SGS-CSTC Standards Technical Services
(Shanghai) Co., Ltd.

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1 Cover Page

TEST REPORT

Application No.:	SHEM1611007311IT
Applicant:	Zhejiang Dahua Vision Technology Co., Ltd.
Equipment under Test (EUT) **NOTE:** The following sample(s) was/were submitted and identified by the client as.	
Product Name:	IP CAMERA
Model No.(EUT):	DH-IPC-PFW8601P-A180, DH-IPC-PFW8800P-A180
Add Model No.:	DH-IPC-PFW8601N-A180, IPC-PFW8601P-A180, IPC-PFW8601N-A180, DH-IPC-PFW8800N-A180, IPC-PFW8800N-A180, IPC-PFW8800P-A180, DH-IPC-PFW8802P-A180, DH-IPC-PFW8802N-A180, IPC-PFW8802N-A180, IPC-PFW8802P-A180
Standards:	EN 55032:2015(Class B), EN 55024:2010+A1:2015, EN 50130-4:2011+A1:2014, EN 61000-3-2:2014, EN 61000-3-3:2013
Date of Receipt:	2016-11-15
Date of Test:	2016-11-18 to 2016-11-23
Date of Issue:	2016-12-26
Test Result:	**Pass***

* In the configuration tested, the EUT detailed in this report 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.

CE

Parlam Zhan
E&E Section Manager
SGS-CSTC (Shanghai) Co., Ltd.

2 Test Summary

ELECTROMAGNETIC INTERFERENCE (EMI)			
Test	**Test Requirement**	**Test Method**	**Result**
Conducted Emission (150kHz to 30MHz)	EN 55032:2015	EN 55032:2015 & CISPR 16-2-1:2014	PASS
Conducted Emission on Telecommunication (150kHz to 30MHz)	EN 55032:2015	EN 55032:2015 & CISPR 16-2-1:2014	PASS
Radiated Emission, (30MHz to 1GHz)	EN 55032:2015	EN 55032:2015 & CISPR 16-2-3:2010+ A1:2010+A2:2014	PASS
Radiated Emission (above 1 GHz)	EN 55032:2015	CISPR 16-2-3: 2010+A1:2010+A2:2014	PASS*
Harmonic Emission on AC, (100 Hz to 2 kHz)	EN 61000-3-2:2014	EN 61000-3-2:2014	PASS
Flicker Emission on AC	EN 61000-3-3:2013	EN 61000-3-3:2013	PASS
Electromagnetic Susceptibility(EMS)			
Test	**Test Requirement**	**Test Method**	**Result**
ESD	EN 55024:2010+A1:2015 & EN 50130-4:2011+A1:2014	EN 61000-4-2:2009	PASS
Radiated Immunity, (80MHz to 1 GHz)	EN 55024:2010+A1:2015	EN 61000-4-3:2006 +A1: 2008+A2:2010	PASS
Radiated Immunity, (80MHz to 2.7 GHz)	EN 50130-4:2011+A1:2014	EN 61000-4-3:2006 +A1: 2008+A2:2010	PASS
Electrical Fast Transients (EFT) on AC ports	EN 55024:2010+A1:2015 & EN 50130-4:2011+A1:2014	EN 61000-4-4:2012	PASS
Electrical Fast Transients (EFT) on signal ports	EN 55024:2010+A1:2015 & EN 50130-4:2011+A1:2014	EN 61000-4-4:2012	PASS
Surge Immunity on AC	EN 55024:2010+A1:2015 & EN 50130-4:2011+A1:2014	EN 61000-4-5:2014	PASS
Surge Immunity on signal ports	EN 55024:2010+A1:2015 & EN 50130-4:2011+A1:2014	EN 61000-4-5:2014	PASS
Injected Currents on AC ports (150kHz to 80MHz)	EN 55024:2010+A1:2015	EN 61000-4-6:2014	PASS
Injected Currents on signal ports (150kHz to 80MHz)	EN 55024:2010+A1:2015	EN 61000-4-6:2014	PASS
Injected Currents on AC ports (150kHz to 100MHz)	EN 50130-4:2011+A1:2014	EN 61000-4-6:2014	PASS
Injected Currents on signal ports (150kHz to 100MHz)	EN 50130-4:2011+A1:2014	EN 61000-4-6:2014	PASS
Power Frequency Magnetic Field	EN 55024:2010+A1:2015	EN 61000-4-8:2010	N/A**
Voltage Dips and Interruptions	EN 55024:2010+A1:2015 &	EN 61000-4-11:2004	PASS

on AC	EN 50130-4:2011+A1:2014		

Remark:

The part of radiation emission was executed in Inventec EMC lab.

EUT In this whole report EUT means Equipment Under Test.

N/A: Not applicable,

Note1:* The highest frequency of the internal sources of the EUT is above 1GHz, the measurement shall be made up to 5 times the highest frequency of 6GHz, whichever is less.

Note2:** The EUT does not contain any component which is susceptible from the magnetic fileld. Power-frequency magnetic field immunity test is only applicable to equipment containing devices susceptible to magnetic fields, such as CRT monitors, Hall elements, electrodynamic microphones, magnetic field sensors, etc.

Note3: There are series models mentioned in this report and they are the similar in electrical and electronic characters. Only the model DH-IPC-PFW8601P-A180, DH-IPC-PFW8800P-A180 was tested since their differences are model number and appearance.

3 Contents

4 General Information

4.1 Client Information

Applicant:	Zhejiang Dahua Vision Technology Co., Ltd.
Address of Applicant:	No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China
Manufacturer:	Zhejiang Dahua Vision Technology Co., Ltd.
Address of Manufacturer:	No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China
Factory:	Zhejiang Dahua Vision Technology Co., Ltd.
Address of Factory:	No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China

4.2 Details of E.U.T.

Power Supply:	DH-IPC-PFW8601P-A180: AC24V, 2A ; POE：48V, 500mA DH-IPC-PFW8800P-A180: AC 24V, 2A; POE：48V, 500mA

4.3 E.U.T Operation Mode

Functions/Modes:	DH-IPC-PFW8601P-A180: a; AC 24V mode ; b; PoE mode DH-IPC-PFW8800P-A180: a; AC 24V mode, b; PoE mode

DH-IPC-PFW8601P-A180:

Mode:a:	Supply by AC24V adapter, keep EUT monitoring continual .
Mode:b:	Supply by PoE adapter , keep EUT monitoring continual .

DH-IPC-PFW8800P-A180:

Mode:a:	Supply by AC24V adapter, keep EUT monitoring continual .
Mode:b:	Supply by PoE adapter , keep EUT monitoring continual .

4.4 E.U.T Operation Environment

Temperature Range:	20-25°C
Humidity Range:	30-60% RH
Atmospheric Pressure Range:	100-105kPa

4.5 Description of Support Units

The EUT has been tested with associated equipment below.

DH-IPC-PFW8601P-A180:

Description	Manufacturer	Model No.
Laptop 1	LENOVO	R400
Monitor 2	JVC	TM-A170G
Switching Adapter 3	HOIOTO	ADS-25FSG-12
PoE Adapter	PowerDsine	PD-9001GR/AC

DH-IPC-PFW8800P-A180:

Description	Manufacturer	Model No.
Laptop	LENOVO	R400
AC Adapter JS-300	MaCable	MKAC-66-243000M
PoE Adapter	PowerDsine	PD-9001GR/AC

4.6 Deviation from Standards

All Immunity tests to EN 55024:2010+A1:2015 & EN 50130-4:2011+A1:2014 were performed in accordance with EN 61000-4-2:2009, EN 61000-4-3:2006+A1:2008+A2:2010, EN 61000-4-4:2012, EN 61000-4-5:2014, EN 61000-4-6:2014, EN61000-4-11:2004 and not IEC 61000-4-x. (x=2,3,4,5,6,11).

4.7 Abnormalities from Standard Conditions

None.

4.8 Modification/Retest Record

None.

4.9 Monitoring of EUT for All Immunity Test

Audio: None.

Visual: Working status of the EUT.

4.10 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

4.11 Test Facility

- **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. Date of expiry: 2017-07-14.

- **FCC – Registration No.: 402683**

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered and fully described in a report filed with the Federal Communications Commission (FCC). The acceptance letter from the FCC is maintained in our files. Registration No.: 402683, Expiry Date: 2017-09-16.

- **Industry Canada (IC) – IC Assigned Code: 8617A**

The 3m Semi-anechoic chamber of SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 8617A-1. Expiry Date: 2017-06-18.

- **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-3868,C-4336,T-2221,G-830 respectively. Date of Expiry: 2017-11-16.

4.12 Measurement Uncertainty

According to CISPR 16-4-2.

Test Item	Frequency Range	Measurement Uncertainty	U_{cispr}
Conducted Emission at mains port using AMN	9kHz-150kHz	3.2 dB	3.8 dB
Conducted Emission at mains port using AMN	150kHz-30MHz	3.0 dB	3.4 dB
Conducted Emission at mains port using VP	9kHz-30MHz	1.9 dB	3.9 dB
Conducted Emission at telecommunication port using AAN	150kHz-30MHz	2.4 dB	5.0 dB
Radiated Emission	30MHz-1000MHz	4.4 dB	6.3 dB
Radiated Emission	1GHz-18GHz	4.6 dB	5.2 dB (1GHz-6GHz)
			5.5 dB (6GHz-18GHz)
Disturbance Power	30MHz-300MHz	3.5 dB	4.5 dB
Remark: AMN – Artificial Mains Network VP – Voltage Probe ANN – Asymmetric Artificial Network			

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

5 Equipment list

Conducted Emission

Item	Test Equipment	Manu facturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	EMI test receiver	Rohde & Schwarz	ESCS30	100086	2016-01-14	2017-01-13
2	Line impedance stabilization network	SCHWARZBECK	NSLK 8127	8127490	2016-01-14	2017-01-13
3	Line impedance stabilization network	EMCO	3816/2	00034161	2016-01-14	2017-01-13

Radiated Emission

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1.	EMI test receive	Rohde & Schwarz	ESR7	101391	2016-01-14	2017-01-13
2	CONTROLLER	INNCO	CO200	474	/	/
3	Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	9168-313	2016-01-16	2017-01-15
4	Double ridged broadband horn ANTENNA	SCHWARZBECK	BBHA9120D	9120D-679	2016-01-16	2017-01-15
5	Amplifier	SCHWARZBECK	SCU-F0118-G40-BZ4-CSS(F)	10001	2016-01-14	2017-01-13
6	Low nosie amplifier	TESEQ	LNA6900	71033	2016-01-14	2017-01-13

Flicker

Item	Test Equipment	Manu facturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	Single phase harmonics &flicker analyzer	EM test	DPA500	V050710 0125	2016-01-14	2017-01-13
2	AC SOURCE 6KVA	EM test	ACS500	V050710 0126	2016-01-14	2017-01-13

Electrostatic Discharge Test

Item	Test Equipment	Manu facturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	Electrostatic Discharge Simulator	TESEQ	NSG 437	468	2016-08-24	2017-08-24

EFT Test

Item	Test Equipment	Manu facturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	EMS test machine	EMC Partner	TRA3000 F-S-D-V	1229	2016-01-14	2017-01-13
2	Capacitive coupling clamp	EM test	HFK	5040004	2016-08-05	2017-08-05

Surge

Item	Test Equipment	Manu facturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	Immunity Test System	EMC PARTNER	TRA3000 F-S-D-V	SHEM163-1	2016-01-13	2017-01-12
2	Ultra-compact simulator	EM test	UCS500M4	SHEM026-1	2016-01-13	2017-01-12
3	Data coupling network 4 line	EM test	CNV 504	SHEM026-3	2016-08-05	2017-08-04
4	Matching resistors for EFT/burst generators	EM test	KW50	SHEM026-4	N/A	N/A
5	Matching resistors for EFT/burst generators	EM test	KW1000	SHEM026-5	N/A	N/A

RI(80M-2.7G)

Item	Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
1	ANTENNA	SCHWARZBECK	STLP9128D	SHEM130-1	N/A	N/A
2	ANTENNA	SCHWARZBECK	STLP9149	SHEM131-1	N/A	N/A
3	AMPLIFIER	MILMEGA	80RF1000-250	SHEM132-1	2016-08-10	2017-08-09
4	AMPLIFIER	MILMEGA	AS0840-55-55	SHEM133-1	2016-08-10	2017-08-09
5	POWER METER SENSOR	ROHDE & SCHWARZ	NRP-Z22	SHEM136-1	2016-08-05	2017-08-04
6	ELECTROMAGNETIC FIELD PROBE	ETS-LINDGREN	HI-6113	SHEM134-1	2016-08-10	2017-08-09

Voltage dips and Interruption Test

Item	Test Equipment	Manu facturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	EMS test machine	EMC Partner	TRA3000 F-S-D-V	1229	2016-01-14	2017-01-13

Conducted Immunity Test

Item	Test Equipment	Manu facturer	Model No.	Serial No.	Cal. Date	Cal.Due date
1	signal generator	Rohde & Schwarz	SMJ100 A	101394	2016-01-14	2017-01-13
2	PAMP Conducted RF test system	HAEFFLY	PAMP25 0	151708	2016-01-14	2017-01-13
3	CDN impedance and K-factor	LUTHI	L-801 M1	2116	2016-01-14	2017-01-13
4	CDN impedance and K-factor	LUTHI	L-801 M2/M3	2117	2016-01-14	2017-01-13

General used equipment

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal. date	Cal.Due date
1	Digital pressure meter	YONGZHI	DYM3-01	101012	2016-03-03	2017-03-02
2	Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	84320600 803136, F304020153 ,20101201F S100A6K,20 1106117	2016-08-03	2017-08-02
3	Digital Multimeter	FLUKE	17B	19720439	2016-01-14	2017-01-13
4	Autoformer regulator	Guangzhou bao de	TDGC2-5KV A	/	/	/
5	CLAMP METER	FLUKE	316	2503030971	2016-01-14	2017-01-13

6 Electromagnetic Interference Test Results

6.1 Conducted Emissions on Mains Terminals

Test Frequency: 150 kHz to 30 MHz

Detector: Peak for pre-scan (9 kHz Resolution Bandwidth from 150 kHz to 30 MHz)

Class / Limit: Table 2-Class B for EN 55032

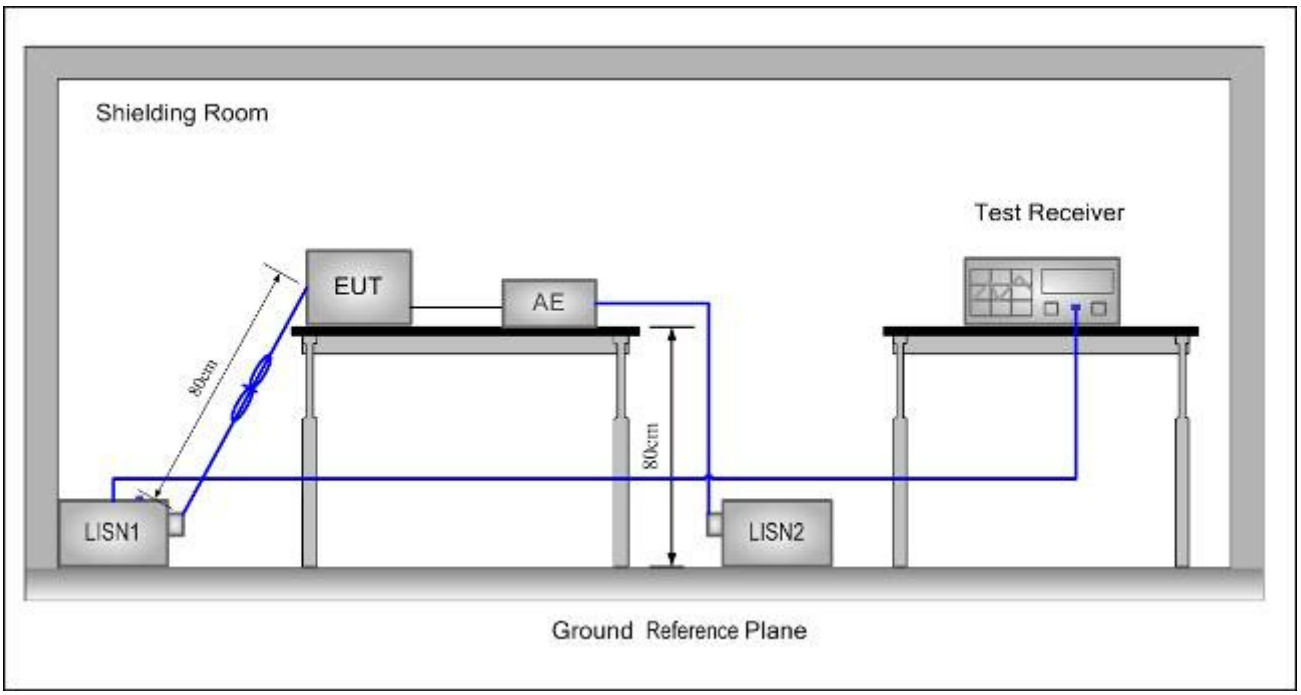
Frequency range (MHz)	**Class B Limits** (dB (μV))	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note1: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50MHz. Note2: The lower limit is applicable at the transition frequency.		

6.1.1 E.U.T. Operation

Test mode: DH-IPC-PFW8601P-A180:
a; AC12V mode: Supply by AC24V adapter , keep EUT monitoring continual.
b; PoE mode: Supply by PoE adapter , keep EUT monitoring continual.
DH-IPC-PFW8800P-A180:
a; AC12V mode: Supply by AC24V adapter , keep EUT monitoring continual.
b; PoE mode: Supply by PoE adapter , keep EUT monitoring continual.

Pre-scan was performed with peak detected on all ports, Quasi-peak & average measurements were performed at the frequencies at which maximum peak emission level were detected.
Please see the attached Quasi-peak and Average test results.

6.1.2 Test Setup and Procedure

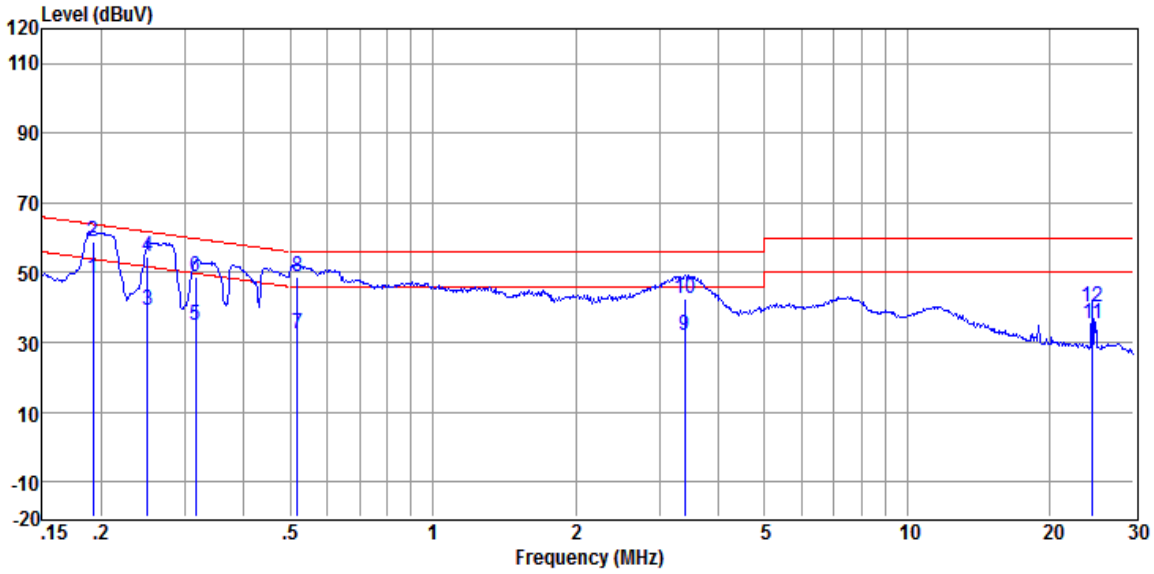


1. The mains terminal disturbance voltage was measured with the EUT in a shielded room.
2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50μH + 5Ω linear impedance. The power cables of all other units of the EUT was connected to a second LISN, which was bonded to the ground reference plane in the same way as the LISN for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISN mounted on top of the ground reference plane. This distance was between the closest points of the LISN and the EUT. The mains lead of EUT excess 0.8m was folded back and forth parallel to the lead so as to form a horizontal bundle with a length between 0.3m and 0.4m. All other units of the EUT and associated equipment was at least 0,8 m from the LISN.

6.1.3 Measurement Data

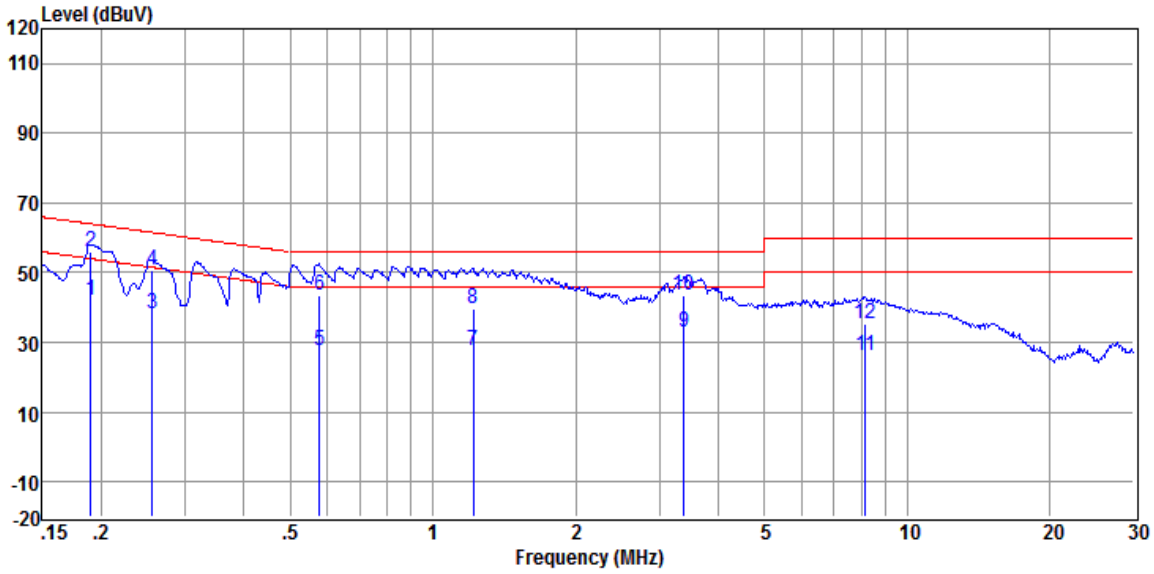
DH-IPC-PFW8601P-A180:

Mode:a;Line:Live Line



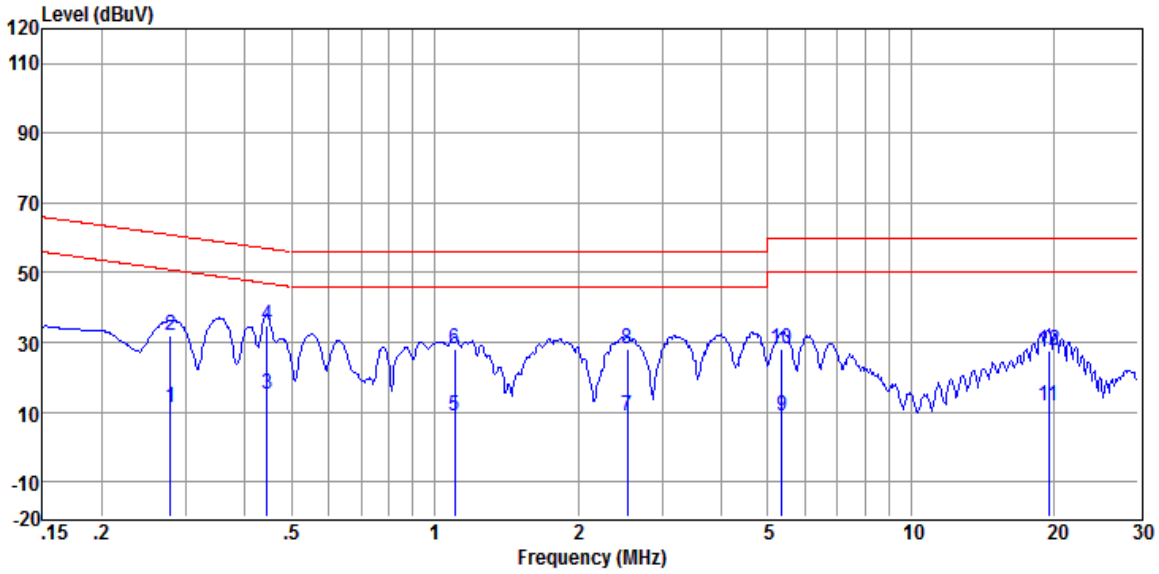
Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.192	38.11	0.09	10.15	48.35	53.93	-5.58	Average
2	0.192	48.71	0.09	10.15	58.95	63.93	-4.98	QP
3	0.251	28.97	0.09	10.16	39.22	51.73	-12.51	Average
4	0.251	44.12	0.09	10.16	54.37	61.73	-7.36	QP
5	0.317	24.55	0.09	10.16	34.80	49.80	-15.00	Average
6	0.317	38.52	0.09	10.16	48.77	59.80	-11.03	QP
7	0.518	22.08	0.10	10.17	32.35	46.00	-13.65	Average
8	0.518	38.42	0.10	10.17	48.69	56.00	-7.31	QP
9	3.399	21.46	0.12	10.20	31.78	46.00	-14.22	Average
10	3.399	32.01	0.12	10.20	42.33	56.00	-13.67	QP
11	24.529	24.73	0.39	10.42	35.54	50.00	-14.46	Average
12	24.529	29.54	0.39	10.42	40.35	60.00	-19.65	QP

Mode:a;Neutral Line:



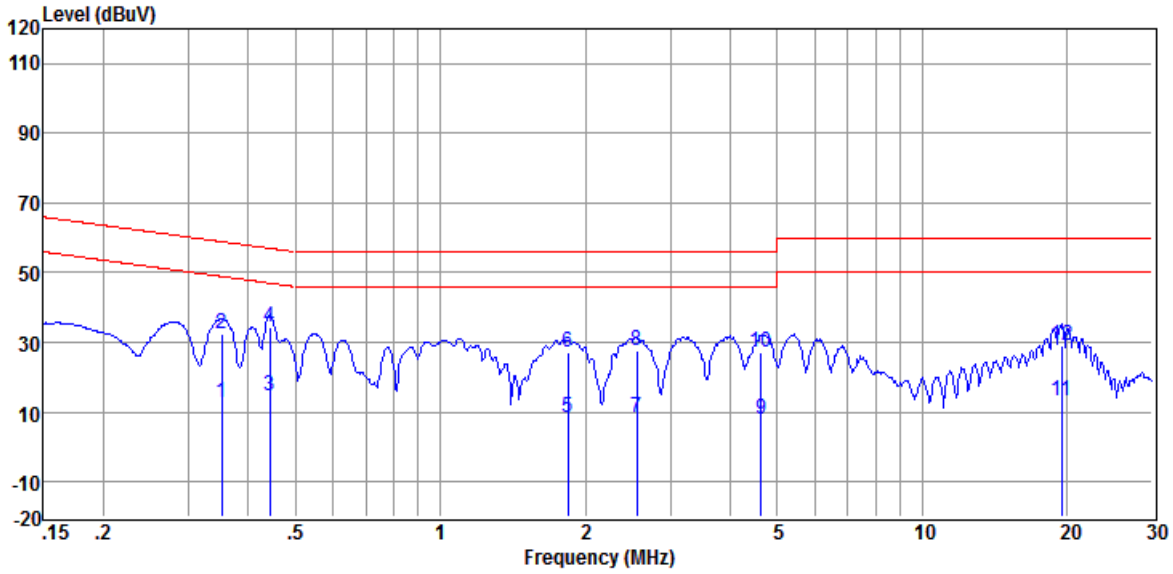
Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.190	32.00	0.05	10.15	42.20	54.02	-11.82	Average
2	0.190	45.67	0.05	10.15	55.87	64.02	-8.15	QP
3	0.256	27.86	0.05	10.16	38.07	51.56	-13.49	Average
4	0.256	40.65	0.05	10.16	50.86	61.56	-10.70	QP
5	0.576	17.41	0.04	10.17	27.62	46.00	-18.38	Average
6	0.576	33.18	0.04	10.17	43.39	56.00	-12.61	QP
7	1.216	17.58	0.05	10.18	27.81	46.00	-18.19	Average
8	1.216	29.54	0.05	10.18	39.77	56.00	-16.23	QP
9	3.381	22.67	0.13	10.20	33.00	46.00	-13.00	Average
10	3.381	32.97	0.13	10.20	43.30	56.00	-12.70	QP
11	8.148	15.62	0.20	10.30	26.12	50.00	-23.88	Average
12	8.148	24.75	0.20	10.30	35.25	60.00	-24.75	QP

Mode:b;Line:Live Line



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.279	1.07	0.09	10.16	11.32	50.85	-39.53	Average
2	0.279	21.66	0.09	10.16	31.91	60.85	-28.94	QP
3	0.444	4.81	0.10	10.17	15.08	46.98	-31.90	Average
4	0.444	24.36	0.10	10.17	34.63	56.98	-22.35	QP
5	1.100	-1.24	0.08	10.18	9.02	46.00	-36.98	Average
6	1.100	17.99	0.08	10.18	28.25	56.00	-27.75	QP
7	2.540	-1.43	0.10	10.20	8.87	46.00	-37.13	Average
8	2.540	17.87	0.10	10.20	28.17	56.00	-27.83	QP
9	5.362	-1.48	0.15	10.25	8.92	50.00	-41.08	Average
10	5.362	17.63	0.15	10.25	28.03	60.00	-31.97	QP
11	19.428	1.36	0.25	10.35	11.96	50.00	-38.04	Average
12	19.428	17.01	0.25	10.35	27.61	60.00	-32.39	QP

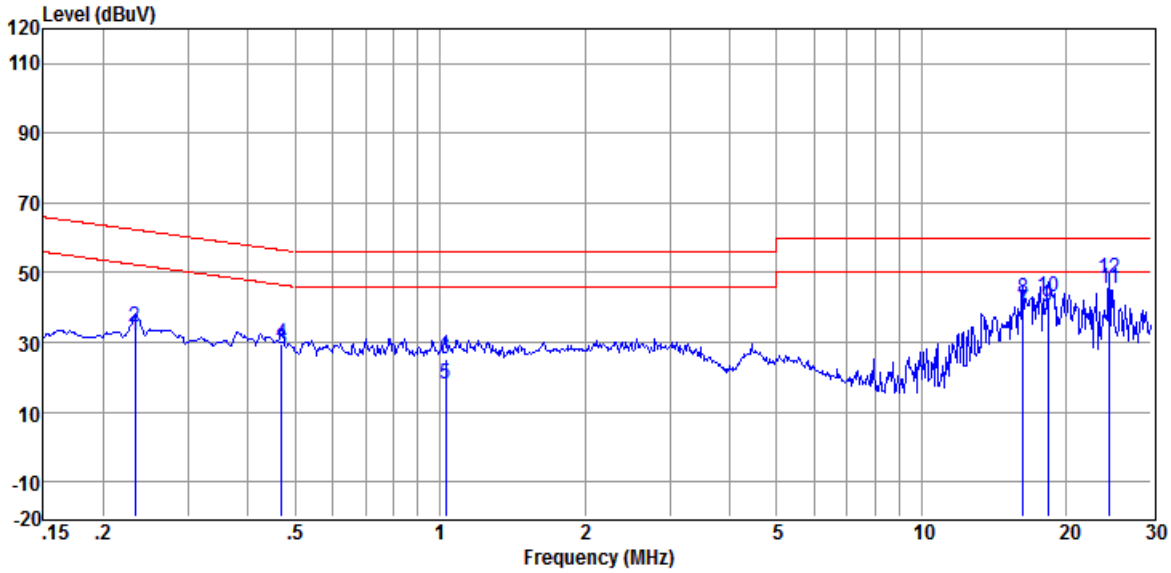
Mode:b;Neutral Line:



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.352	2.35	0.04	10.16	12.55	48.91	-36.36	Average
2	0.352	22.31	0.04	10.16	32.51	58.91	-26.40	QP
3	0.442	4.60	0.04	10.17	14.81	47.02	-32.21	Average
4	0.442	24.19	0.04	10.17	34.40	57.02	-22.62	QP
5	1.839	-2.07	0.06	10.19	8.18	46.00	-37.82	Average
6	1.839	17.12	0.06	10.19	27.37	56.00	-28.63	QP
7	2.554	-1.81	0.09	10.20	8.48	46.00	-37.52	Average
8	2.554	17.41	0.09	10.20	27.70	56.00	-28.30	QP
9	4.622	-2.32	0.17	10.24	8.09	46.00	-37.91	Average
10	4.622	16.92	0.17	10.24	27.33	56.00	-28.67	QP
11	19.428	2.58	0.30	10.35	13.23	50.00	-36.77	Average
12	19.428	18.39	0.30	10.35	29.04	60.00	-30.96	QP

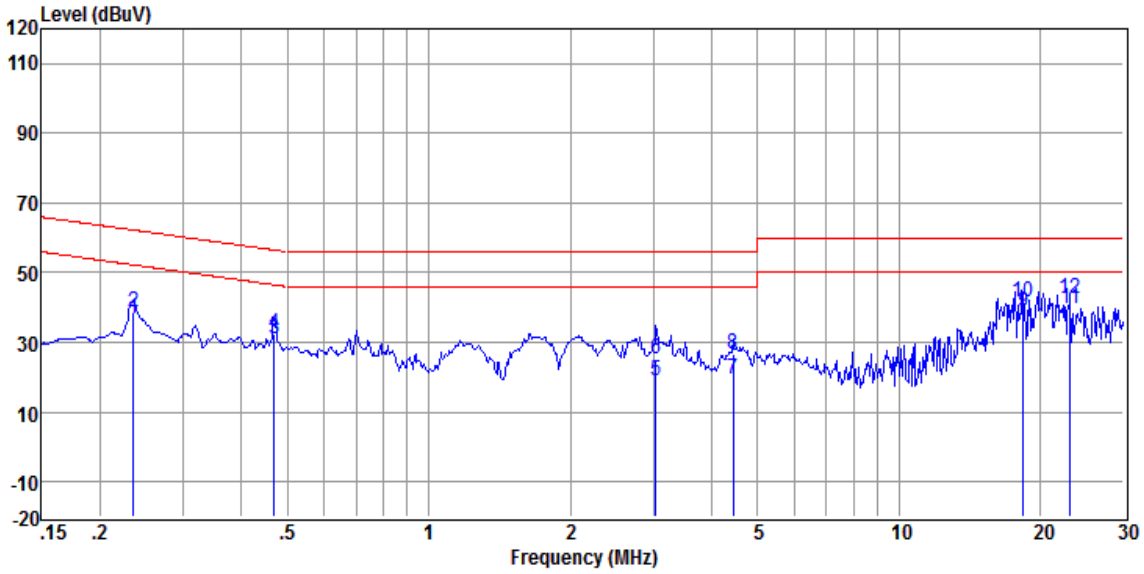
DH-IPC-PFW8800P-A180:

Mode:a;Line:Live Line



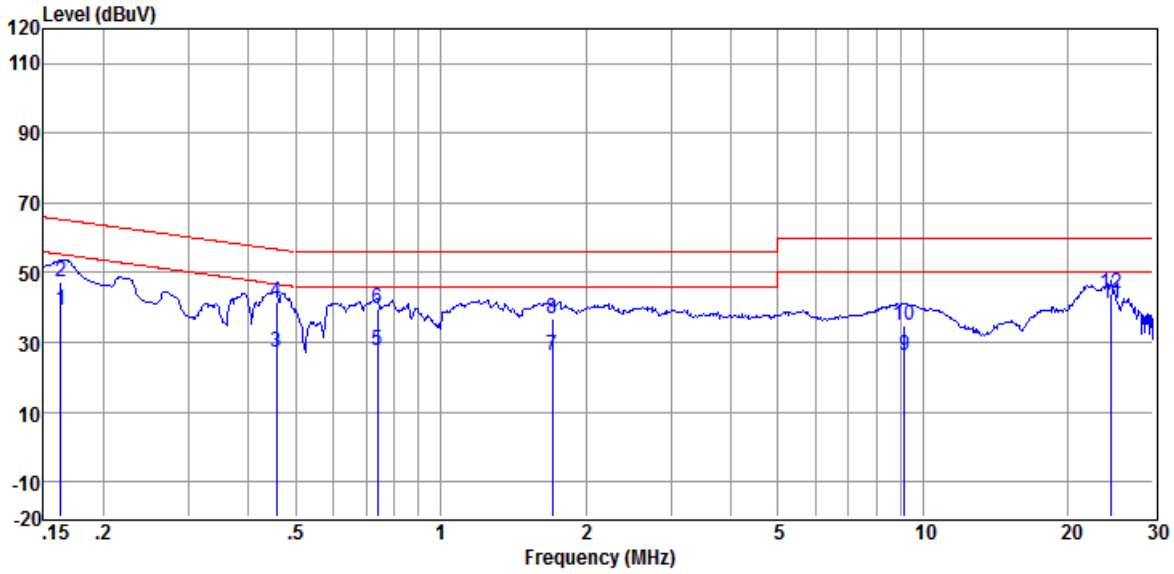
Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.233	21.59	0.09	10.16	31.84	52.35	-20.51	Average
2	0.233	24.01	0.09	10.16	34.26	62.35	-28.09	QP
3	0.469	17.75	0.10	10.17	28.02	46.54	-18.52	Average
4	0.469	19.17	0.10	10.17	29.44	56.54	-27.10	QP
5	1.027	7.66	0.08	10.18	17.92	46.00	-28.08	Average
6	1.027	15.14	0.08	10.18	25.40	56.00	-30.60	QP
7	16.226	28.50	0.23	10.30	39.03	50.00	-10.97	Average
8	16.226	32.11	0.23	10.30	42.64	60.00	-17.36	QP
9	18.303	29.39	0.24	10.33	39.96	50.00	-10.04	Average
10	18.303	32.45	0.24	10.33	43.02	60.00	-16.98	QP
11	24.575	34.69	0.39	10.42	45.50	50.00	-4.50	Average
12	24.575	37.55	0.39	10.42	48.36	60.00	-11.64	QP

Mode:a;Neutral Line:



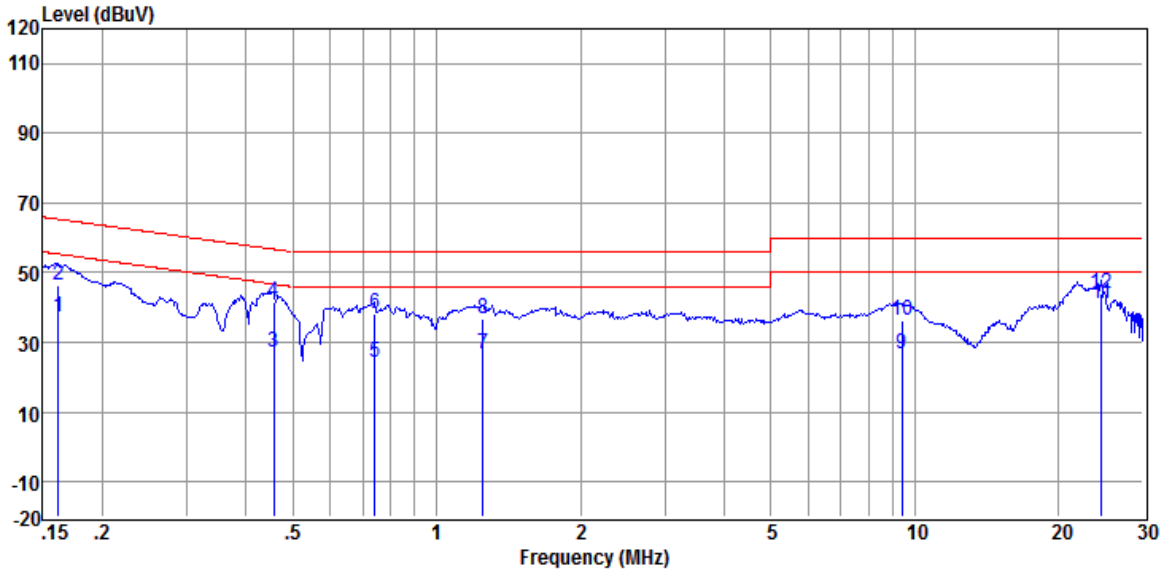
Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.235	26.76	0.05	10.16	36.97	52.26	-15.29	Average
2	0.235	28.28	0.05	10.16	38.49	62.26	-23.77	QP
3	0.469	20.79	0.04	10.17	31.00	46.54	-15.54	Average
4	0.469	22.37	0.04	10.17	32.58	56.54	-23.96	QP
5	3.041	8.80	0.12	10.20	19.12	46.00	-26.88	Average
6	3.041	14.70	0.12	10.20	25.02	56.00	-30.98	QP
7	4.430	9.21	0.16	10.23	19.60	46.00	-26.40	Average
8	4.430	16.29	0.16	10.23	26.68	56.00	-29.32	QP
9	18.364	27.88	0.29	10.33	38.50	50.00	-11.50	Average
10	18.364	31.03	0.29	10.33	41.65	60.00	-18.35	QP
11	23.129	28.77	0.35	10.40	39.52	50.00	-10.48	Average
12	23.129	31.95	0.35	10.40	42.70	60.00	-17.30	QP

Mode:b;Line:Live Line



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.163	28.81	0.06	10.15	39.02	55.30	-16.28	Average
2	0.163	37.30	0.06	10.15	47.51	65.30	-17.79	QP
3	0.456	16.95	0.10	10.17	27.22	46.76	-19.54	Average
4	0.456	31.49	0.10	10.17	41.76	56.76	-15.00	QP
5	0.739	17.18	0.10	10.17	27.45	46.00	-18.55	Average
6	0.739	29.25	0.10	10.17	39.52	56.00	-16.48	QP
7	1.707	15.70	0.08	10.19	25.97	46.00	-20.03	Average
8	1.707	26.57	0.08	10.19	36.84	56.00	-19.16	QP
9	9.156	15.74	0.19	10.20	26.13	50.00	-23.87	Average
10	9.156	24.40	0.19	10.20	34.79	60.00	-25.21	QP
11	24.580	30.11	0.39	10.42	40.92	50.00	-9.08	Average
12	24.580	33.11	0.39	10.42	43.92	60.00	-16.08	QP

Mode:b;Neutral Line:



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.162	26.94	0.05	10.15	37.14	55.38	-18.24	Average
2	0.162	36.34	0.05	10.15	46.54	65.38	-18.84	QP
3	0.456	17.11	0.04	10.17	27.32	46.76	-19.44	Average
4	0.456	31.40	0.04	10.17	41.61	56.76	-15.15	QP
5	0.743	14.20	0.05	10.17	24.42	46.00	-21.58	Average
6	0.743	27.77	0.05	10.17	37.99	56.00	-18.01	QP
7	1.249	16.57	0.05	10.18	26.80	46.00	-19.20	Average
8	1.249	26.67	0.05	10.18	36.90	56.00	-19.10	QP
9	9.401	16.50	0.21	10.18	26.89	50.00	-23.11	Average
10	9.401	25.95	0.21	10.18	36.34	60.00	-23.66	QP
11	24.570	30.21	0.37	10.42	41.00	50.00	-9.00	Average
12	24.570	33.21	0.37	10.42	44.00	60.00	-16.00	QP

Note: 1. Level = Read Level +LISN Factor + Cable loss

2. If QP Result comply with AV limit, AV Result is deemed to comply with AV limit

6.2 Conducted Emissions at Telecommunication ports

Test Frequency: 150 kHz to 30 MHz

Detector: Peak for pre-scan

Quasi-Peak and Average at frequency with maximum peak (9 kHz resolution bandwidth)

Class / Limit: Table 4-Class B for EN 55032

Frequency range (MHz)	**Class B Voltage limits** (dB (μV))	
	Quasi-peak	**Average**
0.15 to 0.50	84 to 74	74 to 64
0.50 to 30	74	64
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 lower limit is applicable at the transition frequency.		

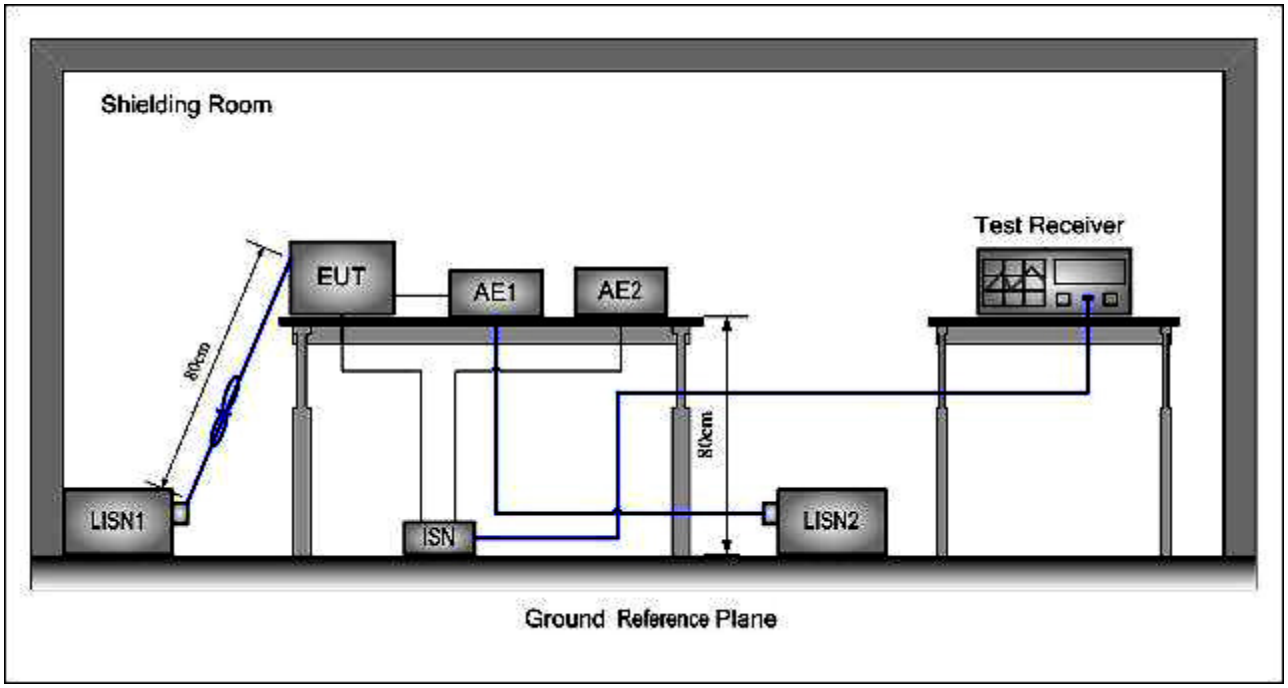
6.2.1 E.U.T. Operation

Test mode: DH-IPC-PFW8601P-A180:
a; AC12V mode: Supply by AC24V adapter , keep EUT monitoring continual.
b; PoE mode: Supply by PoE adapter , keep EUT monitoring continual.
DH-IPC-PFW8800P-A180:
a; AC12V mode: Supply by AC24V adapter , keep EUT monitoring continual.
b; PoE mode: Supply by PoE adapter , keep EUT monitoring continual.

Remark: Pre-tested each rate of LAN port (10M, 100M) test it since there was no worst case in this report.

Pre-scan was performed with peak detected on all ports, Quasi-peak & average measurements were performed at the frequencies at which maximum peak emission level were detected.
Please see the attached Quasi-peak and Average test results.

6.2.2 Test Setup and Procedure

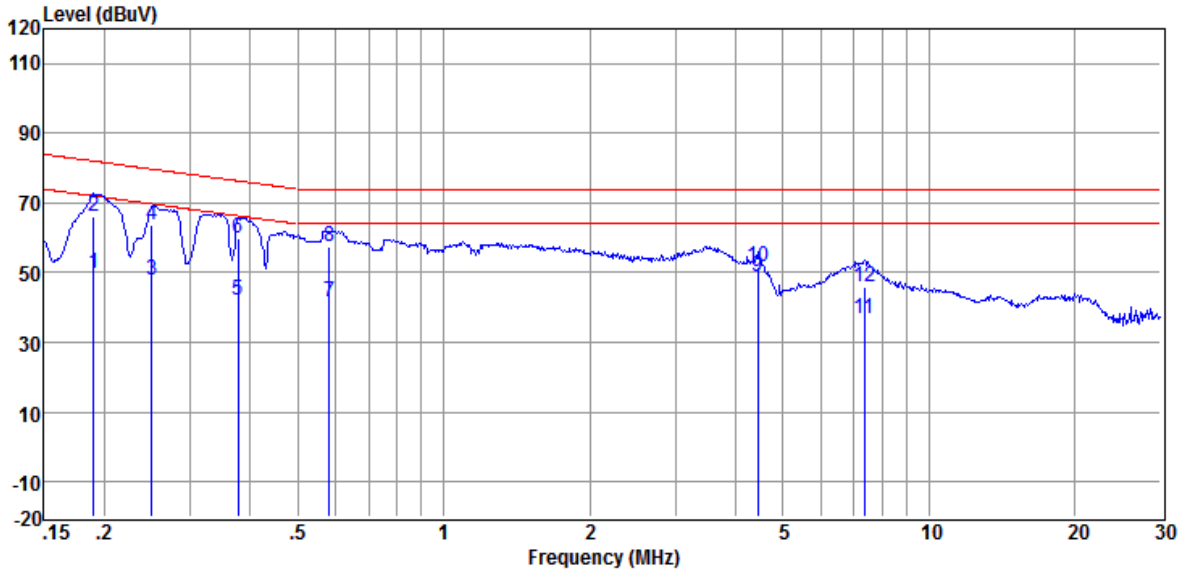


1. The mains terminal disturbance voltage test was conducted in a shielded room.
2. The EUT was connected to nominal power supply through an LISN 1 (Line Impedance Stabilization Network) which provides a 50Ω/50µH + 5Ω linear impedance. The power cables of all other units of the EUT was connected to LISN2, which was bonded to the ground reference plane in the same way as the LISN for the unit being measured. A multiple socket outlet strip was used to connect multiple power cables to a single LISN provided the rating of the LISN was not exceeded.
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. The test was performed with a vertical ground reference plane. The rear of the EUT shall be 0.4 m from the vertical ground reference plane. The vertical ground reference plane was bonded to the horizontal ground reference plane. The LISN was placed 0.8 m from the boundary of the unit under test and bonded to a ground reference plane for LISNs mounted on top of the ground reference plane. This distance was between the closest points of the LISN and the EUT. All other units of the EUT and associated equipment was at least 0,8 m from the LISN.
5. The ISNs were used for measurements on telecom ports, they were nominally 0.8 m from the EUT and bonded to a ground reference plane. Other units of the equipment under test shall be at least 0.8 m from the ISN.

6.2.3 Measurement Data

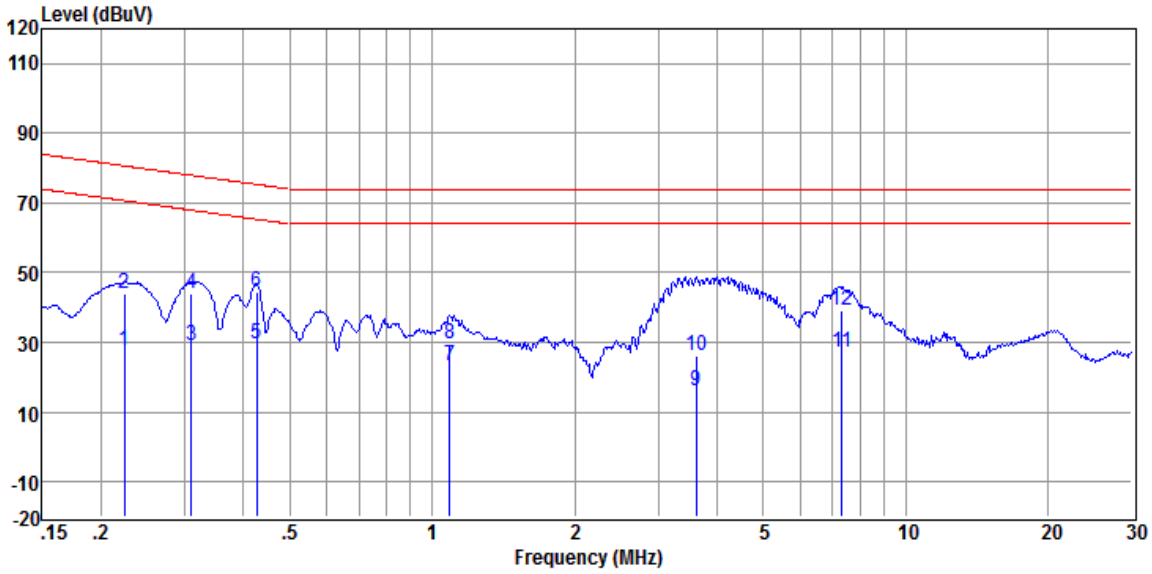
DH-IPC-PFW8601P-A180:

Mode:a; Line:Live Line



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.190	29.79	9.67	10.15	49.61	72.02	-22.41	Average
2	0.190	46.48	9.67	10.15	66.30	82.02	-15.72	QP
3	0.251	28.03	9.60	10.16	47.79	69.73	-21.94	Average
4	0.251	44.18	9.60	10.16	63.94	79.73	-15.79	QP
5	0.377	22.50	9.50	10.16	42.16	66.34	-24.18	Average
6	0.377	40.37	9.50	10.16	60.03	76.34	-16.31	QP
7	0.582	22.09	9.42	10.17	41.68	64.00	-22.32	Average
8	0.582	37.78	9.42	10.17	57.37	74.00	-16.63	QP
9	4.430	29.28	9.21	10.23	48.72	64.00	-15.28	Average
10	4.430	32.41	9.21	10.23	51.85	74.00	-22.15	QP
11	7.368	17.42	9.20	10.29	36.91	64.00	-27.09	Average
12	7.368	26.24	9.20	10.29	45.73	74.00	-28.27	QP

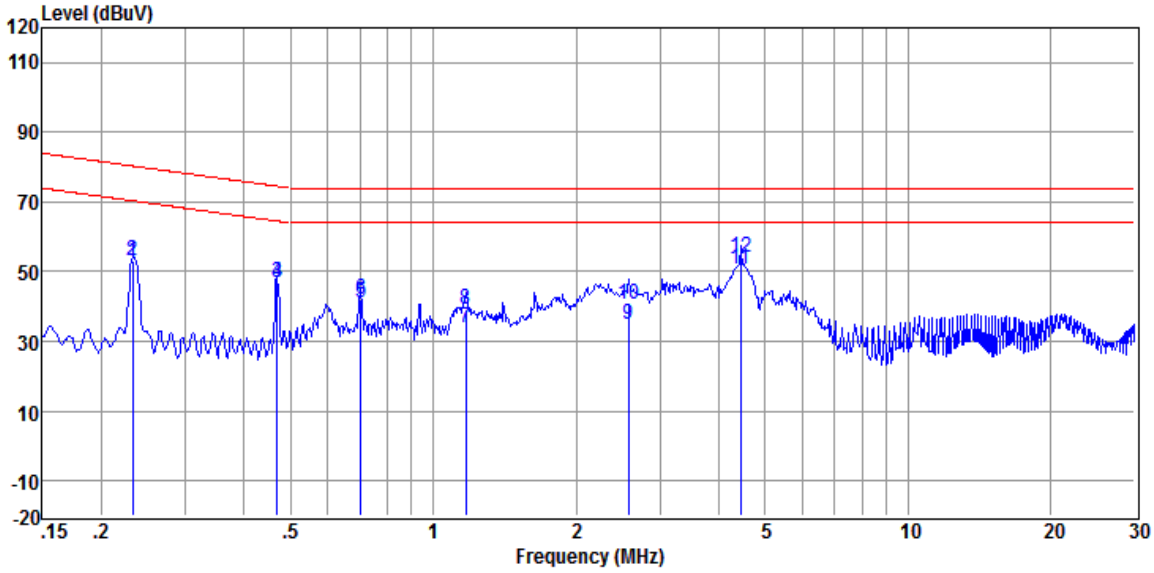
Mode:b; Line:Live Line



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.224	7.70	9.63	10.15	27.48	70.66	-43.18	Average
2	0.224	24.16	9.63	10.15	43.94	80.66	-36.72	QP
3	0.310	9.55	9.54	10.16	29.25	67.97	-38.72	Average
4	0.310	24.18	9.54	10.16	43.88	77.97	-34.09	QP
5	0.426	10.04	9.48	10.17	29.69	65.33	-35.64	Average
6	0.426	24.89	9.48	10.17	44.54	75.33	-30.79	QP
7	1.088	3.66	9.34	10.18	23.18	64.00	-40.82	Average
8	1.088	9.85	9.34	10.18	29.37	74.00	-44.63	QP
9	3.603	-3.48	9.23	10.21	15.96	64.00	-48.04	Average
10	3.603	6.91	9.23	10.21	26.35	74.00	-47.65	QP
11	7.329	7.50	9.20	10.29	26.99	64.00	-37.01	Average
12	7.329	19.92	9.20	10.29	39.41	74.00	-34.59	QP

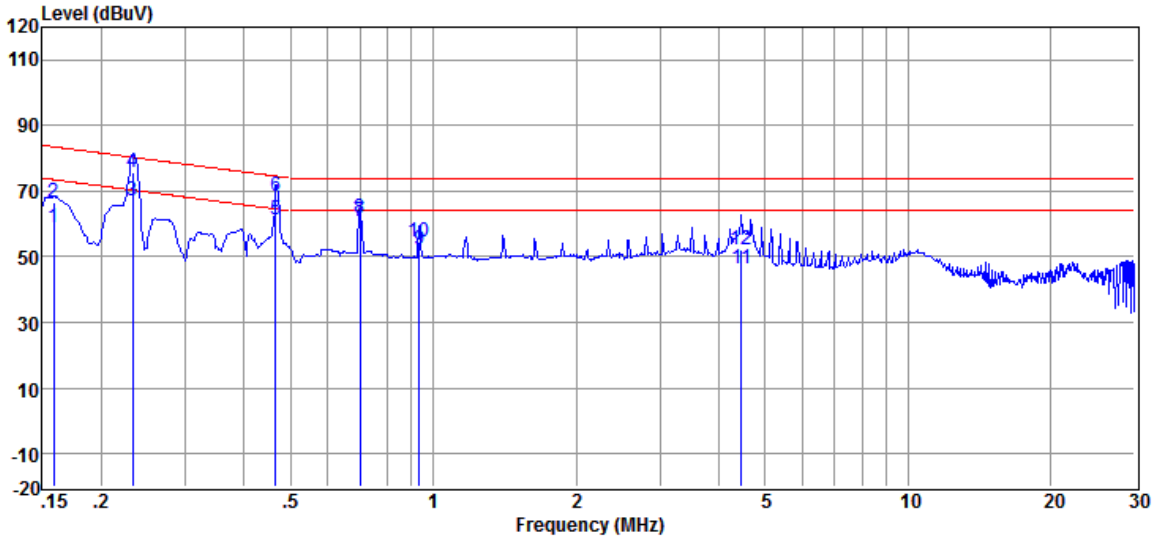
DH-IPC-PFW8800P-A180:

Mode; a: LAN port:



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.233	33.04	9.62	10.16	52.82	70.35	-17.53	Average
2	0.233	33.41	9.62	10.16	53.19	80.35	-27.16	QP
3	0.469	27.02	9.46	10.17	46.65	64.54	-17.89	Average
4	0.469	27.48	9.46	10.17	47.11	74.54	-27.43	QP
5	0.705	21.31	9.39	10.17	40.87	64.00	-23.13	Average
6	0.705	22.41	9.39	10.17	41.97	74.00	-32.03	QP
7	1.172	14.57	9.33	10.18	34.08	64.00	-29.92	Average
8	1.172	19.82	9.33	10.18	39.33	74.00	-34.67	QP
9	2.581	15.34	9.25	10.20	34.79	64.00	-29.21	Average
10	2.581	21.33	9.25	10.20	40.78	74.00	-33.22	QP
11	4.430	31.29	9.21	10.23	50.73	64.00	-13.27	Average
12	4.430	34.58	9.21	10.23	54.02	74.00	-19.98	QP

Mode; b: LAN port:



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)	
1	0.159	38.88	9.73	10.15	58.76	73.52	-14.76	Average
2	0.159	46.67	9.73	10.15	66.55	83.52	-16.97	QP
3	0.233	47.46	9.62	10.16	67.24	70.35	-3.11	Average
4	0.233	55.94	9.62	10.16	75.72	80.35	-4.63	QP
5	0.466	41.47	9.46	10.17	61.10	64.58	-3.48	Average
6	0.466	48.84	9.46	10.17	68.47	74.58	-6.11	QP
7	0.701	41.06	9.39	10.17	60.62	64.00	-3.38	Average
8	0.701	42.27	9.39	10.17	61.83	74.00	-12.17	QP
9	0.933	32.80	9.36	10.18	52.34	64.00	-11.66	Average
10	0.933	35.09	9.36	10.18	54.63	74.00	-19.37	QP
11	4.454	27.09	9.21	10.23	46.53	64.00	-17.47	Average
12	4.454	32.54	9.21	10.23	51.98	74.00	-22.02	QP

Note:

1. Level = Read Level + LISN/ISN Factor + Cable Loss
2. If QP Result comply with AV limit, AV Result is deemed to comply with AV limit

6.3 Radiated Emissions, 30MHz to 1GHz

Detector: Peak for pre-scan (120 kHz resolution bandwidth)

Class / Limit: Table 6-Class B for EN 55032

For 10m

Frequency range	Quasi-peak limits (Class B)
MHz	dB (μV/m)
30 to 230	30
230 to 1000	37
At transitional frequencies the lower limit applies.	

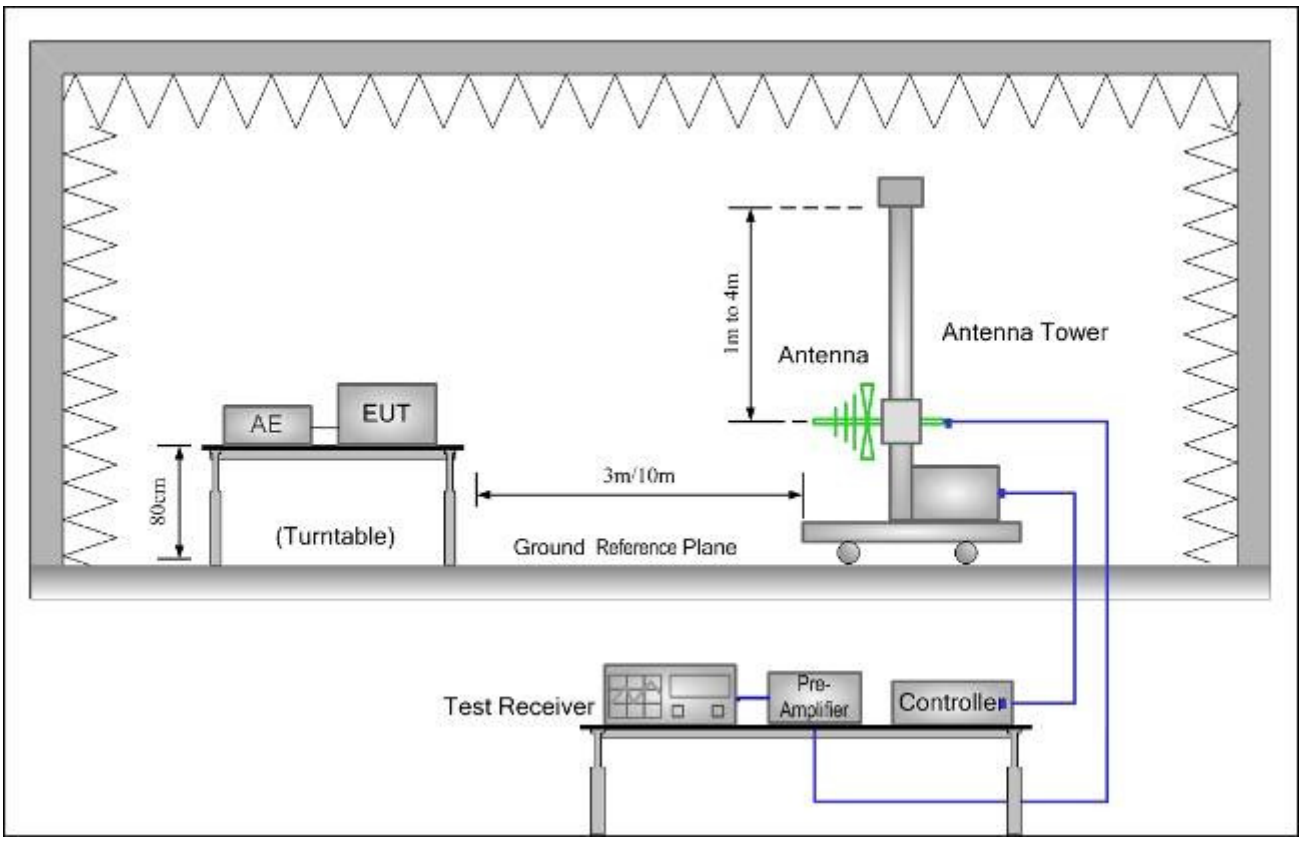
6.3.1 E.U.T. Operation

Test mode: DH-IPC-PFW8601P-A180:
a; AC12V mode: Supply by AC24V adapter , keep EUT monitoring continual.
b; PoE mode: Supply by PoE adapter , keep EUT monitoring continual.
DH-IPC-PFW8800P-A180:
a; AC12V mode: Supply by AC24V adapter , keep EUT monitoring continual.
b; PoE mode: Supply by PoE adapter , keep EUT monitoring continual.

Pre-scan was performed with peak detected on all ports, Quasi-peak measurements was performed at the frequencies at which maximum peak emission level were detected.

Please see the attached Quasi-peak test results.

6.3.2 Test Setup and Procedure

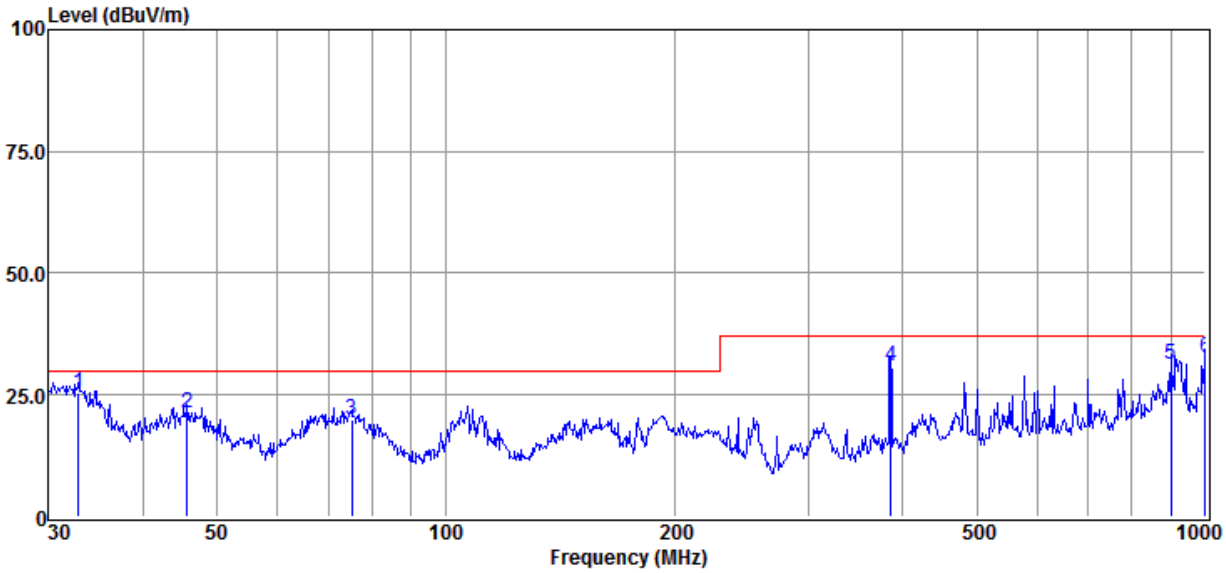


1. The radiated emissions test was conducted in a semi-anechoic chamber.
2. The EUT was connected to AC power source through a mains power outlet which was bonded to the ground reference plane; The mains cables shall drape to the ground reference plane.
3. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emission spectrum signature data plots of the EUT.
5. The frequencies of maximum emission were determined in the final radiated emissions measurement, the physical arrangement of the test system and associated cabling was varied in order to determine the effect on the EUT's emissions in amplitude, direction and frequency. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

6.3.3 Measurement Data

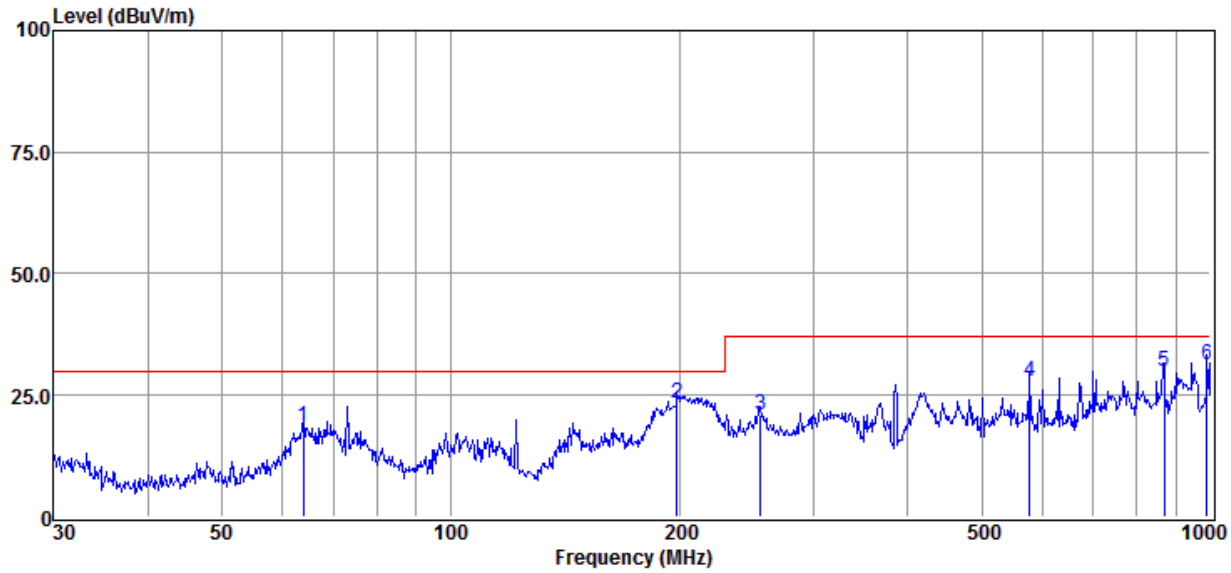
DH-IPC-PFW8601P-A180:

Model:a;Vertical:



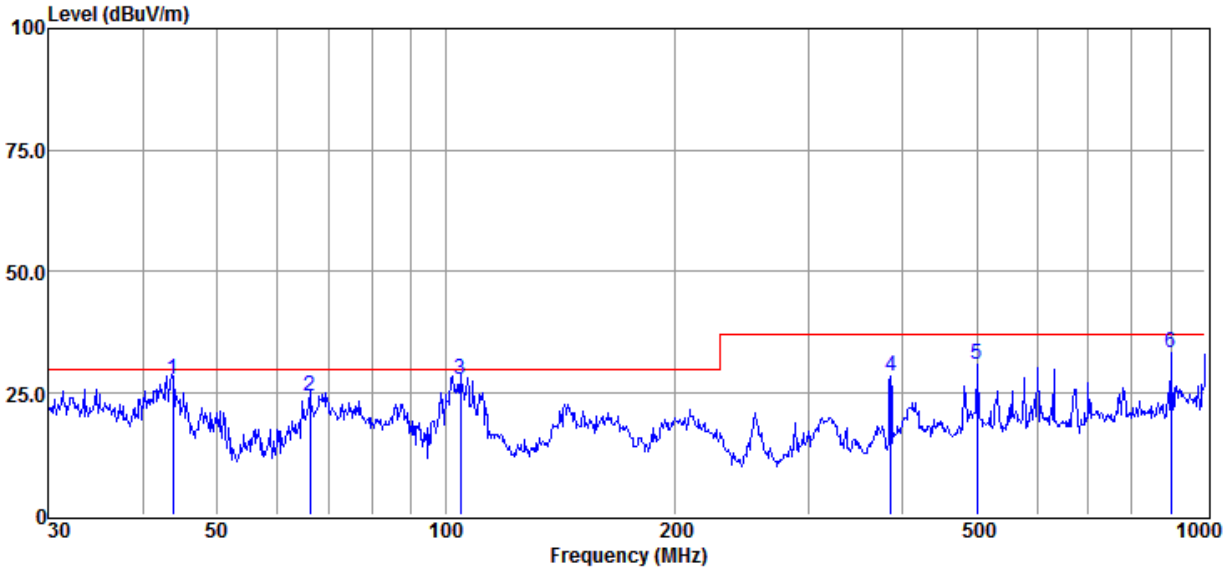
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	32.86	40.89	12.52	28.90	0.94	25.45	30.00	-4.55	QP
2	45.70	35.68	13.22	28.80	1.09	21.19	30.00	-8.81	QP
3	75.18	37.17	10.28	28.80	1.32	19.97	30.00	-10.03	QP
4	385.28	42.43	14.39	28.54	2.60	30.88	37.00	-6.12	QP
5	900.15	33.35	22.87	28.95	4.12	31.39	37.00	-5.61	QP
6	1000.00	32.98	24.10	28.70	4.26	32.64	37.00	-4.36	QP

Model:a;Horizontal:



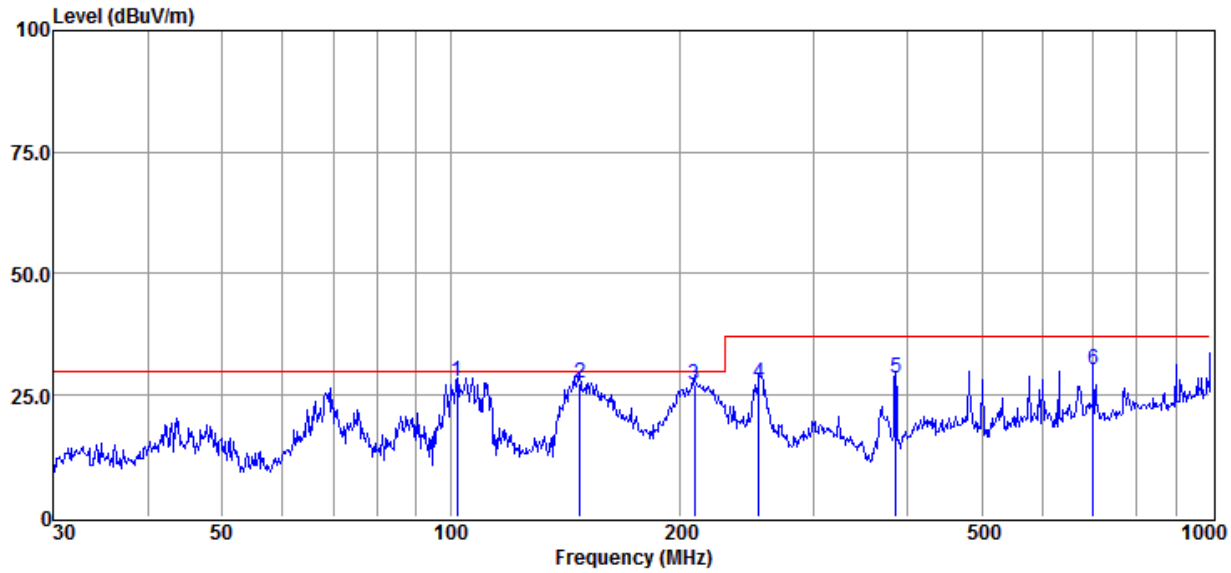
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	63.98	33.67	12.59	28.80	1.21	18.67	30.00	-11.33	QP
2	198.59	38.83	10.84	28.10	1.75	23.32	30.00	-6.68	QP
3	255.62	34.51	12.15	27.90	2.04	20.80	37.00	-16.20	QP
4	578.67	33.63	20.24	29.24	3.19	27.82	37.00	-9.18	QP
5	869.13	31.64	23.16	29.00	3.97	29.77	37.00	-7.23	QP
6	989.54	31.35	24.50	28.76	4.26	31.35	37.00	-5.65	QP

Model:b;Vertical:



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	43.79	42.40	13.35	28.80	0.89	27.84	30.00	-2.16	QP
2	66.27	39.70	12.40	28.80	1.24	24.54	30.00	-5.46	QP
3	104.54	45.10	9.99	28.60	1.28	27.77	30.00	-2.23	QP
4	385.28	39.91	14.39	28.54	2.60	28.36	37.00	-8.64	QP
5	501.18	40.09	17.26	29.20	2.94	31.09	37.00	-5.91	QP
6	900.15	35.38	22.87	28.95	4.12	33.42	37.00	-3.58	QP

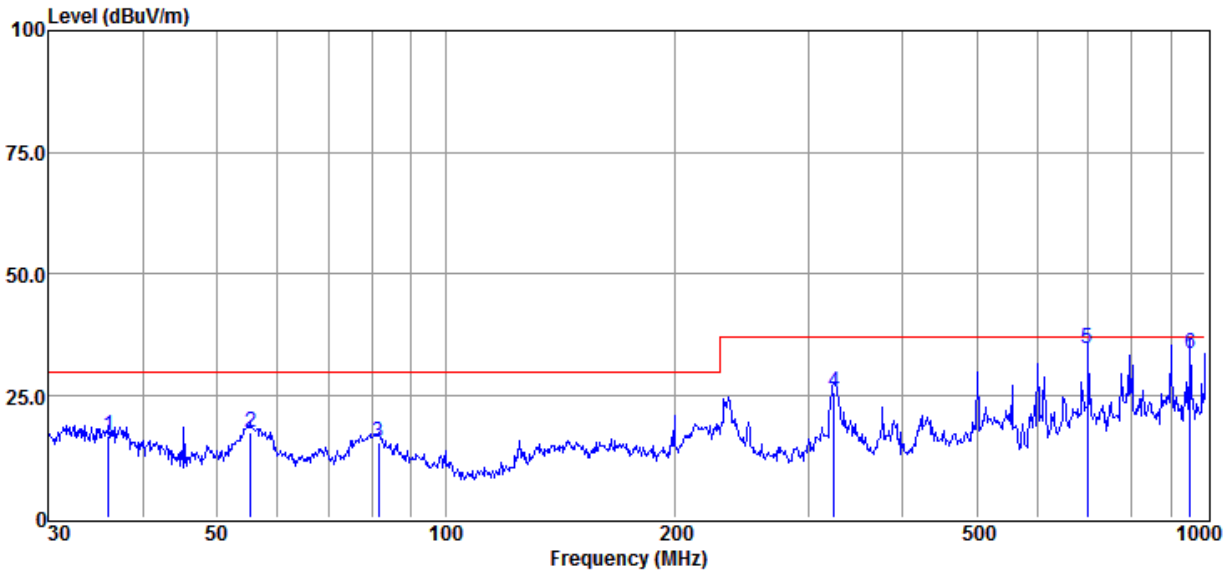
Model:b;Horizontal:



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	101.89	45.71	9.56	28.60	1.27	27.94	30.00	-2.06	QP
2	147.92	41.62	12.70	28.40	1.49	27.41	30.00	-2.59	QP
3	209.31	43.28	10.24	28.10	1.82	27.24	30.00	-2.76	QP
4	254.73	41.19	12.15	27.90	2.04	27.48	37.00	-9.52	QP
5	385.28	40.10	14.39	28.54	2.60	28.55	37.00	-8.45	QP
6	701.76	34.93	20.93	29.29	3.60	30.17	37.00	-6.83	QP

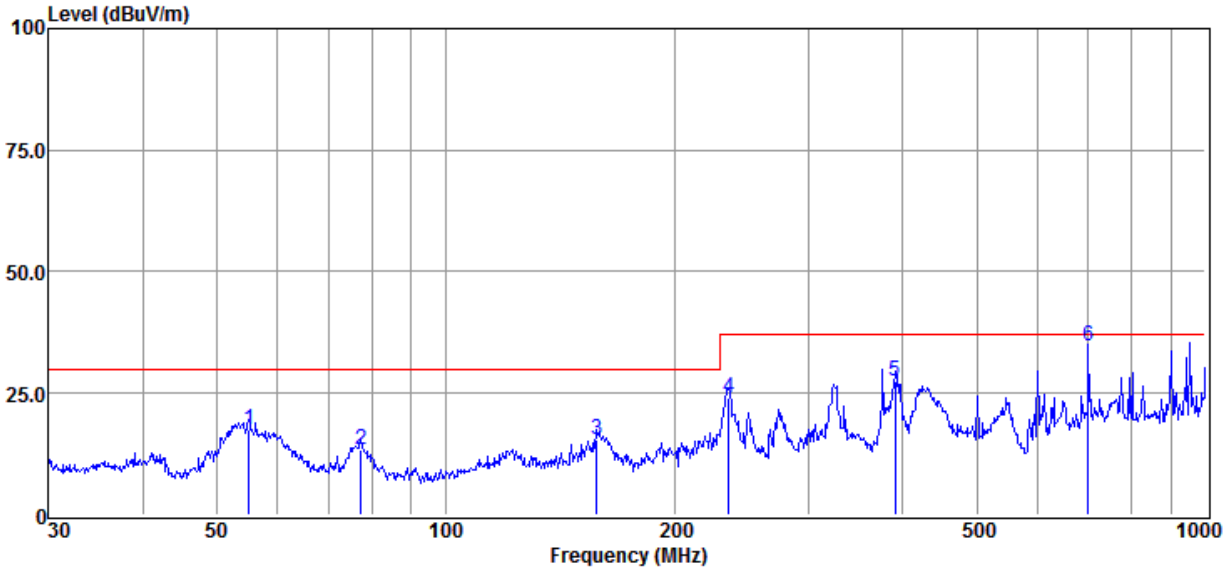
DH-IPC-PFW8800P-A180:

Model:a;Vertical:



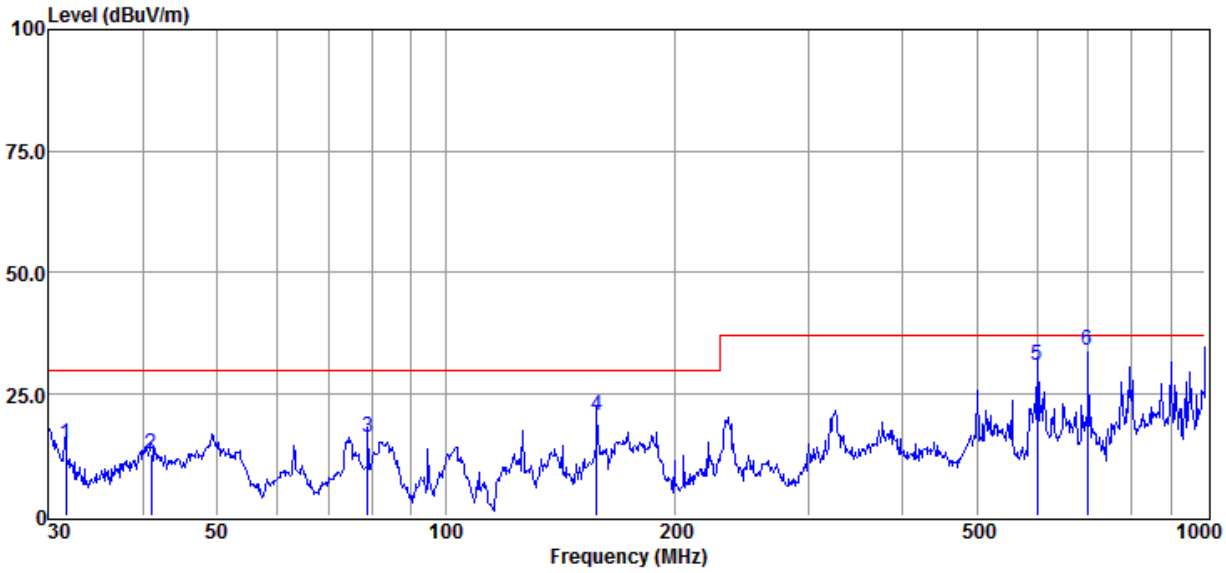
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	36.00	32.24	12.70	28.90	0.84	16.88	30.00	-13.12	QP
2	55.42	31.91	13.17	28.80	1.17	17.45	30.00	-12.55	QP
3	81.50	33.80	8.95	28.70	1.38	15.43	30.00	-14.57	QP
4	324.46	38.53	13.16	28.09	2.32	25.92	37.00	-11.08	QP
5	700.00	39.50	20.90	29.29	3.60	34.71	37.00	-2.29	QP
6	955.44	34.13	24.13	28.85	4.21	33.62	37.00	-3.38	QP

Model:a;Horizontal:



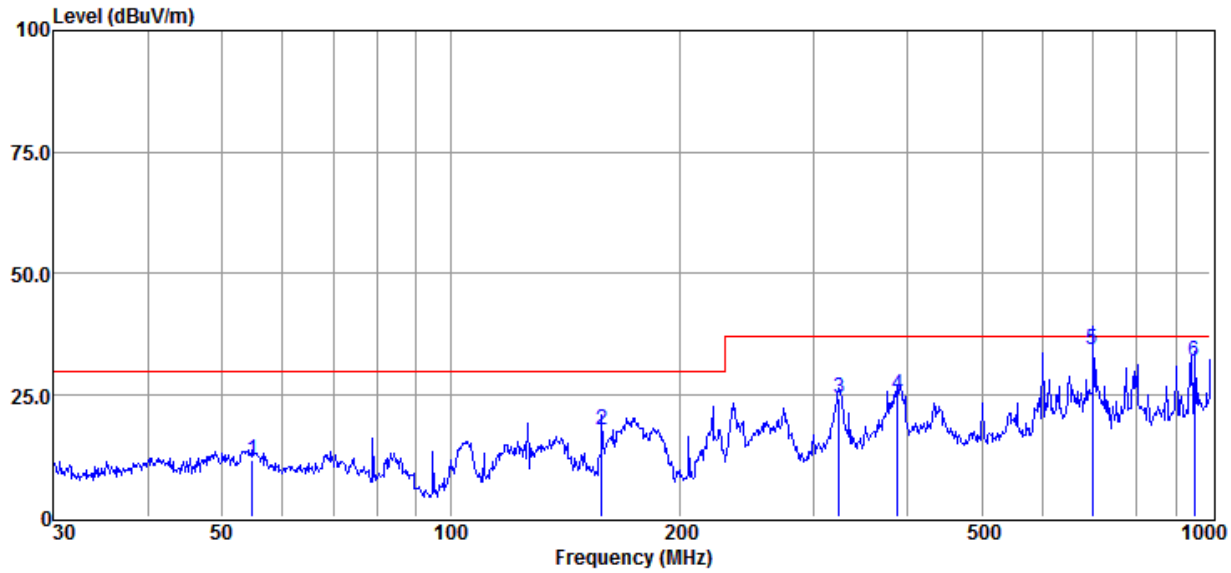
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	55.03	31.85	13.21	28.80	1.16	17.42	30.00	-12.58	QP
2	77.32	31.13	9.76	28.80	1.35	13.44	30.00	-16.56	QP
3	158.11	30.24	12.22	28.40	1.57	15.63	30.00	-14.37	QP
4	235.82	39.57	10.64	28.00	2.00	24.21	37.00	-12.79	QP
5	390.72	38.87	14.65	28.59	2.61	27.54	37.00	-9.46	QP
6	701.76	39.51	20.93	29.29	3.60	34.75	37.00	-2.25	QP

Model:b;Vertical:



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	31.62	30.17	12.67	28.90	0.96	14.90	30.00	-15.10	QP
2	40.99	26.87	13.70	28.80	0.97	12.74	30.00	-17.26	QP
3	78.97	34.22	9.36	28.73	1.36	16.21	30.00	-13.79	QP
4	158.11	35.32	12.22	28.40	1.57	20.71	30.00	-9.29	QP
5	601.43	36.57	20.23	29.25	3.23	30.78	37.00	-6.22	QP
6	700.00	38.80	20.90	29.29	3.60	34.01	37.00	-2.99	QP

Model:b;Horizontal:



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	54.84	26.20	13.23	28.80	1.16	11.79	30.00	-18.21	QP
2	158.11	32.61	12.22	28.40	1.57	18.00	30.00	-12.00	QP
3	324.46	37.16	13.16	28.09	2.32	24.55	37.00	-12.45	QP
4	387.99	36.47	14.53	28.56	2.61	25.05	37.00	-11.95	QP
5	700.00	39.00	20.90	29.29	3.60	34.21	37.00	-2.79	QP
6	952.09	32.94	23.77	28.85	4.21	32.07	37.00	-4.93	QP

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

2. If Peak Result comply with QP limit,QP Result is deemed to comply with QP limit

6.4 Radiated Emissions, 1GHz to 6GHz

Detector: Peak for pre-scan

Peak and Average if maximised peak within 6 dB of limit (1 MHz resolution bandwidth)

Class / Limit: Table 8-Class B for EN 55032

Frequency range (GHz)	**Class B Limits**	
	Average limit (dB (μV/m))	**Peak limits** (dB (μV/m))
1 to 3	50	70
3 to 6	54	74

At transitional frequencies the lower limit applies.

Remark:

The highest internal source of an EUT is defined as the highest frequency generated or used within the EUT or on which the EUT operates or tunes.

1. If the highest frequency of the internal sources of the EUT is less than 108 MHz, the measurement shall only be made up to 1 GHz.
2. If the highest frequency of the internal sources of the EUT is between 108 MHz and 500 MHz, the measurement shall only be made up to 2 GHz.
3. If the highest frequency of the internal sources of the EUT is between 500 MHz and 1 GHz, measurement shall only be made up to 5 GHz.
4. If the highest frequency of the internal sources of the EUT is above 1 GHz, the measurement shall be made up to 5 times the highest frequency or 6 GHz, whichever is less.

6.4.1 E.U.T. Operation

Test mode: DH-IPC-PFW8601P-A180:

a; AC12V mode: Supply by AC24V adapter , keep EUT monitoring continual.

b; PoE mode: Supply by PoE adapter , keep EUT monitoring continual.

DH-IPC-PFW8800P-A180:

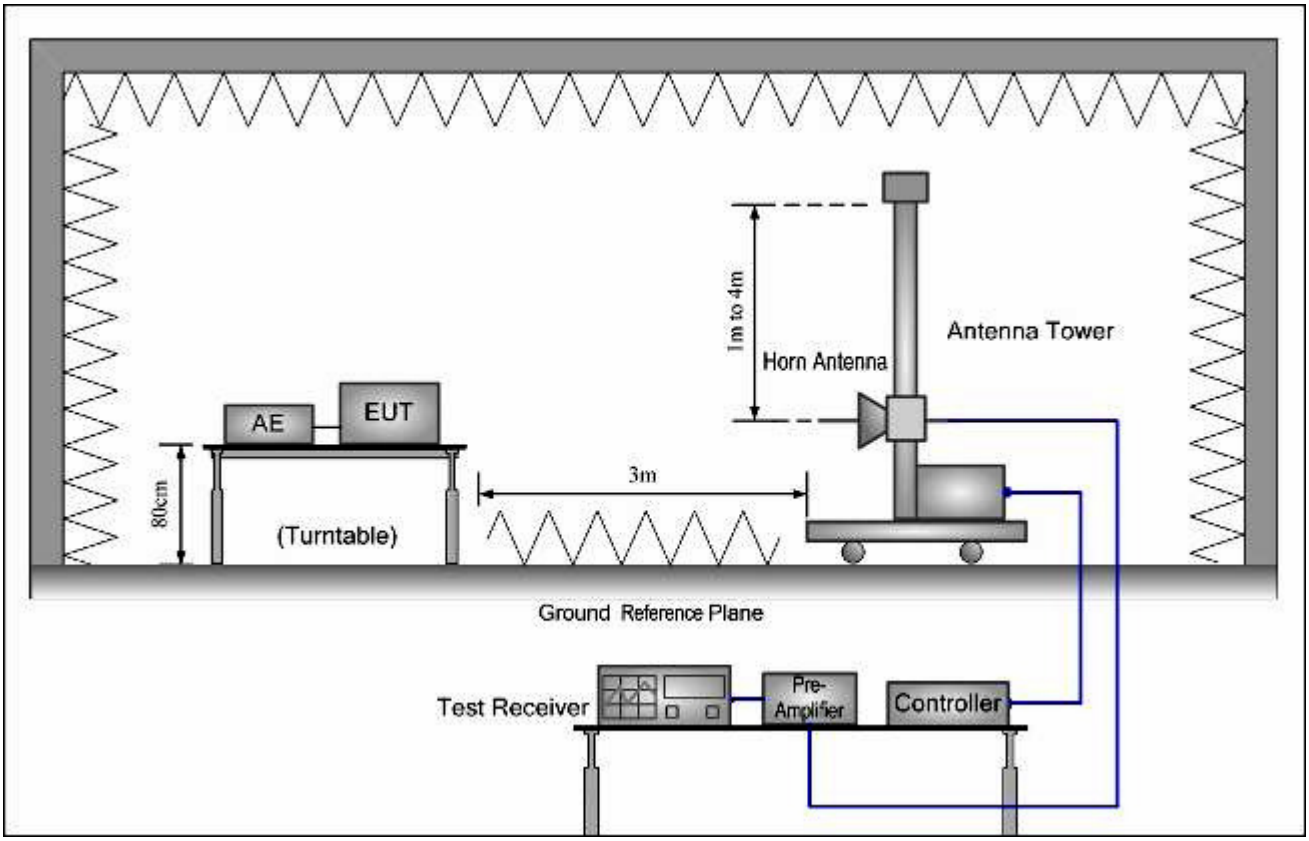
a; AC12V mode: Supply by AC24V adapter , keep EUT monitoring continual.

b; PoE mode: Supply by PoE adapter , keep EUT monitoring continual.

Pre-scan was performed with peak detected on all ports, Peak & average measurements were performed at the frequencies at which maximum peak emission level were detected.

Please see the attached Peak and Average test results.

6.4.2 Test Setup and Procedure

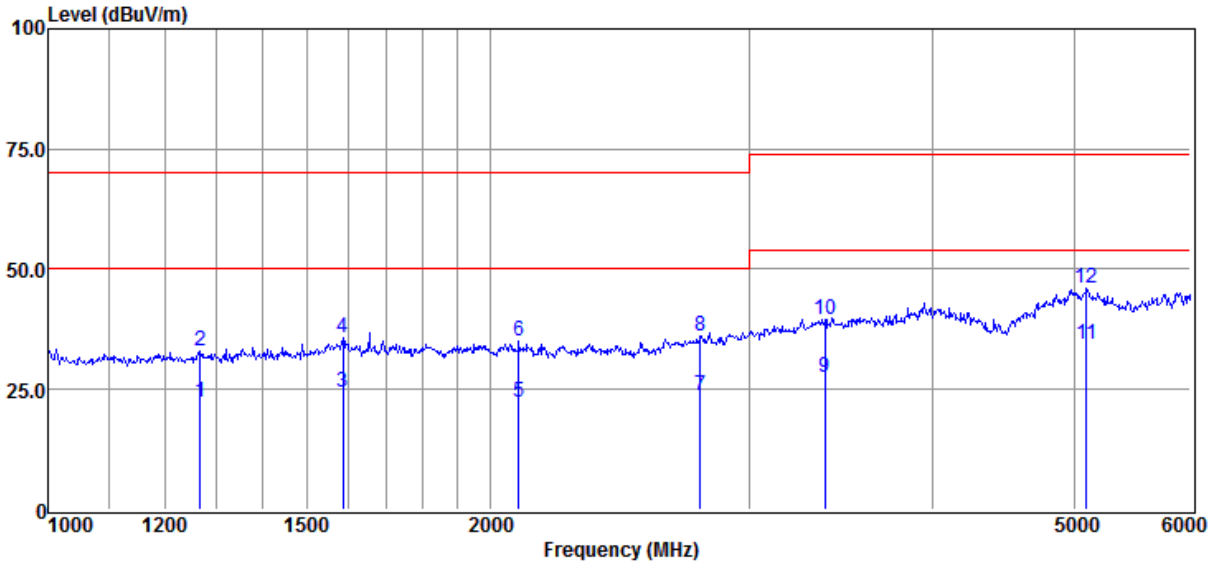


1. The radiated emissions test was conducted in a fully-anechoic chamber.
2. Horn antenna was used for the frequency above 1GHz
3. The EUT was connected to nominal power supply through a mains power outlet which was bonded to the ground reference plane; The mains cables were draped to the ground reference plane. The tabletop EUT was placed upon a non-metallic table 0.8m above the ground reference plane. And for floor-standing arrangement, the EUT was placed on the horizontal ground reference plane, but separated from metallic contact with the ground reference plane by 0.1m of insulation.
4. Before final measurements of radiated emissions, a pre-scan was performed in the spectrum mode with the peak detector to find out the maximum emission spectrum plots of the EUT.
5. The frequencies of maximum emission were determined in the final radiated emissions measurement. At each frequency, the EUT was rotated 360°, and the antenna was raised and lowered from 1 to 4 meters in order to determine the maximum disturbance. Measurements were performed for both horizontal and vertical antenna polarization.

6.4.3 Measurement Data

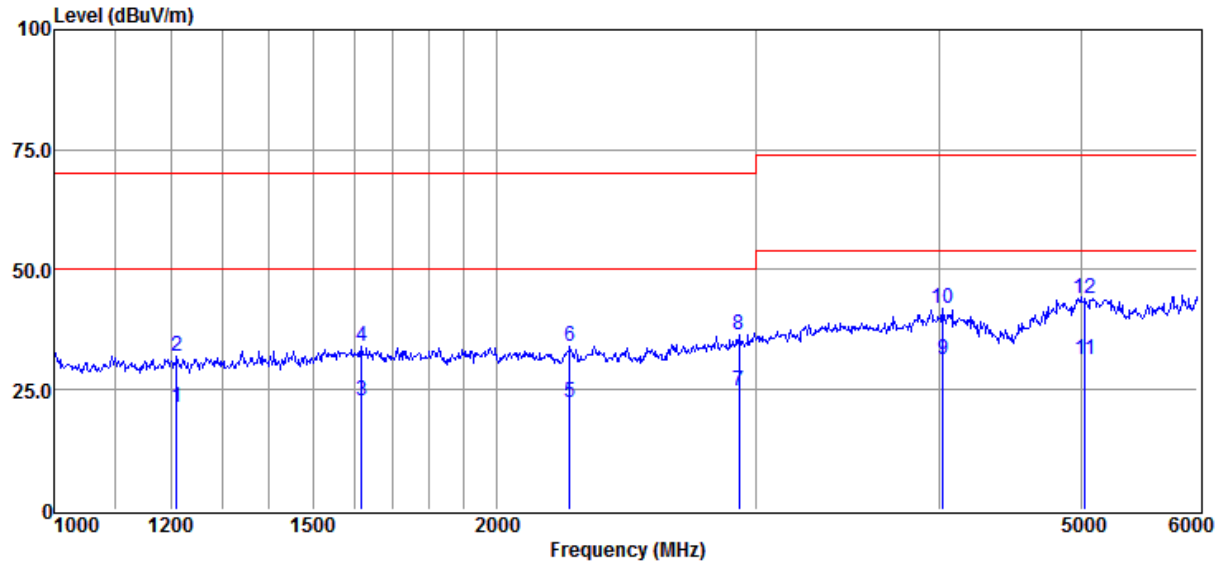
DH-IPC-PFW8601P-A180:

Mode:a;Vertical:



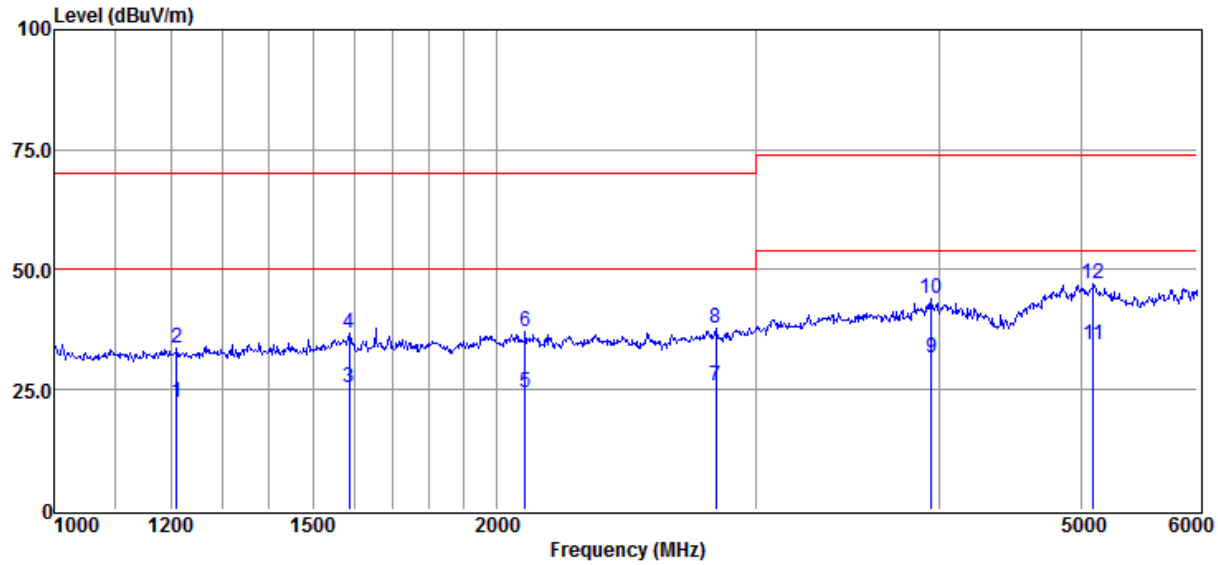
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	1269.10	34.69	24.79	40.64	3.57	22.41	50.00	-27.59	Average
2	1269.10	45.13	24.79	40.64	3.57	32.85	70.00	-37.15	Peak
3	1587.68	35.58	25.42	40.66	3.94	24.28	50.00	-25.72	Average
4	1587.68	47.20	25.42	40.66	3.94	35.90	70.00	-34.10	Peak
5	2092.18	32.10	27.24	41.18	4.23	22.39	50.00	-27.61	Average
6	2092.18	44.75	27.24	41.18	4.23	35.04	70.00	-34.96	Peak
7	2781.79	31.35	28.36	40.87	4.95	23.79	50.00	-26.21	Average
8	2781.79	43.81	28.36	40.87	4.95	36.25	70.00	-33.75	Peak
9	3381.76	31.14	30.80	40.57	6.07	27.44	54.00	-26.56	Peak
10	3381.76	43.32	30.80	40.57	6.07	39.62	74.00	-34.38	Average
11	5097.29	31.52	37.55	41.67	7.02	34.42	54.00	-19.58	Average
12	5097.29	43.09	37.55	41.67	7.02	45.99	74.00	-28.01	Peak

Mode:a;Horizontal:



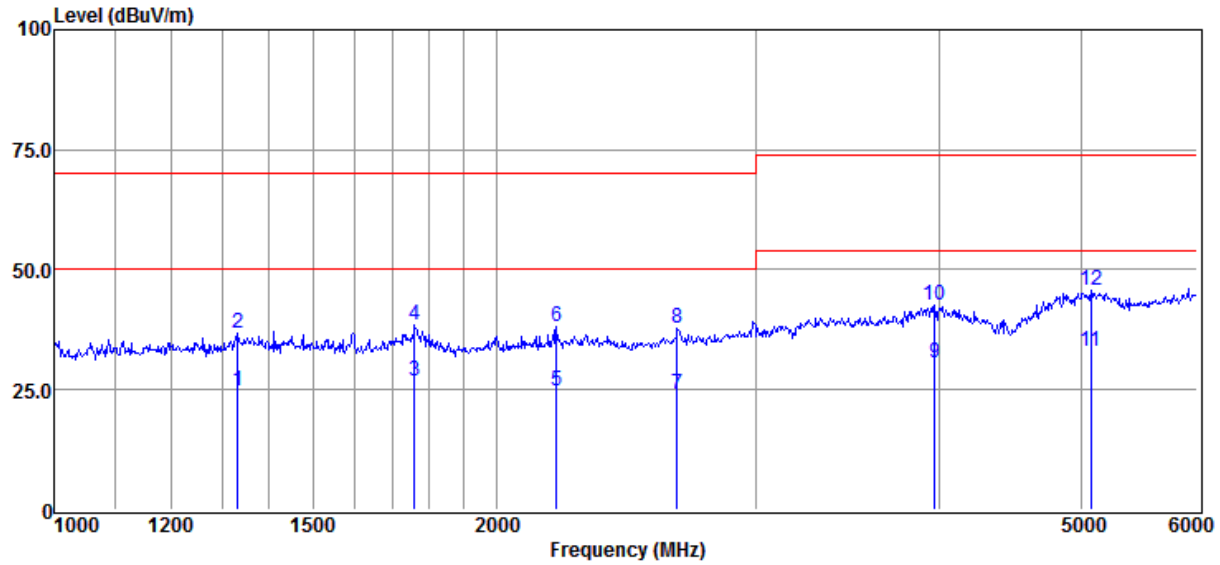
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	1211.33	33.86	24.74	40.67	3.46	21.39	50.00	-28.61	Average
2	1211.33	44.42	24.74	40.67	3.46	31.95	70.00	-38.05	Peak
3	1619.28	33.96	25.57	40.71	3.97	22.79	50.00	-27.21	Average
4	1619.28	45.13	25.57	40.71	3.97	33.96	70.00	-36.04	Peak
5	2243.60	30.83	27.46	41.08	5.04	22.25	50.00	-27.75	Average
6	2243.60	42.53	27.46	41.08	5.04	33.95	70.00	-36.05	Peak
7	2924.91	31.55	28.97	40.84	5.17	24.85	50.00	-25.15	Average
8	2924.91	43.26	28.97	40.84	5.17	36.56	70.00	-33.44	Peak
9	4023.68	31.94	32.58	40.11	6.96	31.37	54.00	-22.63	Peak
10	4023.68	42.32	32.58	40.11	6.96	41.75	74.00	-32.25	Average
11	5033.76	28.02	38.05	41.70	6.84	31.21	54.00	-22.79	Average
12	5033.76	40.78	38.05	41.70	6.84	43.97	74.00	-30.03	Peak

Mode:b;Vertical:



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	1211.33	34.75	24.74	40.67	3.46	22.28	50.00	-27.72	Average
2	1211.33	46.08	24.74	40.67	3.46	33.61	70.00	-36.39	Peak
3	1587.68	36.58	25.42	40.66	3.94	25.28	50.00	-24.72	Average
4	1587.68	48.20	25.42	40.66	3.94	36.90	70.00	-33.10	Peak
5	2092.18	34.10	27.24	41.18	4.23	24.39	50.00	-25.61	Average
6	2092.18	46.75	27.24	41.18	4.23	37.04	70.00	-32.96	Peak
7	2821.95	33.06	28.54	40.86	4.98	25.72	50.00	-24.28	Average
8	2821.95	45.01	28.54	40.86	4.98	37.67	70.00	-32.33	Peak
9	3952.23	32.32	32.54	40.10	6.90	31.66	54.00	-22.34	Peak
10	3952.23	44.78	32.54	40.10	6.90	44.12	74.00	-29.88	Average
11	5097.29	31.52	37.55	41.67	7.02	34.42	54.00	-19.58	Average
12	5097.29	44.09	37.55	41.67	7.02	46.99	74.00	-27.01	Peak

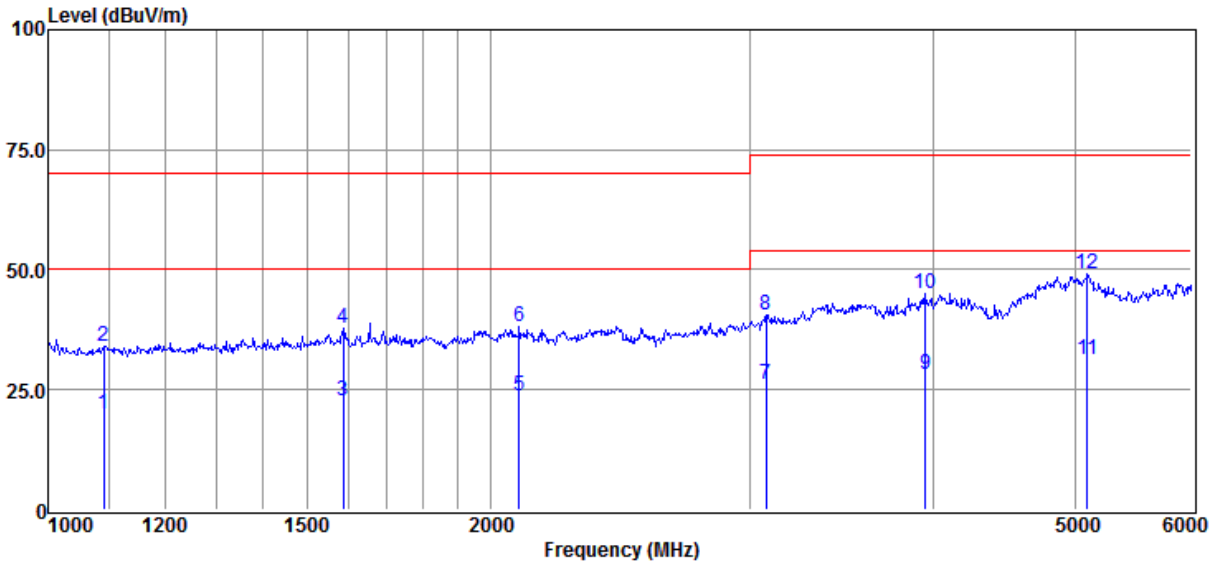
Mode:b;Horizontal:



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	1332.00	36.66	24.85	40.60	3.76	24.67	50.00	-25.33	Average
2	1332.00	48.74	24.85	40.60	3.76	36.75	70.00	-33.25	Peak
3	1758.40	37.41	26.16	40.91	4.26	26.92	50.00	-23.08	Average
4	1758.40	49.02	26.16	40.91	4.26	38.53	70.00	-31.47	Peak
5	2195.88	34.14	27.39	41.11	4.49	24.91	50.00	-25.09	Average
6	2195.88	47.37	27.39	41.11	4.49	38.14	70.00	-31.86	Peak
7	2655.17	32.09	27.96	40.91	4.82	23.96	50.00	-26.04	Average
8	2655.17	45.92	27.96	40.91	4.82	37.79	70.00	-32.21	Peak
9	3973.53	31.28	32.60	40.08	6.90	30.70	54.00	-23.30	Peak
10	3973.53	43.27	32.60	40.08	6.90	42.69	74.00	-31.31	Average
11	5079.06	30.02	37.68	41.68	7.02	33.04	54.00	-20.96	Average
12	5079.06	42.60	37.68	41.68	7.02	45.62	74.00	-28.38	Peak

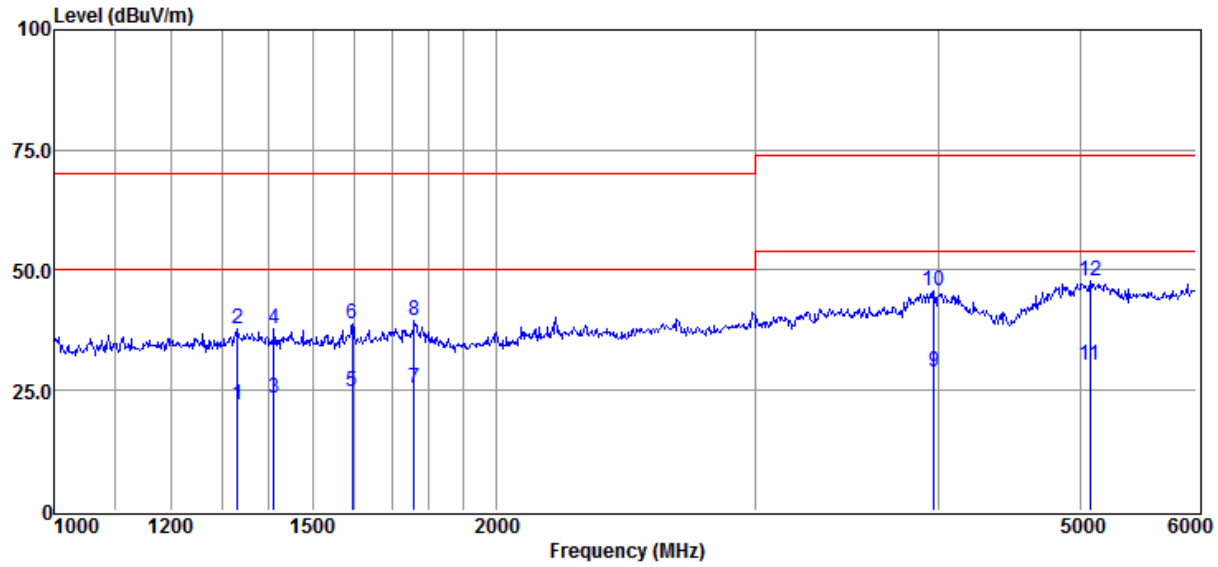
DH-IPC-PFW8800P-A180:

Mode:a;Vertical:



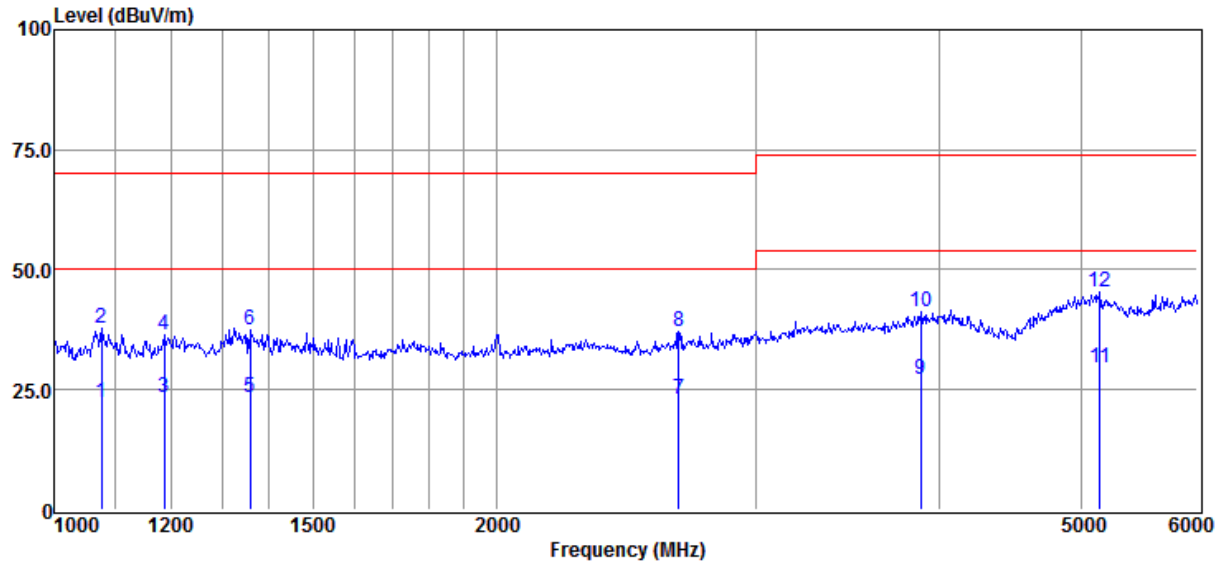
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	1089.81	33.12	24.61	40.74	3.11	20.10	50.00	-29.90	Average
2	1089.81	47.21	24.61	40.74	3.11	34.19	70.00	-35.81	Peak
3	1587.68	34.11	25.42	40.66	3.94	22.81	50.00	-27.19	Average
4	1587.68	49.20	25.42	40.66	3.94	37.90	70.00	-32.10	Peak
5	2092.18	33.53	27.24	41.18	4.23	23.82	50.00	-26.18	Average
6	2092.18	47.75	27.24	41.18	4.23	38.04	70.00	-31.96	Peak
7	3080.91	31.52	29.62	40.77	5.71	26.08	54.00	-27.92	Average
8	3080.91	45.83	29.62	40.77	5.71	40.39	74.00	-33.61	Peak
9	3952.23	28.68	32.54	40.10	6.90	28.02	54.00	-25.98	Average
10	3952.23	45.78	32.54	40.10	6.90	45.12	74.00	-28.88	Peak
11	5097.29	28.52	37.55	41.67	7.02	31.42	54.00	-22.58	Average
12	5097.29	46.09	37.55	41.67	7.02	48.99	74.00	-25.01	Peak

Mode:a;Horizontal:



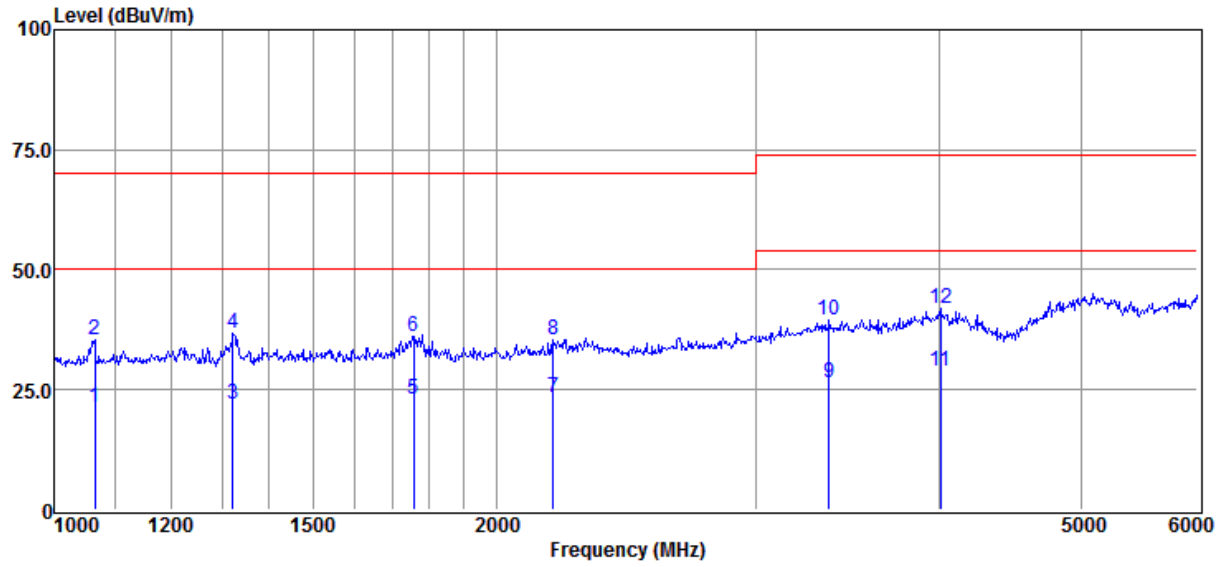
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	1332.00	33.95	24.85	40.60	3.76	21.96	50.00	-28.04	Average
2	1332.00	49.74	24.85	40.60	3.76	37.75	70.00	-32.25	Peak
3	1410.60	35.24	24.92	40.56	3.83	23.43	50.00	-26.57	Average
4	1410.60	49.77	24.92	40.56	3.83	37.96	70.00	-32.04	Peak
5	1596.24	35.86	25.46	40.68	3.94	24.58	50.00	-25.42	Average
6	1596.24	49.94	25.46	40.68	3.94	38.66	70.00	-31.34	Peak
7	1758.40	35.84	26.16	40.91	4.26	25.35	50.00	-24.65	Average
8	1758.40	50.02	26.16	40.91	4.26	39.53	70.00	-30.47	Peak
9	3973.53	29.56	32.60	40.08	6.90	28.98	54.00	-25.02	Peak
10	3973.53	46.27	32.60	40.08	6.90	45.69	74.00	-28.31	Average
11	5079.06	27.37	37.68	41.68	7.02	30.39	54.00	-23.61	Average
12	5079.06	44.60	37.68	41.68	7.02	47.62	74.00	-26.38	Peak

Mode:b;Vertical:



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBµV)	(dB/m)	(dB)	(dB)	(dBµV/m)	(dBµV/m)	(dB)	
1	1076.23	35.45	24.59	40.75	3.14	22.43	50.00	-27.57	Average
2	1076.23	50.71	24.59	40.75	3.14	37.69	70.00	-32.31	Peak
3	1187.69	35.83	24.71	40.68	3.39	23.25	50.00	-26.75	Average
4	1187.69	48.95	24.71	40.68	3.39	36.37	70.00	-33.63	Peak
5	1358.51	35.33	24.88	40.59	3.81	23.43	50.00	-26.57	Average
6	1358.51	49.51	24.88	40.59	3.81	37.61	70.00	-32.39	Peak
7	2659.93	31.26	27.96	40.91	4.82	23.13	50.00	-26.87	Average
8	2659.93	45.32	27.96	40.91	4.82	37.19	70.00	-32.81	Peak
9	3889.01	28.13	32.38	40.15	6.73	27.09	54.00	-26.91	Average
10	3889.01	42.31	32.38	40.15	6.73	41.27	74.00	-32.73	Peak
11	5152.39	26.84	37.06	41.64	7.21	29.47	54.00	-24.53	Average
12	5152.39	42.68	37.06	41.64	7.21	45.31	74.00	-28.69	Peak

Mode:b;Horizontal:



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	1064.72	34.21	24.58	40.76	3.20	21.23	50.00	-28.77	Average
2	1064.72	48.34	24.58	40.76	3.20	35.36	70.00	-34.64	Peak
3	1322.49	34.16	24.85	40.61	3.71	22.11	50.00	-27.89	Average
4	1322.49	48.82	24.85	40.61	3.71	36.77	70.00	-33.23	Peak
5	1755.25	33.51	26.16	40.91	4.26	23.02	50.00	-26.98	Average
6	1755.25	46.60	26.16	40.91	4.26	36.11	70.00	-33.89	Peak
7	2184.11	32.49	27.37	41.12	4.49	23.23	50.00	-26.77	Average
8	2184.11	44.69	27.37	41.12	4.49	35.43	70.00	-34.57	Peak
9	3369.66	30.15	30.73	40.59	6.07	26.36	54.00	-27.64	Peak
10	3369.66	43.28	30.73	40.59	6.07	39.49	74.00	-34.51	Average
11	4009.29	29.33	32.70	40.05	6.96	28.94	54.00	-25.06	Average
12	4009.29	42.27	32.70	40.05	6.96	41.88	74.00	-32.12	Peak

Note: 1. Result Level = Read Level + Antenna Factor + Cable loss - PRM Factor

2. If Peak Result comply with AV limit, AV Result is deemed to comply with AV limit

6.5 Harmonics Test Result

DH-IPC-PFW8601P-A180:

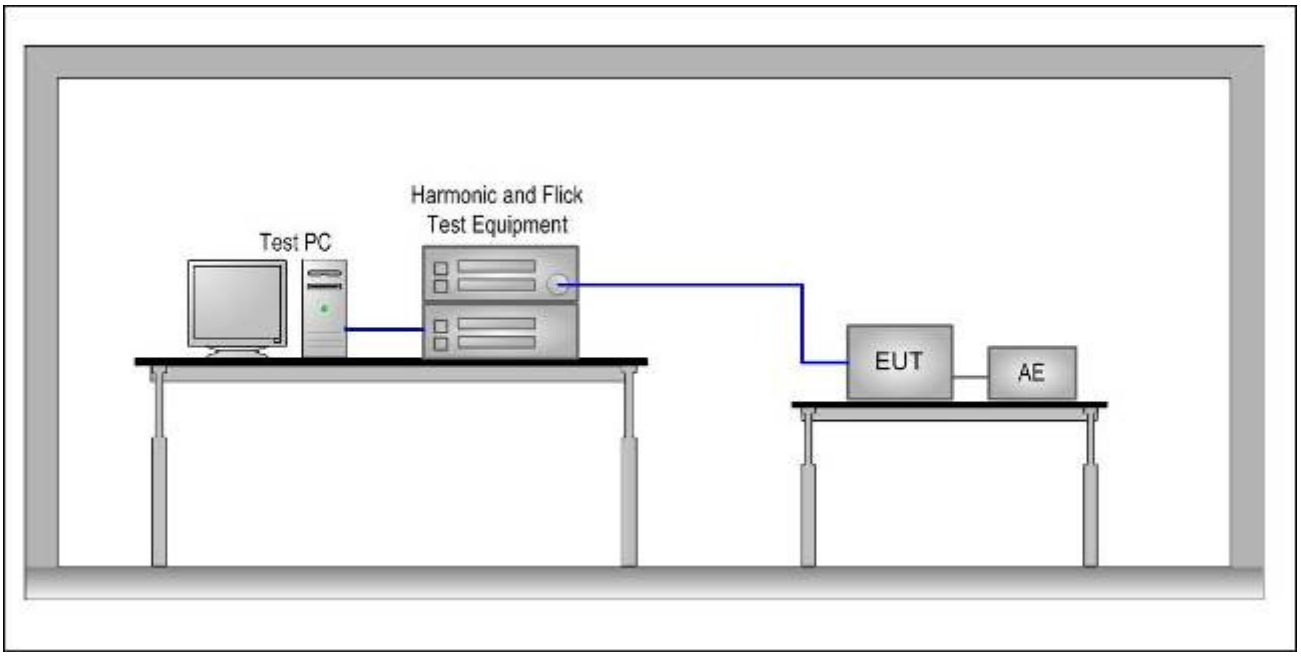
Measurement Time: 2.5mins

Class / Severity: Class B

6.5.1 E.U.T. Operation

Test mode: N/A

6.5.2 Test Setup and Procedure



1. The EUT was tested with the equipment configured to its rated current.
2. The measurements were carried out under steady conditions. When a piece of EUT is brought into operation or is taken out of operation, manually or automatically, harmonic currents and power are not taken into account at first 10s following the switching event. EUT shall not be in standby mode for more than 10% of any observation period.
3. Harmonics of the fundamental current were measured using a digital power meter with an analogue output and frequency analyser which was integrated in the harmonic & flicker test system.
4. For each harmonic order, measure the 1,5 s smoothed r.m.s. harmonic current in each DFT time window and calculate the arithmetic average of the measured values from the DFT time windows, over the entire observation period. Each harmonic order, all 1.5 s smoothed r.m.s. harmonic current values and the average values for the individual harmonic currents, taken over the entire test observation period shall be less than or equal to the applicable limits.

6.5.3 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.

DH-IPC-PFW8800P-A180:

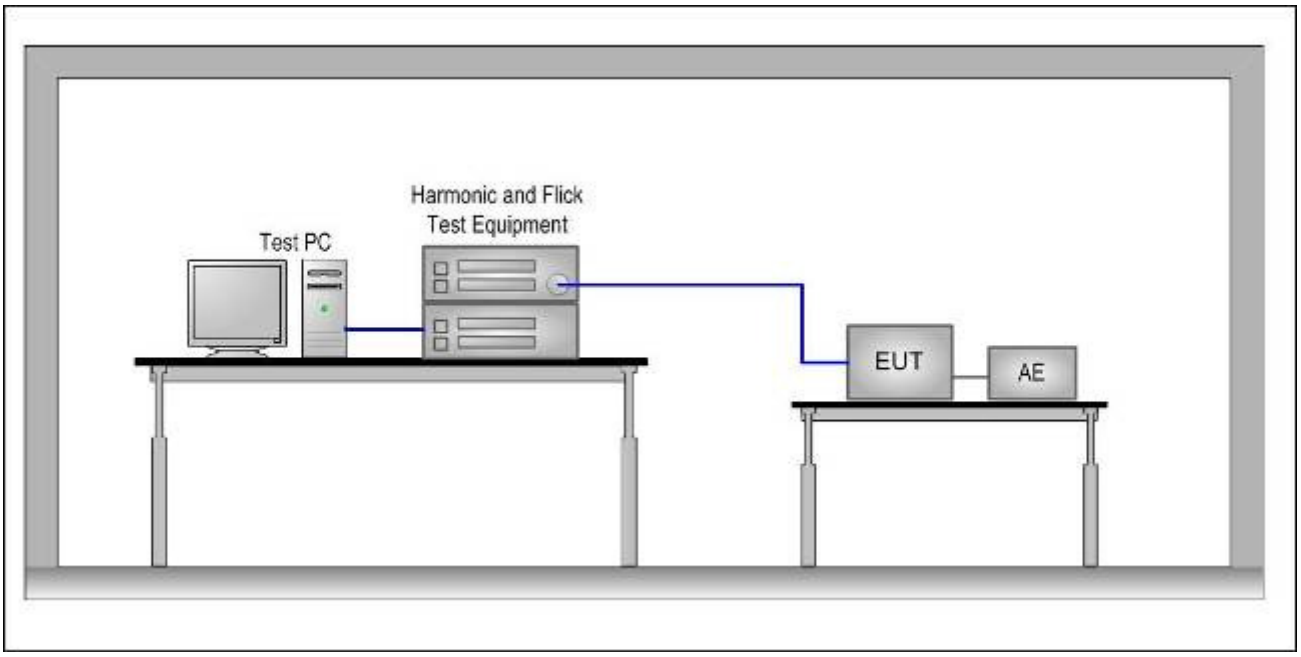
Measurement Time: 2.5mins

Class / Severity: Class B

6.5.4 E.U.T. Operation

Test mode: N/A

6.5.5 Test Setup and Procedure



5. The EUT was tested with the equipment configured to its rated current.
6. The measurements were carried out under steady conditions. When a piece of EUT is brought into operation or is taken out of operation, manually or automatically, harmonic currents and power are not taken into account at first 10s following the switching event. EUT shall not be in standby mode for more than 10% of any observation period.
7. Harmonics of the fundamental current were measured using a digital power meter with an analogue output and frequency analyser which was integrated in the harmonic & flicker test system.
8. For each harmonic order, measure the 1,5 s smoothed r.m.s. harmonic current in each DFT time window and calculate the arithmetic average of the measured values from the DFT time windows, over the entire observation period. Each harmonic order, all 1.5 s smoothed r.m.s. harmonic current values and the average values for the individual harmonic currents, taken over the entire test observation period shall be less than or equal to the applicable limits.

6.5.6 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.

6.6 Flicker Test Result

Measurement Time: 10 mins

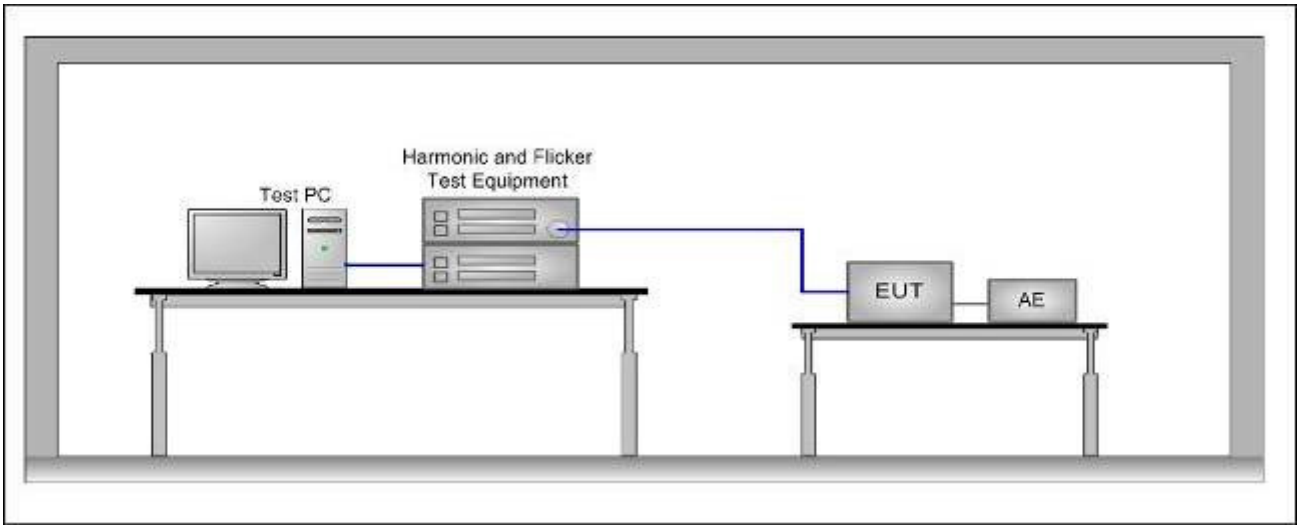
Class / Severity: Clause 5 of EN 61000-3-3

6.6.1 E.U.T. Operation

Test mode: DH-IPC-PFW8601P-A180:
a; AC12V mode: Supply by AC24V adapter , keep EUT monitoring continual.
b; PoE mode: Supply by PoE adapter , keep EUT monitoring continual.
DH-IPC-PFW8800P-A180:
a; AC12V mode: Supply by AC24V adapter , keep EUT monitoring continual.
b; PoE mode: Supply by PoE adapter , keep EUT monitoring continual.

Note: "Pst and Plt requirements shall not be applied to voltage changes caused by manual switching.
The limits shall not be applied to voltage changes associated with emergency switching or emergency interruptions."
Please also refer to Annex A (Application of limits and type test conditions) for details in EN 61000-3-3.

6.6.2 Test Setup and Procedure



1. The test supply voltage (open-circuit voltage) was the rated voltage of the EUT. The Test voltage: was maintained within ±2 % of the nominal value. The frequency was 50 Hz ±0.5 %.
2. The voltage fluctuations and flicker were measured at the supply terminals of the EUT.
3. The observation period, Tp, for the assessment of flicker values by flicker measurement, flicker simulation, or analytical method was:

   — for Pst, Tp = 10 min;

   — for Plt, Tp = 2 h.

   The observation period included that part of the whole operation cycle in which the EUT produces the most unfavorable sequence of voltage changes.

6.6.3 Measurement Data

DH-IPC-PFW8601P-A180:

Mode:a;

Parameter values recorded during the test:

Vrms at the end of test (Volt):	**229.67**			
T-max (mS):	**0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.004**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.001**	**Test limit:**	**0.650**	**Pass**

Mode:b;

Parameter values recorded during the test:

Vrms at the end of test (Volt):	**229.93**			
T-max (mS):	**0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**4.00**	**Pass**
Highest Pst (10 min. period):	**0.012**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.008**	**Test limit:**	**0.650**	**Pass**

DH-IPC-PFW8800P-A180:

Mode:a;

Parameter values recorded during the test:

Vrms at the end of test (Volt):	**229.79**			
T-max (mS):	**0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**6.00**	**Pass**
Highest Pst (10 min. period):	**0.224**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.093**	**Test limit:**	**0.650**	**Pass**

Mode:b;

Parameter values recorded during the test:

Vrms at the end of test (Volt):	**229.76**			
T-max (mS):	**0**	**Test limit (mS):**	**500.0**	**Pass**
Highest dc (%):	**0.00**	**Test limit (%):**	**3.30**	**Pass**
Highest dmax (%):	**0.00**	**Test limit (%):**	**6.00**	**Pass**
Highest Pst (10 min. period):	**0.226**	**Test limit:**	**1.000**	**Pass**
Highest Plt (2 hr. period):	**0.099**	**Test limit:**	**0.650**	**Pass**

7 Electromagnetic Susceptibility Test Results

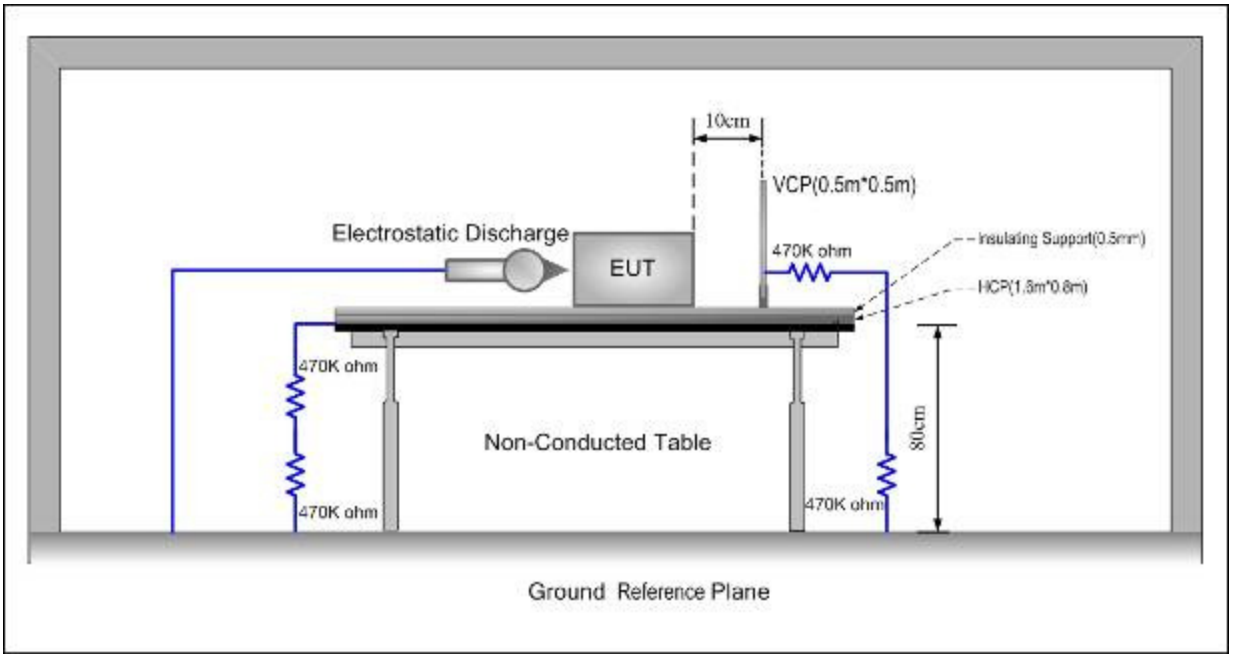
7.1 Performance Criteria Description in Clause 7 of EN 55024

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 manufacturer 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 derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
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 manufacturer, 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 operating 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 derived from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.
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 manufacturer's instructions. Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be lost.

7.2 ESD

Discharge Voltage:	Air Discharge:	±2 kV, ±4 kV, ±8 kV
	Contact Discharge:	±4 kV , ±6 kV
	HCP/VCP:	±4 kV , ±6 kV
Polarity:	Positive & Negative	
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	
Criteria for compliance:	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 EN 50130-4:2011+A1:2014)	

7.2.1 Test Setup and Procedure



1. Contact discharge was applied only to conductive surfaces of the EUT. Air discharge was applied only to non-conducted surfaces of the EUT.
2. The EUT was put on a 0.8m high wooden table for table-top equipment or 0.1m high for floor standing equipment standing on the ground reference plane (GRP).
3. A horizontal coupling plane(HCP) 1.6m by 0.8m in size was placed on the table, and the EUT with its cables were isolated from the HCP by an insulating support thick than 0.5mm. The VCP 0.5m by 0.5m in size while HCP were constructed from the same material type and thickness as that of the GRP, and connected to the GRP via a 470kΩ resistor at each end. The distance between EUT and any of the other metallic surface excepted the GRP, HCP and VCP was greater than 0.8m.
4. During the contact discharges, the tip of the discharge electrode was touch the EUT before the discharge

switch is operated. During the air discharges, the round discharge tip of the discharge electrode was approached as fast as possible to touch the EUT.

5. After each discharge, the ESD generator was removed from the EUT, the generator is then retriggered for a new single discharge. For ungrounded product, a discharge cable with two resistances were used after each discharge to remove remnant electrostatic voltage. A minimum 50 times discharges at each point of each polarity single discharge were applied to HCP and VCP.

7.2.2 Test Results

For EN 55024:2010+A1:2015

Direct Application Test Results

Observations: Test Point:

1. All insulated enclosure & seams.
2. All accessible metal parts of the enclosure.

Direct Application				Test Results	
Discharge Level (kV)	**Polarity (+/-)**	**Test Point**	**Test Mode**	**Contact Discharge**	**Air Discharge**
2,4,8	+/-	1	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	N/A	A
6	+/-	2		A	N/A

Indirect Application Test Results

Observations: Test Point:

1. All sides.

Indirect Application				Test Results	
Discharge Level (kV)	**Polarity (+/-)**	**Test Point**	**Test Mode**	**Horizontal Coupling**	**Vertical Coupling**
4	+/-	1	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	A	A

Results:

A: During test, no degradation in the performance of the EUT was observed; After test, no degradation in the performance of the EUT was observed.

N/A: Not applicable (floor mounted EUT or not requested by Standard).

For EN 50130-4:2011+A1:2014

Direct Application Test Results

Observations: Test Point:

1. All insulated enclosure & seams.
2. All accessible metal parts of the enclosure.

Direct Application				Test Results	
Discharge Level (kV)	**Polarity (+/-)**	**Test Point**	**Test Mode**	**Contact Discharge**	**Air Discharge**
2,4,8	+/-	1	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	N/A	Pass
6	+/-	2		Pass	N/A

Indirect Application Test Results

Observations: Test Point:

1. All sides.

Indirect Application				Test Results	
Discharge Level (kV)	**Polarity (+/-)**	**Test Point**	**Test Mode**	**Horizontal Coupling**	**Vertical Coupling**
6	+/-	1	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	Pass	Pass

Results: Pass

Test phenomenon description for the EUT:

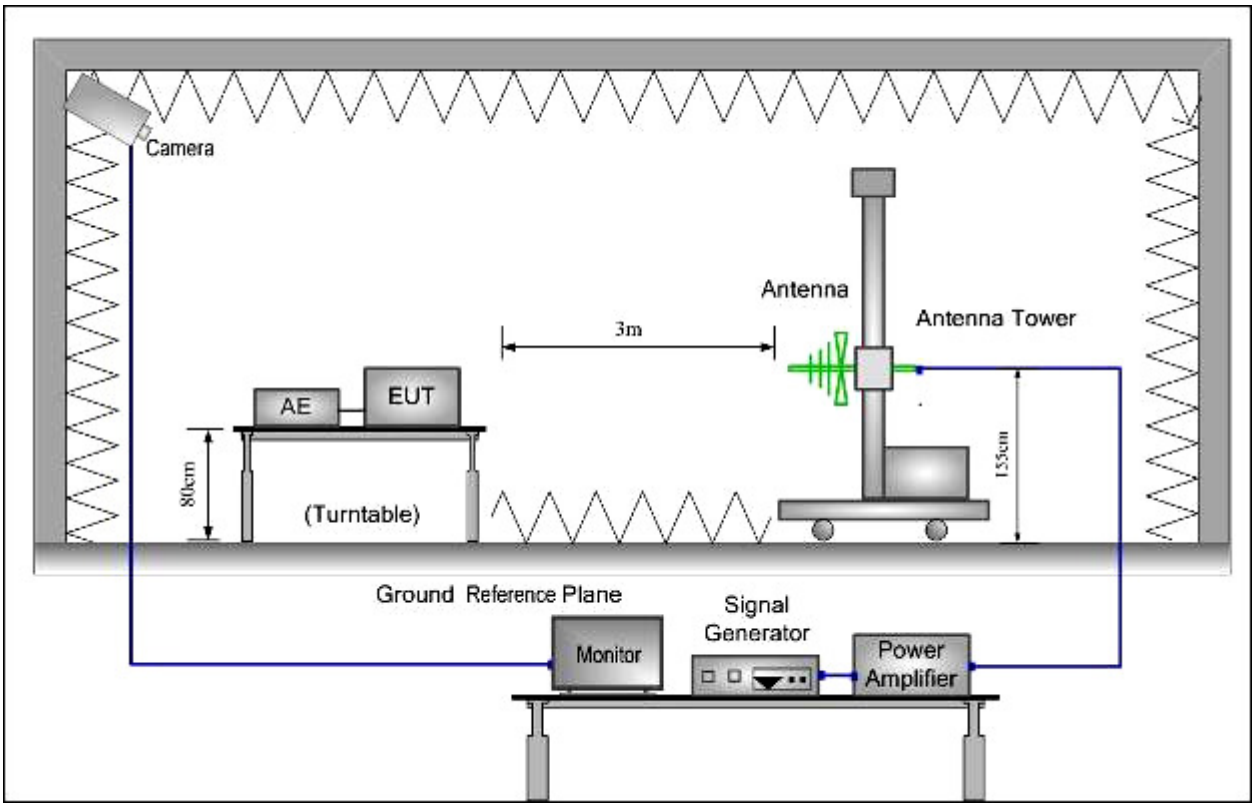
1. The EUT working normal, before the conditioning.
2. Monitor the EUT during the conditioning period to detect no any change in status, during the conditioning.
3. No degradation in the performance of the EUT was observed, after the conditioning.

N/A: Not applicable (not required in the standard or floor mounted the EUT)

7.3 Radiated Immunity

Frequency Range:	80 MHz to 1 GHz (For EN 55024:2010+A1:2015) 80 MHz to 2.7 GHz (For EN 50130-4:2011+A1:2014)
Antenna Polarization:	Horizontal & Vertical (For EN 55024:2010+A1:2015)
Test level:	3.0 V/m on enclosure (For EN 55024:2010+A1:2015) 10 V/m on enclosure (For EN 50130-4:2011+A1:2014)
Modulation:	80%, 1 kHz Amplitude Modulation (For EN 55024:2010+A1:2015) 80%, 1 kHz Amplitude Modulation & 0.5s ON 0.5s OFF Pulse Modulation (For EN 50130-4:2011+A1:2014)
Criteria for compliance:	There shall be no damage, malfunction or change of status due to the conditioning. Flickering of an indicator during the conditioning 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, and no such flickering of indicators occurs at a field strength of 3 V/m. (For EN 50130-4:2011+A1:2014)

7.3.1 Test Setup and Procedure



1. For table-top equipment, the EUT was placed in the chamber on a non-conductive table 0.8m high. For arrangement of floor-standing equipment, the EUT was mounted on a non-conductive support 0.1m above the supporting plane. For human body-mounted equipment, the EUT may be tested in the same manner as table top items.
2. If possible, a minimum of 1 m of cable is exposed to the electromagnetic field. Excess length of cables interconnecting units of the EUT shall be bundled low-inductively in the approximate center of the cable to form a bundle 30 cm to 40 cm in length.
3. The EUT was initially placed with one face coincident with the calibration plane. The EUT face being illuminated was contained within the UFA (Uniform Field Area).
4. The frequency ranges to be considered were swept with the signal modulated and pausing to adjust the RF signal level or to switch oscillators and antennas as necessary. Here the frequency range was swept incrementally, the step size was not exceed 1% of the preceding frequency value.
5. The dwell time of the amplitude modulated carrier at each frequency was not be less than the time necessary for the EUT to be exercised and to respond, and was not less than 0.5 s.
6. The test normally was performed with the generating antenna facing each side of the EUT.
7. The polarization of the field generated by each antenna necessitates testing each selected side twice, once with the antenna positioned vertically and again with the antenna positioned horizontally.
8. The EUT was performed in a configuration to actual installation conditions, a video camera and/or a audio monitor were used to monitor the performance of the EUT.

7.3.2 Test Results

DH-IPC-PFW8601P-A180:

For EN 55024:2010+A1:2015

Frequency	Level	Modulation	Dwell Time	Test Mode	Antenna Polarization	EUT Face	Result / Observations
80 MHz-1 GHz	3.0 V/m	1 kHz, 80% Amp. Mod, 1 % increment	3s	Mode;a Mode;b	V	Front	A
					H		A
					V	Rear	A
					H		A
					V	Left	A
					H		A
					V	Right	A
					H		A
					V	Top	A
					H		A
					V	Bottom	A
					H		A

Remarks:

Front: the front of the EUT faces to transmitting antenna (refer to Radiated Immunity test setup photo)

A: During test, no degradation in the performance of the EUT was observed; After test, no degradation in the performance of the EUT was observed.

N/A: Not applicable.

The EUT does meet the Radiated Immunity requirements of Standard.

For EN 50130-4:2011+A1:2014

Frequency	Level	Modulation	Test Mode	Dwell Time	Antenna Polarization	EUT Face	Result / Observations
80 MHz-2.7 GHz	10 V/m	(80%, 1kHz, A.M.)&(0.5s ON 0.5s OFF P.M.)	Mode;a Mode;b	3S	V	Front	Pass
					H		Pass
					V	Rear	Pass
					H		Pass
					V	Left	Pass
					H		Pass
					V	Right	Pass
					H		Pass
					V	Top	Pass
					H		Pass
					V	Bottom	Pass
					H		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.

DH-IPC-PFW8800P-A180:

For EN 55024:2010+A1:2015

Frequency	Level	Modulation	Dwell Time	Test Mode	Antenna Polarization	EUT Face	Result / Observations
80 MHz-2700 MHz	10.0 V/m	1 kHz, 80% Amp. Mod, 1 % increment	3s	Mode;a Mode:b	V	Front	A
					H		A
					V	Rear	A
					H		A
					V	Left	A
					H		A
					V	Right	A
					H		A
					V	Top	N/A
					H		N/A
					V	Bottom	N/A
					H		N/A

Remarks:

Front: the front of the EUT faces to transmitting antenna (refer to Radiated Immunity test setup photo)

A: During test, no degradation in the performance of the EUT was observed; After test, no degradation in the performance of the EUT was observed.

N/A: Not applicable.

The EUT does meet the Radiated Immunity requirements of Standard.

For EN 50130-4:2011+A1:2014

Frequency	Level	Modulation	Test Mode	Dwell Time	Antenna Polarization	EUT Face	Result / Observations
80 MHz -2700 MHz	10 V/m	(80%, 1kHz, A.M.)&(0.5s ON 0.5s OFF P.M.)	Mode;a Mode:b	3s	V	Front	Pass
					H		Pass
					V	Rear	Pass
					H		Pass
					V	Left	Pass
					H		Pass
					V	Right	Pass
					H		Pass
					V	Top	N/A
					H		N/A
					V	Bottom	N/A
					H		N/A

Test phenomenon description for the EUT:

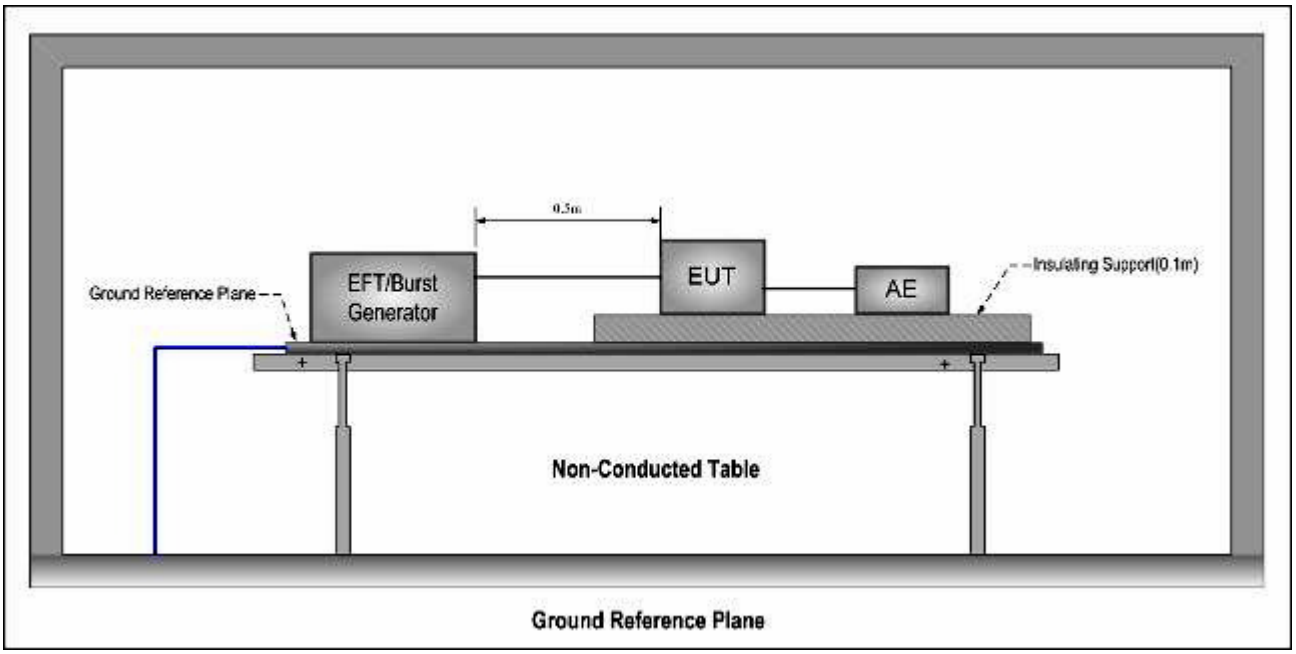
1. The EUT working normal, before the conditioning.
2. Monitor the EUT during the conditioning period and detected no any changes in states, during the conditioning.
3. No degradation in the performance of the EUT was observed, after the conditioning.

7.4 Electrical Fast Transients (EFT)

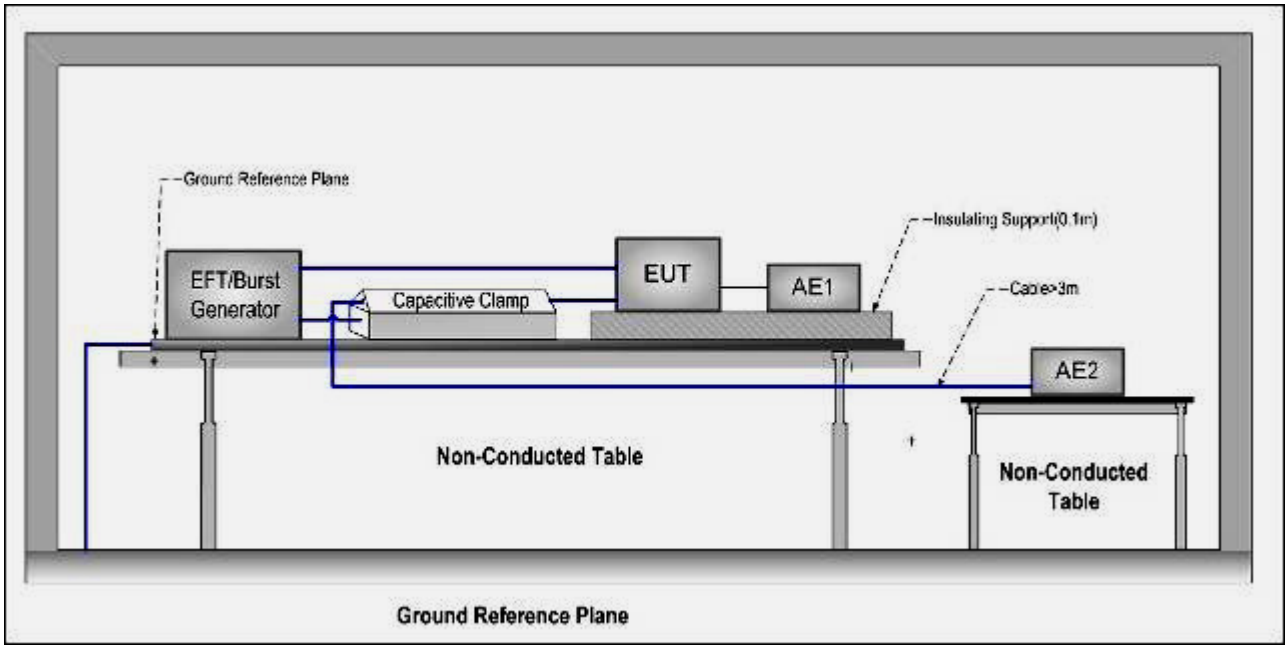
Test Level:	For EN 55024:2010+A1:2015 1.0kV on AC port 0.5 kV on Signal port For EN 50130-4:2011+A1:2014 ±2.0kV on AC port ±1.0kV on Signal ports
Polarity:	Positive & Negative
Repetition Frequency:	5kHz For EN 55024:2010+A1:2015, 100KHz For EN 50130-4:2011+A1:2014
Burst Duration:	300ms
Test Duration:	1 minute per level & polarity
Criteria for compliance:	There shall be no damage, malfunction or change of status due to the conditioning. Flickering of an indicator during the conditioning 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 EN 50130-4:2011+A1:2014)

7.4.1 Test Setup and Procedure

For AC port:



For signal port



1. The EUT was placed on a ground reference plane(GRP) insulated by an insulating support 0.1 m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2. The GRP shall project beyond the EUT and the clamp by at least 0.1m on all sides. The distance between the EUT and any other of the metallic surface except the GRP was greater than 0.5m. All cables to the EUT were placed on the insulation support 0.1m above GRP. Cables not subject to EFT were routed as far as possible from cable under test to minimize the coupling between the cables.
3. The length of signal and power cable between the EUT and EFT generator was 0.5m. If the cable is a non-detachable supply cable more than 0.5m, the excess length of this cable shall be folded to avoid a flat coil and situated at a distance of 0.1m above the GRP.
4. The EUT was conducted the below specified level voltage test for line to neutral or line to neutral to earth(for clamp coupling is for the signal line), 120 seconds duration.
5. If the equipment contains identical ports, only one was tested; multiconductor cables, such as a 50-pair telecommunication cable, were tested as a single cable. Cables did not be split or divided into groups of conductors for this test; interface ports, which were intended by the manufacturer to be connected to data cables not longer than 3 m, did not be tested.

7.4.2 Test Results

For EN 55024:2010+A1:2015

AC port

Lead under Test	Level (±kV)	Coupling Direct/Clamp	Test mode	Observations (Performance Criterion)
Live + Neutral + Earth	± 1.0	Direct	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	(A)

A: During test, no degradation in the performance of the EUT was observed; After test, no degradation in the performance of the EUT was observed.

Signal port

Lead under Test	Level (±kV)	Coupling Direct/Clamp	Test mode	Observations (Performance Criterion)
Signal cable (LAN port, Audio in & Audio out port, Video in port.)	± 0.5	Clamp	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	(A)

A: During test, no degradation in the performance of the EUT was observed; After test, no degradation in the performance of the EUT was observed.

For EN 50130-4:2011+A1:2014

AC port

Lead under Test	Level (±kV)	Coupling Direct/Clamp	Test mode	Observations (Performance Criterion)
Live + Neutral + Earth	±2.0	Direct	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	Pass

Signal ports

Lead under Test	Level (±kV)	Coupling Direct/Clamp	Test mode	Observations (Performance Criterion)
Signal cable (LAN port, Audio in & Audio out port, Video in port.)	± 1.0	Clamp	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	Pass

Test phenomenon description for the EUT:

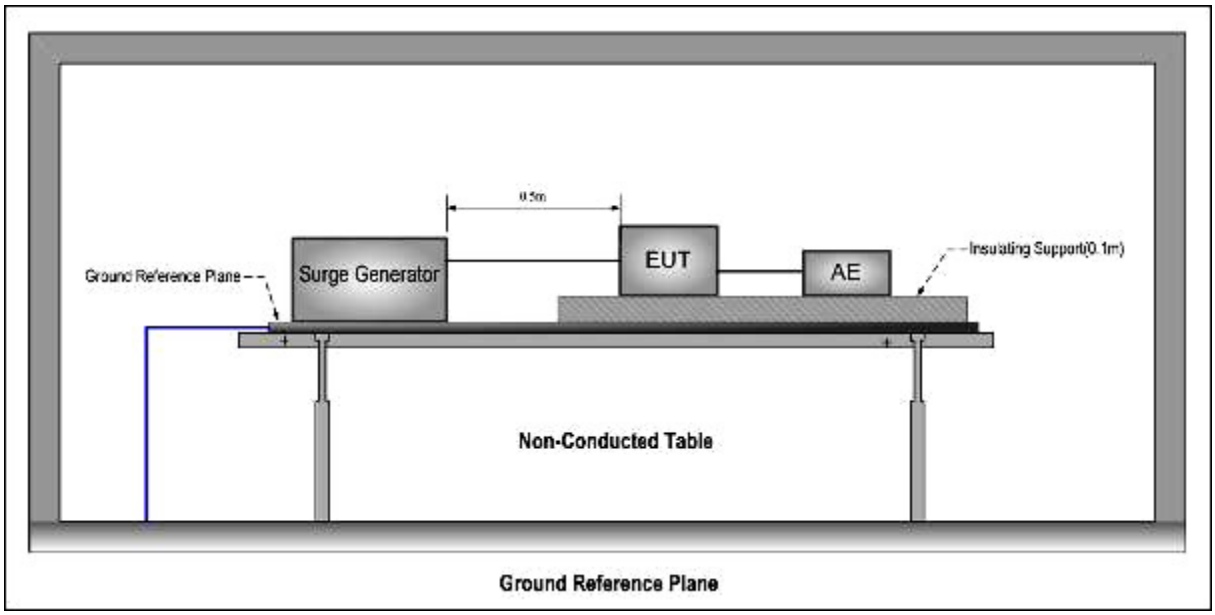
1. The EUT working normal, before the conditioning.
2. Monitor the EUT during the conditioning period and detected no any changes in states, during the conditioning.
3. No degradation in the performance of the EUT was observed, after the conditioning.

7.5 Slow high energy voltage surge

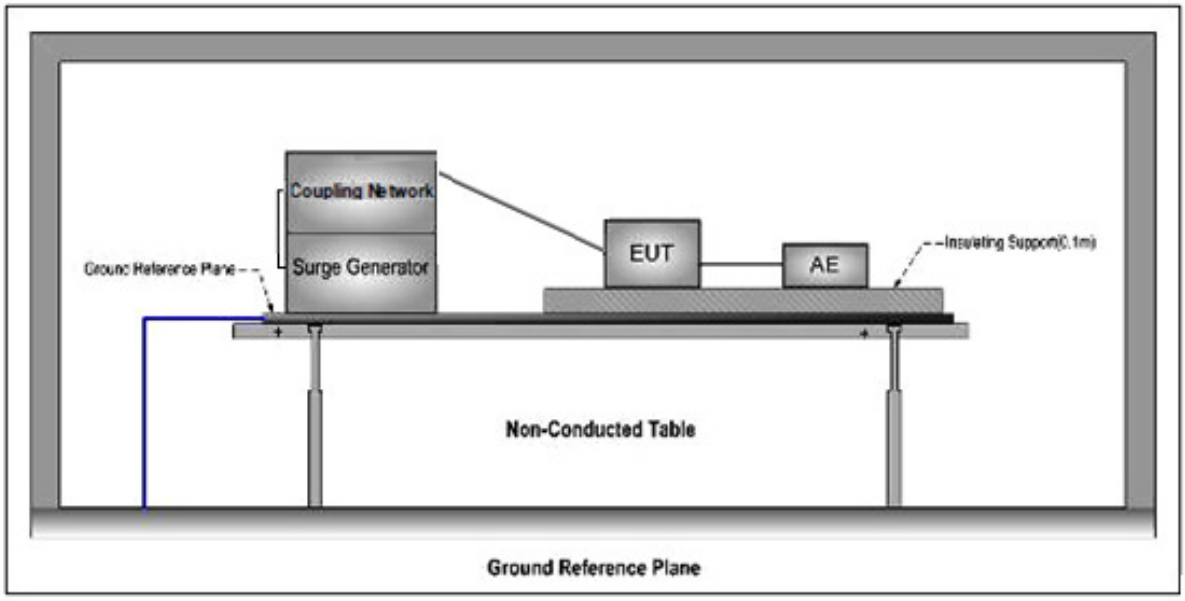
Test Level:	For EN 55024:2010+A1:2015 ±1.0kV Line to Neutral ±2.0kV Line to Earth or Neutral to Earth ± 1.0 kV Line to Ground For EN 50130-4:2011+A1:2014 ±0.5, ±1.0kV Line to Line ±0.5, ±1.0, ±2.0kV Line to PE ±0.5, ±1.0kV Signal ports
Polarity:	Positive & Negative
Generator source impedance:	2Ω on Line to Line, 12Ω for Line to Earth 42Ω on Signal ports
Trigger Mode:	Internal
No. of surges:	5 positive, 5 negative at 0°, 90°, 180°, 270° for AC Mains, 5 positive, 5 negative for Signal ports.
Criteria for compliance:	There shall be no damage, malfunction or change of status due to the conditioning. Flickering of an indicator during the application of the surges is permissable, 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 EN 50130-4:2011+A1:2014)

7.5.1 Test Setup and Procedure

AC port



Signal port



1. The EUT was placed on a ground reference plane(GRP) insulated by an insulating support 0.1 m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2. The 1,2/50 μs surge was to be applied to the EUT power supply terminals via the capacitive coupling network. Decoupling networks were required in order to avoid possible adverse effects on equipment not under test that may be powered by the same lines and to provide sufficient decoupling impedance to the surge wave so that the specified wave may be applied on the lines under test.
3. The power cord between the EUT and the coupling/decoupling network was not exceeding 2 m in length. The interconnection line between the EUT and the coupling/ decoupling network shall not exceed 2 m in length.
4. The EUT was conducted 0.5kV and 1kV test voltage for live to neutral and line to neutral and conducted 0.5kV, 1kV and 2kV test voltage for line to earth and neutral to earth, five positive pulses and five negative pulses each at 0°, 90°, 180° and 270° for a.c. power ports and five positive pulses and five negative surge pulses for d.c. power ports. The test levels were applied on the EUT with a 2 Ω generator source impedance for power supply terminals and 40Ω output impedance for interconnection lines. The tests were done at repetition rate one per minute.

7.5.2 Test Results:

For EN 55024:2010+A1:2015

AC port

Pulse No	Line-Line	Level (kV)	Surge Interval	Phase (deg)	Test Mode	Observation (Performance Criterion)
1–5	L-N	+ 1.0	60 s	0°	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	(A)
6–10	L-N	- 1.0	60 s	0°		(A)
11–15	L-N	+ 1.0	60 s	90°		(A)
16–20	L-N	- 1.0	60 s	90°		(A)
21–25	L-N	+ 1.0	60 s	180°		(A)
26–30	L-N	- 1.0	60 s	180°		(A)
31–35	L-N	+ 1.0	60 s	270°		(A)
36–40	L-N	- 1.0	60 s	270°		(A)
41–45	L-PE	+ 2.0	60 s	0°		(A)
46–50	L-PE	- 2.0	60 s	0°		(A)
51–55	L-PE	+ 2.0	60 s	90°		(A)
56–60	L-PE	- 2.0	60 s	90°		(A)
61–65	L-PE	+ 2.0	60 s	180°		(A)
66–70	L-PE	- 2.0	60 s	180°		(A)
71–75	L-PE	+ 2.0	60 s	270°		(A)
76–80	L-PE	- 2.0	60 s	270°		(A)
81–85	N-PE	+ 2.0	60 s	0°		(A)
86–90	N-PE	- 2.0	60 s	0°		(A)
91–95	N-PE	+ 2.0	60 s	90°		(A)
96–100	N-PE	- 2.0	60 s	90°		(A)
101–105	N-PE	+ 2.0	60 s	180°		(A)
106–110	N-PE	- 2.0	60 s	180°		(A)
111–115	N-PE	+ 2.0	60 s	270°		(A)
116–120	N-PE	- 2.0	60 s	270°		(A)

A: During test, no degradation in the performance of the EUT was observed; After test, no degradation in the performance of the EUT was observed.

Signal port :

Pulse No	Line under test	Matching resistor	Level (kV)	Surge Interval	Test Mode	Observation (Performance Criterion)
1–5	Line-Ground (LAN port, Alarm port.)	42 ohm	+1.0	60s	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	(A)
6–10	Line-Ground (LAN port, Alarm port.)	42 ohm	-1.0	60s		(A)

Pulse No	Line under test	Matching resistor	Level (kV)	Surge Interval	Test Mode	Observation (Performance Criterion)
1–5	Line-Ground (Audio out port, Video in port.)	2 ohm	+1.0	60s	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	(A)
6–10	Line-Ground (Audio out port, Video in port.)	2 ohm	-1.0	60s		(A)

Remarks:

A: No degradation in the performance of the E.U.T. was observed.

The EUT does meet the Surge immunity on telecommunication requirements of Standard.

For EN 50130-4:2011+A1:2014

AC port:

Pulse No	Line-Line	Level (kV)	Surge Interval	Phase (deg)	Test Mode	Observation (Performance Criterion)
1–10	L-N	+0.5, 1.0	60 s	0°	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	Pass
11–20	L-N	-0.5, 1.0	60 s	0°		Pass
21–30	L-N	+0.5, 1.0	60 s	90°		Pass
31–40	L-N	-0.5, 1.0	60 s	90°		Pass
41–50	L-N	+0.5, 1.0	60 s	180°		Pass
51–60	L-N	-0.5, 1.0	60 s	180°		Pass
61–70	L-N	+0.5, 1.0	60 s	270°		Pass
71–80	L-N	-0.5, 1.0	60 s	270°		Pass
81–95	L-PE	+0.5, 1.0, 2.0	60 s	0°		Pass
96–110	L-PE	-0.5, 1.0, 2.0	60 s	0°		Pass
111–125	L-PE	+0.5, 1.0, 2.0	60 s	90°		Pass
126–140	L-PE	-0.5, 1.0, 2.0	60 s	90°		Pass
141–155	L-PE	+0.5, 1.0, 2.0	60 s	180°		Pass
156–170	L-PE	-0.5, 1.0, 2.0	60 s	180°		Pass
171–185	L-PE	+0.5, 1.0, 2.0	60 s	270°		Pass
186–200	L-PE	-0.5, 1.0, 2.0	60 s	270°		Pass
201–215	N-PE	+0.5, 1.0, 2.0	60 s	0°		Pass
216–230	N-PE	-0.5, 1.0, 2.0	60 s	0°		Pass
231–245	N-PE	+0.5, 1.0, 2.0	60 s	90°		Pass
246–260	N-PE	-0.5, 1.0, 2.0	60 s	90°		Pass
261–275	N-PE	+0.5, 1.0, 2.0	60 s	180°		Pass
306–320	N-PE	-0.5, 1.0, 2.0	60 s	180°		Pass
321–335	N-PE	+0.5, 1.0, 2.0	60 s	270°		Pass
336–350	N-PE	-0.5, 1.0, 2.0	60 s	270°		Pass

A: During test, no degradation in the performance of the EUT was observed; After test, no degradation in the performance of the EUT was observed.

Signal port:

Pulse No	Line under test	Matching resistor	Level (kV)	Surge Interval	Test Mode	Observation (Performance Criterion)
1–5	Line-Ground (LAN port, Alarm port.)	42 ohm	+1.0	60s	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	(A)
6–10	Line-Ground (LAN port, Alarm port.)	42 ohm	-1.0	60s		(A)

Pulse No	Line under test	Matching resistor	Level (kV)	Surge Interval	Test Mode	Observation (Performance Criterion)
1–5	Line-Ground (Audio out port, Video in port.)	2 ohm	-0.5, -1.0	60s	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	Pass
6–10	Line-Ground (Audio out port, Video in port.)	2 ohm	+0.5, 1.0	60s		Pass

Test phenomenon description for the EUT:

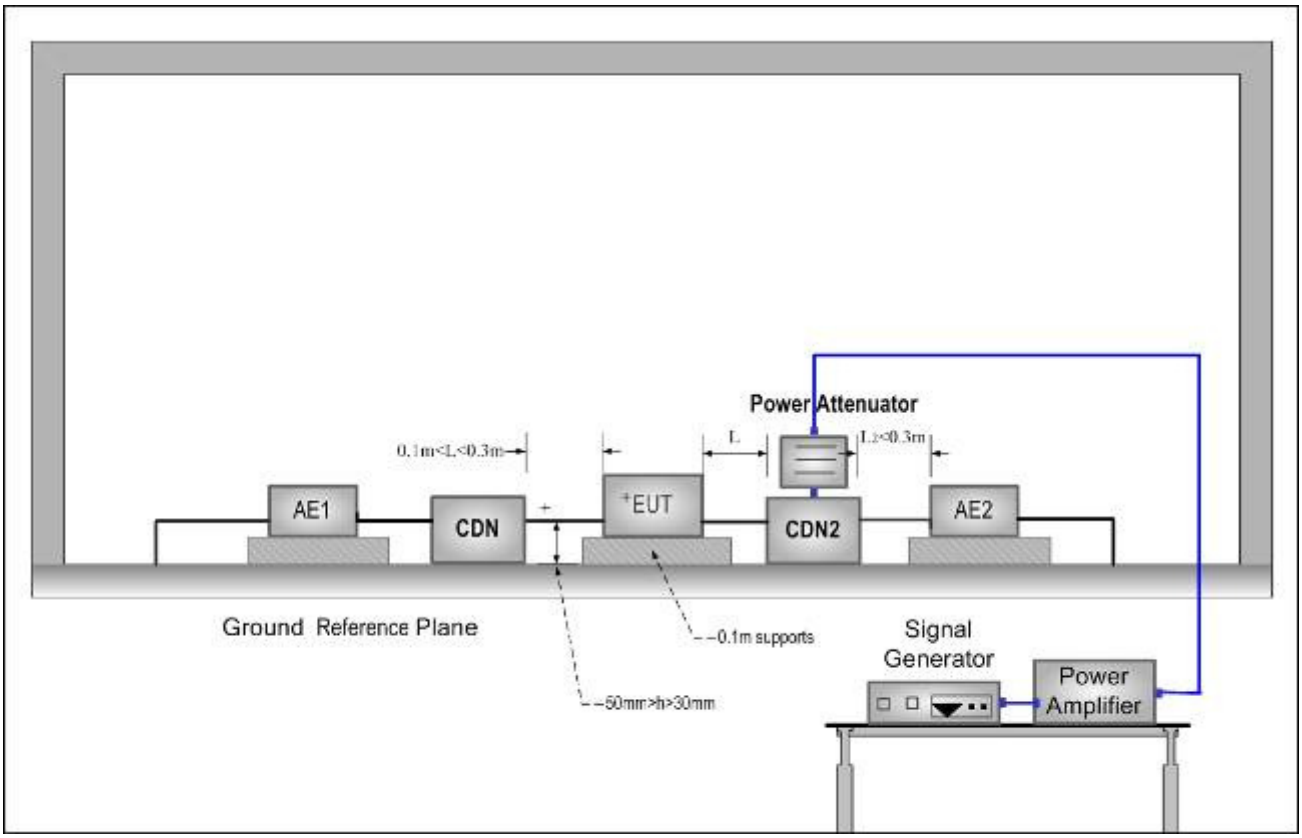
1. The EUT working normal, before the conditioning.
2. Monitor the EUT during the conditioning period and detected no any changes in states, during the conditioning.
3. No degradation in the performance of the EUT was observed, after the conditioning.

7.6 Conducted Immunity

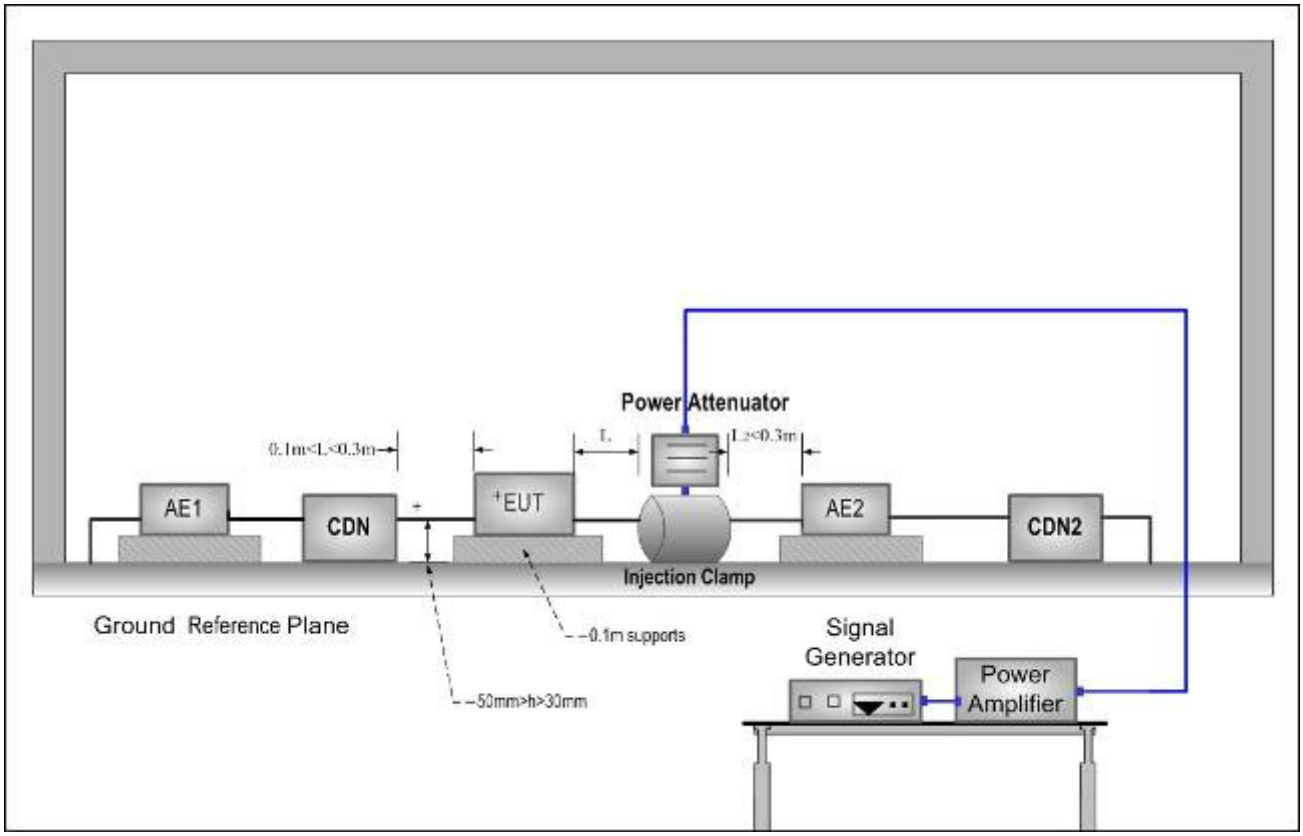
Frequency Range:	For EN 55024:2010+A1:2015 0.15 MHz to 80 MHz For EN 50130-4:2011+A1:2014 0.15 MHz to100 MHz
Test level:	For EN 55024:2010+A1:2015 3.0V r.m.s on AC Ports (unmodulated emf into 150 Ω) & 3.0V r.m.s on Signal Ports (unmodulated emf into 150 Ω) For EN 50130-4:2011+A1:2014 10V r.m.s on AC Ports (unmodulated emf into 150 Ω) & 10V r.m.s on Signal Ports (unmodulated emf into 150 Ω)
Modulation:	80%, 1kHz Amplitude Modulation For EN 55024:2010+A1:2015 80%, 1kHz Amplitude Modulation & 0.5s ON 0.5s OFF Pulse Modulation For EN 50130-4:2011+A1:2014
Criteria for compliance:	There shall be no damage, malfunction or change of status due to the conditioning. Flickering of an indicator during the conditioning is permissable, 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, and no such flickering of indicators occurs at U0 = 130 dBuV.

7.6.1 Test Setup and Procedure

For AC port



For Signal port



1. The EUT was placed on an insulating support of 0.1m height above a ground reference Plane, arranged and connected to satisfy its functional requirement. All cables exiting the EUT was supported at a height of at least 30 mm above the ground reference plane.
2. The coupling and decoupling devices were required, they were located between 0,1 m and 0,3 m from the EUT. This distance was to be measured horizontally from the projection of the EUT on to the ground reference plane to the coupling and decoupling device.
3. Each AE, used with clamp injection, shall be placed on an insulating support 0,1 m above the ground reference plane. A decoupling network shall be installed on each cable between the EUT and AE except the cable under test. All cables connected to each AE, other than those being connected to the EUT, shall be provided with decoupling networks. The decoupling networks connected to each AE (except those on cables between the EUT and AE) shall be applied no further than 0,3 m from the AE. The cable(s) between the AE and the decoupling network (s) or in between the AE and the injection clamp shall not be bundled nor wrapped and shall be kept between 30 mm and 50 mm above the ground reference plane.
4. The frequency range was swept from 150 kHz to 80 MHz, using the signal levels established during the setting process, and with the disturbance signal 80% amplitude modulated with a 1 kHz sine wave, pausing to adjust the RF signal level or to change coupling devices as necessary. Where the frequency was swept incrementally, the step size do not exceed 1% of the preceding frequency value. The dwell time of the amplitude modulated carrier at each frequency was not less than the time necessary for the EUT to be exercised and to respond, and was not less than 0.5 s.
5. If the interface ports, which were intended by the manufacturer to be connected to data cables not longer than 3 m, did not be tested.

7.6.2 Test Results:

For EN 55024:2010+A1:2015

AC Port

Frequency	Line	Test Level	Modulation	Step Size	Dwell Time	Test Mode	Observation (Performance Criterion)
150 kHz to 80 MHz	3 Wires Supply Cable	3.0V r.m.s	80%, 1 kHz Amp. Mod.	1%	3s	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	No Loss of Function (A)

Signal Port

Frequency	Line	Test Level	Modulation	Step Size	Dwell Time	Test Mode	Observation (Performance Criterion)
150 kHz to 80 MHz	Signal Cable (LAN port, Audio in & Audio out port, Video in port.)	3.0V r.m.s	80%, 1 kHz Amp. Mod.	1%	3s	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	No Loss of Function (A)

A: During test, no degradation in the performance of the EUT was observed; After test, no degradation in the performance of the EUT was observed.

The EUT does meet the Conducted Immunity requirements of Standard.

For EN 50130-4:2011+A1:2014

Frequency	Line	Test Level	Modulation	Step Size	Dwell Time	Test Mode	Test Results
150kHz to 100MHz	AC Mains	10Vr.m.s	80%, 1kHz Amp. Mod.	1%	3s	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	Pass
150kHz to 100MHz	AC Mains	10Vr.m.s	0.5s ON, 0.5s OFF P.M. Mod.	1%	3s		Pass
150kHz to 100MHz	Signal ports (LAN port, Audio in & Audio out port, Video in port.)	10Vr.m.s	80%, 1kHz Amp. Mod. Clamp	1%	3s		Pass
150kHz to 100MHz	Signal ports (LAN port, Audio in & Audio out port, Video in port.)	10Vr.m.s	0.5s ON, 0.5s OFF P.M. Mod. Clamp	1%	3s		Pass

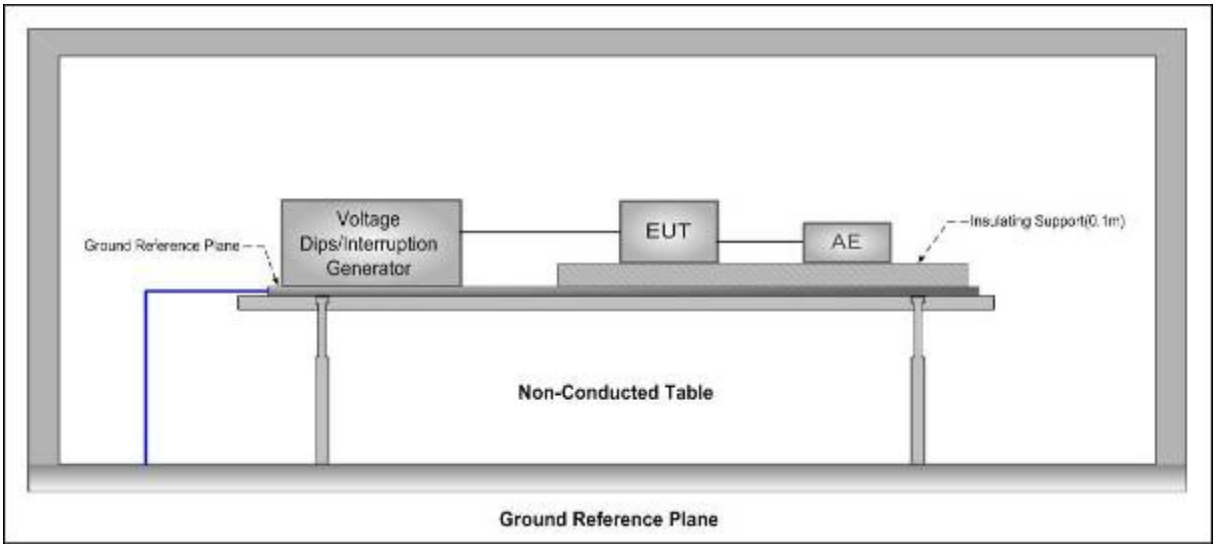
Test phenomenon description for the EUT:

1. The EUT working normal, before the conditioning.
2. Monitor the EUT during the conditioning period and detected ripples in states at signal ports testing, during the conditioning, then could be recovered after test.
3. No degradation in the performance of the EUT was observed, after the conditioning.

7.7 Voltage Dips and Interruptions

Test voltage:	Refer to U_T
Test Level:	For EN 55024:2010+A1:2015 0% of U_T (Supply Voltage) for 0.5 Periods 0% of U_T (Supply Voltage) for 250 Periods 70 % of U_T (Supply Voltage) for 25 Periods For EN 50130-4:2011+A1:2014 0 % UT for 250 period 40 % UT for 10 period 70 % UT for 25 period 80 % UT for 250 period (U_T is the nominal supply voltage.)
No. of Dips / Interruptions:	3 per Level For EN 55024:2010+A1:2015
Criteria:	There shall be no damage, malfunction or change of status due to the conditioning. Flickering of an indicator during the conditioning is permissable, 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 EN 50130-4:2011+A1:2014

7.7.1 Test Setup and Procedure



1. The EUT was placed on a ground reference plane(GRP) insulated by an insulating support 0,1 m thick and the GRP was placed on a 0.8m high wooden table for table-top equipment. For floor standing equipment, the EUT was placed on a 0.1m high wooden support above the GRP.
2. The test was performed with the EUT connected to the test generator with the shortest power supply cable as specified by the EUT manufacturer.
3. The EUT was tested for each selected combination of test level and duration with a sequence of three dips /interruptions with intervals of 10 s minimum. Each representative mode of operation was tested.
4. For EUT with more than one power cord, each power cord was tested individually.

7.7.2 Test Results

For EN 55024:2010+A1:2015

$U_{T=}$ AC 100V & 240V

Test Level % U_T	Phase	Duration of drop out in Periods	No of drop out	Time between drop out	Test Mode	OBSERVATIONS (PERFORMANCE CRITERION)
0	0°,180°	0.5	3	10s	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	(A)
0	0°,180°	250	3	10s		(B)
70	0°,180°	25	3	10s		(B)

Remark:

$U_{T=}$ the nominal supply voltage.

A: During test, no degradation in the performance of the EUT was observed; After test, no degradation in the performance of the EUT was observed.

B: B: During test, the EUT restarted automatically, After test, it could recover automatically after test.

The EUT does meet the Voltage Dips and Interruptions requirements of Standard.

For EN 50130-4:2011+A1:2014

$U_{T=}$ AC 100V & 240V

Test Level % U_T	Phase	Duration of drop out in Periods	No. of drop out	Time between drop out	Test Mode	Test Results
0	0°,180°	250	3	10s	DH-IPC-PFW8601P-A180: Mode;a Mode;b DH-IPC-PFW8800P-A180: Mode;a Mode;b	Pass
40	0°,180°	10	3	10s		Pass
70	0°,180°	25	3	10s		Pass
80	0°,180°	250	3	10s		Pass

Remark:

According to the client's requirement, we used a UPS as ancillary equipment to meet the requirements of this clause during test.

$U_{T=}$ the nominal supply voltage.

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.

8 Photographs (Test Setup For the EUT)

8.1 Conducted Emissions on Mains Terminals Test Setup

DH-IPC-PFW8601P-A180:

DH-IPC-PFW8800P-A180:

8.2 Conducted Emissions on Telecommunication Terminals Test Setup

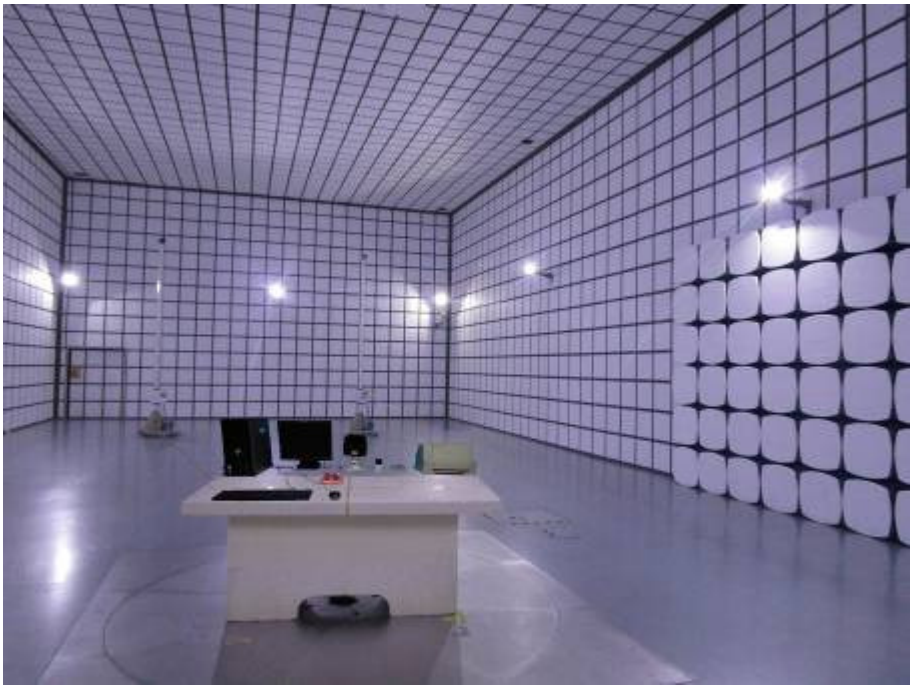
DH-IPC-PFW8601P-A180:

DH-IPC-PFW8800P-A180:

8.3 Radiated Emission Test Setup

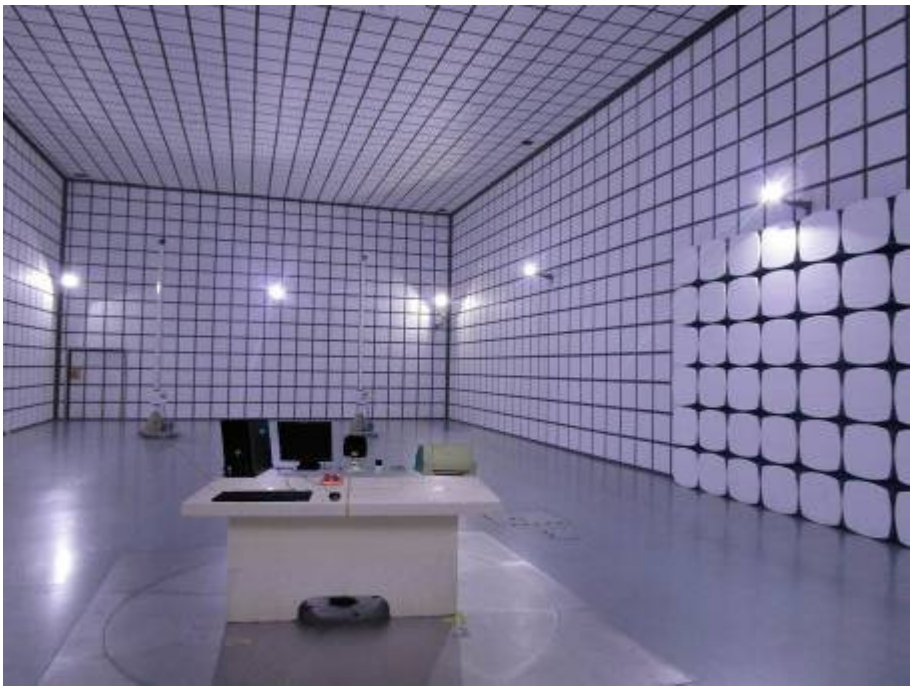
DH-IPC-PFW8601P-A180:

30MHz to 1GHz



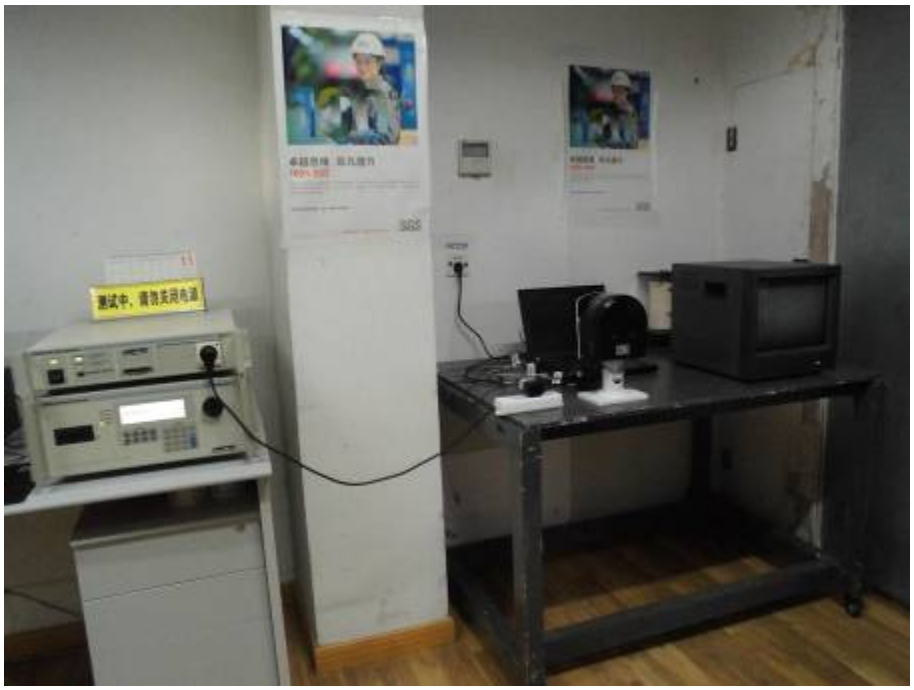
1GHz to 6GHz

DH-IPC-PFW8800P-A180:



8.4 Flicker Test Setup

DH-IPC-PFW8601P-A180:

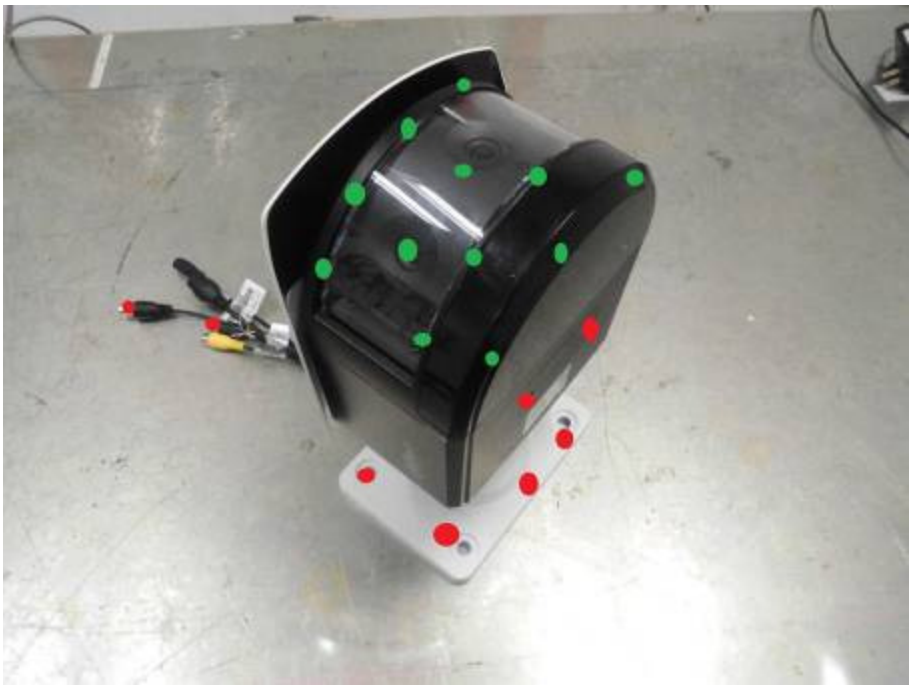


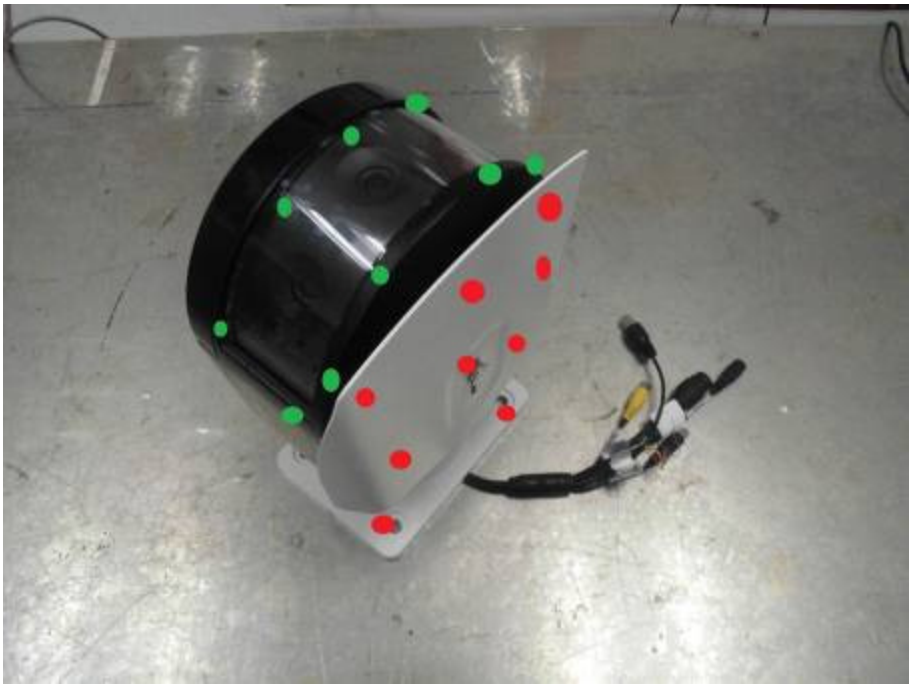
DH-IPC-PFW8800P-A180:

8.5 ESD Test Setup

DH-IPC-PFW8601P-A180:

- Contact discharge
- Air discharge

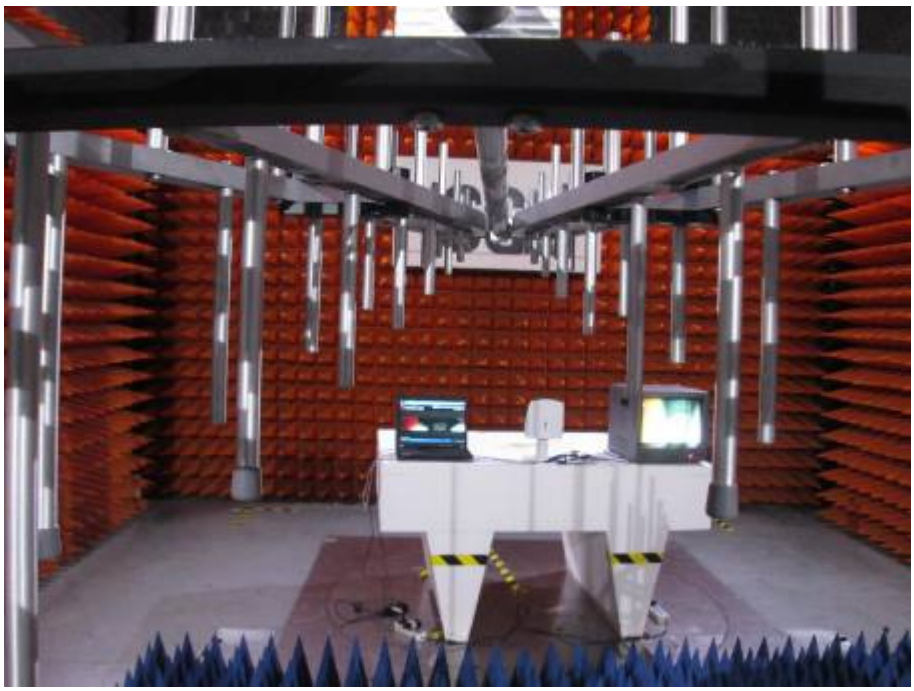




DH-IPC-PFW8800P-A180:

8.6 Radiated Immunity Test Setup

DH-IPC-PFW8601P-A180:



DH-IPC-PFW8800P-A180:

8.7 EFT, Surge, Voltage Dip and Interruptions on Mains Terminals Test Setup

DH-IPC-PFW8601P-A180:

DH-IPC-PFW8800P-A180:

8.8 EFT on Signal Terminals Test Setup

DH-IPC-PFW8601P-A180:

DH-IPC-PFW8800P-A180:

8.9 Surge Terminals Test Setup

8.10 Surge on Signal Terminals Test Setup

DH-IPC-PFW8601P-A180:

DH-IPC-PFW8800P-A180:

8.11 Conducted Immunity on Mains Terminals Test Setup

DH-IPC-PFW8601P-A180:

DH-IPC-PFW8800P-A180:

8.12 Conducted Immunity on Signal Terminals Test Setup

DH-IPC-PFW8601P-A180:

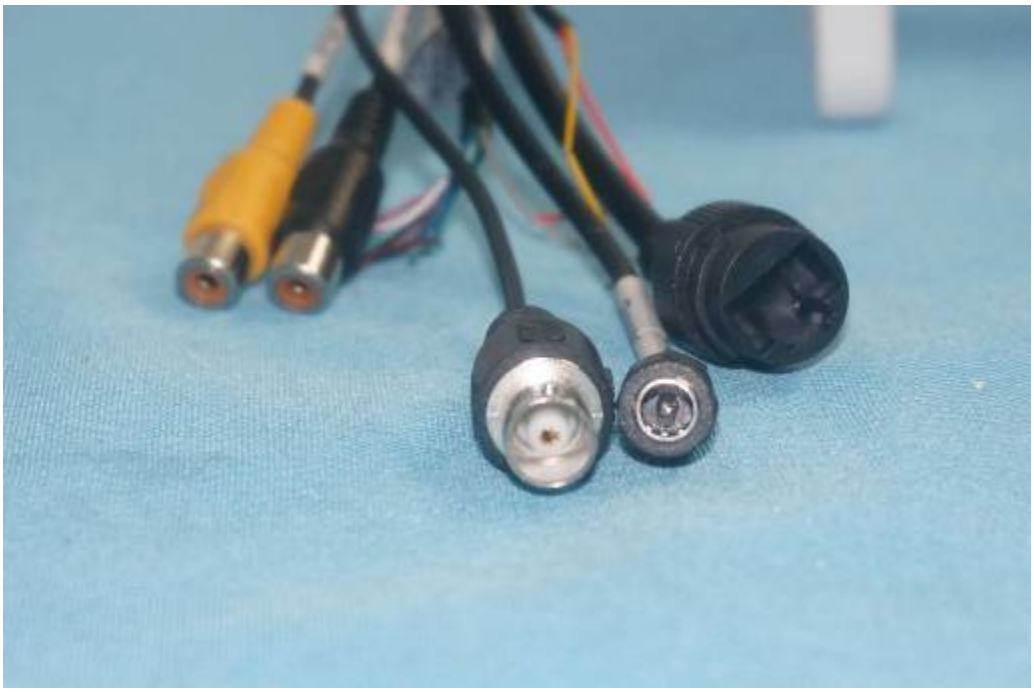
DH-IPC-PFW8800P-A180:

9 EUT Constructional Details

9.1 Exterior of EUT

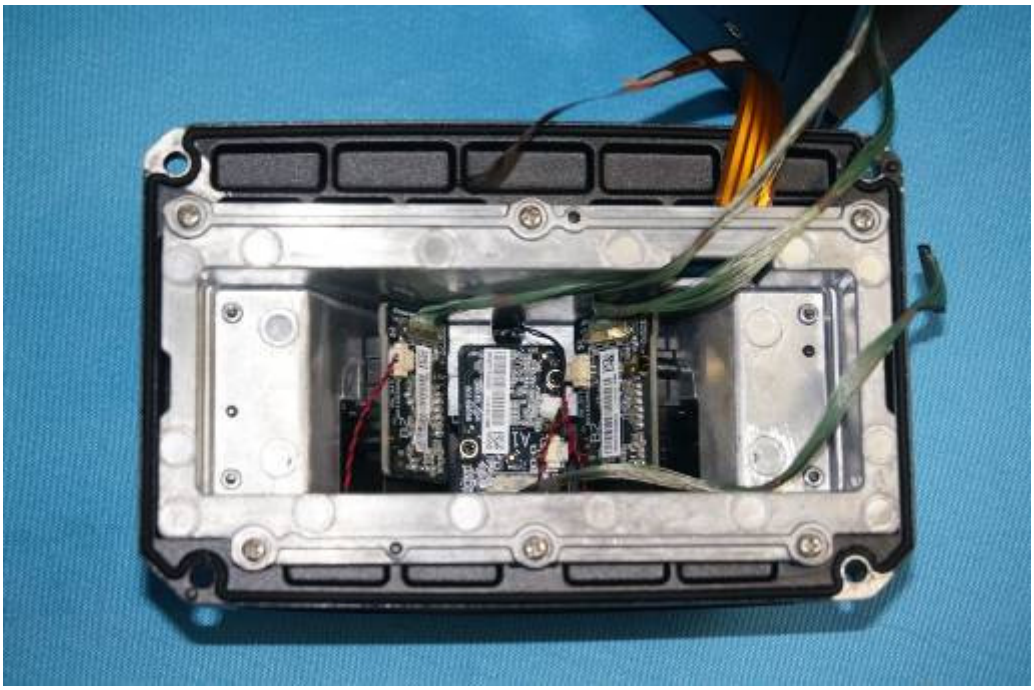
DH-IPC-PFW8601P-A180:

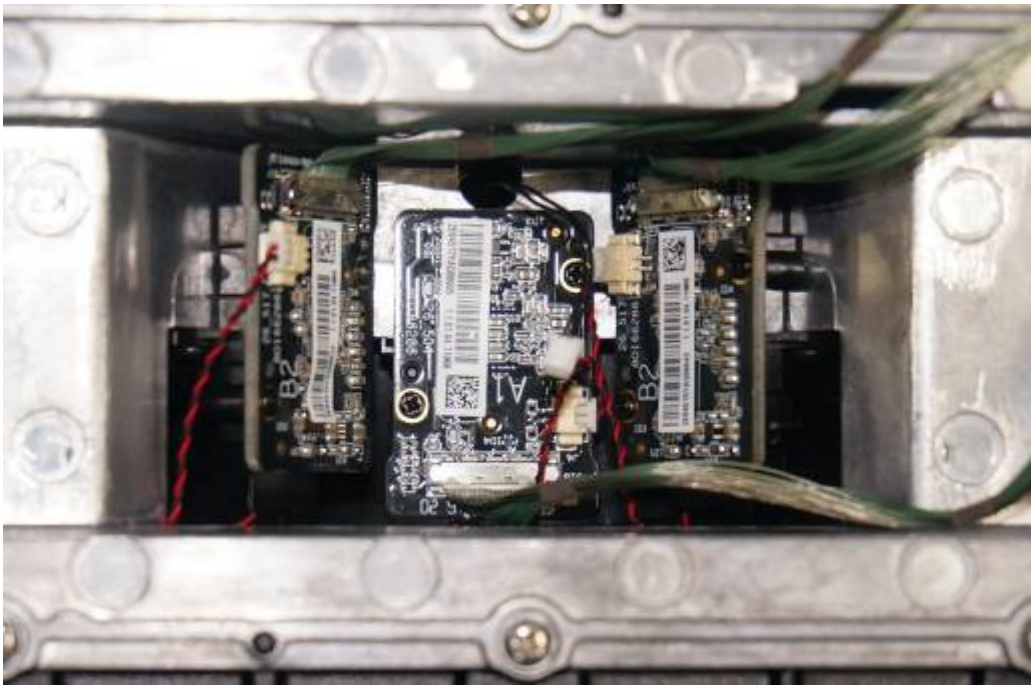
DH-IPC-PFW8800P-A180:



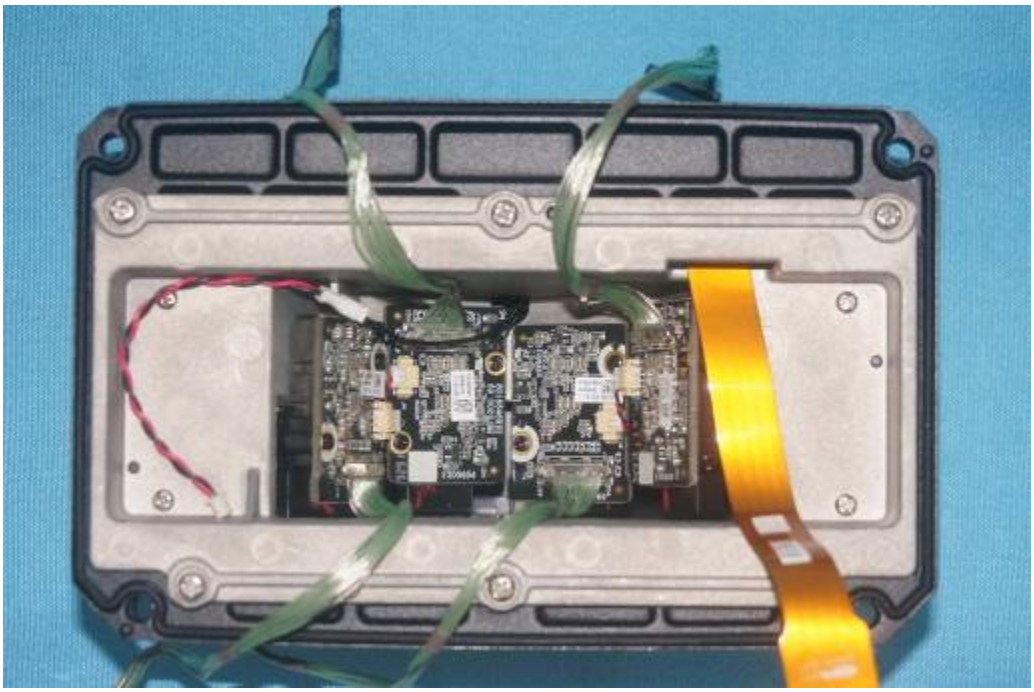
9.2 Interior of EUT

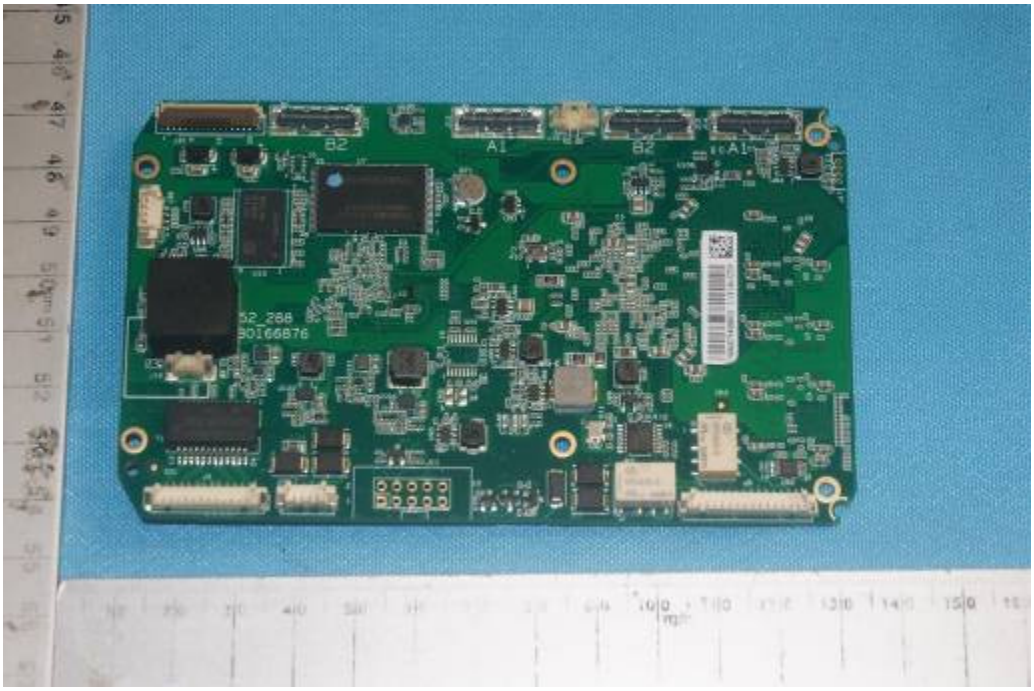
DH-IPC-PFW8601P-A180:

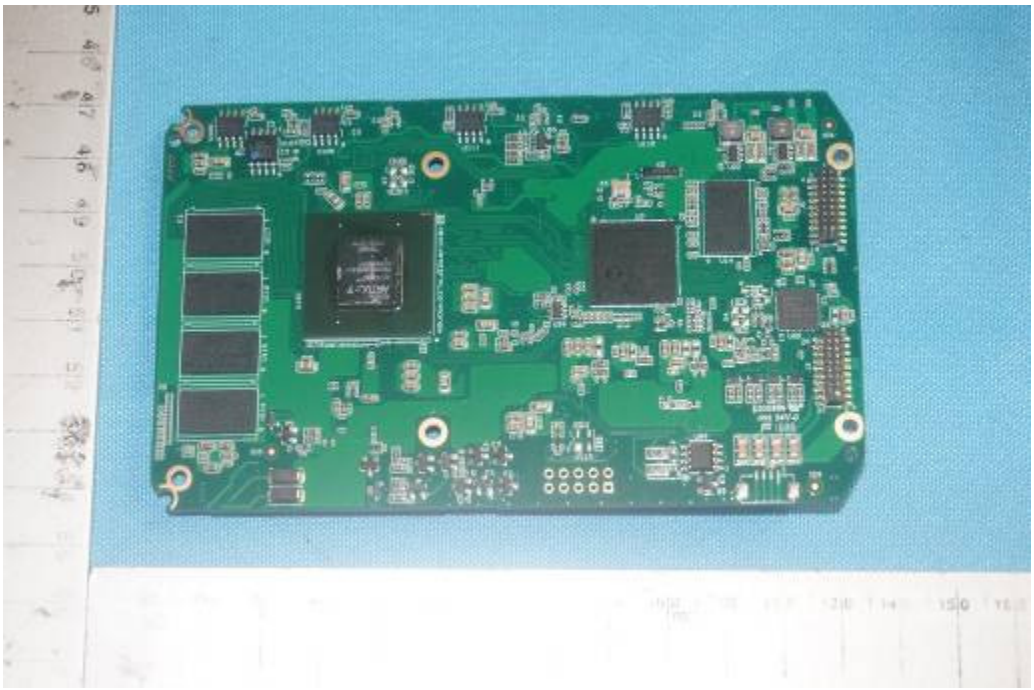


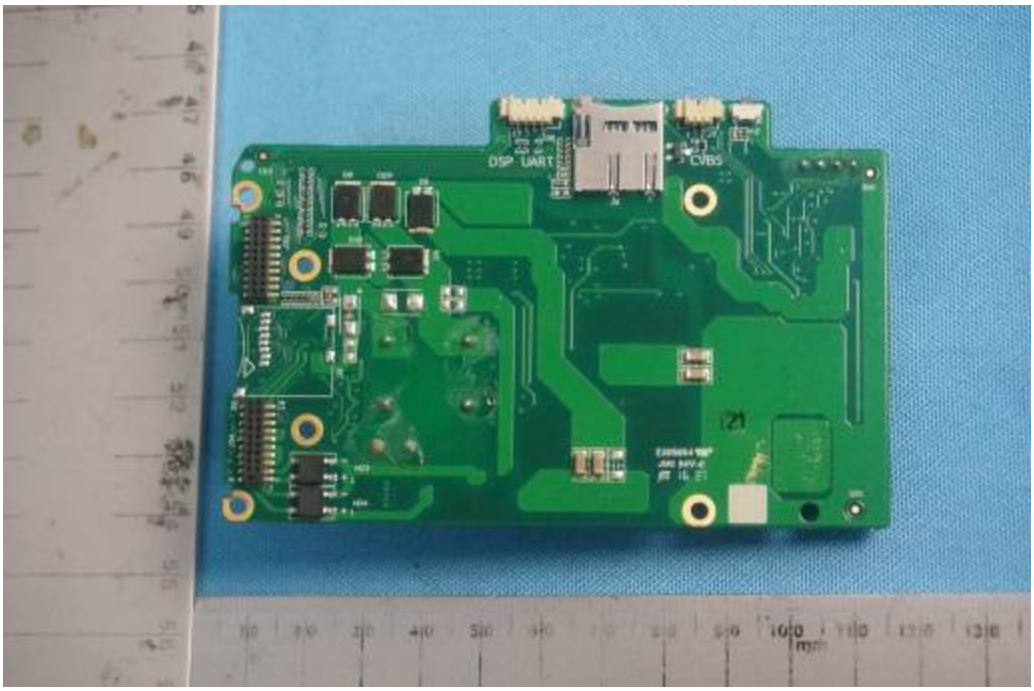


DH-IPC-PFW8800P-A180:









--End of the Report--