FCC Test Report

for

EzBridge

Trade Name	**:**	**Teletronics**
Model Number	**:**	**TTN-11-208**
FCC ID	**:**	**R5ITT-136**
Report Number	**:**	**RF-A63-0404-033**
Date of Receipt	**:**	**April 17,2004**
Date of Report	**:**	**May 14,2004**

Prepared for

Teletronics Technology Co.,LTD.

30F, No29-5, Sec.2, Chung Cheng E Rd., Tamshui,
Taipei Hsien 251, Taiwan, R.O.C.

Prepared by

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NVLAP LAB CODE 200575-0

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Total : 170 Pages

Certification of Compliance

Equipment under Test	:	EzBridge
Model No.	:	TTN-11-208
FCC ID	:	**R5ITT-136**
Applicant	:	Teletronics Technology Co.,LTD.
Address	:	30F, No29-5, Sec.2, Chung Cheng E Rd., Tamshui, Taipei Hsien 251, Taiwan, R.O.C
Applicable Standards	:	**47 CFR part 15, Subpart C**
Date of Testing	:	May 10 ~ May 12, 2004
Deviation	:	N/A
Condition of Test Sample	:	Prototype

We, **Central Research Technology Co**., hereby certify that one sample of the designated product was tested in our facility during the period mentioned above. The test records, data evaluation and Equipment Under Test (EUT) configurations shown in the present report are true and accurate representation of the measurements of the sample's RF characteristics under the conditions herein specified.

The test results show that the EUT as described in the present report is in compliance with the requirements set forth in the standards mentioned above and apply to the tested sample identified in the present report only. The test report shall not be reproduced, except in its entirety, without the written approval of Central Research Technology Co.

PREPARED BY : _____ , **DATE :** _____
(Cathy Chen/RF Engineer)

CHECKED BY : _____ , **DATE :** _____
(Sam Chien/Technical Manager)

APPROVED BY : _____ , **DATE :** _____
(Tsun-Yu Shih/Laboratory Head)

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1. General Description

1.1 General Description of EUT

Equipment under Test	:	EzBridge
Model No.	:	TTN-11-208
FCC ID	:	R5ITT-136
Brand	:	Teletronics
Power in	:	100-240V, 50/60Hz
Test Voltage	:	120V/60Hz
Manufacturer	:	Interepoch Technology ,INC
Function Description	:	Wireless LAN
Number of Channel	:	11
Frequency Range	:	2412 ~ 2462 MHz
Modulation Skill	:	DBPSK(1Mbps), DQPSK(2Mbps), CCK(5.5/11Mbps)
Brand /Antenna / Gain	:	Teletronics/ ANT-OMNI-8 / 8dBi
		Teletronics / ANT-OMNI-12 / 12dBi
		SKYVERTEX / FLAT-PATCH-ANTENNA / 12dBi

The channel and the operation frequency of 802.11b is listed below:

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2412	02	2417	03	2422
04	2427	05	2432	06	2437
07	2442	08	2447	09	2452
10	2457	11	2462		

1.2 Test Mode

During the test, the EUT was set in continuously transmitting mode and/or receiving mode with a duty cycle of 100%.

The channels 1, 6, 11 of 802.11b of EUT were all tested.

1.3 Applied standards

According to the specifications of the manufacturers, the applied standard to evaluate the compliance of requirements is 47CFR Part 15, Subpart C and the measurement procedures specified in ANSI C63.4 are performed.

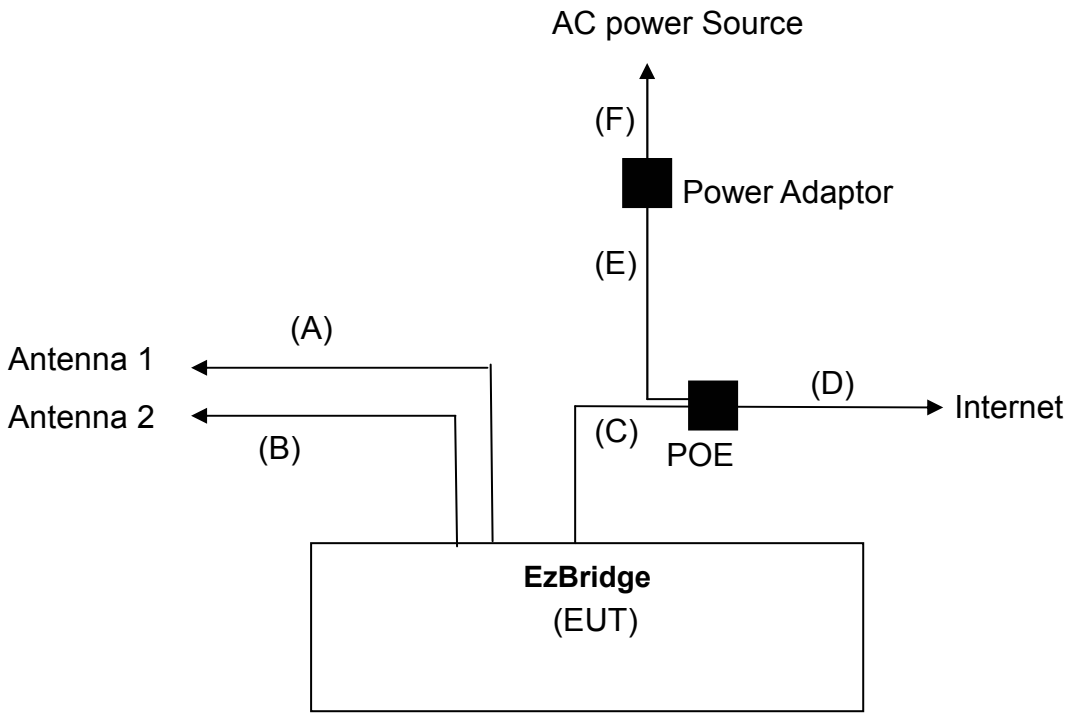
According to 47 CFR Part 15 Section 15.247, all the test items are as following:

PARAGRAPH	TEST REQUIREMENTS	COMPLIANCE (YES/NO)	Remarks
15.107	AC Power Conducted Emissions	**Yes**	
15.247(a)(2)	Spectrum Bandwidth of a Direct Sequence Spread Spectrum System	**Yes**	
15.247(b)	Maximum Peak Output Power	**Yes**	
15.247(c)	Radiated Emissions 30MHz ~ 25GHz	**Yes**	
15.247(c)	Frequency Band Edge Measurement	**Yes**	
15.247(b)(5), 1.1307(b)	Radiation Exposure	**Yes**	**See attached file for MPE**
15.247(d)	Power Spectral Density	**Yes**	

1.4 The Support Units

None

1.5 Layout of the Setup



Connecting Cables :

No.	Cable	Length	Shielded	Ferrite Core	Shielded Backshell	Supported by lab.	Note
A	RF Cable	1.8m	V				
B	RF Cable	1.8m	V				
C	LAN Cable	1.5m	V	V	V		
D	LAN Cable	1.5m	V		V	V	
E	Power cord	1.5m		V			
F	Power cord	1.5m				V	

1.6 Test Capability

Test Facility

The test facility used for evaluating the conformance of the EUT with each standard in the present report meets what required in CISPR16-1, CISPR16-2 and ANSI C63.4.

Test Room	Type of Test Room	Descriptions
☑ TR1	10m semi-anechoic chamber (23m×14m×9m)	Complying with the NSA requirements in documents CISPR 22 and ANSI C63.4. for the radiated emission measurement.
☑ TR4	Shielding Room (5m×3m×3m)	For the RF conducted emission measurement.
☑ TR5	Shielding Room (8m×5m×4m)	For the conducted emission measurement.

Test Laboratory Competence Information

Central Research Technology Co. has been accredited/filed/authorized by the agencies listed in the following table.

Certificate	Nation	Agency	Code	Mark
Accreditation Certificate	USA	NVLAP	200575-0	ISO/IEC 17025
	R.O.C. (Taiwan)	CNLA	0905	ISO/IEC 17025
	R.O.C. (Taiwan)	BSMI	SL2-IN-E-0033,SL2-IS-E-0033, SL2-R1-E-0033,SL2-R2-E-0033, SL2-A1-E-0033	ISO/IEC 17025
Site Filing Document	USA	FCC	474046	Test facility list & NSA Data
	Canada	IC	4699A	Test facility list & NSA Data
	Japan	VCCI	R-1527,C-1609,T-131	Test facility list & NSA Data
Authorization Certificate	Germany	TÜV Rheinland	N/A	ISO/IEC 17025

The copy of each certificate can be downloaded from our web site: www.crc-lab.com

2. Conducted Emission Measurement

Test Result: PASS

2.1 Limits for Conducted Emission

☑ Limits for conducted disturbances at the mains ports

Frequency (MHz)	Quasi-peak (dBμV)	Average (dBμV)
0.15 to 0.5	66 – 56	56 – 46
0.5 to 5	56	46
5 to 30	60	50

Note:
1. The lower limit shall apply at the transition frequency.
2. The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5MHz.

2.2 Test Instruments

Test Site and Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Test Receiver	R&S	ESCS 30/ 836858/021	January 1, 2004
LISN	R&S	ESH2-Z5/ 836613/001	December 31, 2003
2nd LISN	R&S	ENV4200/ 833209/010	December 29, 2003
50Ω terminator	N/A	N/A/001	September 1, 2003
RF Switch	N/A	BN754030/ A35328 01/00	September 1, 2003
RF Cable	N/A	N/A/C0007	August 1, 2003
TR5 shielded room	ETS.LINDGREN	TR5/15353-F	August 27, 2003

Note:

1. The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC.
2. NCR : No Calibration Required.
3. The calibration date of the shielded room listed above is the date of shielding effectiveness verification measurement.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2. The assessed measurement uncertainty for conducted emission is 2.14dB. The value is less than U_{cispr} in table 1 of CISPR 16-4.

2.3 Test Procedures

a. The EUT was set up per the test configuration figured in the next section of this chapter to simulate the typical usage per the user's manual.

b. If the EUT is tabletop equipment, it was placed on a wooden table with a height of 0.8 meters above the reference ground plane and 0.4 meters from the conducting wall of the shielded room. Also if the EUT is floor-standing equipment, it was placed on a non-conducted support with a height of 0.1 meters above the reference ground plane.

c. Connect the EUT's power source to the appropriate power mains through the LISN.

d. All the other peripherals are connected to the 2nd LISN, if any.

e. The LISN was placed 0.8 meters from the EUT and at least 0.8 meters from other units and other metal planes.

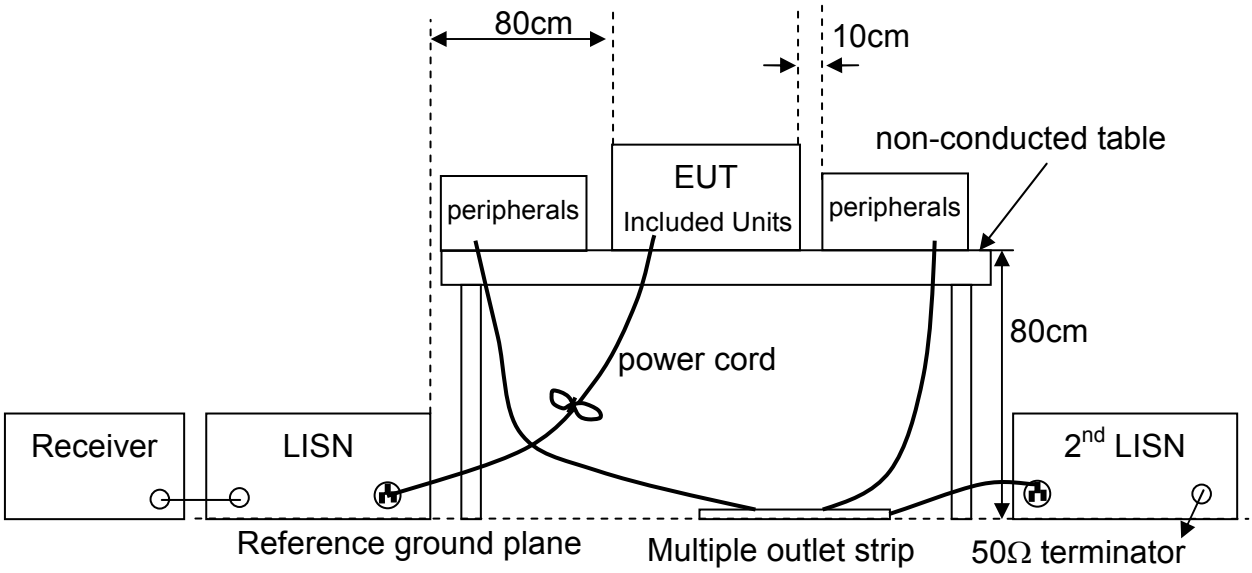
f. Measure the conducted emissions on each power line (Neutral Line and Line 1 – Hot side) of the EUT's power source by using the test receiver connected to the coupling RF output port of LISN.

g. Rapidly scan the signal from 150kHz to 30MHz by using the receiver through the Maximum-Peak detector to determine those frequencies associated with higher emission levels for each measured line.

h. Then measure the maximum level of conducted disturbance for each frequency found from step g. by using the receiver through the Quasi-Peak and Average detectors per CISPR 16-1.

i. Record the level for each frequency and compare with the required limit.

2.4 Test Configurations



2.5 Photographs of the Test Configurations

Please refer to the Attachment 1 of the present report.

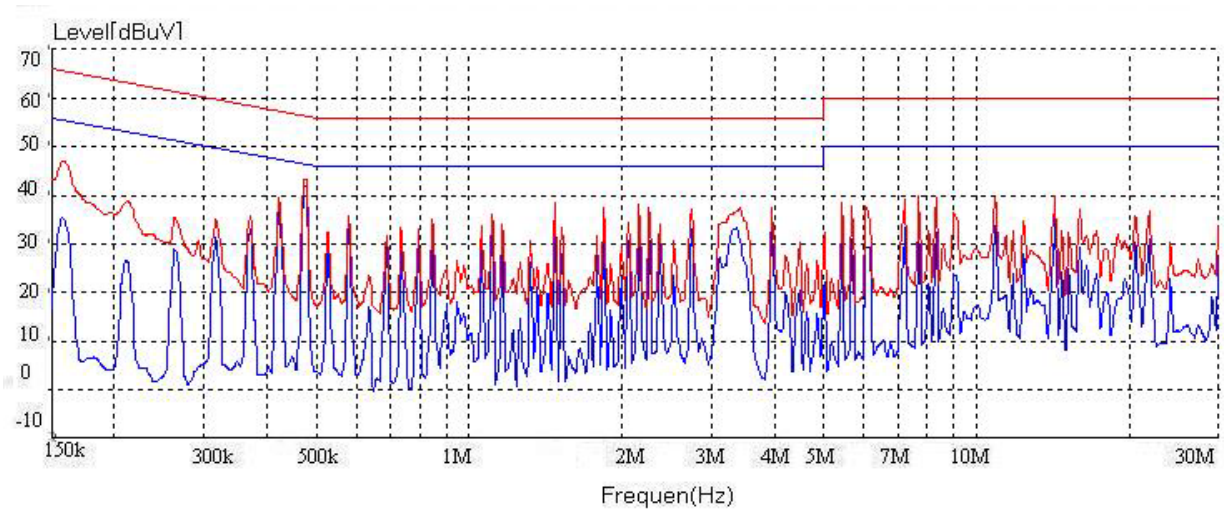
2.6 Test Results

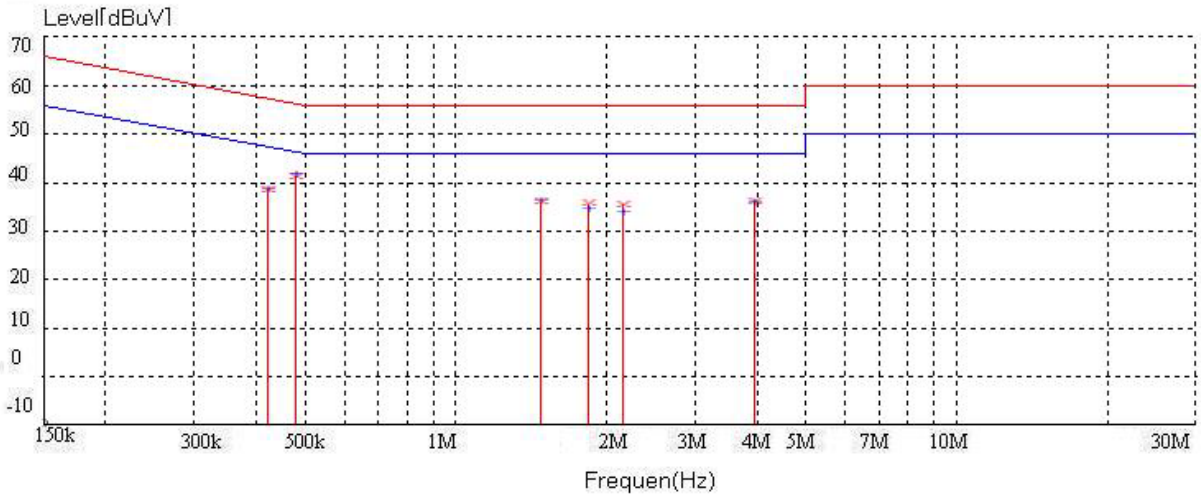
Test Mode	:	**Channel 1, Transmitter**			
Tester	:	Max	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Line1**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	38.00	38.20	0.20	38.20	38.40	57.00	47.00	18.80	8.60
0.48	40.70	41.00	0.30	41.00	41.30	56.00	46.00	15.00	4.70
1.47	35.20	35.30	0.50	35.70	35.80	56.00	46.00	20.30	10.20
1.84	34.90	33.60	0.50	35.40	34.10	56.00	46.00	20.60	11.90
2.16	34.80	33.00	0.50	35.30	33.50	56.00	46.00	20.70	12.50
3.95	35.50	35.00	0.50	36.00	35.50	56.00	46.00	20.00	10.50

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.



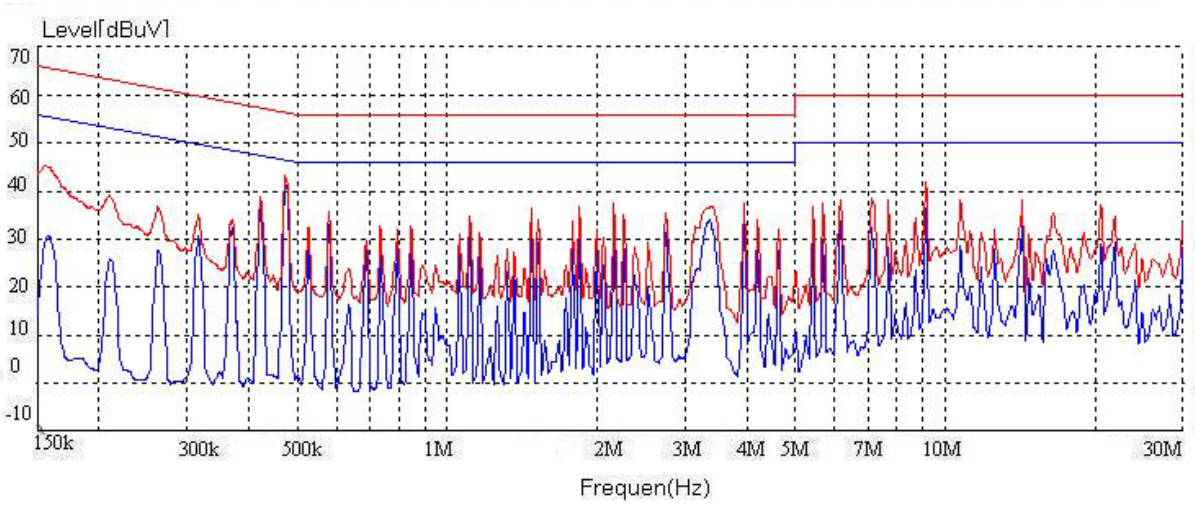

Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

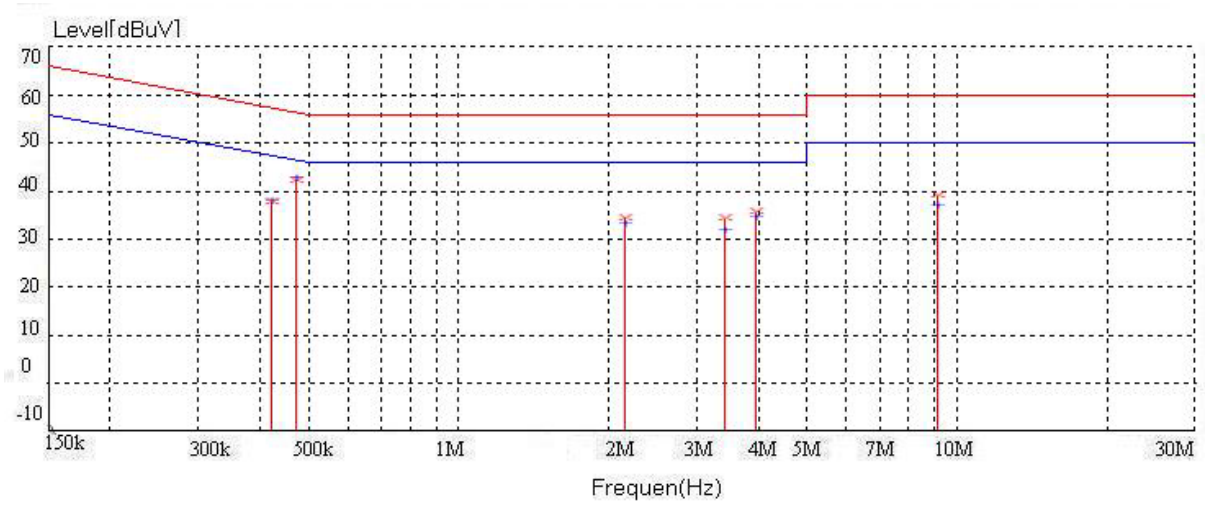
Test Mode	:	**Channel 1, Transmitter**			
Tester	:	Max	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Neutral**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	37.30	37.30	0.20	37.50	37.50	57.00	47.00	19.50	9.50
0.47	41.60	42.00	0.30	41.90	42.30	57.00	47.00	15.10	4.70
2.16	33.80	32.20	0.50	34.30	32.70	56.00	46.00	21.70	13.30
3.42	33.70	30.80	0.50	34.20	31.30	56.00	46.00	21.80	14.70
3.95	34.90	33.60	0.50	35.40	34.10	56.00	46.00	20.60	11.90
9.15	38.20	35.80	0.70	38.90	36.50	60.00	50.00	21.10	13.50

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.



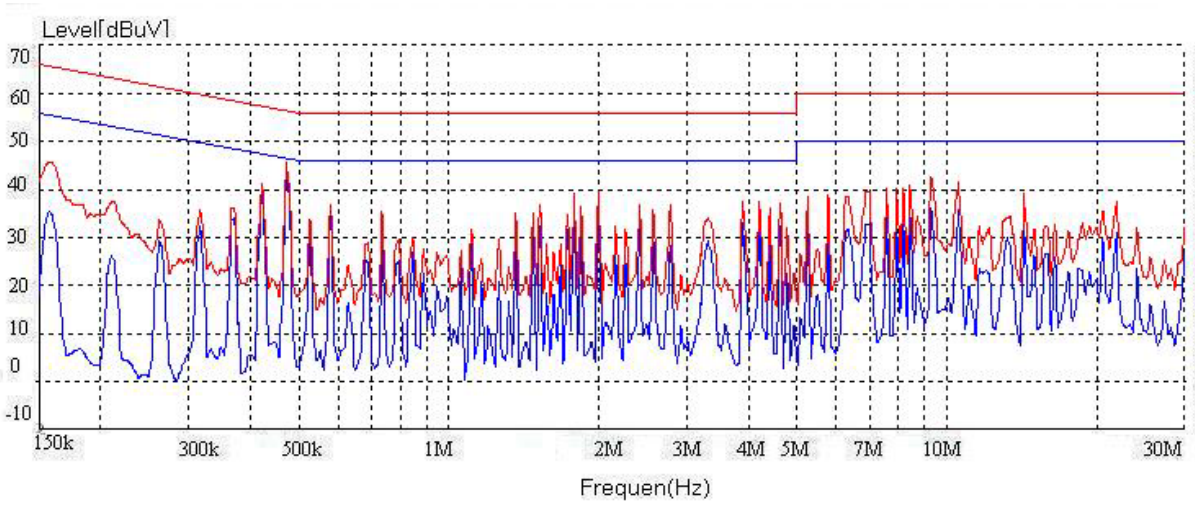

Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

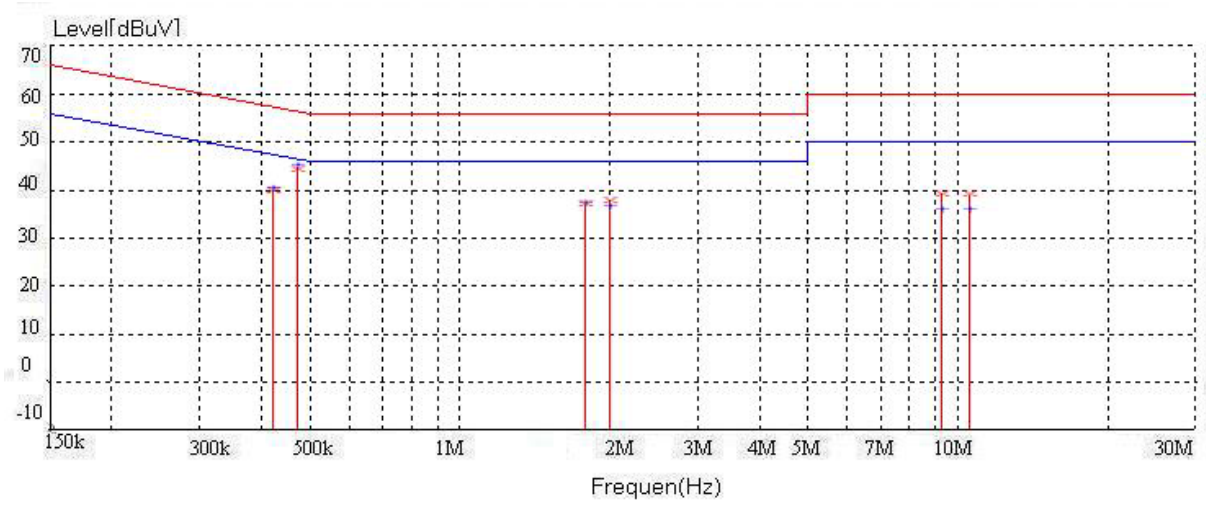
Test Mode	:	**Channel 6, Transmitter**			
Tester	:	Max	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Line1**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	39.40	39.60	0.20	39.60	39.80	57.00	47.00	17.40	7.20
0.47	43.80	44.30	0.30	44.10	44.60	57.00	47.00	12.90	2.40
1.78	36.40	36.40	0.50	36.90	36.90	56.00	46.00	19.10	9.10
1.99	37.10	35.80	0.50	37.60	36.30	56.00	46.00	18.40	9.70
9.30	38.30	34.70	0.70	39.00	35.40	60.00	50.00	21.00	14.60
10.56	38.10	34.70	0.70	38.80	35.40	60.00	50.00	21.20	14.60

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.



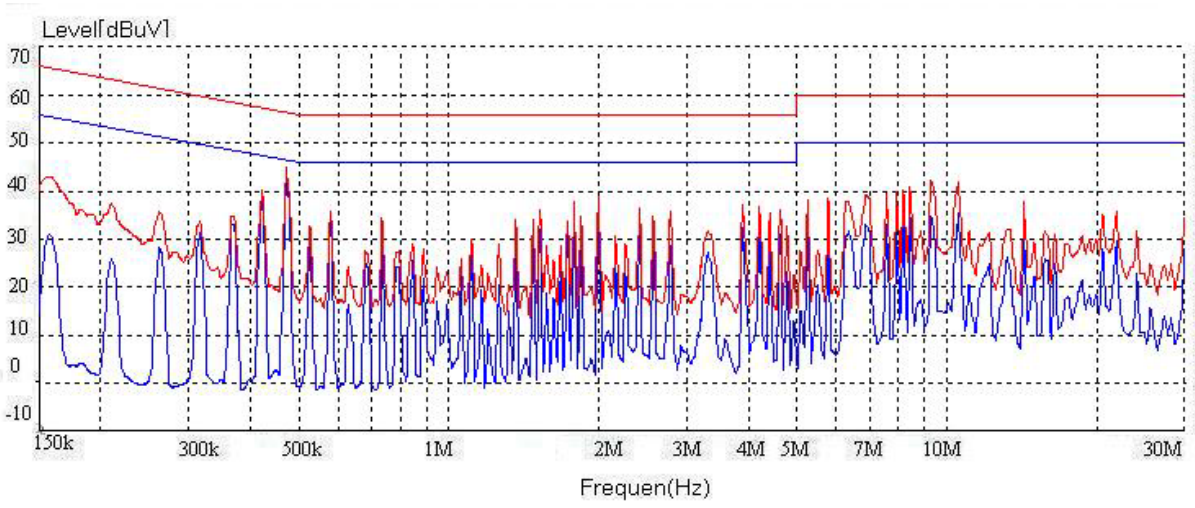

Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

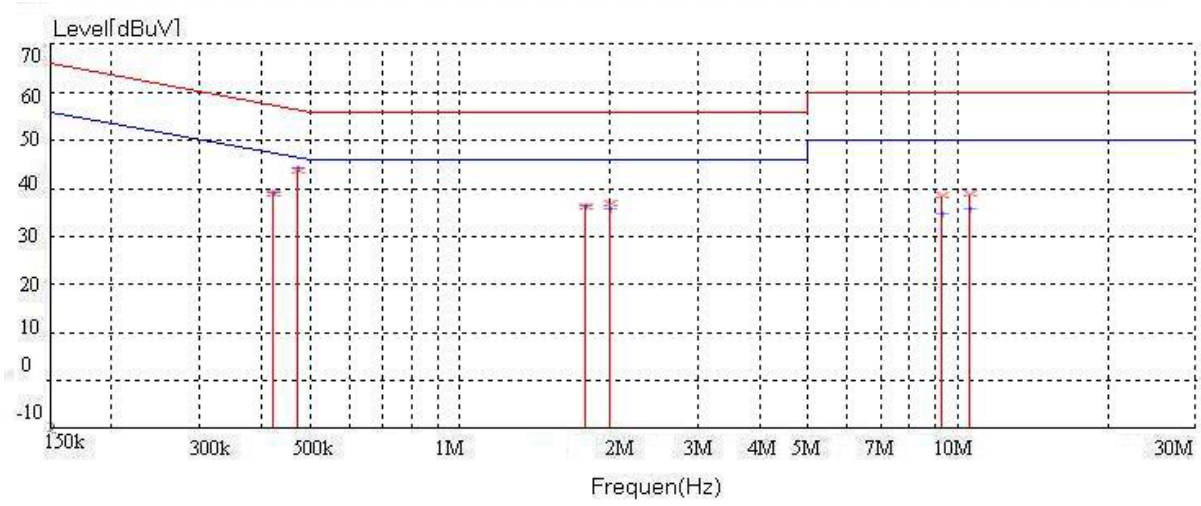
Test Mode	:	**Channel 6, Transmitter**			
Tester	:	Max	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Neutral**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	39.60	38.50	0.20	39.80	38.70	57.00	47.00	17.20	8.30
0.47	44.40	43.50	0.30	44.70	43.80	57.00	47.00	12.30	3.20
1.78	36.60	35.50	0.50	37.10	36.00	56.00	46.00	18.90	10.00
1.99	35.80	34.80	0.50	36.30	35.30	56.00	46.00	19.70	10.70
3.88	32.80	33.70	0.50	33.30	34.20	60.00	50.00	26.70	15.80
9.30	32.50	34.40	0.70	33.20	35.10	60.00	50.00	26.80	14.90

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.



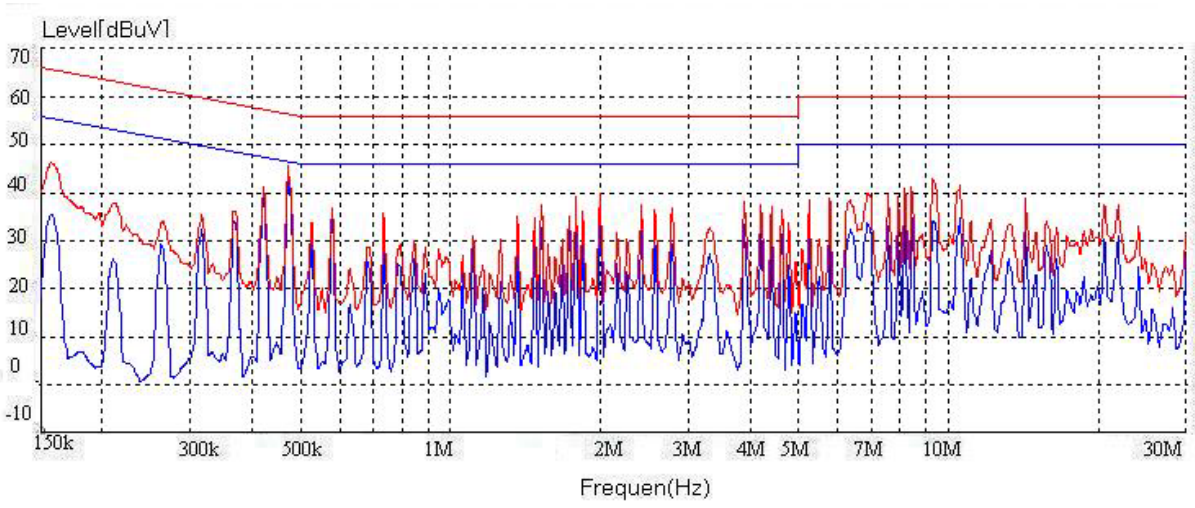

Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

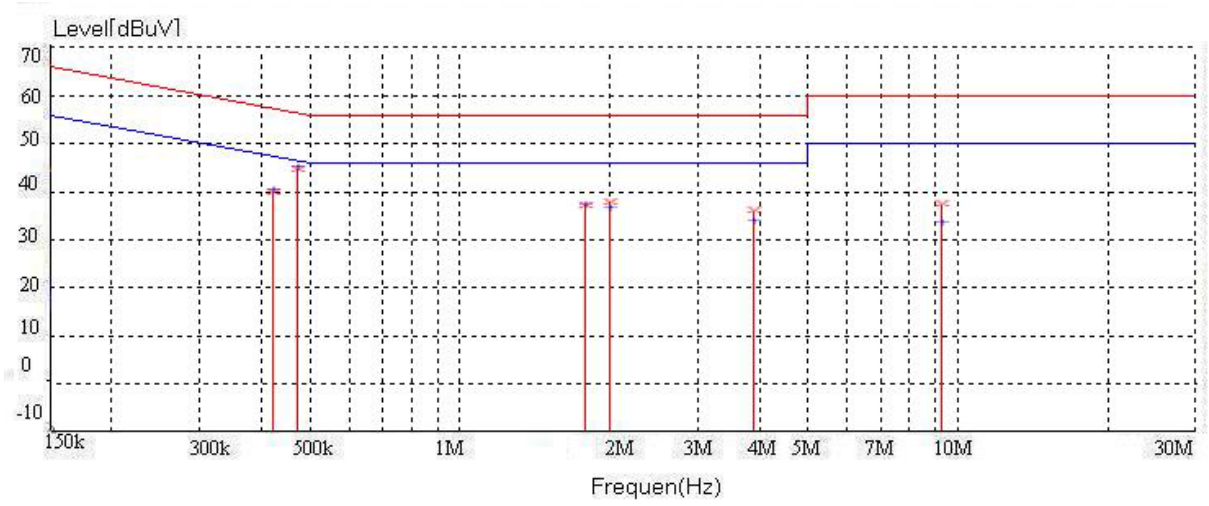
Test Mode	:	**Channel 11, Transmitter**			
Tester	:	Max	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Line1**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	39.50	39.60	0.20	39.70	39.80	57.00	47.00	17.30	7.20
0.47	44.00	44.40	0.30	44.30	44.70	57.00	47.00	12.70	2.30
1.78	36.60	36.60	0.50	37.10	37.10	56.00	46.00	18.90	8.90
1.99	37.20	35.80	0.50	37.70	36.30	56.00	46.00	18.30	9.70
3.88	35.40	32.80	0.50	35.90	33.30	56.00	46.00	20.10	12.70
9.30	36.60	32.50	0.70	37.30	33.20	60.00	50.00	22.70	16.80

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.



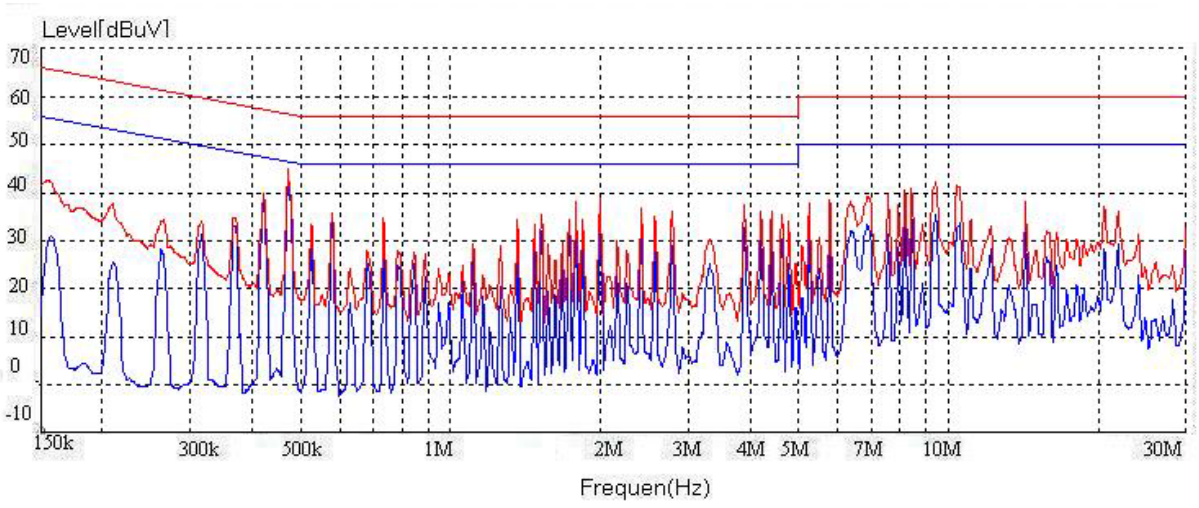

Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

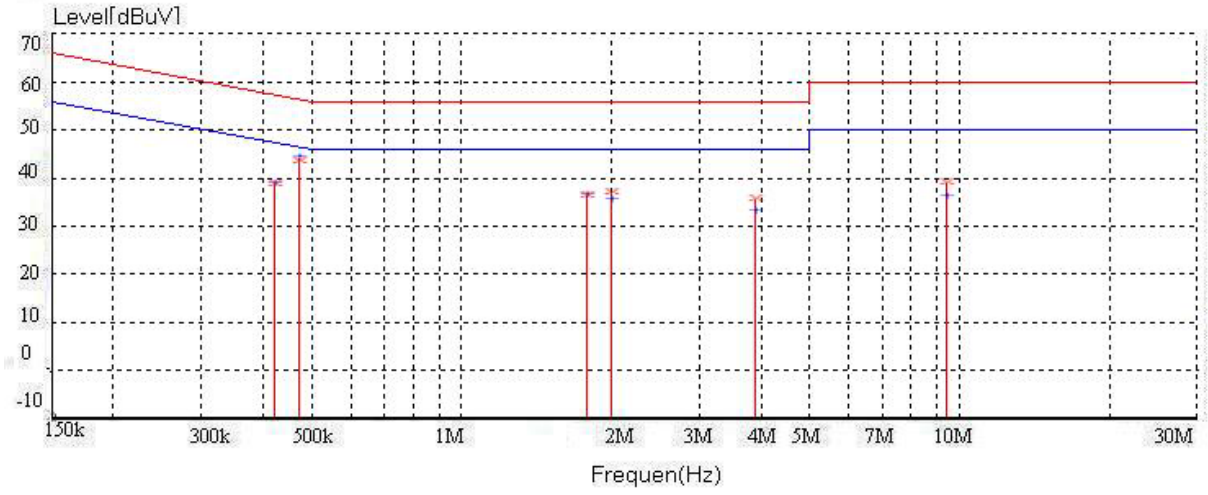
Test Mode	:	**Channel 11, Transmitter**			
Tester	:	Max	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Neutral**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	38.40	38.50	0.20	38.60	38.70	57.00	47.00	18.40	8.30
0.47	43.20	43.70	0.30	43.50	44.00	57.00	47.00	13.50	3.00
1.78	35.60	35.70	0.50	36.10	36.20	56.00	46.00	19.90	9.80
1.99	36.30	34.80	0.50	36.80	35.30	56.00	46.00	19.20	10.70
3.88	35.00	32.20	0.50	35.50	32.70	56.00	46.00	20.50	13.30
9.45	38.30	35.10	0.60	38.90	35.70	60.00	50.00	21.10	14.30

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.



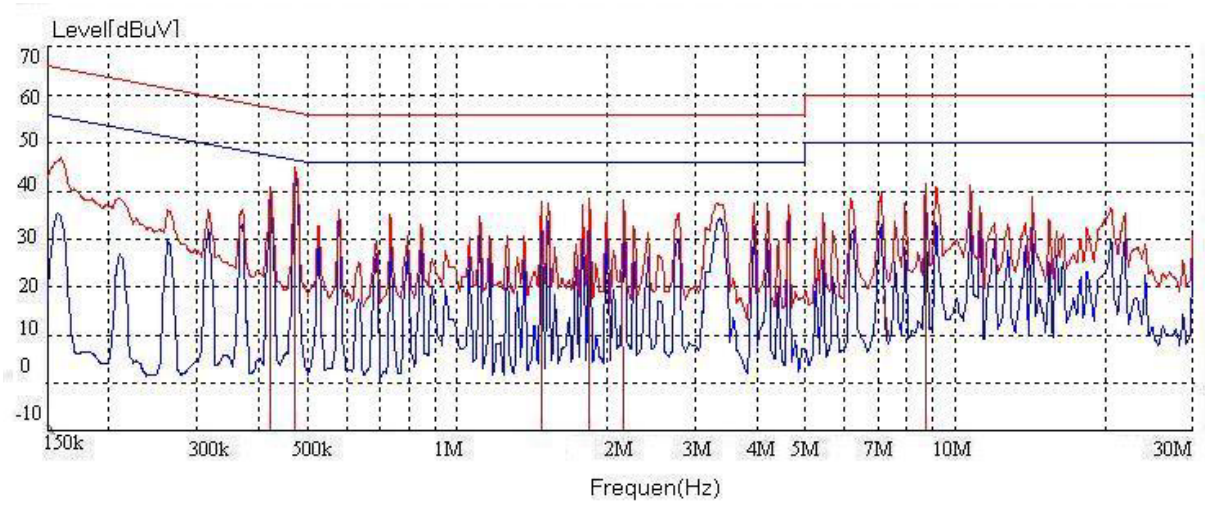

Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

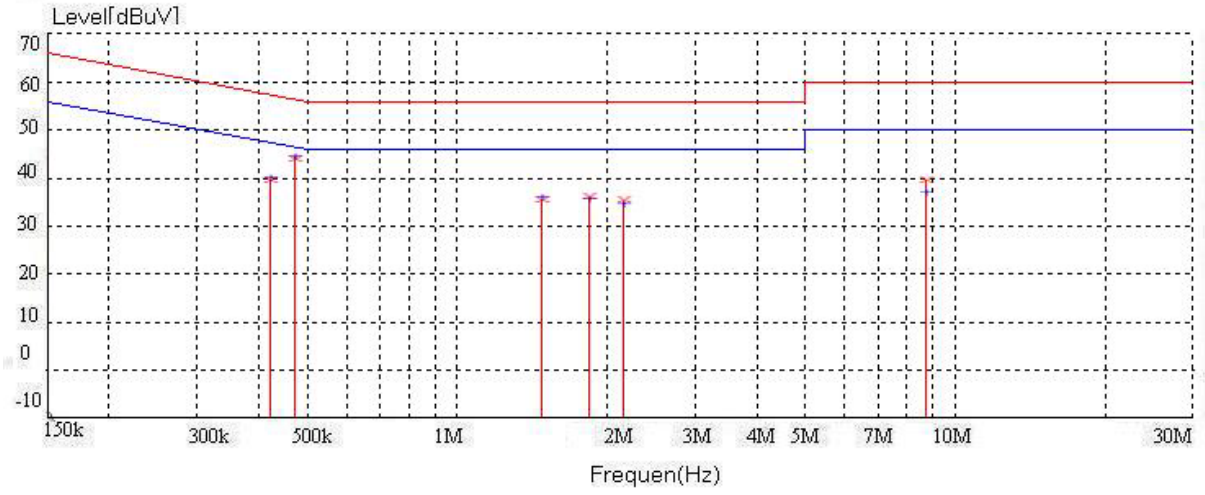
Test Mode	:	**Channel 1, Receiver**			
Tester	:	Max	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Line1**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	39.10	39.30	0.20	39.30	39.50	57.00	47.00	17.70	7.50
0.47	43.40	43.90	0.30	43.70	44.20	57.00	47.00	13.30	2.80
1.47	34.70	34.90	0.50	35.20	35.40	56.00	46.00	20.80	10.60
1.84	35.30	34.80	0.50	35.80	35.30	56.00	46.00	20.20	10.70
2.16	34.50	33.80	0.50	35.00	34.30	56.00	46.00	21.00	11.70
8.73	38.70	35.80	0.70	39.40	36.50	60.00	50.00	20.60	13.50

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.



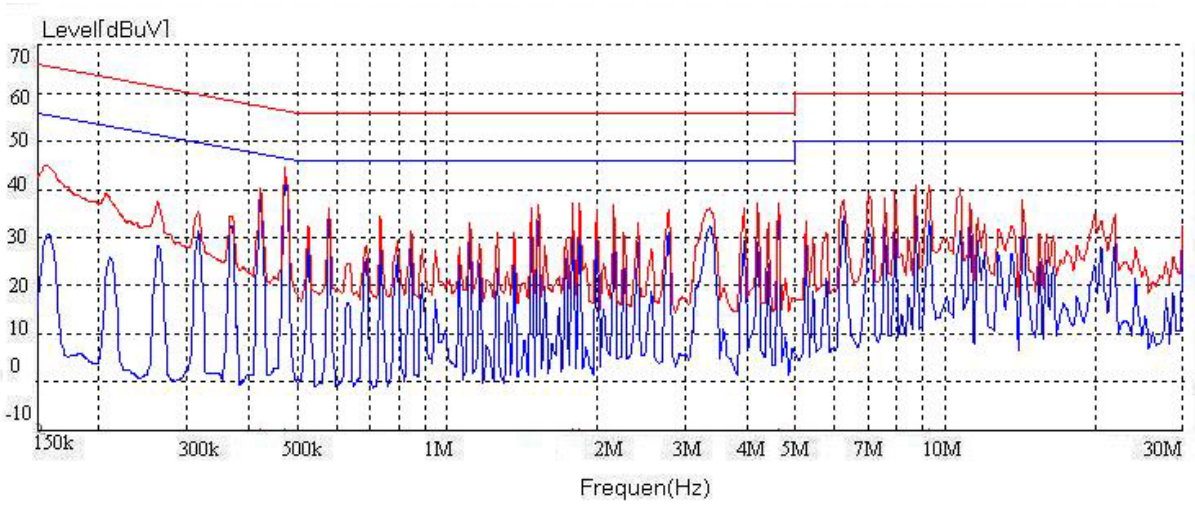

Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

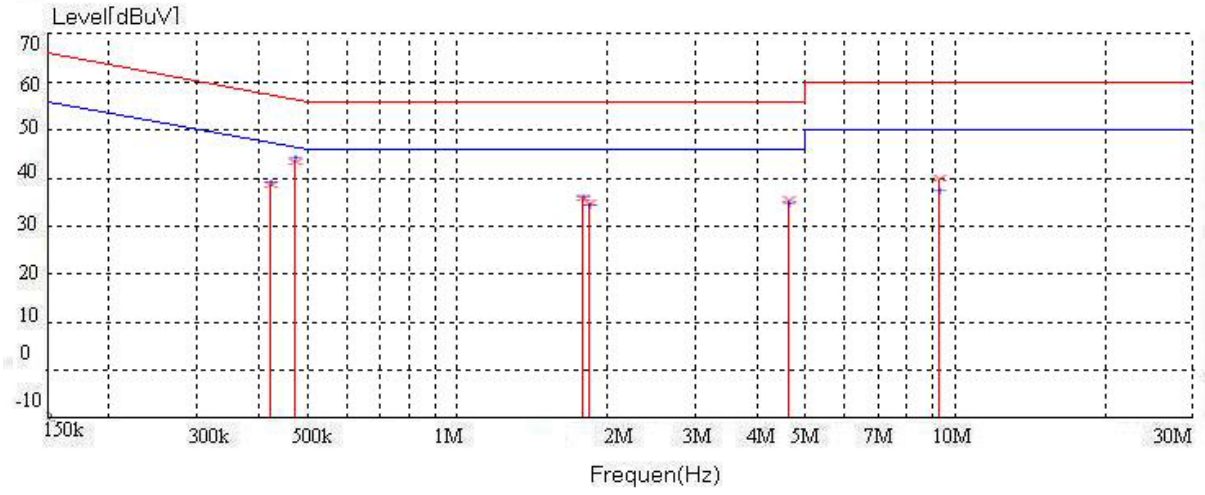
Test Mode	:	**Channel 1, Receiver**			
Tester	:	Max	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Neutral**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	38.10	38.40	0.20	38.30	38.60	57.00	47.00	18.70	8.40
0.47	42.90	43.40	0.30	43.20	43.70	57.00	47.00	13.80	3.30
1.78	35.00	35.00	0.50	35.50	35.50	56.00	46.00	20.50	10.50
1.84	34.00	33.50	0.50	34.50	34.00	56.00	46.00	21.50	12.00
4.63	34.60	33.60	0.50	35.10	34.10	56.00	46.00	20.90	11.90
9.30	38.90	36.10	0.70	39.60	36.80	60.00	50.00	20.40	13.20

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.



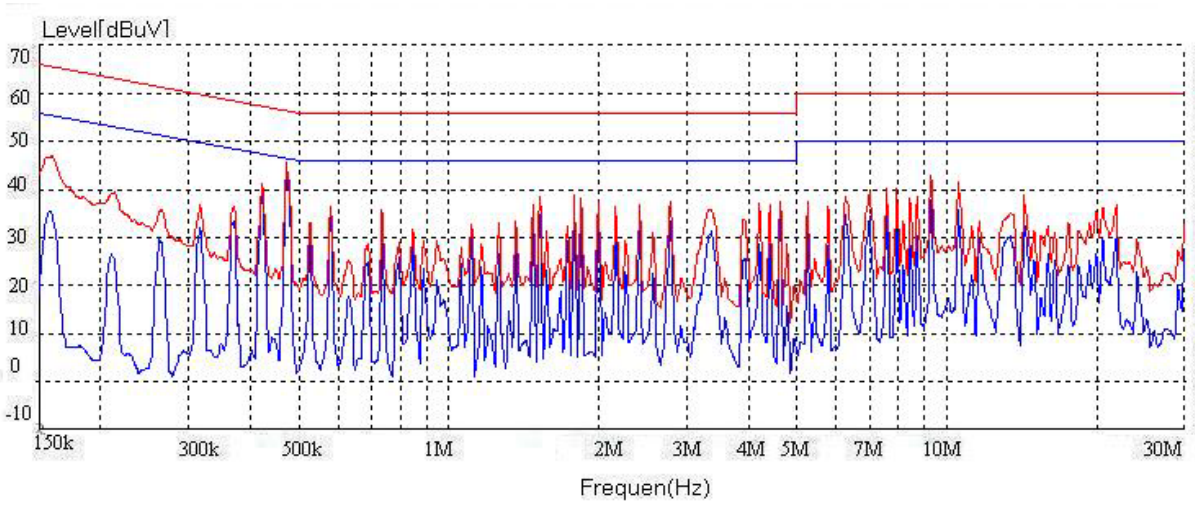

Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

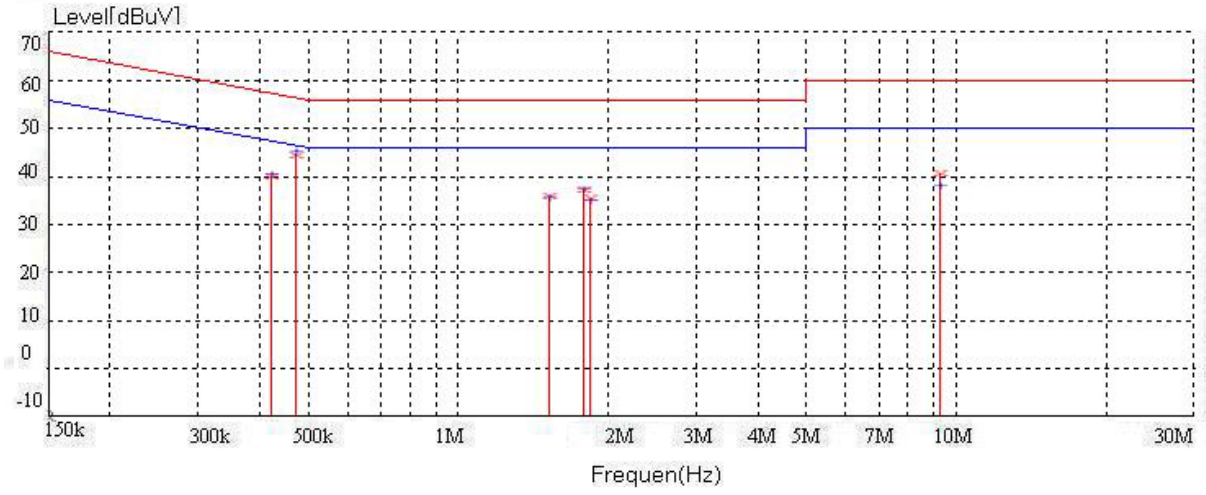
Test Mode	:	**Channel 6, Receiver**			
Tester	:	Max	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Line1**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	39.40	39.60	0.20	39.60	39.80	57.00	47.00	17.40	7.20
0.47	43.90	44.40	0.30	44.20	44.70	57.00	47.00	12.80	2.30
1.52	35.00	34.50	0.50	35.50	35.00	56.00	46.00	20.50	11.00
1.78	36.50	36.60	0.50	37.00	37.10	56.00	46.00	19.00	8.90
1.84	34.50	34.10	0.50	35.00	34.60	56.00	46.00	21.00	11.40
9.30	39.70	36.90	0.70	40.40	37.60	60.00	50.00	19.60	12.40

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.



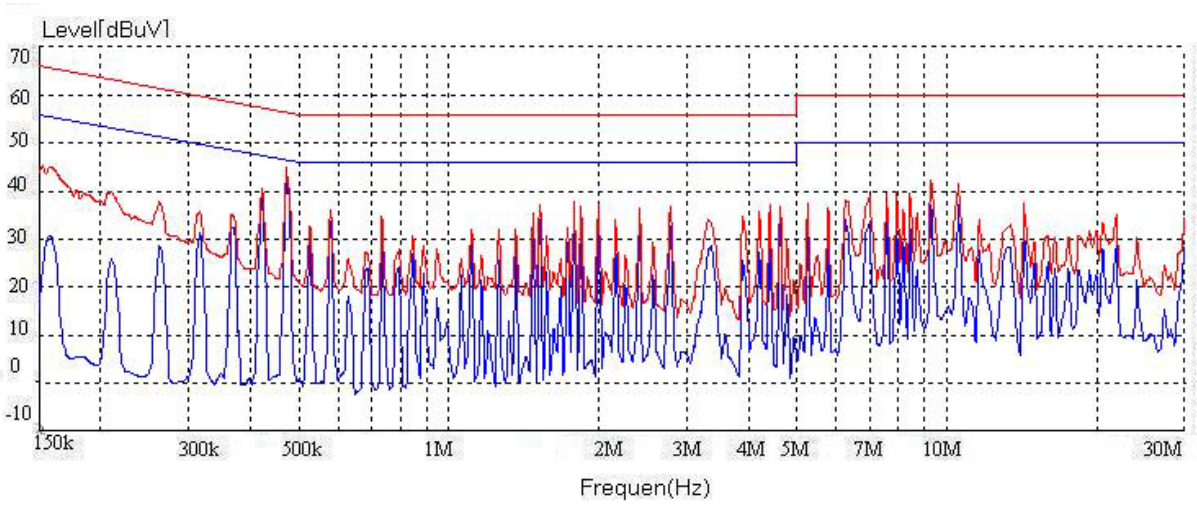

Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

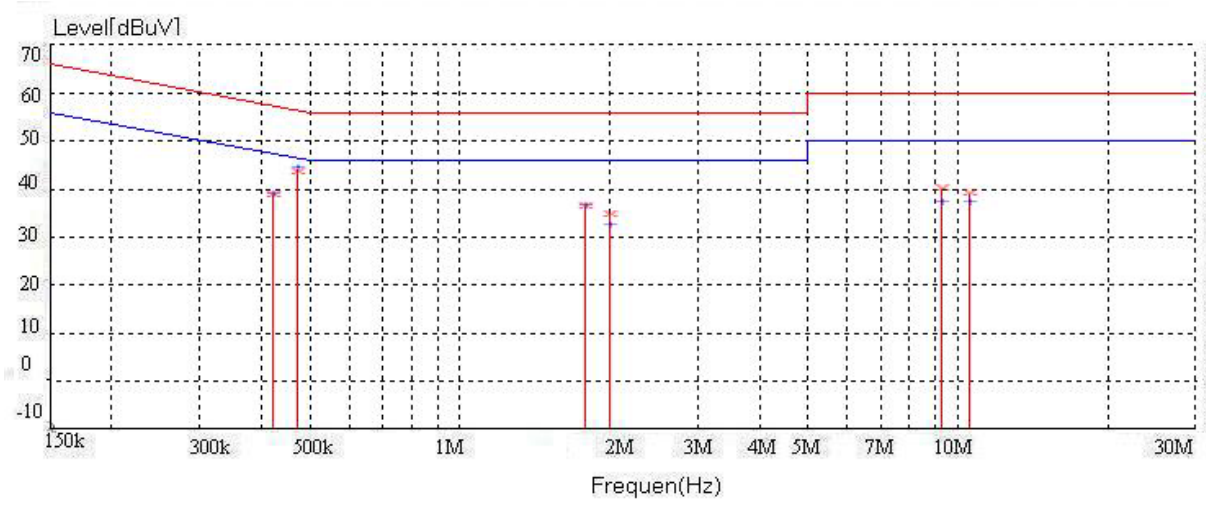
Test Mode	:	**Channel 6, Receiver**			
Tester	:	Max	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Neutral**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	38.30	38.50	0.20	38.50	38.70	57.00	47.00	18.50	8.30
0.47	43.20	43.70	0.30	43.50	44.00	57.00	47.00	13.50	3.00
1.78	35.80	35.80	0.50	36.30	36.30	56.00	46.00	19.70	9.70
1.99	34.10	31.50	0.50	34.60	32.00	56.00	46.00	21.40	14.00
9.30	39.10	36.20	0.70	39.80	36.90	60.00	50.00	20.20	13.10
10.56	38.20	36.30	0.70	38.90	37.00	60.00	50.00	21.10	13.00

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.



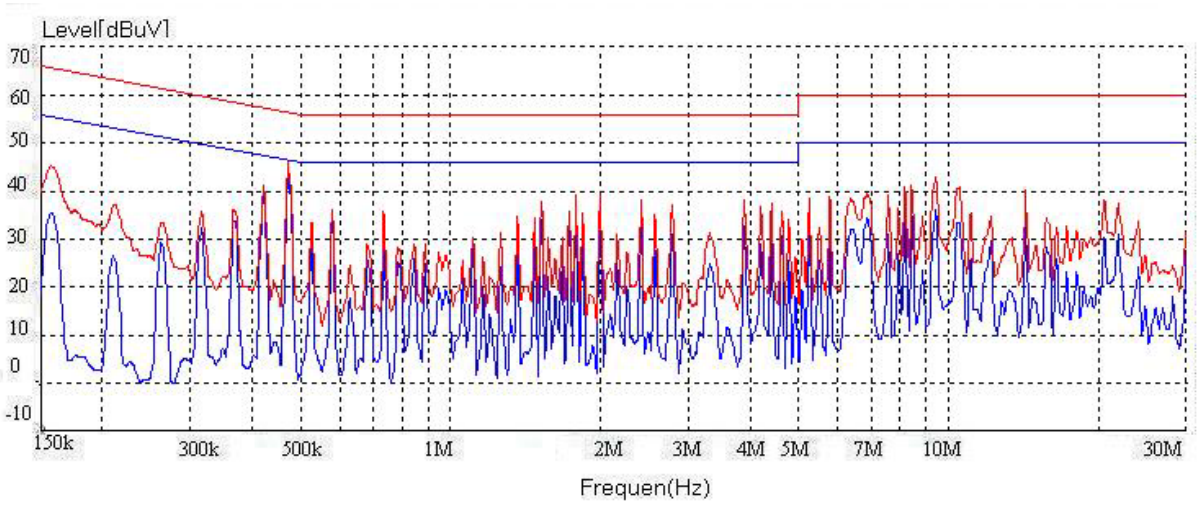

Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

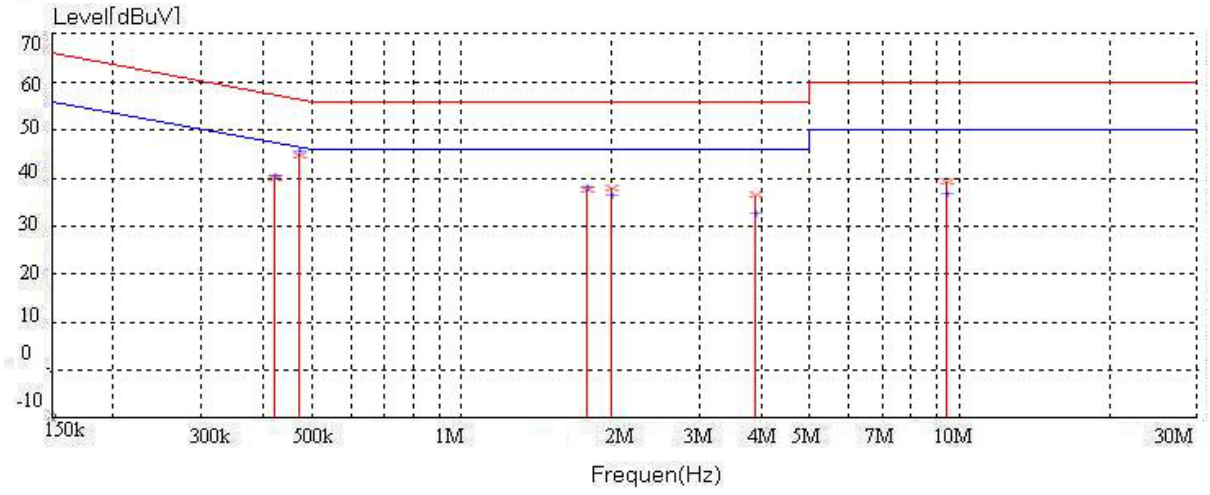
Test Mode	:	**Channel 11, Receiver**			
Tester	:	Max	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Line1**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	39.50	39.70	0.20	39.70	39.90	57.00	47.00	17.30	7.10
0.47	44.20	44.70	0.30	44.50	45.00	57.00	47.00	12.50	2.00
1.78	36.80	36.90	0.50	37.30	37.40	56.00	46.00	18.70	8.60
1.99	37.00	35.40	0.50	37.50	35.90	56.00	46.00	18.50	10.10
3.88	35.60	31.50	0.50	36.10	32.00	56.00	46.00	19.90	14.00
9.45	38.40	35.70	0.60	39.00	36.30	60.00	50.00	21.00	13.70

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.



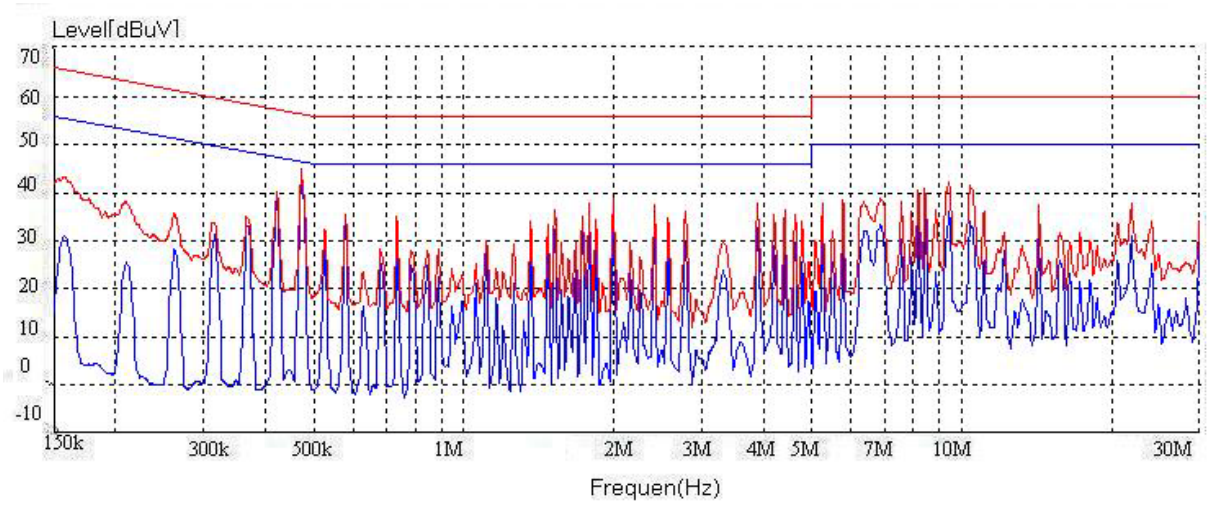

Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

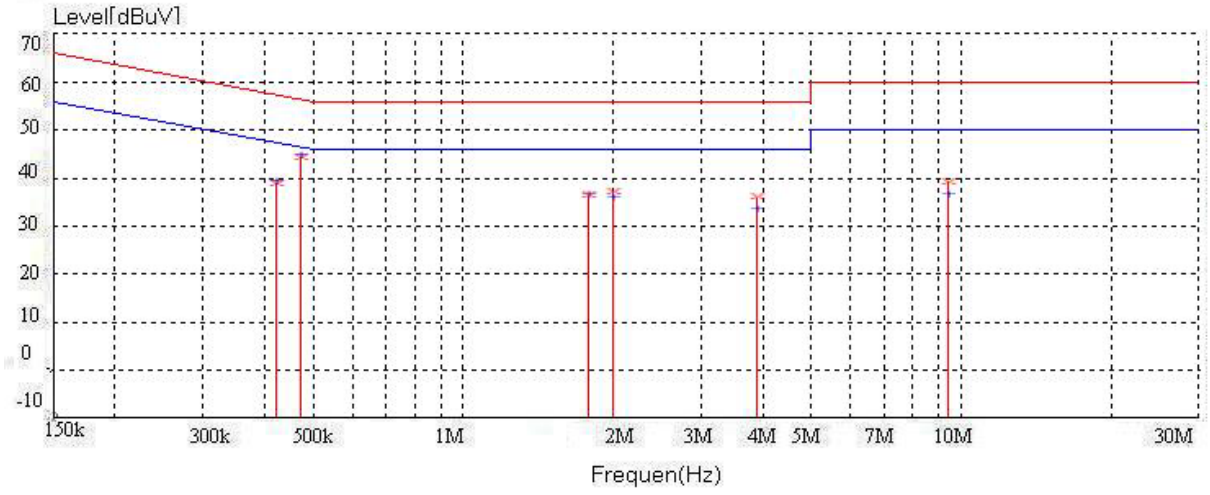
Test Mode	:	**Channel 11, Receiver**			
Tester	:	Alex	**Temperature**	:	19°C
Humidity	:	53%RH	**Frequency Range**	:	150kHz~30MHz
IF Bandwidth	:	9kHz	**Phase**	:	**Neutral**

Frequency (MHz)	Reading data (dBuV)		Correction Factor (dB)	Emission (dBuV)		Limit (dBuV)		Margin (dB)	
	Q.P.	AV.		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.42	38.50	38.70	0.20	38.70	38.90	57.00	47.00	18.30	8.10
0.47	43.60	44.10	0.30	43.90	44.40	57.00	47.00	13.10	2.60
1.78	35.60	35.60	0.50	36.10	36.10	56.00	46.00	19.90	9.90
1.99	36.50	35.10	0.50	37.00	35.60	56.00	46.00	19.00	10.40
3.88	35.20	32.50	0.50	35.70	33.00	56.00	46.00	20.30	13.00
9.45	38.40	35.50	0.60	39.00	36.10	60.00	50.00	21.00	13.90

Note:

1. Emission (dBuV)= Reading Data + Correction Factor.
2. Correction Factor(dB) = Cable Loss + Insertion Loss of LISN.
3. Margin (dB)= Limit – Emission.
4. P.K., Q.P. and AV. are abbreviation of peak, quasi-peak and average respectively.




Level[dBuV]
70
60
50
40
30
20
10
0
-10
150k
300k
500k
1M
2M
3M
4M
5M
7M
10M
30M
Frequen(Hz)

3. 6dB Bandwidth Measurement

Test Result: PASS

3.1 Limits for 6dB Bandwidth

The minimum 6 dB bandwidth shall be at least 500 kHz.

3.2 Test Instruments

Test Site and Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Spectrum (9kHz~7GHz)	R&S	FSP7/100108	May 16, 2003
RF Cable	Huber + Suhner	104/C0022	August 1, 2003
Attenuator	HP	8495B/ 2814A13358	December 29, 2003
TR4 shielded room	ETS.LINDGREN	TR5/15353-E	August 27, 2003

Note:

1. The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC.
2. NCR : No Calibration Required.
3. The calibration date of the shielded room listed above is the date of shielding effectiveness verification measurement.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2. The assessed measurement uncertainty for 6dB bandwidth measurement is 1.62dB.

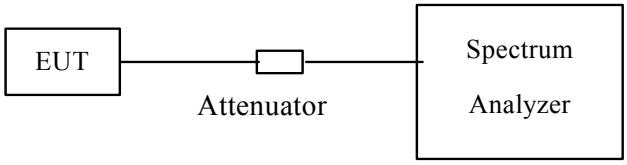
3.3 Test Procedures

a. A software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

b. The Transmitter output of EUT was connected to the spectrum analyzer through an attenuator and performs the 6 dB bandwidth measurement.

c. Record the 6dB bandwidth and compare with the required limit.

3.4 Test Configurations

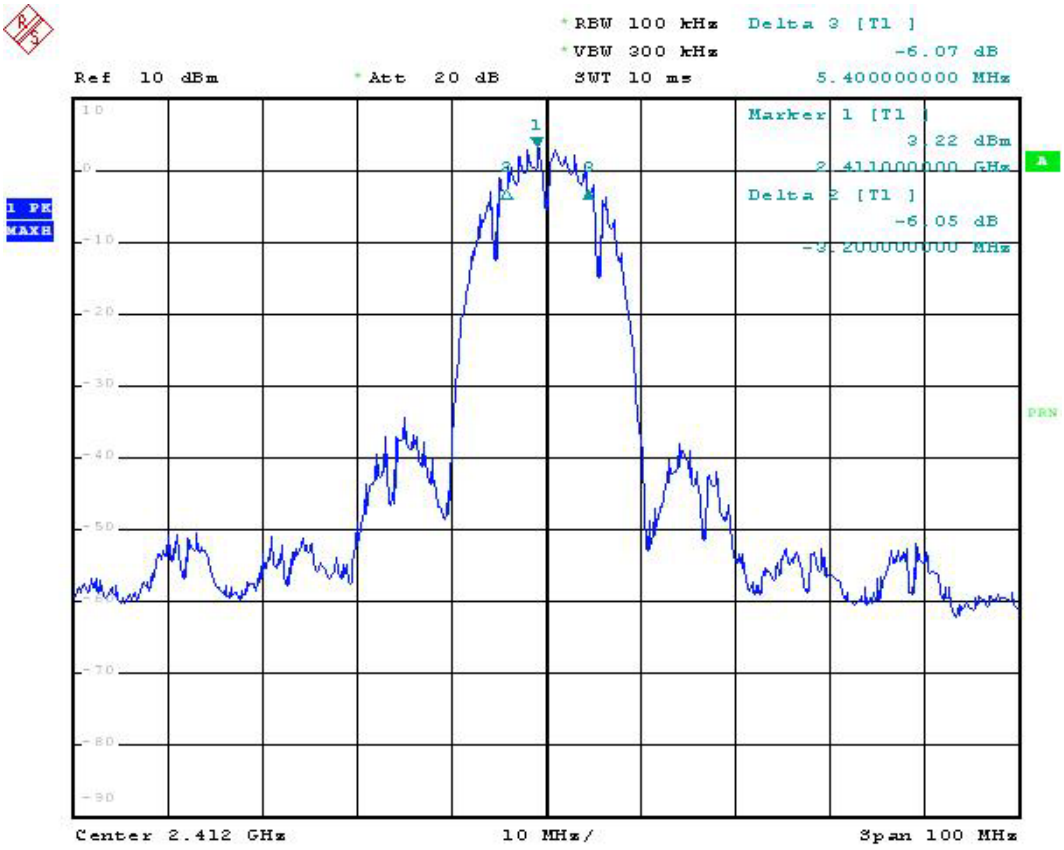


3.5 Test Results

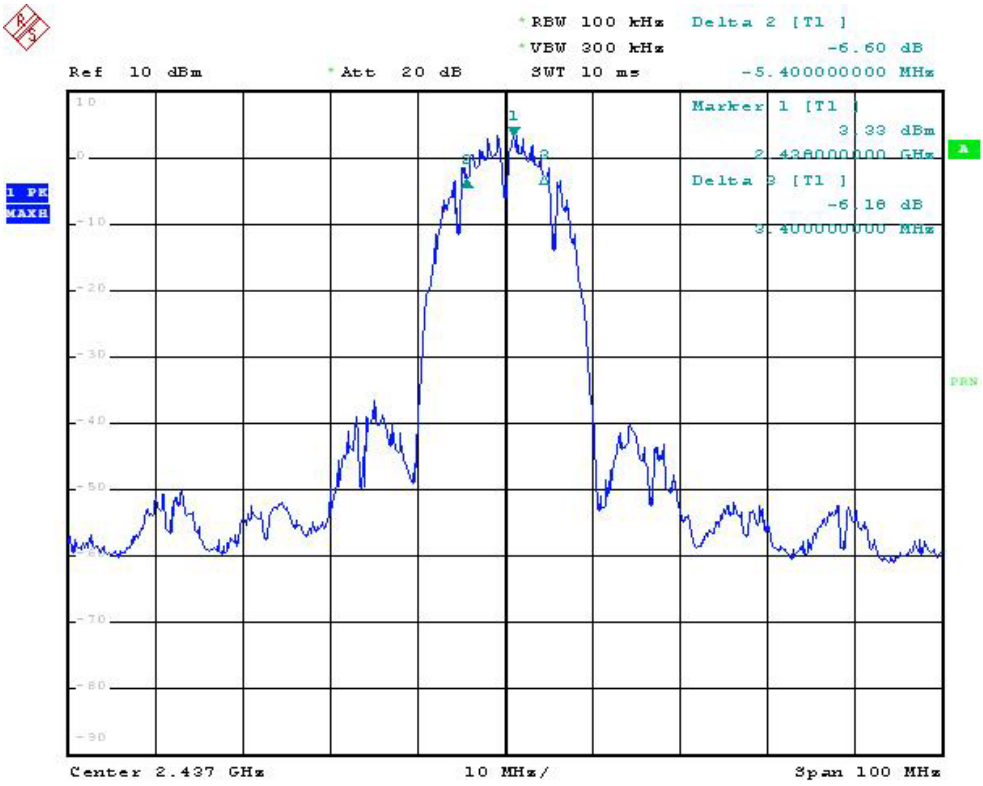
Test Mode	:	**Transmitter**			
Tester	:	Cathy	**Temperature**	:	19°C
Humidity	:	53%RH	**Detector**	:	Peak
RBW	:	100kHz	**VBW**	:	300kHz

Operating Frequency(MHz)	6 dB Bandwidth (MHz)	Limit (MHz)	Result
CH1 (2412MHz)	**8.60**	**0.5**	**Passed**
CH6 (2437MHz)	**8.80**	**0.5**	**Passed**
CH11 (2462MHz)	**9.00**	**0.5**	**Passed**

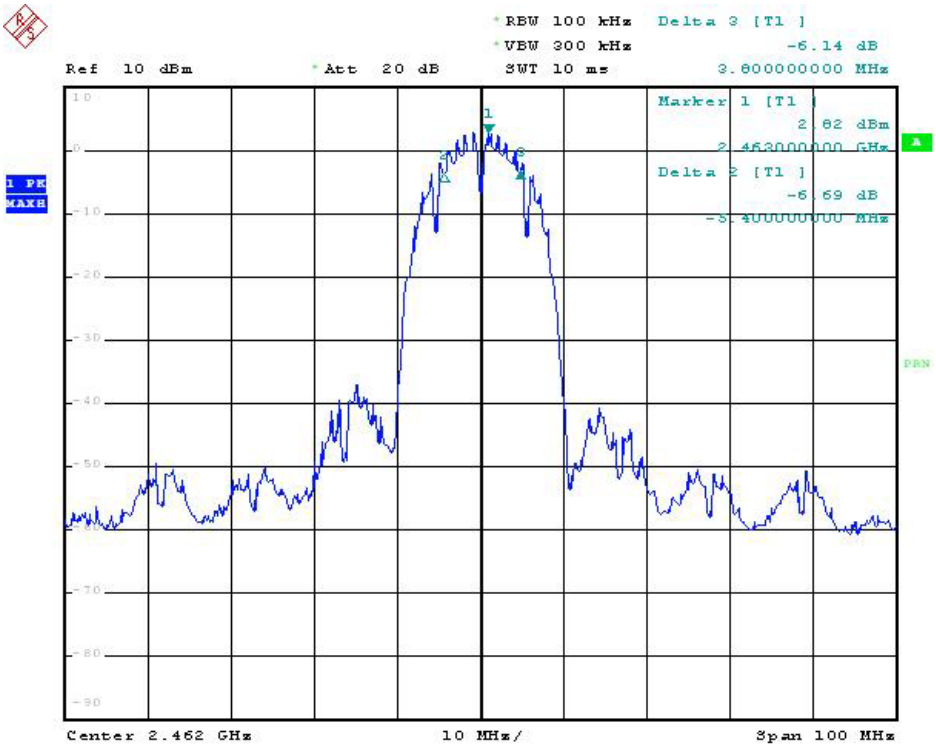
Channel 1 : 2412MHz



Channel 6 : 2437MHz



Channel 11 : 2462MHz



4. Maximum Peak Output Power Measurement

Test Result: PASS

4.1 Limits for Maximum Peak Output Power

The minimum maximum peak output power shall not exceed 1W (30dBm).

4.2 Test Instruments

Test Site and Equipment	Manufacturer	Model No./Serial No.	Last Cal.
Power Meter	Agilent	E4417A/ GB41290871	December 10,2003
Power Sensor	Agilent	E9327/ US4040935	December 10,2003
Attenuator	HP	8495B/ 2814A13358	December 29, 2003
TR4 shielded room	ETS.LINDGREN	TR5/15353-E	August 27, 2003

Note:

1. The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC.
2. NCR : No Calibration Required.
3. The calibration date of the shielded room listed above is the date of shielding effectiveness verification measurement.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2. The assessed measurement uncertainty for maximum peak output power measurement is 1.62dB.

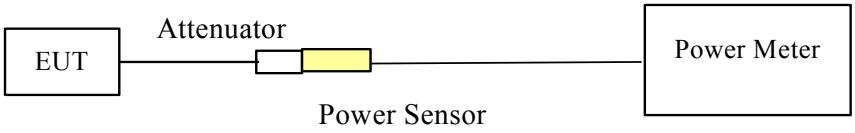
4.3 Test Procedures

a. A software provided by client enabled the EUT to transmit and receive data at lowest, middle and highest channel frequencies individually.

b. The Transmitter output of EUT was connected to the power meter through an attenuator and performs the maximum output power measurement.

c. Record the maximum output power and compare with the required limit.

4.4 Test Configurations



4.5 Test Results

Test Mode	:	**Transmitter**			
Tester	:	Cathy	**Temperature**	:	19°C
Humidity	:	53%RH	**Detector**	:	Peak

Operating Frequency	Reading Data (dBm)	Correction Factor (dB)	Emission (dBm)	Limit (dBm)	Margin (dB)
Ch1 (2412MHz)	21.22	0.97	22.19	30	7.81
Ch6 (2437MHz)	21.39	0.98	22.37	30	7.63
Ch11(2462MHz)	20.15	0.99	21.14	30	8.86

Note:

1. Correction Factor (dB) = Cable Loss + Attenuator
2. Emission (dBm) = Reading Data + Correction Factor
3. Margin (dB) = Limit – Emission