



# FCC PART 15B, CLASS B

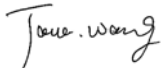
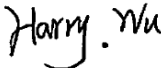
## TEST REPORT

For

### **Xiamen Intretech Inc.**

No.588.Jiahe Road,Xiamen,Fujian,China

**FCC ID: S96LS0001**

<b>Report Type:</b> Original Report	<b>Product Type:</b> Honeybee
<b>Test Engineer:</b> Jack Wang	
<b>Report Number:</b> R2XM130218057-00	
<b>Report Date:</b> 2013-04-08	
<b>Reviewed By:</b> EMC Leader	Harry Wu 
<b>Test Laboratory:</b> Bay Area Compliance Laboratories Corp. (Dongguan) No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 <a href="http://www.baclcorp.com.cn">www.baclcorp.com.cn</a>	

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\* This report may contain data that are not covered by the NVLAP accreditation and shall be marked with an asterisk "★" (Rev.2)

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## GENERAL INFORMATION

### Product Description for Equipment under Test (EUT)

The *Xiamen Intretech Inc.*'s product, model number: *LS-0001 (FCC ID: S96LS0001)* (the "EUT") in this report is a Honeybee, which was measured approximately: 25.8 cm (L) x 12.3 cm (W) x 17.7 cm (H), rated input voltage: DC 5V from system, the highest operating frequency is 25MHz.

*All measurement and test data in this report was gathered from production sample serial number: 130218057 (Assigned by BACL, Dongguan). The EUT was received on 2013-02-19.*

### Objective

This report is prepared on behalf of *Xiamen Intretech Inc.* in accordance with Part 2, Subpart J, Part 15, Subparts A and B of the Federal Communication Commissions rules.

The objective of the manufacturer is to determine compliance with FCC Part 15B, Class B.

### Related Submittal(s)/Grant(s)

No Related Submittal(s)/Grant(s)

### Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Dongguan) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 500069-0).



The current scope of accreditations can be found at <http://ts.nist.gov/standards/scopes/5000690.htm>

## SYSTEM TEST CONFIGURATION

### Justification

The system was configured for testing in a typical fashion (as normally used by a typical user).

### EUT Exercise Software

No EUT exercise software was used.

### Equipment Modifications

No modification was made to the EUT.

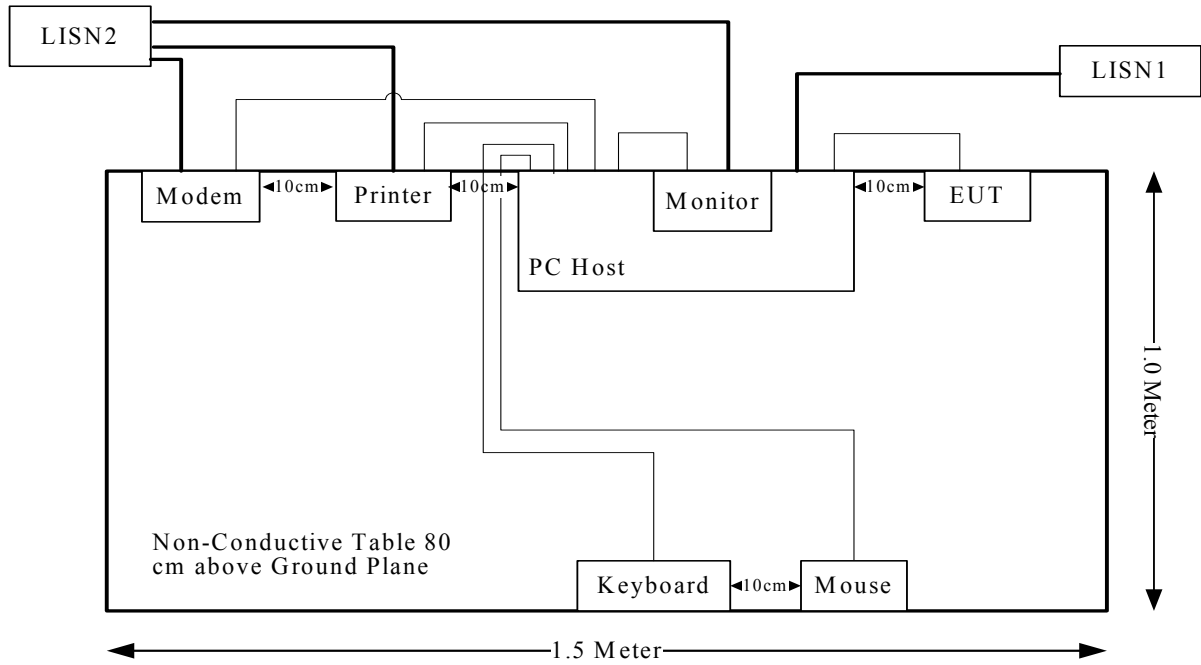
### Local Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	PC System	D07M	HNXJW2X
DELL	monitor	U3011	CNOPH5NY7444516T290L
DELL	mouse	MO55UOA	FOY02P7Y
HP	Printer	C3941A	JPTVOB2337
DELL	Keyboard	SK-8115	CN-0DJ313-716716-05A-0DSO
SAST	Modem	AEM-2100	090200213

### External I/O Cable

Cable Description	Length (m)	From	To
Shielded Detachable Printer Cable	1.2	Parallel Port of PC	Printer
Shielded Detachable Serial Cable	1.2	Serial Port of PC	Modem
Shielded Detachable Keyboard Cable	2.0	Keyboard Port of PC	Keyboard
Shielded Detachable mouse Cable	2.0	mouse Port of PC	mouse
Unshielded Detachable Usb Cable	3.0	Usb Port of PC	EUT

### Block Diagram of Test Setup



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## **SUMMARY OF TEST RESULTS**

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<b>FCC Rules</b>	<b>Description of Test</b>	<b>Results</b>
§15.107	AC Line Conducted Emissions	Compliance
§15.109	Radiated Emissions	Compliance

## FCC §15.107 – AC LINE CONDUCTED EMISSIONS

### Measurement Uncertainty

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If  $U_{lab}$  is less than or equal to  $U_{cispr}$  of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If  $U_{lab}$  is greater than  $U_{cispr}$  of Table 1, then:

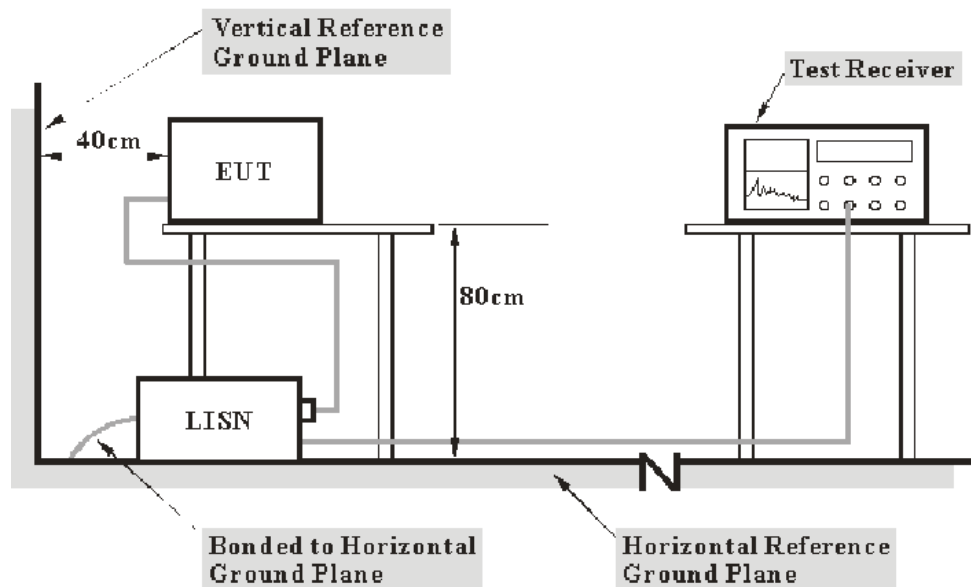
- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.46 dB (150 kHz to 30 MHz).

Table 1 – Values of  $U_{cispr}$

Measurement	$U_{cispr}$
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

### EUT Setup



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

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.107 Class B limits.

The notebook was connected to a 120 VAC/60 Hz power source.

### EMI Test Receiver Setup

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

<u>Frequency Range</u>	<u>IF B/W</u>
150 kHz – 30 MHz	9 kHz

### Test Procedure

During the conducted emission test, the notebook was connected to the outlet of the first LISN and the other support equipments were connected to the outlet of the second LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

### Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2012-11-29	2013-11-28
R&S	LISN1	ESH3-Z5	843331/015	2012-09-17	2013-09-16
R&S	LISN2	ESH3-Z5	100113	2012-11-29	2013-11-28
BACL	Test Software	BACL-EMC	V1.0-2010	N/A	N/A

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

### Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

$$C_f = A_C + VDF$$

Herein,

$V_C$  (cord. Reading): corrected voltage amplitude

$V_R$ : reading voltage amplitude

$A_C$ : attenuation caused by cable loss

VDF: voltage division factor of AMN

$C_f$ : Correction Factor



The “**Margin**” column of the following data tables indicates the degree of compliance within the applicable limit. For example, a margin of 7dB means the emission is 7dB below the maximum limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

### Test Results Summary

According to the recorded data in following table, the EUT complied with the FCC Part 15.107, with the worst margin reading of:

**5.08 dB at 26.920MHz in the Neutral conducted**

### Test Data

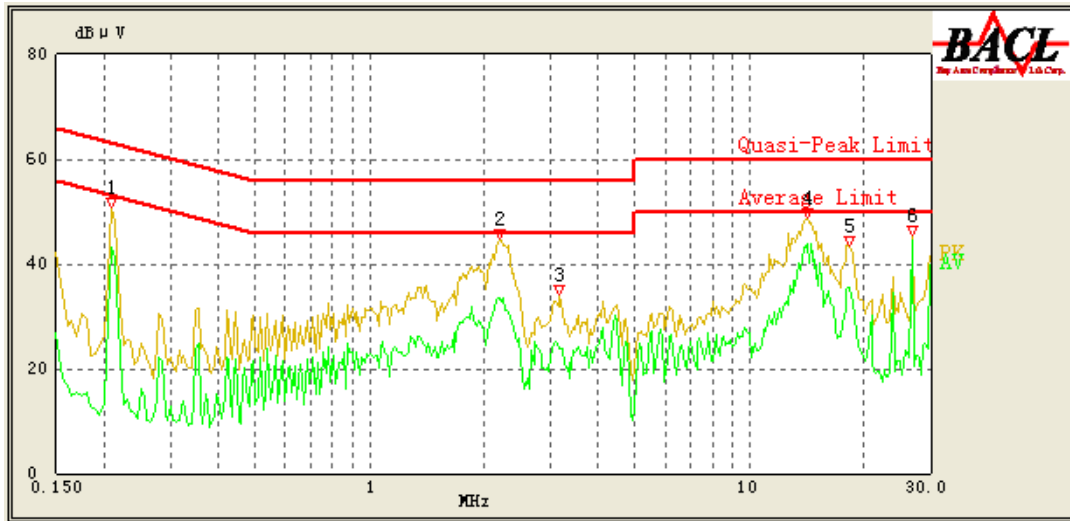
#### Environmental Conditions

<b>Temperature:</b>	25.6 °C
<b>Relative Humidity:</b>	60 %
<b>ATM Pressure:</b>	100.7 kPa

*The testing was performed by Jack Wang on 2013-03-29.*

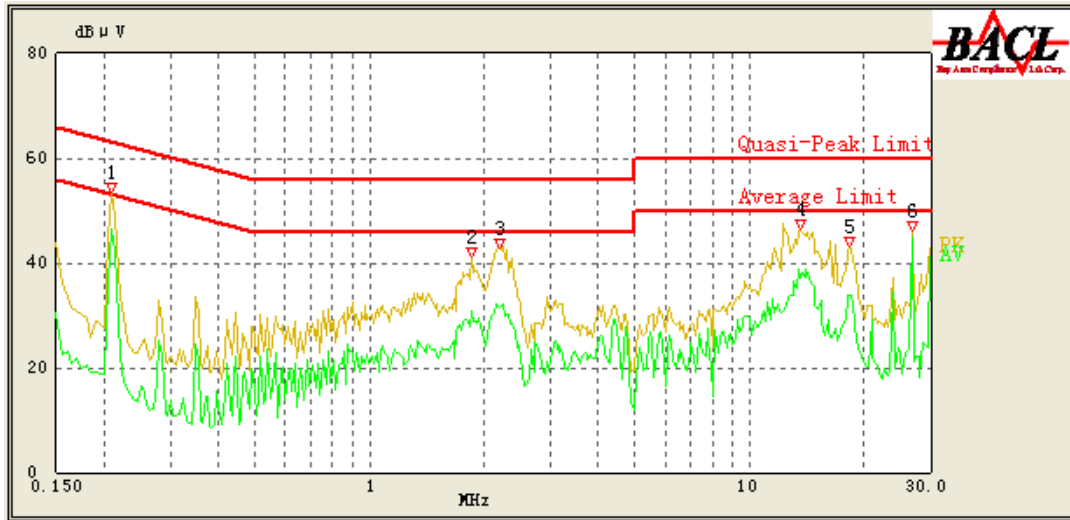
Test mode: Running

120 V, 60 Hz, Line:



No.	Frequency (MHz)	Cord. Reading (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/AV/QP)
1	0.210	48.90	0.96	64.29	15.39	QP
2	0.210	43.28	0.96	54.29	11.01	AV
3	2.200	39.43	0.37	56.00	16.57	QP
4	2.200	33.42	0.37	46.00	12.58	AV
5	3.160	27.85	0.40	56.00	28.15	QP
6	3.160	23.94	0.40	46.00	22.06	AV
7	14.180	45.92	1.55	60.00	14.08	QP
8	14.180	43.84	1.55	50.00	6.16	AV
9	18.295	38.93	2.31	60.00	21.07	QP
10	18.295	35.47	2.31	50.00	14.53	AV
11	26.920	45.18	2.34	60.00	14.82	QP
12	26.920	44.39	2.34	50.00	5.61	AV

**120 V, 60 Hz, Neutral:**



No.	Frequency (MHz)	Cord. Reading (dBμV)	Correction Factor (dB)	Limit (dBμV)	Margin (dB)	Detector (PK/AV/QP)
1	0.210	49.57	1.53	64.29	14.72	QP
2	0.210	46.39	1.53	54.29	7.90	AV
3	1.865	35.85	0.26	56.00	20.15	QP
4	1.865	30.75	0.26	46.00	15.25	AV
5	2.190	35.93	0.28	56.00	20.07	QP
6	2.200	31.59	0.28	46.00	14.41	AV
7	13.695	38.17	1.00	60.00	21.83	QP
8	13.695	37.15	1.00	50.00	12.85	AV
9	18.345	34.24	1.35	60.00	25.76	QP
10	18.200	33.96	1.34	50.00	16.04	AV
11	26.920	46.63	2.33	60.00	13.37	QP
12	26.920	44.92	2.33	50.00	5.08	AV

## FCC §15.109 - RADIATED EMISSIONS

### Measurement Uncertainty

Compliance or non-compliance with a disturbance limit shall be determined in the following manner:

If  $U_{lab}$  is less than or equal to  $U_{cispr}$  of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

If  $U_{lab}$  is greater than  $U_{cispr}$  of Table 1, then:

- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by  $(U_{lab} - U_{cispr})$ , exceeds the disturbance limit.

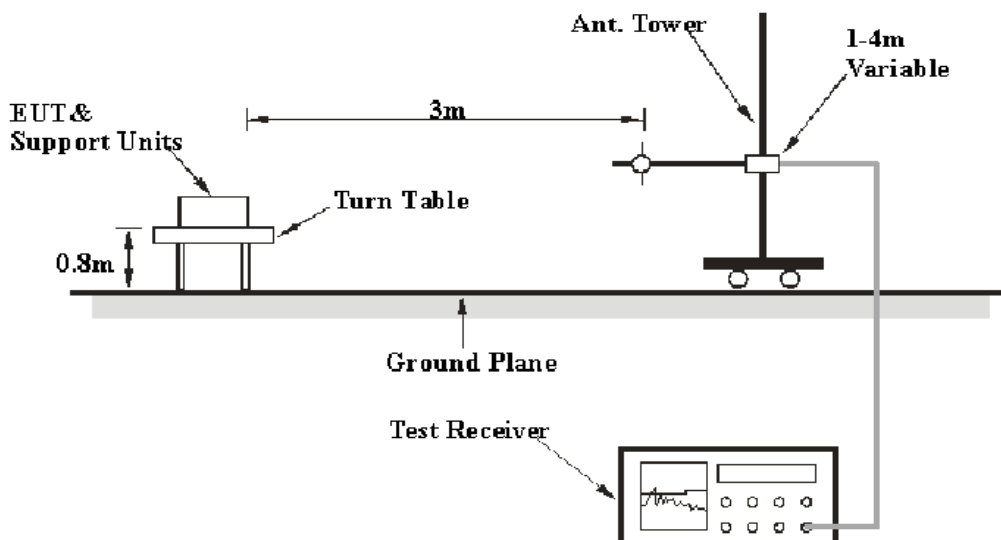
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:

- 30M~200MHz: 5.0 dB
- 200M~1GHz: 6.2 dB
- 1G~6GHz: 4.45 dB
- 6G~18GHz: 5.23 dB

Table 1 – Values of  $U_{cispr}$

Measurement	$U_{cispr}$
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB

### EUT Setup



The radiated emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2003. The specification used was the FCC Part 15.109, Class B limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The notebook connected to a 120 VAC/60 Hz power source.

### EMI Test Receiver Setup

According to FCC 15.33 requirements, the system was measured from 30 MHz to 1 GHz.

During the radiated emission test, the EMI test receiver was set with the following configurations:

<u>Frequency Range</u>	<u>RBW</u>	<u>Video B/W</u>	<u>Detector</u>
30MHz – 1000 MHz	120 kHz	300 kHz	QP

### Test Procedure

For the radiated emissions test, the notebook was connected to the first AC floor outlet and the other support equipments were connected to the second AC floor outlet.

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz-1 GHz

### Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Loss and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Loss} + \text{Cable Loss} - \text{Amplifier Gain}$$

The “**Margin**” column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

### Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	100035	2012-05-14	2013-05-13
Sunol Sciences	Hybrid Antennas	JB3	A060611-1	2011-09-06	2013-09-05
HP	Pre-amplifier	8447E	2434A02181	2012-10-08	2013-10-07
R&S	Spectrum Analyzer	FSEM 30	DE31388	2013-03-15	2014-03-14
ETS-LINDGREN	Horn Antenna	3115	000 527 35	2012-09-06	2014-09-05
Mini-Circuits	Amplifier	ZVA-213-S+	054201245	N/A	N/A
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A

\* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to National Primary Standards and International System of Units (SI).

### Test Results Summary

According to the data in the following table, the EUT complied with the FCC §15.109, Class B, with the worst margin reading of:

**5.32 dB at 42.6100 MHz in the Vertical polarization**

### Test Data

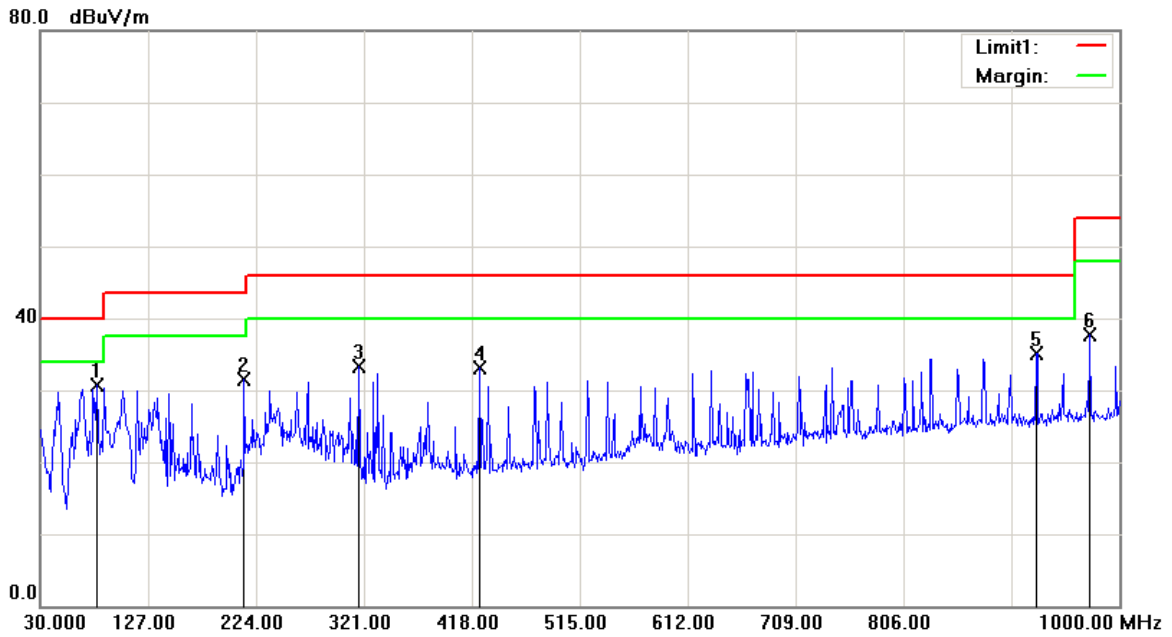
#### Environmental Conditions

Temperature:	24.3°C
Relative Humidity:	61 %
ATM Pressure:	100.7 kPa

*The testing was performed by Jack Wang on 2013-03-29.*

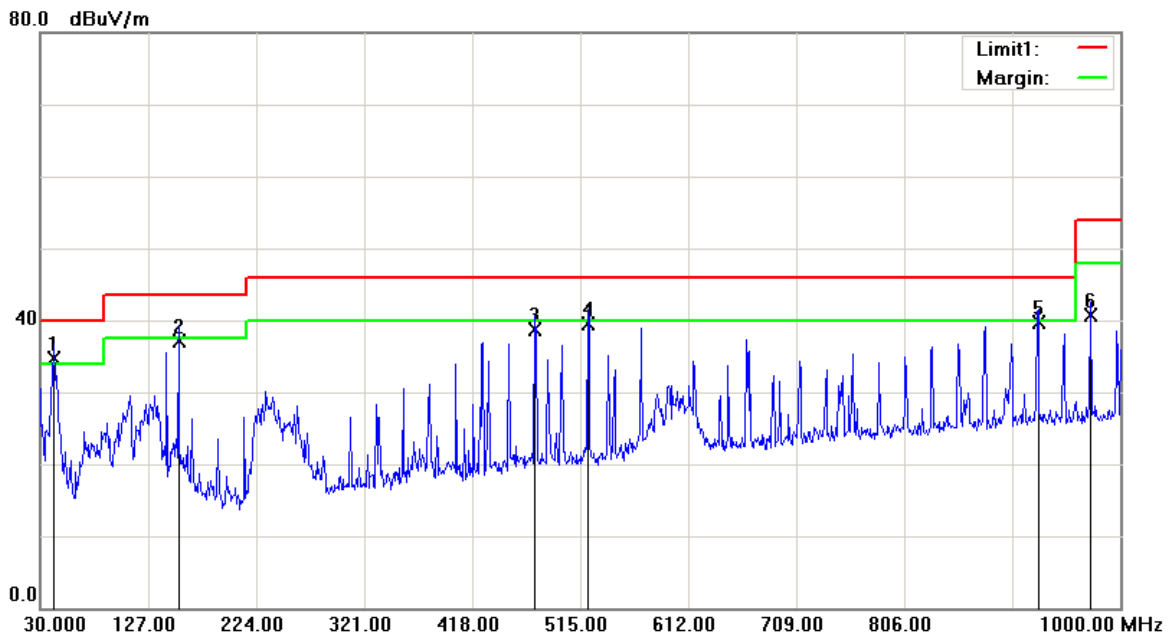
*Test mode: Running*

**Horizontal:**



Frequency (MHz)	Receiver Reading (dBuV/m)	Detector (PK/QP/Ave)	Correction Factor (dB)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
80.4400	43.44	QP	-12.67	30.77	40.00	9.23
213.3300	40.60	QP	-9.06	31.54	43.50	11.96
316.1500	38.98	QP	-5.76	33.22	46.00	12.78
424.7900	36.76	QP	-3.58	33.18	46.00	12.82
925.3100	31.97	QP	3.16	35.13	46.00	10.87
973.8100	33.50	QP	4.12	37.62	54.00	16.38

**Vertical:**



Frequency (MHz)	Receiver Reading (dBuV/m)	Detector (PK/QP/Ave)	Correction Factor (dB)	Cord. Amp. (dBuV/m)	Limit (dBuV/m)	Margin (dB)
42.6100	42.98	QP	-8.30	34.68	40.00	5.32
154.1600	44.79	QP	-7.66	37.13	43.50	6.37
474.2600	41.01	QP	-2.36	38.65	46.00	7.35
521.7900	41.68	QP	-2.14	39.54	46.00	6.46
926.2800	36.47	QP	3.19	39.66	46.00	6.34
973.8100	36.50	QP	4.12	40.62	54.00	13.38

\*\*\*\*\* END OF REPORT \*\*\*\*\*