



# FCC DOC TEST REPORT

## Declaration of Conformity

According to

**47 CFR, Part 2, Part 15, CISPR PUB. 22**

Applicant	: Partner Tech Corp.
Address	: 10F, No. 233-2, Pao Chiao Rd., Shin Tien, Taipei, Taiwan 231, R.O.C.
Equipment	: Handheld Terminal
Model No.	: OT-100
Trade Name	: Partner

Laboratory accreditation



Testing Laboratory  
1332

- The test result refers exclusively to the test presented test model / sample.
- Without written approval of **Cerpass Technology Corp.**, the test report shall not be reproduced except in full.



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Taipei, Taiwan 231, R.O.C.

Equipment : Handheld Terminal

Model No. : OT-100

I **HEREBY** CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 – 2003** and the energy emitted by this equipment was **passed CISPR PUB. 22, FCC Part 15** in both radiated and conducted emission class B limits. Testing was carried out on Nov. 05, 2009 at CerpPASS Technology Corp.

Signature

Jonson Lee

EMC/RF B.U. Senior Manager



## 1. Test Configuration of Equipment under Test

### 1.1. Feature of Equipment under Test

CPU	Freescale i.MX31/i.MX31L (Co-layout) CPU @ 532MHz/133MHz
RAM	Mobile DDR 128MB, NAND flash 128MB
LCD	4.3" widescreen (resolution 480*272)
WiFi	802.11b/g
Bluetooth	Class2
Audio	Line out, speaker, internal microphone, external mic jack
Storage	SD card
Connectors	Mini USB
Special features	Vibration Direction sensor
Battery	Li-ion 2200mAh
Ruggedness	IP54, 1.2 meter drop test
Accessories	Multi-charger, hand strap, leather pouch
Extension modules	MSR, IC card, RFID
OS	Windows CE 5.0
Weight	240g
Dimensions	133 * 82 * 19 mm(H x W x D)

### 1.2. Test Manner

- a. During testing, the interface cables and equipment positions were varied according to ANSI C63.4.
- b. The complete test system included PC, Monitor, Keyboard, Mouse, Printer, Modem, Earphone and EUT for EMI Test.
- c. The result of conduction and radiation test as follow:  
Mode 1. PC Link  
Mode 2. EUT with Credle, Power from Adapter  
Mode 3. EUT with Earphone, Power from Battery – only for radiation test  
For Conduction test, cause "Mode 2" generated the worst test result, it was reported as final data.  
For Radiation test, cause "Mode 1" generated the worst test result, it was reported as final data.
- d. An executive program, "Active sync" under WIN XP was executed to keep sending signals.
- e. An executive program, "Media Player" under WIN XP was executed to play music.
- f. An executive program, "Word Pad" under WIN XP was executed to display the message sent from EUT.
- g. The EUT was executed to keep transmitting and receiving data via Wireless and Bluetooth.



### 1.3. Description of Test System

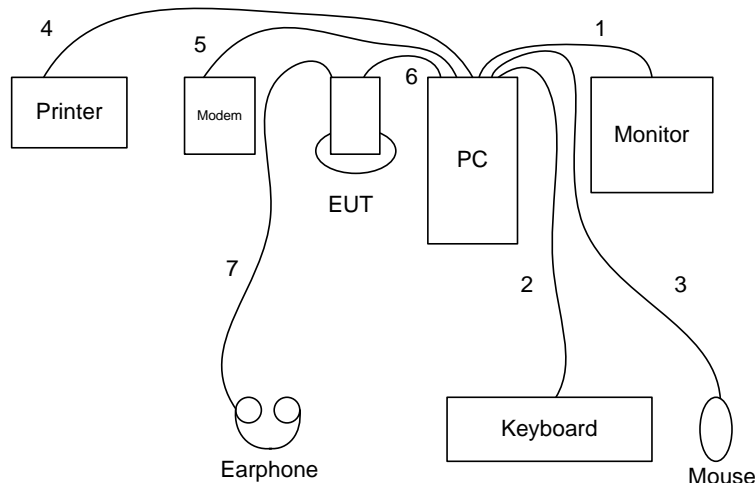
Device	Manufacturer	Model No.	Description
PC	IBM	IGV	Power Cable, Unshielding 1.8 m
Monitor	ViewSonic	G90fB	Power Cable, Adapter Unshielding 1.8 m Data Cable, VGA Shielding 1.35 m
Keyboard	IBM	KB-0225	Data Cable, PS2 Shielding 1.85 m
Mouse	IBM	MO28VO	Data Cable, PS2 Shielding 1.85 m
Modem	ACEXX	DM-1414	Power Cable, Adapter Unshielding 1.8 m Data Cable, RS232 Shielding 1.35 m
Printer	HP	Desk Jet 400	Power Cable, Adapter Unshielding 1.8 m Data Cable, Print Shielding 1.6 m
Earphone	MIC	MIC-4	Data Cable, Audio Shielding, 1.35m

Use Cable:

Cable	Quantity	Description
USB	1	Unshielding, 1.0m

### 1.4. Connection Diagram of Test System

#### 1.4.1 Test Mode: Mode 1

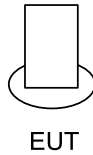


1. The VGA cable is connected from PC to the Monitor.
2. The PS2 cable is connected from PC to the Keyboard.
3. The PS2 cable is connected from PC to the Mouse.
4. The Print cable is connected from PC to the Printer.
5. The RS232 cable is connected from PC to the Modem.
6. The USB cable is connected from EUT to the USB 2.0 HDD.
7. The Audio cable is connected from EUT to the Earphone.

\*The EUT keeps to transmit and receive data via Wireless.

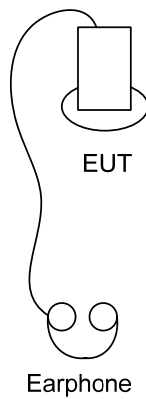


1.4.2 Test Mode: Mode 2



\*The EUT keeps to transmit and receive data via Wireless.

1.4.3 Test Mode: Mode 3



1. The Audio cable is connected from EUT to the Earphone.

\*The EUT keeps to transmit and receive data via Wireless.

**1.5. General Information of Test**

Test Site :	Cerpass Technology Corp. 2F-11, No. 3, Yuan Qu St. (Nankang Software Park), Taipei, Taiwan 115, R.O.C.
Test Site Location (OATS1-SD):	No. 7-2, Moshihkeng, Fongtian Village, Shihding Township, Taipei County, Taiwan, R.O.C.
FCC Registration Number :	TW1049, TW1056, 982971, 488071
IC Registration Number :	4934C-1, 4934D-1
VCCI Registration Number :	T-543 for Telecommunication Test C-3328 for Conducted emission test R-3013 for Radiated emission test
Test Voltage:	AC 120V/ 60Hz
Test in Compliance with:	ANSI C63.4-2003 FCC Part 15 Subpart B
Frequency Range Investigated :	Conducted: from 150kHz to 30 MHz Radiation: from 30 MHz to 2,000 MHz
Test Distance :	The test distance of radiated emission below 1GHz from antenna to EUT is 10 M. The test distance of radiated emission above 1GHz from antenna to EUT is 3 M.

**1.6. Measurement Uncertainty**

Measurement Item	Measurement Frequency	Polarization	Uncertainty
Conducted Emission	9 kHz ~ 30 MHz	LINE / NEUTRAL	2.71 dB
Radiated Emission	30 MHz ~ 1GHz	Vertical	3.89 dB
		Horizontal	3.59 dB



### 1.7. History of this test report

ORIGINAL.

Additional attachment as following record:

Attachment No.	Issue Date	Description





## 2. Test of Conducted Emission

### 2.1. Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

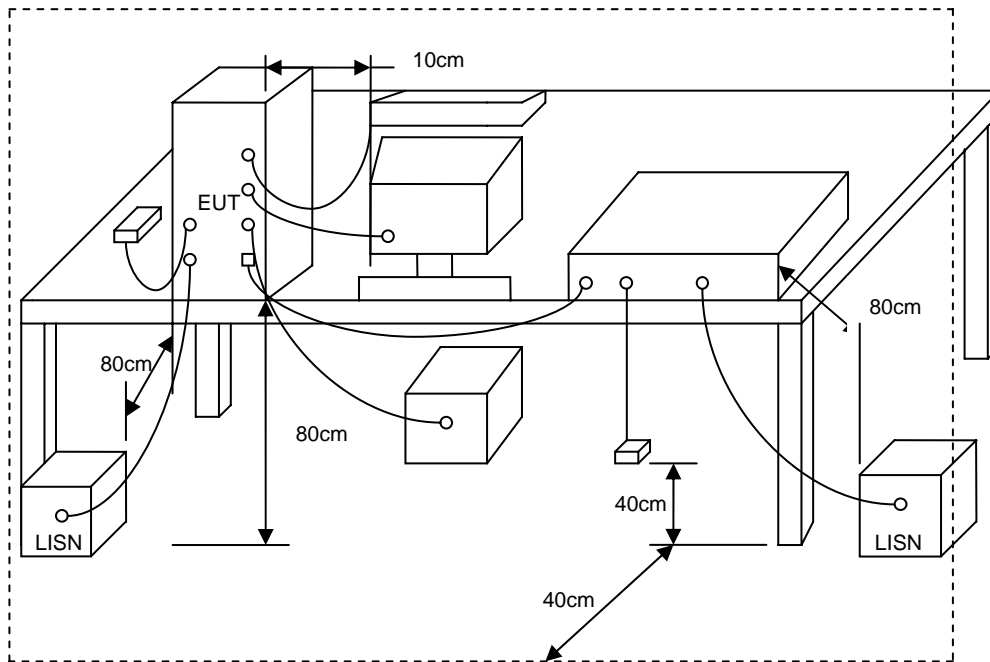
#### Conducted Emission Limits:

Frequency (MHz)	Quasi Peak (dB $\mu$ V)	Average (dB $\mu$ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

### 2.2. Test Procedures

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connecting to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 micro-Henry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.

### 2.3. Typical test Setup



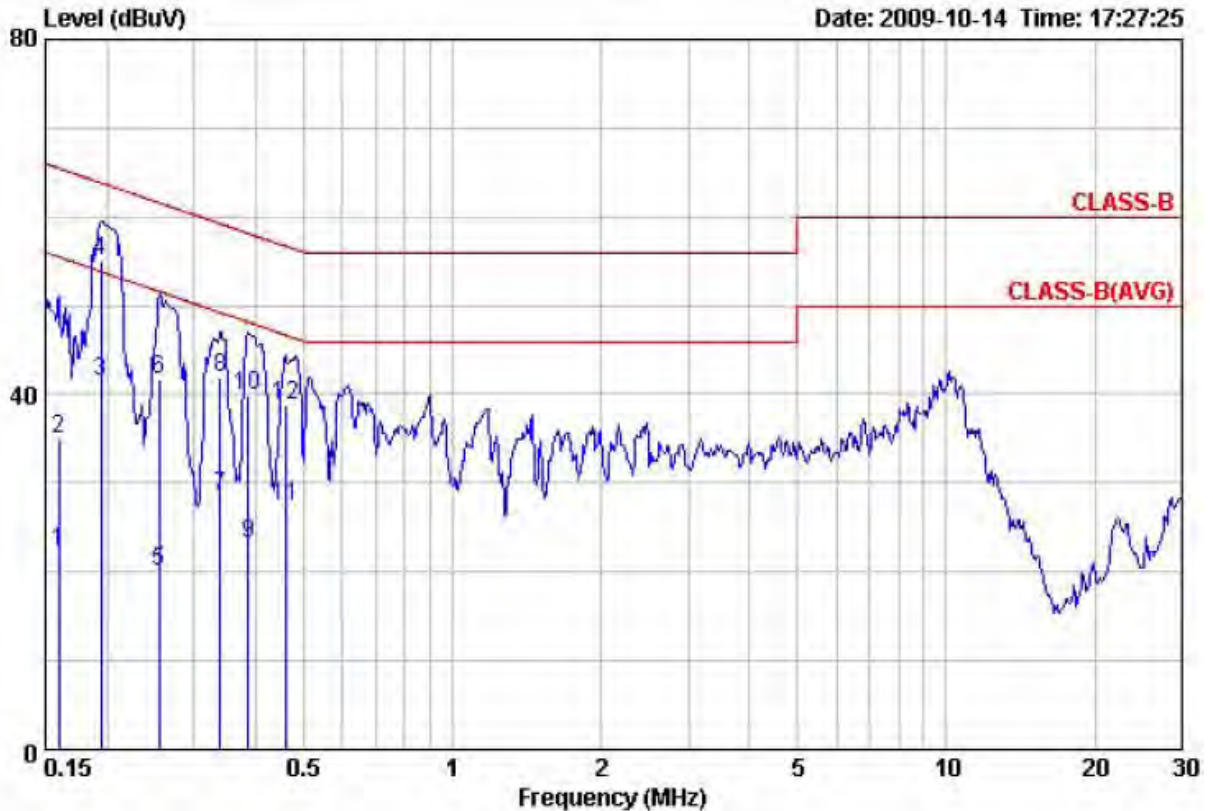
### 2.4. Measurement Equipment

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
EMI Receiver	R&S	ESCI	100443	2008/12/19	2009/12/18
LISN	NSLK 8127	Schwarzbeck	8127-516	2009/05/15	2010/05/14
LISN	ROLF HEINE	NNB-2/16Z	03/10058	2009/04/18	2010/04/17



### 2.5. Test Result and Data

Power	: AC 120V	Pol/Phase	: LINE
Test Mode 2	: EUT with Credle	Temperature	: 25 °C
Memo	: Power from Adapter	Humidity	: 66 %

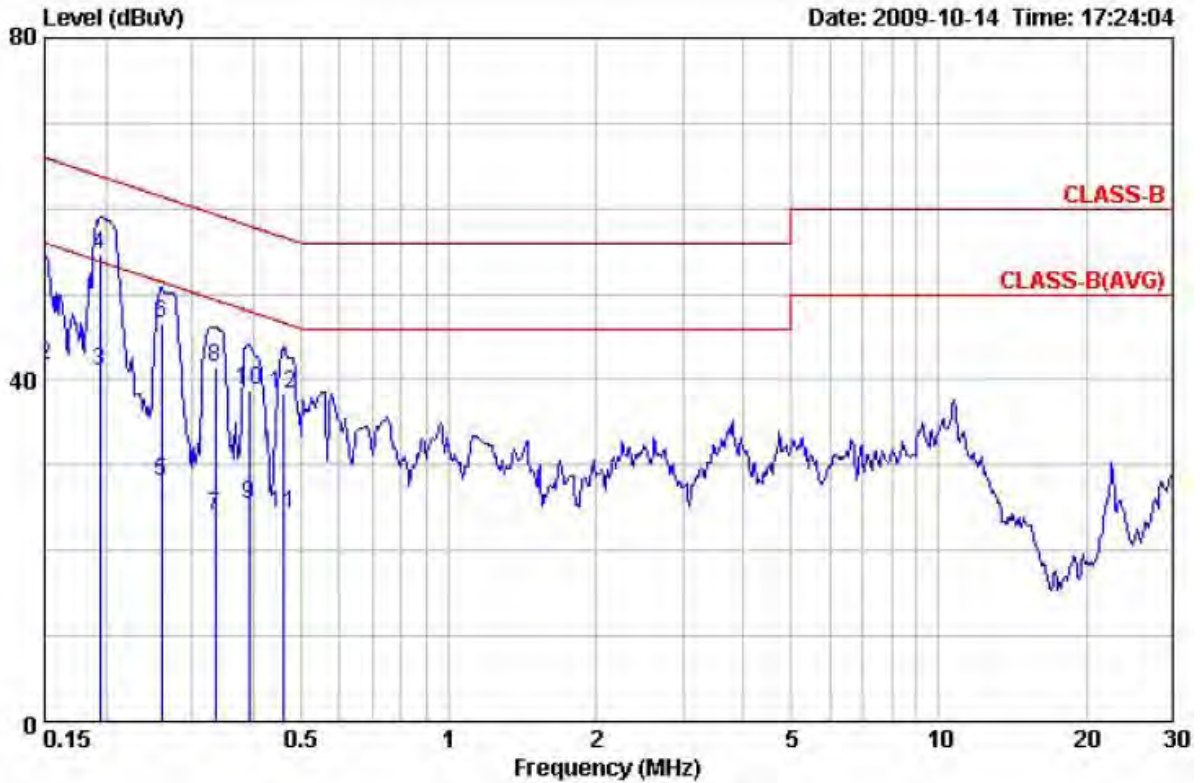


Item	Freq MHz	Read Value dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dBuV	Remark
1	0.160	22.170	0.062	22.232	55.472	-33.240	Average
2	0.160	34.907	0.062	34.969	65.472	-30.503	QP
3	0.194	41.293	0.069	41.362	53.844	-12.482	Average
4	0.194	54.997	0.069	55.066	63.844	-8.778	QP
5	0.255	20.092	0.073	20.165	51.599	-31.434	Average
6	0.255	41.497	0.073	41.570	61.599	-20.029	QP
7	0.339	28.397	0.078	28.475	49.223	-20.748	Average
8	0.339	41.761	0.078	41.839	59.223	-17.384	QP
9	0.387	23.053	0.080	23.133	48.123	-24.990	Average
10	0.387	39.726	0.080	39.806	58.123	-18.317	QP
11	0.461	27.306	0.085	27.391	46.667	-19.276	Average
12	0.461	38.740	0.085	38.825	56.667	-17.842	QP

Remarks: 1. Result = Read Value + Factor  
2. Factor = LISN(ISN) Factor + Cable Loss



Power	: AC 120V	Pol/Phase	: NEUTRAL
Test Mode 2	: EUT with Credle	Temperature	: 25 °C
Memo	: Power from Adapter	Humidity	: 66 %



Item	Freq MHz	Read Value dBuV	Factor dB	Result dBuV	Limit dBuV	Margin dBuV	Remark
1	0.150	28.405	0.060	28.465	56.000	-27.535	Average
2	0.150	41.537	0.060	41.597	66.000	-24.403	QP
3	0.194	40.870	0.069	40.939	53.844	-12.905	Average
4	0.194	54.565	0.069	54.634	63.844	-9.210	QP
5	0.260	28.102	0.074	28.176	51.423	-23.247	Average
6	0.260	46.567	0.074	46.641	61.423	-14.782	QP
7	0.334	23.976	0.077	24.053	49.355	-25.302	Average
8	0.334	41.424	0.077	41.501	59.355	-17.854	QP
9	0.391	25.244	0.080	25.324	48.035	-22.711	Average
10	0.391	38.669	0.080	38.749	58.035	-19.286	QP
11	0.461	24.127	0.085	24.212	46.671	-22.459	Average
12	0.461	38.203	0.085	38.288	56.671	-18.383	QP

Remarks: 1. Result = Read Value + Factor  
 2. Factor = LISN(ISN) Factor + Cable Loss

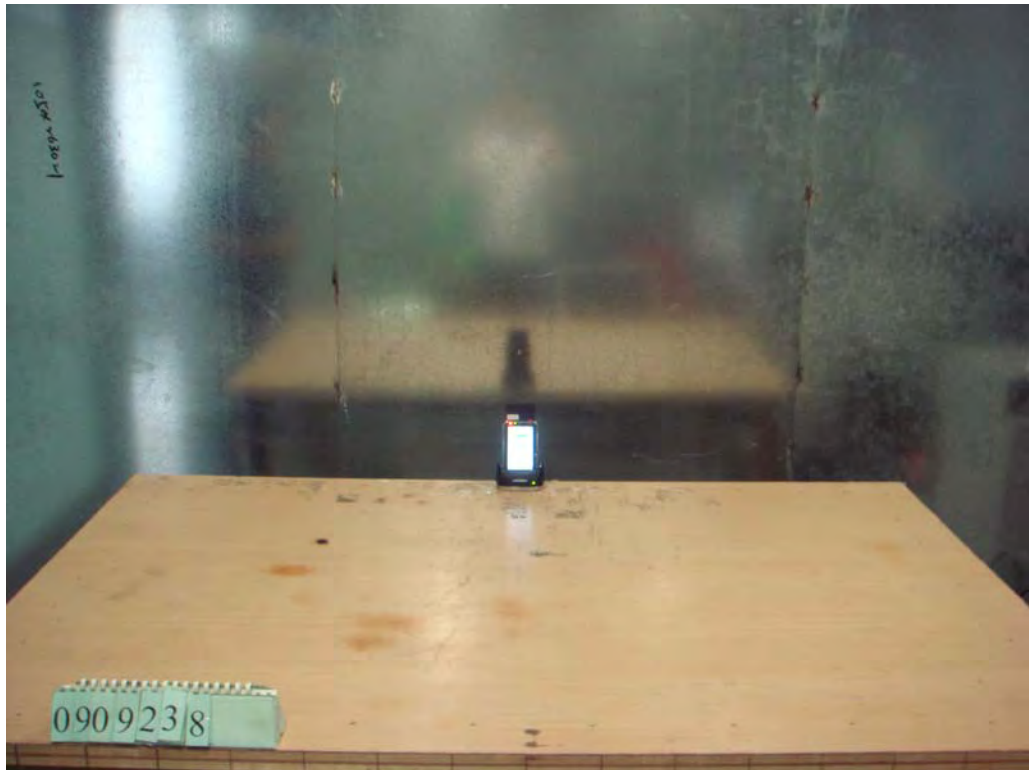
Test engineer: Dean



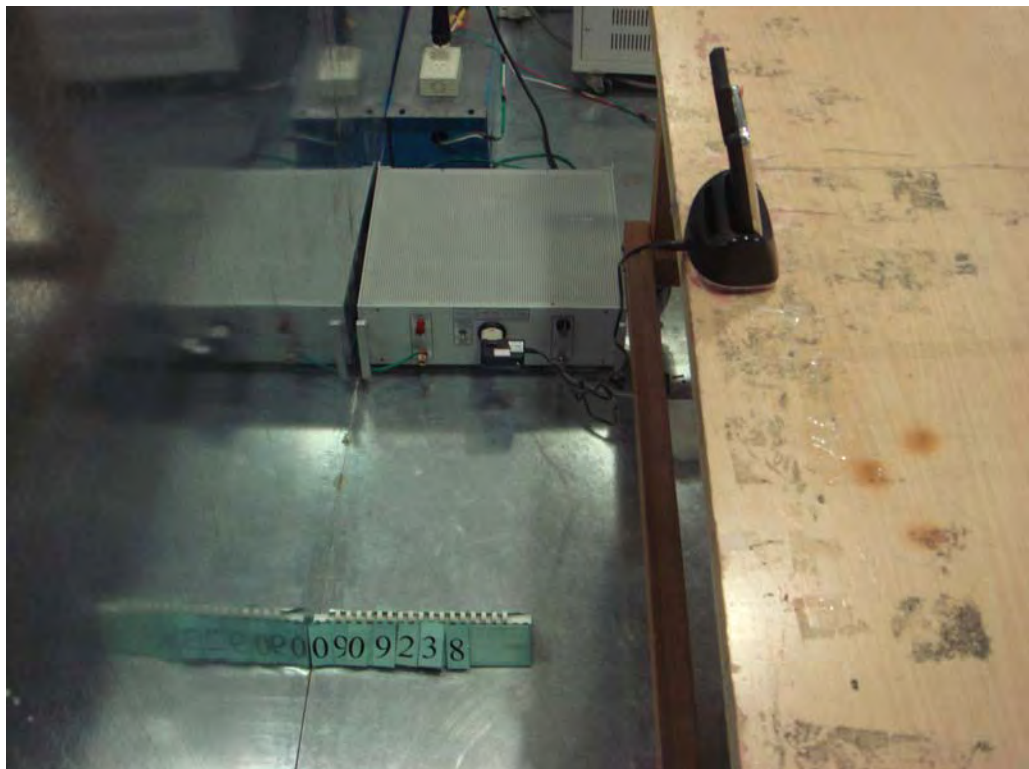


## 2.6. Test Photographs

Front View



Rear View





### 3. Test of Radiated Emission

#### 3.1. Test Limit

Radiated emissions from 30 MHz to 2,000 MHz were measured with a bandwidth of 120 kHz according to the methods defines in ANSI C63.4-2003. The EUT was placed on a nonmetallic stand in the open-field site, 0.8 meter above the ground plane, as shown in section 3.2. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions. For unintentional device, according to § 15.109(a), except for Class A digital devices, the field strength of radiated emissions from unintentional radiators at a distance of 3 meters shall not exceed the following values:

Frequency (MHz)	Distance Meters	Radiated ( $\mu$ V / M)	Radiated (dB $\mu$ V / M)
30-88	3	100	40.0
88-216	3	150	43.5
216-960	3	200	46.0
Above 960	3	500	54.0

For unintentional device, according to CISPR PUB.22, for Class B digital devices, the general requirement of field strength of radiated emissions from intentional radiators at a distance of 10 meters shall not exceed the below table.

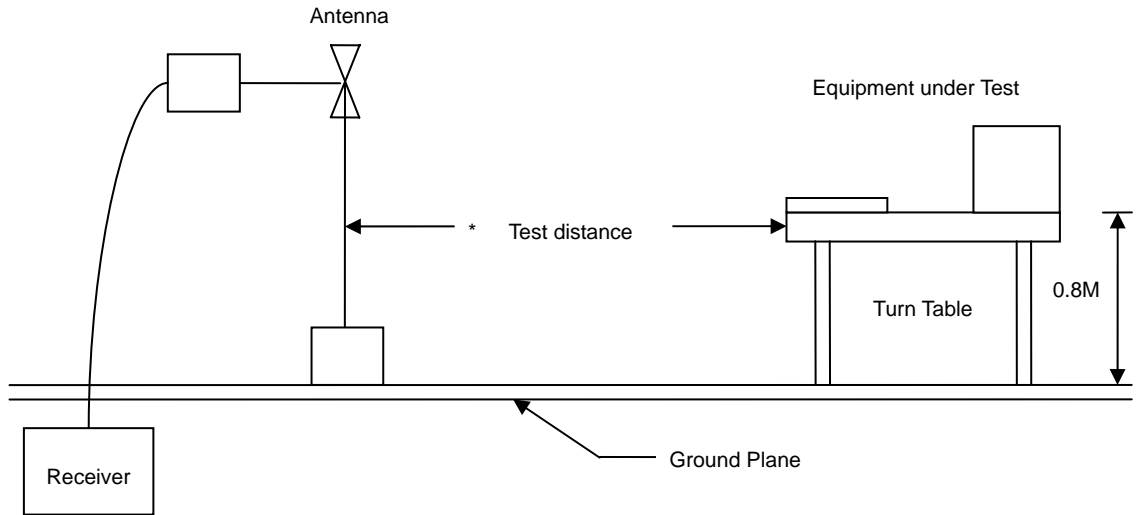
Frequency (MHz)	Distance Meters	Radiated (dB $\mu$ V / M)
30-230	10	30
230-1000	10	37

#### 3.2. Test Procedures

- The EUT was placed on a Rota table top 0.8 meter above ground.
- The EUT was set 3/10 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- The table was rotated 360 degrees to determine the position of the highest radiation.
- The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both horizontal polarization and vertical polarization of the antenna are set to make the measurement.
- For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 M to 4 M) and turn table (from 0 degree to 360 degrees) to find the maximum reading.
- Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- If the emission level of the EUT in peak mode was 6 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 6 dB margin will be repeated one by one using the quasi-peak method and reported.



### 3.3. Typical test Setup



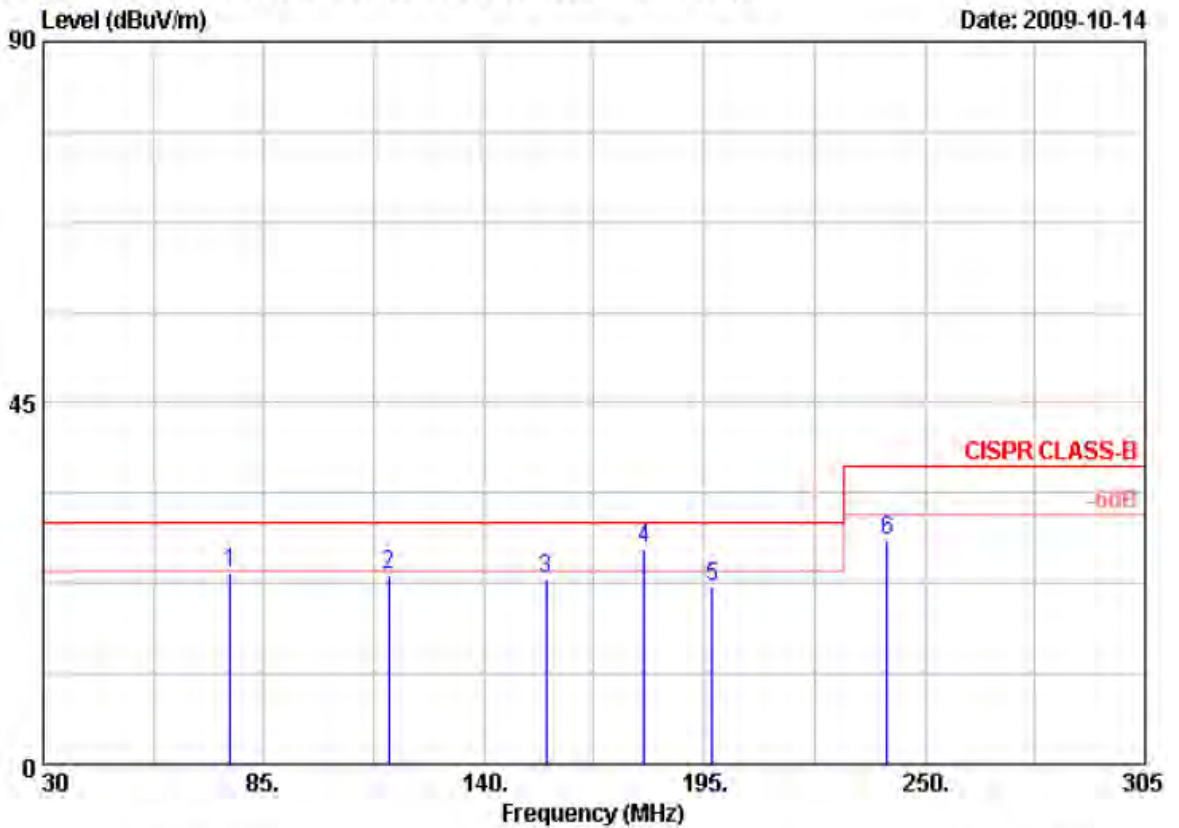
### 3.4. Measurement Equipment

Instrument	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Bilog Antenna	Schaffner	CBL6112B	2840	2009/05/14	2010/05/13
EMI Receiver	R&S	ESCI	100443	2008/12/19	2009/12/18
Amplifier	Agilent	8447D	2944A10593	2009/05/21	2010/05/20
AC Power Converter	APC	AFC-11005	F103120008	N/A	N/A



### 3.5. Test Result and Data

Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode 1	: PC Link	Temperature	: 28 °C
Memo	:	Humidity	: 71 %



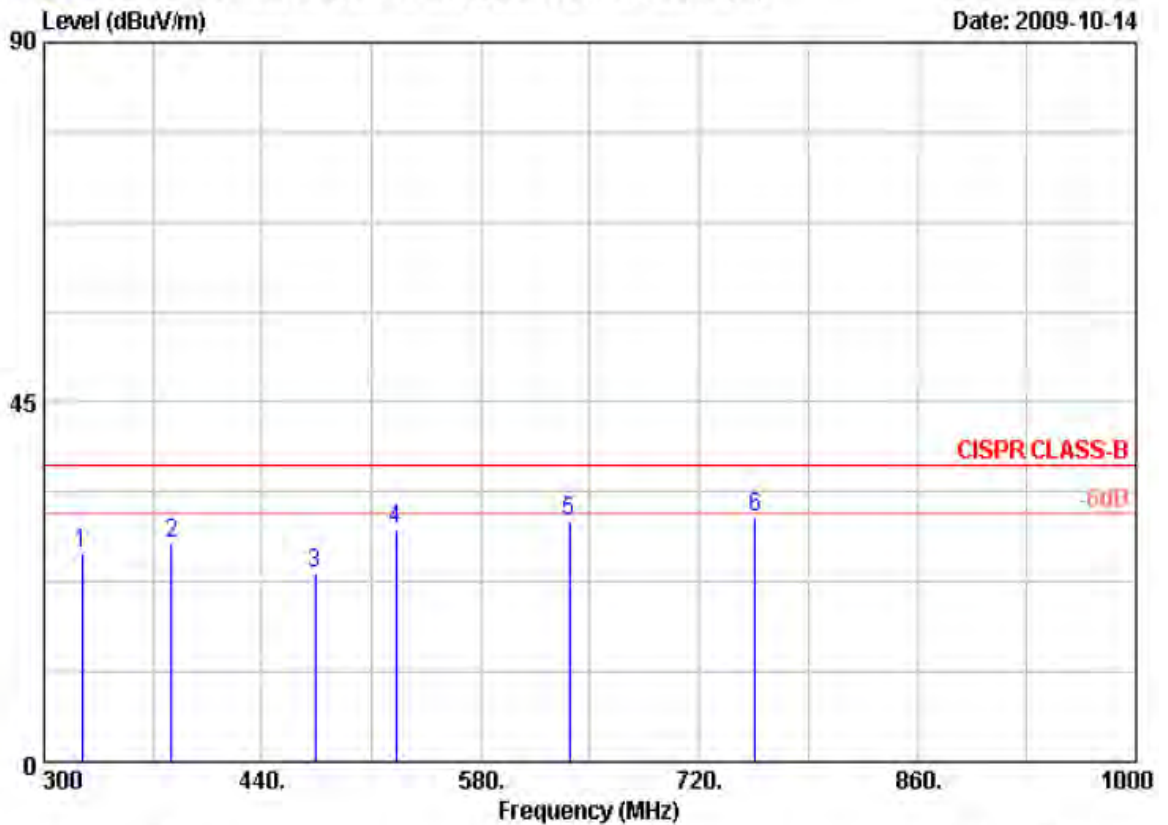
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	76.561	39.859	-16.040	23.819	30.000	-6.181	Peak	400	360
2	116.275	38.984	-15.512	23.472	30.000	-6.528	Peak	400	360
3	155.516	35.561	-12.557	23.004	30.000	-6.996	Peak	400	360
4	180.025	38.901	-12.127	26.774	30.000	-3.226	QP	100	255
5	197.025	37.864	-15.912	21.952	30.000	-8.048	Peak	400	360
6	240.645	42.516	-14.703	27.813	37.000	-9.187	Peak	400	360

Remarks: 1. Result = Read Value + Factor  
 2. Factor = Antenna factor + Cable loss - Amplifier factor





Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode 1	: PC Link	Temperature	: 28 °C
Memo	:	Humidity	: 71 %

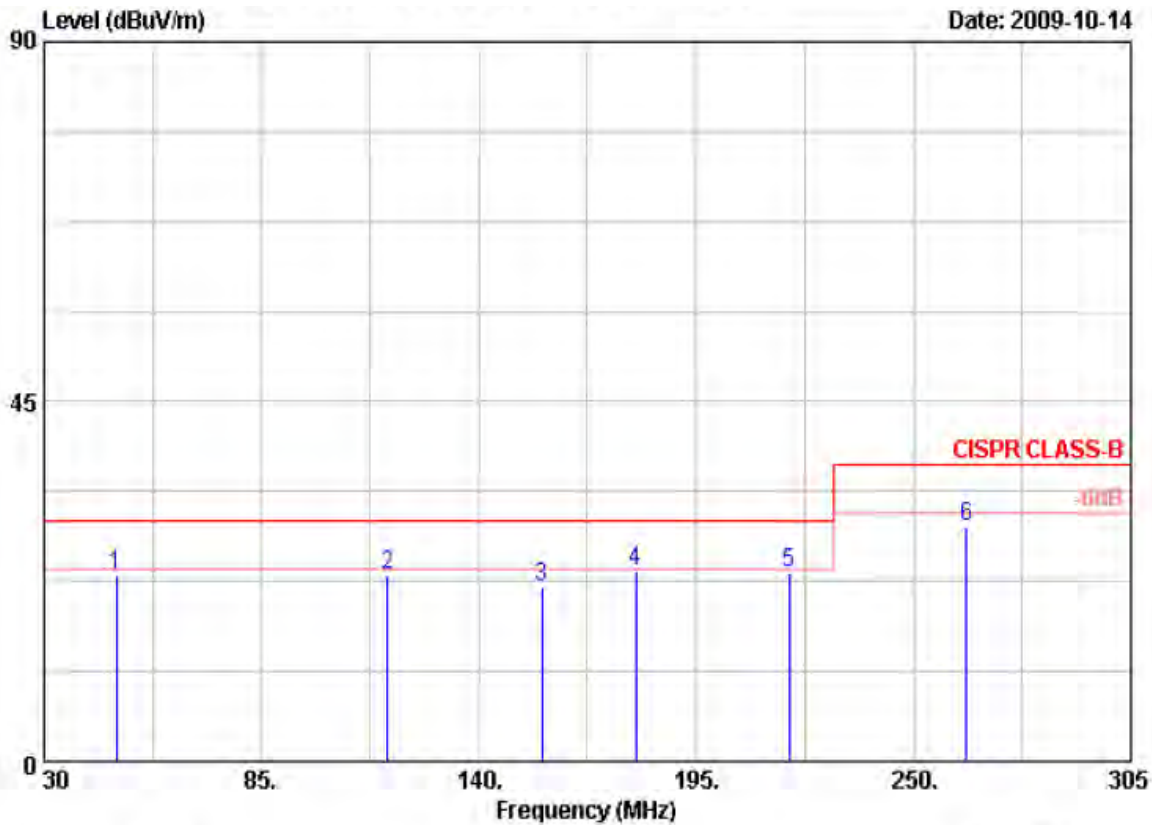


Item	Freq MHz	Read Value dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark	Ant Pos cm	Tab Pos Deg
1	324.075	36.437	-10.267	26.170	37.000	-10.830	Peak	400	0
2	382.000	35.456	-8.241	27.215	37.000	-9.785	Peak	400	0
3	473.847	30.354	-6.846	23.508	37.000	-13.492	Peak	400	0
4	525.684	35.562	-6.566	28.996	37.000	-8.004	Peak	400	0
5	636.493	34.751	-4.747	30.004	37.000	-6.996	Peak	400	0
6	756.024	33.131	-2.549	30.582	37.000	-6.418	Peak	400	0

Remarks: 1. Result = Read Value + Factor  
 2. Factor = Antenna factor + Cable loss - Amplifier factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode 1	: PC Link	Temperature	: 28 °C
Memo	:	Humidity	: 71 %

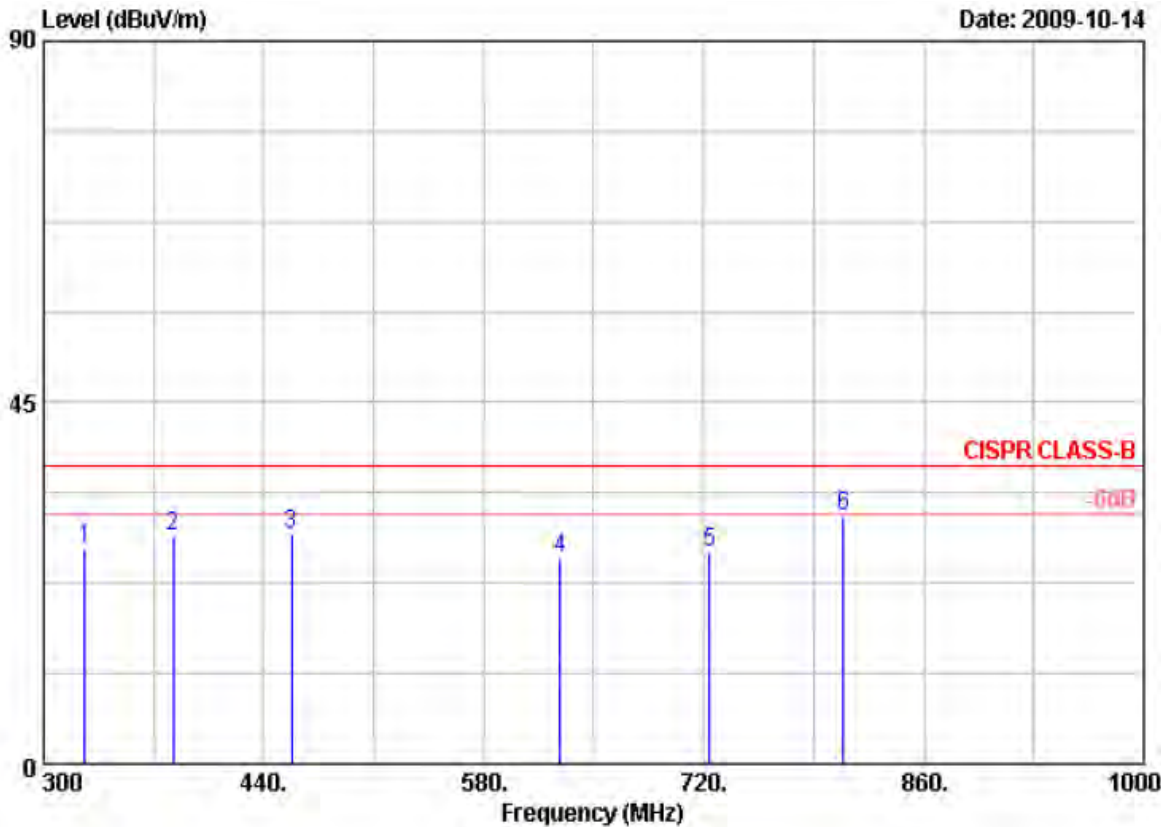


Item	Freq MHz	Read Value dBuV	Factor dB/m	Result dBuV/m	Limit dBuV/m	Margin dB	Remark	Ant Pos cm	Tab Pos Deg
1	48.423	38.411	-15.081	23.330	30.000	-6.670	Peak	400	0
2	116.844	38.716	-15.478	23.238	30.000	-6.762	Peak	400	0
3	155.947	34.389	-12.469	21.920	30.000	-8.080	Peak	400	0
4	179.711	35.843	-12.104	23.739	30.000	-6.261	Peak	400	0
5	218.438	39.735	-16.104	23.631	30.000	-6.369	Peak	400	0
6	263.456	42.486	-13.152	29.334	37.000	-7.666	Peak	400	0

Remarks: 1. Result = Read Value + Factor  
2. Factor = Antenna factor + Cable loss - Amplifier factor



Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode 1	: PC Link	Temperature	: 28 °C
Memo	:	Humidity	: 71 %

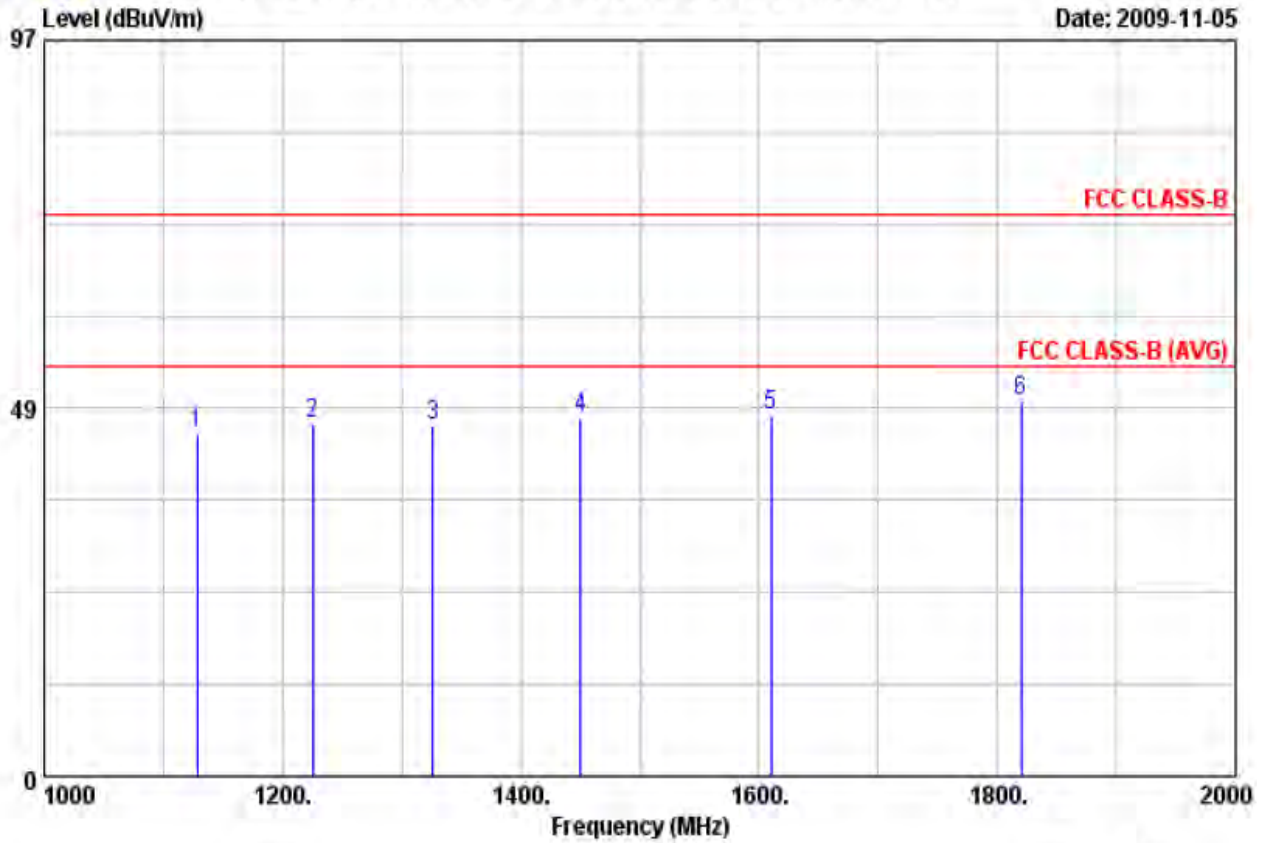


Item	Freq MHz	Read Value dBUV	Factor dB/m	Result dBUV/m	Limit dBUV/m	Margin dB	Remark	Ant Pos cm	Tab Pos Deg
1	326.456	36.889	-10.176	26.713	37.000	-10.287	Peak	400	0
2	382.590	36.490	-8.223	28.267	37.000	-8.733	Peak	400	0
3	457.532	35.489	-6.938	28.551	37.000	-8.449	Peak	400	0
4	628.456	30.457	-4.865	25.592	37.000	-11.408	Peak	400	0
5	723.532	29.890	-3.498	26.392	37.000	-10.608	Peak	400	0
6	809.056	31.991	-1.257	30.734	37.000	-6.266	Peak	400	0

Remarks: 1. Result = Read Value + Factor  
 2. Factor = Antenna factor + Cable loss - Amplifier factor



Power	: AC 120V	Pol/Phase	: VERTICAL
Test Mode 1	: PC Link	Temperature	: 23 °C
Memo	:	Humidity	: 73 %



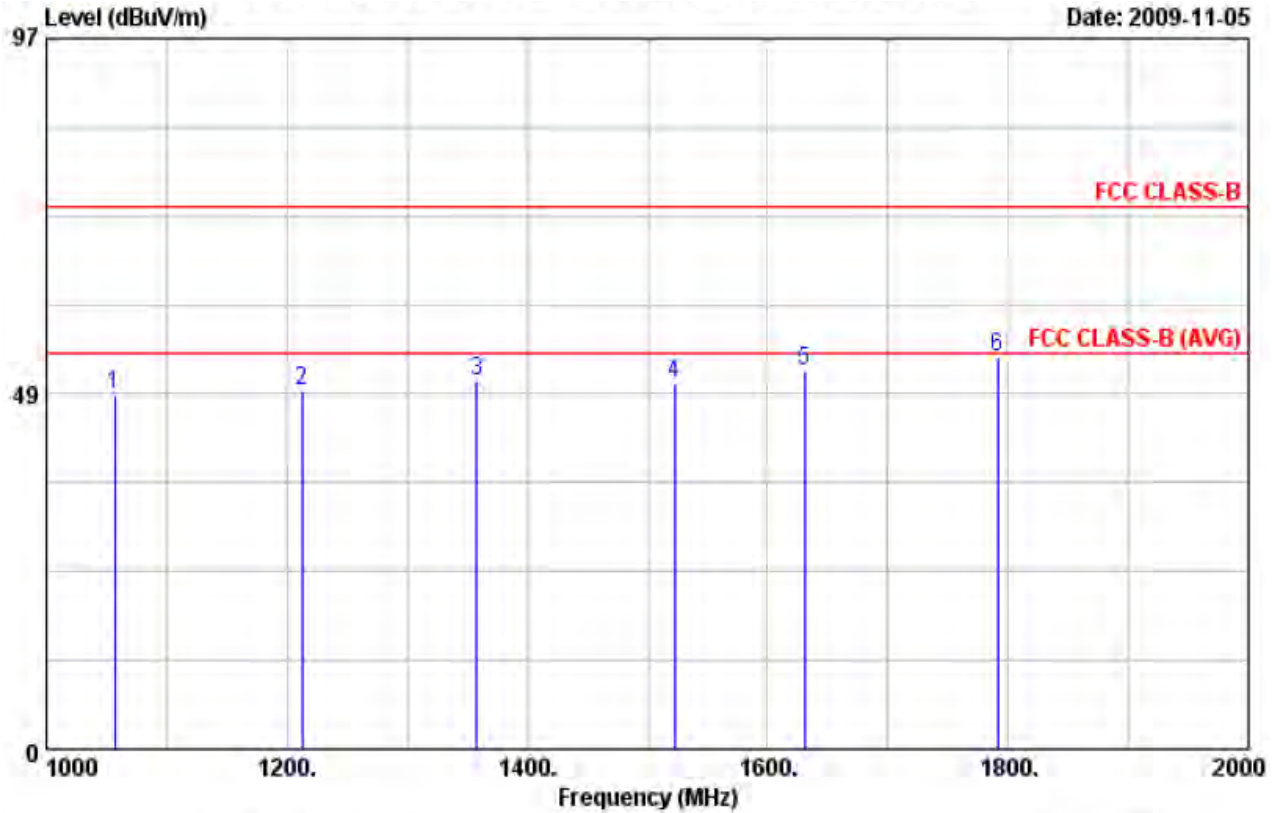
Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	1128.000	54.032	-8.832	45.200	74.000	-28.800	Peak	100	0
2	1225.000	54.800	-8.250	46.550	74.000	-27.450	Peak	100	0
3	1326.000	53.812	-7.644	46.168	74.000	-27.832	Peak	100	0
4	1450.000	54.141	-6.900	47.241	74.000	-26.759	Peak	100	0
5	1610.000	53.629	-5.984	47.645	74.000	-26.355	Peak	100	0
6	1820.000	54.319	-4.808	49.511	74.000	-24.489	Peak	100	0

Remarks: 1. Result = Read Value + Factor  
 2. Factor = Antenna factor + Cable loss - Amplifier factor





Power	: AC 120V	Pol/Phase	: HORIZONTAL
Test Mode 1	: PC Link	Temperature	: 23 °C
Memo	:	Humidity	: 73 %



Item	Freq	Read Value	Factor	Result	Limit	Margin	Remark	Ant Pos	Tab Pos
	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	Deg
1	1057.000	57.690	-9.258	48.432	74.000	-25.568	Peak	100	0
2	1213.000	57.348	-8.322	49.026	74.000	-24.974	Peak	100	0
3	1358.000	57.659	-7.452	50.207	74.000	-23.793	Peak	100	0
4	1523.000	56.472	-6.471	50.001	74.000	-23.999	Peak	100	0
5	1631.000	57.479	-5.866	51.613	74.000	-22.387	Peak	100	0
6	1791.000	58.394	-4.970	53.424	74.000	-20.576	Peak	100	0

Remarks: 1. Result = Read Value + Factor  
 2. Factor = Antenna factor + Cable loss - Amplifier factor

Test engineer: Karp



### 3.6. Test Photographs

Front View



Rear View





Appendix A. Photographs of EUT





