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Report No.: SHEM171200867101

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TEST REPORT

Application No.: SHEM1712008671IT
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: 1, ZHEJIANG DAHUA VISION TECHNOLOGY CO., LTD.
2, ZHEJIANG DAHUA ZHILIAN CO.,LTD.
Address of Factory: 1, No.1199, Bin'an Road, Binjiang District, Hangzhou, P.R. China
2, No.28, Dongqiao Road, Dongzhou Street, Fuyang District, Hangzhou, P.R. China.

Equipment Under Test (EUT):

EUT Name: HDCVI CAMERA

Model No.: HAC-HDW2802TP-A, HAC-HDW2802TN-A, DH-HAC-HDW2802TP-A, DH-HAC-HDW2802TN-A, HAC-HDW2601TP-A, HAC-HDW2601TN-A, DH-HAC-HDW2601TP-A, DH-HAC-HDW2601TN-A, A82AG52α

α

Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.

Trade mark:



Standard(s) : 47 CFR Part 15, Subpart B

Date of Receipt: 2017-12-18

Date of Test: 2017-12-20 to 2018-01-12

Date of Issue: 2018-02-01

Test Result:

Pass*

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




Parlam Zhan
E&E Section Manager

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

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Revision Record				
Version	Chapter	Date	Modifier	Remark
01	/	2018-02-01	/	Original

Authorized for issue by:				
				
		<hr/>		
		Bruce Tang /Project Engineer		
				
		<hr/>		
		Zenger Zhang /Reviewer		

2 Test Summary

Emission Part				
Item	Standard	Method	Requirement	Result
Conducted Emissions at Mains Terminals (150kHz-30MHz)	47 CFR Part 15, Subpart B	ANSI C63.4	Class A	Pass
Radiated Emissions (30MHz-1GHz)	47 CFR Part 15, Subpart B	ANSI C63.4	Class A	Pass
Radiated Emissions (above 1GHz)	47 CFR Part 15, Subpart B	ANSI C63.4	Class A	Pass

Internal Source	Upper Frequency
Below 1.705MHz	30MHz
1.705MHz to 108MHz	1GHz
108MHz to 500MHz	2GHz
500MHz to 1GHz	5GHz
Above 1GHz	5th harmonic of the highest frequency or 40GHz, whichever is lower

Declaration of EUT Family Grouping:

There are series models mentioned in this report and they are the similar in electrical and electronic characters. Only the model HAC-HDW2802TP-A was tested since their differences are pixels and sales area.



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4 General Information

4.1 Details of E.U.T.

Power supply: DC12V
Cable: Signal cable : 0.5m

4.2 Description of Support Units

7"LCD HD DVR	Hikvision	DS-8104AHQLI-E4
Switching Adapter 3	HOIOTO	ADS-25FSG-12
iPoD	Apple	Nano 7

4.3 Measurement Uncertainty

No.	Item	Measurement Uncertainty
1	Conducted Emission at mains port using AMN	3.2dB (9kHz to 150kHz)
		3.0dB (150kHz to 30MHz)
2	Conducted Emission at mains port using VP	1.9 dB(9kHz to 30MHz)
3	Conducted Emission at telecommunication port using AAN	2.4 dB(150kHz to 30MHz)
4	Radiated Power	3.5dB
5	Radiated emission	4.4dB (30MHz-1GHz)
		4.6dB (1GHz-6GHz)

4.4 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

No tests were sub-contracted.

4.5 Test Facility

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

- **CNAS (No. CNAS L0599)**

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

- **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.

- **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.

4.6 Deviation from Standards

None

4.7 Abnormalities from Standard Conditions

None

5 Equipment List

Conducted Emissions at Mains Terminals (150kHz-30MHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESR7	SHEM162-1	2017-12-26	2018-12-25
Line impedance stabilization network	SCHWARZBECK	NSLK8127	SHEM061-1	2017-05-17	2018-05-16
Line impedance stabilization network	EMCO	3816/2	SHEM019-1	2017-12-26	2018-12-25
Pulse limiter	Rohde & Schwarz	ESH3-Z2	SHEM029-1	2017-08-01	2018-07-31
Shielding Room	ZHONGYU	8*4*3M	SHEM079-2	2016-12-29	2019-12-28
CE test Cable	/	/	CE01	2017-12-26	2018-12-25

Radiated Emissions (30MHz-1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2017-09-26	2018-09-25
CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Broadband UHF-VHF ANTENNA	SCHWARZBECK	VULB9168	SHEM048-1	2017-02-28	2020-02-27
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2017-07-22	2018-07-21
Low Amplifier	CLAVIIO	BDLNA-0001-412010	SHEM164-1	2017-08-22	2018-08-21

Radiated Emissions (above 1GHz)					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
EMI test receiver	Rohde & Schwarz	ESU40	SHEM051-1	2017-09-26	2018-09-25
CONTROLLER	INNCO	CO200	SHEM047-1	N/A	N/A
ANTENNA MAST	INNCO	MA400-EP	SHEM047-2	N/A	N/A
TURN DEVICE	INNCO	DE 3600-RH	SHEM047-3	N/A	N/A
Double ridged broadband horn ANTENNA	SCHWARZBECK	BBHA9120D	SHEM050-1	2017-01-14	2020-01-13
High-amplifier	SCHWARZBECK	SCU-F0118-G40-BZ4-CS	SHEM050-2	2017-01-14	2020-01-13
Semi/Fully Anechoic	ST	11*6*6M	SHEM078-2	2017-07-22	2018-07-21

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Digital pressure meter	YONGZHI	DYM3-01	SHEM082-1	2017-03-03	2018-03-02
Temperature&humidity recorder	ShangHai weather meter work	ZJ 1-2B	SHEM042-1~6	2017-09-13	2018-09-12
Digital Multimeter	FLUKE	17B	SHEM043-5	2017-09-13	2018-09-12
Autoformer regulator	Guangzhou bao de	TDGC2-5KVA	SHEM150-1	N/A	N/A
Multi-purpose tong tester	FLUKE	316	SHEM001-1	2017-01-29	2018-01-28

6 Emission Test Results

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

Test Requirement:	47 CFR Part 15, Subpart B
Test Method:	ANSI C63.4
Frequency Range:	150kHz to 30MHz
Limit:	
0.15M-0.5MHz	79dB(μV) quasi-peak, 66dB(μV) average
0.5M-30MHz	73dB(μV) quasi-peak, 60dB(μV) average
Detector:	Peak for pre-scan (9kHz resolution bandwidth) 0.15M to 30MHz

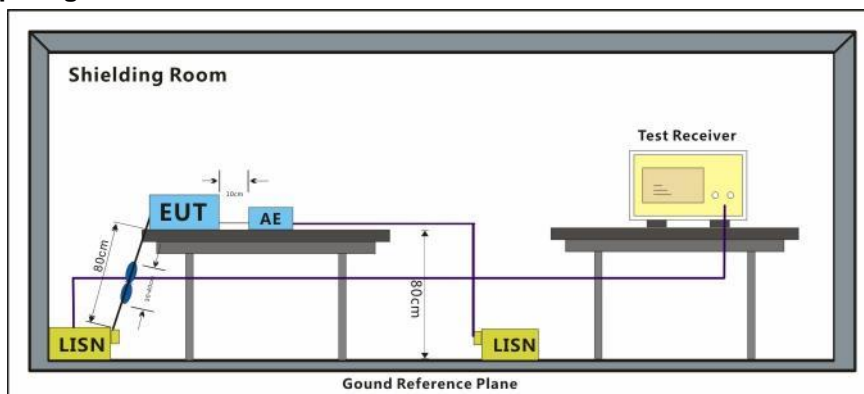
6.1.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1020 mbar

- Test mode:
- a: CVI preview : keep EUT preview with CVI output .
 - b: AHD preview : keep EUT preview with AHD output .
 - c: CVBS preview : keep EUT preview with CVBS output .
 - d: TVI preview : keep EUT preview with TVI output .

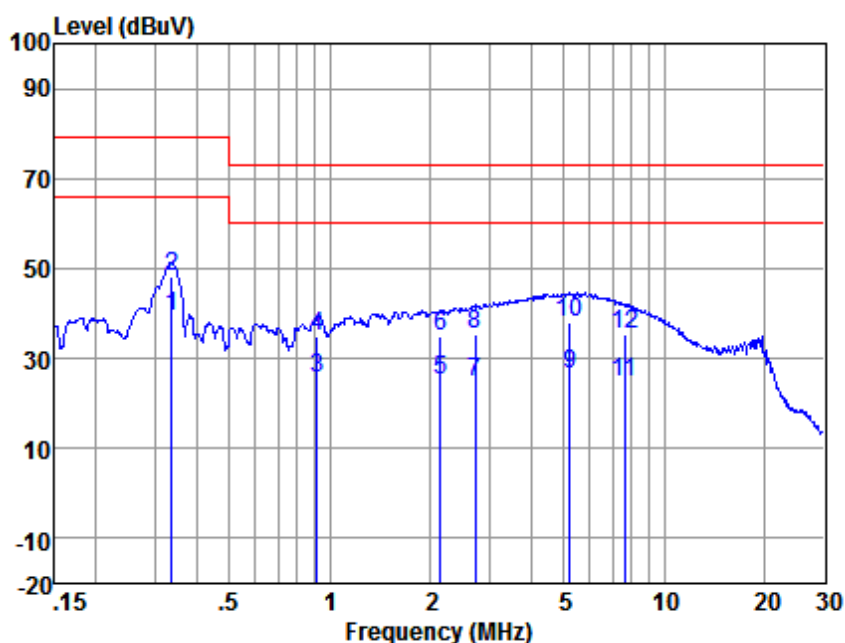
6.1.2 Test Setup Diagram



6.1.3 Measurement Data

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

Mode:a; Line:Live Line

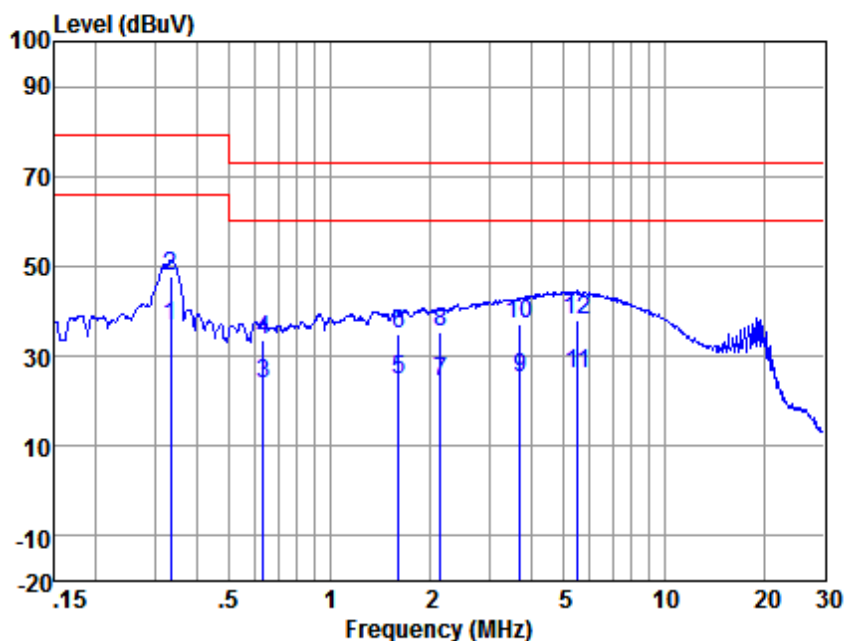


Site : chamber
Condition : LISN-L-2017
EUT/Project No: 8671IT
Test mode : a

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.337	29.31	0.11	9.81	39.23	66.00	-26.77	Average
2	0.337	38.45	0.11	9.81	48.37	79.00	-30.63	QP
3	0.918	15.56	0.11	9.83	25.50	60.00	-34.50	Average
4	0.918	25.10	0.11	9.83	35.04	73.00	-37.96	QP
5	2.144	15.02	0.12	9.85	24.99	60.00	-35.01	Average
6	2.144	24.95	0.12	9.85	34.92	73.00	-38.08	QP
7	2.721	14.72	0.12	9.85	24.69	60.00	-35.31	Average
8	2.721	25.58	0.12	9.85	35.55	73.00	-37.45	QP
9	5.221	16.40	0.11	9.86	26.37	60.00	-33.63	Average
10	5.221	27.91	0.11	9.86	37.88	73.00	-35.12	QP
11	7.606	14.62	0.10	9.86	24.58	60.00	-35.42	Average
12	7.606	25.29	0.10	9.86	35.25	73.00	-37.75	QP

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

Mode:a; Line:Neutral Line

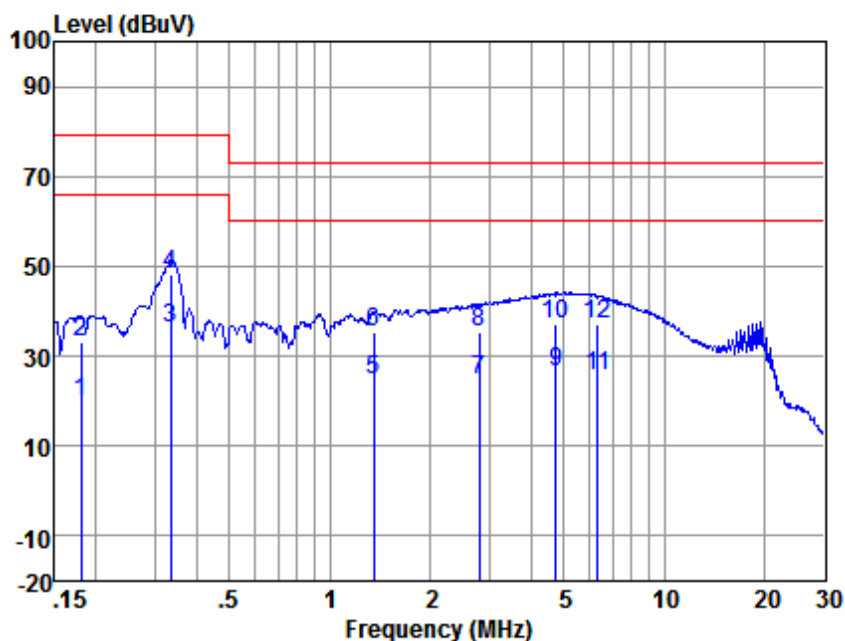


Site : chamber
Condition : LISN-N-2017
EUT/Project No: 8671IT
Test mode : a

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.334	26.55	0.11	9.81	36.47	66.00	-29.53	Average
2	0.334	38.03	0.11	9.81	47.95	79.00	-31.05	QP
3	0.630	13.69	0.11	9.82	23.62	60.00	-36.38	Average
4	0.630	23.80	0.11	9.82	33.73	73.00	-39.27	QP
5	1.610	14.78	0.12	9.84	24.74	60.00	-35.26	Average
6	1.610	24.85	0.12	9.84	34.81	73.00	-38.19	QP
7	2.144	14.49	0.12	9.85	24.46	60.00	-35.54	Average
8	2.144	25.33	0.12	9.85	35.30	73.00	-37.70	QP
9	3.700	15.15	0.13	9.85	25.13	60.00	-34.87	Average
10	3.700	26.98	0.13	9.85	36.96	73.00	-36.04	QP
11	5.505	15.95	0.13	9.86	25.94	60.00	-34.06	Average
12	5.505	28.03	0.13	9.86	38.02	73.00	-34.98	QP

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

Mode:b; Line:Live Line

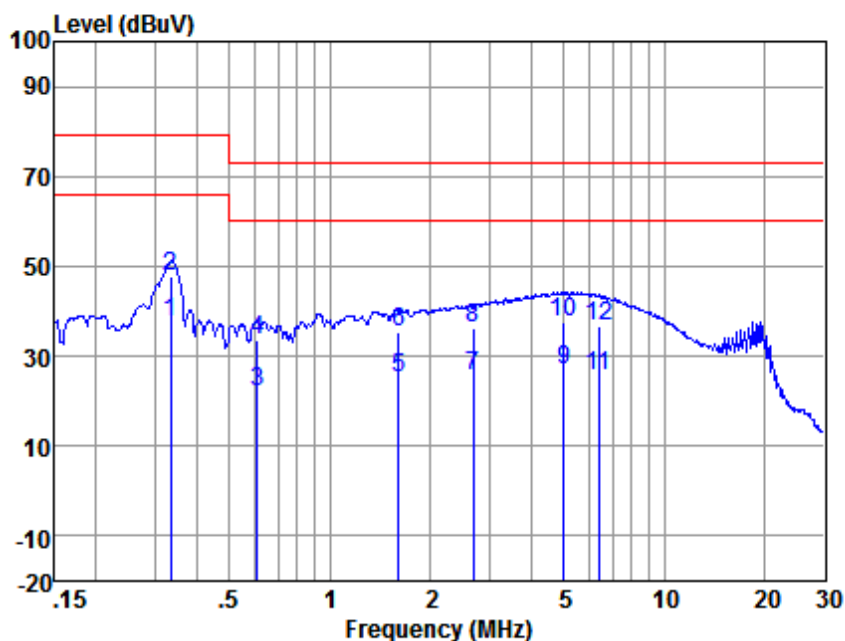


Site : chamber
Condition : LISN-L-2017
EUT/Project No: 8671IT
Test mode : b

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.180	9.73	0.11	9.81	19.65	66.00	-46.35	Average
2	0.180	23.06	0.11	9.81	32.98	79.00	-46.02	QP
3	0.334	26.30	0.11	9.81	36.22	66.00	-29.78	Average
4	0.334	38.13	0.11	9.81	48.05	79.00	-30.95	QP
5	1.352	14.91	0.11	9.84	24.86	60.00	-35.14	Average
6	1.352	25.19	0.11	9.84	35.14	73.00	-37.86	QP
7	2.794	14.68	0.12	9.85	24.65	60.00	-35.35	Average
8	2.794	25.43	0.12	9.85	35.40	73.00	-37.60	QP
9	4.746	16.38	0.11	9.86	26.35	60.00	-33.65	Average
10	4.746	26.96	0.11	9.86	36.93	73.00	-36.07	QP
11	6.352	15.52	0.11	9.86	25.49	60.00	-34.51	Average
12	6.352	27.06	0.11	9.86	37.03	73.00	-35.97	QP

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

Mode:b; Line:Neutral Line

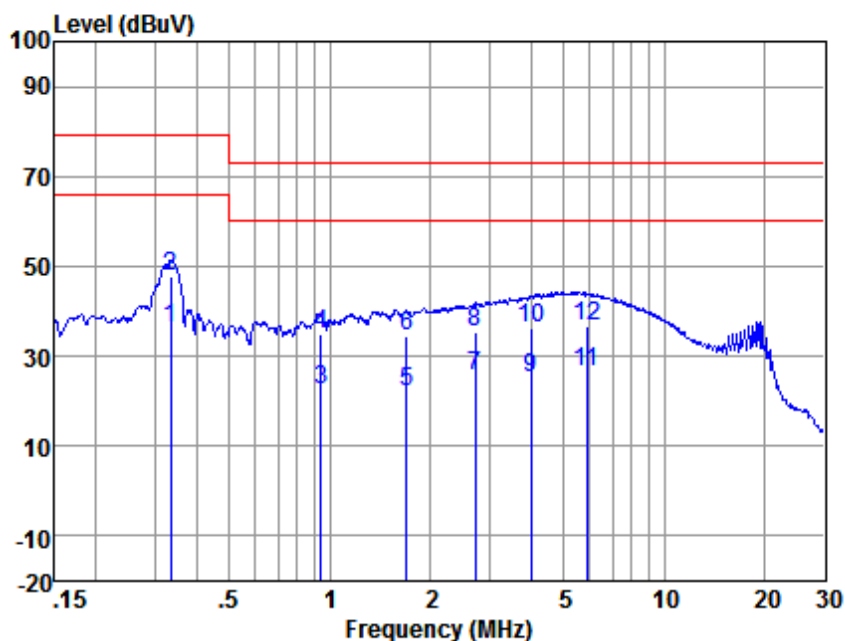


Site : chamber
Condition : LISN-N-2017
EUT/Project No: 8671IT
Test mode : b

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.334	27.57	0.11	9.81	37.49	66.00	-28.51	Average
2	0.334	37.77	0.11	9.81	47.69	79.00	-31.31	QP
3	0.608	12.04	0.11	9.82	21.97	60.00	-38.03	Average
4	0.608	23.57	0.11	9.82	33.50	73.00	-39.50	QP
5	1.610	15.08	0.12	9.84	25.04	60.00	-34.96	Average
6	1.610	25.20	0.12	9.84	35.16	73.00	-37.84	QP
7	2.692	15.79	0.13	9.85	25.77	60.00	-34.23	Average
8	2.692	26.24	0.13	9.85	36.22	73.00	-36.78	QP
9	5.005	16.83	0.13	9.86	26.82	60.00	-33.18	Average
10	5.005	27.65	0.13	9.86	37.64	73.00	-35.36	QP
11	6.386	15.83	0.13	9.86	25.82	60.00	-34.18	Average
12	6.386	26.62	0.13	9.86	36.61	73.00	-36.39	QP

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

Mode:c; Line:Live Line

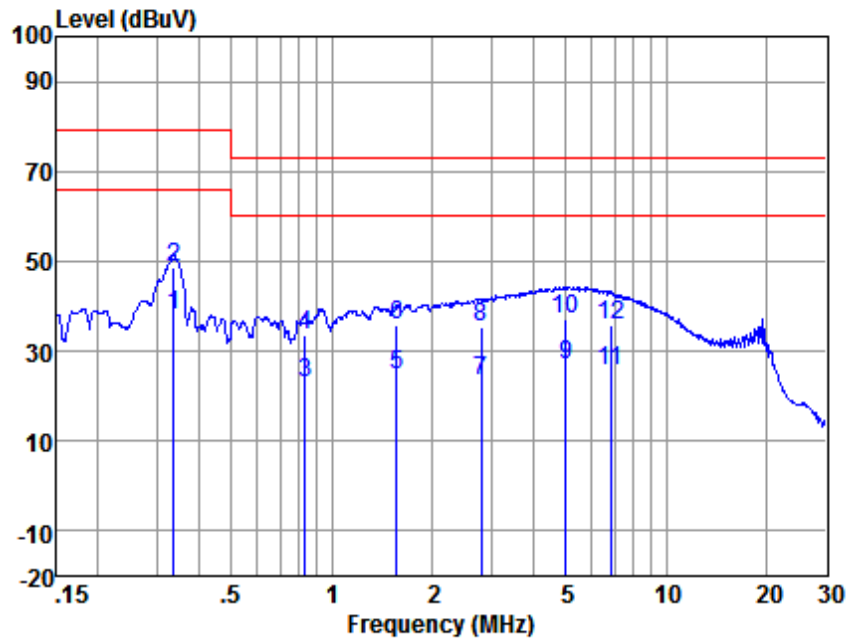


Site : chamber
Condition : LISN-L-2017
EUT/Project No: 8671IT
Test mode : c

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.334	26.40	0.11	9.81	36.32	66.00	-29.68	Average
2	0.334	38.04	0.11	9.81	47.96	79.00	-31.04	QP
3	0.938	12.47	0.11	9.83	22.41	60.00	-37.59	Average
4	0.938	24.94	0.11	9.83	34.88	73.00	-38.12	QP
5	1.698	12.25	0.11	9.84	22.20	60.00	-37.80	Average
6	1.698	24.33	0.11	9.84	34.28	73.00	-38.72	QP
7	2.721	15.55	0.12	9.85	25.52	60.00	-34.48	Average
8	2.721	25.58	0.12	9.85	35.55	73.00	-37.45	QP
9	4.006	15.25	0.12	9.85	25.22	60.00	-34.78	Average
10	4.006	26.46	0.12	9.85	36.43	73.00	-36.57	QP
11	5.867	16.41	0.11	9.86	26.38	60.00	-33.62	Average
12	5.867	26.91	0.11	9.86	36.88	73.00	-36.12	QP

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

Mode:c; Line:Neutral Line

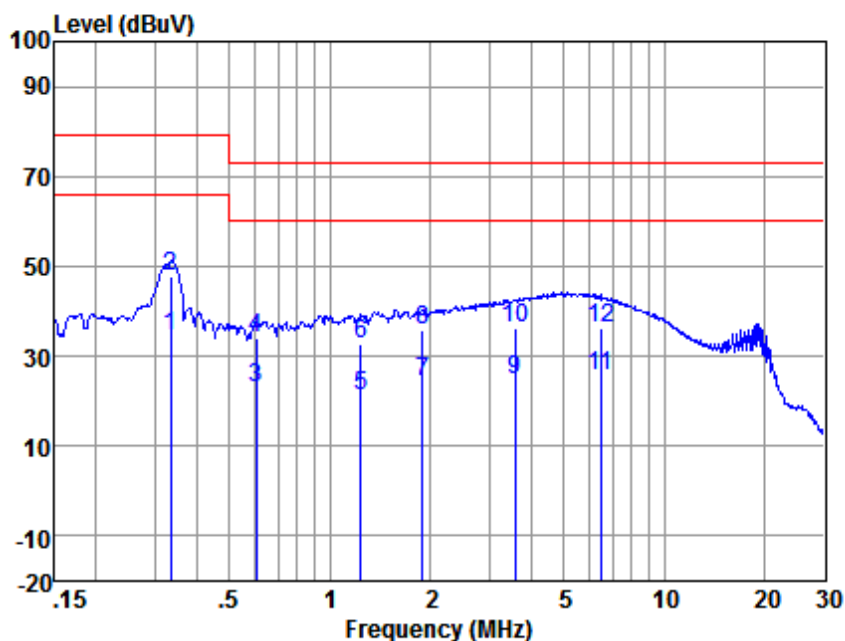


Site : chamber
Condition : LISN-N-2017
EUT/Project No: 8671IT
Test mode : c

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.337	27.95	0.11	9.81	37.87	66.00	-28.13	Average
2	0.337	38.56	0.11	9.81	48.48	79.00	-30.52	QP
3	0.830	12.82	0.11	9.83	22.76	60.00	-37.24	Average
4	0.830	23.79	0.11	9.83	33.73	73.00	-39.27	QP
5	1.568	14.90	0.12	9.84	24.86	60.00	-35.14	Average
6	1.568	25.66	0.12	9.84	35.62	73.00	-37.38	QP
7	2.794	13.53	0.13	9.85	23.51	60.00	-36.49	Average
8	2.794	25.21	0.13	9.85	35.19	73.00	-37.81	QP
9	5.005	16.75	0.13	9.86	26.74	60.00	-33.26	Average
10	5.005	27.17	0.13	9.86	37.16	73.00	-35.84	QP
11	6.841	15.54	0.13	9.86	25.53	60.00	-34.47	Average
12	6.841	26.01	0.13	9.86	36.00	73.00	-37.00	QP

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

Mode:d; Line:Live Line

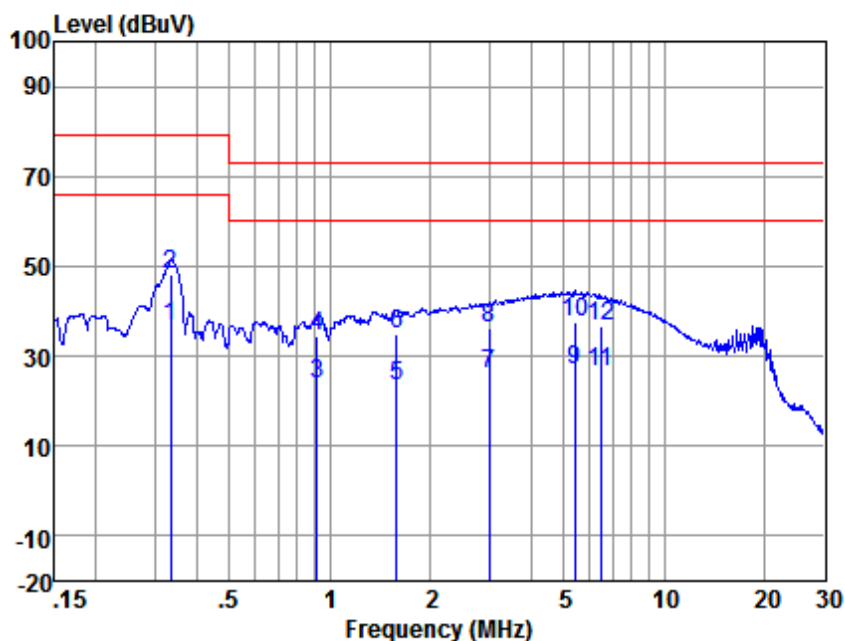


Site : chamber
Condition : LISN-L-2017
EUT/Project No: 8671IT
Test mode : d

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.334	24.48	0.11	9.81	34.40	66.00	-31.60	Average
2	0.334	37.89	0.11	9.81	47.81	79.00	-31.19	QP
3	0.601	13.21	0.11	9.82	23.14	60.00	-36.86	Average
4	0.601	24.31	0.11	9.82	34.24	73.00	-38.76	QP
5	1.242	11.40	0.11	9.84	21.35	60.00	-38.65	Average
6	1.242	22.72	0.11	9.84	32.67	73.00	-40.33	QP
7	1.898	14.16	0.12	9.85	24.13	60.00	-35.87	Average
8	1.898	25.61	0.12	9.85	35.58	73.00	-37.42	QP
9	3.584	14.74	0.12	9.85	24.71	60.00	-35.29	Average
10	3.584	26.33	0.12	9.85	36.30	73.00	-36.70	QP
11	6.454	15.51	0.11	9.86	25.48	60.00	-34.52	Average
12	6.454	26.21	0.11	9.86	36.18	73.00	-36.82	QP

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

Mode:d; Line:Neutral Line



Site : chamber
Condition : LISN-N-2017
EUT/Project No: 8671IT
Test mode : d

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.334	26.96	0.11	9.81	36.88	66.00	-29.12	Average
2	0.334	38.07	0.11	9.81	47.99	79.00	-31.01	QP
3	0.918	13.96	0.11	9.83	23.90	60.00	-36.10	Average
4	0.918	24.73	0.11	9.83	34.67	73.00	-38.33	QP
5	1.585	13.60	0.12	9.84	23.56	60.00	-36.44	Average
6	1.585	24.90	0.12	9.84	34.86	73.00	-38.14	QP
7	2.993	15.87	0.13	9.85	25.85	60.00	-34.15	Average
8	2.993	26.19	0.13	9.85	36.17	73.00	-36.83	QP
9	5.419	16.87	0.13	9.86	26.86	60.00	-33.14	Average
10	5.419	27.58	0.13	9.86	37.57	73.00	-35.43	QP
11	6.454	16.66	0.13	9.86	26.65	60.00	-33.35	Average
12	6.454	26.91	0.13	9.86	36.90	73.00	-36.10	QP

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

6.2 Radiated Emissions (30MHz-1GHz)

Test Requirement: 47 CFR Part 15, Subpart B

Test Method: ANSI C63.4

Frequency Range: 30MHz to 1GHz

Measurement Distance: 3m

Limit:

30MHz -88MHz 49.5(dB μ V/m) quasi-peak

88MHz-216MHz 54.0(dB μ V/m) quasi-peak

216MHz-960MHz 56.9(dB μ V/m) quasi-peak

960MHz-1000MHz 60.0(dB μ V/m) quasi-peak

Detector: Peak for pre-scan (120kHz resolution bandwidth) 30M to1000MHz

6.2.1 E.U.T. Operation

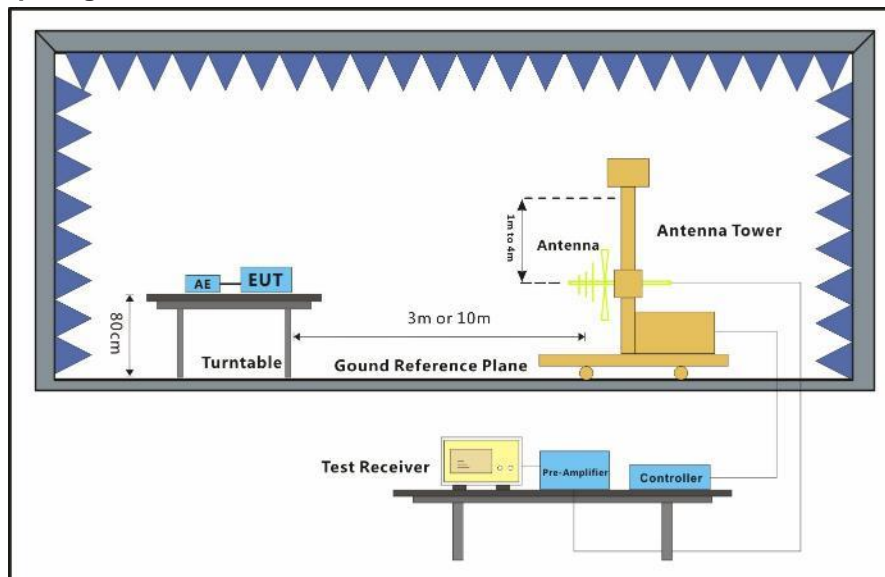
Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1002 mbar

Test mode:

- a: CVI preview : keep EUT preview with CVI output .
- b: AHD preview : keep EUT preview with AHD output .
- c: CVBS preview : keep EUT preview with CVBS output .
- d: TVI preview : keep EUT preview with TVI output .

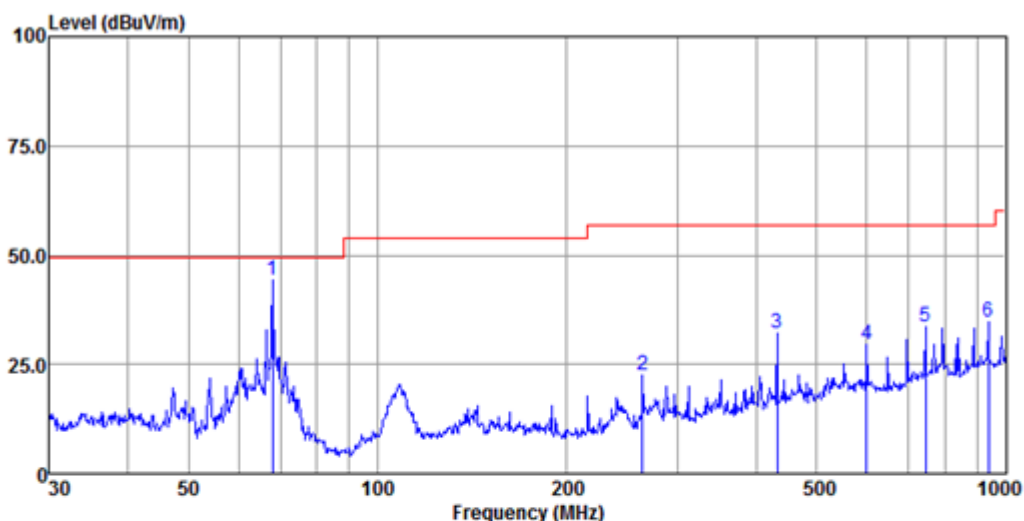
6.2.2 Test Setup Diagram



6.2.3 Measurement Data

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

Mode:a; Polarization:Horizontal



Antenna Polarity :HORIZONTAL

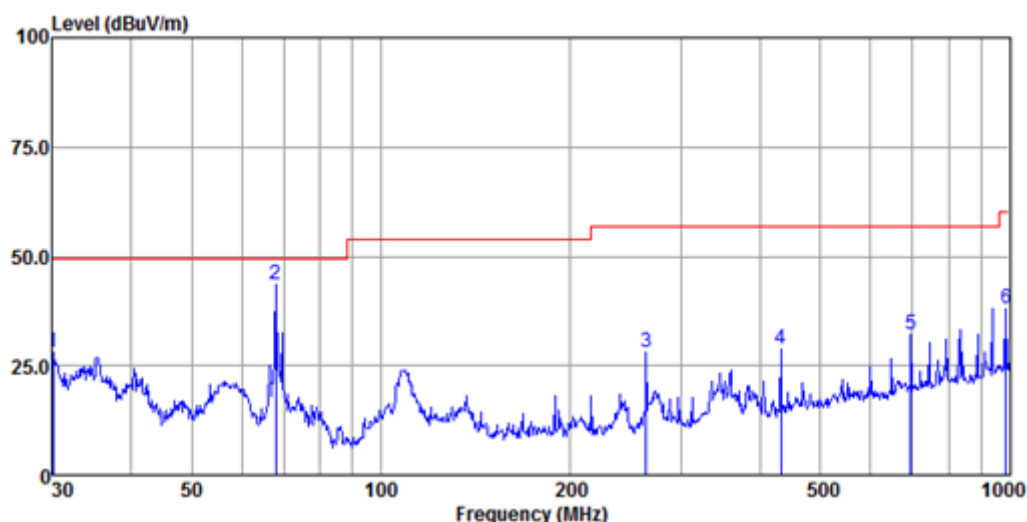
EUT/Project :8671IT

Test mode :a

	Read	Antenna	Cable	Preamp	Emission	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 67.91	11.65	0.33	42.66	75.00	44.32	49.50	-5.18	QP
2 263.82	11.99	0.79	42.44	52.28	22.62	56.90	-34.28	QP
3 432.55	15.83	1.06	42.11	57.14	31.92	56.90	-24.98	QP
4 601.43	19.42	1.38	42.19	51.08	29.69	56.90	-27.21	QP
5 744.87	21.01	1.85	42.55	53.09	33.40	56.90	-23.50	QP
6 938.83	23.14	2.56	41.60	50.68	34.78	56.90	-22.12	QP

Note:Emission Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

Mode:a; Polarization:Vertical



Antenna Polarity :VERTICAL

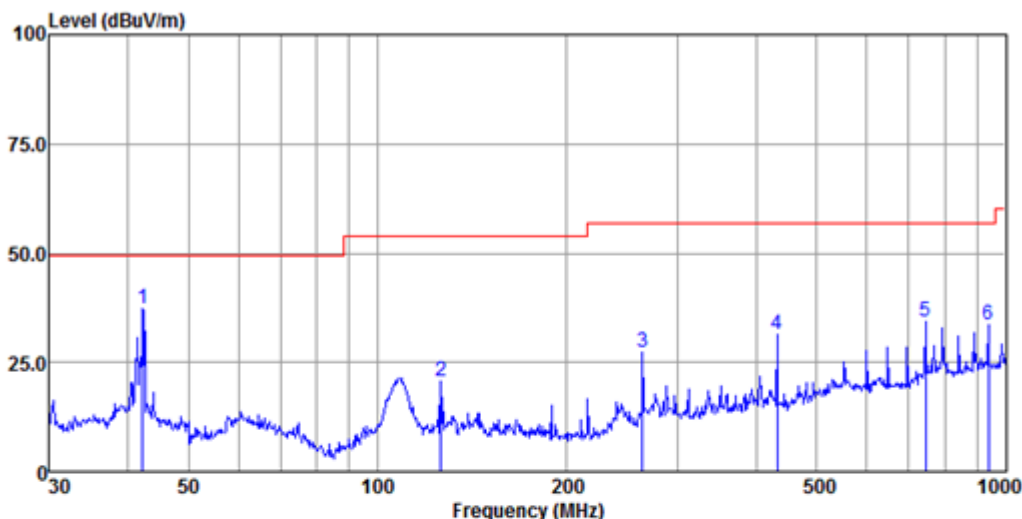
EUT/Project :8671IT

Test mode :a

	Read	Antenna	Cable	Preamp	Emission	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuv	dB/m	dB	dB	dBuv/m	dBuv/m	dB	
1 30.00	15.30	0.18	42.60	55.08	27.96	49.50	-21.54	QP
2 67.91	11.65	0.33	42.66	74.11	43.43	49.50	-6.07	QP
3 263.82	11.99	0.79	42.44	57.85	28.19	56.90	-28.71	QP
4 432.55	15.83	1.06	42.11	53.98	28.76	56.90	-28.14	QP
5 696.86	20.18	1.68	42.39	52.68	32.15	56.90	-24.75	QP
6 986.07	23.65	2.76	41.30	52.99	38.10	60.00	-21.90	QP

Note:Emission Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

Mode:b; Polarization:Horizontal



Antenna Polarity :HORIZONTAL

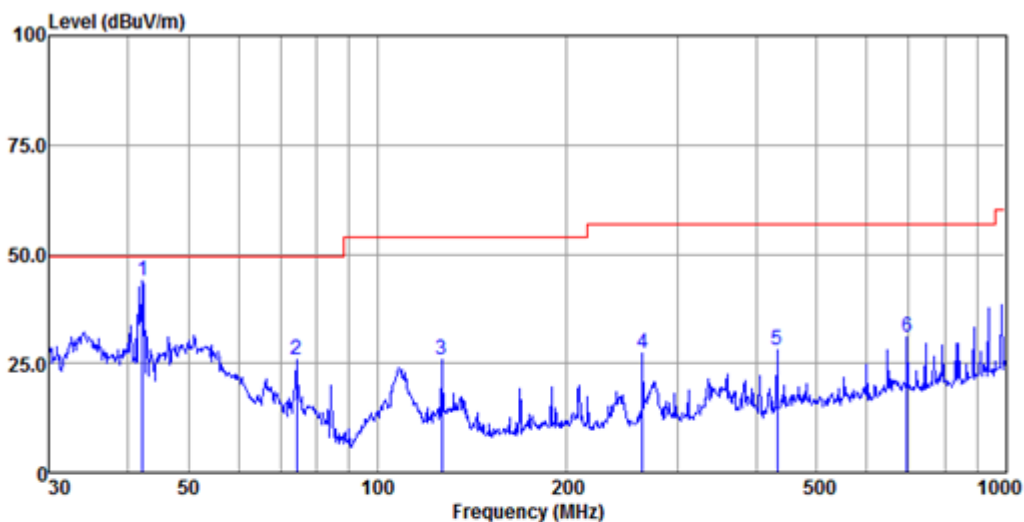
EUT/Project :8671IT

Test mode :b

	Read	Antenna	Cable	Preamp	Emission	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 42.15	14.96	0.23	42.63	64.54	37.10	49.50	-12.40	QP
2 125.89	11.70	0.56	42.67	51.12	20.71	54.00	-33.29	QP
3 263.82	11.99	0.79	42.44	57.07	27.41	56.90	-29.49	QP
4 432.55	15.83	1.06	42.11	56.48	31.26	56.90	-25.64	QP
5 744.87	21.01	1.85	42.55	54.05	34.36	56.90	-22.54	QP
6 938.83	23.14	2.56	41.60	49.49	33.59	56.90	-23.31	QP

Note:Emission Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

Mode:b; Polarization:Vertical



Antenna Polarity :VERTICAL

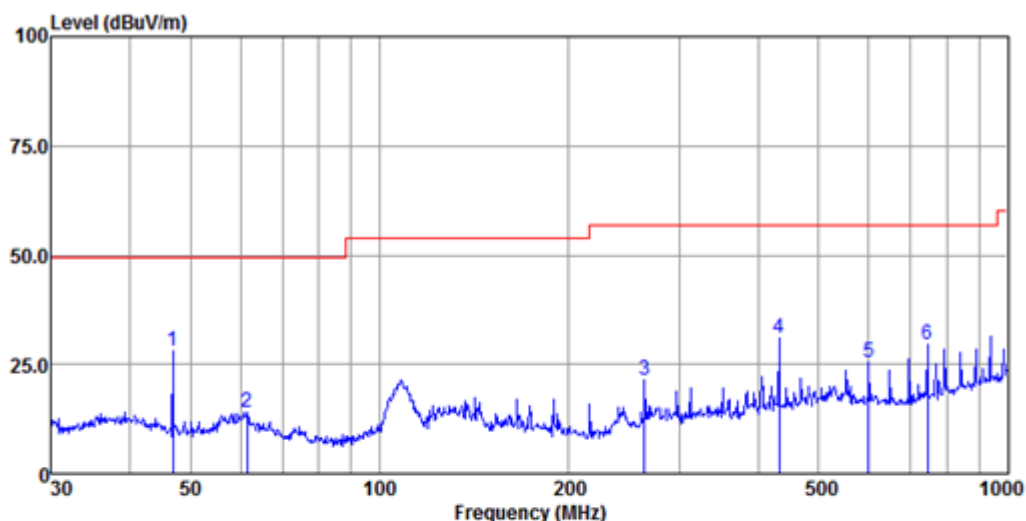
EUT/Project :8671IT

Test mode :b

	Freq	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Emission Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1	42.15	14.96	0.23	42.63	71.25	43.81	49.50	-5.69	QP
2	74.14	9.97	0.35	42.67	58.00	25.65	49.50	-23.85	QP
3	126.33	11.83	0.56	42.66	56.19	25.92	54.00	-28.08	QP
4	263.82	11.99	0.79	42.44	56.95	27.29	56.90	-29.61	QP
5	432.55	15.83	1.06	42.11	53.45	28.23	56.90	-28.67	QP
6	696.86	20.18	1.68	42.39	51.51	30.98	56.90	-25.92	QP

Note:Emission Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

Mode:c; Polarization:Horizontal



Antenna Polarity :HORIZONTAL

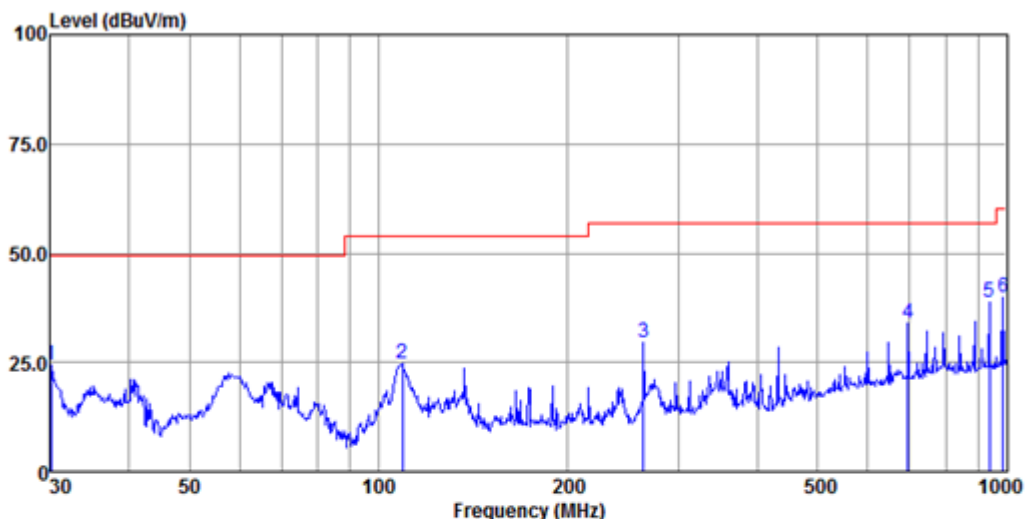
EUT/Project :8671IT

Test mode :c

	Read	Antenna	Cable	Preamp	Emission	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 46.83	12.29	0.25	42.63	58.16	28.07	49.50	-21.43	QP
2 61.35	12.44	0.30	42.65	44.05	14.14	49.50	-35.36	QP
3 263.82	11.99	0.79	42.44	50.99	21.33	56.90	-35.57	QP
4 432.55	15.83	1.06	42.11	56.14	30.92	56.90	-25.98	QP
5 601.43	19.42	1.38	42.19	46.70	25.31	56.90	-31.59	QP
6 744.87	21.01	1.85	42.55	49.14	29.45	56.90	-27.45	QP

Note:Emission Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

Mode:c; Polarization:Vertical



Antenna Polarity :VERTICAL

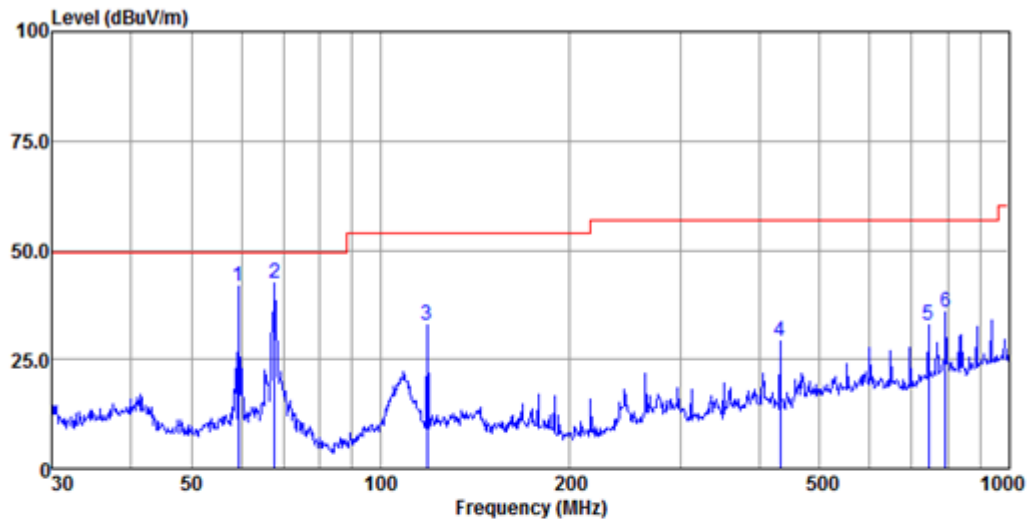
EUT/Project :8671IT

Test mode :c

	Read	Antenna	Cable	Preamp	Emission	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 30.00	15.30	0.18	42.60	51.56	24.44	49.50	-25.06	QP
2 109.03	9.59	0.49	42.70	57.42	24.80	54.00	-29.20	QP
3 263.82	11.99	0.79	42.44	59.25	29.59	56.90	-27.31	QP
4 696.86	20.18	1.68	42.39	54.55	34.02	56.90	-22.88	QP
5 938.83	23.14	2.56	41.60	54.49	38.59	56.90	-18.31	QP
6 986.07	23.65	2.76	41.30	54.67	39.78	60.00	-20.22	QP

Note:Emission Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

Mode:d; Polarization:Horizontal



Antenna Polarity :HORIZONTAL

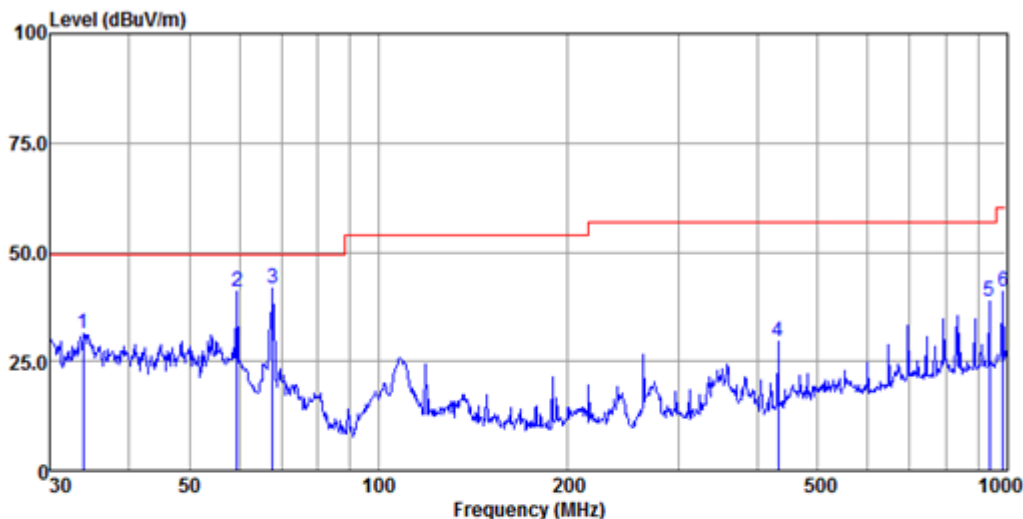
EUT/Project :8671IT

Test mode :d

	Read	Antenna	Cable	Preamp	Emission	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 59.23	12.45	0.30	42.65	71.73	41.83	49.50	-7.67	QP
2 67.68	11.67	0.33	42.66	72.97	42.31	49.50	-7.19	QP
3 118.60	9.95	0.53	42.68	65.18	32.98	54.00	-21.02	QP
4 432.55	15.83	1.06	42.11	54.36	29.14	56.90	-27.76	QP
5 744.87	21.01	1.85	42.55	52.53	32.84	56.90	-24.06	QP
6 793.40	21.81	2.05	42.45	54.31	35.72	56.90	-21.18	QP

Note:Emission Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

Mode:d; Polarization:Vertical



Antenna Polarity :VERTICAL

EUT/Project :8671IT

Test mode :d

	Read	Antenna	Cable	Preamp	Emission	Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
-----	-----	-----	-----	-----	-----	-----	-----	-----
MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB	
1 33.80	15.71	0.20	42.61	58.00	31.30	49.50	-18.20	QP
2 59.44	12.48	0.30	42.65	70.66	40.79	49.50	-8.71	QP
3 67.68	11.67	0.33	42.66	72.32	41.66	49.50	-7.84	QP
4 432.55	15.83	1.06	42.11	54.71	29.49	56.90	-27.41	QP
5 938.83	23.14	2.56	41.60	54.53	38.63	56.90	-18.27	QP
6 986.07	23.65	2.76	41.30	55.99	41.10	60.00	-18.90	QP

Note:Emission Level = Read Level + Antenna Factor + Cable loss - Preamp Factor

6.3 Radiated Emissions (above 1GHz)

Test Requirement: 47 CFR Part 15, Subpart B
 Test Method: ANSI C63.4
 Frequency Range: Above 1GHz
 Measurement Distance: 3m
 Limit:
 Above 1GHz 80(dBμV/m) peak, 60(dBμV/m) average
 Detector: Peak for pre-scan (1000kHz resolution bandwidth) 1000M to 18000MHz

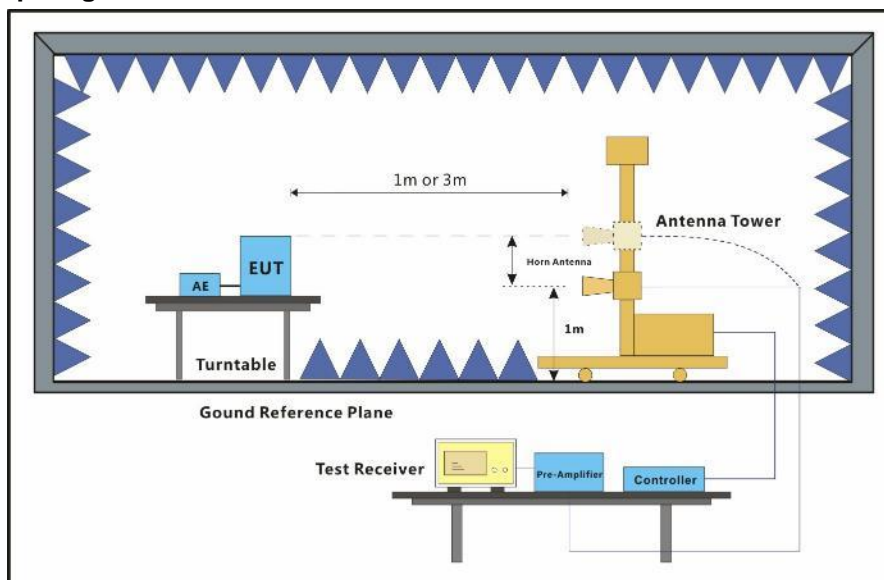
6.3.1 E.U.T. Operation

Operating Environment:

Temperature: 22 °C Humidity: 50 % RH Atmospheric Pressure: 1002 mbar

Test mode:
 a: CVI preview : keep EUT preview with CVI output .
 b: AHD preview : keep EUT preview with AHD output .
 c: CVBS preview : keep EUT preview with CVBS output .
 d: TVI preview : keep EUT preview with TVI output .

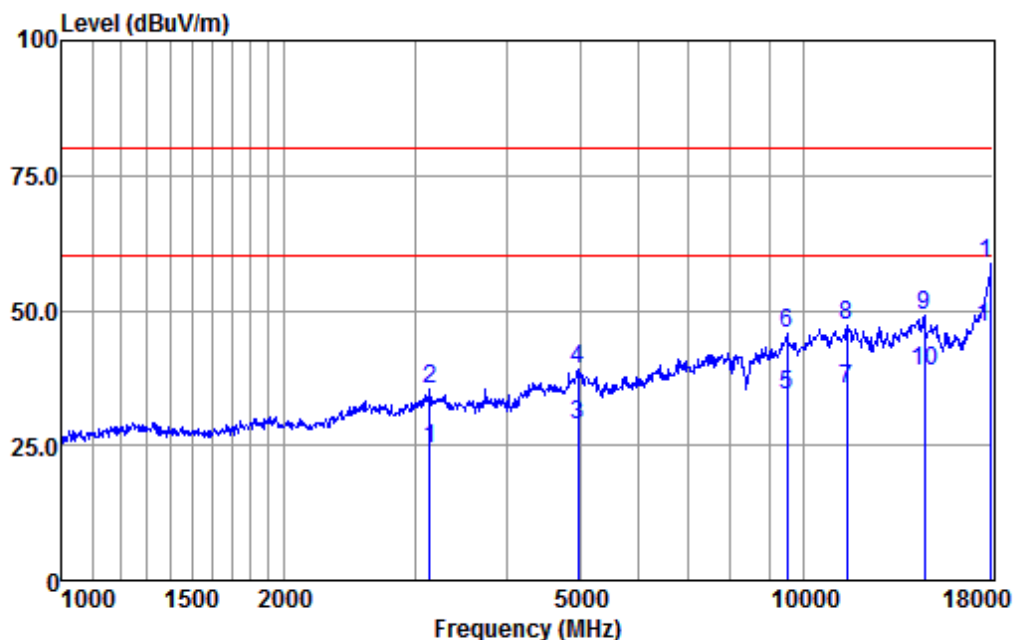
6.3.2 Test Setup Diagram



6.3.3 Measurement Data

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

Mode:a; Polarization:Horizontal



Condition : HORIZONTAL

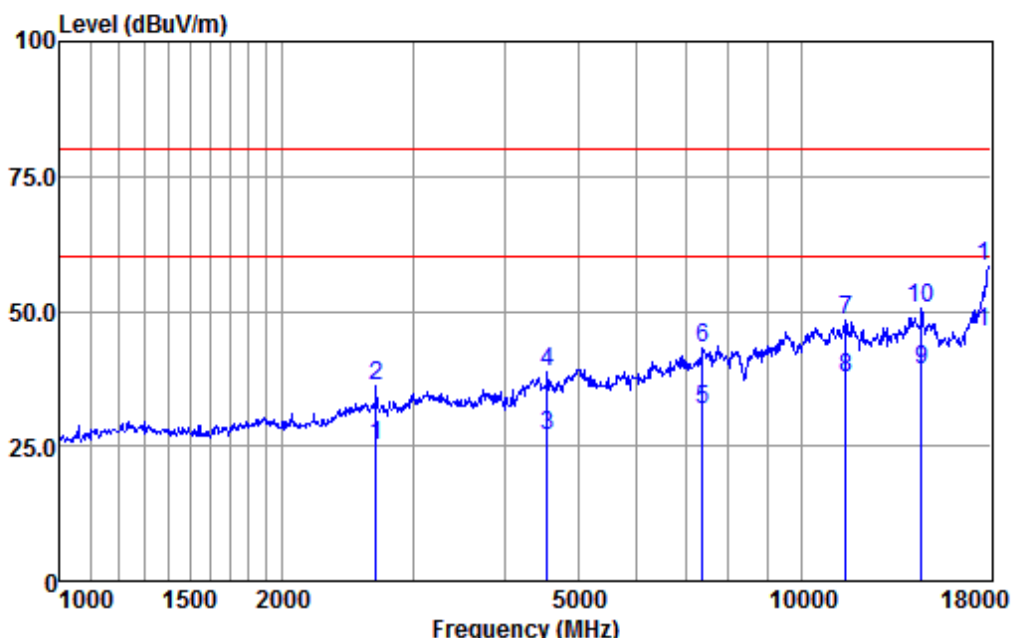
EUT/Project: 8671IT

Test mode : a

	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	3141.15	31.56	28.59	5.92	41.76	24.31	60.00	-35.69 Average
2	3141.15	42.67	28.59	5.92	41.76	35.42	80.00	-44.58 Peak
3	4973.66	30.65	31.55	8.17	41.61	28.76	60.00	-31.24 Average
4	4973.66	41.08	31.55	8.17	41.61	39.19	80.00	-40.81 Peak
5	9530.43	28.59	38.52	9.62	42.32	34.41	60.00	-25.59 Average
6	9530.43	39.97	38.52	9.62	42.32	45.79	80.00	-34.21 Peak
7	11467.00	27.19	40.22	9.76	41.77	35.40	60.00	-24.60 Average
8	11467.00	38.95	40.22	9.76	41.77	47.16	80.00	-32.84 Peak
9	14618.17	38.48	41.75	10.24	41.35	49.12	80.00	-30.88 Peak
10	14618.17	27.92	41.75	10.24	41.35	38.56	60.00	-21.44 Average
11 p	17948.05	37.38	50.11	12.83	41.80	58.52	80.00	-21.48 Peak
12	17948.05	25.58	50.11	12.83	41.80	46.72	60.00	-13.28 Average

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

Mode:a; Polarization:Vertical



Condition : VERTICAL

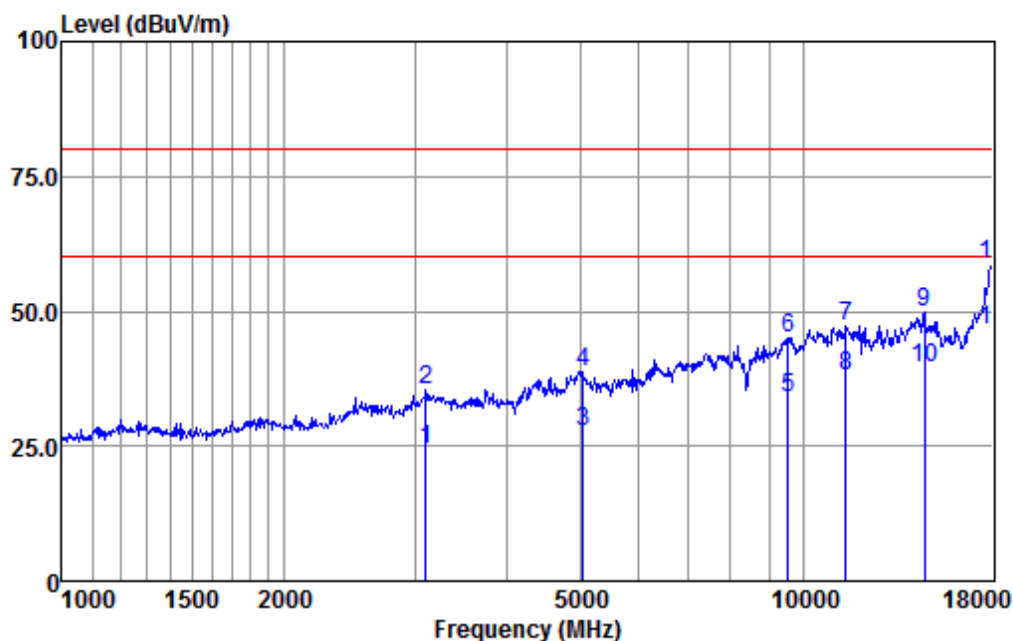
EUT/Project: 8671IT

Test mode : a

	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	2671.73	33.57	27.80	5.57	42.00	24.94	60.00	-35.06 Average
2	2671.73	44.65	27.80	5.57	42.00	36.02	80.00	-43.98 Peak
3	4547.40	30.15	30.71	7.80	41.65	27.01	60.00	-32.99 Average
4	4547.40	41.93	30.71	7.80	41.65	38.79	80.00	-41.21 Peak
5	7368.74	29.06	36.38	8.74	42.42	31.76	60.00	-28.24 Average
6	7368.74	40.35	36.38	8.74	42.42	43.05	80.00	-36.95 Peak
7	11500.20	40.11	40.20	9.76	41.78	48.29	80.00	-31.71 Peak
8	11500.20	29.43	40.20	9.76	41.78	37.61	60.00	-22.39 Average
9	14575.97	28.32	41.80	10.26	41.35	39.03	60.00	-20.97 Average
10	14575.97	39.71	41.80	10.26	41.35	50.42	80.00	-29.58 Peak
11	18000.00	24.42	50.90	12.83	41.86	46.29	60.00	-13.71 Average
12 p	18000.00	36.56	50.90	12.83	41.86	58.43	80.00	-21.57 Peak

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

Mode:b; Polarization:Horizontal



Condition : HORIZONTAL

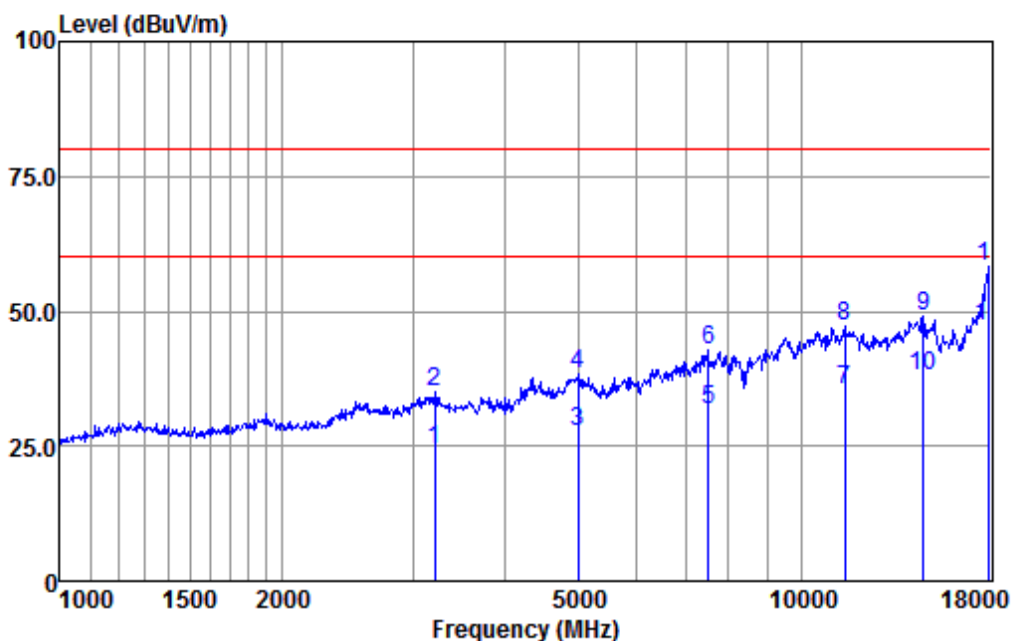
EUT/Project: 8671IT

Test mode : b

	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	3096.08	31.79	28.56	5.89	41.74	24.50	60.00	-35.50
2	3096.08	42.68	28.56	5.89	41.74	35.39	80.00	-44.61
3	5046.06	29.48	31.63	8.19	41.65	27.65	60.00	-32.35
4	5046.06	40.74	31.63	8.19	41.65	38.91	80.00	-41.09
5	9558.02	28.04	38.54	9.62	42.31	33.89	60.00	-26.11
6	9558.02	39.34	38.54	9.62	42.31	45.19	80.00	-34.81
7	11433.91	39.08	40.24	9.76	41.76	47.32	80.00	-32.68
8	11433.91	29.73	40.24	9.76	41.76	37.97	60.00	-22.03
9	14618.17	39.04	41.75	10.24	41.35	49.68	80.00	-30.32
10	14618.17	28.88	41.75	10.24	41.35	39.52	60.00	-20.48
11	18000.00	24.79	50.90	12.83	41.86	46.66	60.00	-13.34
12 p	18000.00	36.63	50.90	12.83	41.86	58.50	80.00	-21.50

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

Mode:b; Polarization:Vertical



Condition : VERTICAL

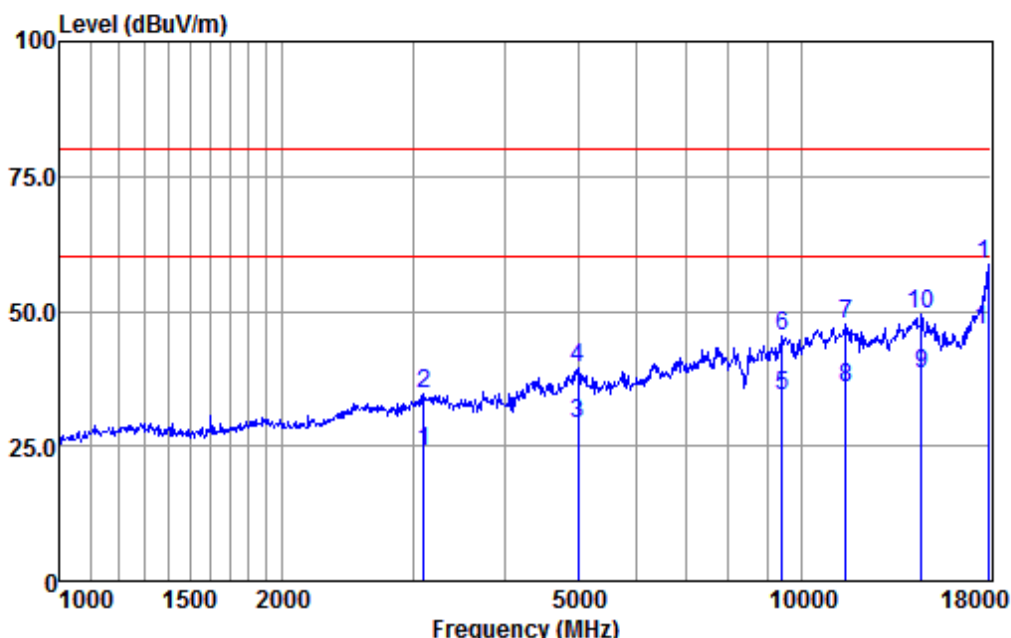
EUT/Project: 8671IT

Test mode : b

		ReadAntenna	Cable	Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	3205.35	31.46	28.63	5.96	41.78	24.27	60.00	-35.73
2	3205.35	42.33	28.63	5.96	41.78	35.14	80.00	-44.86
3	5002.50	29.57	31.60	8.19	41.61	27.75	60.00	-32.25
4	5002.50	40.15	31.60	8.19	41.61	38.33	80.00	-41.67
5	7497.65	28.57	36.70	8.79	42.48	31.58	60.00	-28.42
6	7497.65	39.91	36.70	8.79	42.48	42.92	80.00	-37.08
7	11467.00	27.36	40.22	9.76	41.77	35.57	60.00	-24.43
8	11467.00	38.93	40.22	9.76	41.77	47.14	80.00	-32.86
9	14660.48	38.56	41.70	10.24	41.35	49.15	80.00	-30.85
10	14660.48	27.46	41.70	10.24	41.35	38.05	60.00	-21.95
11 p	17948.05	37.01	50.11	12.83	41.80	58.15	80.00	-21.85
12	17948.05	25.97	50.11	12.83	41.80	47.11	60.00	-12.89

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

Mode:c; Polarization:Horizontal



Condition : HORIZONTAL

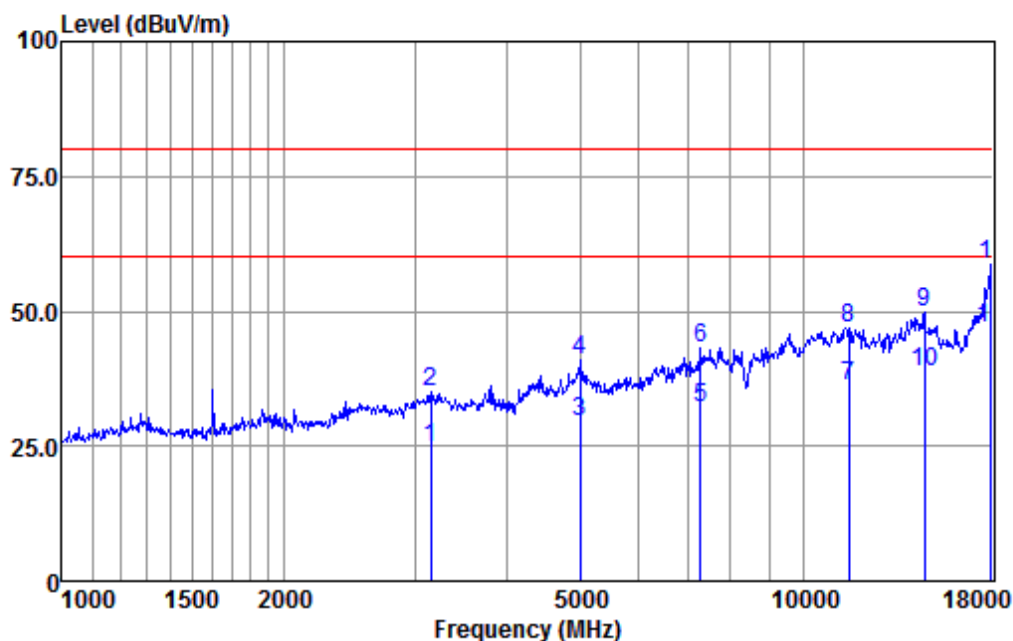
EUT/Project: 8671IT

Test mode : c

		ReadAntenna	Cable	Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	3096.08	31.22	28.56	5.89	41.74	23.93	60.00	-36.07 Average
2	3096.08	42.16	28.56	5.89	41.74	34.87	80.00	-45.13 Peak
3	5002.50	30.96	31.60	8.19	41.61	29.14	60.00	-30.86 Average
4	5002.50	41.41	31.60	8.19	41.61	39.59	80.00	-40.41 Peak
5	9448.15	28.63	38.37	9.62	42.34	34.28	60.00	-25.72 Average
6	9448.15	39.66	38.37	9.62	42.34	45.31	80.00	-34.69 Peak
7	11500.20	39.25	40.20	9.76	41.78	47.43	80.00	-32.57 Peak
8	11500.20	27.54	40.20	9.76	41.78	35.72	60.00	-24.28 Average
9	14575.97	27.61	41.80	10.26	41.35	38.32	60.00	-21.68 Average
10	14575.97	38.83	41.80	10.26	41.35	49.54	80.00	-30.46 Peak
11 p	17948.05	37.69	50.11	12.83	41.80	58.83	80.00	-21.17 Peak
12	17948.05	25.47	50.11	12.83	41.80	46.61	60.00	-13.39 Average

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

Mode:c; Polarization:Vertical



Condition : VERTICAL

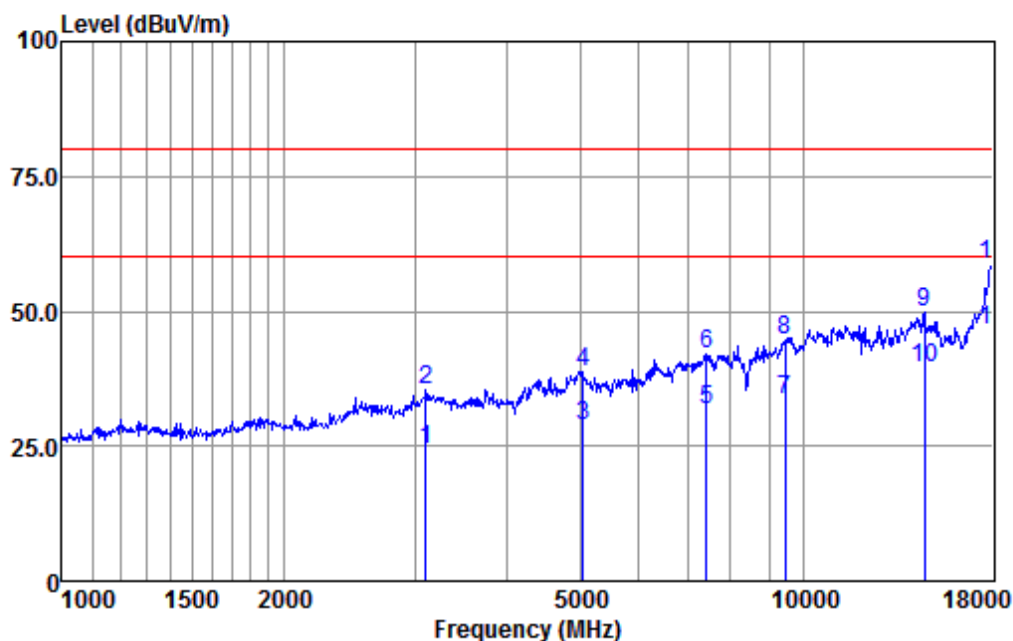
EUT/Project: 8671IT

Test mode : c

	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	3150.24	31.99	28.60	5.92	41.76	24.75	60.00	-35.25
2	3150.24	42.18	28.60	5.92	41.76	34.94	80.00	-45.06
3	5002.50	31.33	31.60	8.19	41.61	29.51	60.00	-30.49
4	5002.50	42.85	31.60	8.19	41.61	41.03	80.00	-38.97
5	7284.04	29.44	36.16	8.74	42.38	31.96	60.00	-28.04
6	7284.04	40.77	36.16	8.74	42.38	43.29	80.00	-36.71
7	11533.48	27.96	40.13	9.76	41.79	36.06	60.00	-23.94
8	11533.48	38.80	40.13	9.76	41.79	46.90	80.00	-33.10
9	14618.17	39.18	41.75	10.24	41.35	49.82	80.00	-30.18
10	14618.17	28.16	41.75	10.24	41.35	38.80	60.00	-21.20
11 p	17948.05	37.64	50.11	12.83	41.80	58.78	80.00	-21.22
12	17948.05	25.83	50.11	12.83	41.80	46.97	60.00	-13.03

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

Mode:d; Polarization:Horizontal



Condition : HORIZONTAL

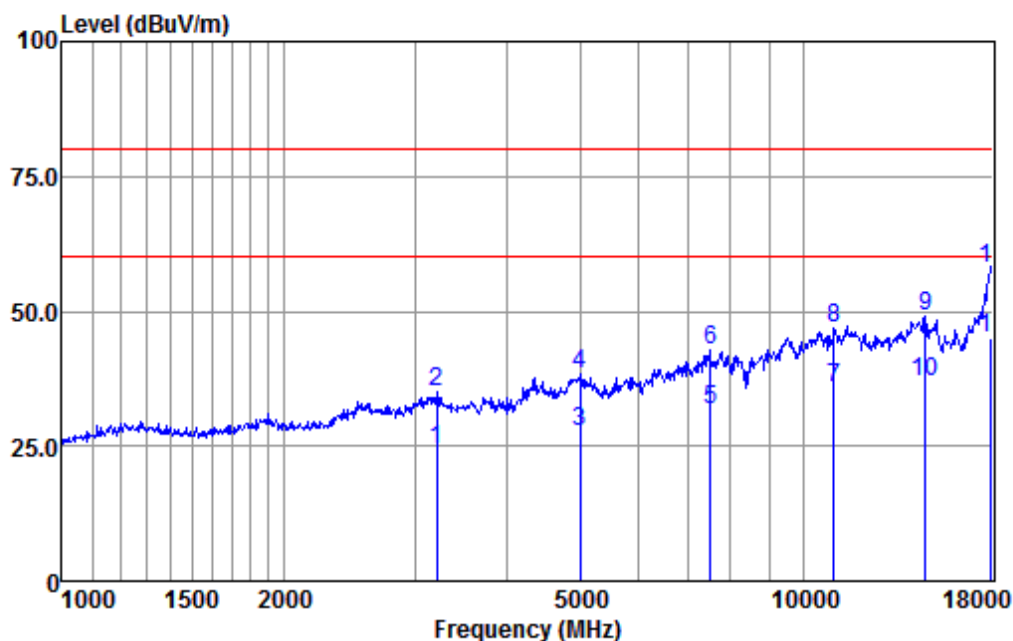
EUT/Project: 8671IT

Test mode : d

	Freq	ReadAntenna	Cable	Preamp		Limit	Over	
	MHz	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	3096.08	31.79	28.56	5.89	41.74	24.50	80.00	-55.50
2	3096.08	42.68	28.56	5.89	41.74	35.39	80.00	-44.61
3	5046.06	30.48	31.63	8.19	41.65	28.65	80.00	-51.35
4	5046.06	40.74	31.63	8.19	41.65	38.91	80.00	-41.09
5	7411.46	28.93	36.48	8.77	42.44	31.74	80.00	-48.26
6	7411.46	39.26	36.48	8.77	42.44	42.07	80.00	-37.93
7	9475.50	27.78	38.44	9.62	42.33	33.51	80.00	-46.49
8	9475.50	38.89	38.44	9.62	42.33	44.62	80.00	-35.38
9	14618.17	39.04	41.75	10.24	41.35	49.68	80.00	-30.32
10	14618.17	28.88	41.75	10.24	41.35	39.52	80.00	-40.48
11	18000.00	24.79	50.90	12.83	41.86	46.66	80.00	-33.34
12 p	18000.00	36.63	50.90	12.83	41.86	58.50	80.00	-21.50

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

Mode:d; Polarization:Vertical



Condition : VERTICAL

EUT/Project: 8671IT

Test mode : d

		ReadAntenna	Cable	Preamp		Limit	Over	
	Freq	Level	Factor	Loss	Factor	Level	Line	Limit
	MHz	dBuV	dB/m	dB	dB	dBuV/m	dBuV/m	dB
1	3205.35	31.46	28.63	5.96	41.78	24.27	80.00	-55.73
2	3205.35	42.33	28.63	5.96	41.78	35.14	80.00	-44.86
3	5002.50	29.57	31.60	8.19	41.61	27.75	80.00	-52.25
4	5002.50	40.15	31.60	8.19	41.61	38.33	80.00	-41.67
5	7497.65	28.57	36.70	8.79	42.48	31.58	80.00	-48.42
6	7497.65	39.91	36.70	8.79	42.48	42.92	80.00	-37.08
7	11012.25	27.12	40.50	9.64	41.64	35.62	80.00	-44.38
8	11012.25	38.28	40.50	9.64	41.64	46.78	80.00	-33.22
9	14660.48	38.56	41.70	10.24	41.35	49.15	80.00	-30.85
10	14660.48	26.46	41.70	10.24	41.35	37.05	80.00	-42.95
11	17948.05	23.97	50.11	12.83	41.80	45.11	80.00	-34.89
12 p	18000.00	35.89	50.90	12.83	41.86	57.76	80.00	-22.24

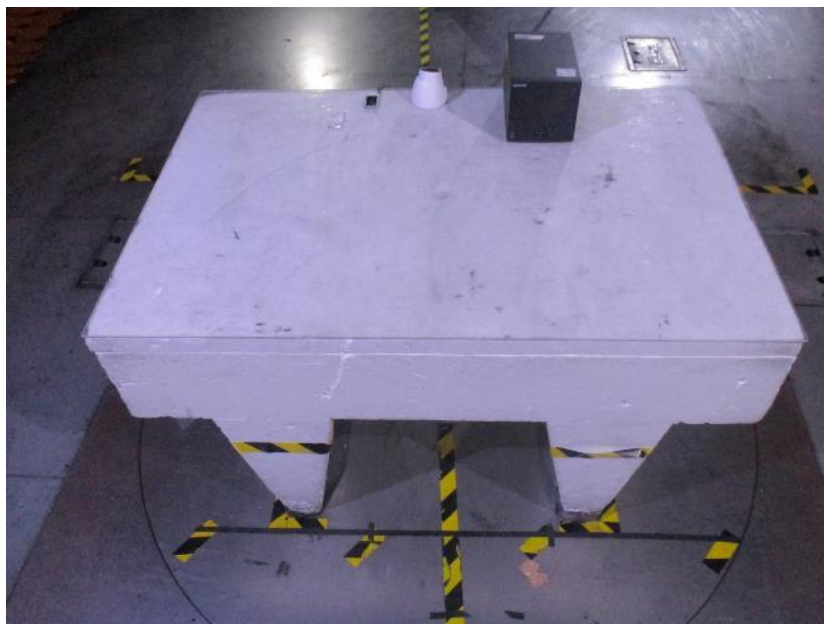
Notes: Emission Level=Read Level + Antenna Factor + Cable Loss – Preamp Factor

7 Photographs

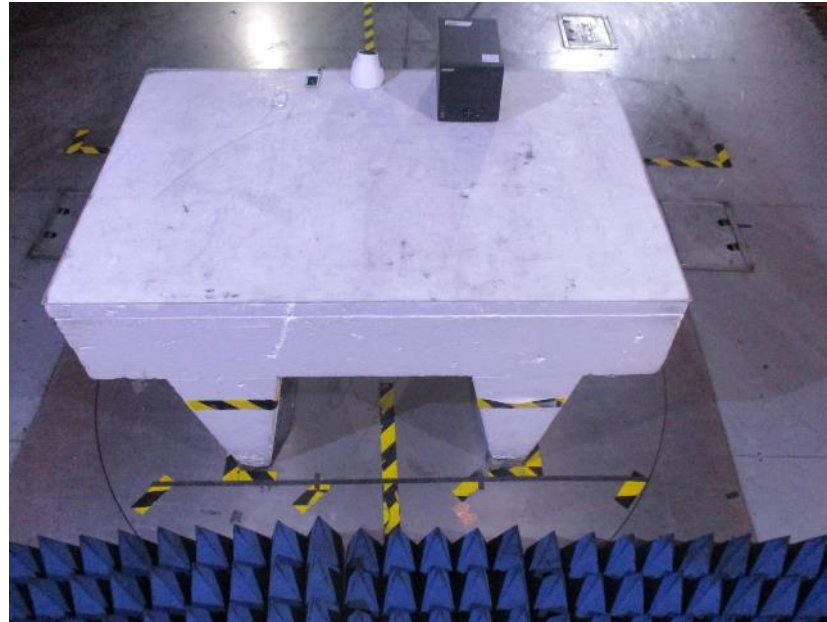
7.1 Conducted Emissions at Mains Terminals (150kHz-30MHz) Test Setup



7.2 Radiated Emissions (30MHz-1GHz) Test Setup



7.3 Radiated Emissions (above 1GHz) Test Setup



7.4 EUT Constructional Details (EUT Photos)







- End of the Report -