



Test Report

Product Name : Wireless Outdoor Bridge
Model No. : ZA-5000-E
FCC ID. No. : UDKZA5000E

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-P05V01-1

The test results relate only to the samples tested.

The test results shown in the test report are traceable to the national/international standard through the calibration of the equipment and evaluated measurement uncertainty herein.

This report must not be used to claim product endorsement by CNLA, NVLAP or any agency of the Government.
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Test Report Certification

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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-E

FCC ID No. : UDKZA5000E

Rated Voltage : AC 100-240V, 50/60Hz

EUT Voltage : AC 120V/60Hz

Trade Name : ZDC

Applicable Standard : FCC Part 15 Subpart E: 2005
ANSI C63.4: 2003

Test Result : Complied

Performed Location : SuZhou EMC Laboratory
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Hi-Tech Development Zone., SuZhou, China
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Laboratory Information

We , **QuietTek 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 QuietTek Corporation's Web Site : <http://tw.quietek.com/modules/myalbum/>

The address and introduction of QuietTek Corporation's laboratories can be founded in our Web site : <http://www.quietek.com/>

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1. General Information

1.1. EUT Description

Product Name	Wireless Outdoor Bridge
Trade Name	ZDC
Model No.	ZA-5000-E
FCC ID No.	UDKZA5000E
Frequency Range	802.11a: 5150-5250, 5725-5825MHz
Channel Number	802.11a: 8CH
Type of Modulation	OFDM
Data Speed	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 model of ZA-5000-E include one Transmitter Module (802.11 a/b/g Mini PCI Card) and one antenna (Outside Antenna), the Transmitter Module connected the Outside 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-P01V02-1, certified under Declaration of Conformity.

Antenna List

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

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:

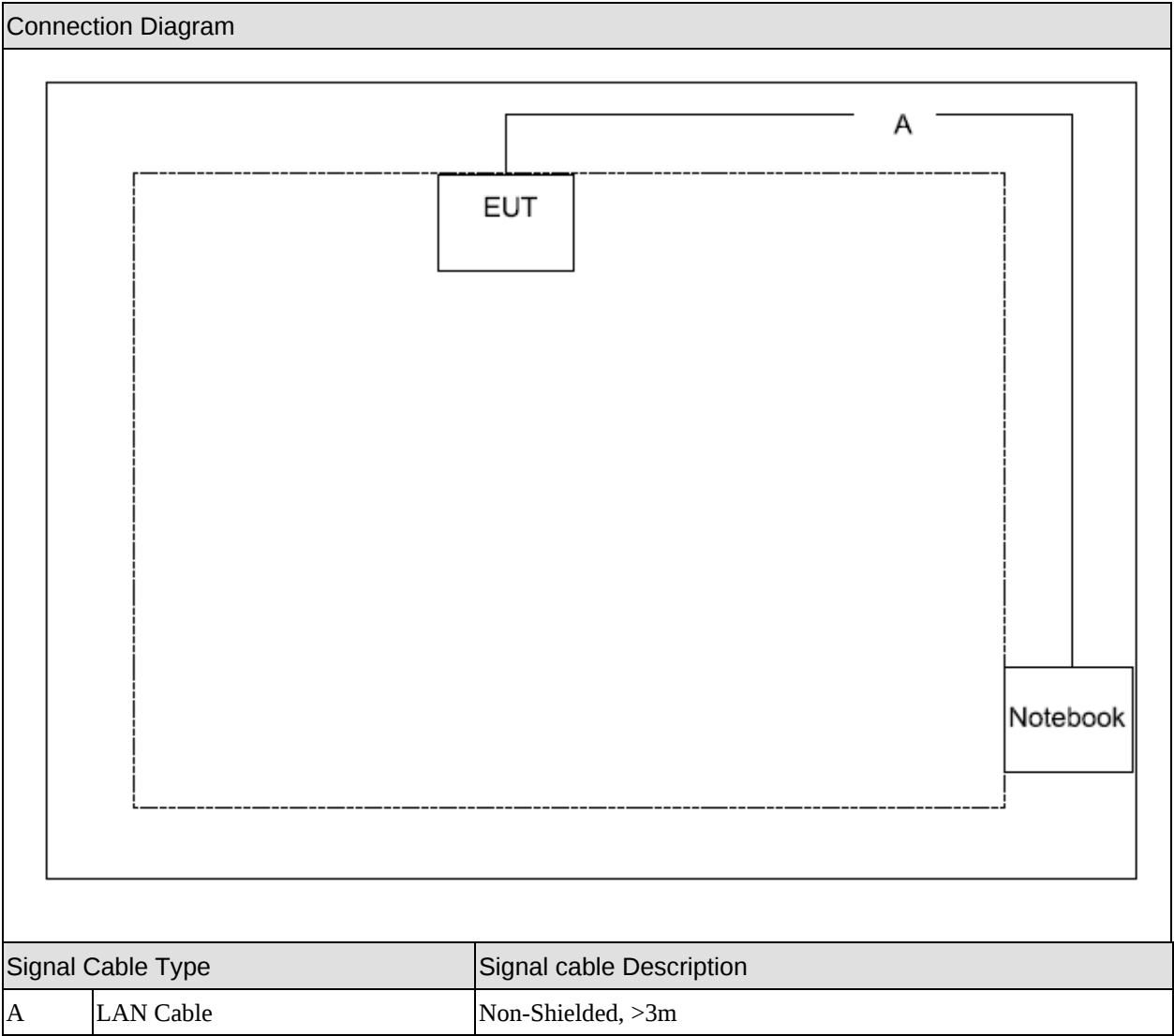
Pre-Test Mode
Mode 1: Transmitter 802.11a with Outside Antenna
Final Test Mode
Mode 1: Transmitter 802.11a with Outside Antenna

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



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:

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	50ohml	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 Transmit 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

26dBc 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

Band Edge / 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

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

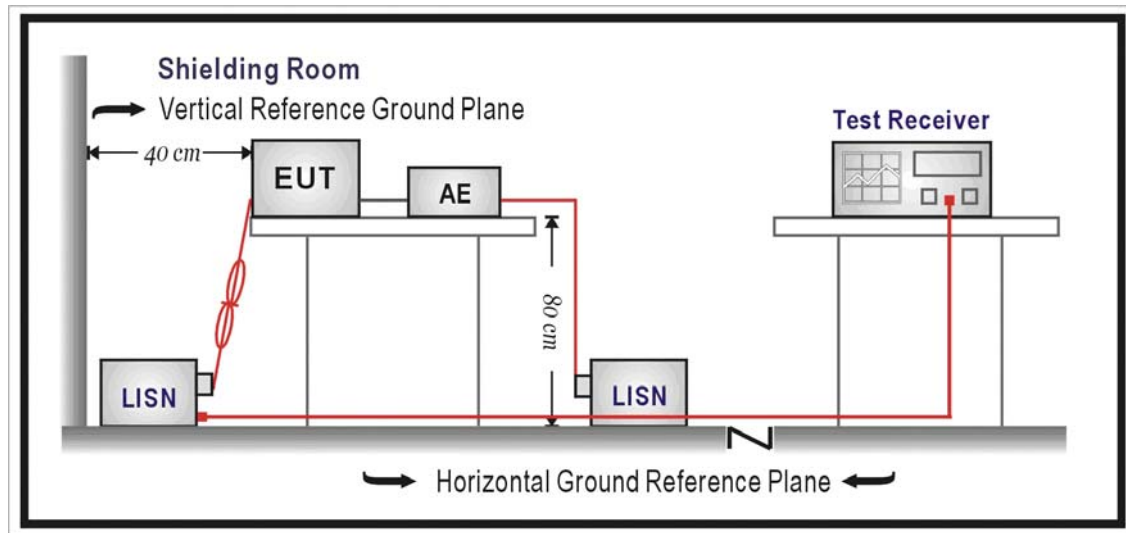
Performed Item	Items	Required	Actual
Conducted Emission	Temperature (°C)	15-35	21
	Humidity (%RH)	25-75	49
	Barometric pressure (mbar)	860-1060	950-1000
Radiated Emission	Temperature (°C)	15-35	23
	Humidity (%RH)	25-75	50
	Barometric pressure (mbar)	860-1060	950-1000

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.

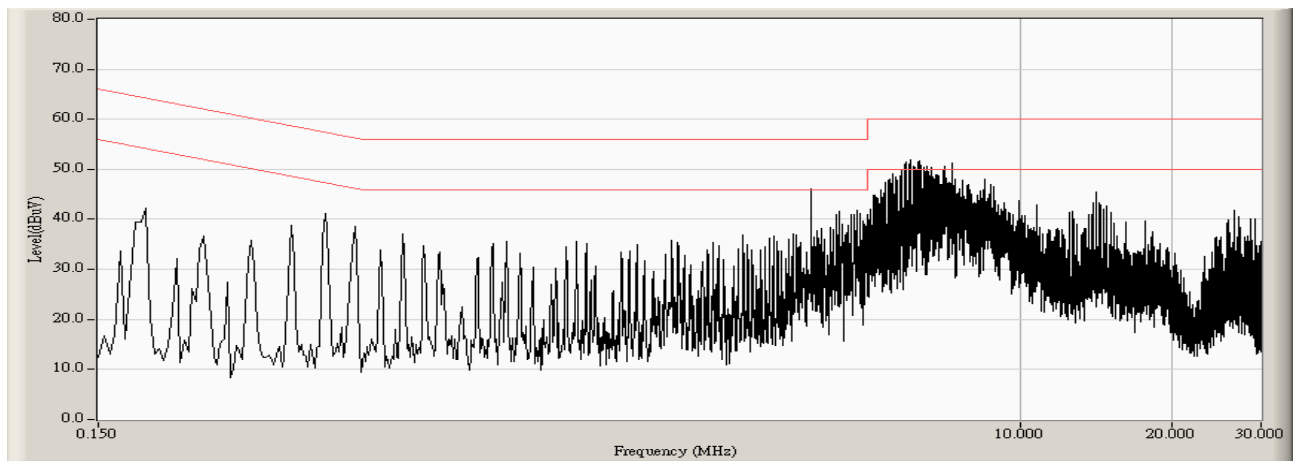
The bandwidth of the field strength meter is 9kHz.

3.5. Deviation from Test Standard

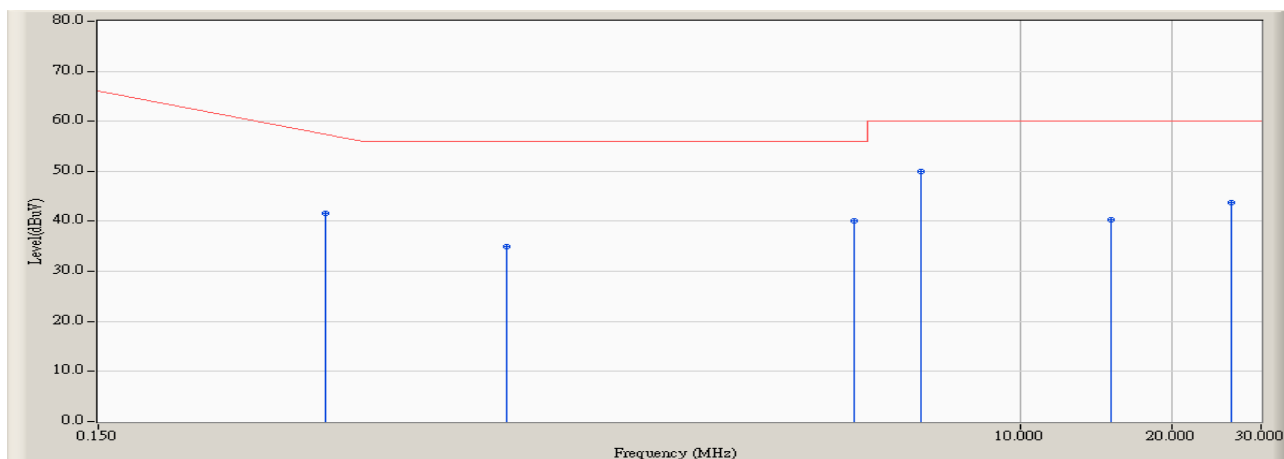
No deviation.

3.6. Test Result

Engineer : John	
Site : SR-1	Time : 2006/06/26 - 10:22
Limit : FCC_Part15_B_00M_QP	Margin : 10
EUT : ZA-5000-E	Probe : ENV216 - Line1
Power : AC 120V/60HZ	Note : Mode1: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)



Engineer : John	
Site : SR-1	Time : 2006/06/26 - 10:25
Limit : FCC_Part15_B_00M_QP	Margin : 0
EUT : ZA-5000-E	Probe : ENV216 - Line1
Power : AC 120V/60HZ	Note : Mode1: 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		0.423	9.534	32.100	41.634	-16.566	58.200	QUASIPeAK
2		0.962	9.632	25.400	35.032	-20.968	56.000	QUASIPeAK
3		4.710	9.782	30.250	40.032	-15.968	56.000	QUASIPeAK
4	*	6.375	9.830	40.200	50.030	-9.970	60.000	QUASIPeAK
5		15.106	10.040	30.360	40.400	-19.600	60.000	QUASIPeAK
6		26.160	10.260	33.500	43.760	-16.240	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 - 10:25
Limit : FCC_Part15_B_00M_AV	Margin : 0
EUT : ZA-5000-E	Probe : ENV216 - Line1
Power : AC 120V/60HZ	Note : Mode1: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)

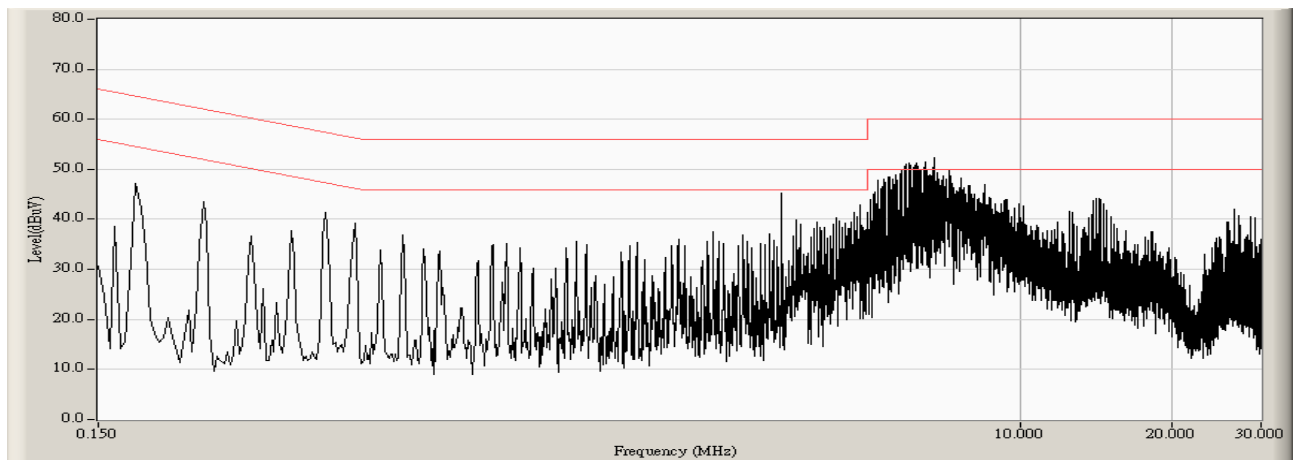


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.423	9.534	30.980	40.514	-7.686	48.200	AVERAGE
2		0.962	9.632	24.120	33.752	-12.248	46.000	AVERAGE
3		4.710	9.782	26.340	36.122	-9.878	46.000	AVERAGE
4	*	6.375	9.830	38.500	48.330	-1.670	50.000	AVERAGE
5		15.106	10.040	28.300	38.340	-11.660	50.000	AVERAGE
6		26.160	10.260	28.560	38.820	-11.180	50.000	AVERAGE

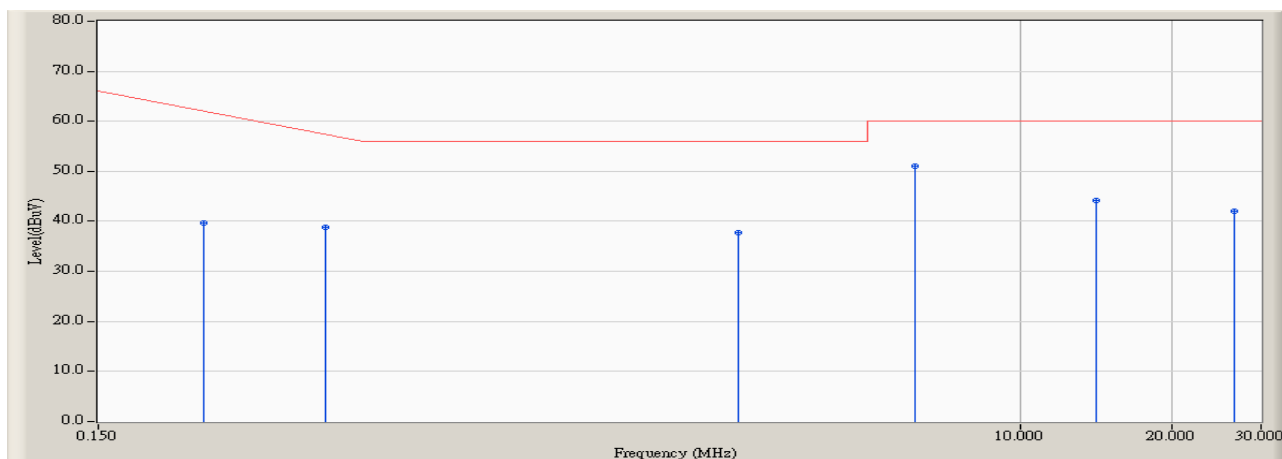
Note:

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 - 10:26
Limit : FCC_Part15_B_00M_QP	Margin : 10
EUT : ZA-5000-E	Probe : ENV216 - Line2
Power : AC 120V/60HZ	Note : Mode1: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)



Engineer : John	
Site : SR-1	Time : 2006/06/26 - 10:30
Limit : FCC_Part15_B_00M_QP	Margin : 0
EUT : ZA-5000-E	Probe : ENV216 - Line2
Power : AC 120V/60HZ	Note : Mode1: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)

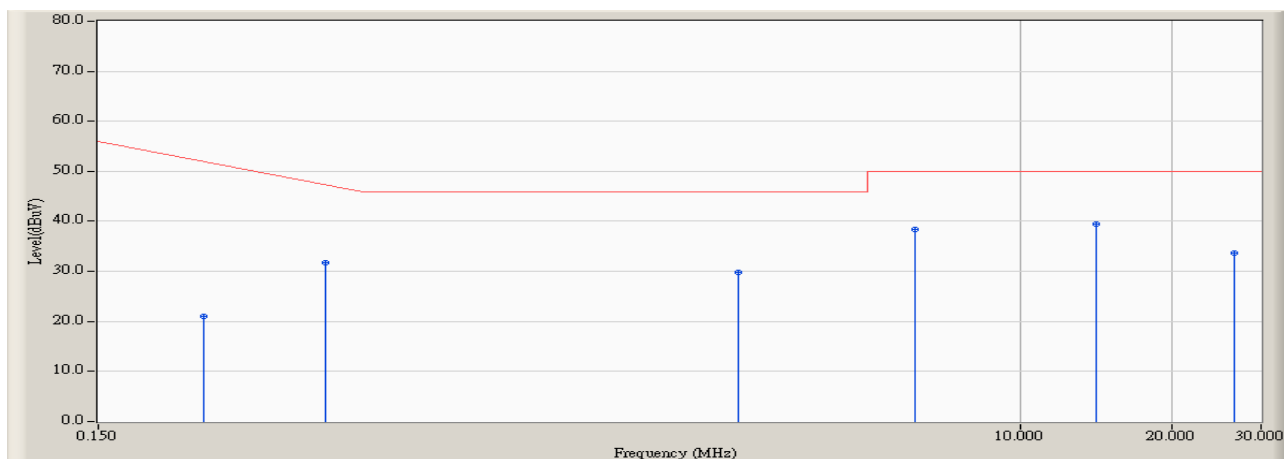


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV)	Margin (dB)	Limit (dBuV)	Detector Type
1		0.242	9.454	30.254	39.708	-23.663	63.371	QUASIPeAK
2		0.422	9.633	29.140	38.773	-19.456	58.229	QUASIPeAK
3		2.765	9.771	27.950	37.721	-18.279	56.000	QUASIPeAK
4	*	6.195	9.745	41.380	51.125	-8.875	60.000	QUASIPeAK
5		14.161	10.130	34.100	44.230	-15.770	60.000	AVERAGE
6		26.605	10.430	31.550	41.980	-18.020	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 - 10:30
Limit : FCC_Part15_B_00M_AV	Margin : 0
EUT : ZA-5000-E	Probe : ENV216 - Line2
Power : AC 120V/60HZ	Note : Mode1: 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		0.242	9.454	11.580	21.034	-32.337	53.371	AVERAGE
2		0.422	9.633	22.135	31.768	-16.461	48.229	AVERAGE
3		2.765	9.771	20.140	29.911	-16.089	46.000	AVERAGE
4		6.195	9.745	28.620	38.365	-11.635	50.000	AVERAGE
5	*	14.161	10.130	29.260	39.390	-10.610	50.000	AVERAGE
6		26.605	10.430	23.170	33.600	-16.400	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 802.11a with Outside Antenna

Description : Front View of Conducted Test for Main



Test Mode : Mode1: Transmitter 802.11a with Outside Antenna

Description : Back View of Conducted Test for Main

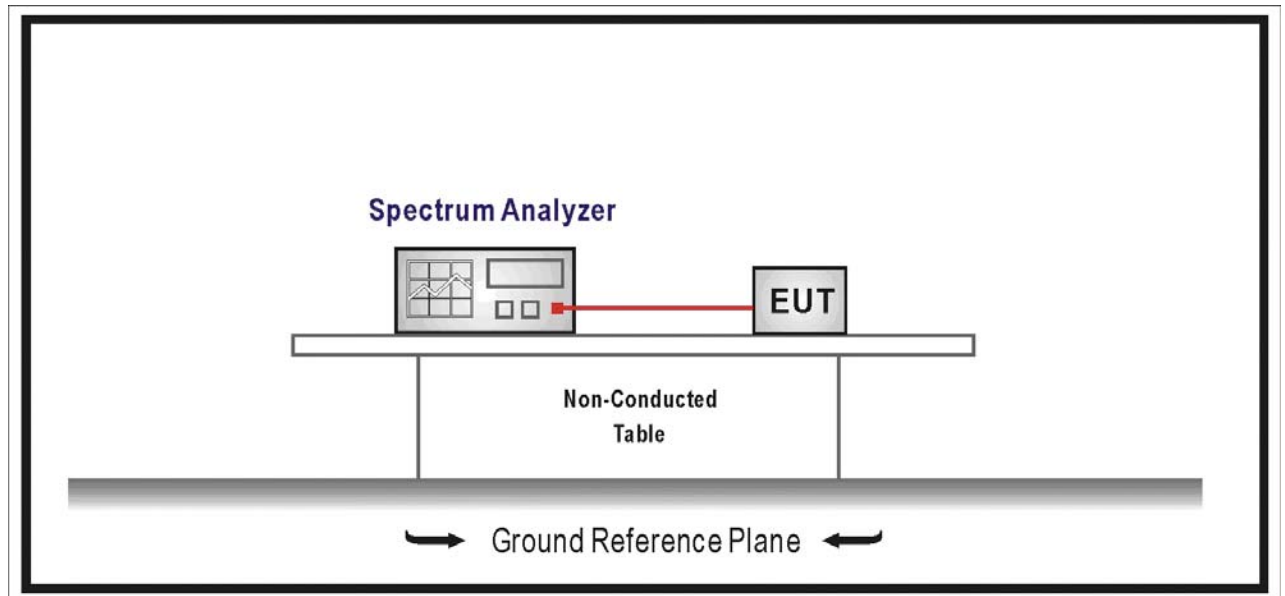


4. 26dBc Occupied Bandwidth

4.1. Test Specification

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

4.2. Test Setup



4.3. 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 $4 \text{ dBm} + 10\log B$, 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 $11 \text{ dBm} + 10\log B$, 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 $17 \text{ dBm} + 10\log B$, 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.

4.4. 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.

4.5. Deviation from Test Standard

No deviation.

4.6. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-E)		
Test Item	26dBc Occupied Bandwidth		
Test Mode	Mode1: 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)

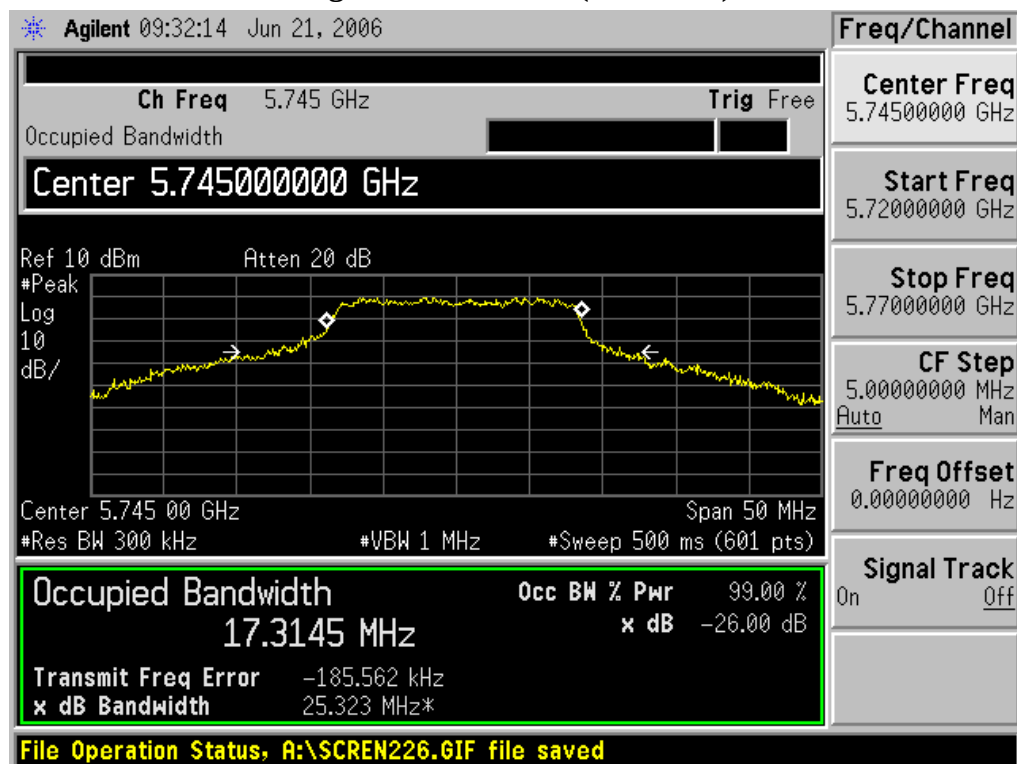


Figure Channel 157 (5785MHz)

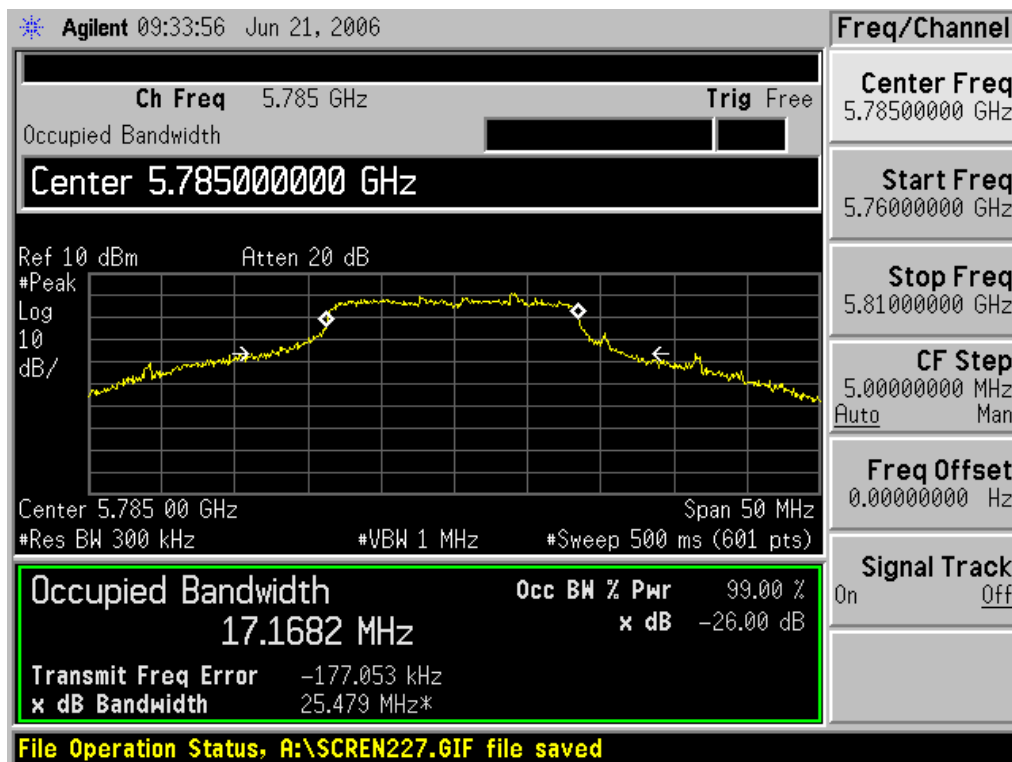
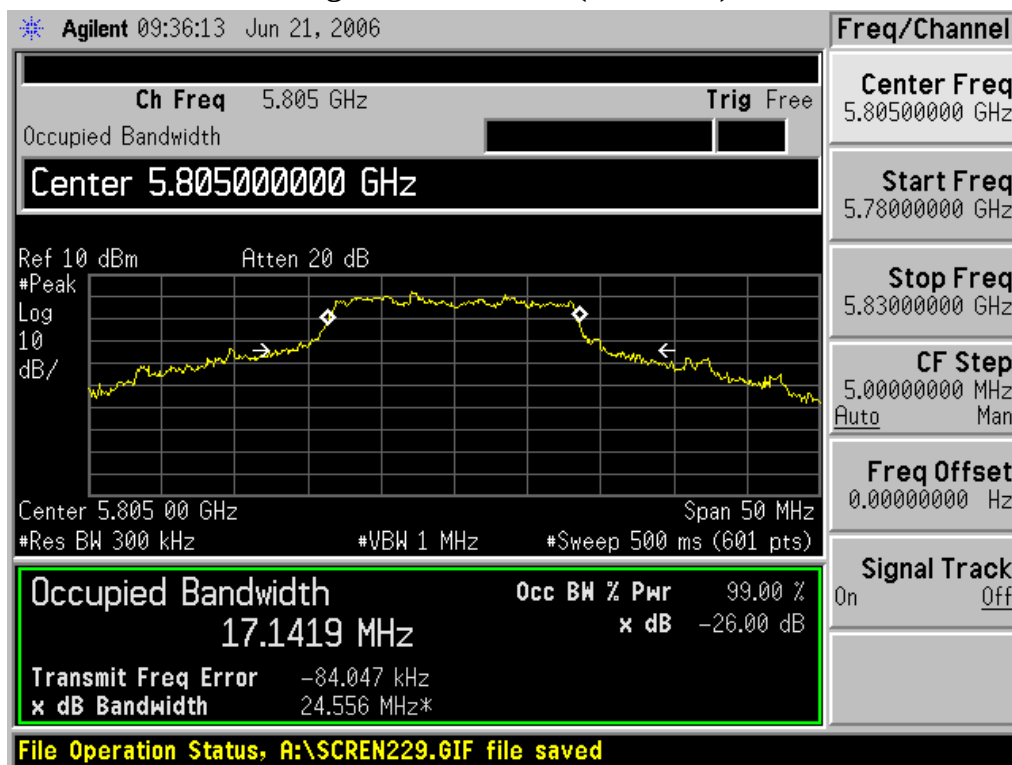


Figure Channel 161 (5805MHz)

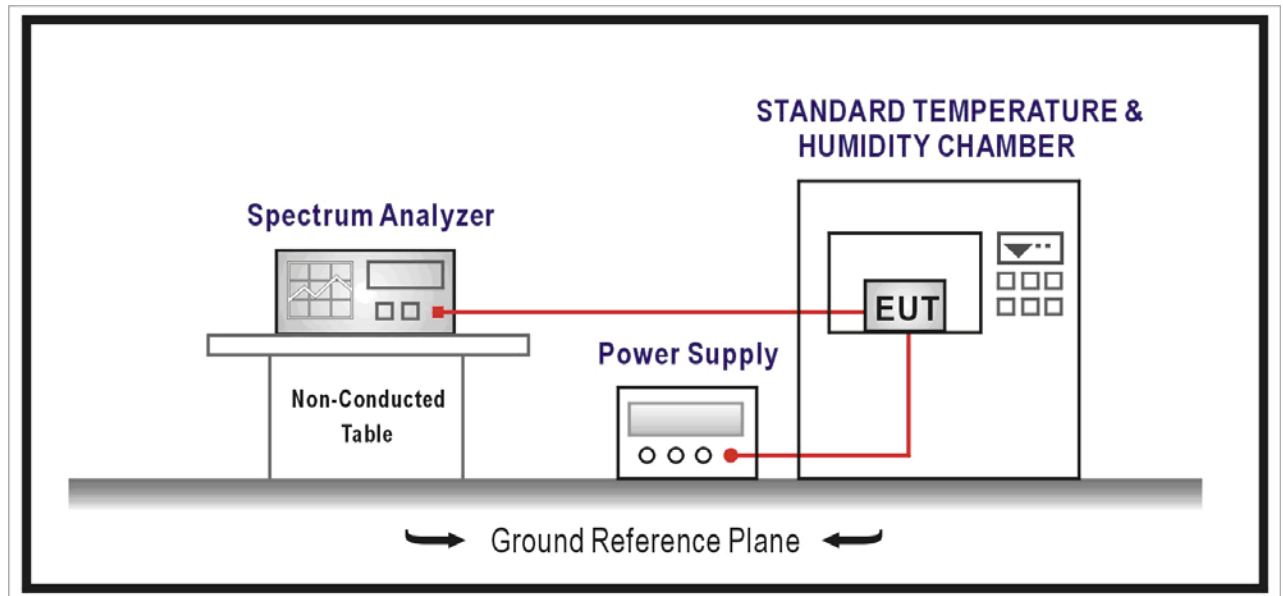


5. Peak Transmit Power

5.1. Test Specification

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

5.2. Test Setup



5.3. 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 $11 \text{ dBm} + 10\log B$, 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 $17 \text{ dBm} + 10\log B$, 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.

5.4. 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.

5.5. Deviation from Test Standard

No deviation.

5.6. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-E)		
Test Item	Peak Transmit Power		
Test Mode	Mode1: 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)

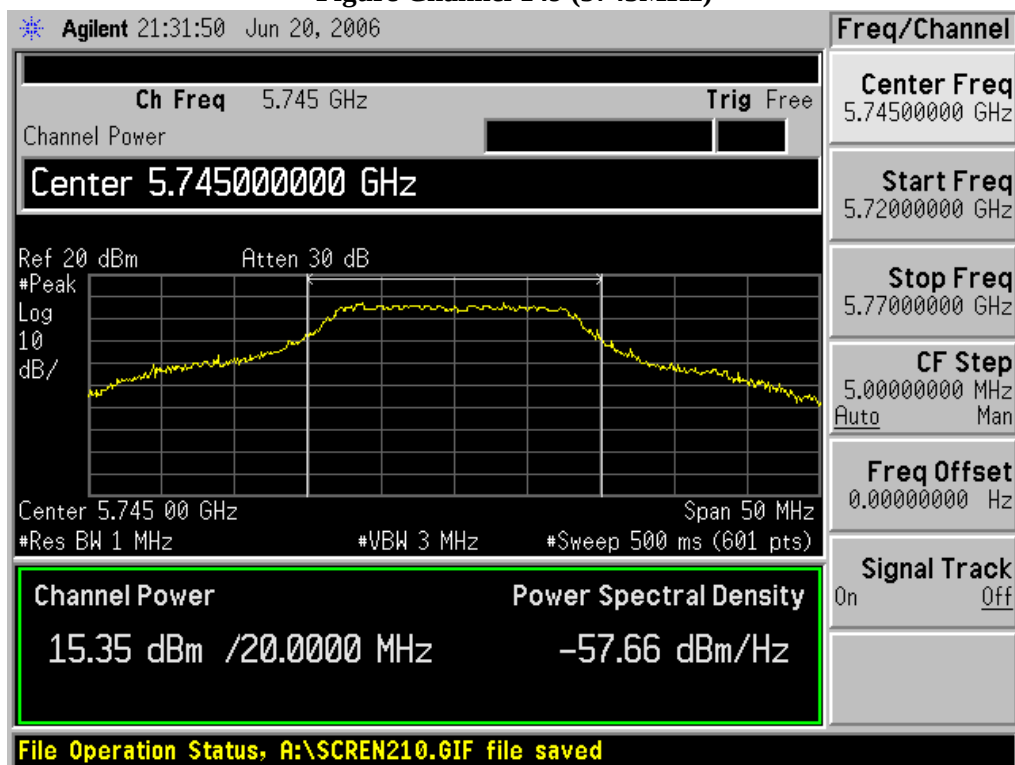


Figure Channel 157 (5785MHz)

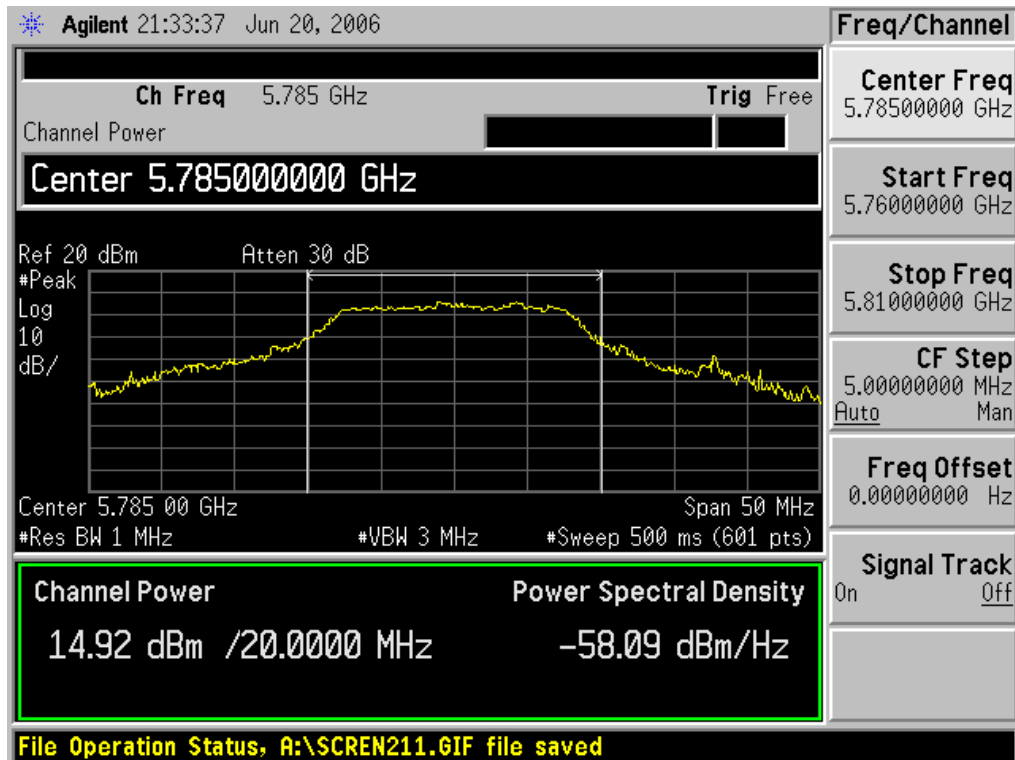
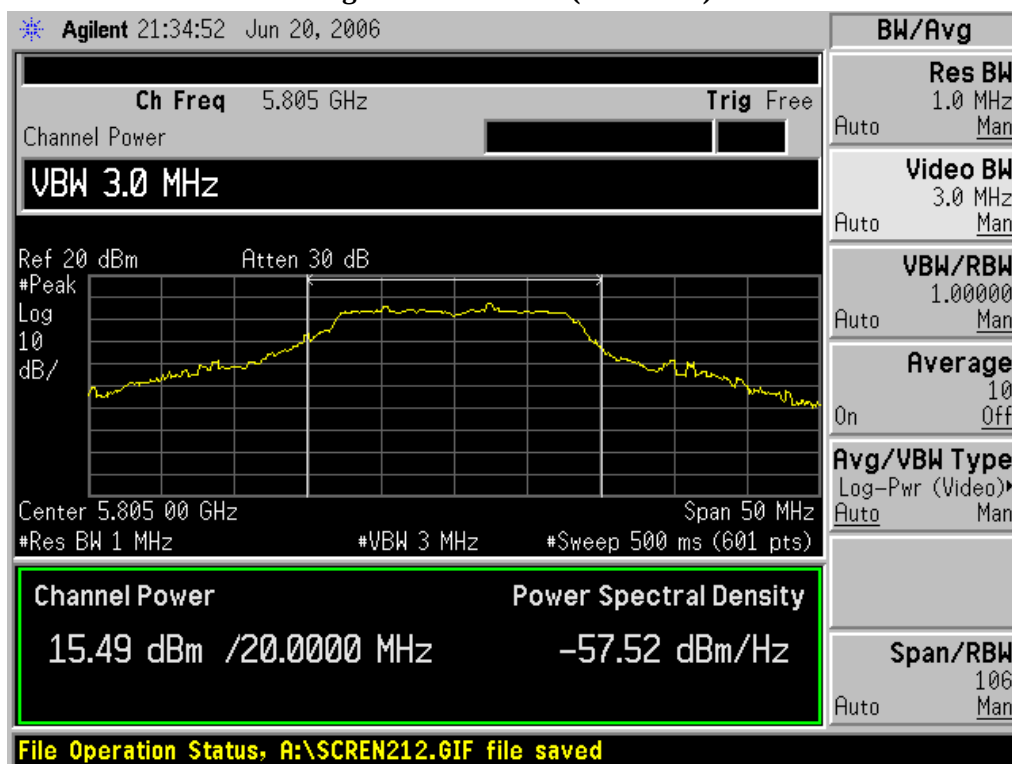


Figure Channel 161 (5805MHz)



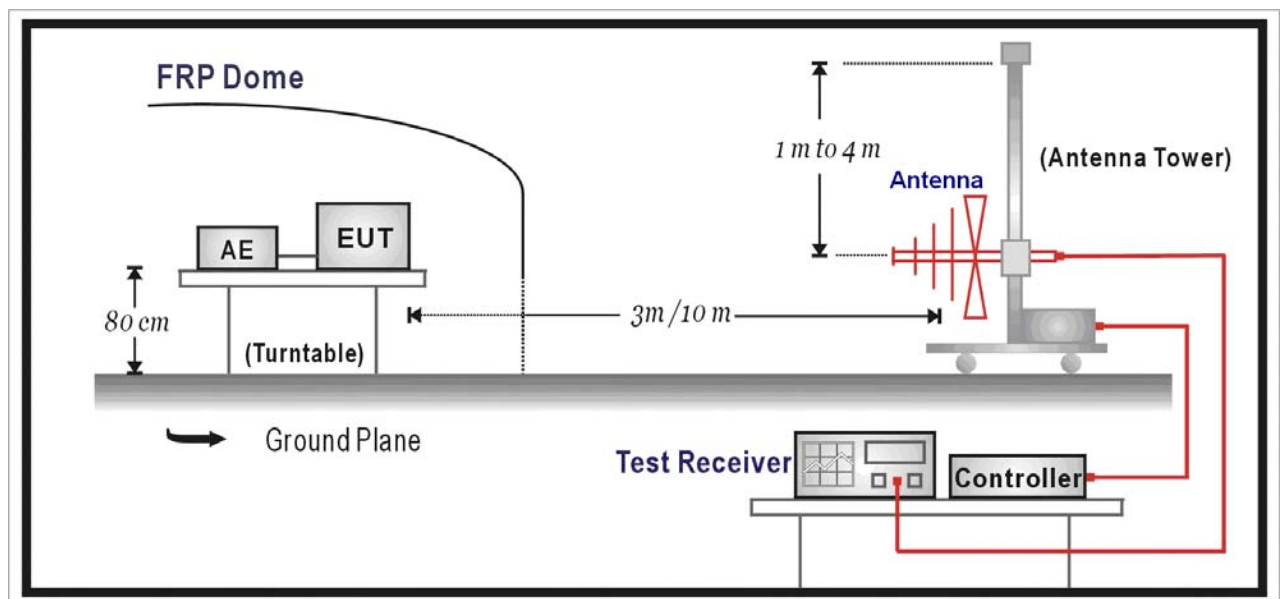
6. Radiated Emission

6.1. Test Specification

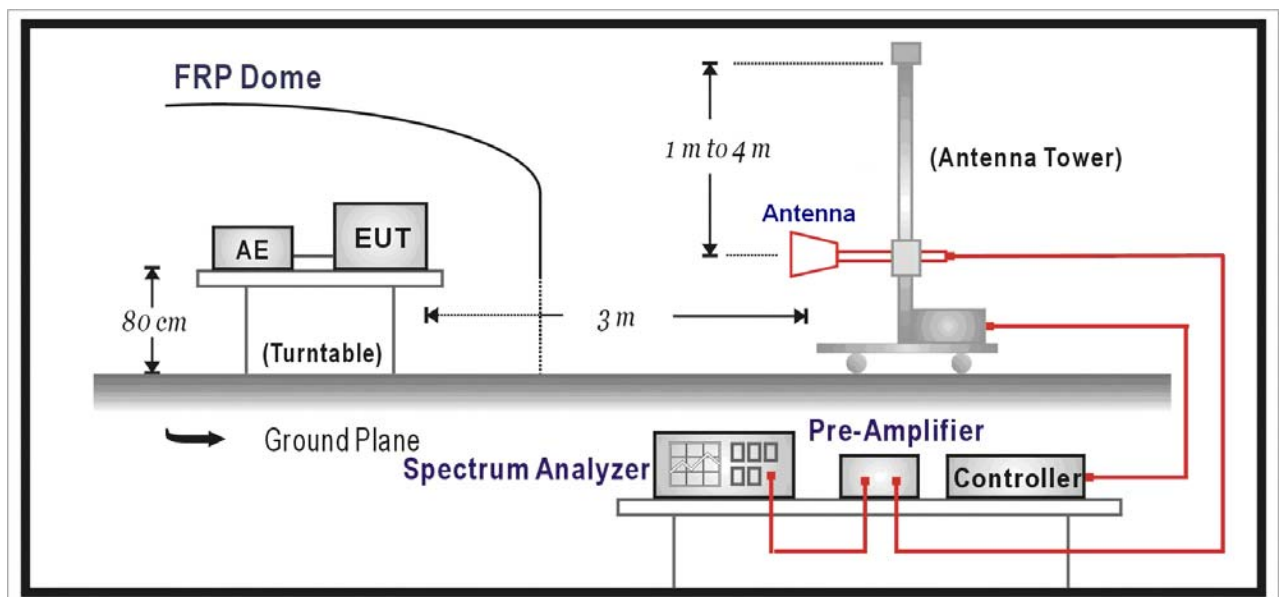
According to EMC Standard: FCC Part 15 Subpart C Paragraph 15.209

6.2. Test Setup

Under 1GHz Test Setup



Above 1GHz Test Setup



6.3. 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	$\mu\text{V/m}$ @3m	$\text{dB}\mu\text{V/m}$ @3m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Remarks :

1. RF Voltage ($\text{dB}\mu\text{V}$) = $20 \log$ RF Voltage (μV)
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.

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 additional latch filter below 1GHz was used to measure the level of harmonics radiated emission during field strength of harmonics measurement.

The bandwidth below 1GHz setting on the field strength meter is 120 kHz, above 1GHz are 1 MHz.

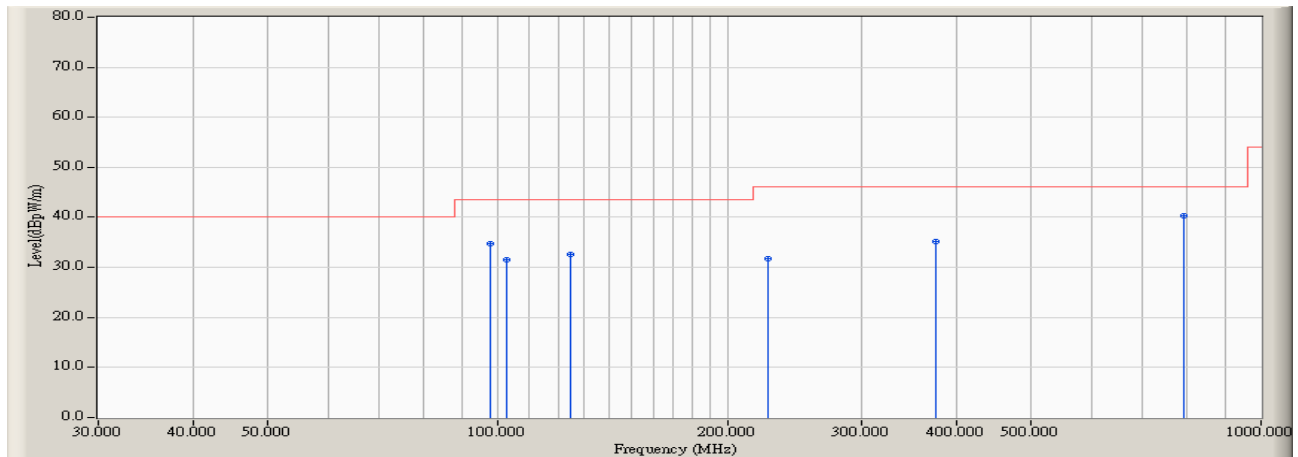
The frequency range from 30MHz to 10th harmonics is checked.

6.5. Deviation from Test Standard

No deviation.

6.6. Test Result

Engineer : Dream	
Site : AC-2	Time : 2006/07/15 - 20:42
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : Wireless Outdoor Bridge (ZA-5000-E)	Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode1: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)

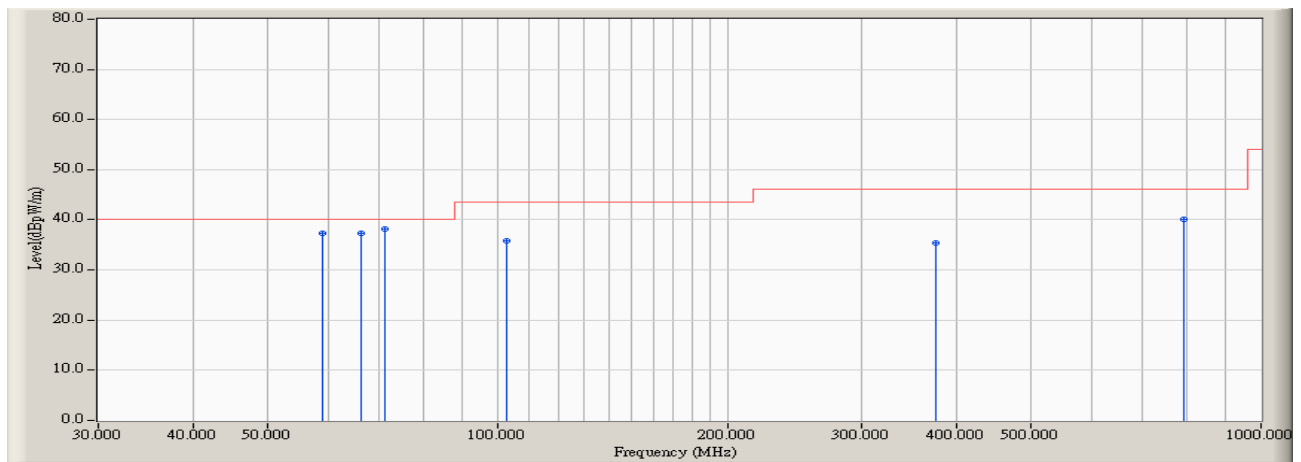


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBpW)	Measure Level (dBpW/m)	Margin (dB)	Limit (dBpW/m)	Detector Type
1		97.900	-11.861	46.685	34.824	-8.696	43.520	QUASIPeAK
2		102.750	-11.096	42.652	31.556	-11.964	43.520	QUASIPeAK
3		124.575	-10.125	42.690	32.565	-10.955	43.520	QUASIPeAK
4		226.425	-12.116	43.955	31.839	-14.181	46.020	QUASIPeAK
5		374.350	-5.568	40.650	35.082	-10.938	46.020	QUASIPeAK
6	*	791.450	0.665	39.654	40.320	-5.700	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 : 2006/07/15 - 20:56
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : Wireless Outdoor Bridge (ZA-5000-E)	Probe : CBL6112B_2932(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode1: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)

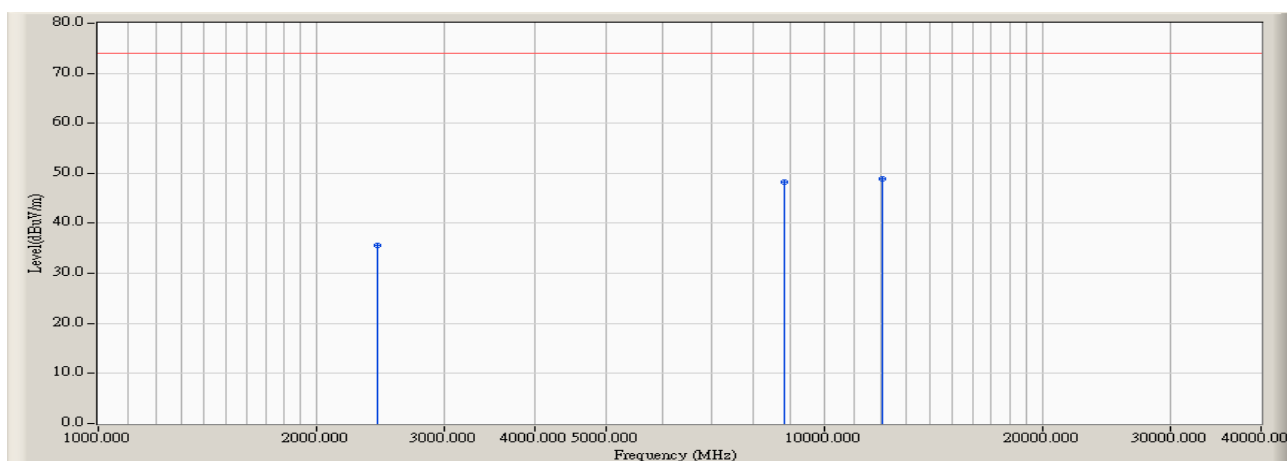


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBpW)	Measure Level (dBpW/m)	Margin (dB)	Limit (dBpW/m)	Detector Type
1		59.100	-16.949	54.263	37.314	-2.686	40.000	QUASIPeAK
2		66.375	-17.094	54.352	37.258	-2.742	40.000	QUASIPeAK
3	*	71.225	-16.783	55.022	38.239	-1.761	40.000	QUASIPeAK
4		102.750	-11.096	46.988	35.892	-7.628	43.520	QUASIPeAK
5		374.350	-5.568	40.955	35.387	-10.633	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 : 2006/07/16 - 10:49
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - HORIZONTAL
Power : AC 120V/50Hz	Note : Mode1: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)

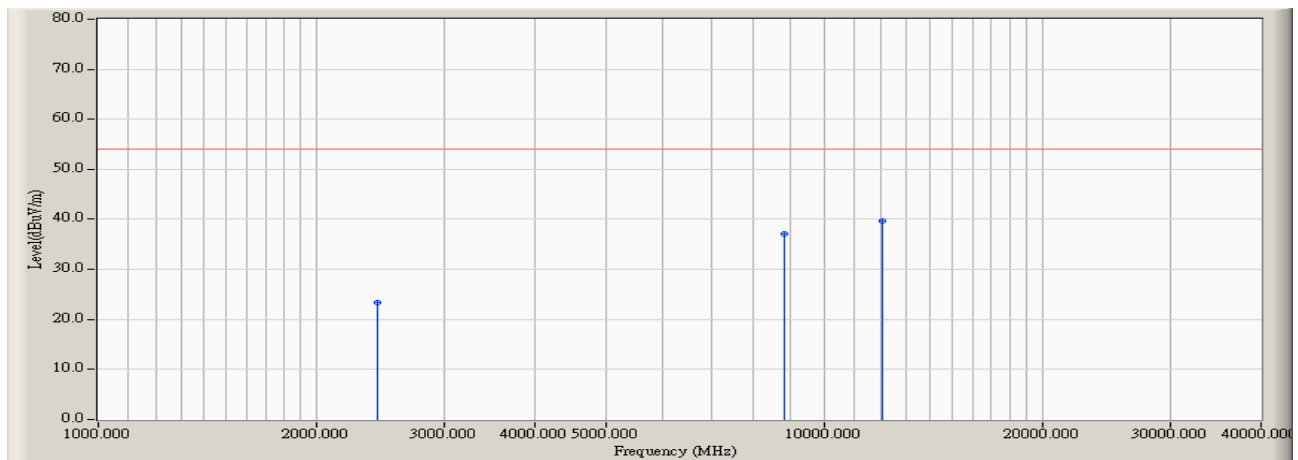


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2420.000	-3.720	39.320	35.600	-38.370	73.970	PEAK
2		8820.000	12.020	36.200	48.220	-25.750	73.970	PEAK
3	*	12050.000	14.640	34.350	48.990	-24.980	73.970	PEAK

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 : 2006/07/16 - 10:56
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - HORIZONTAL
Power : AC 120V/50Hz	Note : Mode1: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)

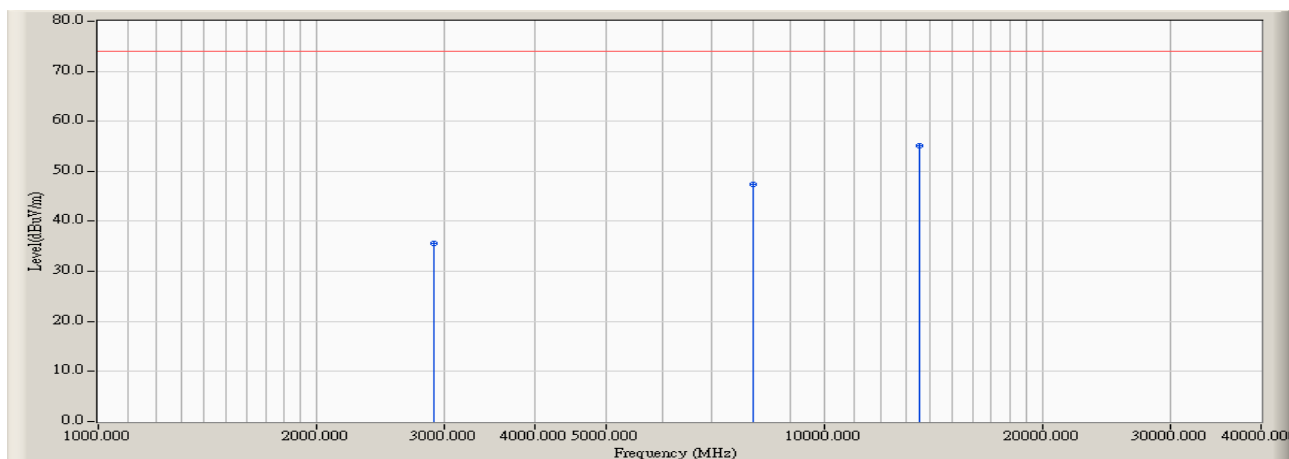


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2420.000	-3.720	27.050	23.330	-30.640	53.970	AVERAGE
2		8820.000	12.020	24.980	37.000	-16.970	53.970	AVERAGE
3	*	12050.000	14.640	24.940	39.580	-14.390	53.970	AVERAGE

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 : 2006/07/16 - 11:09
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - VERTICAL
Power : AC 120V/50Hz	Note : Mode1: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)

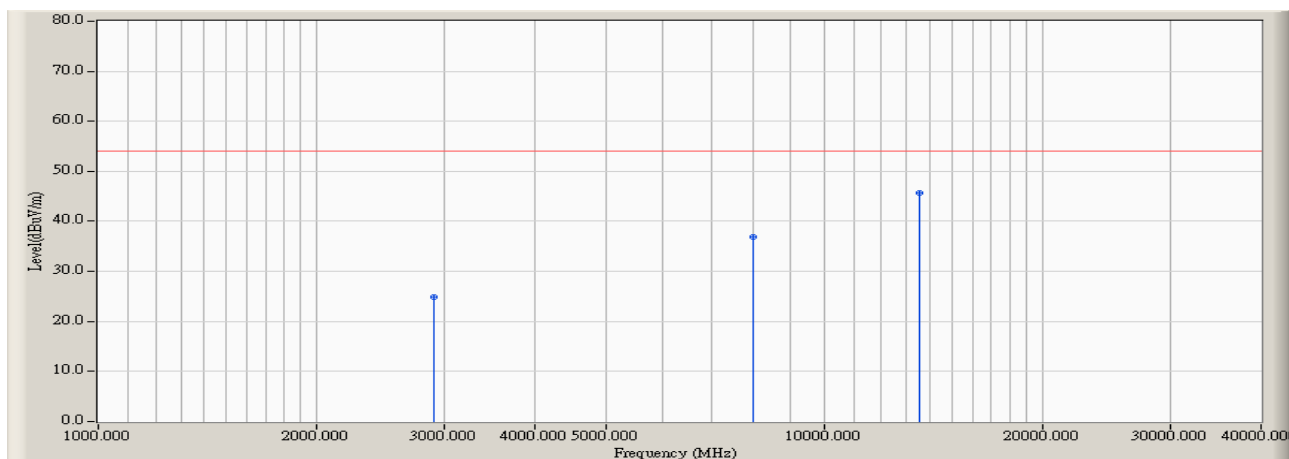


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2900.000	-3.087	38.650	35.563	-38.407	73.970	PEAK
2		7970.000	11.470	35.910	47.380	-26.590	73.970	PEAK
3	*	13520.000	18.824	36.300	55.124	-18.846	73.970	PEAK

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 : 2006/07/16 - 11:23
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - VERTICAL
Power : AC 120V/50Hz	Note : Mode1: Transmitter 802.11a with Inside Antenna (Tx: 5745MHz)

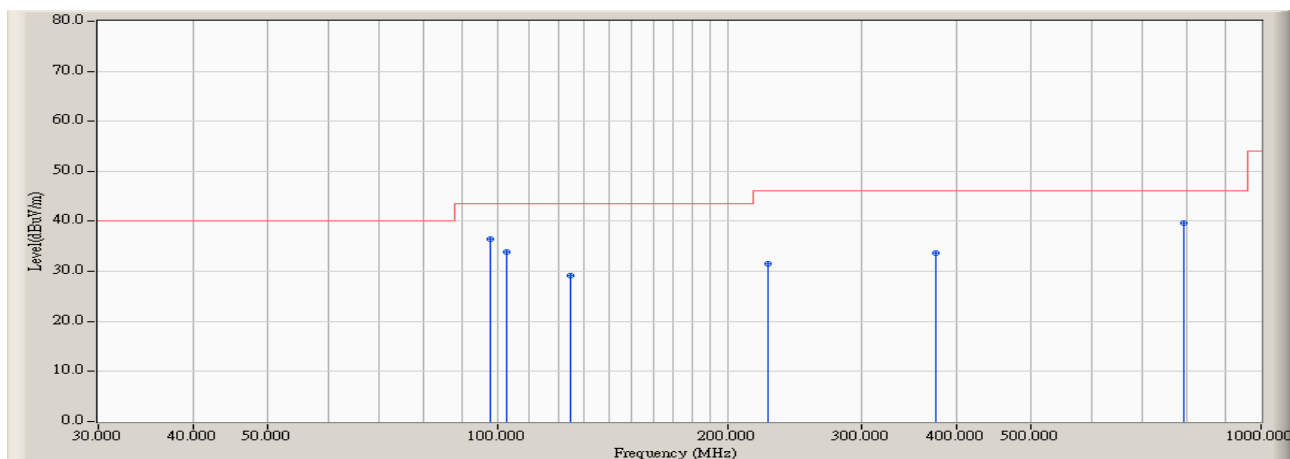


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2900.000	-3.087	27.980	24.893	-29.077	53.970	AVERAGE
2		7970.000	11.470	25.420	36.890	-17.080	53.970	AVERAGE
3	*	13520.000	18.824	26.840	45.664	-8.306	53.970	AVERAGE

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 - 15:48
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : Wireless Outdoor Bridge (ZA-5000-E)	Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode1: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)

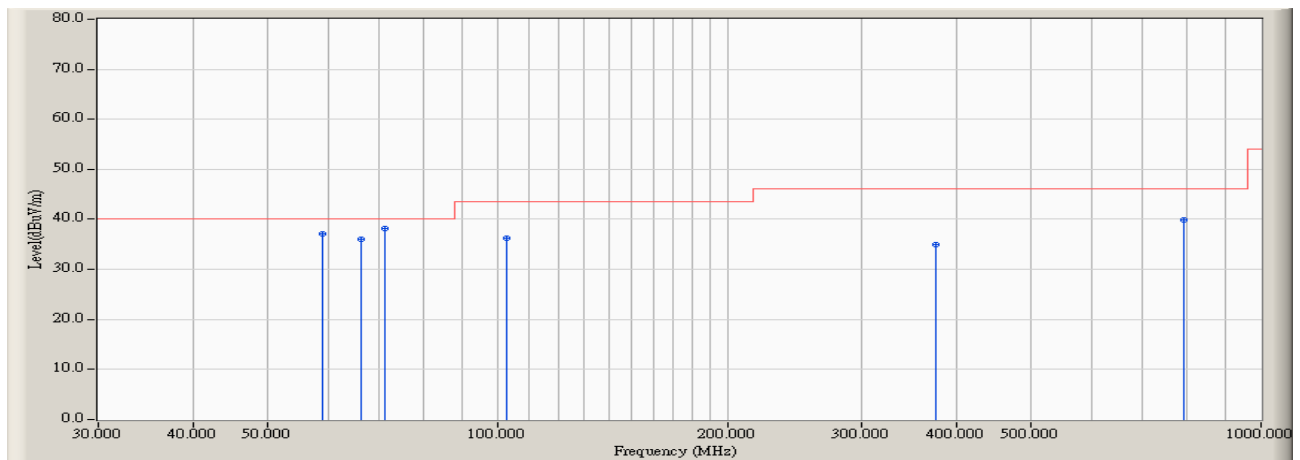


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		97.900	-11.861	48.366	36.505	-7.015	43.520	QUASIPeAK
2		102.750	-11.096	44.920	33.824	-9.696	43.520	QUASIPeAK
3		124.575	-10.125	39.210	29.085	-14.435	43.520	QUASIPeAK
4		226.425	-12.116	43.685	31.569	-14.451	46.020	QUASIPeAK
5		374.350	-5.568	39.321	33.753	-12.267	46.020	QUASIPeAK
6	*	791.450	0.665	39.120	39.785	-6.235	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 - 16:09
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : Wireless Outdoor Bridge (ZA-5000-E)	Probe : CBL6112B_2932(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode1: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)

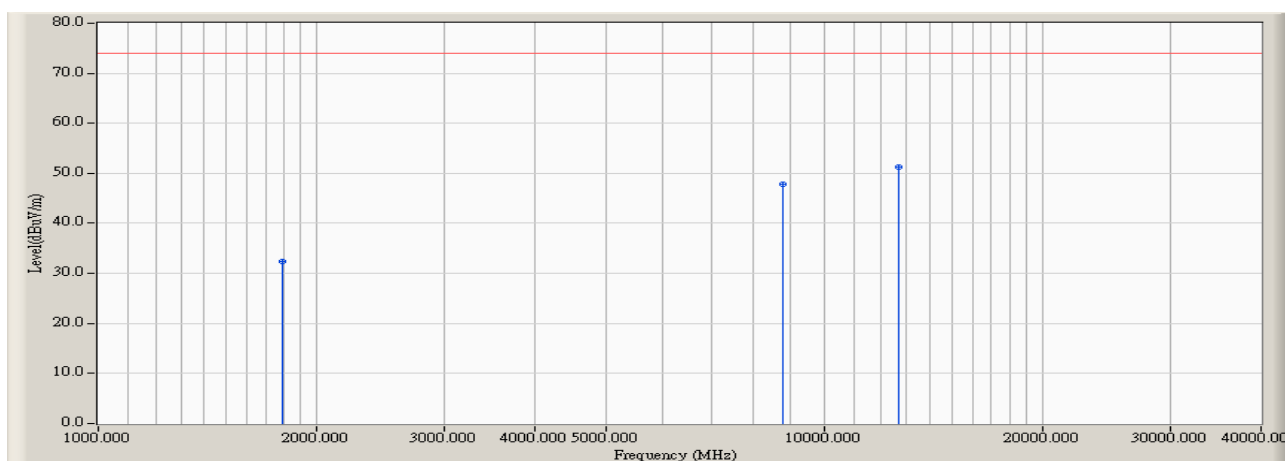


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		59.100	-16.949	54.120	37.171	-2.829	40.000	QUASIPeAK
2		66.375	-17.094	53.210	36.116	-3.884	40.000	QUASIPeAK
3	*	71.225	-16.783	54.985	38.202	-1.798	40.000	QUASIPeAK
4		102.750	-11.096	47.320	36.224	-7.296	43.520	QUASIPeAK
5		374.350	-5.568	40.625	35.057	-10.963	46.020	QUASIPeAK
6		791.450	0.665	39.320	39.985	-6.035	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 : John	
Site : AC-2	Time : 2006/06/23 - 09:38
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - HORIZONTAL
Power : AC 120V/50Hz	Note : Mode1: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)

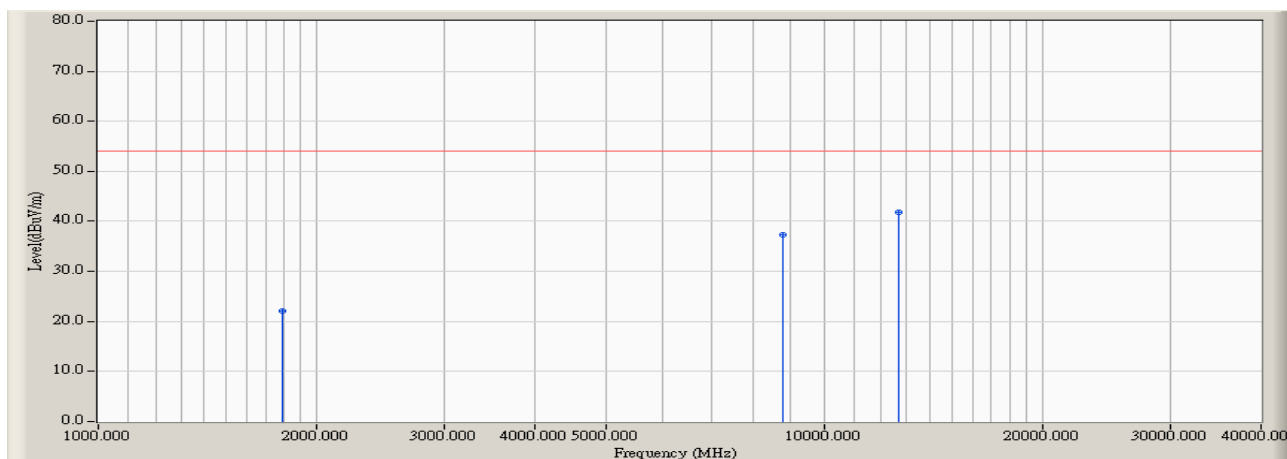


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1790.000	-7.078	39.400	32.322	-41.648	73.970	PEAK
2		8760.000	11.964	35.820	47.784	-26.186	73.970	PEAK
3	*	12670.000	16.073	35.290	51.364	-22.606	73.970	PEAK

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 : 2006/06/23 - 09:56
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - HORIZONTAL
Power : AC 120V/50Hz	Note : Mode1: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)

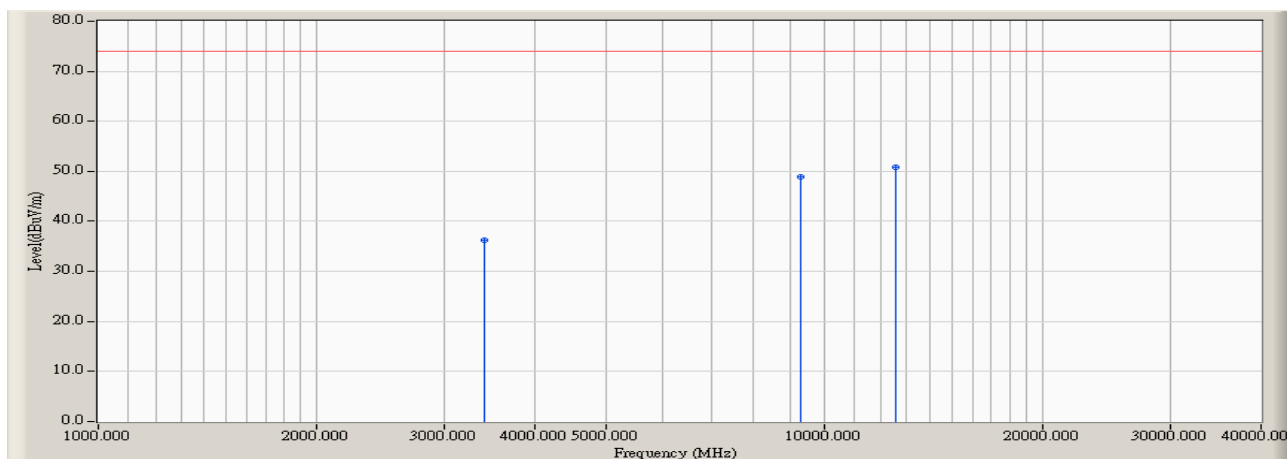


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		1790.000	-7.078	29.120	22.042	-31.928	53.970	AVERAGE
2		8760.000	11.964	25.340	37.304	-16.666	53.970	AVERAGE
3	*	12670.000	16.073	25.780	41.854	-12.116	53.970	AVERAGE

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 : 2006/06/23 - 10:02
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - VERTICAL
Power : AC 120V/50Hz	Note : Mode1: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)

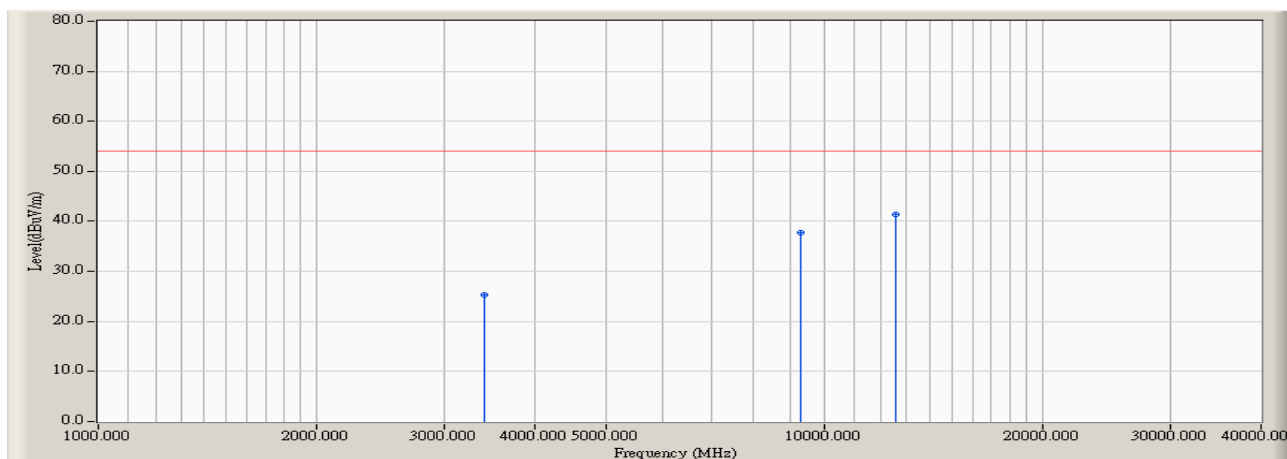


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3410.000	-2.445	38.700	36.254	-37.716	73.970	PEAK
2		9300.000	12.981	35.880	48.862	-25.108	73.970	PEAK
3	*	12530.000	15.565	35.170	50.734	-23.236	73.970	PEAK

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 : 2006/06/23 - 10:12
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - VERTICAL
Power : AC 120V/50Hz	Note : Mode1: Transmitter 802.11a with Outside Antenna (Tx: 5785MHz)

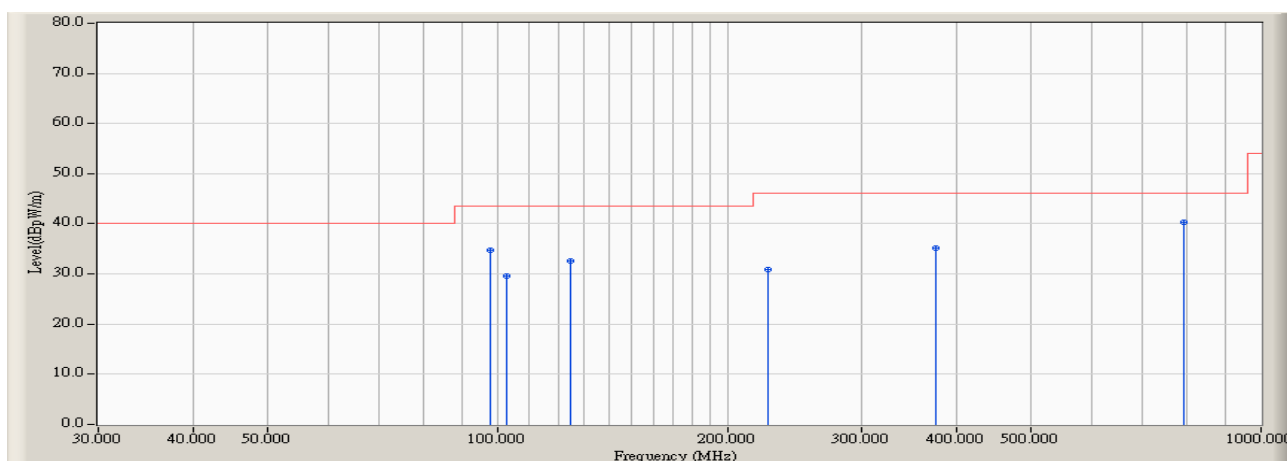


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3410.000	-2.445	27.820	25.374	-28.596	53.970	AVERAGE
2		9300.000	12.981	24.780	37.762	-16.208	53.970	AVERAGE
3	*	12530.000	15.565	25.820	41.384	-12.586	53.970	AVERAGE

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 : 2006/07/15 - 21:12
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : Wireless Outdoor Bridge (ZA-5000-E)	Probe : CBL6112B_2932(30-2000MHz) - HORIZONTAL
Power : AC 120V/60Hz	Note : Mode1: Transmitter 802.11a with Inside Antenna (Tx: 5805MHz)

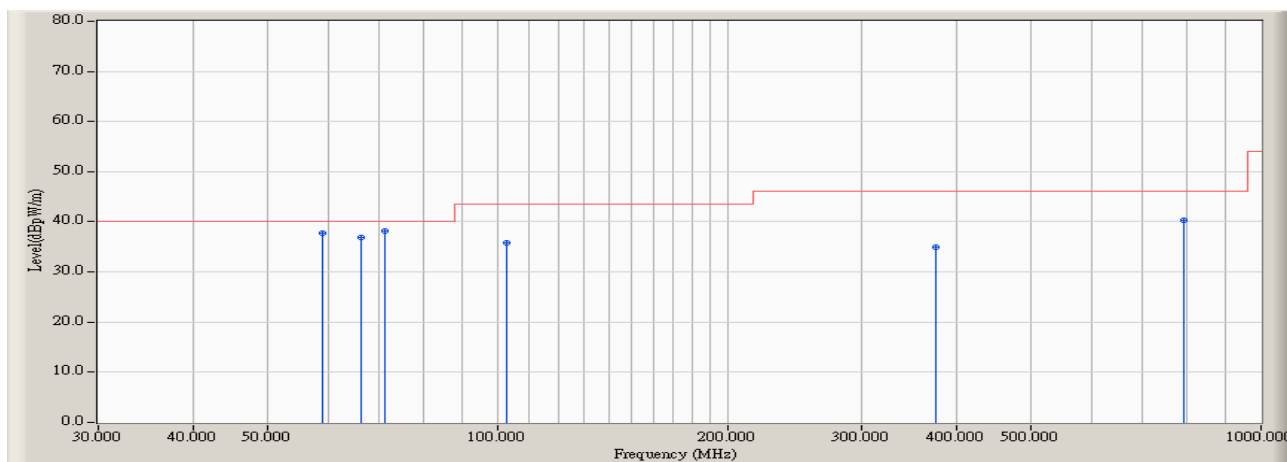


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBpW)	Measure Level (dBpW/m)	Margin (dB)	Limit (dBpW/m)	Detector Type
1		97.900	-11.861	46.622	34.761	-8.759	43.520	QUASIPeAK
2		102.750	-11.096	40.622	29.526	-13.994	43.520	QUASIPeAK
3		124.575	-10.125	42.622	32.497	-11.023	43.520	QUASIPeAK
4		226.425	-12.116	42.985	30.869	-15.151	46.020	QUASIPeAK
5		374.350	-5.568	40.653	35.084	-10.936	46.020	QUASIPeAK
6	*	791.450	0.665	39.659	40.324	-5.696	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 : 2006/07/15 - 21:39
Limit : FCC_SpartC_15.209_03M_QP	Margin : 0
EUT : Wireless Outdoor Bridge (ZA-5000-E)	Probe : CBL6112B_2932(30-2000MHz) - VERTICAL
Power : AC 120V/60Hz	Note : Mode1: Transmitter 802.11a with Inside Antenna (Tx: 5805MHz)

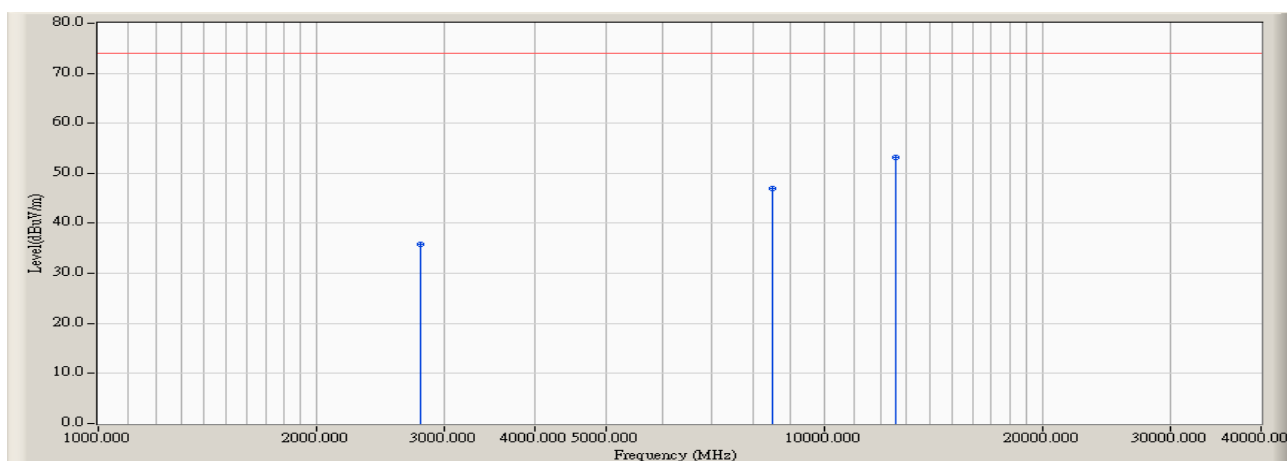


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBpW)	Measure Level (dBpW/m)	Margin (dB)	Limit (dBpW/m)	Detector Type
1		59.100	-16.949	54.655	37.706	-2.294	40.000	QUASIPeAK
2		66.375	-17.094	53.989	36.895	-3.105	40.000	QUASIPeAK
3	*	71.225	-16.783	55.052	38.269	-1.731	40.000	QUASIPeAK
4		102.750	-11.096	46.952	35.856	-7.664	43.520	QUASIPeAK
5		374.350	-5.568	40.623	35.055	-10.965	46.020	QUASIPeAK
6		791.450	0.665	39.652	40.317	-5.703	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 : 2006/07/16 - 11:48
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - HORIZONTAL
Power : AC 120V/50Hz	Note : Mode1: Transmitter 802.11a with Inside Antenna (Tx: 5805MHz)

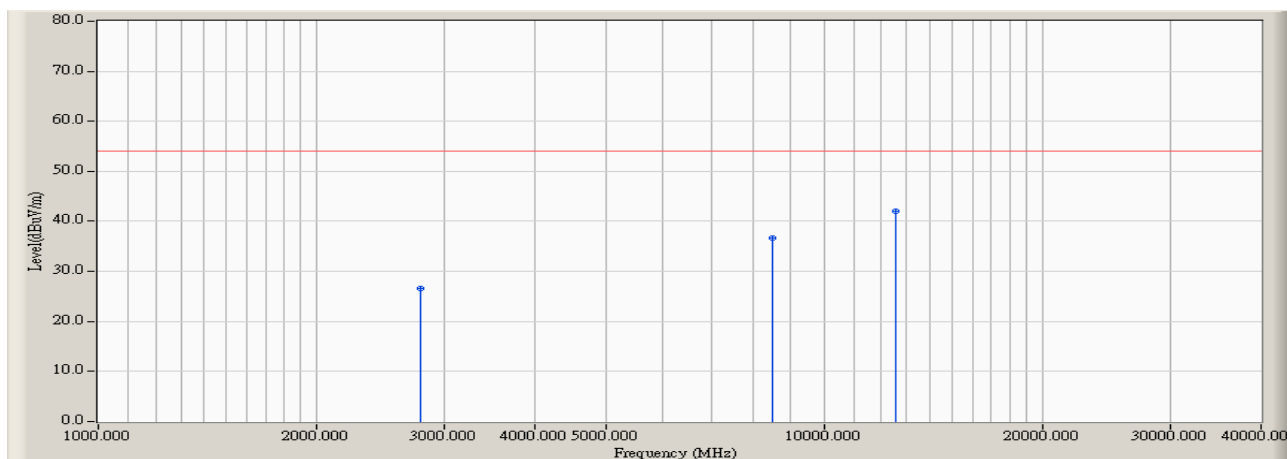


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2780.000	-3.273	39.120	35.847	-38.123	73.970	PEAK
2		8510.000	11.461	35.440	46.901	-27.069	73.970	PEAK
3	*	12530.000	15.565	37.690	53.254	-20.716	73.970	PEAK

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 : 2006/07/16 - 11:59
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - HORIZONTAL
Power : AC 120V/50Hz	Note : Mode1: Transmitter 802.11a with Inside Antenna (Tx: 5805MHz)

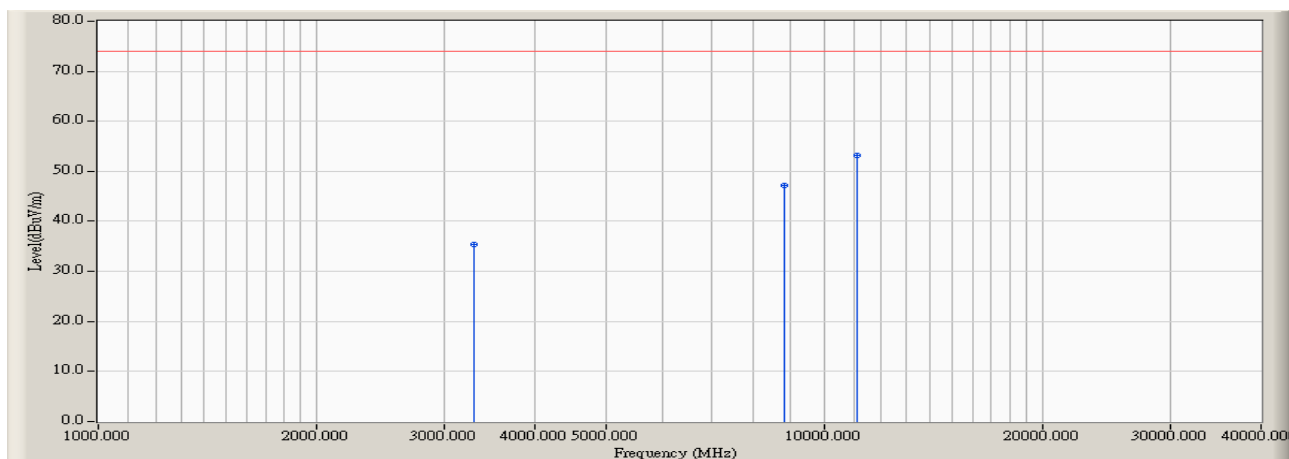


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		2780.000	-3.273	29.770	26.497	-27.473	53.970	AVERAGE
2		8510.000	11.461	25.190	36.651	-17.319	53.970	AVERAGE
3	*	12530.000	15.565	26.540	42.104	-11.866	53.970	AVERAGE

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 : 2006/07/16 - 12:16
Limit : FCC_SpartC_15.209_03M_PK	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - VERTICAL
Power : AC 120V/50Hz	Note : Mode1: Transmitter 802.11a with Inside Antenna (Tx: 5805MHz)

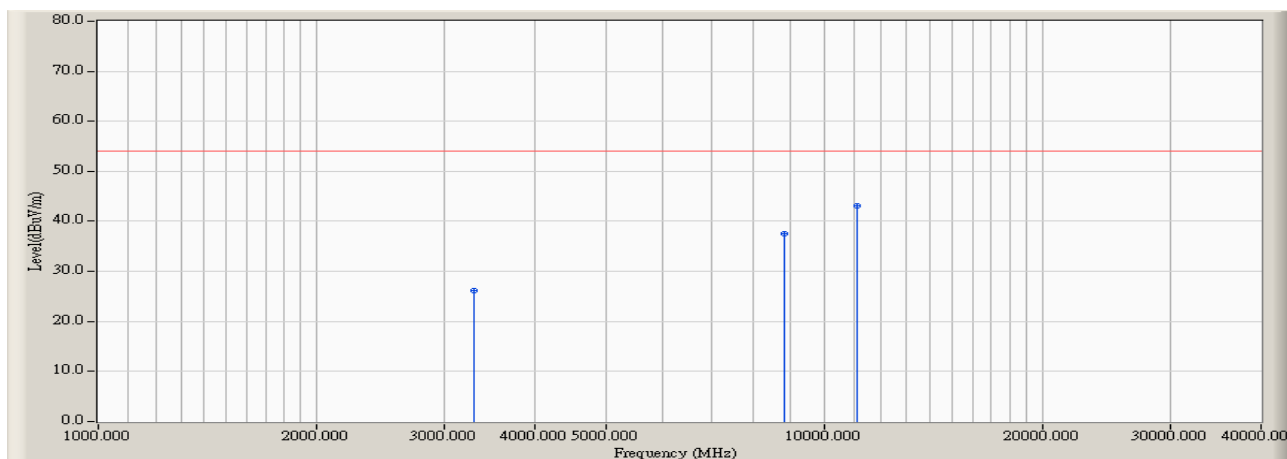


		Frequency (MHz)	Correct Factor (dB)	Reading Level (dBuV)	Measure Level (dBuV/m)	Margin (dB)	Limit (dBuV/m)	Detector Type
1		3300.000	-2.754	38.170	35.416	-38.554	73.970	PEAK
2		8820.000	12.020	35.100	47.120	-26.850	73.970	PEAK
3	*	11120.000	16.821	36.420	53.241	-20.729	73.970	PEAK

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 : 2006/07/16 - 12:29
Limit : FCC_SpartC_15.209_03M_AV	Margin : 0
EUT : ZA-5000-E	Probe : 9120D_(1G-18G) - VERTICAL
Power : AC 120V/50Hz	Note : Mode1: 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		3300.000	-2.754	28.900	26.146	-27.824	53.970	AVERAGE
2		8820.000	12.020	25.410	37.430	-16.540	53.970	AVERAGE
3	*	11120.000	16.821	26.310	43.131	-10.839	53.970	AVERAGE

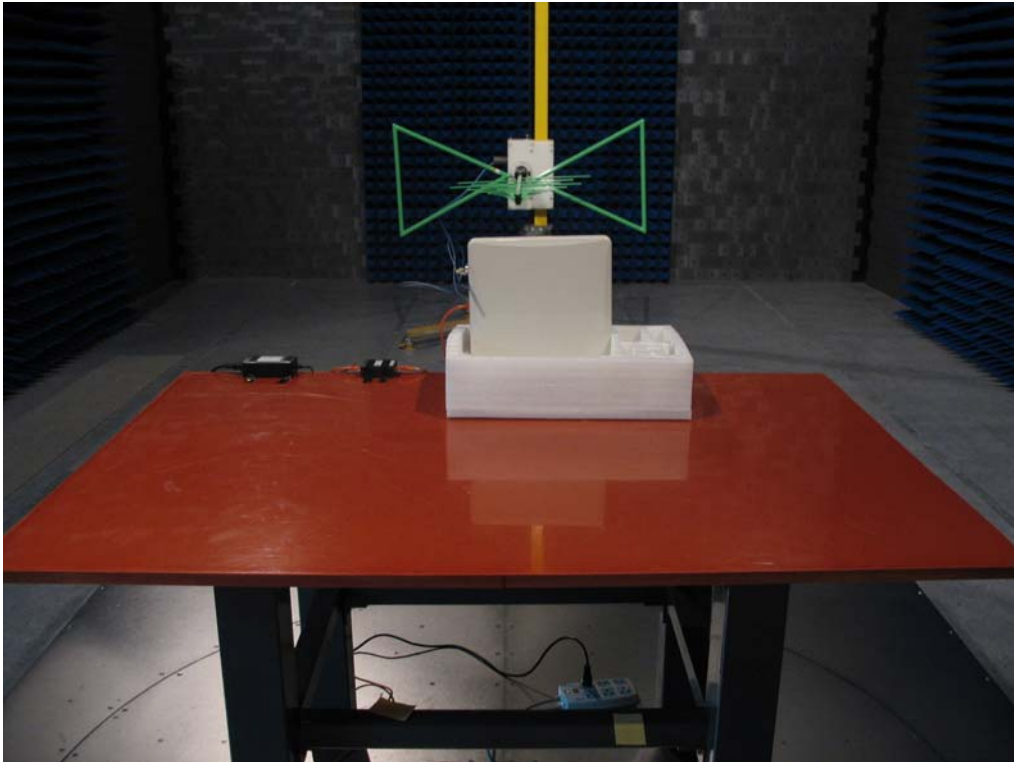
Note:

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

6.7. Test Photograph

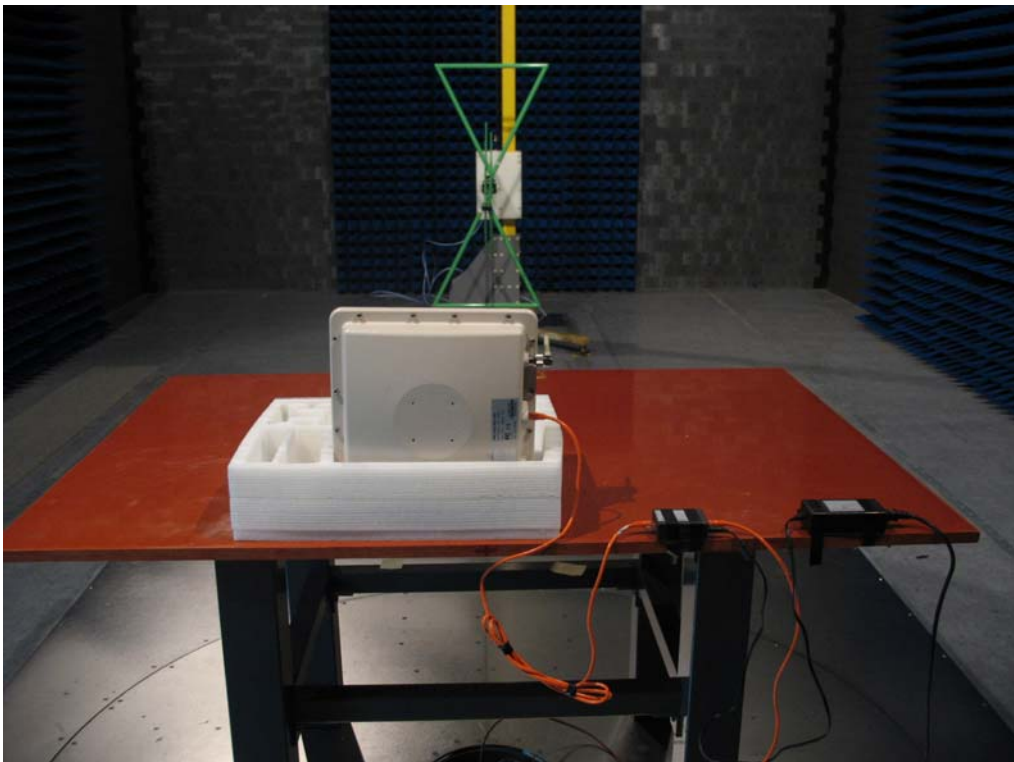
Test Mode: Mode1: Transmitter 802.11a with Outside Antenna

Description: Front View of Radiated Test for Under 1GHz



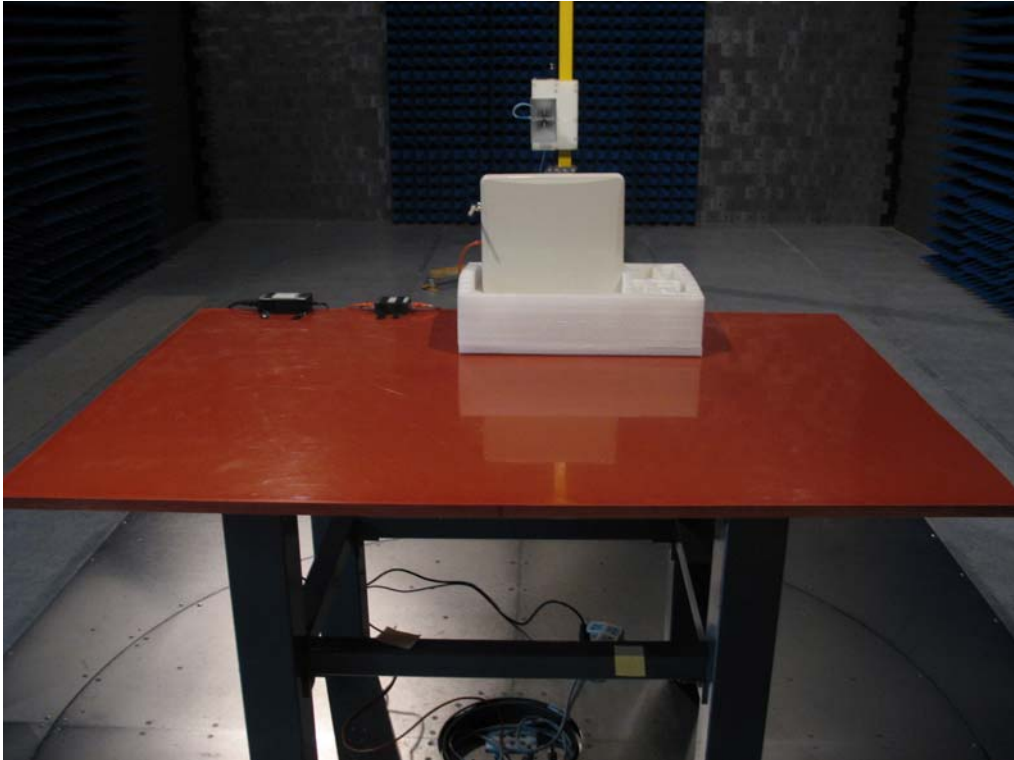
Test Mode: Mode1: Transmitter 802.11a with Outside Antenna

Description: Back View of Radiated Test for Under 1GHz



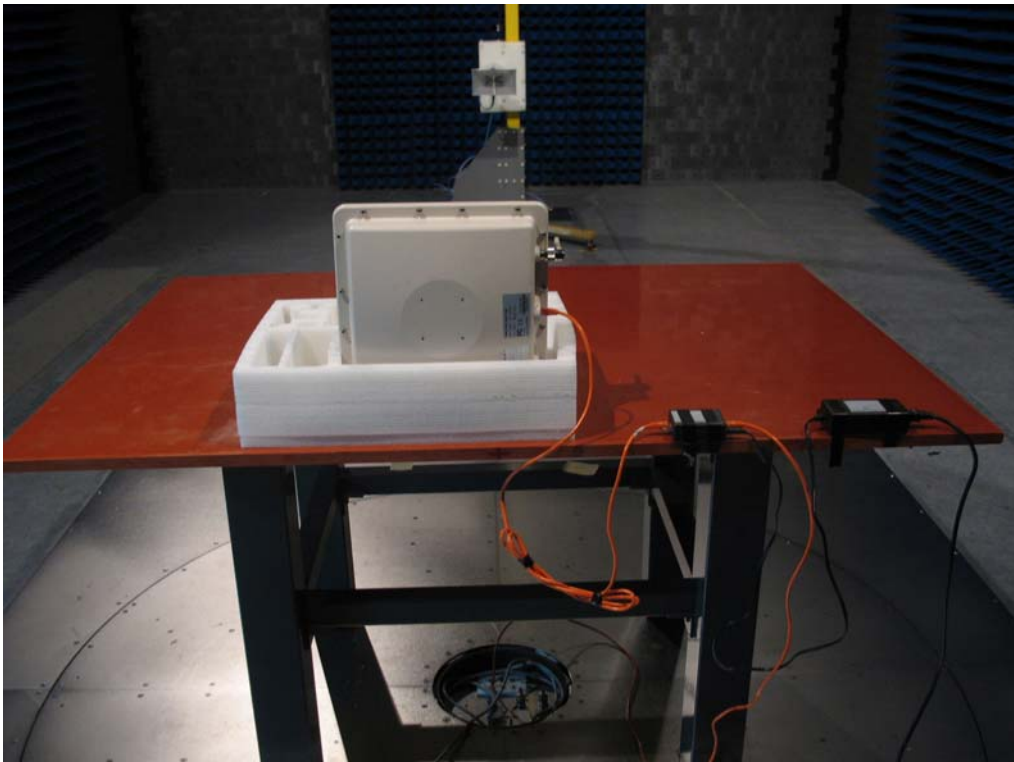
Test Mode: Mode1: Transmitter 802.11a with Outside Antenna

Description: Front View of Radiated Test for Above 1GHz



Test Mode: Mode1: Transmitter 802.11a with Outside Antenna

Description: Back View of Radiated Test for Above 1GHz

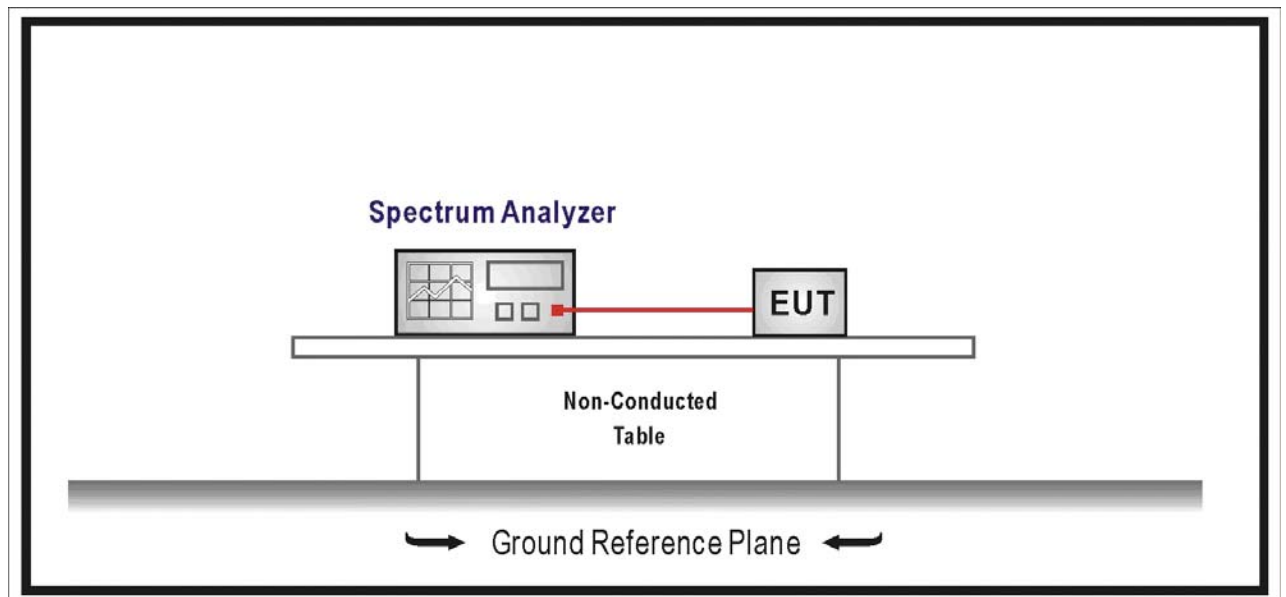


7. Peak Power Spectral Density

7.1. Test Specification

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

7.2. Test Setup



7.3. 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.

7.4. Deviation from Test Standard

No deviation.

7.5. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-E)		
Test Item	Peak Power Spectral Density		
Test Mode	Mode1: 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)

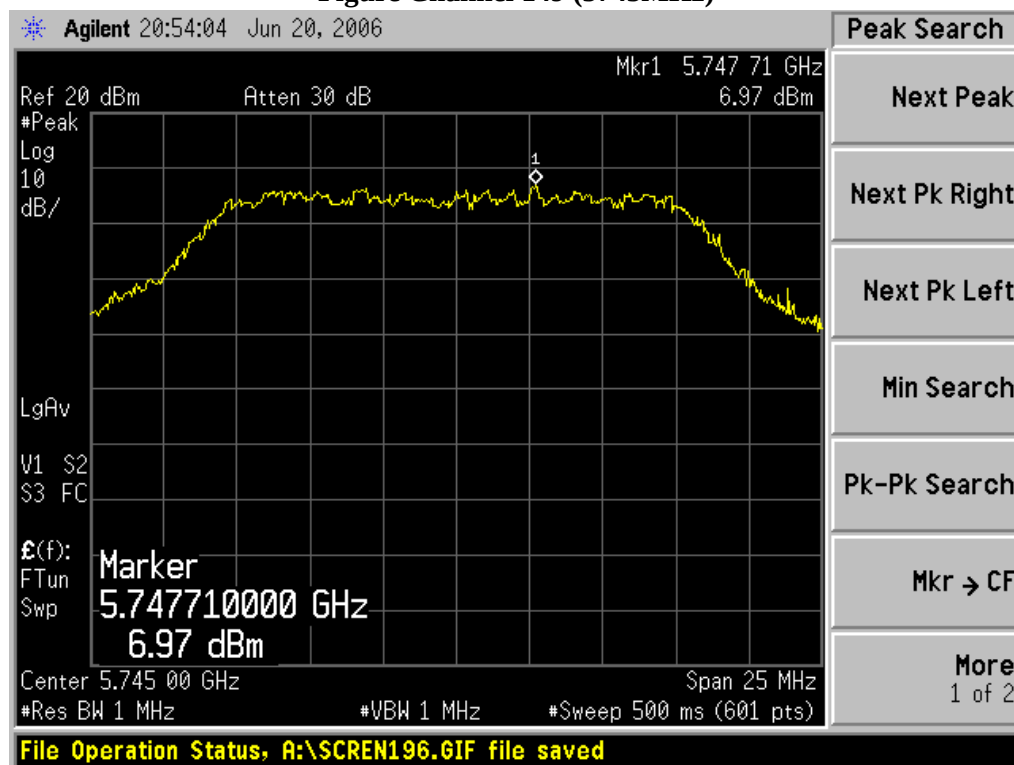


Figure Channel 157 (5785MHz)

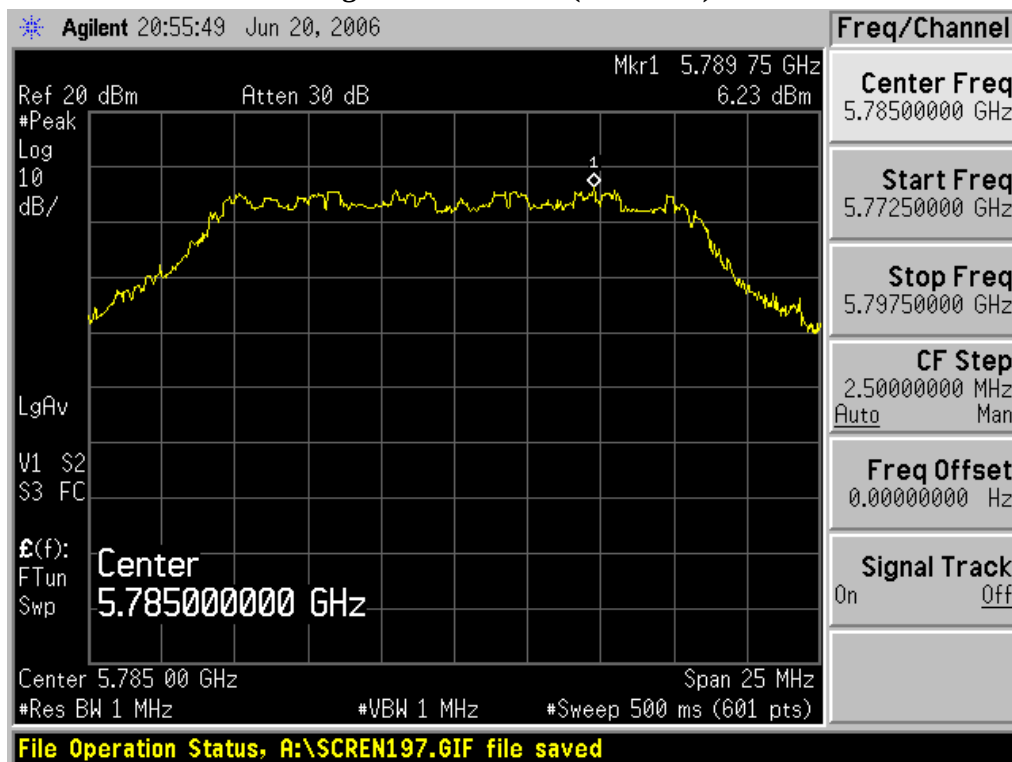
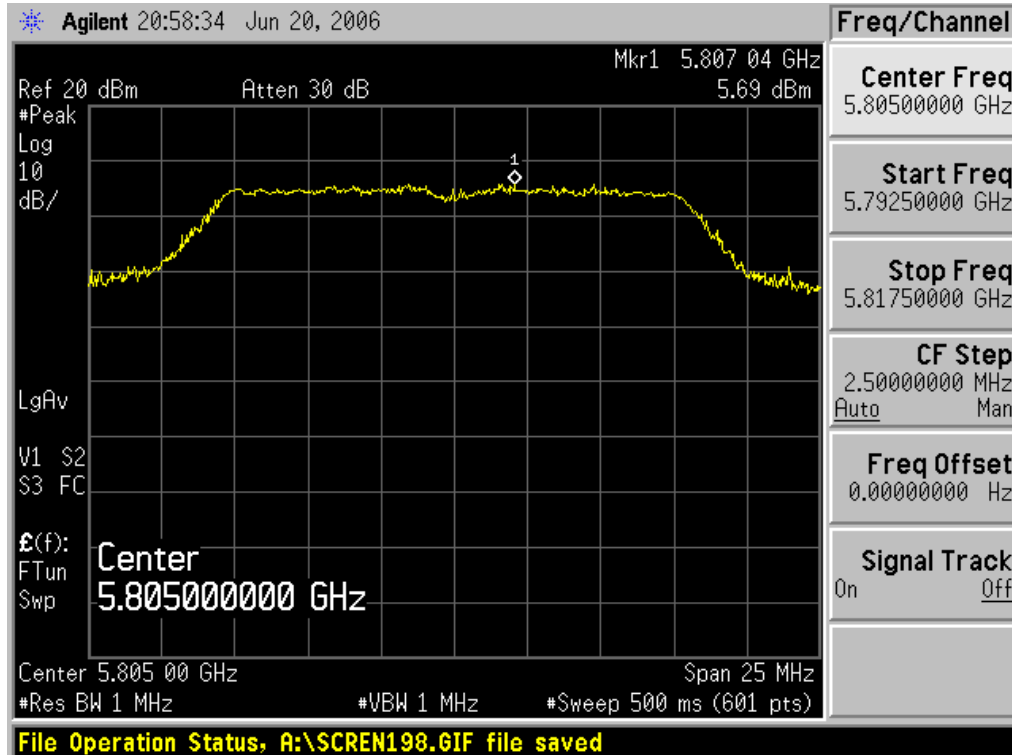


Figure Channel 161 (5805MHz)

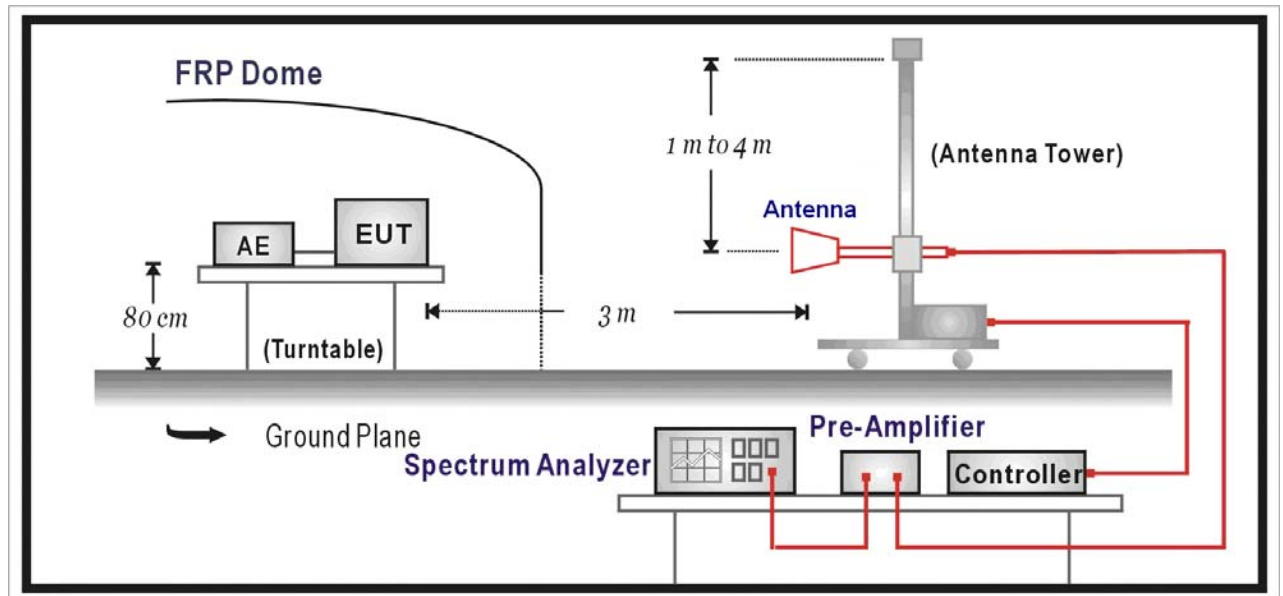


8. Band Edge

8.1. Test Specification

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

8.2. Test Setup



8.3. 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 5.47-5.725 GHz band: all emission outside of the 5.47-5.725 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.

8.4. Deviation from Test Standard

No deviation.

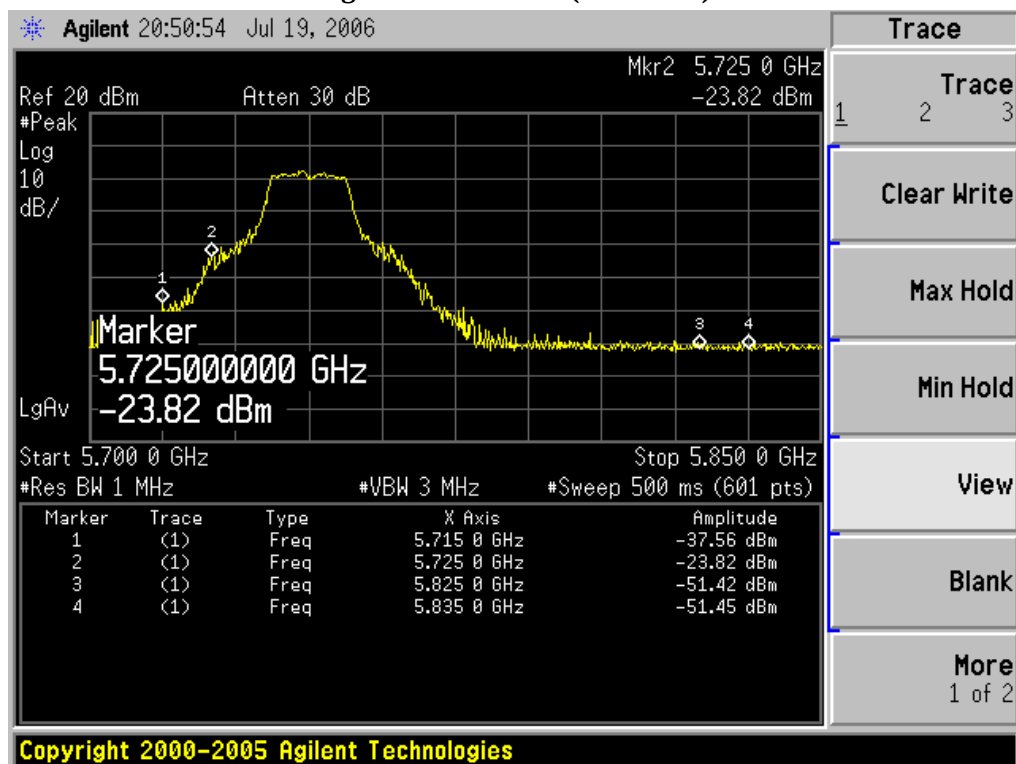
8.5. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-E)		
Test Item	Band Edge		
Test Mode	Mode1: 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)

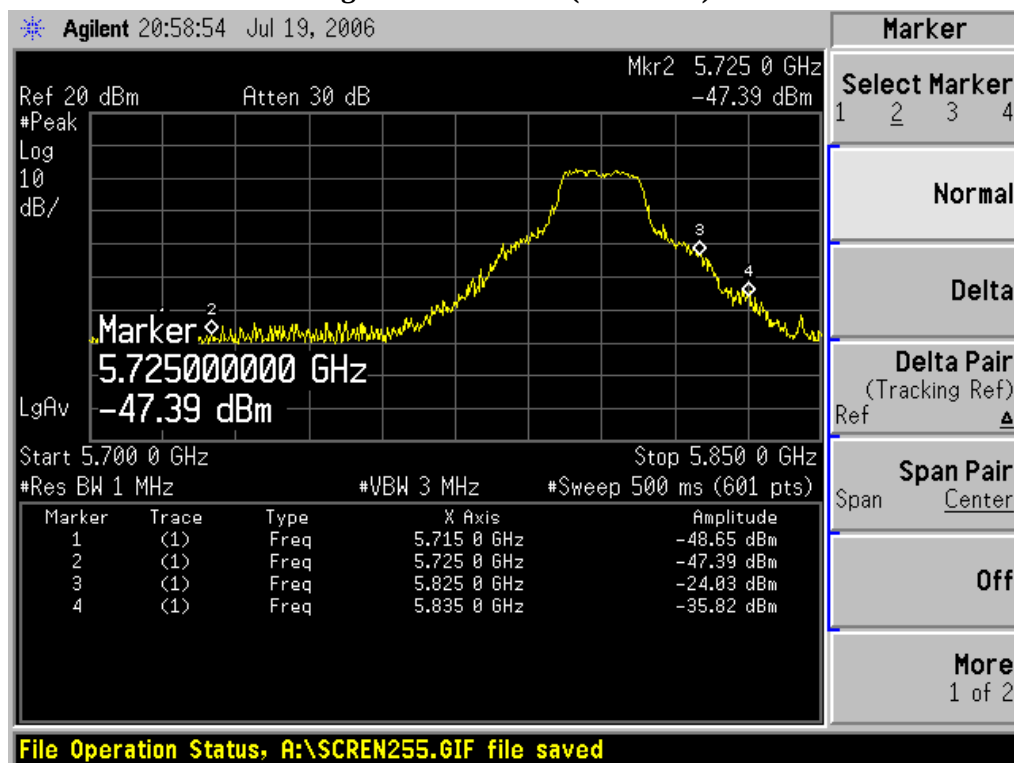


Product	Wireless Outdoor Bridge (ZA-5000-E)		
Test Item	Band Edge		
Test Mode	Mode1: Transmitter 802.11a with Outside Antenna		
Date of Test	2006/07/19	Test Site	AC-3

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)

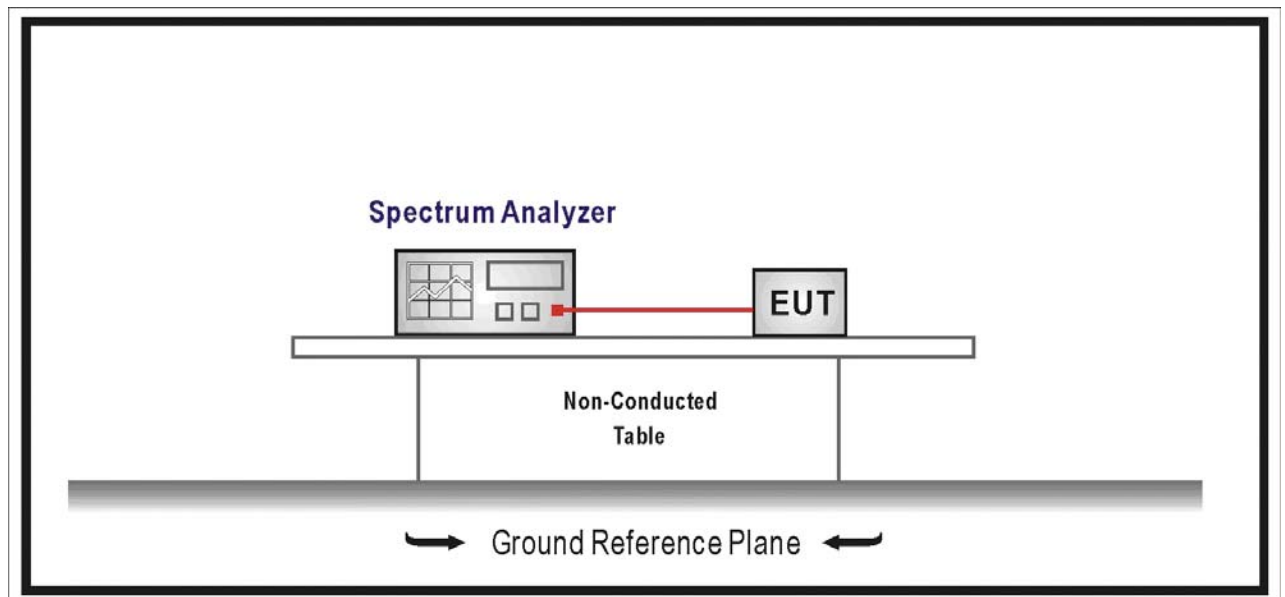


9. Peak Excursion

9.1. Test Specification

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

9.2. Test Setup



9.3. 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.

9.4. Deviation from Test Standard

No deviation.

9.5. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-E)		
Test Item	Peak Excursion		
Test Mode	Mode1: 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)

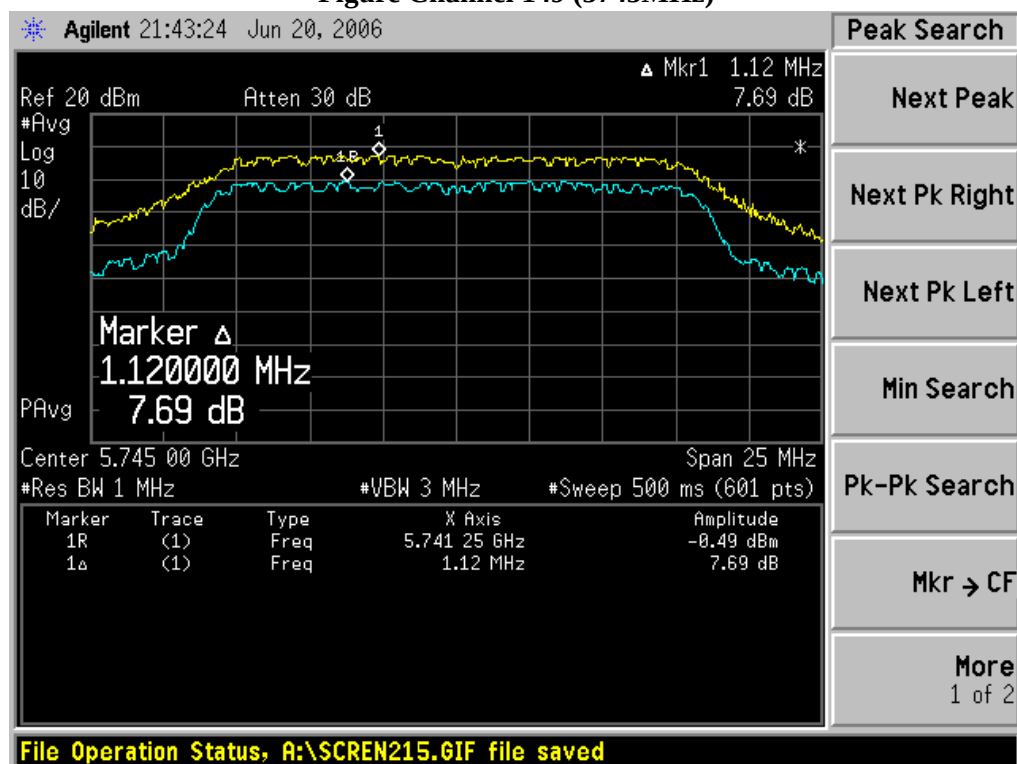


Figure Channel 157 (5785MHz)

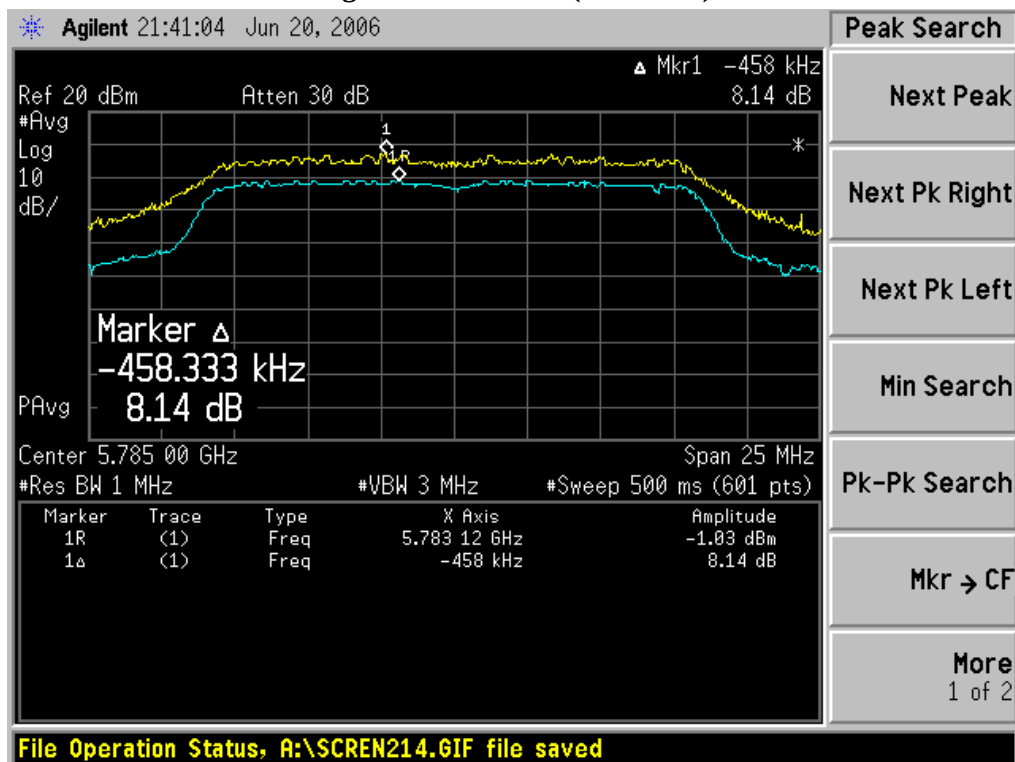
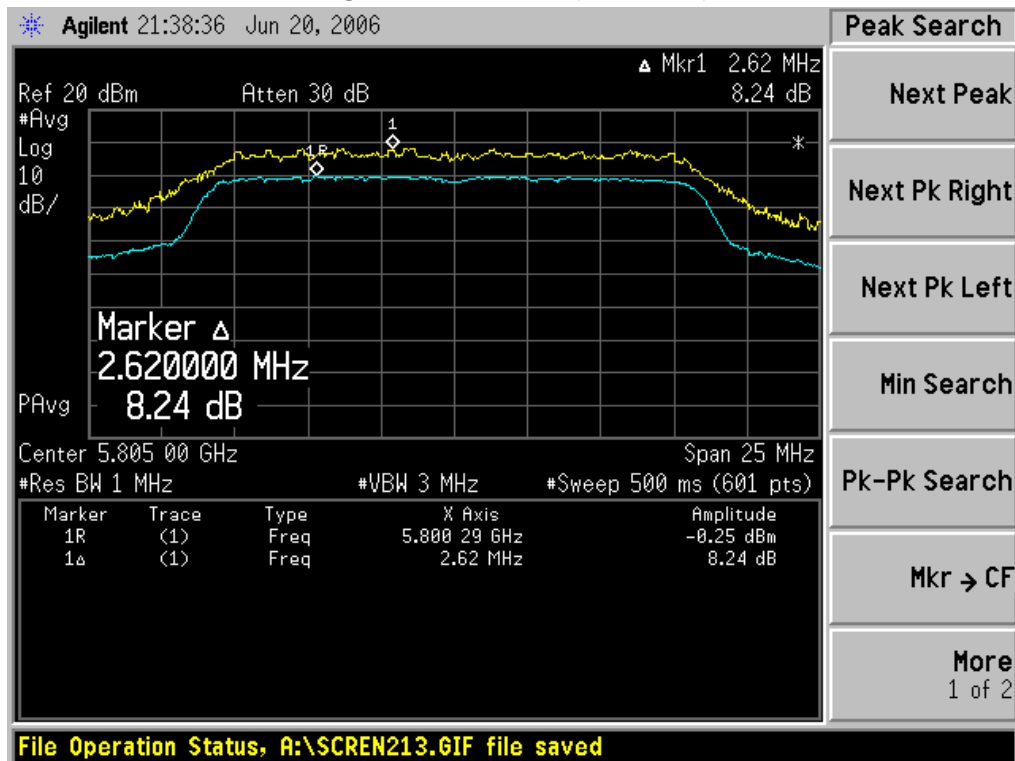


Figure Channel 161 (5805MHz)

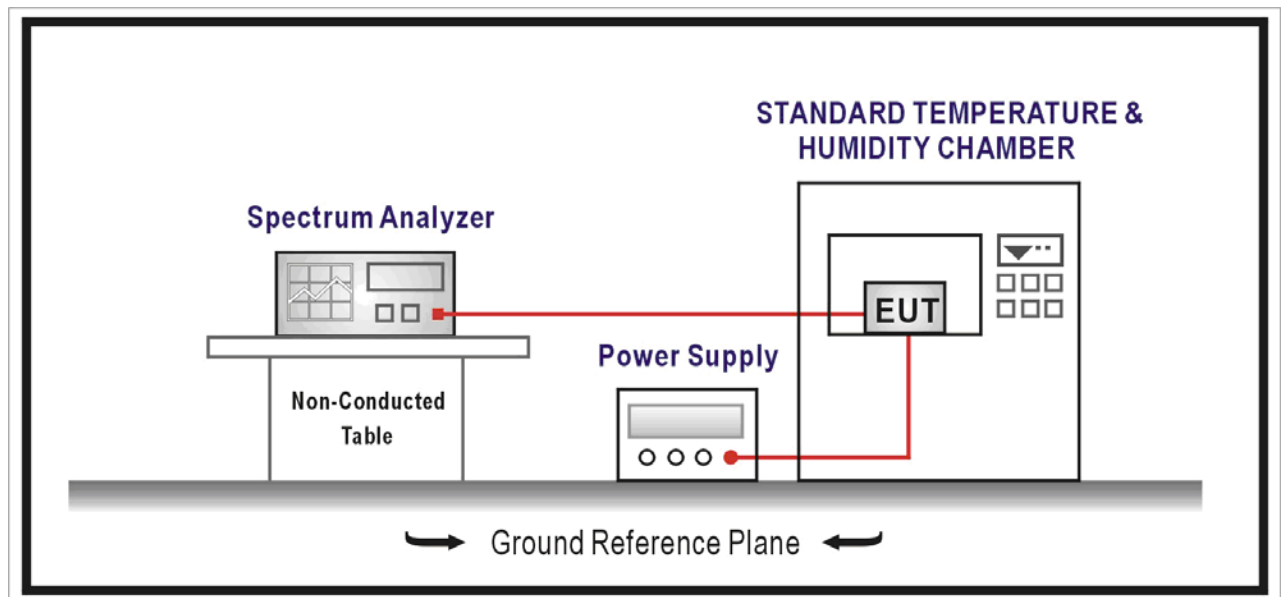


10. Frequency Stability

10.1. Test Specification

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

10.2. Test Setup



10.3. 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

10.4. Deviation from Test Standard

No deviation.

10.5. Test Result

Product	Wireless Outdoor Bridge (ZA-5000-E)		
Test Item	Frequency Stability		
Test Mode	Mode1: 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 (°C)	Voltage (VAC)	0 minutes		2 minutes		5 minutes		10 minutes	
		Measured (MHz)	Tolerance (%)	Measured (MHz)	Tolerance (%)	Measured (MHz)	Tolerance (%)	Measured (MHz)	Tolerance (%)
0 °C	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 °C	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 °C	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