



**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.: SHEM160700448201
Page: 1 of 34

1 Cover Page

TEST REPORT

Application No.:	SHEM1607004482IT
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:	HDCVI CAMERA
Model No.(EUT):	DH-HAC-HFW3231EP-Z
Add Model No.:	HAC-HFW3231EP-Z, HAC-HFW3231EN-Z, DH-HAC-HFW3231EN-Z, HAC-HFW3231EP-ZH, HAC-HFW3231EN-ZH, DH-HAC-HFW3231EP-ZH, DH-HAC-HFW3231EN-ZH, DH-HAC-HFW3231EP-ZT, DH-HAC-HFW3231EN-ZT, HAC-HFW3231EP-ZT, HAC-HFW3231EN-ZT, DH-HAC-HFW3231EP-ZTH, DH-HAC-HFW3231EN-ZTH, HAC-HFW3231EP-ZTH, HAC-HFW3231EN-ZTH, DH-HAC-HFW32A1EN-Z, DH-HAC-HFW32A1EP-Z, HAC-HFW32A1EN-Z, HAC-HFW32A1EP-Z
Standards:	CFR 47 FCC Part 15 subpart B, 2015
Date of Receipt:	December 28, 2015
Date of Test:	January 04, 2016 to January 13, 2016
Date of Issue:	July 15, 2016
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 Version

Revision Record				
Version	Chapter	Date	Modifier	Remark
00	1, Add models 2, Company address	July 15, 2016		Copy Based on SHEM151200487901

Authorized for issue by:			
Engineer		Bruce Tang _____ Print Name	<i>Bruce Tang</i> _____
Clerk		Lara Huang _____ Print Name	<i>Lara Huang</i> _____
Reviewer		Parlam Zhan _____ Print Name	<i>Parlam Zhan</i> _____

3 Test Summary

ELECTROMAGNETIC INTERFERENCE (EMI)			
Test	Test Requirement	Test Method	Result
Conducted Emission (150kHz to 30MHz)	CFR 47 FCC Part 15 subpart B, 2015	ANSI C63.4: 2014	PASS
Radiated Emission, (30MHz to 1GHz)	CFR 47 FCC Part 15 subpart B, 2015	ANSI C63.4: 2014	PASS
Radiated Emission above 1 GHz	CFR 47 FCC Part 15 subpart B, 2015	ANSI C63.4: 2014	PASS*
<p>Remark:</p> <p>N/A: Not Applicable.</p> <p>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.</p> <p>Note2: There are series models mentioned in this report, and they are the similar in electrical and electronic characters. Only the model DH-HAC-HFW3231EP-Z was tested since their differences were the model number, trade name and appearance.</p> <p>Note3: Only one mode was shown as the test setup photos since all models were same for the test setup.</p> <p>Note4: We add some models in this report. The new models added in this report are the same Electronic or Electrical characters as the models in the report SHEM151200487901, so the new models in this report are deemed to fulfill the EMC requirements without testing.</p> <p>Note5: We add some models in this report. The new models added in this report are the same Electronic or Electrical characters as the models in the report SHEM160600357601, so the new models in this report are deemed to fulfill the EMC requirements without testing.</p>			

4 Contents

1	COVER PAGE	1
2	VERSION	2
3	TEST SUMMARY	3
4	CONTENTS	4
5	GENERAL INFORMATION	5
5.1	Client Information.....	5
5.2	Details of E.U.T.	5
5.3	E.U.T Operation Mode.....	5
5.4	E.U.T Operation Environment	5
5.5	Description of Support Units	6
5.6	Deviation from Standards	6
5.7	Abnormalities from Standard Conditions	6
5.8	Modification/Retest Record	6
5.9	Test Location.....	6
5.10	Test Facility.....	7
6	EQUIPMENT LIST	8
7	ELECTROMAGNETIC INTERFERENCE TEST RESULTS.....	10
7.1	Conducted Emissions on Mains Terminals	10
7.2	Radiated Emissions, 30MHz to 1GHz	16
7.3	Radiated Emissions, 1GHz to 6GHz.....	22
8	PHOTOGRAPHS (TEST SETUP FOR THE EUT).....	28
8.1	Conducted Emissions on Mains Terminals Test Setup.....	28
8.2	Radiated Emission Test Setup.....	28
9	EUT CONSTRUCTIONAL DETAILS	30
9.1	Exterior of EUT	30
9.2	Interior of EUT	31-34

5 General Information

5.1 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

5.2 Details of E.U.T.

Power Supply:	DC12V / AC24V
Test Voltage:	AC 120V, 60Hz
Cable Type:	N/A

5.3 E.U.T Operation Mode

Functions/Modes:	AC mode, DC mode
AC mode	EUT powered by AC adapter ,Keep EUT monitoring image continual .
DC mode	EUT powered by DC adapter ,Keep EUT monitoring image continual .

5.4 E.U.T Operation Environment

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

5.5 Description of Support Units

The EUT has been tested with associated equipment below.

Description	Manufacturer	Model No.
AC Adapter	HON-KWANG	57A241500
Adapter	HONOR	ADS-12B-12 12012G
Monitor	JVC	TM-A170G

5.6 Deviation from Standards

None.

5.7 Abnormalities from Standard Conditions

None.

5.8 Modification/Retest Record

None.

5.9 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

5.10 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.

6 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	SCHWARZBE CK	NSLK812 7	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	SCHWARZBE CK	VULB916 8	9168-313	2016-01-16	2017-01-15
4	Double ridged broadband horn ANTENNA	SCHWARZBE CK	BBHA912 0D	9120D-67 9	2016-01-16	2017-01-15
5	Amplifier	SCHWARZBE CK	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	2015-04-13	2016-04-12
2	Temperature & humidity recorder	ShangHai weather meter work	ZJ 1-2B	84320600 803136, F3040201 53,20101 201FS10 0A6K,201 106117	2015-08-03	2016-08-02
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

7 Electromagnetic Interference Test Results

7.1 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.

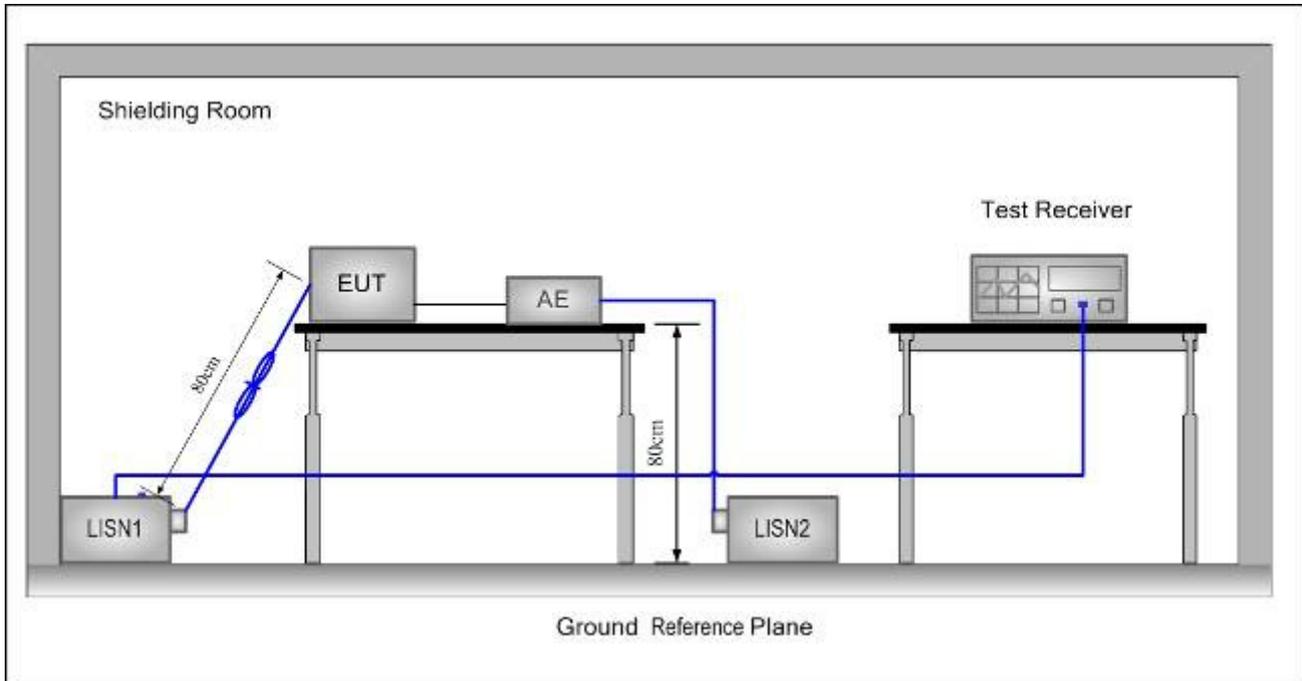
7.1.1 E.U.T. Operation

Test mode: AC mode, DC mode

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.

7.1.2 Test Setup and Procedure

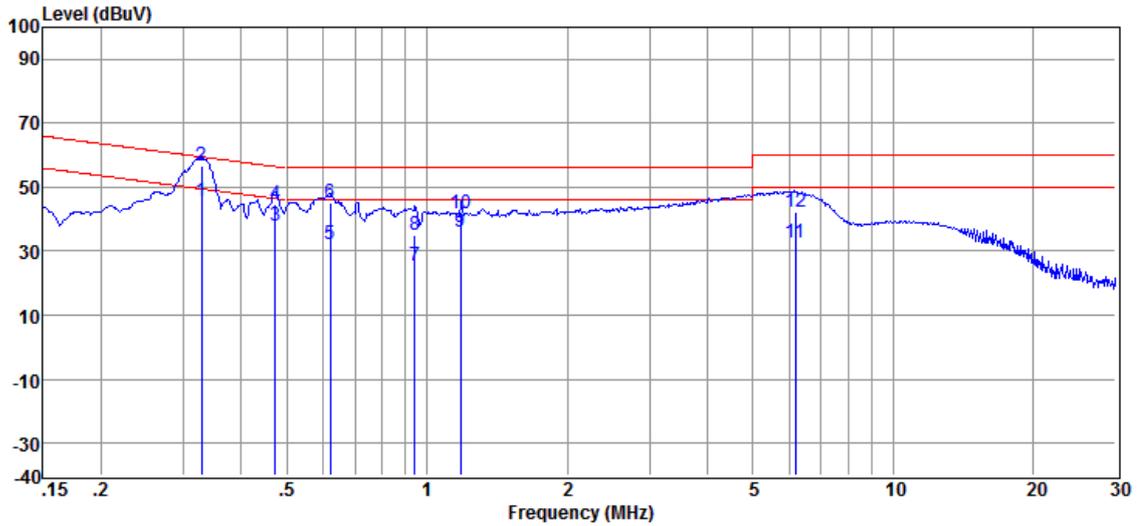


1. The mains terminal disturbance voltage was measured with the EUT in a shielded room.
2. The EUT was connected to AC power source through a LISN 1 (Line Impedance Stabilization Network) which provides a $50\Omega/50\mu\text{H} + 5\Omega$ linear impedance. The power cables of all other units of the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

7.1.3 Measurement Data

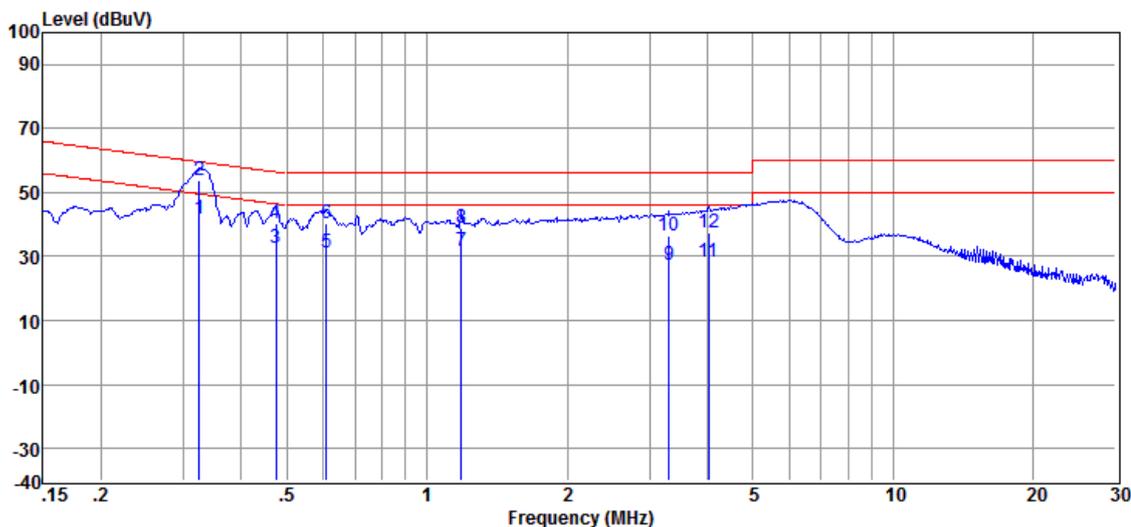
DC mode

Live Line:



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dB μ V)	(dB)	(dB)	(dB μ V)	(dB μ V)	(dB)	
1	0.328	35.73	0.25	9.86	45.84	49.49	-3.65	Average
2	0.328	46.46	0.25	9.86	56.57	59.49	-2.92	QP
3	0.473	28.03	0.25	9.86	38.14	46.46	-8.32	Average
4	0.473	34.69	0.25	9.86	44.80	56.46	-11.66	QP
5	0.620	21.90	0.23	9.86	31.99	46.00	-14.01	Average
6	0.620	34.95	0.23	9.86	45.04	56.00	-10.96	QP
7	0.941	15.53	0.18	9.87	25.58	46.00	-20.42	Average
8	0.941	25.11	0.18	9.87	35.16	56.00	-20.84	QP
9	1.182	26.06	0.21	9.87	36.14	46.00	-9.86	Average
10	1.182	31.56	0.21	9.87	41.64	56.00	-14.36	QP
11	6.163	22.28	0.41	9.88	32.57	50.00	-17.43	Average
12	6.163	32.14	0.41	9.88	42.43	60.00	-17.57	QP

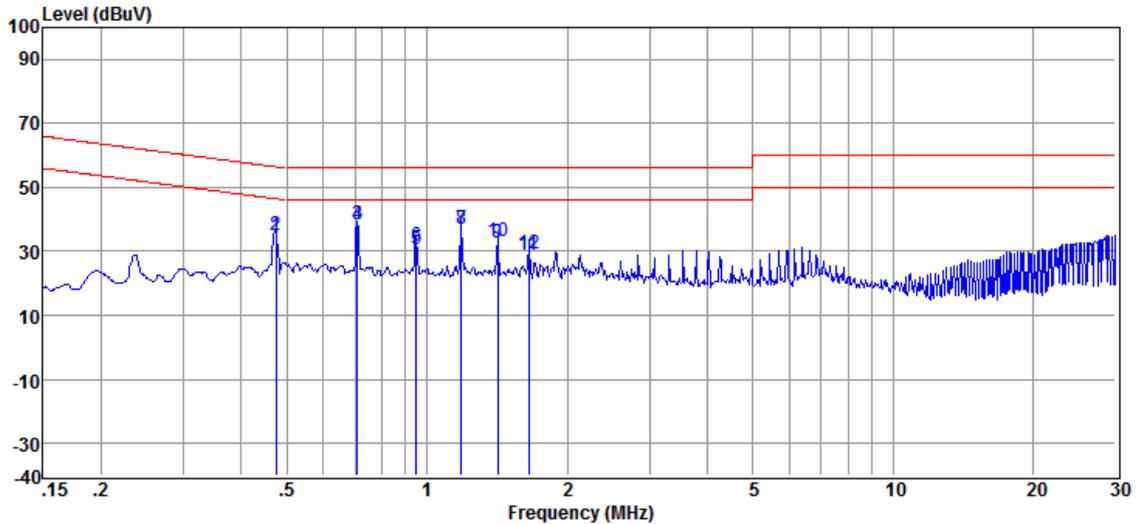
Neutral Line:



Item	Freq.	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Detector
(Mark)	(MHz)	(dBμV)	(dB)	(dB)	(dBμV)	(dBμV)	(dB)	
1	0.325	31.64	0.30	9.86	41.80	49.57	-7.77	Average
2	0.325	43.56	0.30	9.86	53.72	59.57	-5.85	QP
3	0.474	22.28	0.30	9.86	32.44	46.44	-14.00	Average
4	0.474	30.31	0.30	9.86	40.47	56.44	-15.97	QP
5	0.608	21.33	0.24	9.86	31.43	46.00	-14.57	Average
6	0.608	30.09	0.24	9.86	40.19	56.00	-15.81	QP
7	1.184	21.30	0.42	9.87	31.59	46.00	-14.41	Average
8	1.184	28.48	0.42	9.87	38.77	56.00	-17.23	QP
9	3.309	16.92	0.68	9.88	27.48	46.00	-18.52	Average
10	3.309	25.92	0.68	9.88	36.48	56.00	-19.52	QP
11	4.015	17.85	0.56	9.89	28.30	46.00	-17.70	Average
12	4.015	27.12	0.56	9.89	37.57	56.00	-18.43	QP

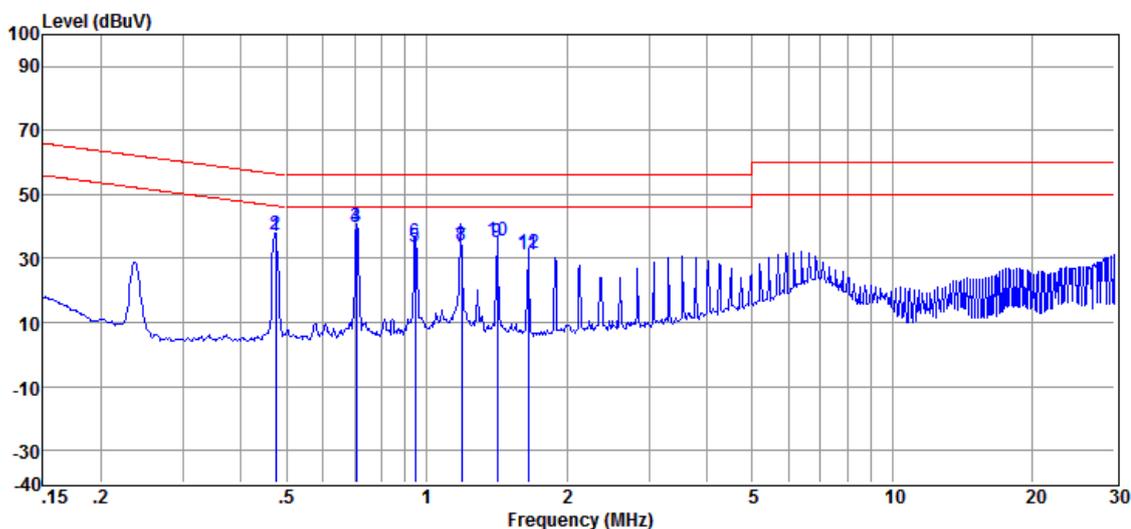
AC mode

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	0.474	24.69	0.25	9.86	34.80	46.44	-11.64	Average
2	0.474	25.09	0.25	9.86	35.20	56.44	-21.24	QP
3	0.709	28.43	0.22	9.86	38.51	46.00	-7.49	Average
4	0.709	28.45	0.22	9.86	38.53	56.00	-17.47	QP
5	0.948	20.50	0.18	9.87	30.55	46.00	-15.45	Average
6	0.948	21.78	0.18	9.87	31.83	56.00	-24.17	QP
7	1.185	26.68	0.22	9.87	36.77	46.00	-9.23	Average
8	1.185	26.92	0.22	9.87	37.01	56.00	-18.99	QP
9	1.417	22.58	0.27	9.87	32.72	46.00	-13.28	Average
10	1.417	22.85	0.27	9.87	32.99	56.00	-23.01	QP
11	1.655	18.53	0.31	9.87	28.71	46.00	-17.29	Average
12	1.655	19.13	0.31	9.87	29.31	56.00	-26.69	QP

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	0.474	26.94	0.30	9.86	37.10	46.44	-9.34	Average
2	0.474	27.13	0.30	9.86	37.29	56.44	-19.15	QP
3	0.708	29.70	0.19	9.86	39.75	46.00	-6.25	Average
4	0.708	29.65	0.19	9.86	39.70	56.00	-16.30	QP
5	0.946	23.60	0.22	9.87	33.69	46.00	-12.31	Average
6	0.946	24.94	0.22	9.87	35.03	56.00	-20.97	QP
7	1.187	23.24	0.42	9.87	33.53	46.00	-12.47	Average
8	1.187	23.63	0.42	9.87	33.92	56.00	-22.08	QP
9	1.420	24.66	0.62	9.87	35.15	46.00	-10.85	Average
10	1.420	24.81	0.62	9.87	35.30	56.00	-20.70	QP
11	1.655	20.56	0.79	9.87	31.22	46.00	-14.78	Average
12	1.655	20.86	0.79	9.87	31.52	56.00	-24.48	QP

Level = Read Level + LISN/ISN Factor + Cable Loss

7.2 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.

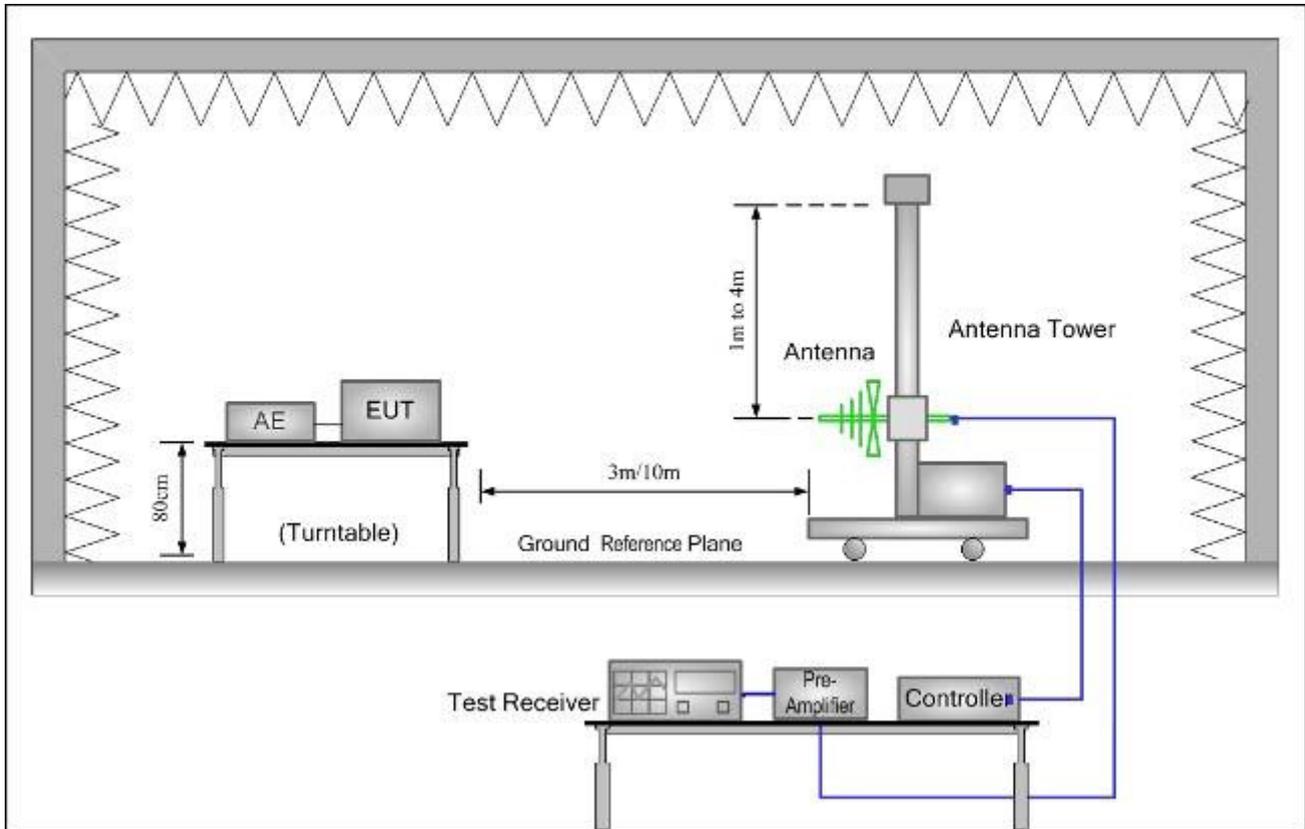
7.2.1 E.U.T. Operation

Test mode: AC mode, DC mode

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.

7.2.2 Test Setup and Procedure

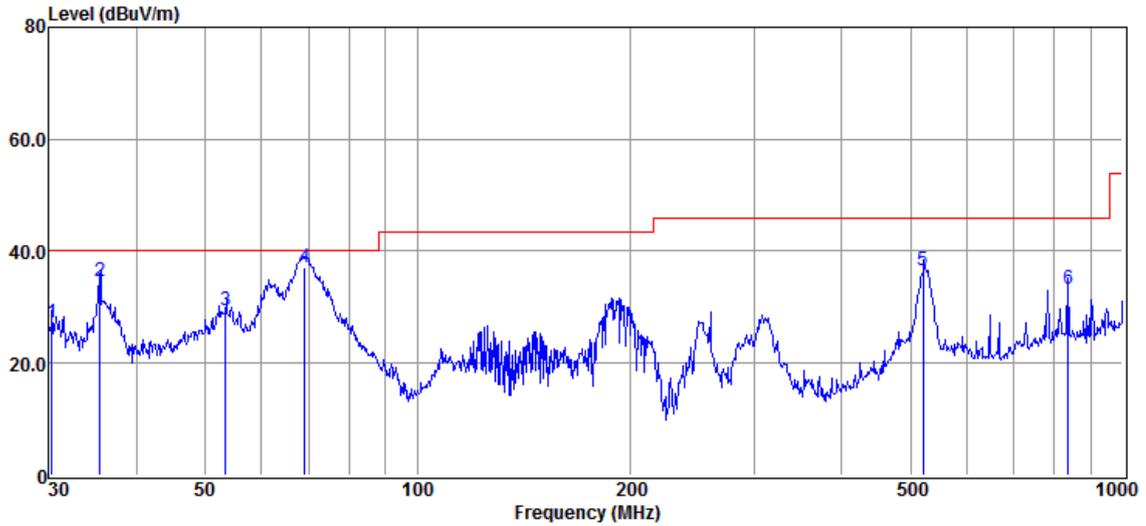


1. The radiated emissions test was conducted in a semi-anechoic chamber.
2. The EUT was connected to AC power source through a mains power outlet which was bonded to the ground reference plane; The mains cables shall drape to the ground reference plane.
3. The tabletop EUT was placed upon a non-metallic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

7.2.3 Measurement Data

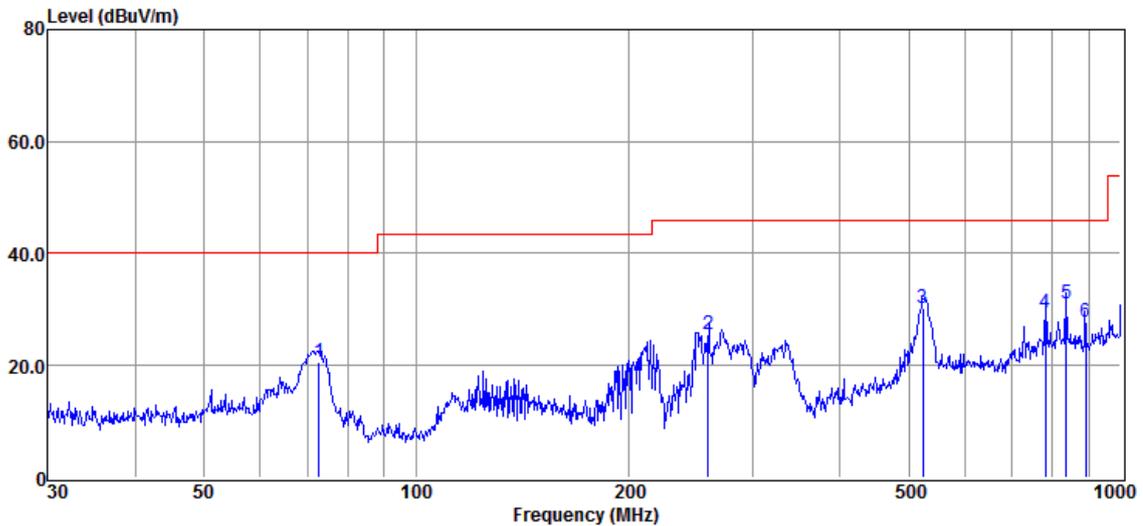
DC mode

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	30.32	38.86	12.53	24.60	0.54	27.33	40.00	-12.67	QP
2	35.48	46.00	12.60	24.60	0.57	34.57	40.00	-5.43	QP
3	53.41	39.75	13.40	24.60	0.73	29.28	40.00	-10.72	QP
4	69.19	49.10	11.78	24.60	0.86	37.14	40.00	-2.86	QP
5	521.91	39.91	18.05	24.18	2.83	36.61	46.00	-9.39	QP
6	836.69	29.76	23.71	23.98	3.72	33.21	46.00	-12.79	QP

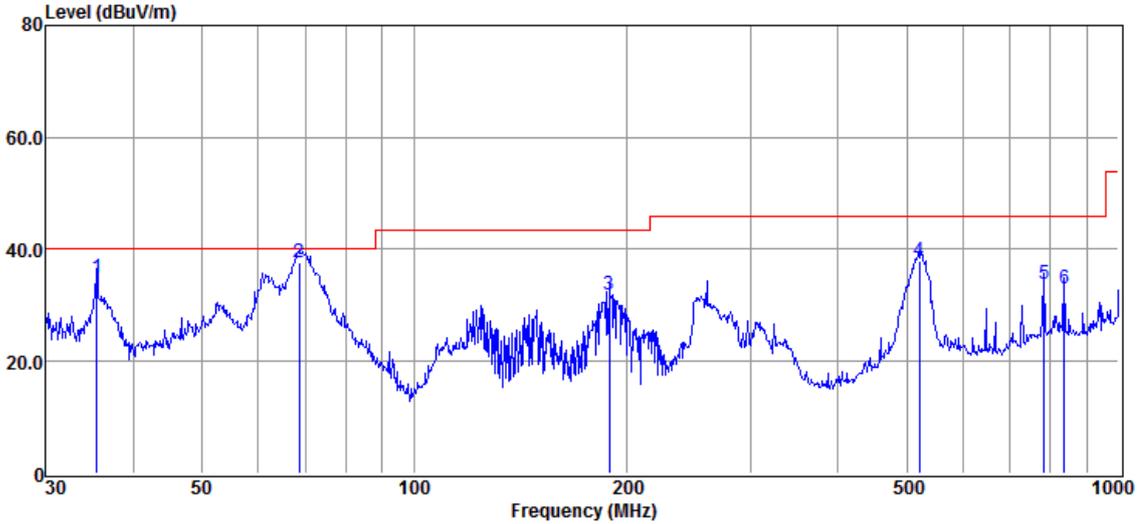
Horizontal:



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	72.72	33.38	10.92	24.60	0.88	20.58	40.00	-19.42	QP
2	259.94	35.98	12.20	24.47	1.86	25.57	46.00	-20.43	QP
3	523.40	33.38	18.14	24.18	2.83	30.17	46.00	-15.83	QP
4	782.73	26.63	23.21	24.01	3.59	29.42	46.00	-16.58	QP
5	836.54	27.55	23.71	23.98	3.72	31.00	46.00	-15.00	QP
6	890.93	25.26	22.62	23.94	3.85	27.79	46.00	-18.21	QP

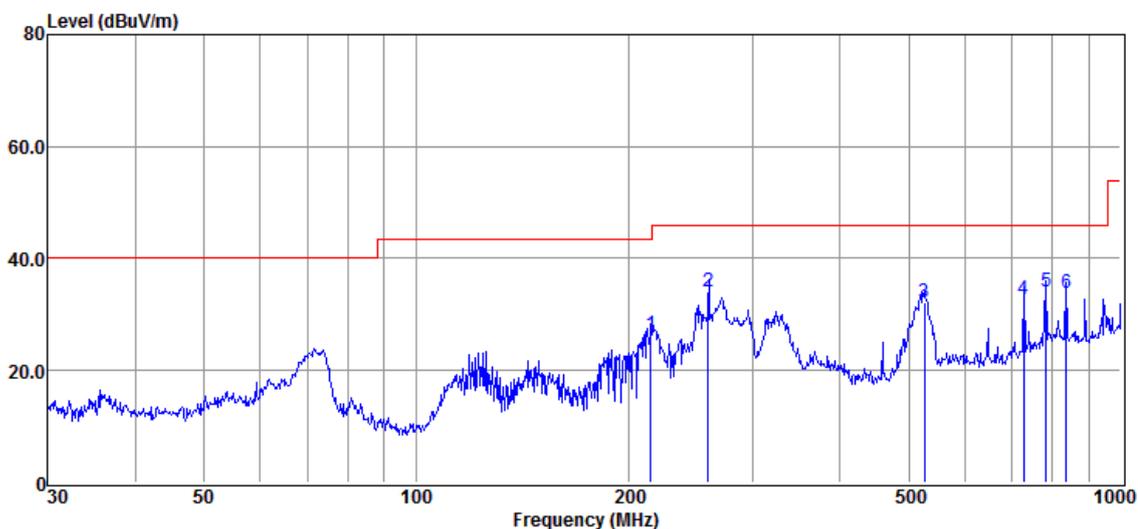
AC mode

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	35.48	46.22	12.60	24.60	0.57	34.79	40.00	-5.21	QP
2	68.70	49.59	11.89	24.60	0.85	37.73	40.00	-2.27	QP
3	189.36	43.65	11.09	24.50	1.54	31.78	43.50	-11.72	QP
4	521.91	41.19	18.05	24.18	2.83	37.89	46.00	-8.11	QP
5	782.92	30.88	23.22	24.01	3.59	33.68	46.00	-12.32	QP
6	836.69	29.53	23.71	23.98	3.72	32.98	46.00	-13.02	QP

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	215.27	38.91	10.15	24.50	1.71	26.27	43.50	-17.23	QP
2	259.88	44.61	12.20	24.47	1.86	34.20	46.00	-11.80	QP
3	526.93	35.28	18.33	24.17	2.84	32.28	46.00	-13.72	QP
4	728.43	32.14	21.28	24.04	3.44	32.82	46.00	-13.18	QP
5	783.69	31.28	23.23	24.01	3.59	34.09	46.00	-11.91	QP
6	837.29	30.31	23.70	23.97	3.72	33.76	46.00	-12.24	QP

$$\text{Level} = \text{Read Level} + \text{Antenna Factor} + \text{Cable Loss} - \text{Preamp Factor}$$

7.3 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

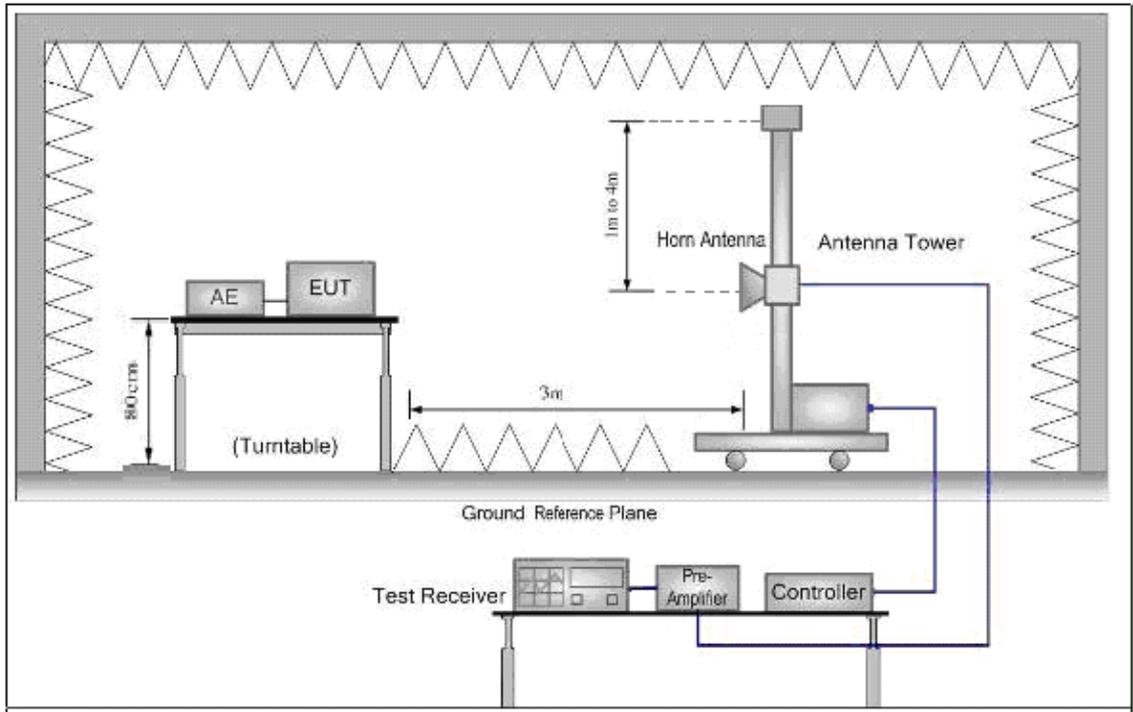
7.3.1 E.U.T. Operation

Test mode: AC mode, DC mode

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.

7.3.2 Test Setup and Procedure

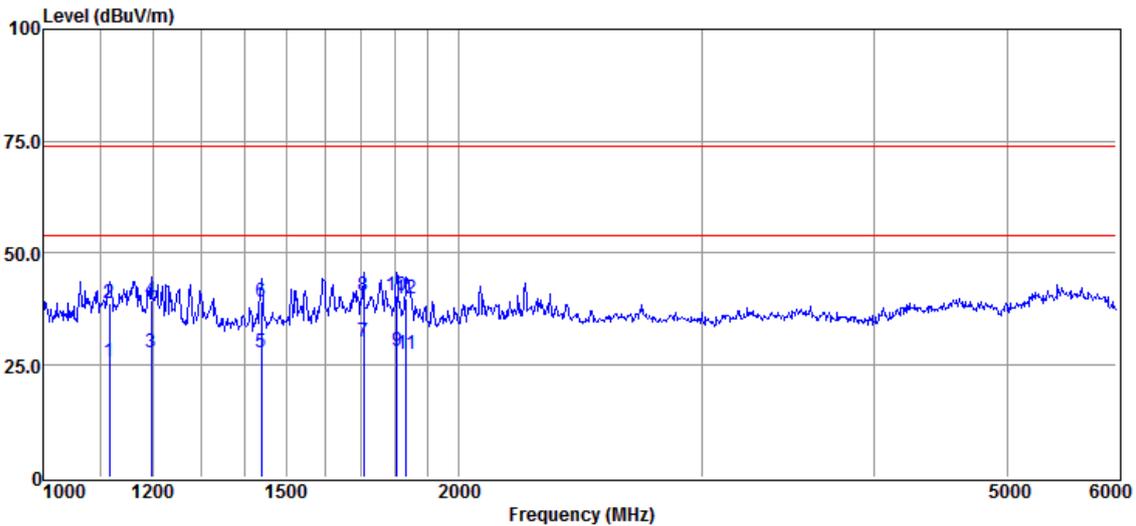


6. The radiated emissions test was conducted in a semi-anechoic chamber.
7. The EUT was connected to AC power source through a mains power outlet which was bonded to the ground reference plane; The mains cables shall drape to the ground reference plane.
8. The tabletop EUT was placed upon a non-metallic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

7.3.3 Measurement Data

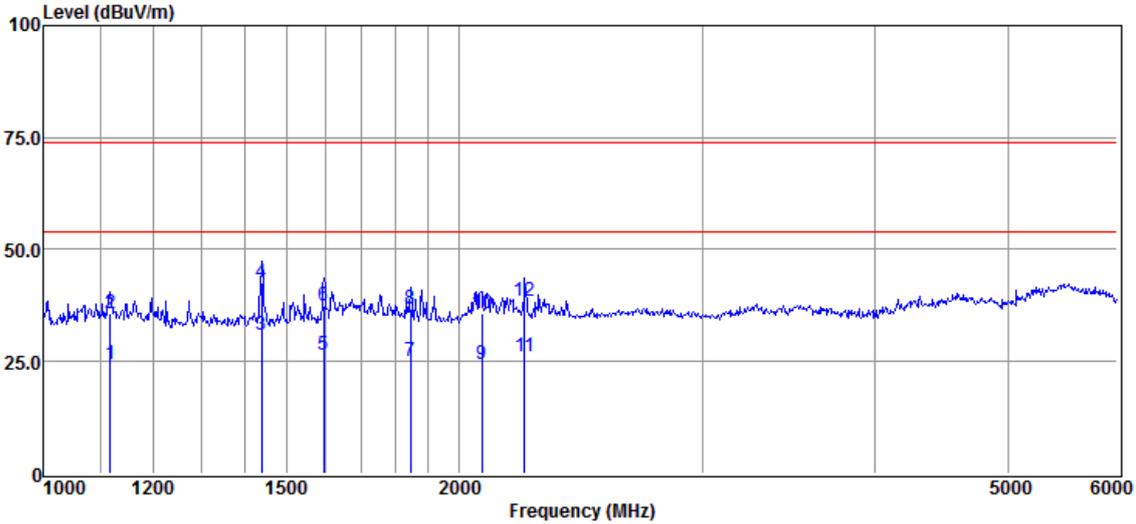
DC mode

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	1115.49	39.10	24.75	42.20	4.28	25.93	54.00	-28.07	Average
2	1115.49	51.97	24.75	42.20	4.28	38.80	74.00	-35.20	Peak
3	1196.23	40.80	24.86	42.20	4.47	27.93	54.00	-26.07	Average
4	1196.23	52.55	24.86	42.20	4.47	39.68	74.00	-34.32	Peak
5	1438.68	39.70	25.17	42.20	5.05	27.72	54.00	-26.28	Average
6	1438.68	51.14	25.17	42.20	5.05	39.16	74.00	-34.84	Peak
7	1705.65	40.79	25.52	42.24	6.10	30.17	54.00	-23.83	Average
8	1705.65	51.28	25.52	42.24	6.10	40.66	74.00	-33.34	Peak
9	1803.07	38.40	25.64	42.26	6.52	28.30	54.00	-25.70	Average
10	1803.07	50.66	25.64	42.26	6.52	40.56	74.00	-33.44	Peak
11	1832.38	37.50	25.68	42.27	6.65	27.56	54.00	-26.44	Average
12	1832.38	49.73	25.68	42.27	6.65	39.79	74.00	-34.21	Peak

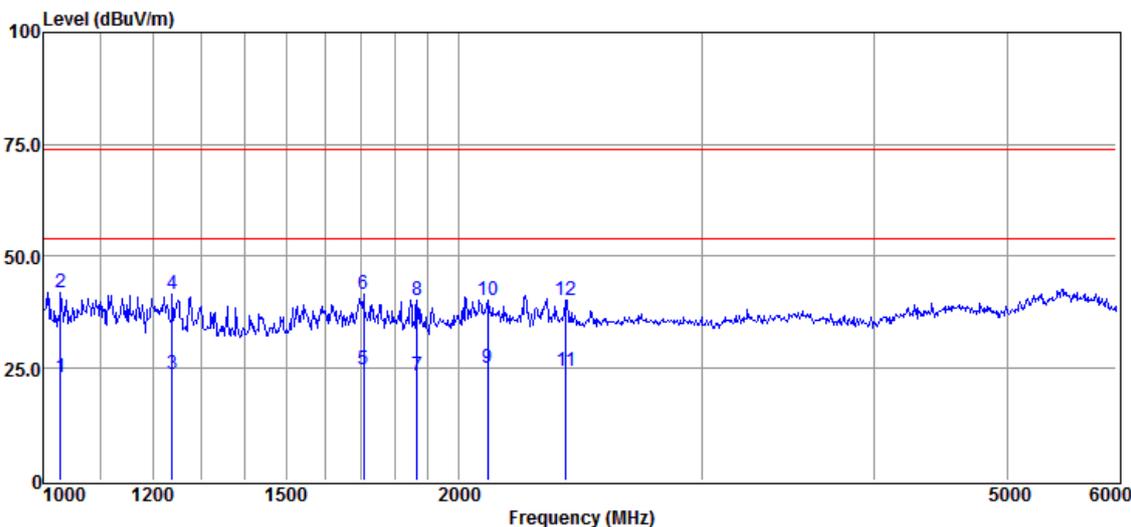
Horizontal:



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	1117.50	37.51	24.76	42.20	4.28	24.35	54.00	-29.65	Average
2	1117.50	48.81	24.76	42.20	4.28	35.65	74.00	-38.35	Peak
3	1438.68	42.91	25.21	42.20	5.05	30.97	54.00	-23.03	Average
4	1438.68	54.49	25.21	42.20	5.05	42.55	74.00	-31.45	Peak
5	1596.24	37.50	25.42	42.22	5.62	26.32	54.00	-27.68	Average
6	1596.24	48.76	25.42	42.22	5.62	37.58	74.00	-36.42	Peak
7	1845.56	34.90	25.71	42.27	6.71	25.05	54.00	-28.95	Average
8	1845.56	46.45	25.71	42.27	6.71	36.60	74.00	-37.40	Peak
9	2077.24	33.10	26.13	42.33	7.37	24.27	54.00	-29.73	Average
10	2077.24	44.46	26.13	42.33	7.37	35.63	74.00	-38.37	Peak
11	2231.58	34.60	26.59	42.39	7.35	26.15	54.00	-27.85	Average
12	2231.58	47.07	26.59	42.39	7.35	38.62	74.00	-35.38	Peak

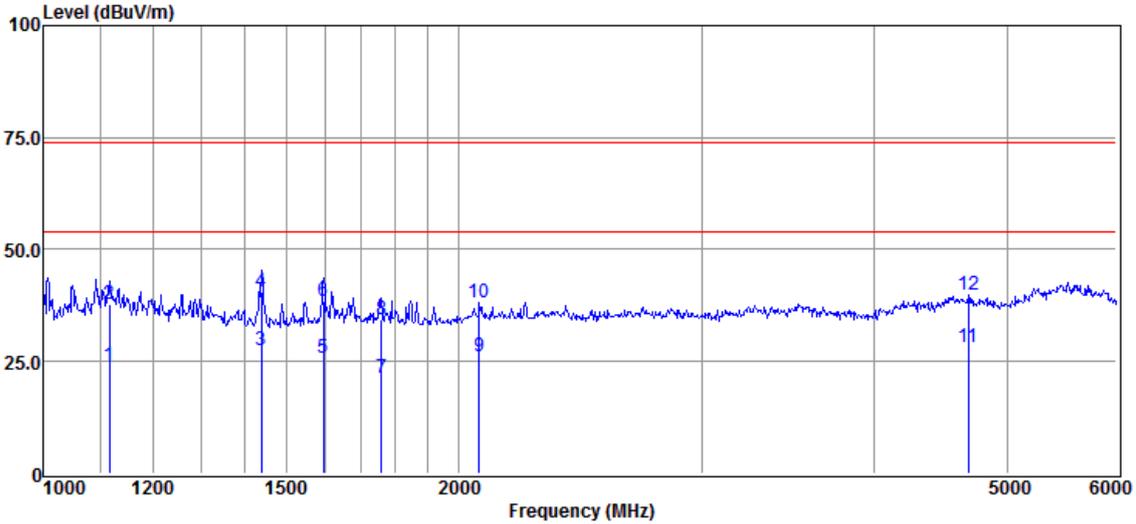
AC mode

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	1029.08	36.40	24.64	42.20	4.07	22.91	74.00	-51.09	Average
2	1029.08	55.33	24.64	42.20	4.07	41.84	74.00	-32.16	Peak
3	1239.88	36.50	24.91	42.20	4.58	23.79	74.00	-50.21	Average
4	1239.88	54.12	24.91	42.20	4.58	41.41	74.00	-32.59	Peak
5	1705.65	35.19	25.52	42.24	6.10	24.57	74.00	-49.43	Average
6	1705.65	52.24	25.52	42.24	6.10	41.62	74.00	-32.38	Peak
7	1865.51	33.10	25.73	42.27	6.79	23.35	74.00	-50.65	Average
8	1865.51	49.93	25.73	42.27	6.79	40.18	74.00	-33.82	Peak
9	2099.69	33.90	26.20	42.34	7.37	25.13	74.00	-48.87	Average
10	2099.69	49.02	26.20	42.34	7.37	40.25	74.00	-33.75	Peak
11	2393.09	32.61	27.08	42.46	7.32	24.55	74.00	-49.45	Average
12	2393.09	48.35	27.08	42.46	7.32	40.29	74.00	-33.71	Peak

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	1115.49	37.20	24.76	42.20	4.28	24.04	54.00	-29.96	Average
2	1115.49	50.96	24.76	42.20	4.28	37.80	74.00	-36.20	Peak
3	1438.68	39.51	25.21	42.20	5.05	27.57	54.00	-26.43	Average
4	1438.68	52.42	25.21	42.20	5.05	40.48	74.00	-33.52	Peak
5	1596.24	36.80	25.42	42.22	5.62	25.62	54.00	-28.38	Average
6	1596.24	49.76	25.42	42.22	5.62	38.58	74.00	-35.42	Peak
7	1758.40	31.60	25.61	42.25	6.33	21.29	54.00	-32.71	Average
8	1758.40	44.60	25.61	42.25	6.33	34.29	74.00	-39.71	Peak
9	2069.81	34.90	26.11	42.33	7.37	26.05	54.00	-27.95	Average
10	2069.81	47.00	26.11	42.33	7.37	38.15	74.00	-35.85	Peak
11	4685.61	30.10	30.71	43.21	10.45	28.05	54.00	-25.95	Average
12	4685.61	41.77	30.71	43.21	10.45	39.72	74.00	-34.28	Peak

$$\text{Level} = \text{Read Level} + \text{Antenna Factor} + \text{Cable Loss} - \text{Preamp Factor}$$

8 Photographs (Test Setup For the EUT)

8.1 Conducted Emissions on Mains Terminals Test Setup



8.2 Radiated Emission Test Setup

30MHz to 1GHz



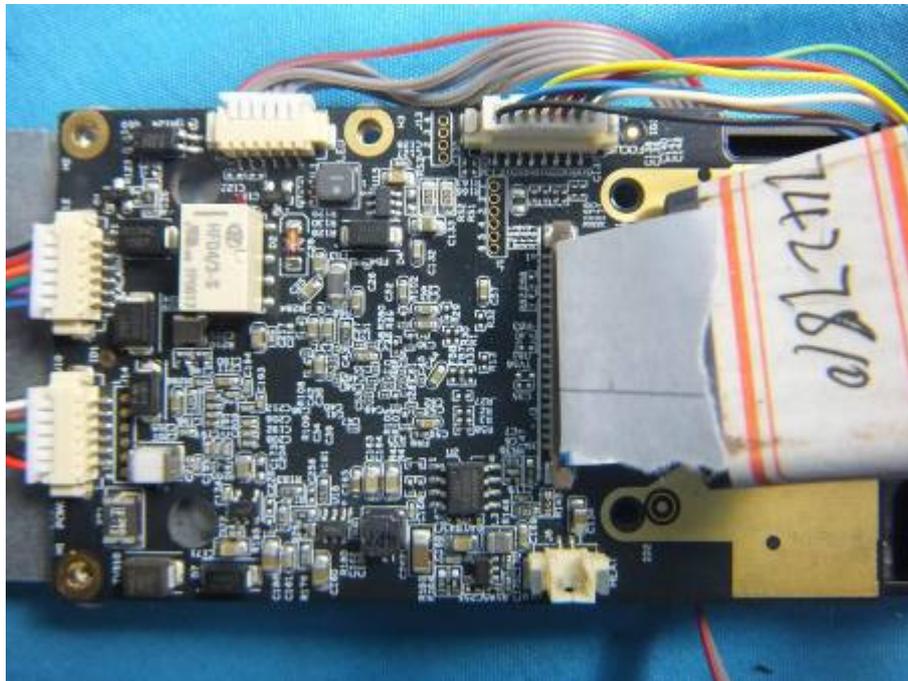
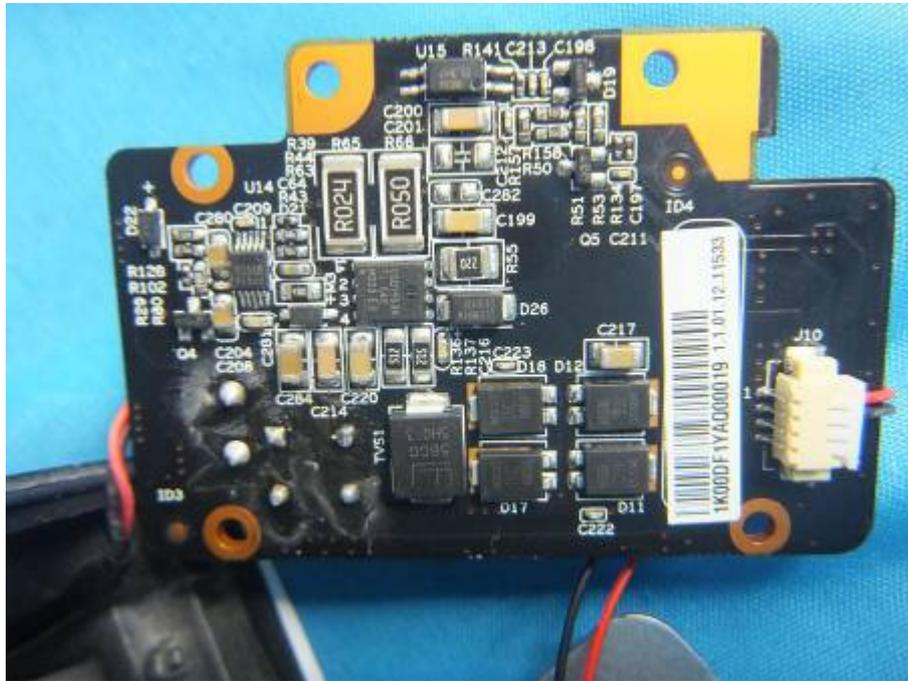
1GHz to 6GHz



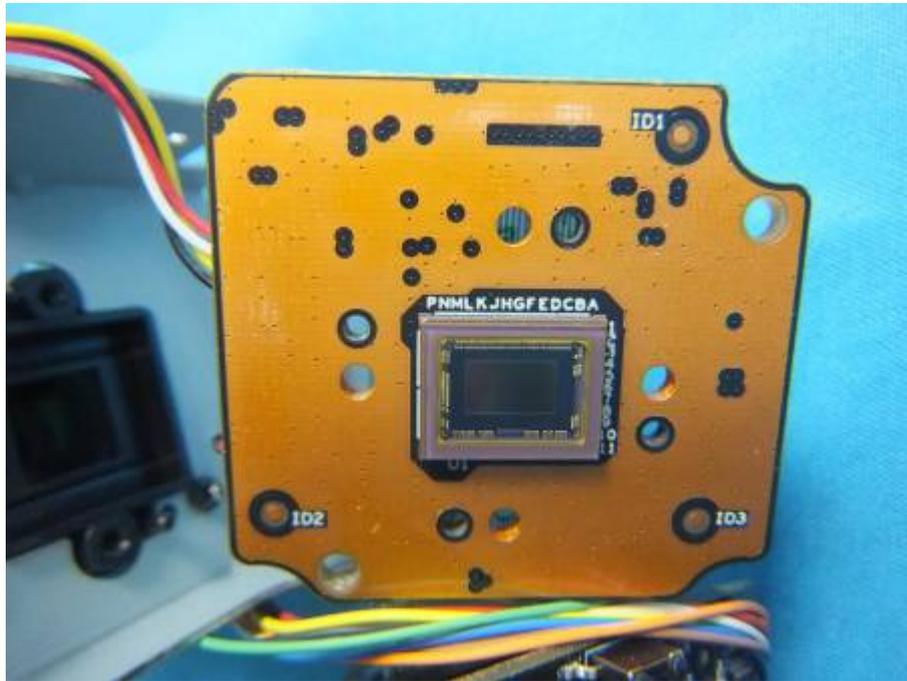
9 EUT Constructional Details

9.1 Exterior of EUT









--End of the Report--