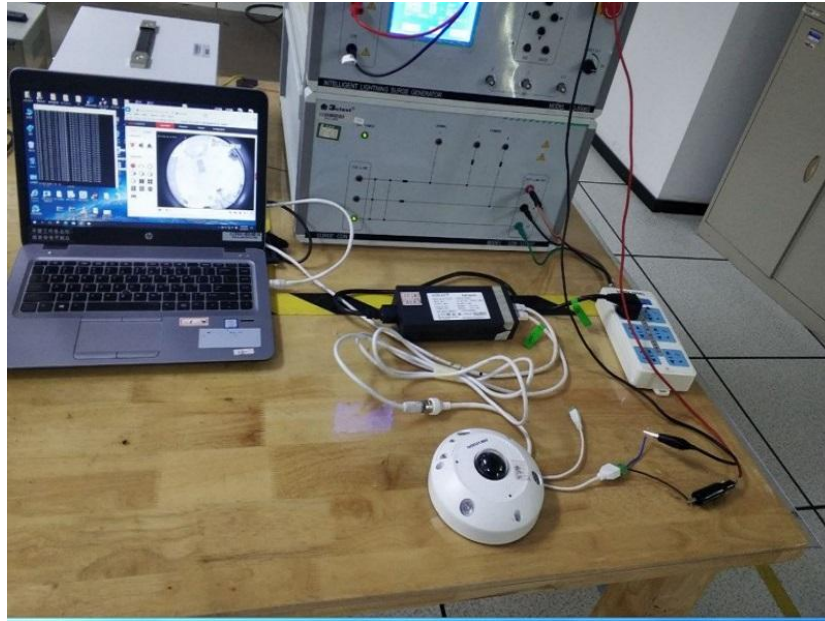
**8.10 Surge at Power Port Test Setup**





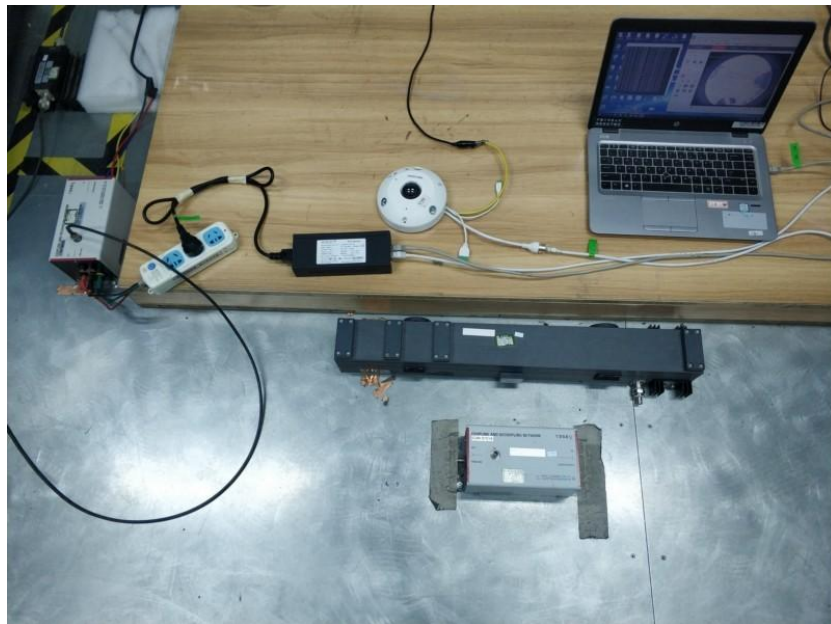
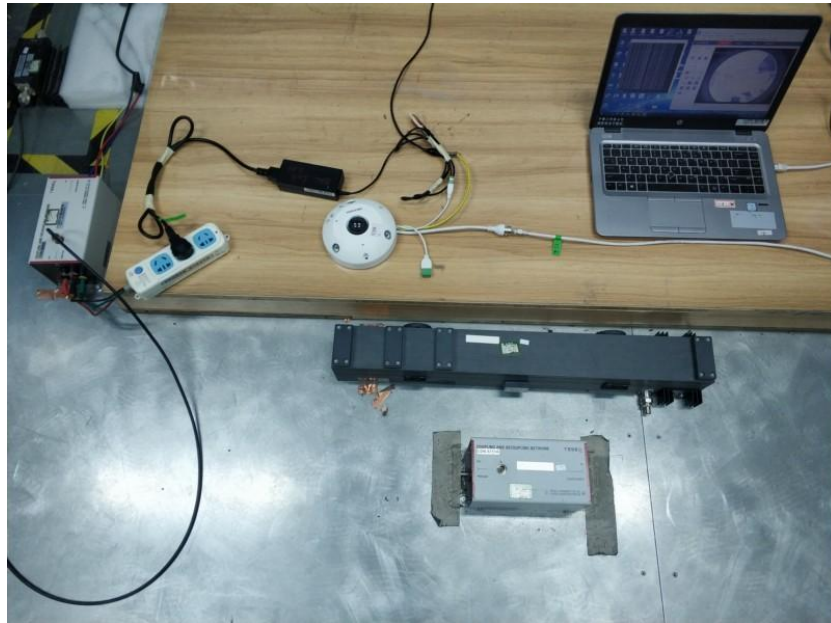
**8.11 Surge at Signal Port Test Setup**



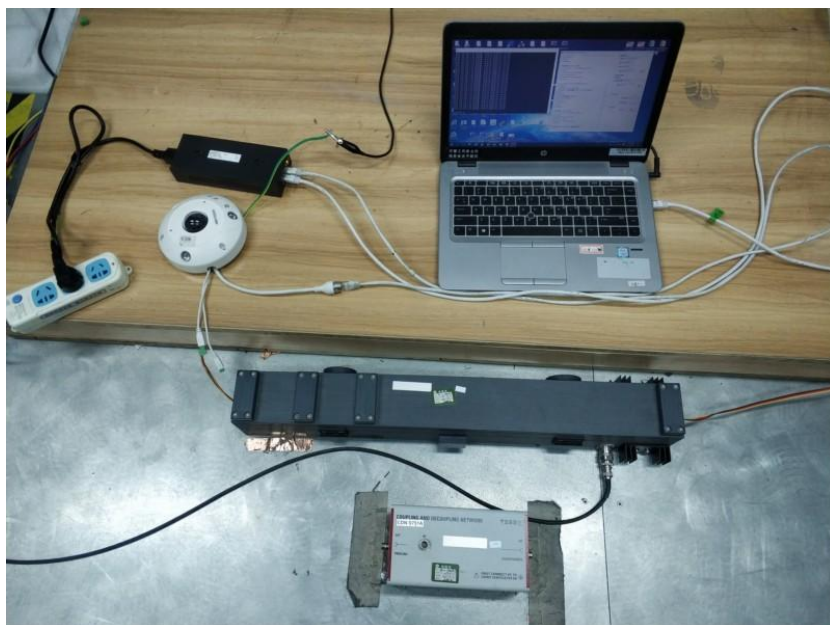
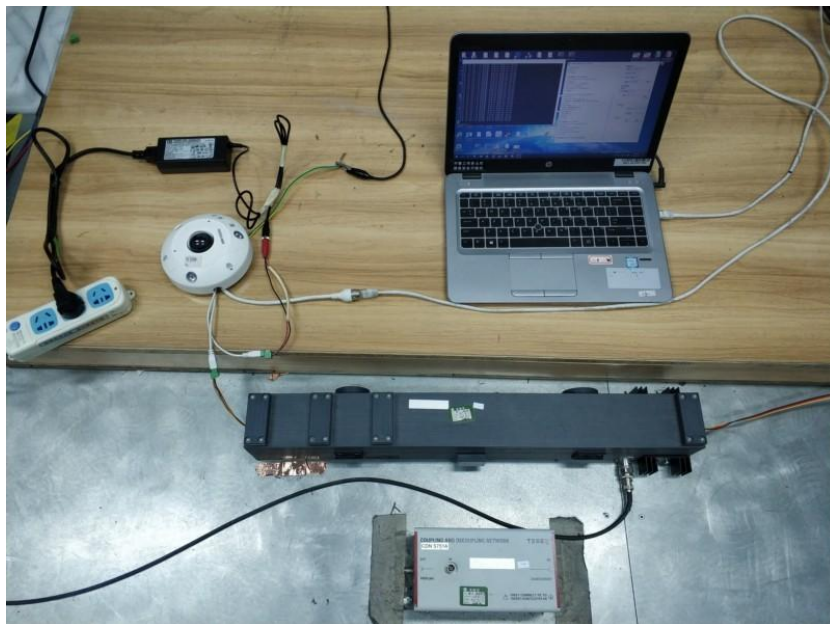


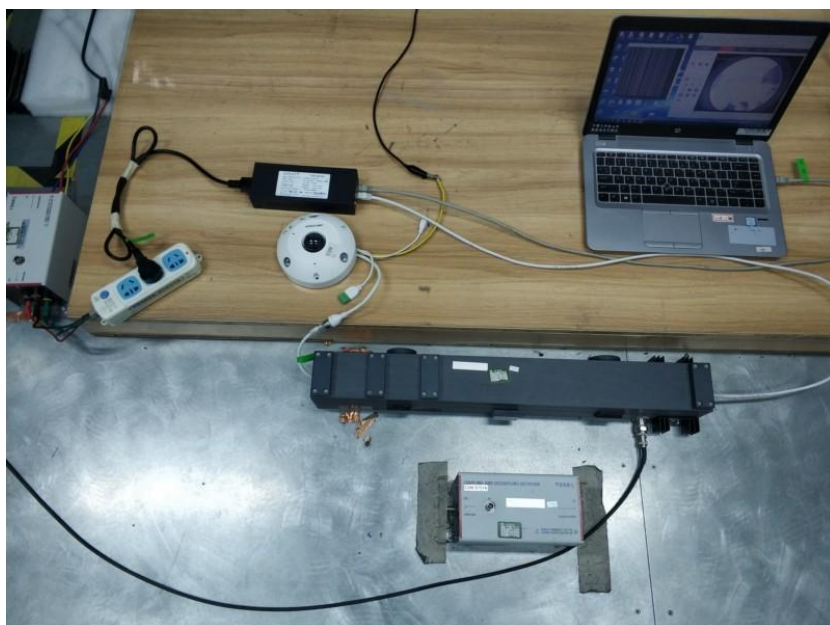
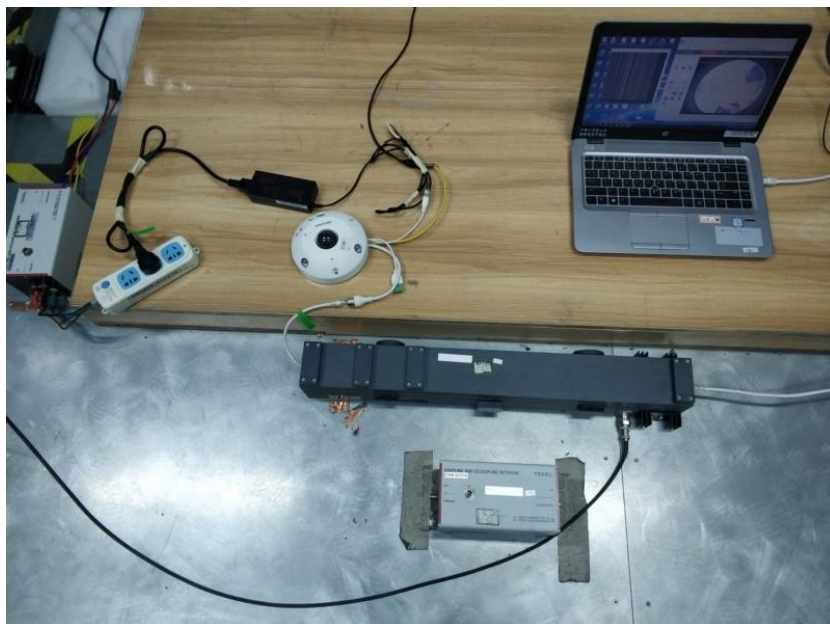


**8.12 Conducted Immunity at Power Port (150kHz-100MHz) Test Setup**



### 8.13 Conducted Immunity at Signal Port (150kHz-100MHz) Test Setup

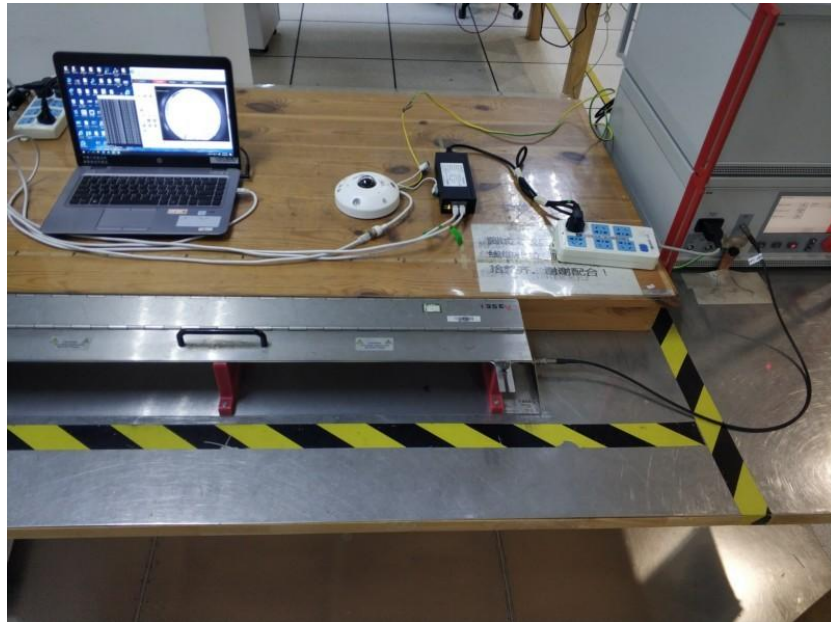
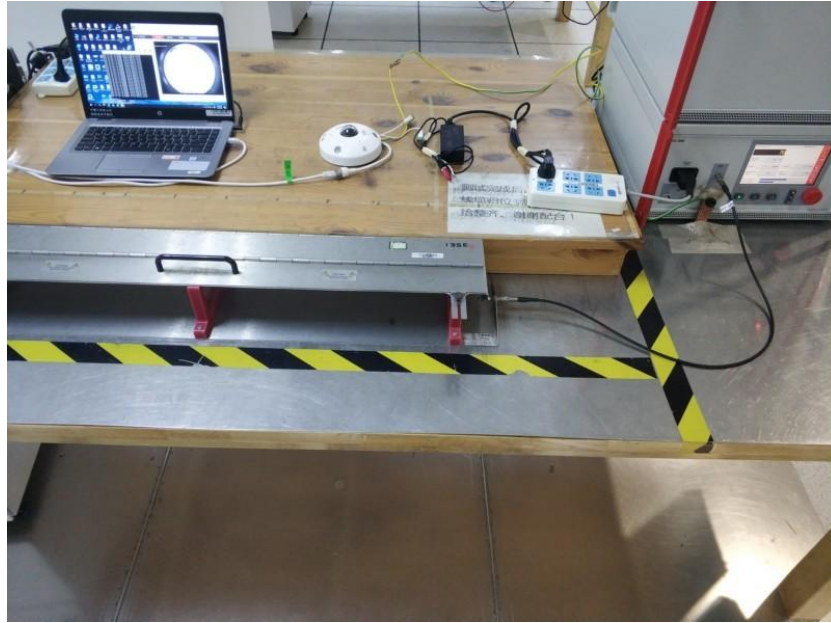




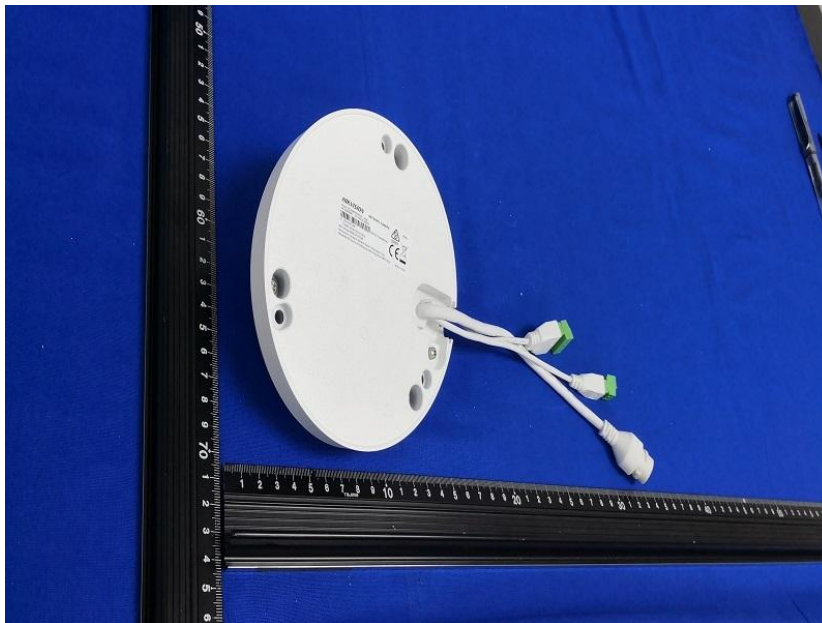
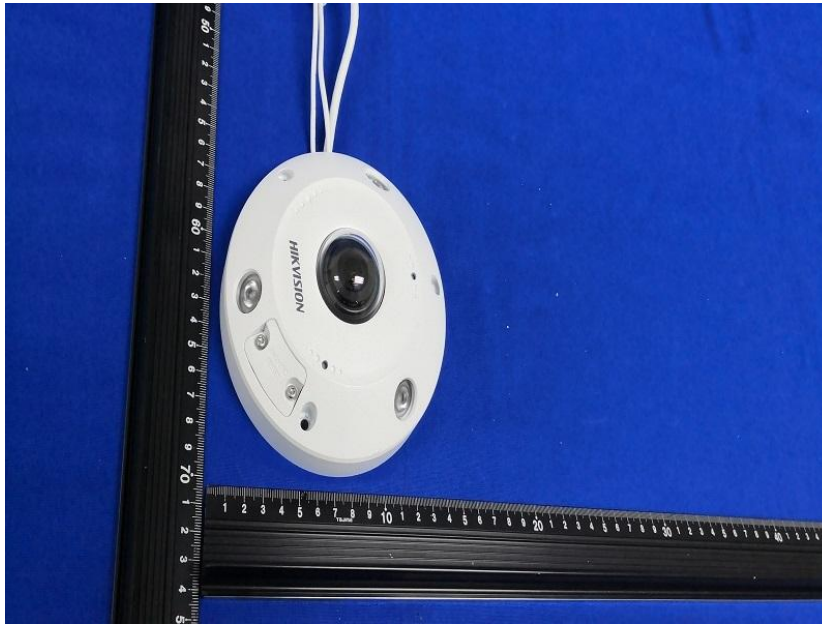
### 8.14 Voltage Dips and Interruptions Test Setup

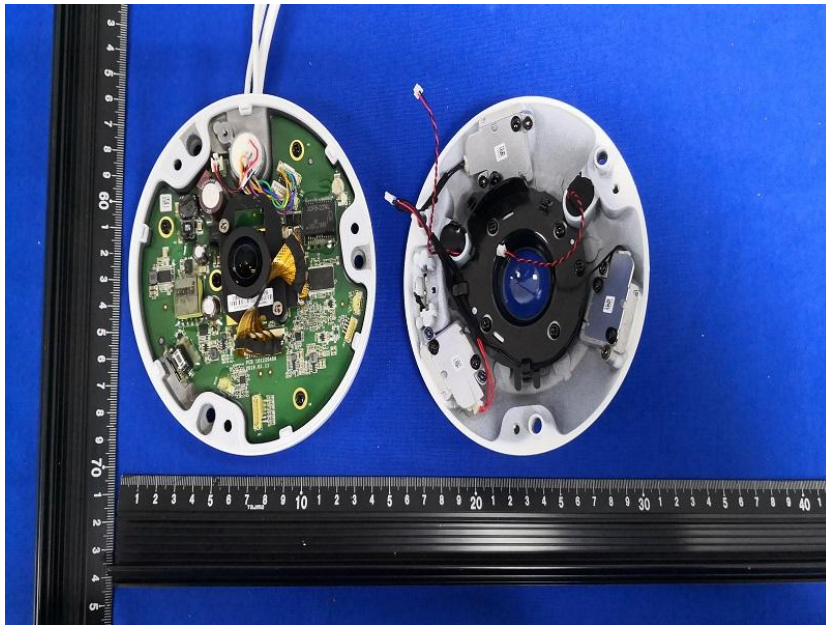
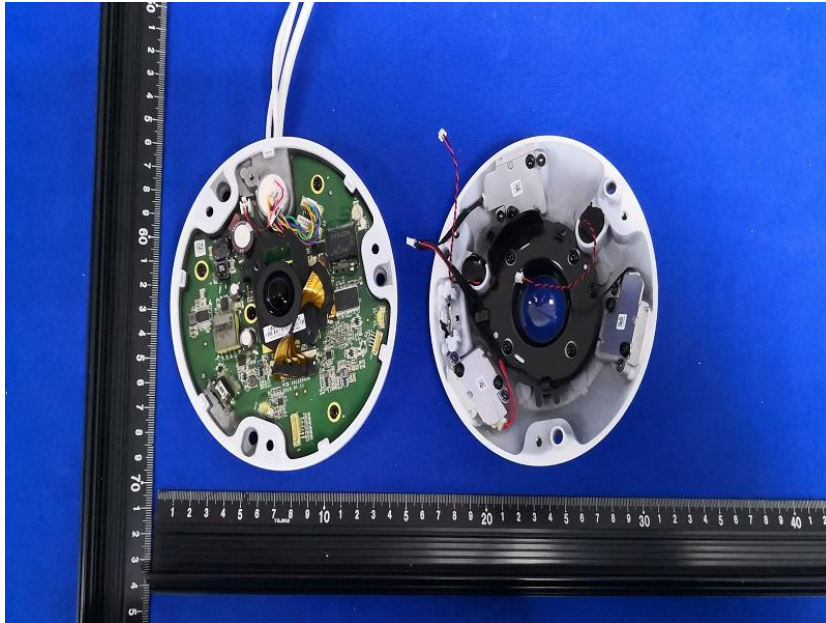


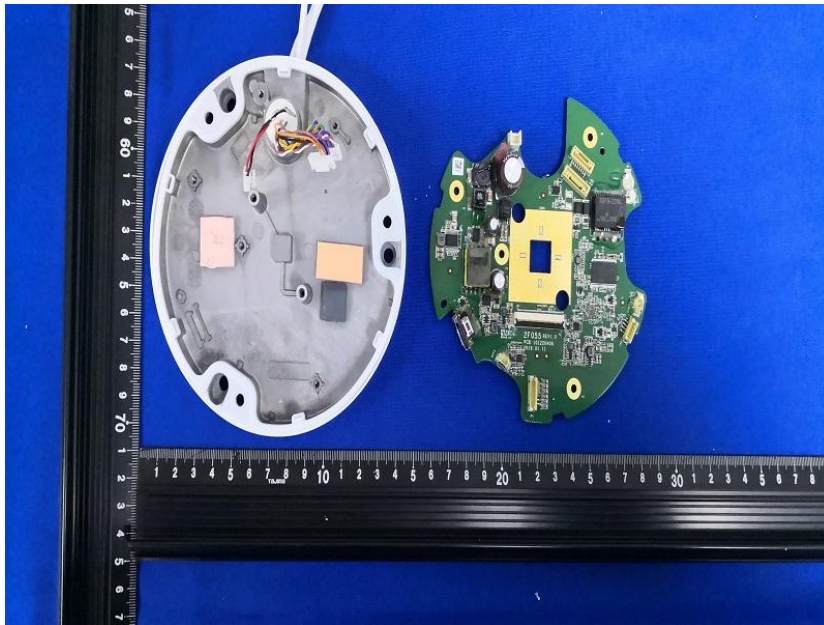
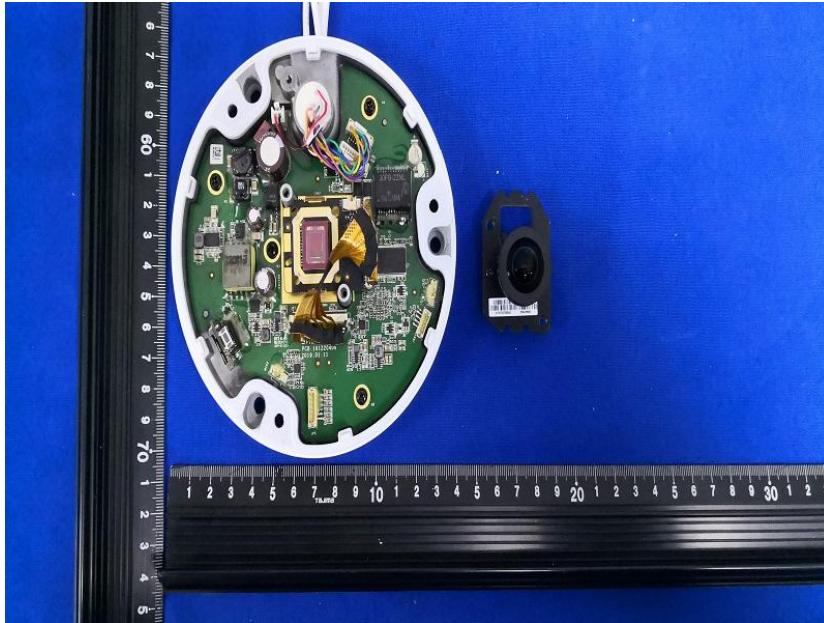
**8.15 Mains Supply Voltage Variations-Conditioning Test Setup**



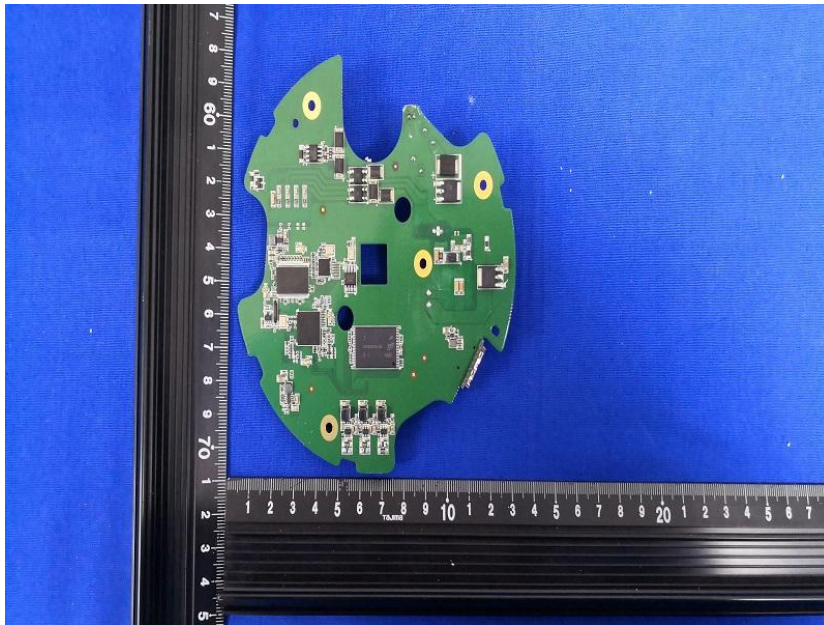
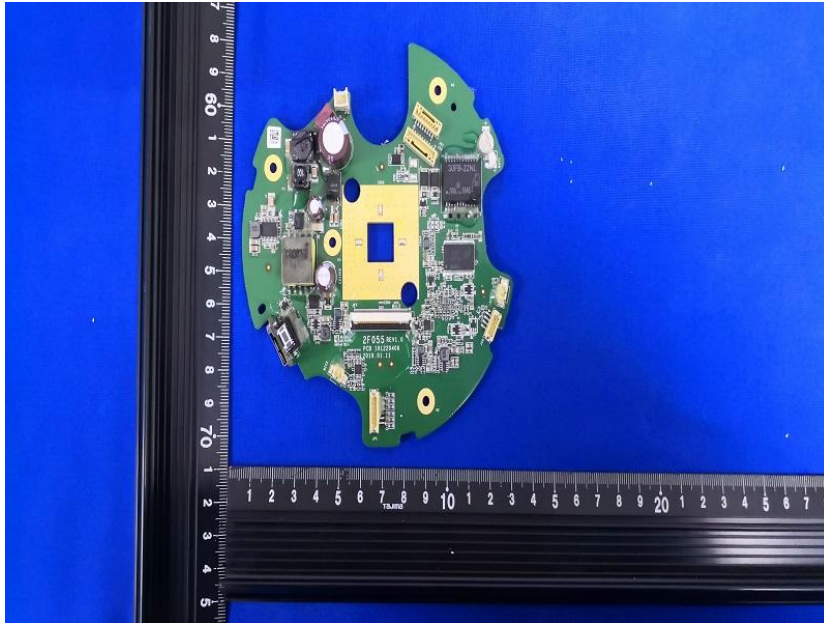
**8.16 EUT Constructional Details (EUT Photos)**

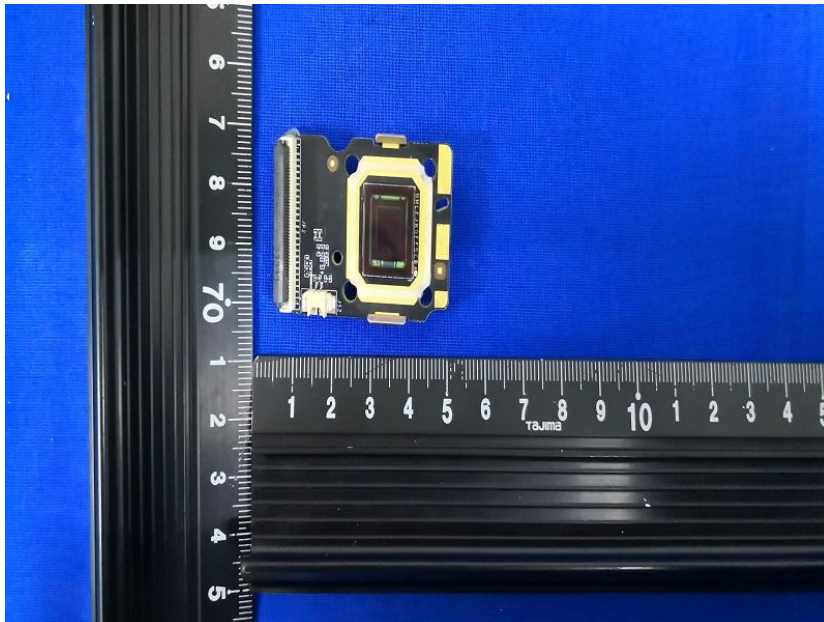
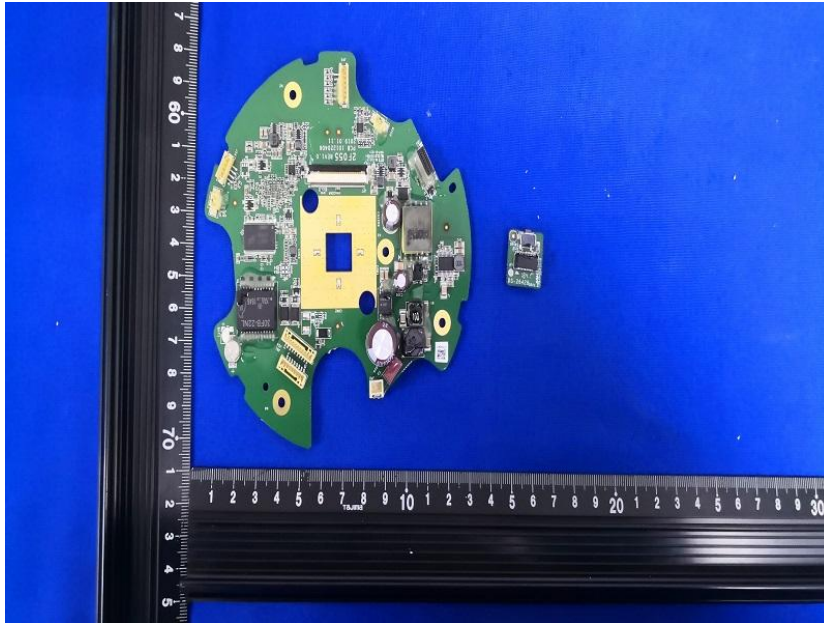


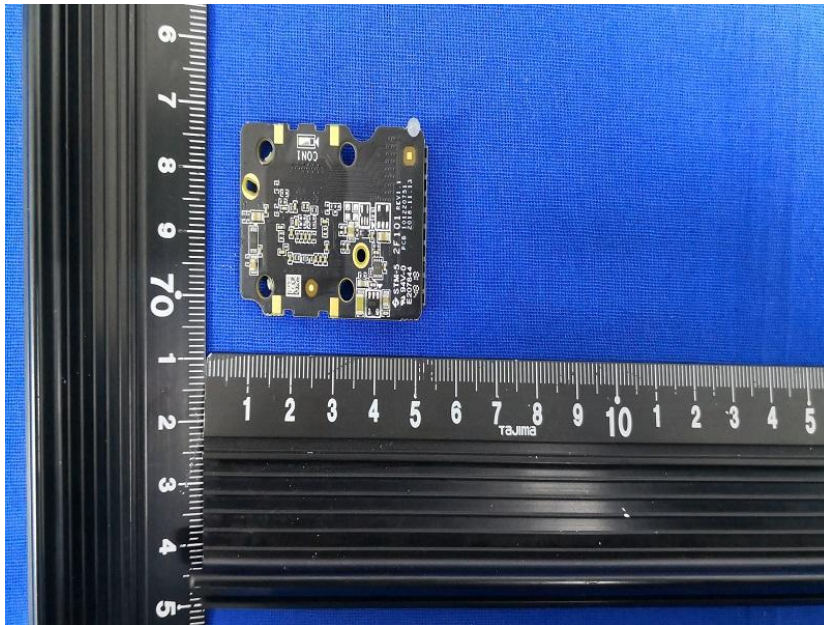
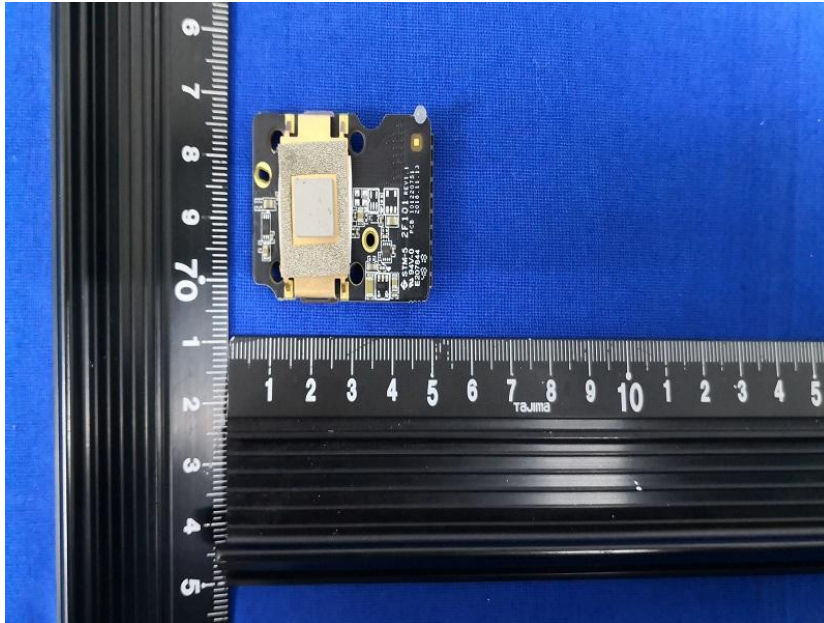


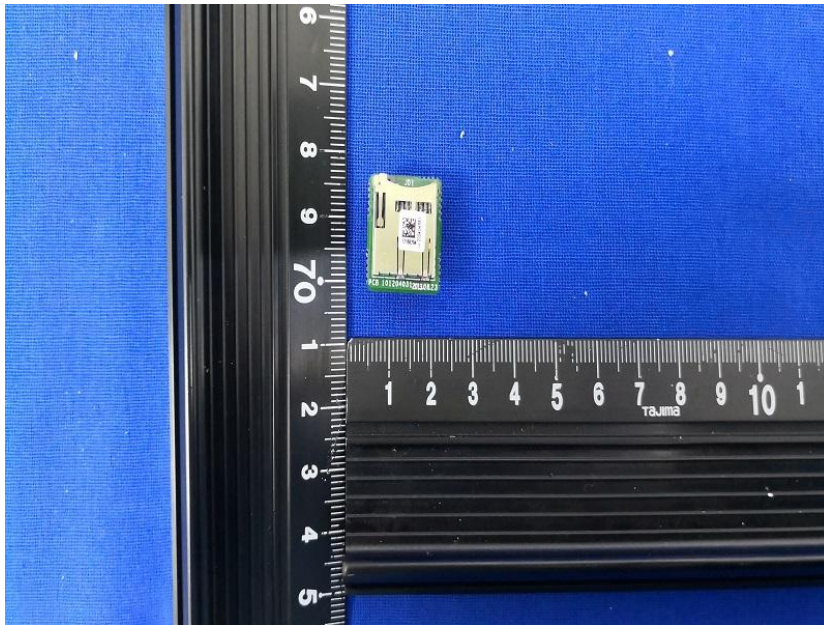
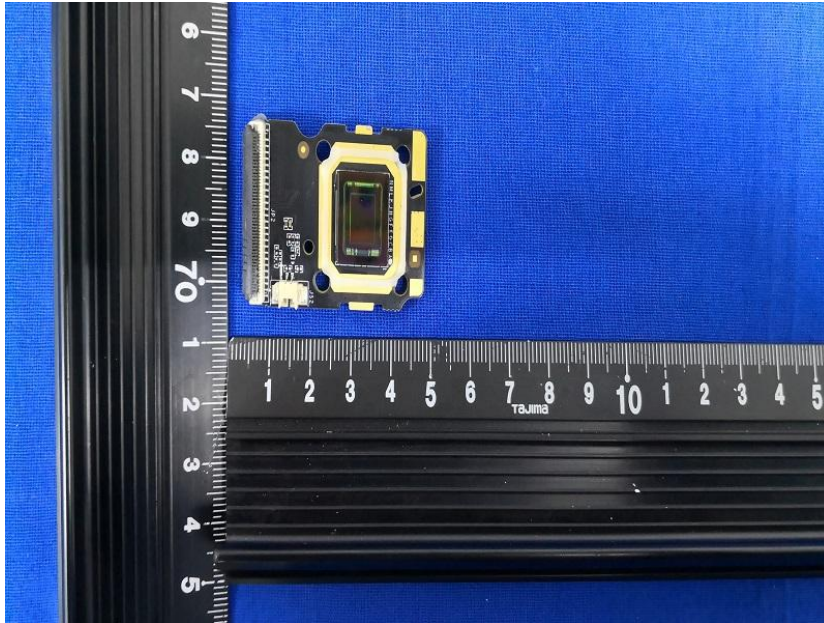


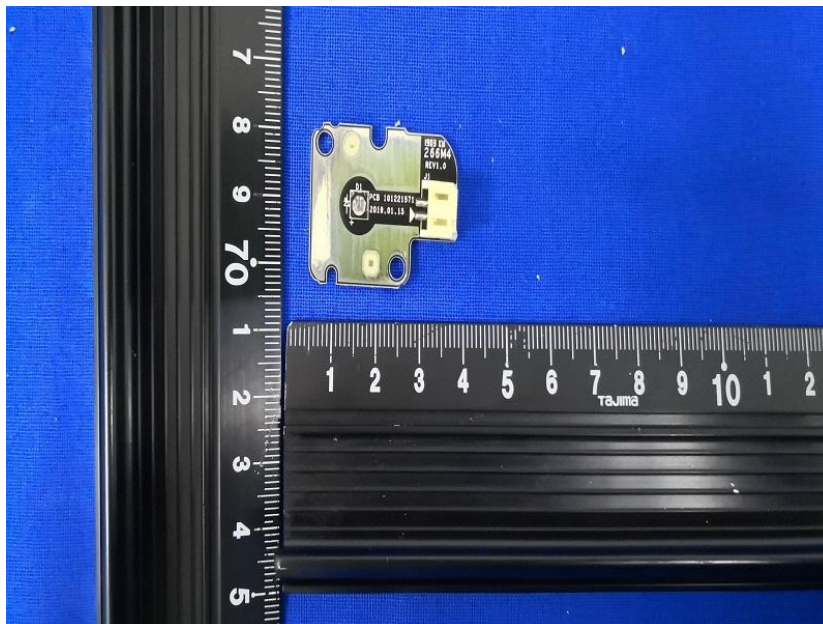
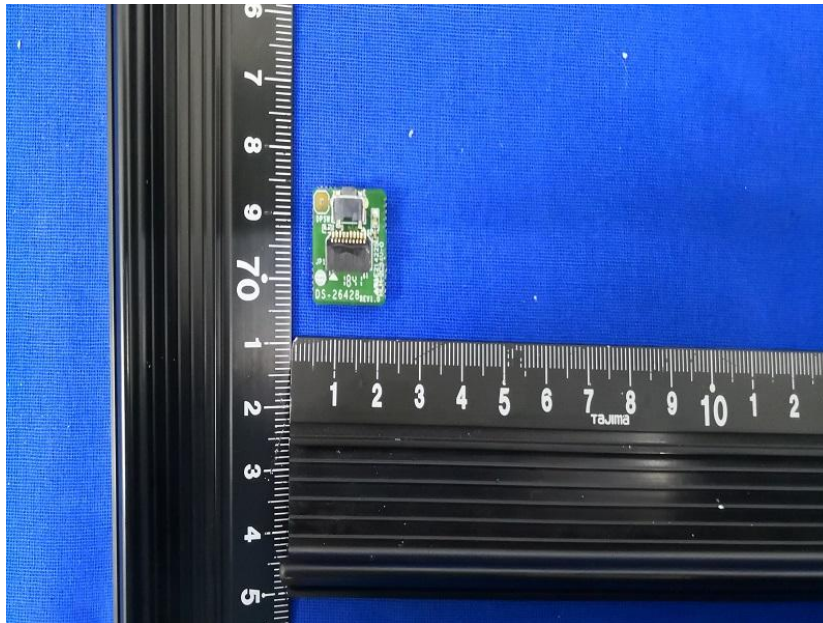


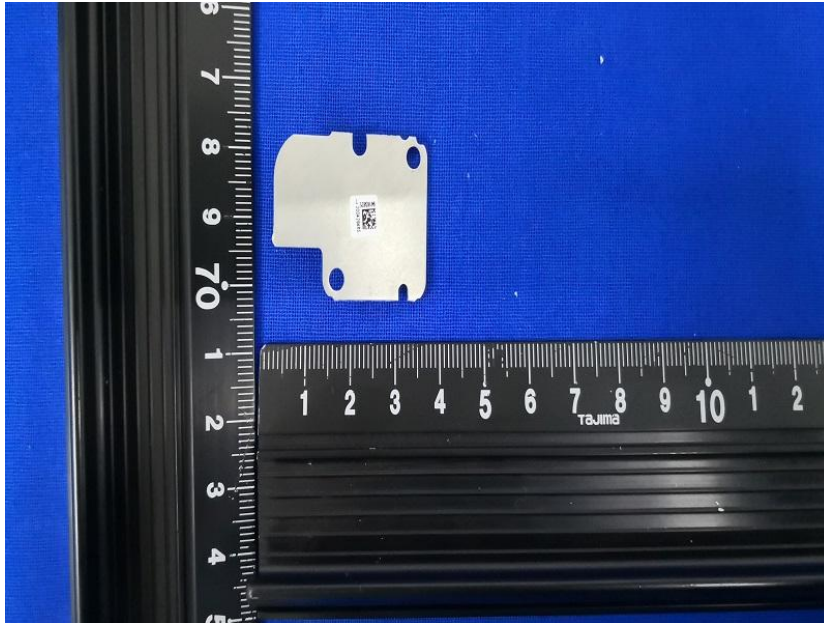












**--End of the Report--**