



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

588 West Jindu Road, Xinqiao, Songjiang, 201612 Shanghai, China
Telephone: +86 (0) 21 6191 5666
Fax: +86 (0) 21 6191 5678
ee.shanghai@sgs.com

Report No.: SHEM161100731201
Page: 1 of 58

1 Cover Page

TEST REPORT

Application No.:	SHEM1611007312IT
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:	ICES-003 Issue 6: 2016
Date of Receipt:	2016-11-15
Date of Test:	2016-11-18 to 2016-11-22
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.



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

The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

The report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government. All test results in this report can be traceable to National or International Standards.

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at www.sgs.com/terms_and_conditions.htm and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at www.sgs.com/terms_e-document.htm. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only.

2 Test Summary

ELECTROMAGNETIC INTERFERENCE (EMI)				
Test	Test Requirement	Test Method	Class/Severity	Result
Conducted Emission (150kHz to 30MHz)	ICES-003 Issue 6: 2016	ANSI C63.4: 2014	Class B	PASS
Radiated Emission, (30MHz to 1GHz)	ICES-003 Issue 6: 2016	ANSI C63.4: 2014	Class B	PASS
Radiated Emission above 1 GHz	ICES-003 Issue 6: 2016	ANSI C63.4: 2014	Class B	PASS*
<p>Remark: 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: 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 Note3: Only one mode was shown as the test setup photos since all models were same for the test setup.</p>				

3 Contents

1	COVER PAGE	1
2	TEST SUMMARY	2
3	CONTENTS.....	3
4	GENERAL INFORMATION	4
4.1	Client Information.....	4
4.2	Details of E.U.T.	4
4.3	E.U.T Operation Mode.....	4
4.4	E.U.T Operation Environment	4
4.5	Description of Support Units	5
4.6	Deviation from Standards	5
4.7	Abnormalities from Standard Conditions	5
4.8	Modification/Retest Record	5
4.9	Test Location.....	5
4.10	Test Facility.....	6
5	EQUIPMENT LIST	7
6	ELECTROMAGNETIC INTERFERENCE TEST RESULTS.....	9
6.1	Conducted Emissions on Mains Terminals	9
6.2	Radiated Emissions, 30MHz to 1GHz.....	19
6.3	Radiated Emissions, 1GHz to 6GHz.....	29
7	PHOTOGRAPHS (TEST SETUP FOR THE EUT).....	39
7.1	Conducted Emissions on Mains Terminals Test Setup.....	39
7.2	Radiated Emission Test Setup.....	41
8	EUT CONSTRUCTIONAL DETAILS	45
8.1	Exterior of EUT	45
8.2	Interior of EUT	50-58

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: AC 24V, 2A; POE 48V, 500mA DH-IPC-PFW8800P-A180: AC 24V, 2A; POE 48V, 500mA
Test Voltage:	AC 120V, 60Hz

4.3 E.U.T Operation Mode

Functions/Modes:	DH-IPC-PFW8601P-A180: a; AC 24Vmode b; POE model DH-IPC-PFW8800P-A180: a; AC 24Vmode 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.

Description	Manufacturer	Model No.
AC Adapter (120V)	JS	JS-24030
PoE Adapter	PowerDsine	PD-9001GR/AC
Monitor 2	JVC	TM-A170G
Laptop	LENOVO	R400

4.6 Deviation from Standards

None.

4.7 Abnormalities from Standard Conditions

None.

4.8 Modification/Retest Record

None.

4.9 Test Location

All tests were performed at:

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

4.10 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.

5 Equipment list

Conducted Emission

Item	Test Equipment	Manufacturer	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
4	SCHWARZBECK CAT5 8158	SCHWARZBECK	8-Wire ISN CAT 5	CAT5-8158-0061	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-F011 8-G40-BZ 4-CSS(F)	10001	2016-01-14	2017-01-13
6	Low noise amplifier	TESEQ	LNA6900	71033	2016-01-14	2017-01-13

General 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, F3040201 53,20101 201FS10 0A6K,201 106117	2016-08-03	2017-08-02
3	Digital Multimeter	FLUKE	17B	19720439	2016-01-14	2017-01-13
4	Autoformer regulator	Guangzhou bao de	TDGC2-5K VA-	/	/	/
5	CLAMP METER	FLUKE	316	250303097 1	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)

Limit:

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; AC 24V mode: Supply by AC24V adapter , keep EUT monitoring continual .

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

DH-IPC-PFW8800P-A180:

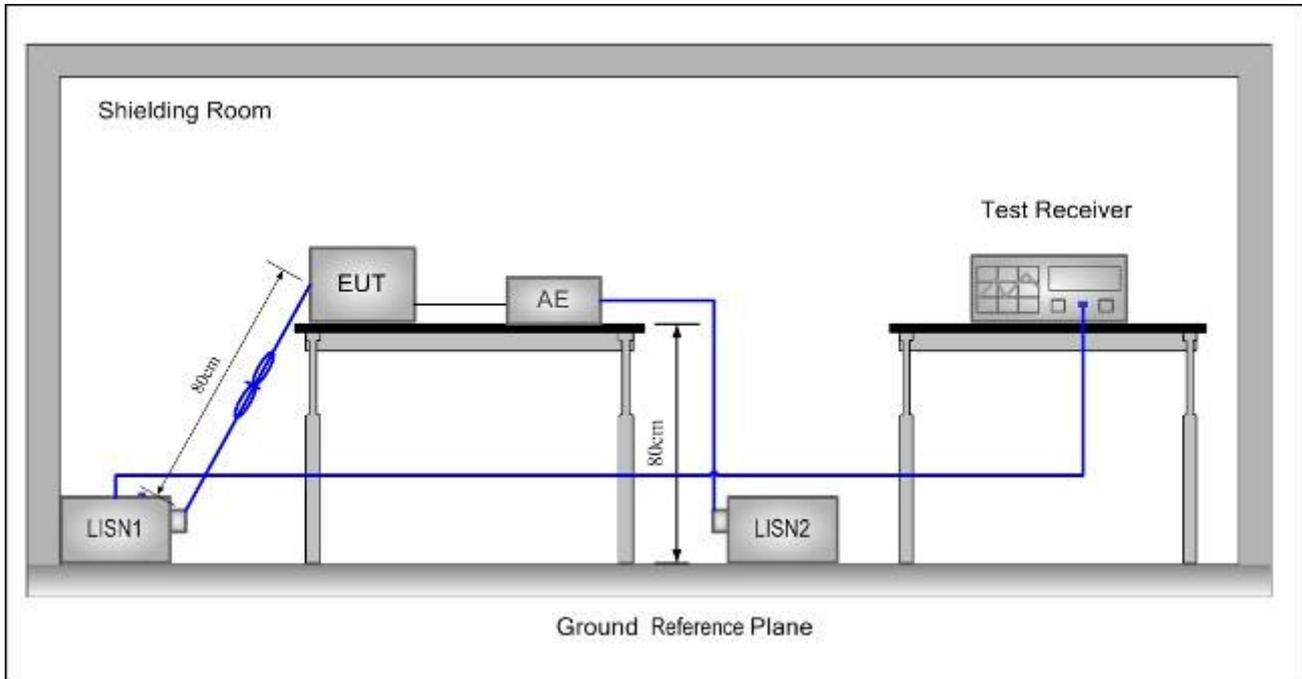
a; AC 24V mode: Supply by AC24V adapter , keep EUT monitoring continual .

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

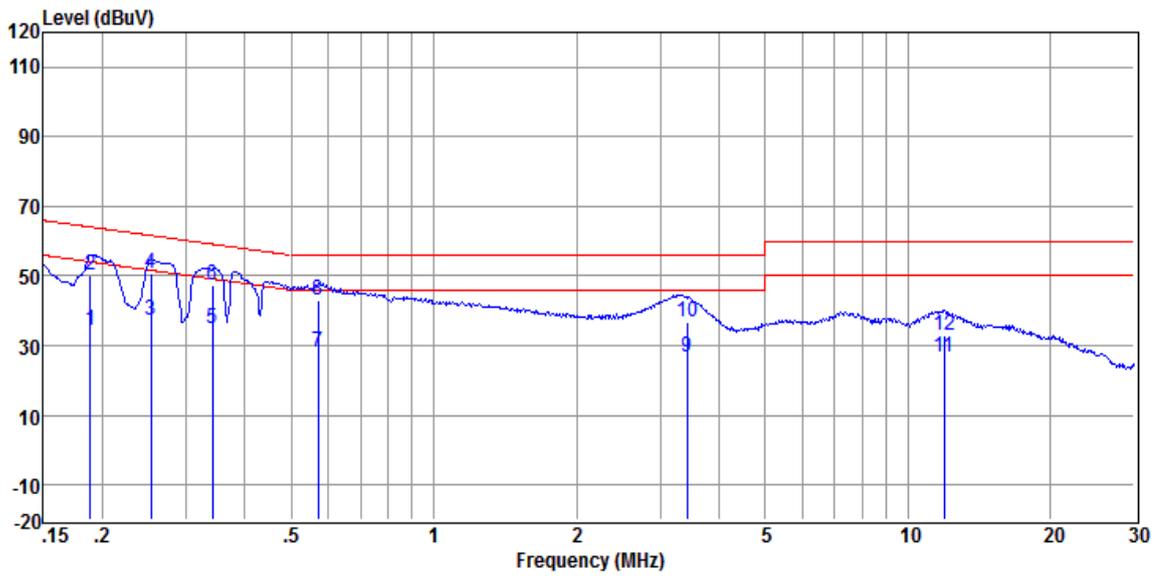


1. The mains terminal disturbance voltage was measured with the EUT in a shielded room.
2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the 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

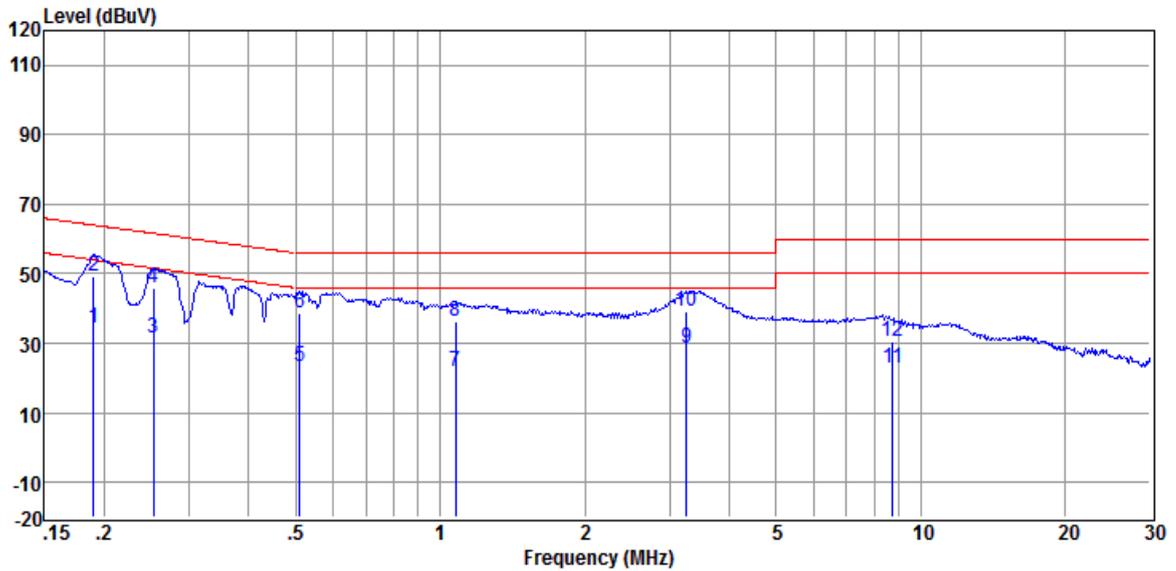
DH-IPC-PFW8601P-A180:

Mode:a;Live Line:



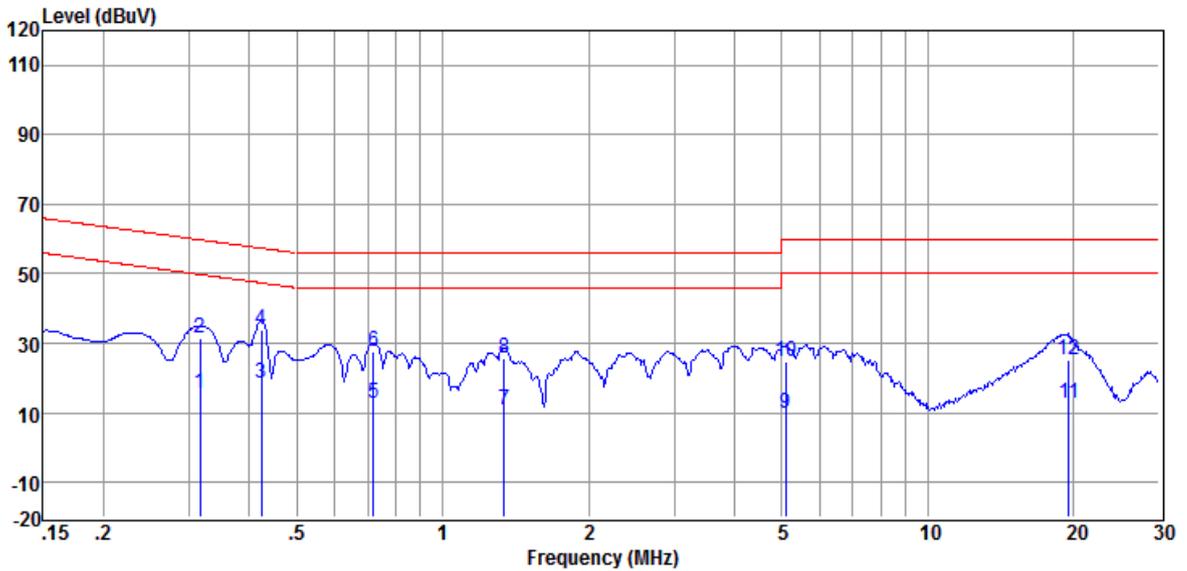
Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)	
1	0.188	24.16	0.08	10.15	34.39	54.11	-19.72	Average
2	0.188	40.18	0.08	10.15	50.41	64.11	-13.70	QP
3	0.253	27.11	0.09	10.16	37.36	51.64	-14.28	Average
4	0.253	40.43	0.09	10.16	50.68	61.64	-10.96	QP
5	0.341	24.77	0.09	10.16	35.02	49.18	-14.16	Average
6	0.341	37.05	0.09	10.16	47.30	59.18	-11.88	QP
7	0.570	18.04	0.10	10.17	28.31	46.00	-17.69	Average
8	0.570	32.65	0.10	10.17	42.92	56.00	-13.08	QP
9	3.417	16.43	0.12	10.20	26.75	46.00	-19.25	Average
10	3.417	26.66	0.12	10.20	36.98	56.00	-19.02	QP
11	11.933	16.18	0.20	10.23	26.61	50.00	-23.39	Average
12	11.933	22.55	0.20	10.23	32.98	60.00	-27.02	QP

Mode:a:Neutral Line:



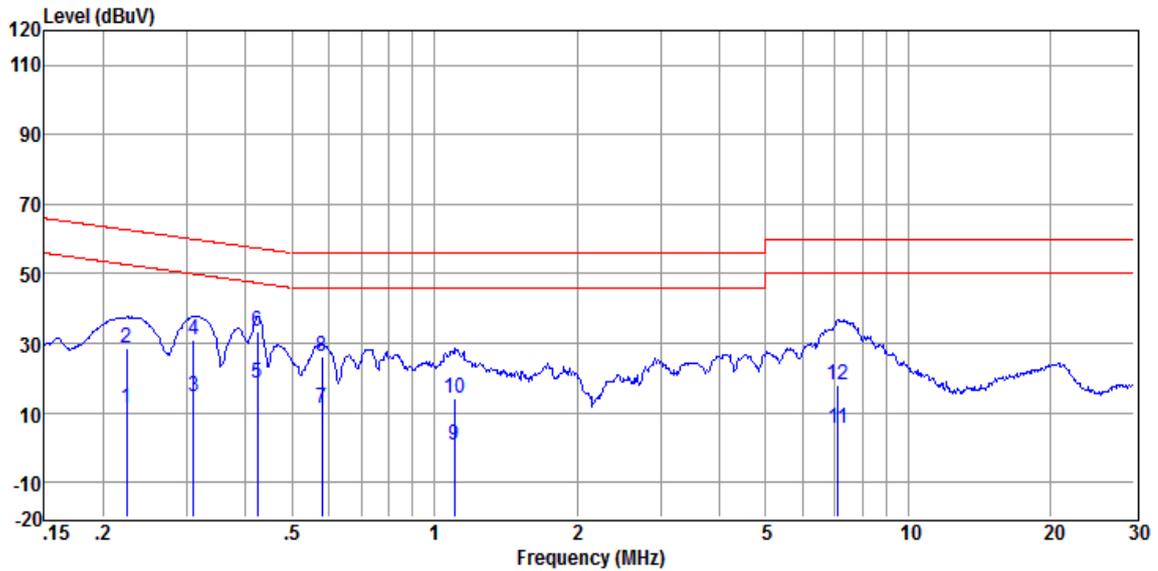
Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)	
1	0.190	24.40	0.00	10.15	34.55	54.02	-19.47	Average
2	0.190	38.95	0.00	10.15	49.10	64.02	-14.92	QP
3	0.253	21.14	0.00	10.16	31.30	51.64	-20.34	Average
4	0.253	35.65	0.00	10.16	45.81	61.64	-15.83	QP
5	0.510	13.23	0.00	10.17	23.40	46.00	-22.60	Average
6	0.510	28.64	0.00	10.17	38.81	56.00	-17.19	QP
7	1.077	11.62	0.00	10.18	21.80	46.00	-24.20	Average
8	1.077	26.18	0.00	10.18	36.36	56.00	-19.64	QP
9	3.258	18.33	0.00	10.20	28.53	46.00	-17.47	Average
10	3.258	28.81	0.00	10.20	39.01	56.00	-16.99	QP
11	8.730	12.71	0.00	10.25	22.96	50.00	-27.04	Average
12	8.730	20.34	0.00	10.25	30.59	60.00	-29.41	QP

Mode:b;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	0.317	5.50	0.09	10.16	15.75	49.80	-34.05	Average
2	0.317	21.23	0.09	10.16	31.48	59.80	-28.32	QP
3	0.424	8.25	0.10	10.17	18.52	47.37	-28.85	Average
4	0.424	23.52	0.10	10.17	33.79	57.37	-23.58	QP
5	0.720	2.39	0.10	10.17	12.66	46.00	-33.34	Average
6	0.720	17.25	0.10	10.17	27.52	56.00	-28.48	QP
7	1.338	0.75	0.08	10.18	11.01	46.00	-34.99	Average
8	1.338	15.46	0.08	10.18	25.72	56.00	-30.28	QP
9	5.085	-0.41	0.15	10.25	9.99	50.00	-40.01	Average
10	5.085	14.27	0.15	10.25	24.67	60.00	-35.33	QP
11	19.532	2.11	0.25	10.35	12.71	50.00	-37.29	Average
12	19.532	14.62	0.25	10.35	25.22	60.00	-34.78	QP

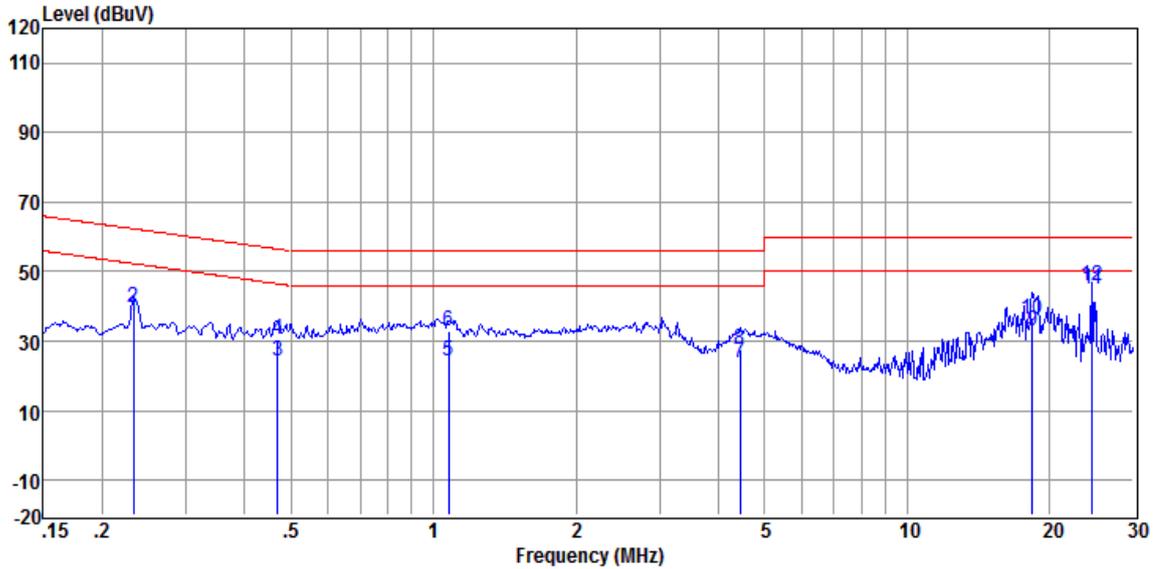
Mode:b:Neutral Line:



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)	
1	0.224	1.09	0.05	10.15	11.29	52.66	-41.37	Average
2	0.224	18.20	0.05	10.15	28.40	62.66	-34.26	QP
3	0.310	4.59	0.05	10.16	14.80	49.97	-35.17	Average
4	0.310	20.57	0.05	10.16	30.78	59.97	-29.19	QP
5	0.424	8.21	0.04	10.17	18.42	47.37	-28.95	Average
6	0.424	23.38	0.04	10.17	33.59	57.37	-23.78	QP
7	0.579	0.98	0.04	10.17	11.19	46.00	-34.81	Average
8	0.579	15.87	0.04	10.17	26.08	56.00	-29.92	QP
9	1.100	-9.43	0.05	10.18	0.80	46.00	-45.20	Average
10	1.100	3.99	0.05	10.18	14.22	56.00	-41.78	QP
11	7.100	-5.13	0.19	10.28	5.34	50.00	-44.66	Average
12	7.100	7.35	0.19	10.28	17.82	60.00	-42.18	QP

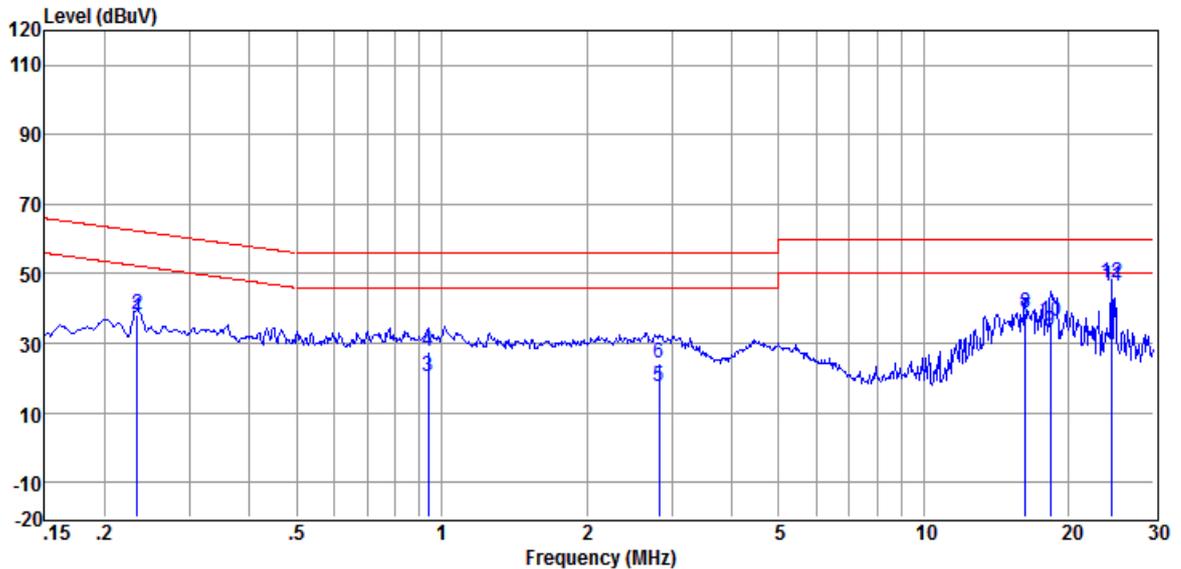
DH-IPC-PFW8800P-A180:

Mode;a:Live Line:



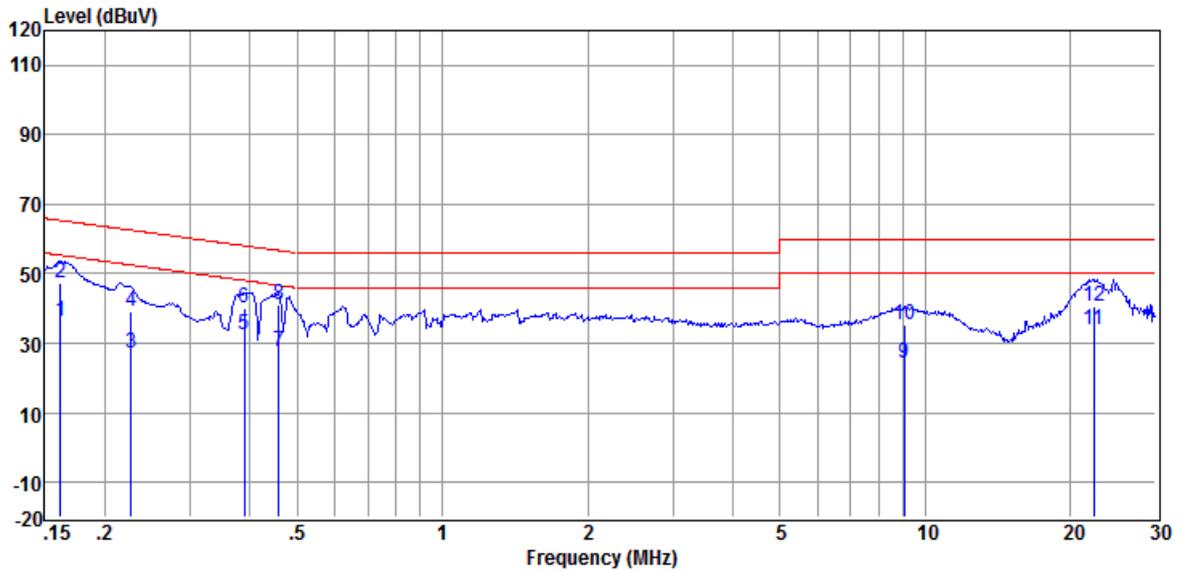
Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)	
1	0.233	26.77	0.09	10.16	37.02	52.35	-15.33	Average
2	0.233	29.36	0.09	10.16	39.61	62.35	-22.74	QP
3	0.469	14.13	0.10	10.17	24.40	46.54	-22.14	Average
4	0.469	20.35	0.10	10.17	30.62	56.54	-25.92	QP
5	1.077	13.78	0.08	10.18	24.04	46.00	-21.96	Average
6	1.077	22.51	0.08	10.18	32.77	56.00	-23.23	QP
7	4.430	13.25	0.14	10.23	23.62	46.00	-22.38	Average
8	4.430	17.47	0.14	10.23	27.84	56.00	-28.16	QP
9	18.366	22.26	0.24	10.33	32.83	50.00	-17.17	Average
10	18.366	25.72	0.24	10.33	36.29	60.00	-23.71	QP
11	24.576	33.97	0.39	10.42	44.78	50.00	-5.22	Average
12	24.576	34.89	0.39	10.42	45.70	60.00	-14.30	QP

Mode;a:Neutral Line:



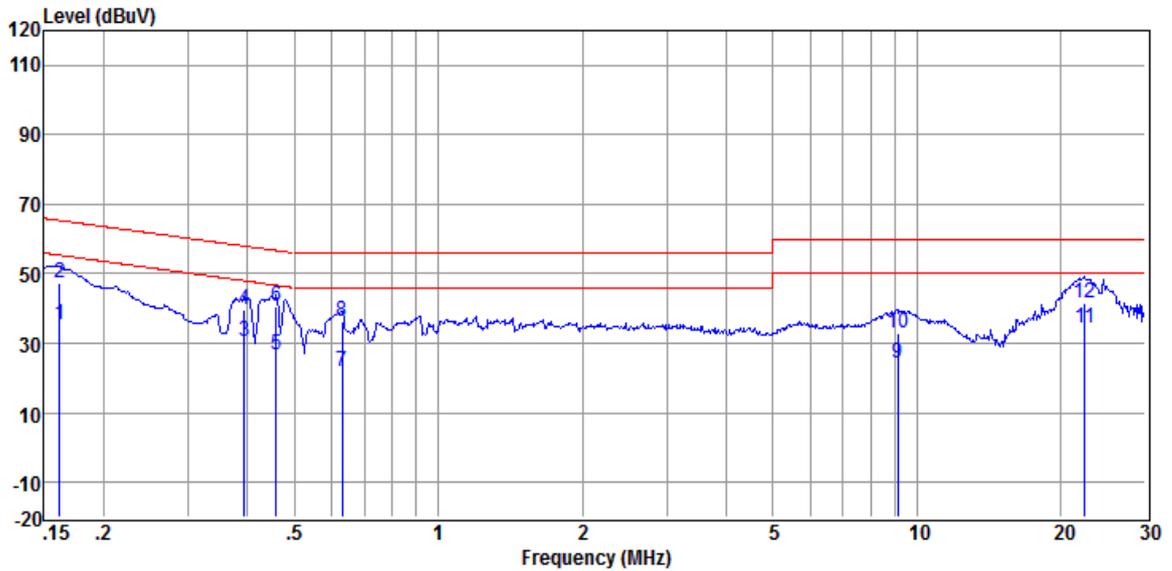
Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)	
1	0.234	26.90	0.05	10.16	37.11	52.30	-15.19	Average
2	0.234	28.10	0.05	10.16	38.31	62.30	-23.99	QP
3	0.938	10.28	0.05	10.18	20.51	46.00	-25.49	Average
4	0.938	17.42	0.05	10.18	27.65	56.00	-28.35	QP
5	2.824	7.29	0.11	10.20	17.60	46.00	-28.40	Average
6	2.824	14.08	0.11	10.20	24.39	56.00	-31.61	QP
7	16.226	26.70	0.27	10.30	37.27	50.00	-12.73	Average
8	16.226	28.28	0.27	10.30	38.85	60.00	-21.15	QP
9	18.302	22.59	0.29	10.33	33.21	50.00	-16.79	Average
10	18.302	25.88	0.29	10.33	36.50	60.00	-23.50	QP
11	24.576	35.52	0.37	10.42	46.31	50.00	-3.69	Average
12	24.576	36.42	0.37	10.42	47.21	60.00	-12.79	QP

Mode;b: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	0.162	25.88	0.06	10.15	36.09	55.38	-19.29	Average
2	0.162	37.30	0.06	10.15	47.51	65.38	-17.87	QP
3	0.227	16.87	0.09	10.15	27.11	52.57	-25.46	Average
4	0.227	28.73	0.09	10.15	38.97	62.57	-23.60	QP
5	0.389	22.22	0.10	10.16	32.48	48.08	-15.60	Average
6	0.389	30.08	0.10	10.16	40.34	58.08	-17.74	QP
7	0.459	17.21	0.10	10.17	27.48	46.71	-19.23	Average
8	0.459	31.00	0.10	10.17	41.27	56.71	-15.44	QP
9	9.059	13.69	0.18	10.22	24.09	50.00	-25.91	Average
10	9.059	24.71	0.18	10.22	35.11	60.00	-24.89	QP
11	22.298	23.08	0.32	10.39	33.79	50.00	-16.21	Average
12	22.298	29.95	0.32	10.39	40.66	60.00	-19.34	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	24.96	0.05	10.15	35.16	55.38	-20.22	Average
2	0.162	37.03	0.05	10.15	47.23	65.38	-18.15	QP
3	0.393	20.51	0.04	10.16	30.71	47.99	-17.28	Average
4	0.393	29.34	0.04	10.16	39.54	57.99	-18.45	QP
5	0.459	16.27	0.04	10.17	26.48	46.71	-20.23	Average
6	0.459	30.27	0.04	10.17	40.48	56.71	-16.23	QP
7	0.630	11.68	0.05	10.17	21.90	46.00	-24.10	Average
8	0.630	26.28	0.05	10.17	36.50	56.00	-19.50	QP
9	9.107	13.67	0.20	10.21	24.08	50.00	-25.92	Average
10	9.107	22.57	0.20	10.21	32.98	60.00	-27.02	QP
11	22.416	23.78	0.34	10.39	34.51	50.00	-15.49	Average
12	22.416	30.89	0.34	10.39	41.62	60.00	-18.38	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 Radiated Emissions, 30MHz to 1GHz

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

Limit:

For 3m

Frequency range (MHz)	Quasi-peak limits (dB (μV/m))
30 to 88	40
88 to 216	43.5
216 to 960	46
Above 960	54

Note: At transitional frequencies the lower limit applies.

6.2.1 E.U.T. Operation

Test mode: DH-IPC-PFW8601P-A180:

a; AC 24V mode: Supply by AC24V adapter , keep EUT monitoring continual .

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

DH-IPC-PFW8800P-A180:

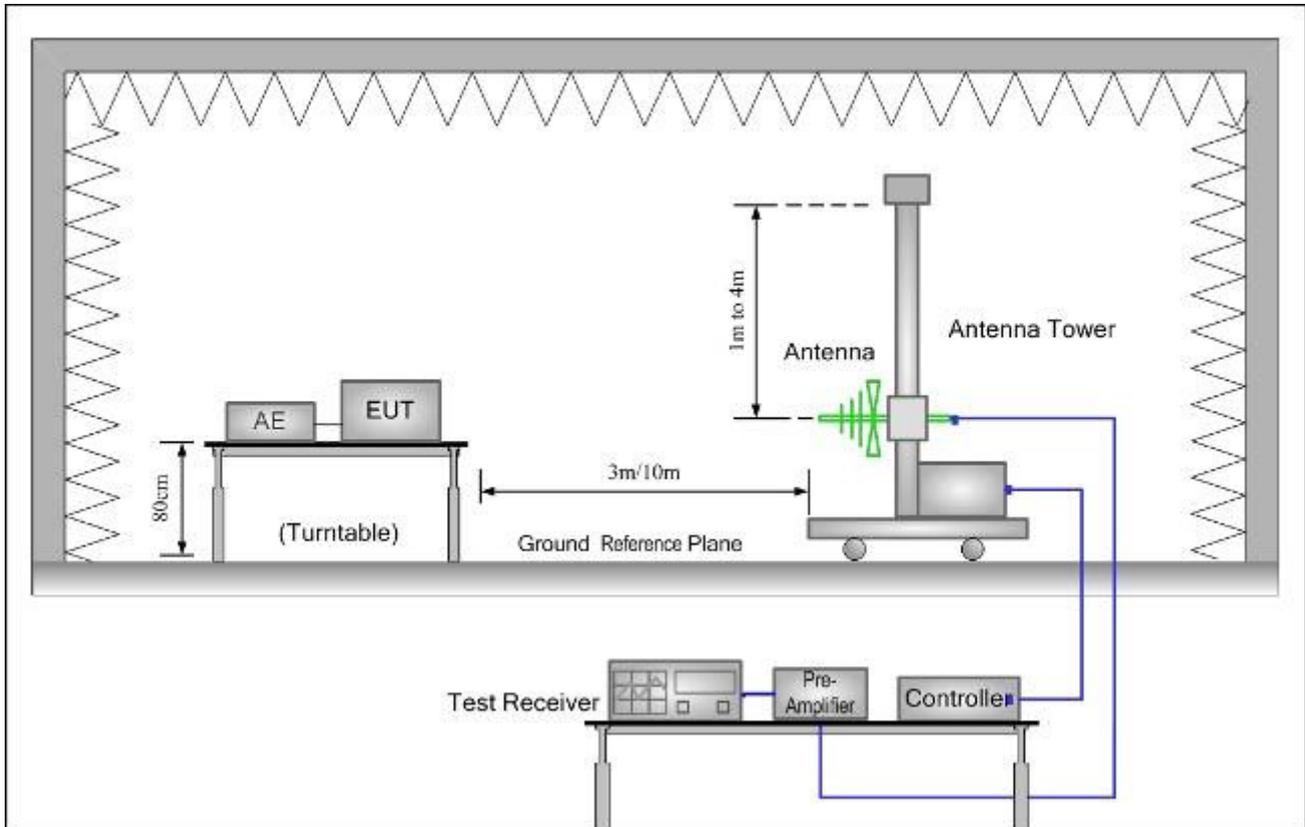
a; AC 24V mode: Supply by AC24V adapter , keep EUT monitoring continual .

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.

6.2.2 Test Setup and Procedure

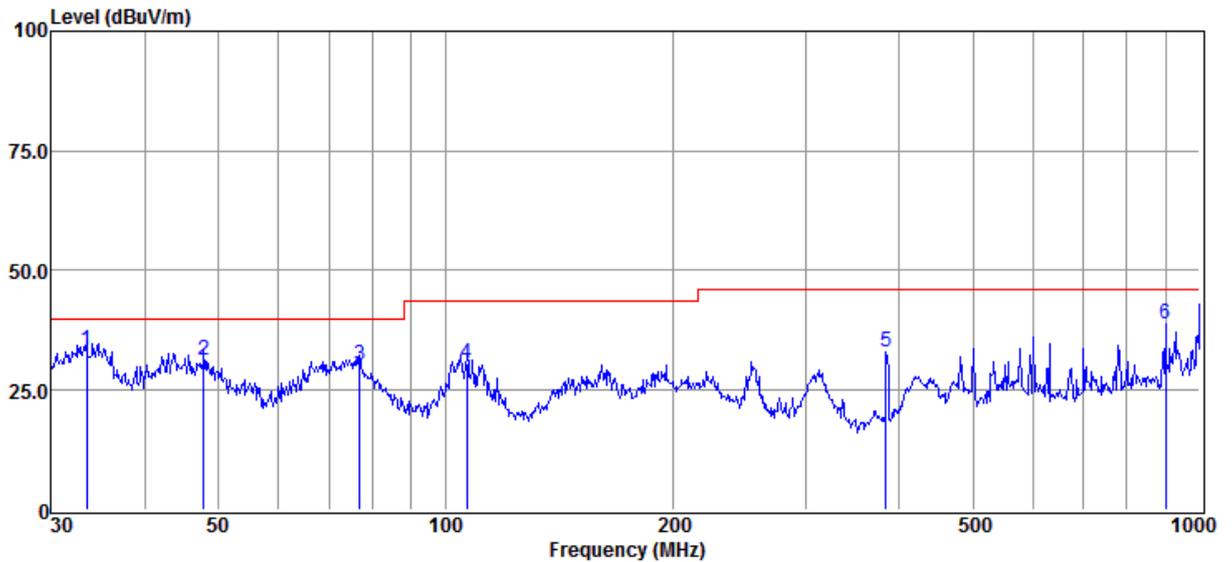


1. The radiated emissions test was conducted in a semi-anechoic chamber.
2. The EUT was connected to AC power source through a mains power outlet which was bonded to the ground reference plane; The mains cables shall drape to the ground reference plane.
3. The tabletop EUT was placed upon a non-metallic 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.

6.2.3 Measurement Data

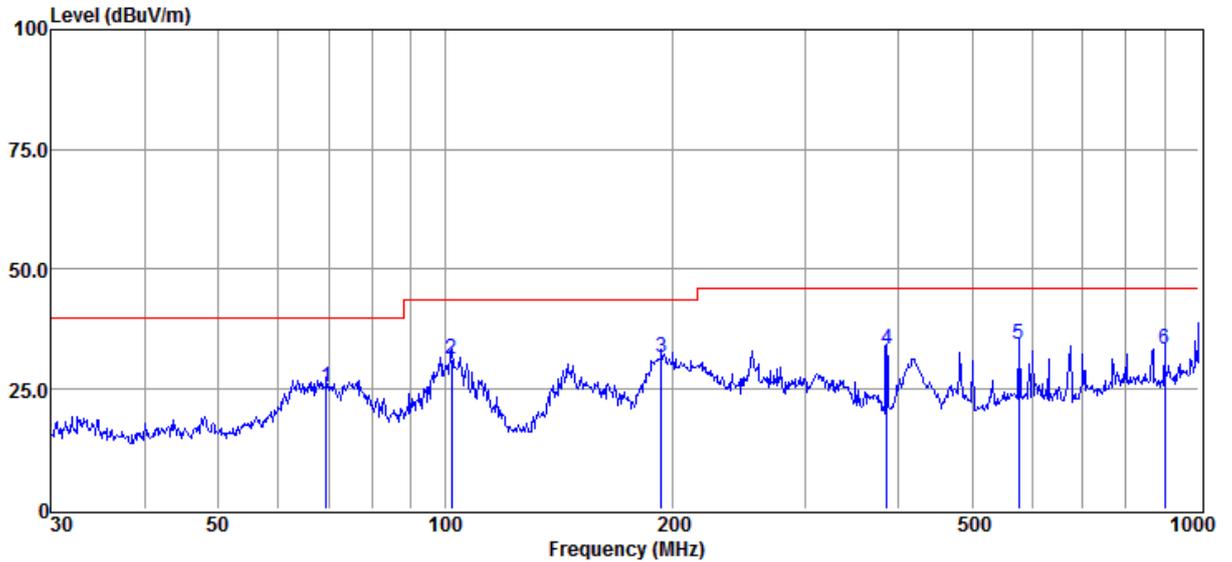
DH-IPC-PFW8601P-A180:

Mode:a;Vertical:



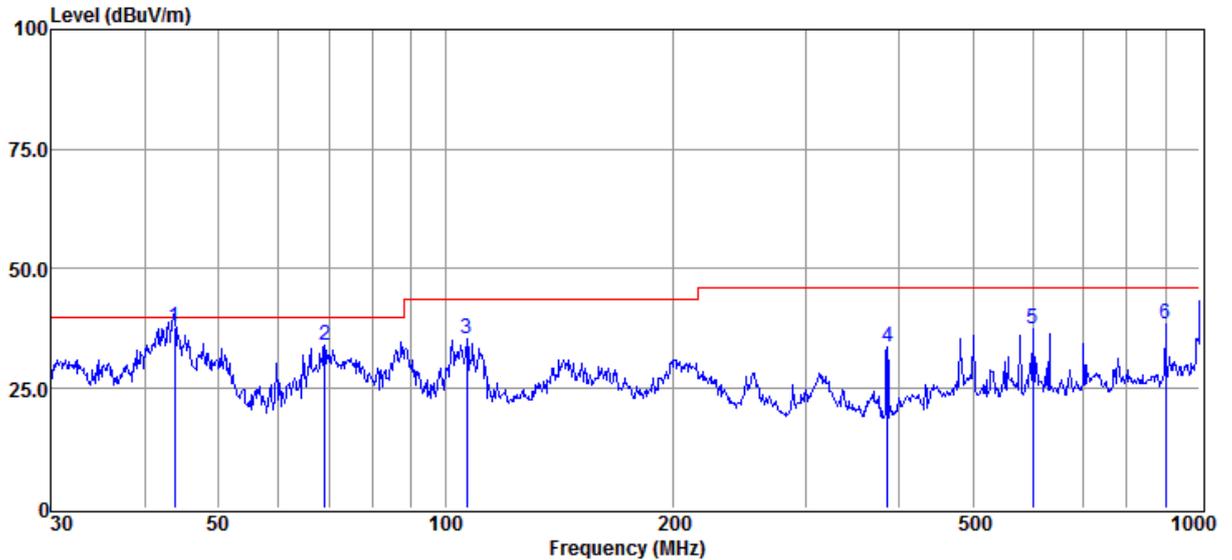
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	33.45	48.88	12.41	28.90	0.92	33.31	40.00	-6.69	QP
2	47.83	45.44	13.84	28.80	0.96	31.44	40.00	-8.56	QP
3	77.05	47.81	9.82	28.80	1.34	30.17	40.00	-9.83	QP
4	106.76	47.37	10.35	28.60	1.31	30.43	43.50	-13.07	QP
5	383.93	44.71	14.31	28.53	2.60	33.09	46.00	-12.91	QP
6	900.15	40.85	22.87	28.95	4.12	38.89	46.00	-7.11	QP

Mode:a;Horizontal:



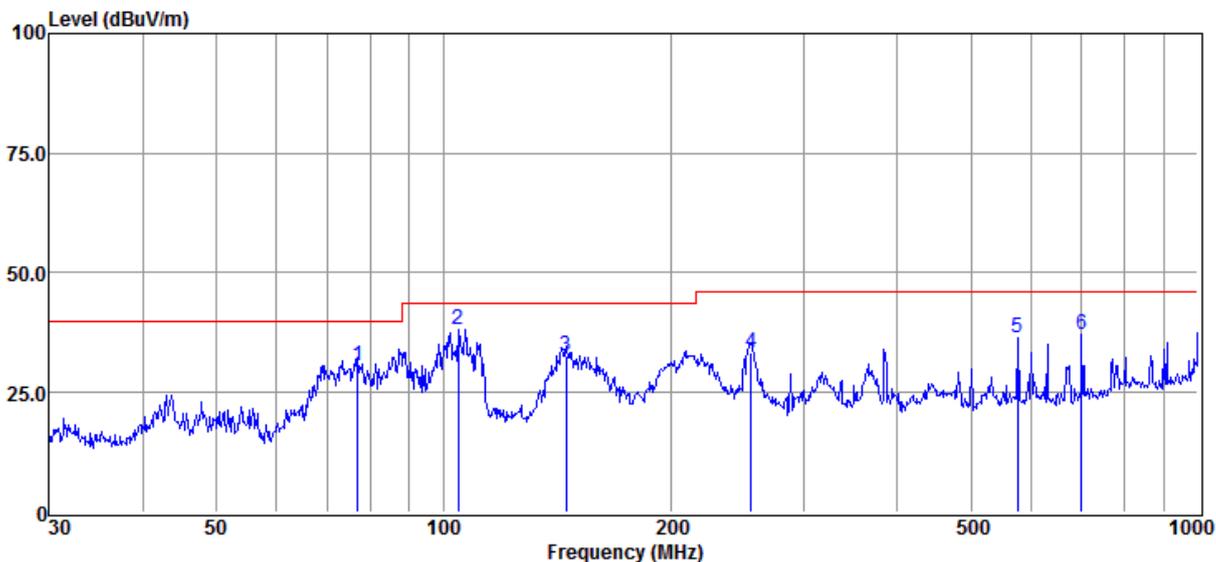
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	69.60	41.18	11.70	28.80	1.25	25.33	40.00	-14.67	QP
2	102.00	48.94	9.56	28.60	1.27	31.17	43.50	-12.33	QP
3	193.77	46.92	10.98	28.19	1.73	31.44	43.50	-12.06	QP
4	385.28	44.99	14.39	28.54	2.60	33.44	46.00	-12.56	QP
5	576.64	40.33	20.23	29.24	3.19	34.51	46.00	-11.49	QP
6	900.15	35.28	22.87	28.95	4.12	33.32	46.00	-12.68	QP

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	43.79	52.50	13.35	28.80	0.89	37.94	40.00	-2.06	QP
2	69.11	49.76	11.80	28.80	1.24	34.00	40.00	-6.00	QP
3	106.76	52.18	10.35	28.60	1.31	35.24	43.50	-8.26	QP
4	385.28	45.27	14.39	28.54	2.60	33.72	46.00	-12.28	QP
5	601.43	43.21	20.23	29.25	3.23	37.42	46.00	-8.58	QP
6	900.15	40.39	22.87	28.95	4.12	38.43	46.00	-7.57	QP

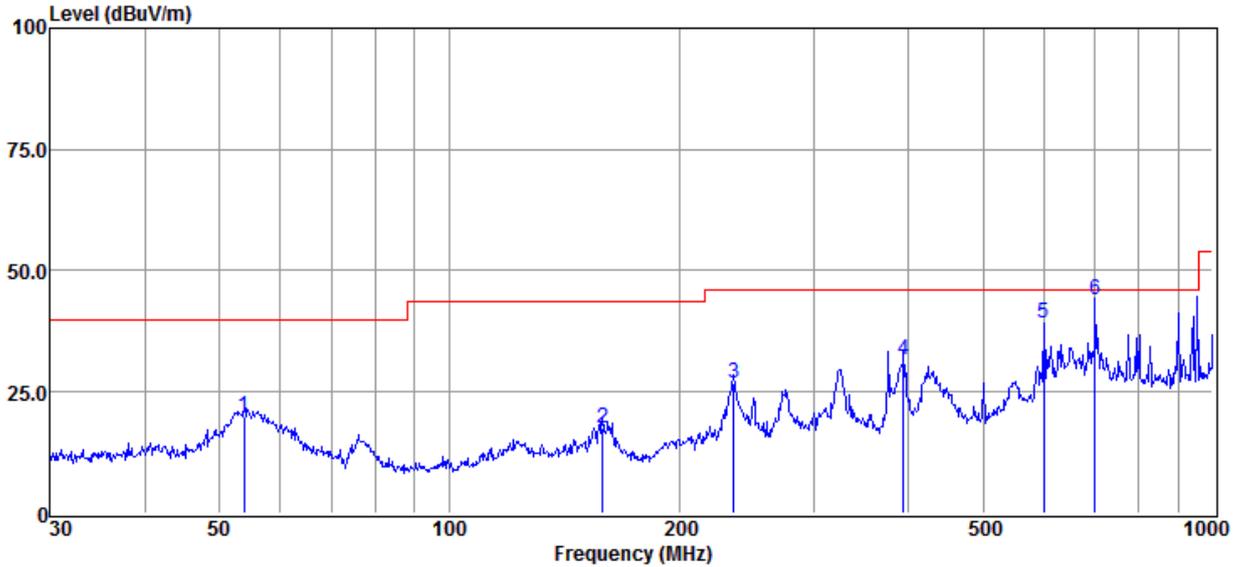
Mode:b;Horizontal:



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	77.05	48.06	9.82	28.80	1.34	30.42	40.00	-9.58	QP
2	104.54	55.60	9.99	28.60	1.28	38.27	43.50	-5.23	QP
3	145.35	47.10	12.57	28.40	1.47	32.74	43.50	-10.76	QP
4	255.62	46.97	12.15	27.90	2.04	33.26	46.00	-12.74	QP
5	576.64	42.31	20.23	29.24	3.19	36.49	46.00	-9.51	QP
6	701.76	41.74	20.93	29.29	3.60	36.98	46.00	-9.02	QP

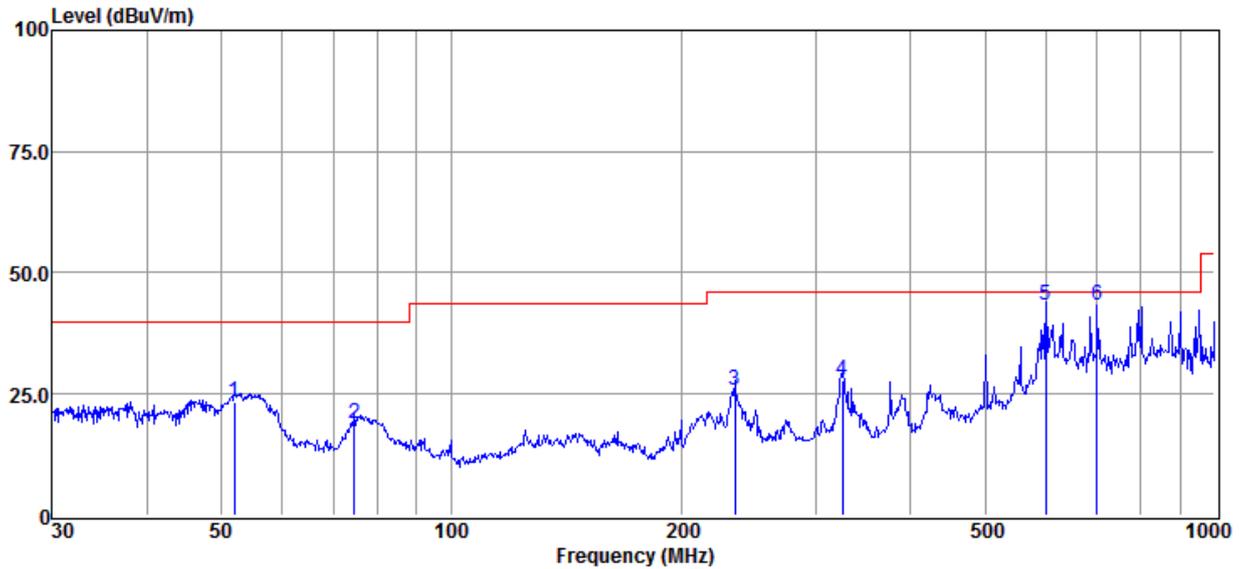
DH-IPC-PFW8800P-A180:

Mode;a:Vertical:



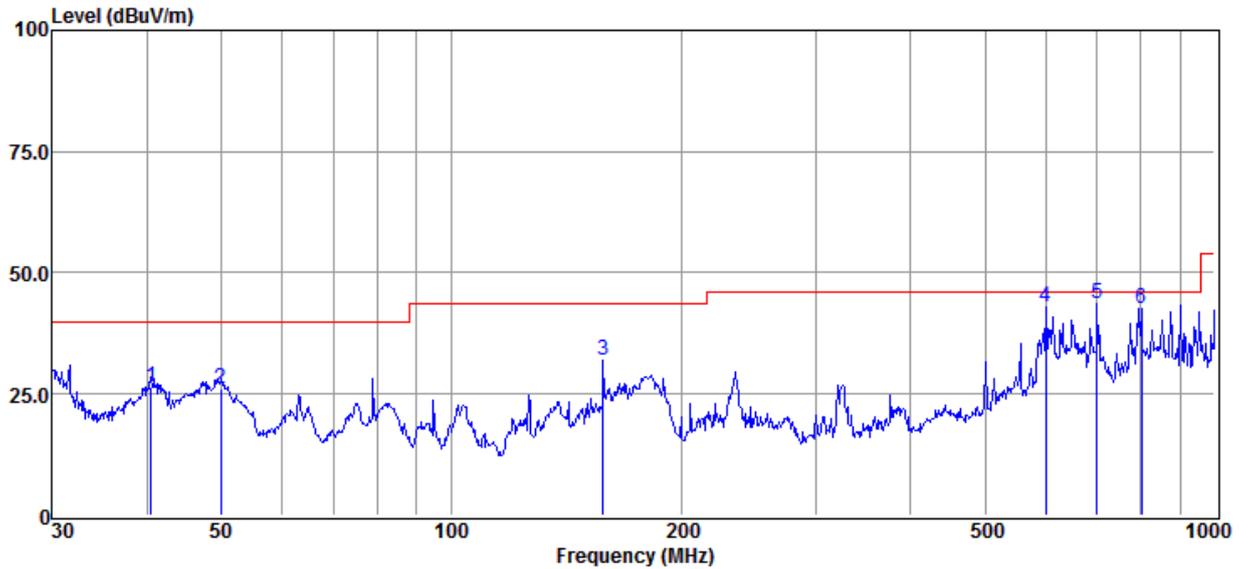
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	53.88	34.08	13.34	28.80	1.16	19.78	40.00	-20.22	QP
2	158.67	32.13	12.18	28.40	1.57	17.48	43.50	-26.02	QP
3	235.82	42.05	10.64	28.00	2.00	26.69	46.00	-19.31	QP
4	393.47	42.74	14.76	28.61	2.62	31.51	46.00	-14.49	QP
5	601.43	44.85	20.23	29.25	3.23	39.06	46.00	-6.94	QP
6	701.76	48.61	20.93	29.29	3.60	43.85	46.00	-2.15	QP

Mode;a:Horizontal:



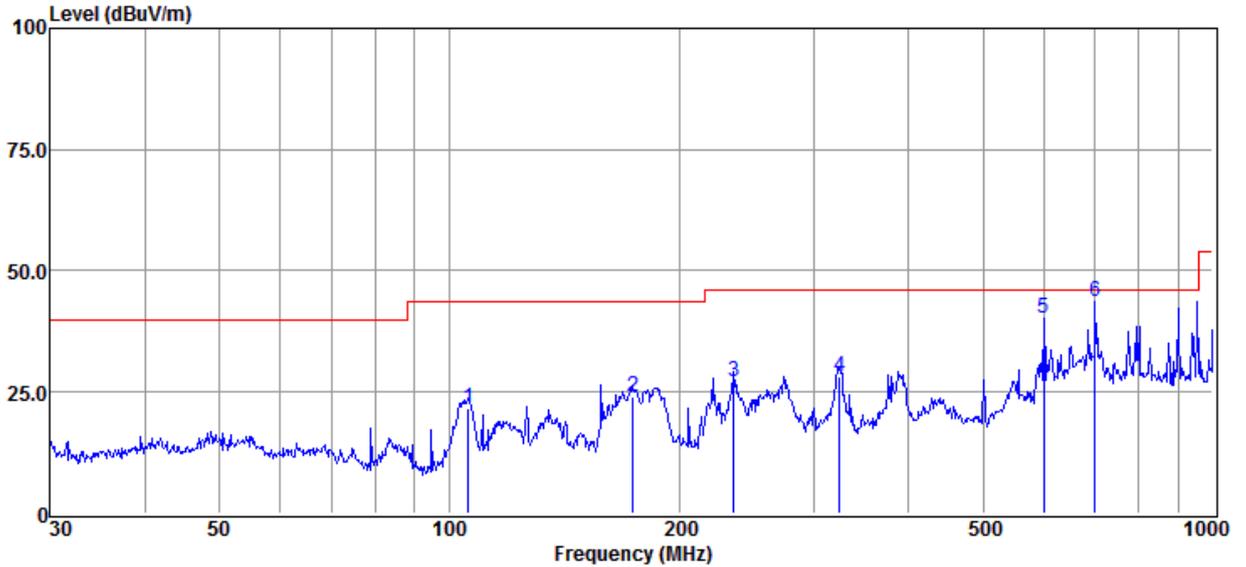
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	52.03	37.62	13.56	28.80	1.15	23.53	40.00	-16.47	QP
2	74.66	35.91	10.42	28.80	1.32	18.85	40.00	-21.15	QP
3	234.99	41.21	10.55	28.00	2.00	25.76	46.00	-20.24	QP
4	325.60	40.34	13.12	28.10	2.34	27.70	46.00	-18.30	QP
5	601.43	49.10	20.23	29.25	3.23	43.31	46.00	-2.69	QP
6	701.76	48.21	20.93	29.29	3.60	43.45	46.00	-2.55	QP

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	40.42	40.59	13.59	28.80	1.04	26.42	40.00	-13.58	QP
2	49.88	40.13	13.81	28.80	1.14	26.28	40.00	-13.72	QP
3	158.11	46.65	12.22	28.40	1.57	32.04	43.50	-11.46	QP
4	601.43	48.73	20.23	29.25	3.23	42.94	46.00	-3.06	QP
5	701.76	48.37	20.93	29.29	3.60	43.61	46.00	-2.39	QP
6	801.79	44.50	23.53	29.10	3.85	42.78	46.00	-3.22	QP

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	106.01	38.87	10.23	28.60	1.30	21.80	43.50	-21.70	QP
2	173.81	39.12	11.71	28.30	1.63	24.16	43.50	-19.34	QP
3	235.82	42.47	10.64	28.00	2.00	27.11	46.00	-18.89	QP
4	324.46	40.82	13.16	28.09	2.32	28.21	46.00	-17.79	QP
5	601.43	46.06	20.23	29.25	3.23	40.27	46.00	-5.73	QP
6	701.76	48.44	20.93	29.29	3.60	43.68	46.00	-2.32	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

6.3 Radiated Emissions, 1GHz to 6GHz

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

Limit:

Remark: The spectrum shall be investigated from the lowest radio frequency signal generated or used in the device, without going below the lowest frequency for which a radiated emission limit is specified, up to the frequency shown in the following table:

Highest frequency generated or used in the device or on which the device operates or tunes (MHz)	Upper frequency of measurement Range (MHz)
Below 1.705	30
1.705 to 108	1000
108 to 500	2000
500 to 1000	5000
Above 1000	5th harmonic of the highest frequency or 40 GHz, whichever is lower

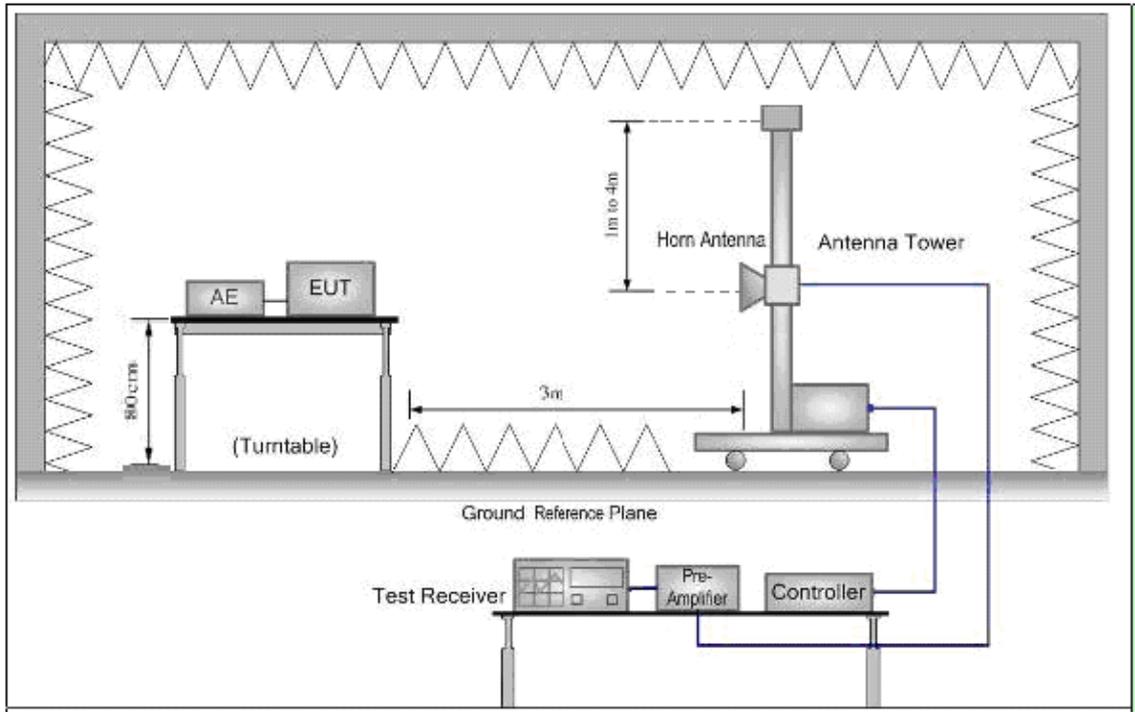
6.3.1 E.U.T. Operation

Test mode: DH-IPC-PFW8601P-A180:
a; AC 24V 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; AC 24V 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.

6.3.2 Test Setup and Procedure

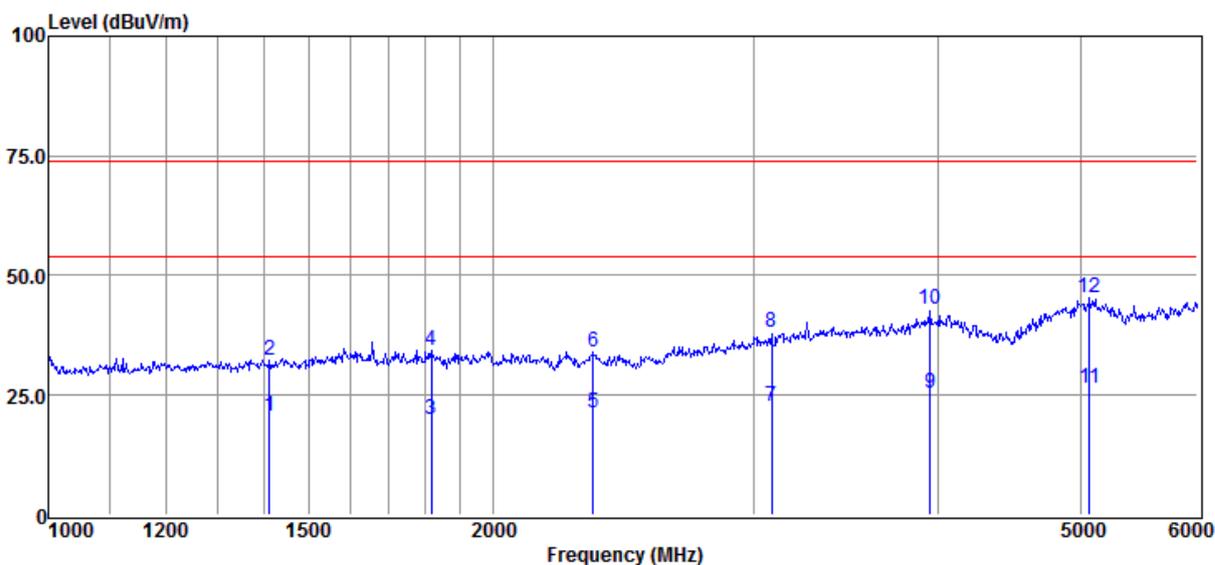


6. The radiated emissions test was conducted in a semi-anechoic chamber.
7. The EUT was connected to AC power source through a mains power outlet which was bonded to the ground reference plane; The mains cables shall drape to the ground reference plane.
8. The tabletop EUT was placed upon a non-metallic 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.
9. 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.
10. 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

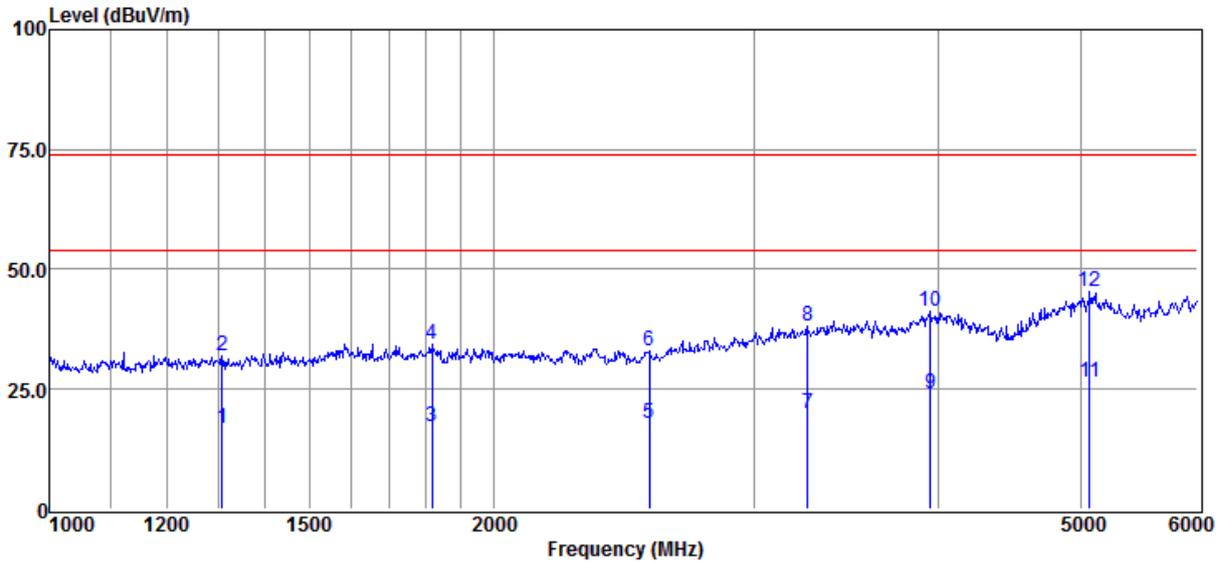
DH-IPC-PFW8601P-A180:

Mode:a;Vertical:



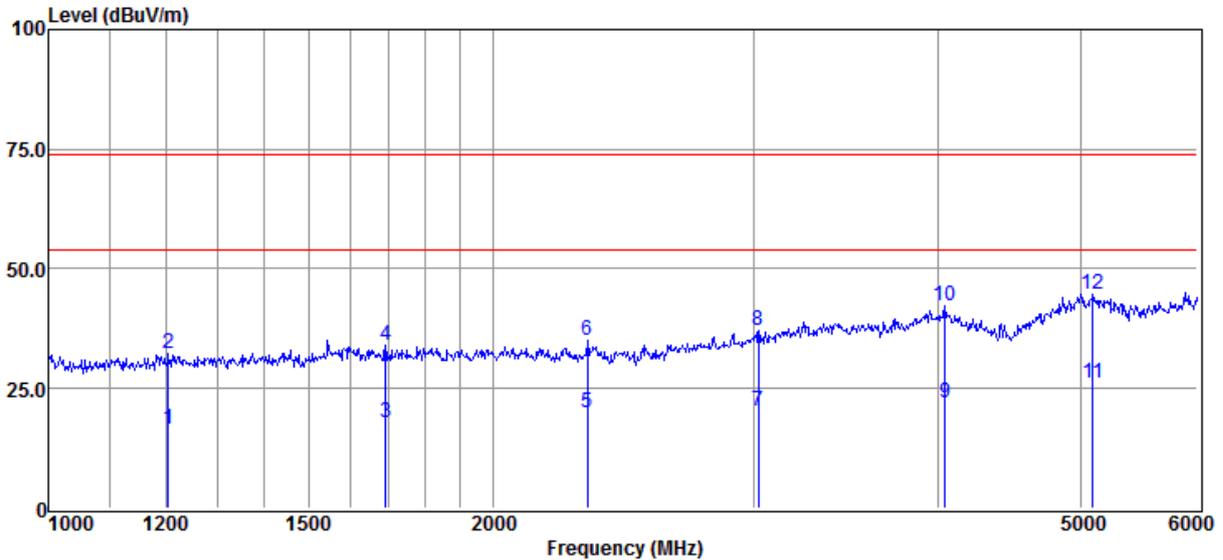
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	1410.60	32.32	24.92	40.56	3.83	20.51	54.00	-33.49	Average
2	1410.60	44.26	24.92	40.56	3.83	32.45	74.00	-41.55	Peak
3	1816.04	30.24	26.39	40.99	4.39	20.03	54.00	-33.97	Average
4	1816.04	44.49	26.39	40.99	4.39	34.28	74.00	-39.72	Peak
5	2338.00	29.42	27.59	41.03	5.24	21.22	54.00	-32.78	Average
6	2338.00	42.11	27.59	41.03	5.24	33.91	74.00	-40.09	Peak
7	3086.44	28.12	29.65	40.76	5.71	22.72	54.00	-31.28	Average
8	3086.44	43.61	29.65	40.76	5.71	38.21	74.00	-35.79	Peak
9	3952.23	26.03	32.54	40.10	6.90	25.37	54.00	-28.63	Average
10	3952.23	43.72	32.54	40.10	6.90	43.06	74.00	-30.94	Peak
11	5069.97	23.77	37.68	41.68	6.84	26.61	54.00	-27.39	Average
12	5069.97	42.37	37.68	41.68	6.84	45.21	74.00	-28.79	Peak

Mode:a;Horizontal:



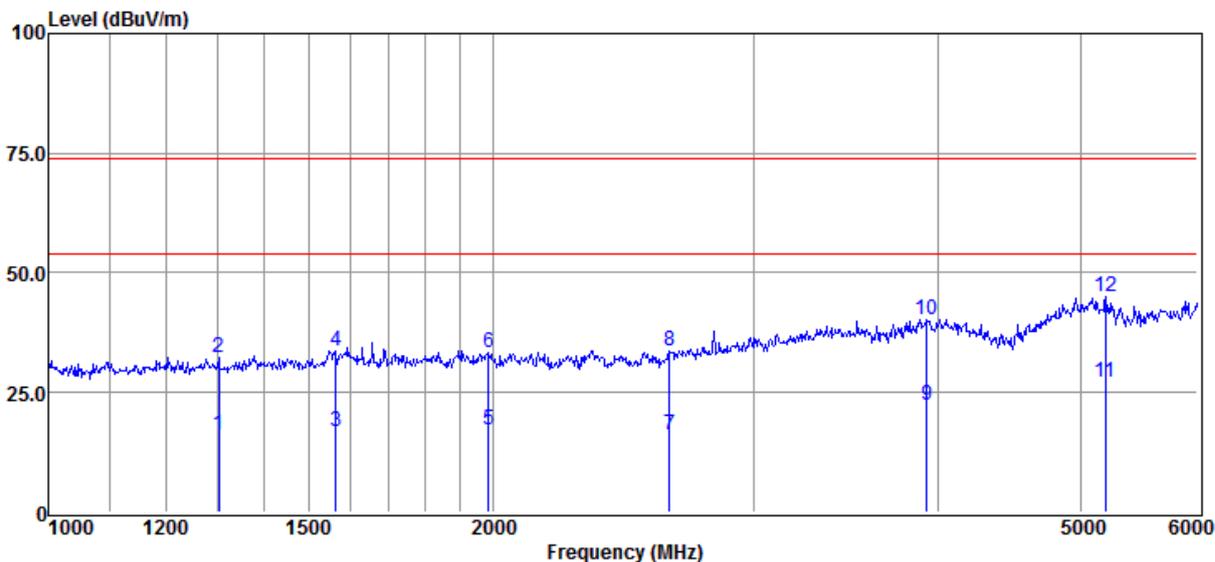
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	1308.35	28.96	24.83	40.61	3.67	16.85	54.00	-37.15	Average
2	1308.35	43.98	24.83	40.61	3.67	31.87	74.00	-42.13	Peak
3	1816.04	27.24	26.39	40.99	4.39	17.03	54.00	-36.97	Average
4	1816.04	44.49	26.39	40.99	4.39	34.28	74.00	-39.72	Peak
5	2547.97	26.56	27.85	40.94	4.57	18.04	54.00	-35.96	Average
6	2547.97	41.50	27.85	40.94	4.57	32.98	74.00	-41.02	Peak
7	3262.72	24.45	30.34	40.65	5.82	19.96	54.00	-34.04	Average
8	3262.72	42.57	30.34	40.65	5.82	38.08	74.00	-35.92	Peak
9	3952.23	24.57	32.54	40.10	6.90	23.91	54.00	-30.09	Average
10	3952.23	42.02	32.54	40.10	6.90	41.36	74.00	-32.64	Peak
11	5069.97	23.77	37.68	41.68	6.84	26.61	54.00	-27.39	Average
12	5069.97	42.37	37.68	41.68	6.84	45.21	74.00	-28.79	Peak

Mode:b;Vertical:



Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dB μ V)	(dB/m)	(dB)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
1	1204.84	28.93	24.73	40.67	3.43	16.42	54.00	-37.58	Average
2	1204.84	44.82	24.73	40.67	3.43	32.31	74.00	-41.69	Peak
3	1690.43	28.69	25.88	40.82	4.11	17.86	54.00	-36.14	Average
4	1690.43	44.94	25.88	40.82	4.11	34.11	74.00	-39.89	Peak
5	2317.14	27.97	27.56	41.04	5.35	19.84	54.00	-34.16	Average
6	2317.14	43.08	27.56	41.04	5.35	34.95	74.00	-39.05	Peak
7	3026.20	26.35	29.40	40.80	5.48	20.43	54.00	-33.57	Average
8	3026.20	43.17	29.40	40.80	5.48	37.25	74.00	-36.75	Peak
9	4045.37	22.72	32.45	40.17	7.03	22.03	54.00	-31.97	Average
10	4045.37	42.88	32.45	40.17	7.03	42.19	74.00	-31.81	Peak
11	5097.29	23.12	37.55	41.67	7.02	26.02	54.00	-27.98	Average
12	5097.29	41.78	37.55	41.67	7.02	44.68	74.00	-29.32	Peak

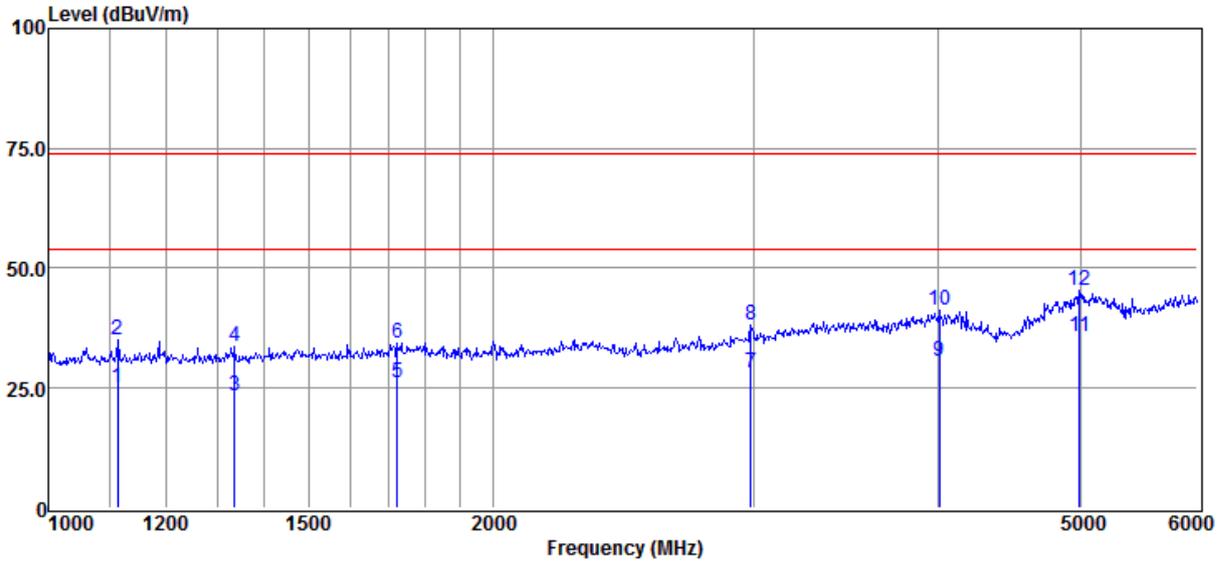
Mode:b;Horizontal:



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	1303.67	28.43	24.83	40.62	3.67	16.31	54.00	-37.69	Average
2	1303.67	44.42	24.83	40.62	3.67	32.30	74.00	-41.70	Peak
3	1565.09	28.19	25.32	40.63	3.87	16.75	54.00	-37.25	Average
4	1565.09	45.18	25.32	40.63	3.87	33.74	74.00	-40.26	Peak
5	1986.24	26.78	27.04	41.21	4.45	17.06	54.00	-36.94	Average
6	1986.24	43.22	27.04	41.21	4.45	33.50	74.00	-40.50	Peak
7	2631.49	24.45	27.93	40.91	4.82	16.29	54.00	-37.71	Average
8	2631.49	41.78	27.93	40.91	4.82	33.62	74.00	-40.38	Peak
9	3931.04	23.28	32.51	40.11	6.73	22.41	54.00	-31.59	Average
10	3931.04	41.11	32.51	40.11	6.73	40.24	74.00	-33.76	Peak
11	5198.75	24.88	36.68	41.61	7.21	27.16	54.00	-26.84	Average
12	5198.75	42.80	36.68	41.61	7.21	45.08	74.00	-28.92	Peak

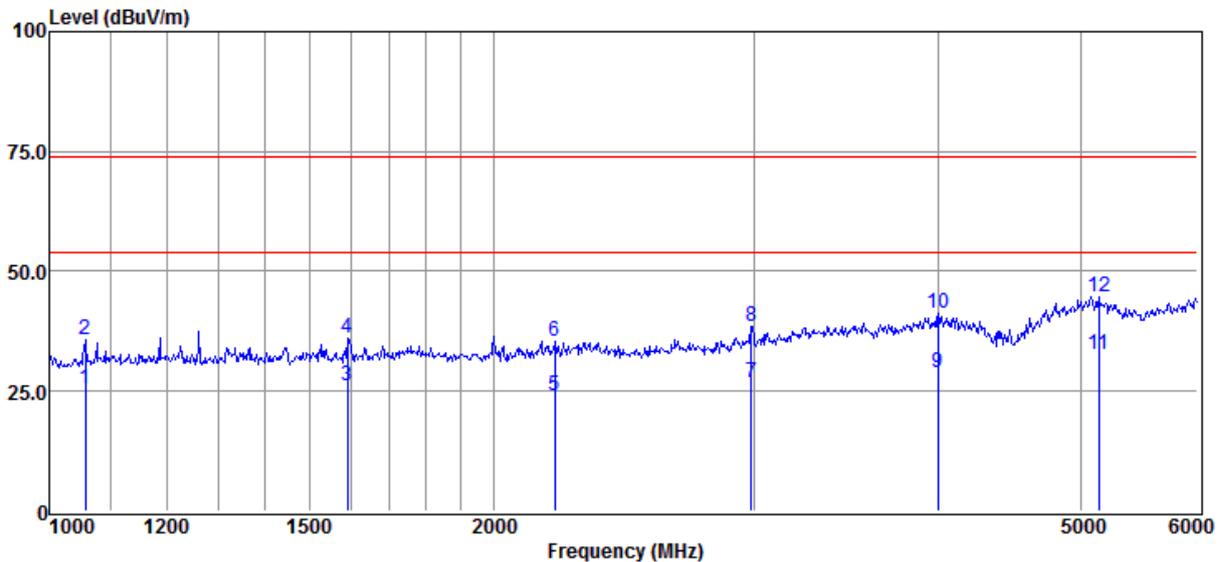
DH-IPC-PFW8800P-A180:

Mode;a:Vertical:



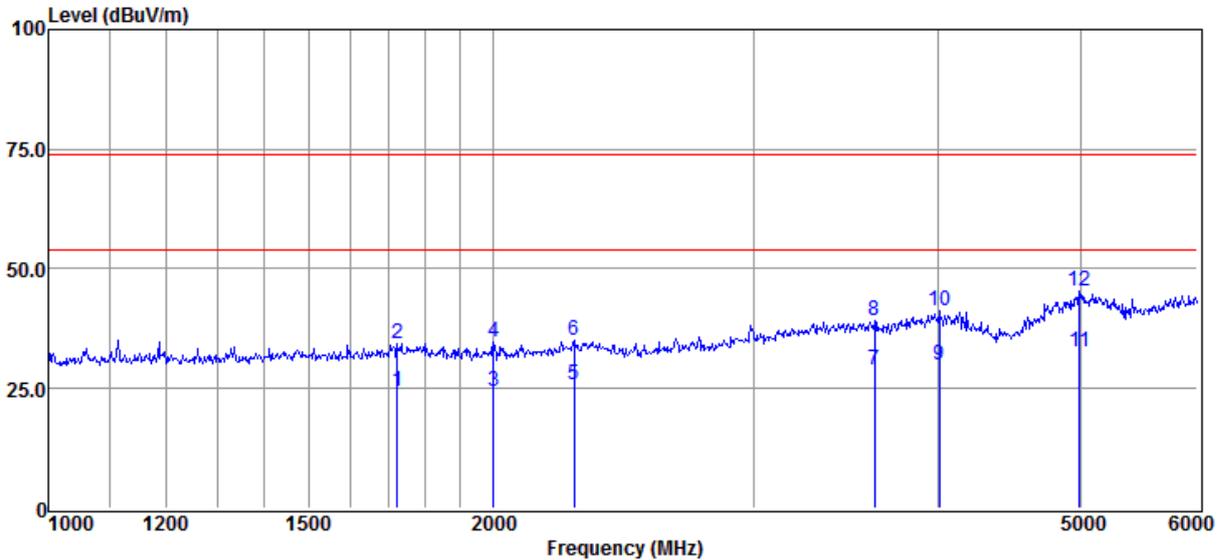
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dB μ V)	(dB/m)	(dB)	(dB)	(dB μ V/m)	(dB μ V/m)	(dB)	
1	1113.50	38.04	24.63	40.73	3.09	25.03	54.00	-28.97	Average
2	1113.50	48.21	24.63	40.73	3.09	35.20	74.00	-38.80	Peak
3	1336.78	35.18	24.86	40.60	3.76	23.20	54.00	-30.80	Average
4	1336.78	45.57	24.86	40.60	3.76	33.59	74.00	-40.41	Peak
5	1721.00	36.75	26.01	40.86	4.14	26.04	54.00	-27.96	Average
6	1721.00	45.08	26.01	40.86	4.14	34.37	74.00	-39.63	Peak
7	2988.48	34.28	29.26	40.82	5.35	28.07	54.00	-25.93	Average
8	2988.48	44.46	29.26	40.82	5.35	38.25	74.00	-35.75	Peak
9	4009.29	31.14	32.70	40.05	6.96	30.75	54.00	-23.25	Average
10	4009.29	41.54	32.70	40.05	6.96	41.15	74.00	-32.85	Peak
11	4988.86	32.35	38.08	41.71	7.04	35.76	54.00	-18.24	Average
12	4988.86	42.08	38.08	41.71	7.04	45.49	74.00	-28.51	Peak

Mode;a:Horizontal:



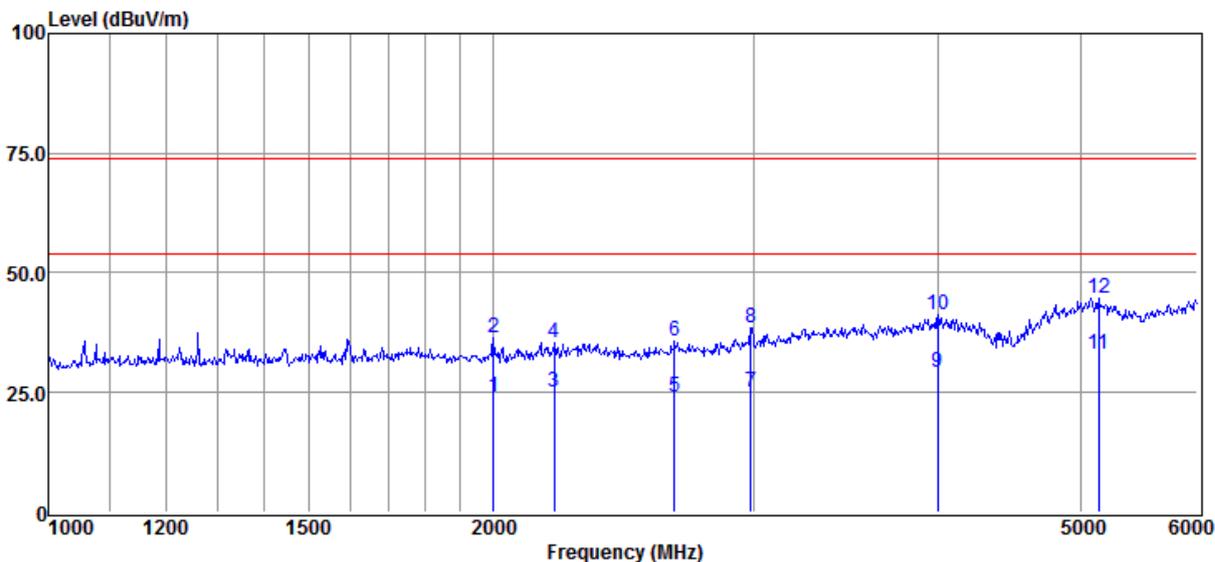
Item	Freq.	Read Level	Antenna Factor	Preamp Factor	Cable Loss	Result Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB/m)	(dB)	(dB)	(dBμV/m)	(dBμV/m)	(dB)	
1	1057.12	38.39	24.57	40.76	3.20	25.40	54.00	-28.60	Average
2	1057.12	48.72	24.57	40.76	3.20	35.73	74.00	-38.27	Peak
3	1590.53	37.48	25.44	40.67	3.94	26.19	54.00	-27.81	Average
4	1590.53	47.53	25.44	40.67	3.94	36.24	74.00	-37.76	Peak
5	2199.82	33.16	27.40	41.11	4.49	23.94	54.00	-30.06	Average
6	2199.82	44.57	27.40	41.11	4.49	35.35	74.00	-38.65	Peak
7	2988.48	33.06	29.26	40.82	5.35	26.85	54.00	-27.15	Average
8	2988.48	44.86	29.26	40.82	5.35	38.65	74.00	-35.35	Peak
9	4002.11	29.24	32.70	40.05	6.96	28.85	54.00	-25.15	Average
10	4002.11	41.51	32.70	40.05	6.96	41.12	74.00	-32.88	Peak
11	5143.16	30.08	37.06	41.64	7.21	32.71	54.00	-21.29	Average
12	5143.16	42.19	37.06	41.64	7.21	44.82	74.00	-29.18	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	1721.00	34.96	26.01	40.86	4.14	24.25	54.00	-29.75	Average
2	1721.00	45.08	26.01	40.86	4.14	34.37	74.00	-39.63	Peak
3	2000.53	34.12	27.10	41.23	4.45	24.44	54.00	-29.56	Average
4	2000.53	44.28	27.10	41.23	4.45	34.60	74.00	-39.40	Peak
5	2267.85	34.36	27.49	41.07	5.04	25.82	54.00	-28.18	Average
6	2267.85	43.51	27.49	41.07	5.04	34.97	74.00	-39.03	Peak
7	3626.53	32.34	31.61	40.38	5.33	28.90	54.00	-25.10	Average
8	3626.53	42.46	31.61	40.38	5.33	39.02	74.00	-34.98	Peak
9	4009.29	30.36	32.70	40.05	6.96	29.97	54.00	-24.03	Average
10	4009.29	41.54	32.70	40.05	6.96	41.15	74.00	-32.85	Peak
11	4988.86	29.14	38.08	41.71	7.04	32.55	54.00	-21.45	Average
12	4988.86	42.08	38.08	41.71	7.04	45.49	74.00	-28.51	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	2000.53	33.62	27.10	41.23	4.45	23.94	54.00	-30.06	Average
2	2000.53	46.19	27.10	41.23	4.45	36.51	74.00	-37.49	Peak
3	2199.82	34.27	27.40	41.11	4.49	25.05	54.00	-28.95	Average
4	2199.82	44.57	27.40	41.11	4.49	35.35	74.00	-38.65	Peak
5	2655.17	32.23	27.96	40.91	4.82	24.10	54.00	-29.90	Average
6	2655.17	43.76	27.96	40.91	4.82	35.63	74.00	-38.37	Peak
7	2988.48	31.26	29.26	40.82	5.35	25.05	54.00	-28.95	Average
8	2988.48	44.86	29.26	40.82	5.35	38.65	74.00	-35.35	Peak
9	4002.11	29.56	32.70	40.05	6.96	29.17	54.00	-24.83	Average
10	4002.11	41.51	32.70	40.05	6.96	41.12	74.00	-32.88	Peak
11	5143.16	30.24	37.06	41.64	7.21	32.87	54.00	-21.13	Average
12	5143.16	42.19	37.06	41.64	7.21	44.82	74.00	-29.18	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

7 Photographs (Test Setup For the EUT)

7.1 Conducted Emissions on Mains Terminals Test Setup

DH-IPC-PFW8601P-A180:



DH-IPC-PFW8800P-A180:



7.2 Radiated Emission Test Setup

DH-IPC-PFW8601P-A180:

30MHz to 1GHz



1GHz to 6GHz



DH-IPC-PFW8800P-A180:
30MHz to 1GHz



1GHz to 6GHz



8 EUT Constructional Details

8.1 Exterior of EUT

DH-IPC-PFW8601P-A180:

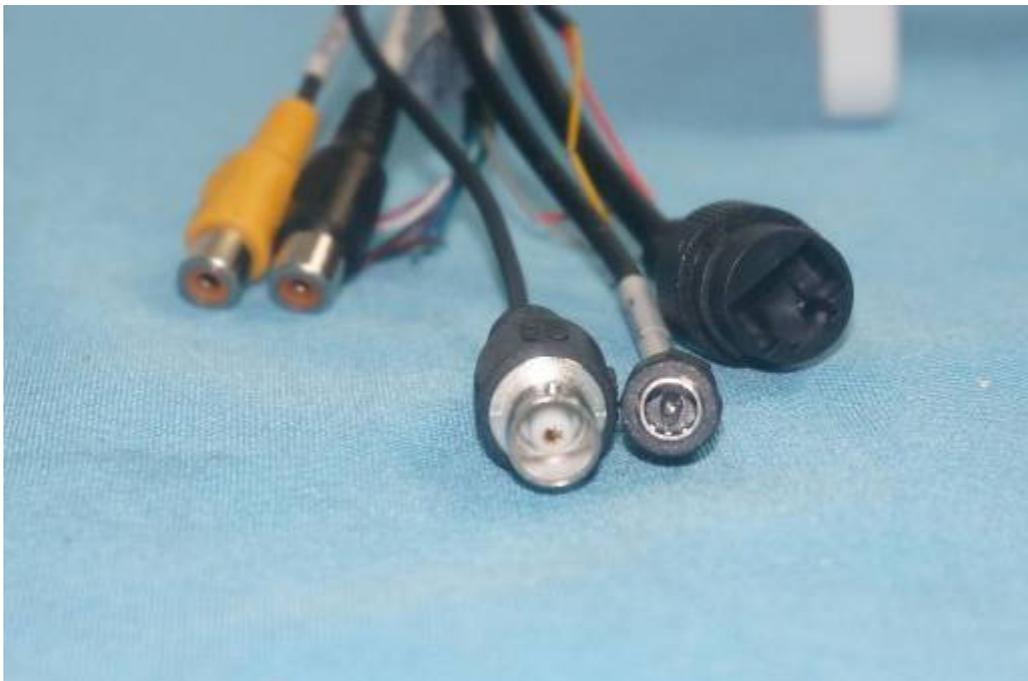






DH-IPC-PFW8800P-A180:

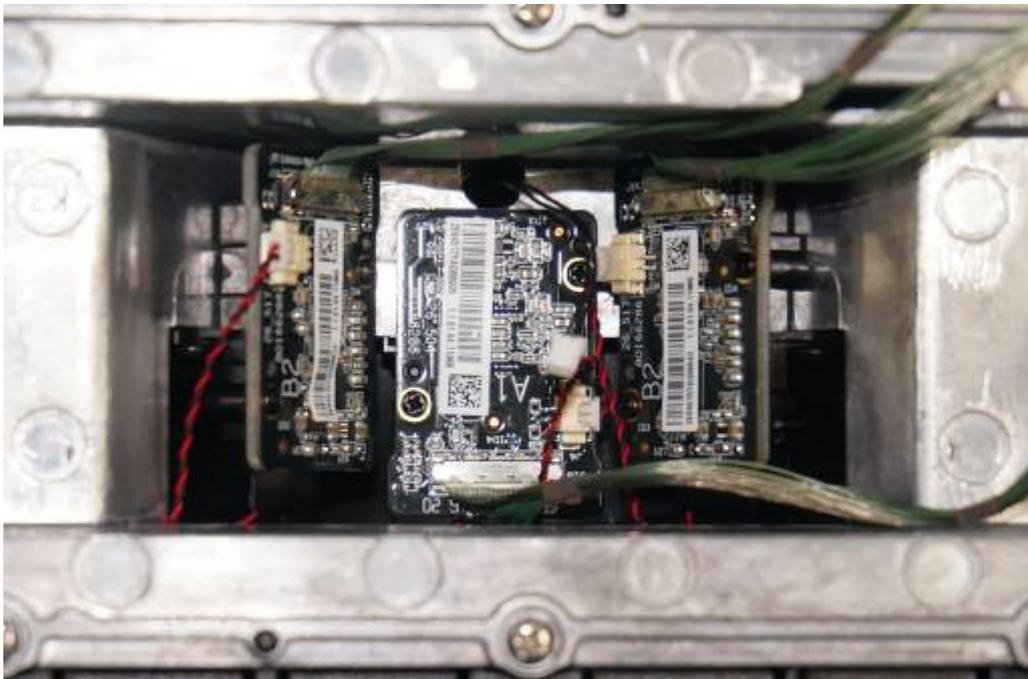
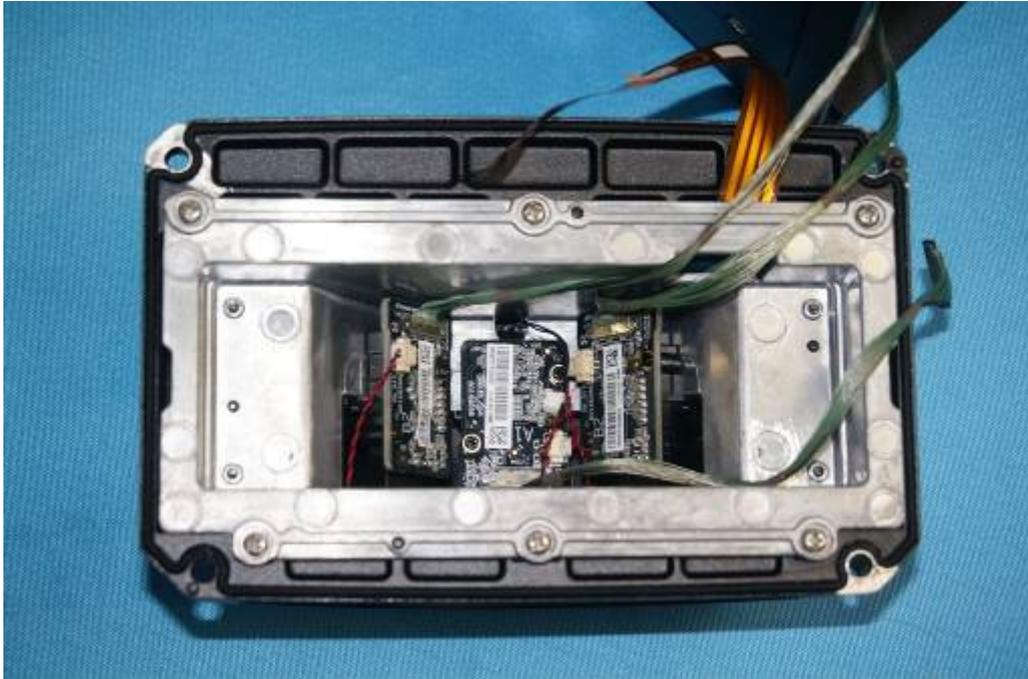




8.2 Interior of EUT

DH-IPC-PFW8601P-A180:

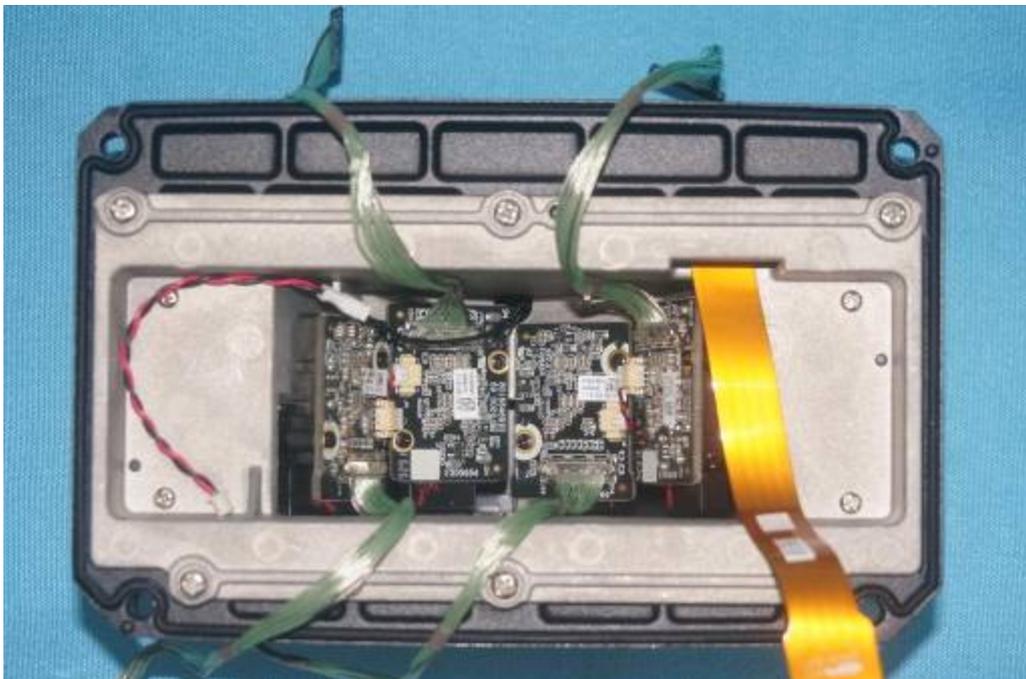


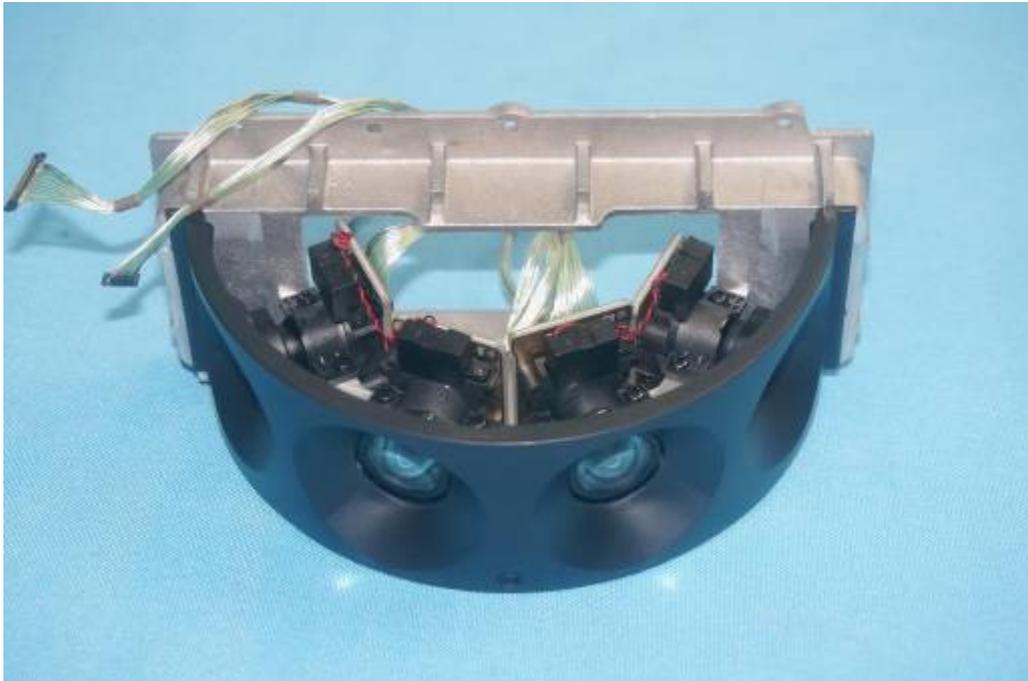


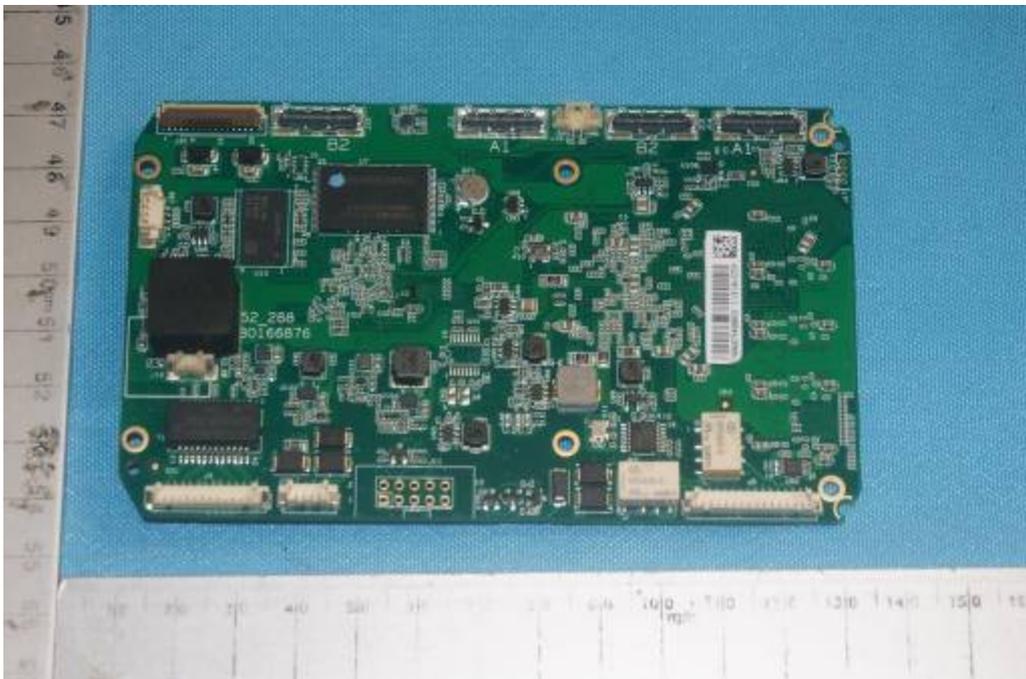


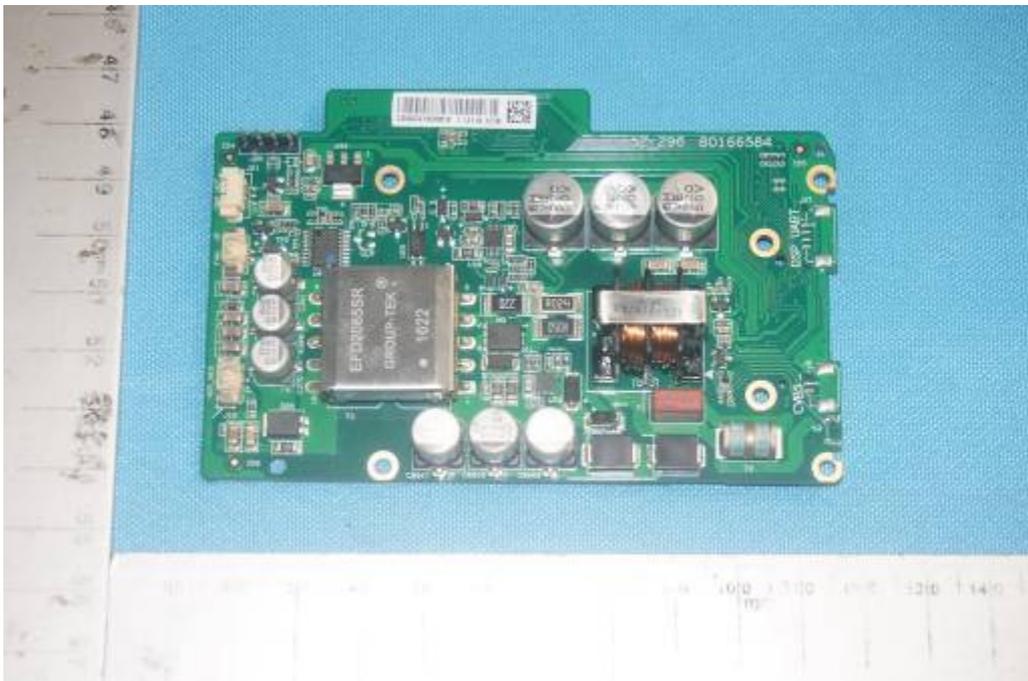


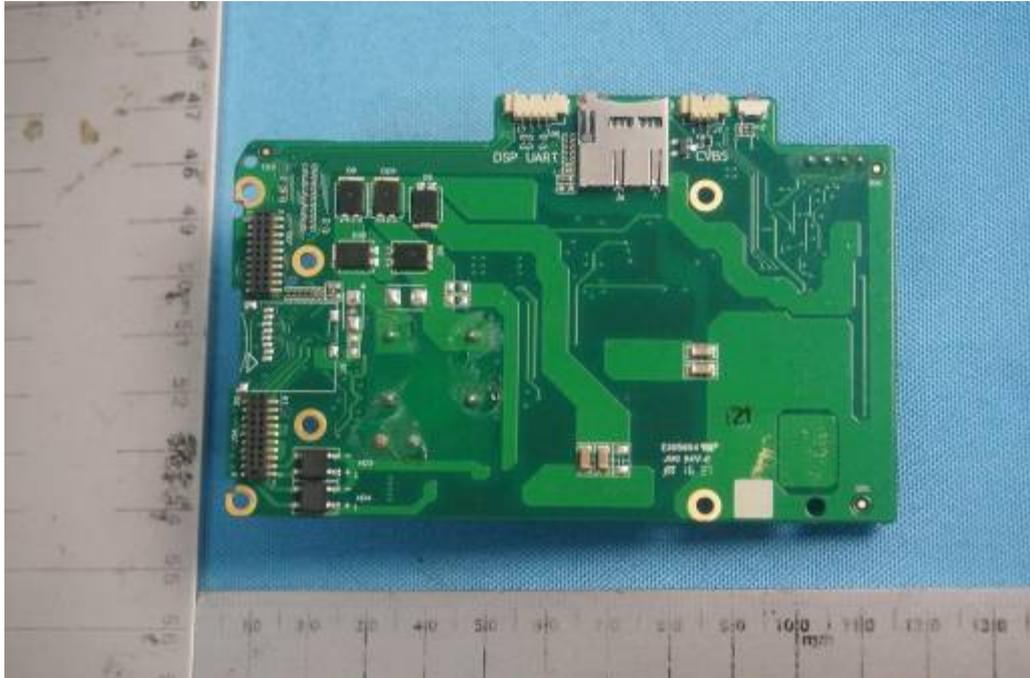
DH-IPC-PFW8800P-A180:











--End of the Report--