

Test Report For

SHENZHEN BEACON DISPLAY TECHNOLOGY CO., LTD.

LCD Monitor

Model No.: S242P, E240, S241P, S24**, S24**P, C23WP, C23WT, C23W

FCC ID: Z5QLCDS242P

Prepared for : SHENZHEN BEACON DISPLAY TECHNOLOGY CO.,
LTD.
Address : Room 201, Incubator Building, CASTD, High-tech South
Street NO.1, Nanshan District, Shenzhen 518057, China

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Report Number : ES140529286E
Date of Test : June 3, 2014 to June 17, 2014
Date of Report : June 17, 2014

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TEST REPORT DESCRIPTION

Applicant : SHENZHEN BEACON DISPLAY TECHNOLOGY CO., LTD.
Manufacturer : SHENZHEN BEACON DISPLAY TECHNOLOGY CO., LTD.
Trade Mark : N/A
EUT : LCD Monitor
Model No. : S242P, E240, S241P, S24**, S24**P, C23WP, C23WT, C23W
Power Supply : DC 24V from Adapter

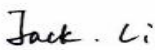
Measurement Procedure Used:


FCC Rules and Regulations Part 15: 2013 Subpart B Class B & FCC / ANSI C63.4-2009


The device described above is tested by SHENZHEN EMTEK CO., LTD. to determine the maximum emission levels emanating from the device and the severe levels of the device can endure and its performance criterion. The measurement results are contained in this test report and SHENZHEN EMTEK CO., LTD. is assumed full of responsibility for the accuracy and completeness of these measurements. Also, this report shows that the EUT (Equipment Under Test) is technically compliant with the FCC requirements.

This report applies to above tested sample only and shall not be reproduced in part without written approval of SHENZHEN EMTEK CO., LTD.

Date of Test : June 3, 2014 to June 17, 2014

Prepared by : 
Jack Li/Editor

Reviewer : 
June Xie/Supervisor

Approved & Authorized Signer : 
Lisa Wang/Manager

Modified Information

Version	Report No.	Revision Date	Summary
V1.0	ES140529286E	/	Original Version

1. SUMMARY OF TEST RESULT

EMISSION		
Description of Test Item	Standard & Limits	Results
Conducted Disturbance at Mains Terminals	FCC Part 15, Subpart B, Class B ANSI C63.4: 2009	Pass
Radiated Disturbance	FCC Part 15, Subpart B, Class B ANSI C63.4: 2009	Pass
Note: N/A is an abbreviation for Not Applicable.		

2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT	:	LCD Monitor
Model Number	:	S242P, E240, S241P, S24**, S24**P, C23WP, C23WT, C23W All models are almost the same, P means with front protection glass with brightness sensor, * stands for 0-9 for different client. We take S242P to test.
Adapter	:	Model: MENB1100A2448F02 Input: AC 100-240V, 50-60Hz, 2.0A Output: DC 24V, 4.2A
Test Voltage	:	AC 120V/60Hz
Applicant	:	SHENZHEN BEACON DISPLAY TECHNOLOGY CO., LTD.
Address	:	Room 201, Incubator Building, CASTD, High-tech South Street NO.1, Nanshan District, Shenzhen 518057, China
Manufacturer	:	SHENZHEN BEACON DISPLAY TECHNOLOGY CO., LTD.
Address	:	Room 201, Incubator Building, CASTD, High-tech South Street NO.1, Nanshan District, Shenzhen 518057, China
Date of Received	:	June 3, 2014
Date of Test	:	June 3, 2014 to June 17, 2014

2.2. Description of Test Facility

Site Description	
EMC Lab.	: Accredited by CNAS, 2013.10.29 The certificate is valid until 2016.10.28 The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005) The Certificate Registration Number is L2291. Accredited by TUV Rheinland Shenzhen 2010.5.25 The Laboratory has been assessed according to the requirements ISO/IEC 17025. Accredited by FCC, April 17, 2013 The Certificate Registration Number is 709623. Accredited by Industry Canada, November 15, 2010 The Certificate Registration Number is 46405-4480.
Name of Firm	: SHENZHEN EMTEK CO., LTD.
Site Location	: Bldg 69, Majialong Industry Zone, Nanshan District, Shenzhen, Guangdong, China

2.3. Description of Support Device

PC	:	Manufacturer: LENOVO M/N: 9702 S/N: L3C4410 CE, FCC: DOC
Keyboard	:	Manufacturer: LENOVO M/N: KU-0225 S/N:0585494 CE, FCC: DOC
Mouse	:	Manufacturer: LENOVO M/N: MO28UOL S/N:44G7862 068 CE, FCC: DOC
Printer	:	Manufacturer: HP M/N: C89520 S/N: CN25S182N6 CE, FCC: DOC

2.4. Measurement Uncertainty

Test Item	Uncertainty
Conducted Emission Uncertainty	: 2.96dB(9k~150kHz Conduction 1#) 2.74dB(150k-30MHzConduction 1#)
Radiated Emission Uncertainty (3m Chamber)	: 3.78dB (30M~1GHz Polarize: H) 4.27dB (30M~1GHz Polarize: V) 4.46dB (1~6GHz) 4.96dB (6~18GHz)

3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. For Power Line Conducted Emission Measurement

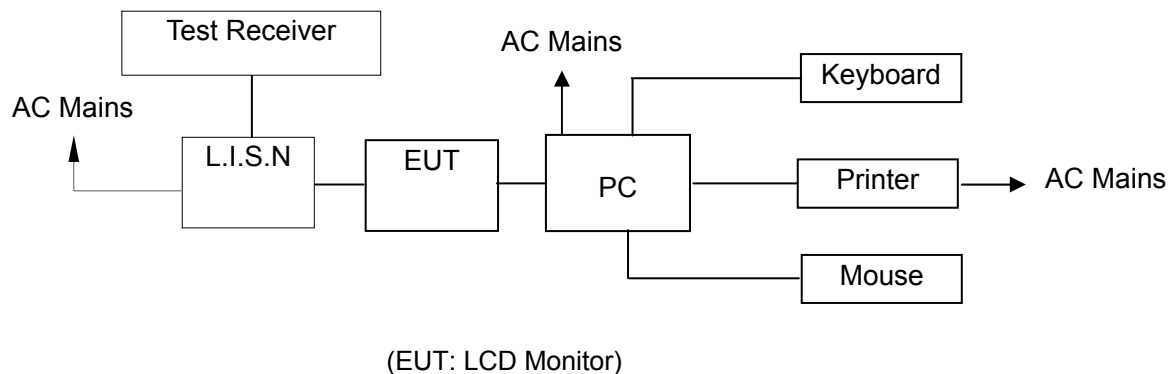
Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
<input checked="" type="checkbox"/>	Test Receiver	Rohde & Schwarz	ESCS30	828985/018	May 17, 2014	1 Year
<input checked="" type="checkbox"/>	L.I.S.N.	Schwarzbeck	NNLK8129	8129-203	May 17, 2014	1 Year
<input type="checkbox"/>	L.I.S.N.	ROHDE & SCHWARZ	ESH3-Z6	100011	May 17, 2014	1 Year
<input type="checkbox"/>	L.I.S.N.	ROHDE & SCHWARZ	ESH3-Z6	100253	May 17, 2014	1 Year
<input checked="" type="checkbox"/>	L.I.S.N.	ROHDE & SCHWARZ	ESH3-Z5	100191	May 17, 2014	1 Year
<input checked="" type="checkbox"/>	50Ω Coaxial Switch	Anritsu	MP59B	M20531	N/A	N/A
<input type="checkbox"/>	Pulse Limiter	Rohde & Schwarz	ESH3-Z2	100006	May 17, 2014	1 Year
<input type="checkbox"/>	Current probe	Rohde & Schwarz	EZ-17	0816.2063.02	May 17, 2014	1 Year

3.2. For Radiated Emission Measurement

Used	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
<input checked="" type="checkbox"/>	EMI Test Receiver	Rohde & Schwarz	ESU	1302.6005.26	May 17, 2014	1 Year
<input checked="" type="checkbox"/>	Pre-Amplifier	HP	8447D	2944A07999	May 17, 2014	1 Year
<input checked="" type="checkbox"/>	Bilog Antenna	Schwarzbeck	VULB9163	142	May 17, 2014	1 Year
<input type="checkbox"/>	Loop Antenna	Schwarzbeck	FMZB 1519	012	May 17, 2014	1 Year
<input type="checkbox"/>	Horn Antenna	Schwarzbeck	BBHA 9170	BBHA9170399	May 17, 2014	1 Year
<input checked="" type="checkbox"/>	Horn Antenna	Schwarzbeck	BBHA 9120	D143	May 17, 2014	1 Year
<input checked="" type="checkbox"/>	Cable	Schwarzbeck	AK9513	ACRX1	May 17, 2014	1 Year
<input checked="" type="checkbox"/>	Cable	Rosenberger	N/A	FP2RX2	May 17, 2014	1 Year
<input checked="" type="checkbox"/>	Cable	Schwarzbeck	AK9513	CRPX1	May 17, 2014	1 Year
<input checked="" type="checkbox"/>	Cable	Schwarzbeck	AK9513	CRRX2	May 17, 2014	1 Year
<input checked="" type="checkbox"/>	Pre-Amplifier	A.H.	PAM-0126	1415261	May 17, 2014	1 Year

4. POWER LINE CONDUCTED EMISSION MEASUREMENT

4.1. Block Diagram of Test Setup



4.2. Measuring Standard

FCC Part 15, Subpart B, Class B ANSI C63.4: 2009

4.3. Power Line Conducted Emission Limits (Class B)

Frequency (MHz)	Limit (dB μ V)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	56.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

NOTE1-The lower limit shall apply at the transition frequencies.
 NOTE2-The limit decreases linearly with the logarithm of the frequency in the range 0.15MHz to 0.50MHz.

4.4. EUT Configuration on Measurement

The following equipments are installed on Conducted Emission Measurement to meet FCC requirements and operating in a manner which tends to maximize its emission characteristics in a normal application.

EUT : LCD Monitor
 Model Number : S242P

4.5. Operating Condition of EUT

4.5.1. Setup the EUT as shown on Section 4.1.

4.5.2. Turn on the power of all equipments.

4.5.3. Let the EUT work in measuring mode (VGA mode 1920*1080, DVI mode 1920*1080, CVBS in, Y+Pb+Pr, S-Video) and measure it.

4.6. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through Line Impedance Stability Network (L.I.S.N). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the FCC regulations during conducted emission measurement.

The bandwidth of the field strength meter (R&S Test Receiver ESCS30) is set at 9kHz in 150kHz~30MHz and 200Hz in 9kHz~150kHz.

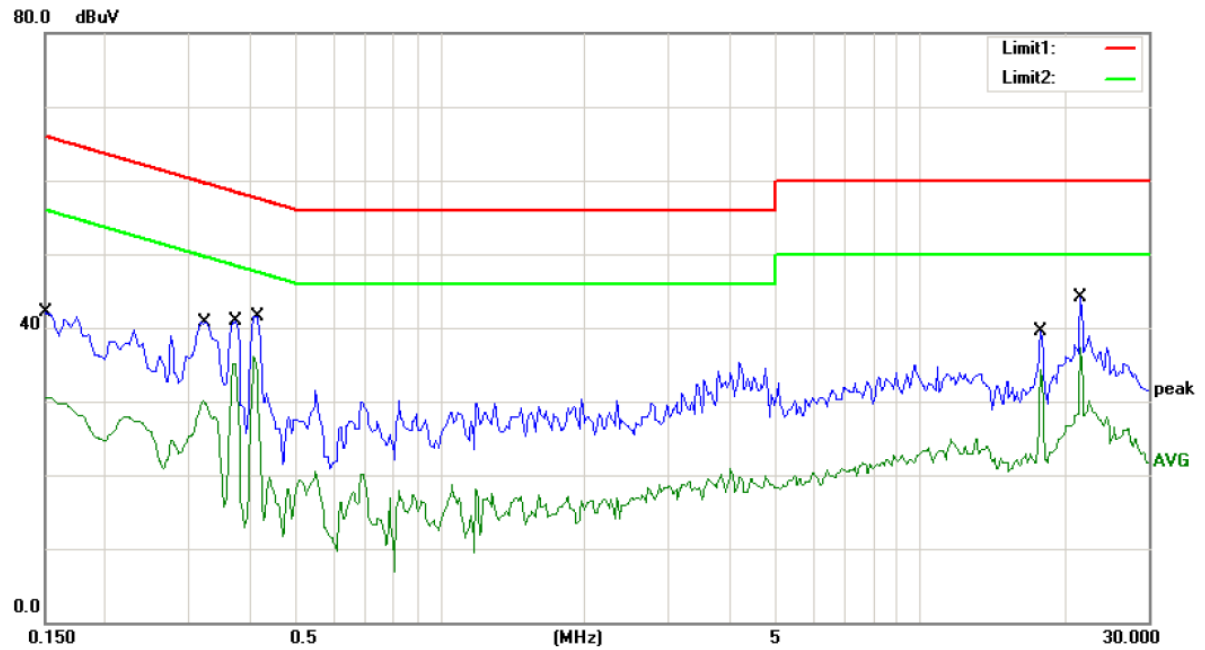
The frequency range from 150kHz to 30MHz is investigated.

All the modes were tested and the data are attached the following pages.

4.7. Measuring Results

PASS.

Please refer to following pages.



Site Conduction #1

Phase: **L1**

Temperature: 24

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

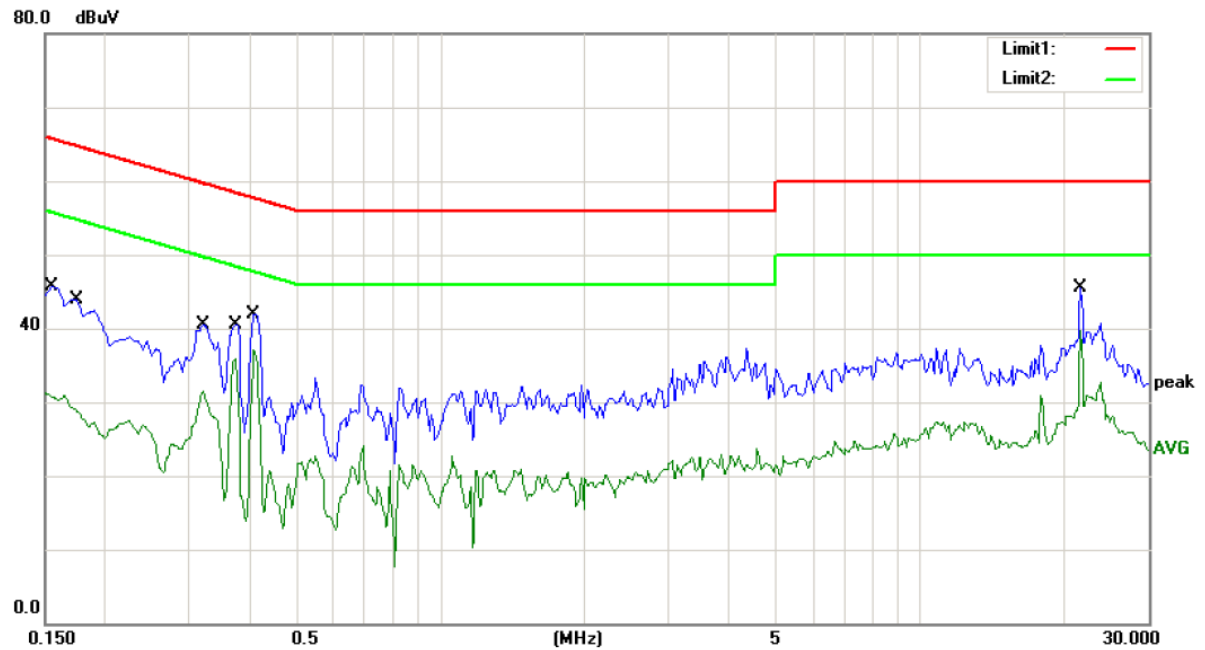
Humidity: 53 %

Mode: VGA IN

Note:

No. Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
	MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	0.1500	42.01	0.00	42.01	66.00	-23.99	QP	
2	0.1500	30.41	0.00	30.41	56.00	-25.59	AVG	
3	0.3250	40.78	0.00	40.78	59.58	-18.80	QP	
4	0.3250	30.11	0.00	30.11	49.58	-19.47	AVG	
5	0.3750	40.90	0.00	40.90	58.39	-17.49	QP	
6	0.3750	35.15	0.00	35.15	48.39	-13.24	AVG	
7	0.4150	41.52	0.00	41.52	57.55	-16.03	QP	
8 *	0.4150	36.13	0.00	36.13	47.55	-11.42	AVG	
9	17.9000	39.55	0.00	39.55	60.00	-20.45	QP	
10	17.9000	34.32	0.00	34.32	50.00	-15.68	AVG	
11	21.6250	44.02	0.00	44.02	60.00	-15.98	QP	
12	21.6250	37.36	0.00	37.36	50.00	-12.64	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: ZHL



Site Conduction #1

Phase: **N**

Temperature: 24

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

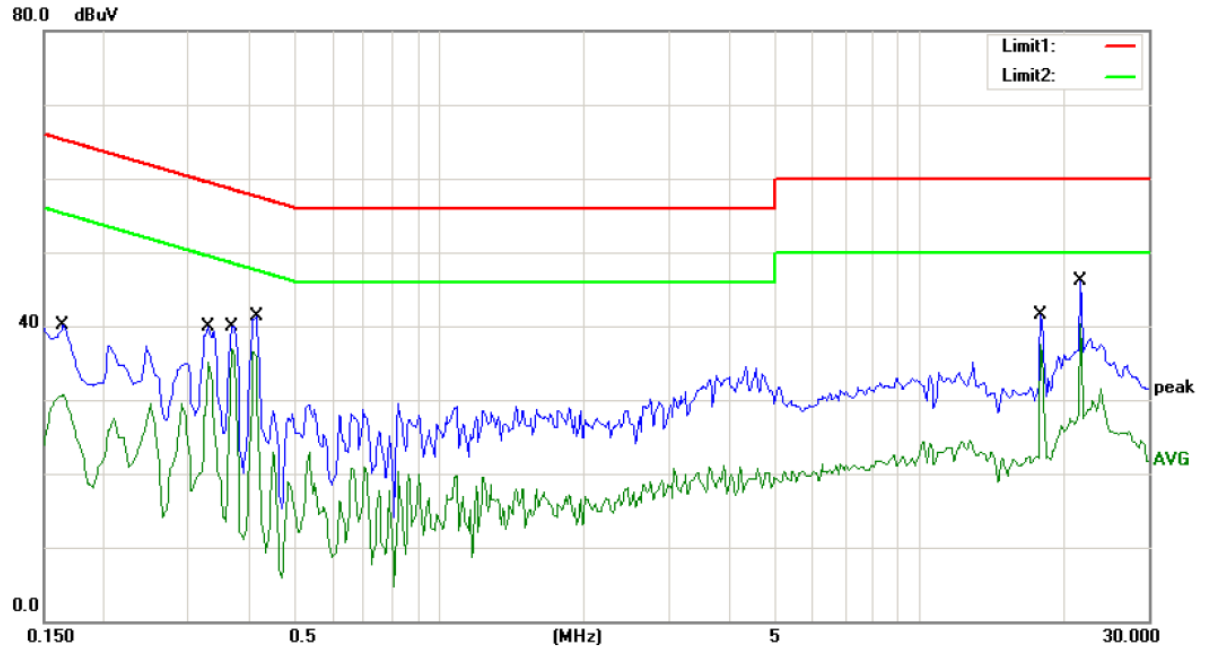
Humidity: 53 %

Mode: VGA IN

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1550	45.64	0.00	45.64	65.73	-20.09	QP	
2		0.1550	31.23	0.00	31.23	55.73	-24.50	AVG	
3		0.1750	43.93	0.00	43.93	64.72	-20.79	QP	
4		0.1750	30.82	0.00	30.82	54.72	-23.90	AVG	
5		0.3200	40.51	0.00	40.51	59.71	-19.20	QP	
6		0.3200	31.54	0.00	31.54	49.71	-18.17	AVG	
7		0.3750	40.57	0.00	40.57	58.39	-17.82	QP	
8		0.3750	35.94	0.00	35.94	48.39	-12.45	AVG	
9		0.4050	40.71	0.00	40.71	57.75	-17.04	QP	
10		0.4050	37.18	0.00	37.18	47.75	-10.57	AVG	
11		21.6250	45.50	0.00	45.50	60.00	-14.50	QP	
12	*	21.6250	39.70	0.00	39.70	50.00	-10.30	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: ZHL



Site Conduction #1

Phase: **L1**

Temperature: 24

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

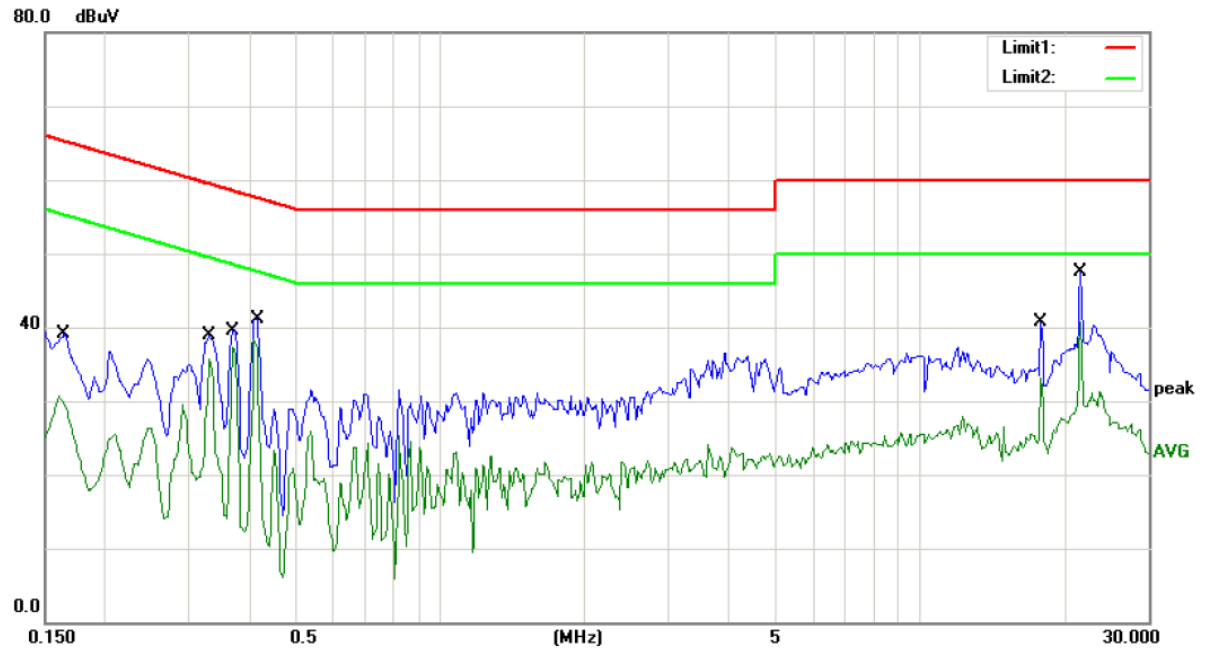
Humidity: 53 %

Mode: DVI IN

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1650	40.10	0.00	40.10	65.21	-25.11	QP	
2		0.1650	30.70	0.00	30.70	55.21	-24.51	AVG	
3		0.3300	39.80	0.00	39.80	59.45	-19.65	QP	
4		0.3300	35.04	0.00	35.04	49.45	-14.41	AVG	
5		0.3700	39.89	0.00	39.89	58.50	-18.61	QP	
6		0.3700	36.96	0.00	36.96	48.50	-11.54	AVG	
7		0.4150	41.30	0.00	41.30	57.55	-16.25	QP	
8		0.4150	36.49	0.00	36.49	47.55	-11.06	AVG	
9		17.9000	41.54	0.00	41.54	60.00	-18.46	QP	
10		17.9000	37.51	0.00	37.51	50.00	-12.49	AVG	
11		21.6250	46.04	0.00	46.04	60.00	-13.96	QP	
12	*	21.6250	40.32	0.00	40.32	50.00	-9.68	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: ZHL



Site Conduction #1

Phase: **N**

Temperature: 24

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

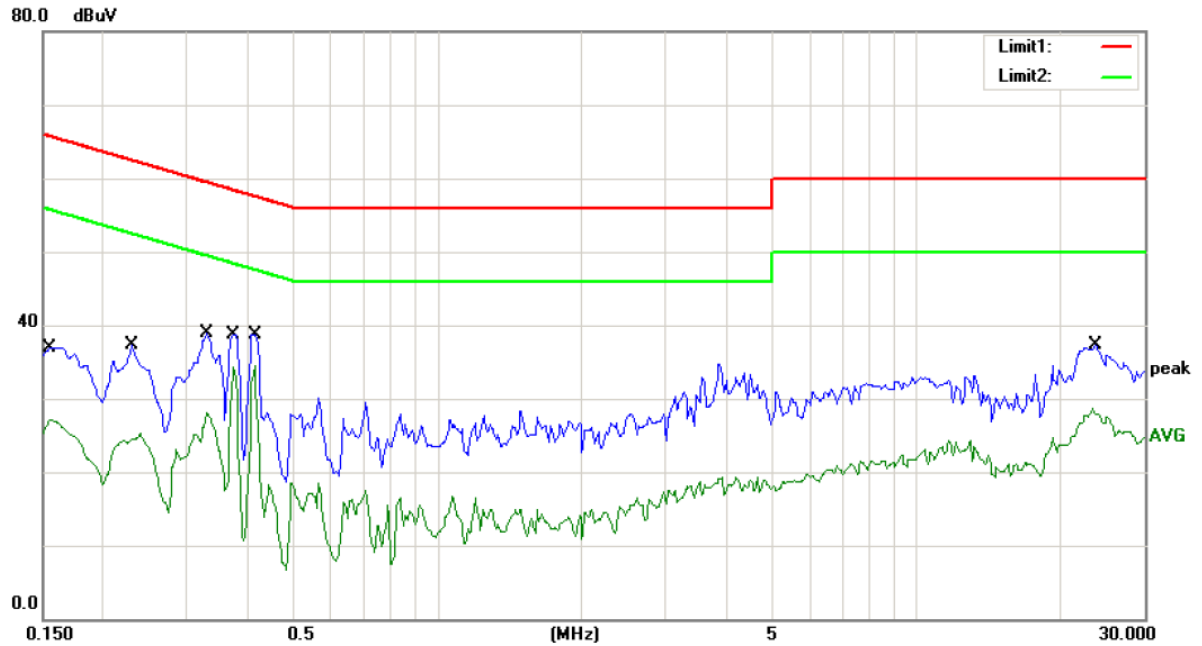
Humidity: 53 %

Mode: DVI IN

Note:

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1650	39.13	0.00	39.13	65.21	-26.08	QP	
2	0.1650	30.70	0.00	30.70	55.21	-24.51	AVG	
3	0.3300	38.82	0.00	38.82	59.45	-20.63	QP	
4	0.3300	35.77	0.00	35.77	49.45	-13.68	AVG	
5	0.3700	39.59	0.00	39.59	58.50	-18.91	QP	
6	0.3700	37.30	0.00	37.30	48.50	-11.20	AVG	
7	0.4150	41.16	0.00	41.16	57.55	-16.39	QP	
8 *	0.4150	38.23	0.00	38.23	47.55	-9.32	AVG	
9	17.9000	40.74	0.00	40.74	60.00	-19.26	QP	
10	17.9000	33.16	0.00	33.16	50.00	-16.84	AVG	
11	21.6250	47.57	0.00	47.57	60.00	-12.43	QP	
12	21.6250	40.67	0.00	40.67	50.00	-9.33	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: ZHL



Site Conduction #1

Phase: **L1**

Temperature: 24

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

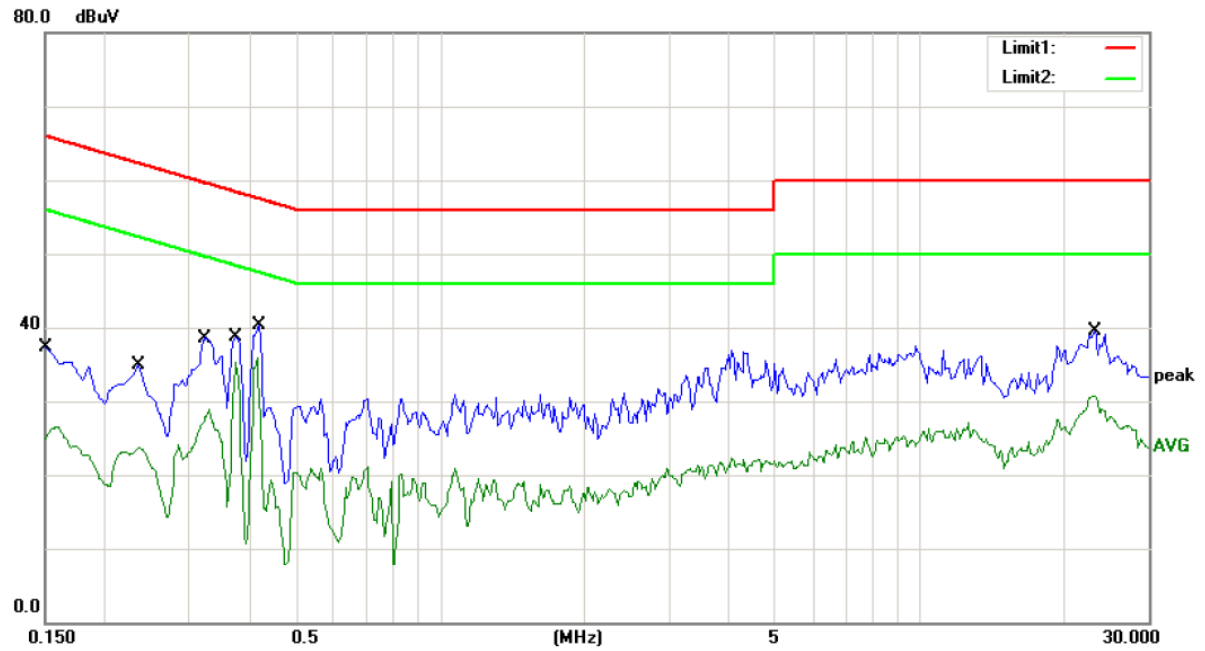
Humidity: 53 %

Mode: CVBS IN

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over		
		MHz	Level	Factor	ment			Detector	Comment
			dBuV	dB	dBuV	dBuV	dB		
1		0.1550	36.94	0.00	36.94	65.73	-28.79	QP	
2		0.1550	27.18	0.00	27.18	55.73	-28.55	AVG	
3		0.2300	37.21	0.00	37.21	62.45	-25.24	QP	
4		0.2300	25.22	0.00	25.22	52.45	-27.23	AVG	
5		0.3300	38.95	0.00	38.95	59.45	-20.50	QP	
6		0.3300	28.16	0.00	28.16	49.45	-21.29	AVG	
7		0.3750	38.72	0.00	38.72	58.39	-19.67	QP	
8		0.3750	34.40	0.00	34.40	48.39	-13.99	AVG	
9		0.4150	38.77	0.00	38.77	57.55	-18.78	QP	
10	*	0.4150	34.54	0.00	34.54	47.55	-13.01	AVG	
11		23.7000	37.25	0.00	37.25	60.00	-22.75	QP	
12		23.7000	28.64	0.00	28.64	50.00	-21.36	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: ZHL



Site Conduction #1

Phase: **N**

Temperature: 24

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

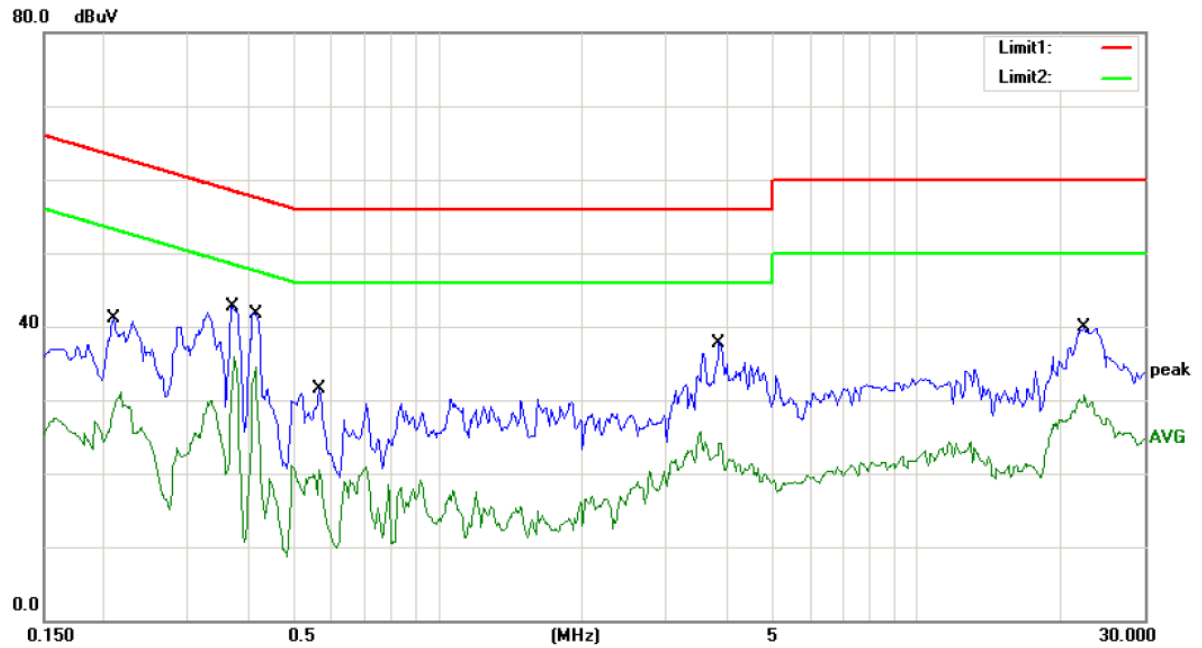
Humidity: 53 %

Mode: CVBS IN

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1500	37.39	0.00	37.39	66.00	-28.61	QP	
2		0.1500	26.43	0.00	26.43	56.00	-29.57	AVG	
3		0.2350	34.93	0.00	34.93	62.27	-27.34	QP	
4		0.2350	23.66	0.00	23.66	52.27	-28.61	AVG	
5		0.3250	38.60	0.00	38.60	59.58	-20.98	QP	
6		0.3250	28.91	0.00	28.91	49.58	-20.67	AVG	
7		0.3750	38.70	0.00	38.70	58.39	-19.69	QP	
8		0.3750	35.23	0.00	35.23	48.39	-13.16	AVG	
9		0.4200	40.39	0.00	40.39	57.45	-17.06	QP	
10	*	0.4200	35.83	0.00	35.83	47.45	-11.62	AVG	
11		23.2250	39.52	0.00	39.52	60.00	-20.48	QP	
12		23.2250	30.66	0.00	30.66	50.00	-19.34	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: ZHL



Site Conduction #1

Phase: **L1**

Temperature: 24

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

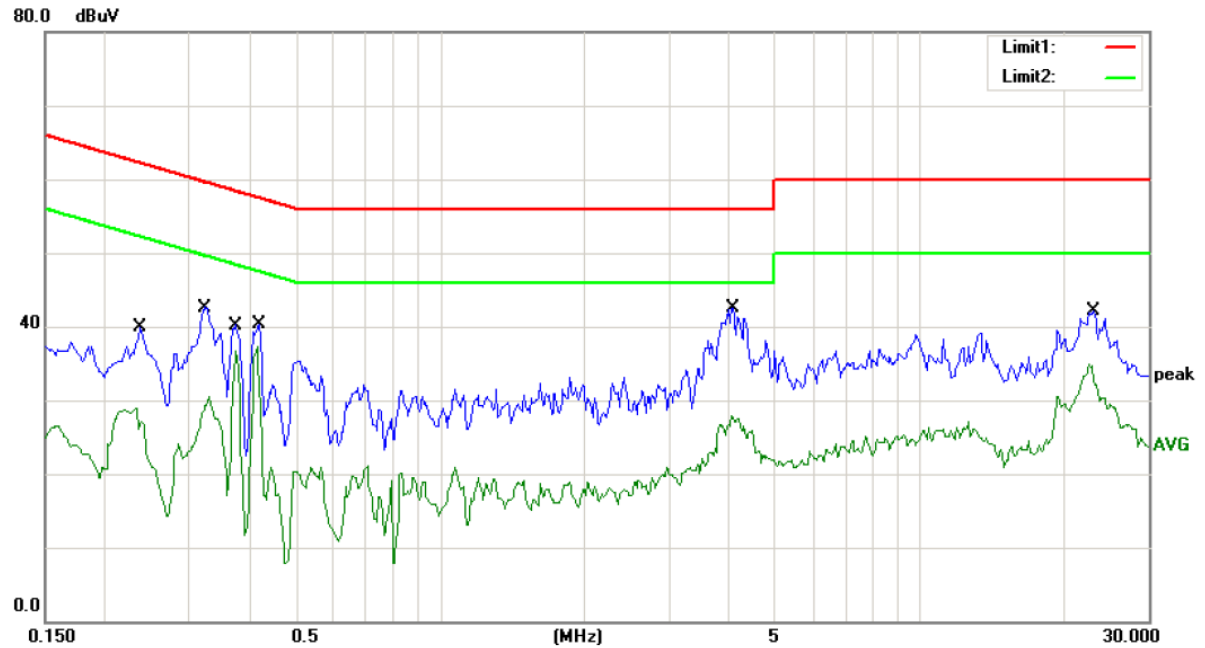
Humidity: 53 %

Mode: Y+Pb+Pr

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2100	41.16	0.00	41.16	63.21	-22.05	QP	
2		0.2100	31.05	0.00	31.05	53.21	-22.16	AVG	
3		0.3711	42.80	0.00	42.80	58.48	-15.68	QP	
4	*	0.3711	35.90	0.00	35.90	48.48	-12.58	AVG	
5		0.4150	41.77	0.00	41.77	57.55	-15.78	QP	
6		0.4150	34.54	0.00	34.54	47.55	-13.01	AVG	
7		0.5650	31.53	0.00	31.53	56.00	-24.47	QP	
8		0.5650	20.52	0.00	20.52	46.00	-25.48	AVG	
9		3.8800	37.78	0.00	37.78	56.00	-18.22	QP	
10		3.8800	25.69	0.00	25.69	46.00	-20.31	AVG	
11		22.5000	39.91	0.00	39.91	60.00	-20.09	QP	
12		22.5000	30.65	0.00	30.65	50.00	-19.35	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: ZHL



Site Conduction #1

Phase: **N**

Temperature: 24

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

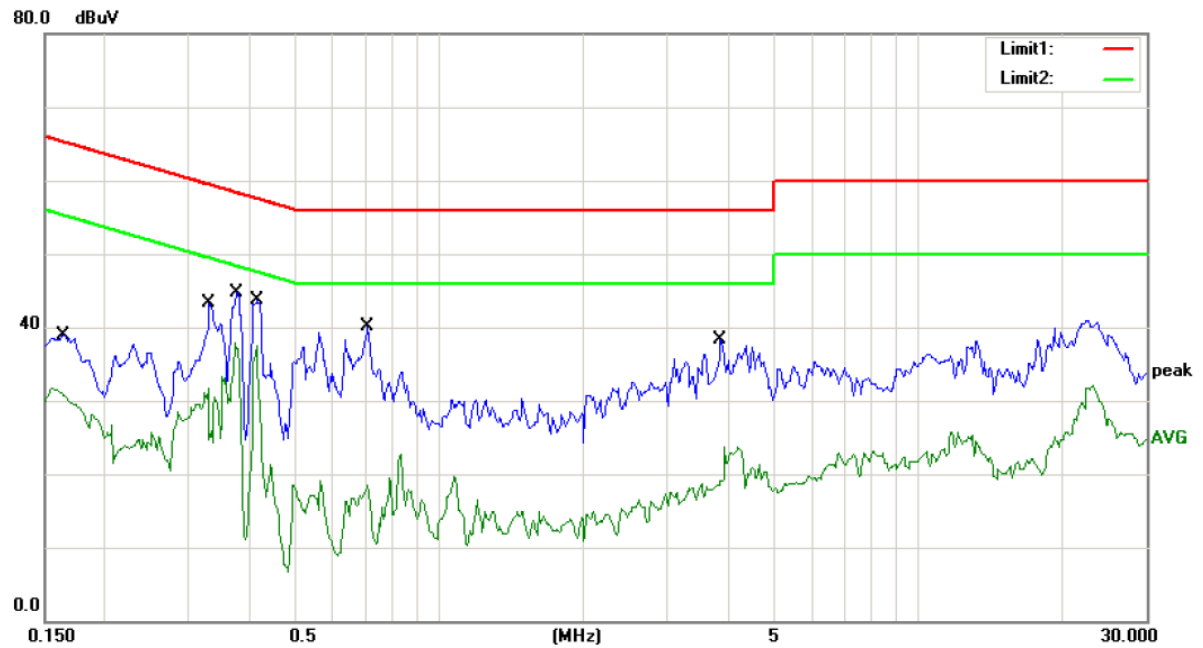
Humidity: 53 %

Mode: Y+Pb+Pr

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2365	39.86	0.00	39.86	62.22	-22.36	QP	
2		0.2365	28.94	0.00	28.94	52.22	-23.28	AVG	
3		0.3250	42.60	0.00	42.60	59.58	-16.98	QP	
4		0.3250	30.41	0.00	30.41	49.58	-19.17	AVG	
5		0.3750	40.20	0.00	40.20	58.39	-18.19	QP	
6		0.3750	36.73	0.00	36.73	48.39	-11.66	AVG	
7		0.4200	40.39	0.00	40.39	57.45	-17.06	QP	
8	*	0.4200	37.33	0.00	37.33	47.45	-10.12	AVG	
9		4.0703	42.48	0.00	42.48	56.00	-13.52	QP	
10		4.0703	27.82	0.00	27.82	46.00	-18.18	AVG	
11		23.0181	42.08	0.00	42.08	60.00	-17.92	QP	
12		23.0181	34.95	0.00	34.95	50.00	-15.05	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: ZHL



Site Conduction #1

Phase: **L1**

Temperature: 24

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

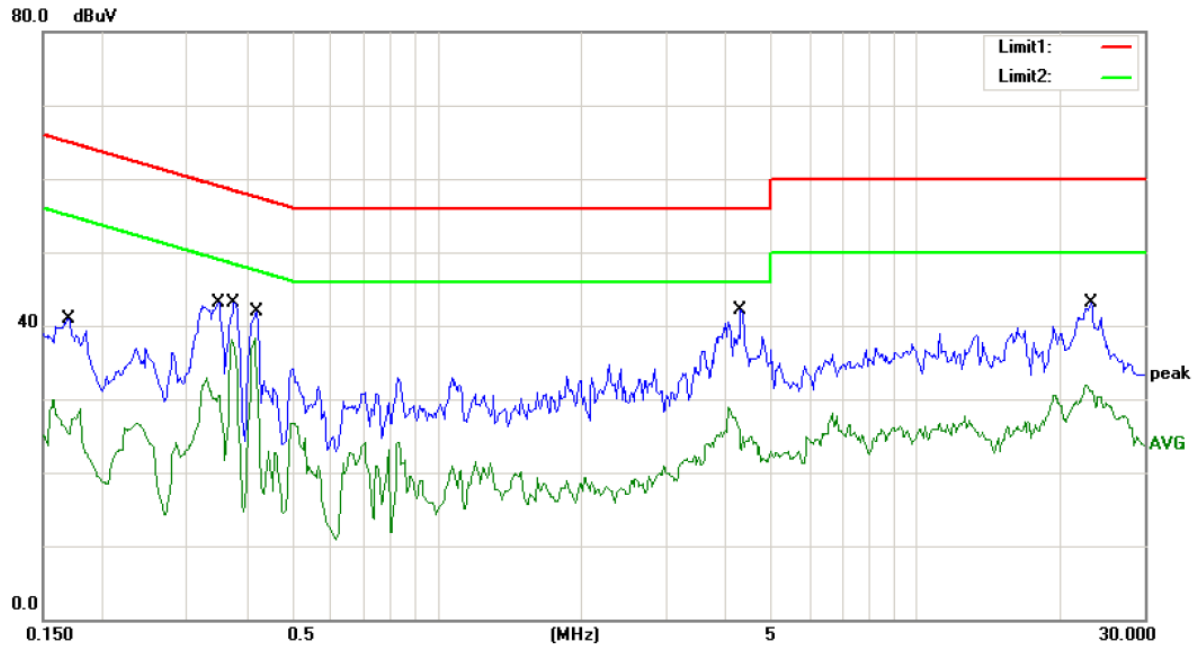
Humidity: 53 %

Mode: S-Video

Note:

No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1650	38.93	0.00	38.93	65.21	-26.28	QP	
2	0.1650	31.68	0.00	31.68	55.21	-23.53	AVG	
3	0.3303	43.39	0.00	43.39	59.44	-16.05	QP	
4	0.3303	31.66	0.00	31.66	49.44	-17.78	AVG	
5	0.3771	44.68	0.00	44.68	58.34	-13.66	QP	
6	0.3771	37.90	0.00	37.90	48.34	-10.44	AVG	
7	0.4170	43.62	0.00	43.62	57.51	-13.89	QP	
8 *	0.4170	37.54	0.00	37.54	47.51	-9.97	AVG	
9	0.7100	40.03	0.00	40.03	56.00	-15.97	QP	
10	0.7100	22.63	0.00	22.63	46.00	-23.37	AVG	
11	3.8800	38.28	0.00	38.28	56.00	-17.72	QP	
12	3.8800	23.75	0.00	23.75	46.00	-22.25	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: ZHL



Site Conduction #1

Phase: **N**

Temperature: 24

Limit: (CE)FCC PART 15 class B_QP

Power: AC 120V/60Hz

Humidity: 53 %

Mode: S-Video

Note:

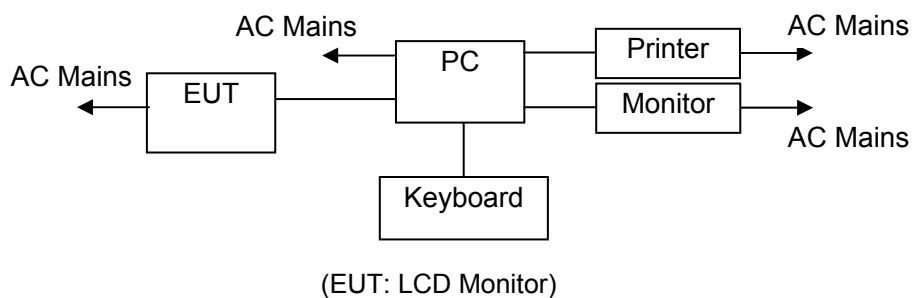
No. Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV	Limit dBuV	Over dB	Detector	Comment
1	0.1700	40.83	0.00	40.83	64.96	-24.13	QP	
2	0.1700	29.91	0.00	29.91	54.96	-25.05	AVG	
3	0.3500	43.15	0.00	43.15	58.96	-15.81	QP	
4	0.3500	32.91	0.00	32.91	48.96	-16.05	AVG	
5	0.3751	43.19	0.00	43.19	58.39	-15.20	QP	
6	0.3751	38.17	0.00	38.17	48.39	-10.22	AVG	
7	0.4200	41.89	0.00	41.89	57.45	-15.56	QP	
8 *	0.4200	38.33	0.00	38.33	47.45	-9.12	AVG	
9	4.3000	42.10	0.00	42.10	56.00	-13.90	QP	
10	4.3000	28.82	0.00	28.82	46.00	-17.18	AVG	
11	23.2250	43.02	0.00	43.02	60.00	-16.98	QP	
12	23.2250	32.00	0.00	32.00	50.00	-18.00	AVG	

*:Maximum data x:Over limit !:over margin Comment: Factor build in receiver. Operator: ZHL

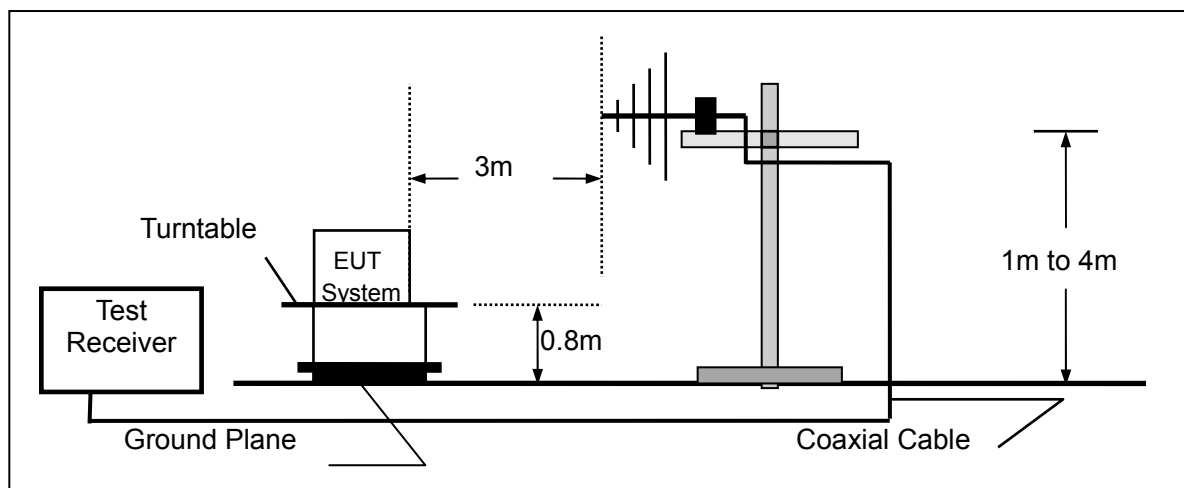
5. RADIATED EMISSION MEASUREMENT

5.1. Block Diagram of Test Setup

5.1.1. Block diagram of EUT System



5.1.2. Block diagram of test setup (In chamber)



5.2. Measuring Standard

FCC Part 15, Subpart B, Class B ANSI C63.4: 2009

5.3. Radiated Emission Limits (Class B)

Frequency MHz	Distance Meters	Field Strengths Limit	
		$\mu\text{V/m}$	$\text{dB}(\mu\text{V})/\text{m}$
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0

Frequency (GHz)	Distance (Meters)	Field Strengths Limit	
		Average ($\text{dB}\mu\text{V/m}$)	Peak ($\text{dB}\mu\text{V/m}$)
1~6	3	54	74

Remark: (1) Emission level (dB) μ V = 20 log Emission level μ V/m
(2) The smaller limit shall apply at the cross point between two frequency bands.
(3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

5.4. EUT Configuration on Measurement

The FCC Class B regulations test method must be used to find the maximum emission during radiated emission measurement.

EUT : LCD Monitor
Model Number : S242P

5.5. Operating Condition of EUT

5.5.1. Setup the EUT as shown on Section 5.1.

5.5.2. Turn on the power of all equipments.

5.5.3. Let the EUT work in measuring mode (VGA mode 1920*1080, VGA mode 800*600, DVI mode 1920*1080, DVI mode 800*600, CVBS in, Y+Pb+Pr, S-Video) and measure it.

5.6. Test Procedure

The EUT is placed on a turn table which is 0.8 meter high above the ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna which is mounted on a antenna tower. The antenna can be moved up and down from 1 to 4 meters to find out the maximum emission level. Bilog antenna (calibrated by Dipole Antenna) is used as a receiving antenna. Both horizontal and vertical polarization of the antenna are set on test.

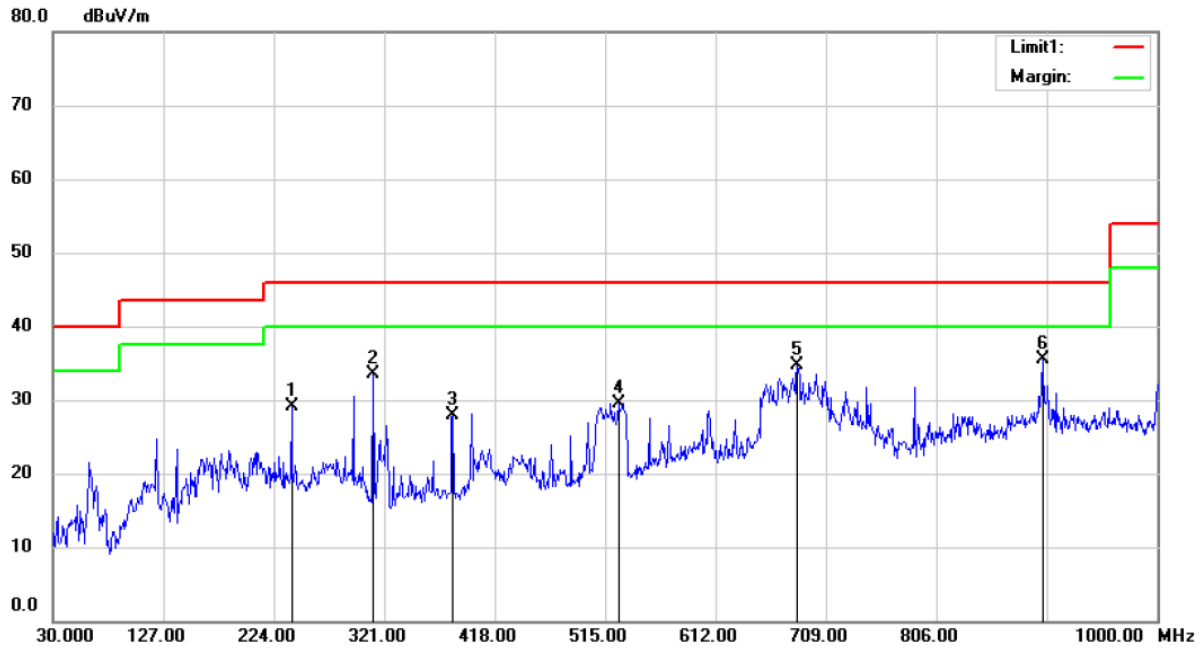
The bandwidth of the Receiver (ESU26) is set at 120kHz.
The worst scanning curves are attached in following pages.

5.7. Measuring Results

PASS.

The frequency range from 30MHz to 6000MHz is investigated.

Please refer to following pages.

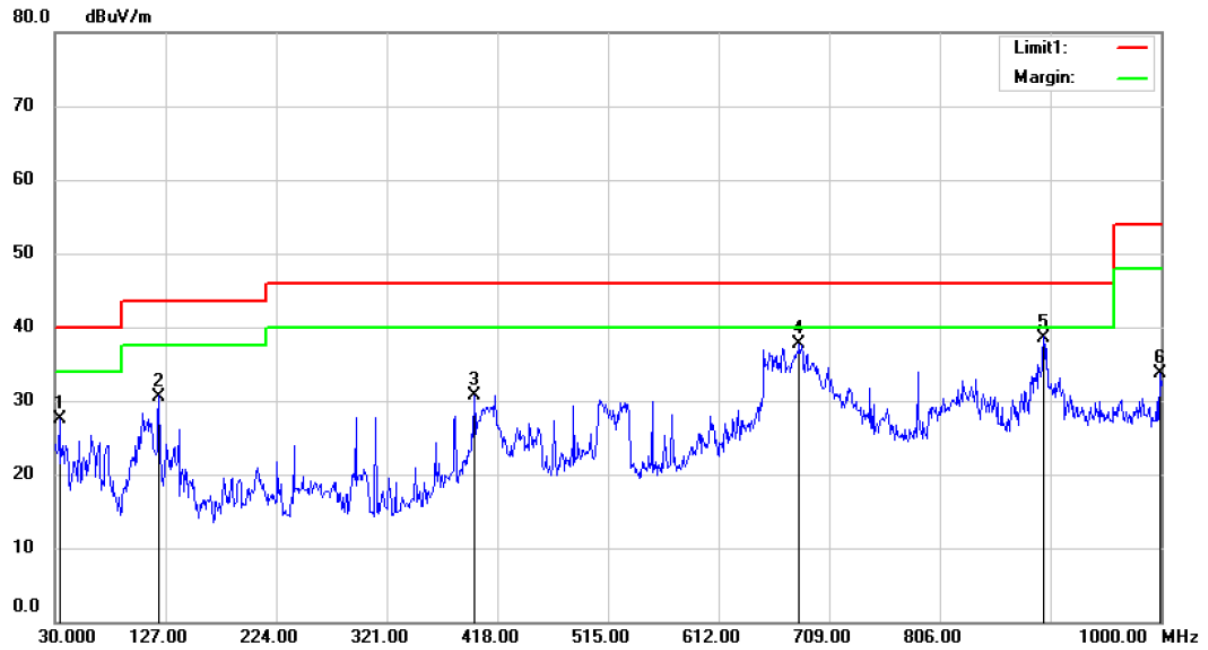


Site site #1 Polarization: **Horizontal** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
Mode:VGA IN(1920*1080)
Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		239.5200	49.26	-20.13	29.13	46.00	-16.87	QP		
2		311.3000	51.73	-18.16	33.57	46.00	-12.43	QP		
3		381.1400	43.92	-16.07	27.85	46.00	-18.15	QP		
4		526.6400	41.58	-12.06	29.52	46.00	-16.48	QP		
5		683.7800	44.06	-9.29	34.77	46.00	-11.23	QP		
6	*	899.1200	40.95	-5.53	35.42	46.00	-10.58	QP		

*:Maximum data x:Over limit !:over margin

Operator: Wang

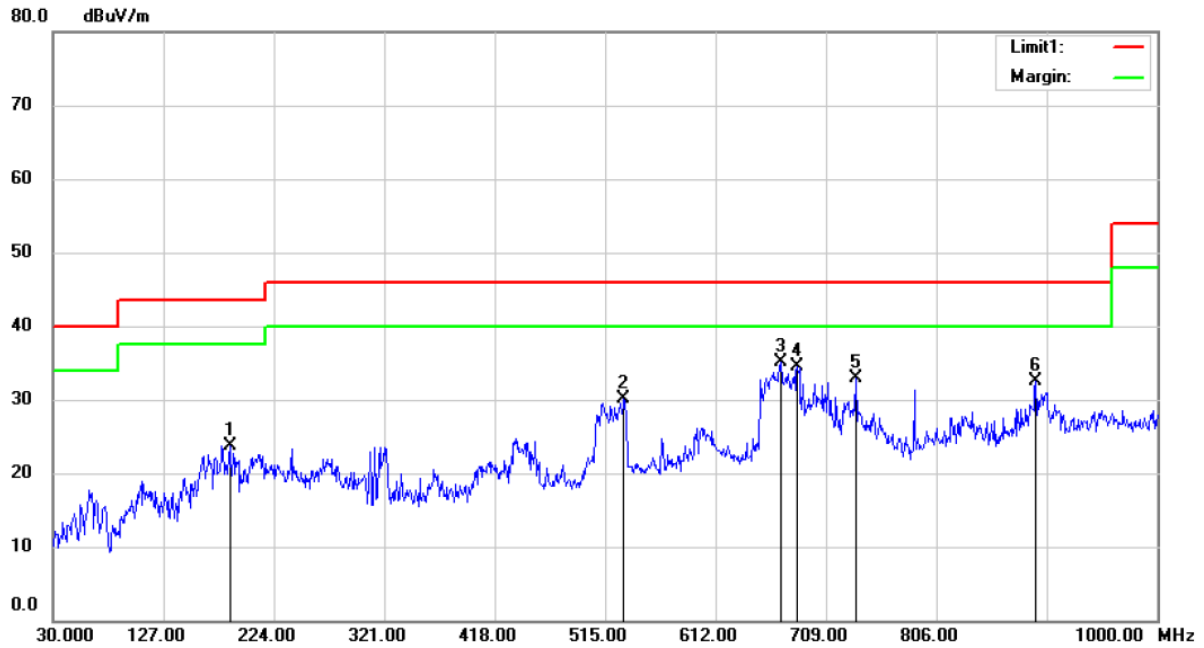


Site site #1 Polarization: **Vertical** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
Mode:VGA IN(1920*1080)
Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		33.8800	49.80	-22.31	27.49	40.00	-12.51	QP		
2		121.1800	54.05	-23.45	30.60	43.50	-12.90	QP		
3		397.6300	46.29	-15.53	30.76	46.00	-15.24	QP		
4		682.8100	46.95	-9.30	37.65	46.00	-8.35	QP		
5	*	897.1800	44.18	-5.58	38.60	46.00	-7.40	QP		
6		999.0300	37.94	-4.32	33.62	54.00	-20.38	QP		

*:Maximum data x:Over limit !:over margin

Operator: Wang

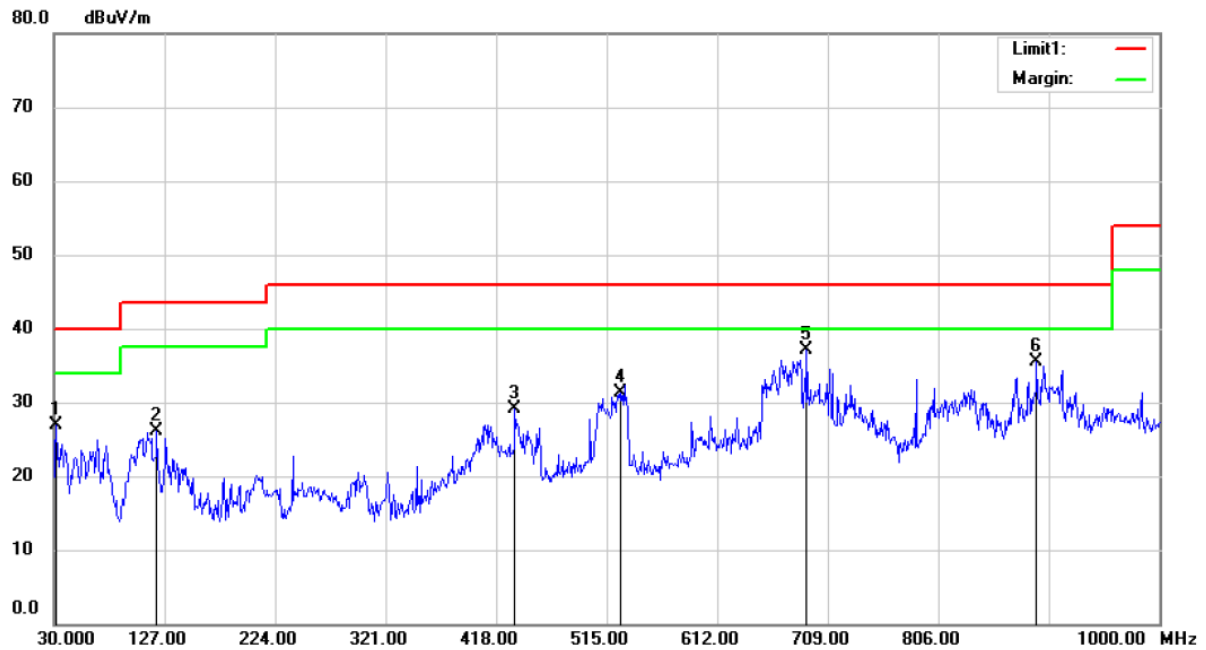


Site site #1 Polarization: **Horizontal** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
Mode:VGA IN(800*600)
Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		185.2000	46.42	-22.76	23.66	43.50	-19.84	QP		
2		531.4900	42.07	-11.93	30.14	46.00	-15.86	QP		
3	*	669.2300	44.46	-9.43	35.03	46.00	-10.97	QP		
4		683.7800	43.81	-9.29	34.52	46.00	-11.48	QP		
5		735.1900	41.32	-8.50	32.82	46.00	-13.18	QP		
6		893.3000	38.12	-5.63	32.49	46.00	-13.51	QP		

*:Maximum data x:Over limit !:over margin

Operator: Wang

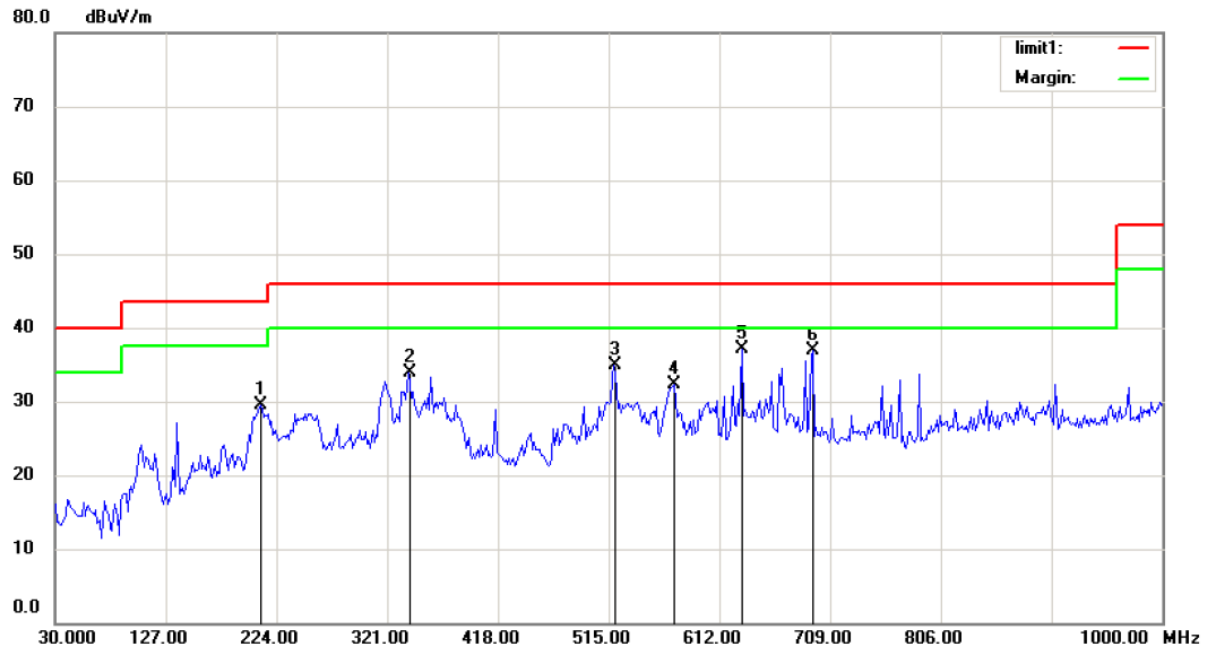


Site site #1 Polarization: **Vertical** Temperature: 24 C
Limit: (RE)FCC PART 15 CLASS B Power: AC 120V/60Hz Humidity: 53 %
Mode:VGA IN(800*600)
Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		31.9400	49.26	-22.33	26.93	40.00	-13.07	QP		
2		120.2100	49.42	-23.31	26.11	43.50	-17.39	QP		
3		434.4900	43.68	-14.60	29.08	46.00	-16.92	QP		
4		527.6100	43.36	-12.03	31.33	46.00	-14.67	QP		
5	*	690.5700	46.38	-9.22	37.16	46.00	-8.84	QP		
6		892.3300	41.09	-5.66	35.43	46.00	-10.57	QP		

*:Maximum data x:Over limit !:over margin

Operator: Wang



Site 3m Chamber #1

Polarization: **Horizontal**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

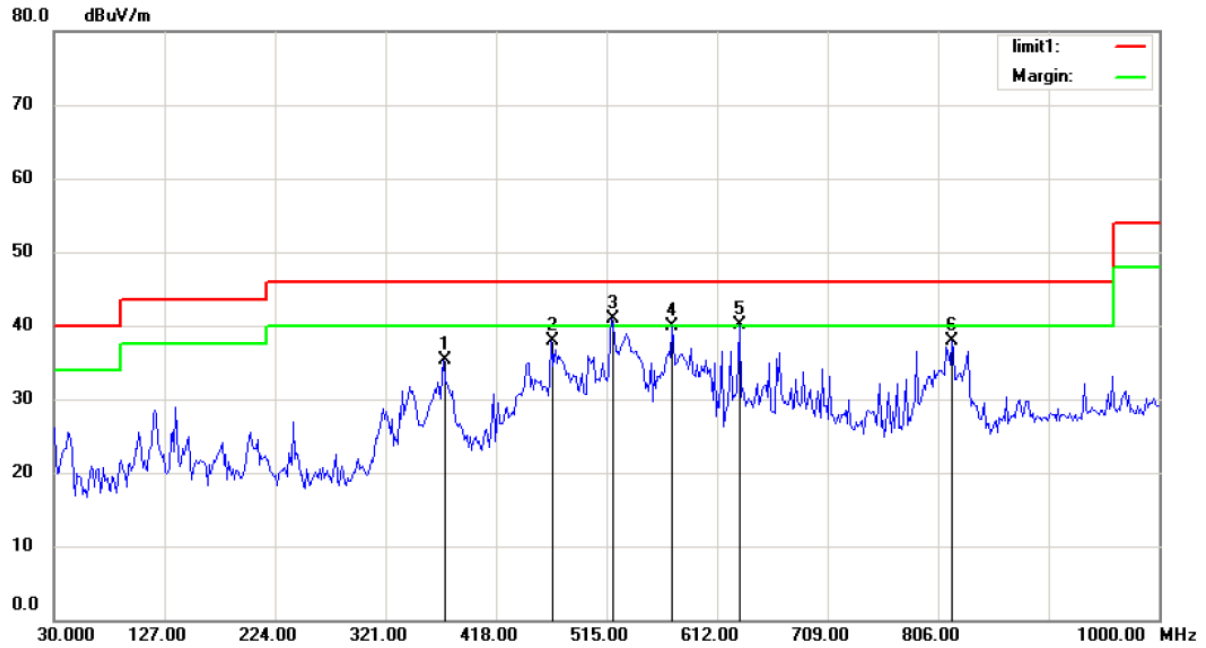
Mode:DVI(1920*1080)

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		210.3205	16.34	13.26	29.60	43.50	-13.90	QP		
2		339.3430	16.39	17.55	33.94	46.00	-12.06	QP		
3		519.6635	13.92	20.97	34.89	46.00	-11.11	QP		
4		572.5160	10.77	21.50	32.27	46.00	-13.73	QP		
5	*	631.5865	13.79	23.24	37.03	46.00	-8.97	QP		
6		693.7660	12.51	24.46	36.97	46.00	-9.03	QP		

*:Maximum data x:Over limit !:over margin

Operator: KK



Site 3m Chamber #1

Polarization: **Vertical**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

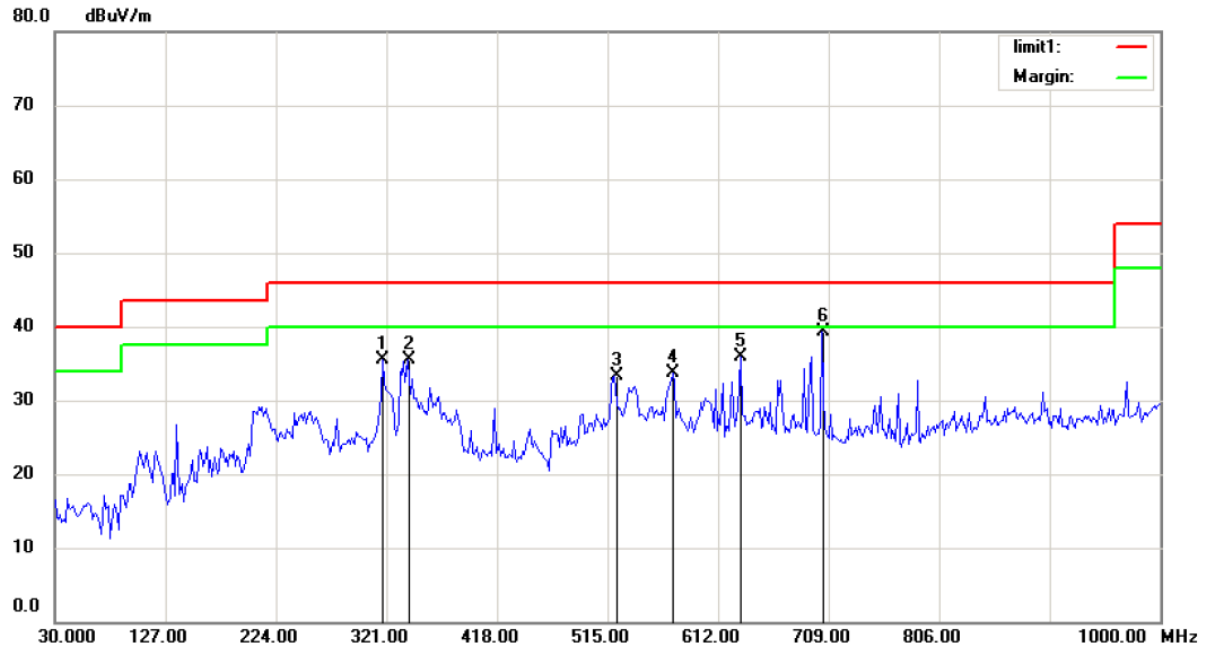
Mode:DVI(1920*1080)

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		371.9872	17.74	17.54	35.28	46.00	-10.72	QP		
2		466.8110	18.19	19.74	37.93	46.00	-8.07	QP		
3	*	519.6635	20.01	20.93	40.94	46.00	-5.06	QP		
4		572.5160	18.58	21.35	39.93	46.00	-6.07	QP		
5	!	631.5865	16.82	23.21	40.03	46.00	-5.97	QP		
6		818.1250	13.36	24.55	37.91	46.00	-8.09	QP		

*:Maximum data x:Over limit !:over margin

Operator: KK



Site 3m Chamber #1

Polarization: **Horizontal**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

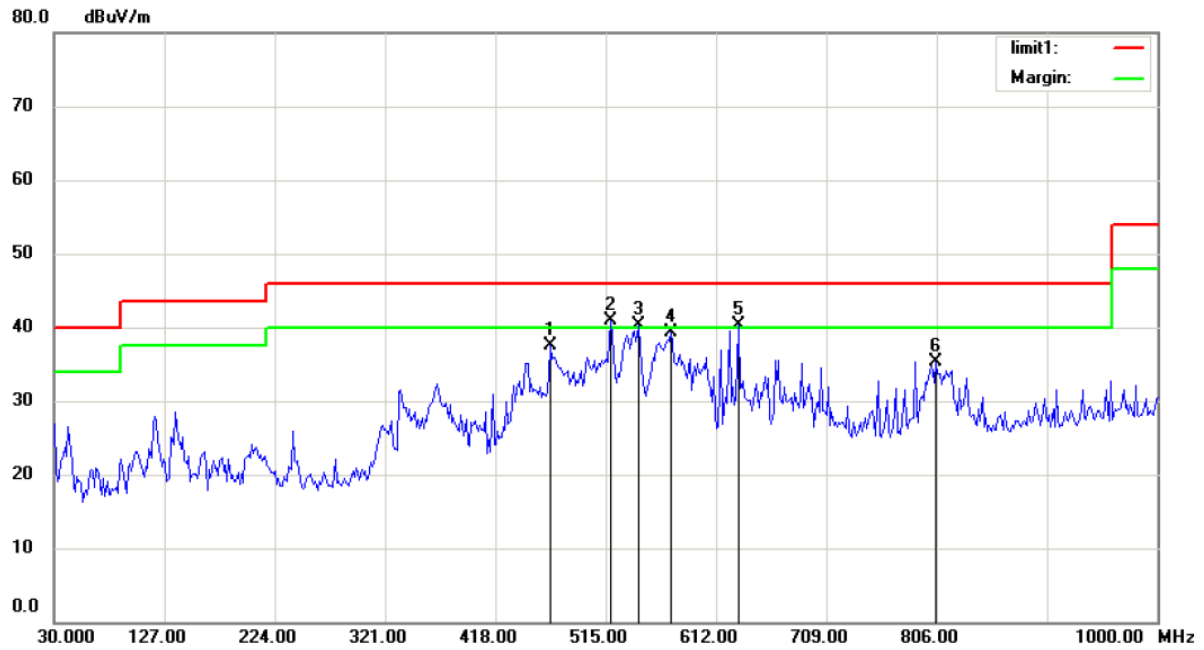
Mode:DVI(800*600)

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		317.5801	18.81	16.64	35.45	46.00	-10.55	QP		
2		339.3430	17.94	17.55	35.49	46.00	-10.51	QP		
3		521.2180	12.21	21.01	33.22	46.00	-12.78	QP		
4		572.5160	12.18	21.50	33.68	46.00	-12.32	QP		
5		631.5865	12.64	23.24	35.88	46.00	-10.12	QP		
6	*	703.0930	15.11	24.24	39.35	46.00	-6.65	QP		

*:Maximum data x:Over limit !:over margin

Operator: KK



Site 3m Chamber #1

Polarization: **Vertical**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

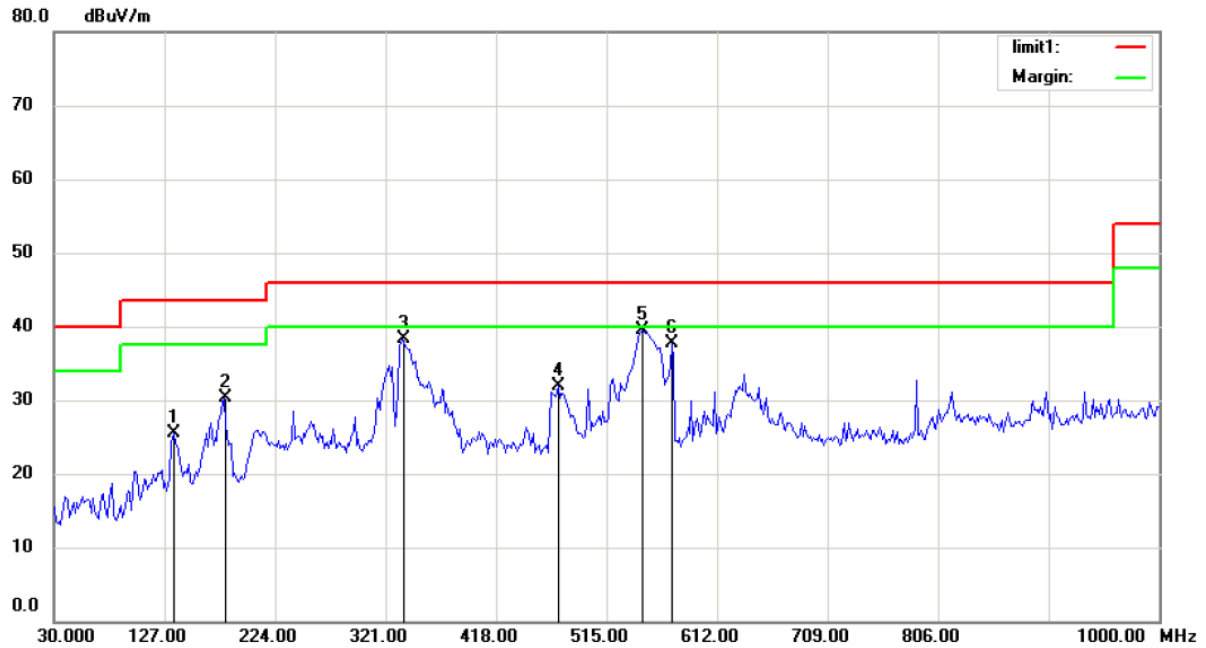
Mode:DVI(800*600)

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		466.8107	17.72	19.74	37.46	46.00	-8.54	QP		
2	*	519.6634	19.90	20.93	40.83	46.00	-5.17	QP		
3	!	544.5352	18.63	21.59	40.22	46.00	-5.78	QP		
4		572.5160	17.88	21.35	39.23	46.00	-6.77	QP		
5	!	631.5865	17.15	23.21	40.36	46.00	-5.64	QP		
6		805.6891	10.67	24.62	35.29	46.00	-10.71	QP		

*:Maximum data x:Over limit !:over margin

Operator: KK



Site 3m Chamber #1

Polarization: **Horizontal**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

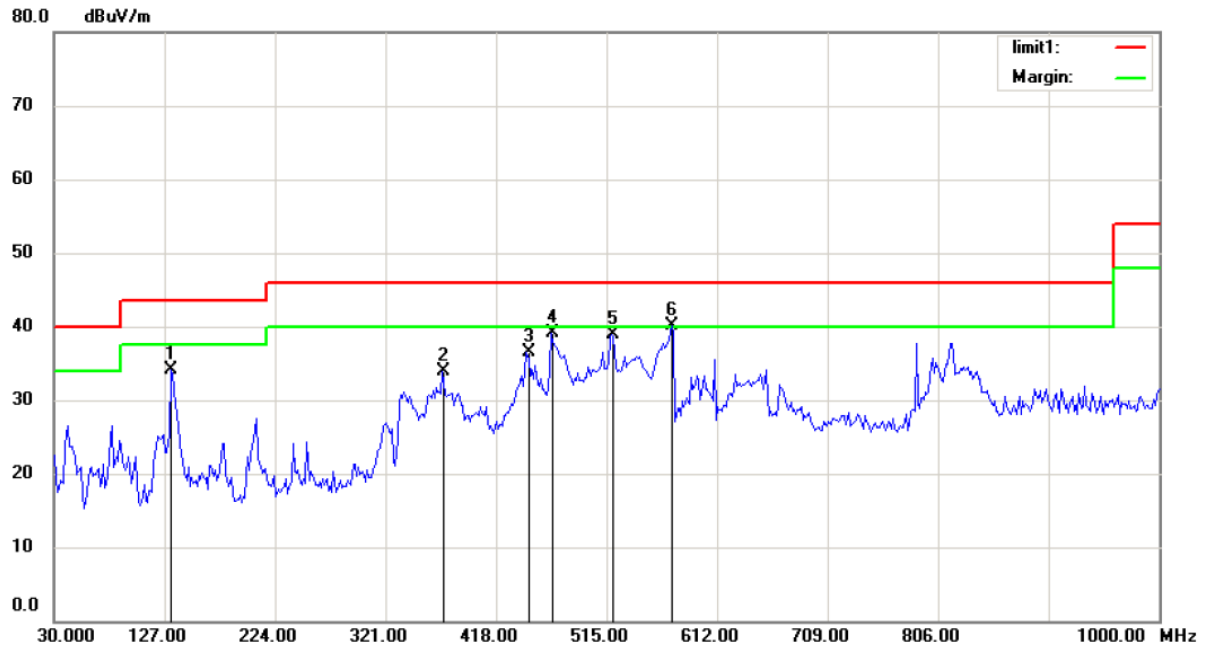
Mode:CVBS

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		135.7051	14.49	10.92	25.41	43.50	-18.09	QP		
2		179.2308	17.98	12.23	30.21	43.50	-13.29	QP		
3		336.2340	20.84	17.37	38.21	46.00	-7.79	QP		
4		473.0288	11.95	19.96	31.91	46.00	-14.09	QP		
5	*	546.0897	17.93	21.65	39.58	46.00	-6.42	QP		
6		572.5160	16.11	21.50	37.61	46.00	-8.39	QP		

*:Maximum data x:Over limit !:over margin

Operator: KK



Site: 3m Chamber #1

Polarization: **Vertical**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

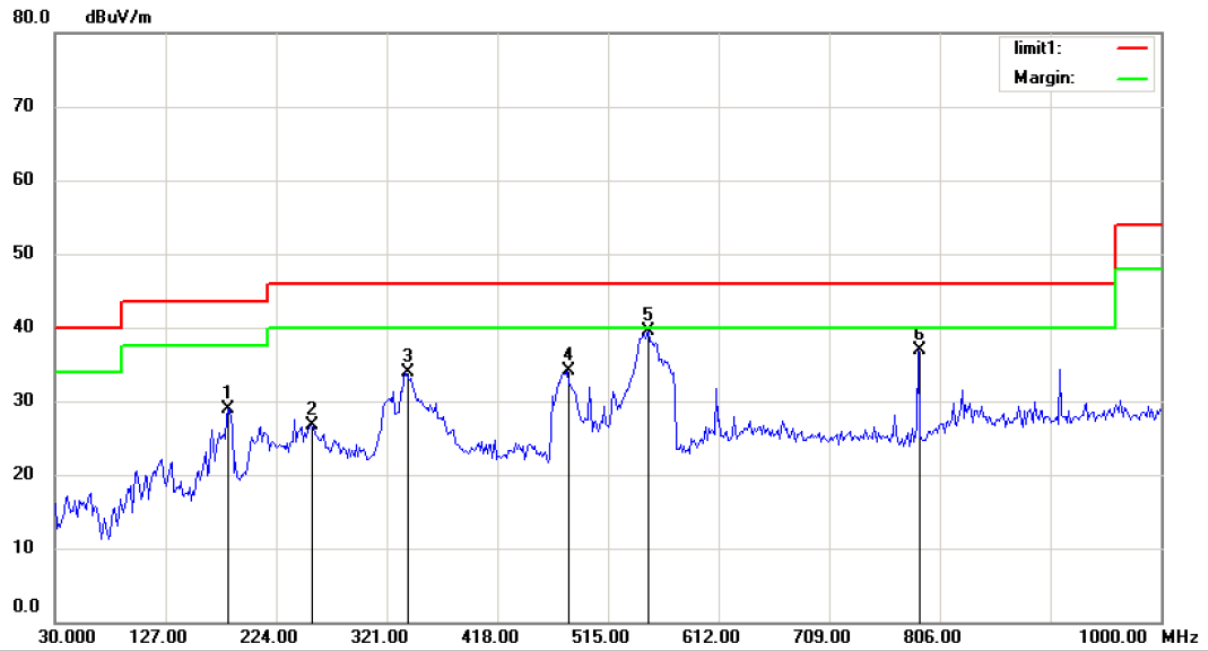
Mode: CVBS

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		132.5961	23.06	11.11	34.17	43.50	-9.33	QP		
2		370.4327	16.47	17.41	33.88	46.00	-12.12	QP		
3		445.0481	16.51	19.94	36.45	46.00	-9.55	QP		
4		466.8110	19.44	19.74	39.18	46.00	-6.82	QP		
5		519.6635	17.98	20.93	38.91	46.00	-7.09	QP		
6	*	572.5160	18.80	21.35	40.15	46.00	-5.85	QP		

*:Maximum data x:Over limit !:over margin

Operator: KK



Site 3m Chamber #1

Polarization: **Horizontal**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

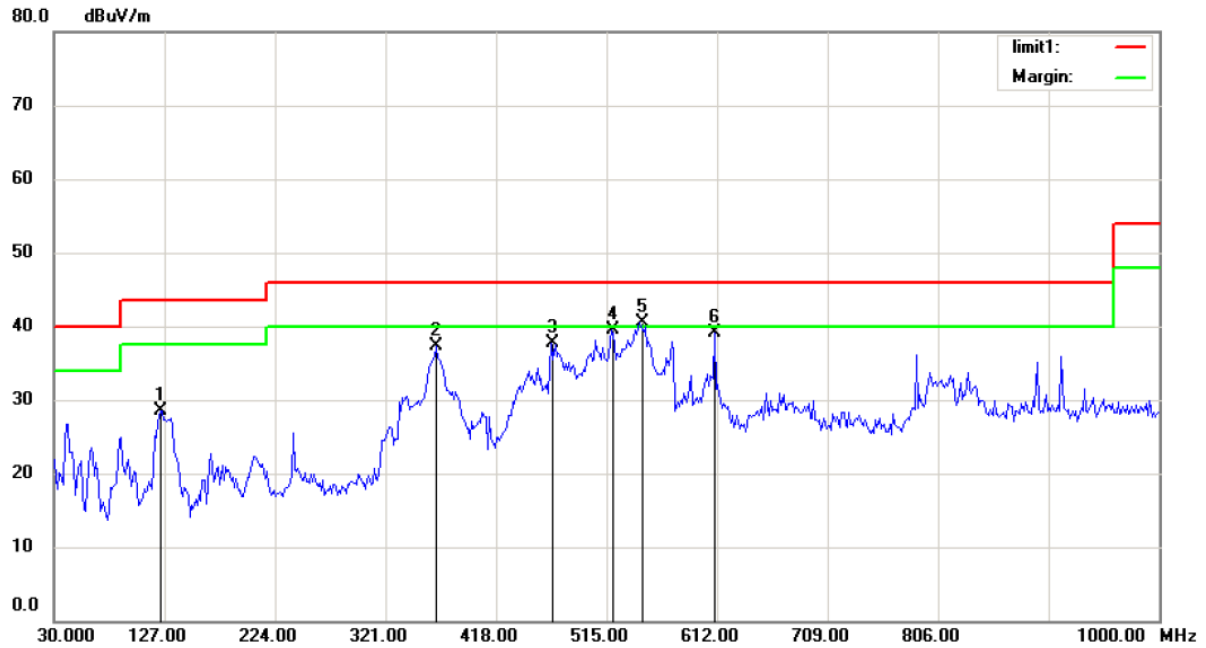
Mode:Y+Pb+Pr

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		182.3397	16.49	12.49	28.98	43.50	-14.52	QP		
2		253.8462	11.78	14.97	26.75	46.00	-19.25	QP		
3		337.7885	16.42	17.46	33.88	46.00	-12.12	QP		
4		479.2468	14.02	20.15	34.17	46.00	-11.83	QP		
5	*	550.7532	17.84	21.72	39.56	46.00	-6.44	QP		
6		787.0353	12.86	24.06	36.92	46.00	-9.08	QP		

*:Maximum data x:Over limit !:over margin

Operator: KK



Site 3m Chamber #1

Polarization: **Vertical**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

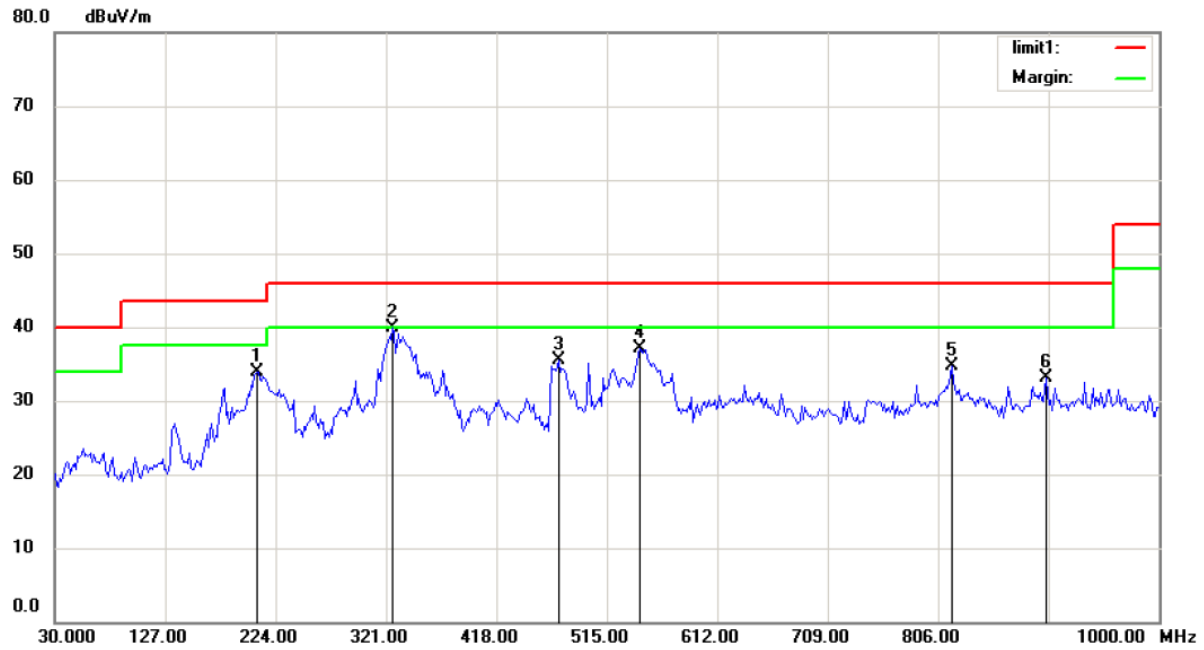
Mode:Y+Pb+Pr

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		123.2692	16.17	12.30	28.47	43.50	-15.03	QP		
2		365.7692	19.66	17.63	37.29	46.00	-8.71	QP		
3		466.8110	17.90	19.74	37.64	46.00	-8.36	QP		
4		519.6635	18.61	20.93	39.54	46.00	-6.46	QP		
5	*	544.5353	18.96	21.59	40.55	46.00	-5.45	QP		
6		609.8237	16.47	22.70	39.17	46.00	-6.83	QP		

*:Maximum data x:Over limit !:over margin

Operator: KK



Site 3m Chamber #1

Polarization: **Horizontal**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

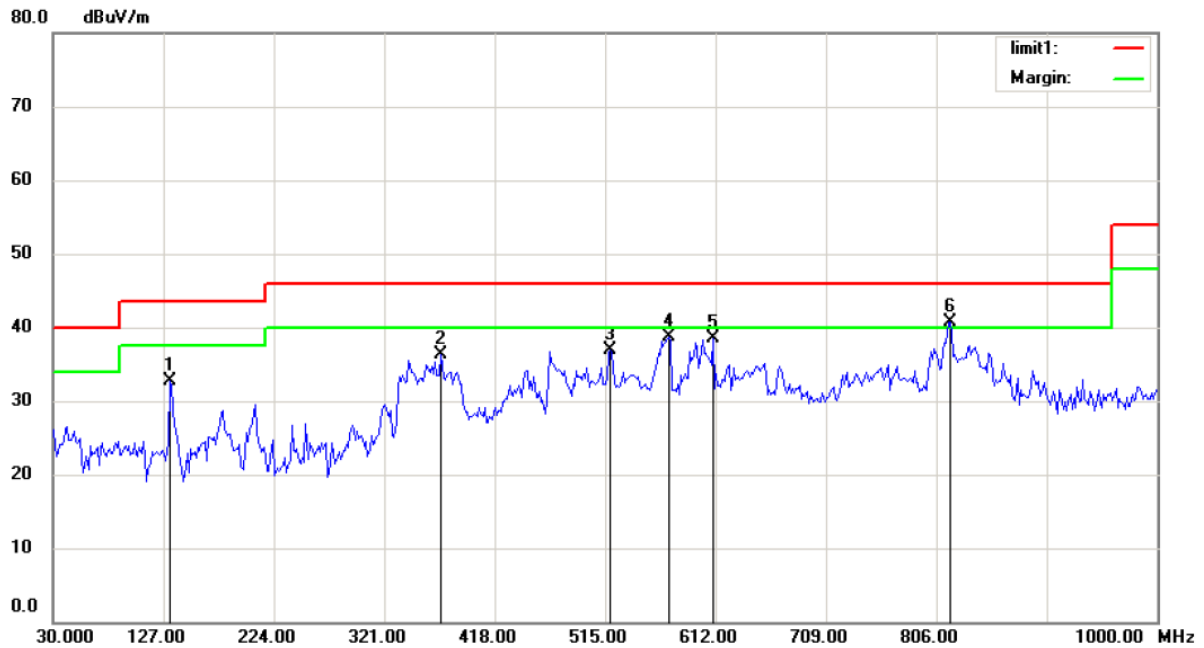
Mode:S-Video

Note:

No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Over	Antenna	Table	
		MHz	Level	Factor	ment			Height	Degree	
			dBuV	dB	dBuV/m	dBuV/m	dB	cm	degree	Comment
1		207.2114	20.62	13.27	33.89	43.50	-9.61	QP		
2	*	326.9070	23.04	16.93	39.97	46.00	-6.03	QP		
3		473.0288	15.45	19.96	35.41	46.00	-10.59	QP		
4		544.5352	15.54	21.60	37.14	46.00	-8.86	QP		
5		818.1250	10.13	24.53	34.66	46.00	-11.34	QP		
6		900.5128	7.17	26.03	33.20	46.00	-12.80	QP		

*:Maximum data x:Over limit !:over margin

Operator: KK



Site 3m Chamber #1

Polarization: **Vertical**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 120V/60Hz

Humidity: 53 %

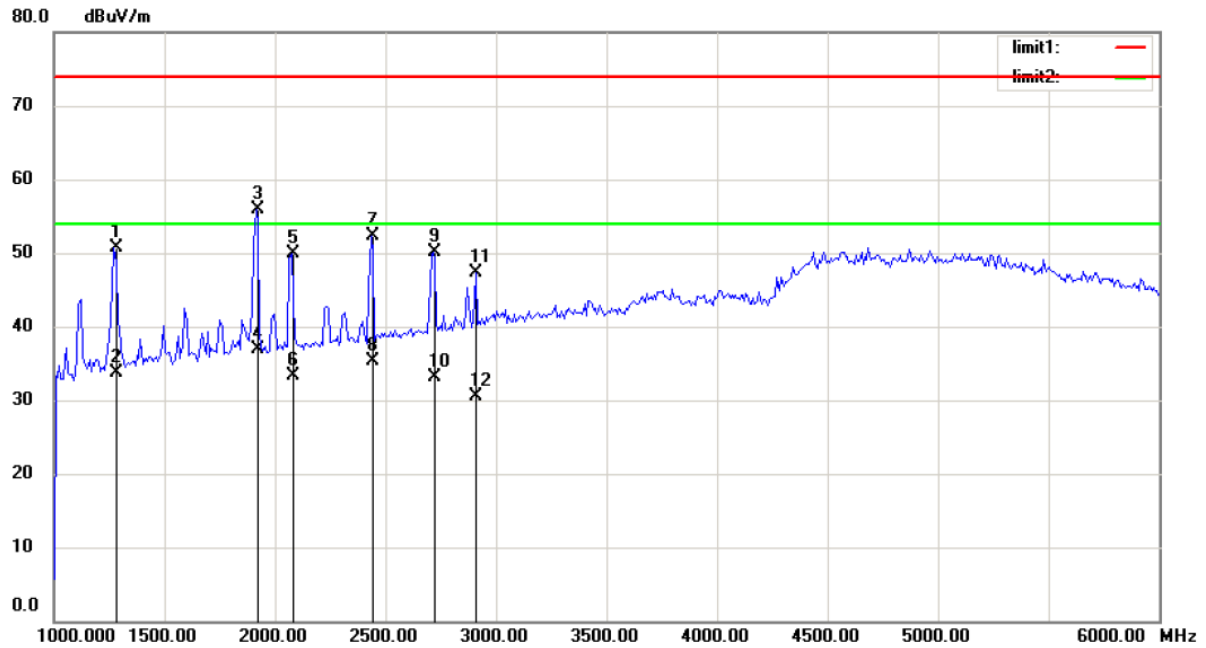
Mode:S-Video

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		132.5961	21.56	11.11	32.67	43.50	-10.83	QP		
2		370.4326	18.97	17.41	36.38	46.00	-9.62	QP		
3		519.6634	15.98	20.93	36.91	46.00	-9.09	QP		
4		570.9615	17.40	21.31	38.71	46.00	-7.29	QP		
5		609.8237	15.76	22.70	38.46	46.00	-7.54	QP		
6	*	818.1250	16.11	24.55	40.66	46.00	-5.34	QP		

*:Maximum data x:Over limit !:over margin

Operator: KK



Site: 3m Chamber #1

Polarization: **Horizontal**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 220V/50Hz

Humidity: 53 %

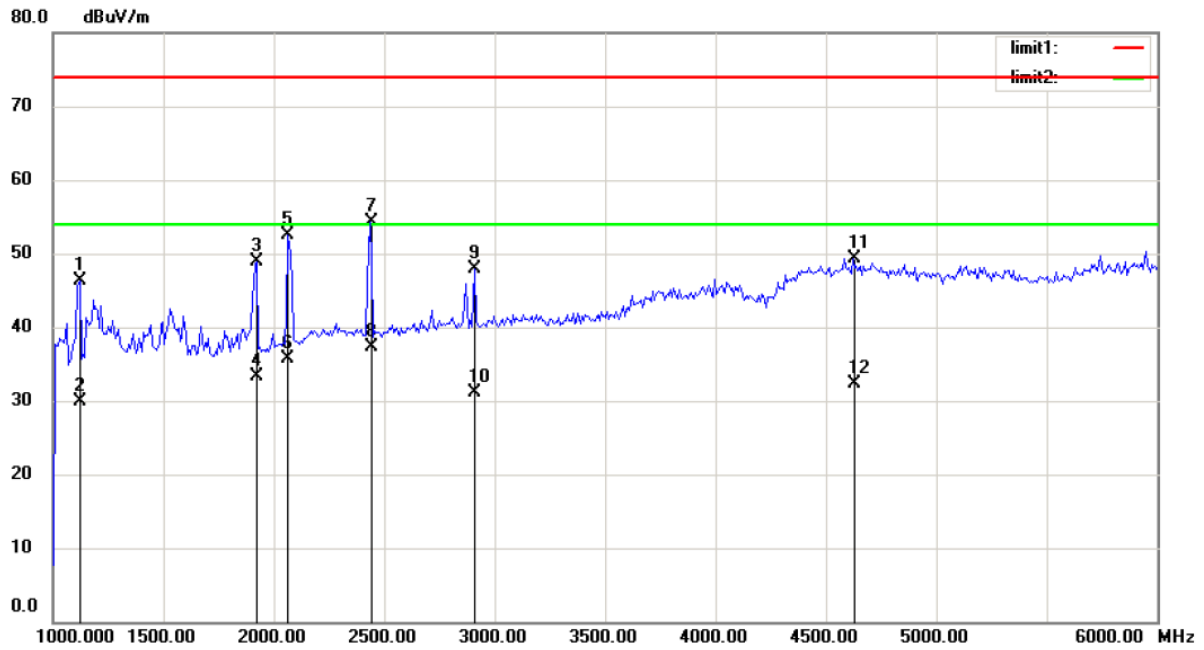
Mode:VGA(1920*1080)

Note:

No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1272.436	63.61	-12.97	50.64	74.00	-23.36	peak		
2		1272.436	46.70	-12.97	33.73	54.00	-20.27	AVG		
3		1913.462	66.77	-10.94	55.83	74.00	-18.17	peak		
4	*	1913.462	47.80	-10.94	36.86	54.00	-17.14	AVG		
5		2073.718	60.26	-10.39	49.87	74.00	-24.13	peak		
6		2073.718	43.60	-10.39	33.21	54.00	-20.79	AVG		
7		2434.295	61.48	-9.10	52.38	74.00	-21.62	peak		
8		2434.295	44.50	-9.10	35.40	54.00	-18.60	AVG		
9		2714.744	57.96	-7.86	50.10	74.00	-23.90	peak		
10		2714.744	40.90	-7.86	33.04	54.00	-20.96	AVG		
11		2907.051	54.31	-7.00	47.31	74.00	-26.69	peak		
12		2907.051	37.60	-7.00	30.60	54.00	-23.40	AVG		

*:Maximum data x:Over limit !:over margin

Operator: KK



Site 3m Chamber #1

Polarization: **Vertical**

Temperature: 24

Limit: (RE)FCC PART 15 CLASS B

Power: AC 220V/50Hz

Humidity: 53 %

Mode:VGA(1920*1080)

Note:

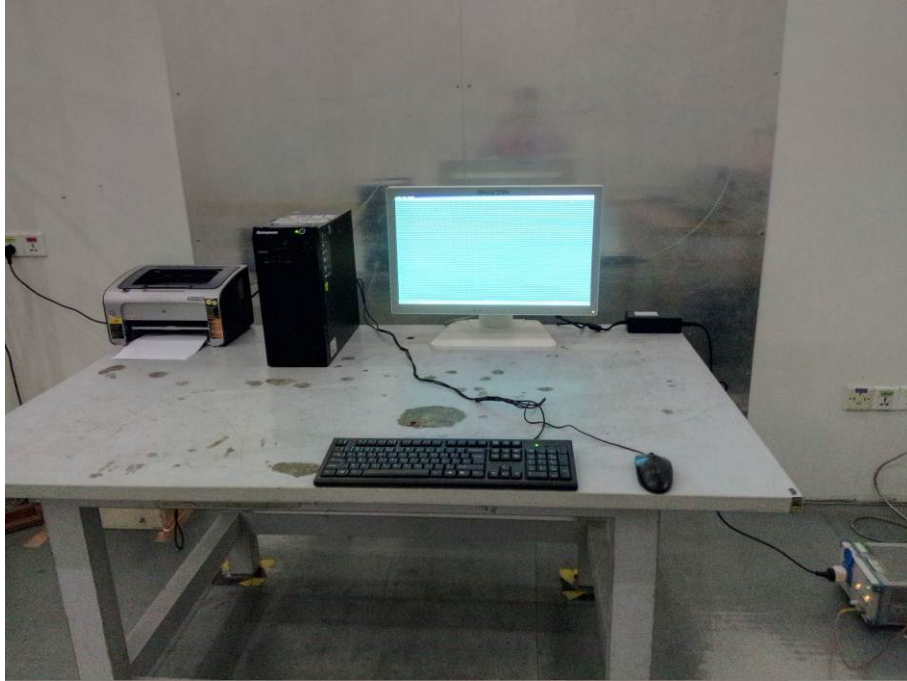
No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Over dB	Antenna Height cm	Table Degree degree	Comment
1		1120.192	58.84	-12.59	46.25	74.00	-27.75	peak		
2		1120.192	42.50	-12.59	29.91	54.00	-24.09	AVG		
3		1921.474	59.91	-10.97	48.94	74.00	-25.06	peak		
4		1921.474	44.30	-10.97	33.33	54.00	-20.67	AVG		
5		2065.705	62.50	-9.97	52.53	74.00	-21.47	peak		
6		2065.705	45.60	-9.97	35.63	54.00	-18.37	AVG		
7		2434.295	62.99	-8.59	54.40	74.00	-19.60	peak		
8	*	2434.295	45.90	-8.59	37.31	54.00	-16.69	AVG		
9		2907.051	55.11	-7.14	47.97	74.00	-26.03	peak		
10		2907.051	38.30	-7.14	31.16	54.00	-22.84	AVG		
11		4621.795	52.74	-3.51	49.23	74.00	-24.77	peak		
12		4621.795	35.90	-3.51	32.39	54.00	-21.61	AVG		

*:Maximum data x:Over limit !:over margin

Operator: KK

6. PHOTOGRAPHS

6.1.Photos of Conducted Emission Measurement



6.2. Photos of Radiation Emission Measurement

