

TEST REPORT



Applicant	SHUOYING INDUSTRIAL (SHENZHEN) CO.,LTD
Address	Shuoying Road,Hebei Industry Area,Dalang,Longhua Town,Baoan,Shenzhen,China

Manufacturer or Supplier	SHUOYING INDUSTRIAL (SHENZHEN) CO.,LTD	 <p>120921N021</p>
Address	Shuoying Road,Hebei Industry Area,Dalang,Longhua,Town,Baoan,Shenzhen,China	
Product	Digital Video Camera	
Brand Name	N/A	
Model	DVH198	
Additional Model & Model Difference	N/A	
Date of tests	Sep. 22 ~ Oct. 12, 2012	

The submitted sample of the above equipment has been tested for according to the requirements of the following standards:

☒ **FCC Part 15, Subpart B, Class B**

CONCLUSION: The submitted sample was found to **COMPLY** with the test requirement

Tested by Breeze Jiang Project Engineer / EMC Department	Approved by Sam Tung Manager/ EMC Department
	 Date: Oct. 15, 2012

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Test Report No.: FC120921N021

RELEASE CONTROL RECORD

ISSUE NO.	REASON FOR CHANGE	DATE ISSUED
Original release	N/A	Oct. 15, 2012



1 SUMMARY OF TEST RESULTS

The EUT has been tested according to the following specifications:

APPLIED STANDARD: FCC Part 15, Subpart B			
Standard Section	Test Item	Result	Remark
15.107	Conducted Emission Test	PASS	Meets Class B Limit Minimum passing margin is -13.99db at 0.18519MHz
15.109	Radiated Emission Test (30MHz ~ 1GHz)	PASS	Meets Class B Limit Minimum passing margin is -3.47db at 826.58MHz

1.1 MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

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

MEASUREMENT	FREQUENCY	UNCERTAINTY
Conducted emissions	150kHz ~ 30MHz	+/-2.94 dB
Radiated emissions	30MHz ~ 1GHz	+/-3.40 dB
	Above 1GHz	+/-2.20 dB



2 GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

FCC ID:	XJN-DVH198
PRODUCT	Digital Video Camera
MODEL NO.	DVH198
POWER SUPPLY	DC5V From Notebook PC Input AC120V/60Hz
DATA CABLE SUPPLIED	USB Line: shielded detachable 1.0m, with one core.
THE HIGHEST OPERATING FREQUENCY	96MHz

NOTE:

1. The EUT is a Digital Video Camera, for a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. For the test results, the EUT had been tested with all conditions. But only the worst case was showed in test report.



2.2 DESCRIPTION OF TEST MODES

The EUT was tested under the following modes. And the final worst mode was marked in boldface and recorded in this report.

◆ FOR EMISSION TEST

Test Mode	Test Voltage
Data Transmitting	DC5V From Notebook PC Input AC120V/60Hz

2.3 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

FOR EMISSION TEST

NO.	PRODUCT	BRAND	MODEL NO.	SERIAL NO.	FCC ID
1	Notebook PC	DELL	5P2PM2X	12400120329	N/A
2	Printer	hp	Laserjet1300	N/A	N/A
3	Mouse	hp	M-UAE96	N/A	N/A
4	SD Card	Kingston	K00125	KT02628	N/A

NO.	CABLE DESCRIPTION OF THE ABOVE SUPPORT UNITS
1	AC Line Unshielded, Detachable 0.8m, DC Line Unshielded, Undetachable 1.8m.
2	AC Line Unshielded, Detachable 1.5m, USB Line Unshielded, Detachable 1.5m.
3	USB Line Unshielded, Undetachable 1.5m
4	N/A



3 EMISSION TEST

3.1 CONDUCTED EMISSION MEASUREMENT

3.1.1 LIMITS OF CONDUCTED EMISSION MEASUREMENT

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.107)

FREQUENCY (MHz)	Class A (dBuV)		Class B (dBuV)	
	Quasi-peak	Average	Quasi-peak	Average
0.15 - 0.5	79	66	66 - 56	56 - 46
0.50 - 5.0	73	60	56	46
5.0 - 30.0	73	60	60	50

- NOTES:** (1) The lower limit shall apply at the transition frequencies.
(2) The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50 MHz.
(3) All emanations from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.

3.1.2 TEST INSTRUMENTS

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESU 26	100005	May 15,12	May 14,13
Artificial Mains Network	Rohde&Schwarz	ENV216	101173	May 15,12	May 14,13
Pulse Limiter	Rohde&Schwarz	ESH3-Z2	100168	May 15,12	May 14,13
RF Cable	FUJIKURA	3D-2W	553 Cable	May 15,12	May 15,13
Impedance Stabilization Network	TESEQ	ISN T800	27957	Oct.10,12	Oct.09,13
Test Software	ADT	ADT_Conc V7.3.7	N/A	N/A	N/A

- NOTE:** 1. The calibration interval of the above test instruments is 12 months and the calibrations are traceable to CEPREI/CHINA and NIM/CHINA.
2. The test was performed in Shielding Room 553.



3.1.3 TEST PROCEDURE

The basic test procedure was in accordance with ANSI C63.4:2009(section 7).

- a. The EUT was placed 0.4 meters from the conducting wall of the shielded room with EUT being connected to the power mains through a line impedance stabilization network (LISN). Other support units were connected to the power mains through another LISN. The two LISNs provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- b. Both lines of the power mains connected to the EUT were checked for maximum conducted interference.
- c. The frequency range from 150 kHz to 30 MHz was searched. Emission levels under (Limit - 20dB) were not recorded.

NOTE:

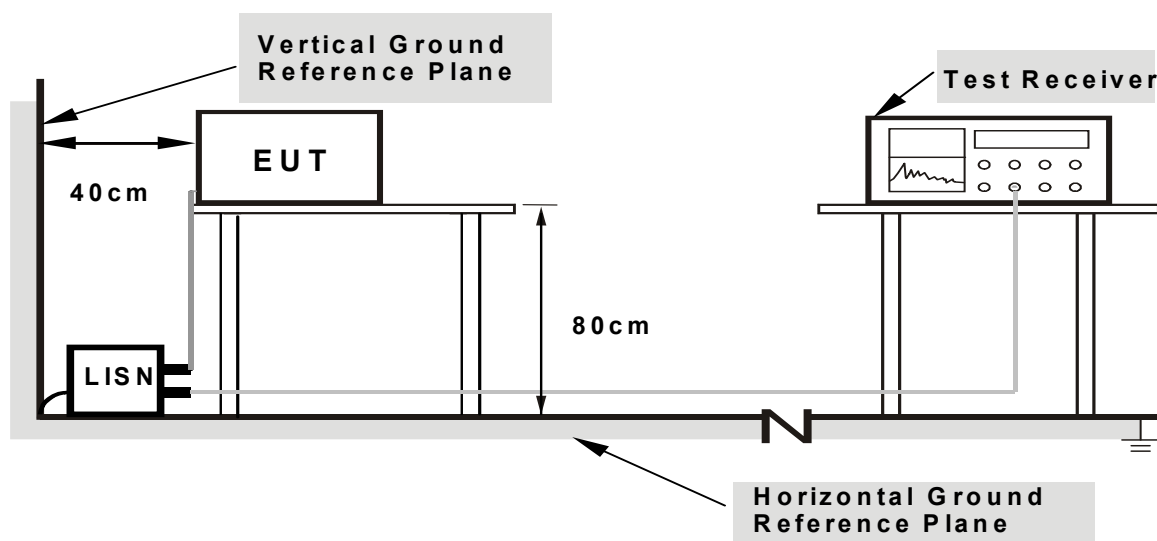
1. Q.P. and AV. are abbreviations of quasi-peak and average individually.
2. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.
3. Margin value = Emission level - Limit value
4. Correction factor = Insertion loss + Cable loss
5. Emission Level = Correction Factor + Reading Value.

3.1.4 DEVIATION FROM TEST STANDARD

No deviation



3.1.5 TEST SETUP



Note: 1.Support units were connected to second LISN.
2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.

3.1.6 EUT OPERATING CONDITIONS

- a. Turn on the power of the EUT, connect to notebook PC then running data transmitting software.
- b. EUT was operated according to the type used was description in manufacturer's specifications or the User's Manual.



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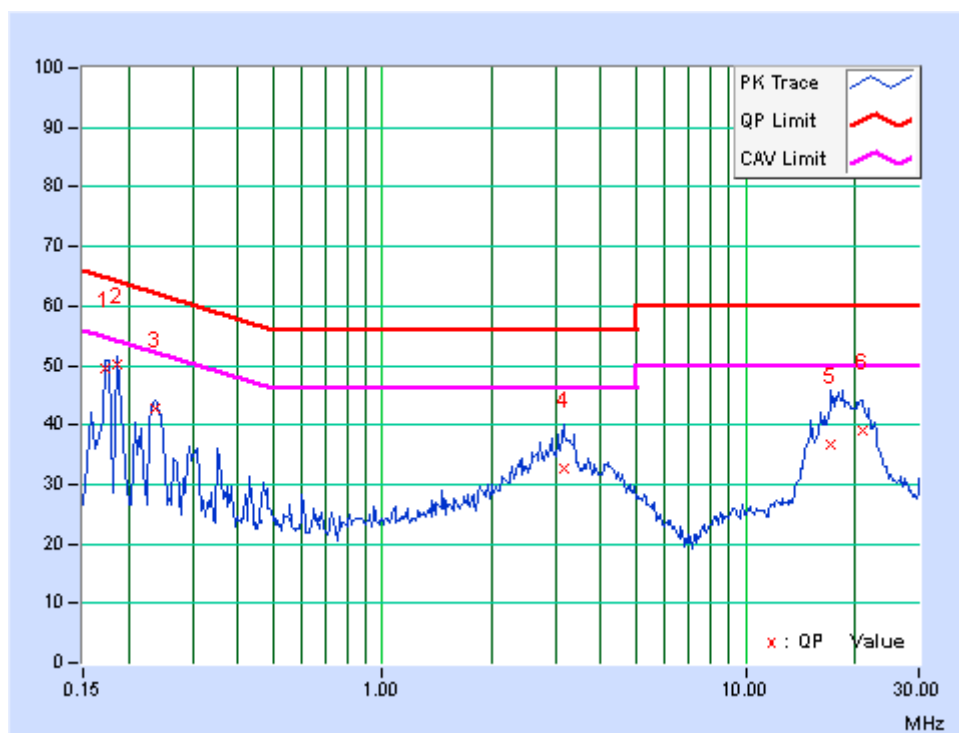
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3.1.7 TEST RESULTS

TEST MODE	Data Transmitting	6DB BANDWIDTH	9 kHz
TEST VOLTAGE	DC5V From Notebook PC Input AC120V/60Hz	PHASE	Line (L)
ENVIRONMENTAL CONDITIONS	25deg. C, 48% RH	TESTED BY	Breeze

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17346	10.57	38.77	20.86	49.34	31.43	64.79	54.79	-15.46	-23.37
2	0.18519	10.52	39.74	23.14	50.26	33.66	64.25	54.25	-13.99	-20.59
3	0.23602	10.44	32.29	16.29	42.73	26.73	62.24	52.24	-19.51	-25.51
4	3.14790	9.95	22.73	15.63	32.68	25.58	56.00	46.00	-23.32	-20.42
5	17.25909	10.15	26.41	18.73	36.56	28.88	60.00	50.00	-23.44	-21.12
6	21.01269	10.34	28.74	22.73	39.08	33.07	60.00	50.00	-20.92	-16.93

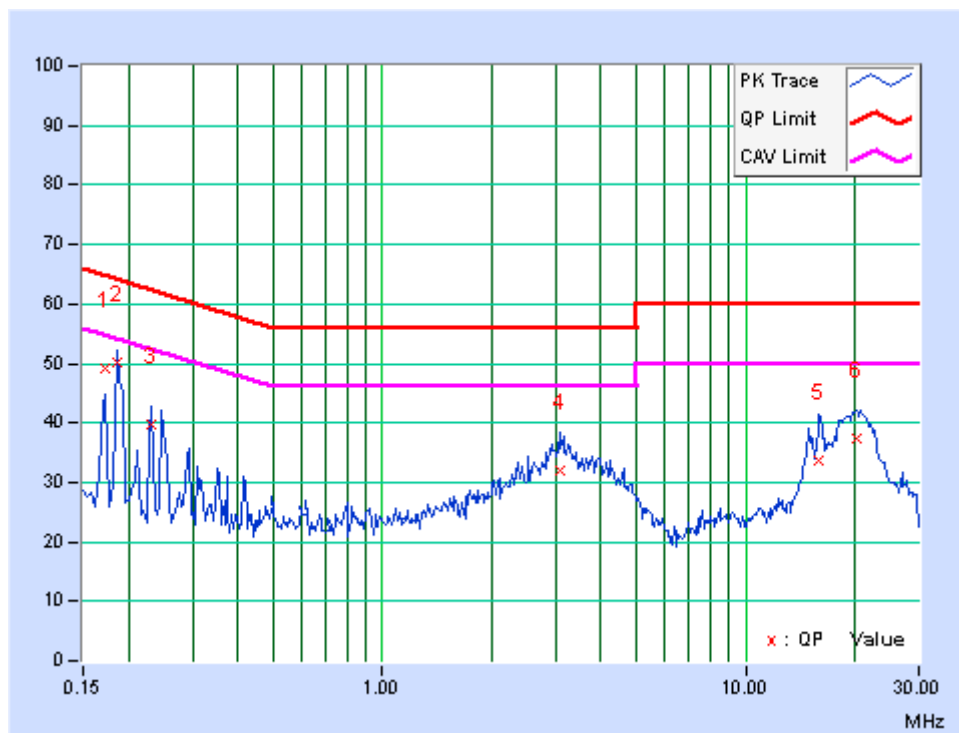
REMARKS: The emission levels of other frequencies were very low against the limit.



TEST MODE	Data Transmitting	6DB BANDWIDTH	9 kHz
TEST VOLTAGE	DC5V From Notebook PC Input AC120V/60Hz	PHASE	Neutral (N)
ENVIRONMENTAL CONDITIONS	25deg. C, 48% RH	TESTED BY	Breeze

No	Freq. [MHz]	Corr. Factor (dB)	Reading Value		Emission Level		Limit		Margin	
			[dB (uV)]		[dB (uV)]		[dB (uV)]		(dB)	
			Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
1	0.17346	10.57	38.75	19.54	49.32	30.11	64.79	54.79	-15.47	-24.68
2	0.18519	10.48	39.58	22.84	50.06	33.32	64.25	54.25	-14.19	-20.93
3	0.23211	10.37	29.45	12.71	39.82	23.08	62.37	52.37	-22.55	-29.29
4	3.08143	9.63	22.33	15.10	31.96	24.73	56.00	46.00	-24.04	-21.27
5	15.96879	10.07	23.73	10.90	33.80	20.97	60.00	50.00	-26.20	-29.03
6	20.25806	10.21	27.10	20.72	37.31	30.93	60.00	50.00	-22.69	-19.07

REMARKS: The emission levels of other frequencies were very low against the limit.





3.2 RADIATED EMISSION MEASUREMENT

3.2.1 LIMITS OF RADIATED EMISSION MEASUREMENT

TEST STANDARD: FCC Part 15, Subpart B (Section: 15.109)

FREQUENCY (MHz)	Class A (at 10m)		Class B (at 3m)	
	uV/m	dBuV/m	uV/m	dBuV/m
30 – 88	90	39.1	100	40.0
88 – 216	150	43.5	150	43.5
216 – 960	210	46.4	200	46.0
960 – 1000	300	49.5	500	54.0

FREQUENCY RANGE OF RADIATED MEASUREMENT (For unintentional radiators)

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

LIMIT OF RADIATED EMISSION OF FCC PART 15, SUBPART B FOR FREQUENCY ABOVE 1000 MHz

FREQUENCY (MHz)	Class A (dBuV/m) (at 3m)		Class B (dBuV/m) (at 3m)	
	PEAK	AVERAGE	PEAK	AVERAGE
Above 1000	80.0	60.0	74.0	54.0

Note: (1) The lower limit shall apply at the transition frequencies.

(2) Emission level (dBuV/m) = 20 log Emission level (uV/m).

(3) All emanation from a class A/B digital device or system, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strengths specified above.



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3.2.2 TEST INSTRUMENTS

FOR FREQUENCY BELOW 1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde&Schwarz	ESVS10	841431/004	May 23,12	May 22,13
Bilog Antenna	Teseq	CBL 6111D	30643	Jul. 16,12	Jul. 15,13
EMI Test Receiver	Rohde&Schwarz	ESPI	100302	May 23,12	May 22,13
3m Semi-anechoic Chamber	ETS-LINDGREN	9m*6m*6m	NSEMC003	Mar. 24,12	Mar. 23,13
Signal Amplifier	Agilent	8447D	2944A10488	May 2,12	May 2,13
Test Software	ADT	ADT_Radiated_V7.5.4	N/A	N/A	N/A

NOTE: 1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA and NIM/CHINA.

2. The test was performed in 966 Chamber.

FOR FREQUENCY ABOVE 1GHz

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Horn Antenna	EMCO	3117	00062558	Oct.19,11	Oct.19,12
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170242	Jan. 1,11	Jan. 1,13
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170147	Feb. 18,12	Feb. 18,13
Spectrum Analyzer	Agilent	E4446A	MY46180622	May 2,12	May 2,13
Pre-Amplifier (100MHz-26.5GHz)	EMCI	EMC 012645	980077	Nov. 7,11	Nov. 7,12
Pre-Amplifier (18GHz-40GHz)	EMCI	EMC 184045	980102	Nov. 7,11	Nov. 7,12
Test Software	ADT	ADT_Radiated_V7.6.15	N/A	N/A	N/A

NOTE: 1. The calibration interval of the above test instruments is 12 months. And the calibrations are traceable to CEPREI/CHINA and NIM/CHINA.

2. The test was performed in 10m Chamber.



3.2.3 TEST PROCEDURE

The basic test procedure was in accordance with ANSI C63.4:2009 (section 12).

- a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meters chamber room. The table was rotated 360 degrees to determine the position of the highest radiation.
- b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
- c. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.
- e. The test-receiver system was set to quasi-peak detect function and specified bandwidth with maximum hold mode when the test frequency is below 1 GHz.
- f. The test-receiver system was set to peak and average detect function and specified bandwidth with maximum hold mode when the test frequency is above 1 GHz.

NOTE:

1. The resolution bandwidth of test receiver/spectrum analyzer is 120kHz for Quasi-peak detection (QP) at frequency below 1GHz.
2. The resolution bandwidth is 1MHz and video bandwidth of test receiver/spectrum analyzer is 3MHz for Peak detection at frequency above 1GHz. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz for Average detection (AV) at frequency above 1GHz.
3. For measurement of frequency above 1000 MHz, the EUT was set 3 meters away from the receiver antenna.
4. $\text{Emission level(dBuV/m)} = \text{Raw Value(dBuV)} + \text{Correction Factor(dB/m)}$
5. $\text{Correction Factor(dB/m)} = \text{Antenna Factor (dB/m)} + \text{Cable Factor (dB)}$
6. $\text{Margin value} = \text{Emission level} - \text{Limit value}.$

3.2.4 DEVIATION FROM TEST STANDARD

No deviation

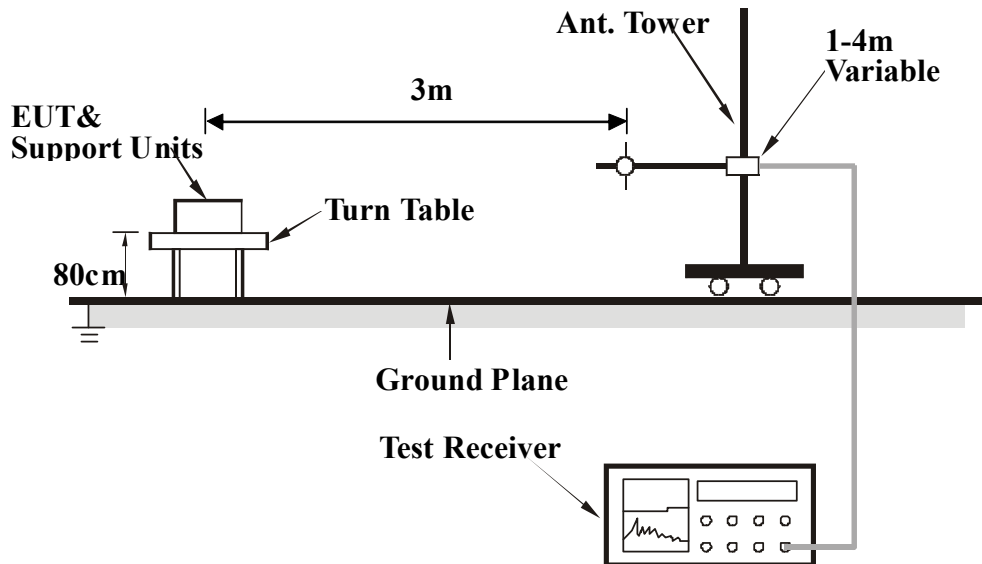


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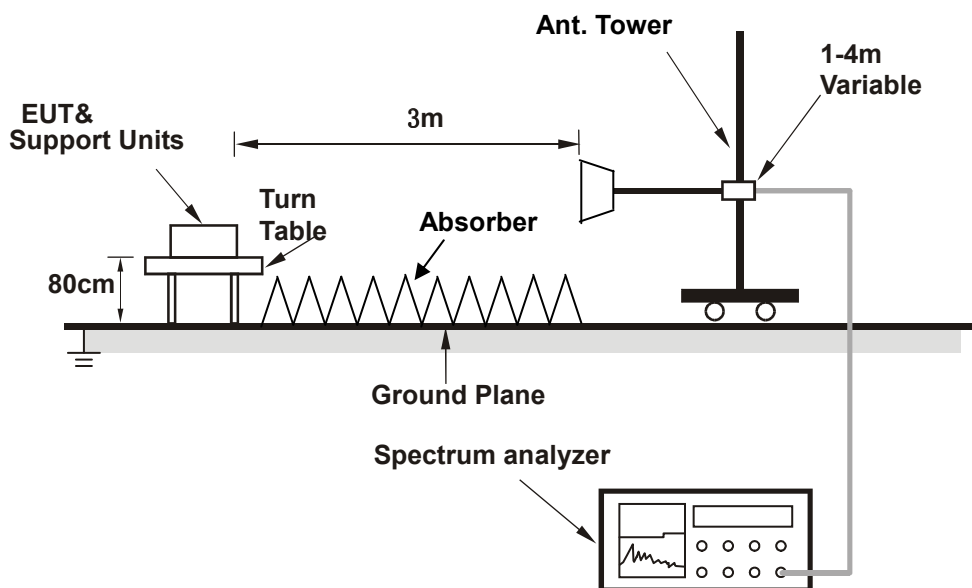
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3.2.5 TEST SETUP

FOR FREQUENCY BELOW 1GHz



FOR FREQUENCY ABOVE 1GHz



3.2.6 EUT OPERATING CONDITIONS

Same as item 3.1.6.

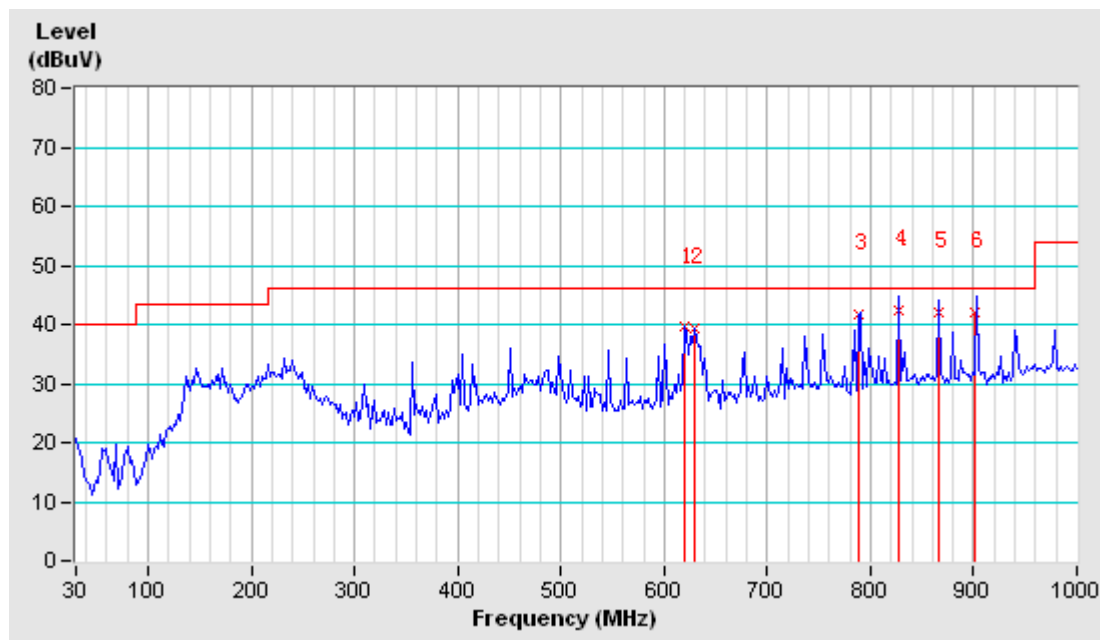


3.2.7 TEST RESULTS

TEST MODE	Data Transmitting	FREQUENCY RANGE	30-1000MHz
TEST VOLTAGE	DC5V From Notebook PC Input AC120V/60Hz	DETECTOR FUNCTION & RESOLUTION BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	24deg. C, 50% RH	TESTED BY: Breeze	

ANTENNA POLARITY & TEST DISTANCE: HORIZONTAL AT 3 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	619.76	25.01	14.55	39.56	46.00	-6.44	200	89
2	629.46	25.07	14.35	39.42	46.00	-6.58	160	149
3	788.54	28.07	13.72	41.79	46.00	-4.21	128	199
4	826.58	28.53	14.00	42.53	46.00	-3.47	100	281
5	866.14	29.53	12.50	42.03	46.00	-3.97	100	193
6	901.64	29.84	12.30	42.14	46.00	-3.86	100	270

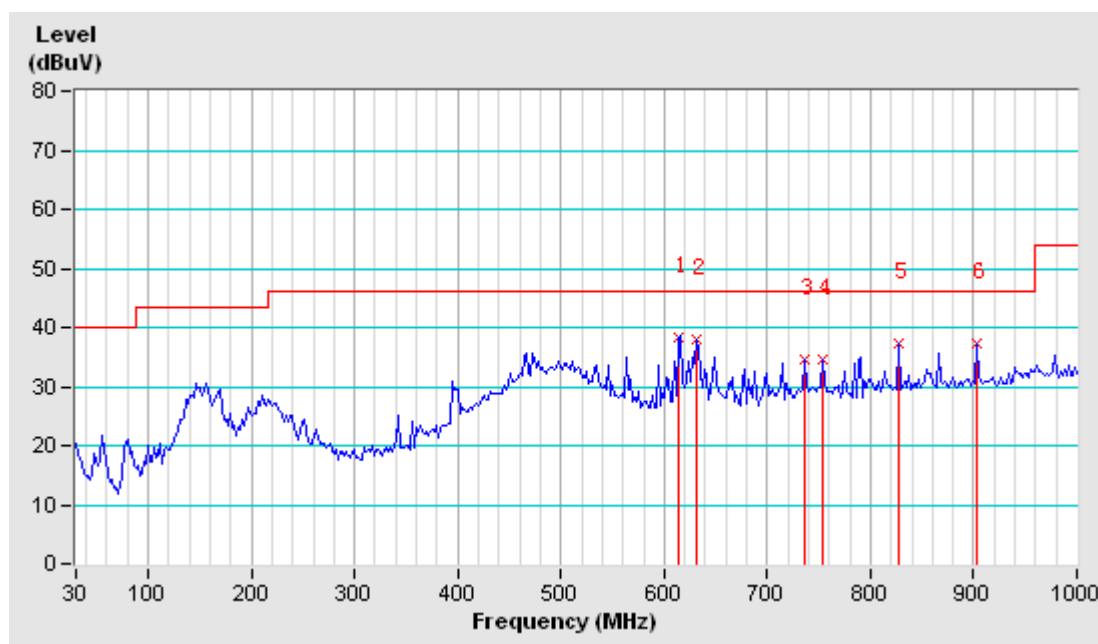
REMARKS: The emission levels of other frequencies were very low against the limit.



TEST MODE	Data Transmitting	FREQUENCY RANGE	30-1000MHz
TEST VOLTAGE	DC5V From Notebook PC Input AC120V/60Hz	DETECTOR FUNCTION & RESOLUTION BANDWIDTH	Quasi-Peak, 120kHz
ENVIRONMENTAL CONDITIONS	24deg. C, 50% RH	TESTED BY: Breeze	

ANTENNA POLARITY & TEST DISTANCE: VERTICAL AT AT 3 M								
No.	Freq. (MHz)	Correction Factor (dB/m)	Raw Value (dBuV)	Emission Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Antenna Height (cm)	Table Angle (Degree)
1	613.94	24.81	13.60	38.40	46.00	-7.60	207	124
2	631.40	25.07	12.83	37.90	46.00	-8.10	243	68
3	736.16	27.38	7.30	34.68	46.00	-11.32	134	233
4	753.62	28.00	6.63	34.62	46.00	-11.38	182	159
5	827.34	28.57	8.88	37.45	46.00	-8.55	253	92
6	903.00	29.90	7.32	37.22	46.00	-8.78	156	199

REMARKS: The emission levels of other frequencies were very low against the limit.





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4 PHOTOGRAPHS OF THE TEST CONFIGURATION

Please refer to attached file (Test Setup Photo)



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5 APPENDIX A – MODIFICATIONS RECORDERS FOR ENGINEERING CHANGES TO THE EUT BY THE LAB

No any modifications were made to the EUT by the lab during the test.

---END---