Test Report

Product Name	：	Wireless Outdoor Bridge
Model No.	：	ZA-5000-D
FCC ID No.	：	UDKZA5000D

Applicant	：	Nanjing Z-COM Wireless Co., Ltd.
Address	：	168 Long Pan Zhong Road, Jiangsu Software Park, Suite 118 Nanjing, China 210002

Date of Receipt	：	2006/06/06
Issued Date	：	2006/07/19
Report No.	：	066L128-RF-US-P05V01

Test Report Certification

Issued Date : 2006/07/19
Report No. : 066L128-RF-US-P05V01

QuieTek

Product Name	:	Wireless Outdoor Bridge
Applicant	:	Nanjing Z-COM Wireless Co., Ltd.
Address	:	168 Long Pan Zhong Road, Jiangsu Software Park, Suite 118 Nanjing, China 210002
Manufacturer	:	Nanjing Z-COM Wireless Co., Ltd.
Model No.	:	ZA-5000-D
FCC ID No.	:	UDKZA5000D
Rated Voltage	:	AC 100-240V, 50/60Hz
EUT Voltage	:	AC 120V/60Hz
Trade Name	:	ZDC
Applicable Standard	:	FCC Part 15 Subpart C and E: 2005 ANSI C63.4: 2003
Test Result	:	Complied
Performed Location	:	SuZhou EMC Laboratory No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., SuZhou, China TEL:+86-512-6251-5088 / FAX:+86-512-6251-5098

Documented By : Mandy Liu
(Mandy Liu)

Reviewed By : Dream Cao
(Dream Cao)

Approved By : Gene Chang
(Gene Chang)

Laboratory Information

We , **QuieTek Corporation**, are an independent EMC and safety consultancy that was established the whole facility in our laboratories. The test facility has been accredited by the following accreditation Bodies in compliance with ISO 17025, EN 45001 and Guide 25:

Taiwan R.O.C.	**:**	**BSMI, DGT, CNLA**
Germany	**:**	**TUV Rheinland**
Norway	**:**	**Nemko, DNV**
USA	**:**	**FCC, NVLAP**
Japan	**:**	**VCCI**

The related certificate for our laboratories about the test site and management system can be downloaded from QuieTek Corporation's Web Site : http://tw.quietek.com/modules/myalbum/
The address and introduction of QuieTek Corporation's laboratories can be founded in our Web site : http://www.quietek.com/
If you have any comments, Please don't hesitate to contact us. Our contact information is as below:

HsinChu Testing Laboratory :

No.75-2, 3rd Lin, Wangye Keng, Yonghxing Tsuen, Qionglin Shiang, Hsinchu County 307, Taiwan, R.O.C.
TEL:+886-3-592-8858 / FAX:+886-3-592-8859 E-Mail : service@quietek.com

NVLAP Lab Code : 200347-0
1313

LinKou Testing Laboratory :

No. 5, Ruei-Shu Valley, Ruei-Ping Tsuen, Lin-Kou Shiang, Taipei, Taiwan, R.O.C.
TEL : 886-2-8601-3788 / FAX : 886-2-8601-3789 E-Mail : service@quietek.com

NVLAP Lab Code: 200533-0
0914

Suzhou Testing Laboratory :

No.99 Hongye Rd., Suzhou Industrial Park Loufeng Hi-Tech Development Zone., SuZhou, China
TEL : +86-512-6251-5088 / FAX : 86-512-6251-5098 E-Mail : service@quietek.com

NVLAP Lab Code : 200743-0
1596

TABLE OF CONTENTS

1. General Information

1.1. EUT Description

Product Name	Wireless Outdoor Bridge
Trade Name	ZDC
Model No.	ZA-5000-D
FCC ID No.	UDKZA5000D
Frequency Range	802.11b/g: 2412-2472MHz, 802.11a: 5725-5825MHz
Channel Number	802.11b/g: 11CH, 802.11a: 8CH
Type of Modulation	DSSS/OFDM
Data Speed	DSSS: 1, 2, 5.5, 11Mbps OFDM: 6, 9, 12, 18, 24, 36, 48, 54Mbps
Antenna Gain	Refer to the table “Antenna List”
Channel Control	Auto
Antenna Type	Connector
Antenna Joint Type	MHF Connector

Component	
Power Adapter	M/N: DSA-0421S-501 Input: AC 100-240V, 50/60Hz Output: DC 48V, 0.83A Cable Out: Non-Shielded, 1.8m
Power Cord	Non-Shielded, 1.8m
Network Adapter	Input: DC 48V
Outside Antenna	Manufacture: Z-COM M/N: ZA-A5002

Note: 1. The ZA-5000-D include two same Transmitter Module (802.11 a/b/g Mini PCI Card) and two antenna (Inside Antenna and Outside Antenna), one Transmitter Module connected the Outside Antenna can work as 802.11 a/b/g, and another Transmitter Module connected the Inside Antenna can work as 802.11a only as the software controller.

2. This device is a composite device in accordance with Part 15 Subpart B regulations. The function for the receiver was measured and made a test report that the report number is 066L128-IT-US-P01V02, certified under Declaration of Conformity.

Antenna List

No.	Manufacturer	Model No.	Part No.	Peak Gain
1	Z-COM (Inside)	ZA-5106	--	6dBi
2	Z-COM (Outside)	ZA-5102	--	2dBi

802.11b/g Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
01	2412 MHz	02	2417 MHz	03	2422 MHz	04	2427 MHz
05	2432 MHz	06	2437 MHz	07	2442 MHz	08	2447 MHz
09	2452 MHz	10	2457 MHz	11	2462 MHz		

802.11a Working Frequency of Each Channel:							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency
149	5745 MHz	153	5765 MHz	157	5785 MHz	161	5805 MHz

1.2. Mode of Operation

QuieTek has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

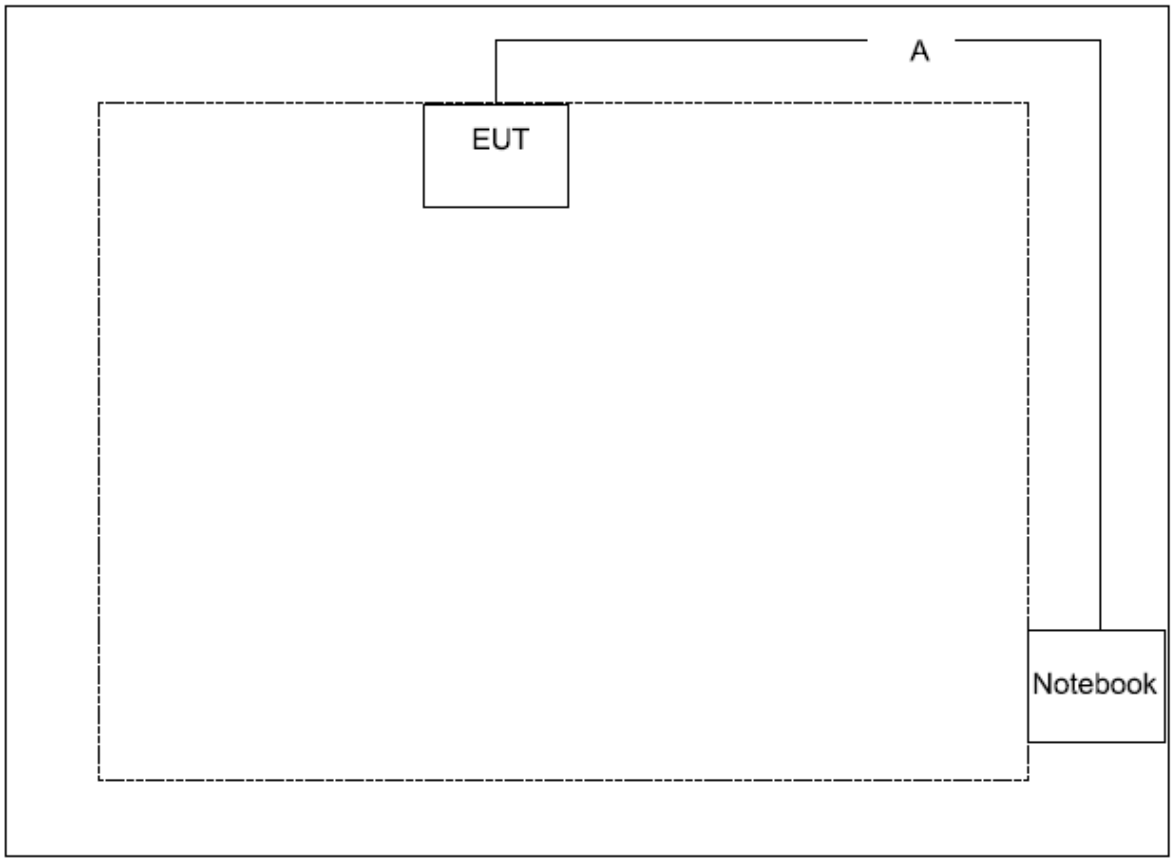
Pre-Test Mode
Mode 1: Transmitter 802.11b
Mode 2: Transmitter 802.11g
Mode 3: Transmitter 802.11a with Outside Antenna
Mode 4: Transmitter 802.11a with Inside Antenna
Final Test Mode
Mode 1: Transmitter 802.11b
Mode 2: Transmitter 802.11g
Mode 3: Transmitter 802.11a with Outside Antenna
Mode 4: Transmitter 802.11a with Inside Antenna

1.3. Tested System Details

The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

Product		Manufacturer	Model No.	Serial No.	Power Cord
1	Notebook PC	ASUS	ALP-AJAX GDC	N/A	Non-Shielded, 1.8m, with one ferrite core bonded

1.4. Configuration of Tested System

Connection Diagram


Signal Cable Type		Signal cable Description
A	LAN Cable	Non-Shielded, >3m

1.5. EUT Exercise Software

(1)	Setup the EUT and simulators as shown on 1.4
(2)	Turn on the power of all equipment.
(3)	Execute the continuous transmission software of Putty.exe.
(4)	Setup the test mode, the test channel and the data rate.
(5)	Use the software to start the continuous transmission.
(6)	Verify that the EUT works correctly.

2. Technical Test

2.1. Summary of Test Result

☒ No deviations from the test standards

☐ Deviations from the test standards as below description:

For 802.11b/g (FCC 15C)

Emission			
Performed Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC Part 15 Subpart C Paragraph 15.207	Yes	No
Peak Output Power	FCC Part 15 Subpart C Paragraph 15.247	Yes	No
Radiated Emission	FCC Part 15 Subpart C Paragraph 15.247	Yes	No
Band Edge	FCC Part 15 Subpart C Paragraph 15.247	Yes	No
Occupied Bandwidth	FCC Part 15 Subpart C Paragraph 15.247	Yes	No
Peak Power Spectral Density	FCC Part 15 Subpart C Paragraph 15.247	Yes	No

For 802.11a (FCC 15E)

Emission			
Performed Item	Normative References	Test Performed	Deviation
Conducted Emission	FCC Part 15 Subpart C Paragraph 15.207	Yes	No
26dBc Occupied Bandwidth	FCC Part 15 Subpart E Paragraph 15.407	Yes	No
Peak Transmit Power	FCC Part 15 Subpart E Paragraph 15.407	Yes	No
Radiated Emission	FCC Part 15 Subpart E Paragraph 15.407	Yes	No
Peak Power Spectral Density	FCC Part 15 Subpart E Paragraph 15.407	Yes	No
Peak Excursion	FCC Part 15 Subpart E Paragraph 15.407	Yes	No
Band Edge	FCC Part 15 Subpart E Paragraph 15.407	Yes	No
Frequency Stability	FCC Part 15 Subpart E Paragraph 15.407	Yes	No

2.2. List of Test Equipment

Conducted Emission / SR-1

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
EMI Test Receiver	R&S	ESCI	100175	2005/07/25
Two-Line V-Network	R&S	ENV216	100013	2006/03/31
Two-Line V-Network	R&S	ENV216	100014	2006/04/25
V-Network	R&S	ESH3-Z6	100248	2005/07/13
V-Network	R&S	ESH3-Z6	100249	2005/07/13
ISN	Schaffner	ISN T400	21648	2005/08/03
Current Probe	R&S	EZ-17	100252	2006/04/18
50ohm Coaxial Switch	ANRITSU	MP59B	6200447305	2005/11/25
50ohm Impedance	SHX	50ohmI	QT-IM001	2006/03/20
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH004	2006/03/30

Radiated Emission / AC-2

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/11
EMI Test Receiver	R&S	ESCI	100175	2005/07/25
Preamplifier	Quietek	AP-025C	QT-AP003	2005/11/25
Preamplifier	Quietek	AP-180C	CHM-0602013	2006/03/20
Bilog Type Antenna	Schaffner	CBL6112B	2932	2005/10/26
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2005/09/30
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2005/09/30
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2006/03/30

Peak Output Power / AC-3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/11
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2006/03/30

Peak Power Spectral Density / AC-3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/11
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2006/03/30

Occupied Bandwidth / AC-3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/11
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2006/03/30

Peak Excursion / AC-3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/11
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2006/03/30

Frequency Stability/ AC-3

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/11
Programmable Temperature&Humidity Chamber	Gaoyu	TH-1P-B	WIT-05121302	2006/01/16
DC Power Supply	IDRC	CD-035-020PR	977272	2005/12/28
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH003	2006/03/30

Band Edge / AC-2

Instrument	Manufacturer	Type No.	Serial No	Cal. Date
Spectrum Analyzer	Agilent	E4446A	MY45300103	2006/03/11
EMI Test Receiver	R&S	ESCI	100175	2005/07/25
Preamplifier	Quietek	AP-025C	QT-AP003	2005/11/25
Preamplifier	Quietek	AP-180C	CHM-0602013	2006/03/20
Bilog Type Antenna	Schaffner	CBL6112B	2932	2005/10/26
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	496	2005/09/30
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	294	2005/09/30
Temperature/Humidity Meter	zhicheng	ZC1-2	QT-TH002	2006/03/30

2.3. Measurement Uncertainty

Conducted Emission

The measurement uncertainty is evaluated as ± 2.26 dB.

Radiated Emission

The measurement uncertainty is evaluated as ± 3.19 dB.

2.4. Test Environment

Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	23
	Humidity (%RH)	25-75	48
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	25
	Humidity (%RH)	25-75	51
	Barometric pressure (mbar)	860-1060	950-1000

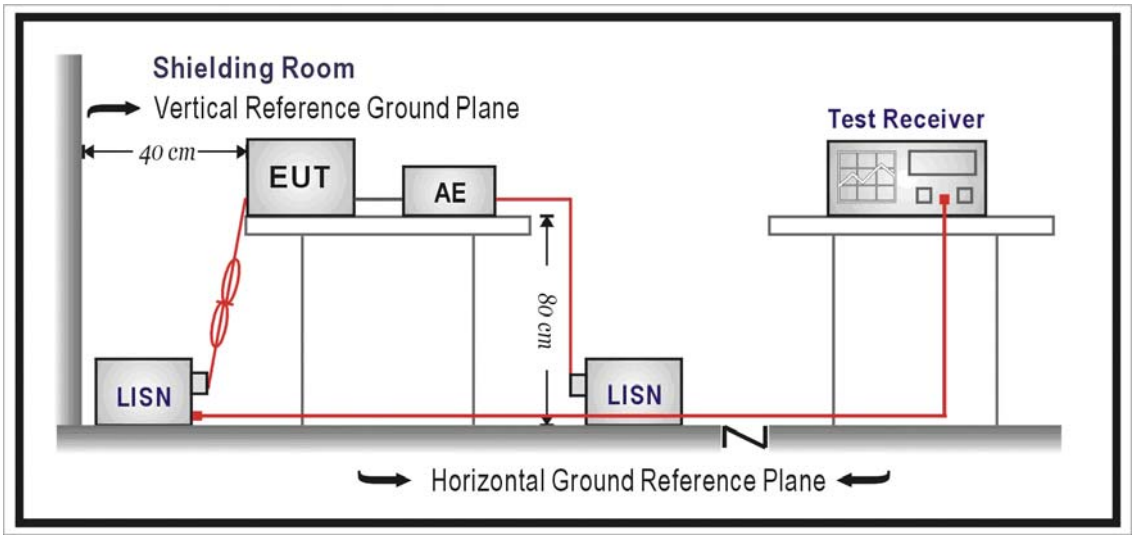
Part Ⅰ - 802.11b/g (FCC Part 15C)

3. Conducted Emission (Main Terminals)

3.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.207

3.2. Test Setup



3.3. Limit

Limits (dBuV)		
Frequency	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges

3.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.

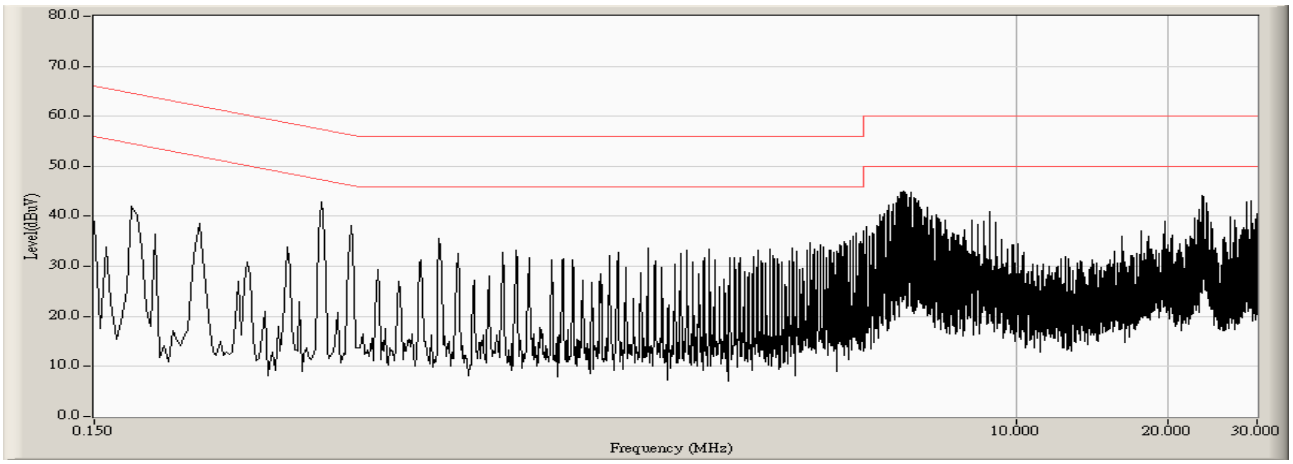
The bandwidth of the field strength meter is 9kHz.

3.5. Deviation from Test Standard

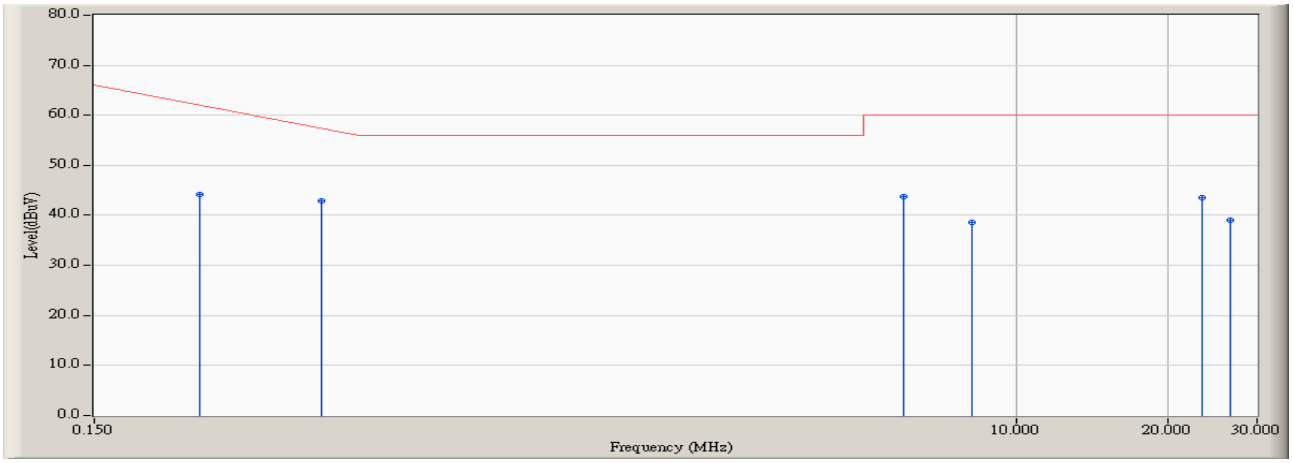
No deviation.

3.6. Test Result

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 15:53**
Limit : FCC_Part15_B_00M_QP	**Margin : 10**
EUT : ZA-5000-D	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode1: Transmitter 802.11b(Tx: 2437MHz)**



Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 16:01**
Limit : FCC_Part15_B_00M_QP	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode1: Transmitter 802.11b(Tx: 2437MHz)**

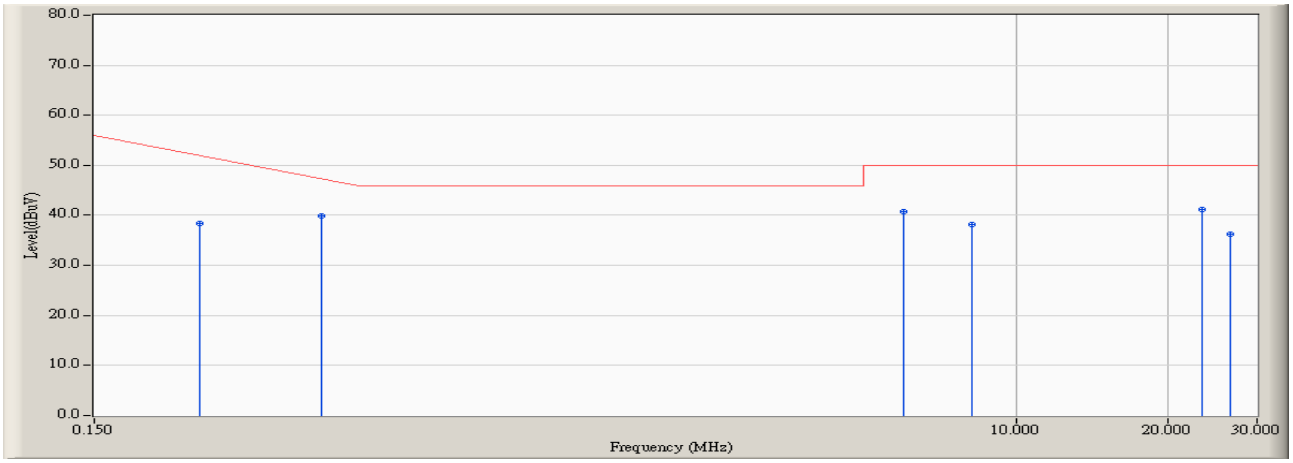


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.242	9.332	34.900	44.232	-19.139	63.371	QUASIPEAK
2	*	0.422	9.533	33.300	42.833	-15.396	58.229	QUASIPEAK
3		5.974	9.810	33.900	43.710	-16.290	60.000	QUASIPEAK
4		8.174	9.880	28.700	38.580	-21.420	60.000	QUASIPEAK
5		23.318	10.291	33.300	43.591	-16.409	60.000	QUASIPEAK
6		26.610	10.240	28.900	39.140	-20.860	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 16:01**
Limit : FCC_Part15_B_00M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode1: Transmitter 802.11b(Tx: 2437MHz)**

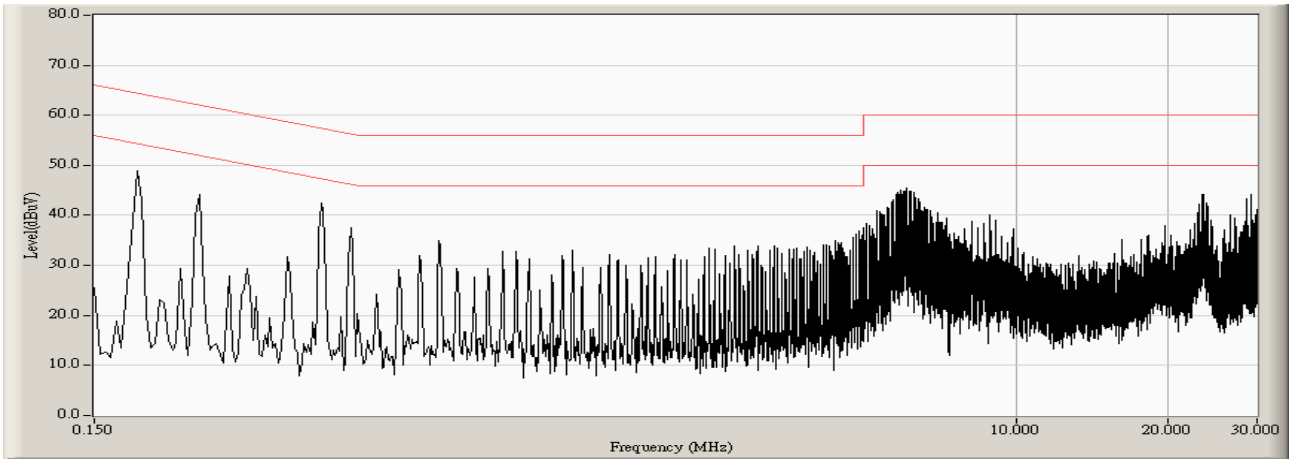


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.242	9.332	29.000	38.332	-15.039	53.371	AVERAGE
2	*	0.422	9.533	30.400	39.933	-8.296	48.229	AVERAGE
3		5.974	9.810	31.000	40.810	-9.190	50.000	AVERAGE
4		8.174	9.880	28.200	38.080	-11.920	50.000	AVERAGE
5		23.318	10.291	30.900	41.191	-8.809	50.000	AVERAGE
6		26.610	10.240	25.900	36.140	-13.860	50.000	AVERAGE

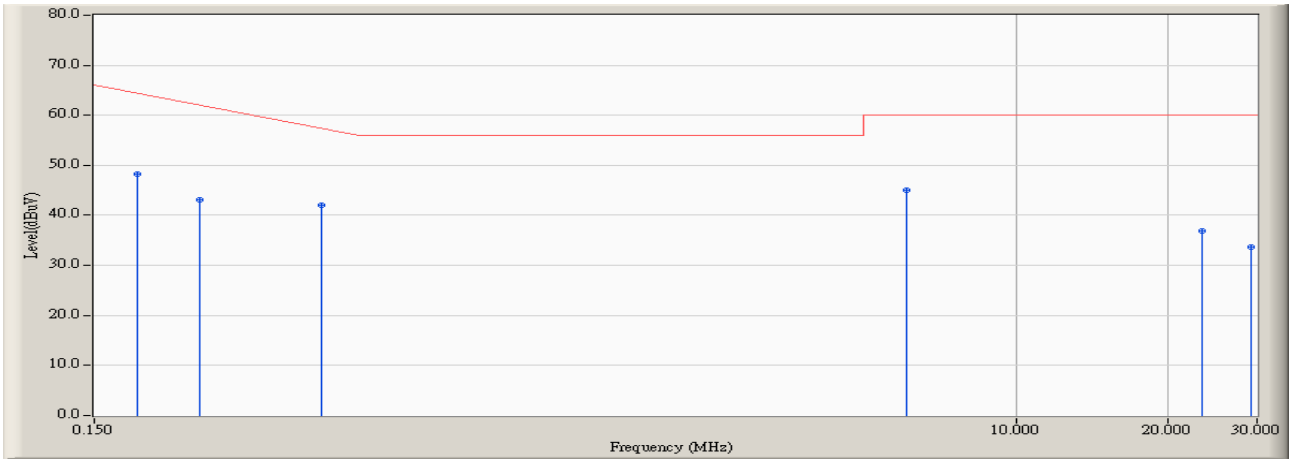
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 16:02**
Limit : FCC_Part15_B_00M_QP	**Margin : 10**
EUT : ZA-5000-D	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode1: Transmitter 802.11b(Tx: 2437MHz)**



Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 16:05**
Limit : FCC_Part15_B_00M_QP	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode1: Transmitter 802.11b(Tx: 2437MHz)**

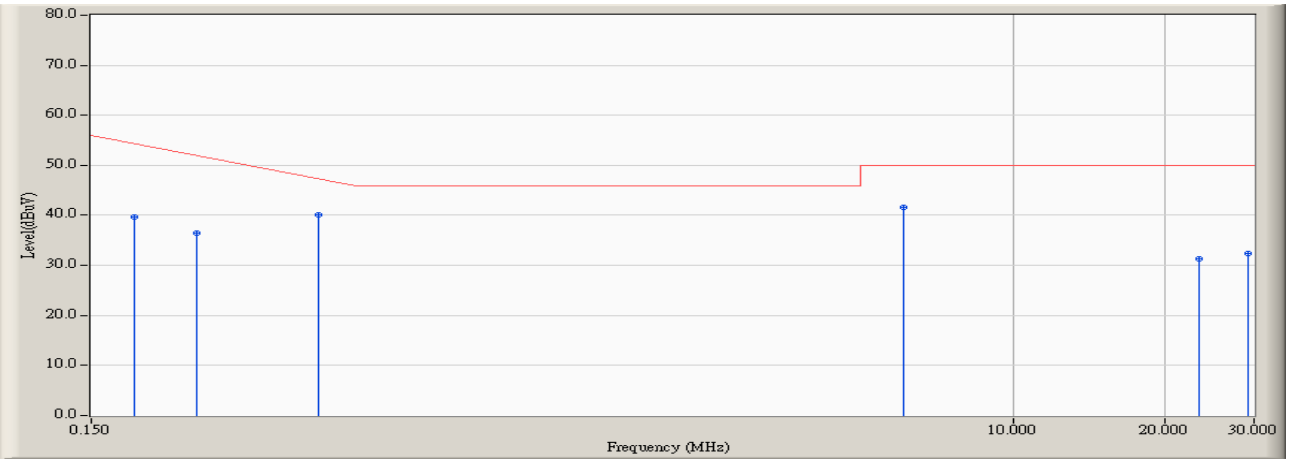


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.182	9.515	38.700	48.215	-16.871	65.086	QUASIPEAK
2		0.242	9.454	33.700	43.154	-20.217	63.371	QUASIPEAK
3		0.422	9.633	32.300	41.933	-16.296	58.229	QUASIPEAK
4	*	6.090	9.740	35.200	44.940	-15.060	60.000	QUASIPEAK
5		23.310	10.301	26.500	36.801	-23.199	60.000	QUASIPEAK
6		29.230	10.510	23.200	33.710	-26.290	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 16:05**
Limit : FCC_Part15_B_00M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode1: Transmitter 802.11b(Tx: 2437MHz)**

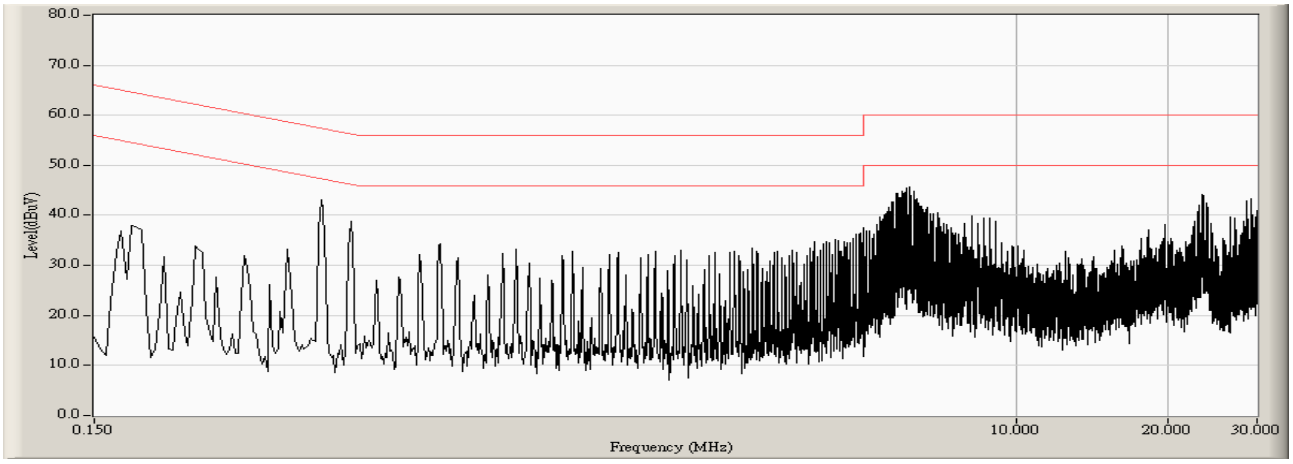


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.182	9.515	30.200	39.715	-15.371	55.086	AVERAGE
2		0.242	9.454	27.100	36.554	-16.817	53.371	AVERAGE
3	*	0.422	9.633	30.500	40.133	-8.096	48.229	AVERAGE
4		6.090	9.740	31.800	41.540	-8.460	50.000	AVERAGE
5		23.310	10.301	21.100	31.401	-18.599	50.000	AVERAGE
6		29.230	10.510	21.900	32.410	-17.590	50.000	AVERAGE

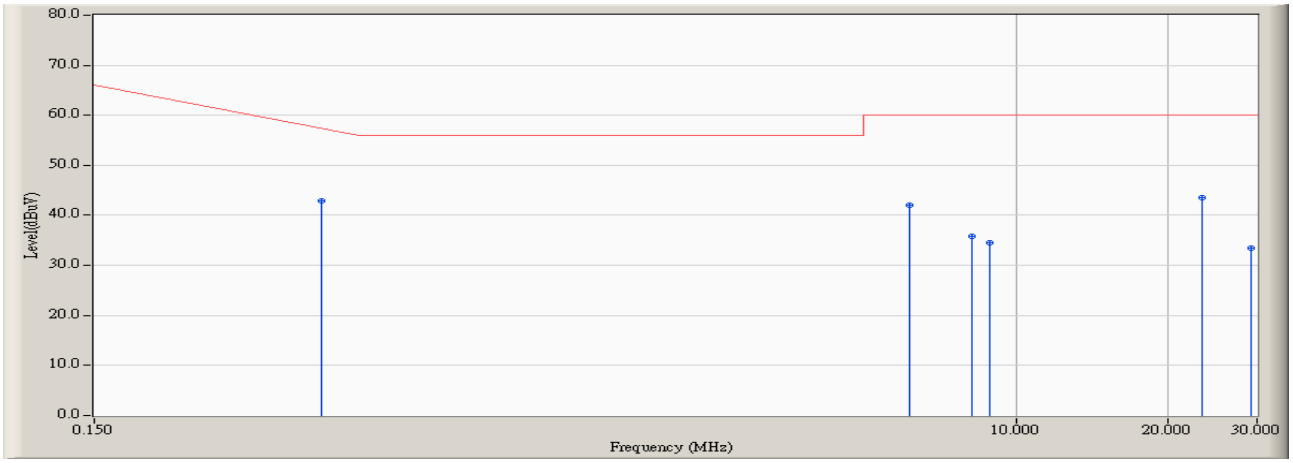
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 16:14**
Limit : FCC_Part15_B_00M_QP	**Margin : 10**
EUT : ZA-5000-D	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode2: Transmitter 802.11g(Tx: 2437MHz)**



Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 16:25**
Limit : FCC_Part15_B_00M_QP	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode2: Transmitter 802.11g(Tx: 2437MHz)**

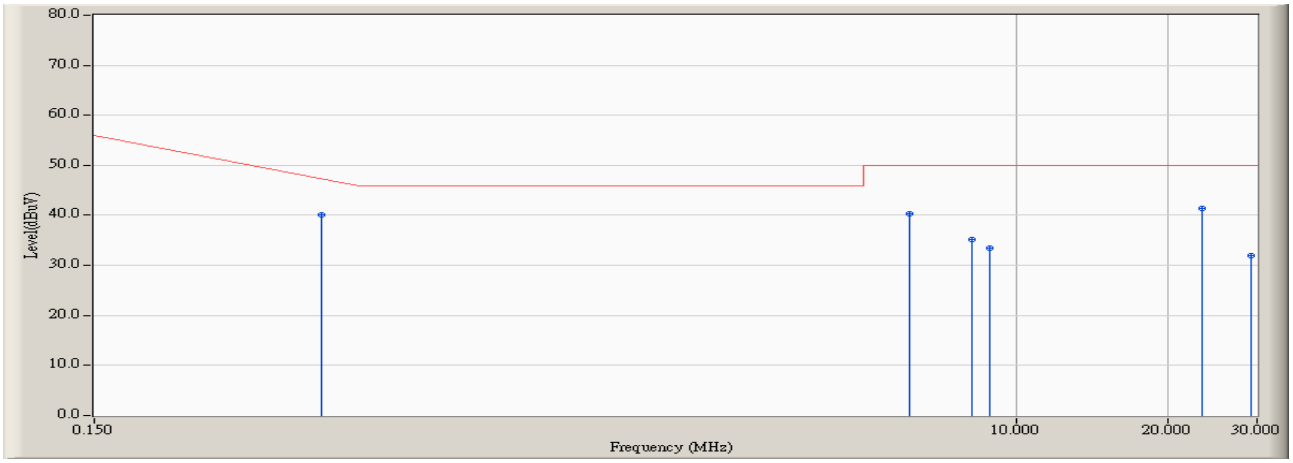


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.422	9.533	33.400	42.933	-15.296	58.229	QUASIPEAK
2		6.146	9.820	32.300	42.120	-17.880	60.000	QUASIPEAK
3		8.174	9.880	26.000	35.880	-24.120	60.000	QUASIPEAK
4		8.890	9.918	24.700	34.618	-25.382	60.000	QUASIPEAK
5		23.318	10.291	33.300	43.591	-16.409	60.000	QUASIPEAK
6		29.230	10.313	23.100	33.413	-26.587	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 16:25**
Limit : FCC_Part15_B_00M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode2: Transmitter 802.11g(Tx: 2437MHz)**

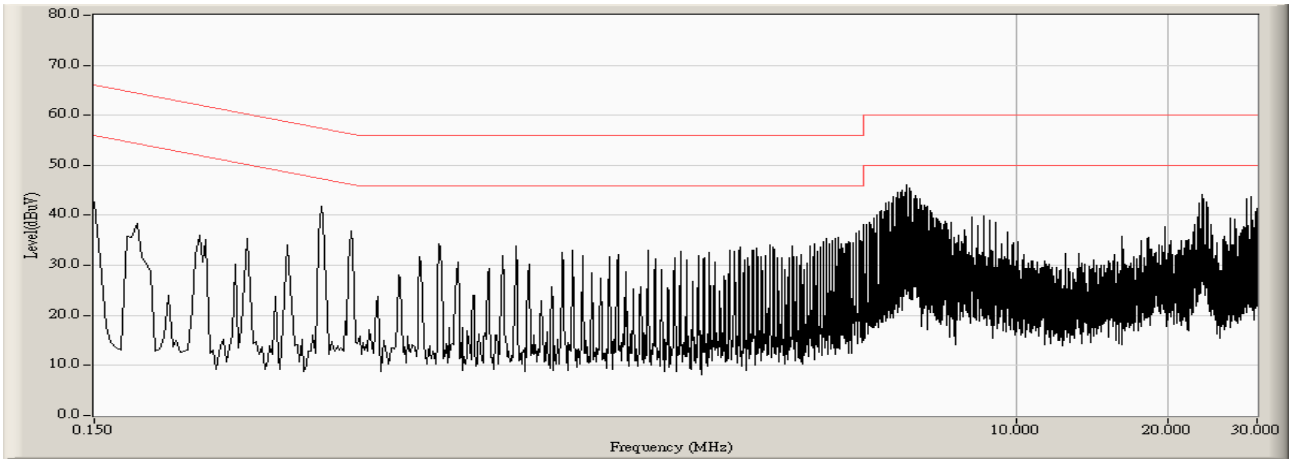


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1	*	0.422	9.533	30.500	40.033	-8.196	48.229	AVERAGE
2		6.146	9.820	30.500	40.320	-9.680	50.000	AVERAGE
3		8.174	9.880	25.200	35.080	-14.920	50.000	AVERAGE
4		8.890	9.918	23.500	33.418	-16.582	50.000	AVERAGE
5		23.318	10.291	31.000	41.291	-8.709	50.000	AVERAGE
6		29.230	10.313	21.700	32.013	-17.987	50.000	AVERAGE

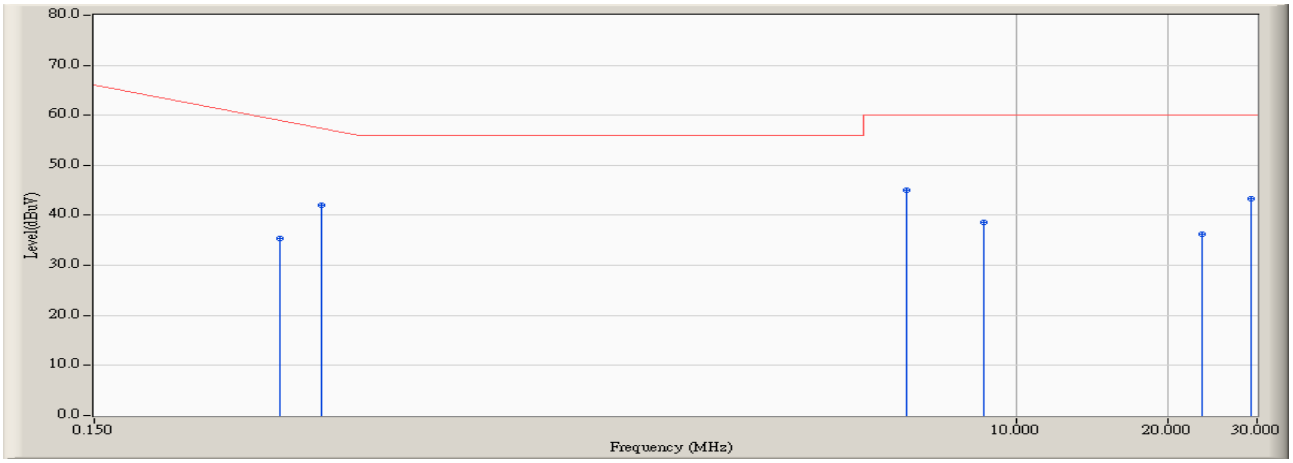
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 16:26**
Limit : FCC_Part15_B_00M_QP	**Margin : 10**
EUT : ZA-5000-D	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode2: Transmitter 802.11g(Tx: 2437MHz)**



Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 16:29**
Limit : FCC_Part15_B_00M_QP	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode2: Transmitter 802.11g(Tx: 2437MHz)**

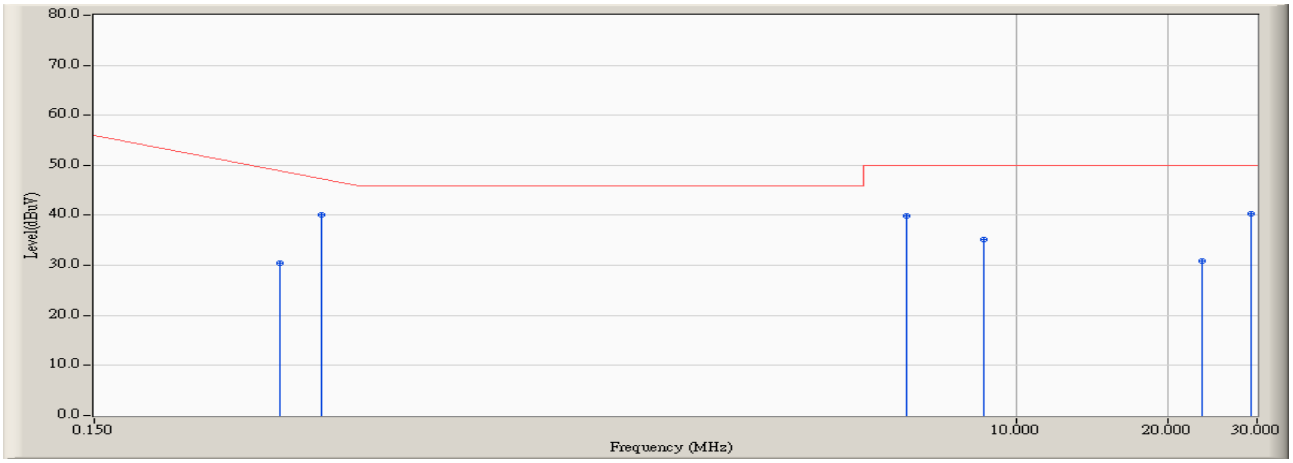


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.350	9.571	25.800	35.371	-24.915	60.286	QUASIPEAK
2		0.422	9.633	32.400	42.033	-16.196	58.229	QUASIPEAK
3	*	6.086	9.740	35.300	45.040	-14.960	60.000	QUASIPEAK
4		8.654	9.870	28.800	38.670	-21.330	60.000	QUASIPEAK
5		23.310	10.301	26.000	36.301	-23.699	60.000	QUASIPEAK
6		29.238	10.510	32.800	43.310	-16.690	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 16:29**
Limit : FCC_Part15_B_00M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode2: Transmitter 802.11g(Tx: 2437MHz)**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.350	9.571	20.800	30.371	-19.915	50.286	AVERAGE
2	*	0.422	9.633	30.500	40.133	-8.096	48.229	AVERAGE
3		6.086	9.740	30.200	39.940	-10.060	50.000	AVERAGE
4		8.654	9.870	25.400	35.270	-14.730	50.000	AVERAGE
5		23.310	10.301	20.600	30.901	-19.099	50.000	AVERAGE
6		29.238	10.510	29.800	40.310	-9.690	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

3.7. Test Photograph

Test Mode : Mode1: Transmitter 802.11b

Description : Front View of Conducted Test for Main

Test Mode : Mode1: Transmitter 802.11b

Description : Back View of Conducted Test for Main

Test Mode : Mode2: Transmitter 802.11g

Description : Front View of Conducted Test for Main

Test Mode : Mode2: Transmitter 802.11g

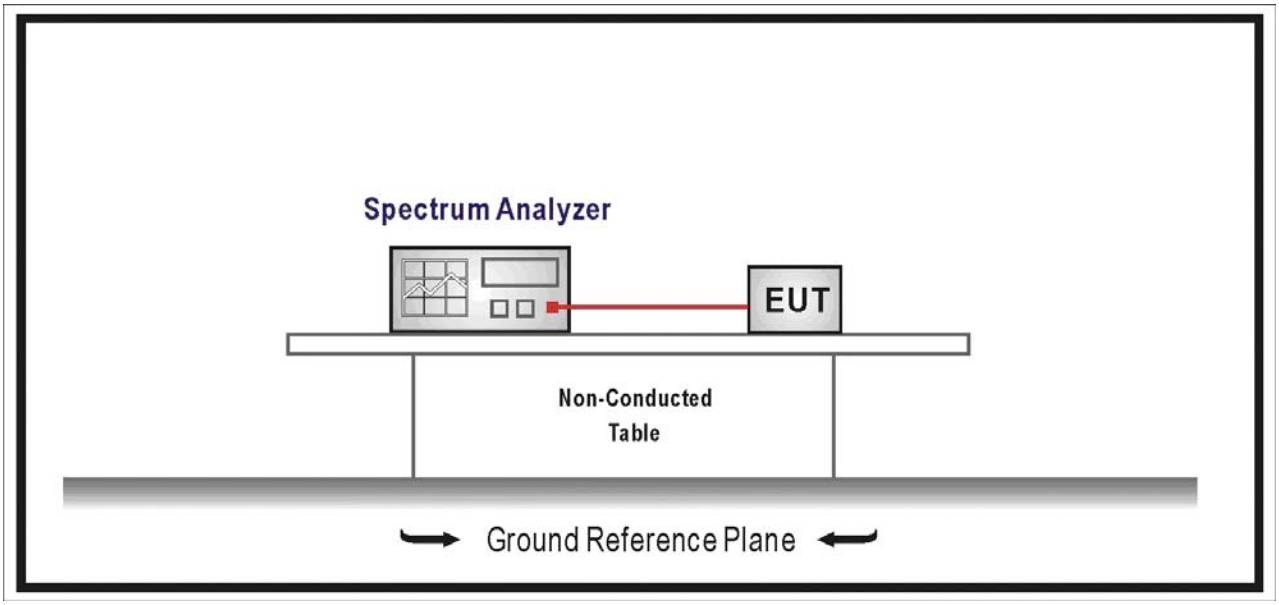
Description : Back View of Conducted Test for Main

4. Peak Output Power

4.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.247

4.2. Test Setup



4.3. Limit

The maximum peak power shall be less 1 Watt.

4.4. Deviation from Test Standard

No deviation.

4.5. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Peak Output Power		
Test Mode	Mode1: Transmitter 802.11b		
Date of Test	2006/06/20	Test Site	AC-3

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit (dBm)	Result
01	2412.00	21.70	1 Watt= 30 dBm	Pass
06	2437.00	20.93	1 Watt= 30 dBm	Pass
11	2462.00	20.35	1 Watt= 30 dBm	Pass

Figure Channel 01 (2412MHz)

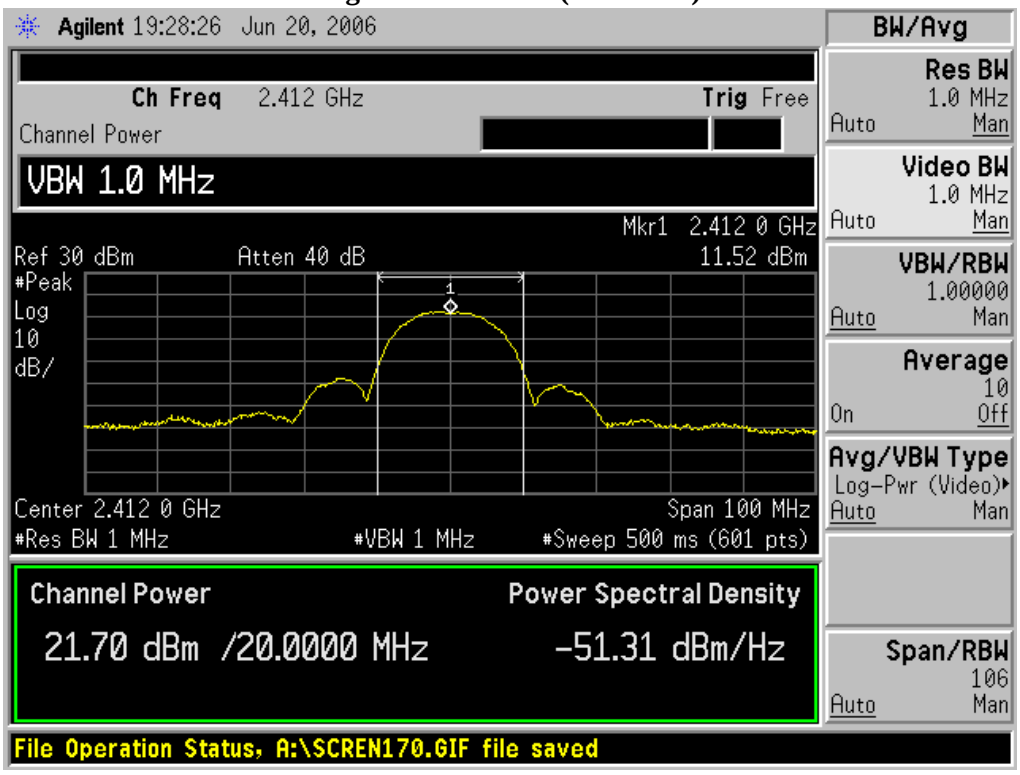


Figure Channel 06 (2437MHz)

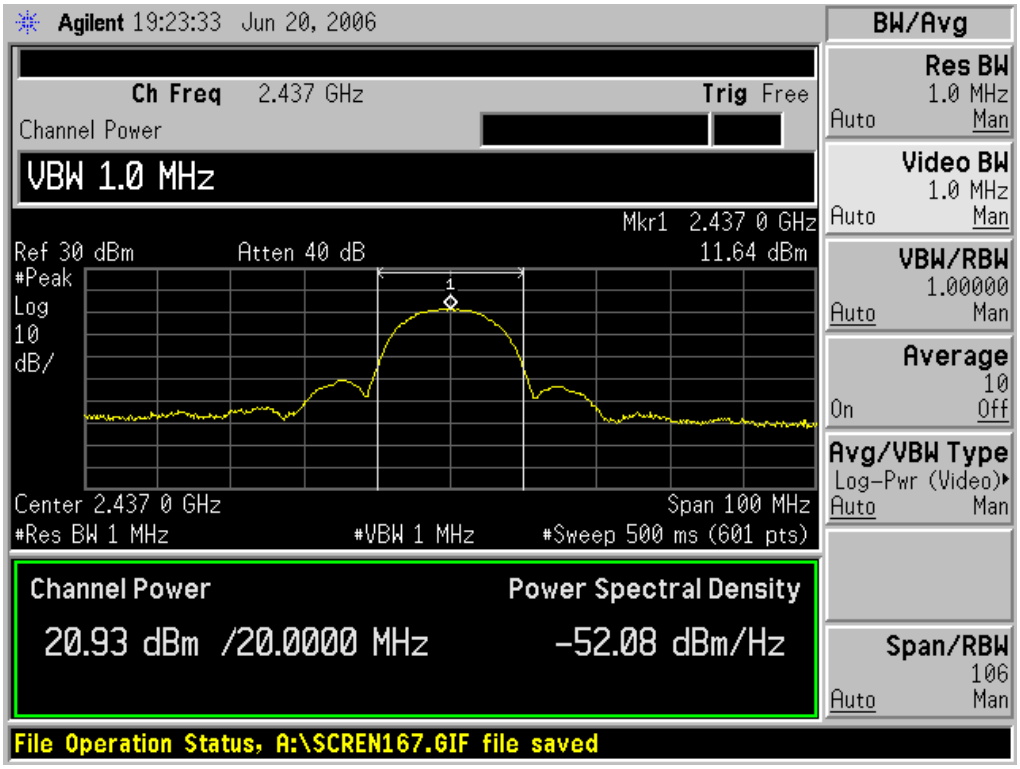
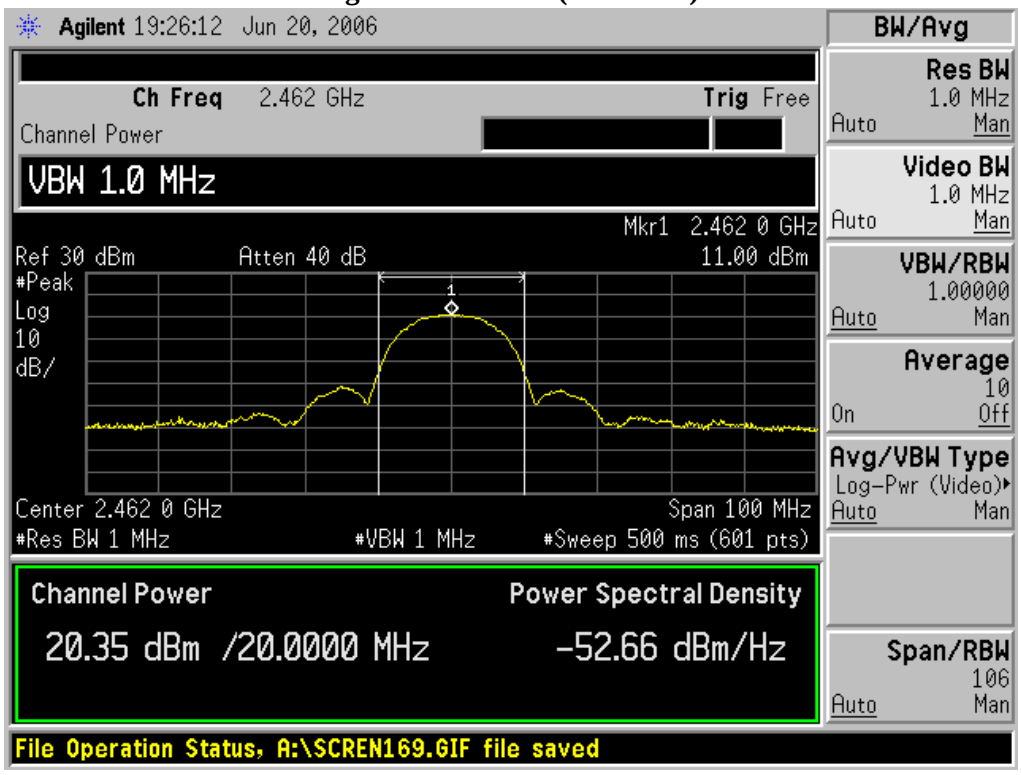


Figure Channel 11 (2462MHz)



Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Peak Output Power		
Test Mode	Mode2: Transmitter 802.11g		
Date of Test	2006/06/20	Test Site	AC-3

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit (dBm)	Result
01	2412.00	21.79	1 Watt= 30 dBm	Pass
06	2437.00	24.32	1 Watt= 30 dBm	Pass
11	2462.00	21.15	1 Watt= 30 dBm	Pass

Figure Channel 01 (2412MHz)

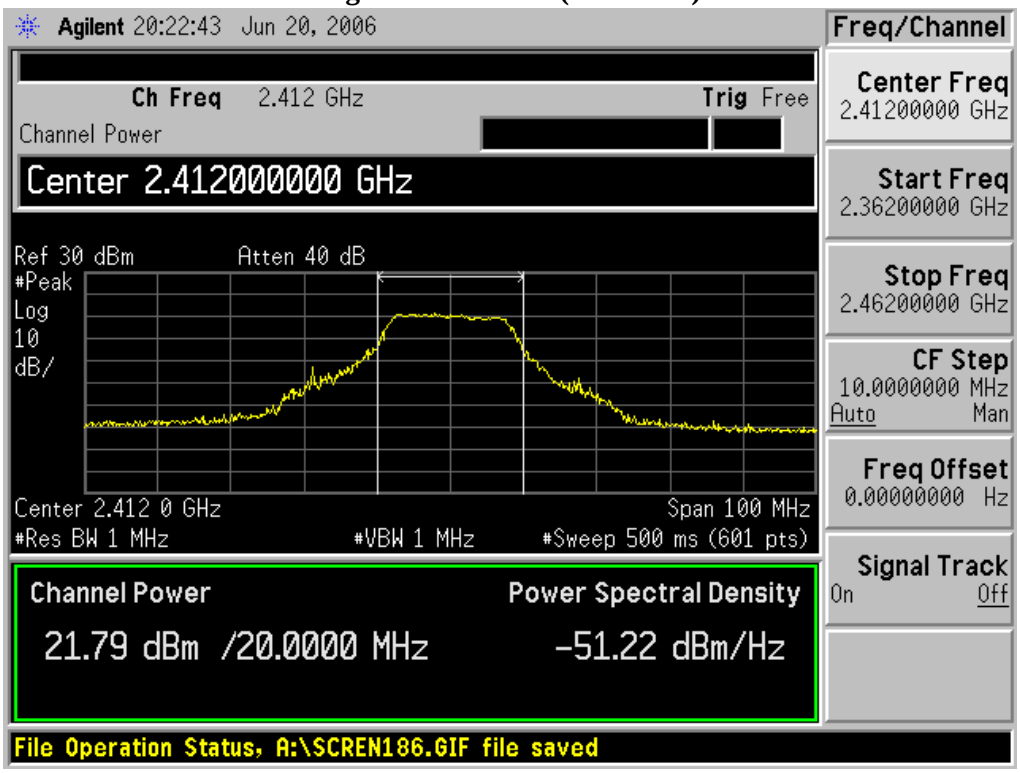


Figure Channel 06 (2437MHz)

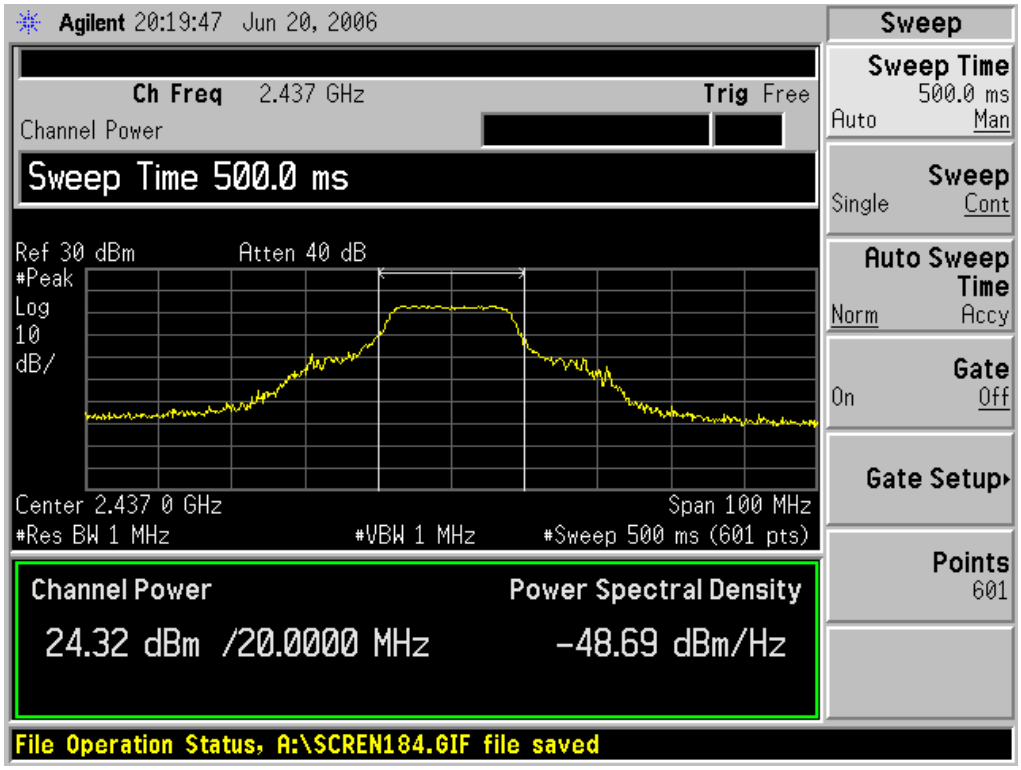
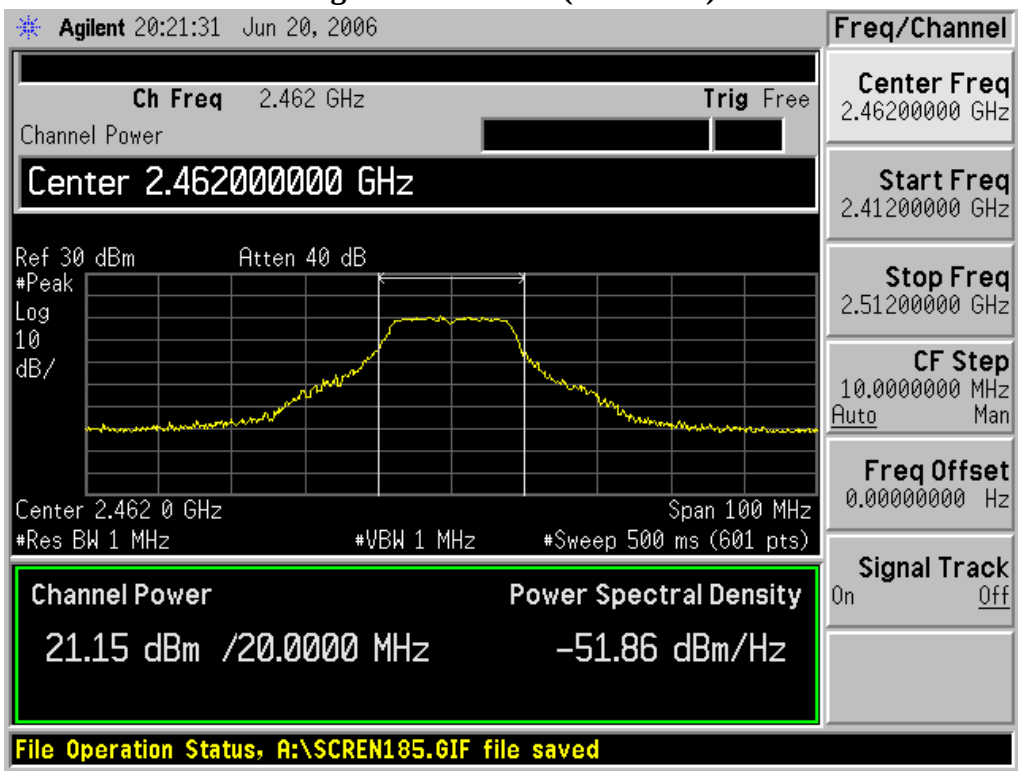


Figure Channel 11 (2462MHz)



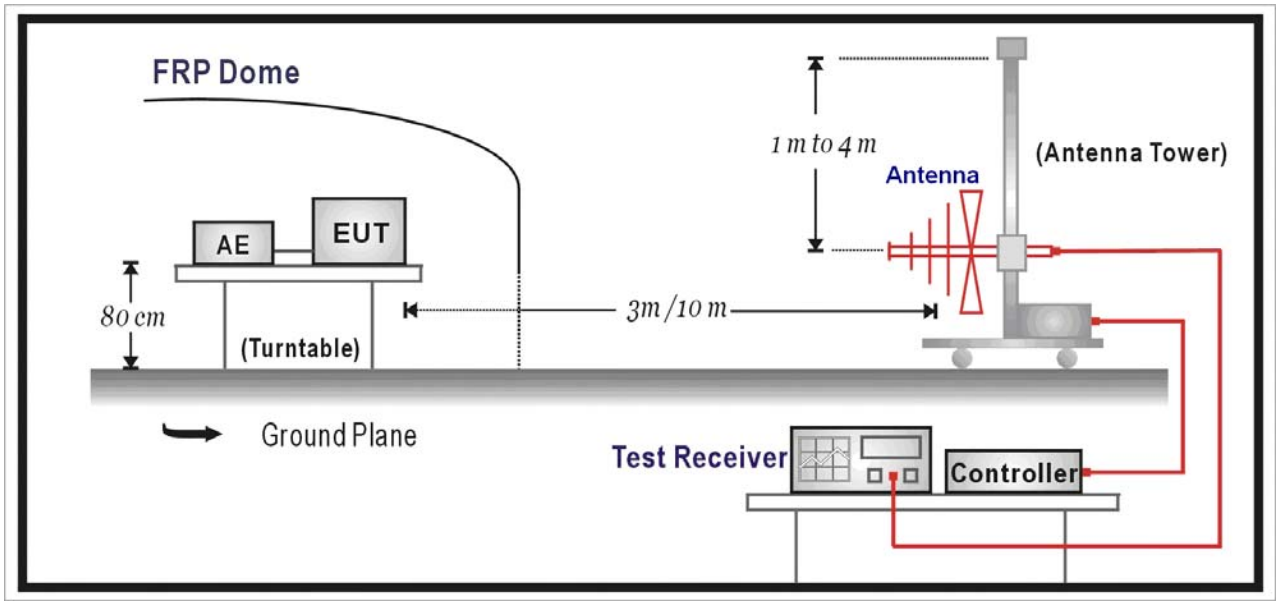
5. Radiated Emission

5.1. Test Specification

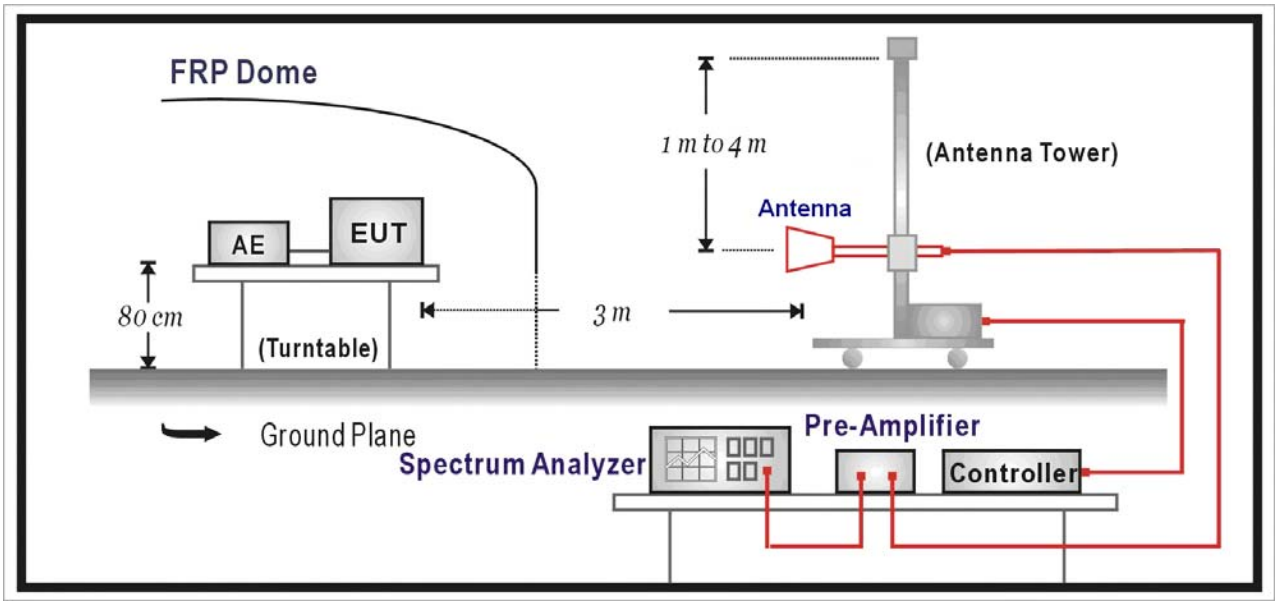
According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.209

5.2. Test Setup

Under 1GHz Test Setup



Above 1GHz Test Setup



5.3. Limit

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

FCC Part 15 Subpart C Paragraph 15.209 Limits			
Frequency MHz	uV/m	dBuV/m	Measurement distance (meter)
0.009-0.490	2400/F(kHz)	See Remark[1]	300
0.490-1.705	24000/F(kHz)	See Remark[1]	30
1.705-30	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

Remarks : 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

5.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4 on radiated measurement.
On the field strength of fundamental and harmonics, the limits shown are based on measuring equipment employing a average detector function. As an alternative, compliance with the limits may be based on the use of measurement instrumentation with a CISPR quasi-peak detector.
On the field strength of spurious electric, on any frequency or frequencies below or equal to 1000 MHz, the limits shown are based on measuring equipment employing a quasi-peak detector function and on any frequency or frequencies above 1000 MHz the radiated limits shown are based upon the use of measurement instrumentation employing an average detector function.

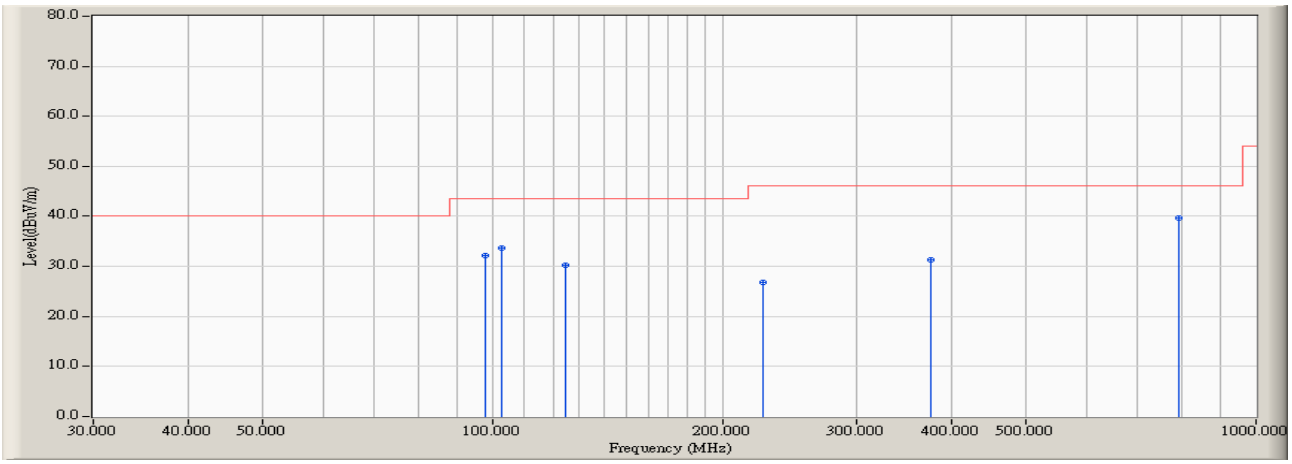
When average radiated emission measurement are included emission measurement below 1000 MHz, there also is a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.
The bandwidth below 1GHz setting on the field strength meter is 120 kHz and above 1GHz is 1MHz.

5.5. Deviation from Test Standard

No deviation.

5.6. Test Result

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 17:42**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2412MHz)**

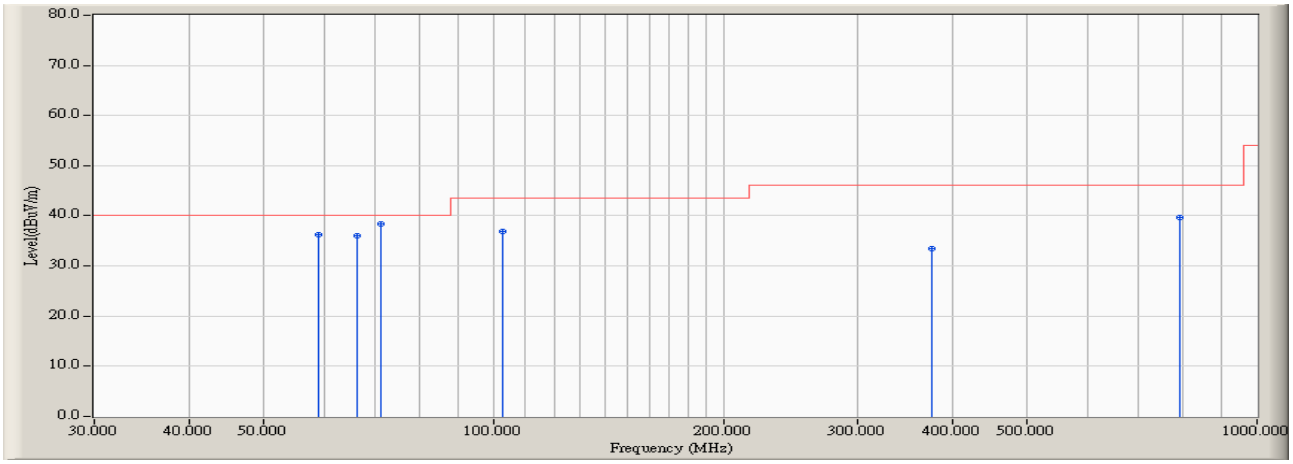


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	44.062	32.201	-11.319	43.520	QUASIPEAK
2		102.750	-11.096	44.802	33.706	-9.814	43.520	QUASIPEAK
3		124.575	-10.125	40.298	30.173	-13.347	43.520	QUASIPEAK
4		226.425	-12.116	39.000	26.884	-19.136	46.020	QUASIPEAK
5		374.350	-5.568	36.987	31.419	-14.601	46.020	QUASIPEAK
6	*	791.450	0.665	38.951	39.616	-6.404	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 17:59**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2412MHz)**

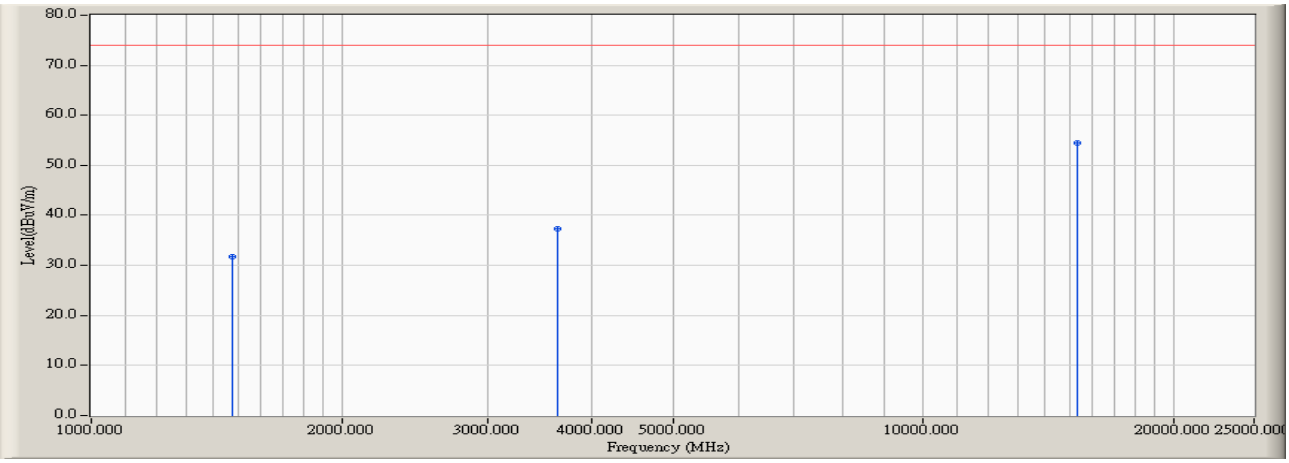


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	53.210	36.261	-3.739	40.000	QUASIPEAK
2		66.375	-17.094	53.216	36.122	-3.878	40.000	QUASIPEAK
3	*	71.225	-16.783	55.102	38.319	-1.681	40.000	QUASIPEAK
4		102.750	-11.096	48.011	36.915	-6.605	43.520	QUASIPEAK
5		374.350	-5.568	38.985	33.417	-12.603	46.020	QUASIPEAK
6		791.450	0.665	38.951	39.616	-6.404	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 20:08**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2412MHz)**

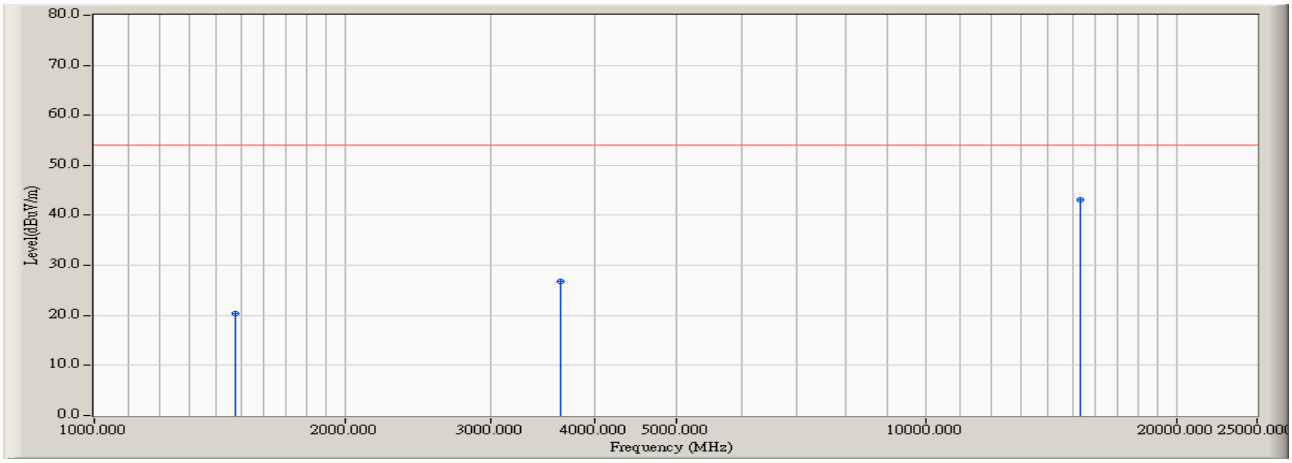


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1480.000	-7.789	39.510	31.720	-42.250	73.970	PEAK
2		3640.000	-1.195	38.530	37.335	-36.635	73.970	PEAK
3	*	15320.000	19.312	35.130	54.442	-19.528	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 20:14**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2412MHz)**

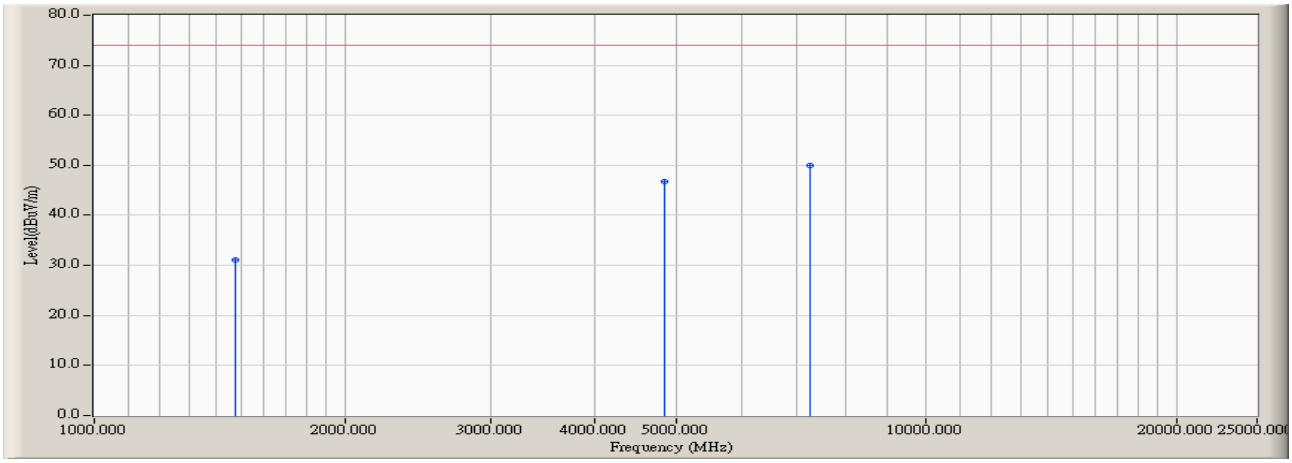


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1480.000	-7.789	28.270	20.480	-33.490	53.970	AVERAGE
2		3640.000	-1.195	27.920	26.725	-27.245	53.970	AVERAGE
3	*	15320.000	19.312	23.800	43.112	-10.858	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 20:29**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2412MHz)**

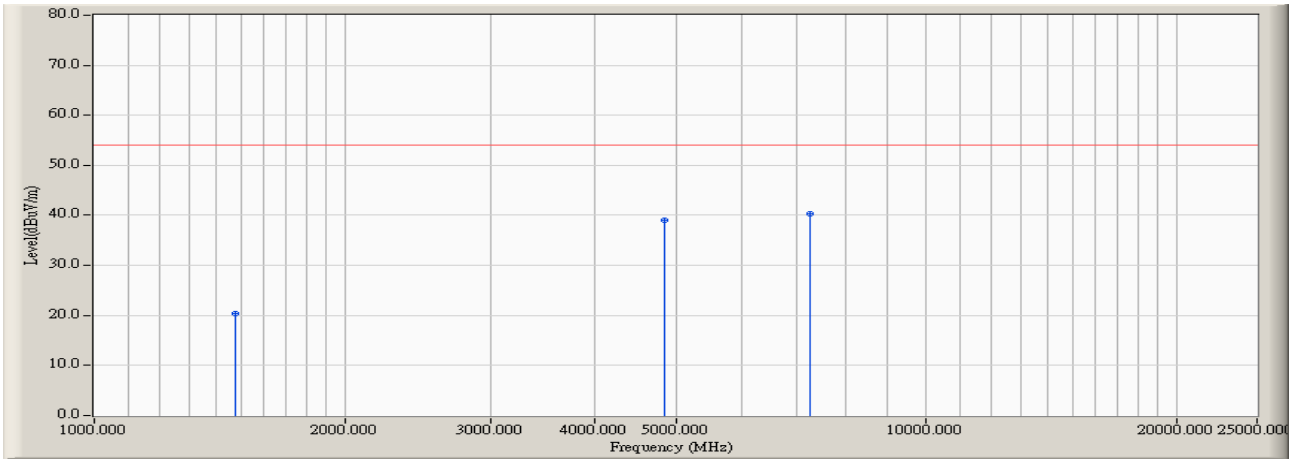


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1480.000	-7.789	38.890	31.100	-42.870	73.970	PEAK
2		4840.000	2.367	44.470	46.836	-27.134	73.970	PEAK
3	*	7240.000	12.309	37.660	49.969	-24.001	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 20:49**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2412MHz)**

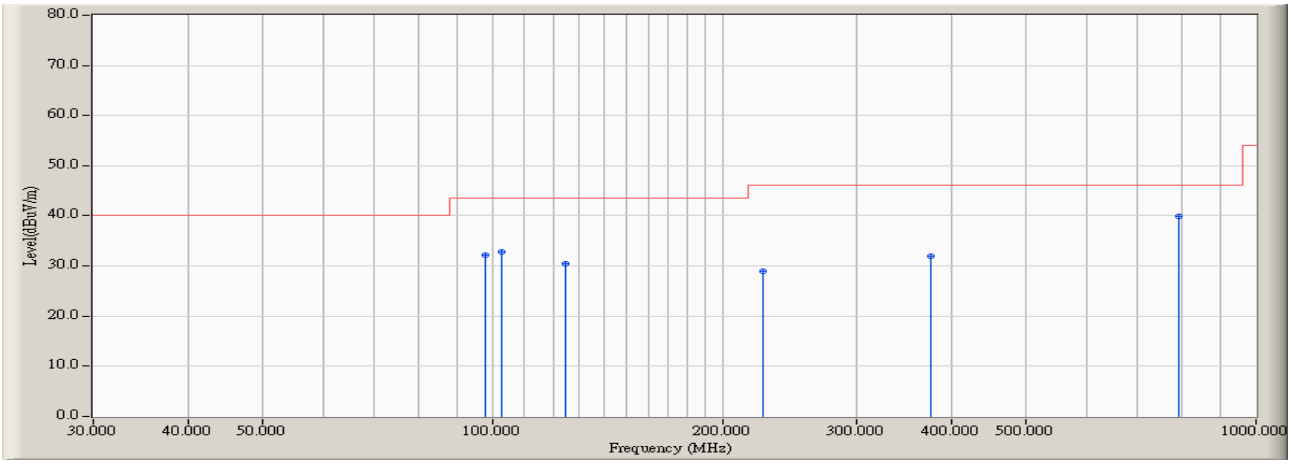


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1480.000	-7.789	28.270	20.480	-33.490	53.970	AVERAGE
2		4840.000	2.367	36.630	38.996	-14.974	53.970	AVERAGE
3	*	7240.000	12.309	27.980	40.289	-13.681	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/05 - 20:25**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2437MHz)**

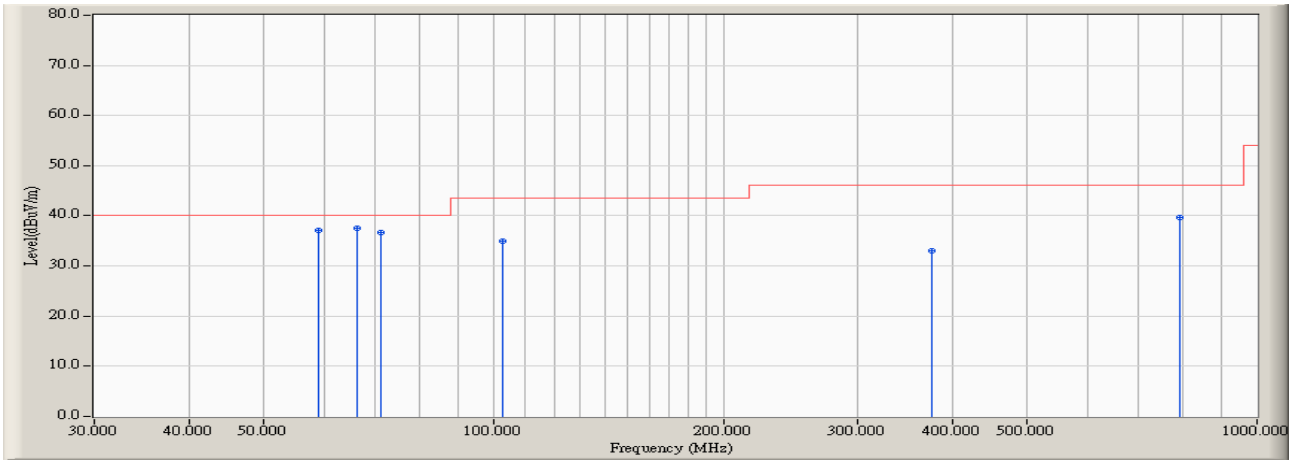


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	44.049	32.188	-11.332	43.520	QUASIPEAK
2		102.750	-11.096	43.890	32.794	-10.726	43.520	QUASIPEAK
3		124.575	-10.125	40.682	30.557	-12.963	43.520	QUASIPEAK
4		226.425	-12.116	40.987	28.871	-17.149	46.020	QUASIPEAK
5		374.350	-5.568	37.620	32.052	-13.968	46.020	QUASIPEAK
6	*	791.450	0.665	39.210	39.875	-6.145	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/05 - 20:49**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2437MHz)**

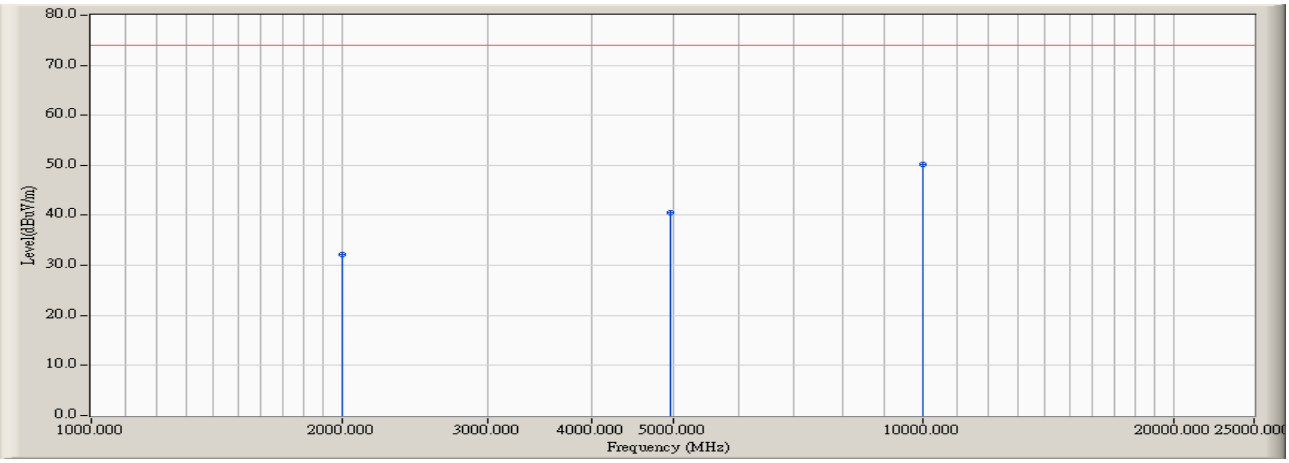


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	54.120	37.171	-2.829	40.000	QUASIPEAK
2	*	66.375	-17.094	54.620	37.526	-2.474	40.000	QUASIPEAK
3		71.225	-16.783	53.564	36.781	-3.219	40.000	QUASIPEAK
4		102.750	-11.096	46.098	35.002	-8.518	43.520	QUASIPEAK
5		374.350	-5.568	38.640	33.072	-12.948	46.020	QUASIPEAK
6		791.450	0.665	38.960	39.625	-6.395	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/21 - 21:21**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2437MHz)**

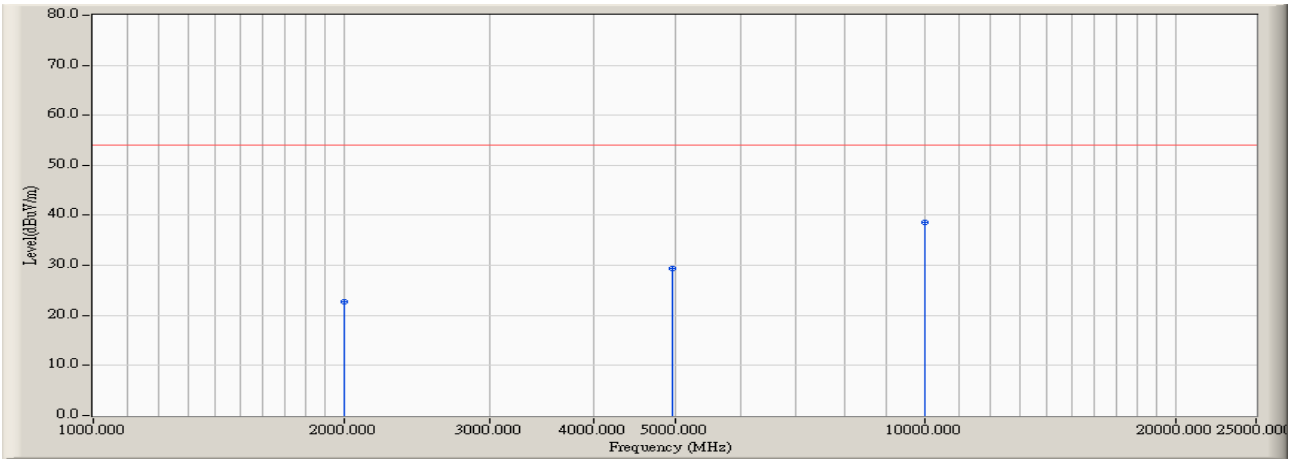


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2000.000	-5.637	37.740	32.104	-41.866	73.970	PEAK
2		4960.000	2.628	38.010	40.638	-33.332	73.970	PEAK
3	*	10000.000	14.426	35.800	50.226	-23.744	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/21 - 21:26**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2437MHz)**

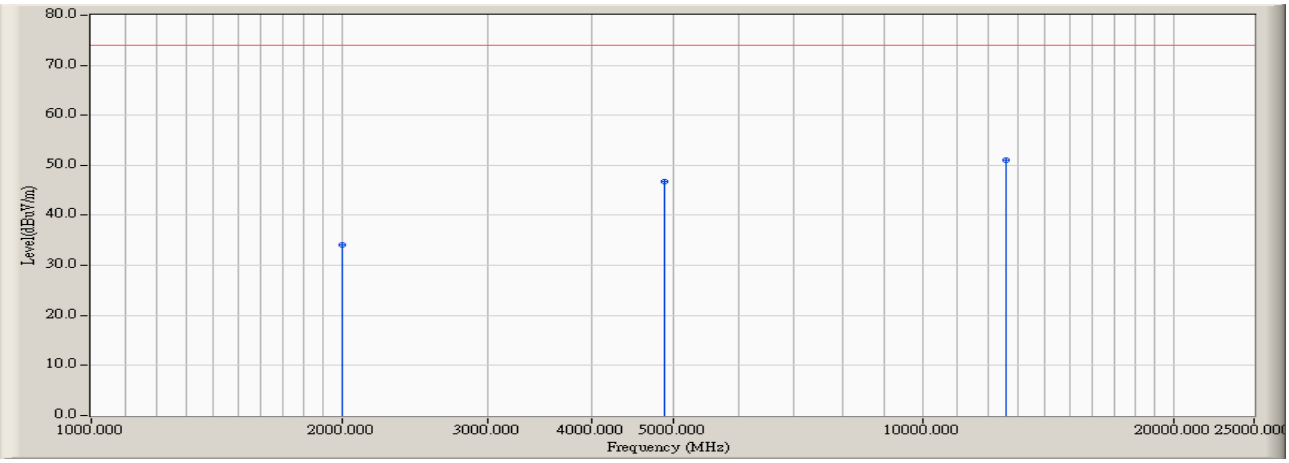


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2000.000	-5.637	28.410	22.774	-31.196	53.970	AVERAGE
2		4960.000	2.628	26.840	29.468	-24.502	53.970	AVERAGE
3	*	10000.000	14.426	24.170	38.596	-15.374	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/21 - 21:43**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2437MHz)**

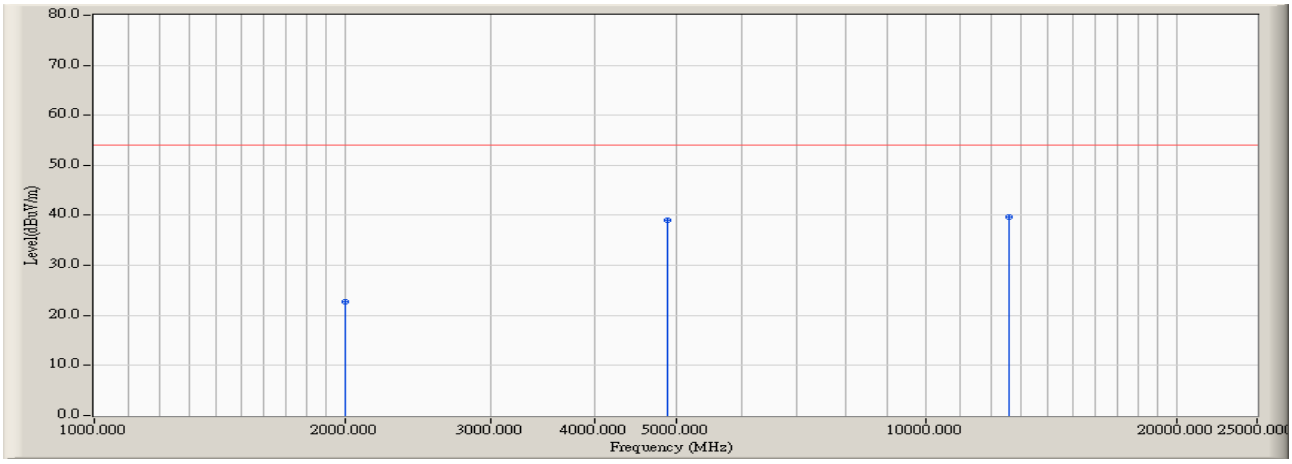


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2000.000	-5.637	39.690	34.054	-39.916	73.970	PEAK
2		4880.000	2.460	44.310	46.769	-27.201	73.970	PEAK
3	*	12600.000	15.815	35.230	51.045	-22.925	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/21 - 21:50**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2437MHz)**

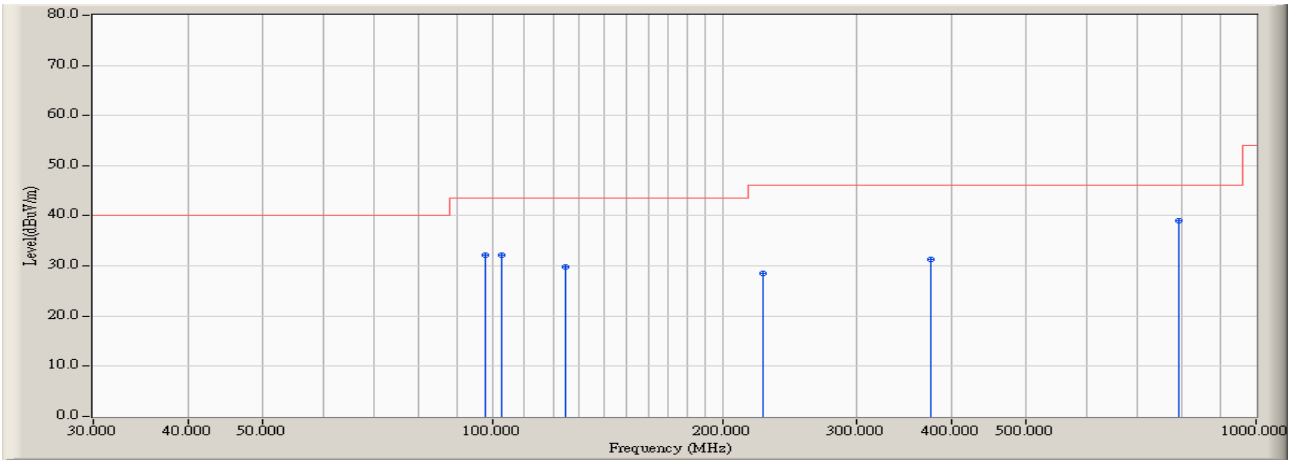


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2000.000	-5.637	28.410	22.774	-31.196	53.970	AVERAGE
2		4880.000	2.460	36.470	38.929	-15.041	53.970	AVERAGE
3	*	12600.000	15.815	23.870	39.685	-14.285	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 18:06**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2462MHz)**

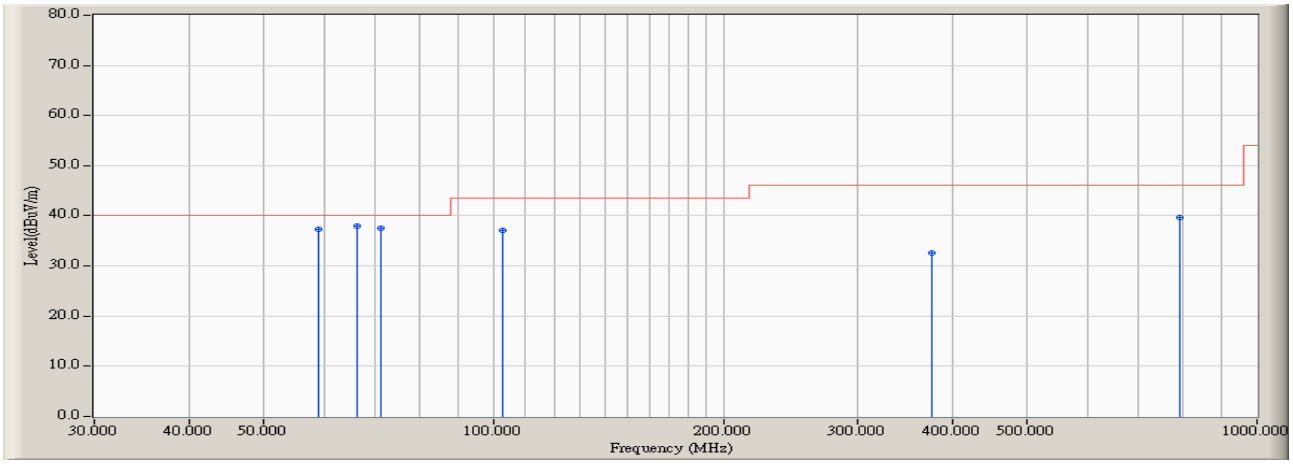


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	44.063	32.202	-11.318	43.520	QUASIPEAK
2		102.750	-11.096	43.302	32.206	-11.314	43.520	QUASIPEAK
3		124.575	-10.125	40.020	29.895	-13.625	43.520	QUASIPEAK
4		226.425	-12.116	40.586	28.470	-17.550	46.020	QUASIPEAK
5		374.350	-5.568	36.875	31.307	-14.713	46.020	QUASIPEAK
6	*	791.450	0.665	38.320	38.985	-7.035	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 18:18**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2462MHz)**

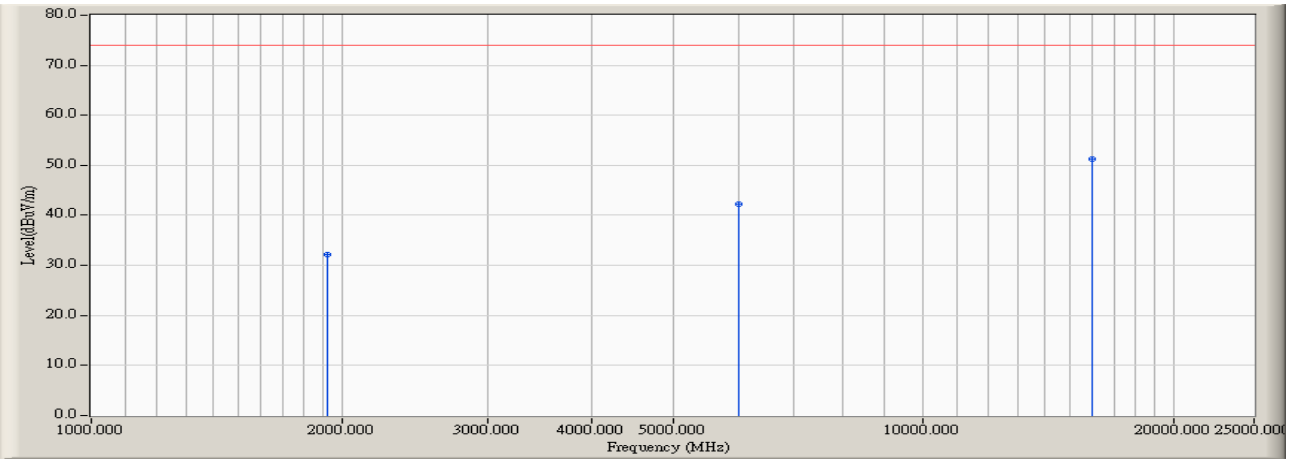


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	54.210	37.261	-2.739	40.000	QUASIPEAK
2	*	66.375	-17.094	55.128	38.034	-1.966	40.000	QUASIPEAK
3		71.225	-16.783	54.289	37.506	-2.494	40.000	QUASIPEAK
4		102.750	-11.096	48.210	37.114	-6.406	43.520	QUASIPEAK
5		374.350	-5.568	38.258	32.690	-13.330	46.020	QUASIPEAK
6		791.450	0.665	38.965	39.630	-6.390	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 20:58**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2462MHz)**

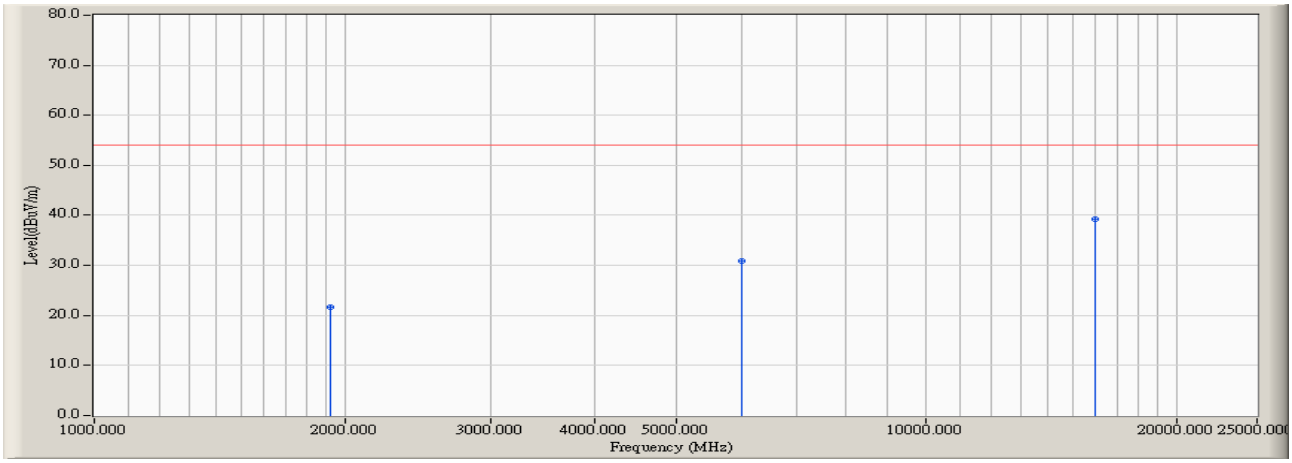


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1920.000	-6.255	38.380	32.125	-41.845	73.970	PEAK
2		6000.000	5.232	37.030	42.262	-31.708	73.970	PEAK
3	*	15960.000	17.820	33.480	51.300	-22.670	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 21:09**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2462MHz)**

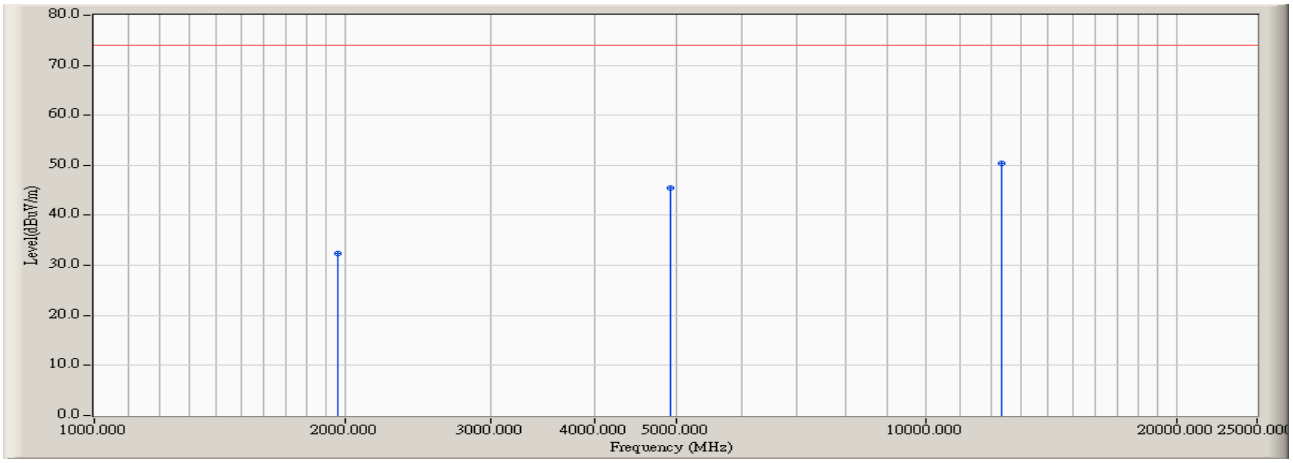


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1920.000	-6.255	27.840	21.585	-32.385	53.970	AVERAGE
2		6000.000	5.232	25.560	30.792	-23.178	53.970	AVERAGE
3	*	15960.000	17.820	21.440	39.260	-14.710	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 21:17**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2462MHz)**

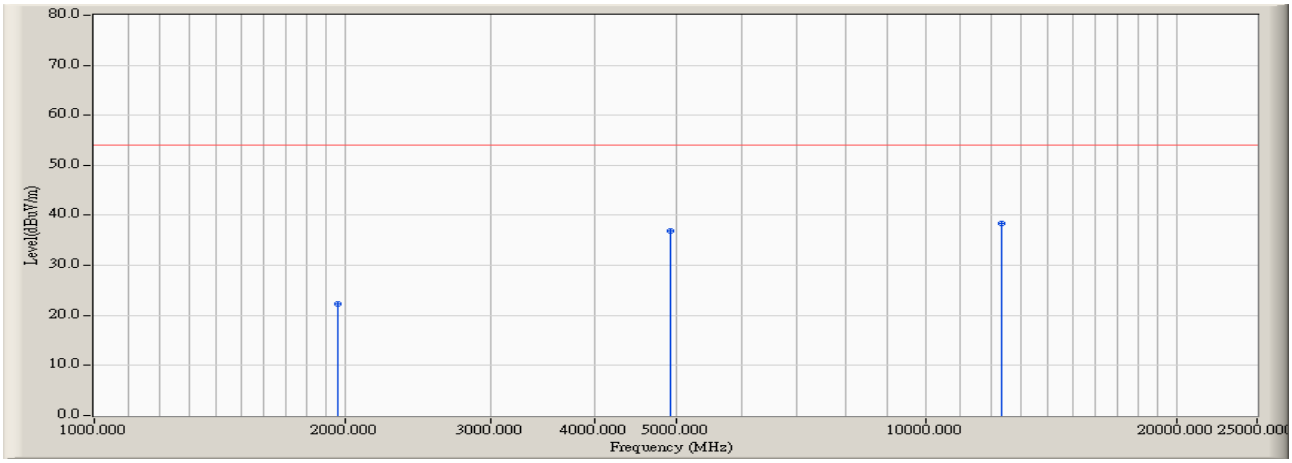


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1960.000	-5.950	38.430	32.481	-41.489	73.970	PEAK
2		4920.000	2.544	42.870	45.414	-28.556	73.970	PEAK
3	*	12320.000	15.126	35.280	50.406	-23.564	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 21:28**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode1: Transmitter 802.11b (Tx: 2462MHz)**

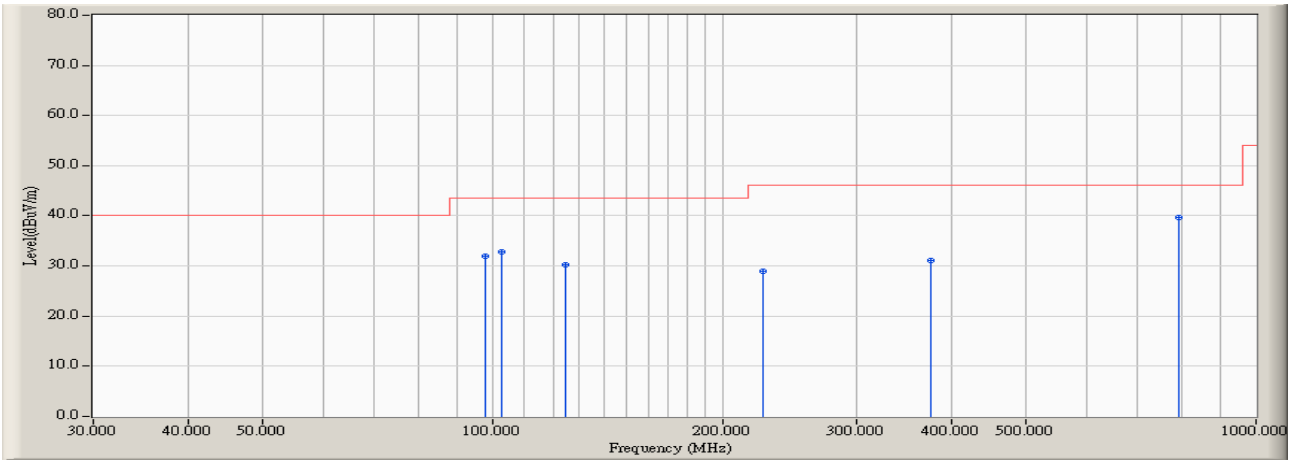


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1960.000	-5.950	28.280	22.331	-31.639	53.970	AVERAGE
2		4920.000	2.544	34.370	36.914	-17.056	53.970	AVERAGE
3	*	12320.000	15.126	23.340	38.466	-15.504	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 18:36**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2412MHz)**

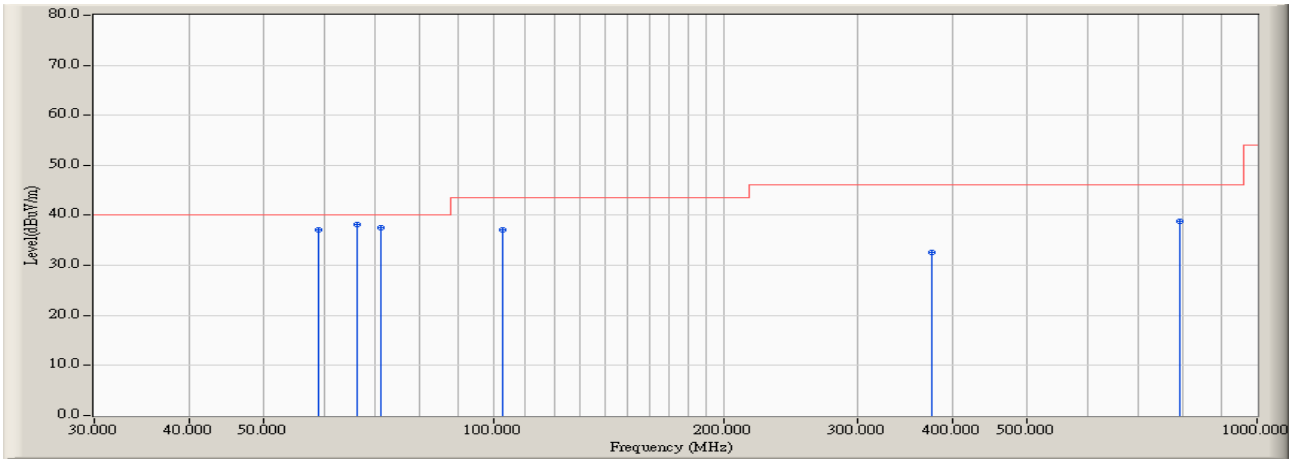


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	43.852	31.991	-11.529	43.520	QUASIPEAK
2		102.750	-11.096	43.895	32.799	-10.721	43.520	QUASIPEAK
3		124.575	-10.125	40.296	30.171	-13.349	43.520	QUASIPEAK
4		226.425	-12.116	40.987	28.871	-17.149	46.020	QUASIPEAK
5		374.350	-5.568	36.710	31.142	-14.878	46.020	QUASIPEAK
6	*	791.450	0.665	38.987	39.652	-6.368	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 18:49**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2412MHz)**

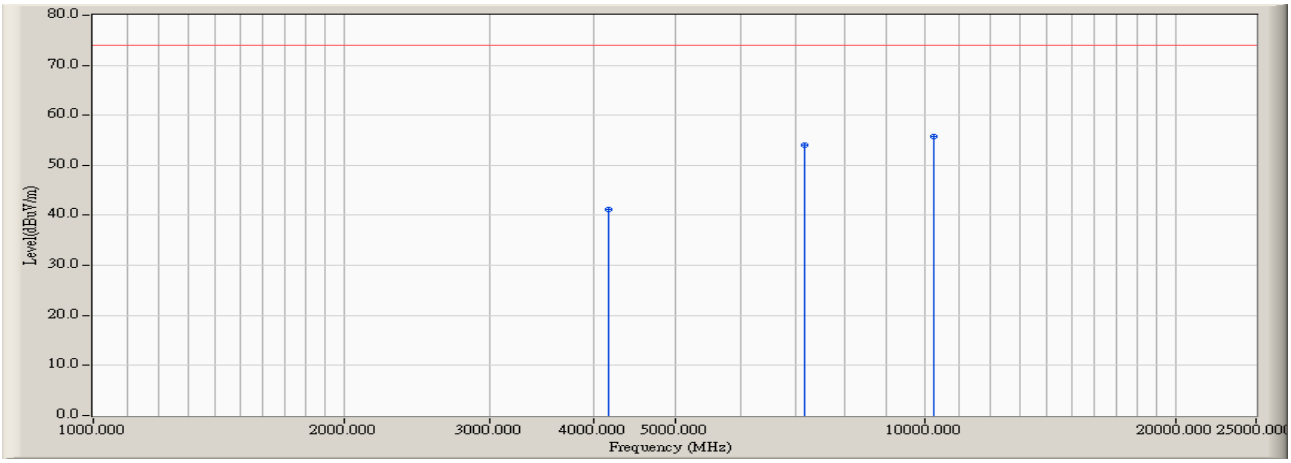


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	54.126	37.177	-2.823	40.000	QUASIPEAK
2	*	66.375	-17.094	55.189	38.095	-1.905	40.000	QUASIPEAK
3		71.225	-16.783	54.320	37.537	-2.463	40.000	QUASIPEAK
4		102.750	-11.096	48.112	37.016	-6.504	43.520	QUASIPEAK
5		374.350	-5.568	38.126	32.558	-13.462	46.020	QUASIPEAK
6		791.450	0.665	38.126	38.791	-7.229	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 21:48**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2412MHz)**

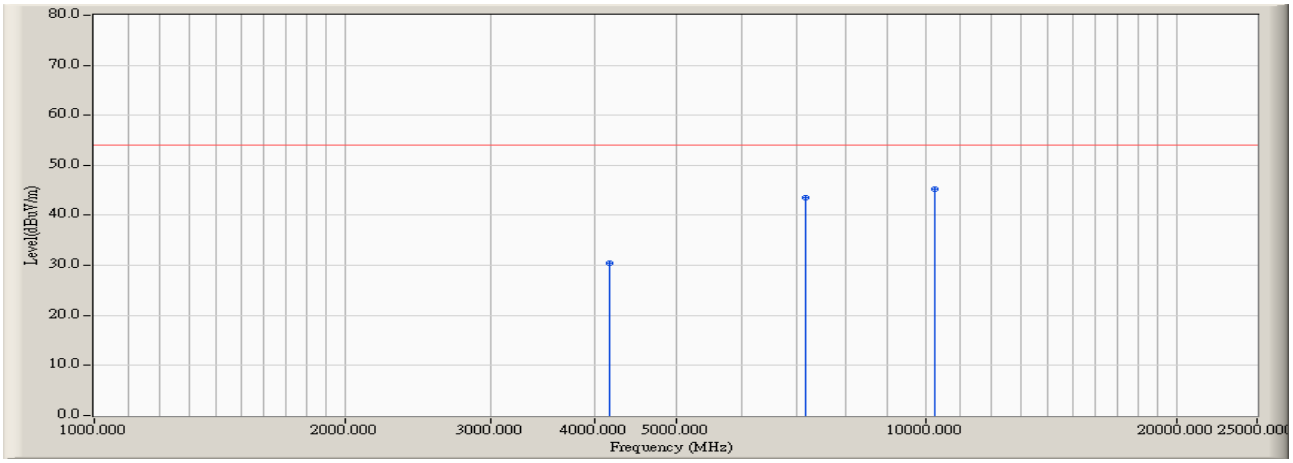


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4160.000	0.567	40.700	41.266	-32.704	73.970	PEAK
2		7160.000	12.228	41.880	54.108	-19.862	73.970	PEAK
3	*	10240.000	15.147	40.610	55.756	-18.214	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 21:56**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2412MHz)**

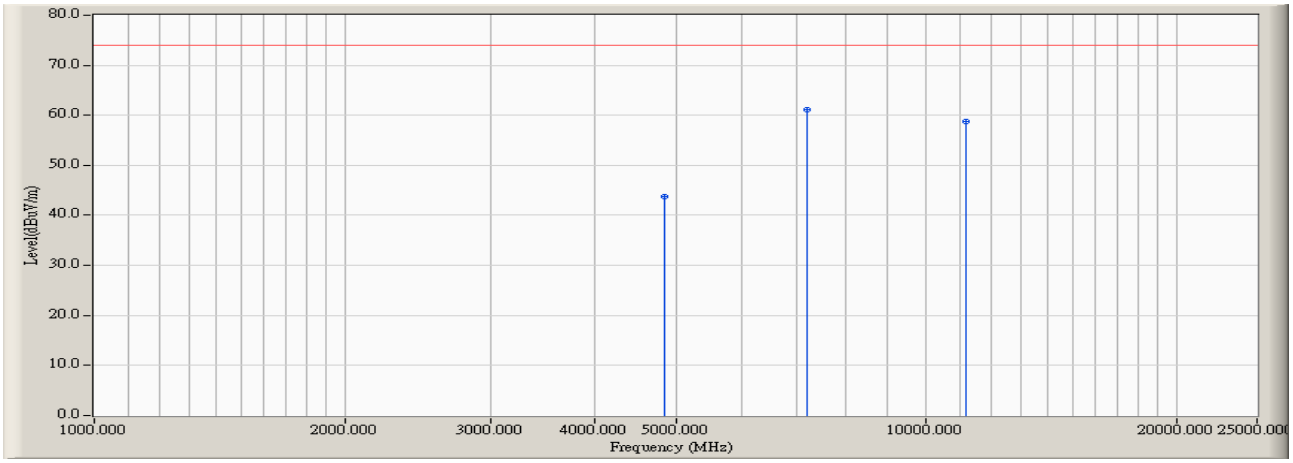


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4160.000	0.567	29.840	30.406	-23.564	53.970	AVERAGE
2		7160.000	12.228	31.280	43.508	-10.462	53.970	AVERAGE
3	*	10240.000	15.147	30.060	45.206	-8.764	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 21:59**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2412MHz)**

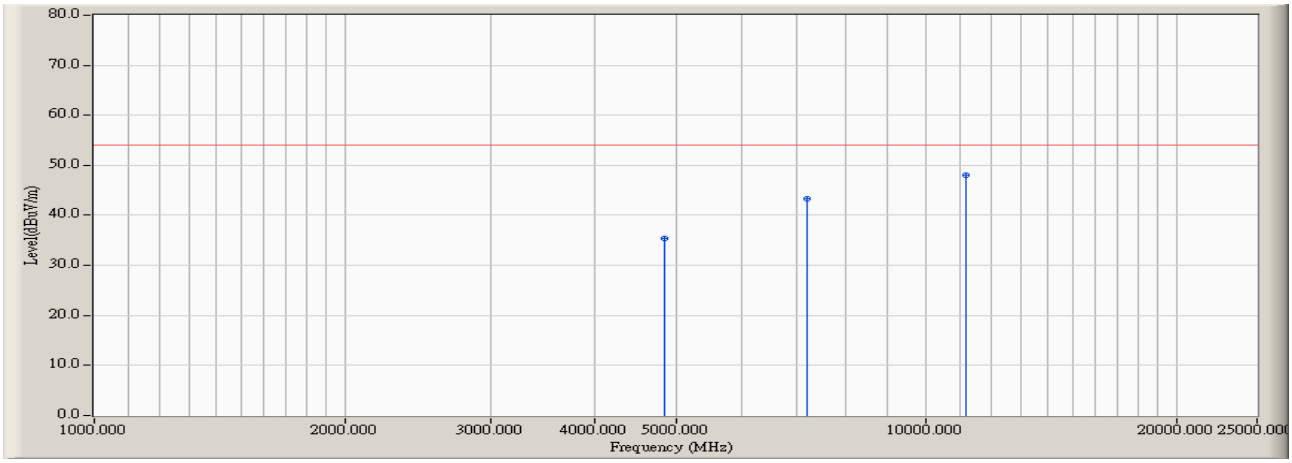


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4840.000	2.367	41.390	43.756	-30.214	73.970	PEAK
2	*	7200.000	12.351	48.770	61.121	-12.849	73.970	PEAK
3		11160.000	16.722	42.080	58.801	-15.169	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 22:06**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2412MHz)**

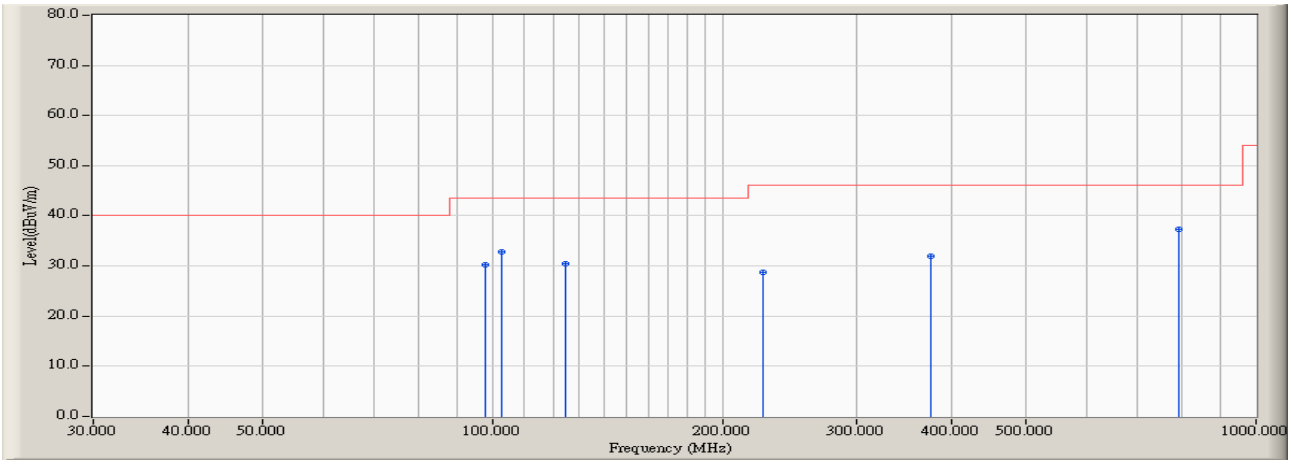


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4840.000	2.367	32.950	35.316	-18.654	53.970	AVERAGE
2		7200.000	12.351	30.990	43.341	-10.629	53.970	AVERAGE
3	*	11160.000	16.722	31.230	47.951	-6.019	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/05 - 21:31**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2437MHz)**

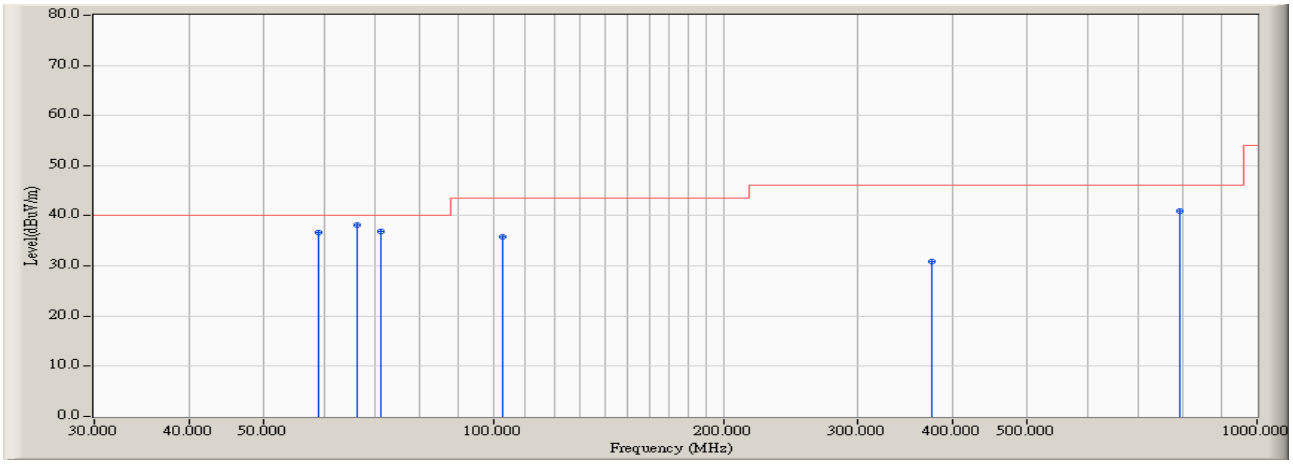


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	42.001	30.140	-13.380	43.520	QUASIPEAK
2		102.750	-11.096	43.880	32.784	-10.736	43.520	QUASIPEAK
3		124.575	-10.125	40.685	30.560	-12.960	43.520	QUASIPEAK
4		226.425	-12.116	40.874	28.758	-17.262	46.020	QUASIPEAK
5		374.350	-5.568	37.620	32.052	-13.968	46.020	QUASIPEAK
6	*	791.450	0.665	36.582	37.247	-8.773	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/05 - 21:52**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2437MHz)**

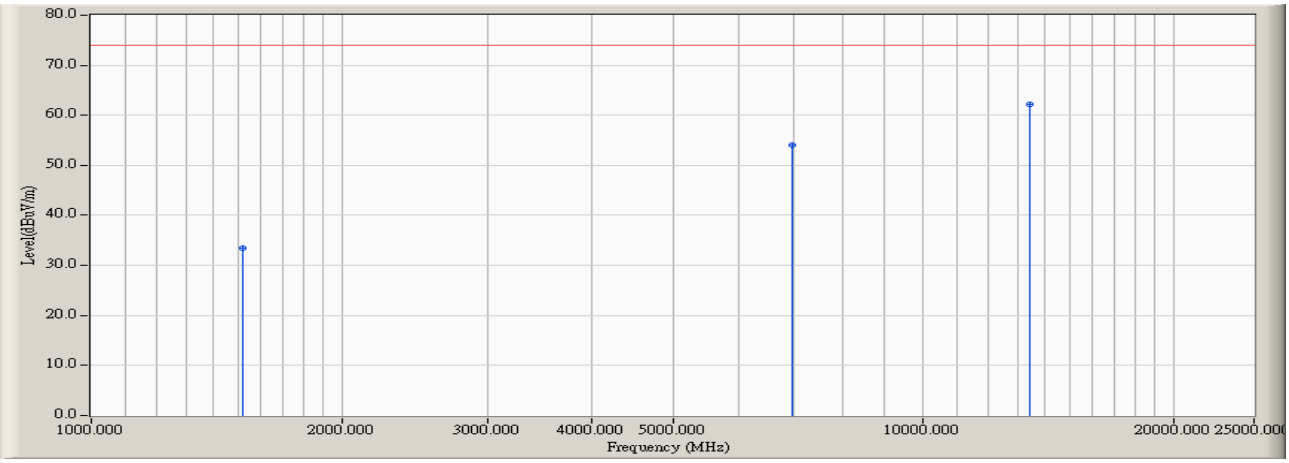


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	53.690	36.741	-3.259	40.000	QUASIPEAK
2	*	66.375	-17.094	55.320	38.226	-1.774	40.000	QUASIPEAK
3		71.225	-16.783	53.652	36.869	-3.131	40.000	QUASIPEAK
4		102.750	-11.096	47.002	35.906	-7.614	43.520	QUASIPEAK
5		374.350	-5.568	36.460	30.892	-15.128	46.020	QUASIPEAK
6		791.450	0.665	40.360	41.025	-4.995	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 10:10**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2437MHz)**

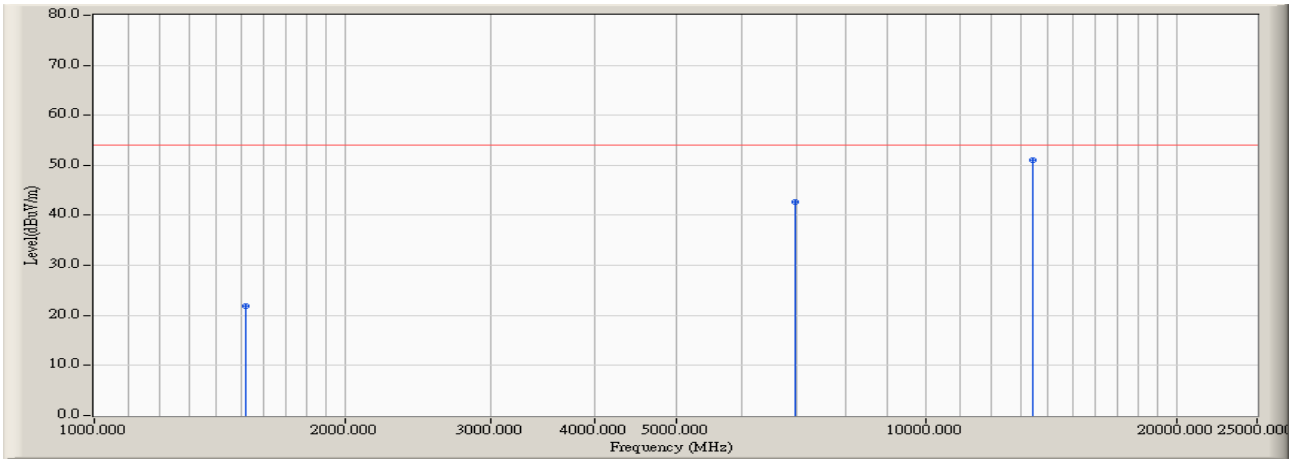


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1520.000	-7.758	41.320	33.562	-40.408	73.970	PEAK
2		6960.000	11.509	42.460	53.969	-20.001	73.970	PEAK
3	*	13440.000	18.589	43.530	62.118	-11.852	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 10:26**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2437MHz)**

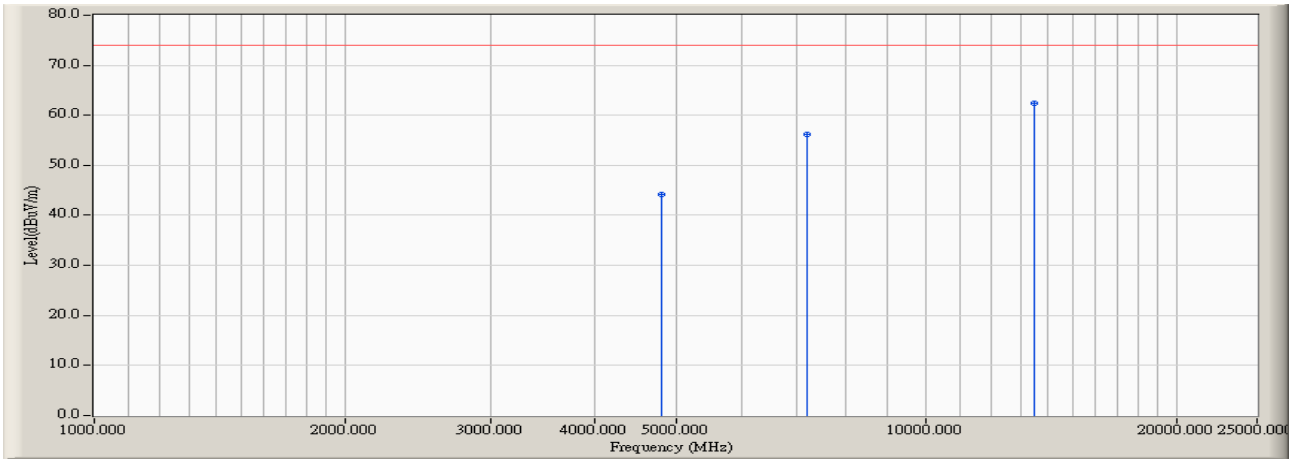


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1520.000	-7.758	29.740	21.982	-31.988	53.970	AVERAGE
2		6960.000	11.509	31.170	42.679	-11.291	53.970	AVERAGE
3	*	13440.000	18.589	32.500	51.088	-2.882	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 10:39**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2437MHz)**

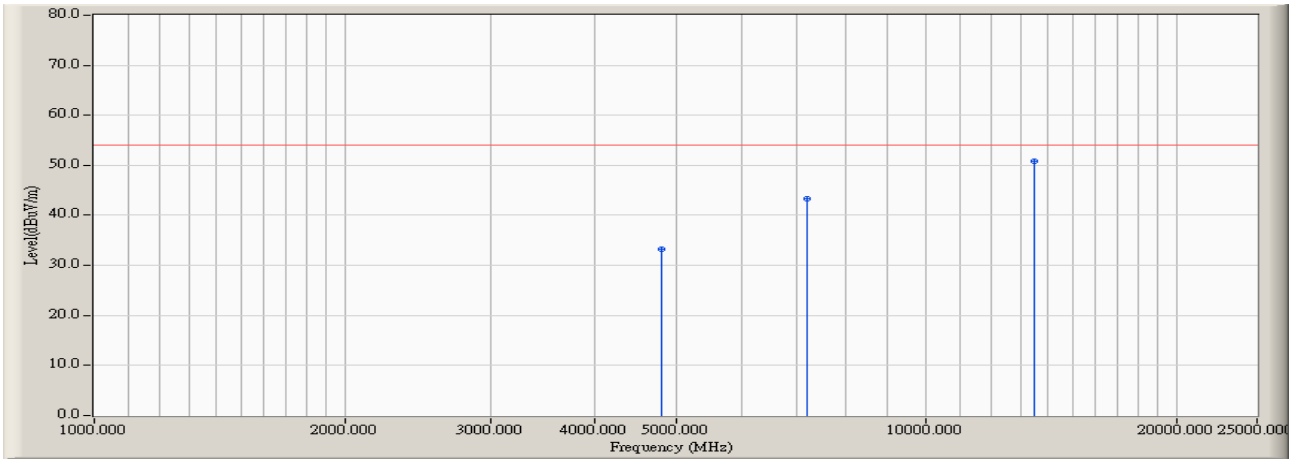


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4800.000	2.297	41.930	44.226	-29.744	73.970	PEAK
2		7200.000	12.351	43.770	56.121	-17.849	73.970	PEAK
3	*	13480.000	18.705	43.770	62.475	-11.495	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 10:46**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2437MHz)**

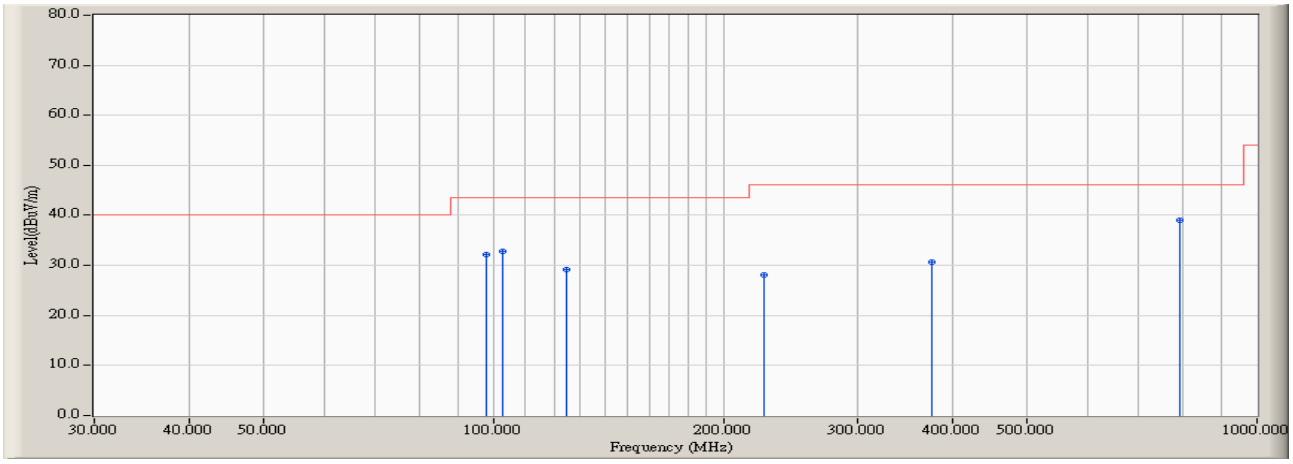


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4800.000	2.297	31.030	33.326	-20.644	53.970	AVERAGE
2		7200.000	12.351	30.890	43.241	-10.729	53.970	AVERAGE
3	*	13480.000	18.705	32.210	50.915	-3.055	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 18:58**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2462MHz)**

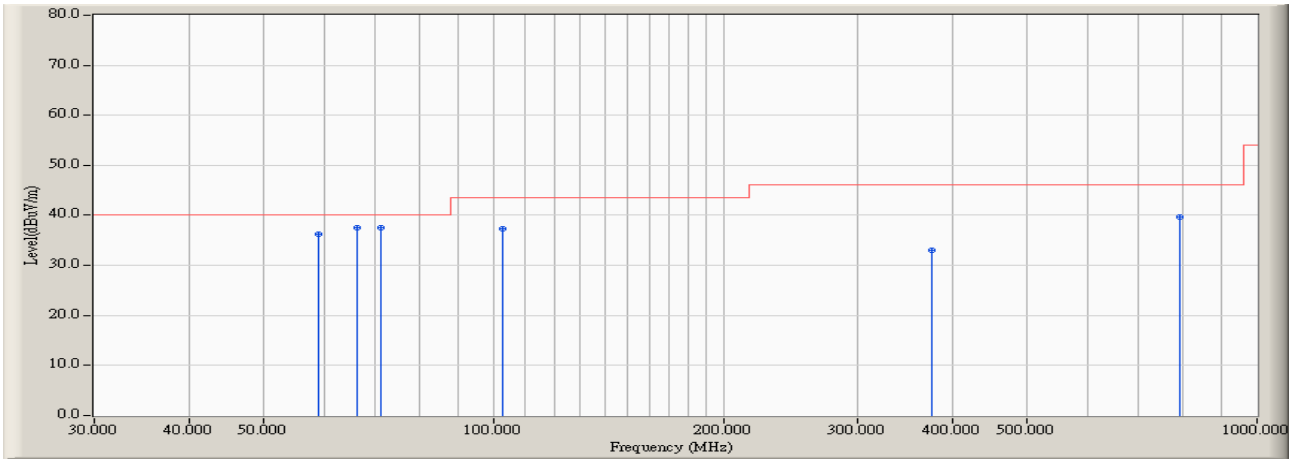


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	44.065	32.204	-11.316	43.520	QUASIPEAK
2		102.750	-11.096	43.895	32.799	-10.721	43.520	QUASIPEAK
3		124.575	-10.125	39.321	29.196	-14.324	43.520	QUASIPEAK
4		226.425	-12.116	40.236	28.120	-17.900	46.020	QUASIPEAK
5		374.350	-5.568	36.256	30.688	-15.332	46.020	QUASIPEAK
6	*	791.450	0.665	38.369	39.034	-6.986	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 19:18**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2462MHz)**

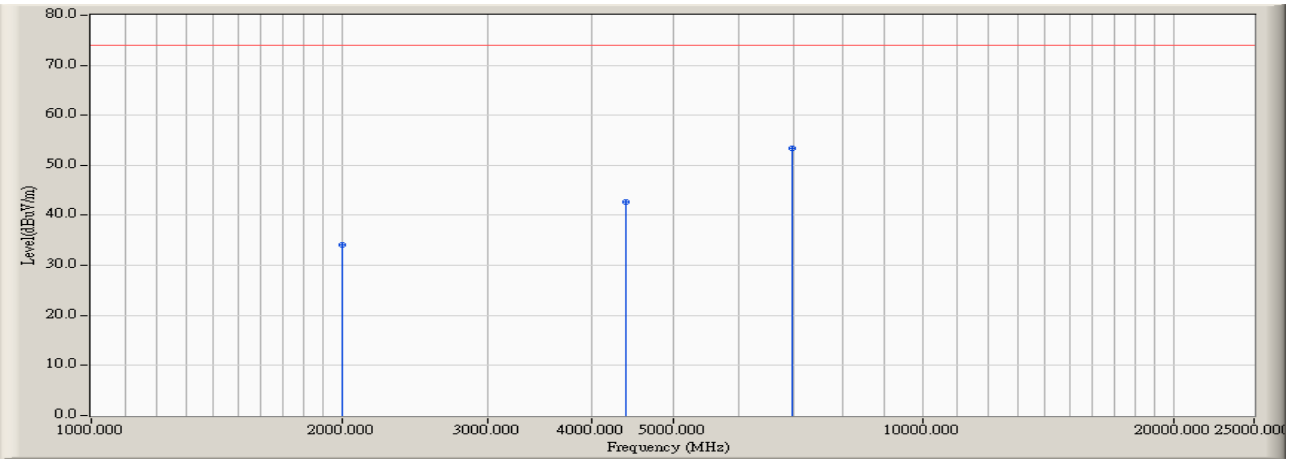


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	53.123	36.174	-3.826	40.000	QUASIPEAK
2	*	66.375	-17.094	54.698	37.604	-2.396	40.000	QUASIPEAK
3		71.225	-16.783	54.351	37.568	-2.432	40.000	QUASIPEAK
4		102.750	-11.096	48.321	37.225	-6.295	43.520	QUASIPEAK
5		374.350	-5.568	38.654	33.086	-12.934	46.020	QUASIPEAK
6		791.450	0.665	38.963	39.628	-6.392	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 22:16**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2462MHz)**

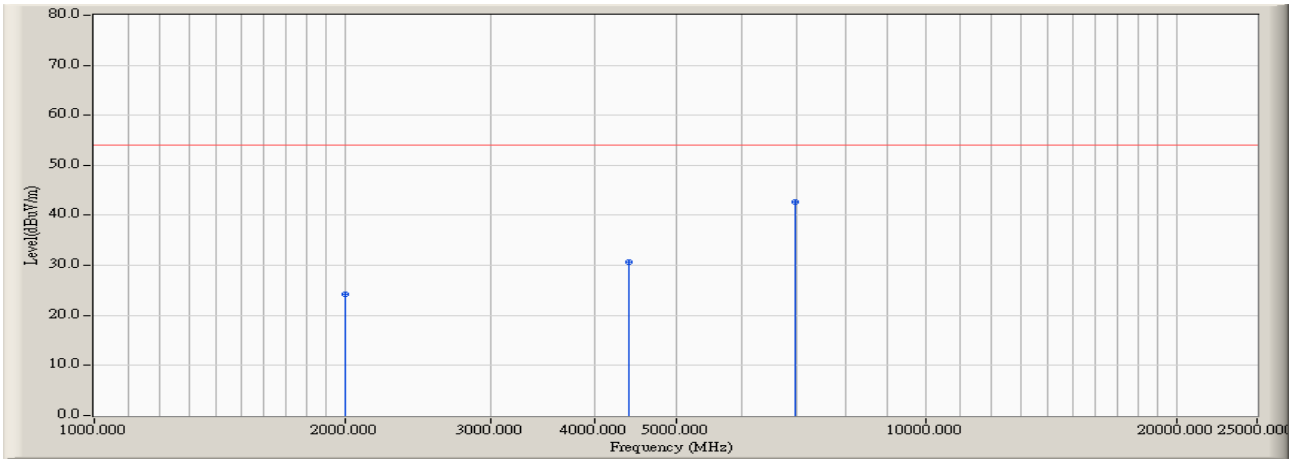


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2000.000	-5.637	39.760	34.124	-39.846	73.970	PEAK
2		4400.000	1.160	41.610	42.770	-31.200	73.970	PEAK
3	*	6960.000	11.509	41.840	53.349	-20.621	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 22:28**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2462MHz)**

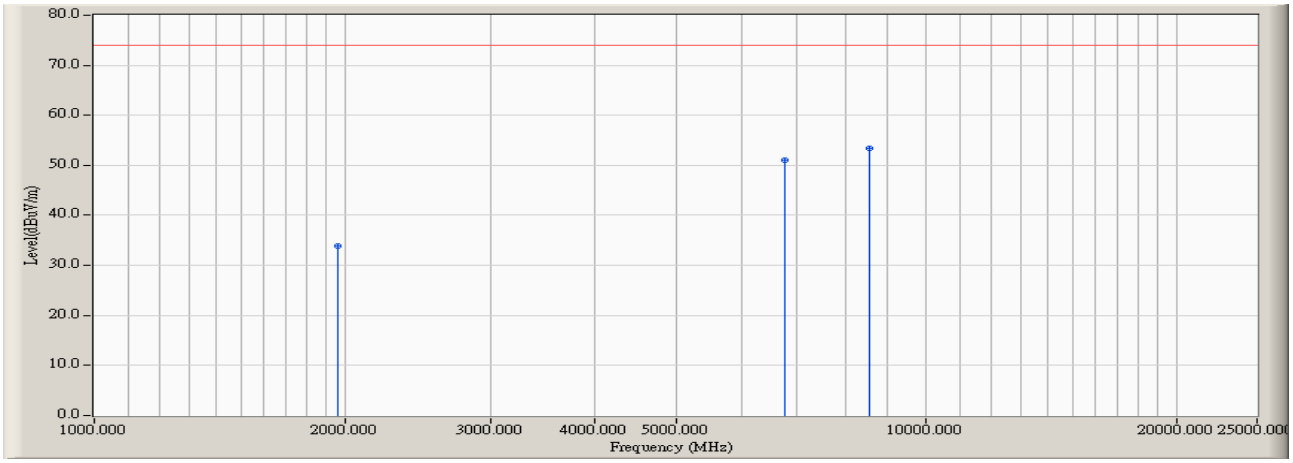


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2000.000	-5.637	29.960	24.324	-29.646	53.970	AVERAGE
2		4400.000	1.160	29.460	30.620	-23.350	53.970	AVERAGE
3	*	6960.000	11.509	31.230	42.739	-11.231	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 22:36**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2462MHz)**

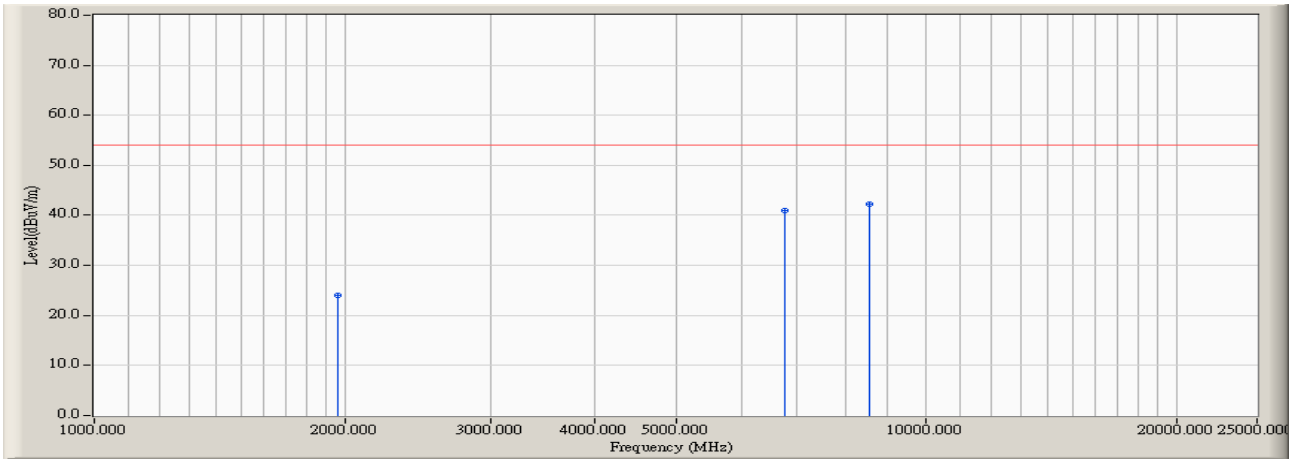


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1960.000	-5.950	39.740	33.791	-40.179	73.970	PEAK
2		6760.000	10.605	40.510	51.115	-22.855	73.970	PEAK
3	*	8560.000	11.598	41.830	53.428	-20.542	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/13 - 22:40**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode2: Transmitter 802.11g (Tx: 2462MHz)**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1960.000	-5.950	29.990	24.041	-29.929	53.970	AVERAGE
2		6760.000	10.605	30.360	40.965	-13.005	53.970	AVERAGE
3	*	8560.000	11.598	30.590	42.188	-11.782	53.970	AVERAGE

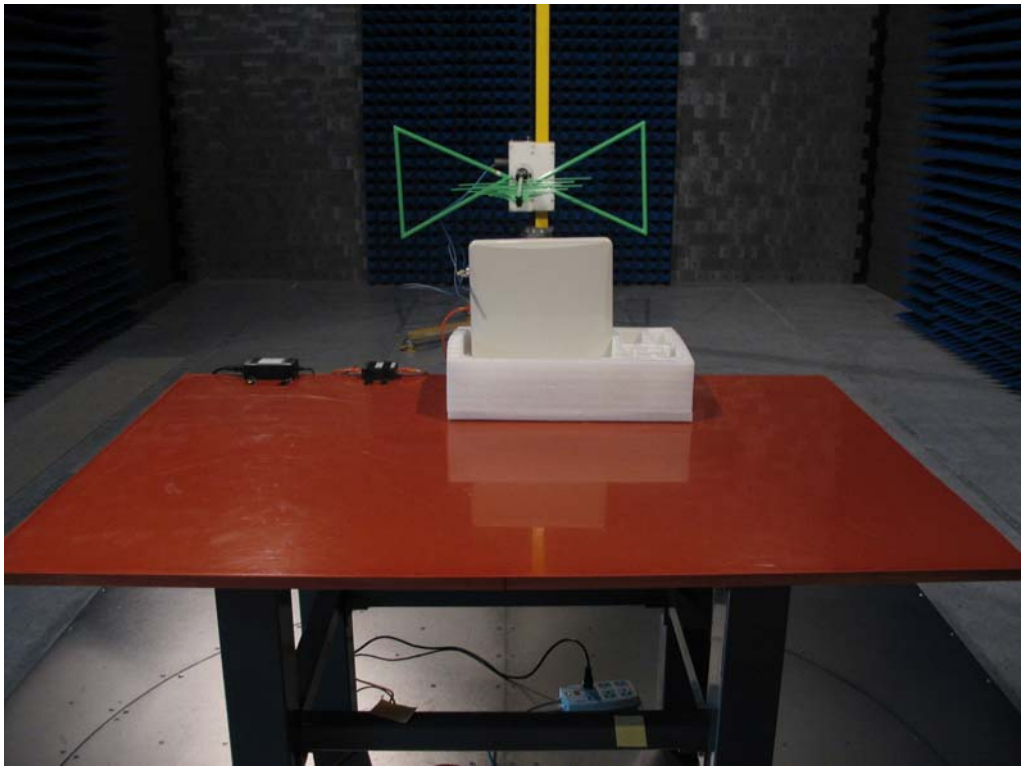
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

5.7. Test Photograph

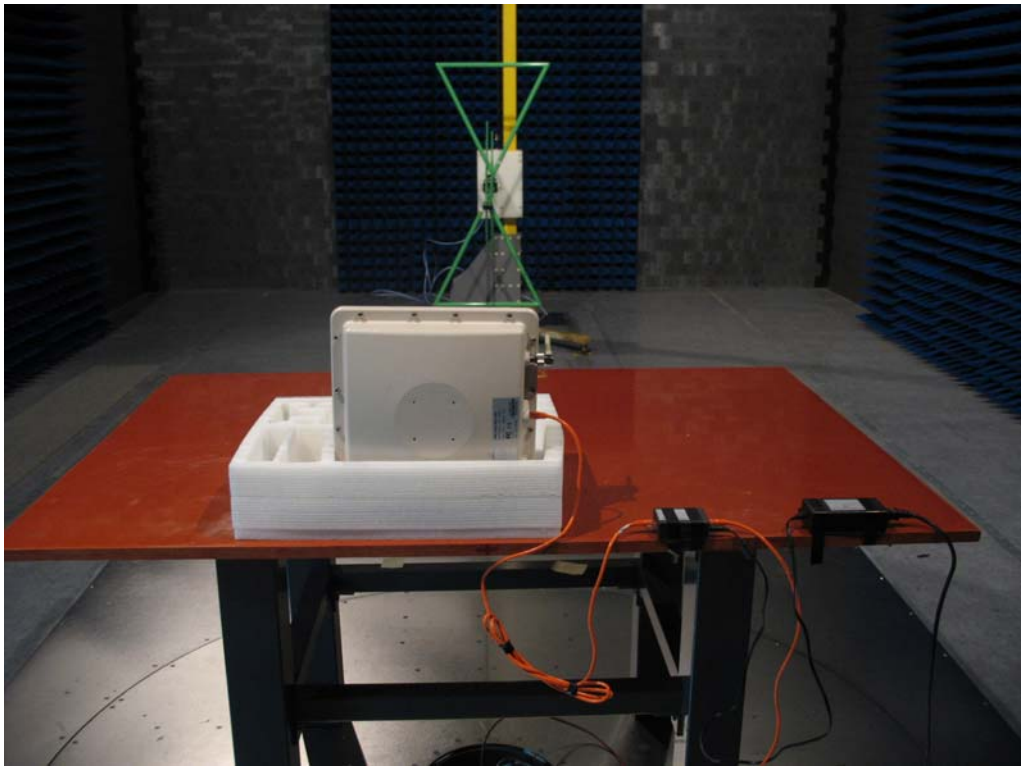
Test Mode: Mode1: Transmitter 802.11b

Description: Front View of Radiated Test for Under 1GHz



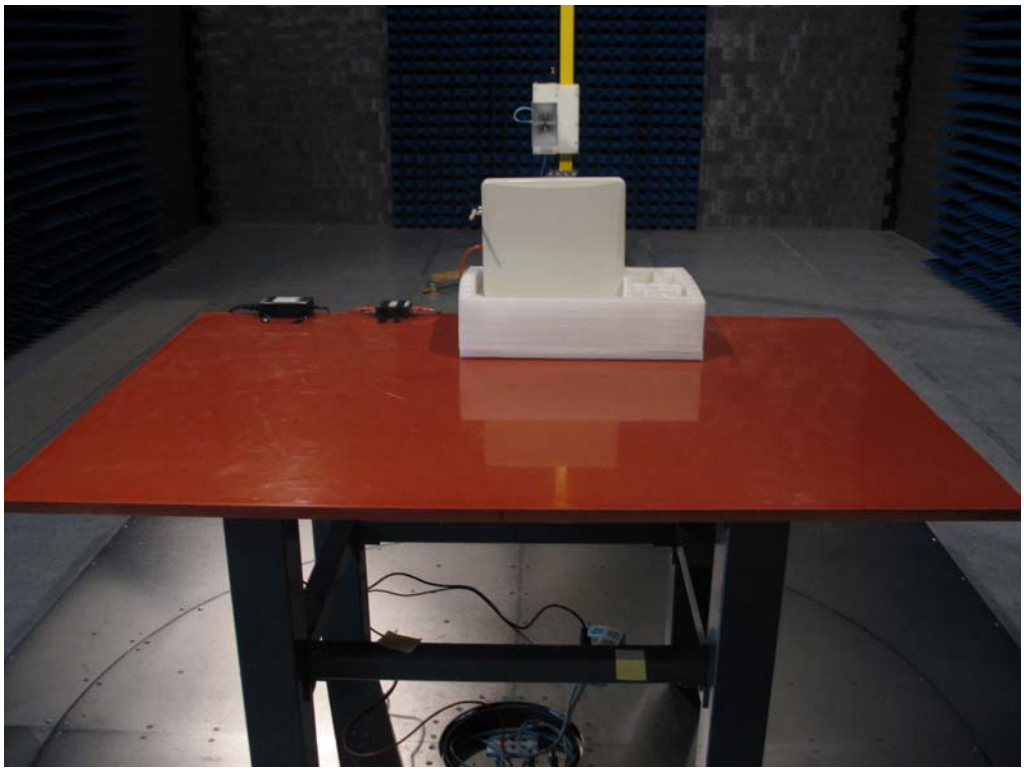
Test Mode: Mode1: Transmitter 802.11b

Description: Back View of Radiated Test for Under 1GHz



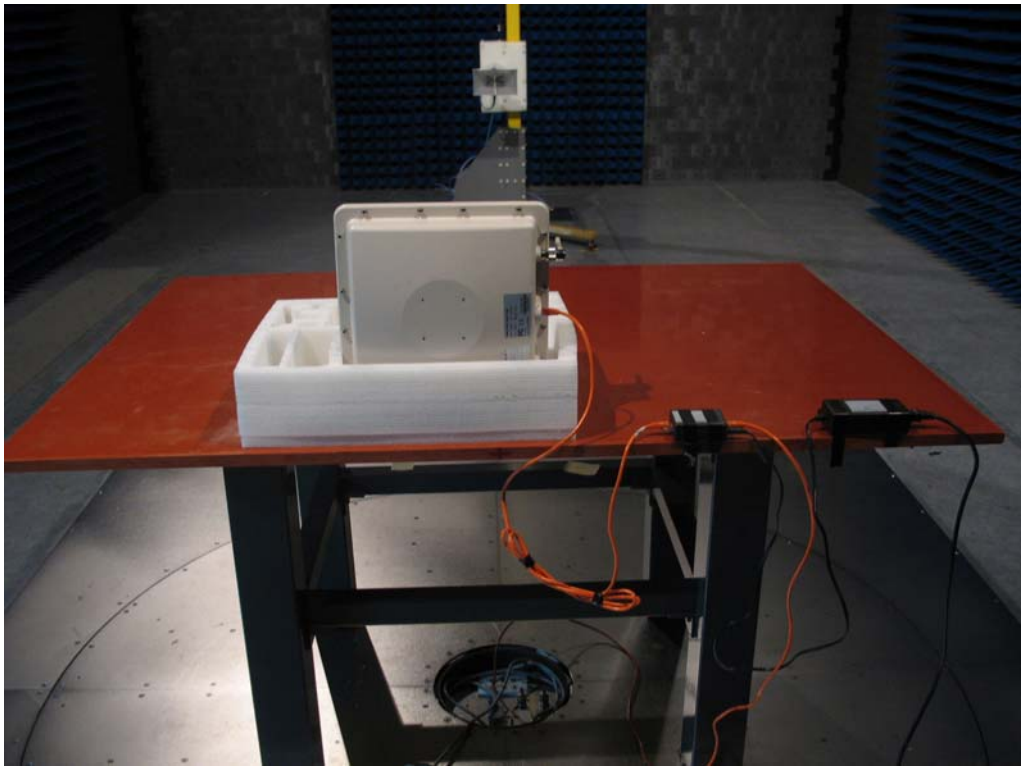
Test Mode: Mode1: Transmitter 802.11b

Description: Front View of Radiated Test for Above 1GHz



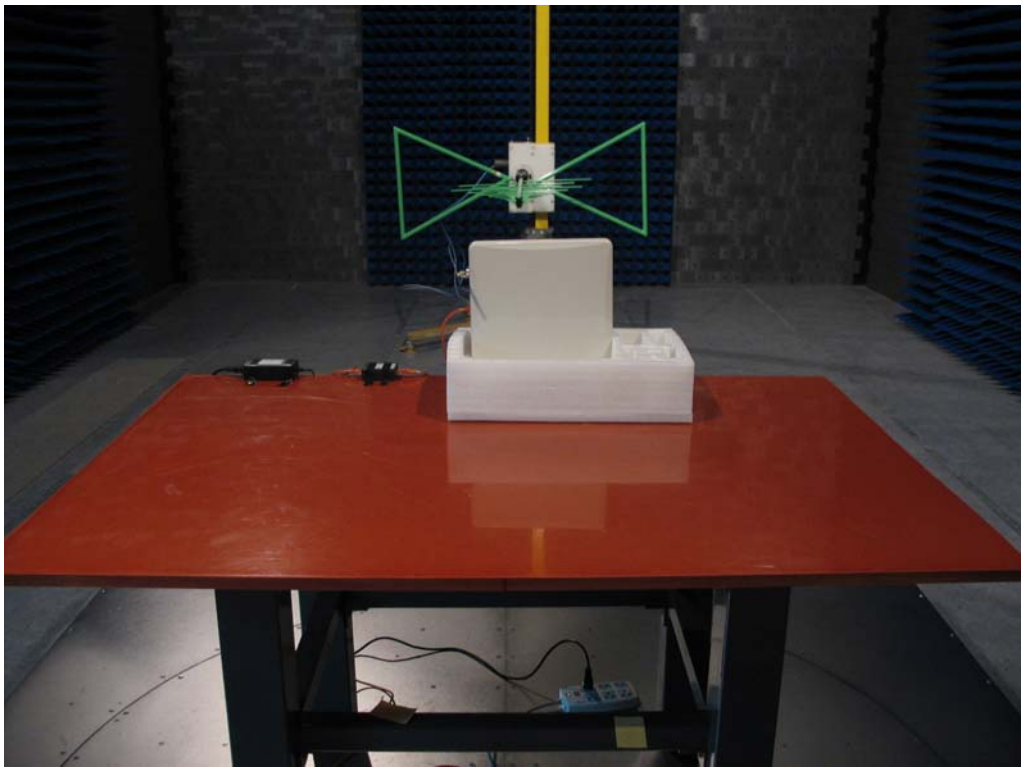
Test Mode: Mode1: Transmitter 802.11b

Description: Back View of Radiated Test for Above 1GHz



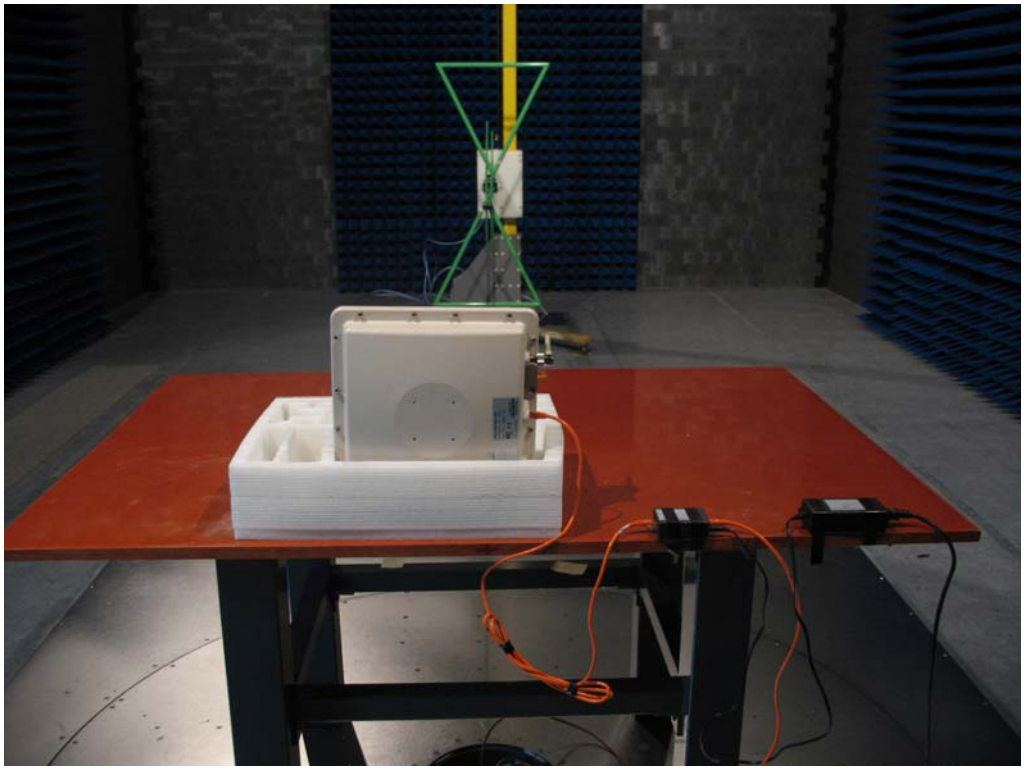
Test Mode: Mode2: Transmitter 802.11g

Description: Front View of Radiated Test for Under 1GHz



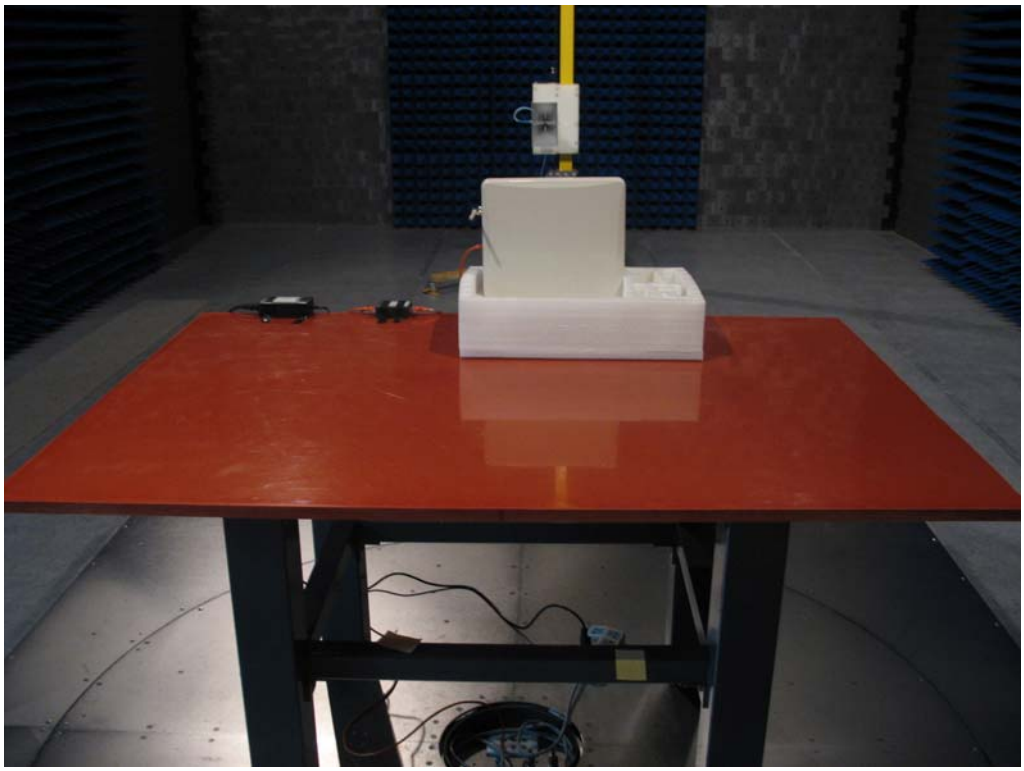
Test Mode: Mode2: Transmitter 802.11g

Description: Back View of Radiated Test for Under 1GHz



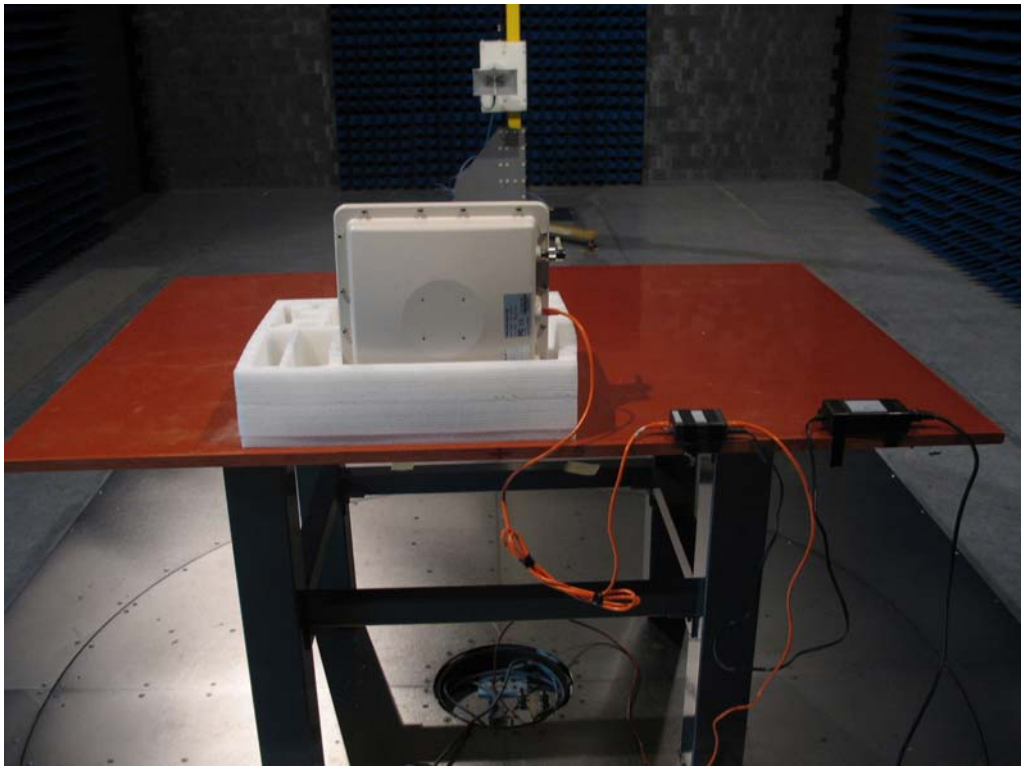
Test Mode: Mode2: Transmitter 802.11g

Description: Front View of Radiated Test for Above 1GHz



Test Mode: Mode2: Transmitter 802.11g

Description: Back View of Radiated Test for Above 1GHz



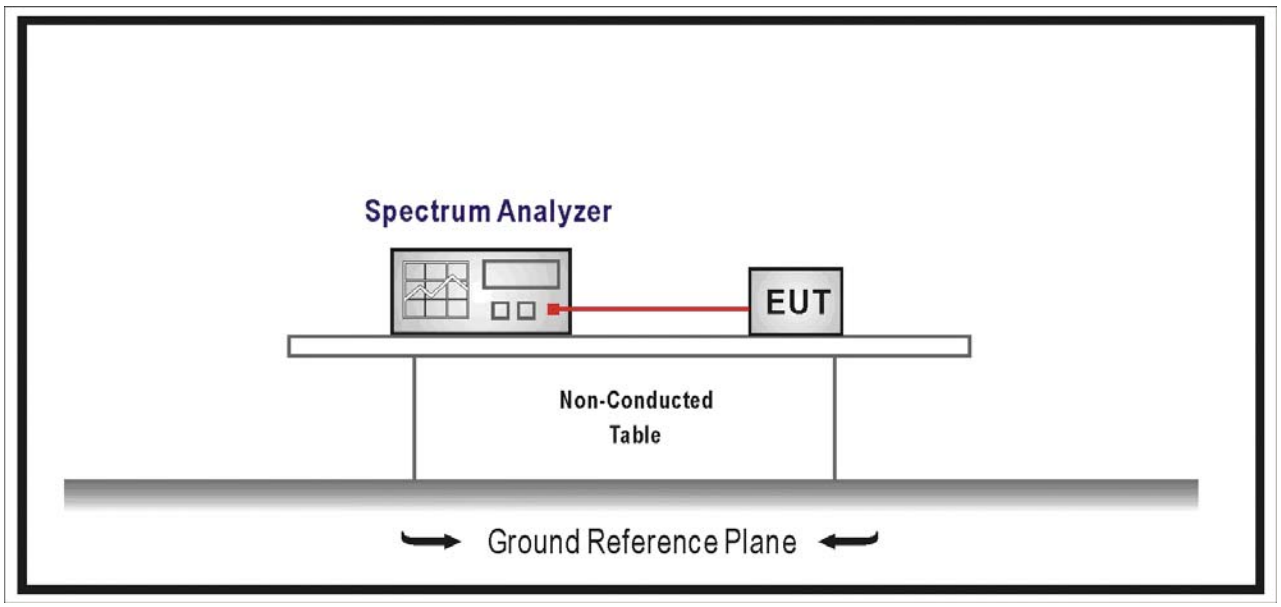
6. Band Edge

6.1. Test Specification

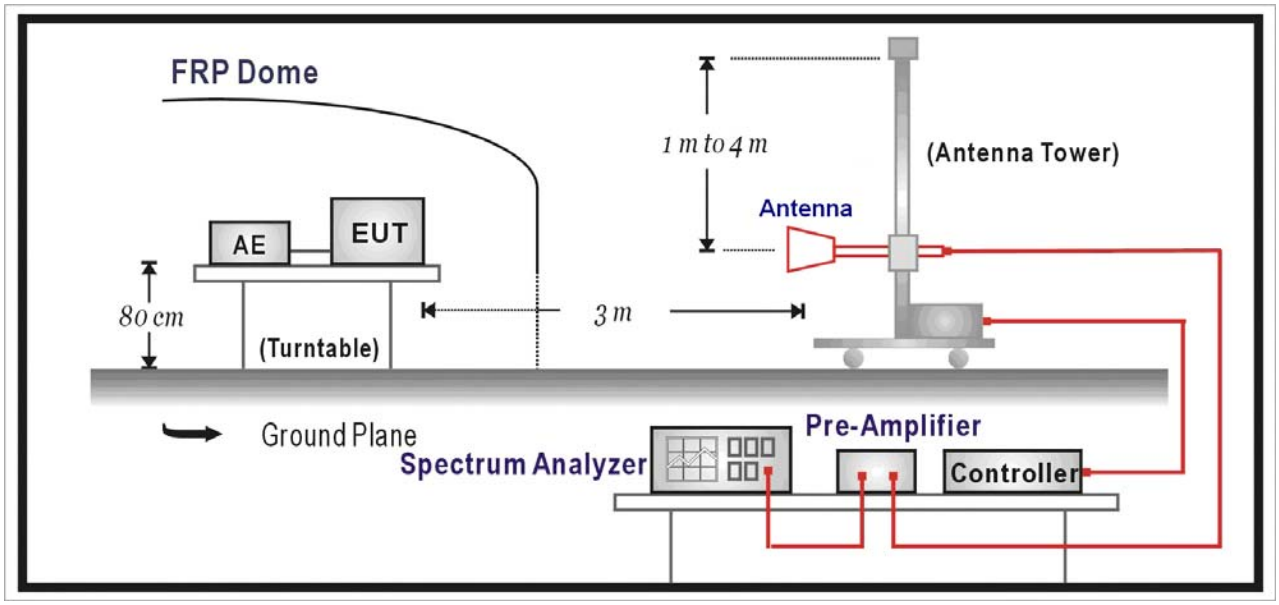
According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.247

6.2. Test Setup

RF Conducted Measurement



RF Radiated Measurement



6.3. Limit

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

6.4. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4 on radiated measurement.
The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

6.5. Deviation from Test Standard

No deviation.

6.6. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode1: Transmitter 802.11b		
Date of Test	2006/06/21	Test Site	AC-2

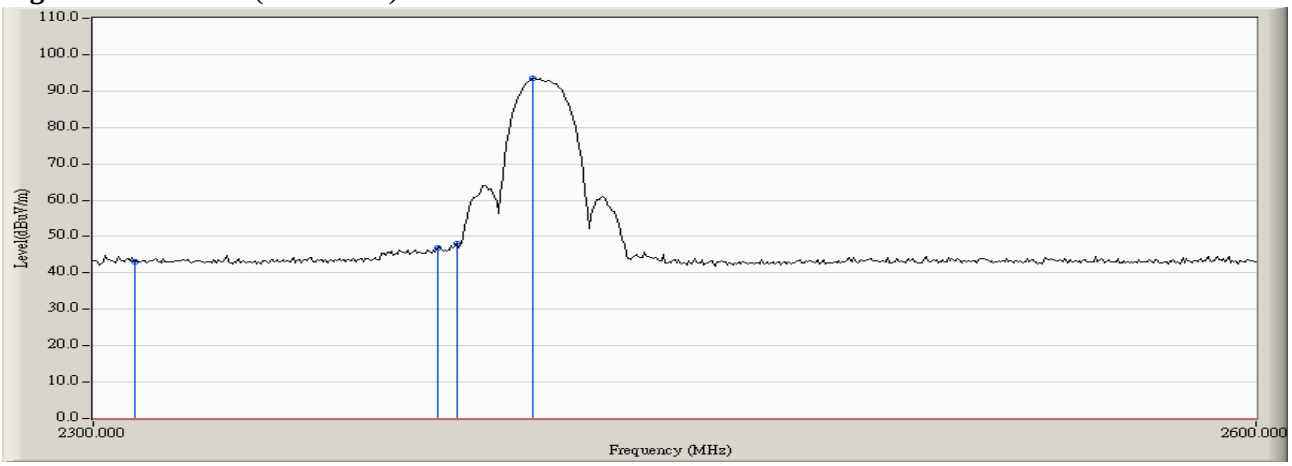
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
01	<2400	>20	Pass

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2385.000	50.707	47.003	74.00	54.00	Pass
01 (Average)	--	--	--	74.00	54.00	Pass

Figure Channel 01: (Horizontal)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode1: Transmitter 802.11b		
Date of Test	2006/06/21	Test Site	AC-2

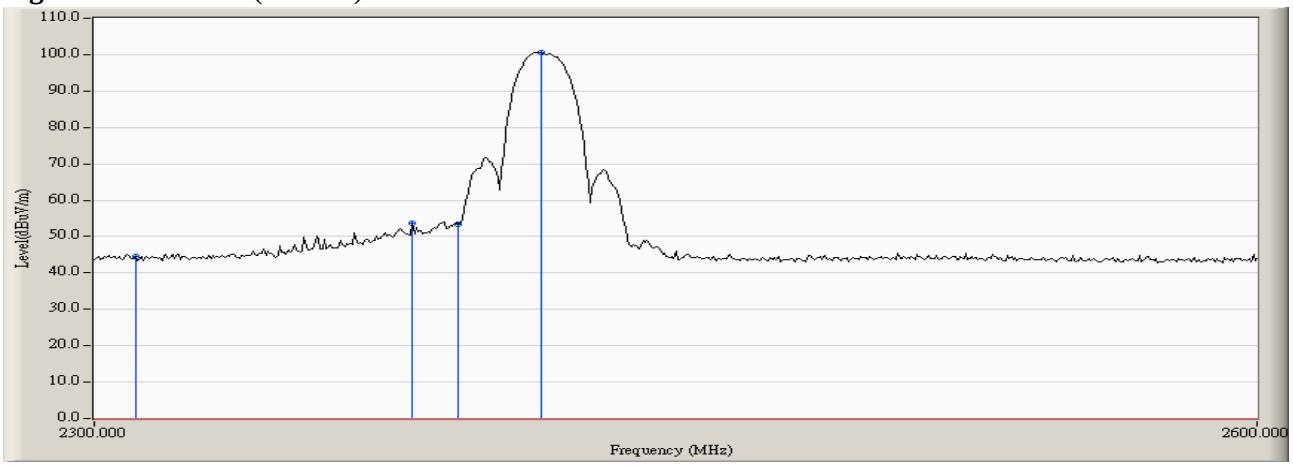
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
01	<2400	>20	Pass

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2378.500	57.289	51.596	74.00	54.00	Pass
01 (Average)	--	--	--	74.00	54.00	Pass

Figure Channel 01: (Vertical)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode1: Transmitter 802.11b		
Date of Test	2006/06/21	Test Site	AC-2

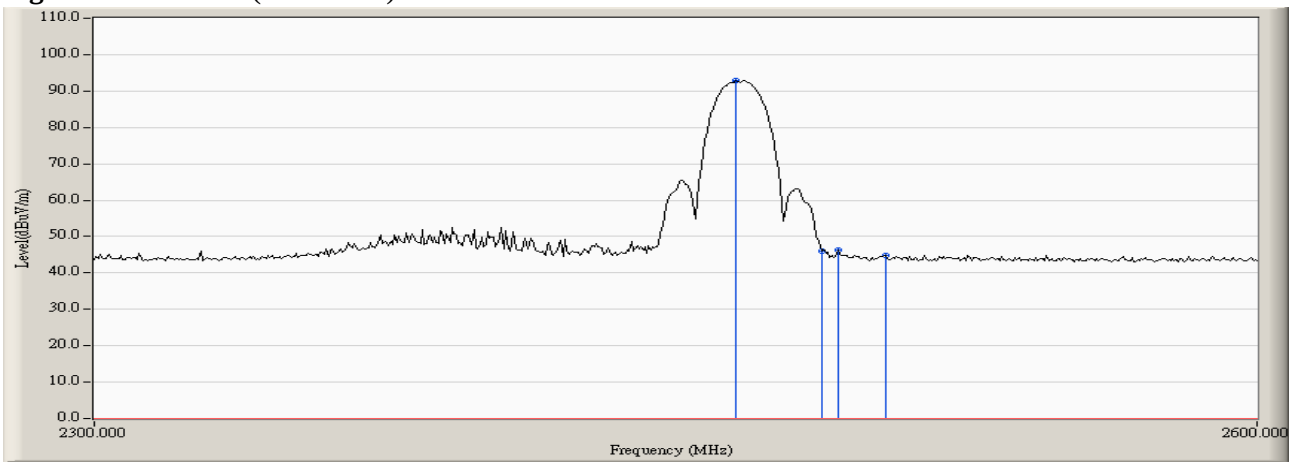
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
11	>2483.5	>20	Pass

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2487.500	50.027	46.307	74.00	54.00	Pass
11(Average)	--	--	--	74.00	54.00	Pass

Figure Channel 11: (Horizontal)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode1: Transmitter 802.11b		
Date of Test	2006/06/21	Test Site	AC-2

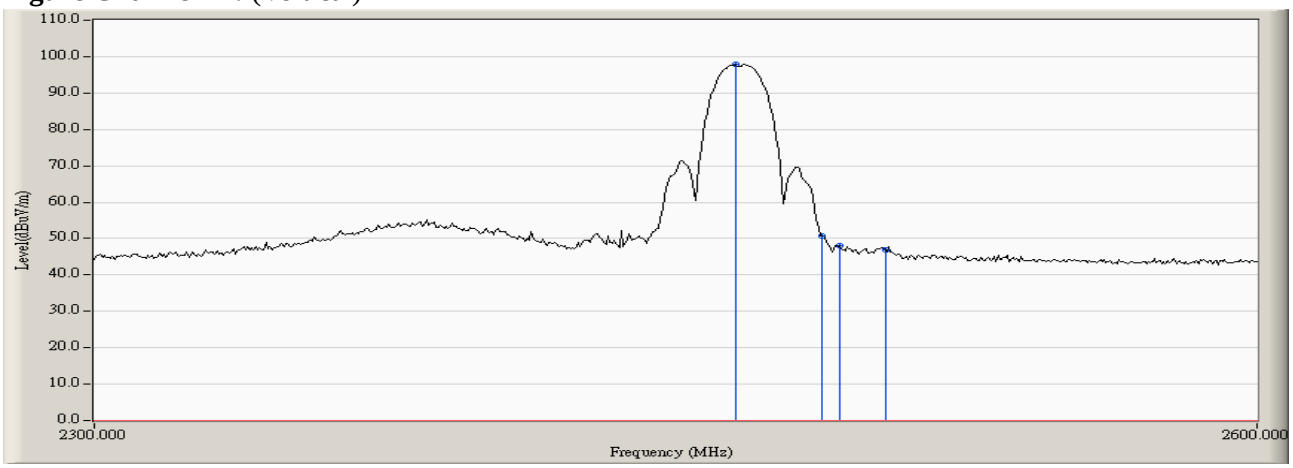
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
11	>2483.5	>20	Pass

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2488.000	51.773	48.053	74.00	54.00	Pass
11(Average)	--	--	--	74.00	54.00	Pass

Figure Channel 11: (Vertical)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode2: Transmitter 802.11g		
Date of Test	2006/06/21	Test Site	AC-2

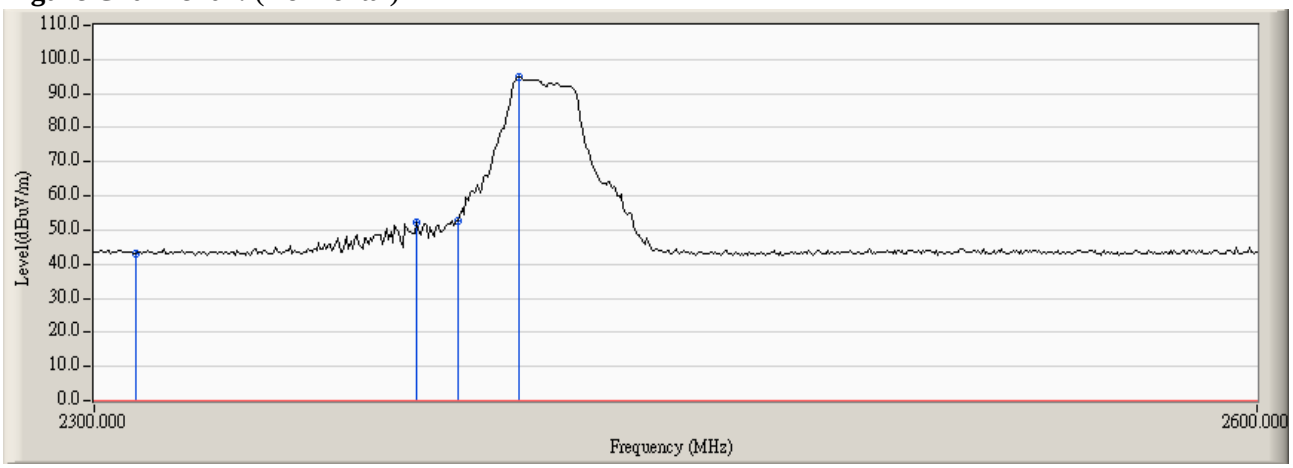
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
01	<2400	>20	Pass

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2379.500	55.924	52.230	74.00	54.00	Pass
01 (Average)	--	--	--	74.00	54.00	Pass

Figure Channel 01: (Horizontal)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode2: Transmitter 802.11g		
Date of Test	2006/06/21	Test Site	AC-2

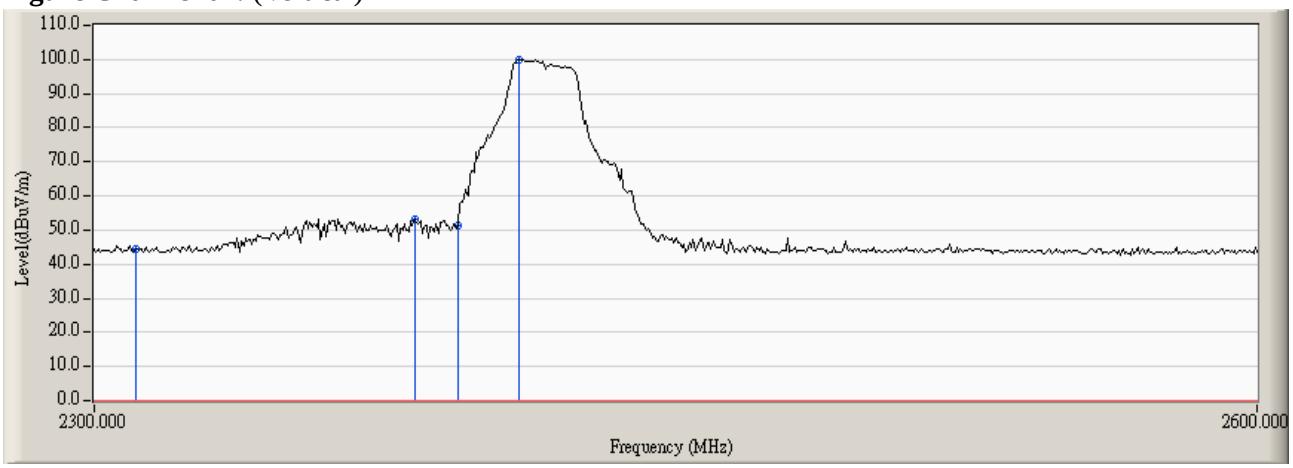
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
01	<2400	>20	Pass

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
01 (Peak)	2379.000	56.744	53.050	74.00	54.00	Pass
01 (Average)	--	--	--	74.00	54.00	Pass

Figure Channel 01: (Vertical)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode2: Transmitter 802.11g		
Date of Test	2006/06/21	Test Site	AC-2

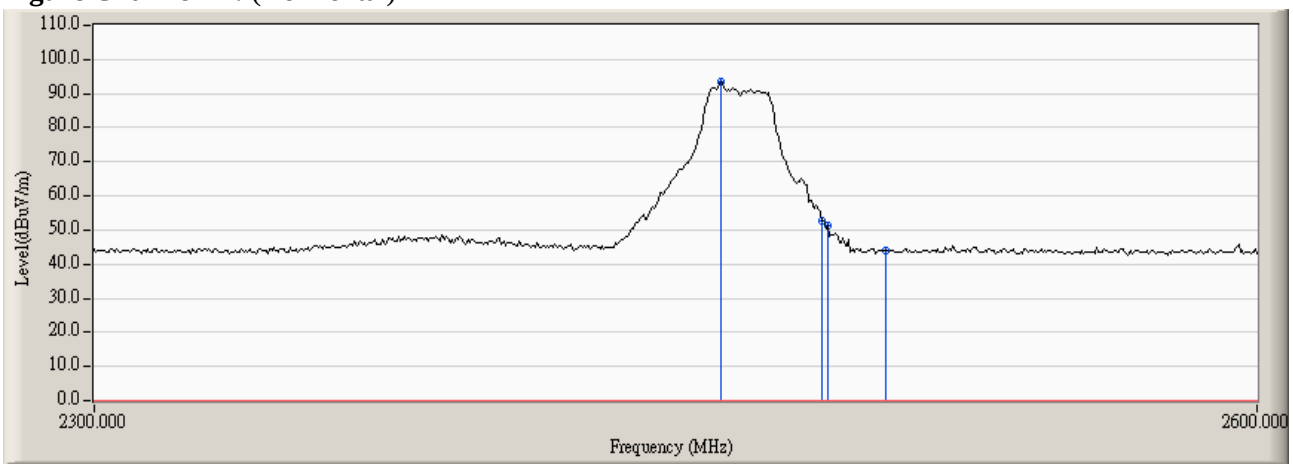
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
11	>2483.5	>20	Pass

RF Radiated Measurement (Horizontal):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2485.000	55.061	51.341	74.00	54.00	Pass
11(Average)	--	--	--	74.00	54.00	Pass

Figure Channel 11: (Horizontal)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode2: Transmitter 802.11g		
Date of Test	2006/06/21	Test Site	AC-2

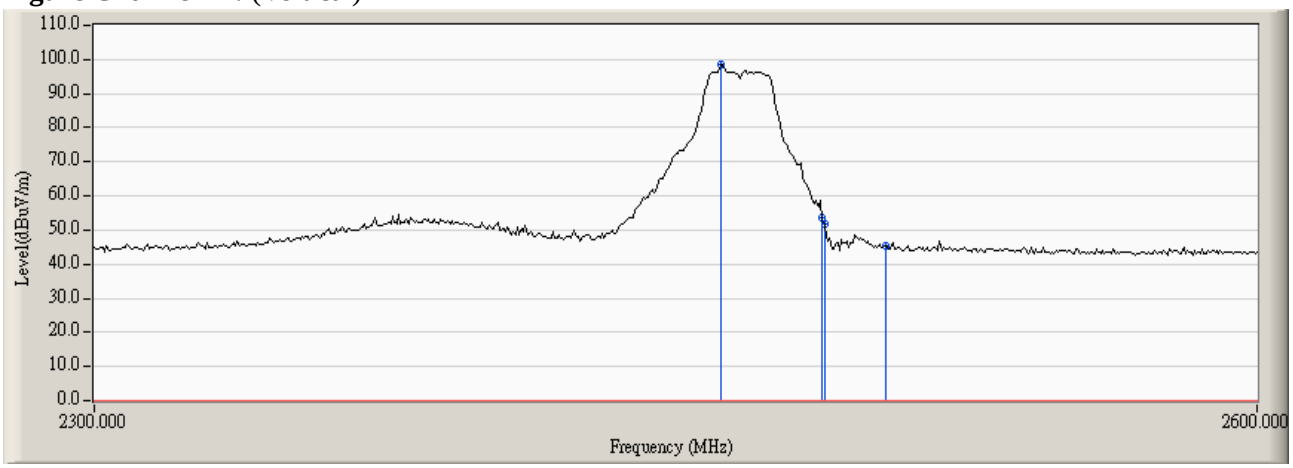
RF Radiated Measurement:

Channel No.	Frequency (MHz)	Required Limit (dBc)	Result
11	>2483.5	>20	Pass

RF Radiated Measurement (Vertical):

Channel No.	Frequency (MHz)	Reading Level (dBuV)	Emission Level (dBuV/m)	Peak Limit (dBuV/m)	Average Limit (dBuV/m)	Result
11(Peak)	2484.000	55.437	51.717	74.00	54.00	Pass
11(Average)	--	--	--	74.00	54.00	Pass

Figure Channel 11: (Vertical)



Note:

RBW=1MHz, VBW=1MHz, Sweep Time=500ms.

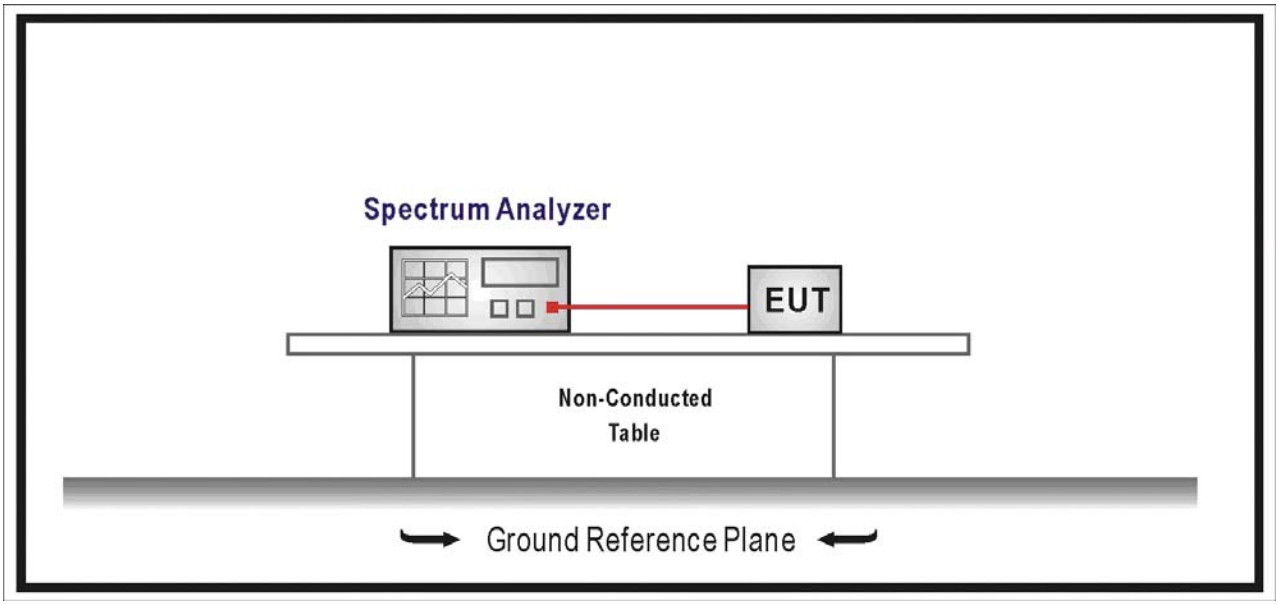
Note: The average measurement was not performed when the peak measured data under the limit of average detection. If the readings given are average, peak measurement should also be supplied.

7. Occupied Bandwidth

7.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.247

7.2. Test Setup



7.3. Limit

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

7.4. Deviation from Test Standard

No deviation.

7.5. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Occupied Bandwidth		
Test Mode	Mode1: Transmitter 802.11b		
Date of Test	2006/06/20	Test Site	AC-2

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	10260	500	Pass
06	2437	10260	500	Pass
11	2462	10310	500	Pass

Figure Channel 01 (2412MHz)

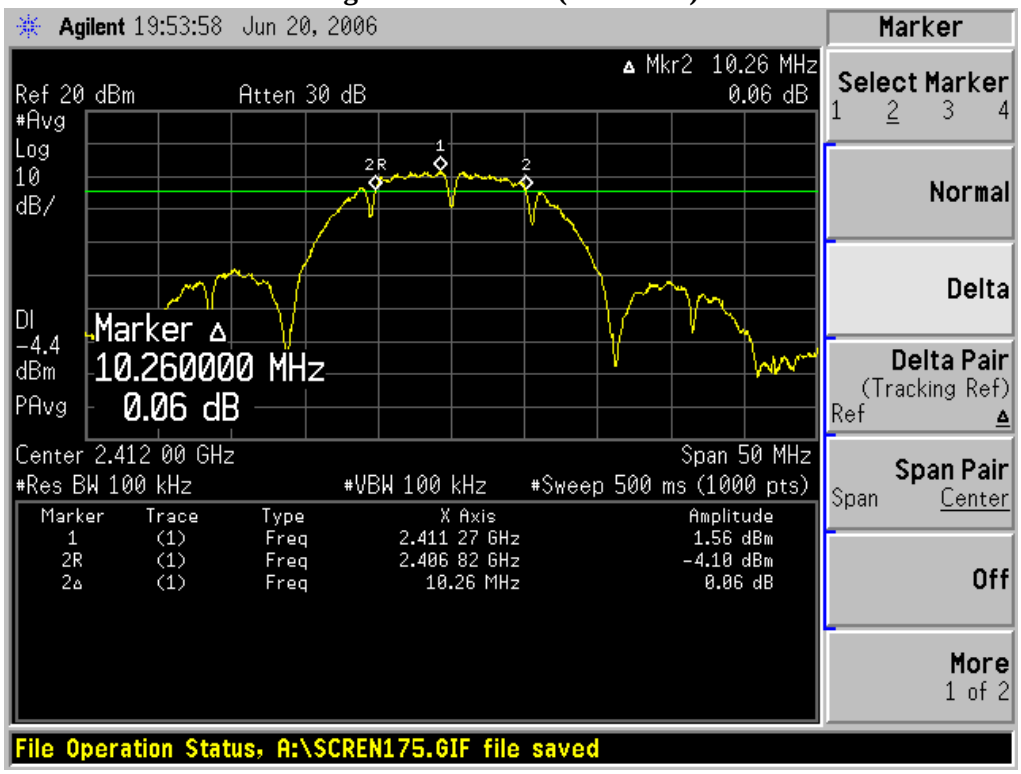


Figure Channel 06 (2437MHz)

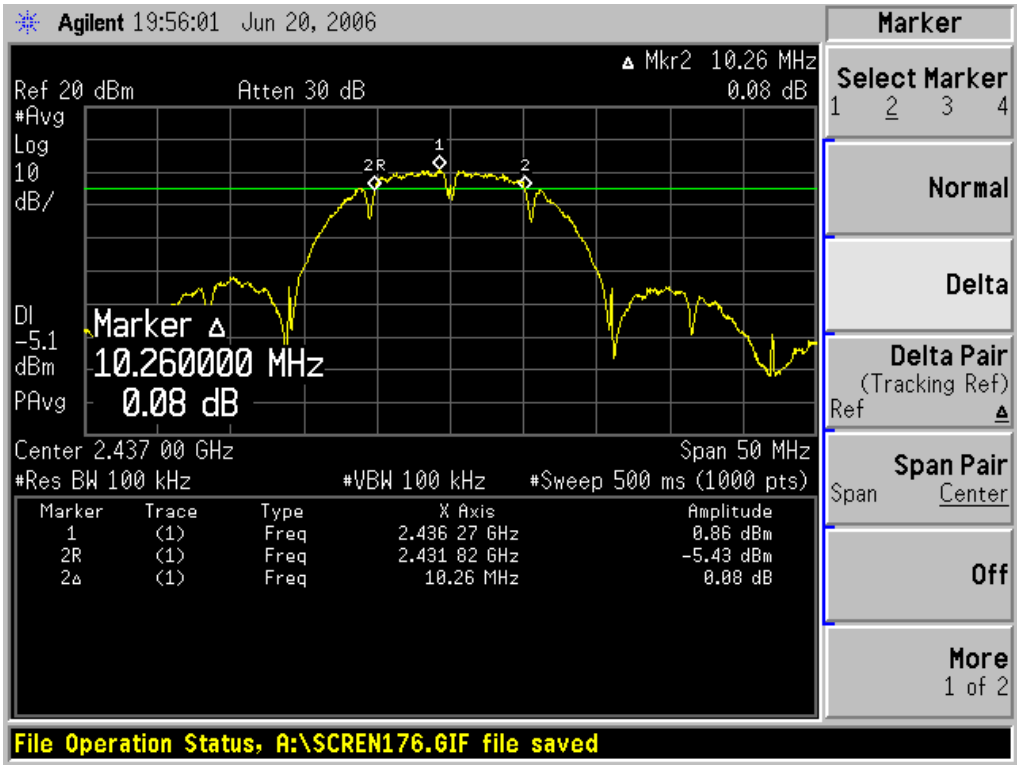
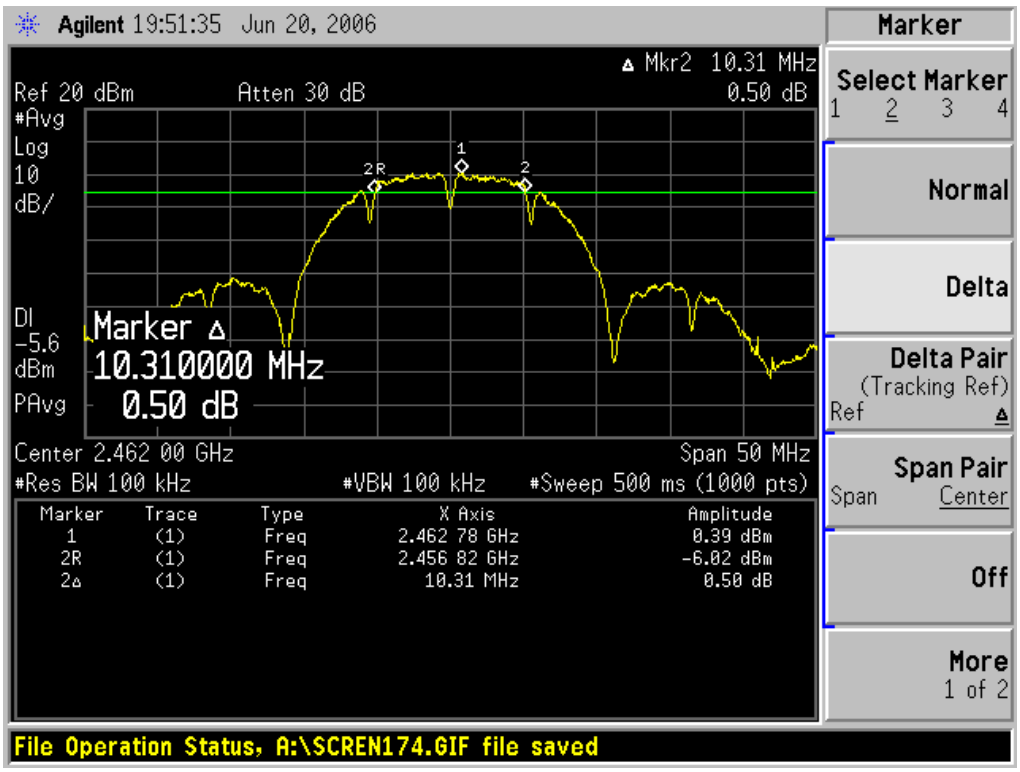


Figure Channel 11 (2462MHz)



Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Occupied Bandwidth		
Test Mode	Mode2: Transmitter 802.11g		
Date of Test	2006/06/20	Test Site	AC-2

Channel No.	Frequency (MHz)	Measurement Level (kHz)	Required Limit (kHz)	Result
01	2412	16580	500	Pass
06	2437	16480	500	Pass
11	2462	16580	500	Pass

Figure Channel 01 (2412MHz)

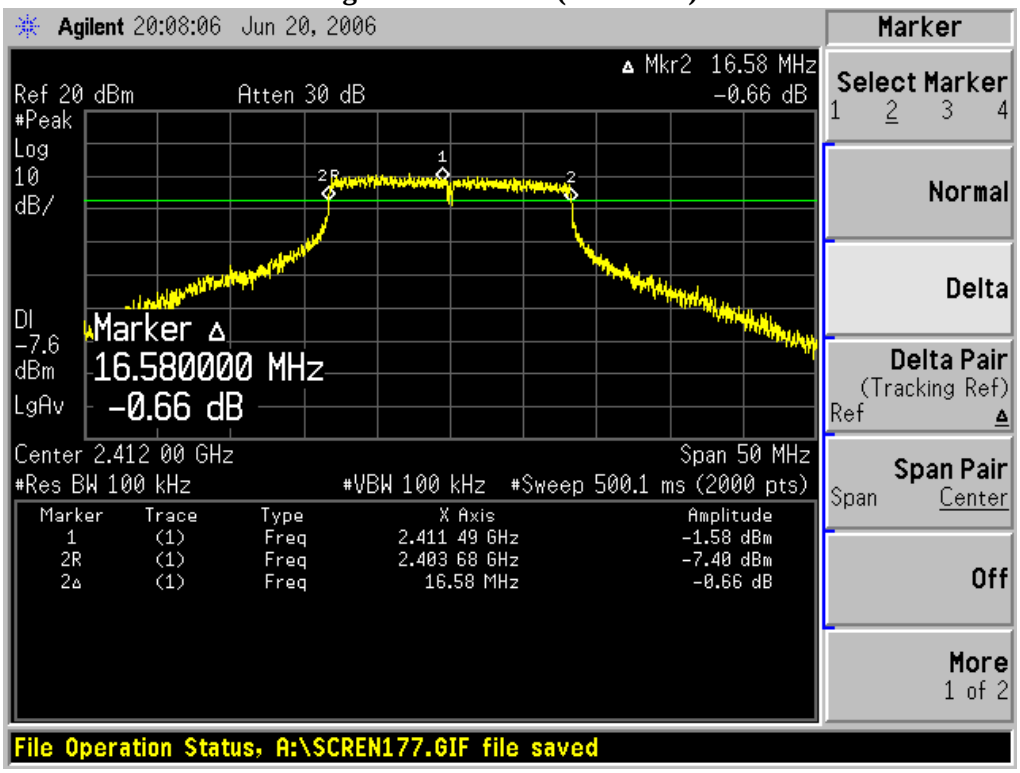


Figure Channel 06 (2437MHz)

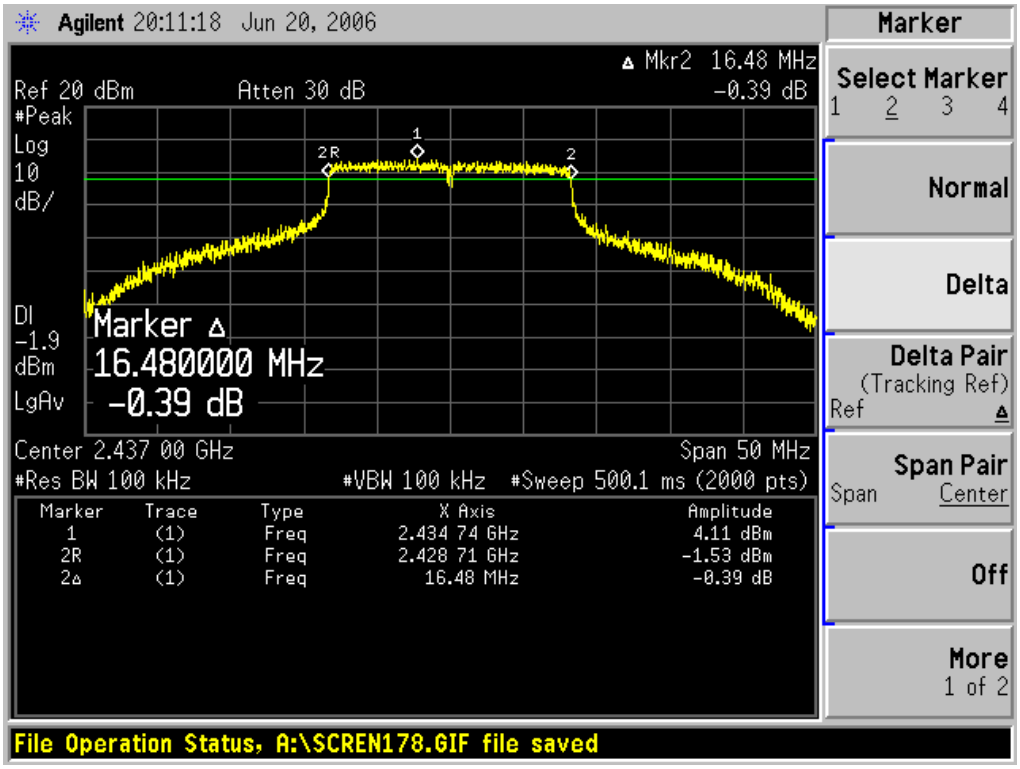
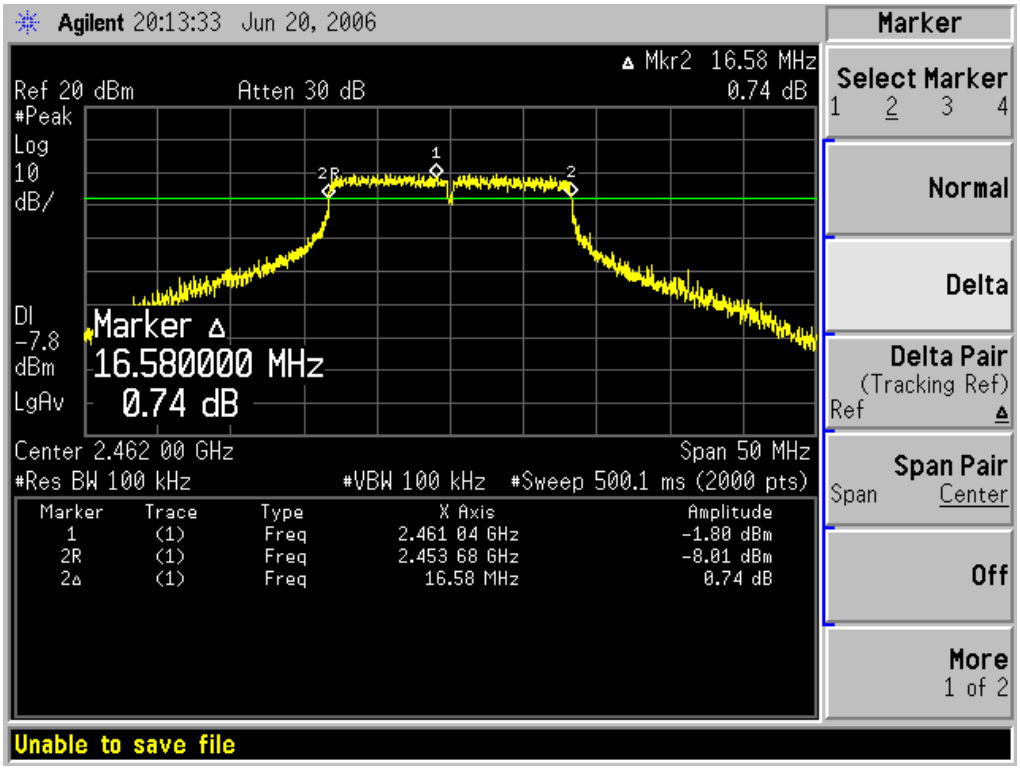


Figure Channel 11 (2462MHz)

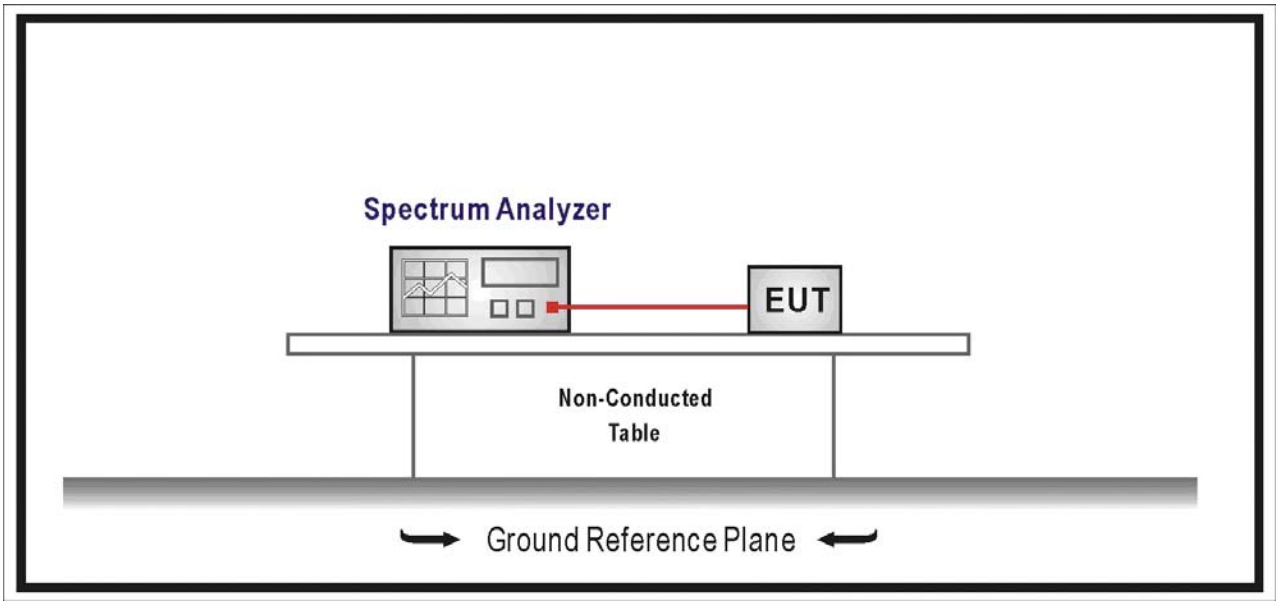


8. Peak Power Spectral Density

8.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.247

8.2. Test Setup



8.3. Limit

The peak power spectral density conducted from the intentional radiated to the antenna shall not be greater than +8dBm in any 3kHz band during any time interval of continuous transmission.

8.4. Deviation from Test Standard

No deviation.

8.5. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Peak Power Spectral Density		
Test Mode	Mode1: Transmitter 802.11b		
Date of Test	2006/06/20	Test Site	AC-3

Channel	Freq. (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm /3kHz)	Result
01	2412	-2.12	8	PASS
06	2437	0.77	8	PASS
11	2462	-5.15	8	PASS

Figure Channel 01 (2412MHz)

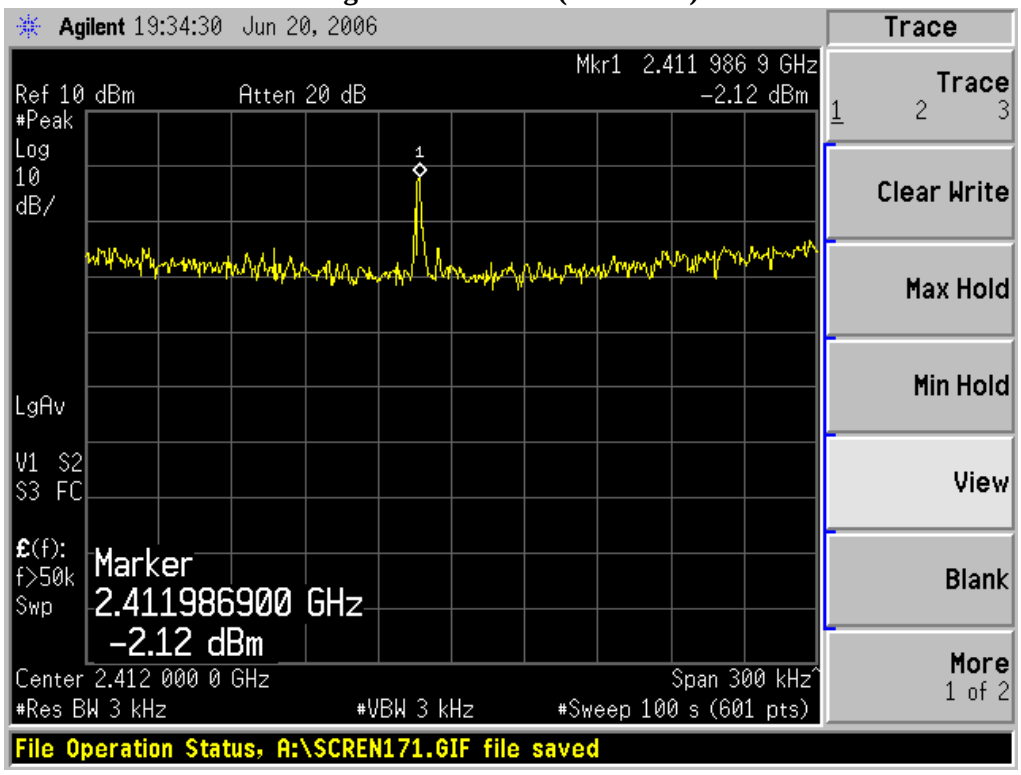


Figure Channel 06 (2437MHz)

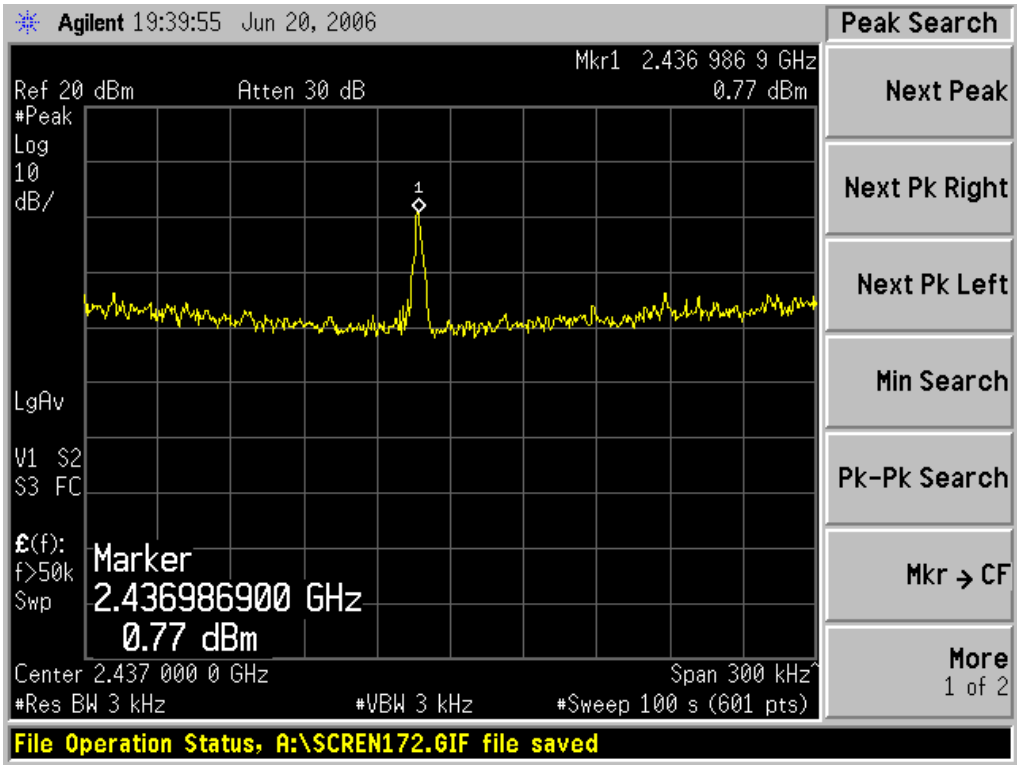
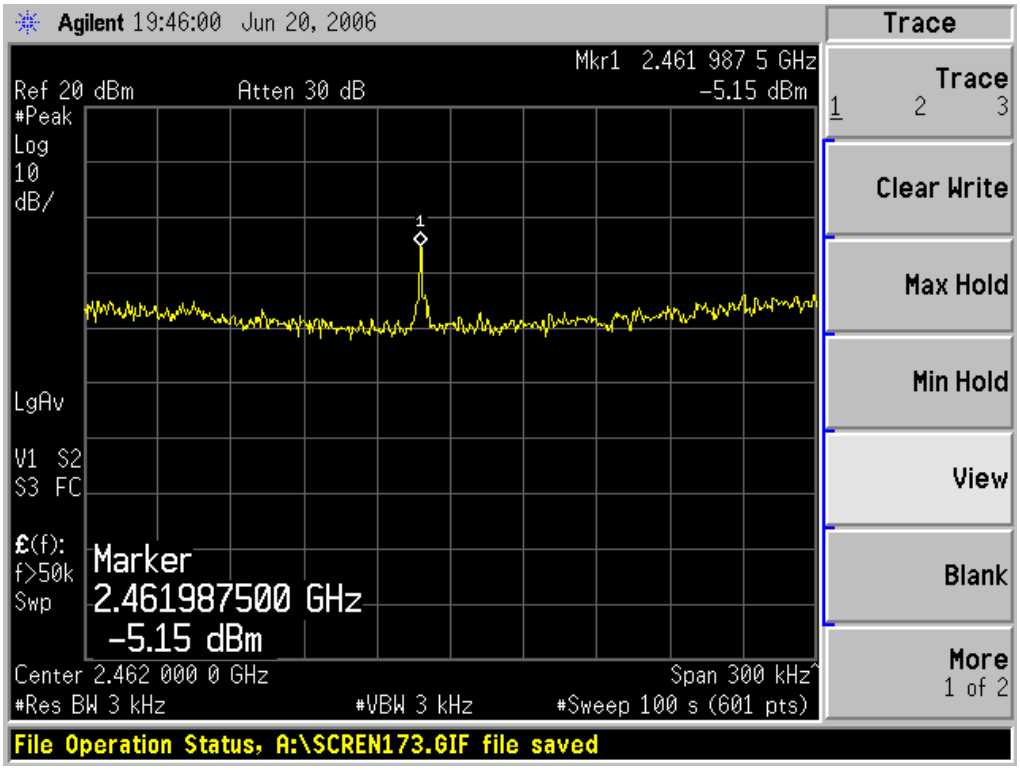


Figure Channel 11 (2462MHz)



Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Peak Power Spectral Density		
Test Mode	Mode2: Transmitter 802.11g		
Date of Test	2006/06/20	Test Site	AC-3

Channel	Freq. (MHz)	Power Spectral Density (dBm/3kHz)	Limit (dBm /3kHz)	Result
01	2412	-5.34	8	PASS
06	2437	-2.65	8	PASS
11	2462	-14.83	8	PASS

Figure Channel 01 (2412MHz)

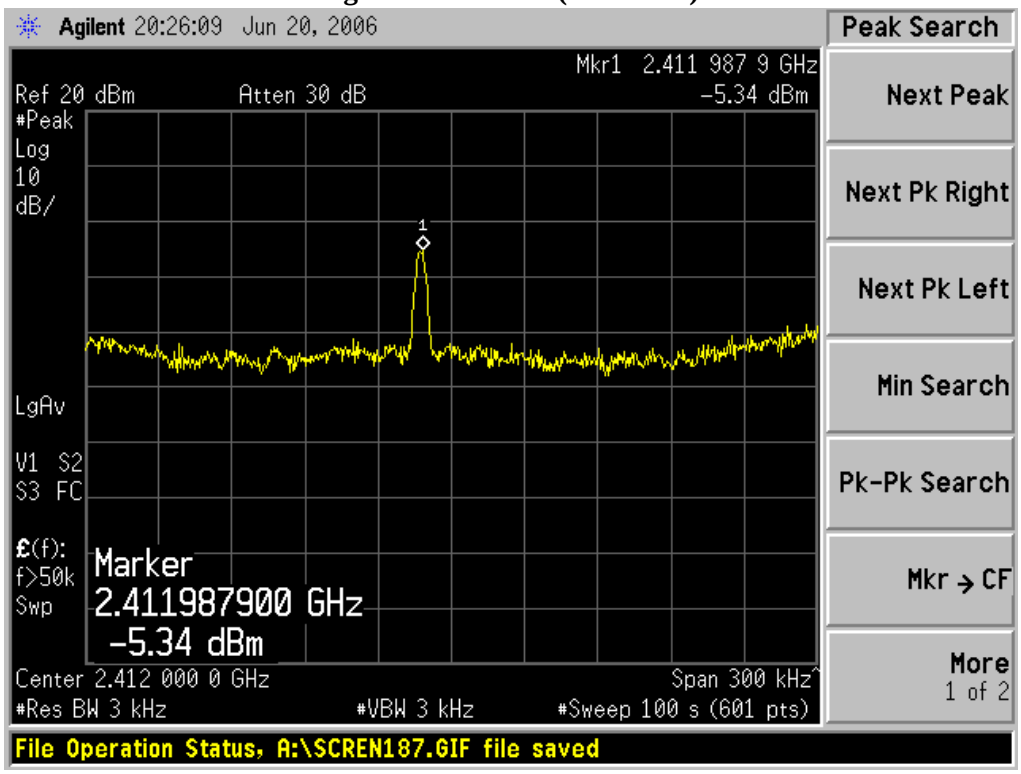


Figure Channel 06 (2437MHz)

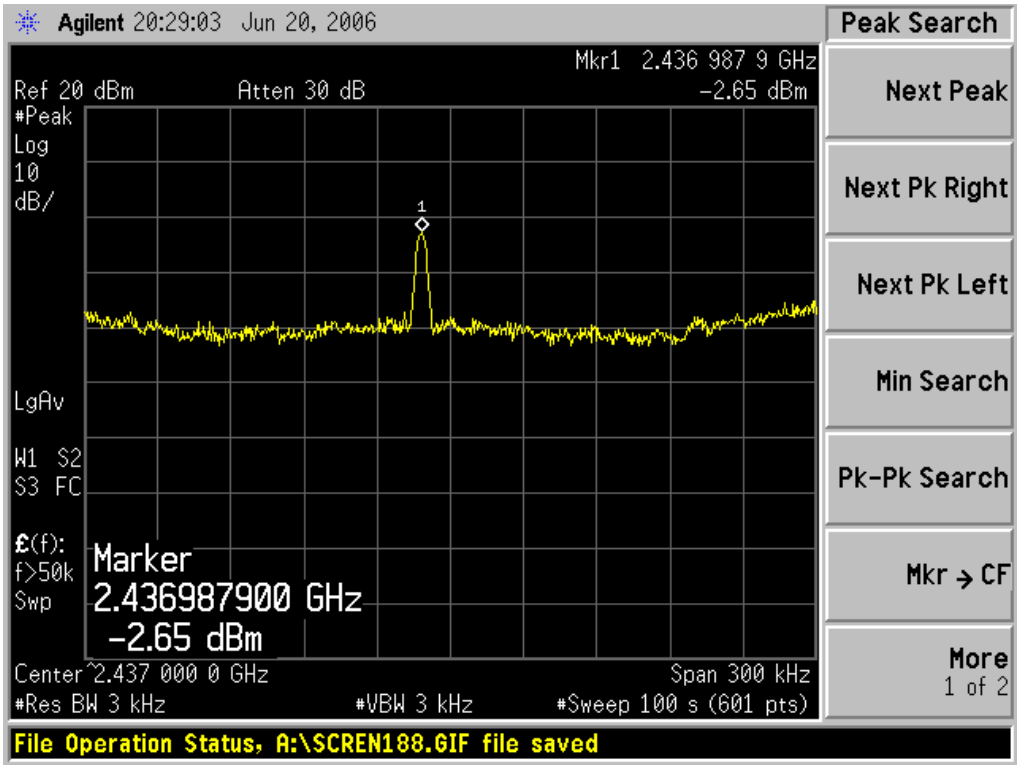
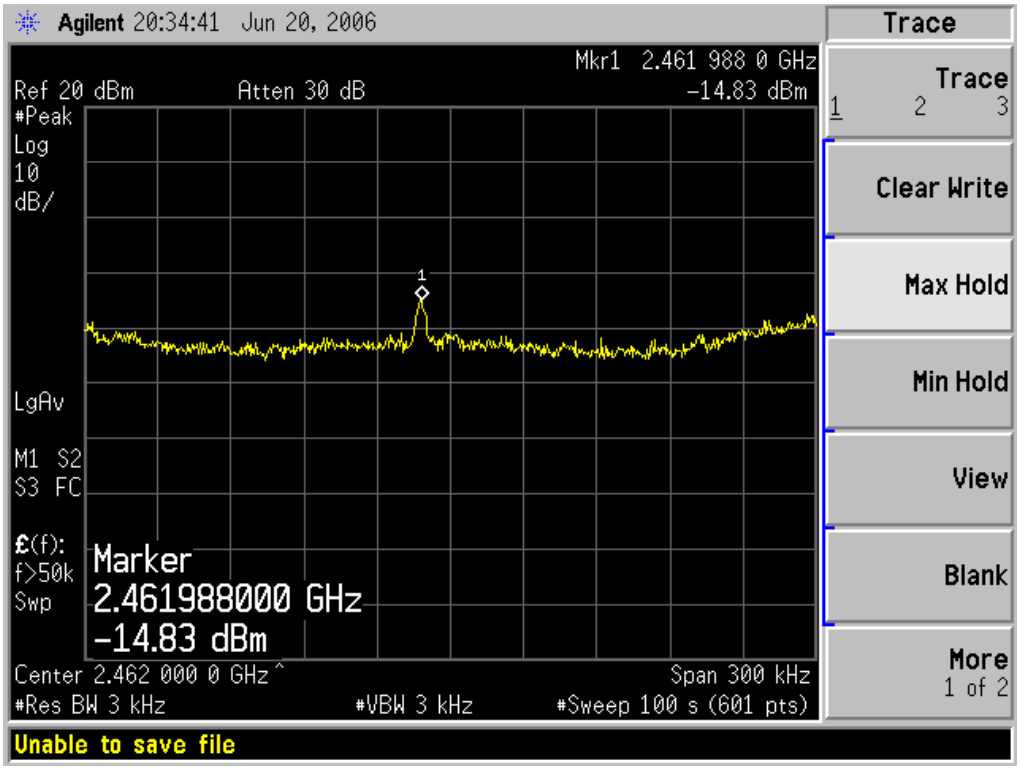


Figure Channel 11 (2462MHz)



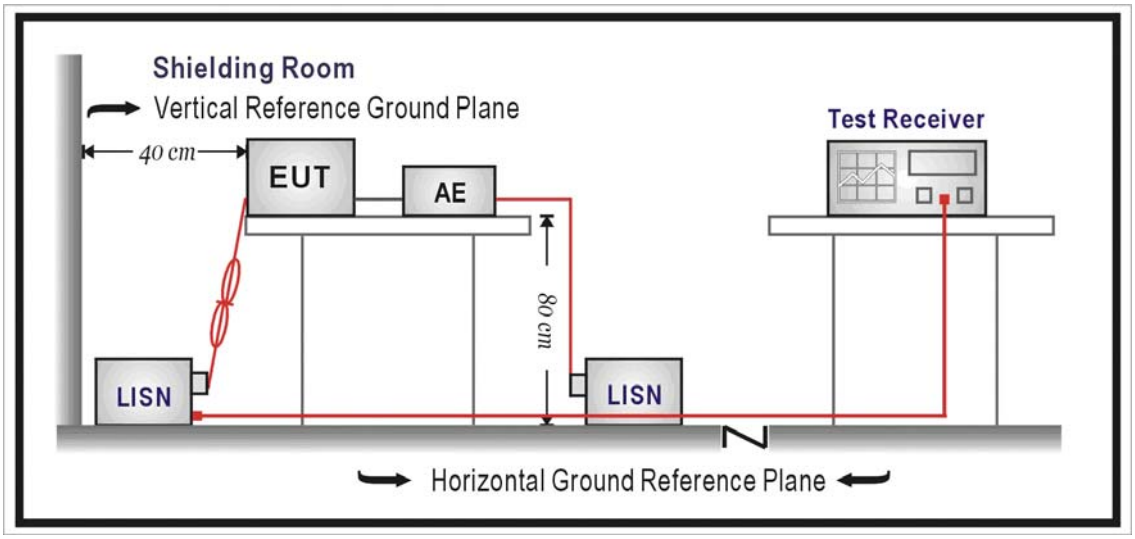
Part Ⅱ - 802.11a (FCC Part 15E)

9. Conducted Emission (Main Terminals)

9.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.207

9.2. Test Setup



9.3. Limit

Limits (dBuV)		
Frequency	QP	AV
0.15 - 0.50	66-56	56-46
0.50-5.0	56	46
5.0 - 30	60	50

Remarks: In the above table, the tighter limit applies at the band edges

9.4. Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of AC line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed on conducted measurement.

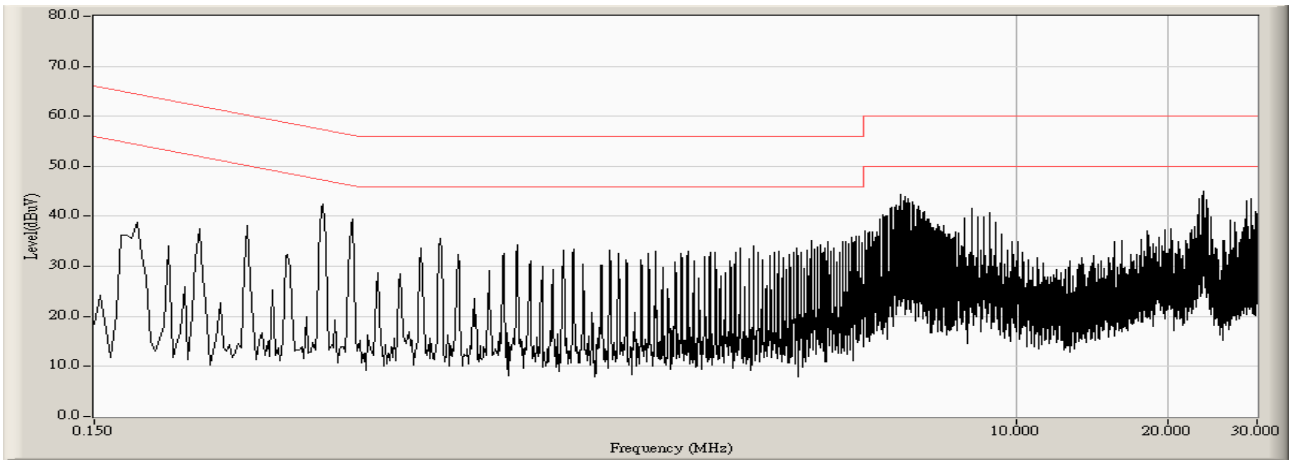
The bandwidth of the field strength meter is 9kHz.

9.5. Deviation from Test Standard

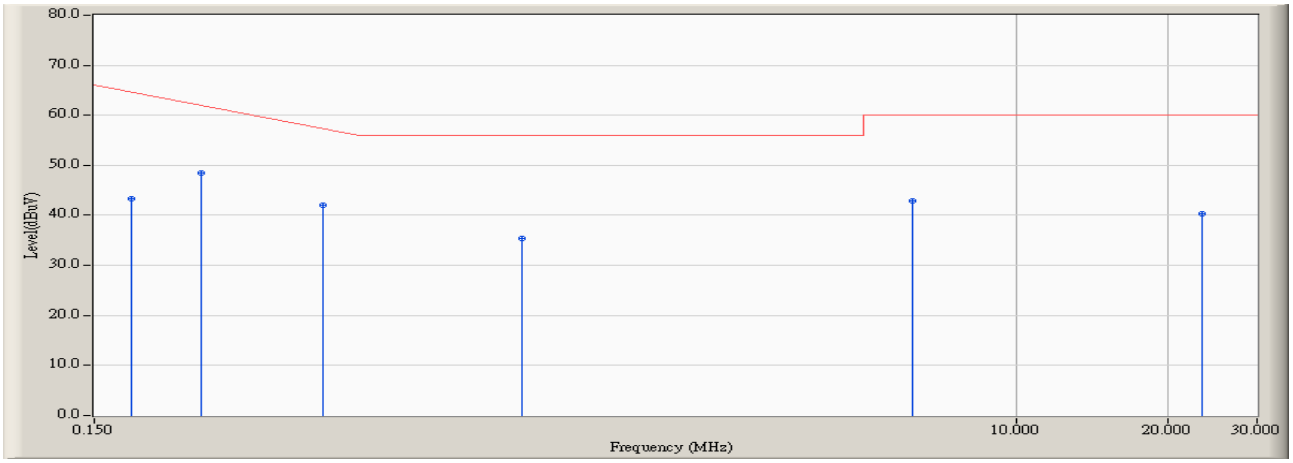
No deviation.

9.6. Test Result

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 15:07**
Limit : FCC_Part15_C_00M_QP	**Margin : 10**
EUT : ZA-5000-D	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode3: Transmitter 802.11a with outside Antenna (Tx: 5785MHz)**



Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 15:10**
Limit : FCC_Part15_C_00M_QP	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode3: Transmitter 802.11a with outside Antenna (Tx: 5785MHz)**

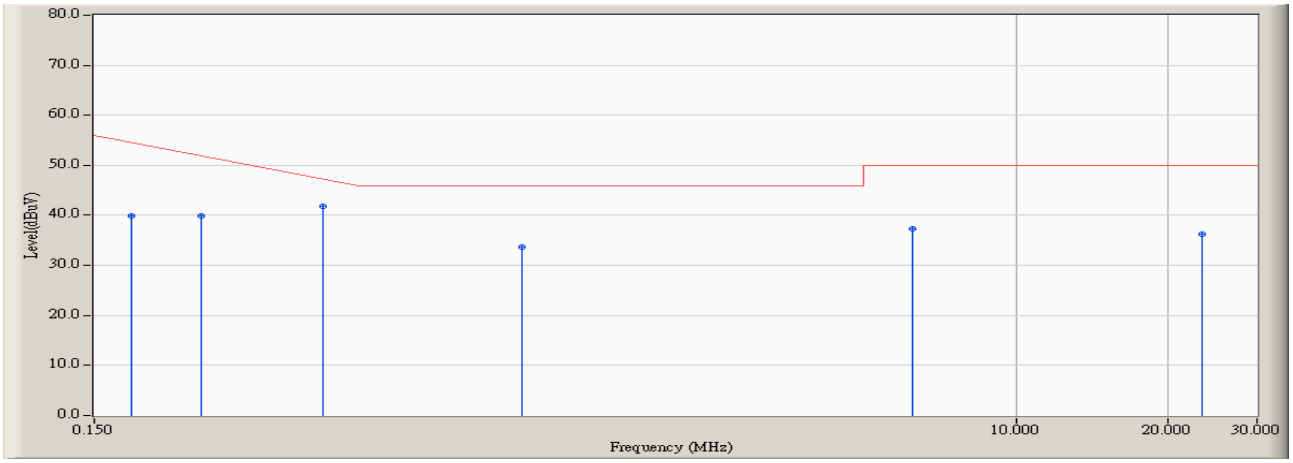


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.178	9.772	33.500	43.272	-21.928	65.200	QUASIPEAK
2	*	0.244	9.334	39.100	48.435	-14.879	63.314	QUASIPEAK
3		0.426	9.537	32.500	42.037	-16.077	58.114	QUASIPEAK
4		1.050	9.630	25.770	35.400	-20.600	56.000	QUASIPEAK
5		6.242	9.830	33.100	42.930	-17.070	60.000	QUASIPEAK
6		23.295	10.296	29.980	40.276	-19.724	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 15:10**
Limit : FCC_Part15_B_00M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode3: Transmitter 802.11a with outside Antenna (Tx: 5785MHz)**

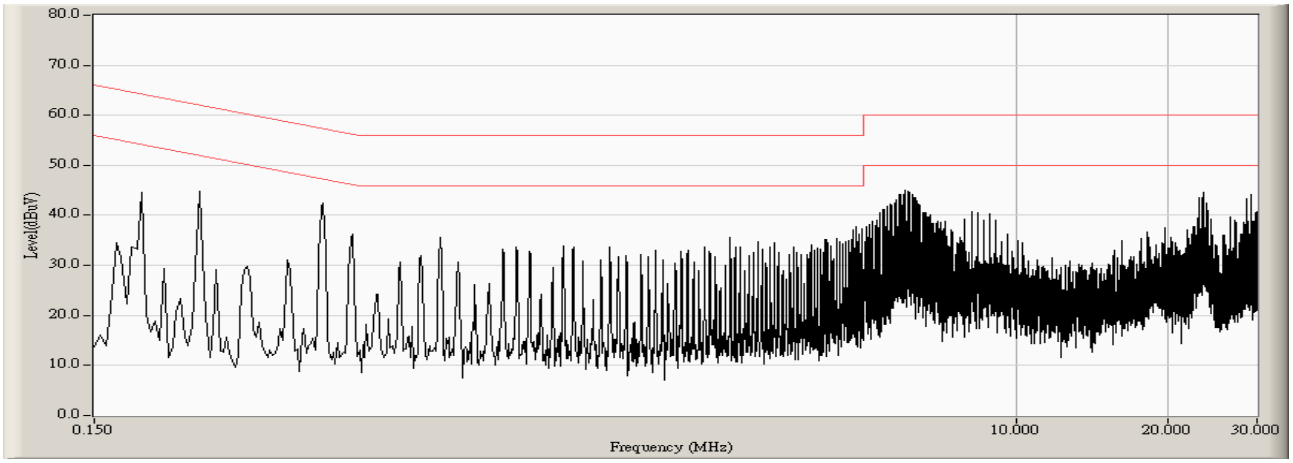


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.178	9.772	30.220	39.992	-15.208	55.200	AVERAGE
2		0.244	9.334	30.600	39.935	-13.379	53.314	AVERAGE
3	*	0.426	9.537	32.200	41.737	-6.377	48.114	AVERAGE
4		1.050	9.630	24.100	33.730	-12.270	46.000	AVERAGE
5		6.242	9.830	27.560	37.390	-12.610	50.000	AVERAGE
6		23.295	10.296	25.880	36.176	-13.824	50.000	AVERAGE

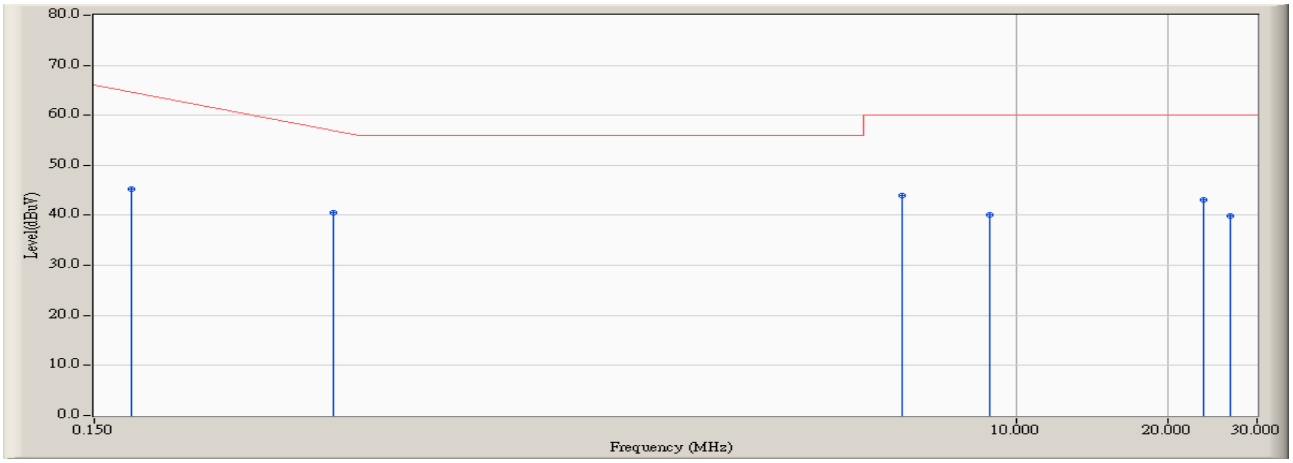
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 15:11**
Limit : FCC_Part15_B_00M_QP	**Margin : 10**
EUT : ZA-5000-D	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode3: Transmitter 802.11a with outside Antenna (Tx: 5785MHz)**



Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 15:13**
Limit : FCC_Part15_B_00M_QP	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode3: Transmitter 802.11a with outside Antenna (Tx: 5785MHz)**

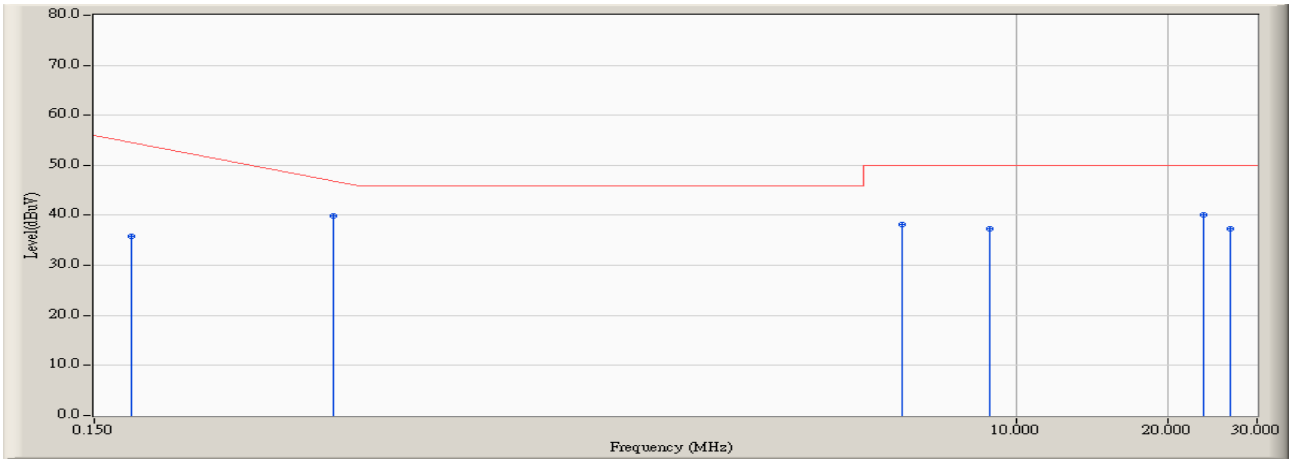


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.178	9.539	35.660	45.199	-20.001	65.200	QUASIPEAK
2		0.446	9.657	30.850	40.507	-17.036	57.543	QUASIPEAK
3	*	5.940	9.730	34.200	43.930	-16.070	60.000	QUASIPEAK
4		8.890	9.898	30.200	40.098	-19.902	60.000	QUASIPEAK
5		23.564	10.310	32.780	43.090	-16.910	60.000	QUASIPEAK
6		26.610	10.430	29.500	39.930	-20.070	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 15:13**
Limit : FCC_Part15_B_00M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode3: Transmitter 802.11a with outside Antenna (Tx: 5785MHz)**

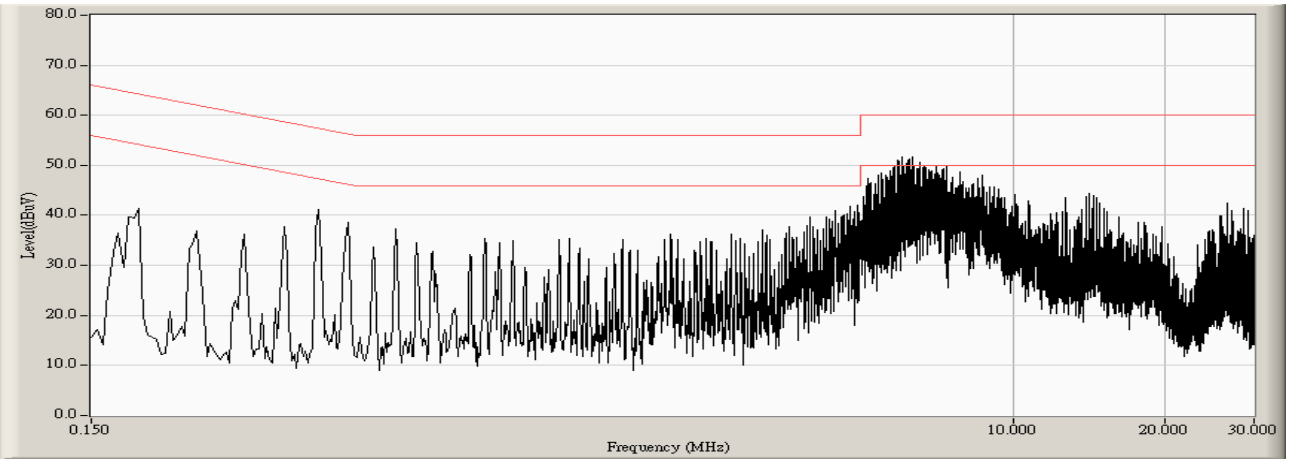


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.178	9.539	26.300	35.839	-19.361	55.200	AVERAGE
2	*	0.446	9.657	30.200	39.857	-7.686	47.543	AVERAGE
3		5.940	9.730	28.400	38.130	-11.870	50.000	AVERAGE
4		8.890	9.898	27.440	37.338	-12.662	50.000	AVERAGE
5		23.564	10.310	29.850	40.160	-9.840	50.000	AVERAGE
6		26.610	10.430	26.800	37.230	-12.770	50.000	AVERAGE

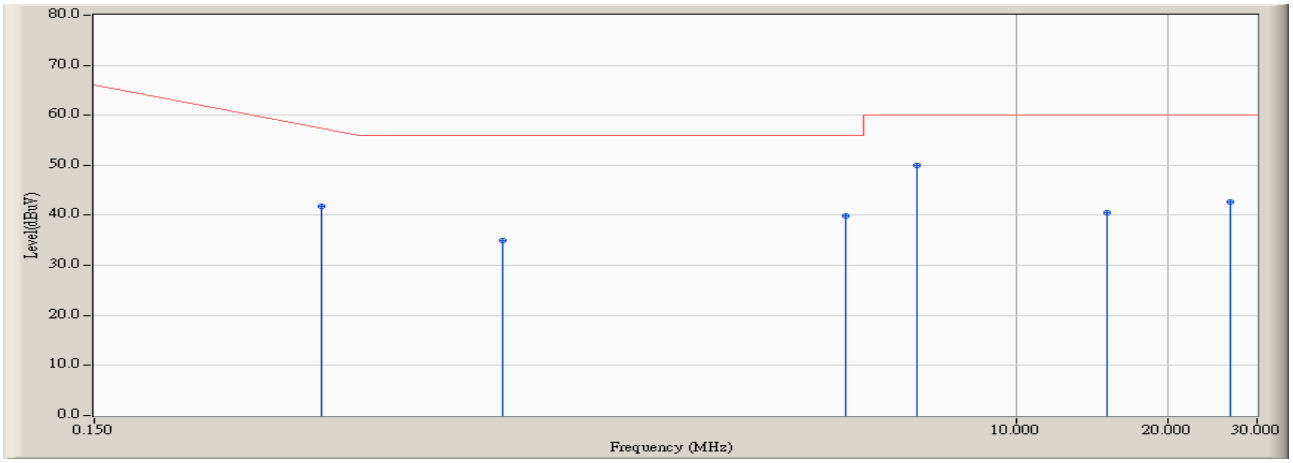
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 11:13**
Limit : FCC_Part15_B_00M_QP	**Margin : 10**
EUT : ZA-5000-D(802.11a)	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**



Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 11:16**
Limit : FCC_Part15_B_00M_QP	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**

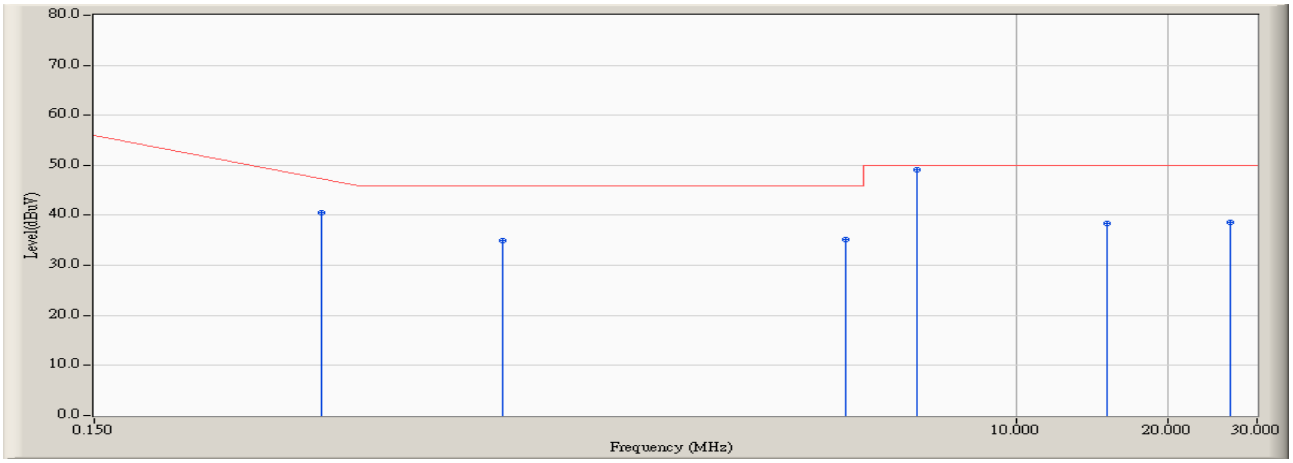


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.422	9.533	32.300	41.833	-16.396	58.229	QUASIPEAK
2		0.962	9.632	25.400	35.032	-20.968	56.000	QUASIPEAK
3		4.589	9.793	30.100	39.893	-16.107	56.000	QUASIPEAK
4	*	6.378	9.830	40.200	50.030	-9.970	60.000	QUASIPEAK
5		15.161	10.040	30.560	40.600	-19.400	60.000	QUASIPEAK
6		26.610	10.240	32.400	42.640	-17.360	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 11:16**
Limit : FCC_Part15_B_00M_AV	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : ENV216 - Line1**
Power : AC 120V/60HZ	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**

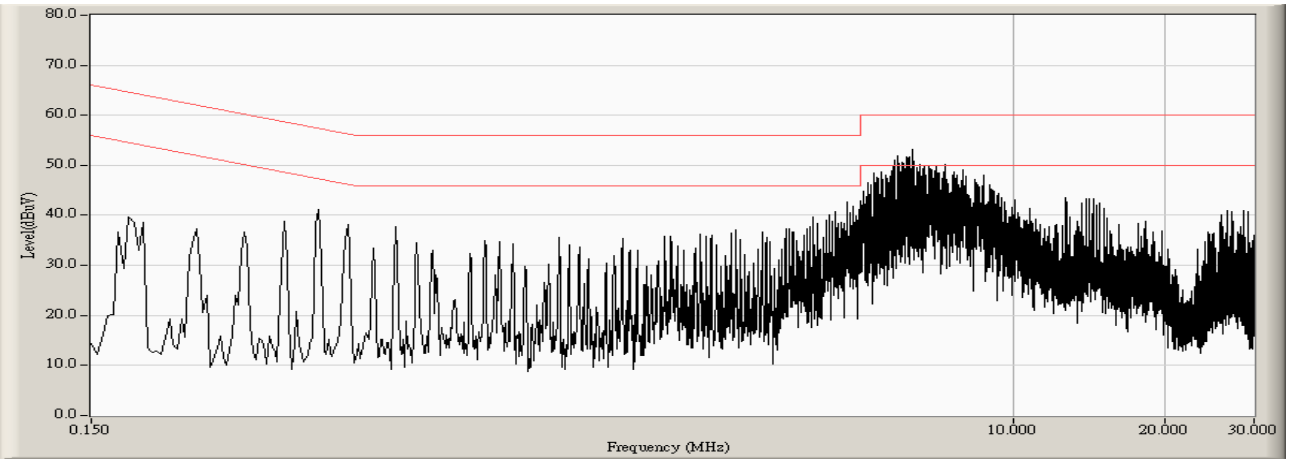


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.422	9.533	31.000	40.533	-7.696	48.229	AVERAGE
2		0.962	9.632	25.300	34.932	-11.068	46.000	AVERAGE
3		4.589	9.793	25.360	35.153	-10.847	46.000	AVERAGE
4	*	6.378	9.830	39.200	49.030	-0.970	50.000	AVERAGE
5		15.161	10.040	28.310	38.350	-11.650	50.000	AVERAGE
6		26.610	10.240	28.300	38.540	-11.460	50.000	AVERAGE

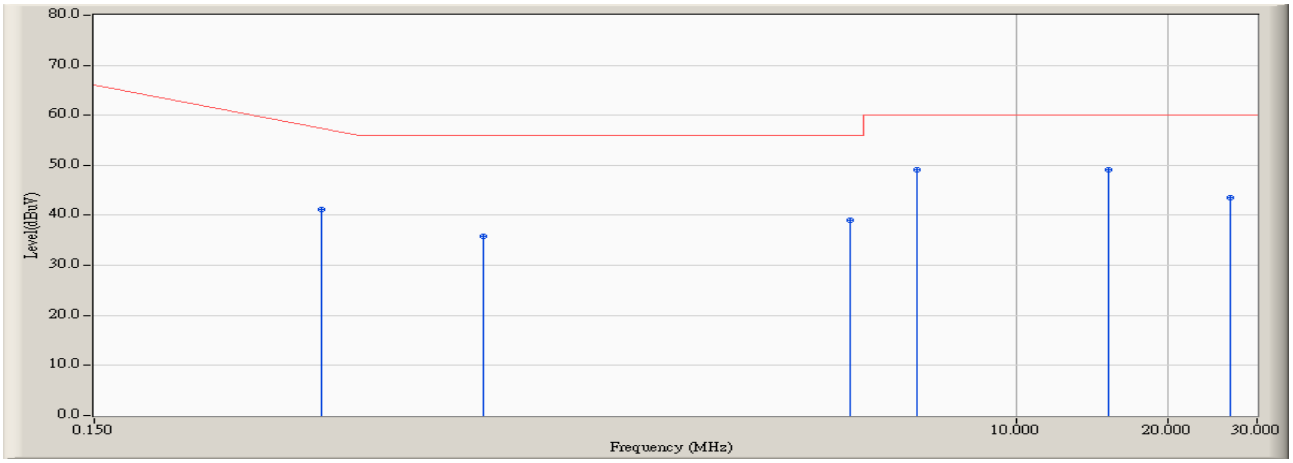
Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 11:29**
Limit : FCC_Part15_B_00M_QP	**Margin : 10**
EUT : ZA-5000-D(802.11a)	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**



Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 11:32**
Limit : FCC_Part15_B_00M_QP	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**

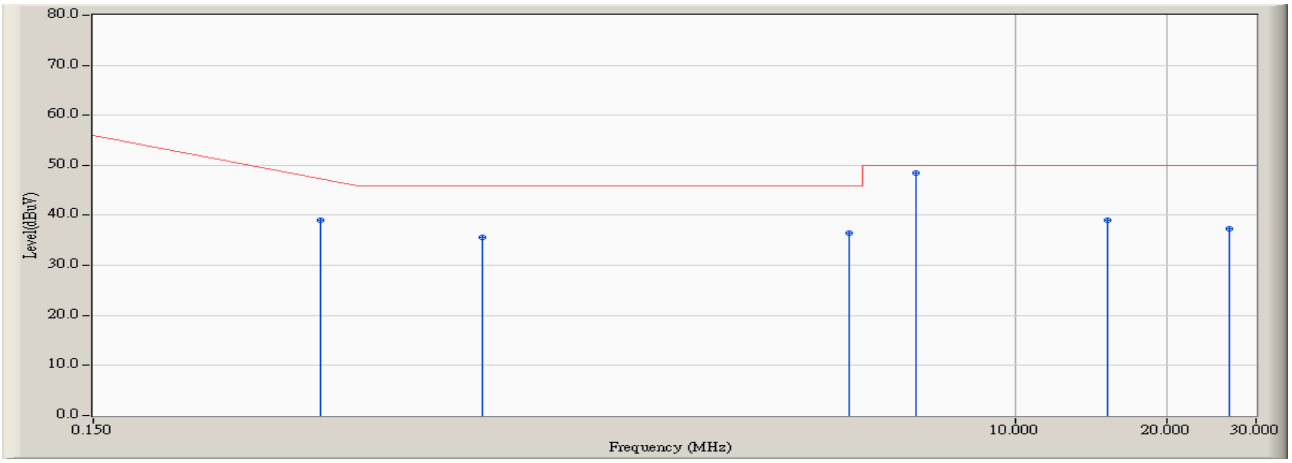


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.422	9.633	31.600	41.233	-16.995	58.229	QUASIPEAK
2		0.882	9.701	26.100	35.801	-20.199	56.000	QUASIPEAK
3		4.690	9.709	29.300	39.009	-16.991	56.000	QUASIPEAK
4	*	6.378	9.750	39.400	49.150	-10.850	60.000	QUASIPEAK
5		15.228	10.150	38.930	49.080	-10.920	60.000	QUASIPEAK
6		26.610	10.430	33.200	43.630	-16.370	60.000	QUASIPEAK

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : SR-1	**Time : 2006/06/26 - 11:34**
Limit : FCC_Part15_B_00M_AV	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : ENV216 - Line2**
Power : AC 120V/60HZ	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.422	9.633	29.400	39.033	-9.195	48.229	AVERAGE
2		0.882	9.701	26.000	35.701	-10.299	46.000	AVERAGE
3		4.690	9.709	26.700	36.409	-9.591	46.000	AVERAGE
4	*	6.378	9.750	38.690	48.440	-1.560	50.000	AVERAGE
5		15.228	10.150	28.800	38.950	-11.050	50.000	AVERAGE
6		26.610	10.430	26.900	37.330	-12.670	50.000	AVERAGE

Note:

1. All Reading Levels are Quasi-Peak and average value.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

9.7. Test Photograph

Test Mode : Mode3: Transmitter 802.11a with Outside Antenna

Description : Front View of Conducted Test for Main

Test Mode : Mode3: Transmitter 802.11a with Outside Antenna

Description : Back View of Conducted Test for Main

Test Mode : Mode4: Transmitter 802.11a with Inside Antenna

Description : Front View of Conducted Test for Main

Test Mode : Mode4: Transmitter 802.11a with Inside Antenna

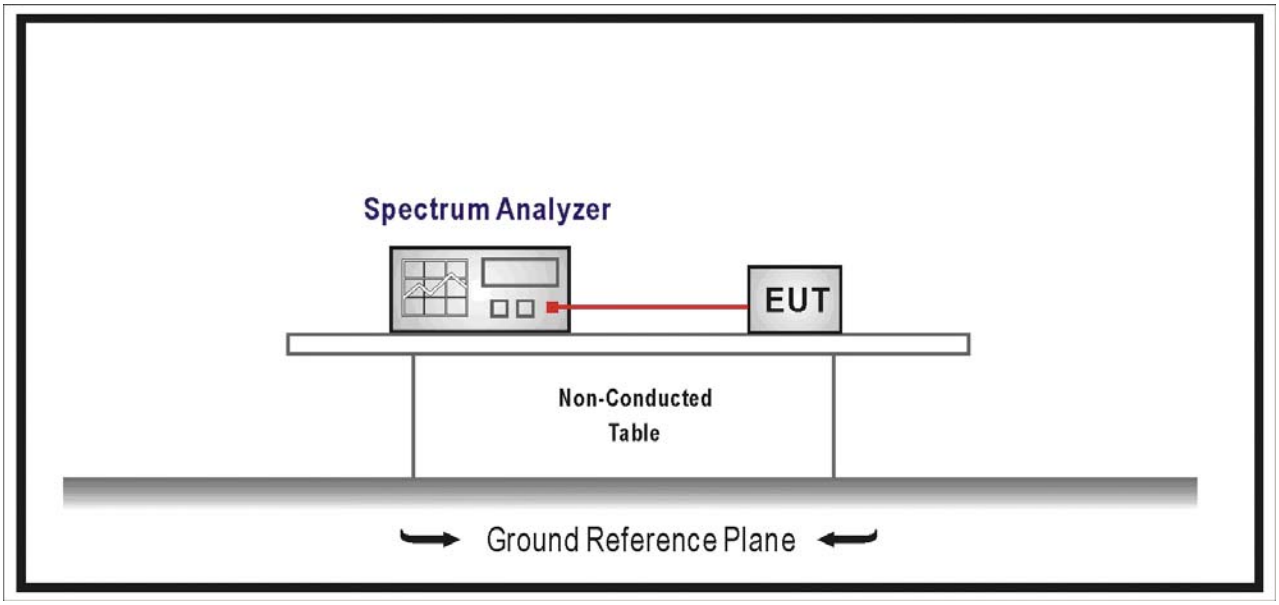
Description : Back View of Conducted Test for Main

10. 26dBc Occupied Bandwidth

10.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.407

10.2. Test Setup



10.3. Limit

(1) For the band 5.15-5.25 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 50 mW or 4 dBm + 10log B, where B is the 26dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

(2) For the band 5.25-5.35 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.825 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 1W or 17 dBm + 10log B, where B is the 26dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

10.4. Test Procedure

The peak power spectral density is measured as a conducted emission by direct connection of a spectrum analyzer t to the equipment under test. Measurements are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less.

10.5. Deviation from Test Standard

No deviation.

10.6. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	26dBc Occupied Bandwidth		
Test Mode	Mode3: Transmitter 802.11a with Outside Antenna		
Date of Test	2006/06/21	Test Site	AC-3

Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
149	5745	25.323	--	Pass
157	5785	25.479	--	Pass
161	5805	24.556	--	Pass

Figure Channel 149 (5745MHz)

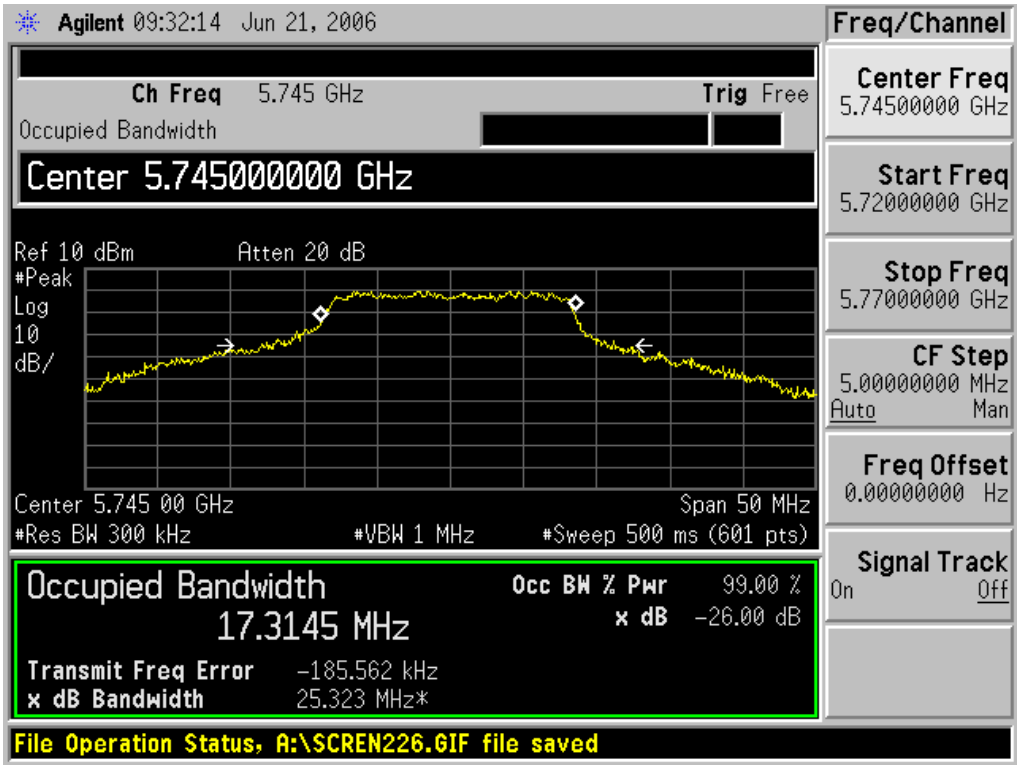


Figure Channel 157 (5785MHz)

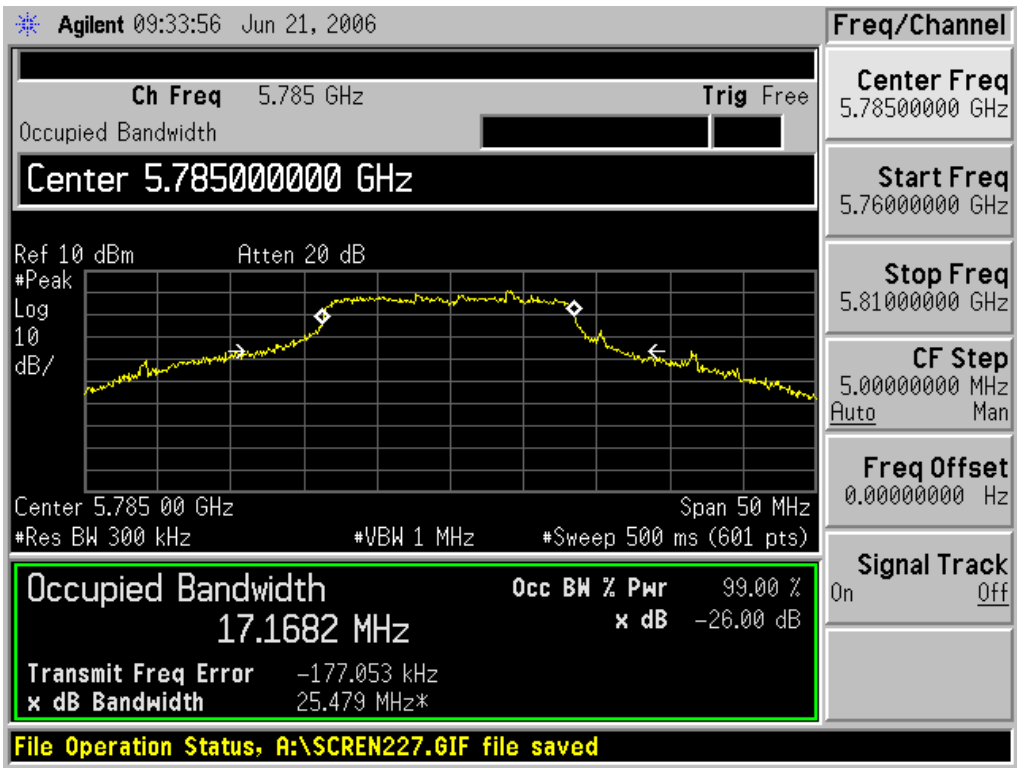
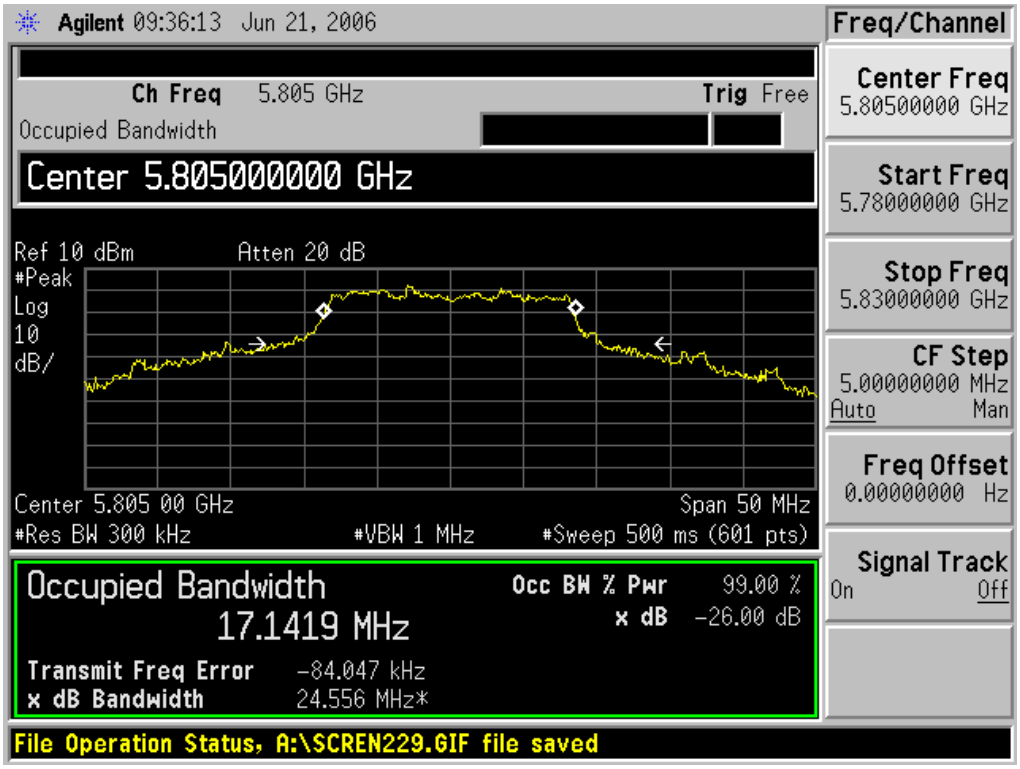


Figure Channel 161 (5805MHz)



Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	26dBc Occupied Bandwidth		
Test Mode	Mode4: Transmitter 802.11a with Inside Antenna		
Date of Test	2006/06/21	Test Site	AC-3

Channel No.	Frequency (MHz)	Measurement Level (MHz)	Required Limit (MHz)	Result
149	5745	25.323	--	Pass
157	5785	25.479	--	Pass
161	5805	24.556	--	Pass

Figure Channel 149 (5745MHz)

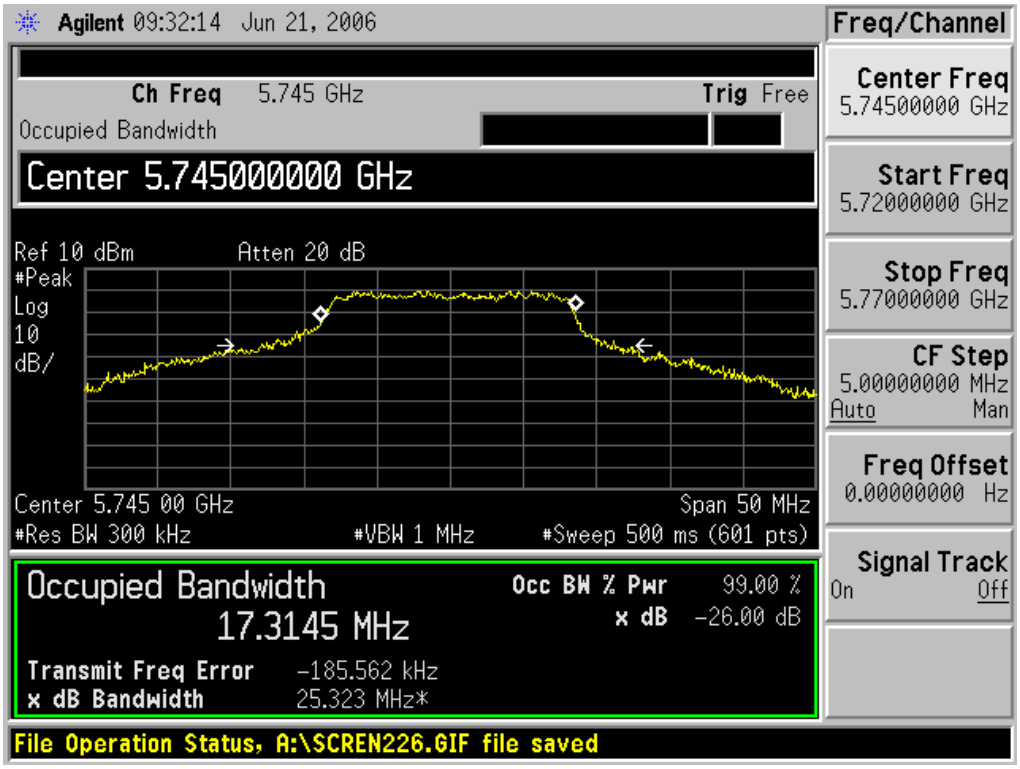


Figure Channel 157 (5785MHz)

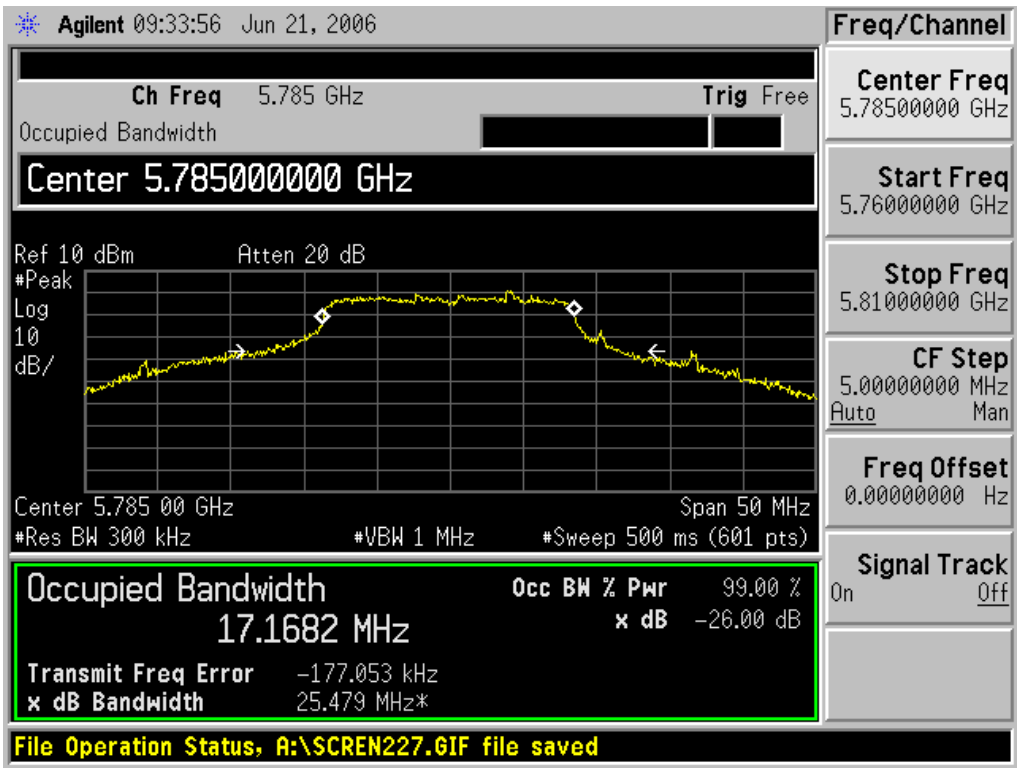
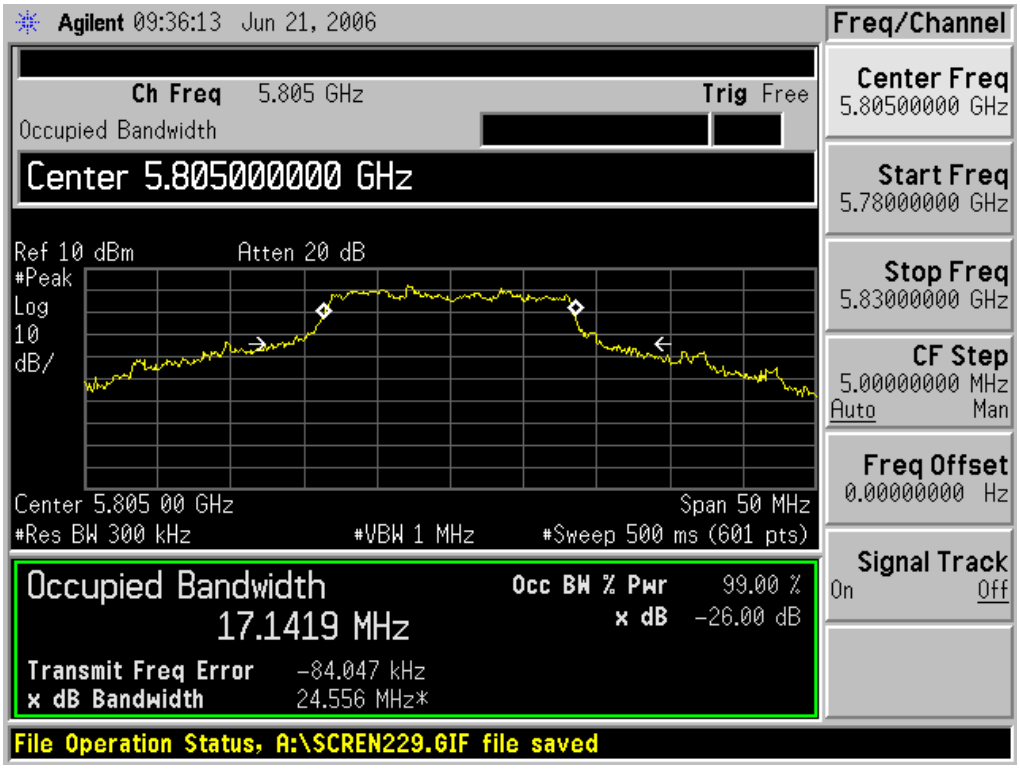


Figure Channel 161 (5805MHz)

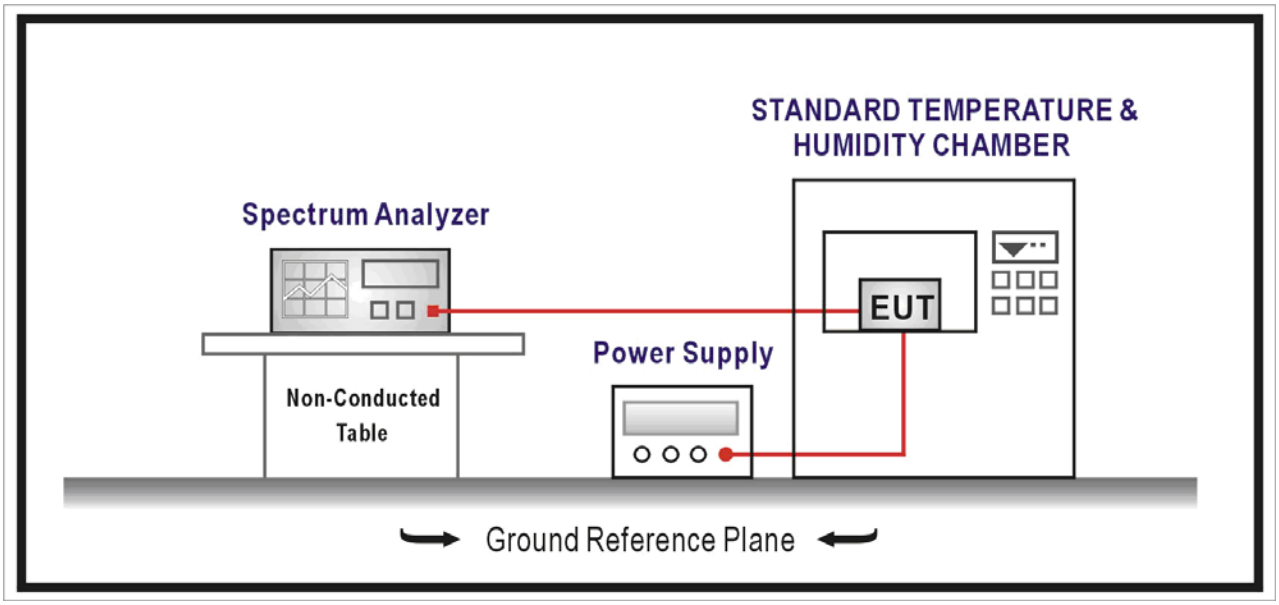


11. Peak Transmit Power

11.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.407

11.2. Test Setup



11.3. Limit

(1) For the band 5.15-5.25 GHz, the peak transmit power over the frequency band of Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 20dB below the level of the fundamental or to the general radiated emission limits in paragraph 15.209, whichever is the lesser attenuation.

(2) For the band 5.25-5.35 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 250 mW or 11 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.825 GHz, the peak transmit power over the frequency band of operation shall not exceed the lesser of 1W or 17 dBm + 10log B, where B is the 26-dB emission bandwidth in MHz. If transmitting antenna of directional gain greater than 6 dBi are used, the peak transmit power shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

11.4. Test Procedure

The peak power spectral density is measured as a conducted emission by direct connection of a spectrum analyzer to the equipment under test. Measurements are made over a bandwidth of 1 MHz or the 26 dB emission bandwidth of the device, whichever is less.

11.5. Deviation from Test Standard

No deviation.

11.6. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Peak Transmit Power		
Test Mode	Mode3: Transmitter 802.11a with Outside Antenna		
Date of Test	2006/06/20	Test Site	AC-3

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit (dBm)	Result
149	5745	15.35	30dBm or 17dBm+10*log(26dB BW), whichever is lesser	Pass
157	5785	14.92	30dBm or 17dBm+10*log(26dB BW), whichever is lesser	Pass
161	5805	15.49	30dBm or 17dBm+10*log(26dB BW), whichever is lesser	Pass

Figure Channel 149 (5745MHz)

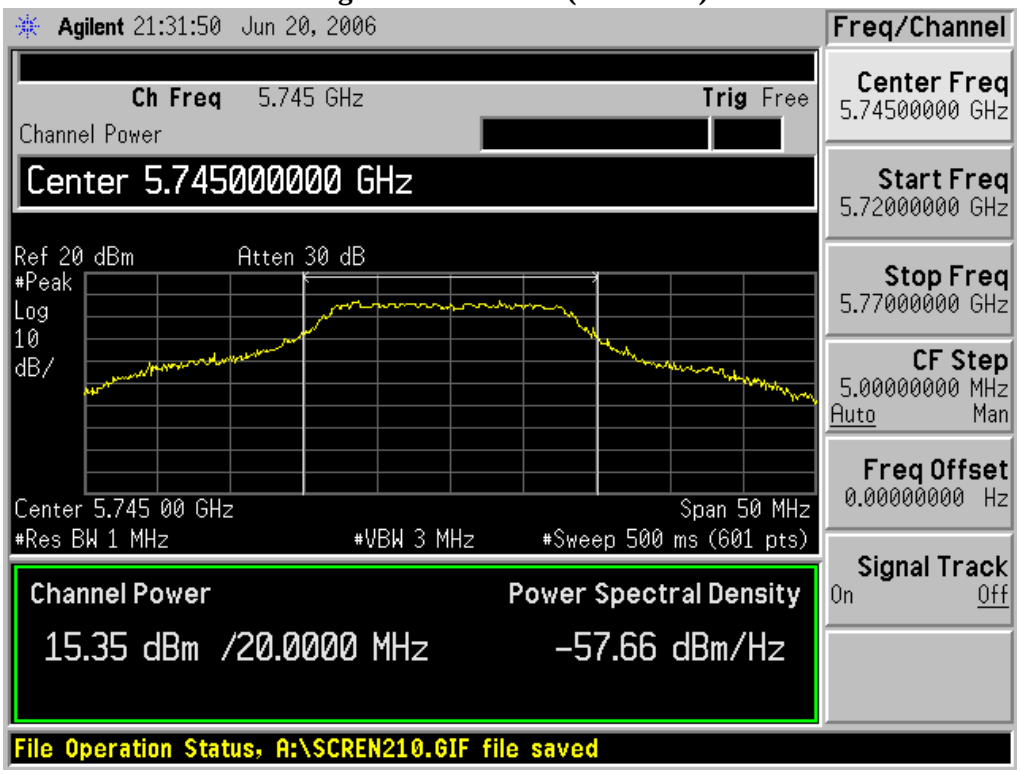


Figure Channel 157 (5785MHz)

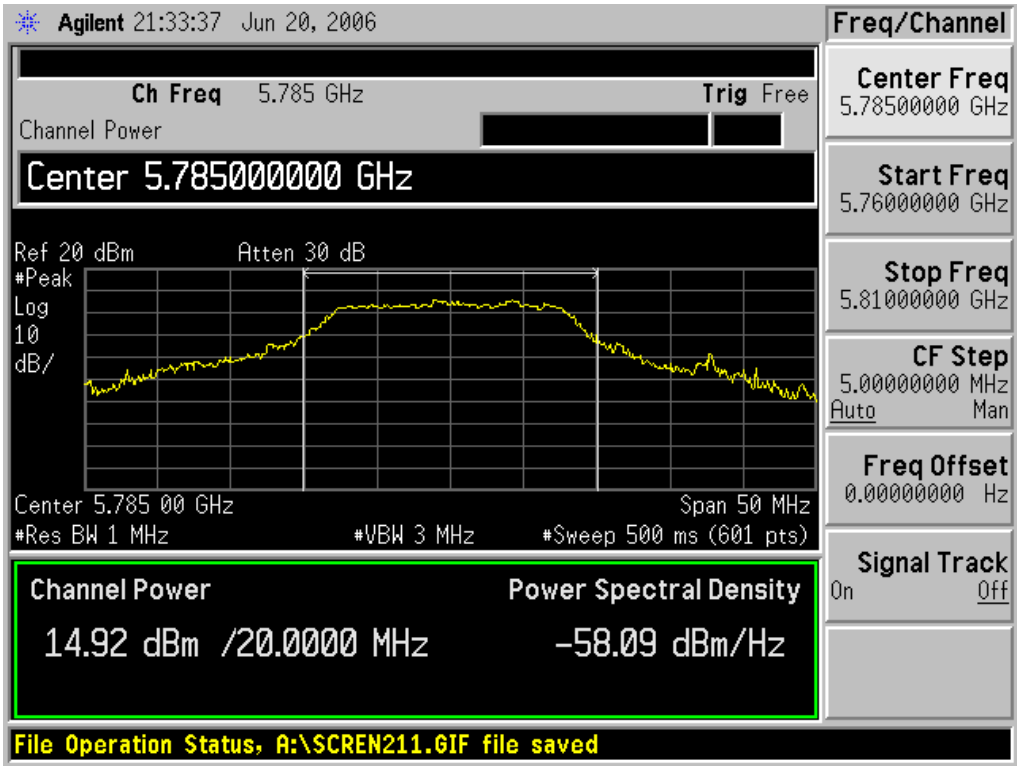
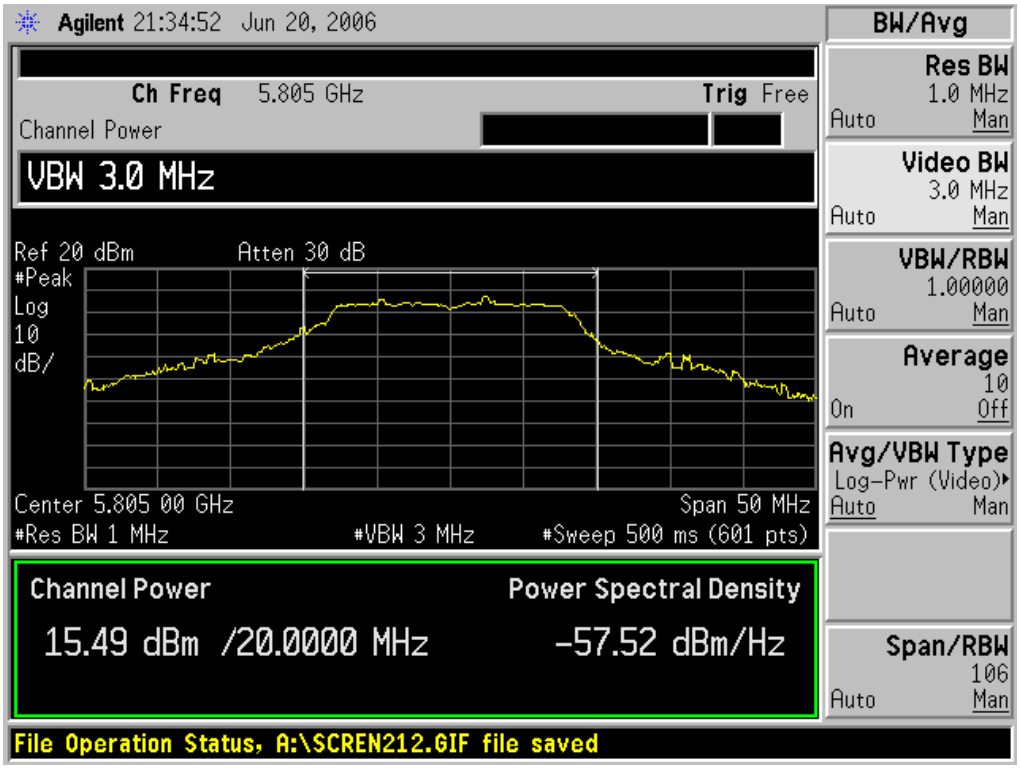


Figure Channel 161 (5805MHz)



Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Peak Transmit Power		
Test Mode	Mode4: Transmitter 802.11a with Inside Antenna		
Date of Test	2006/06/20	Test Site	AC-3

Channel No.	Frequency (MHz)	Measurement (dBm)	Required Limit (dBm)	Result
149	5745	15.35	30dBm or 17dBm+10*log(26dB BW), whichever is lesser	Pass
157	5785	14.92	30dBm or 17dBm+10*log(26dB BW), whichever is lesser	Pass
161	5805	15.49	30dBm or 17dBm+10*log(26dB BW), whichever is lesser	Pass

Figure Channel 149 (5745MHz)

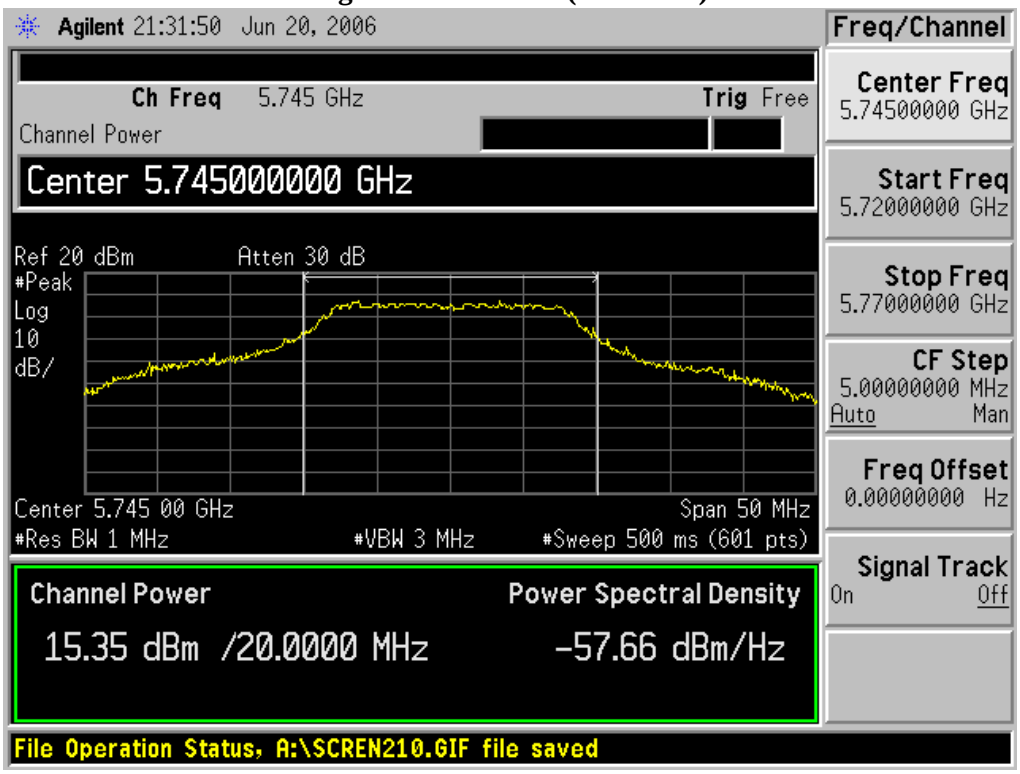


Figure Channel 157 (5785MHz)

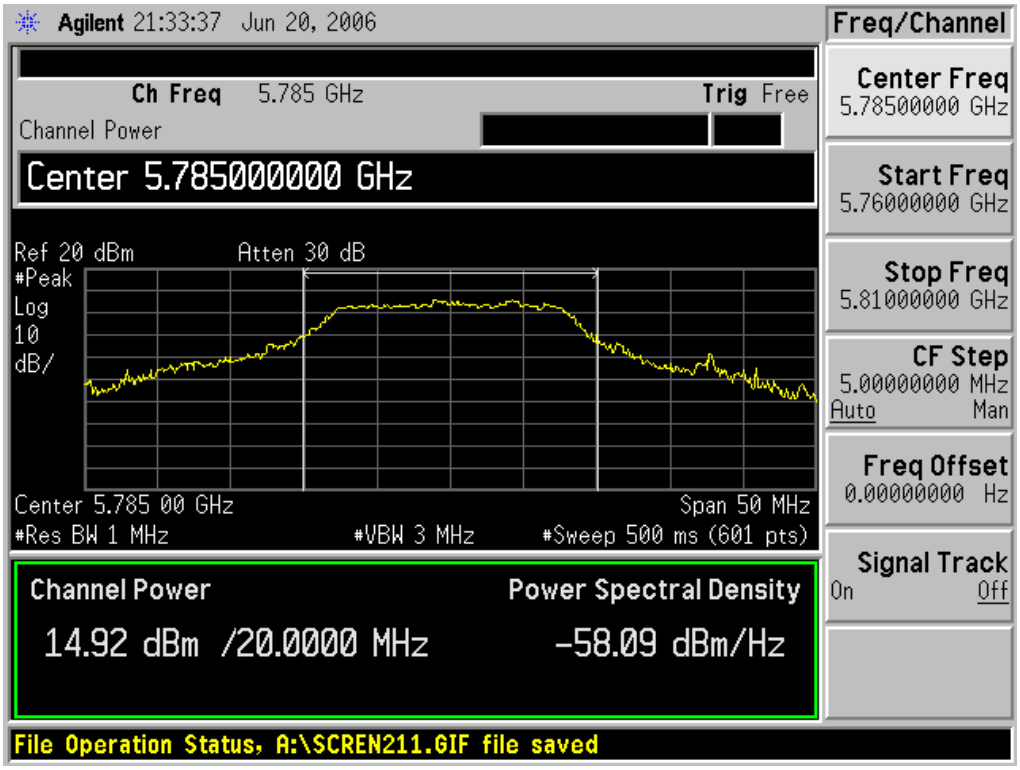
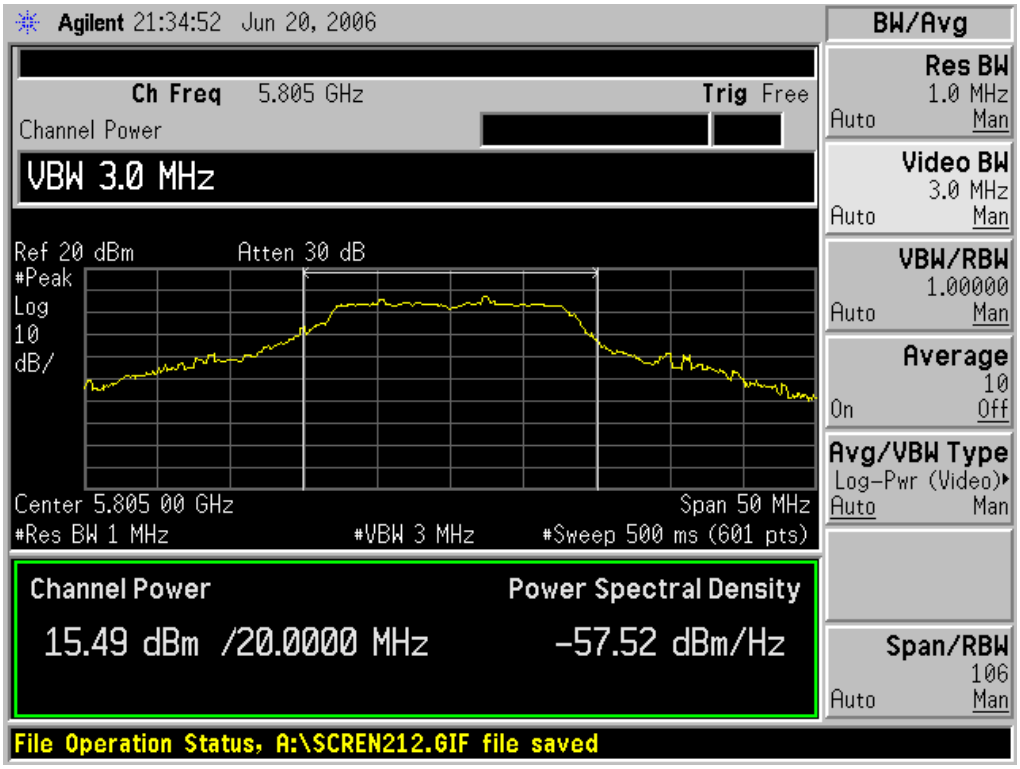


Figure Channel 161 (5805MHz)



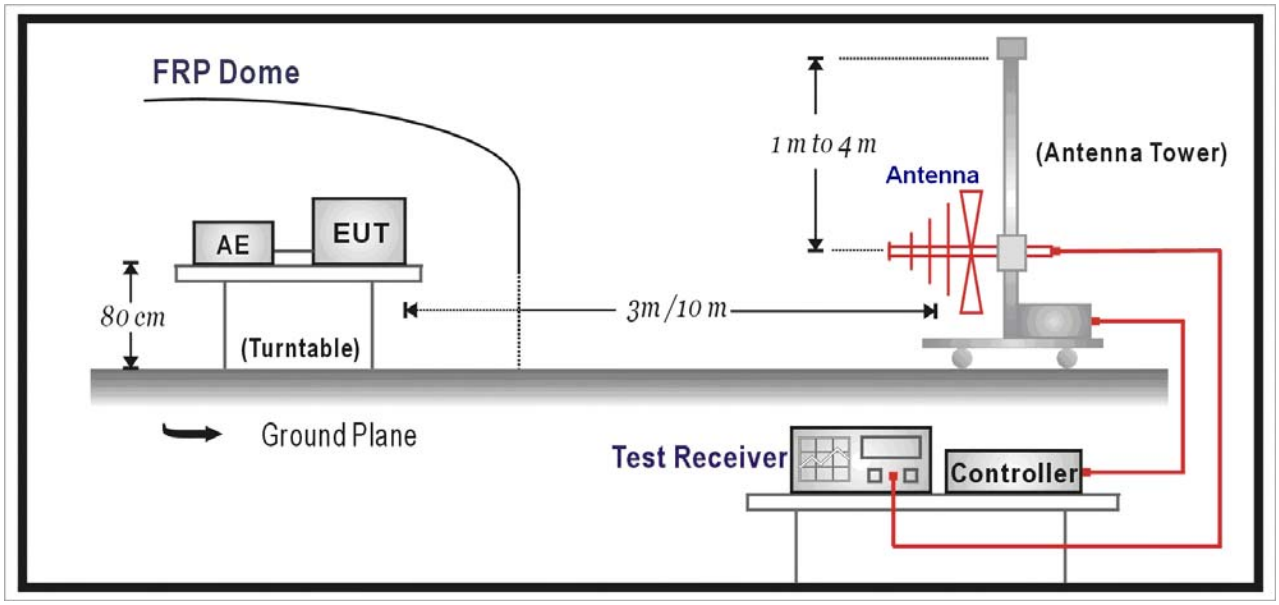
12. Radiated Emission

12.1. Test Specification

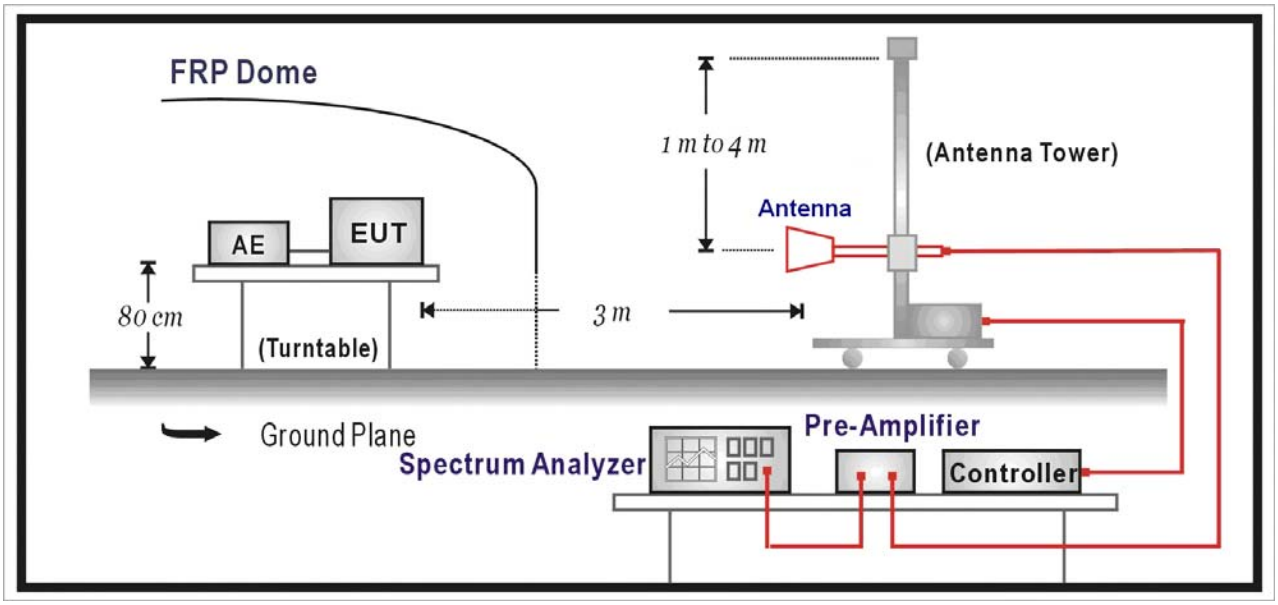
According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.209

12.2. Test Setup

Under 1GHz Test Setup



Above 1GHz Test Setup



12.3. Limit

(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of –27 dBm/MHz in the 5.15-5.25 GHz band.

(3) For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of –17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of –27 dBm/MHz.

(4) The field strength of emissions appearing within restricted bands of operation shall not exceed the limits in the Section 15.209.

(5) Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in Section 15.209:

FCC Part 15 Subpart C Paragraph 15.209 Limits		
Frequency MHz	uV/m @3m	dBuV/m@3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks : 1. RF Voltage (dBuV) = 20 log RF Voltage (uV)

2. In the Above Table, the tighter limit applies at the band edges.

3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

12.4. Test Procedure

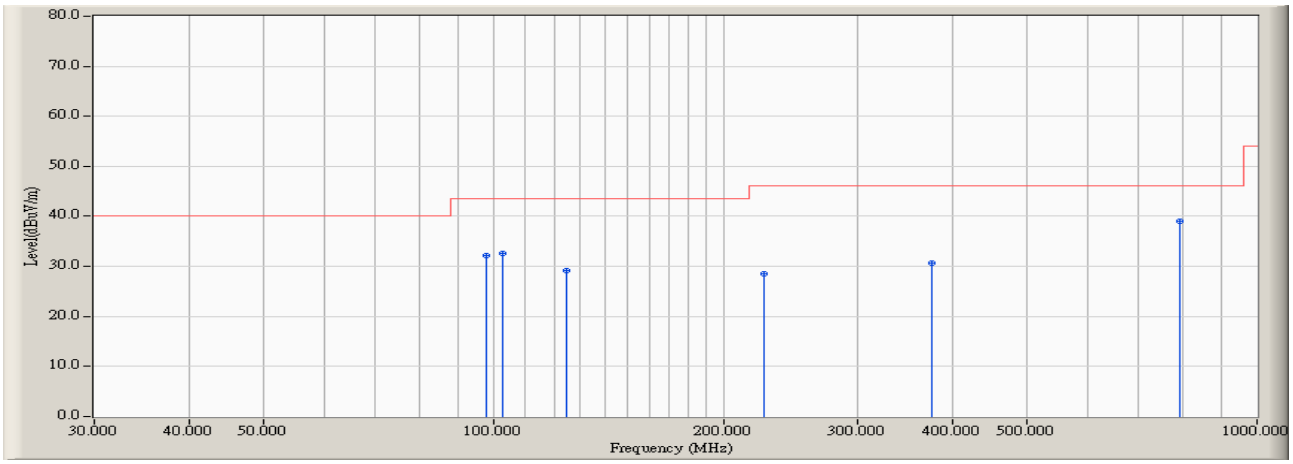
The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.4 on radiated measurement.
The additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field dtrength of harmonics measurement.
The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.
The frequency range from 30MHz to 10th harminics is checked.

12.5. Deviation from Test Standard

No deviation.

12.6. Test Result

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 09:46**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5745MHz)**

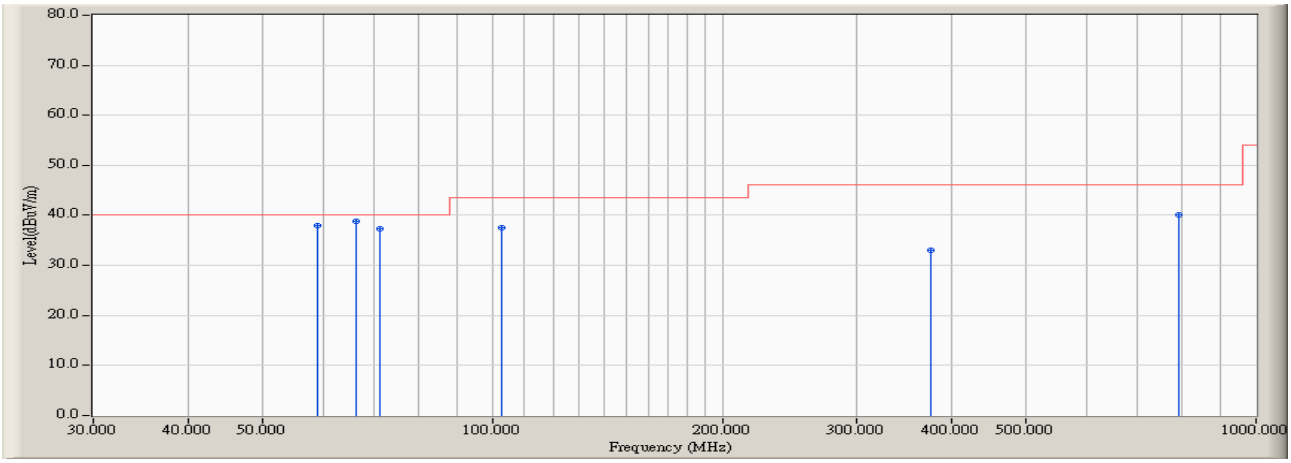


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	44.055	32.194	-11.326	43.520	QUASIPEAK
2		102.750	-11.096	43.652	32.556	-10.964	43.520	QUASIPEAK
3		124.575	-10.125	39.365	29.240	-14.280	43.520	QUASIPEAK
4		226.425	-12.116	40.562	28.446	-17.574	46.020	QUASIPEAK
5		374.350	-5.568	36.320	30.752	-15.268	46.020	QUASIPEAK
6	*	791.450	0.665	38.352	39.017	-7.003	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 09:53**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5745MHz)**

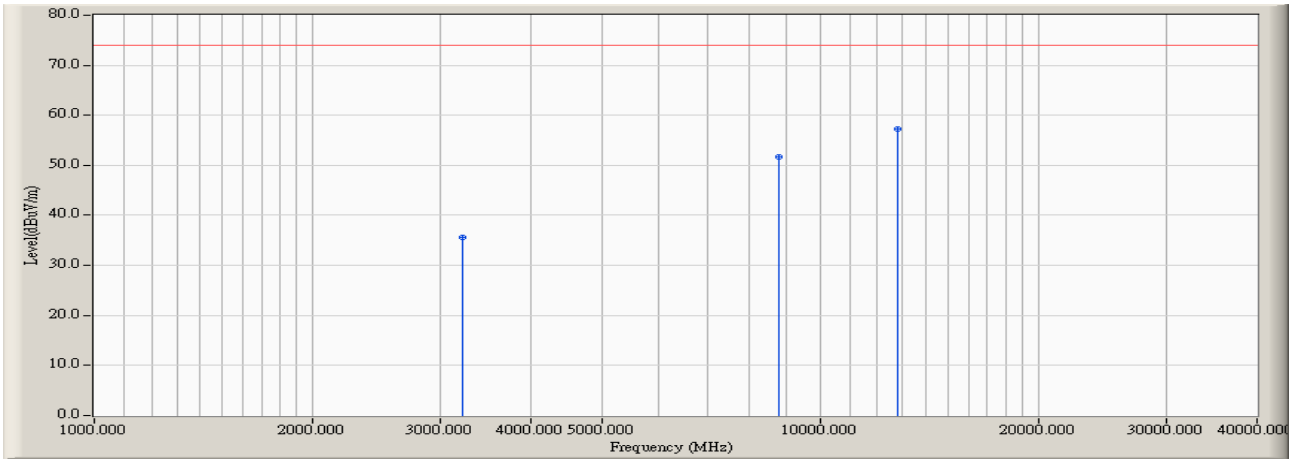


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	54.989	38.040	-1.960	40.000	QUASIPEAK
2	*	66.375	-17.094	56.000	38.906	-1.094	40.000	QUASIPEAK
3		71.225	-16.783	54.026	37.243	-2.757	40.000	QUASIPEAK
4		102.750	-11.096	48.622	37.526	-5.994	43.520	QUASIPEAK
5		374.350	-5.568	38.654	33.086	-12.934	46.020	QUASIPEAK
6		791.450	0.665	39.356	40.021	-5.999	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 14:18**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5745MHz)**

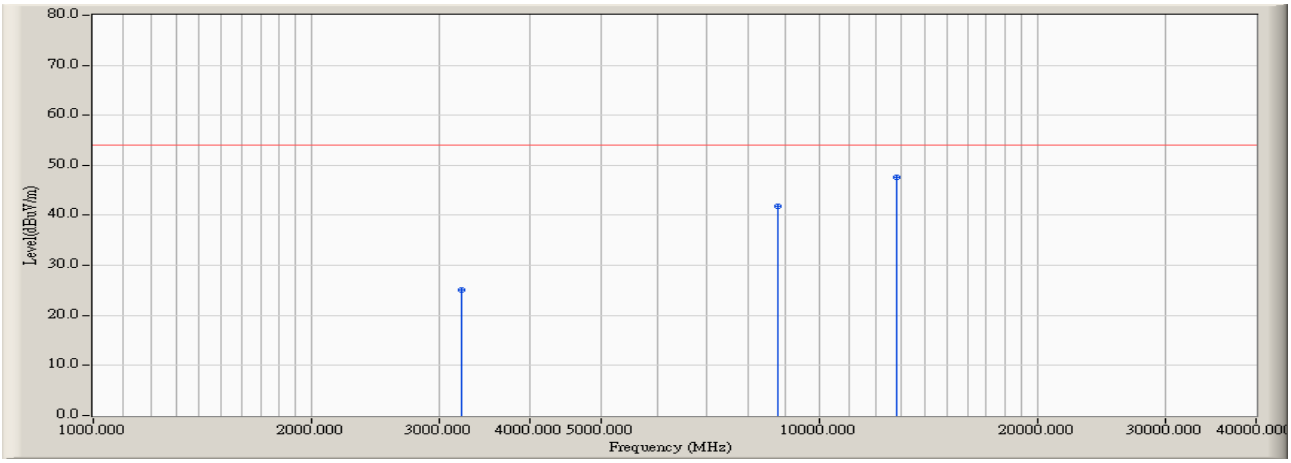


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3220.000	-2.579	38.120	35.541	-38.429	73.970	PEAK
2		8760.000	11.964	39.680	51.644	-22.326	73.970	PEAK
3	*	12800.000	16.556	40.640	57.197	-16.773	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 14:29**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5745MHz)**

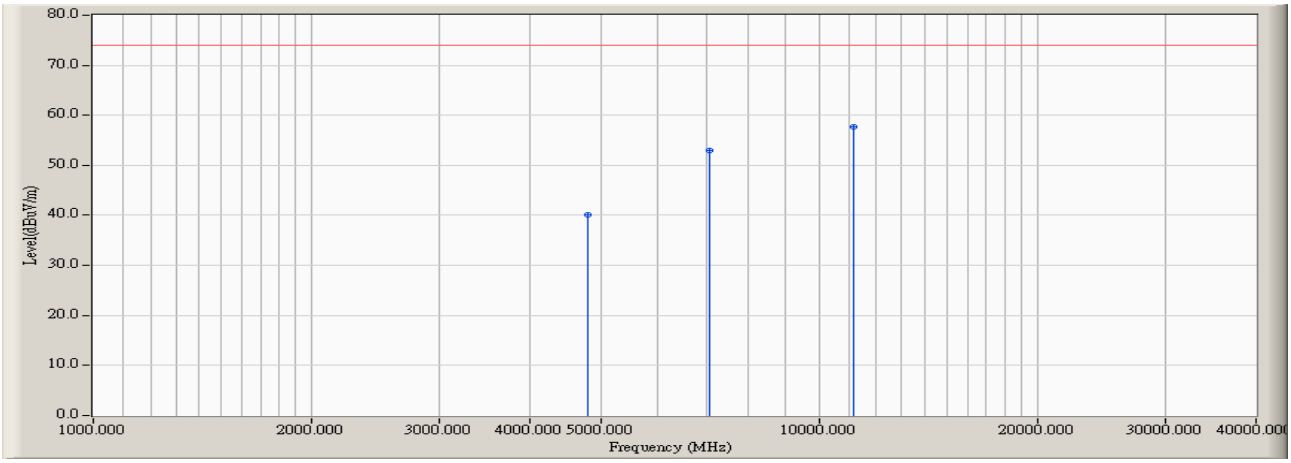


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3220.000	-2.579	27.620	25.041	-28.929	53.970	AVERAGE
2		8760.000	11.964	29.940	41.904	-12.066	53.970	AVERAGE
3	*	12800.000	16.556	31.090	47.647	-6.323	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 14:38**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5745MHz)**

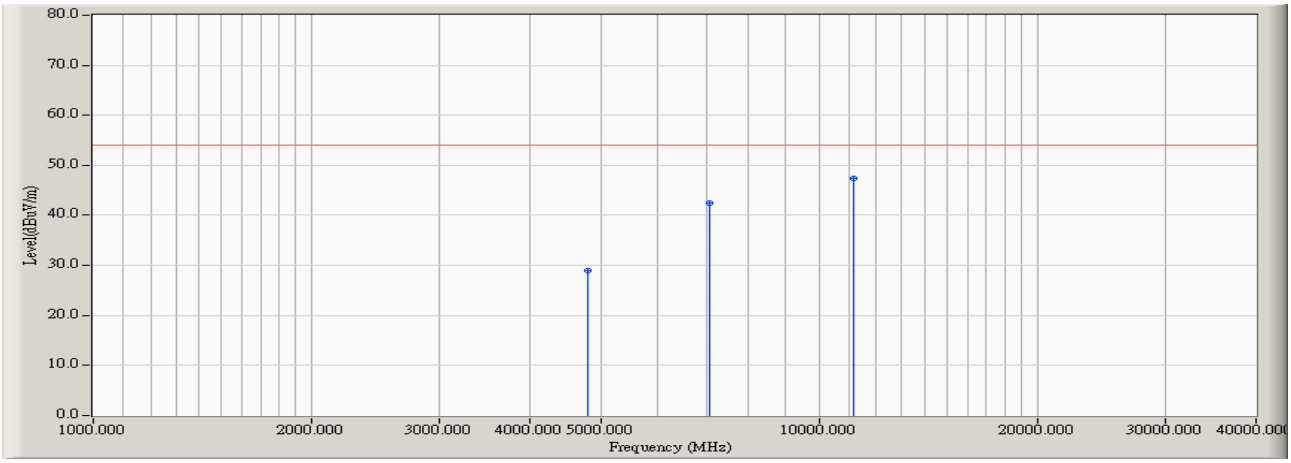


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4800.000	2.297	37.800	40.096	-33.874	73.970	PEAK
2		7080.000	11.939	41.130	53.069	-20.901	73.970	PEAK
3	*	11160.000	16.722	41.020	57.741	-16.229	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 14:45**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5745MHz)**

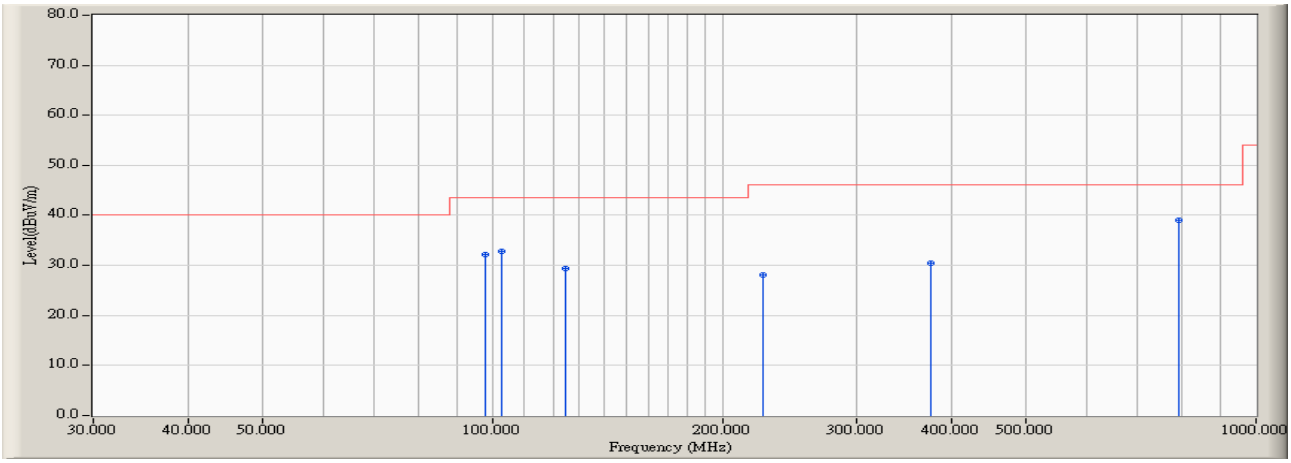


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		4800.000	2.297	26.600	28.896	-25.074	53.970	AVERAGE
2		7080.000	11.939	30.630	42.569	-11.401	53.970	AVERAGE
3	*	11160.000	16.722	30.670	47.391	-6.579	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/05 - 19:09**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)**

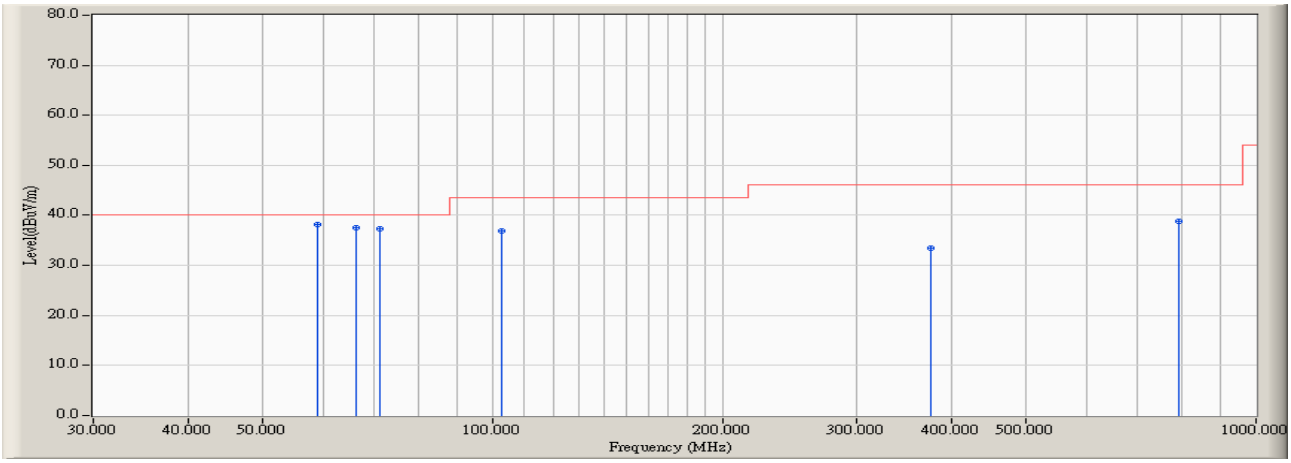


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	44.050	32.189	-11.331	43.520	QUASIPEAK
2		102.750	-11.096	43.810	32.714	-10.806	43.520	QUASIPEAK
3		124.575	-10.125	39.586	29.461	-14.059	43.520	QUASIPEAK
4		226.425	-12.116	40.205	28.089	-17.931	46.020	QUASIPEAK
5		374.350	-5.568	36.112	30.544	-15.476	46.020	QUASIPEAK
6	*	791.450	0.665	38.357	39.022	-6.998	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/05 - 19:22**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)**

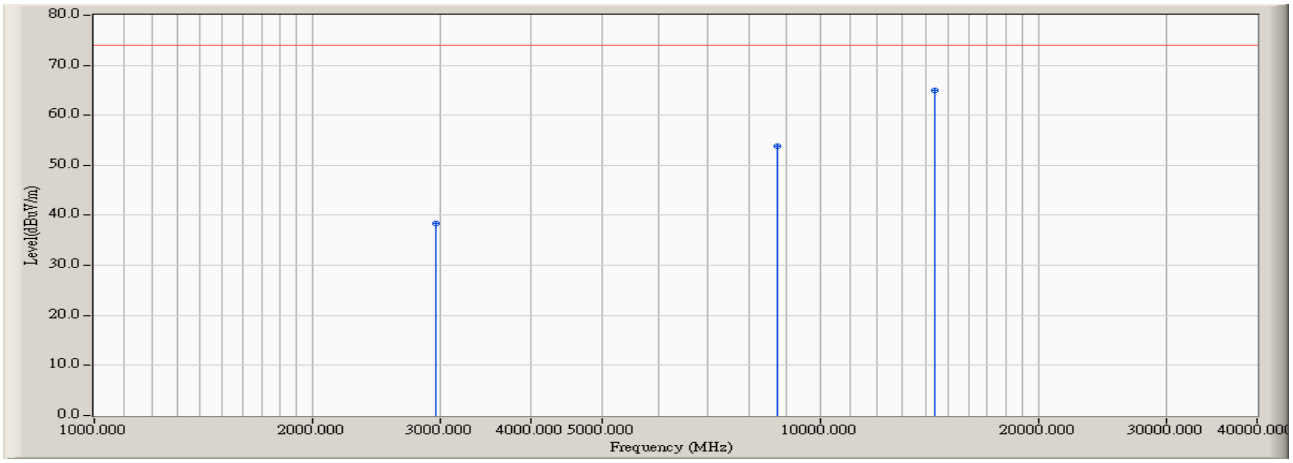


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1	*	59.100	-16.949	55.110	38.161	-1.839	40.000	QUASIPEAK
2		66.375	-17.094	54.620	37.526	-2.474	40.000	QUASIPEAK
3		71.225	-16.783	53.996	37.213	-2.787	40.000	QUASIPEAK
4		102.750	-11.096	48.011	36.915	-6.605	43.520	QUASIPEAK
5		375.350	-5.562	39.120	33.559	-12.461	46.020	QUASIPEAK
6		791.450	0.665	38.102	38.767	-7.253	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 13:54**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)**

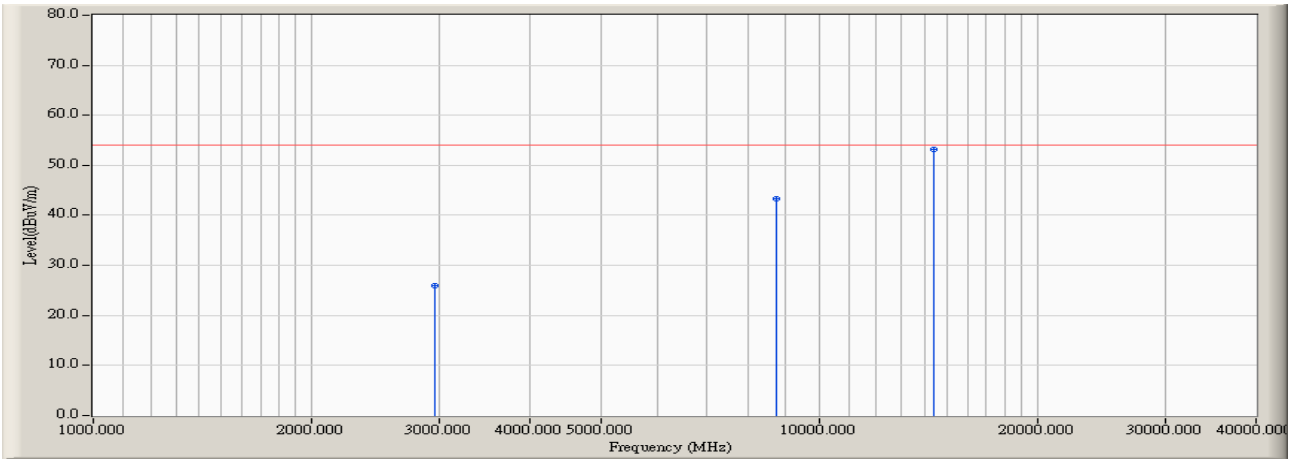


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2960.000	-2.925	41.390	38.465	-35.505	73.970	PEAK
2		8720.000	11.895	41.900	53.795	-20.175	73.970	PEAK
3	*	14360.000	21.324	43.600	64.924	-9.046	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 13:59**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)**

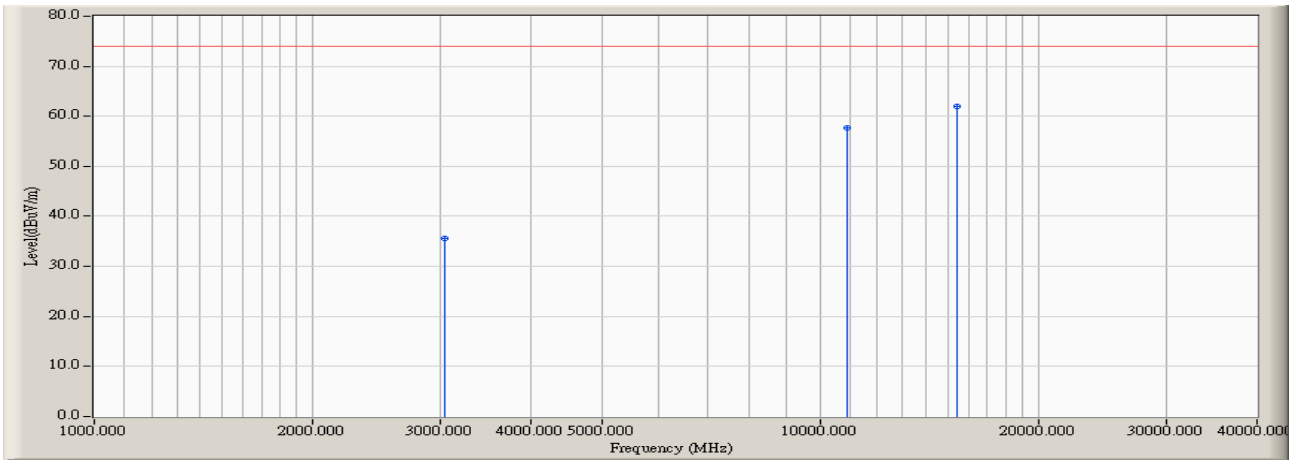


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2960.000	-2.925	28.950	26.025	-27.945	53.970	AVERAGE
2		8720.000	11.895	31.340	43.235	-10.735	53.970	AVERAGE
3	*	14360.000	21.324	31.760	53.084	-0.886	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 14:05**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)**

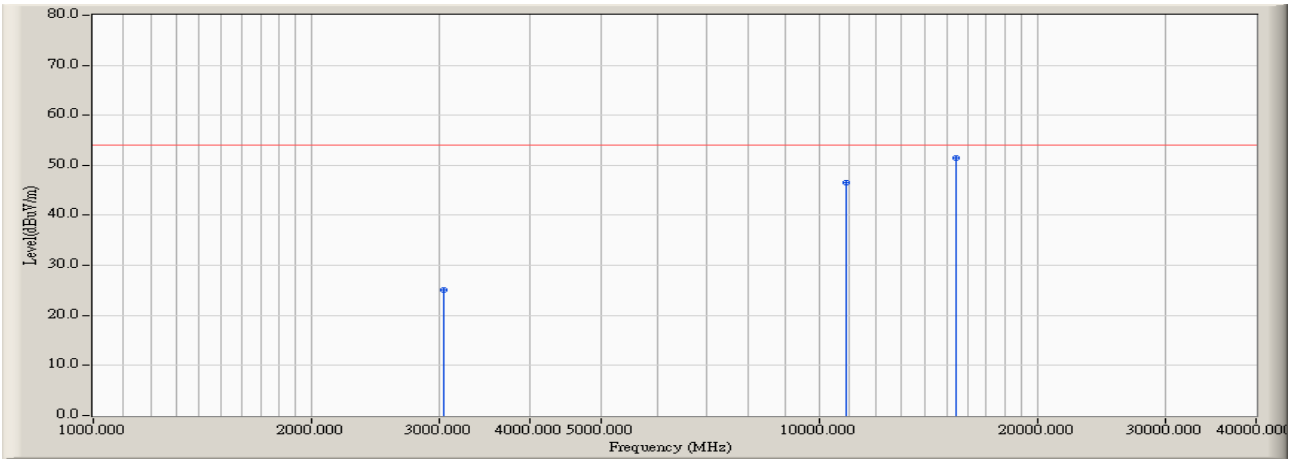


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3040.000	-2.700	38.250	35.550	-38.420	73.970	PEAK
2		10920.000	16.901	40.720	57.621	-16.349	73.970	PEAK
3	*	15440.000	18.771	43.310	62.081	-11.889	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 14:15**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)**

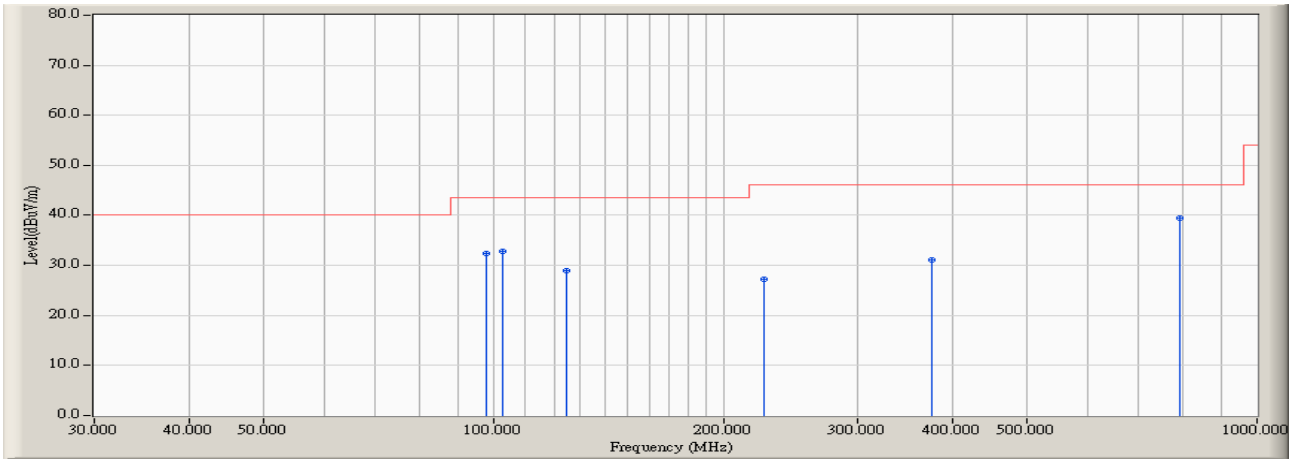


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3040.000	-2.700	27.840	25.140	-28.830	53.970	AVERAGE
2		10920.000	16.901	29.600	46.501	-7.469	53.970	AVERAGE
3	*	15440.000	18.771	32.640	51.411	-2.559	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 10:02**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5805MHz)**

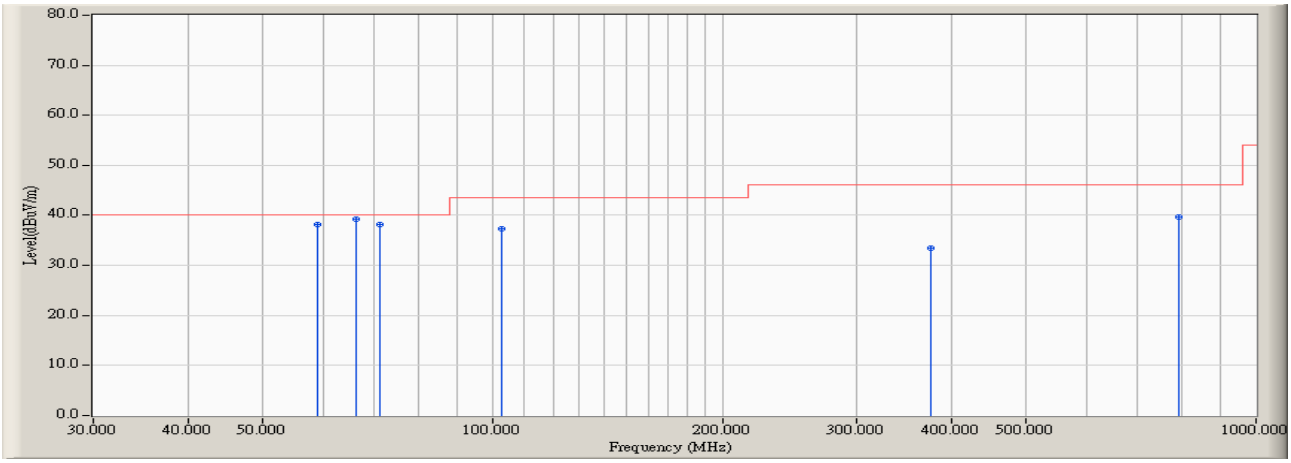


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	44.305	32.444	-11.076	43.520	QUASIPEAK
2		102.750	-11.096	43.892	32.796	-10.724	43.520	QUASIPEAK
3		124.575	-10.125	39.064	28.939	-14.581	43.520	QUASIPEAK
4		226.425	-12.116	39.365	27.249	-18.771	46.020	QUASIPEAK
5		374.350	-5.568	36.636	31.068	-14.952	46.020	QUASIPEAK
6	*	791.450	0.665	38.698	39.363	-6.657	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 10:16**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5805MHz)**

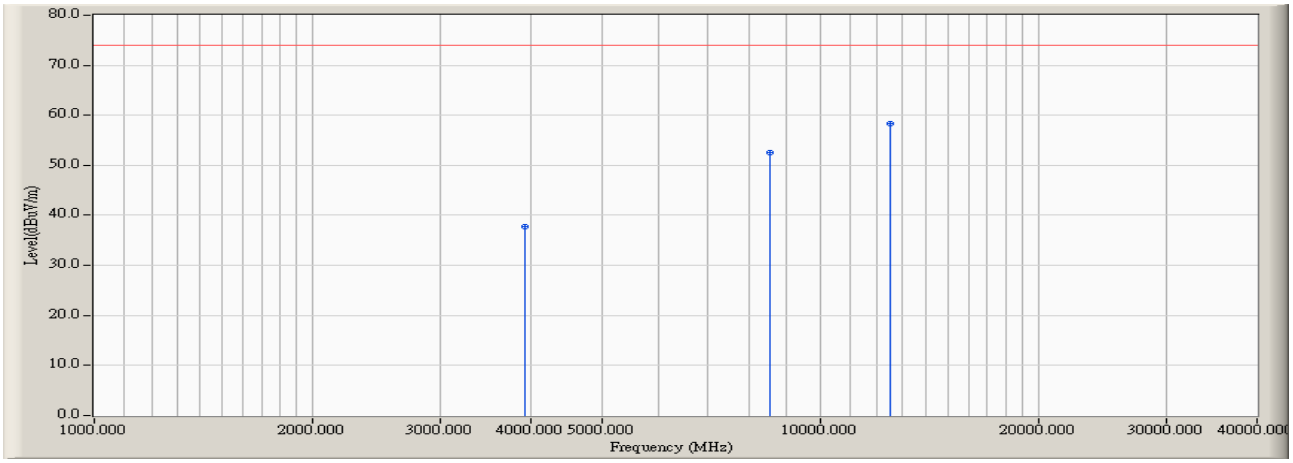


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	55.036	38.087	-1.913	40.000	QUASIPEAK
2	*	66.375	-17.094	56.320	39.226	-0.774	40.000	QUASIPEAK
3		71.225	-16.783	54.956	38.173	-1.827	40.000	QUASIPEAK
4		102.750	-11.096	48.336	37.240	-6.280	43.520	QUASIPEAK
5		374.350	-5.568	38.963	33.395	-12.625	46.020	QUASIPEAK
6		791.450	0.665	38.952	39.618	-6.402	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 14:51**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5805MHz)**

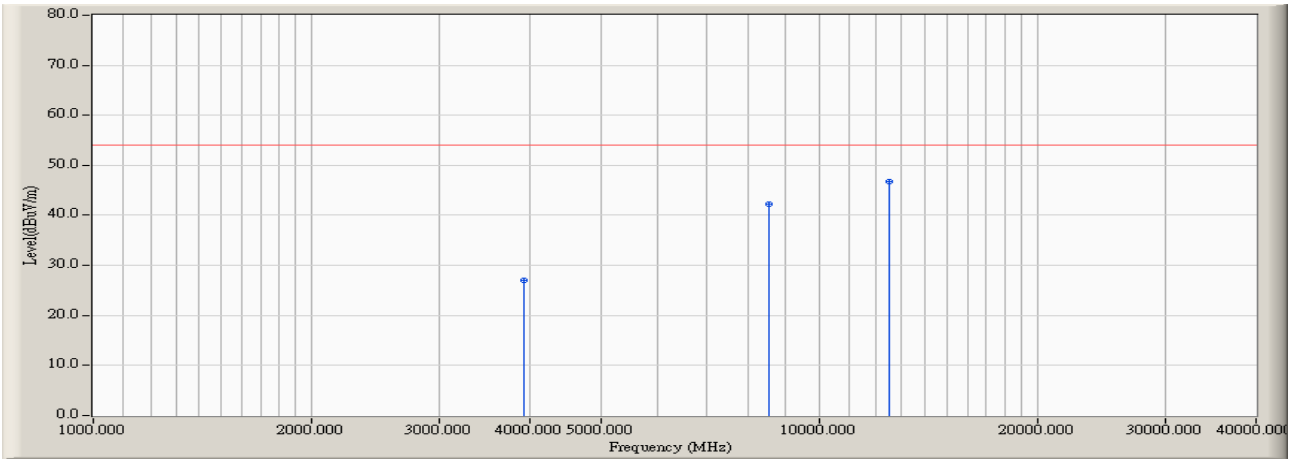


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3920.000	-0.159	38.000	37.841	-36.129	73.970	PEAK
2		8520.000	11.488	41.000	52.488	-21.482	73.970	PEAK
3	*	12520.000	15.528	42.830	58.359	-15.611	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 14:59**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5805MHz)**

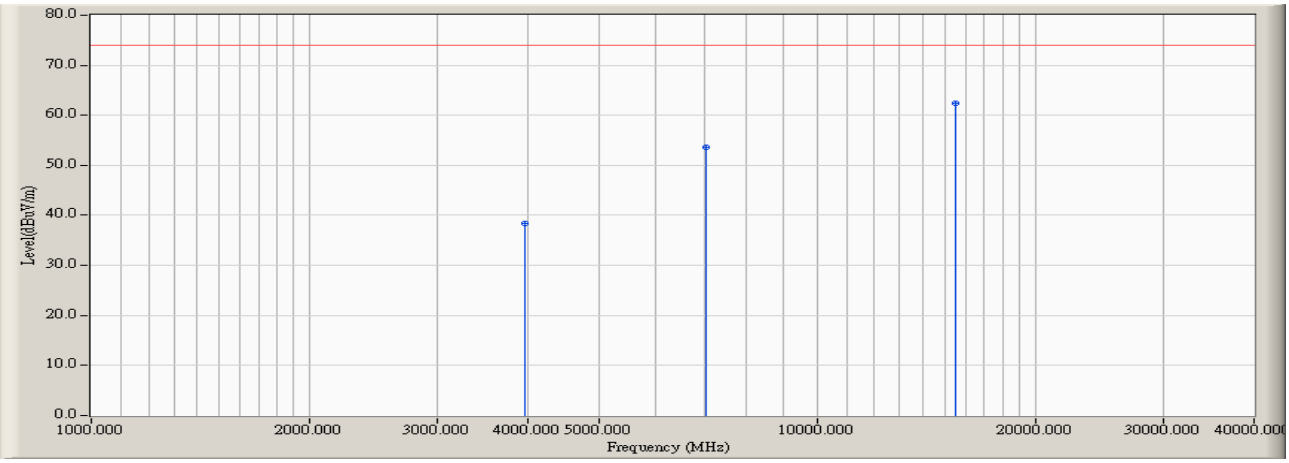


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3920.000	-0.159	27.110	26.951	-27.019	53.970	AVERAGE
2		8520.000	11.488	30.760	42.248	-11.722	53.970	AVERAGE
3	*	12520.000	15.528	31.310	46.839	-7.131	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 15:09**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5805MHz)**

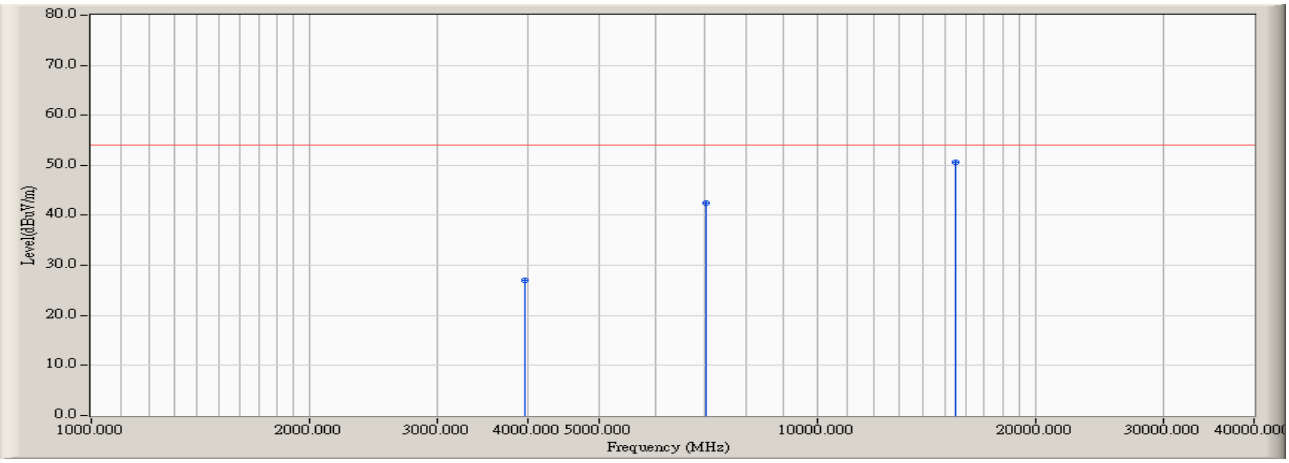


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3960.000	0.028	38.380	38.408	-35.562	73.970	PEAK
2		7040.000	11.797	41.730	53.528	-20.442	73.970	PEAK
3	*	15520.000	18.467	44.000	62.468	-11.502	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 15:12**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode3: Transmitter 802.11a with Outside Antenna (Tx: 5805MHz)**

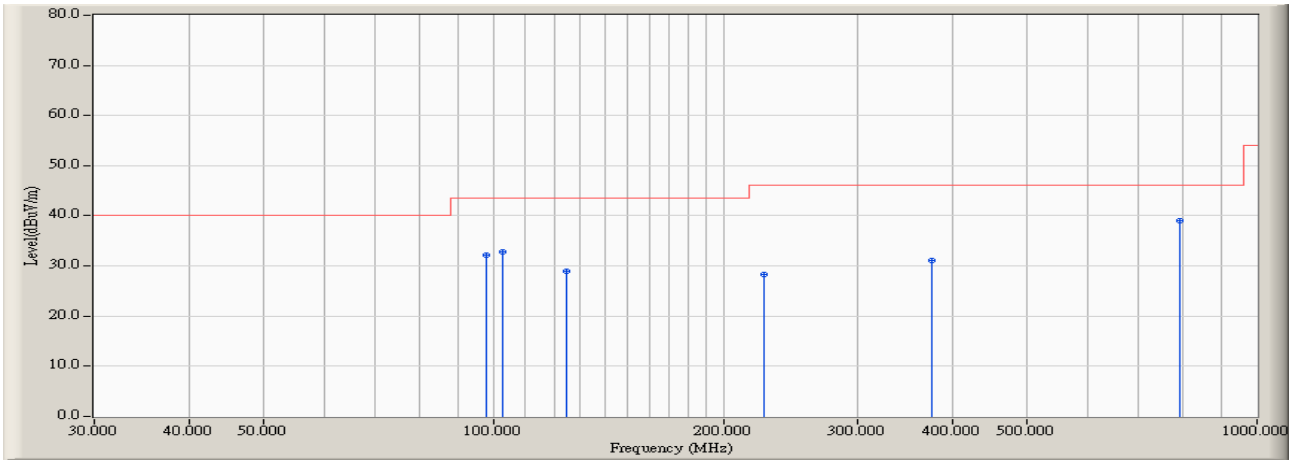


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3960.000	0.028	26.910	26.938	-27.032	53.970	AVERAGE
2		7040.000	11.797	30.570	42.368	-11.602	53.970	AVERAGE
3	*	15520.000	18.467	32.200	50.668	-3.302	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 11:06**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)**

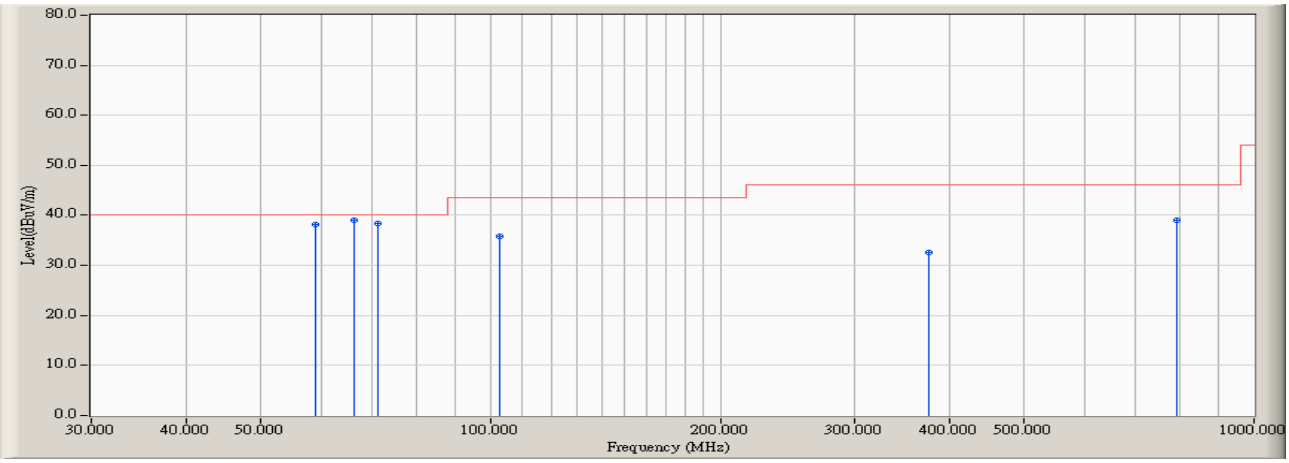


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	44.065	32.204	-11.316	43.520	QUASIPEAK
2		102.750	-11.096	43.809	32.713	-10.807	43.520	QUASIPEAK
3		124.575	-10.125	39.036	28.911	-14.609	43.520	QUASIPEAK
4		226.425	-12.116	40.368	28.252	-17.768	46.020	QUASIPEAK
5		374.350	-5.568	36.765	31.197	-14.823	46.020	QUASIPEAK
6	*	791.450	0.665	38.321	38.986	-7.034	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 11:13**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)**

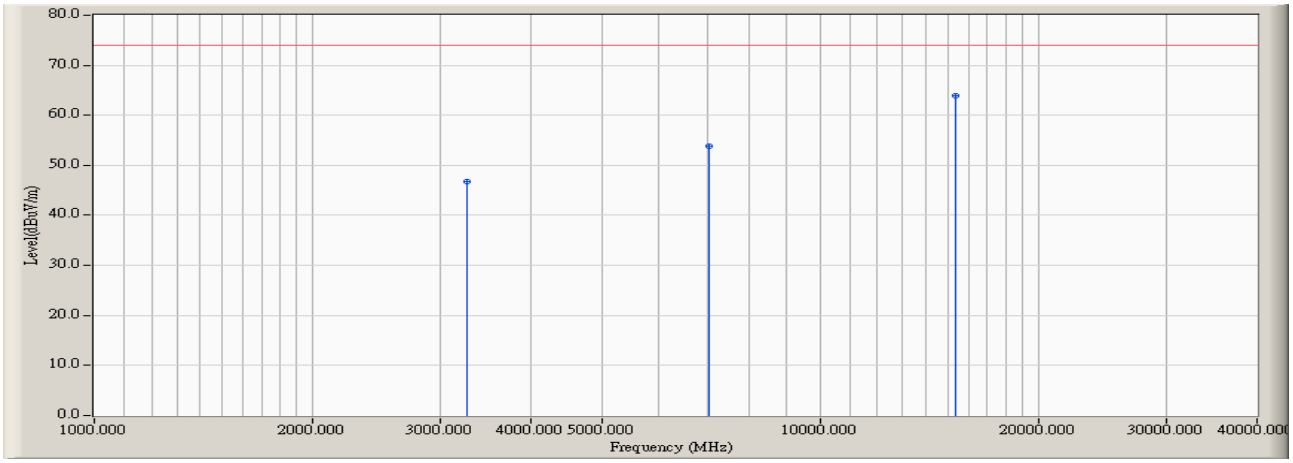


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	55.231	38.282	-1.718	40.000	QUASIPEAK
2	*	66.375	-17.094	56.120	39.026	-0.974	40.000	QUASIPEAK
3		71.225	-16.783	55.231	38.448	-1.552	40.000	QUASIPEAK
4		102.750	-11.096	47.002	35.906	-7.614	43.520	QUASIPEAK
5		374.350	-5.568	38.263	32.695	-13.325	46.020	QUASIPEAK
6		791.450	0.665	38.365	39.030	-6.990	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 16:26**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)**

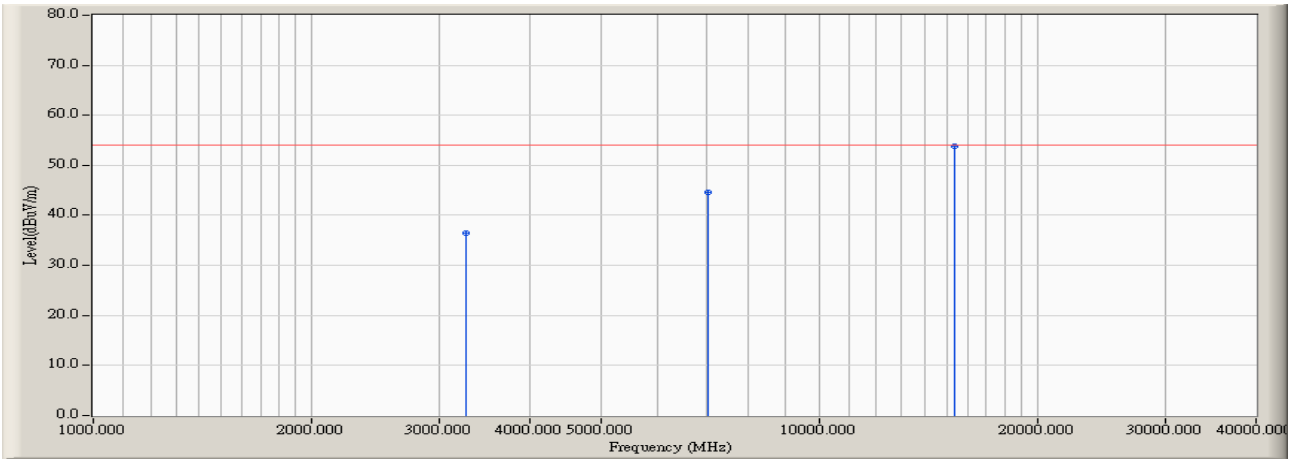


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3270.000	-2.691	49.410	46.719	-27.251	73.970	PEAK
2		7040.000	11.797	42.100	53.898	-20.072	73.970	PEAK
3	*	15360.000	19.141	44.710	63.851	-10.119	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 16:30**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)**

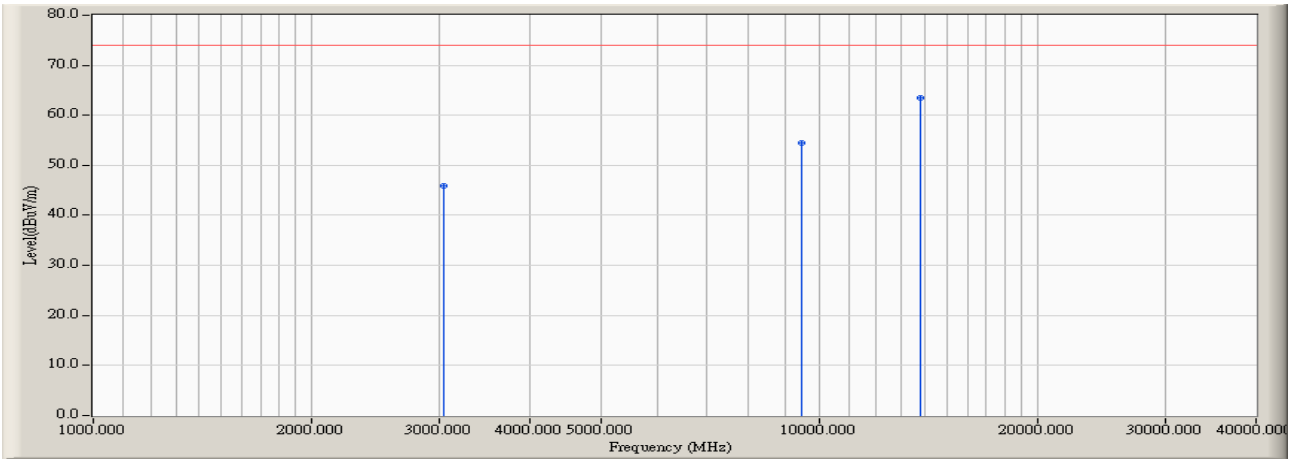


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3270.000	-2.691	39.220	36.529	-17.441	53.970	AVERAGE
2		7040.000	11.797	32.730	44.528	-9.442	53.970	AVERAGE
3	*	15360.000	19.141	33.920	53.061	-0.909	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 16:38**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)**

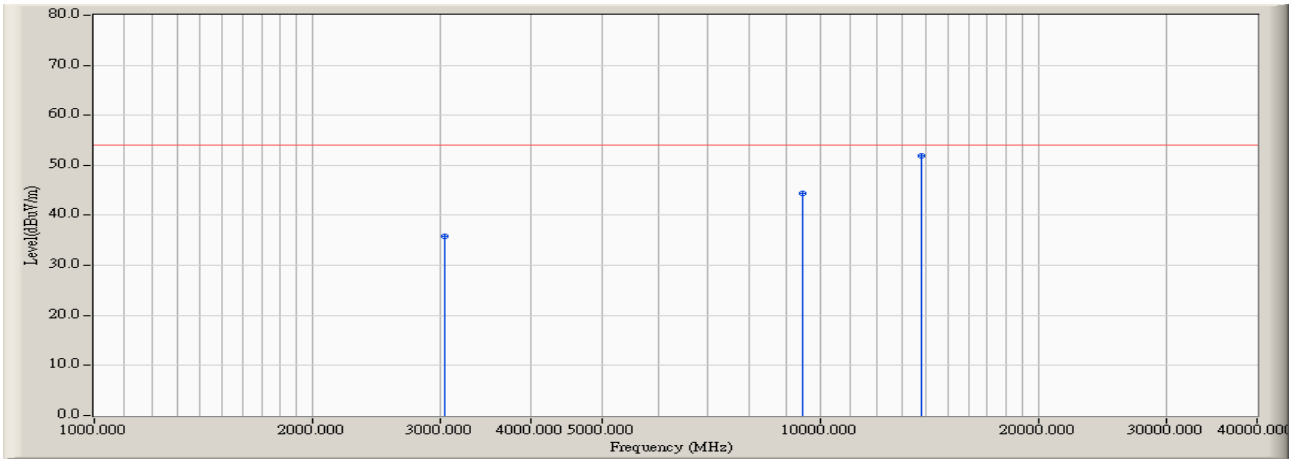


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3040.000	-2.700	48.620	45.920	-28.050	73.970	PEAK
2		9470.000	13.378	41.130	54.507	-19.463	73.970	PEAK
3	*	13780.000	19.691	43.890	63.581	-10.389	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 16:43**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)**

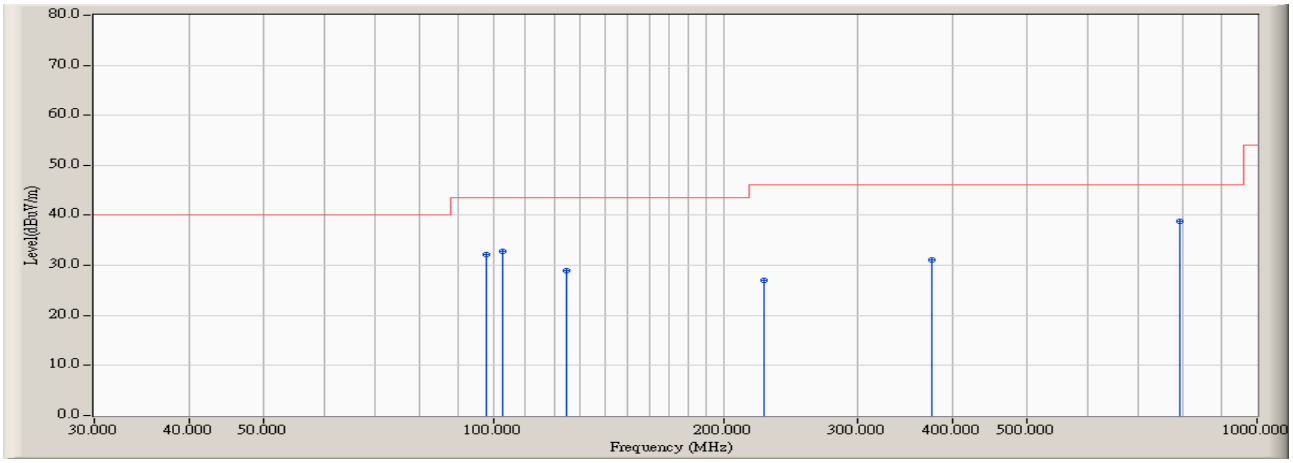


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3040.000	-2.700	38.530	35.830	-18.140	53.970	AVERAGE
2		9470.000	13.378	31.070	44.447	-9.523	53.970	AVERAGE
3	*	13780.000	19.691	32.270	51.961	-2.009	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/05 - 20:38**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**

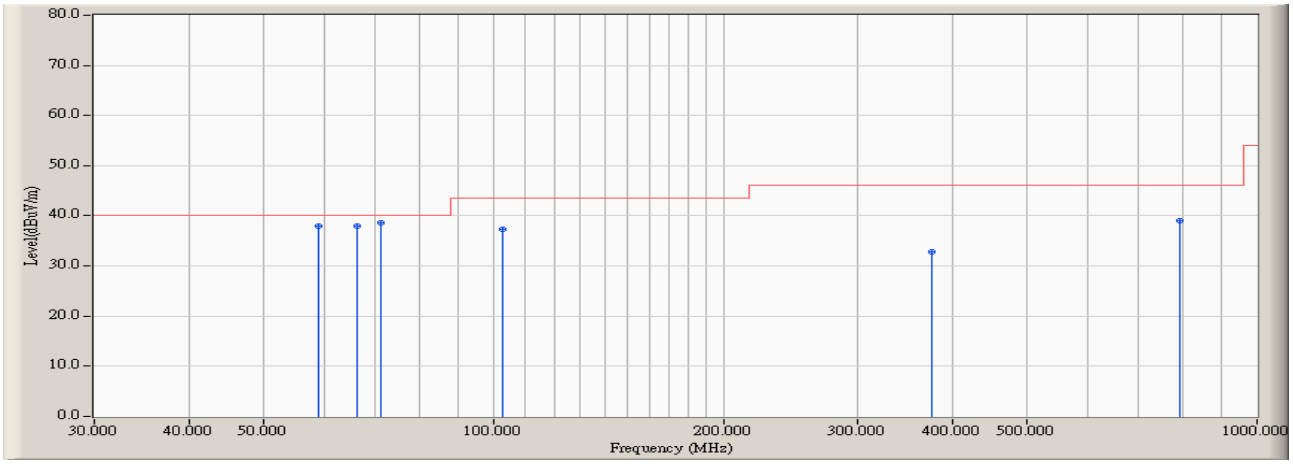


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	44.050	32.189	-11.331	43.520	AVERAGE
2		102.750	-11.096	43.880	32.784	-10.736	43.520	AVERAGE
3		124.575	-10.125	39.036	28.911	-14.609	43.520	AVERAGE
4		226.425	-12.116	39.056	26.940	-19.080	46.020	AVERAGE
5		374.350	-5.568	36.689	31.121	-14.899	46.020	AVERAGE
6	*	791.450	0.665	38.125	38.790	-7.230	46.020	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/05 - 20:59**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**

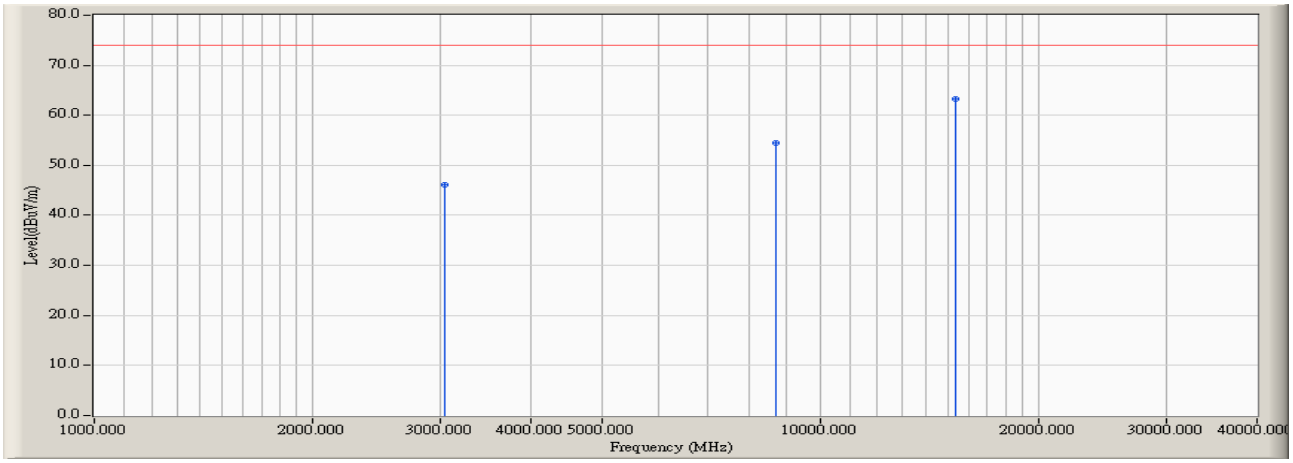


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	55.012	38.063	-1.937	40.000	AVERAGE
2		66.375	-17.094	55.026	37.932	-2.068	40.000	AVERAGE
3	*	71.225	-16.783	55.362	38.579	-1.421	40.000	AVERAGE
4		102.750	-11.096	48.350	37.254	-6.266	43.520	AVERAGE
5		374.350	-5.568	38.320	32.752	-13.268	46.020	AVERAGE
6		791.450	0.665	38.325	38.990	-7.030	46.020	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 15:09**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**

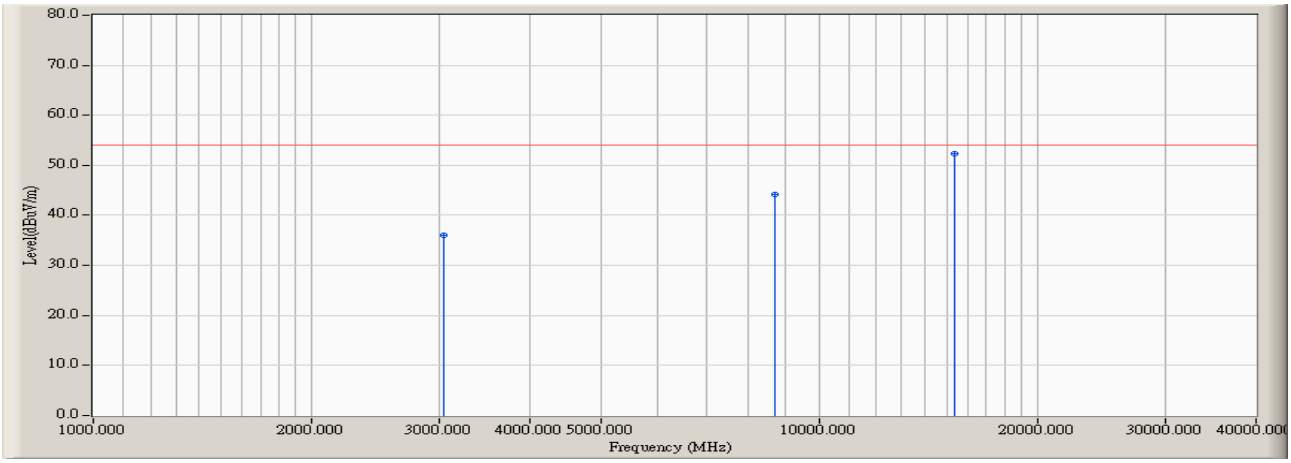


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3040.000	-2.700	48.743	46.043	-27.927	73.970	PEAK
2		8710.000	11.876	42.630	54.506	-19.464	73.970	PEAK
3	*	15340.000	19.223	44.020	63.243	-10.727	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 15:12**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**

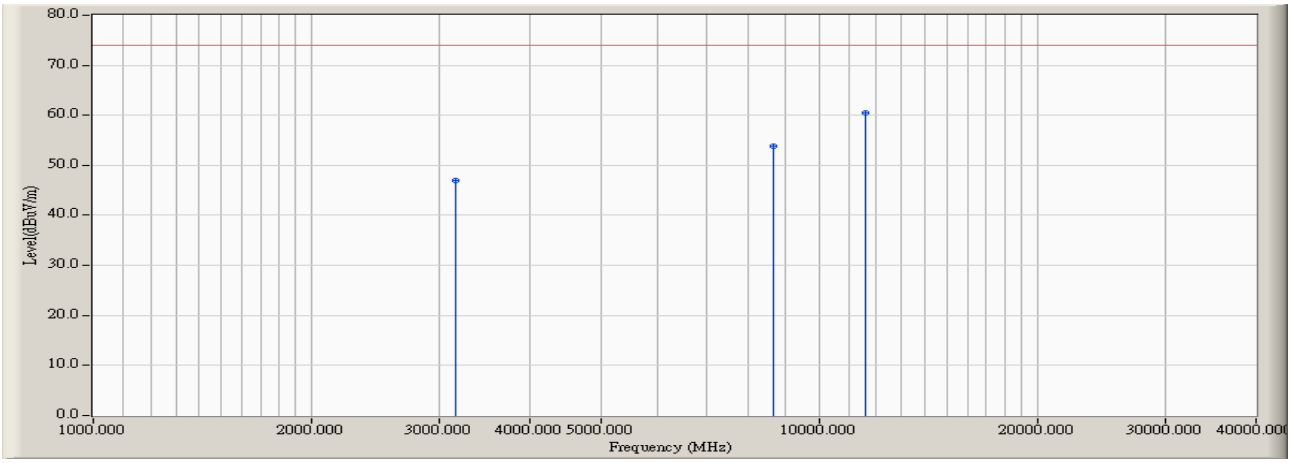


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3040.000	-2.700	38.660	35.960	-18.010	53.970	AVERAGE
2		8710.000	11.876	32.310	44.186	-9.784	53.970	AVERAGE
3	*	15340.000	19.223	33.120	52.343	-1.627	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 15:24**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**

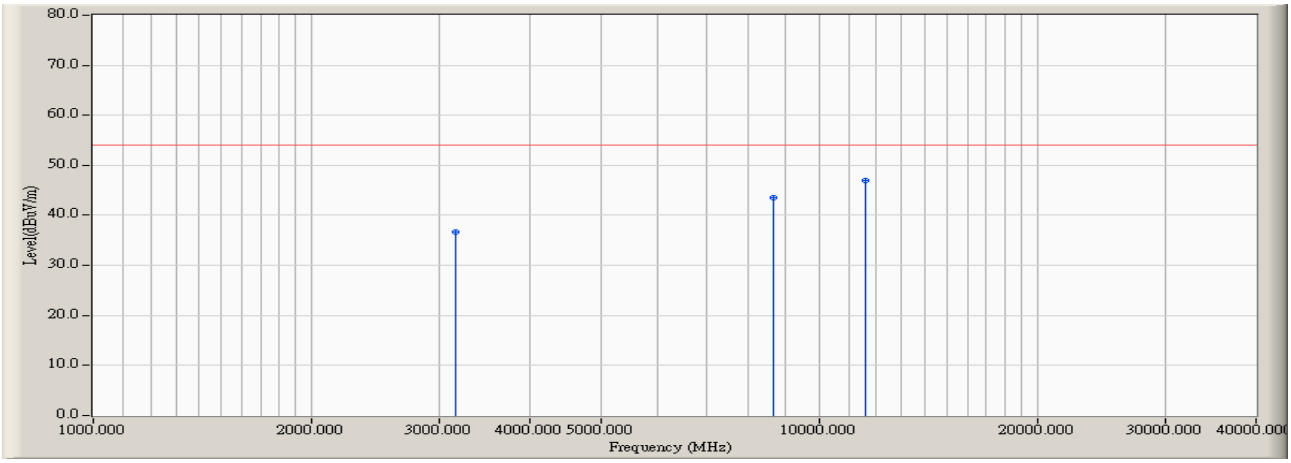


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3150.000	-2.520	49.530	47.010	-26.960	73.970	PEAK
2		8650.000	11.780	41.970	53.750	-20.220	73.970	PEAK
3	*	11570.000	15.745	44.700	60.444	-13.526	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : John	
Site : AC-2	**Time : 2006/06/22 - 15:30**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5785MHz)**

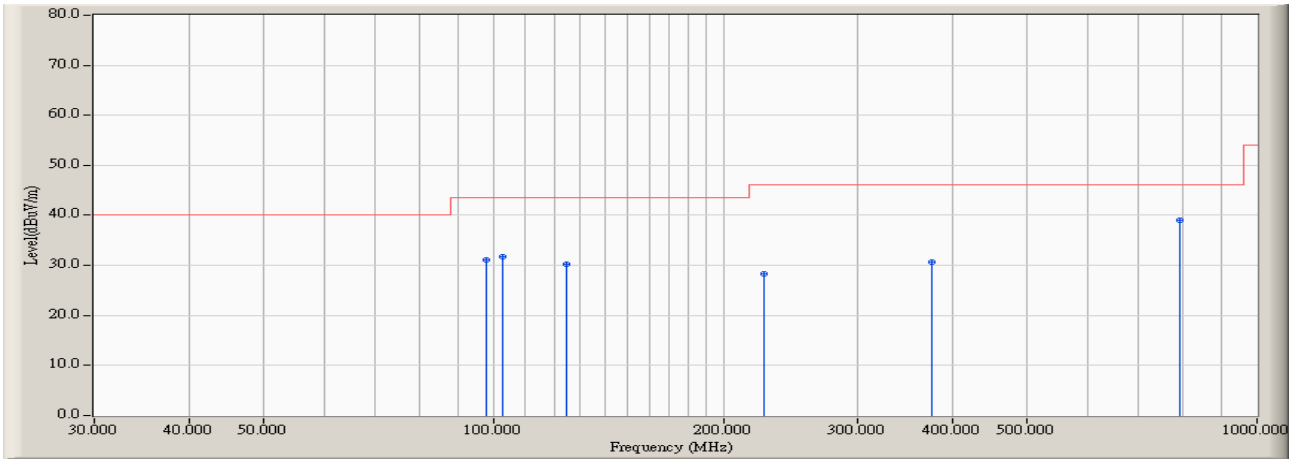


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3150.000	-2.520	39.100	36.580	-17.390	53.970	AVERAGE
2		8650.000	11.780	31.720	43.500	-10.470	53.970	AVERAGE
3	*	11570.000	15.745	31.130	46.874	-7.096	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 11:25**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL**
Power : AC 120V/60Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5805MHz)**

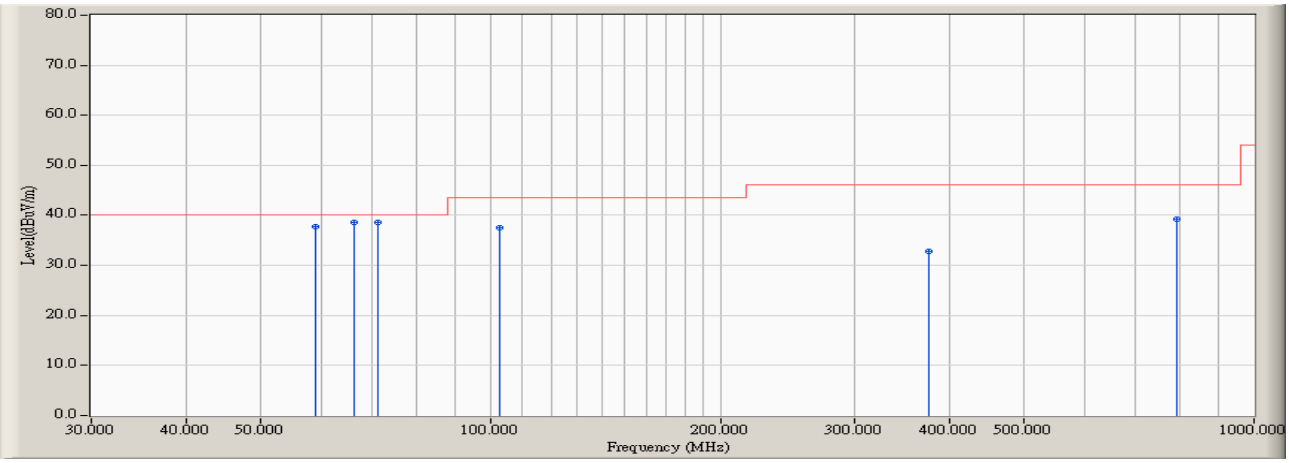


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	43.021	31.160	-12.360	43.520	QUASIPEAK
2		102.750	-11.096	42.822	31.726	-11.794	43.520	QUASIPEAK
3		124.575	-10.125	40.365	30.240	-13.280	43.520	QUASIPEAK
4		226.425	-12.116	40.332	28.216	-17.804	46.020	QUASIPEAK
5		374.350	-5.568	36.321	30.753	-15.267	46.020	QUASIPEAK
6	*	791.450	0.665	38.352	39.017	-7.003	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 11:37**
Limit : FCC_SpartC_15.209_03M_QP	**Margin : 0**
EUT : Wireless Outdoor Bridge (ZA-5000-D)	**Probe : CBL6112B_2932(30-2000MHz) - VERTICAL**
Power : AC 120V/60Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5805MHz)**

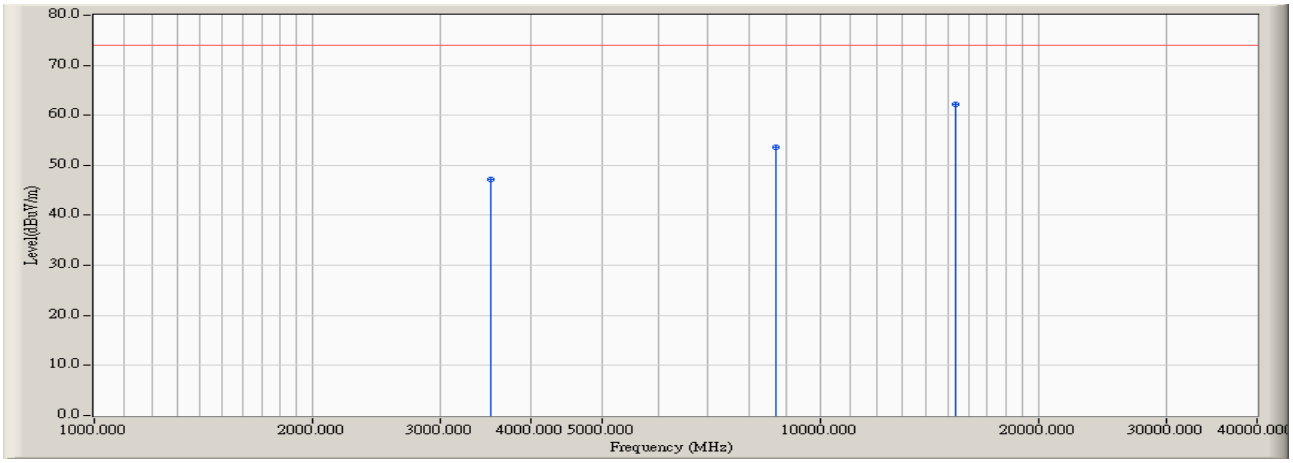


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	54.652	37.703	-2.297	40.000	QUASIPEAK
2	*	66.375	-17.094	55.692	38.598	-1.402	40.000	QUASIPEAK
3		71.225	-16.783	55.369	38.586	-1.414	40.000	QUASIPEAK
4		102.750	-11.096	48.665	37.569	-5.951	43.520	QUASIPEAK
5		374.350	-5.568	38.352	32.784	-13.236	46.020	QUASIPEAK
6		791.450	0.665	38.665	39.330	-6.690	46.020	QUASIPEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 16:52**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5805MHz)**

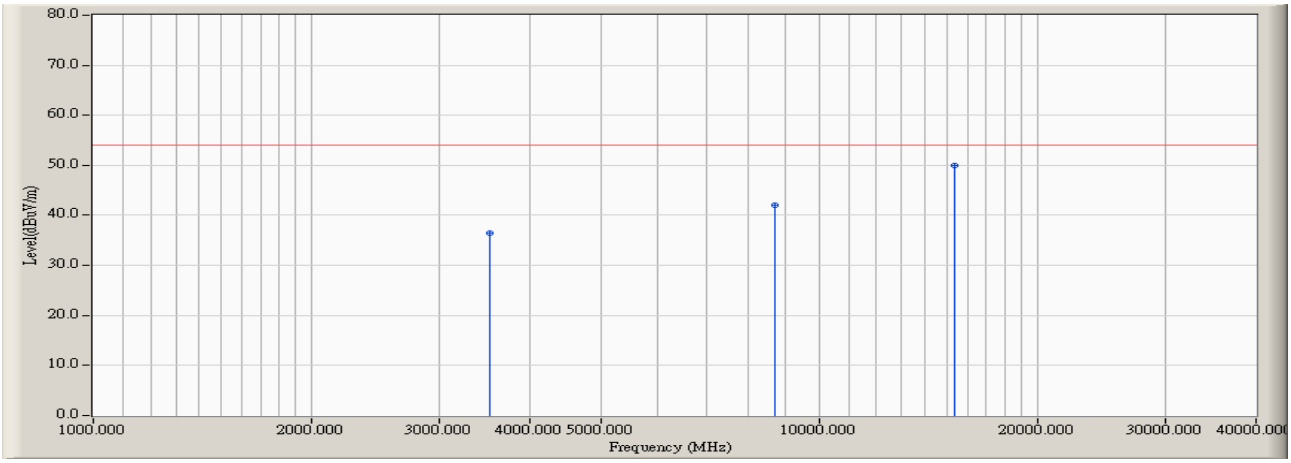


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3520.000	-1.664	48.820	47.156	-26.814	73.970	PEAK
2		8680.000	11.825	41.750	53.575	-20.395	73.970	PEAK
3	*	15390.000	19.002	43.210	62.212	-11.758	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 16:59**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - HORIZONTAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5805MHz)**

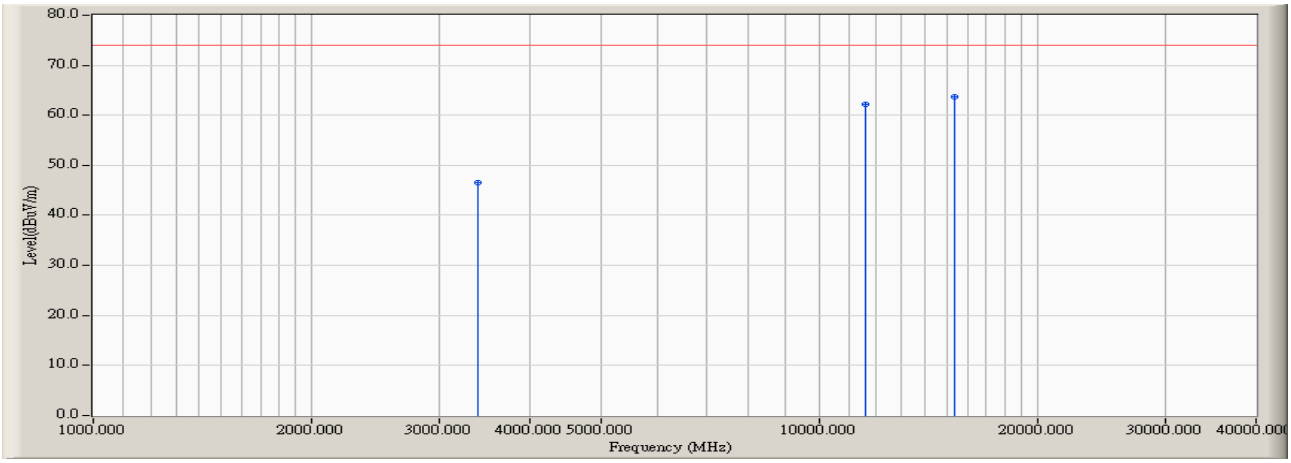


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3520.000	-1.664	38.090	36.426	-17.544	53.970	AVERAGE
2		8680.000	11.825	30.120	41.945	-12.025	53.970	AVERAGE
3	*	15390.000	19.002	31.020	50.022	-3.948	53.970	AVERAGE

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 17:08**
Limit : FCC_SpartC_15.209_03M_PK	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5805MHz)**

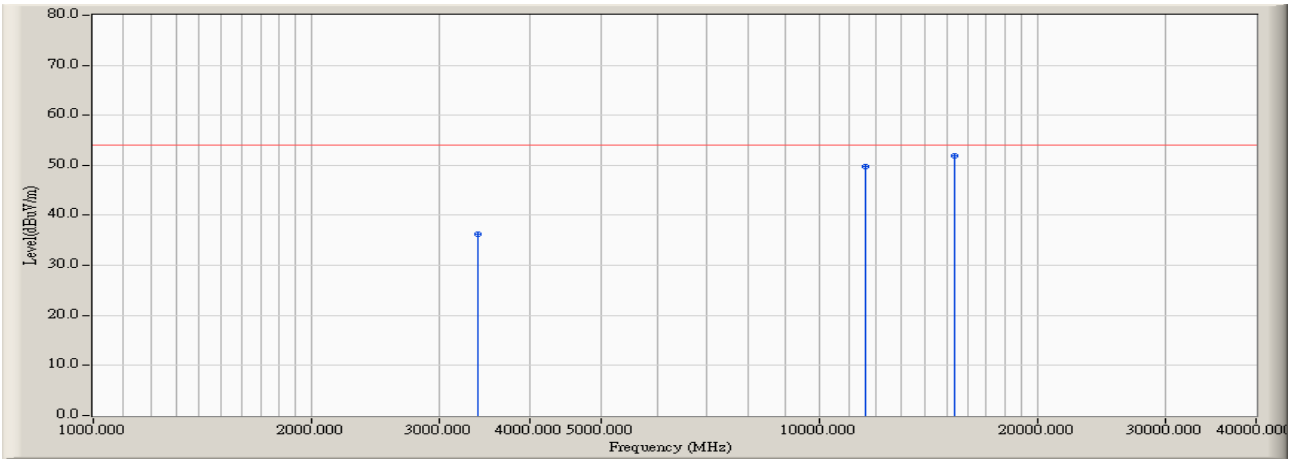


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3380.000	-2.580	49.140	46.560	-27.410	73.970	PEAK
2		11600.000	15.663	46.520	62.184	-11.786	73.970	PEAK
3	*	15390.000	19.002	44.720	63.722	-10.248	73.970	PEAK

Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

Engineer : Dream	
Site : AC-2	**Time : 2006/07/14 - 17:18**
Limit : FCC_SpartC_15.209_03M_AV	**Margin : 0**
EUT : ZA-5000-D(802.11a)	**Probe : 9120D_(1G-18G) - VERTICAL**
Power : AC 120V/50Hz	**Note : Mode4: Transmitter 802.11a with Inside Antenna (Tx: 5805MHz)**



		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3380.000	-2.580	38.790	36.210	-17.760	53.970	AVERAGE
2		11600.000	15.663	34.170	49.834	-4.136	53.970	AVERAGE
3	*	15340.000	19.223	32.680	51.903	-2.067	53.970	AVERAGE

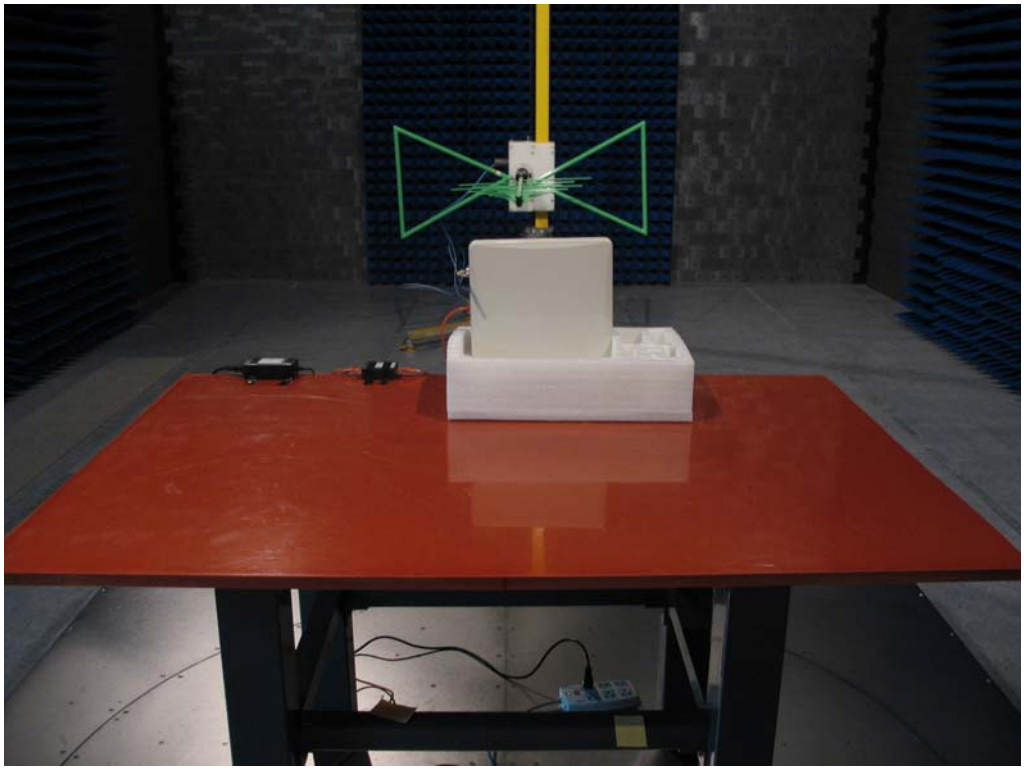
Note:

1. All Readings below 1GHz are Quasi-Peak, above are performed with peak and/or average measurements as necessary.
2. " * ", means this data is the worst emission level.
3. Measurement Level = Reading Level + Correct Factor

12.7. Test Photograph

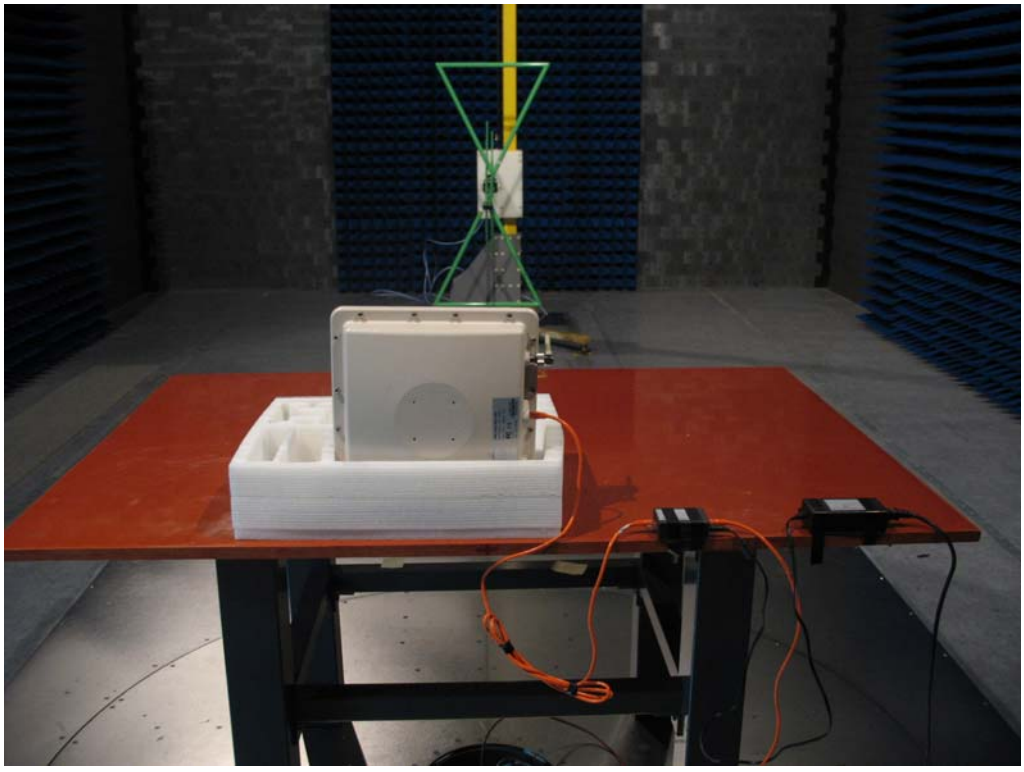
Test Mode: Mode3: Transmitter 802.11a with Outside Antenna

Description: Front View of Radiated Test for Under 1GHz



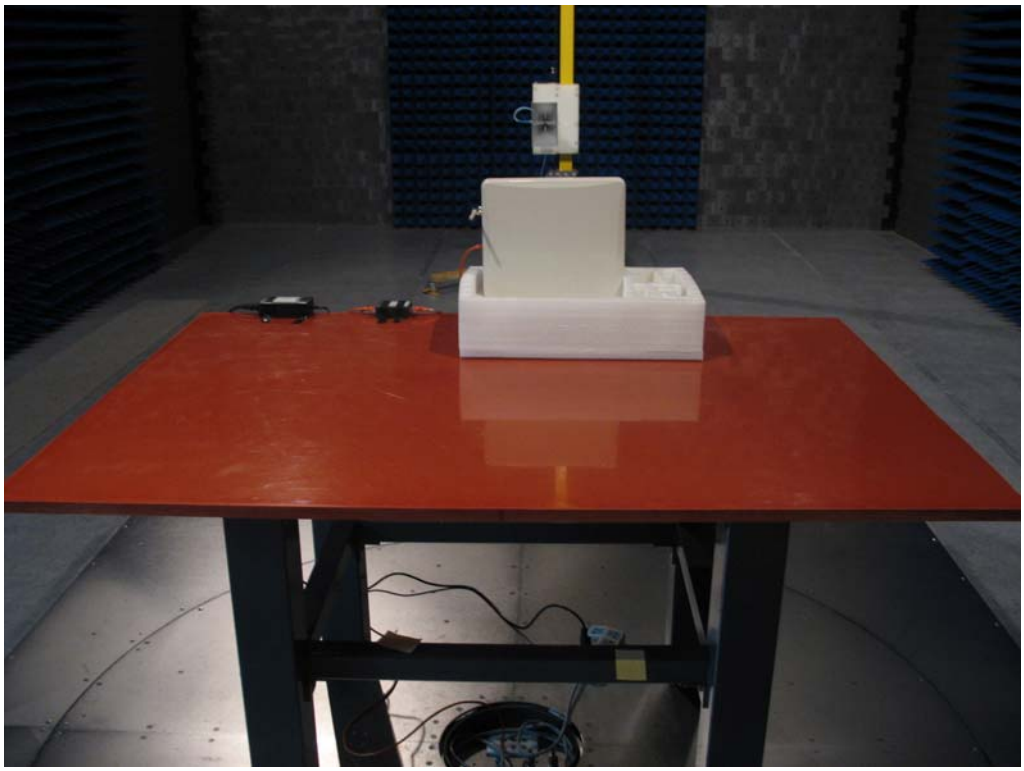
Test Mode: Mode3: Transmitter 802.11a with Outside Antenna

Description: Back View of Radiated Test for Under 1GHz



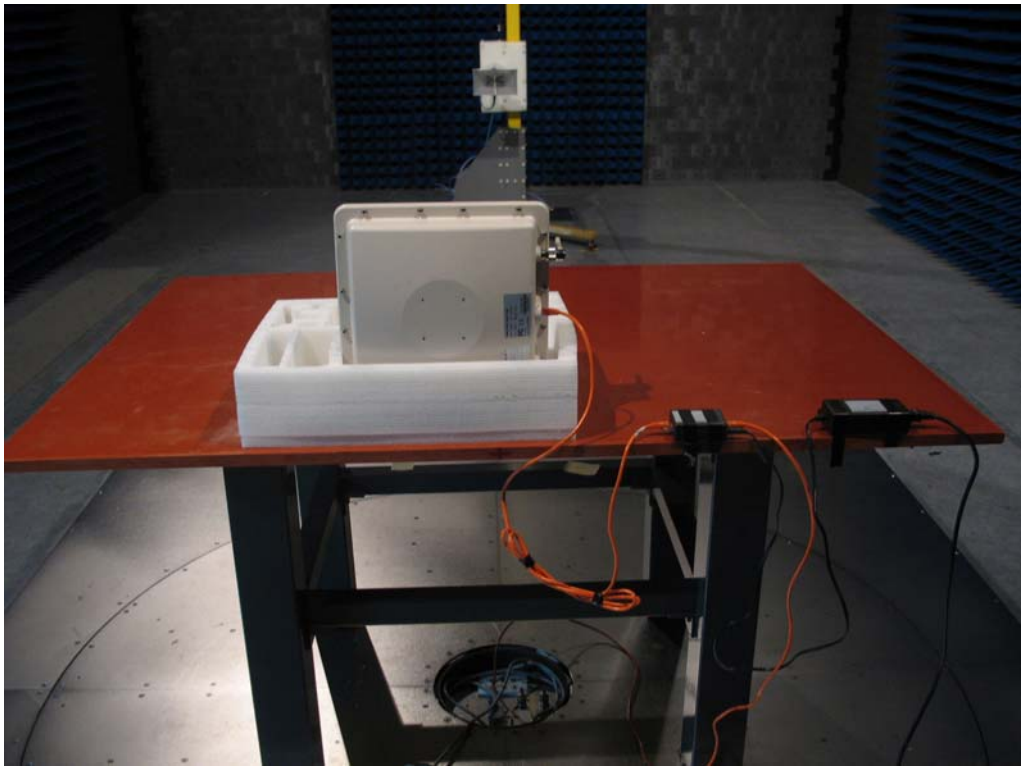
Test Mode: Mode3: Transmitter 802.11a with Outside Antenna

Description: Front View of Radiated Test for Above 1GHz



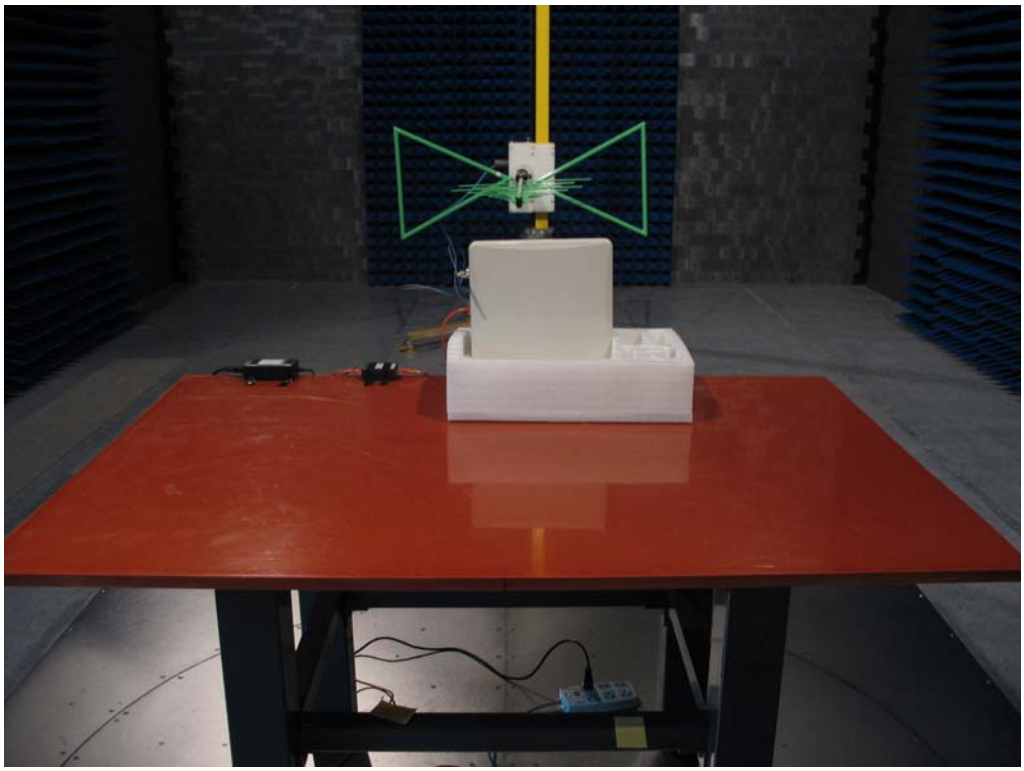
Test Mode: Mode3: Transmitter 802.11a with Outside Antenna

Description: Back View of Radiated Test for Above 1GHz



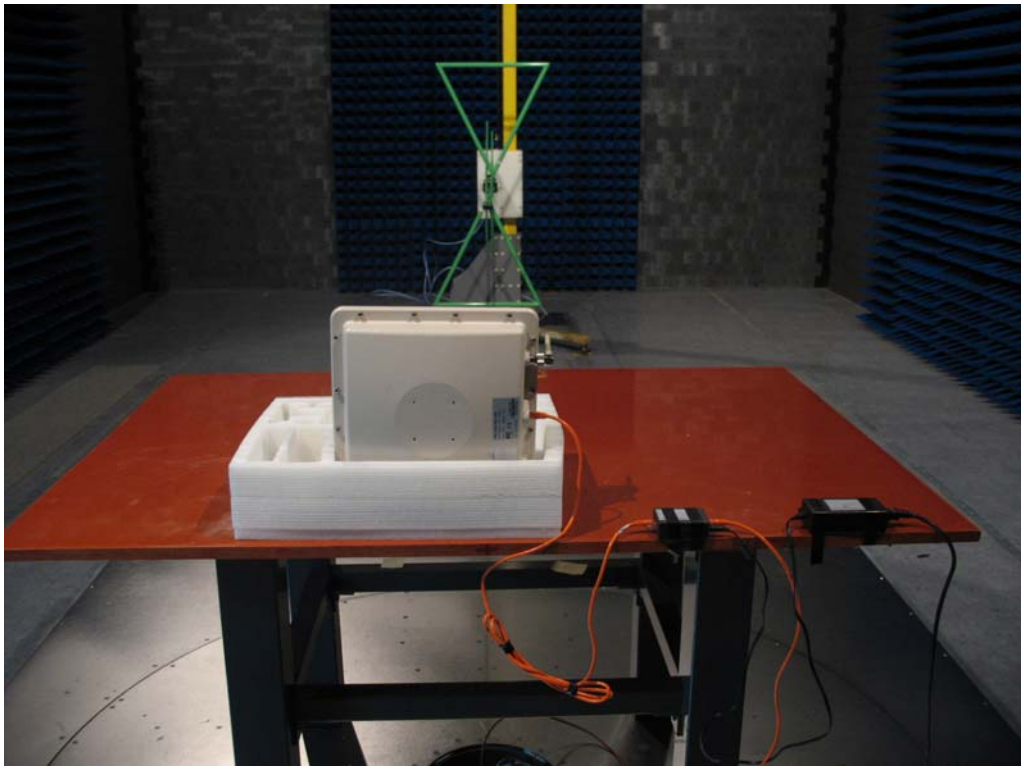
Test Mode: Mode4: Transmitter 802.11a with Inside Antenna

Description: Front View of Radiated Test for Under 1GHz



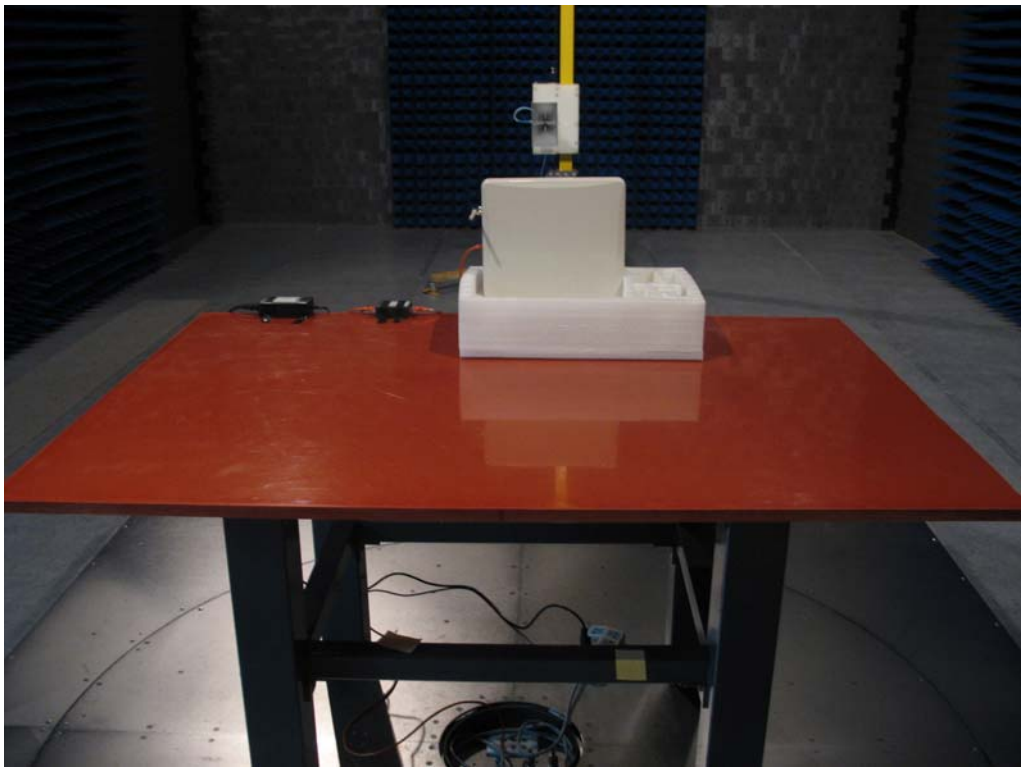
Test Mode: Mode4: Transmitter 802.11a with Inside Antenna

Description: Back View of Radiated Test for Under 1GHz



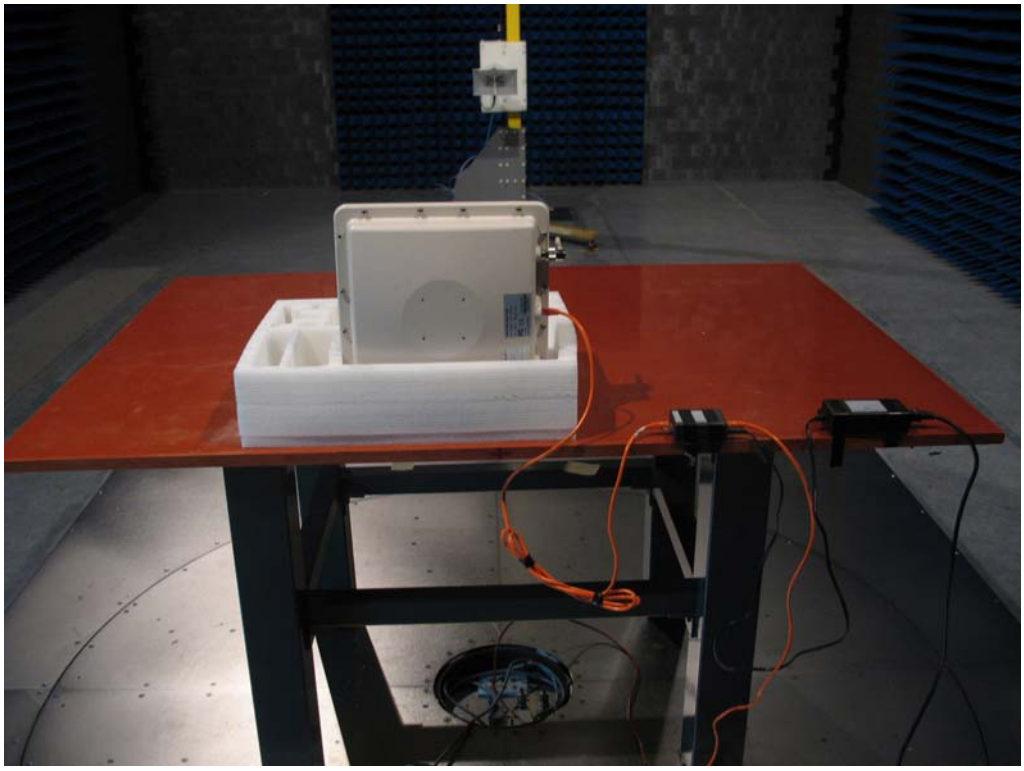
Test Mode: Mode4: Transmitter 802.11a with Inside Antenna

Description: Front View of Radiated Test for Above 1GHz



Test Mode: Mode4: Transmitter 802.11a with Inside Antenna

Description: Back View of Radiated Test for Above 1GHz

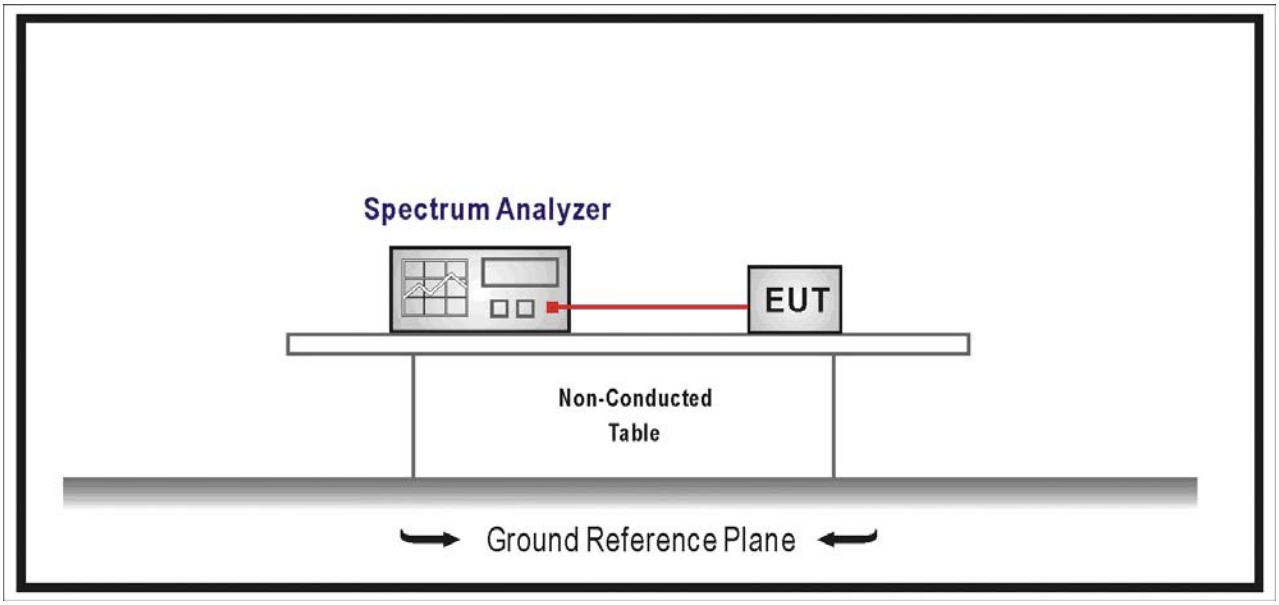


13. Peak Power Spectral Density

13.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.407

13.2. Test Setup



13.3. Limit

(1) For the band 5.15-5.25 GHz, the peak power spectral density shall not exceed 4 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

(2) For the band 5.25-5.35 GHz, the peak power spectral density shall not exceed 11 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

(3) For the band 5.725-5.825 GHz, the peak power spectral density shall not exceed 17 dBm in any 1-MHz band. If transmitting antenna of directional gain greater than 6 dBi are used, the peak power spectral density shall be reduced by the amount in dB that directional gain of the antenna exceeds 6 dBi.

13.4. Deviation from Test Standard

No deviation.

13.5. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Peak Power Spectral Density		
Test Mode	Mode3: Transmitter 802.11a with Outside Antenna		
Date of Test	2006/06/20	Test Site	AC-3

Channel	Freq. (MHz)	Power Spectral Density (dBm/1MHz)	Limit (dBm /1MHz)	Result
149	5745	6.97	17	PASS
157	5785	6.23	17	PASS
161	5805	5.69	17	PASS

Figure Channel 149 (5745MHz)

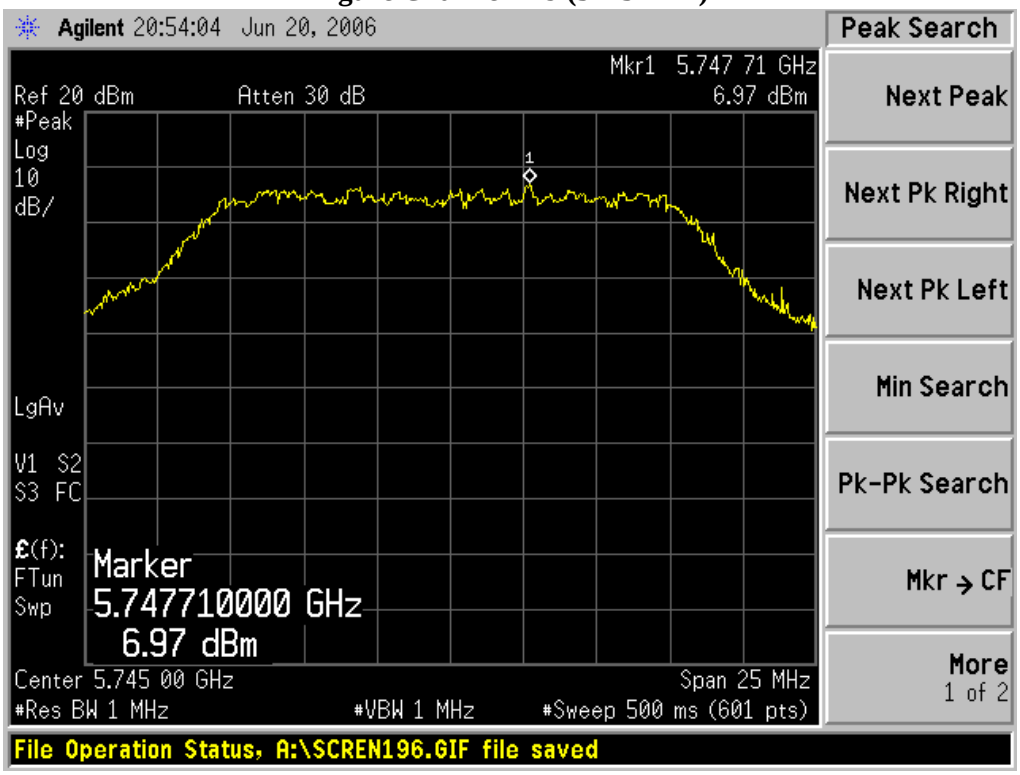


Figure Channel 157 (5785MHz)

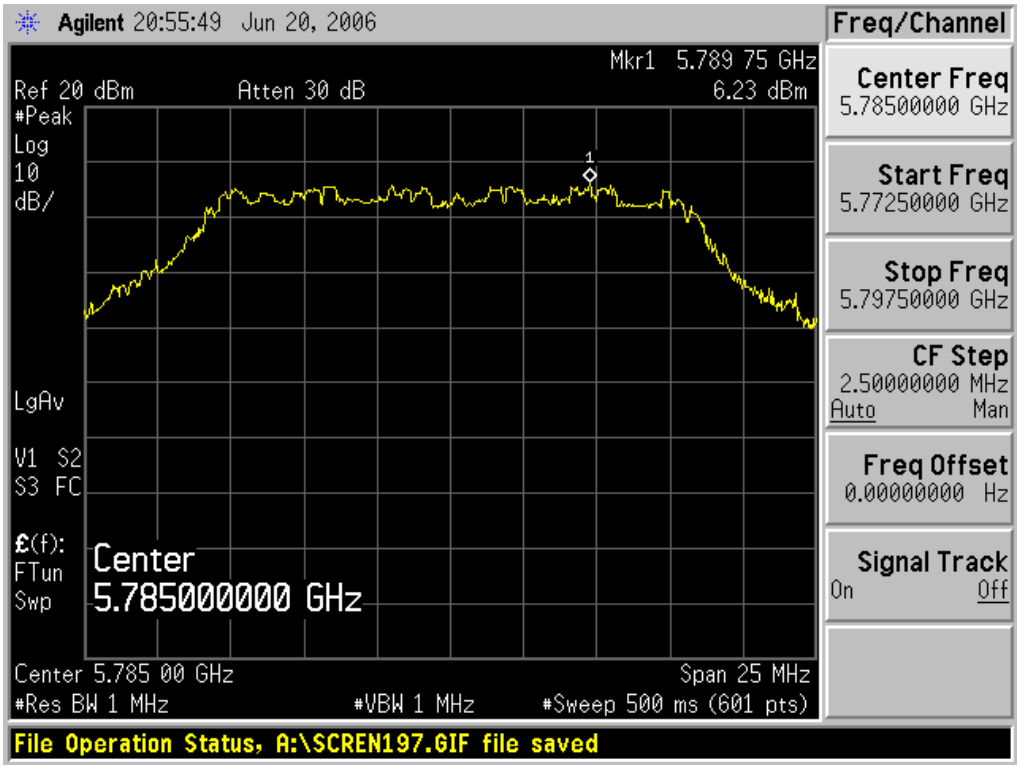
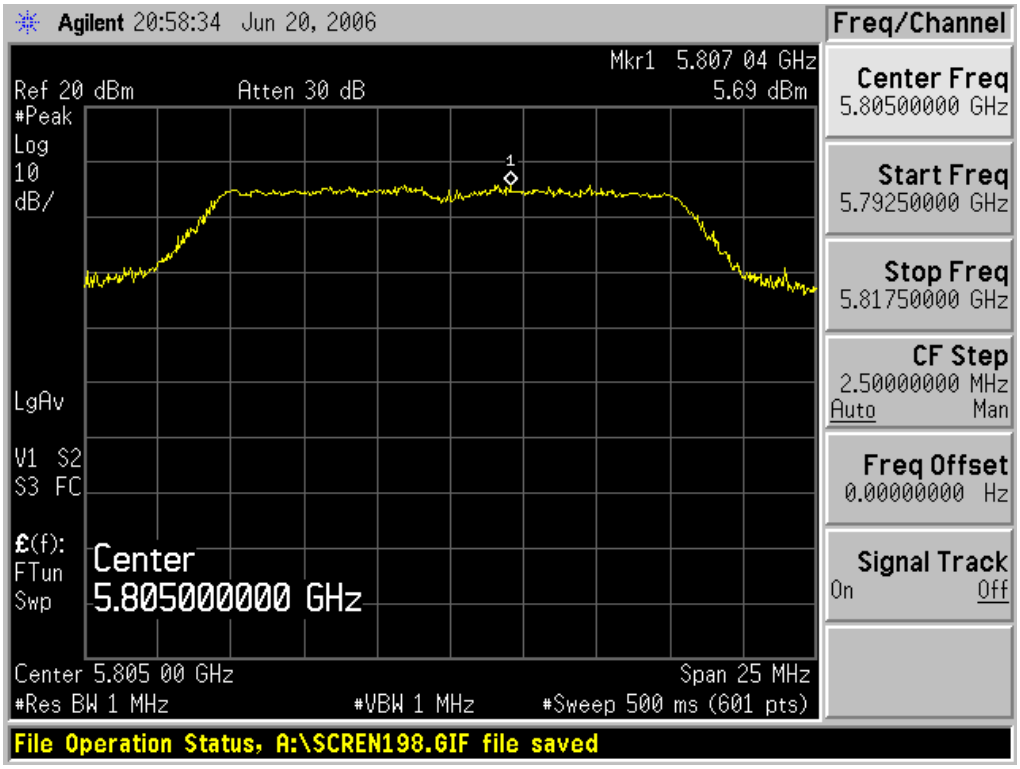


Figure Channel 161 (5805MHz)



Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Peak Power Spectral Density		
Test Mode	Mode4: Transmitter 802.11a with Inside Antenna		
Date of Test	2006/06/20	Test Site	AC-3

Channel	Freq. (MHz)	Power Spectral Density (dBm/1MHz)	Limit (dBm /1MHz)	Result
149	5745	6.97	17	PASS
157	5785	6.23	17	PASS
161	5805	5.69	17	PASS

Figure Channel 149 (5745MHz)

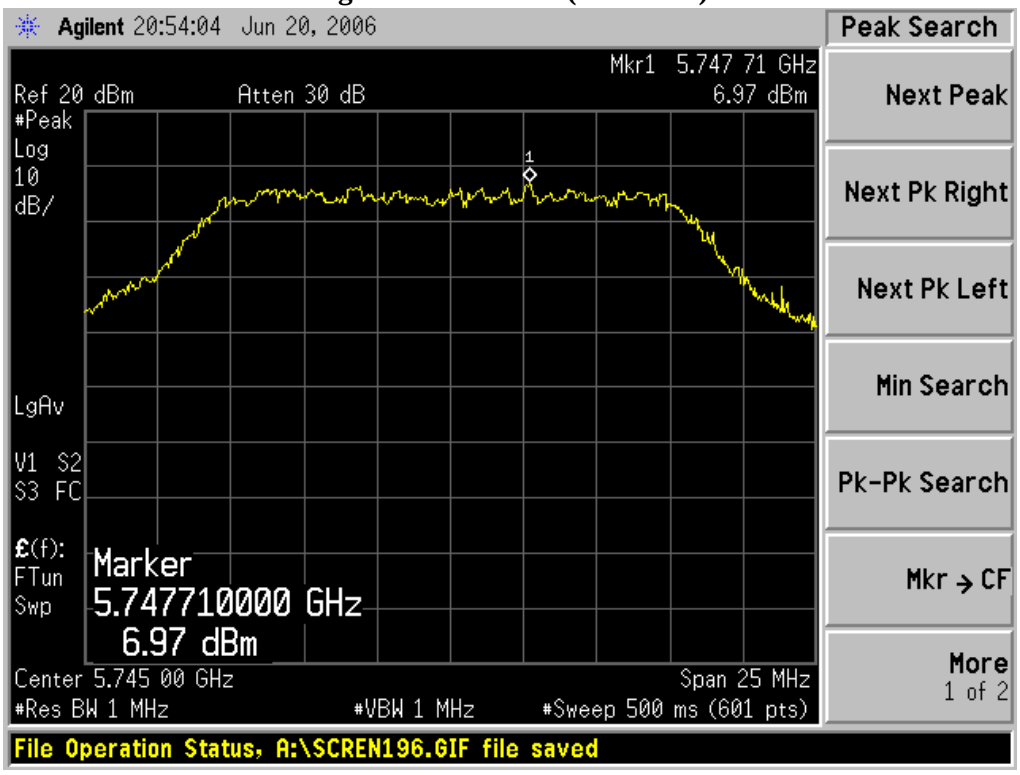


Figure Channel 157 (5785MHz)

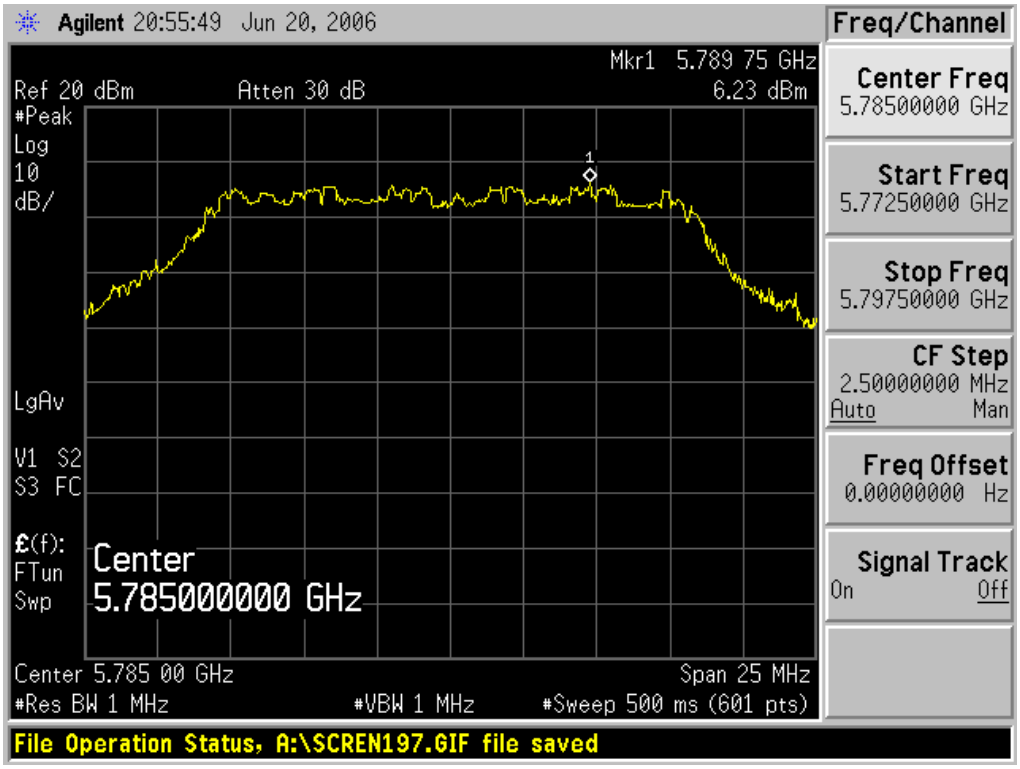
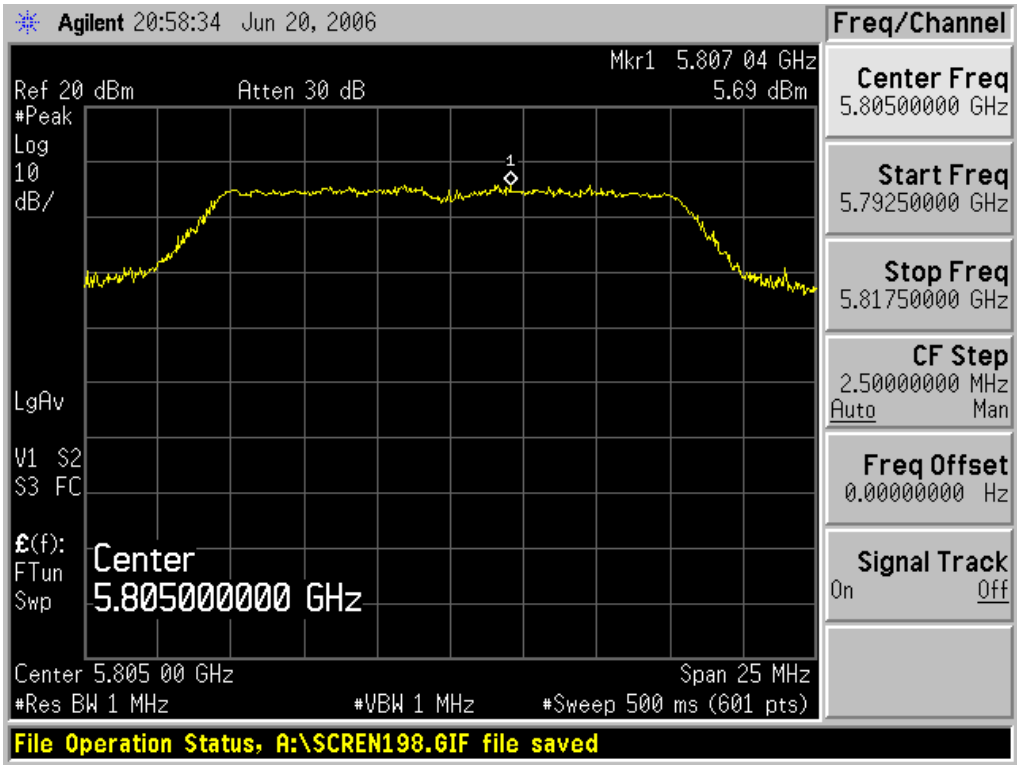


Figure Channel 161 (5805MHz)

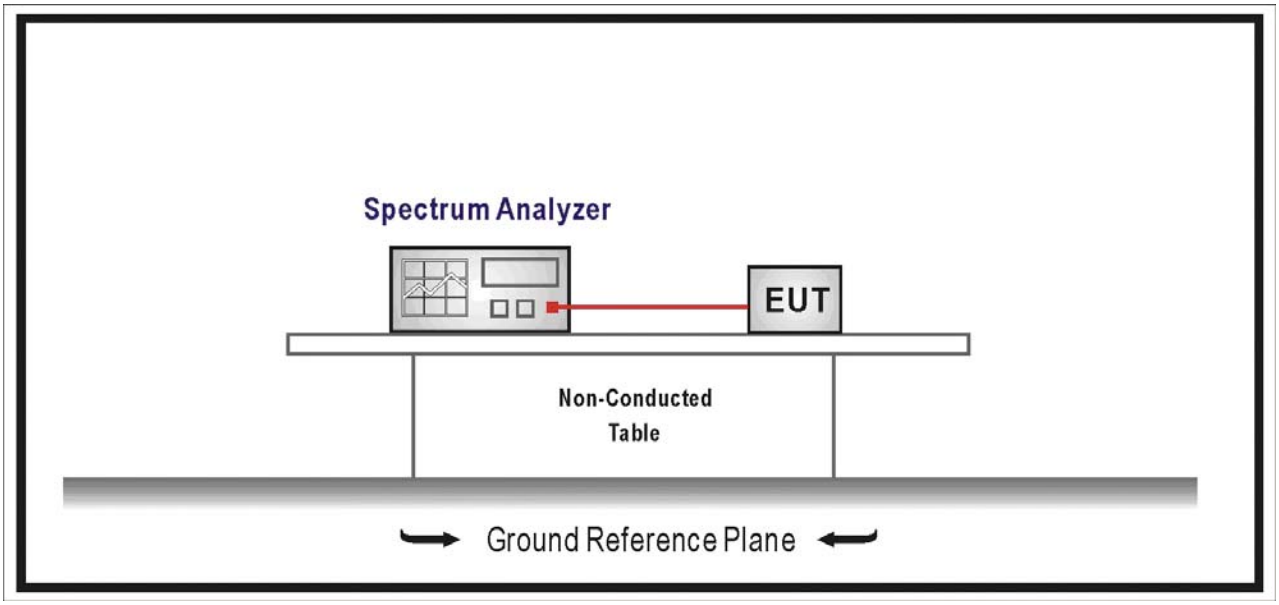


14. Band Edge

14.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.407

14.2. Test Setup



14.3. Limit

(1) For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz.

(2) For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of –27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generate emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of –27dBm/MHz in the 5.15-5.25 GHz band.

(3) For transmitters operating in the 5.47-5.725 GHz band: all emission outside of the 5.47-5725 GHz band shall not exceed an EIRP of –27 dBm/MHz.

(4) For transmitters operating in the 5.725-5.825 GHz band: all emission within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of –17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of –27 dBm/MHz.

14.4. Deviation from Test Standard

No deviation.

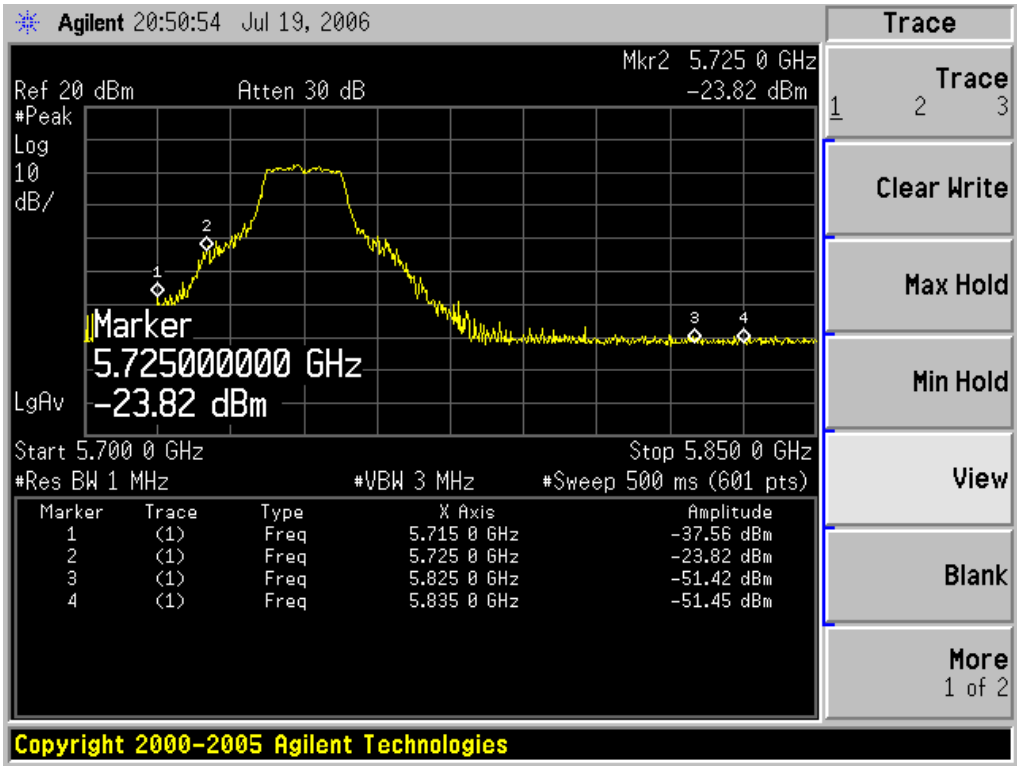
14.5. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode3: Transmitter 802.11a with Outside Antenna		
Date of Test	2006/07/19	Test Site	AC-3

RF Conducted Measurement:

Channel No.	Frequency (MHz)	Antenna Gain	Reading Level (dBm/MHz)	Level (dBm/MHz)	EIRP Limit (dBm/MHz)	Result
149 (5745MHz)	5715.000	2dBi	-37.56	-35.56	-27	Pass
	5725.000	2dBi	-23.82	-21.82	-17	Pass
	5825.000	2dBi	-51.42	-49.42	-17	Pass
	5835.000	2dBi	-51.45	-49.45	-27	Pass

Figure Channel 149 (5745MHz)

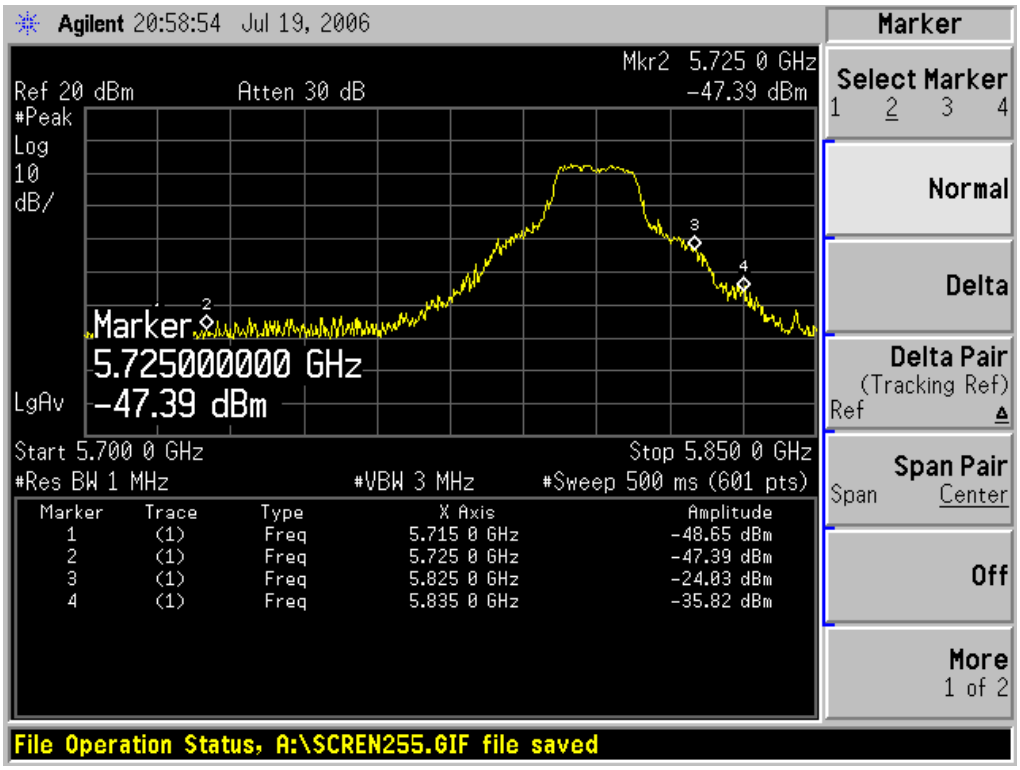


Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode3: Transmitter 802.11a with Outside Antenna		
Date of Test	2006/07/19	Test Site	AC-3

RF Conducted Measurement:

Channel No.	Frequency (MHz)	Antenna Gain	Reading Level (dBm/MHz)	Level (dBm/MHz)	EIRP Limit (dBm/MHz)	Result
161 (5805MHz)	5715.000	2dBi	-48.65	-46.65	-27	Pass
	5725.000	2dBi	-47.39	-45.39	-17	Pass
	5825.000	2dBi	-24.03	-22.03	-17	Pass
	5835.000	2dBi	-35.82	-33.82	-27	Pass

Figure Channel 161 (5805MHz)

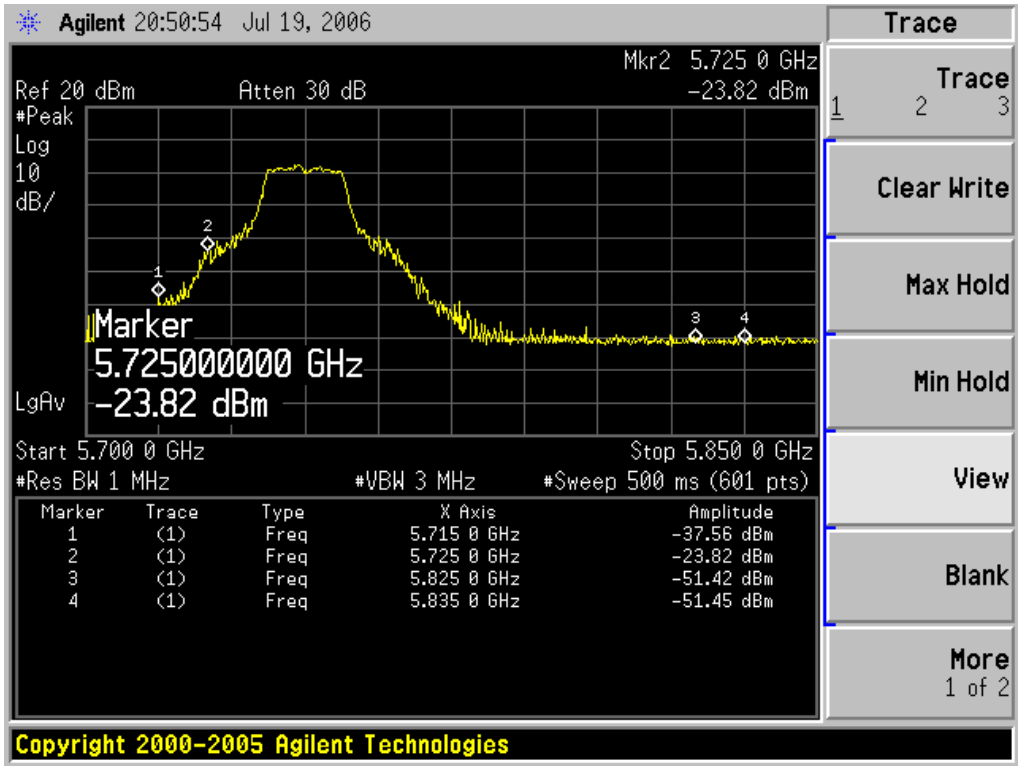


Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode4: Transmitter 802.11a with Inside Antenna		
Date of Test	2006/07/19	Test Site	AC-3

RF Conducted Measurement:

Channel No.	Frequency (MHz)	Antenna Gain	Reading Level (dBm/MHz)	Level (dBm/MHz)	EIRP Limit (dBm/MHz)	Result
149 (5745MHz)	5715.000	6dBi	-37.56	-31.56	-27	Pass
	5725.000	6dBi	-23.82	-17.82	-17	Pass
	5825.000	6dBi	-51.42	-45.42	-17	Pass
	5835.000	6dBi	-51.45	-45.45	-27	Pass

Figure Channel 149 (5745MHz)

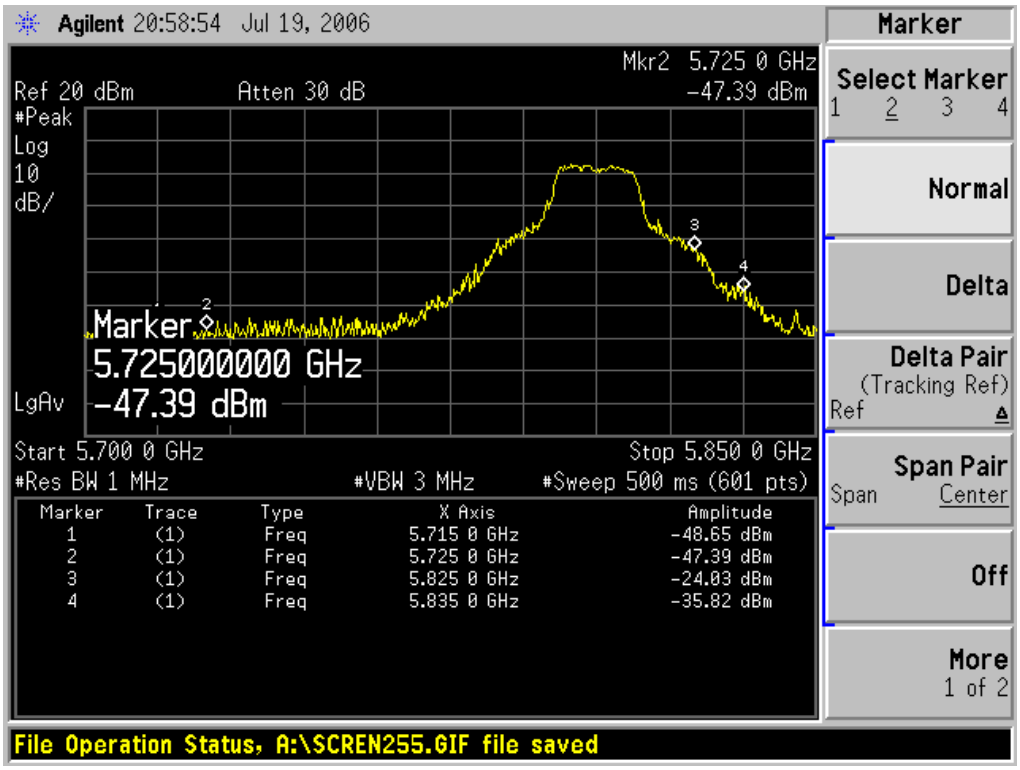


Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Band Edge		
Test Mode	Mode4: Transmitter 802.11a with Inside Antenna		
Date of Test	2006/07/19	Test Site	AC-3

RF Conducted Measurement:

Channel No.	Frequency (MHz)	Antenna Gain	Reading Level (dBm/MHz)	Level (dBm/MHz)	EIRP Limit (dBm/MHz)	Result
161 (5805MHz)	5715.000	6dBi	-48.65	-42.65	-27	Pass
	5725.000	6dBi	-47.39	-41.39	-17	Pass
	5825.000	6dBi	-24.03	-18.03	-17	Pass
	5835.000	6dBi	-35.82	-29.82	-27	Pass

Figure Channel 161 (5805MHz)

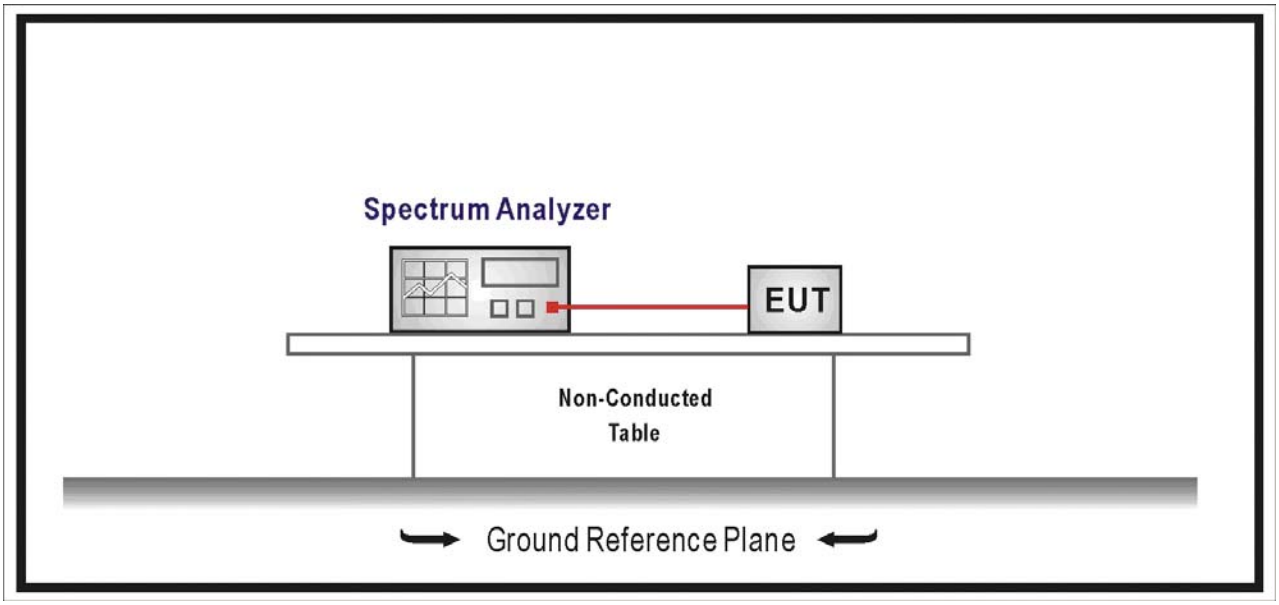


15. Peak Excursion

15.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.407

15.2. Test Setup



15.3. Limit

The ratio of the peak excursion of the modulation envelope (measured using a peak hold function) to the peak transmit power (measured as specified above) shall not exceed 13 dB across any 1 MHz bandwidth or the emission bandwidth whichever is less.

15.4. Deviation from Test Standard

No deviation.

15.5. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Peak Excursion		
Test Mode	Mode3: Transmitter 802.11a with Outside Antenna		
Date of Test	2006/06/20	Test Site	AC-3

Channel	Freq. (MHz)	Peak Excursion (dB)	Limit (dB)	Result
149	5745	7.69	<13	PASS
157	5785	8.14	<13	PASS
161	5805	8.24	<13	PASS

Figure Channel 149 (5745MHz)

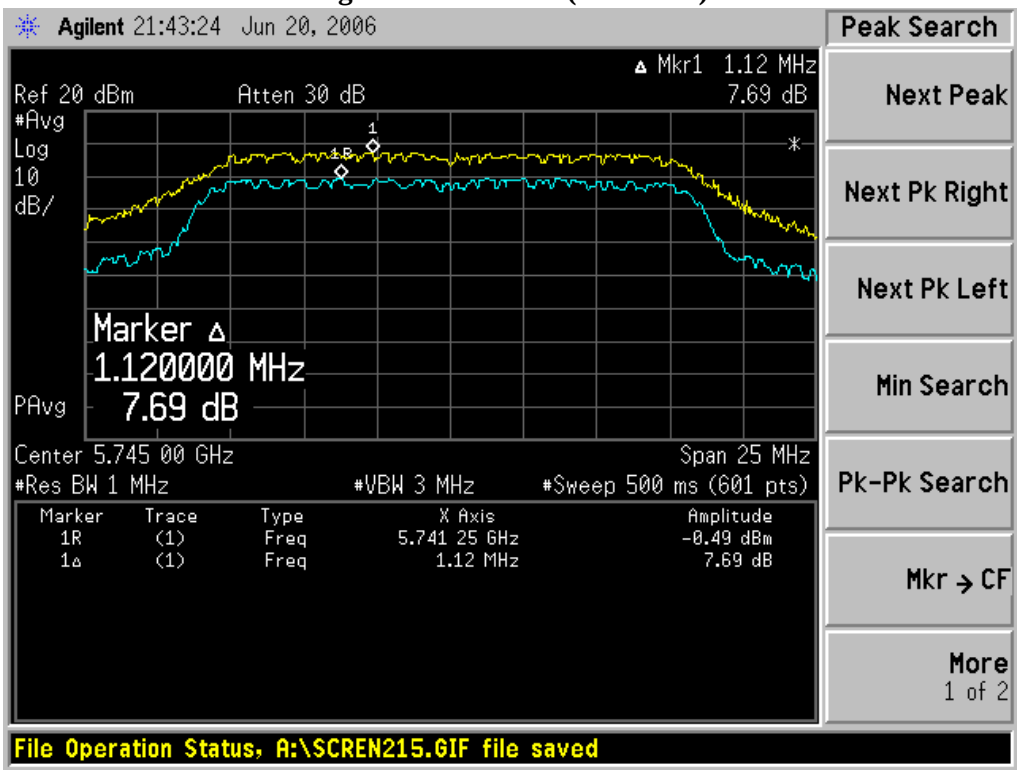


Figure Channel 157 (5785MHz)

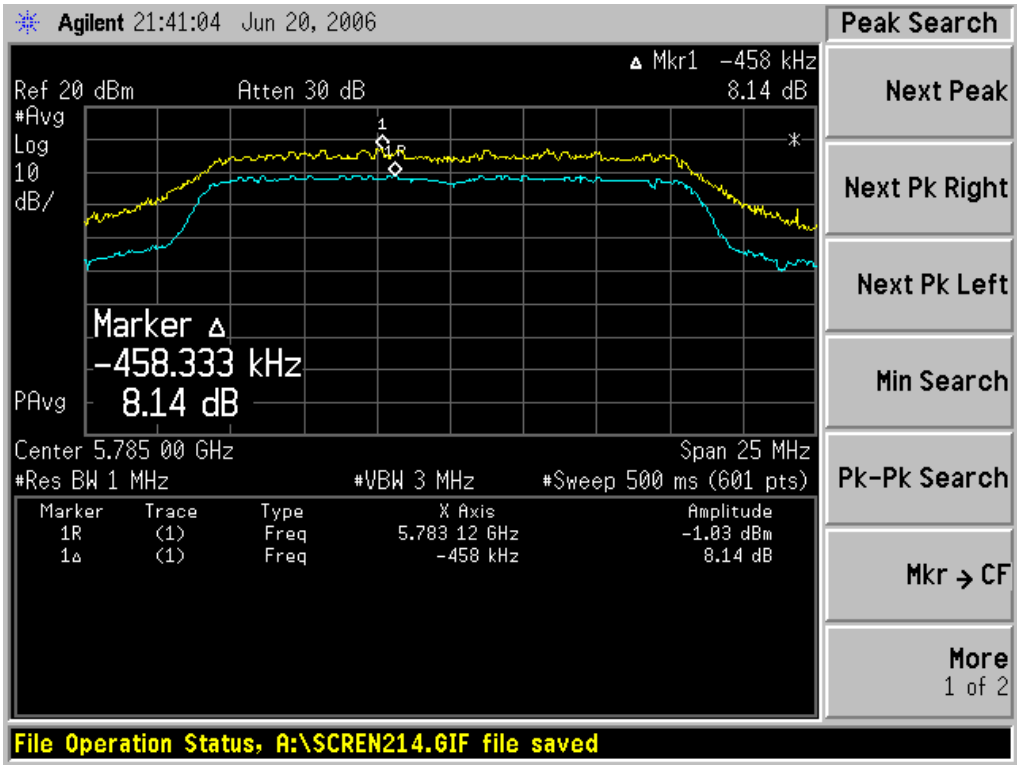
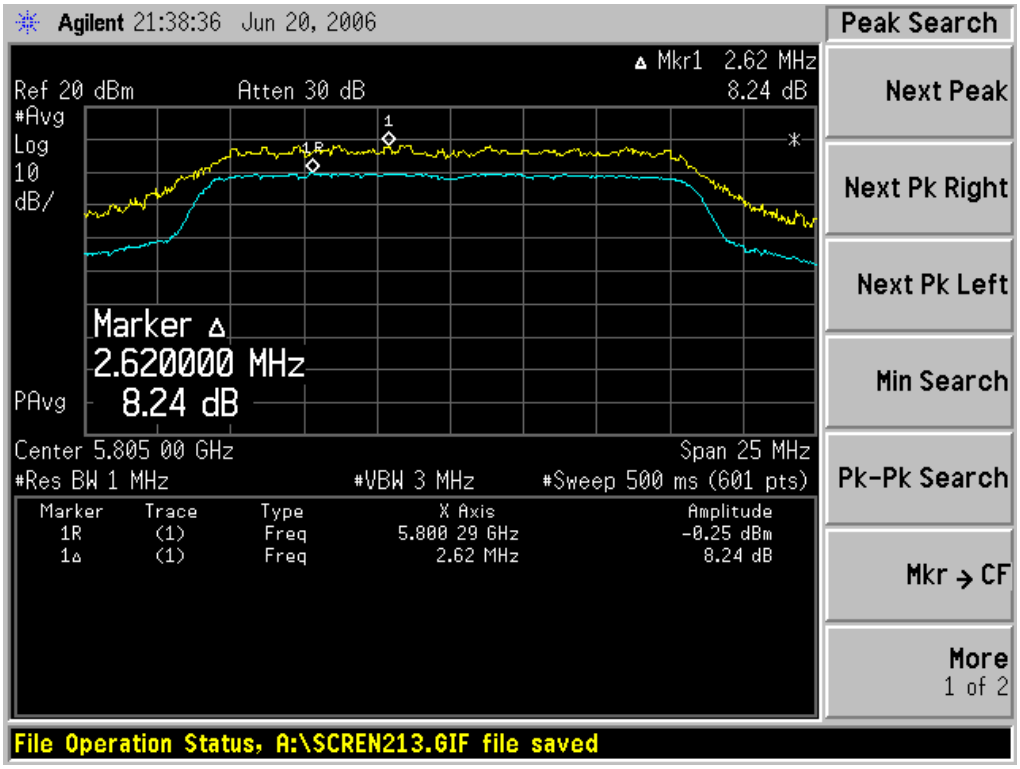


Figure Channel 161 (5805MHz)



Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Peak Excursion		
Test Mode	Mode4: Transmitter 802.11a with Inside Antenna		
Date of Test	2006/06/20	Test Site	AC-3

Channel	Freq. (MHz)	Peak Excursion (dB)	Limit (dB)	Result
149	5745	7.69	<13	PASS
157	5785	8.14	<13	PASS
161	5805	8.24	<13	PASS

Figure Channel 149 (5745MHz)

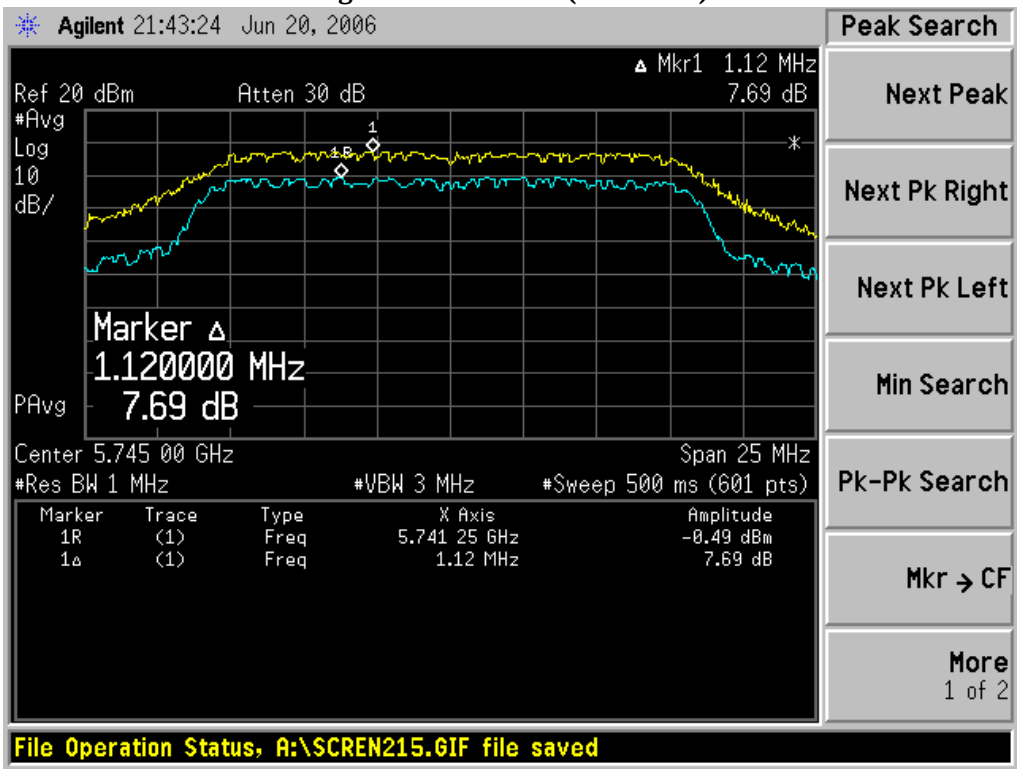


Figure Channel 157 (5785MHz)

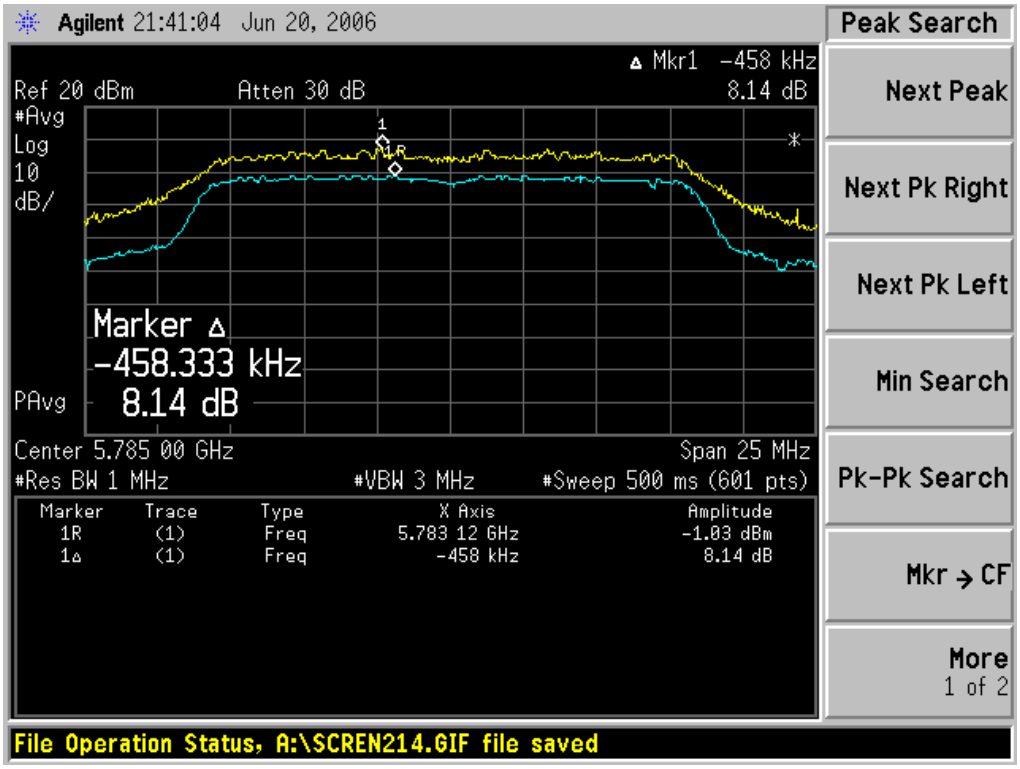
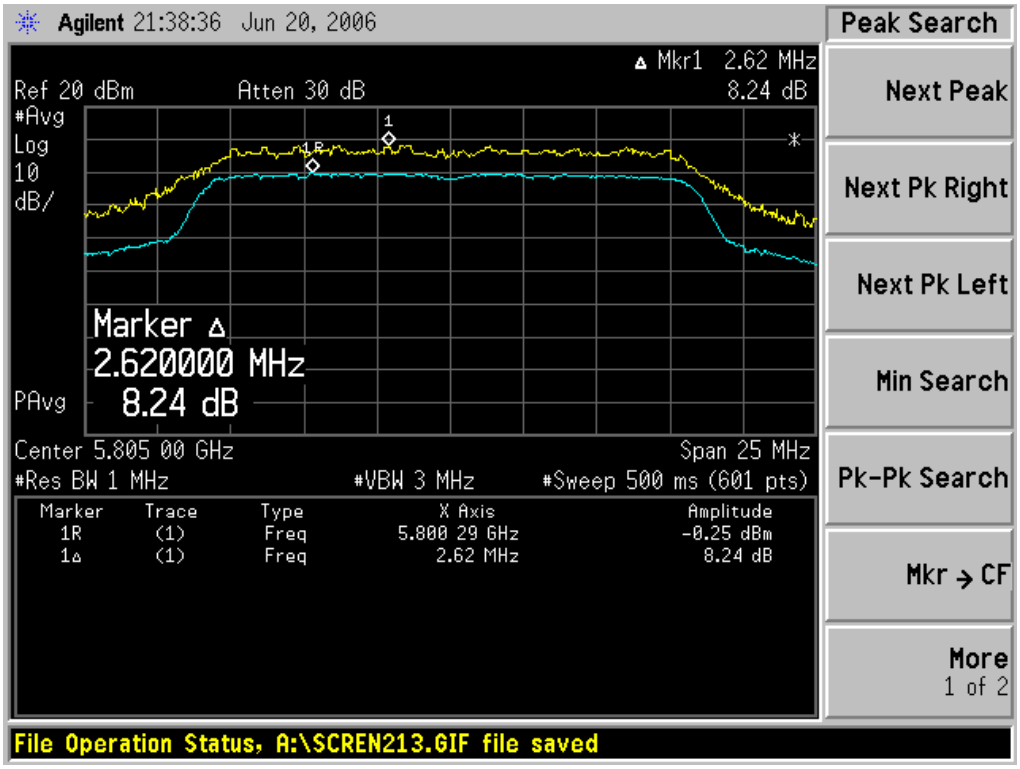


Figure Channel 161 (5805MHz)

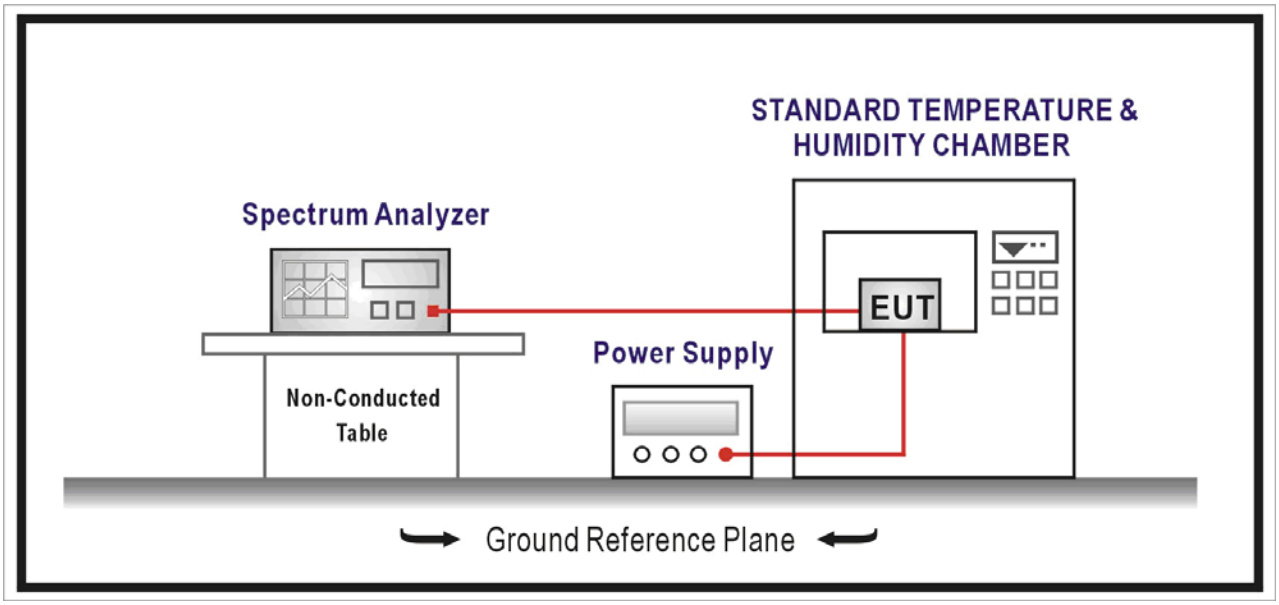


16. Frequency Stability

16.1. Test Specification

According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.407

16.2. Test Setup



16.3. Limit

Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified

16.4. Deviation from Test Standard

No deviation.

16.5. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Frequency Stability		
Test Mode	Mode3: Transmitter 802.11a with Outside Antenna		
Date of Test	2006/06/20	Test Site	AC-3

Operating Frequency: Channel 161 (5805MHz)									Limit: 0.02%
Temp (℃)	Voltage (VAC)	0 minutes		2 minutes		5 minutes		10 minutes	
		Measured (MHz)	Tolerance (%)	Measured (MHz)	Tolerance (%)	Measured (MHz)	Tolerance (%)	Measured (MHz)	Tolerance (%)
0 ℃	102V	5805.0981	0.00168	5805.0970	0.00167	5805.0950	0.00163	5805.0960	0.00165
	120V	5805.0870	0.00149	5805.0860	0.00148	5805.0785	0.00135	5805.0860	0.00148
	138V	5805.0789	0.00135	5805.0790	0.00136	5805.0820	0.00141	5805.0800	0.00137
20 ℃	102V	5805.0901	0.00155	5805.0906	0.00156	5805.0916	0.00157	5805.0920	0.00158
	120V	5805.0010	0.00010	5805.0950	0.00163	5805.0821	0.00141	5805.0820	0.00141
	138V	5804.9820	-0.00031	5804.9760	-0.00041	5804.9680	-0.00055	5804.9505	-0.00085
55 ℃	102V	5804.9100	-0.00155	5804.9090	-0.00156	5804.8890	-0.00191	5804.9020	-0.00168
	120V	5805.0020	0.00003	5805.0012	0.00002	5805.0068	0.00011	5805.0090	0.00015
	138V	5805.0790	0.00136	5805.0800	0.00137	5805.0900	0.00155	5805.0980	0.00168

Product	Wireless Outdoor Bridge (ZA-5000-D)		
Test Item	Frequency Stability		
Test Mode	Mode4: Transmitter 802.11a with Inside Antenna		
Date of Test	2006/06/20	Test Site	AC-3

Operating Frequency: Channel 161 (5805MHz)									Limit: 0.02%
Temp (℃)	Voltage (VAC)	0 minutes		2 minutes		5 minutes		10 minutes	
		Measured (MHz)	Tolerance (%)	Measured (MHz)	Tolerance (%)	Measured (MHz)	Tolerance (%)	Measured (MHz)	Tolerance (%)
0 ℃	102V	5805.0981	0.00168	5805.0970	0.00167	5805.0950	0.00163	5805.0960	0.00165
	120V	5805.0870	0.00149	5805.0860	0.00148	5805.0785	0.00135	5805.0860	0.00148
	138V	5805.0789	0.00135	5805.0790	0.00136	5805.0820	0.00141	5805.0800	0.00137
20 ℃	102V	5805.0901	0.00155	5805.0906	0.00156	5805.0916	0.00157	5805.0920	0.00158
	120V	5805.0010	0.00010	5805.0950	0.00163	5805.0821	0.00141	5805.0820	0.00141
	138V	5804.9820	-0.00031	5804.9760	-0.00041	5804.9680	-0.00055	5804.9505	-0.00085
55 ℃	102V	5804.9100	-0.00155	5804.9090	-0.00156	5804.8890	-0.00191	5804.9020	-0.00168
	120V	5805.0020	0.00003	5805.0012	0.00002	5805.0068	0.00011	5805.0090	0.00015
	138V	5805.0790	0.00136	5805.0800	0.00137	5805.0900	0.00155	5805.0980	0.00168