



**Spectrum Research &  
Testing Lab., Inc.**  
No. 101-10, Ling 8,  
Shan-Tong Li, Chung-Li  
City, Taoyuan, Taiwan

## TEST REPORT

Reference No.:B05012103  
Report No.:FCBA04010502-02  
Page:1 of 23  
Issued Date:Jan. 27, 2005

Product Name: Bluetooth Class 1 USB Adapter  
Model No.: BT007Si  
Applicant: Bluetake Technology Co., Ltd.  
5F, No. 27, Lane 155, Sec. 3, Pei Shen Road,  
Shen Keng Shiang, Taipei, Taiwan 222  
Date of Receipt: Oct. 28, 2004  
Finished date of Test: Nov. 18, 2004  
Applicable Standards: 47 CFR Part 15, Subpart B  
ANSI C63.4:2003

We, **Spectrum Research & Testing Laboratory Inc.**, hereby certify that one sample of the above was tested in our laboratory with positive results according to the above-mentioned standards. The records in the report are an accurate account of the results. Details of the results are given in the subsequent pages of this report.

Checked By : Hugo Yeh, Date: Jan. 27, 2005  
( Hugo Yeh )

Approved By : J. H., Date: 1/27/2005  
( Johnson Ho, Director )

**NVLAP**<sup>®</sup>

Lab Code: 200099-0

 <p><b>Spectrum Research &amp; Testing Lab., Inc.</b> No. 101-10, Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan, Taiwan</p>	<p><b>TEST REPORT</b></p>	<p>Reference No.:B05012103 Report No.:FCBA04010502-02 Page:2 of 23 Issued Date:Jan. 27, 2005</p>
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## 1. DOCUMENT POLICY AND TEST STATEMENT

### 1.1 DOCUMENT POLICY

- The report shall not be reproduced except in full, without the written approval of SRT Lab, Inc.
- The report must not be used by the applicant to claim that the product is endorsed by NVLAP, TÜV, NEMKO and SRT.
- The NVLAP logo applies only to the applicable standards specified in this report.

### 1.2 TEST STATEMENT

- The test results in the report apply only to the unit tested by SRT Lab.
- There was no deviation from the requirements of test standards during the test.
- AC power source, 120 VAC/60 Hz, was used during the test.

### 1.3 EUT MODIFICATION

- No modification in SRT Lab.

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## 2. DESCRIPTION OF EUT AND TEST MODE

### 2.1 GENERAL DESCRIPTION OF EUT

PRODUCT	Bluetooth Class 1 USB Adapter
MODEL NO.	BT007Si
POWER SUPPLY	5Vdc Computer USB supply
CABLE	N/A
I/O PORT	N/A
FREQUENCY BAND	2400~2483.5MHz
CARRIER FREQUENCY	CH0: 2402MHz~CH78: 2480MHz
NUMBER OF CHANNEL	79
CHANNEL SPACING	1 MHz
RATED RF OUTPUT POWER	1 mW (0dBm)
I.F. & L.O.	IF=1MHz, LO=RF-IF
MODULATION TYPE	GFSK
BIT RATE OF TRANSMISSION	1Mbps
ANTENNA TYPE	Printed antenna
ANTENNA GAIN	0 dBi

**NOTE :** For more detailed features, please refer to the manufacturer's specification or User's Manual of EUT.

### 2.2 DESCRIPTION OF SUPPORT UNIT

The EUT was tested with a PC system and configured by the requirement of ANSI C63.4. All interface ports were connected to the appropriate support units via specific cables. The support units and cables are listed below.

NO	DEVICE	BRAND	MODEL #	FCC ID/DOC	CABLE
1	NOTEBOOK	DELL	PP01L	DOC	1.5m unshielded power cord
2	PRINTER	EPSON	STYLUS C20SX	DOC	1.5m unshielded power cord 1.2m shielded data cable
3	MODEM	ACEEX	DM-1414	DOC	1.5m unshielded DC power cable 1.2m shielded data cable
4	BLUETOOTH HEADPHONE	AIR2U	13909	DOC	N/A

**NOTE :** For the actual test configuration, please refer to the photos of testing.

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## 2.3 DESCRIPTION OF TEST MODE

79 channels are provided by EUT. The 3 channels of lower, medium and higher were chosen for test.

Channel	Frequency (MHz)
0	2402
39	2441
78	2480

### NOTE :

1. Below 1 GHz, the channel 0, 39 and 78 were pre-tested in chamber. The channel 78, worst case one, was chosen for conducted and radiated emission test.
2. Above 1 GHz, the channel 0, 39 and 78 were tested individually

## 3. DESCRIPTION OF APPLIED STANDARDS

The EUT is a kind of wireless product and to be connected with a PC system for normal use. According to the specifications provided by the applicant, it must comply with the requirements of the following standards:

47 CFR Part 15, Subpart B

ANSI C63.4:2003

All tests have been performed and recorded as the above standards.

 <p><b>Spectrum Research &amp; Testing Lab., Inc.</b> No. 101-10, Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan, Taiwan</p>	<h1>TEST REPORT</h1>	Reference No.:B05012103 Report No.:FCBA04010502-02 Page:6 of 23 Issued Date:Jan. 27, 2005
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## 4. TECHNICAL CHARACTERISTICS TEST

### 4.1 CONDUCTED EMISSION TEST

#### 4.1.1 LIMIT

Frequency (MHz)	Class A (dB $\mu$ V)		Class B (dB $\mu$ V)	
	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

#### NOTE :

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.

#### 4.1.2 TEST EQUIPMENT

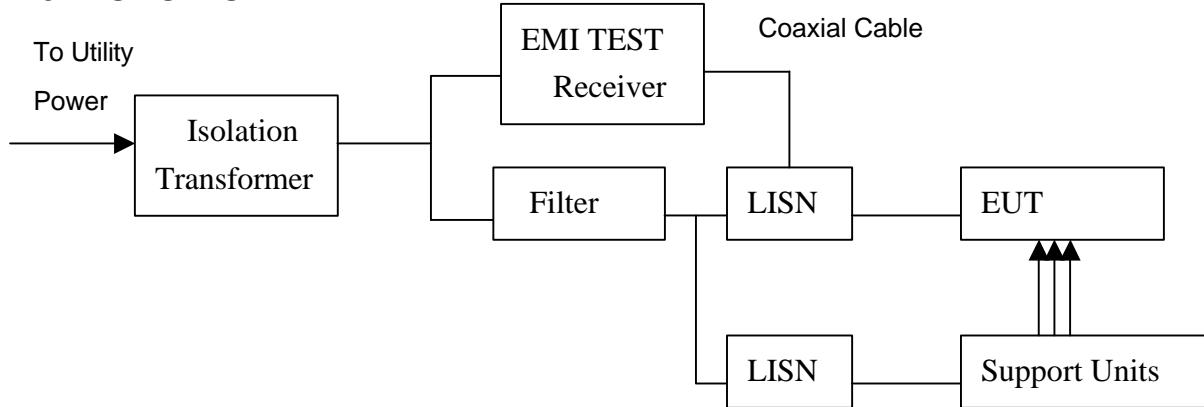
The following test equipment was used for the test:

EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DUE DATE OF CAL. & CAL. CENTER
EMI TEST RECEIVER	9 kHz TO 30 MHz	ROHDE & SCHWARZ	ESHS30/ 826003/008	AUG. 2005 ETC
LISN (for EUT)	50 $\mu$ H, 50 ohm	SOLAR ELECTRONICS	FCC-LISN-50-25-2 / 01018	NOV. 2005 ETC
LISN (for Peripheral)	50 $\mu$ H, 50 ohm	SOLAR ELECTRONICS	9252-50-R-24-BNC / 951318	JUN. 2005 ETC
50 ohm TERMINATOR	50 ohm	HP	11593A/ 2	MAR. 2005 ETC
COAXIAL CABLE	3m	SUNCITY	J400/ 3M	JUL. 2005 SRT
ISOLATION TRANSFORMER	N/A	APC	AFC-11015/ F102040016	N/A
FILTER	2 LINE, 30A	FIL.COIL	FC-943/ 771	N/A
GROUND PLANE	2.3M (H) x 2.4M (W)	SRT	N/A	N/A
GROUND PLANE	2.4M (H) x 2.4M (W)	SRT	N/A	N/A

**NOTE:** The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.



#### 4.1.3 TEST SETUP



#### NOTE:

1. The EUT was put on a wooden table with 0.8m heights above ground plane, and 0.4m away from reference ground plane (> 2mx2m).
2. For the actual test configuration, please refer to the photos of testing.
3. The serial no. of the LISN connected to EUT is 01018.
4. The serial no. of the LISN connected to support units is 951318.

#### 4.1.4 TEST PROCEDURE

The EUT was tested according to the requirement of ANSI C63.4:2003 and CISPR22:2003. The frequency spectrum from 0.15 MHz to 30 MHz was investigated. The LISN used was 50 ohm/50μH as specified. All readings were quasi-peak and average values with 10 kHz resolution bandwidth of the test receiver. The EUT system was operated in all typical methods by users. Both lines of the power mains of EUT were measured and the cables connected to EUT and support units were moved to find the maximum emission levels for each frequency.

First, find the margin or higher points at least 6 points by software, then use manual to find the maximum data. The procedure is referred on the test procedure of SRT LAB.

#### 4.1.5 EUT OPERATING CONDITION

1. Set the EUT under transmission condition continuously at a specific channel frequency.
2. Under Windows XP ran “EMI TEST” and “Media Player” programs.
3. PC sent "H" pattern or accessed the following peripherals directly or via EUT:
  - RS232
  - Printer
  - FDD
  - HDD

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## 4.1.6 TEST RESULT

Temperature:	27°C	Humidity:	59 %RH
Ferquency Range:	0.15 – 30 MHz	Tested Mode:	Link
Receiver Detector:	Q.P. and AV.	Tested By:	Nick Chen

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBmV)		Emission Level (dBmV)		Limit (dBmV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.168	0.30	48.16	40.85	48.46	41.15	65.04	55.04	-16.58	-13.89
0.509	0.24	31.82	28.11	32.06	28.35	56.00	46.00	-23.94	-17.65
4.061	0.10	31.94	22.45	32.04	22.55	56.00	46.00	-23.96	-23.45
14.602	0.10	36.20	28.91	36.30	29.01	60.00	50.00	-23.70	-20.99
14.714	0.10	34.50	28.32	34.60	28.42	60.00	50.00	-25.40	-21.58
15.502	0.10	32.48	26.44	32.58	26.54	60.00	50.00	-27.42	-23.46

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBmV)		Emission Level (dBmV)		Limit (dBmV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.168	0.30	49.74	41.13	50.04	41.43	65.04	55.04	-15.00	-13.61
0.509	0.24	32.40	28.52	32.64	28.76	56.00	46.00	-23.36	-17.24
2.200	0.11	29.14	24.42	29.25	24.53	56.00	46.00	-26.75	-21.47
13.587	0.10	33.56	27.44	33.66	27.54	60.00	50.00	-26.34	-22.46
14.714	0.10	33.84	27.89	33.94	27.99	60.00	50.00	-26.06	-22.01
15.102	0.10	32.88	26.60	32.98	26.70	60.00	50.00	-27.02	-23.30

### NOTE :

1. Measurement uncertainty is +/-1.32dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
4. Margin value = Emission level - Limit
5. The emission of other frequencies were very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

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Temperature:	27°C	Humidity:	59 %RH
Ferquency Range:	0.15 – 30 MHz	Tested Mode:	CH0
Receiver Detector:	Q.P. and AV.	Tested By:	Nick Chen
		Tested Date:	Nov. 16, 2004

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB <sub>m</sub> V)		Emission Level (dB <sub>m</sub> V)		Limit (dB <sub>m</sub> V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.168	0.30	49.86	41.36	50.16	41.66	65.04	55.04	-14.88	-13.38
0.504	0.24	32.28	29.18	32.52	29.42	56.00	46.00	-23.48	-16.58
2.705	0.10	28.72	25.79	28.82	25.89	56.00	46.00	-27.18	-20.11
13.973	0.10	32.60	26.77	32.70	26.87	60.00	50.00	-27.30	-23.13
14.703	0.10	32.94	27.36	33.04	27.46	60.00	50.00	-26.96	-22.54
15.267	0.10	32.12	26.44	32.22	26.54	60.00	50.00	-27.78	-23.46

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB <sub>m</sub> V)		Emission Level (dB <sub>m</sub> V)		Limit (dB <sub>m</sub> V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.168	0.30	48.40	40.94	48.70	41.24	65.04	55.04	-16.34	-13.81
0.504	0.24	32.40	28.45	32.64	28.69	56.00	46.00	-23.36	-17.31
4.111	0.10	32.66	23.01	32.76	23.11	56.00	46.00	-23.24	-22.89
13.404	0.10	33.34	27.52	33.44	27.62	60.00	50.00	-26.56	-22.38
14.308	0.10	32.90	26.97	33.00	27.07	60.00	50.00	-27.00	-22.93
17.624	0.10	32.34	26.68	32.44	26.78	60.00	50.00	-27.56	-23.22

**NOTE :**

1. Measurement uncertainty is +/-1.32dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
4. Margin value = Emission level - Limit
5. The emission of other frequencies were very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

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Temperature:	27 °C	Humidity:	59 %RH
Ferquency Range:	0.15 – 30 MHz	Tested Mode:	CH39
Receiver Detector:	Q.P. and AV.	Tested By:	Nick Chen
		Tested Date:	Nov. 16, 2004

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB <sub>m</sub> V)		Emission Level (dB <sub>m</sub> V)		Limit (dB <sub>m</sub> V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.168	0.30	48.70	40.95	49.00	41.25	65.04	55.04	-16.04	-13.79
0.504	0.24	32.54	29.17	32.78	29.41	56.00	46.00	-23.22	-16.59
3.715	0.10	32.10	22.75	32.20	22.85	56.00	46.00	-23.80	-23.15
13.567	0.10	34.44	28.12	34.54	28.22	60.00	50.00	-25.46	-21.78
14.186	0.10	34.48	27.99	34.58	28.09	60.00	50.00	-25.42	-21.91
17.347	0.10	31.18	24.77	31.28	24.87	60.00	50.00	-28.72	-25.13

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dB <sub>m</sub> V)		Emission Level (dB <sub>m</sub> V)		Limit (dB <sub>m</sub> V)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.165	0.30	47.04	38.45	47.34	38.75	65.19	55.19	-17.85	-16.44
0.509	0.24	32.24	28.62	32.48	28.86	56.00	46.00	-23.52	-17.14
2.477	0.11	29.12	26.11	29.23	26.22	56.00	46.00	-26.77	-19.78
13.851	0.10	33.12	27.21	33.22	27.31	60.00	50.00	-26.78	-22.69
14.074	0.10	33.64	27.75	33.74	27.85	60.00	50.00	-26.26	-22.15
15.031	0.10	32.12	28.41	32.22	28.51	60.00	50.00	-27.78	-21.49

**NOTE :**

1. Measurement uncertainty is +/-1.32dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
4. Margin value = Emission level - Limit
5. The emission of other frequencies were very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

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Temperature:	27 °C	Humidity:	59 %RH
Ferquency Range:	0.15 – 30 MHz	Tested Mode:	CH78
Receiver Detector:	Q.P. and AV.	Tested By:	Nick Chen
		Tested Date:	Nov. 16, 2004

Power Line Measured : Line

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBmV)		Emission Level (dBmV)		Limit (dBmV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.168	0.30	50.14	41.38	50.44	41.68	65.04	55.04	-14.60	-13.36
0.509	0.24	32.20	27.55	32.44	27.79	56.00	46.00	-23.56	-18.21
4.111	0.10	28.56	20.28	28.66	20.38	56.00	46.00	-27.34	-25.62
13.678	0.10	33.24	27.01	33.34	27.11	60.00	50.00	-26.66	-22.89
14.236	0.10	33.58	26.96	33.68	27.06	60.00	50.00	-26.32	-22.94
15.144	0.10	31.32	25.81	31.42	25.91	60.00	50.00	-28.58	-24.09

Power Line Measured : Neutral

Freq. (MHz)	Correct. Factor (dB)	Reading Value (dBmV)		Emission Level (dBmV)		Limit (dBmV)		Margin (dB)	
		Q.P.	AV.	Q.P.	AV.	Q.P.	AV.	Q.P.	AV.
0.168	0.30	48.66	40.97	48.96	41.27	65.04	55.04	-16.08	-13.77
0.504	0.24	32.66	29.34	32.90	29.58	56.00	46.00	-23.10	-16.42
4.160	0.10	28.50	20.08	28.60	20.18	56.00	46.00	-27.40	-25.82
13.790	0.10	34.30	28.10	34.40	28.20	60.00	50.00	-25.60	-21.80
14.186	0.10	33.30	27.43	33.40	27.53	60.00	50.00	-26.60	-22.47
17.511	0.10	31.80	24.54	31.90	24.64	60.00	50.00	-28.10	-25.36

**NOTE :**

1. Measurement uncertainty is +/-1.32dB
2. Emission level = Reading value + Correction factor
3. Correction Factor = Cable loss + Insertion loss of LISN
4. Margin value = Emission level - Limit
5. The emission of other frequencies were very low against the limit.
6. "-": The Quasi-peak reading value also meets average limit and measurement with the average detector is unnecessary.

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## 4.2 RADIATED EMISSION TEST

### 4.2.1 LIMIT

FCC Part15, Subpart C Section 15.209 limit of radiated emission for frequency below1000MHz. The emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

FREQUENCY (MHz)	DISTANCE (m)	FIELD STRENGTH (dBmV/m)
30 - 88	3	40.0
88 - 216	3	43.5
216 - 960	3	46.0
Above 960	3	54.0

#### NOTE :

1. In the emission tables above , the tighter limit applies at the band edges.
2. Distance refers to the distance between measuring instrument, antemma, and the closest point of any part of the device or system.

FCC Part 15, Section15.35(b) limit of radiated emission 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

 <p><b>Spectrum Research &amp; Testing Lab., Inc.</b> No. 101-10, Ling 8, Shan-Tong Li, Chung-Li City, Taoyuan, Taiwan</p>	<h1>TEST REPORT</h1>	Reference No.:B05012103 Report No.:FCBA04010502-02 Page:13 of 23 Issued Date:Jan. 27, 2005
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## 4.2.2 TEST EQUIPMENT

The following test equipment was used during the radiated emission test:

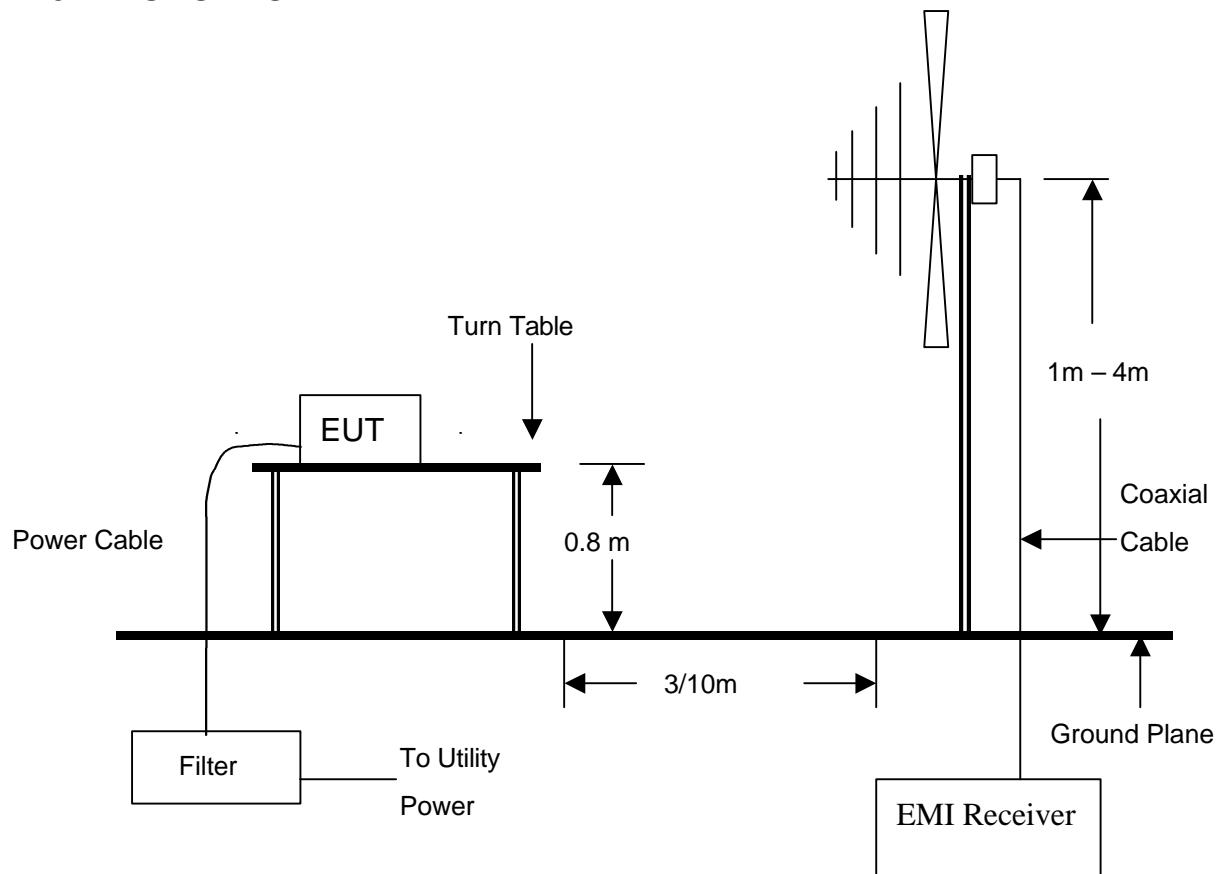
EQUIPMENT/ FACILITIES	SPECIFICATIONS	MANUFACTURER	MODEL#/ SERIAL#	DUe DATE OF CAL. & CAL. CENTER
EMI TEST RECEIVER	20 MHz TO 1000 MHz	ROHDE & SCHWARZ	ESVS30/ 841997/003	SEP. 2005 ETC
BI-LOG ANTENNA	25 MHz TO 2 GHz	EMCO	3142/ 9701-1124	APR. 2005 SRT
SPECTRUM ANALYZER	9 KHz TO 26.5 GHz	HP	8593E/ 3710A03220	MAY 2005 ETC
PRE-AMPLIFIER	1 GHz TO 26.5 GHz	HP	8449B/ 3008A01019	DEC. 2004 ETC
HORN ANTENNA	1 GHz TO 18 GHz	EMCO	3115/ 9602-4681	NOV. 2004 ETC
OATS	3 – 10 M MEASUREMENT	SRT	SRT-1	APR. 2005 SRT
COAXIAL CABLE	25M	SUNCITY	J400/ 25M	AUG. 2005 SRT
FILTER	2 LINE, 30A	FIL.COIL	FC-943/ 869	N/A
FREQUENCY CONVERTER	N/A	APC	AFC-2KBB/ F100030031	AUG. 2005 SRT

**NOTE:**

1. The calibration interval of the above test equipment is one year and the calibrations are traceable to NML/ROC and NIST/USA.
2. The Open Area Test Site (SRT-1) is registered by FCC with No. 90957 and VCCI with No. R-1081.
3. The Open Area Test Site (SRT-2) is registered by FCC with No. 98458 and VCCI with No. R-1168.



### 4.2.3 TEST SET-UP



#### NOTE :

1. The EUT system was put on a wooden table with 0.8m heights above a ground plane.
2. For the actual test configuration, please refer to the photos of testing.

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#### **4.2.4 TEST PROCEDURE**

The EUT was tested according to the requirement of ANSI C63.4:2003 and CISPR 22:2003. The measurements were made at an open area test site with 10 meter measurement distance under 1 GHz and with 3m distance above 1GHz. The frequency spectrum measured started from 30 MHz. Under 1 GHz, all readings were quasi-peak values with 120 kHz resolution bandwidth of the test receiver. Above 1 GHz, the measurements were made at an open area test site with 3 meter measurement distance and all readings were peak or average values with 1 MHz resolution bandwidth of the test receiver. The EUT system was operated in all typical methods by users. The cables connected to EUT and support units were moved to find the maximum emission levels for each frequency.

First, find the margin or higher points at least 6 points by software, then use manual to find the maximum data. The procedure is referred on the test procedure of SRT LAB.

#### **4.2.5 EUT OPERATING CONDITION**

Same as section 4.1.5 of this report.

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## 4.2.6 TEST RESULT

Temperature:	24 °C	Humidity:	59 %RH
Ferquency Range:	30 – 1000 MHz	Measured Distance:	3m
Receiver Detector:	Q.P.	Tested Mode:	Link
Tested By:	Nick Chen	Tested Date:	Nov. 18, 2004

Antenna Polarization:Horizontal

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	AZ(°)	EL(m)
155.9558	1.71	8.28	32.7	42.69	49.50	-6.82	346.8	4.0
167.2154	1.78	9.16	34.8	45.74	49.50	-3.76	187.1	4.0
179.6548	1.84	10.12	28.9	40.86	49.50	-8.64	10.6	4.0
399.6598	2.72	15.78	27.6	46.10	52.00	-5.90	355.9	2.8
927.5469	3.79	24.16	20.1	48.05	52.00	-3.95	58.9	1.0
933.1856	3.75	24.20	19.7	47.65	52.00	-4.35	212.6	1.0

Antenna Polarization:Vertical

Frequency (MHz)	Cable Loss (dB)	Antenna Factor (dB/m)	Reading Data (dB $\mu$ V)	Emission Level (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	AZ(°)	EL(m)
133.2512	1.62	7.09	36.8	45.51	49.50	-4.00	248.6	1.3
179.6540	1.84	10.12	31.5	43.46	49.50	-6.04	107.5	1.0
232.6785	2.04	11.48	29.7	43.22	52.00	-8.78	344.8	1.0
397.6589	2.71	15.75	30.5	48.96	52.00	-3.04	47.6	1.0
452.0357	2.89	18.66	24.8	46.35	52.00	-5.65	168.6	1.0
832.4548	3.82	23.25	21.9	48.98	52.00	-3.02	89.4	1.0

### NOTE :

1. Measurement uncertainty is +/-2dB.
2. \*\*: Measurement does not apply for this frequency.
3. Emission Level = Reading Value + Ant. Factor + Cable Loss.
4. The field strength of other emission frequencies were very low against the limit.

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Temperature:	22°C	Humidity:	56%RH
Ferquency Range:	1 – 25 GHz	Test mode:	Ch0
Receiver Detector:	PK. or AV.	Measured Distance:	3m
Tested by:	Peter Tsai		

Antenna Polarization : Horizontal

Freq./MHz	Cable	Ant.	Reading		Emission		Limit Line		Margin		AZ (o)	EL (m)		
	Loss (dB)	Fact. (dB)	(dBuV)		(dBuV/m)		(dBuV/m)		(dBuV/m)					
			PK	AV	PK	AV	PK	AV	PK	AV				
2402.00(F)	-32.16	28.00	101.3	59.4	97.2	55.2	N/A	N/A	N/A	N/A	81.6	1.012		
2497.60	-32.16	28.19	55.0	36.4	51.1	32.4	74.0	54.0	-22.9	-21.6	48.6	1.031		
2333.90	-32.35	27.87	48.8	43.2	44.3	38.7	74.0	54.0	-29.7	-15.3	77.5	1.103		
2563.30	-31.88	28.55	52.3	43.2	48.9	39.9	74.0	54.0	-25.1	-14.1	74.9	1.117		
4804.00	-30.47	33.64	42.8	*	46.0	*	74.0	54.0	-28.0	*	194.3	1.671		
7206.00	-28.90	36.26	41.7	*	49.1	*	74.0	54.0	-24.9	*	273.2	1.374		

Antenna Polarization : Vertical

Freq/MHz	Cable	Ant.	Reading		Emission		Limit Line		Margin		AZ (o)	EL (m)		
	Loss (dB)	Fact. (dB)	(dBuV)		(dBuV/m)		(dBuV/m)		(dBuV/m)					
			PK	AV	PK	AV	PK	AV	PK	AV				
2402.00(F)	-32.16	28.54	98.6	55.9	95.0	52.3	N/A	N/A	N/A	N/A	330.7	1.047		
2497.60	-32.16	28.19	54.1	37.2	50.1	33.2	74.0	54.0	-23.9	-20.8	327.4	1.103		
2531.40	-31.94	28.37	55.8	38.4	52.2	34.8	74.0	54.0	-21.8	-19.2	336.2	1.041		
2332.00	-32.35	27.86	47.0	*	42.5	*	74.0	54.0	-31.5	*	263.1	1.118		
4804.00	-30.47	33.64	42.3	*	45.5	*	74.0	54.0	-28.5	*	183.1	1.231		
7206.00	-28.90	36.26	43.4	*	50.7	*	74.0	54.0	-23.3	*	234.1	1.663		

**NOTE :** 1. Measurement uncertainty is less than +/-2dB

2. \*\*: Measurement does not apply for this frequency.

3. Emission Level = Reading Value + Ant. Factor + Cable Loss

4. The field strength of other emission frequencies were very low against the limit.

5.(F):The field strength of fundamental frequency.

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Temperature: 22°C Humidity: 56%RH  
Ferquency Range: 1 – 25 GHz Test mode: Ch39  
Receiver Detector: PK. or AV. Measured Distance: 3m  
Tested by: Peter Tsai

### Antenna Polarization : Horizontal

Freq./MHz	Cable	Ant.	Reading		Emission		Limit Line		Margin		AZ (o)	EL (m)		
	Loss	Fact.	(dBuV)		(dBuV/m)		(dBuV/m)		(dBuV/m)					
	(dB)	(dB)	PK	AV	PK	AV	PK	AV	PK	AV				
2441.00(F)	-32.23	28.08	101.7	58.7	97.5	54.6	N/A	N/A	N/A	N/A	339.4	2.013		
2506.00	-32.12	28.23	59.9	39.7	56.0	35.8	74.0	54.0	-18.0	-18.2	327.8	1.793		
2377.90	-32.25	27.95	48.8	*	44.5	*	74.0	54.0	-29.5	*	341.3	1.831		
2561.60	-31.87	28.54	51.5	33.4	48.2	30.1	74.0	54.0	-25.8	-23.9	297.1	1.327		
4882.00	-30.26	33.71	42.0	*	45.5	*	74.0	54.0	-28.5	*	136.7	1.113		
7323.00	-29.04	36.36	42.9	*	50.2	*	74.0	54.0	-23.8	*	259.1	1.226		

### Antenna Polarization : Vertical

Freq./MHz	Cable	Ant.	Reading		Emission		Limit Line		Margin		AZ (o)	EL (m)		
	Loss	Fact.	(dBuV)		(dBuV/m)		(dBuV/m)		(dBuV/m)					
	(dB)	(dB)	PK	AV	PK	AV	PK	AV	PK	AV				
2441.00(F)	-32.23	28.62	100.4	56.8	96.8	53.2	N/A	N/A	N/A	N/A	337.1	1.108		
2377.50	-32.25	27.95	50.5	37.8	46.2	33.5	74.0	54.0	-27.8	-20.5	341.1	1.113		
2496.50	-32.17	28.19	53.8	40.4	49.8	36.4	74.0	54.0	-24.2	-17.6	323.2	1.008		
2506.00	-32.12	28.23	58.7	41.3	54.8	37.4	74.0	54.0	-19.2	-16.6	336.4	1.213		
4882.00	-30.26	33.71	41.5	*	44.9	*	74.0	54.0	-29.1	*	83.3	1.764		
7323.00	-29.04	36.36	42.7	*	50.0	*	74.0	54.0	-24.0	*	151.3	1.347		

- NOTE :**
1. Measurement uncertainty is less than +/-2dB
  2. \*\*: Measurement does not apply for this frequency.
  3. Emissiom Level = Reading Value + Ant. Factor + Cable Loss
  4. The field strength of other emission frequencies were very low against the limit.
  - 5.(F):The field stregth of fundamental frquency.

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Temperature: 22°C Humidity: 56%RH  
Ferquency Range: 1 – 25GHz Test mode: Ch78  
Receiver Detector: PK. or AV. Measured Distance: 3m  
Tested by: Peter Tsai

### Antenna Polarization : Horizontal

Freq./MHz	Cable	Ant.	Reading		Emission		Limit Line		Margin		AZ (o)	EL (m)		
	Loss	Fact.	(dBuV)		(dBuV/m)		(dBuV/m)		(dBuV/m)					
	(dB)	(dB)	PK	AV	PK	AV	PK	AV	PK	AV				
2480.00(F)	-32.19	28.16	106.2	60.7	102.2	56.7	N/A	N/A	N/A	N/A	54.5	1.371		
2416.90	-32.19	28.03	56.7	39.6	52.5	35.4	74.0	54.0	-21.5	-18.6	61.3	1.283		
2513.10	-32.07	28.27	63.6	39.1	59.8	35.3	74.0	54.0	-14.2	-18.7	56.1	1.437		
2483.50	-32.19	28.17	71.5	43.7	67.5	39.7	74.0	54.0	-6.5	-14.3	55.4	1.293		
4960.00	-30.26	33.77	47.2	*	50.7	*	74.0	54.0	-23.3	*	73.1	1.938		
7440.00	-28.95	36.45	42.5	*	50.0	*	74.0	54.0	-24.0	*	213.2	2.034		

### Antenna Polarization : Vertical

Freq./MHz	Cable	Ant.	Reading		Emission		Limit Line		Margin		AZ (o)	EL (m)		
	Loss	Fact.	(dBuV)		(dBuV/m)		(dBuV/m)		(dBuV/m)					
	(dB)	(dB)	PK	AV	PK	AV	PK	AV	PK	AV				
2480.00(F)	-32.19	28.73	103.1	54.3	99.6	50.8	N/A	N/A	N/A	N/A	336.6	1.106		
2416.50	-32.19	28.03	55.1	40.6	51.0	36.4	74.0	54.0	-23.0	-17.6	323.1	1.113		
2512.50	-32.08	28.27	58.2	41.7	54.4	37.9	74.0	54.0	-19.6	-16.1	283.7	1.212		
2483.50	-32.19	28.17	70.8	46.8	66.8	42.8	74.0	54.0	-7.2	-11.2	303.2	1.108		
4960.00	-30.26	33.77	46.8	*	50.3	*	74.0	54.0	-23.7	*	43.13	1.011		
7440.00	-28.95	36.45	43.0	*	50.5	*	74.0	54.0	-23.5	*	267.3	1.673		

- NOTE :**
1. Measurement uncertainty is less than +/- 2dB
  2. \*\*: Measurement does not apply for this frequency.
  3. Emissiom Level = Reading Value + Ant. Factor + Cable Loss
  4. The field strength of other emission frequencies were very low against the limit.
  - 5.(F):The field stregth of fundamental frquency.



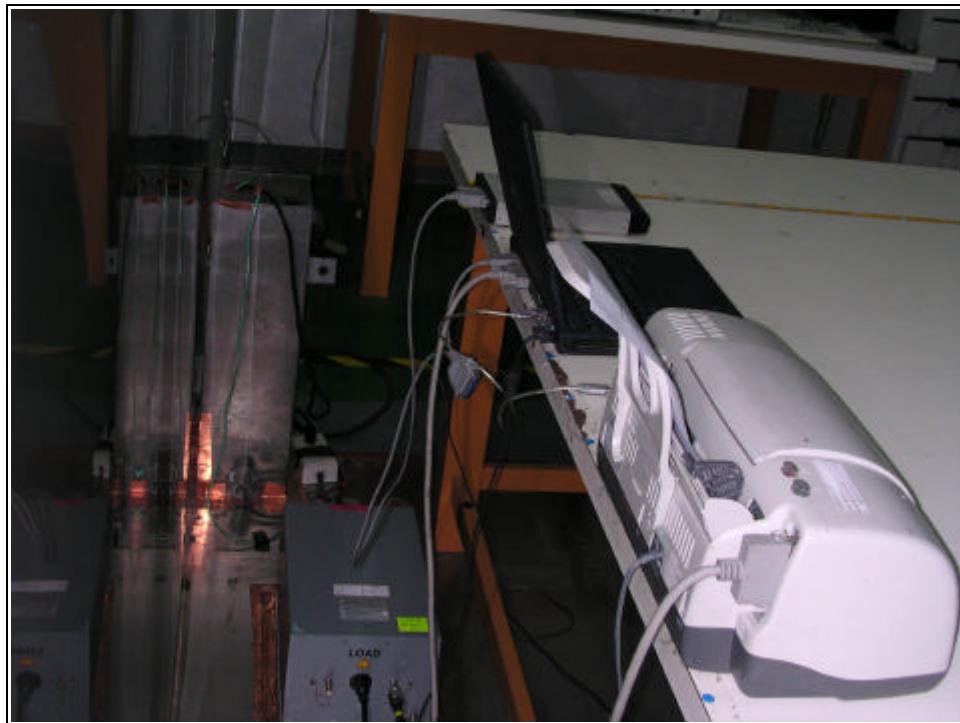
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## 5. PHOTOS OF TESTING

- Conducted test





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- Radiated test (TX)





# TEST REPORT

- Radiated test (Link)





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## 6. TERMS OF ABRIVATION

AV.	Average detection
AZ(°)	Turn table azimuth
Correct.	Correction
EL(m)	Antenna height (meter)
EUT	Equipment Under Test
Horiz.	Horizontal direction
LISN	Line Impedance Stabilization Network
NSA	Normalized Site Attenuation
Q.P.	Quasi-peak detection
SRT Lab	Spectrum Research & Testing Laboratory, Inc.
Vert.	Vertical direction