EMI TEST REPORT

Test Report No. : 25LE0018-YK-1

Applicant	:	**BUFFALO, Inc.**
Type of Equipment	:	**Air Station (High Power Wireless Router)**
Model No.	:	**WHR-HP-G54**
FCC ID	:	**FDI-09101577-0**
Test Standard	:	**FCC Part15 Subpart C, Section 15.207, Section 15.247: 2005**
Test Result	:	**Complied**

1. This test report shall not be reproduced except in full, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this test report are traceable to the national or international standards.

Date of test: July 12, 27, 28 and 29, 2005

Tested by: Takahiro Suzuki & Toyokazu Imamura

Approved by: Osamu Watatani
Site Manager of Yamakita EMC Lab.

UL Apex Co., Ltd.
YAMAKITA EMC LAB.
907 Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken, 258-0124 JAPAN

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1 Applicant Information

Company Name	:	BUFFALO Inc.
Brand Name	:	BUFFALO
Address	:	15 Shibata Hondori 4-chome Minami-ku, Nagoya-shi, Aichi-ken 457-8520 JAPAN
Telephone Number	:	+81-52-619-1860
Facsimile Number	:	+81-52-619-1204
Contact Person	:	Koichi Kimura

2 Product Description

Type of Equipment	:	Air Station (High Power Wireless Router)
Model No.	:	WHR-HP-G54
Serial No.	:	D-01
Rating	:	DC5V
Country of Manufacture	:	Taiwan
Receipt Date of Sample	:	July 4, 2005
Condition of EUT	:	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)

Model: WHR-HP-G54 (referred to as the EUT in this report) is Air Station (a High Power Wireless Router).

The clock frequency used in EUT: 264MHz (CPU)

Equipment type	:	Transceiver
Frequency of operation	:	2412 - 2462 MHz
Bandwidth	:	22 MHz
Channel spacing	:	5 MHz
Channel number	:	11 channels
Type of modulation	:	DSSS
Antenna type	:	Main: Monopole antenna Sub (for Receiving only): Monopole antenna
Antenna connector type	:	Reverse SMA
Antenna gain	:	Main: 2.0 dBi Sub: 1.34 dBi
Mode of operation	:	Simplex
Emission Designation	:	G1D
Operation temperature range	:	0 ~ 40 deg. C.

*FCC Part15.31 (e)

Host devise (WHR-HP-G54) provides the Wireless LAN Module with stable power supply, and the power is not changed when voltage of the High Power Wireless Router is varied. Therefore, the equipment complies power supply regulation.

*FCC Part15.203

The High Power Wireless Router complies FCC Part15.203 Antenna requirement since the antenna of WHR-HP-G54 doesn't use a standard antenna jack or electrical connector.

3 Test Specification, Procedures and Results

3.1 Test specification

Test specification : FCC Part15 Subpart C: 2005
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits: 2005
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz: 2005

3.2 Procedures & Results

Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin	Results
Conducted Emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	Section 15.207	-	N/A	3.9dB (0.3820MHz, L1, AV, Transmitting 2412MHz IEEE802.11g)	Complied
6dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247 (a)(2)	Conducted	N/A	*See data.	Complied
Maximum Peak Output Power	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247 (b)(3)	Conducted	N/A		Complied
Spurious Emission & Restricted Band Edges	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247 (d)	Conducted/ Radiated	N/A	Radiated: 0.4dB (400.00MHz, QP, Vertical, Transmitting 2437MHz IEEE802.11g)	Complied
Power Density	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247 (e)	Conducted	N/A	*See data.	Complied

Note: UL Apex's EMI Work Procedures No.QPM05.
These tests were also referred to "Guidance on Measurement for Digital Transmission Systems Section15.247".

* No addition, exclusion nor deviation has been made from the standard.

3.3 Uncertainty

Conducted emission
The measurement uncertainty (with 95% confidence level) for this test is ±1.3dB.
The data listed in this test report has enough margin, more than site margin.

Radiated emission
The measurement uncertainty (with 95% confidence level) for this test using Biconical antenna is ±4.8dB.
The measurement uncertainty (with 95% confidence level) for this test using Logperiodic antenna is ±5.2dB.
The measurement uncertainty (with 95% confidence level) for this test using Horn antenna is ±6.6dB.
The data listed in this report meets the limits unless the uncertainty is taken into consideration.

3.4 Test Location

UL Apex Co., Ltd. Yamakita EMC Lab.
907, Kawanishi, Yamakita-machi, Ashigarakami-gun, Kanagawa-ken 258-0124 JAPAN
Telephone number : +81 465 77 1011
Facsimile number : +81 465 77 2112
NVLAP Lab. code : 200441-0

No. 1 test site has been fully described in a report submitted to FCC office, and accepted on September 20, 2002 (Registration No.: 95486).
IC Registration No. : IC3489A

No. 2 test site has been fully described in a report submitted to FCC office, and accepted on April 4, 2005 (Registration No.: 466226).
IC Registration No. : IC3489A-2

No. 1 anechoic chamber has been fully described in a report submitted to FCC office, and accepted on November 8, 2002 (Registration No.: 95967).
IC Registration No. : IC3489A-B

Test room	Width x Depth x Height (m)	Test room	Width x Depth x Height (m)
No.1 shielded room	8.0 x 5.0 x 2.5	No.1 EMS lab. (Semi-anechoic chamber)	10.0 x 7.5 x 5.7
No.2 shielded room	5.0 x 4.0 x 2.5		
No.3 shielded room	4.0 x 5.0 x 2.7		

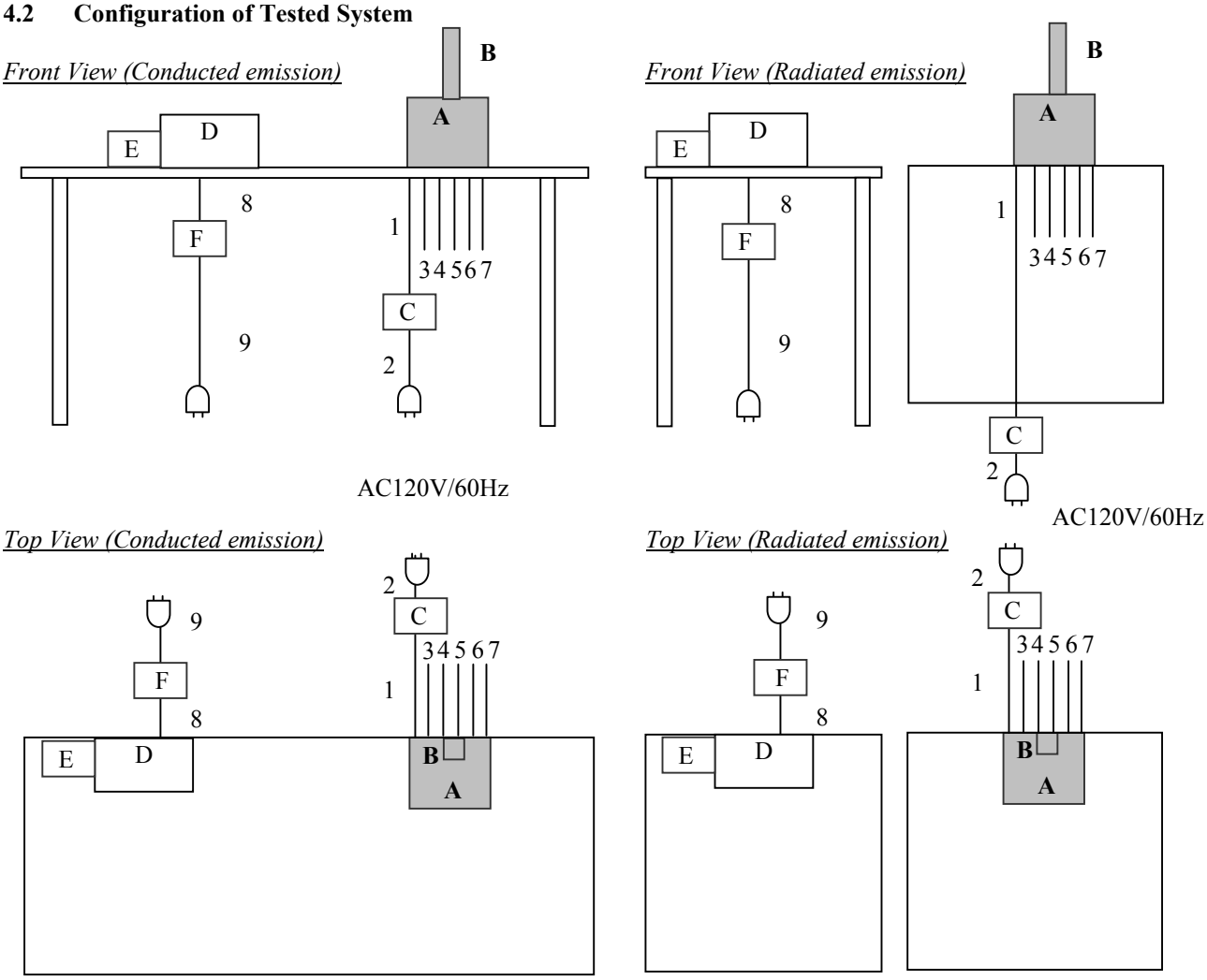
4 System Test Configuration

4.1 Justification

The system was configured in typical fashion (as a customer would normally use it) for testing.

Operation:
1) Transmitting (IEEE802.11b)
   -2412MHz (Low)
   -2437MHz (Middle)
   -2462MHz (High)
2) Transmitting (IEEE802.11g)
   -2412MHz (Low)
   -2437MHz (Middle)
   -2462MHz (High)

4.2 Configuration of Tested System



* Test data was taken under worse case conditions.

Description of EUT and support equipment

No.	Item	Model number	Serial number	Manufacturer	FCC ID (Remark)
A	Air Station (High Speed Wireless Router)	WZR-HP-G54	D-01	BUFFALO	FDI-09101577-0 (EUT)
B	Antenna	-	-	BUFFALO	(EUT)
C	AC Adaptor	UI318-0526	505-0351625	BUFFALO	-
D	Personal Computer	2662-34J	97-0542K	IBM	-
F	High Power Wireless Adapter	WLI-CB-G54HP	000D0B3E8CC0	BUFFALO	-
E	AC Adaptor	02K6661	11S02K6661Z1Z2JY16D5AG	IBM	-

List of cables used

No.	Name	Length (m)	Shield	Back-shell material	Remark
1	DC Cable	0.5	Unshielded	Polyvinyl chloride	-
2	AC Power Cable	1.85	Unshielded	Polyvinyl chloride	-
3	LAN cable	0.6	Unshielded	Polyvinyl chloride	-
4	LAN cable	0.6	Unshielded	Polyvinyl chloride	-
5	LAN cable	0.6	Unshielded	Polyvinyl chloride	-
6	LAN cable	0.6	Unshielded	Polyvinyl chloride	-
7	LAN cable	0.6	Unshielded	Polyvinyl chloride	-
8	DC Cable	1.75	Unshielded	Polyvinyl chloride	-
9	AC Power Cable	0.9	Unshielded	Polyvinyl chloride	-

5 Conducted Emissions

5.1 Operating environment

The test was carried out in No.1 shielded room.

5.2 Test configuration

EUT was placed on a platform of nominal size, 1m by 1.8m, raised 80cm above the conducting ground plane.
The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals was aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from a Line Impedance Stabilization Network (LISN) and excess AC cable was bundled in center. I/O cables were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.

5.3 Test conditions

Frequency range : 0.15 - 30MHz
EUT operation mode : Transmitting

5.4 Test procedure

The EUT was connected to a LISN (AMN).
An overview sweep with peak detection has been performed.
The Conducted emission measurements were made with the following detector function of the test receiver.
Detector: QP/AV
IF Bandwidth: 9kHz

5.5 Results

Summary of the test results : Pass
Test data : APPENDIX 2 Page 17 to 26

Date : July 12, 2005 Test engineer : Takahiro Suzuki

6 6dB Bandwidth

Test Procedure
The bandwidth was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass Test data: APPENDIX 2 Page 27 to 28
Date: July 29, 2005 Test engineer : Toyokazu Imamura

7 Maximum Peak Output Power

Test Procedure
The Maximum Peak Output Power was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass Test data: APPENDIX 2 Page 29 to 30
Date: July 29, 2005 Test engineer : Toyokazu Imamura

8 Out of Band Emissions (Antenna Port Conducted)

Test Procedure
The Out of Band Emissions was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass Test data: APPENDIX 2 Page 31 to 42
Date: July 29, 2005 Test engineer : Toyokazu Imamura

9 Out of Band Emissions (Radiated)

9.1 Operating environment

The test was carried out in No.1 open site.

9.2 Test configuration

EUT was placed on a platform of nominal size, 0.5m by 0.5m, raised 80cm above the conducting ground plane.
A drawing of the set up is shown in the photos of Appendix 1.

9.3 Test conditions

Frequency range : 30MHz - 26GHz
Test distance : 3m
EUT operation mode : Transmitting

9.4 Test procedure

The Radiated Electric Field Strength intensity has been measured with a ground plane and at a distance of 3m.
The measuring antenna height was varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.
The measurements were performed for both vertical and horizontal antenna polarization.

In any 100kHz 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 confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

Measurements were performed with QP, PK, and AV detector.
The radiated emission measurements were made with the following detector function of the test receiver.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver	Spectrum Analyzer
Detector IF Bandwidth	QP: BW 120kHz	PK: RBW: 1MHz/VBW: 1MHz AV: RBW: 1MHz/VBW: 10Hz

The equipment and its antenna were previously checked at each position of two axes X and Y. The position in which the maximum noise occurred was chosen to put into measurement. See the table below and photographs in page 16.
With the position, the noise levels of all the frequencies were measured.

Combinations of the worst case

	Router	Antenna
Below 1GHz		
Horizontal	X	Y
Vertical	X	X
Above 1GHz		
Horizontal	X	Y
Vertical	X	X

9.5 Results

Summary of the test results : Pass
Test data : APPENDIX 2 Page 43 to 48 (30 - 1000MHz)
: APPENDIX 2 Page 49 to 60 (1 - 26GHz)

Date : July 27 and 28, 2005 Test engineer : Toyokazu Imamura

10 Peak Power Density (Antenna Port Conducted)

Test Procedure
The Out of Band Emissions was measured with a spectrum analyzer connected to the antenna port.

Summary of the test results: Pass Test data: APPENDIX 2 Page 61 to 63
Date: July 29, 2005 Test engineer : Toyokazu Imamura

APPENDIX 1: Photographs of test setup

Page 14 : Conducted emission

Page 15 : Radiated emission

Page 16 : Pre check of worse-case position

APPENDIX 2: Test Data

Page 17 - 26 : Conducted Emission

Page 27 - 28 : 6dB Bandwidth

Page 29 - 30 : Maximum Peak Output Power

Page 31 - 42 : Out of Band Emissions (Antenna Port Conducted)

Page 43 - 60 : Out of Band Emissions (Radiated)
43-48 : 30-1000MHz
49-60 : 1-26GHz

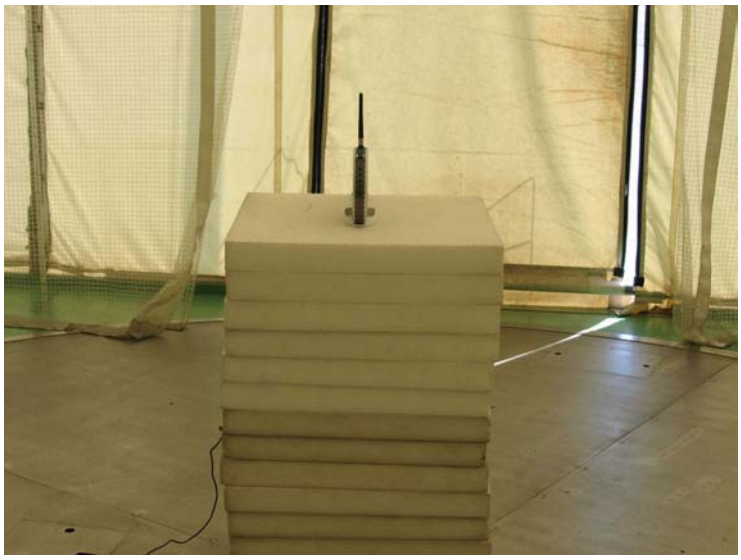
Page 61 - 63 : Peak Power Density

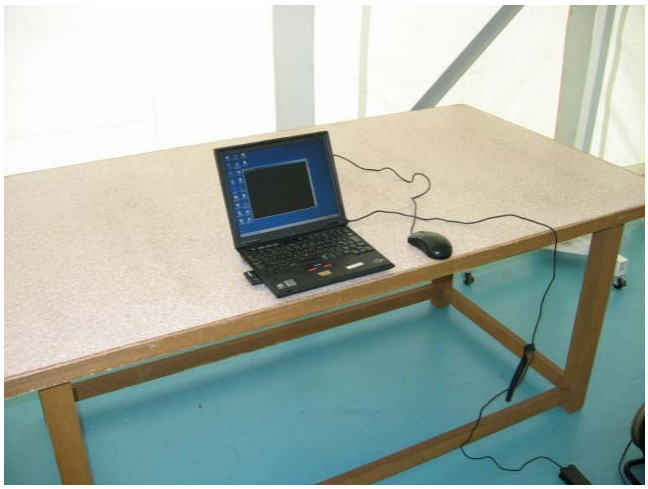
APPENDIX 3: Test instruments

Page 64 : Test instruments

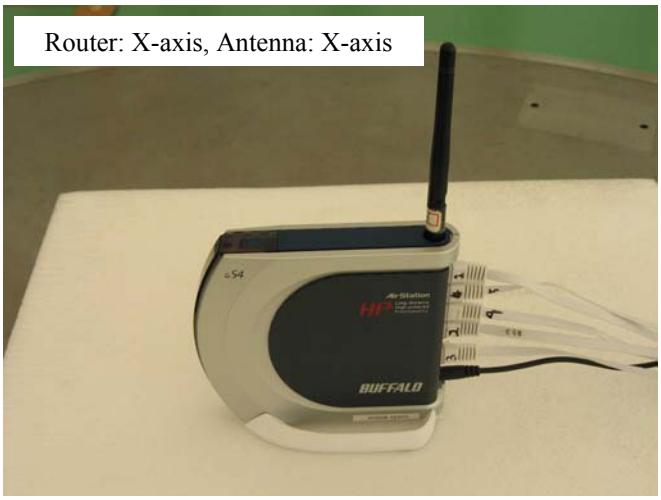
Conducted emission

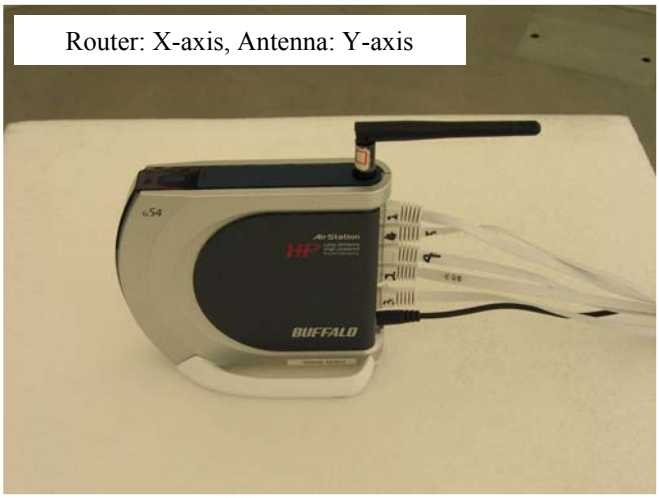
Radiated emission

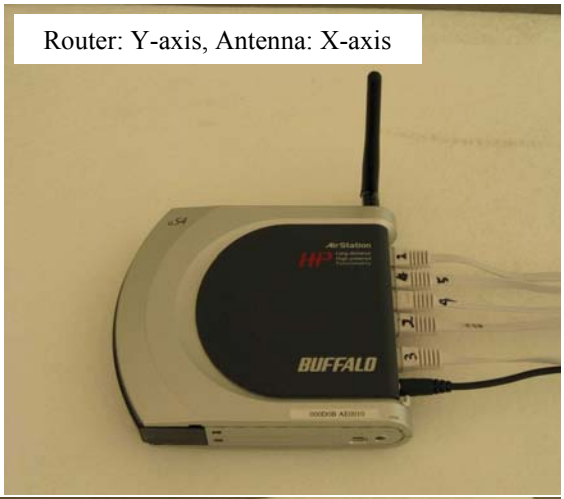




Pre check of worse-case position







DATA OF CONDUCTION TEST

UL Apex Co.,Ltd.
YAMAKITA No.1 SHIELD TEST ROOM
Report No. : 25LE0018-YK-1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2412MHz
Remarks : Normal, IEEE802.11b
Date : 7/12/2005
Phase : Single Phase
Temperature : 24 ℃ Engineer : Takahiro Suzuki
Humidity : 68 %
Regulation : FCC Part15C §15.207. (CISPR Pub.22)

No.	FREQ. [MHz]	READING(N) QP [dBμV]	READING(N) AV [dBμV]	READING(L1) QP [dBμV]	READING(L1) AV [dBμV]	LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT QP [dB]	RESULT AV [dBμV]	LIMITS QP [dBμV]	LIMITS AV [dBμV]	MARGIN QP [dB]	MARGIN AV [dB]
1.	0.1637	53.7	42.0	53.7	42.8	0.1	0.1	0.0	53.9	43.0	65.3	55.3	11.4	12.3
2.	0.3290	45.9	41.7	46.0	43.0	0.1	0.1	0.0	46.2	43.2	59.5	49.5	13.3	6.3
3.	0.4988	40.4	34.2	40.0	34.3	0.0	0.2	0.0	40.6	34.5	56.0	46.0	15.4	11.5
4.	0.8251	40.6	34.4	41.1	35.0	0.1	0.2	0.0	41.4	35.3	56.0	46.0	14.6	10.7
5.	0.9941	42.3	34.6	42.7	34.9	0.1	0.2	0.0	43.0	35.2	56.0	46.0	13.0	10.8
6.	1.6544	42.4	31.0	42.6	31.4	0.1	0.3	0.0	43.0	31.8	56.0	46.0	13.0	14.2

CALCULATION: READING + LISN FACTOR + CABLE LOSS + ATTEN.

■LISN :KLS-01(NSLK8126) ■COAXIAL CABLE:KCC-14/15/16/18
■PULSE LIMTTER:KPL-01(PL01) ■EMI RECEIVER:KTR-02(ESCS30)

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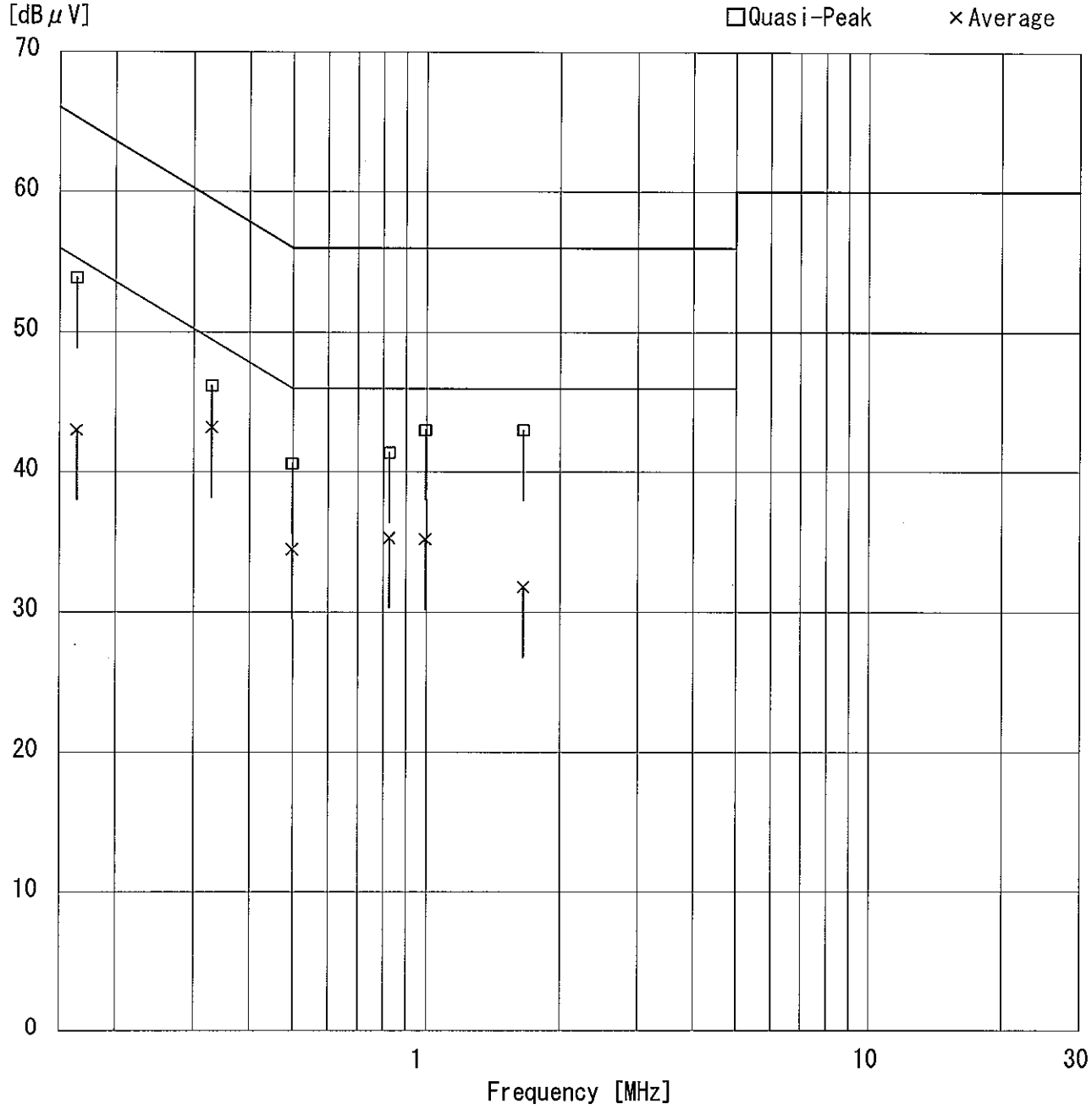

DATA OF CONDUCTION TEST CHART

UL Apex Co.,Ltd.
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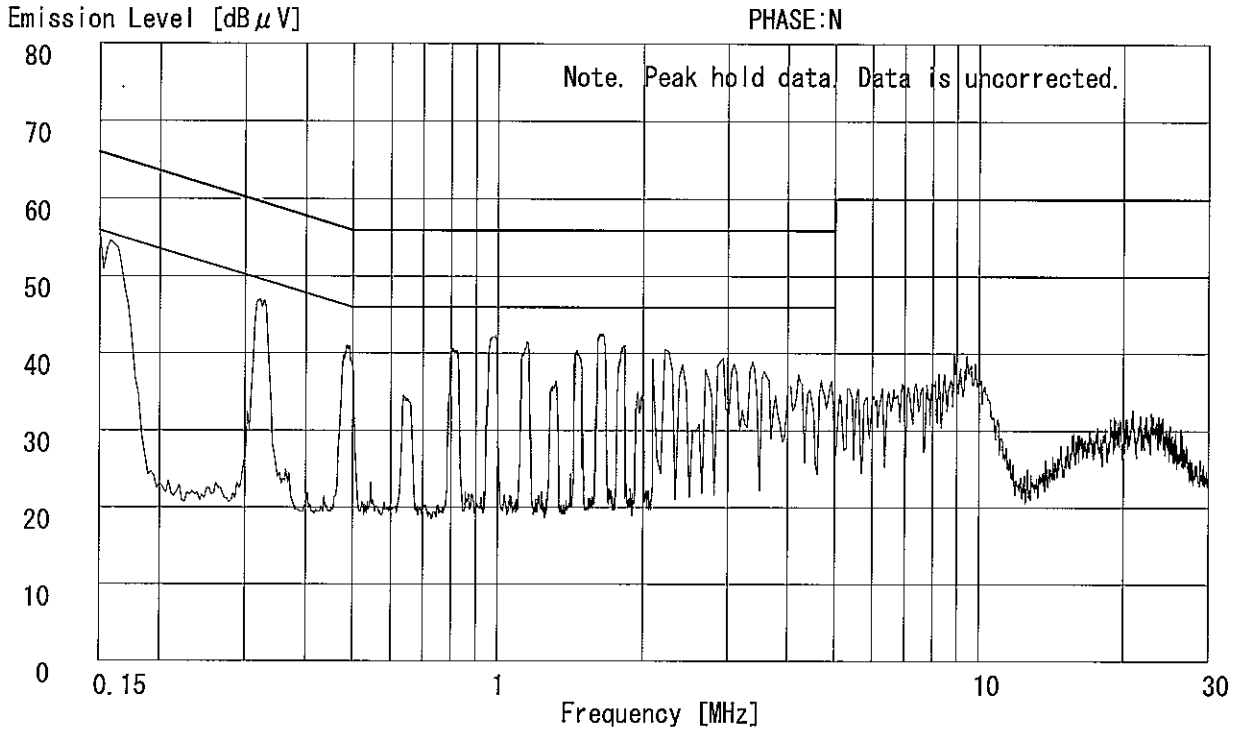
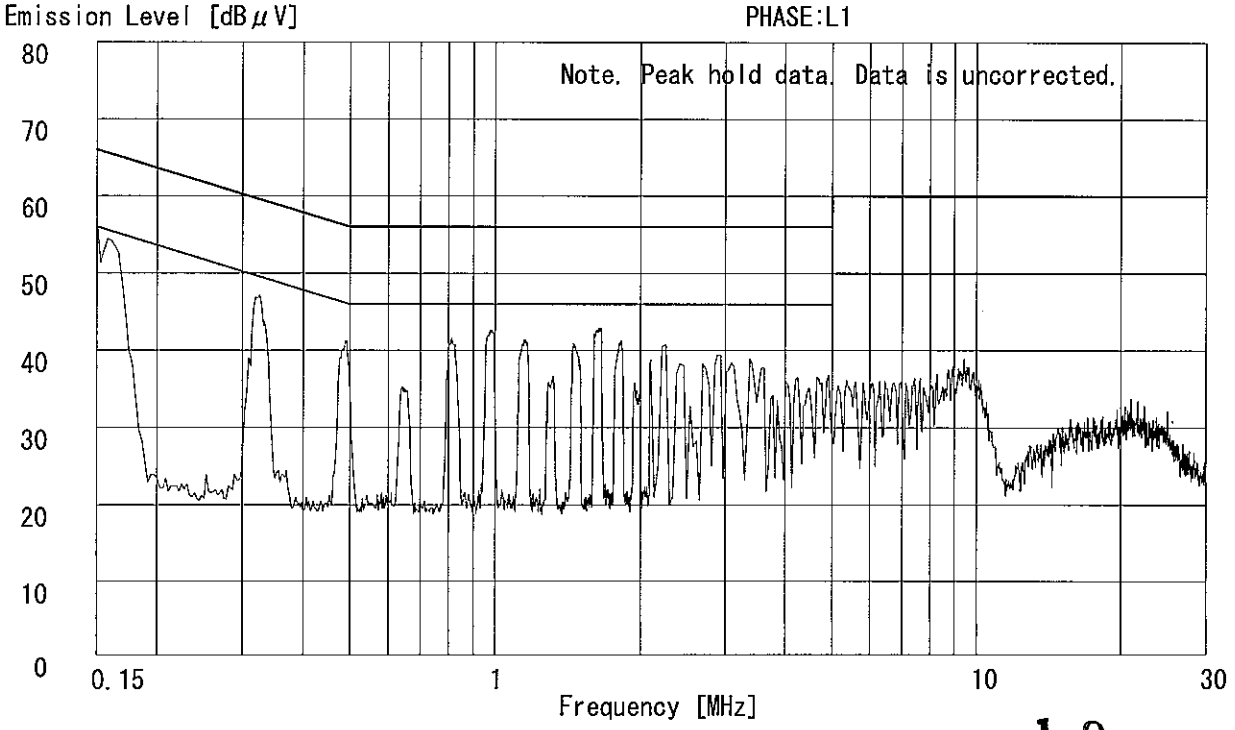
Regulation 1	: FCC Part15C §15.207. (CISPR Pub.22)
Regulation 2	: FCC Part15C §15.207. (CISPR Pub.22)

Engineer : Takahiro Suzuki





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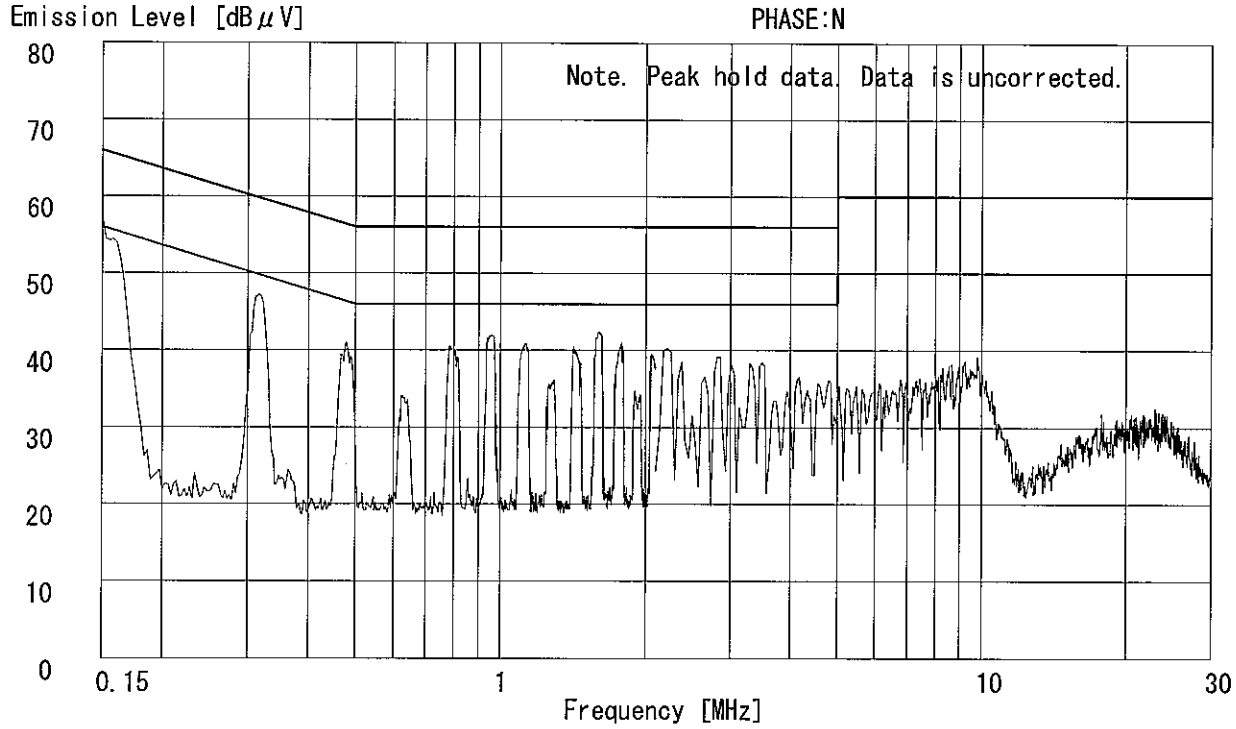

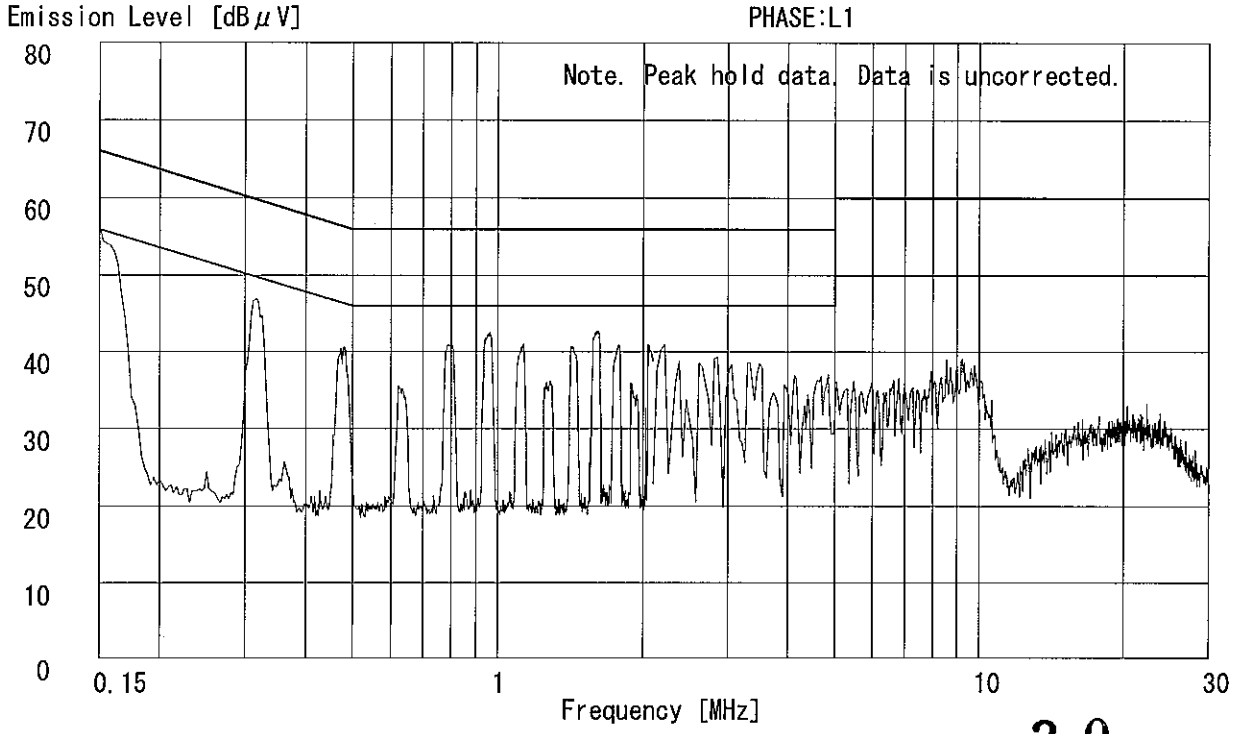

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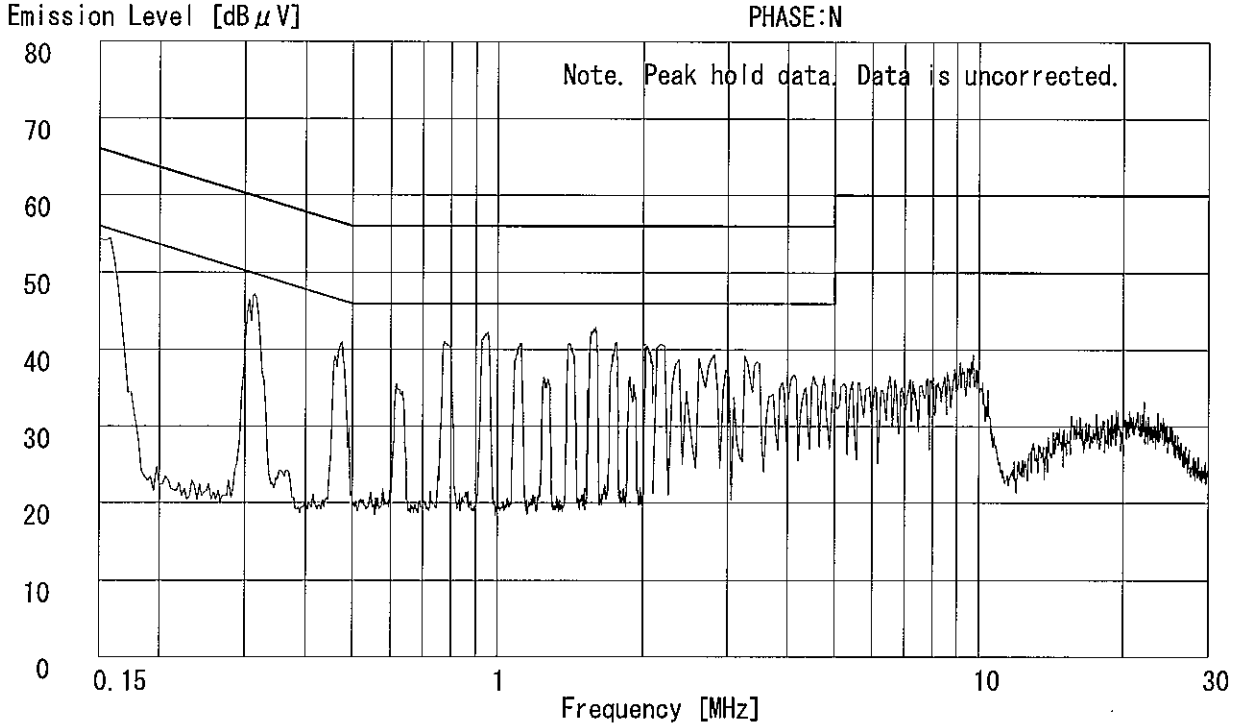
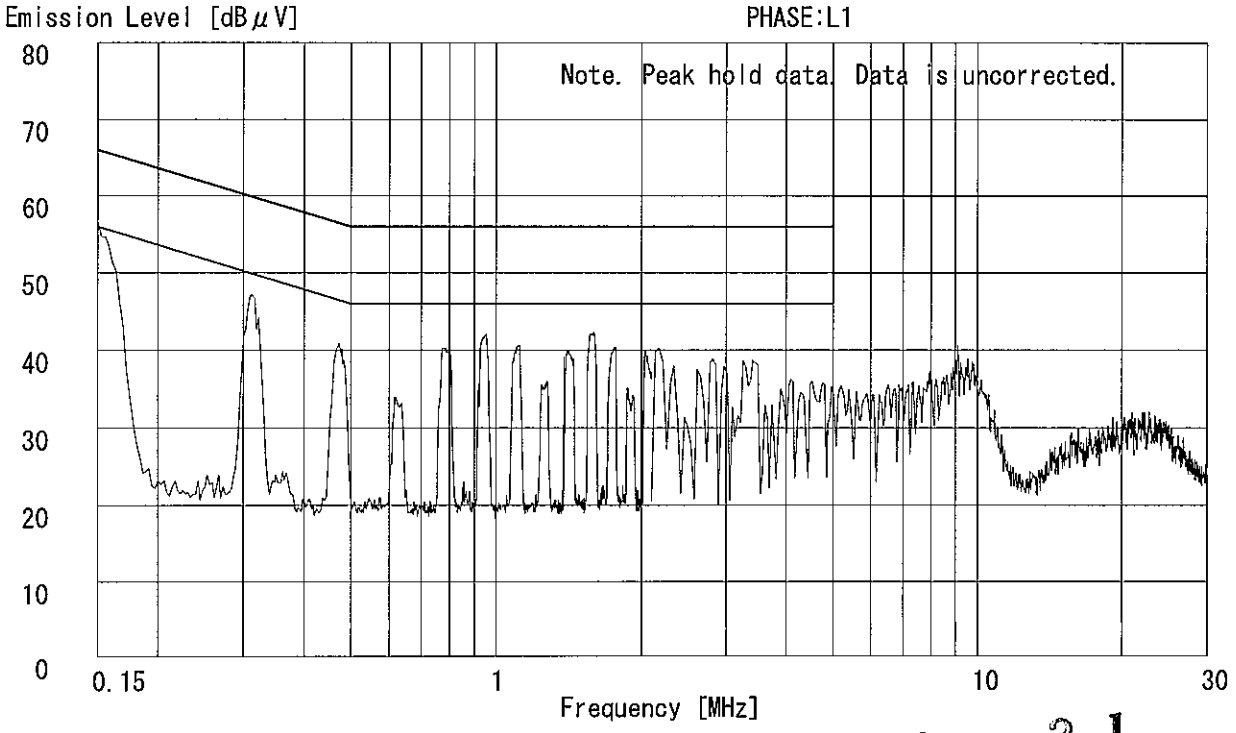
Humidity : 68 %
Regulation 1 : FCC Part15C §15.207.(CISPR Pub.22)
Regulation 2 : FCC Part15C §15.207.(CISPR Pub.22)





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Humidity : 68 %
Regulation : FCC Part15C §15.207.(CISPR Pub.22)

No.	FREQ. [MHz]	READING(N) QP [dBμV]	READING(N) AV [dBμV]	READING(L1) QP [dBμV]	READING(L1) AV [dBμV]	LISN FACTOR [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT QP [dB]	RESULT AV [dBμV]	LIMITS QP [dBμV]	LIMITS AV [dBμV]	MARGIN QP [dB]	MARGIN AV [dB]
1.	0.1668	51.1	37.8	50.8	43.1	0.1	0.1	0.0	51.3	43.3	65.1	55.1	13.8	11.8
2.	0.3820	43.3	37.5	45.6	44.2	0.0	0.1	0.0	45.7	44.3	58.2	48.2	12.5	3.9
3.	0.5843	37.0	27.5	41.0	38.3	0.0	0.2	0.0	41.2	38.5	56.0	46.0	14.8	7.5
4.	0.9690	39.2	30.0	40.7	35.4	0.1	0.2	0.0	41.0	35.7	56.0	46.0	15.0	10.3
5.	1.1662	37.9	26.0	43.6	36.9	0.1	0.2	0.0	43.9	37.2	56.0	46.0	12.1	8.8
6.	1.9425	38.0	27.9	42.1	32.3	0.1	0.3	0.0	42.5	32.7	56.0	46.0	13.5	13.3

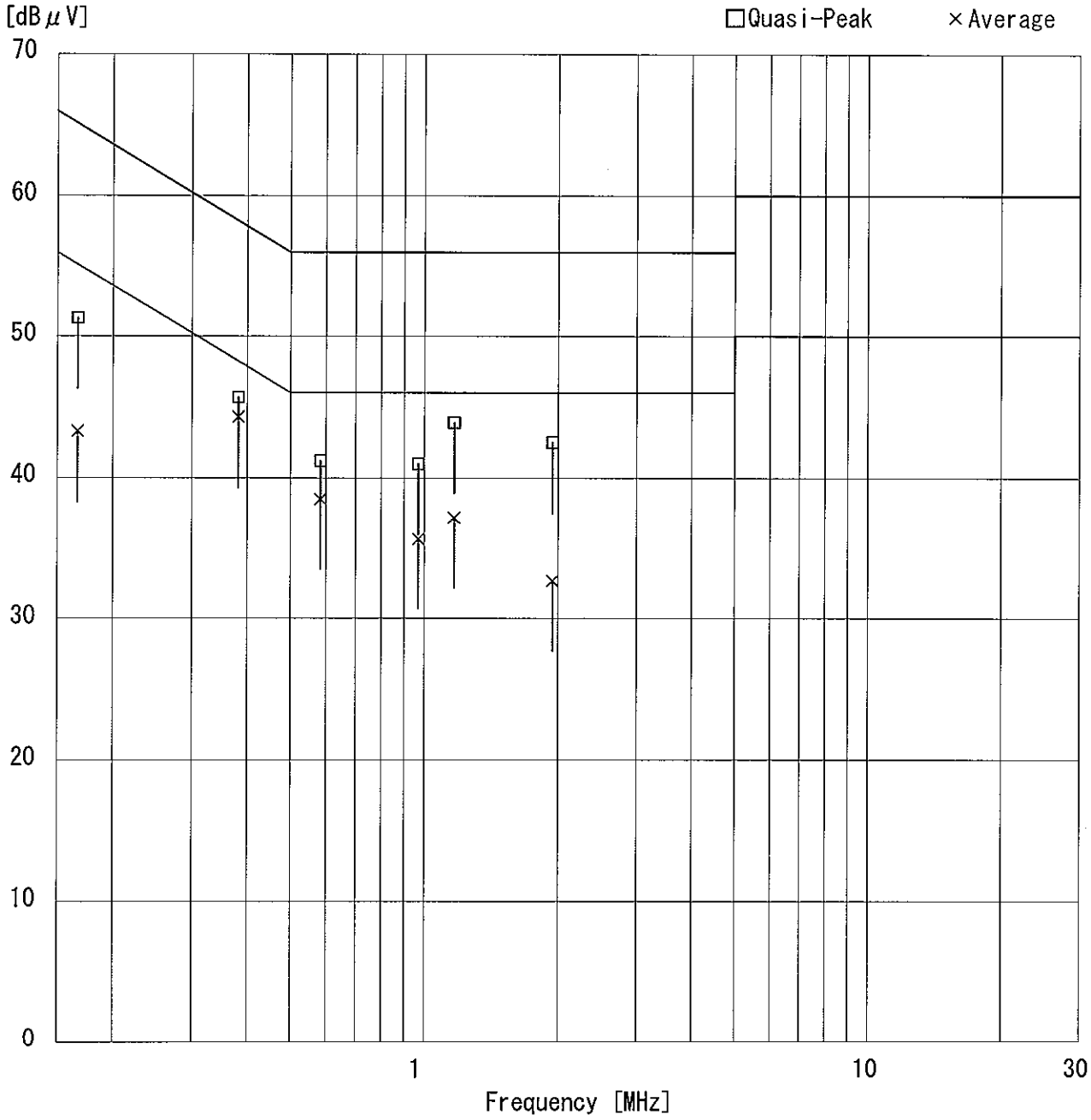
CALCULATION: READING + LISN FACTOR + CABLE LOSS + ATTEN.

■LISN :KLS-01(NSLK8126) ■COAXIAL CABLE:KCC-14/15/16/18
■PULSE LIMTTER:KPL-01(PL01) ■EMI RECEIVER:KTR-02(ESCS30)

DATA OF CONDUCTION TEST

UL Apex Co.,Ltd.
YAMAKITA No.1 SHIELD TEST ROOM
Report No. : 25LE0018-YK-1

Applicant	: BUFFALO Inc.		
Kind of Equipment	: High Speed Wireless Router		
Model No.	: WHR-HP-G54		
Serial No.	: D-01		
Power	: AC120V/60Hz		
Mode	: Transmitting:2412MHz		
Remarks	: Normal, IEEE802.11g		
Date	: 7/12/2005		
Phase	: Single Phase		
Temperature	: 24 ℃	Engineer	: Takahiro Suzuki
Humidity	: 68 %		
Regulation	: FCC Part15C §15.207.(CISPR Pub.22)		

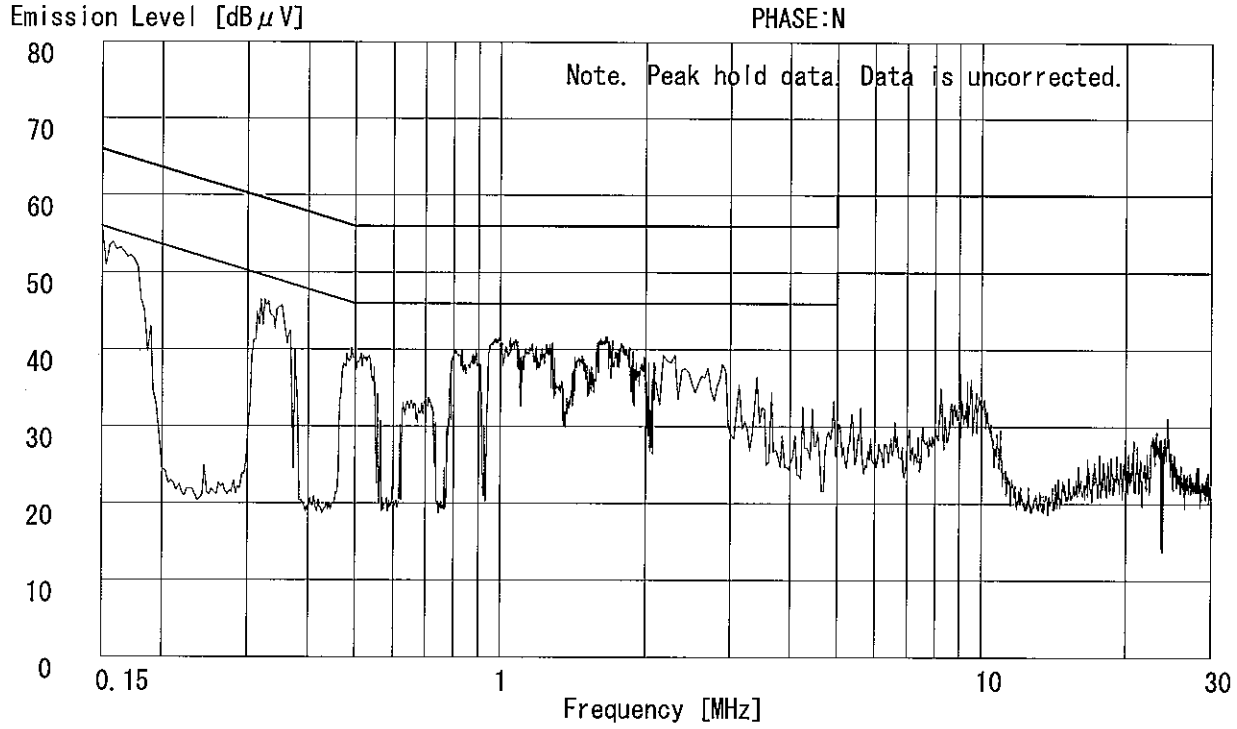


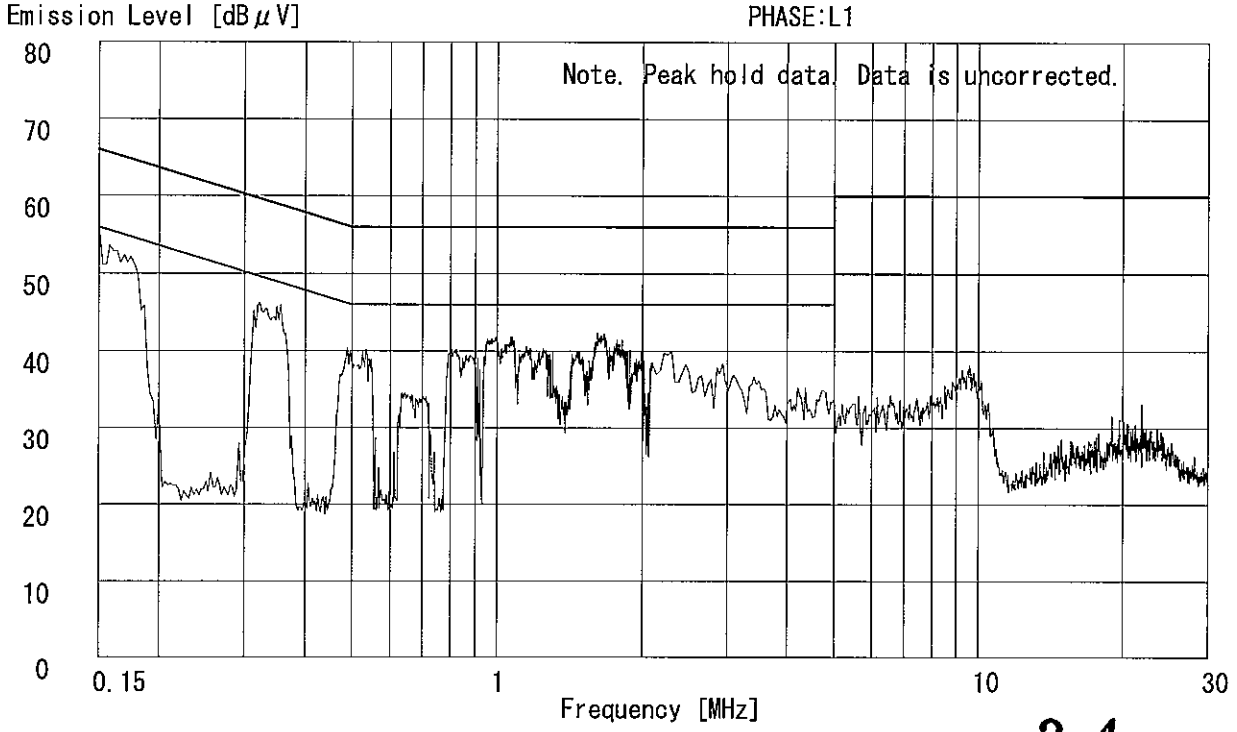
DATA OF CONDUCTION TEST CHART

UL Apex Co.,Ltd.
YAMAKITA No.1 SHIELD TEST ROOM
Report No. : 25LE0018-YK-1

Applicant	: BUFFALO Inc.
Kind of Equipment	: High Speed Wireless Router
Model No.	: WHR-HP-G54
Serial No.	: D-01
Power	: AC120V/60Hz
Mode	: Transmitting:2412MHz
Remarks	: Normal, IEEE802.11g
Date	: 7/12/2005
Phase	: Single Phase
Temperature	: 24 ℃
Humidity	: 68 %
Regulation 1	: FCC Part15C §15.207.(CISPR Pub.22)
Regulation 2	: FCC Part15C §15.207.(CISPR Pub.22)

Engineer : Takahiro Suzuki



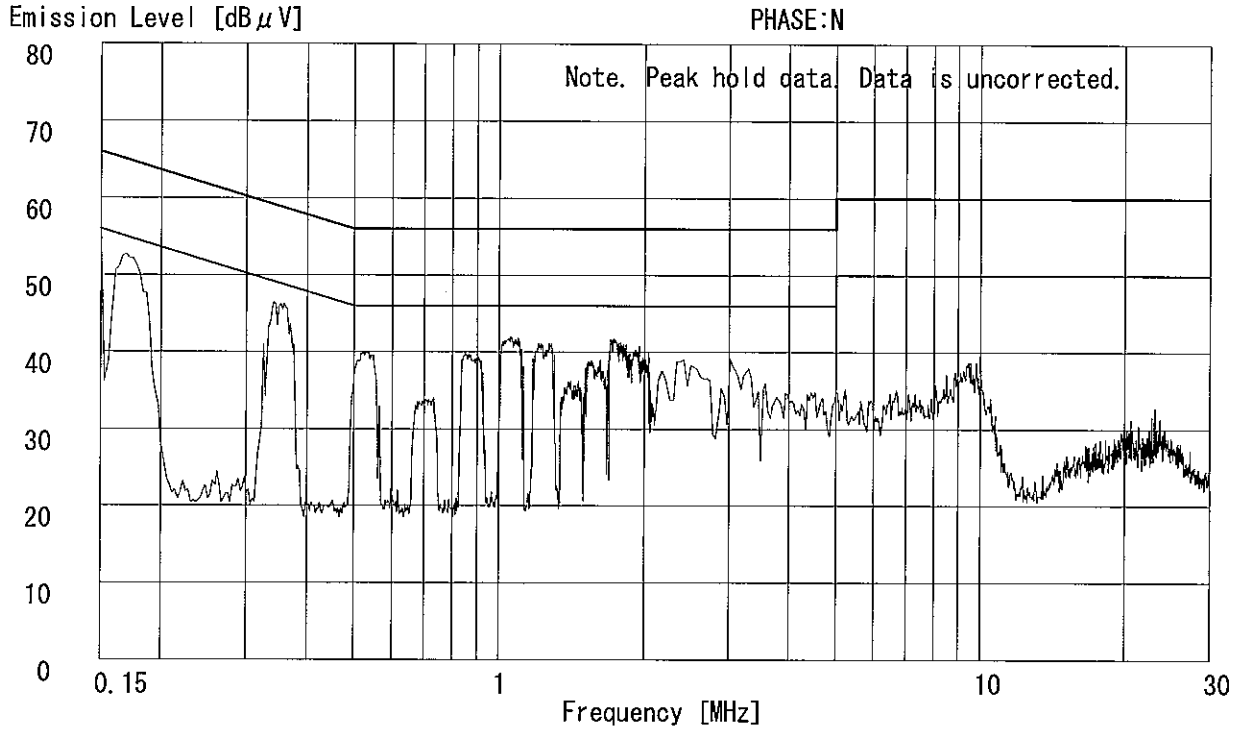


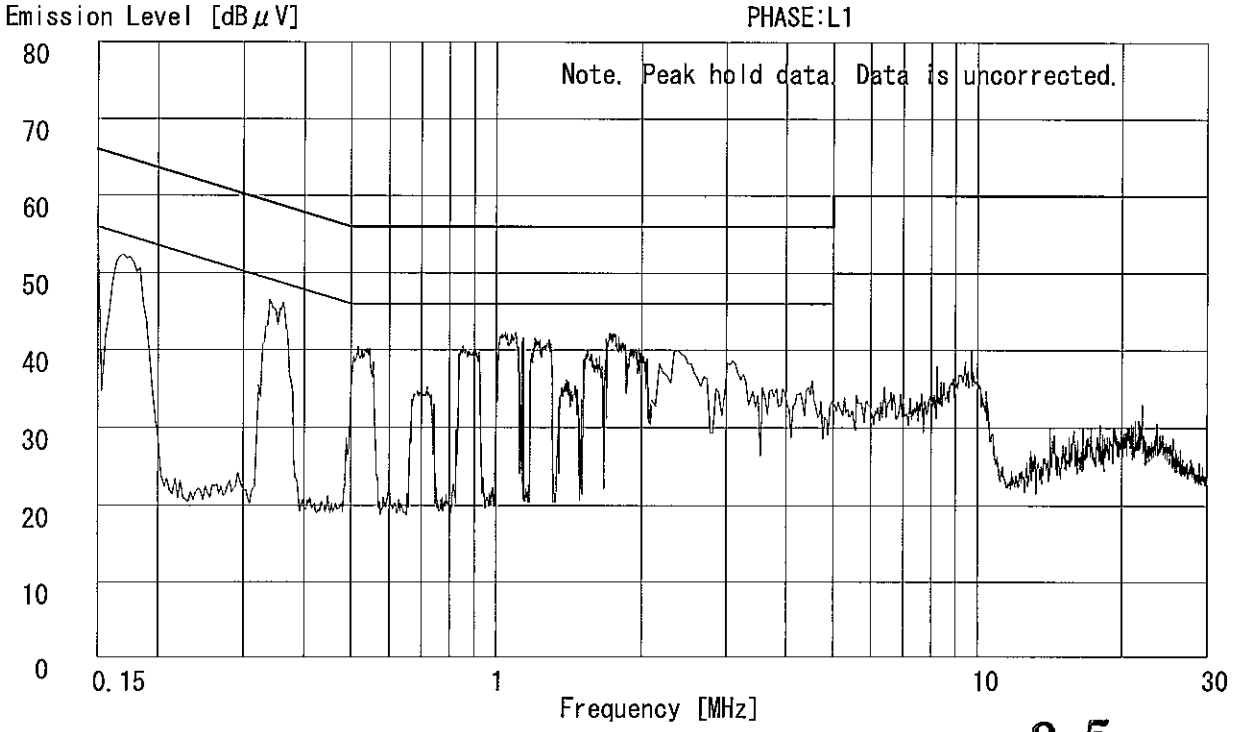
DATA OF CONDUCTION TEST CHART

UL Apex Co.,Ltd.
YAMAKITA No.1 SHIELD TEST ROOM
Report No. : 25LE0018-YK-1

Applicant	: BUFFALO Inc.
Kind of Equipment	: High Speed Wireless Router
Model No.	: WHR-HP-G54
Serial No.	: D-01
Power	: AC120V/60Hz
Mode	: Transmitting:2437MHz
Remarks	: Normal, IEEE802.11g
Date	: 7/12/2005
Phase	: Single Phase
Temperature	: 24 ℃
Humidity	: 68 %
Regulation 1	: FCC Part15C §15.207. (CISPR Pub.22)
Regulation 2	: FCC Part15C §15.207. (CISPR Pub.22)

Engineer : Takahiro Suzuki



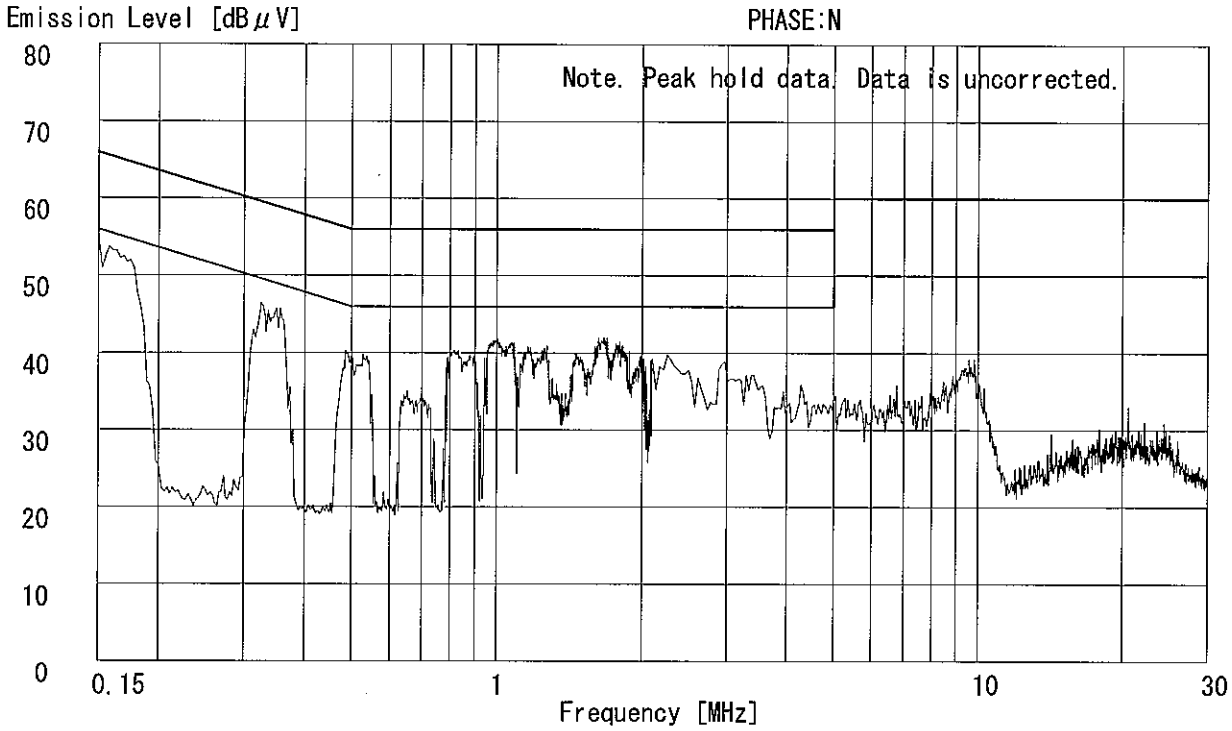


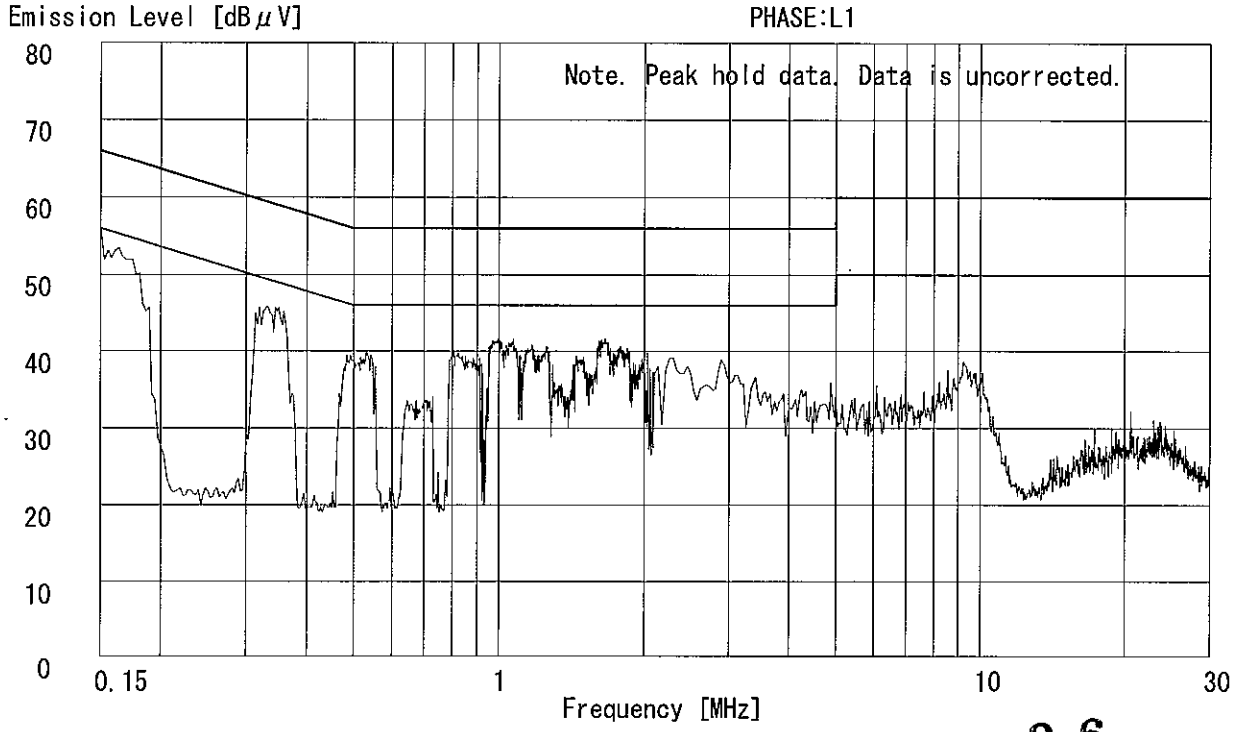
DATA OF CONDUCTION TEST CHART

UL Apex Co.,Ltd.
YAMAKITA No.1 SHIELD TEST ROOM
Report No. : 25LE0018-YK-1

Applicant	: BUFFALO Inc.
Kind of Equipment	: High Speed Wireless Router
Model No.	: WHR-HP-G54
Serial No.	: D-01
Power	: AC120V/60Hz
Mode	: Transmitting:2462MHz
Remarks	: Normal, IEEE802.11g
Date	: 7/12/2005
Phase	: Single Phase
Temperature	: 24 ℃
Humidity	: 68 %
Regulation 1	: FCC Part15C §15.207. (CISPR Pub.22)
Regulation 2	: FCC Part15C §15.207. (CISPR Pub.22)

Engineer : Takahiro Suzuki





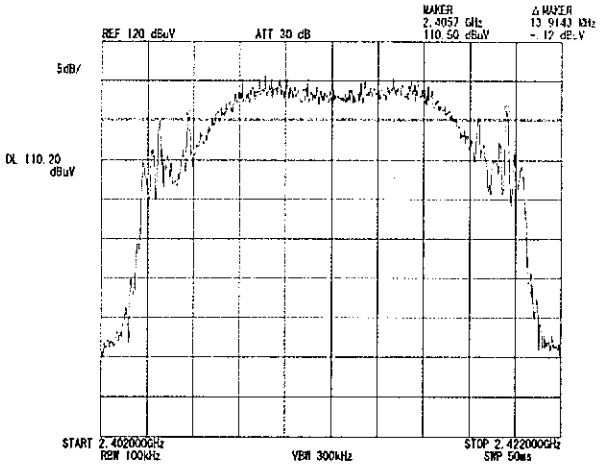
6dB Bandwidth: FCC 15.247(a)(2)

UL Apex Co.,Ltd. Yamakita No.1 Shielded Room

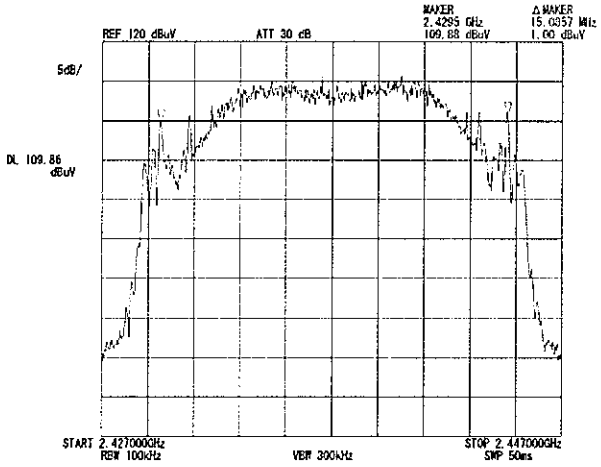
COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(a)(2)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11b(11Mbps)]

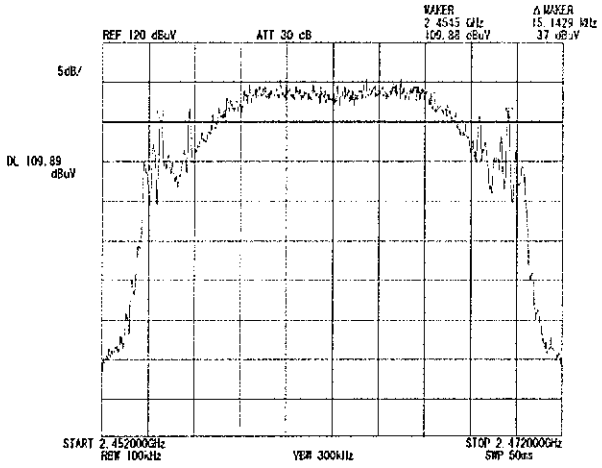
1. ch 1: 2412MHz/6dB Bandwidth:13.91MHz



2. ch 6: 2437MHz/6dB Bandwidth:15.09MHz



3. ch 11: 2462MHz/6dB Bandwidth:15.14MHz



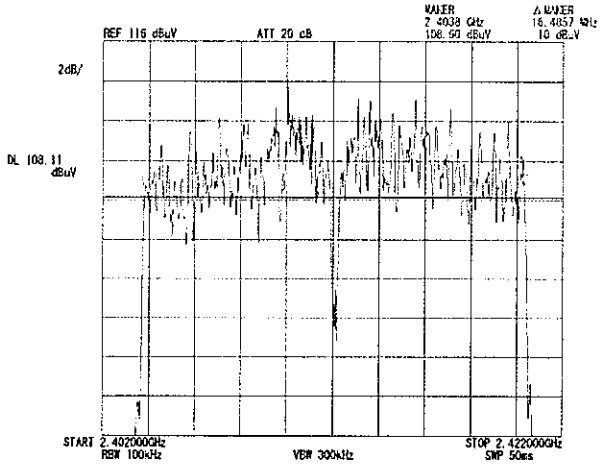
6dB Bandwidth: FCC 15.247(a)(2)

UL Apex Co.,Ltd. Yamakita No.1 Shielded Room

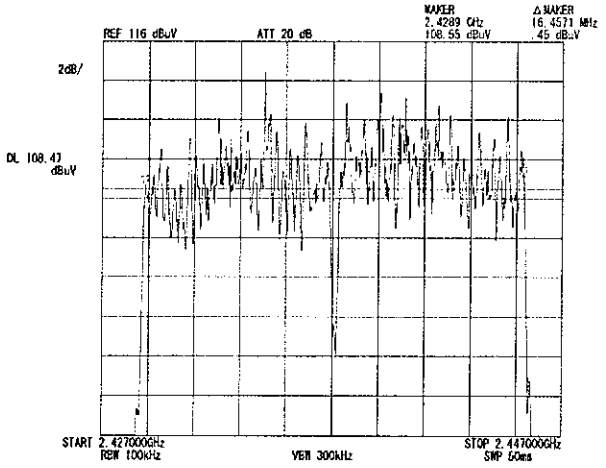
COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(a)(2)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11g(54Mbps)]

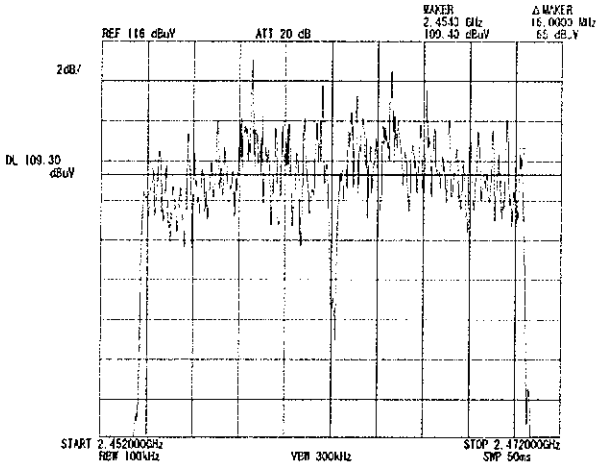
1. ch 1: 2412MHz/6dB Bandwidth:16.49MHz



2. ch 6: 2437MHz/6dB Bandwidth:16.46MHz



3. ch 11: 2462MHz/6dB Bandwidth:16.00MHz



Maximum Peak Conducted Output Power

UL Apex Co.,Ltd
YAMAKITA NO.1 Shielded Room

COMPANY : BUFFALO Inc
EQUIPMENT : High Speed Wireless Router
MODEL NUMBE : WHR-HP-G54
SERIAL NUMBE : D-01
FCC ID : FDI-09101577-0
POWER : AC120V/60Hz
TEST MODE : Transmitting

REPORT NO : 25LE0018-YK-1
REGULATION : Fcc Part15SubpartC 247(b)(3)
DATE : 2005/7/29
TEMP./HUMI : 24℃/63%

ENGINEER : Toyokazu Imamura

IEEE802.11b(11Mbps)

CH	FREQ [GHz]	PM Reading *1 [dBm]	Cable Loss [dB]	Results [dBm]	Limit (1W) [dBm]	MARGIN [dB]
Low	2412.00	24.21	0.50	24.71	30.0	5.29
Mid	2437.00	24.04	0.50	24.54	30.0	5.46
High	2462.00	23.88	0.50	24.38	30.0	5.62

IEEE802.11g(54Mbps)

CH	FREQ [GHz]	S/A Reading *2,*3 [dBm]	Cable Loss [dB]	Results [dBm]	Limit (1W) [dBm]	MARGIN [dB]
Low	2412.00	25.10	0.50	25.60	30.0	4.40
Mid	2437.00	25.30	0.50	25.80	30.0	4.20
High	2462.00	24.70	0.50	25.20	30.0	4.80

*1PM:Power Meter
*2 S/A:Spectrum Analyzer
*3 Test was performed using the function of the spectrum analyzer measuring of channel power.

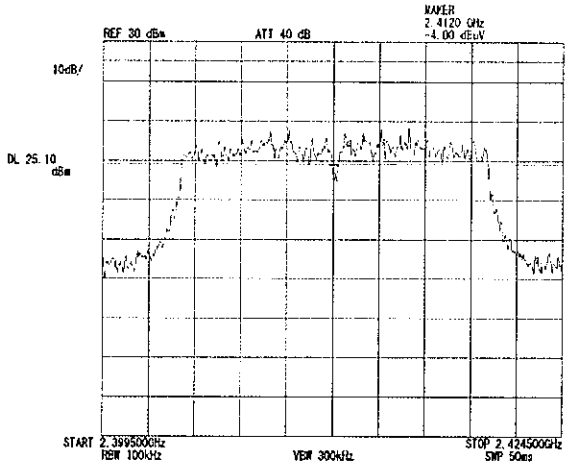
Maximum Peak Conducted Output Power: FCC 15.247(b)(3)

UL Apex Co.,Ltd. Yamakita No.1 Shielded Room

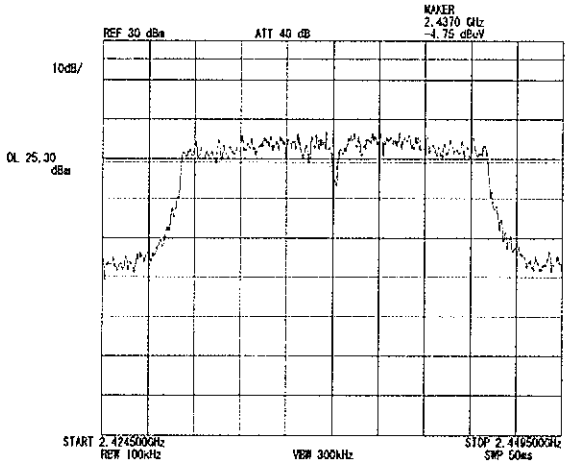
COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: Fcc Part15SubpartC 247(b)(3)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24°C/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[Spectrum Analyzer data of IEEE802.11g(54Mbps)]

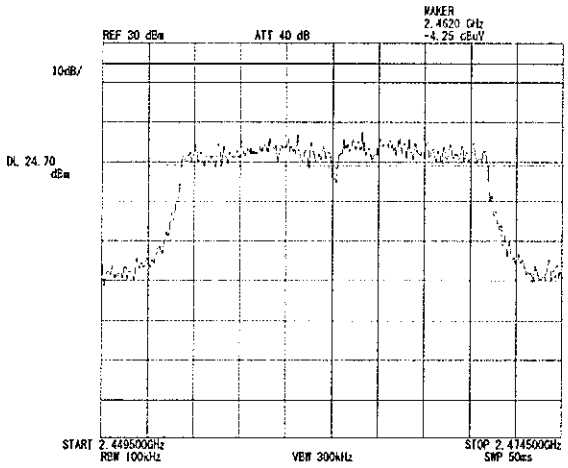
1. ch : 2412MHz



2. ch : 2437MHz



3. ch : 2462MHz



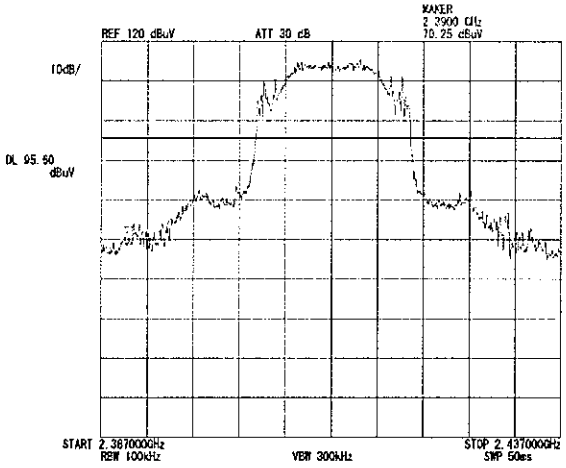
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11b(11Mbps)]

Ch1:2412MHz

1.



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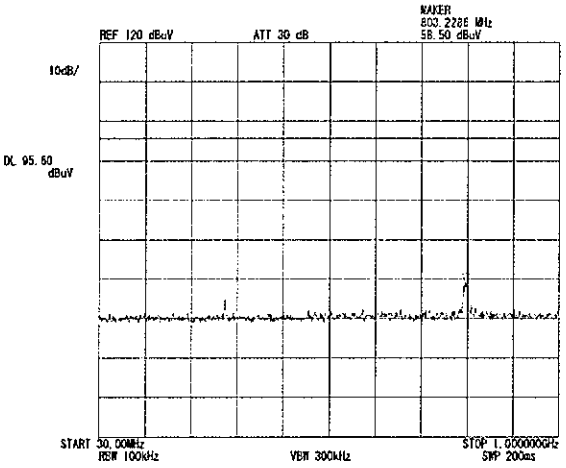

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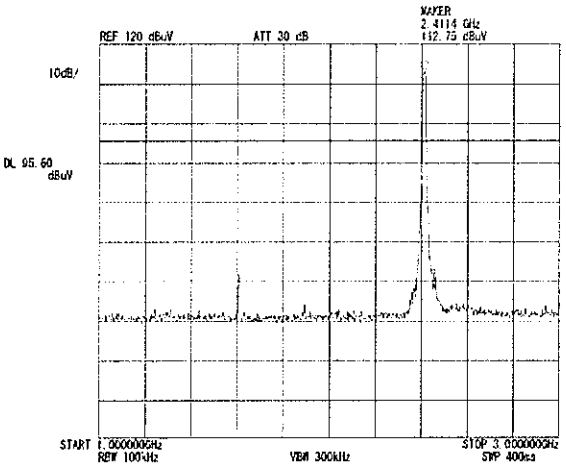


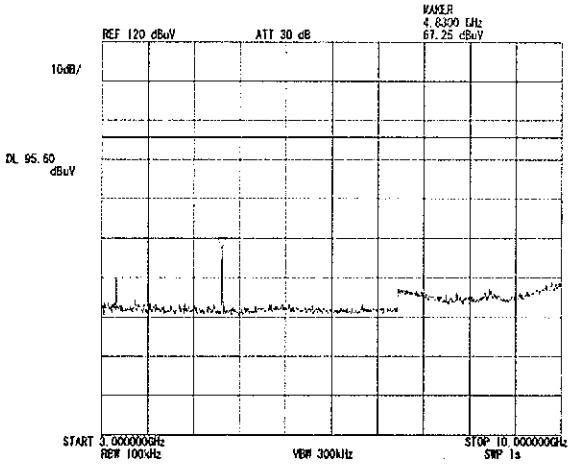
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11b(11Mbps)]

Ch1:2412MHz

4.



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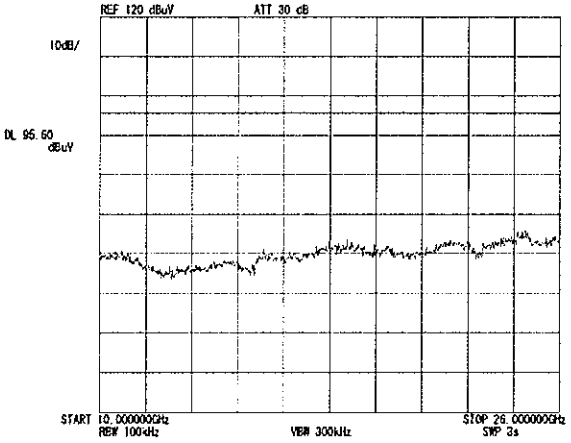


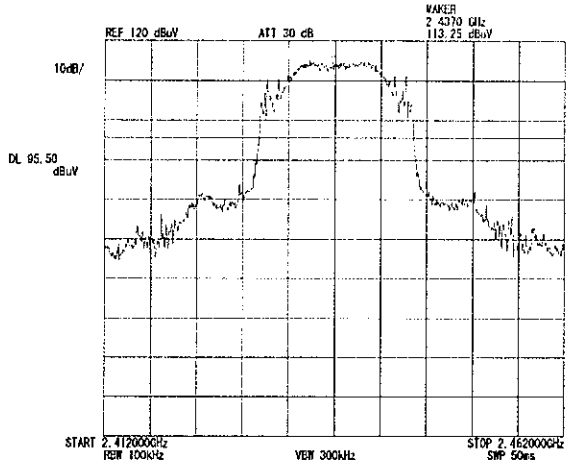
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11b(11Mbps)]

Ch6:2437MHz

1.



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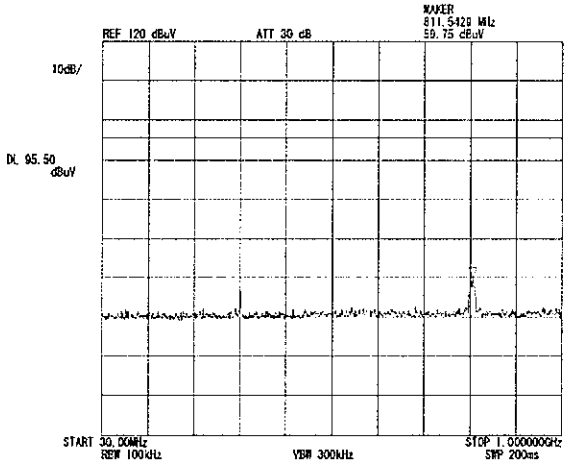

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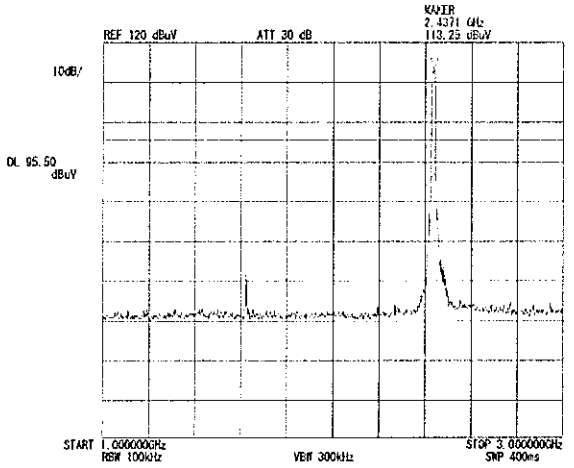


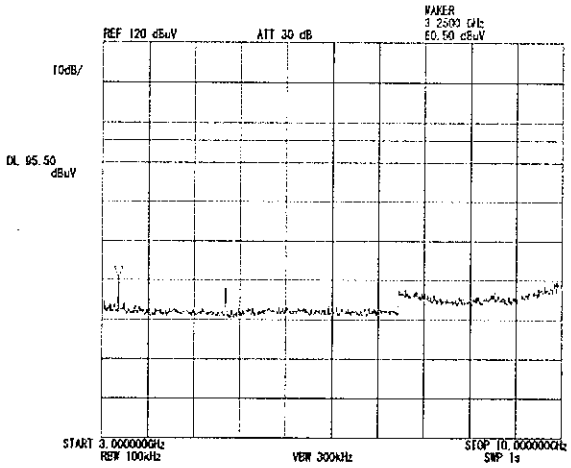
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11b(11Mbps)]

Ch6:2437MHz

4.



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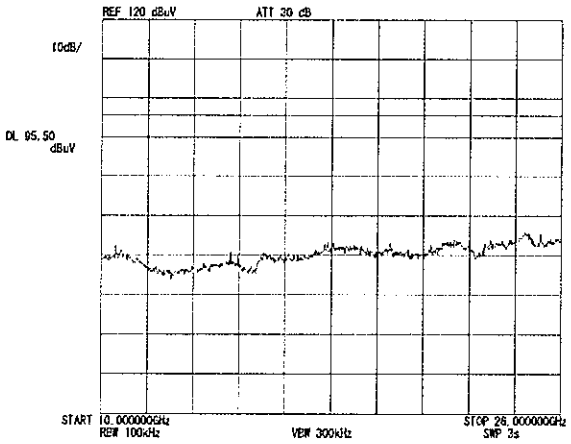


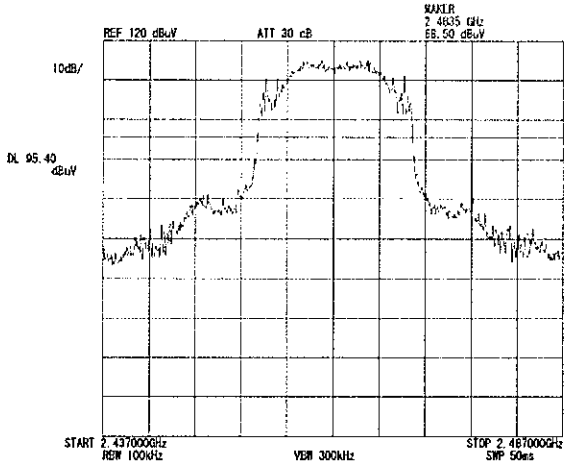
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24°C/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11b(11Mbps)]

Ch11:2462MHz

1.



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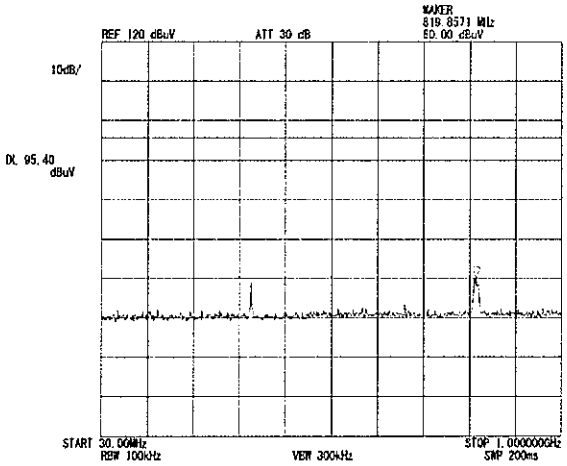

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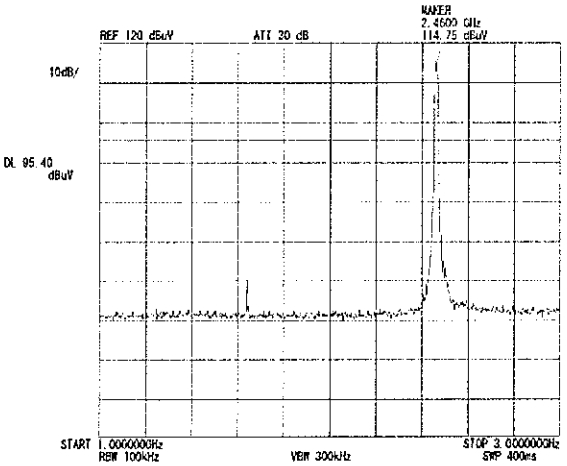


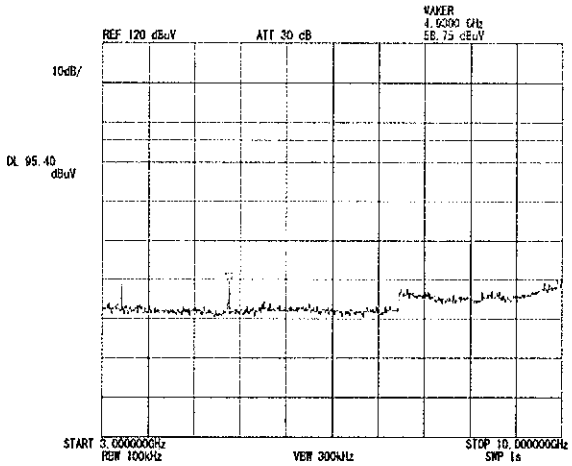
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11b(11Mbps)]

Ch11:2462MHz

4.



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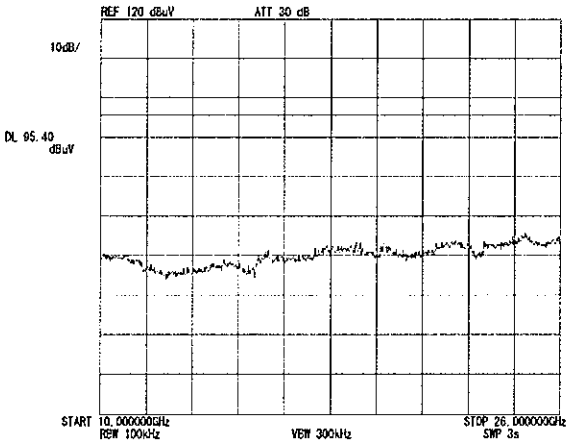


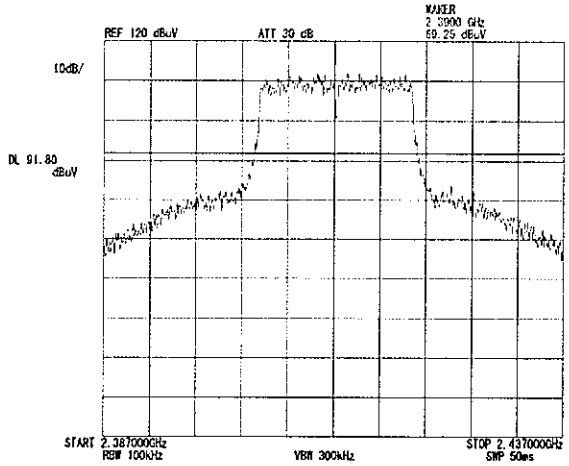
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

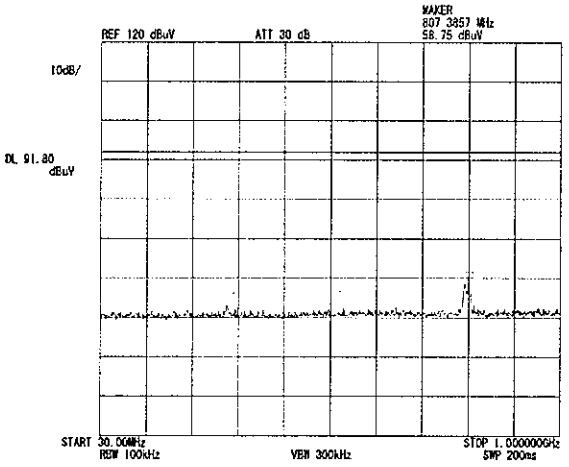
[IEEE802.11g(54Mbps)]

Ch1:2412MHz

1.



2.



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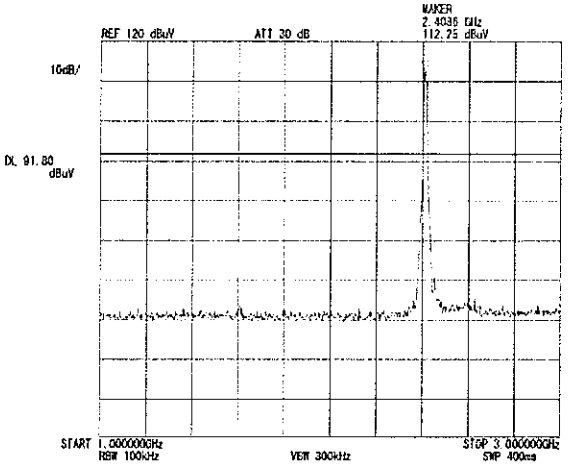


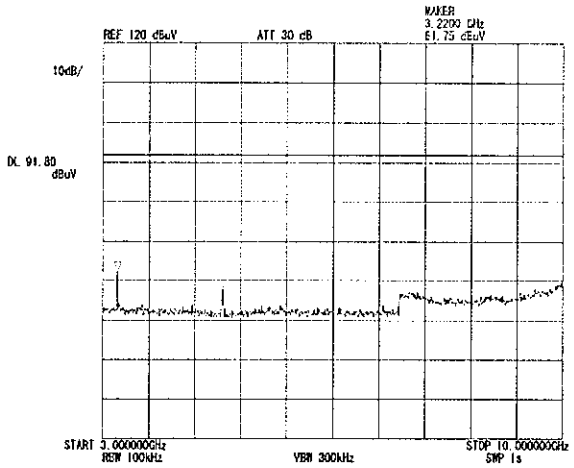
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11g(54Mbps)]

Ch1:2412MHz

4.



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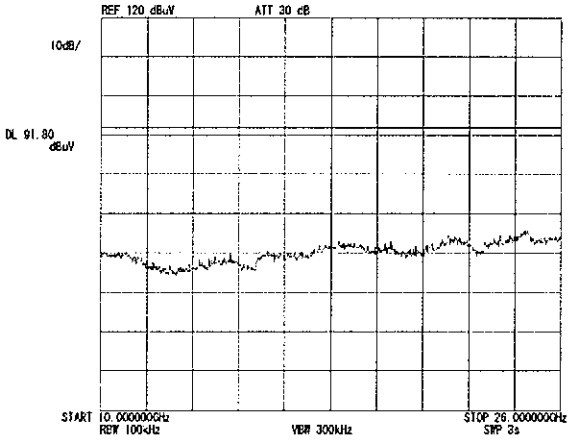


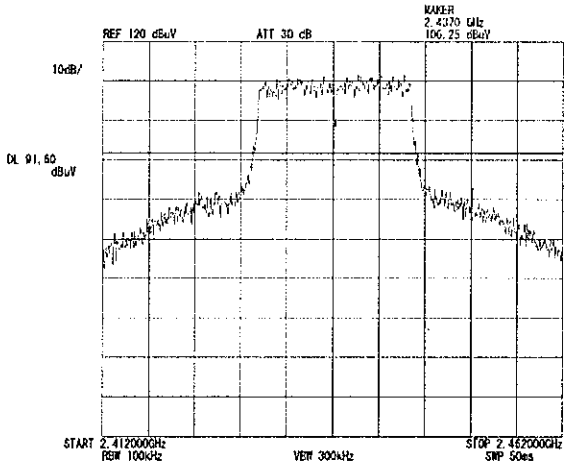
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11g(54Mbps)]

Ch6:2437MHz

1.



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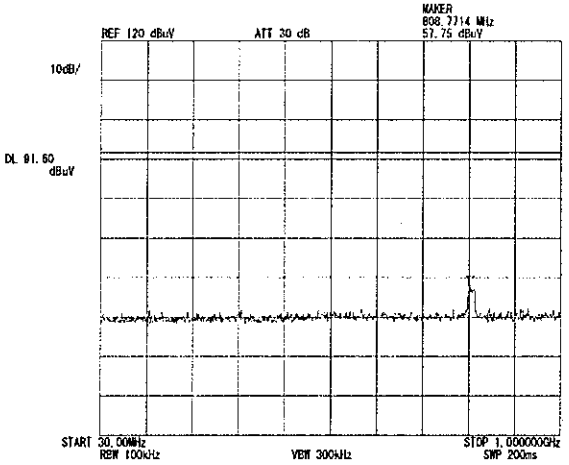
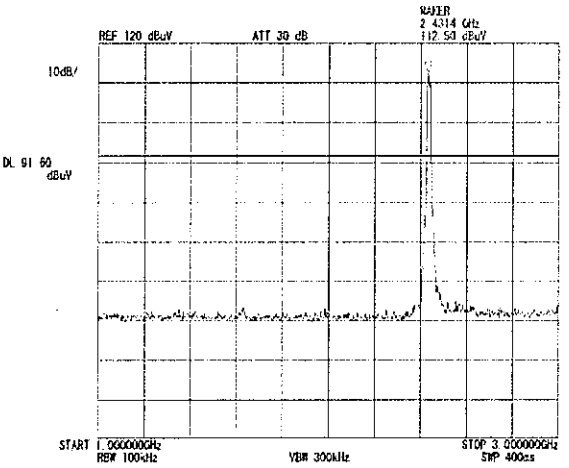


3.



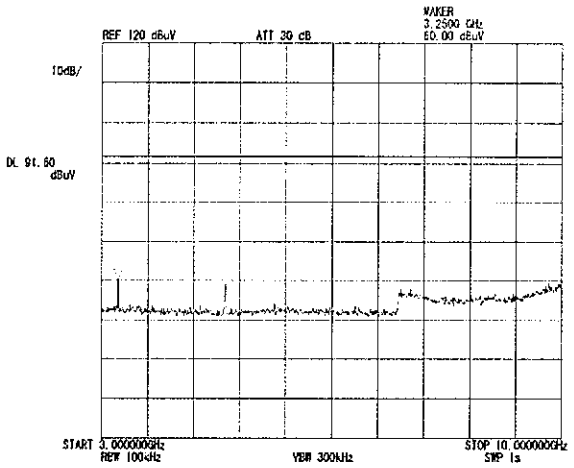
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11g(54Mbps)]

Ch6:2437MHz

4.



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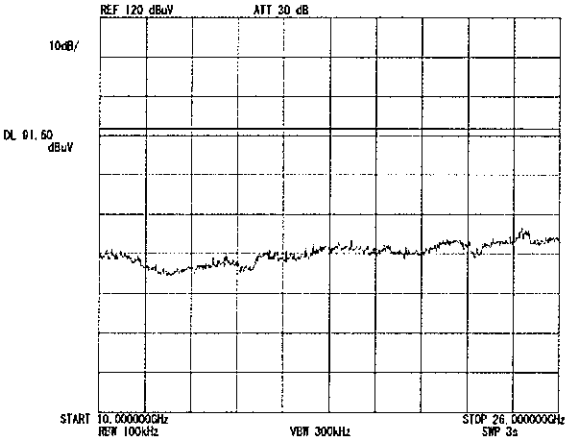


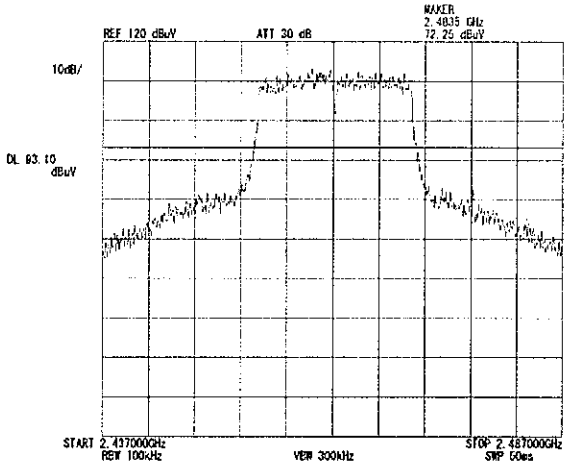
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

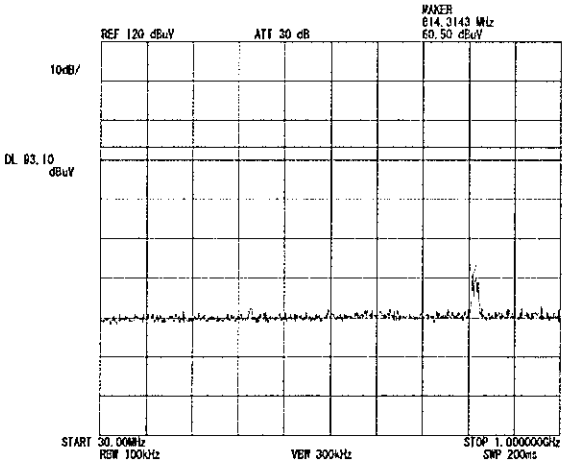
[IEEE802.11g(54Mbps)]

Ch11:2462MHz

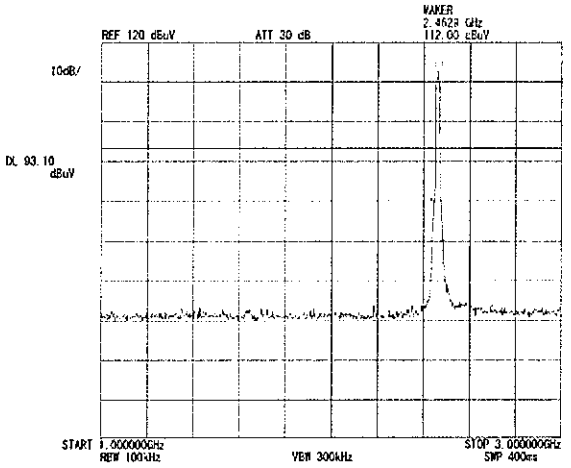
1.



2.



3.



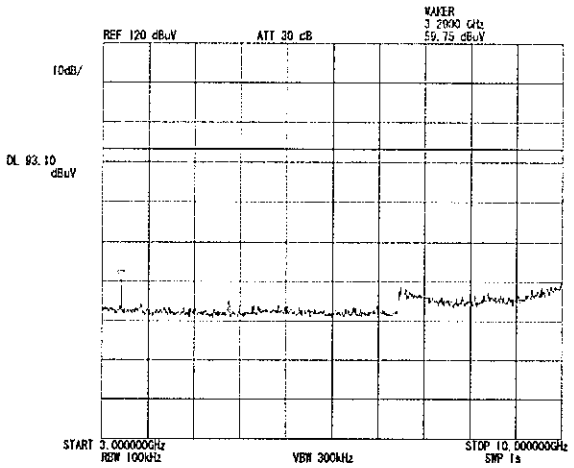
Out of Band Emission(Antenna Terminal Conducted): FCC 15.247(d)

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(d)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

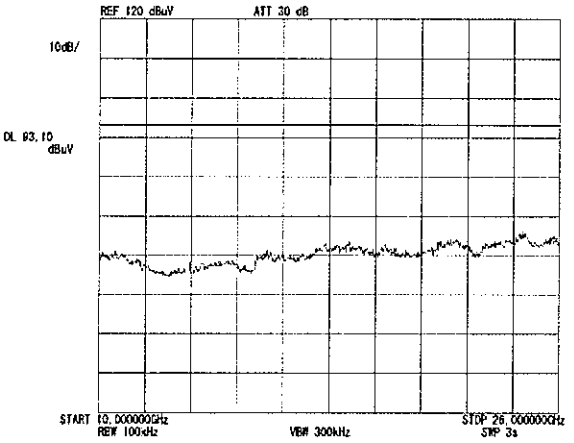
[IEEE802.11g(54Mbps)]

Ch11:2462MHz

4.



5.



DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK - 1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2412MHz
Remarks : IEEE802.11b/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	250.00	BB	34.8	33.6	17.1	27.8	4.3	6.0	34.4	33.2	46.0	11.6	12.8
2.	299.99	BB	29.6	33.8	19.9	27.7	4.8	6.0	32.6	36.8	46.0	13.4	9.2
3.	374.99	BB	35.7	32.4	16.7	28.3	5.4	6.0	35.5	32.2	46.0	10.5	13.8
4.	400.00	BB	37.0	42.3	17.5	28.6	5.7	6.0	37.6	42.9	46.0	8.4	3.1
5.	500.00	BB	39.9	42.7	18.5	29.1	6.4	6.0	41.7	44.5	46.0	4.3	1.5
6.	749.98	BB	30.7	31.1	21.3	29.1	8.1	6.0	37.0	37.4	46.0	9.0	8.6
7.	799.98	BB	30.3	27.5	21.6	28.9	8.4	6.0	37.4	34.6	46.0	8.6	11.4
8.	899.98	BB	30.8	33.7	23.2	28.7	9.1	6.0	40.4	43.3	46.0	5.6	2.7

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KBA-01(BBA9106)30-299.99MHz/KLA-01(USLP9143)300-1000MHz
■CABLE:KCC-10/11/12/13/18■PREAMP:KAF-01(8447D)■EMI RECEIVER:KTR-02(ESCS30)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK-1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2437MHz
Remarks : IEEE802.11b/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	250.00	BB	30.7	31.8	17.1	27.8	4.3	6.0	30.3	31.4	46.0	15.7	14.6
2.	299.98	BB	27.7	29.8	19.9	27.7	4.8	6.0	30.7	32.8	46.0	15.3	13.2
3.	374.99	BB	36.0	32.7	16.7	28.3	5.4	6.0	35.8	32.5	46.0	10.2	13.5
4.	400.00	BB	36.2	44.5	17.5	28.6	5.7	6.0	36.8	45.1	46.0	9.2	0.9
5.	500.00	BB	37.9	42.7	18.5	29.1	6.4	6.0	39.7	44.5	46.0	6.3	1.5
6.	749.98	BB	29.3	29.7	21.3	29.1	8.1	6.0	35.6	36.0	46.0	10.4	10.0
7.	799.98	BB	29.1	26.9	21.6	28.9	8.4	6.0	36.2	34.0	46.0	9.8	12.0
8.	899.98	BB	31.0	34.5	23.2	28.7	9.1	6.0	40.6	44.1	46.0	5.4	1.9

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KBA-01(BBA9106)30-299.99MHz/KLA-01(USLP9143)300-1000MHz
■CABLE:KCC-10/11/12/13/18■PREAMP:KAF-01(8447D)■EMI RECEIVER:KTR-02(ESCS30)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK - 1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2462MHz
Remarks : IEEE802.11b/Antenna:Normal
Date : 7/28/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 37 %
Regulation : FCC Part15C §15.209

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	250.00	BB	33.6	36.6	17.1	27.8	4.3	6.0	33.2	36.2	46.0	12.8	9.8
2.	299.98	BB	37.3	38.4	19.9	27.7	4.8	6.0	40.3	41.4	46.0	5.7	4.6
3.	374.99	BB	32.3	30.2	16.7	28.3	5.4	6.0	32.1	30.0	46.0	13.9	16.0
4.	400.00	BB	34.8	44.5	17.5	28.6	5.7	6.0	35.4	45.1	46.0	10.6	0.9
5.	500.00	BB	41.2	43.6	18.5	29.1	6.4	6.0	43.0	45.4	46.0	3.0	0.6
6.	749.98	BB	32.9	30.4	21.3	29.1	8.1	6.0	39.2	36.7	46.0	6.8	9.3
7.	799.98	BB	29.2	27.8	21.6	28.9	8.4	6.0	36.3	34.9	46.0	9.7	11.1
8.	899.98	BB	30.9	35.0	23.2	28.7	9.1	6.0	40.5	44.6	46.0	5.5	1.4

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KBA-01(BBA9106)30-299.99MHz/KLA-01(USLP9143)300-1000MHz
■CABLE:KCC-10/11/12/13/18■PREAMP:KAF-01(8447D)■EMI RECEIVER:KTR-02(ESCS30)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK - 1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2412MHz
Remarks : IEEE802.11g/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	250.00	BB	34.2	33.9	17.1	27.8	4.3	6.0	33.8	33.5	46.0	12.2	12.5
2.	299.99	BB	29.1	33.6	19.9	27.7	4.8	6.0	32.1	36.6	46.0	13.9	9.4
3.	374.99	BB	35.3	32.4	16.7	28.3	5.4	6.0	35.1	32.2	46.0	10.9	13.8
4.	400.00	BB	36.9	41.8	17.5	28.6	5.7	6.0	37.5	42.4	46.0	8.5	3.6
5.	500.00	BB	38.3	41.3	18.5	29.1	6.4	6.0	40.1	43.1	46.0	5.9	2.9
6.	749.98	BB	31.4	30.4	21.3	29.1	8.1	6.0	37.7	36.7	46.0	8.3	9.3
7.	799.98	BB	28.9	27.1	21.6	28.9	8.4	6.0	36.0	34.2	46.0	10.0	11.8
8.	899.98	BB	31.2	34.8	23.2	28.7	9.1	6.0	40.8	44.4	46.0	5.2	1.6

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KBA-01(BBA9106)30-299.99MHz/KLA-01(USLP9143)300-1000MHz
■CABLE:KCC-10/11/12/13/18■PREAMP:KAF-01(8447D) ■EMI RECEIVER:KTR-02(ESCS30)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK-1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2437MHz
Remarks : IEEE802.11g/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	250.00	BB	29.7	31.7	17.1	27.8	4.3	6.0	29.3	31.3	46.0	16.7	14.7
2.	299.99	BB	28.3	30.0	19.9	27.7	4.8	6.0	31.3	33.0	46.0	14.7	13.0
3.	374.99	BB	35.7	32.7	16.7	28.3	5.4	6.0	35.5	32.5	46.0	10.5	13.5
4.	400.00	BB	34.7	45.0	17.5	28.6	5.7	6.0	35.3	45.6	46.0	10.7	0.4
5.	500.00	BB	35.1	43.5	18.5	29.1	6.4	6.0	36.9	45.3	46.0	9.1	0.7
6.	749.98	BB	30.4	31.6	21.3	29.1	8.1	6.0	36.7	37.9	46.0	9.3	8.1
7.	799.98	BB	29.9	28.8	21.6	28.9	8.4	6.0	37.0	35.9	46.0	9.0	10.1
8.	899.98	BB	30.9	35.1	23.2	28.7	9.1	6.0	40.5	44.7	46.0	5.5	1.3

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KBA-01(BBA9106)30-299.99MHz/KLA-01(USLP9143)300-1000MHz
■CABLE:KCC-10/11/12/13/18■PREAMP:KAF-01(8447D)■EMI RECEIVER:KTR-02(ESCS30)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK-1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2462MHz
Remarks : IEEE802.11g/Antenna:Normal
Date : 7/28/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 37 %
Regulation : FCC Part15C §15.209

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	250.00	BB	33.4	36.8	17.1	27.8	4.3	6.0	33.0	36.4	46.0	13.0	9.6
2.	299.99	BB	37.9	38.8	19.9	27.7	4.8	6.0	40.9	41.8	46.0	5.1	4.2
3.	374.99	BB	32.4	30.9	16.7	28.3	5.4	6.0	32.2	30.7	46.0	13.8	15.3
4.	400.00	BB	35.2	44.1	17.5	28.6	5.7	6.0	35.8	44.7	46.0	10.2	1.3
5.	500.00	BB	42.7	43.2	18.5	29.1	6.4	6.0	44.5	45.0	46.0	1.5	1.0
6.	749.98	BB	32.9	30.2	21.3	29.1	8.1	6.0	39.2	36.5	46.0	6.8	9.5
7.	799.98	BB	29.3	27.3	21.6	28.9	8.4	6.0	36.4	34.4	46.0	9.6	11.6
8.	899.98	BB	31.0	35.1	23.2	28.7	9.1	6.0	40.6	44.7	46.0	5.4	1.3

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KBA-01(BBA9106)30-299.99MHz/KLA-01(USLP9143)300-1000MHz
■CABLE:KCC-10/11/12/13/18■PREAMP:KAF-01(8447D)■EMI RECEIVER:KTR-02(ESCS30)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK-1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2412MHz
Remarks : IEEE802.11b/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2390.00	BB	57.0	54.1	27.7	37.0	4.0	10.0	61.7	58.8	74.0	12.3	15.2
2.	3216.17	BB	57.5	58.1	29.0	37.1	4.6	10.1	64.1	64.7	74.0	9.9	9.3
3.	4824.00	BB	58.9	57.0	32.1	36.5	5.5	0.5	60.5	58.6	74.0	13.5	15.4
4.	7236.00	BB	46.9	47.2	36.6	36.8	6.6	0.2	53.5	53.8	74.0	20.5	20.2
5.	9648.00	BB	42.5	42.1	38.9	37.1	7.4	0.4	52.1	51.7	74.0	21.9	22.3
6.	12060.00	BB	42.2	41.1	39.8	36.1	8.2	0.0	54.1	53.0	74.0	19.9	21.0
7.	14472.00	BB	40.2	40.5	42.4	35.0	8.9	0.3	56.8	57.1	74.0	17.2	16.9
8.	16884.00	BB	40.8	41.8	40.7	35.6	9.6	0.6	56.1	57.1	74.0	17.9	16.9
9.	19296.00	BB	42.8	41.2	38.6	34.9	10.3	0.0	56.8	55.2	74.0	17.2	18.8
10.	21708.00	BB	41.6	42.2	39.0	35.6	10.7	0.0	55.7	56.3	74.0	18.3	17.7
11.	24120.00	BB	42.5	43.0	39.3	34.9	11.1	0.0	58.0	58.5	74.0	16.0	15.5

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK－1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2412MHz
Remarks : IEEE802.11b/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2390.00	BB	44.6	44.1	27.7	37.0	4.0	10.0	49.3	48.8	54.0	4.7	5.2
2.	3216.17	BB	46.0	46.7	29.0	37.1	4.6	10.1	52.6	53.3	54.0	1.4	0.7
3.	4824.00	BB	46.0	39.6	32.1	36.5	5.5	0.5	47.6	41.2	54.0	6.4	12.8
4.	7236.00	BB	40.2	35.7	36.6	36.8	6.6	0.2	46.8	42.3	54.0	7.2	11.7
5.	9648.00	BB	35.2	33.1	38.9	37.1	7.4	0.4	44.8	42.7	54.0	9.2	11.3
6.	12060.00	BB	31.5	31.9	39.8	36.1	8.2	0.0	43.4	43.8	54.0	10.6	10.2
7.	14472.00	BB	31.8	31.1	42.4	35.0	8.9	0.3	48.4	47.7	54.0	5.6	6.3
8.	16884.00	BB	31.6	32.1	40.7	35.6	9.6	0.6	46.9	47.4	54.0	7.1	6.6
9.	19296.00	BB	32.6	32.6	38.6	34.9	10.3	0.0	46.6	46.6	54.0	7.4	7.4
10.	21708.00	BB	33.2	33.1	39.0	35.6	10.7	0.0	47.3	47.2	54.0	6.7	6.8
11.	24120.00	BB	33.1	33.6	39.3	34.9	11.1	0.0	48.6	49.1	54.0	5.4	4.9

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK-1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2437MHz
Remarks : IEEE802.11b/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	4874.00	BB	54.4	57.8	32.2	36.5	5.5	0.5	56.1	59.5	74.0	17.9	14.5
2.	7311.00	BB	52.5	47.8	36.7	36.8	6.7	0.2	59.3	54.6	74.0	14.7	19.4
3.	9748.00	BB	45.6	46.1	39.0	37.1	7.4	0.3	55.2	55.7	74.0	18.8	18.3
4.	12185.00	BB	45.1	44.7	39.6	36.0	8.2	0.0	56.9	56.5	74.0	17.1	17.5
5.	14622.00	BB	42.4	42.0	42.1	35.3	8.9	0.4	58.5	58.1	74.0	15.5	15.9
6.	17059.00	BB	42.5	42.1	41.1	35.6	9.7	0.6	58.3	57.9	74.0	15.7	16.1
7.	19496.00	BB	41.7	43.7	38.4	35.2	10.5	0.0	55.4	57.4	74.0	18.6	16.6
8.	21933.00	BB	42.8	43.1	39.1	35.2	10.8	0.0	57.5	57.8	74.0	16.5	16.2
9.	24370.00	BB	42.8	43.9	39.4	35.0	11.1	0.0	58.3	59.4	74.0	15.7	14.6

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK - 1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2437MHz
Remarks : IEEE802.11b/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	4874.00	BB	40.1	43.1	32.2	36.5	5.5	0.5	41.8	44.8	54.0	12.2	9.2
2.	7311.00	BB	41.1	36.3	36.7	36.8	6.7	0.2	47.9	43.1	54.0	6.1	10.9
3.	9748.00	BB	37.5	37.1	39.0	37.1	7.4	0.3	47.1	46.7	54.0	6.9	7.3
4.	12185.00	BB	34.4	32.7	39.6	36.0	8.2	0.0	46.2	44.5	54.0	7.8	9.5
5.	14622.00	BB	32.0	32.1	42.1	35.3	8.9	0.4	48.1	48.2	54.0	5.9	5.8
6.	17059.00	BB	32.1	32.3	41.1	35.6	9.7	0.6	47.9	48.1	54.0	6.1	5.9
7.	19496.00	BB	31.9	31.7	38.4	35.2	10.5	0.0	45.6	45.4	54.0	8.4	8.6
8.	21933.00	BB	33.4	33.6	39.1	35.2	10.8	0.0	48.1	48.3	54.0	5.9	5.7
9.	24370.00	BB	33.6	33.9	39.4	35.0	11.1	0.0	49.1	49.4	54.0	4.9	4.6

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK - 1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2462MHz
Remarks : IEEE802.11b/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2483.50	BB	61.3	58.2	28.0	37.1	4.0	10.0	66.2	63.1	74.0	7.8	10.9
2.	4924.00	BB	59.3	59.8	32.3	36.4	5.6	0.5	61.3	61.8	74.0	12.7	12.2
3.	7386.00	BB	52.0	47.3	36.8	36.8	6.7	0.2	58.9	54.2	74.0	15.1	19.8
4.	9848.00	BB	49.5	47.9	39.2	37.1	7.4	0.2	59.2	57.6	74.0	14.8	16.4
5.	12310.00	BB	42.0	43.8	39.3	35.8	8.1	0.0	53.6	55.4	74.0	20.4	18.6
6.	14772.00	BB	42.3	42.1	41.6	35.5	9.0	0.6	58.0	57.8	74.0	16.0	16.2
7.	17234.00	BB	42.9	42.6	41.6	35.6	9.6	0.3	58.8	58.5	74.0	15.2	15.5
8.	19696.00	BB	41.3	41.7	38.4	35.1	10.5	0.0	55.1	55.5	74.0	18.9	18.5
9.	22158.00	BB	42.8	42.9	39.2	35.0	11.0	0.0	58.0	58.1	74.0	16.0	15.9
10.	24620.00	BB	45.3	46.3	39.4	34.9	11.3	0.0	61.1	62.1	74.0	12.9	11.9

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK - 1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2462MHz
Remarks : IEEE802.11b/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2483.50	BB	47.3	45.6	28.0	37.1	4.0	10.0	52.2	50.5	54.0	1.8	3.5
2.	4924.00	BB	43.2	43.8	32.3	36.4	5.6	0.5	45.2	45.8	54.0	8.8	8.2
3.	7386.00	BB	39.7	36.5	36.8	36.8	6.7	0.2	46.6	43.4	54.0	7.4	10.6
4.	9848.00	BB	40.9	37.2	39.2	37.1	7.4	0.2	50.6	46.9	54.0	3.4	7.1
5.	12310.00	BB	32.0	31.4	39.3	35.8	8.1	0.0	43.6	43.0	54.0	10.4	11.0
6.	14772.00	BB	32.0	32.0	41.6	35.5	9.0	0.6	47.7	47.7	54.0	6.3	6.3
7.	17234.00	BB	32.3	32.4	41.6	35.6	9.6	0.3	48.2	48.3	54.0	5.8	5.7
8.	19696.00	BB	31.8	31.8	38.4	35.1	10.5	0.0	45.6	45.6	54.0	8.4	8.4
9.	22158.00	BB	33.4	33.5	39.2	35.0	11.0	0.0	48.6	48.7	54.0	5.4	5.3
10.	24620.00	BB	35.8	35.9	39.4	34.9	11.3	0.0	51.6	51.7	54.0	2.4	2.3

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK - 1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2412MHz
Remarks : IEEE802.11g/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2390.00	BB	63.1	62.0	27.7	37.0	4.0	10.0	67.8	66.7	74.0	6.2	7.3
2.	4824.00	BB	51.8	53.6	32.1	36.5	5.5	0.5	53.4	55.2	74.0	20.6	18.8
3.	7236.00	BB	51.1	47.3	36.6	36.8	6.6	0.2	57.7	53.9	74.0	16.3	20.1
4.	9648.00	BB	48.9	46.8	38.9	37.1	7.4	0.4	58.5	56.4	74.0	15.5	17.6
5.	12060.00	BB	43.8	42.2	39.8	36.1	8.2	0.0	55.7	54.1	74.0	18.3	19.9
6.	14472.00	BB	41.5	41.5	42.4	35.0	8.9	0.3	58.1	58.1	74.0	15.9	15.9
7.	16884.00	BB	42.0	42.2	40.7	35.6	9.6	0.6	57.3	57.5	74.0	16.7	16.5
8.	19296.00	BB	42.6	42.3	38.6	34.9	10.3	0.0	56.6	56.3	74.0	17.4	17.7
9.	21708.00	BB	42.8	42.0	39.0	35.6	10.7	0.0	56.9	56.1	74.0	17.1	17.9
10.	24120.00	BB	43.4	43.5	39.3	34.9	11.1	0.0	58.9	59.0	74.0	15.1	15.0

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK - 1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2412MHz
Remarks : IEEE802.11g/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2390.00	BB	44.9	45.1	27.7	37.0	4.0	10.0	49.6	49.8	54.0	4.4	4.2
2.	4824.00	BB	34.2	36.0	32.1	36.5	5.5	0.5	35.8	37.6	54.0	18.2	16.4
3.	7236.00	BB	35.1	32.6	36.6	36.8	6.6	0.2	41.7	39.2	54.0	12.3	14.8
4.	9648.00	BB	35.2	35.3	38.9	37.1	7.4	0.4	44.8	44.9	54.0	9.2	9.1
5.	12060.00	BB	32.0	31.2	39.8	36.1	8.2	0.0	43.9	43.1	54.0	10.1	10.9
6.	14472.00	BB	32.1	31.7	42.4	35.0	8.9	0.3	48.7	48.3	54.0	5.3	5.7
7.	16884.00	BB	31.9	31.8	40.7	35.6	9.6	0.6	47.2	47.1	54.0	6.8	6.9
8.	19296.00	BB	32.4	32.7	38.6	34.9	10.3	0.0	46.4	46.7	54.0	7.6	7.3
9.	21708.00	BB	32.7	32.6	39.0	35.6	10.7	0.0	46.8	46.7	54.0	7.2	7.3
10.	24120.00	BB	33.8	33.3	39.3	34.9	11.1	0.0	49.3	48.8	54.0	4.7	5.2

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK - 1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2437MHz
Remarks : IEEE802.11g/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	4874.00	BB	52.2	54.2	32.2	36.5	5.5	0.5	53.9	55.9	74.0	20.1	18.1
2.	7311.00	BB	51.2	46.7	36.7	36.8	6.7	0.2	58.0	53.5	74.0	16.0	20.5
3.	9748.00	BB	51.3	38.8	39.0	37.1	7.4	0.3	60.9	48.4	74.0	13.1	25.6
4.	12185.00	BB	42.4	42.5	39.6	36.0	8.2	0.0	54.2	54.3	74.0	19.8	19.7
5.	14622.00	BB	41.9	41.7	42.1	35.3	8.9	0.4	58.0	57.8	74.0	16.0	16.2
6.	17059.00	BB	42.2	41.1	41.1	35.6	9.7	0.6	58.0	56.9	74.0	16.0	17.1
7.	19496.00	BB	42.3	42.0	38.4	35.2	10.5	0.0	56.0	55.7	74.0	18.0	18.3
8.	21933.00	BB	42.8	42.8	39.1	35.2	10.8	0.0	57.5	57.5	74.0	16.5	16.5
9.	24370.00	BB	43.7	43.9	39.4	35.0	11.1	0.0	59.2	59.4	74.0	14.8	14.6

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK-1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2437MHz
Remarks : IEEE802.11g/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	4874.00	BB	34.4	35.2	32.2	36.5	5.5	0.5	36.1	36.9	54.0	17.9	17.1
2.	7311.00	BB	35.0	33.6	36.7	36.8	6.7	0.2	41.8	40.4	54.0	12.2	13.6
3.	9748.00	BB	33.1	29.8	39.0	37.1	7.4	0.3	42.7	39.4	54.0	11.3	14.6
4.	12185.00	BB	32.4	31.1	39.6	36.0	8.2	0.0	44.2	42.9	54.0	9.8	11.1
5.	14622.00	BB	31.5	31.9	42.1	35.3	8.9	0.4	47.6	48.0	54.0	6.4	6.0
6.	17059.00	BB	32.2	32.0	41.1	35.6	9.7	0.6	48.0	47.8	54.0	6.0	6.2
7.	19496.00	BB	31.7	31.8	38.4	35.2	10.5	0.0	45.4	45.5	54.0	8.6	8.5
8.	21933.00	BB	33.2	33.3	39.1	35.2	10.8	0.0	47.9	48.0	54.0	6.1	6.0
9.	24370.00	BB	33.9	33.9	39.4	35.0	11.1	0.0	49.4	49.4	54.0	4.6	4.6

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK - 1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2462MHz
Remarks : IEEE802.11g/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2483.50	BB	66.8	63.1	28.0	37.1	4.0	10.0	71.7	68.0	74.0	2.3	6.0
2.	4924.00	BB	56.1	58.5	32.3	36.4	5.6	0.5	58.1	60.5	74.0	15.9	13.5
3.	7386.00	BB	45.8	45.1	36.8	36.8	6.7	0.2	52.7	52.0	74.0	21.3	22.0
4.	9848.00	BB	44.7	42.5	39.2	37.1	7.4	0.2	54.4	52.2	74.0	19.6	21.8
5.	12310.00	BB	42.9	43.3	39.3	35.8	8.1	0.0	54.5	54.9	74.0	19.5	19.1
6.	14772.00	BB	42.7	42.4	41.6	35.5	9.0	0.6	58.4	58.1	74.0	15.6	15.9
7.	17234.00	BB	42.9	42.3	41.6	35.6	9.6	0.3	58.8	58.2	74.0	15.2	15.8
8.	19696.00	BB	41.9	42.3	38.4	35.1	10.5	0.0	55.7	56.1	74.0	18.3	17.9
9.	22158.00	BB	42.9	41.6	39.2	35.0	11.0	0.0	58.1	56.8	74.0	15.9	17.2
10.	24620.00	BB	45.1	45.6	39.4	34.9	11.3	0.0	60.9	61.4	74.0	13.1	12.6

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

DATA OF RADIATION TEST

UL Apex Co.,Ltd.
Yamakita No.1 Open Test Site
Report No. : 25LE0018-YK - 1

Applicant : BUFFALO Inc.
Kind of Equipment : High Speed Wireless Router
Model No. : WHR-HP-G54
Serial No. : D-01
Power : AC120V/60Hz
Mode : Transmitting:2462MHz
Remarks : IEEE802.11g/Antenna:Normal
Date : 7/27/2005
Test Distance : 3 m
Temperature : 31 ℃ Engineer : Toyokazu Imamura
Humidity : 49 %
Regulation : FCC Part15C §15.209(AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING HOR [dBμV]	READING VER [dBμV]	ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT HOR [dBμV/m]	RESULT VER [dBμV/m]	LIMITS [dBμV/m]	MARGIN HOR [dB]	MARGIN VER [dB]
1.	2483.50	BB	48.3	46.1	28.0	37.1	4.0	10.0	53.2	51.0	54.0	0.8	3.0
2.	4924.00	BB	36.8	38.4	32.3	36.4	5.6	0.5	38.8	40.4	54.0	15.2	13.6
3.	7386.00	BB	31.9	32.8	36.8	36.8	6.7	0.2	38.8	39.7	54.0	15.2	14.3
4.	9848.00	BB	32.5	32.7	39.2	37.1	7.4	0.2	42.2	42.4	54.0	11.8	11.6
5.	12310.00	BB	32.0	31.7	39.3	35.8	8.1	0.0	43.6	43.3	54.0	10.4	10.7
6.	14772.00	BB	31.8	32.1	41.6	35.5	9.0	0.6	47.5	47.8	54.0	6.5	6.2
7.	17234.00	BB	32.5	32.5	41.6	35.6	9.6	0.3	48.4	48.4	54.0	5.6	5.6
8.	19696.00	BB	31.7	31.8	38.4	35.1	10.5	0.0	45.5	45.6	54.0	8.5	8.4
9.	22158.00	BB	33.5	33.5	39.2	35.0	11.0	0.0	48.7	48.7	54.0	5.3	5.3
10.	24620.00	BB	35.8	35.9	39.4	34.9	11.3	0.0	51.6	51.7	54.0	2.4	2.3

CALCULATION: READING + ANT.FACTOR + CABLE LOSS - AMP.GAIN + ATTEN.

■ANTENNA:KHA-02(1-18GHz)/KHA-04(18-26GHz)
■CABLE:KCC-D3/D7■PREAMP:KAF-02(8449B)■SPECTRUM ANALYZER:KSA-04(R3271A)

Power Density (Conducted)

UL Apex Co.,Ltd
YAMAKITA NO.1 Shielded Room

COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed Wireless Router	REGULATION	: Fcc Part15SubpartC 247(e)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-09101577-0		
POWER	: AC120V/60Hz		
TEST MODE	: Transmitting		

ENGINEER : Toyokazu Imamura

IEEE802.11b(11Mbps)

CH	FREQ [GHz]	S/A Reading * [dBm]	Cable Loss [dB]	Results [dBm]	Limit [dBm]	MARGIN [dB]
Low	2.4133	-5.75	0.5	-5.25	8.0	13.3
Mid	2.4343	-5.50	0.5	-5	8.0	13.0
High	2.4640	-6.00	0.5	-5.5	8.0	13.5

IEEE802.11g(54Mbps)

CH	FREQ [GHz]	S/A Reading * [dBm]	Cable Loss [dB]	Results [dBm]	Limit [dBm]	MARGIN [dB]
Low	2.4164	-6.75	0.5	-6.25	8.0	14.3
Mid	2.4414	-6.00	0.5	-5.5	8.0	13.5
High	2.4637	-5.75	0.5	-5.25	8.0	13.3

*S/A Reading[dBm] = S/A Reading[dBuV] - 107[dB]
S/A:Spectrum Analyzer

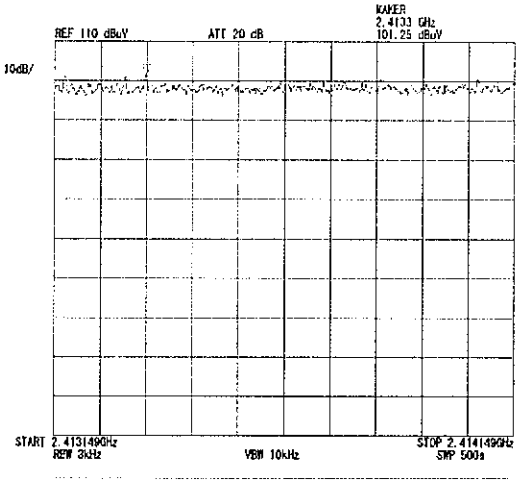
Power Density: FCC 15.247(e)

UL Apex Co.,Ltd. Yamakita No.1 Shielded Room

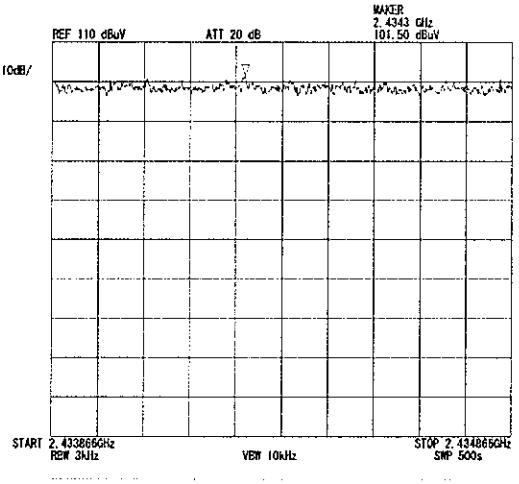
COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(e)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11b(11Mbps)]

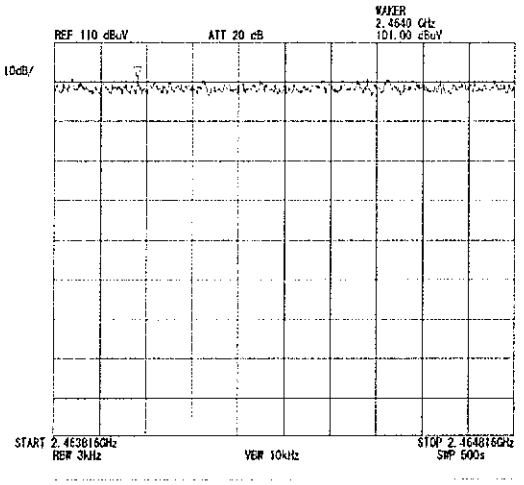
1. ch 1: 2412MHz



2. ch 6: 2437MHz



3. ch 11: 2462MHz



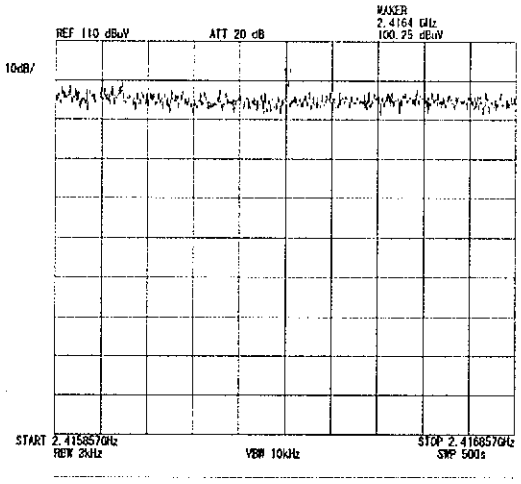
Power Density: FCC 15.247(e)

UL Apex Co.,Ltd. Yamakita No.1 Shielded Room

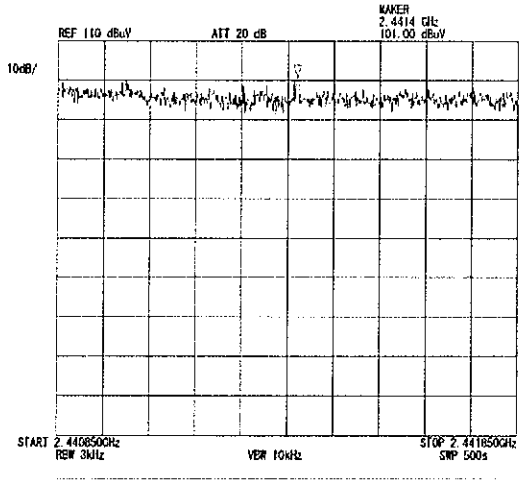
COMPANY	: BUFFALO Inc	REPORT NO	: 25LE0018-YK-1
EQUIPMENT	: High Speed wireless Router	REGULATION	: FCC Part15SubpartC 247(e)
MODEL NUMBER	: WHR-HP-G54	DATE	: 2005/7/29
SERIAL NUMBER	: D-01	TEMP./HUMI	: 24℃/63%
FCC ID	: FDI-0910577-0	TEST MODE	: Transmitting
POWER	: AC120V/60Hz	ENGINEER	: Toyokazu Imamura

[IEEE802.11g(54Mbps)]

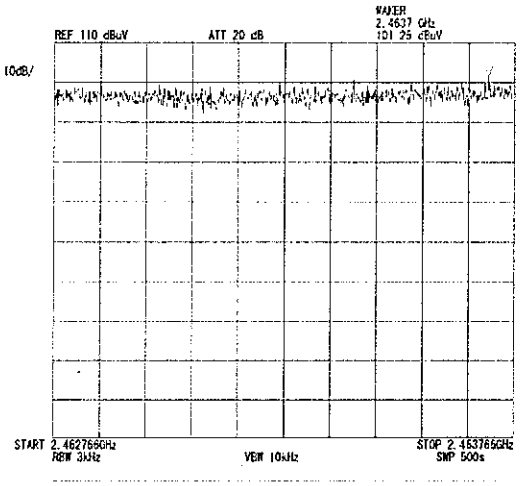
1. ch 1: 2412MHz



2. ch 6: 2437MHz



3. ch 11: 2462MHz



Test Report No :25LE0018-YK-1

APPENDIX 3
Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No.	Test Item	Calibration Date * Interval(month)
KCC-D7	Coaxial Cable	Advantest	A01002	AT 1,2,3,4	2005/04/12 * 12
KSA-04	Spectrum Analyzer	Advantest	R3271A	RE/AT 1,2,3,4	2004/09/15 * 12
KPSS-01	Power sensor	Agilent	E9327A	AT 2	2005/03/04 * 12
KPM-05	Power meter	Agilent	E4417A	AT 2	2005/03/02 * 12
KCC-14/15/16/18/KPL-01	Coaxial Cable/Pulse Limitter	Fujikura/Suhner/PMM	5D-2W/8D-2W/S04272B/S04272B/PL01	CE	2005/06/14 * 12
KLS-01	LISN(AMN)	Schwarzbeck	NSLK8126	CE (EUT)	2005/05/10 * 12
KLS-02	LISN(AMN)	Schwarzbeck	NSLK8127	CE	2004/11/01 * 12
KTM-01	Terminator	TME	CT-01BP	CE	2005/04/07 * 12
KTR-02	Test Receiver	Rohde & Schwarz	ESCS30	CE	2004/11/25 * 12
KAF-01	Pre Amplifier	Hewlett Packard	8447D	RE	2005/05/24 * 12
KAF-02	Pre Amplifier	Hewlett Packard	8449B	RE	2005/04/28 * 12
KAT10-S1	Attenuator	Agilent	8449D 010	RE	2005/04/12 * 12
KAT10-S2	Attenuator	Agilent	8490D 010	RE	2004/10/14 * 12
KAT6-02	Attenuator	INMET	18N-6dB	RE	2005/04/07 * 12
KBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2004/08/07 * 12
KCC-10/11/12/13/18	Coaxial Cable	Fujikura/Suhner	8D-2W/12D-SFA/S04272B/S04272B/S04272B	RE	2005/06/14 * 12
KCC-D3/D7	Coaxial Cable	Rosenberger/Advantest	2201/JUN-08-01-06 1	RE	2005/04/12 * 12
KFL-01	Highpass Filter	Hewlett Packard	84300 80038	RE	2005/04/12 * 12
KHA-02	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2004/09/25 * 12
KHA-04	Horn Antenna	EMCO	3160-09	RE	2005/05/14 * 12
KLA-01	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2005/01/29 * 12
KOTS-01	Open Test Site	JSE	30m	RE	2004/08/14 * 12
KSA-01	Spectrum Analyzer	Advantest	R3365	CE/RE	2005/07/06 * 12

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Test Item:

- CE: Conducted Emission
- RE: Out of Band Emission (Radiated)
- AT: Antenna Terminal Conducted test
  - 1: 6dB Bandwidth
  - 2: Maximum Peak Output Power
  - 3: Out of Band Emission (Conducted)
  - 4: Peak Power Density