

# **FCC TEST REPORT**

Authorized under Declaration of Conformity

according to

**47 CFR Part 15 Subpart B and RSS-210**

**Equipment : U.S. Robotics Wireless Maxg USB Adapter**  
**Trade Name : USR**  
**Model No. : USR5421**  
**FCC ID : IXM-USGBR01**  
**IC ID : 550A-15027**  
**Filing Type : Declaration of Conformity**  
**Applicant : Universal Scientific Industrial Co., Ltd.**  
141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, Taiwan

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- Certificate or Test Report must not be used by the applicant to claim the product in this test report endorsement by NVLAP or any agency of U.S. government.

***SPORTON International Inc.***

*6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.*



## Table of Contents

History of this test report.....	ii
<b>CERTIFICATE OF COMPLIANCE.....</b>	<b>1</b>
<b>1. General Description of Equipment under Test.....</b>	<b>1</b>
1.1 Applicant.....	1
1.2 Manufacturer.....	1
1.3 Basic Description of Equipment under Test.....	1
1.4 Feature of Equipment under Test.....	2
<b>2. Test Configuration of Equipment under Test.....</b>	<b>3</b>
2.1 Test Manner.....	3
2.2 Description of Test System.....	3
2.3 Connection Diagram of Test System.....	4
<b>3. Test Software .....</b>	<b>5</b>
<b>4. General Information of Test.....</b>	<b>6</b>
4.1 Test Facility.....	6
4.2 Test Voltage.....	6
4.3 Standard for Methods of Measurement .....	6
4.4 Test in Compliance with .....	6
4.5 Frequency Range Investigated.....	6
4.6 Test Distance.....	6
<b>5. Test of Conducted Powerline .....</b>	<b>7</b>
5.1 Major Measuring Instruments .....	7
5.2 Test Procedures.....	7
5.3 Typical Test Setup Layout of Conducted Powerline.....	8
5.4 Test Result of Conducted Emission.....	9
5.5 Photographs of Conducted Emission Test Configuration.....	11
<b>6. Test of Radiated Emission.....</b>	<b>13</b>
6.1 Major Measuring Instruments .....	13
6.2 Test Procedures.....	14
6.3 Typical Test Setup Layout of Radiated Emission.....	15
6.4 Test Result of Radiated Emission.....	16
6.5 Photographs of Radiated Emission Test Configuration.....	28
<b>7. List of Measuring Equipment Used .....</b>	<b>29</b>
<b>8. Uncertainty Evaluation.....</b>	<b>30</b>
<b>9. Certificate of NVLAP Accreditation .....</b>	<b>32</b>
<b>Appendix A. Photographs of EUT</b>	



### History of this test report

Original Report Issue Date: Feb. 28, 2005

☒ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

**CERTIFICATE OF COMPLIANCE**  
Authorized under **D**eclaration of **C**onformity  
according to

**47 CFR Part 15 Subpart B Class B and RSS-210**

**Equipment** : U.S. Robotics Wireless Maxg USB Adapter  
**Trade Name** : USR  
**Model No.** : USR5421  
**FCC ID** : IXM-USGBR01  
**IC ID** : 550A-15027  
**Filing Type** : Declaration of Conformity  
**Applicant** : **Universal Scientific Industrial Co., Ltd.**  
141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, Taiwan

**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 FCC Part 15B and RSS-210** in both radiated and conducted emission class B limits. Testing was carried out on Feb. 24, 2005 at **SPORTON International Inc. LAB.**



Dr. Daniel Lee  
EMC / SAR Manager

**SPORTON International Inc.**

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Page No. : 1 of 32  
Issued Date : Feb. 28, 2005

## **1. General Description of Equipment under Test**

### **1.1 Applicant**

Universal Scientific Industrial Co., Ltd.  
141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, Taiwan

### **1.2 Manufacturer**

Universal Scientific Industrial Co., Ltd.  
141, Lane 351, Taiping Road, Sec. 1, Tsao Tuen, Nan-Tou, Taiwan

### **1.3 Basic Description of Equipment under Test**

Equipment	: U.S. Robotics Wireless Maxg USB Adapter
Trade Name	: USR
Model No.	: USR5421
FCC ID	: IXM-USGBR01
IC ID	: 550A-15027
Power Supply Type	: DC 5V

**1.4 Feature of Equipment under Test**

Product Feature & Specification				
1. Modulation Type/Data Rate	802.11b: CCK / 11 Mbps 802.11g: OFDM / 54 Mbps			
2. Freq.Range/Carrier Freqs.	2400 MHz ~ 2483.5 MHz			
3. Number o f Channels	USA/Canada: 11	V	European: 13	
	Japan: 13, 14		Other:	
4. Carrier Frequency of each channel	$2412 + (n-1) \times 5 \text{ MHz}; n = 1 \sim 11$			
5. Channel Spacing	5 MHz			
6. Maximum Output Power to Antenna (Normal condition)	802.11b: 21.4 dBm 802.11g: 21.9 dBm			
7. Type of Antenna Connector	N/A			
8. Antenna Type	On board printed antenna			
9. Antenna Gain	-1 dBi			
10. Function Type	Transmitter		Transceiver	V
11. Power Rating (DC/AC , Voltage)	DC 5V			



## **2. Test Configuration of Equipment under Test**

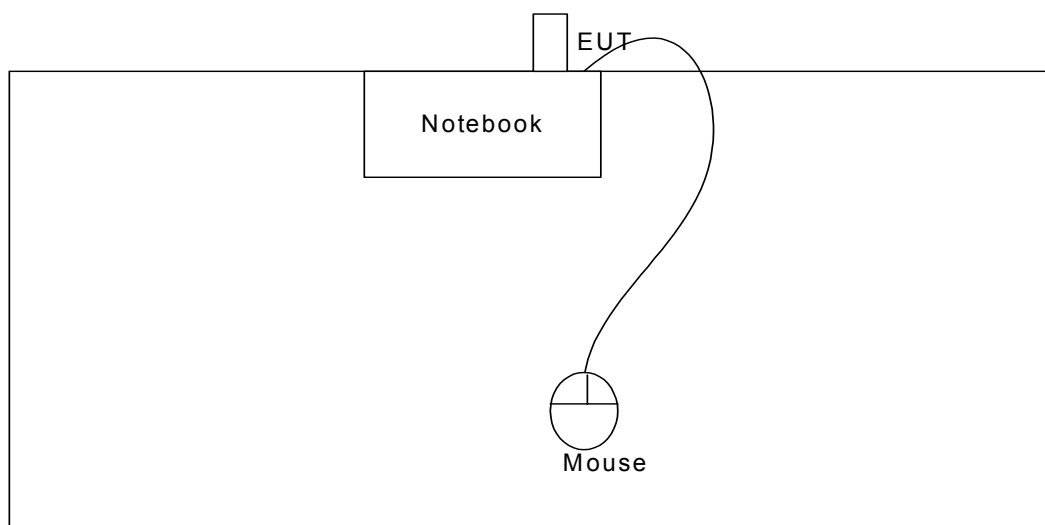
### **2.1 Test Manner**

- a. The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
- b. The complete test system included DELL Notebook, EPSON Printer and EUT for EMI test.
- c. The following test modes were tested for conduction test:  
Mode 1: Wireless On Mode
- d. The following test modes were tested for radiation test:  
Mode 1: 802.11b Rx\_Ch06  
Mode 2: 802.11g Rx\_Ch06
- e. Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 7000MHz.

### **2.2 Description of Test System**

Item	Asset	Model Name	Power Cord
1.	Notebook (DELL)	PP05L	N/A
2.	(USB) Mouse (LOGITECH)	M-BE58	Aluminum foil-shielded, 1.7m

## 2.3 Connection Diagram of Test System







### **3. Test Software**

Programmed RF utility installed in notebook provides function for continuous receiving signal.

## **4. General Information of Test**

### **4.1 Test Facility**

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,  
Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.  
TEL : 886-3-327-3456  
FAX : 886-3-318-0055

Test Site No. : CO01-HY, 03CH06-HY and 05CH02-HY

### **4.2 Test Voltage**

120V/60Hz

### **4.3 Standard for Methods of Measurement**

ANSI C63.4-2003

### **4.4 Test in Compliance with**

47 CFR Part 15 Subpart B and RSS-210

### **4.5 Frequency Range Investigated**

- a. Conduction: from 150 kHz to 30 MHz
- b. Radiation: from 30 MHz to 7000 MHz

### **4.6 Test Distance**

The test distance of radiated emission from antenna to EUT is 3m.

## **5. Test of Conducted Powerline**

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz 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 5.3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

### **5.1 Major Measuring Instruments**

As described in Section 7.

### **5.2 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 connect 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 microhenry 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.

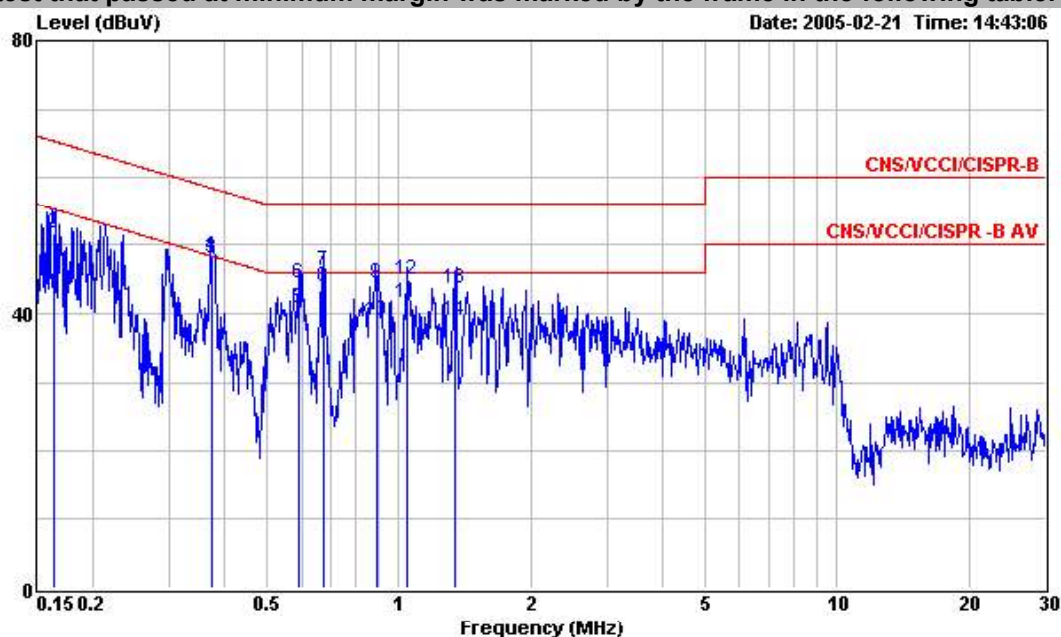


## 5.4 Test Result of Conducted Emission

### 5.4.1 Frequency Range of Test : 150kHz to 30 MHz

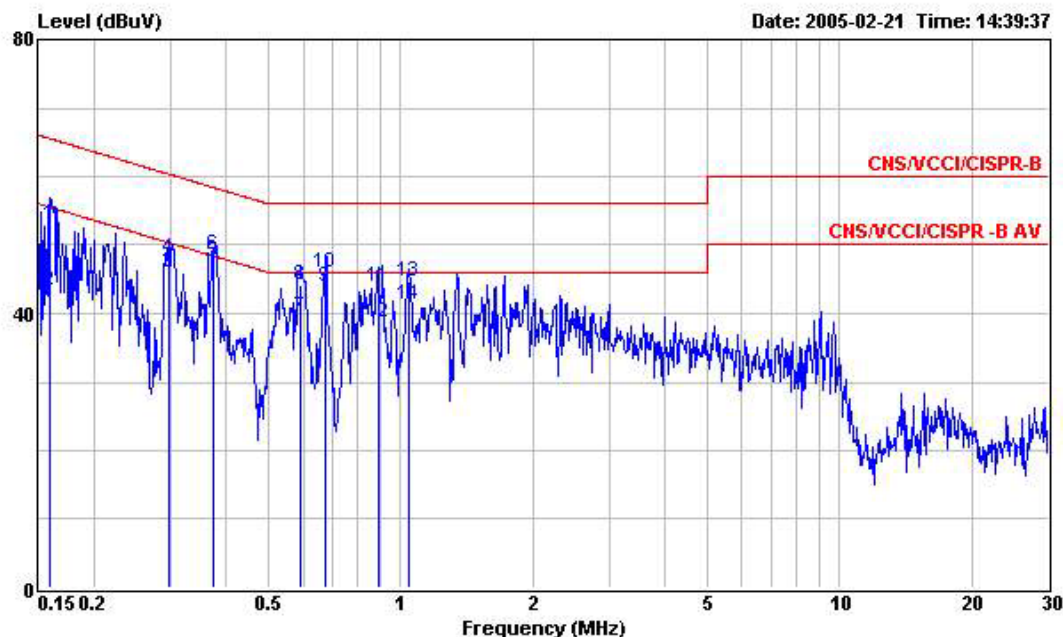
- Test Mode : Mode 1
- Temperature : 24°C
- Relative Humidity : 47%

■ The test that passed at minimum margin was marked by the frame in the following table.



Site : CO01-HY  
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 LINE  
 EUT : USB Wireless LAN USB adapter  
 Power : 120V 60Hz  
 Model : FD521613  
 Memo : Wireless on

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.163	42.74	-12.58	55.32	42.61	0.10	0.03	Average
2	0.163	51.70	-13.62	65.32	51.57	0.10	0.03	QP
3	0.374	47.98	-0.44	48.42	47.87	0.10	0.01	Average
4	0.374	48.37	-10.05	58.42	48.26	0.10	0.01	QP
5	0.593	40.74	-5.26	46.00	40.62	0.10	0.02	Average
6	0.593	44.52	-11.48	56.00	44.40	0.10	0.02	QP
7	0.672	46.19	-9.81	56.00	46.06	0.10	0.03	QP
8	0.672	43.95	-2.05	46.00	43.82	0.10	0.03	Average
9	0.889	44.38	-11.62	56.00	44.24	0.10	0.04	QP
10	0.889	39.00	-7.00	46.00	38.86	0.10	0.04	Average
11	1.046	41.44	-4.56	46.00	41.30	0.10	0.04	Average
12	1.046	44.99	-11.01	56.00	44.85	0.10	0.04	QP
13	1.344	43.68	-12.32	56.00	43.54	0.10	0.04	QP
14	1.344	39.07	-6.93	46.00	38.93	0.10	0.04	Average



Site : CO01-HY  
Condition : CNS/VCCI/CISPR-B 2003 2001/008 NEUTRAL  
EUT : USB Wireless LAN USB adapter  
Power : 120V 60Hz  
Model : FD521613  
Memo : Wireless on

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.159	53.06	-12.46	65.52	52.93	0.10	0.03	QP
2	0.159	43.46	-12.06	55.52	43.33	0.10	0.03	Average
3	0.296	45.88	-4.47	50.35	45.76	0.10	0.02	Average
4	0.296	48.10	-12.25	60.35	47.98	0.10	0.02	QP
5	0.374	47.43	-0.98	48.41	47.32	0.10	0.01	Average
6	0.374	48.49	-9.92	58.41	48.38	0.10	0.01	QP
7	0.592	39.56	-6.44	46.00	39.44	0.10	0.02	Average
8	0.592	44.20	-11.80	56.00	44.08	0.10	0.02	QP
9	0.671	43.78	-2.22	46.00	43.65	0.10	0.03	Average
10	0.671	45.91	-10.09	56.00	45.78	0.10	0.03	QP
11	0.895	43.81	-12.19	56.00	43.67	0.10	0.04	QP
12	0.895	38.79	-7.21	46.00	38.65	0.10	0.04	Average
13	1.046	44.62	-11.38	56.00	44.48	0.10	0.04	QP
14	1.046	41.34	-4.66	46.00	41.20	0.10	0.04	Average

Test Engineer :

Jay

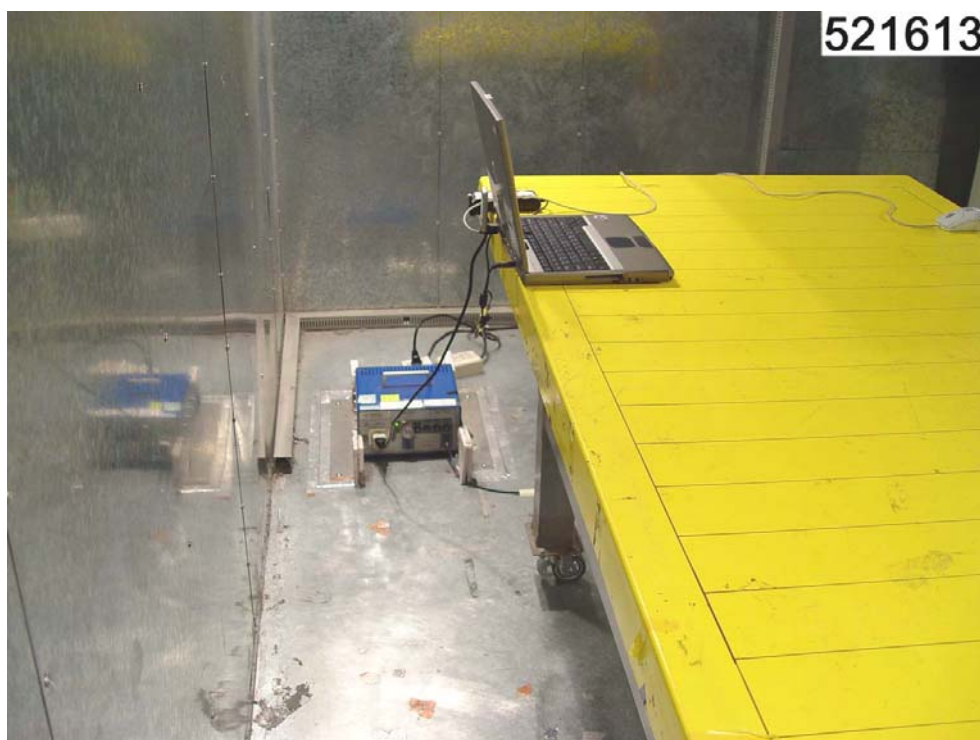


## 5.5 Photographs of Conducted Emission Test Configuration

FRONT VIEW



REAR VIEW





**521613**

**SIDE VIEW**







## **6. Test of Radiated Emission**

Radiated emissions from 30 MHz to 7000 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, 0.8 meter above the ground plane, as shown in section 6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

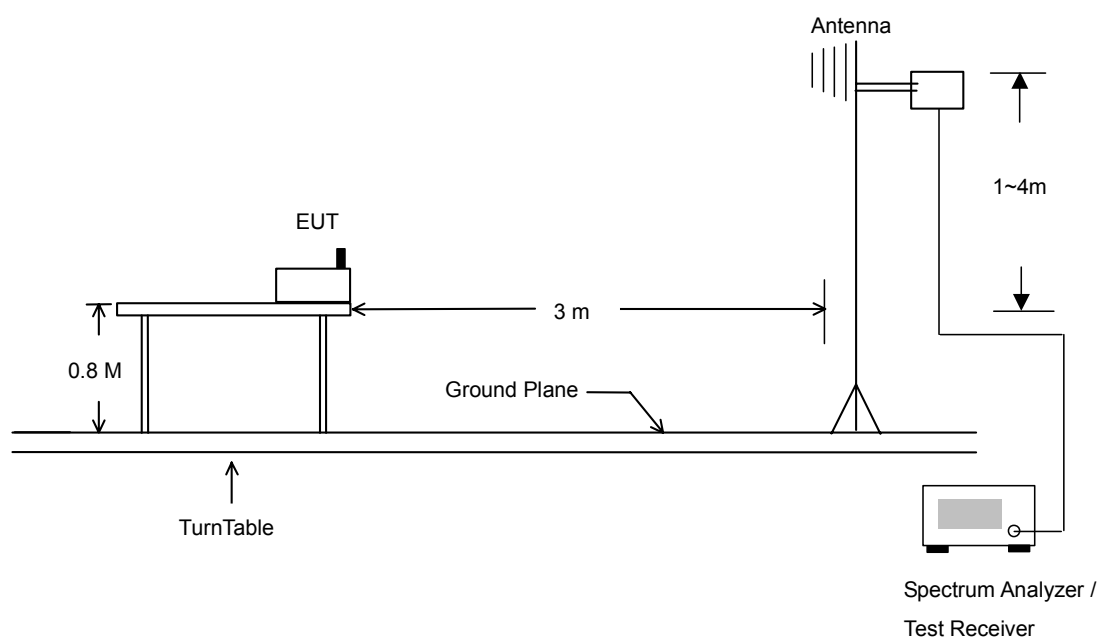
### **6.1 Major Measuring Instruments**

As described in Section 7.

## **6.2 Test Procedures**

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. 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 for both horizontal polarization and vertical polarization of the antenna.
- e. 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.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 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 3 dB margin will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

### 6.3 Typical Test Setup Layout of Radiated Emission



## 6.4 Test Result of Radiated Emission

### 6.4.1 Test Mode: Mode 1

- Frequency Range of Test: from 30 MHz to 7000 MHz
- Test Distance: 3m
- Temperature: 26°C
- Relative Humidity: 53%
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

The test that passed at the minimum margin was marked by a frame in the following data

