



EMI TEST REPORT

Test Report No. : 25IE0245-HO-1

Applicant : Sony Corporation
Type of Equipment : Wireless LAN Module
Model No. : IRF303JU
Test standard : FCC Part 15 Subpart C
Section 15.207, Section 15.247 : 2005
FCC ID : AK8IRF303
Test Result : Complied

1. This test report shall not be reproduced in full or partial, 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 report are traceable to the national or international standards.

Date of test:

June 13 to 17, 2005

Tested by:

Yutaka Yoshida
EMC Service

Norihisa Hashimoto
EMC Service

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EMC Service

Approved by :

Naoki Sakamoto
Group Leader of
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SECTION 1: Client information

Company Name : Sony Corporation
Address : Gate City Osaki West Tower Osaki East Tec.
1-11-1 Osaki Shinagawa-ku, Tokyo, 141-0032 Japan
Telephone Number : +81-3-5435-3977
Facsimile Number : +81-3-5435-3963
Contact Person : Masaki Nishimura

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment : Wireless LAN Module
Model No. : IRF303JU
Serial No. : 002 (for Spurious Emission (Radiated) and Conducted Emission tests)
003(Maximum Peak Output Power test)
001 (for other tests)
Rating : DC3.3V, 0.81A
Country of Manufacture : Japan
Receipt Date of Sample : June 13, 2005
Condition of EUT : Engineering prototype
(Not for Sale: This sample is equivalent to mass-produced items.)

2.2 Product Description

Equipment Type : Transceiver
Frequency of operation : 2412-2462MHz (IEEE802.11b/g)
Transmission method : DSSS
Modulation Techniques : OFDM,CCK,QPSK,BPSK
Channel number : 11channels
Power control : Non
Mode of operation : Duplex
Antenna Type : Pattern Antenna (M/N : LFANT101,LFANT103)
Antenna Gain : LFANT101 : 2.29dBi (MAX)
LFANT103 : 2.35dBi (MAX)
Antenna Connector Type : U.FL

*Remarks variant model : IRF303U2 (only a different Host device)

FCC 15.31 (e)

The stabilized voltage (DC3.3V) is supplied constantly from the host device as power supply to EUT.
Therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

This EUT complies with the requirement of FCC15.203, because a unique coupling (Antenna Connector Type : U.FL) is used for this EUT.

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SECTION 3: Test specification, procedures & 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 and results

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin *0	Results
1	Conducted emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	Section 15.207	-	N/A	15.5dB, 0.1822MHz, Phase N (QP) IEEE802.11g, High Ch	Complied
2	6dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247(a)(2)	Conducted	N/A	See data.	Complied
3	Maximum Peak Output Power	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247(b)(3)	Conducted	N/A	See data.	Complied
4	Spurious Emission	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247 (d) Section 15.209	Conducted/ Radiated	N/A	1.0dB, 2483.5MHz,HOR IEEE802.11g, High Ch	Complied
5	Restricted Band Edges	ANSI C63.4:2003 13. Measurement of intentional radiators	Section 15.247 (d)	Conducted/ Radiated	N/A	See data.	Complied
6	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 and QPM15.

*0) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

Uncertainty:

Conducted Emission

The measurement uncertainty (with a 95% confidence level) for this test is ± 1.3 dB.

The data listed in this test report has enough margin, more than the site margin.

Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ± 4.5 dB(3m)/ ± 4.7 dB(10m).

The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ± 5.2 dB(3m)/ ± 3.8 dB(10m).

The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ± 6.6 dB.

The data listed in this report meets the limits unless the uncertainty is taken into consideration.

Other test except Conducted Emission and Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test is ± 3.0 dB.

The data listed in this test report has enough margin, more than the site margin.

*These tests were also referred to "Guidance on Measurement for Digital Transmission Systems Section15.247".

*These tests were performed without any deviations from test procedure except for additions or exclusions.

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3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	RSS210(issue 5): 2001 + Amendment:2002 + Amendment2:2003 + Amendment3:2004 + Amendment4:2004	RSS210(issue 5): 2001 + Amendment:2002 + Amendment2:2003 + Amendment3:2004 + Amendment4:2004	Conducted	N/A	N/A	N/A

3.4 Test Location

UL Apex Co., Ltd. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
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	Listed date (for FCC)	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	February 01, 2002	313583	IC4247	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	June 05, 2002	846015	IC4247-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 shielded room	-	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.4 measurement room	-	-	-	3.1 x 5.0 x 2.7m	N/A	-

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1 and No.2 semi-anechoic and No.3 shielded room.

3.5 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

SECTION 4: Operation of E.U.T. during testing

4.1 Operating Modes

The EUT was operating in a manner similar to typical use during the tests.

PacketType : Maximum
Payload : PN9
Operation : Transmitting mode(IEEE802.11b/11g)
Low Channel :2412MHz(Ch1)
Mid Channel :2437MHz(Ch6)
High channel :2462MHz(Ch11)
Conditions : 1) Data Rate:IEEE802.11b:1,2,5.5,11, IEEE802.11g:6,9,12,18,24,36,48,54 Mbps
2) Antenna Port:1,2 (same type)
3) Pattern Antenna:LFANT101, LFANT103
4) Cable length : from 10cm to 20cm
*We pre-confirmed the above conditions on EUT and performed the final test with the following conditions;

	IEEE802.11b	IEEE802.11g
Conducted emission test	1)Rate:11Mbps	1)Rate:54Mbps
	2)Antenna Port:1	
	3)Pattern Antenna:LFANT101	
	4)Cable:20cm	
Radiated emission test	1)Rate:11Mbps	1)Rate:54Mbps
	2)Antenna Port:1	
	3)Pattern Antenna:LFANT101, LFANT103 (*both were tested)	
	4)Cable:20cm	
Other tests	1)Rate:11Mbps	1)Rate: 54Mbps
	2)Antenna Port:2	
	3)Pattern Antenna:N/A	
	4)Cable:10cm	

<The details>

Conducted emission test : The above conditions did not affect the test result so that the test was made with these conditions in the above table.

Radiated emission test : As for Rate, 11Mbps (Maximum transmission rate of 11b) and 54Mbps (Maximum transmission rate of 11g) had worst margins.
The result of Antenna Port 1 had worst margin.
We confirmed the tests with minimum length 10cm and maximum length 20cm, and the result with 20cm had worst margin.

Other tests : As for Rate, 11Mbps (Maximum transmission rate of 11b) and 54Mbps (Maximum transmission rate of 11g) had worst margins.
The result of Antenna Port 2 had worst margin.
The Cable length did not affect the test result so that the test was made with 10cm.

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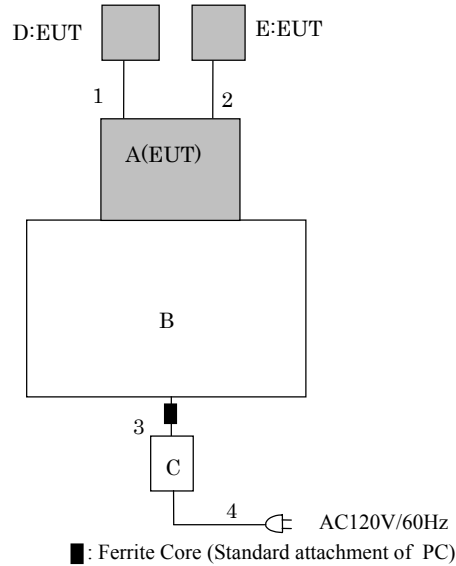
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4.2 Configuration and peripherals



* Cabling was taken into consideration and test data was taken under worse case conditions.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	FCC ID	Remarks
A	Wireless LAN Module	IRF303JU	002*1 003*2 001*3	SONY	AK8IRF303	EUT
B	Notebook Personal Computer	PP01L	CN-04P449-48155-28N-1004	DELL	-	-
C	AC Adaptor	AA20031	CN-09364U-16291-289-00YA	DELL	-	-
D	Pattern Antenna	LFANT101 LFANT103	-	SONY	AK8IRF303	EUT
E	Pattern Antenna	LFANT101 LFANT103	-	SONY	AK8IRF303	EUT

*1 : for Spurious Emission (Radiated) and Conducted Emission tests

*2 : for Maximum Peak Output Power test

*3 : for other tests

List of cables used

No.	Name	Length (m)	Shield	Backshell Material
1	Antenna Cable	0.2	Y	FEP
2	Antenna Cable	0.2	Y	FEP
3	DC Cable	1.8	N	Polyvinyl chloride
4	AC Cable	1.8	N	Polyvinyl chloride

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SECTION 5: Conducted Emission

Test Procedure

EUT was placed on a platform of nominal size, 0.5m by 1.0m, 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 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)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

1) For the tests on EUT with other peripherals (as a whole system)

I/O cable and AC cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.

2) For the tests on EUT itself (as a stand alone equipment)

Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN/(AMN) to the input power source. All unused 50ohm connectors of the LISN(AMN) were resistively terminated in 50ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber or a Measurement Room.

The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

The measurements have been performed with a CISPR quasi-peak detector (IF BW 9 kHz).

Measurement range: 0.15-30MHz

Test data : APPENDIX 3

Test result : Pass

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SECTION 6: Spurious Emission

[Conducted]

Test Procedure

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

Test data : APPENDIX 3

Test result : Pass

[Radiated]

Test Procedure

EUT was placed on the size, 0.5m by 1.0m, raised 80cm above the conducting ground plane.

The Radiated Electric Field Strength intensity has been measured in a Semi Anechoic Chamber with a ground plane and at a distance of 3m(Below 10GHz) and 1m(Upper 10GHz).

The height of the measuring 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 with the Test Receiver or the Spectrum Analyzer.

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.

20dBc was applied to the frequency over the limit of FCC 15.209 and outside the restricted band of 15.205.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver / Spectrum Analyzer	Spectrum Analyzer
Detector	QP: BW 120kHz(T/R)	PK: RBW:1MHz/VBW: 1MHz
IF Bandwidth	20dBc : RBW:100kHz/VBW: 300kHz (S/A)	AV: RBW:1MHz/VBW:10Hz 20dBc : RBW:100kHz/VBW:300kHz

Test data : APPENDIX 3

Test result : Pass

- The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

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SECTION 7: Bandwidth

Test Procedure

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

Test data : APPENDIX 3
Test result : Pass

SECTION 8: Maximum Peak Output Power

Test Procedure

The Maximum Peak Output Power was measured with a spectrum analyzer connected to the antenna port.
The test was made with the spectrum analyzer that has a function of channel-power measurement.

Test data : APPENDIX 3
Test result : Pass

SECTION 9: Peak Power Density

Test Procedure

The Peak Power Density was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

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APPENDIX 1: Photographs of test setup

Conducted Emission **Front**



Rear



Spurious Emission (Radiated)

Front

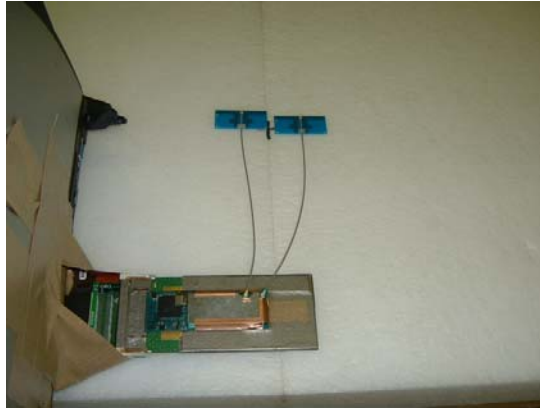


Rear

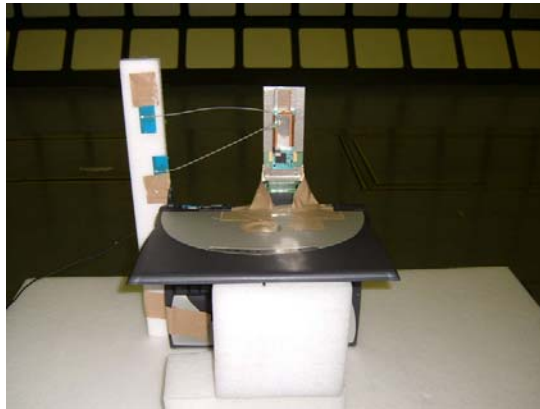


Worst Case Position (Z-axis:Horizontal / Y-axis:Vertical)

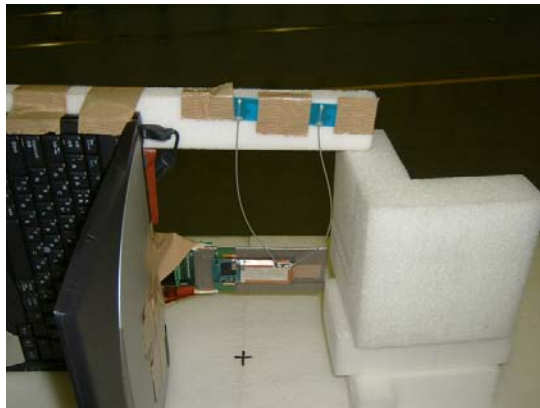
X-axis



Y-axis



Z-axis



APPENDIX 2:Test instruments

EMI test equipment

Control No.	(Conducted Emission)Instrument	Manufacturer	Model No	Item	Calibration Date * Interval(month)
MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE/CE	2004/11/13 * 12
MHA-05	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2005/01/10 * 12
MCC-05	Microwave Cable 1G-50GHz	Storm	421-011 (90-1394-079)	RE	2005/01/05 * 12
MCC-18	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	RE	2005/02/03 * 12
MPA-01	Pre Amplifier	Agilent	8449B	RE	2005/02/05 * 12
MBF-03	SHF Bandpass Filter	M-City	13GHz BPF	RE	2005/05/20 * 12
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2004/10/14 * 12
MLA-01	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2004/10/14 * 12
MCC-01	Coaxial Cable 0.1-3000MHz	Suhner/storm/Agilent/TSJ	-	RE	2004/12/19 * 12
MPA-04	Pre Amplifier	Agilent	8447D	RE	2005/05/24 * 12
MAT-06	Attenuator(6dB)	Weinschel Corp	2	RE	2004/12/16 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE /CE	2004/11/12 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	AT	2005/06/03 * 12
MAT-24	Attenuator	Agilent	8493C	AT	2005/06/03 * 12
MHF-02	High Pass Filter	Tokimec	TF323DCA	RE	2004/09/18 * 12
MLS-02	LISN(AMN)	Schwarzbeck	NSLK8127	CE(EUT)	2004/11/10 * 12
MCC-03	Coaxial Cable	Fujikura/Suhner/Agilent/TSJ	-	CE	2004/12/24 * 12
MCC-28	Microwave Cable 1G-50GHz	Suhner	SUCOFLEX101	RE	2004/08/26 * 12
MCC-17	Microwave Cable 1G-50GHz	Suhner	SUCOFLEX 101	RE	2005/02/03 * 12
MHA-01	Horn Antenna	EMCO	3160-09	RE	2005/01/10 * 12
MCC-26	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2004/08/26 * 12

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

Test Item :

CE: Conducted emission

RE: Spurious emission(Radiated)

AT: Other tests

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APPENDIX 3: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 01:39:03

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120/60Hz)
Temp°C/Humi% : 26deg. C / 49%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting 11b 11Mbps ch1 2412MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)

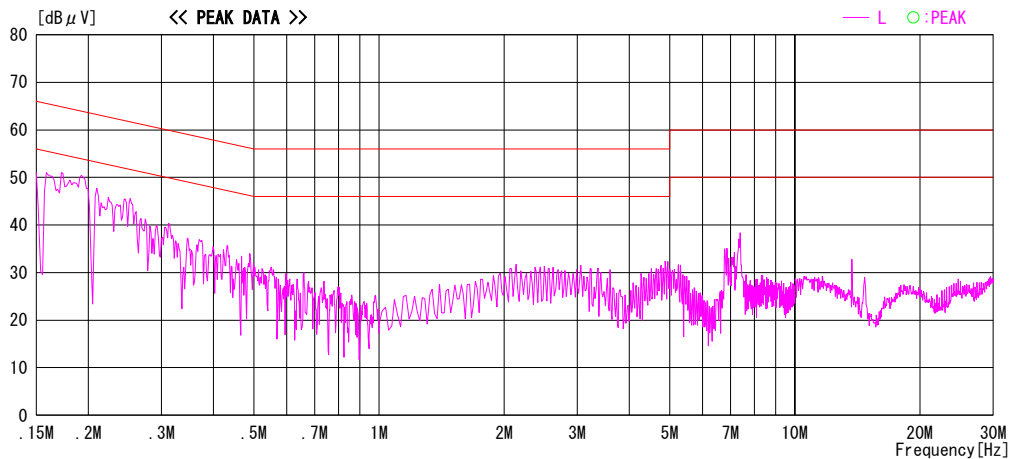
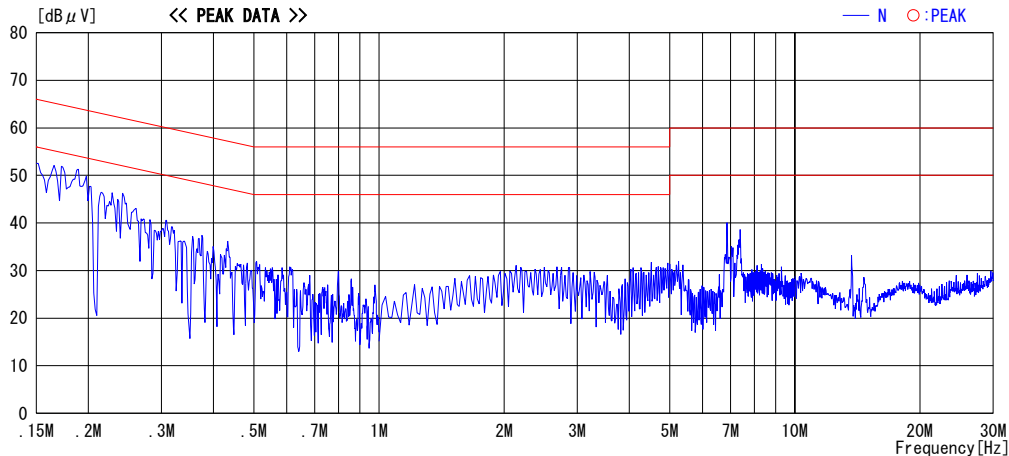


CHART:WITH FACTOR, Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C. F (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

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DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 01:46:32

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 251E0245-HO
Power : DC3.3V (AC120/60Hz)
Temp°C/Humi% : 26deg. C / 49%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting 11b 11Mbps ch6 2437MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)

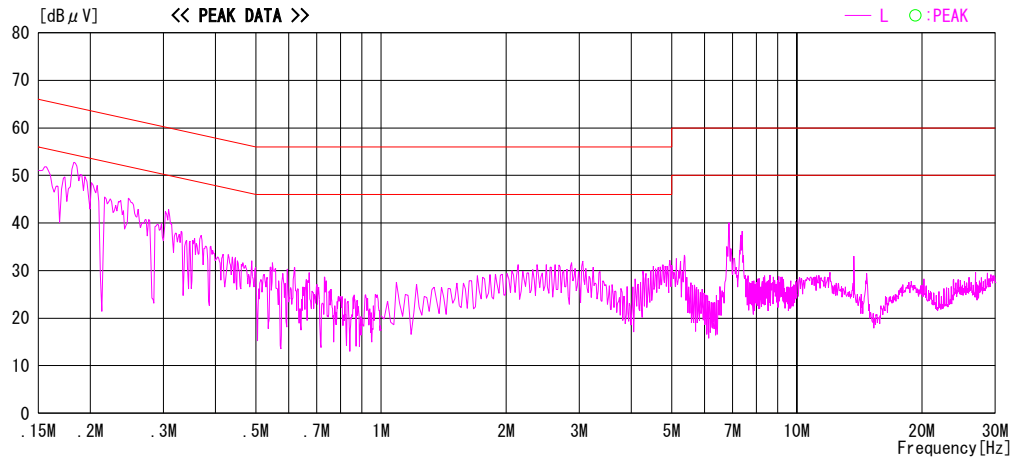
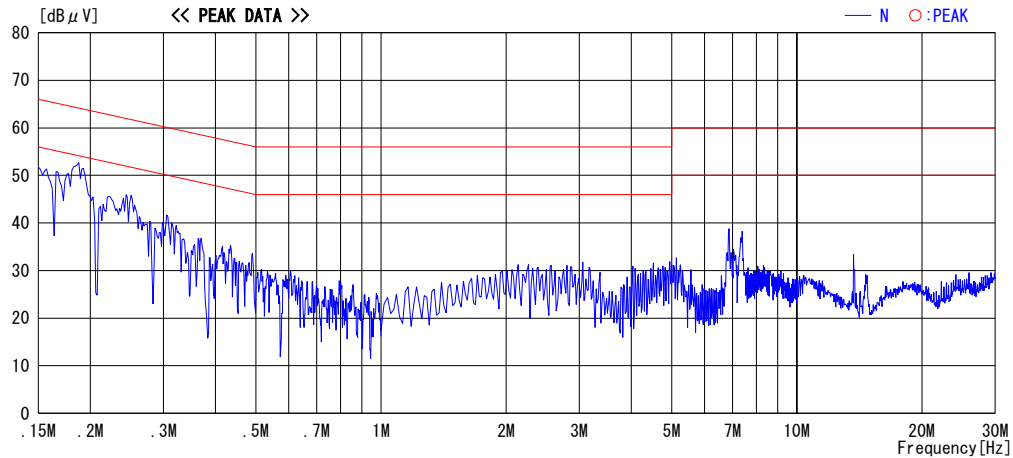


CHART:WITH FACTOR, Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C. F (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 01:51:16

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 251E0245-HO
Power : DC3.3V (AC120/60Hz)
Temp°C/Humi% : 26deg. C / 49%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting 11b 11Mbps ch11 2462MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)

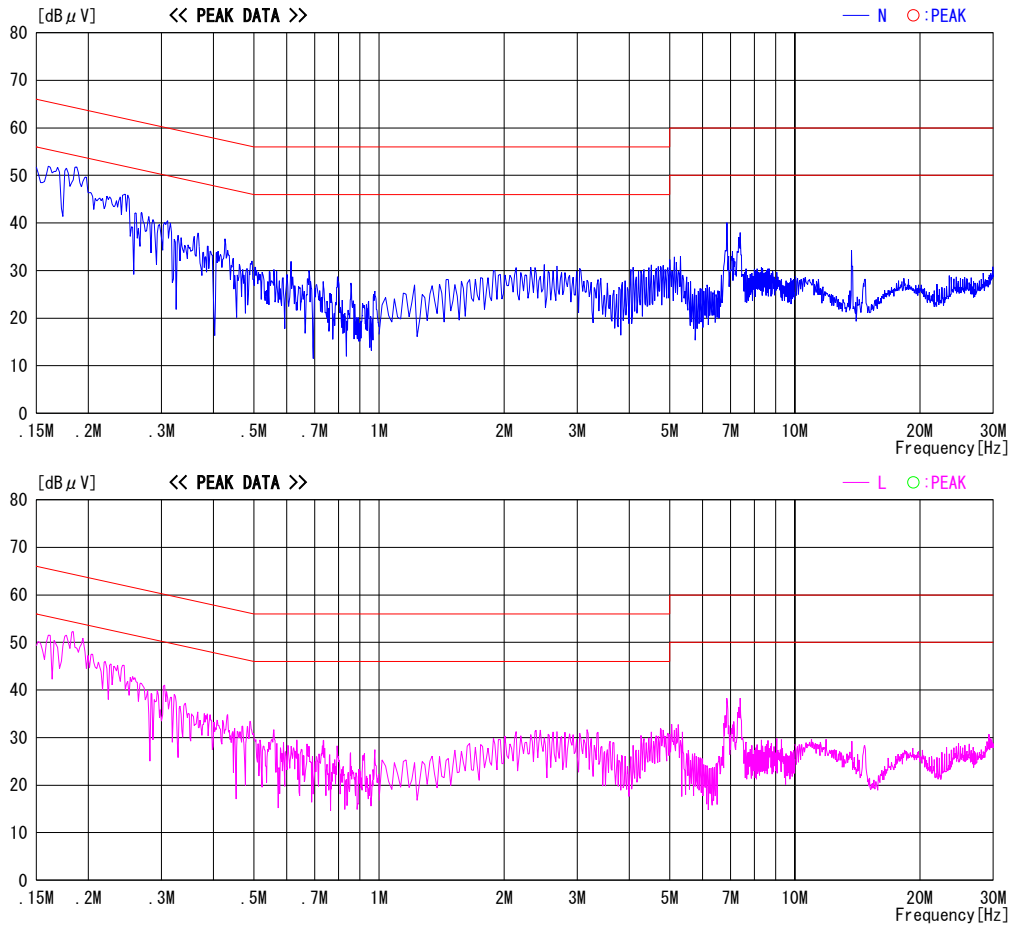


CHART:WITH FACTOR, Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C. F (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 01:56:04

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 251E0245-H0
Power : DC3.3V (AC120/60Hz)
Temp°C/Humi% : 26deg. C / 49%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting 11g 54Mbps ch1 2412MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)

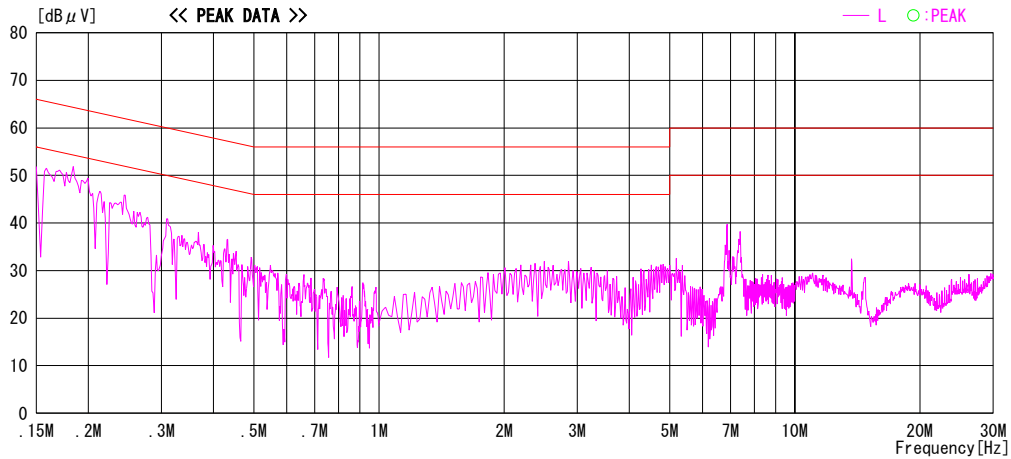
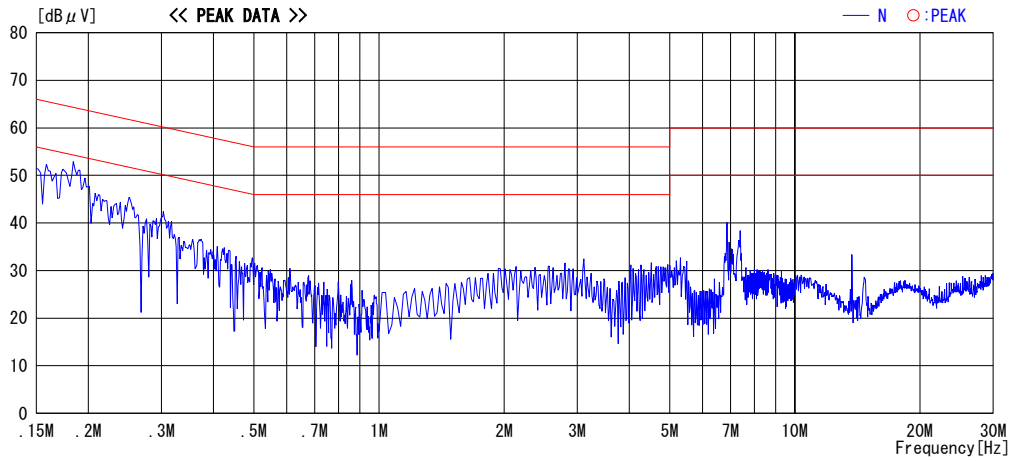


CHART:WITH FACTOR, Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C. F (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 02:00:11

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 251E0245-HO
Power : DC3.3V (AC120/60Hz)
Temp°C/Humi% : 26deg. C / 49%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting 11g 54Mbps ch6 2437MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)

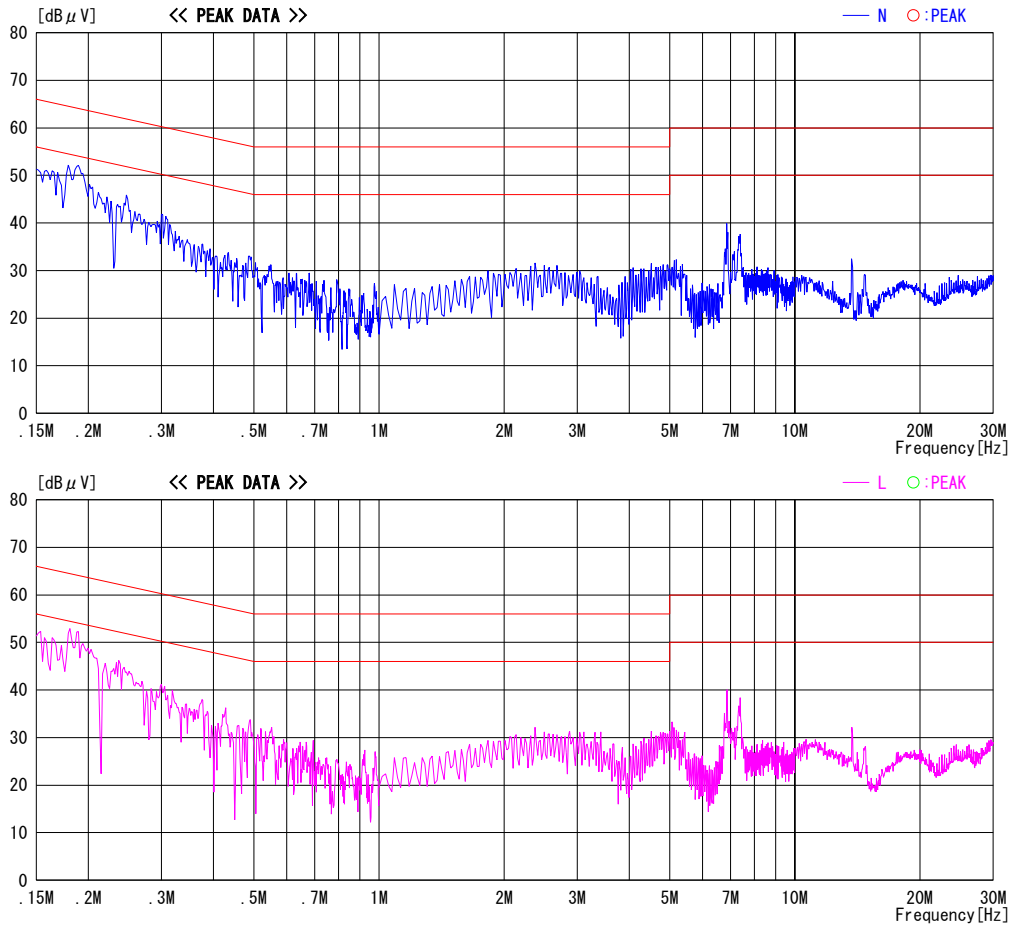


CHART:WITH FACTOR, Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C. F (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 02:07:01

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 25IE0245-H0
Power : DC3.3V (AC120/60Hz)
Temp°C/Humi% : 26deg. C / 49%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting 11g 54Mbps ch11 2462MHz

LIMIT : FCC15C § 15.207 (QP)
FCC15C § 15.207 (AV)

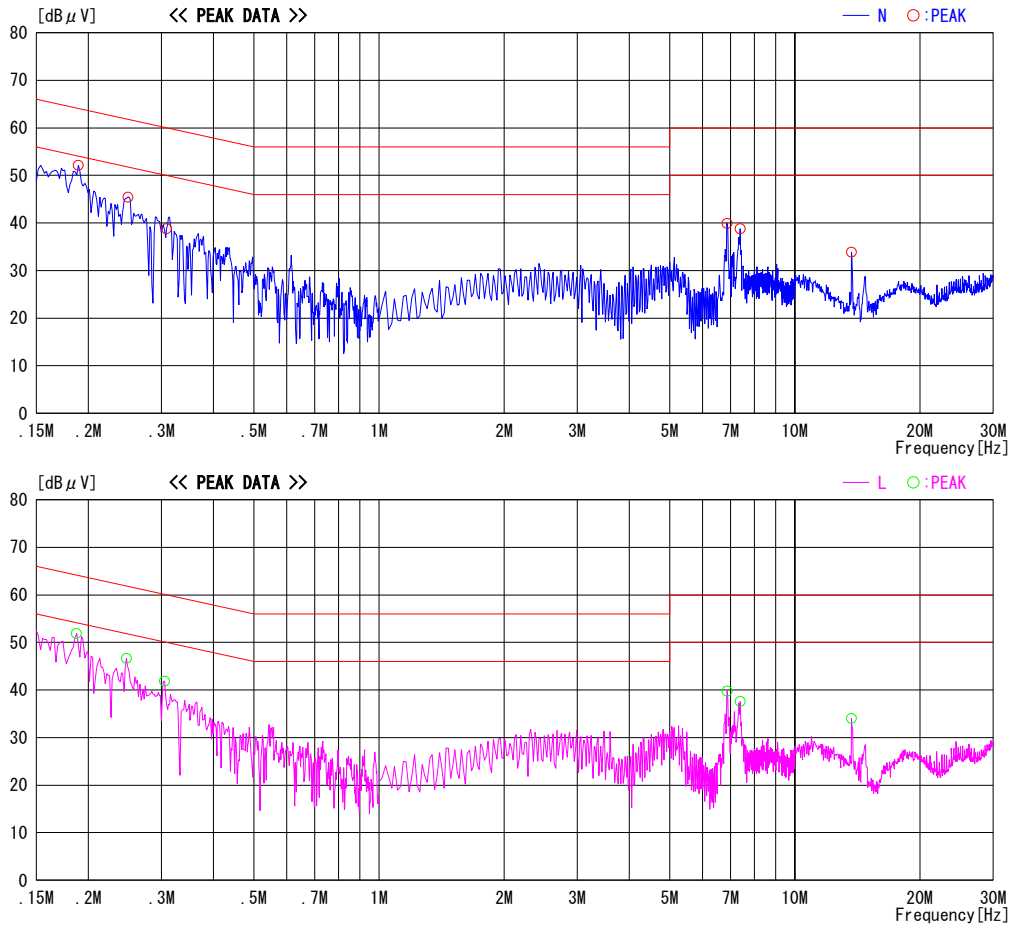


CHART:WITH FACTOR, Peak hold data. Data is uncorrected. CALCURATION: RESULT=READING+C. F (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

DATA OF CONDUCTED EMISSION TEST

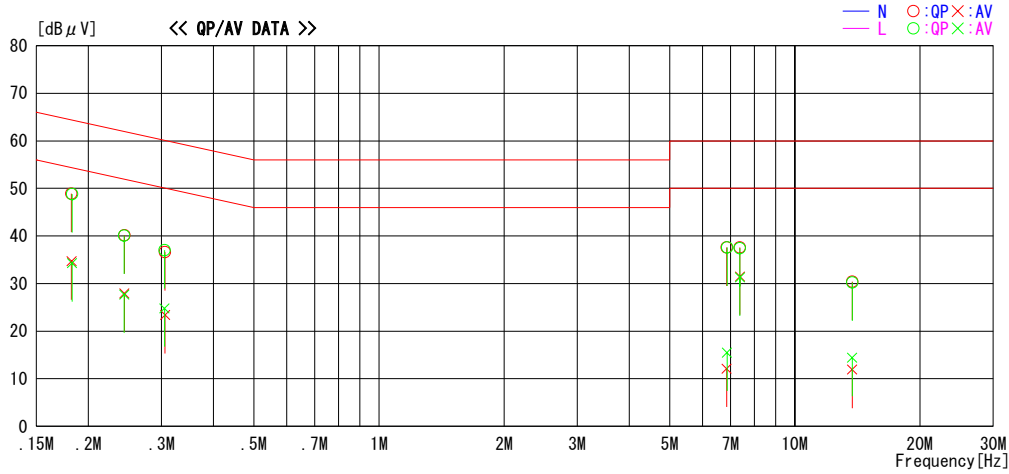
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 02:07:01

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120/60Hz)
Temp°C/Humi% : 26deg. C / 49%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting 11g 54Mbps ch11 2462MHz

LIMIT : FCC15C § 15.207 (QP)
FCC15C § 15.207 (AV)



NO	FREQ [MHz]	READING		C. F	RESULT		LIMIT		MARGIN		PHASE
		QP [dB μV]	AV [dB μV]		QP [dB μV]	AV [dB μV]	QP [dB μV]	AV [dB μV]	QP [dB]	AV [dB]	
1	0.1822	48.4	34.2	0.5	48.9	34.7	64.4	54.4	15.5	19.7	N
2	0.2442	39.7	27.4	0.5	40.2	27.9	62.0	52.0	21.8	24.1	N
3	0.3058	36.2	23.0	0.4	36.6	23.4	60.1	50.1	23.5	26.7	N
4	6.8573	36.3	10.8	1.3	37.6	12.1	60.0	50.0	22.4	37.9	N
5	7.3795	36.3	30.2	1.3	37.6	31.5	60.0	50.0	22.4	18.5	N
6	13.7380	28.5	10.0	1.9	30.4	11.9	60.0	50.0	29.6	38.1	N
7	0.1828	48.3	33.8	0.5	48.8	34.3	64.4	54.4	15.6	20.1	L
8	0.2441	39.6	27.2	0.5	40.1	27.7	62.0	52.0	21.9	24.3	L
9	0.3049	36.6	24.4	0.4	37.0	24.8	60.1	50.1	23.1	25.3	L
10	6.8698	36.3	14.2	1.3	37.6	15.5	60.0	50.0	22.4	34.5	L
11	7.3790	36.1	30.0	1.3	37.4	31.3	60.0	50.0	22.6	18.7	L
12	13.7385	28.3	12.5	1.9	30.2	14.4	60.0	50.0	29.8	35.6	L

CHART: WITH FACTOR, Peak hold data. Data is uncorrected. CALCULATION: RESULT=READING+C. F (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

6dB Bandwidth(DSSS and other forms of modulation)

UL Apex Co., Ltd.
Head Office EMC Lab. No.4 Measurement Room

Company : Sony Corporation
Equipment : Wireless LAN Module
Model : IRF303JU
Sample No. : 001
Power : DC3.3V
Mode : Tx IEEE 802.11b/g
Antenna Port : 2

REPORT NO : 25IE0245-HO
REGULATION : FCC 15.247(a)(2)
TEST DISTANCE : -
DATE : 06/16/2005
TEMPERATURE : 26deg.C
HUMIDITY : 46%
ENGINEER : Hiroka Umeyama

[IEEE802.11b : 11Mbps]

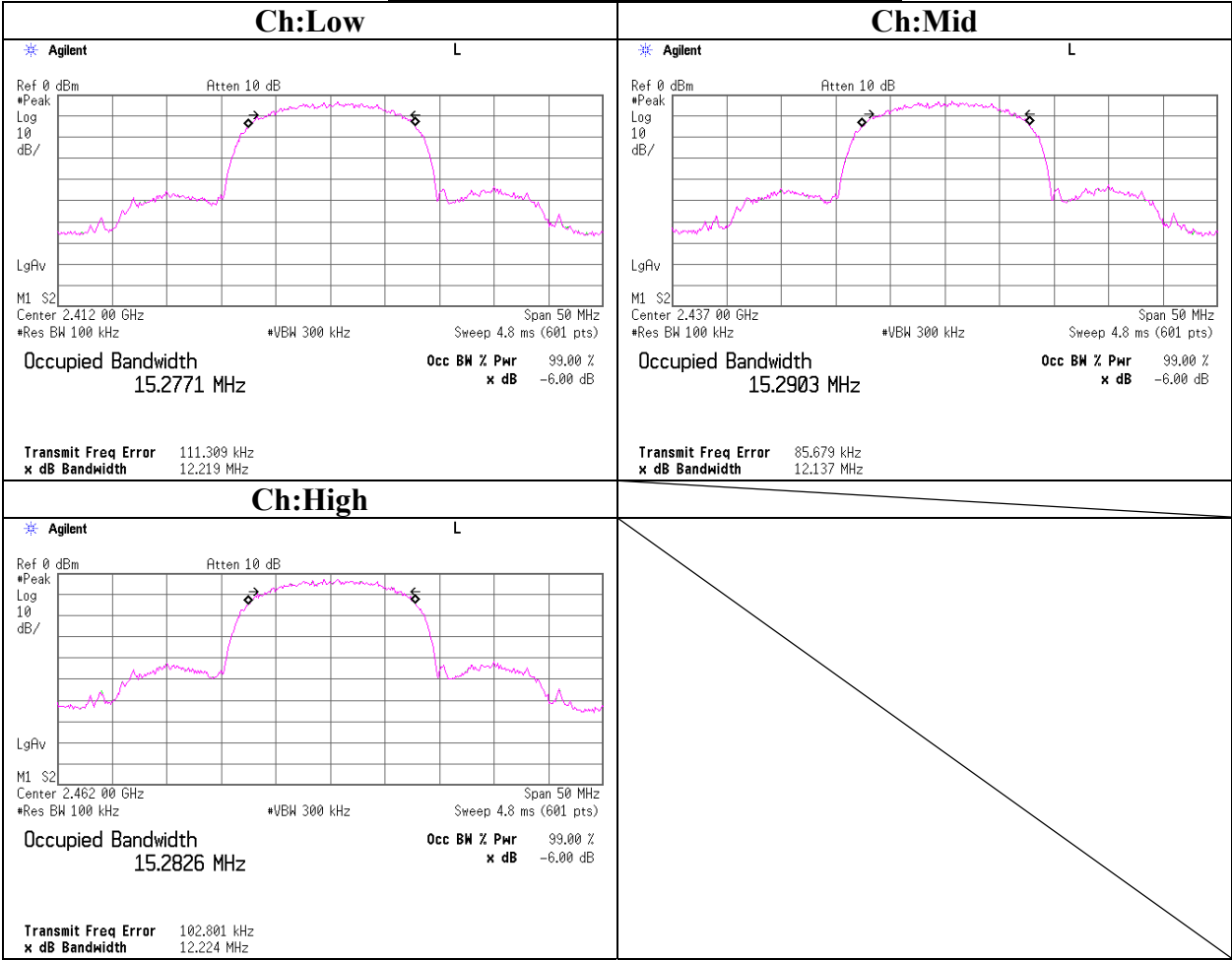
Ch	Freq.	6dB Bandwidth	Limit
	[MHz]	[MHz]	[kHz]
Low	2412.0	12.219	500.0
Mid	2437.0	12.137	500.0
High	2462.0	12.224	500.0

[IEEE802.11g : 54Mbps]

Ch	Freq.	6dB Bandwidth	Limit
	[MHz]	[MHz]	[kHz]
Low	2412.0	16.598	500.0
Mid	2437.0	16.565	500.0
High	2462.0	16.589	500.0

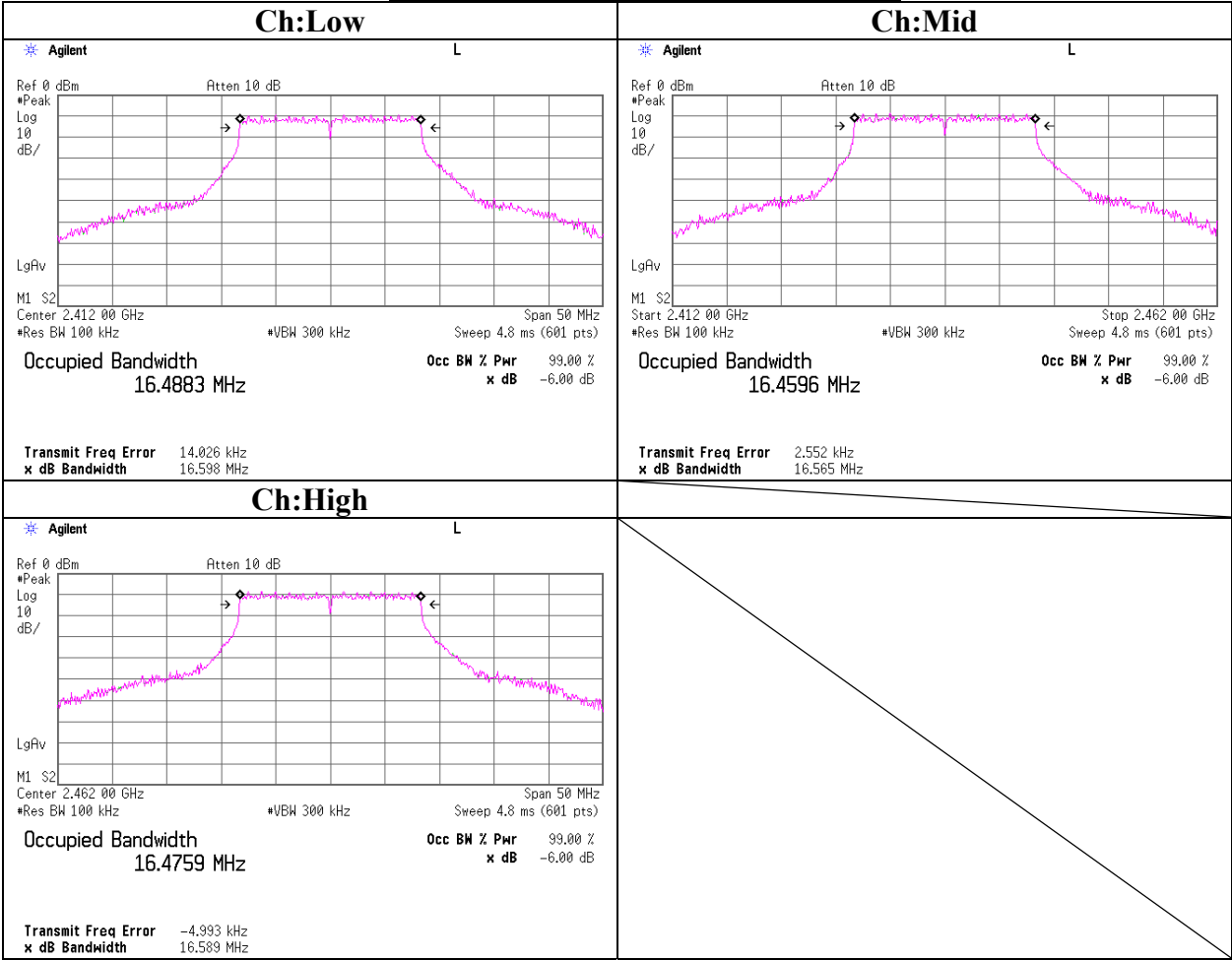
6dB Bandwidth(DSSS and other forms of modulation)

IEEE802.11b 11Mbps Antenna Port:2



6dB Bandwidth(DSSS and other forms of modulation)

IEEE802.11g 54Mbps Antenna Port:2



Maximum Peak OutPut Power (DSSS and other forms of modulation)

UL Apex Co., Ltd.
Head Office EMC Lab. No.4 Measurement Room

Company : Sony Corporation
Equipment : Wireless LAN Module
Model : IRF303JU
Sample No. : 003
Power : DC3.3V
Mode : Tx IEEE 802.11b
Antenna Port : 1,2

REPORT NO : 25IE0245-HO
REGULATION : FCC 15.247(b)(3)
TEST DISTANCE : -
DATE : 06/13/2005
TEMPERATURE : 24deg.C
HUMIDITY : 49%
ENGINEER : Hiroka Umeyama

[IEEE802.11b : 11Mbps : Antenna 1]

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit (1W) [dBm]	Margin [dB]
Low	2412.0	12.47	0.49	10.00	22.96	30.00	7.04
Mid	2437.0	12.49	0.49	10.00	22.98	30.00	7.02
High	2462.0	13.31	0.49	10.00	23.80	30.00	6.20

[IEEE802.11b : 11Mbps : Antenna 2]

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit (1W) [dBm]	Margin [dB]
Low	2412.0	12.58	0.49	10.00	23.07	30.00	6.93
Mid	2437.0	13.04	0.49	10.00	23.53	30.00	6.47
High	2462.0	13.47	0.49	10.00	23.96	30.00	6.04

Sample Calculation:

Result = Reading + Cable Loss + Attenuator

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

UL Apex Co., Ltd.

Head Office EMC Lab.

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MF060b(10.04.03)

Maximum Peak OutPut Power (DSSS and other forms of modulation)

	UL Apex Co., Ltd.	Head Office EMC Lab. No.4 Measurement Room
Company	: Sony Corporation	REPORT NO : 25IE0245-HO
Equipment	: Wireless LAN Module	REGULATION : FCC 15.247(b)(3)
Model	: IRF303JU	TEST DISTANCE : -
Sample No.	: 003	DATE : 06/13/2005
Power	: DC3.3V	TEMPERATURE : 24deg.C
Mode	: Tx IEEE 802.11g	HUMIDITY : 49%
Antenna Port	: 1,2	ENGINEER : Hiroka Umeyama

[IEEE802.11g : 54Mbps : Antenna 1]

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit (1W) [dBm]	Margin [dB]
Low	2412.0	10.65	0.49	10.00	21.14	30.00	8.86
Mid	2437.0	11.23	0.49	10.00	21.72	30.00	8.28
High	2462.0	11.73	0.49	10.00	22.22	30.00	7.78

[IEEE802.11g : 54Mbps : Antenna 2]

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit (1W) [dBm]	Margin [dB]
Low	2412.0	10.37	0.49	10.00	20.86	30.00	9.14
Mid	2437.0	11.17	0.49	10.00	21.66	30.00	8.34
High	2462.0	11.79	0.49	10.00	22.28	30.00	7.72

Sample Calculation:

Result = Reading + Cable Loss + Attenuator

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

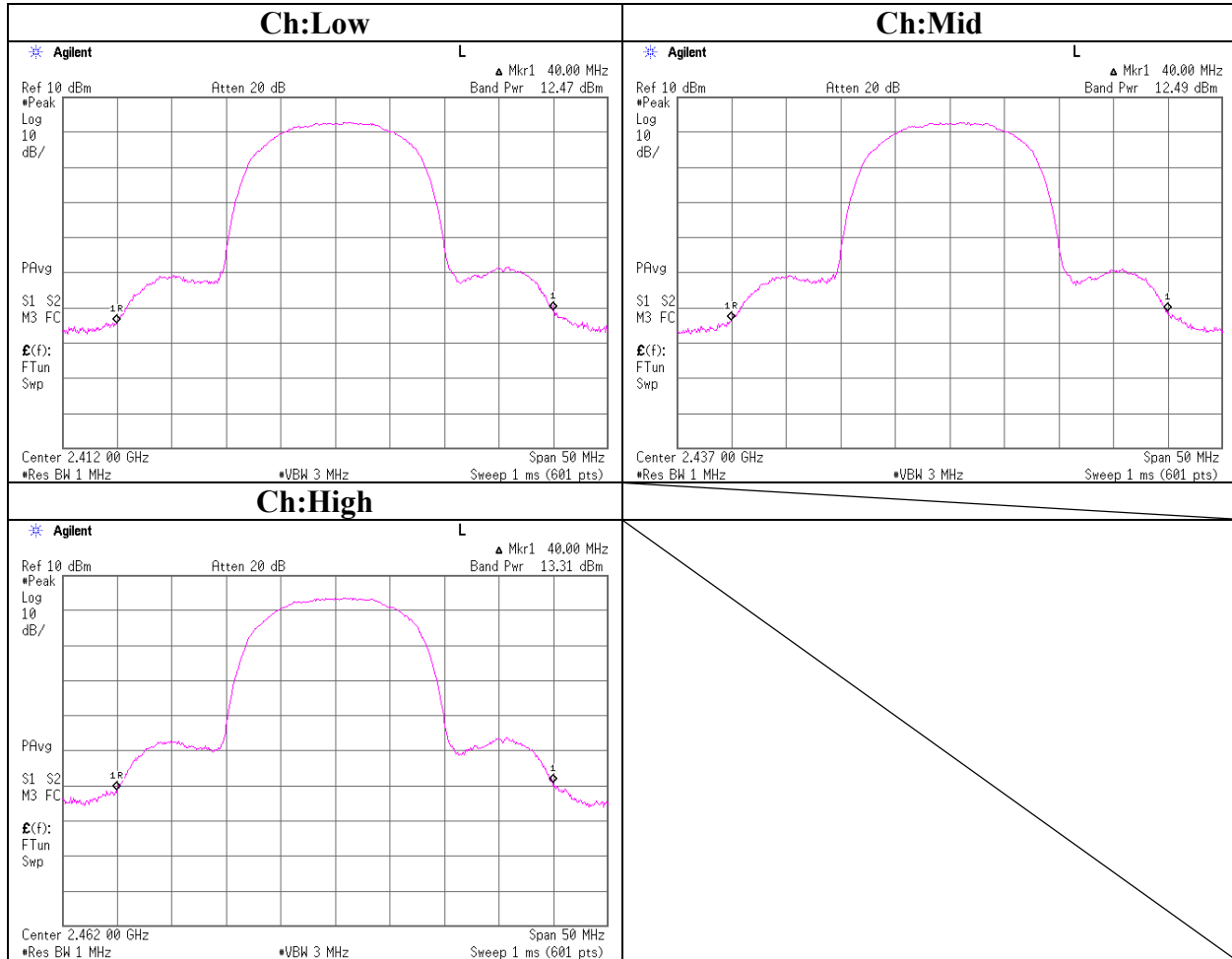
Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

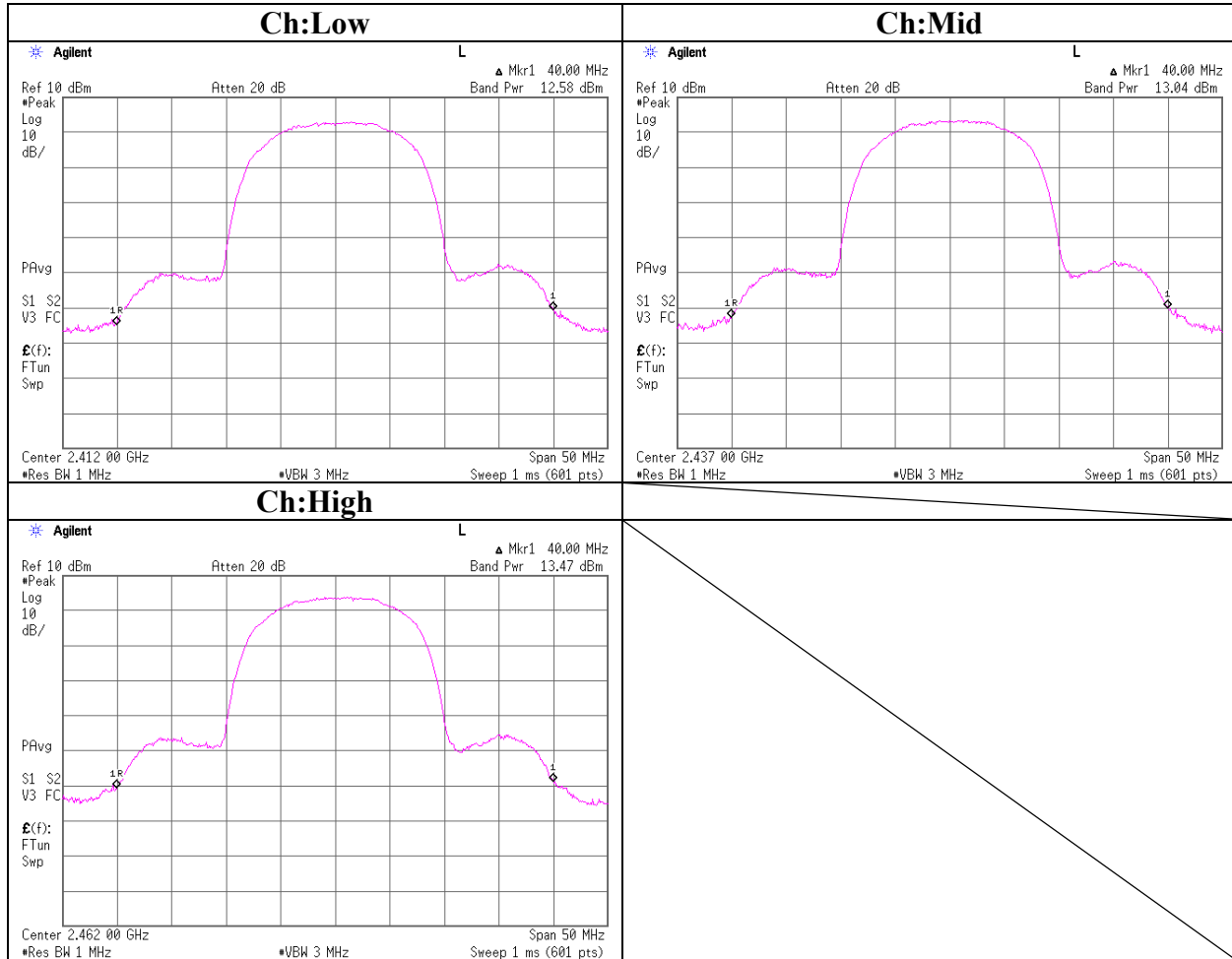
Maximum Peak OutPut Power (DSSS and other forms of modulation)

IEEE802.11b 11Mbps Antenna Port:1



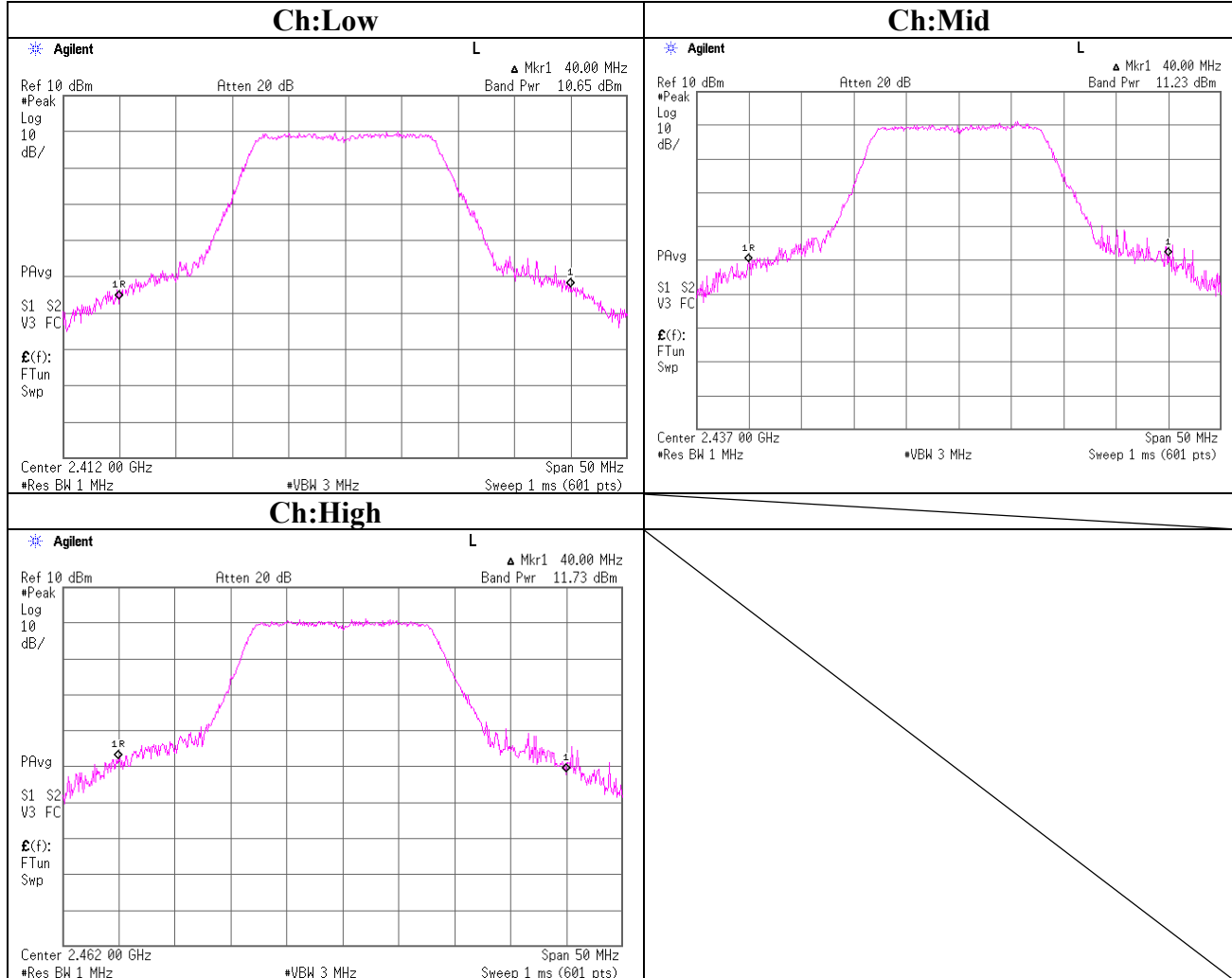
Maximum Peak OutPut Power (DSSS and other forms of modulation)

IEEE802.11b 11Mbps Antenna Port:2



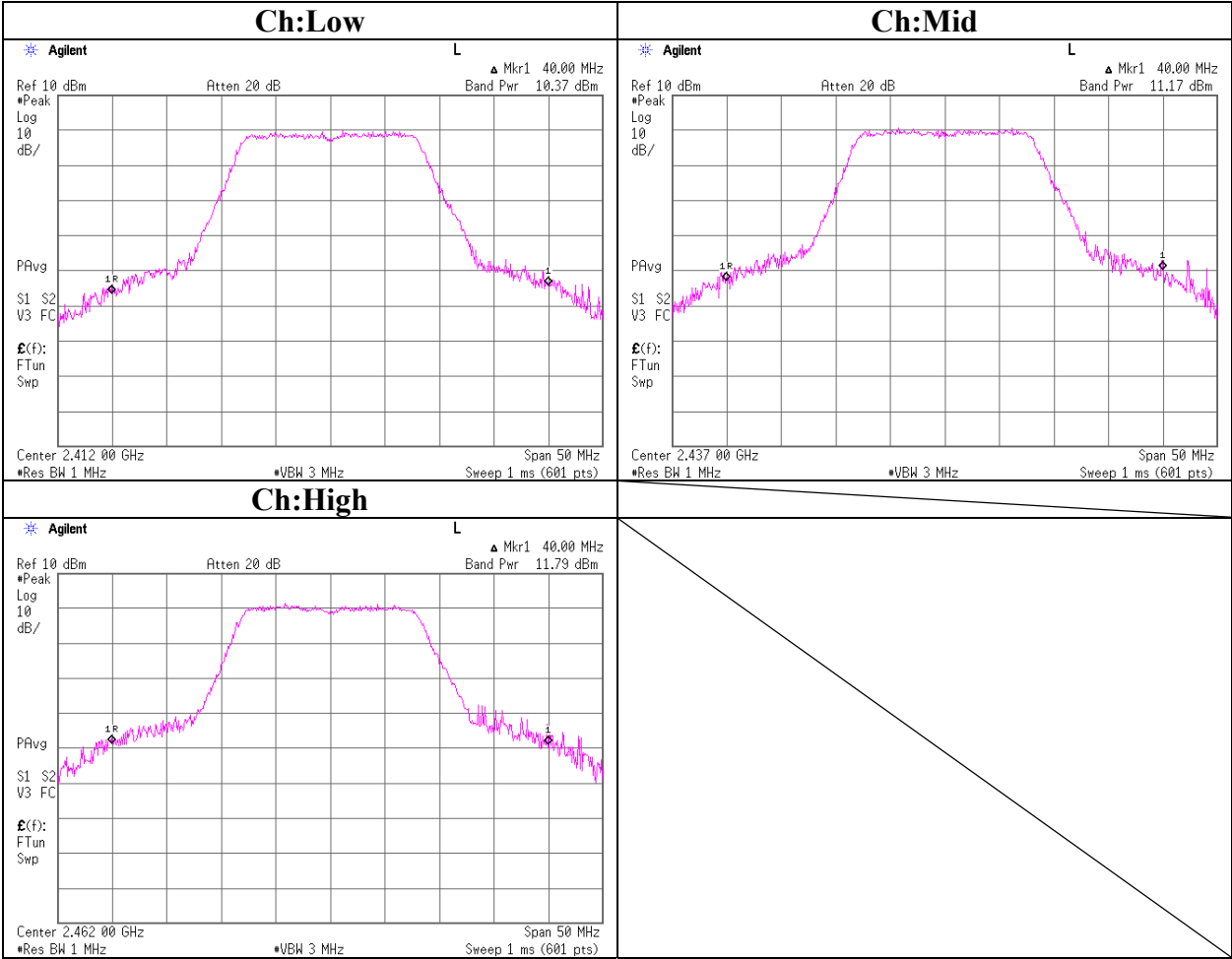
Maximum Peak OutPut Power (DSSS and other forms of modulation)

IEEE802.11g 54Mbps Antenna Port:1



Maximum Peak OutPut Power (DSSS and other forms of modulation)

IEEE802.11g 54Mbps Antenna Port:2



Radiated Spurious Emission(DSSS and other forms of modulation)

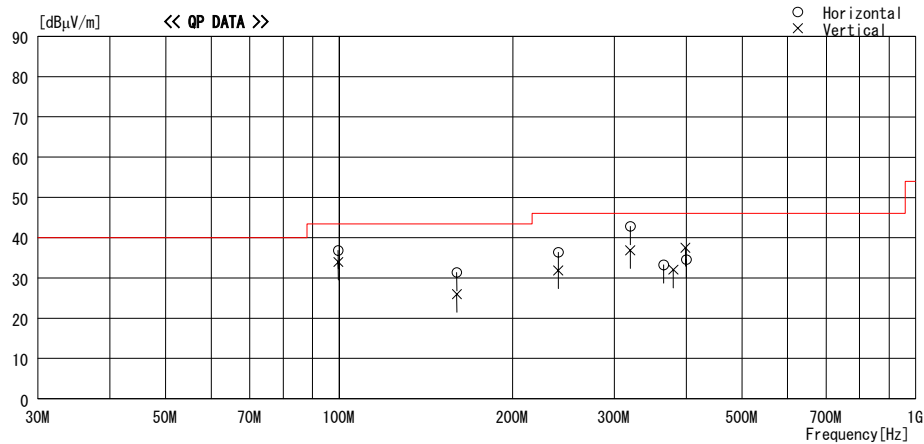
DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 09:09:53

Applicant : Sony Corporation Report No. : 251E0245-HO
Kind of EUT : Wireless LAN Module Power : DC3.3V (AC120V/60Hz)
Model No. : IRF303JU, LFANT101 Temp/C/Humi% : 26deg.C / 60%
Serial No. : 002 Operator : Yutaka Yoshida

Mode / Remarks : Transmitting 11b 11Mbps CH1:2412MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C §15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency	Reading	DET	Antenna	Loss&	Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Gain							
[MHz]	[dBμV]		[dB/m]	[dB]	[dBμV/m]	[Deg]	[cm]		[dBμV/m]	[dB]	
99.693	46.4	QP	10.1	-19.7	36.8	275	184	Hori.	43.5	6.7	
99.688	43.6	QP	10.1	-19.7	34.0	292	100	Vert.	43.5	9.5	
159.994	34.4	QP	15.7	-18.7	31.4	290	189	Hori.	43.5	12.1	
159.994	29.0	QP	15.7	-18.7	26.0	101	100	Vert.	43.5	17.5	
239.991	36.6	QP	17.3	-17.5	36.4	289	124	Hori.	46.0	9.6	
239.984	32.1	QP	17.3	-17.5	31.9	155	230	Vert.	46.0	14.1	
319.991	44.5	QP	15.4	-17.1	42.8	265	100	Hori.	46.0	3.2	
319.995	38.6	QP	15.4	-17.1	36.9	155	166	Vert.	46.0	9.1	
365.621	33.4	QP	16.9	-17.0	33.3	122	100	Hori.	46.0	12.7	
379.920	31.7	QP	17.4	-17.0	32.1	0	120	Vert.	46.0	13.9	
398.785	36.6	QP	18.0	-17.1	37.5	288	119	Vert.	46.0	8.5	
399.992	33.7	QP	18.0	-17.1	34.6	105	100	Hori.	46.0	11.4	

CHART:WITHOUT FACTOR ANT TYPE : ~30MHz LOOP, 30~300MHz BICONICAL, 300MHz~1000MHz Dipole, 1000MHz~ HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

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DATA OF RADIATED EMISSION TEST

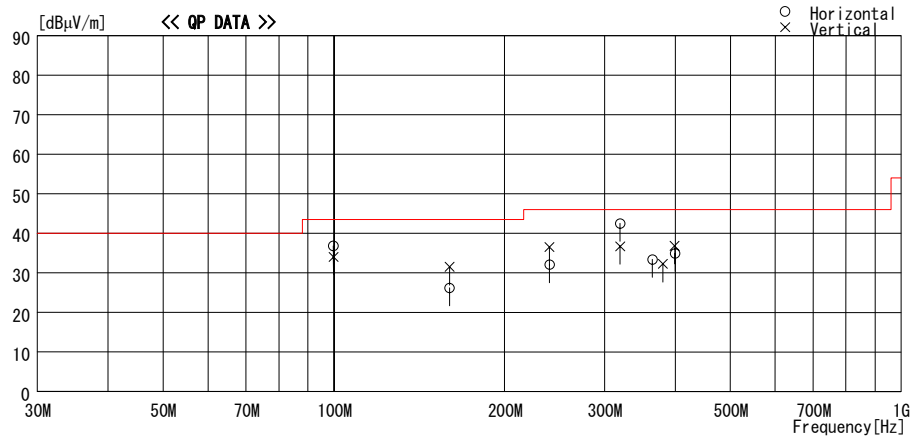
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 09:59:24

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 251E0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks: Transmitting 11b 11Mbps CH6:2437MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C §15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency	Reading	DET	Antenna	Loss	Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Gain							
[MHz]	[dBμV]		[dB/m]	[dB]	[dBμV/m]	[Deg]	[cm]		[dBμV/m]	[dB]	
99.800	46.3	QP	10.2	-19.7	36.8	275	184	Hori.	43.5	6.7	
99.800	43.6	QP	10.2	-19.7	34.1	290	100	Vert.	43.5	9.4	
159.984	34.5	QP	15.7	-18.7	31.5	289	190	Vert.	43.5	12.0	
159.860	29.2	QP	15.7	-18.7	26.2	100	100	Hori.	43.5	17.3	
239.939	36.7	QP	17.3	-17.5	36.5	290	125	Vert.	46.0	9.5	
239.939	32.3	QP	17.3	-17.5	32.1	153	230	Hori.	46.0	13.9	
319.639	44.3	QP	15.3	-17.1	42.5	260	100	Hori.	46.0	3.5	
319.639	38.5	QP	15.3	-17.1	36.7	156	166	Vert.	46.0	9.3	
364.529	33.5	QP	16.9	-17.0	33.4	120	100	Hori.	46.0	12.6	
379.960	31.8	QP	17.4	-17.0	32.2	359	120	Vert.	46.0	13.8	
398.810	35.9	QP	18.0	-17.1	36.8	289	117	Vert.	46.0	9.2	
399.599	34.0	QP	18.0	-17.1	34.9	106	100	Hori.	46.0	11.1	

CHART:WITHOUT FACTOR ANT TYPE: -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP.GAIN
Page:

DATA OF RADIATED EMISSION TEST

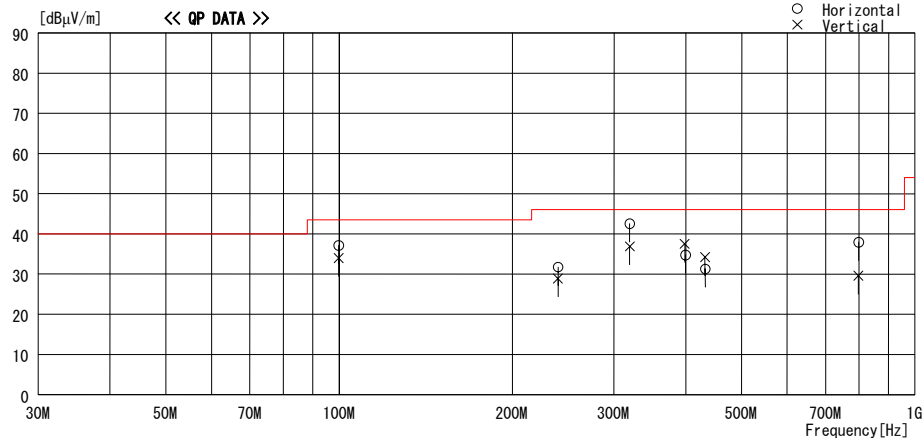
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 10:28:05

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 251E0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg. C / 60%
Operator : Yutaka Yoshida

Mode / Remarks : Transmitting 11b 11Mbps CH11:2462MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C §15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBμV]	DET	Antenna	Lossk	Level [dBμV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBμV/m]	Margin [dB]	Comment
			Factor [dB/m]	Gain [dB]							
99.800	46.6	QP	10.2	-19.7	37.1	105	300	Hori.	43.5	6.4	
99.800	43.5	QP	10.2	-19.7	34.0	323	100	Vert.	43.5	9.5	
239.939	31.9	QP	17.3	-17.5	31.7	246	300	Hori.	46.0	14.3	
239.939	29.1	QP	17.3	-17.5	28.9	185	100	Vert.	46.0	17.1	
319.639	44.4	QP	15.3	-17.1	42.6	237	100	Hori.	46.0	3.4	
319.639	38.7	QP	15.3	-17.1	36.9	154	100	Vert.	46.0	9.1	
398.196	36.7	QP	17.9	-17.1	37.8	276	100	Vert.	46.0	8.5	
399.599	33.8	QP	18.0	-17.1	34.7	113	100	Hori.	46.0	11.3	
432.076	30.3	QP	18.2	-17.2	31.3	249	189	Hori.	46.0	14.7	
432.032	33.2	QP	18.2	-17.2	34.2	270	100	Vert.	46.0	11.8	
797.704	24.1	QP	21.2	-15.7	29.6	0	100	Vert.	46.0	16.4	
798.725	32.4	QP	21.2	-15.7	37.9	291	100	Hori.	46.0	8.1	

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber

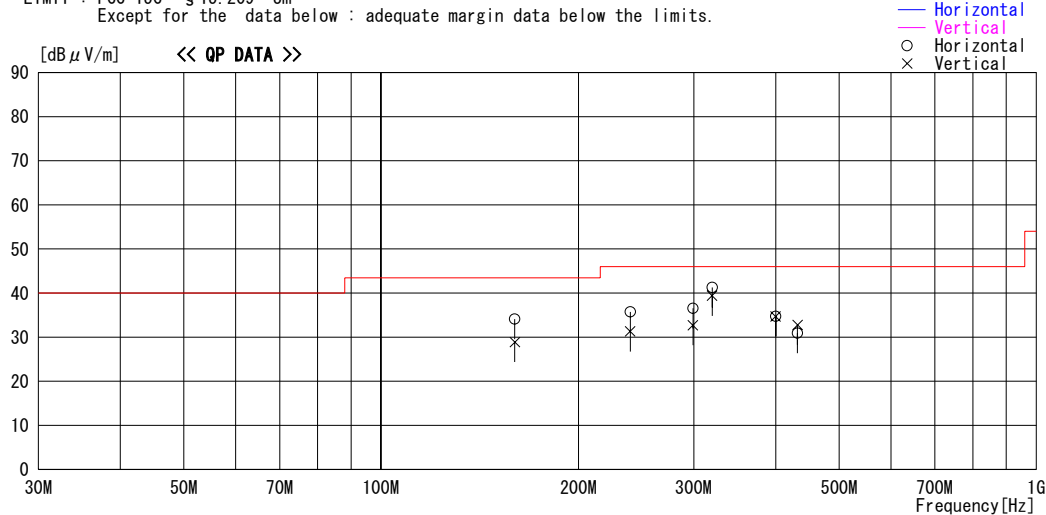
Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 25IE0245-H0
Power : DC3.3V(AC120V/60Hz)
Temp°C/Humi% : 23deg.C / 56%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting 11g ch1 2412MHz 54Mbps HOR:Z, VER:Y

LIMIT : FCC 15C §15.209 3m

Except for the data below : adequate margin data below the limits.



No.	FREQ [MHz]	READING QP [dB μ V]	ANT FACTOR [dB/m]	LOSS [dB]	GAIN [dB]	RESULT [dB μ V/m]	LIMIT [dB μ V/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
----- Horizontal -----										
1	159.992	37.1	15.7	8.8	27.5	34.1	43.5	9.4	199	213
2	239.988	35.9	17.3	9.6	27.1	35.7	46.0	10.3	133	214
3	299.081	33.4	20.4	9.9	27.1	36.6	46.0	9.4	116	27
4	319.985	43.1	15.3	10.1	27.2	41.3	46.0	4.7	100	181
5	399.986	33.8	18.0	10.7	27.8	34.7	46.0	11.3	100	167
6	431.995	29.9	18.2	10.9	28.1	30.9	46.0	15.1	205	359
----- Vertical -----										
7	159.987	31.9	15.7	8.8	27.5	28.9	43.5	14.6	100	359
8	239.986	31.5	17.3	9.6	27.1	31.3	46.0	14.7	287	28
9	299.088	29.5	20.4	9.9	27.1	32.7	46.0	13.3	185	328
10	319.988	41.2	15.3	10.1	27.2	39.4	46.0	6.6	146	118
11	399.989	33.8	18.0	10.7	27.8	34.7	46.0	11.3	110	106
12	432.013	31.8	18.2	10.9	28.1	32.8	46.0	13.2	109	53

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - AMP. GAIN

Page:

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 25IE0245-H0
Power : DC3.3V (AC120v/60Hz)
Temp°C/Humi% : 23deg. C / 56%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting 11g ch6 2437MHz 54Mbps HOR:Z, VER:Y

LIMIT : FCC 15C § 15.209 3m

Except for the data below : adequate margin data below the limits.

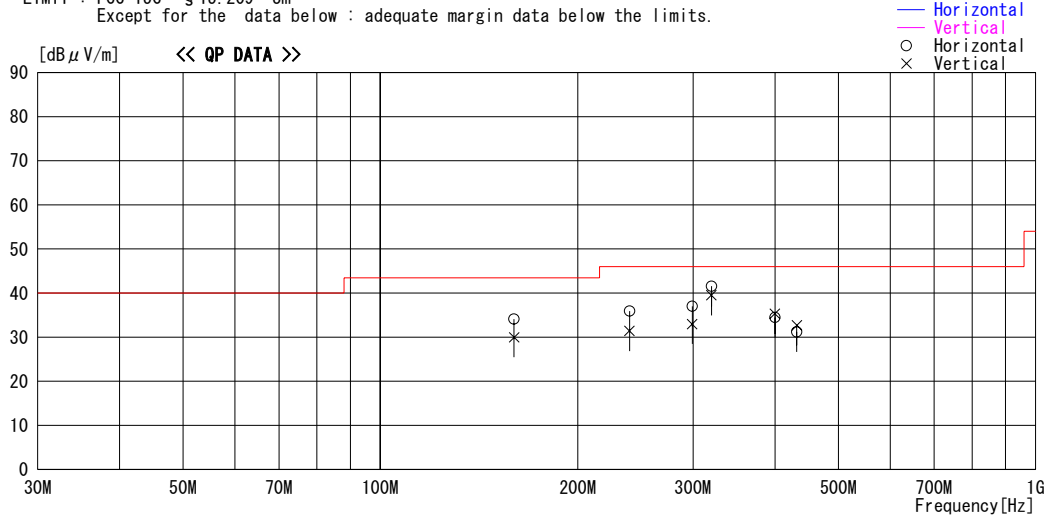


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - AMP. GAIN

Page:

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MF060b(10.04.03)

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT101
Serial No. : 002

Report No. : 251E0245-H0
Power : DC3.3V (AC120v/60Hz)
Temp°C/Humi% : 23deg. C / 56%
Operator : Norihisa Hashimoto

Mode / Remarks : Transmitting 11g ch11 2462MHz 54Mbps HOR:Z, VER:Y

LIMIT : FCC 15C § 15.209 3m

Except for the data below : adequate margin data below the limits.

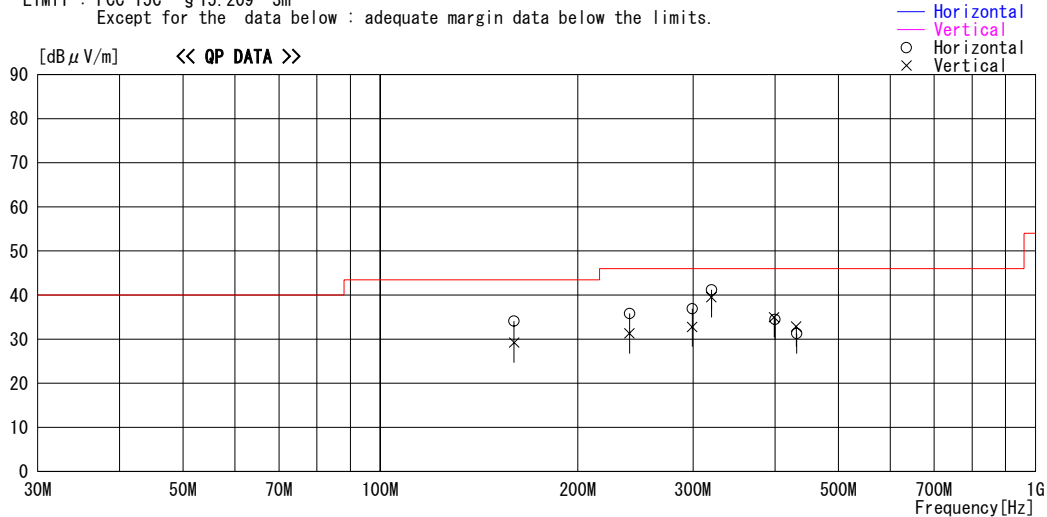


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - AMP. GAIN

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Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation
EQUIPMENT : Wireless LAN Module
MODEL : IRF303JU, LFANT101
SAMPLE NO. : 002
POWER : DC3.3V(AC120V/60Hz)
MODE : Transmitting (11b / 11Mbps / CH1:2412MHz)
: Antenna Port 1

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber
REGULATION : Fcc Part15 Subpart C 15.247 (d)
TEST DISTANCE : 3m / 1m
DATE : 06/15,16/2005
TEMPERATURE : 26deg.C
HUMIDITY : 49%
ENGINEER : Norihisa Hashimoto

PK DETECT (RBW: 1MHz, VBW:1MHz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2390.0	46.2	45.7	30.9	36.4	3.7	20.0	64.4	63.9	74.0	9.6	10.1
2	4823.9	45.9	47.4	35.0	36.0	5.4	1.0	51.3	52.8	74.0	22.7	21.2
3	7236.1	35.2	34.9	37.6	36.0	6.7	0.4	43.9	43.6	74.0	30.1	30.4
4	9647.9	34.8	34.6	36.3	36.4	8.0	0.1	42.8	42.6	74.0	31.2	31.4
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac												
5	12060.0	44.1	45.3	41.4	36.1	7.3	0.2	47.4	48.6	74.0	26.6	25.4
6	14472.0	43.7	43.6	41.8	34.6	8.2	0.1	49.7	49.6	74.0	24.3	24.4
7	16884.0	42.8	43.1	44.6	35.0	8.8	1.1	52.8	53.1	74.0	21.2	20.9
8	19296.0	40.4	42.4	41.6	34.1	10.0	2.1	50.5	52.5	74.0	23.5	21.5
9	21708.0	42.1	41.8	40.4	34.7	9.6	2.0	49.9	49.6	74.0	24.1	24.4
10	24120.0	42.2	44.5	41.0	35.6	11.5	0.3	49.9	52.2	74.0	24.1	21.8

AV DETECT (RBW: 1MHz, VBW:10Hz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2390.0	31.9	31.4	30.9	36.4	3.7	20.0	50.1	49.6	54.0	3.9	4.4
2	4823.9	32.9	31.9	35.0	36.0	5.4	1.0	38.3	37.3	54.0	15.7	16.7
3	7236.1	22.4	22.5	37.6	36.0	6.7	0.4	31.1	31.2	54.0	22.9	22.8
4	9647.9	22.3	22.3	36.3	36.4	8.0	0.1	30.3	30.3	54.0	23.7	23.7
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac												
5	12060.0	30.8	31.0	41.4	36.1	7.3	0.2	34.1	34.3	54.0	19.9	19.7
6	14472.0	30.5	30.5	41.8	34.6	8.2	0.1	36.5	36.5	54.0	17.5	17.5
7	16884.0	30.4	30.4	44.6	35.0	8.8	1.1	40.4	40.4	54.0	13.6	13.6
8	19296.0	29.8	29.8	41.6	34.1	10.0	2.1	39.9	39.9	54.0	14.1	14.1
9	21708.0	31.3	31.4	40.4	34.7	9.6	2.0	39.1	39.2	54.0	14.9	14.8
10	24120.0	31.8	31.7	41.0	35.6	11.5	0.3	39.5	39.4	54.0	14.5	14.6

20dBc(Fundamental 2412MHz) (RBW: 100kHz, VBW:300kHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Atten. or Filter [dB]	RESULT		Limit 20dBc [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	2412.0	90.1	89.5	30.9	36.3	3.6	20.0	108.3	107.7	-	-	-
2	2400.0	43.7	46.2	30.9	36.4	3.6	20.0	61.8	64.3	Funda-20dB	26.5	23.4

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) =

9.5 dB

* Except for the above table : All other spurious emissions were less than 20dB for the limit.

* Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

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MF060b(10.04.03)

Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation EQUIPMENT : Wireless LAN Module MODEL : IRF303JU, LFANT101 SAMPLE NO. : 002 POWER : DC3.3V(AC120V/60Hz) MODE : Transmitting (11b / 11Mbps / CH6:2437MHz) : Antenna Port 1	UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber REGULATION : Fcc Part15 Subpart C 15.247 (d) TEST DISTANCE : 3m / 1m DATE : 06/15,16/2005 TEMPERATURE : 26deg.C HUMIDITY : 49% ENGINEER : Norihisa Hashimoto
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PK DETECT (RBW: 1MHz , VBW:1MHz)

No.	Freq. [MHz]	Reading HOR VER [dBuV]		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result HOR VER [dBuV/m]		Limit PK [dBuV/m]	Margin HOR VER [dB]		
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)													
1	4873.9	44.2	44.2	35.3	36.0	5.4	1.0	49.9	49.9	74.0	24.1	24.1	
2	7310.6	34.5	34.9	37.7	36.0	6.7	0.5	43.4	43.8	74.0	30.6	30.2	
3	9747.9	34.2	34.1	36.3	36.4	8.0	0.2	42.3	42.2	74.0	31.8	31.9	
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac													
4	12185.0	42.7	42.6	41.5	36.0	7.3	0.3	46.3	46.2	74.0	27.7	27.8	
5	14622.0	41.6	42.3	42.1	35.1	8.2	0.2	47.5	48.2	74.0	26.5	25.8	
6	17059.0	41.4	41.7	44.6	34.9	8.8	1.1	51.5	51.8	74.0	22.5	22.2	
7	19496.0	41.0	40.5	41.4	34.3	10.1	2.3	51.0	50.5	74.0	23.0	23.5	
8	21933.0	44.1	43.8	40.5	34.2	9.5	1.1	51.5	51.2	74.0	22.5	22.8	
9	24370.0	43.6	42.4	41.1	35.7	11.7	0.6	51.8	50.6	74.0	22.2	23.4	

AV DETECT (RBW: 1MHz , VBW:10Hz)

No.	Freq. [MHz]	Reading HOR VER [dBuV]		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result HOR VER [dBuV/m]		Limit AV [dBuV/m]	Margin HOR VER [dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	4873.9	30.2	30.8	35.3	36.0	5.4	1.0	35.9	36.5	54.0	18.1	17.5
2	7310.6	22.5	22.7	37.7	36.0	6.7	0.5	31.4	31.6	54.0	22.6	22.4
3	9747.9	21.9	21.9	36.3	36.4	8.0	0.2	30.0	30.0	54.0	24.1	24.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac												
4	12185.0	30.9	30.9	41.5	36.0	7.3	0.3	34.5	34.5	54.0	19.5	19.5
5	14622.0	30.6	30.7	42.1	35.1	8.2	0.2	36.5	36.6	54.0	17.5	17.4
6	17059.0	30.0	30.0	44.6	34.9	8.8	1.1	40.1	40.1	54.0	13.9	13.9
7	19496.0	29.9	29.8	41.4	34.3	10.1	2.3	39.9	39.8	54.0	14.1	14.2
8	21933.0	33.5	33.4	40.5	34.2	9.5	1.1	40.9	40.8	54.0	13.1	13.2
9	24370.0	31.3	31.4	41.1	35.7	11.7	0.6	39.5	39.6	54.0	14.5	14.4

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5 dB

* Except for the above table : All other spurious emissions were less than 20dB for the limit.

* Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation EQUIPMENT : Wireless LAN Module MODEL : IRF303JU, LFANT101 SAMPLE NO. : 002 POWER : DC3.3V(AC120V/60Hz) MODE : Transmitting (11b / 11Mbps / CH11:2462MHz) : Antenna Port 1	UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber REGULATION : Fcc Part15 Subpart C 15.247 (d) TEST DISTANCE : 3m / 1m DATE : 06/15,16/2005 TEMPERATURE : 26deg.C HUMIDITY : 49% ENGINEER : Norihisa Hashimoto
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PK DETECT (RBW: 1MHz, VBW:1MHz)												
No.	Freq. [MHz]	Reading HOR VER [dBuV]		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result HOR VER [dBuV/m]		Limit PK [dBuV/m]	Margin HOR VER [dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2483.5	45.6	45.5	30.8	36.4	3.6	20.0	63.6	63.5	74.0	10.4	10.5
2	4924.0	42.2	45.5	35.6	35.9	5.4	1.0	48.3	51.6	74.0	25.7	22.4
3	7386.1	34.3	35.2	37.8	36.0	6.7	0.6	43.4	44.3	74.0	30.6	29.7
4	9847.9	34.2	34.0	36.2	36.4	8.3	0.2	42.5	42.3	74.0	31.5	31.7
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac												
5	12310.0	42.0	41.4	41.5	35.9	7.4	0.4	45.9	45.3	74.0	28.1	28.7
6	14772.0	41.7	40.3	42.4	35.6	8.4	0.4	47.8	46.4	74.0	26.2	27.6
7	17234.0	40.8	41.0	44.5	35.0	8.8	1.0	50.6	50.8	74.0	23.4	23.2
8	19696.0	40.5	40.8	41.2	34.6	10.3	1.8	49.7	50.0	74.0	24.3	24.0
9	22158.0	42.1	42.2	40.5	34.1	9.7	0.9	49.6	49.7	74.0	24.4	24.3
10	24620.0	41.9	41.7	41.1	35.5	11.7	0.9	50.6	50.4	74.0	23.4	23.6

AV DETECT (RBW: 1MHz, VBW:10Hz)												
No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV]						[dBuV/m]			[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2483.5	32.4	32.1	30.8	36.4	3.6	20.0	50.4	50.1	54.0	3.6	3.9
2	4924.0	27.5	31.6	35.6	35.9	5.4	1.0	33.6	37.7	54.0	20.4	16.3
3	7386.1	22.3	23.0	37.8	36.0	6.7	0.6	31.4	32.1	54.0	22.6	21.9
4	9847.9	21.9	22.0	36.2	36.4	8.3	0.2	30.2	30.3	54.0	23.8	23.7
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac												
5	12310.0	30.7	30.8	41.5	35.9	7.4	0.4	34.6	34.7	54.0	19.4	19.3
6	14772.0	30.3	30.2	42.4	35.6	8.4	0.4	36.4	36.3	54.0	17.6	17.7
7	17234.0	29.7	29.6	44.5	35.0	8.8	1.0	39.5	39.4	54.0	14.5	14.6
8	19696.0	30.2	30.3	41.2	34.6	10.3	1.8	39.4	39.5	54.0	14.6	14.5
9	22158.0	31.6	31.6	40.5	34.1	9.7	0.9	39.1	39.1	54.0	14.9	14.9
10	24620.0	31.7	31.7	41.1	35.5	11.7	0.9	40.4	40.4	54.0	13.6	13.6

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5 dB
* Except for the above table : All other spurious emissions were less than 20dB for the limit.
* Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.
* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation
EQUIPMENT : Wireless LAN Module
MODEL : IRF303JU, LFANT101
SAMPLE NO. : 002
POWER : DC3.3V(AC120V/60Hz)
MODE : Transmitting (11g / 54Mbps / CH1:2412MHz)
: Antenna Port 1

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber
REGULATION : Fcc Part15 Subpart C 15.247 (d)
TEST DISTANCE : 3m / 1m
DATE : 06/15,16/2005
TEMPERATURE : 26deg.C
HUMIDITY : 49%
ENGINEER : Norihisa Hashimoto

PK DETECT (RBW: 1MHz, VBW:1MHz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2390.0	54.2	53.4	30.9	36.4	3.7	20.0	72.4	71.6	74.0	1.6	2.4
2	4823.9	34.2	36.4	35.0	36.0	5.4	1.0	39.6	41.8	74.0	34.4	32.2
3	7236.0	34.3	34.3	37.6	36.0	6.7	0.4	43.0	43.0	74.0	31.0	31.0
4	9647.9	34.0	34.0	36.3	36.4	8.0	0.2	42.1	42.1	74.0	31.9	31.9
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac												
5	12060.0	43.1	42.2	41.4	36.1	7.3	0.2	46.4	45.5	74.0	27.6	28.5
6	14472.0	41.6	41.8	41.8	34.6	8.2	0.1	47.6	47.8	74.0	26.4	26.2
7	16884.0	40.2	40.5	44.6	35.0	8.8	1.1	50.2	50.5	74.0	23.8	23.5
8	19296.0	40.1	42.1	41.6	34.1	10.0	2.1	50.2	52.2	74.0	23.8	21.8
9	21708.0	41.8	41.7	40.4	34.7	9.6	2.0	49.6	49.5	74.0	24.4	24.5
10	24120.0	41.9	43.4	41.0	35.6	11.5	0.3	49.6	51.1	74.0	24.4	22.9

AV DETECT (RBW: 1MHz, VBW:10Hz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2390.0	33.8	33.1	30.9	36.4	3.7	20.0	52.0	51.3	54.0	2.0	2.7
2	4823.9	22.0	23.8	35.0	36.0	5.4	1.0	27.4	29.2	54.0	26.6	24.8
3	7236.0	22.1	22.1	37.6	36.0	6.7	0.4	30.8	30.8	54.0	23.2	23.2
4	9647.9	22.3	22.3	36.3	36.4	8.0	0.2	30.4	30.4	54.0	23.6	23.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac												
5	12060.0	30.6	31.0	41.4	36.1	7.3	0.2	33.9	34.3	54.0	20.1	19.7
6	14472.0	30.5	30.4	41.8	34.6	8.2	0.1	36.5	36.4	54.0	17.5	17.6
7	16884.0	30.3	30.3	44.6	35.0	8.8	1.1	40.3	40.3	54.0	13.7	13.7
8	19296.0	30.0	29.8	41.6	34.1	10.0	2.1	40.1	39.9	54.0	13.9	14.1
9	21708.0	31.2	31.4	40.4	34.7	9.6	2.0	39.0	39.2	54.0	15.0	14.8
10	24120.0	31.8	31.8	41.0	35.6	11.5	0.3	39.5	39.5	54.0	14.5	14.5

20dBc(Fundamental 2412MHz) (RBW: 100kHz, VBW:300kHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Atten. or Filter [dB]	RESULT		Limit 20dBc [dBuV/m]	MARGIN	
		HOR [dBuV/m]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	2412.0	86.9	85.0	30.9	36.3	3.6	20.0	105.1	103.2	-	-	-
2	2400.0	50.1	47.4	30.9	36.4	3.6	20.0	68.2	65.5	Funda-20dB	16.9	17.7

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) =

9.5 dB

* Except for the above table : All other spurious emissions were less than 20dB for the limit.

* Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

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MF060b(10.04.03)

Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation EQUIPMENT : Wireless LAN Module MODEL : IRF303JU, LFANT101 SAMPLE NO. : 002 POWER : DC3.3V(AC120V/60Hz) MODE : Transmitting (11g / 54Mbps / CH6:2437MHz) : Antenna Port 1	UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber REGULATION : Fcc Part15 Subpart C 15.247 (d) TEST DISTANCE : 3m / 1m DATE : 06/15,16/2005 TEMPERATURE : 26deg.C HUMIDITY : 49% ENGINEER : Norihisa Hahsimoto
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PK DETECT (RBW: 1MHz , VBW:1MHz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	4874.0	35.0	37.9	35.3	36.0	5.4	1.0	40.7	43.6	74.0	33.3	30.4
2	7310.8	34.3	35.5	37.7	36.0	6.7	0.5	43.2	44.4	74.0	30.8	29.6
3	9748.6	33.9	35.1	36.3	36.4	8.0	0.2	42.0	43.2	74.0	32.1	30.9
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac												
4	12185.0	43.0	42.1	41.5	36.0	7.3	0.3	46.6	45.7	74.0	27.4	28.3
5	14622.0	41.8	42.2	42.1	35.1	8.2	0.2	47.7	48.1	74.0	26.3	25.9
6	17059.0	40.6	41.5	44.6	34.9	8.8	1.1	50.7	51.6	74.0	23.3	22.4
7	19496.0	40.8	40.2	41.4	34.3	10.1	2.3	50.8	50.2	74.0	23.2	23.8
8	21933.0	43.6	43.4	40.5	34.2	9.5	1.1	51.0	50.8	74.0	23.0	23.2
9	24370.0	43.5	42.5	41.1	35.7	11.7	0.6	51.7	50.7	74.0	22.3	23.3

AV DETECT (RBW: 1MHz , VBW:10Hz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	4874.0	22.4	24.7	35.3	36.0	5.4	1.0	28.1	30.4	54.0	25.9	23.6
2	7310.8	22.2	22.5	37.7	36.0	6.7	0.5	31.1	31.4	54.0	22.9	22.6
3	9748.6	21.9	21.9	36.3	36.4	8.0	0.2	30.0	30.0	54.0	24.1	24.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac												
4	12185.0	30.8	30.8	41.5	36.0	7.3	0.3	34.4	34.4	54.0	19.6	19.6
5	14622.0	30.8	30.7	42.1	35.1	8.2	0.2	36.7	36.6	54.0	17.3	17.4
6	17059.0	30.1	30.2	44.6	34.9	8.8	1.1	40.2	40.3	54.0	13.8	13.7
7	19496.0	30.0	29.8	41.4	34.3	10.1	2.3	40.0	39.8	54.0	14.0	14.2
8	21933.0	33.2	33.5	40.5	34.2	9.5	1.1	40.6	40.9	54.0	13.4	13.1
9	24370.0	31.3	31.4	41.1	35.7	11.7	0.6	39.5	39.6	54.0	14.5	14.4

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5 dB

* Except for the above table : All other spurious emissions were less than 20dB for the limit.

* Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

UL Apex Co., Ltd.

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MF060b(10.04.03)

Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation EQUIPMENT : Wireless LAN Module MODEL : IRF303JU, LFANT101 SAMPLE NO. : 002 POWER : DC3.3V(AC120V/60Hz) MODE : Transmitting (11g / 54Mbps / CH11:2462MHz) : Antenna Port 1	UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber REGULATION : Fcc Part15 Subpart C 15.247 (d) TEST DISTANCE : 3m / 1m DATE : 06/15,16/2005 TEMPERATURE : 26deg.C HUMIDITY : 49% ENGINEER : Norihisa Hashimoto
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PK DETECT (RBW: 1MHz , VBW:1MHz)												
No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV]						[dBuV/m]			[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2483.5	54.6	44.6	30.8	36.4	3.6	20.0	72.6	62.6	74.0	1.4	11.4
2	4924.0	34.4	38.0	35.6	35.9	5.4	1.0	40.5	44.1	74.0	33.5	29.9
3	7386.1	34.2	34.2	37.8	36.0	6.7	0.6	43.3	43.3	74.0	30.7	30.7
4	9847.9	33.8	34.0	36.2	36.4	8.3	0.2	42.1	42.3	74.0	31.9	31.7
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac												
5	12310.0	41.8	41.6	41.5	35.9	7.4	0.4	45.7	45.5	74.0	28.3	28.5
6	14772.0	41.6	40.6	42.4	35.6	8.4	0.4	47.7	46.7	74.0	26.3	27.3
7	17234.0	40.6	40.5	44.5	35.0	8.8	1.0	50.4	50.3	74.0	23.6	23.7
8	19696.0	40.4	41.2	41.2	34.6	10.3	1.8	49.6	50.4	74.0	24.4	23.6
9	22158.0	42.2	42.4	40.5	34.1	9.7	0.9	49.7	49.9	74.0	24.3	24.1
10	24620.0	41.1	40.9	41.1	35.5	11.7	0.9	49.8	49.6	74.0	24.2	24.4

AV DETECT (RBW: 1MHz , VBW:10Hz)												
No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV]						[dBuV/m]			[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2483.5	33.4	31.4	30.8	36.4	3.6	20.0	51.4	49.4	54.0	2.6	4.6
2	4924.0	22.4	24.7	35.6	35.9	5.4	1.0	28.5	30.8	54.0	25.5	23.2
3	7386.1	22.3	22.5	37.8	36.0	6.7	0.6	31.4	31.6	54.0	22.6	22.4
4	9847.9	21.9	21.9	36.2	36.4	8.3	0.2	30.2	30.2	54.0	23.8	23.8
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter) - Dfac												
5	12310.0	30.7	30.7	41.5	35.9	7.4	0.4	34.6	34.6	54.0	19.4	19.4
6	14772.0	30.4	30.4	42.4	35.6	8.4	0.4	36.5	36.5	54.0	17.5	17.5
7	17234.0	29.6	29.6	44.5	35.0	8.8	1.0	39.4	39.4	54.0	14.6	14.6
8	19696.0	30.3	30.2	41.2	34.6	10.3	1.8	39.5	39.4	54.0	14.5	14.6
9	22158.0	31.5	31.5	40.5	34.1	9.7	0.9	39.0	39.0	54.0	15.0	15.0
10	24620.0	31.7	31.7	41.1	35.5	11.7	0.9	40.4	40.4	54.0	13.6	13.6

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5 dB

* Except for the above table : All other spurious emissions were less than 20dB for the limit.

* Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation EQUIPMENT : Wireless LAN Module MODEL : IRF303JU, LFANT103 SAMPLE NO. : 002 POWER : DC3.3V(AC120V/60Hz) MODE : Transmitting (11b / 11Mbps / CH1:2412MHz) : Antenna Port 1	UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber REGULATION : Fcc Part15 Subpart C 15.247 (d) TEST DISTANCE : 3m / 1m DATE : 06/13/2005 TEMPERATURE : 26deg.C HUMIDITY : 49% ENGINEER : Hiroka Umeyama
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PK DETECT (RBW: 1MHz, VBW:1MHz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2390.0	56.5	59.2	30.9	36.4	3.7	0.0	54.7	57.4	74.0	19.3	16.6
2	4823.9	41.8	46.6	35.0	36.0	5.4	1.0	47.2	52.0	74.0	26.8	22.0
3	7239.0	35.5	35.9	37.6	36.0	6.7	0.4	44.2	44.6	74.0	29.8	29.4
4	9647.9	35.3	34.6	36.3	36.4	8.0	0.1	43.3	42.6	74.0	30.7	31.4

AV DETECT (RBW: 1MHz, VBW:10Hz)

No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV]						[dBuV/m]			[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2390.0	44.2	46.5	30.9	36.4	3.7	0.0	42.4	44.7	54.0	11.6	9.3
2	4823.9	27.0	22.2	35.0	36.0	5.4	1.0	32.4	27.6	54.0	21.6	26.4
3	7239.0	22.3	22.4	37.6	36.0	6.7	0.4	31.0	31.1	54.0	23.0	22.9
4	9647.9	22.2	30.9	36.3	36.4	8.0	0.1	30.2	38.9	54.0	23.8	15.1

20dBc(Fundamental 2412MHz) (RBW: 100kHz, VBW:300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Atten. or	RESULT		Limit	MARGIN	
	[MHz]	HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	20dBc	HOR	VER
		[dBuV/m]	[dBuV/m]	[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	2412.0	105.5	106.9	30.9	36.3	3.6	0.0	103.7	105.1	-	-	-
2	2400.0	69.1	70.5	30.9	36.4	3.6	0.0	67.2	68.6	Funda-20dB	16.5	16.5

- * Except for the above table : All other spurious emissions were less than 20dB for the limit.
- * Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz
- * In the above table, factor 0.0dB represents no use of Atten. and/or Filter.
- * The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

DATA OF RADIATED EMISSION TEST

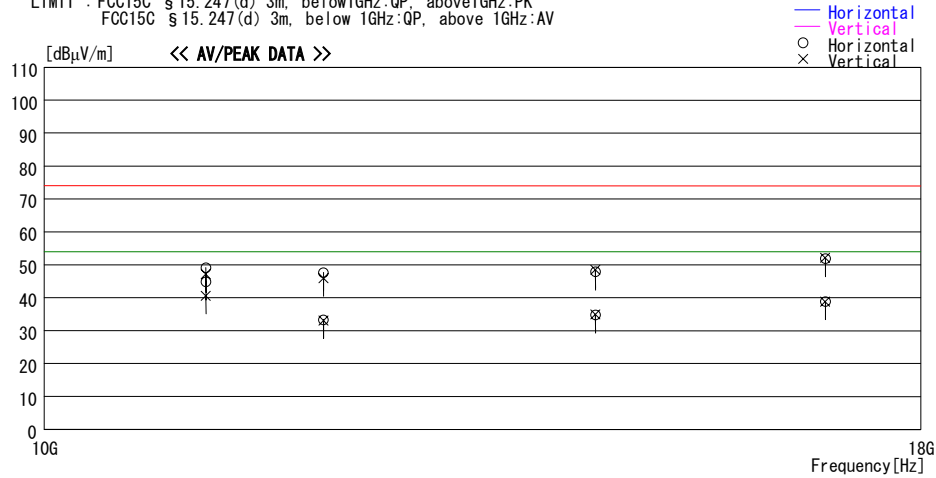
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 11:39:51

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 251E0245-HO
Power : DC3.3V(AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks: Transmitting 11b 11Mbps CH1:2412MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg.]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss Gain [dB]							
11143.980	49.4	PK	37.9	-38.2	49.1			Hori.	74.0	24.9	3m->1m Dfac=-9.54dB
11143.980	47.4	PK	37.9	-38.2	47.1			Vert.	74.0	26.9	3m->1m Dfac=-9.54dB
11143.980	45.2	AV	37.9	-38.2	44.9			Hori.	54.0	9.1	3m->1m Dfac=-9.54dB
11143.980	41.0	AV	37.9	-38.2	40.7			Vert.	54.0	13.3	3m->1m Dfac=-9.54dB
12060.000	44.7	PK	41.4	-38.4	47.7			Hori.	74.0	26.3	3m->1m Dfac=-9.54dB
12060.000	43.0	PK	41.4	-38.4	46.0			Vert.	74.0	28.0	3m->1m Dfac=-9.54dB
12060.000	30.3	AV	41.4	-38.4	33.3			Hori.	54.0	20.7	3m->1m Dfac=-9.54dB
12060.000	30.1	AV	41.4	-38.4	33.1			Vert.	54.0	20.9	3m->1m Dfac=-9.54dB
14472.000	42.9	PK	41.8	-36.8	47.9			Hori.	74.0	26.1	3m->1m Dfac=-9.54dB
14472.000	43.6	PK	41.8	-36.8	48.6			Vert.	74.0	25.4	3m->1m Dfac=-9.54dB
14472.000	29.8	AV	41.8	-36.8	34.8			Hori.	54.0	19.2	3m->1m Dfac=-9.54dB
14472.000	29.9	AV	41.8	-36.8	34.9			Vert.	54.0	19.1	3m->1m Dfac=-9.54dB
16884.000	42.4	PK	44.6	-35.1	51.9			Hori.	74.0	22.1	3m->1m Dfac=-9.54dB
16884.000	42.7	PK	44.6	-35.1	52.2			Vert.	74.0	21.8	3m->1m Dfac=-9.54dB
16884.000	29.4	AV	44.6	-35.1	38.9			Hori.	54.0	15.1	3m->1m Dfac=-9.54dB
16884.000	29.4	AV	44.6	-35.1	38.9			Vert.	54.0	15.1	3m->1m Dfac=-9.54dB

CHART:WITHOUT FACTOR ANT TYPE: -30MHz LOOP 30-300MHz BICONICAL 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - AMP. GAIN
Page:

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 15:40:22

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks: Transmitting 11b 11Mbps CH1:2412MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:AV

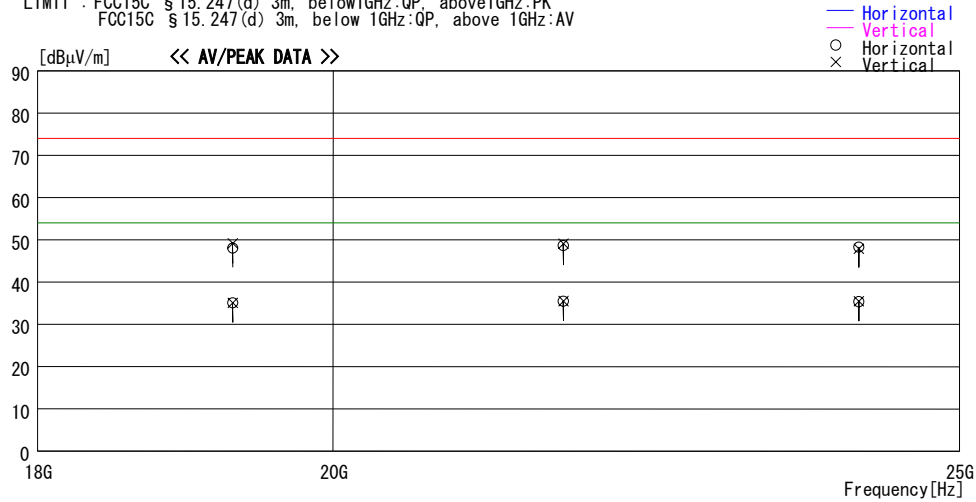


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation EQUIPMENT : Wireless LAN Module MODEL : IRF303JU, LFANT103 SAMPLE NO. : 002 POWER : DC3.3V(AC120V/60Hz) MODE : Transmitting (11b / 11Mbps / CH6:2437MHz) : Antenna Port 1	UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber REGULATION : Fcc Part15 Subpart C 15.247 (d) TEST DISTANCE : 3m / 1m DATE : 06/13/2005 TEMPERATURE : 26deg.C HUMIDITY : 49% ENGINEER : Hiroka Umeyama
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PK DETECT (RBW: 1MHz , VBW: 1MHz)												
No.	Freq. [MHz]	Reading HOR VER [dBuV]		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result HOR VER [dBuV/m]		Limit PK [dBuV/m]	Margin HOR VER [dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	4874.1	36.6	36.2	35.3	36.0	5.4	1.0	42.3	41.9	74.0	31.7	32.1
2	7309.6	34.8	34.2	37.7	36.0	6.7	0.5	43.7	43.1	74.0	30.3	30.9
3	9747.8	34.2	33.5	36.3	36.4	8.0	0.2	42.3	41.6	74.0	31.8	32.5

AV DETECT (RBW: 1MHz , VBW:10Hz)												
No.	Freq.	Reading		Ant. Factor	Amp. Gain	Cable Loss	Atten. or Filter	Result		Limit AV	Margin	
		HOR	VER					HOR	VER		HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]		[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	4874.1	21.9	23.9	35.3	36.0	5.4	1.0	27.6	29.6	54.0	26.4	24.4
2	7309.6	22.3	22.2	37.7	36.0	6.7	0.5	31.2	31.1	54.0	22.8	22.9
3	9747.8	24.5	21.9	36.3	36.4	8.0	0.2	32.6	30.0	54.0	21.5	24.1

* Except for the above table : All other spurious emissions were less than 20dB for the limit.
* Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.
* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

DATA OF RADIATED EMISSION TEST

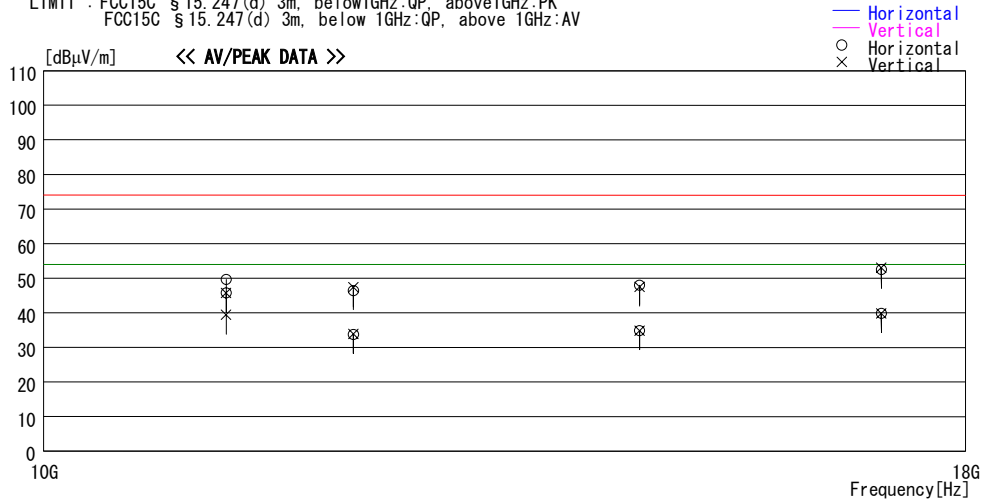
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 13:40:46

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks : Transmitting 11b 11Mbps CH6:2437MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency	Reading	DET	Antenna		Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Loss&Gain							
[MHz]	[dBμV]		[dB/m]	[dB]	[dBμV/m]	[Deg]	[cm]		[dBμV/m]	[dB]	
11234.480	50.1	PK	38.0	-38.4	49.7			Hori.	74.0	24.3	3m->1m Dfac=-9.54dB
11234.480	46.1	PK	38.0	-38.4	45.7			Vert.	74.0	28.3	3m->1m Dfac=-9.54dB
11234.480	46.1	AV	38.0	-38.4	45.7			Hori.	54.0	8.3	3m->1m Dfac=-9.54dB
11234.480	39.8	AV	38.0	-38.4	39.4			Vert.	54.0	14.6	3m->1m Dfac=-9.54dB
12185.000	43.1	PK	41.5	-38.1	46.5			Hori.	74.0	27.5	3m->1m Dfac=-9.54dB
12185.000	44.0	PK	41.5	-38.1	47.4			Vert.	74.0	26.6	3m->1m Dfac=-9.54dB
12185.000	30.4	AV	41.5	-38.1	33.8			Hori.	54.0	20.2	3m->1m Dfac=-9.54dB
12185.000	30.4	AV	41.5	-38.1	33.8			Vert.	54.0	20.2	3m->1m Dfac=-9.54dB
14622.000	43.4	PK	42.1	-37.4	48.1			Hori.	74.0	26.0	3m->1m Dfac=-9.54dB
14622.000	42.8	PK	42.1	-37.4	47.5			Vert.	74.0	26.5	3m->1m Dfac=-9.54dB
14622.000	30.2	AV	42.1	-37.4	34.9			Hori.	54.0	19.1	3m->1m Dfac=-9.54dB
14622.000	30.2	AV	42.1	-37.4	34.9			Vert.	54.0	19.1	3m->1m Dfac=-9.54dB
17059.000	42.0	PK	44.6	-34.0	52.6			Hori.	74.0	21.5	3m->1m Dfac=-9.54dB
17059.000	42.5	PK	44.6	-34.0	53.1			Vert.	74.0	20.9	3m->1m Dfac=-9.54dB
17059.000	29.3	AV	44.6	-34.0	39.9			Hori.	54.0	14.1	3m->1m Dfac=-9.54dB
17059.000	29.3	AV	44.6	-34.0	39.9			Vert.	54.0	14.1	3m->1m Dfac=-9.54dB

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

DATA OF RADIATED EMISSION TEST

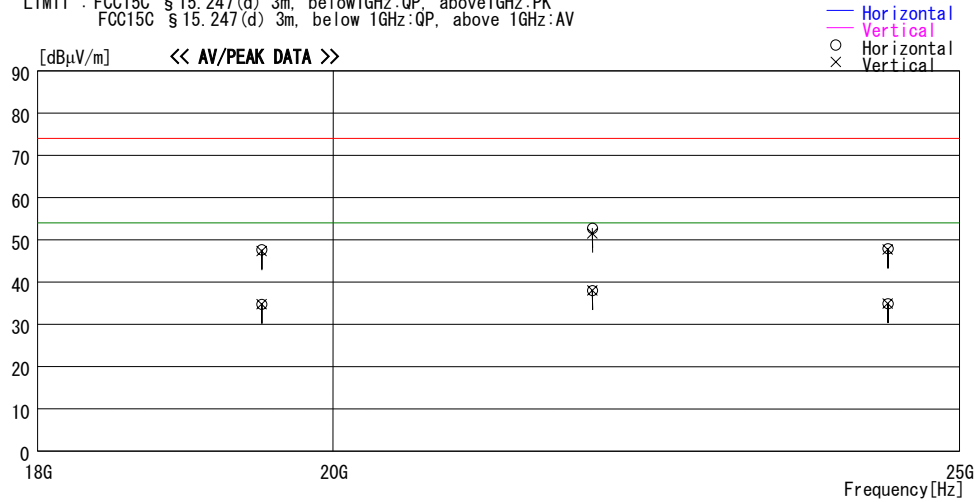
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 15:49:46

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks : Transmitting 11b 11Mbps CH6:2437MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBμV]	DET	Antenna	Loss&	Level [dBμV/m]	Angle [Deg]	Height [cm]	Polar.	Limit	Margin	Comment
			Factor [dB/m]	Gain [dB]					[dBμV/m]	[dB]	
19496.000	42.3	PK	41.4	-36.0	47.7			Hori.	74.0	26.4	3m->1m Dfac=-9.54dB
19496.000	41.9	PK	41.4	-36.0	47.3			Vert.	74.0	26.7	3m->1m Dfac=-9.54dB
19496.000	29.4	AV	41.4	-36.0	34.8			Hori.	54.0	19.2	3m->1m Dfac=-9.54dB
19496.000	29.4	AV	41.4	-36.0	34.8			Vert.	54.0	19.2	3m->1m Dfac=-9.54dB
21933.000	47.8	PK	40.5	-35.5	52.8			Hori.	74.0	21.3	3m->1m Dfac=-9.54dB
21933.000	46.5	PK	40.5	-35.5	51.5			Vert.	74.0	22.5	3m->1m Dfac=-9.54dB
21933.000	33.0	AV	40.5	-35.5	38.0			Hori.	54.0	16.0	3m->1m Dfac=-9.54dB
21933.000	33.0	AV	40.5	-35.5	38.0			Vert.	54.0	16.0	3m->1m Dfac=-9.54dB
24370.000	43.7	PK	41.1	-36.9	47.9			Hori.	74.0	26.1	3m->1m Dfac=-9.54dB
24370.000	43.5	PK	41.1	-36.9	47.7			Vert.	74.0	26.3	3m->1m Dfac=-9.54dB
24370.000	30.7	AV	41.1	-36.9	34.9			Hori.	54.0	19.1	3m->1m Dfac=-9.54dB
24370.000	30.7	AV	41.1	-36.9	34.9			Vert.	54.0	19.1	3m->1m Dfac=-9.54dB

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation EQUIPMENT : Wireless LAN Module MODEL : IRF303JU, LFANT103 SAMPLE NO. : 002 POWER : DC3.3V(AC120V/60Hz) MODE : Transmitting (11b / 11Mbps / CH11:2462MHz) : Antenna Port 1	UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber REGULATION : Fcc Part15 Subpart C 15.247 (d) TEST DISTANCE : 3m / 1m DATE : 06/13/2005 TEMPERATURE : 26deg.C HUMIDITY : 49% ENGINEER : Hiroka Umeyama
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PK DETECT (RBW: 1MHz , VBW:1MHz)												
No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2483.5	64.0	60.5	30.8	36.4	3.6	0.0	62.0	58.5	74.0	12.0	15.5
2	4924.0	41.8	45.7	35.6	35.9	5.4	1.0	47.9	51.8	74.0	26.1	22.2
3	7387.4	35.0	34.8	37.8	36.0	6.7	0.6	44.1	43.9	74.0	29.9	30.1
4	9847.9	34.3	34.2	36.2	36.4	8.3	0.2	42.6	42.5	74.0	31.4	31.5

AV DETECT (RBW: 1MHz , VBW:10Hz)												
No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV]	[dBuV]					[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2483.5	52.4	48.8	30.8	36.4	3.6	0.0	50.4	46.8	54.0	3.6	7.2
2	4924.0	25.9	29.9	35.6	35.9	5.4	1.0	32.0	36.0	54.0	22.0	18.0
3	7387.4	22.3	22.4	37.8	36.0	6.7	0.6	31.4	31.5	54.0	22.6	22.5
4	9847.9	21.9	22.0	36.2	36.4	8.3	0.2	30.2	30.3	54.0	23.8	23.7

* Except for the above table : All other spurious emissions were less than 20dB for the limit.
* Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.
* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

DATA OF RADIATED EMISSION TEST

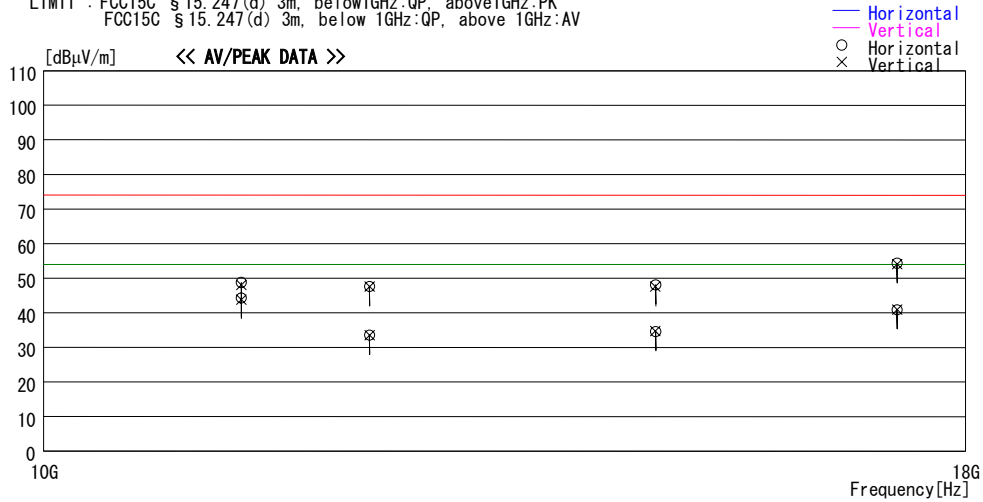
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 14:00:22

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks : Transmitting 11b 11Mbps CH11:2462MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency	Reading	DET	Antenna		Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Loss&Gain							
[MHz]	[dBμV]		[dB/m]	[dB]	[dBμV/m]	[Deg]	[cm]		[dBμV/m]	[dB]	
11343.960	49.3	PK	38.1	-38.6	48.8			Hori.	74.0	25.2	3m->1m Dfac=-9.54dB
11343.990	48.6	PK	38.1	-38.6	48.1			Vert.	74.0	25.9	3m->1m Dfac=-9.54dB
11343.960	44.9	AV	38.1	-38.6	44.4			Hori.	54.0	9.6	3m->1m Dfac=-9.54dB
11343.990	44.4	AV	38.1	-38.6	43.9			Vert.	54.0	10.1	3m->1m Dfac=-9.54dB
12310.000	44.4	PK	41.5	-38.2	47.7			Hori.	74.0	26.3	3m->1m Dfac=-9.54dB
12310.000	44.3	PK	41.5	-38.2	47.6			Vert.	74.0	26.4	3m->1m Dfac=-9.54dB
12310.000	30.3	AV	41.5	-38.2	33.6			Hori.	54.0	20.4	3m->1m Dfac=-9.54dB
12310.000	30.3	AV	41.5	-38.2	33.6			Vert.	54.0	20.4	3m->1m Dfac=-9.54dB
14772.000	43.3	PK	42.4	-37.6	48.1			Hori.	74.0	25.9	3m->1m Dfac=-9.54dB
14772.000	42.8	PK	42.4	-37.6	47.6			Vert.	74.0	26.4	3m->1m Dfac=-9.54dB
14772.000	29.8	AV	42.4	-37.6	34.6			Hori.	54.0	19.4	3m->1m Dfac=-9.54dB
14772.000	29.9	AV	42.4	-37.6	34.7			Vert.	54.0	19.3	3m->1m Dfac=-9.54dB
17234.000	42.9	PK	44.5	-33.0	54.4			Hori.	74.0	19.6	3m->1m Dfac=-9.54dB
17234.000	42.6	PK	44.5	-33.0	54.1			Vert.	74.0	19.9	3m->1m Dfac=-9.54dB
17234.000	29.5	AV	44.5	-33.0	41.0			Hori.	54.0	13.1	3m->1m Dfac=-9.54dB
17234.000	29.5	AV	44.5	-33.0	41.0			Vert.	54.0	13.1	3m->1m Dfac=-9.54dB

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

DATA OF RADIATED EMISSION TEST

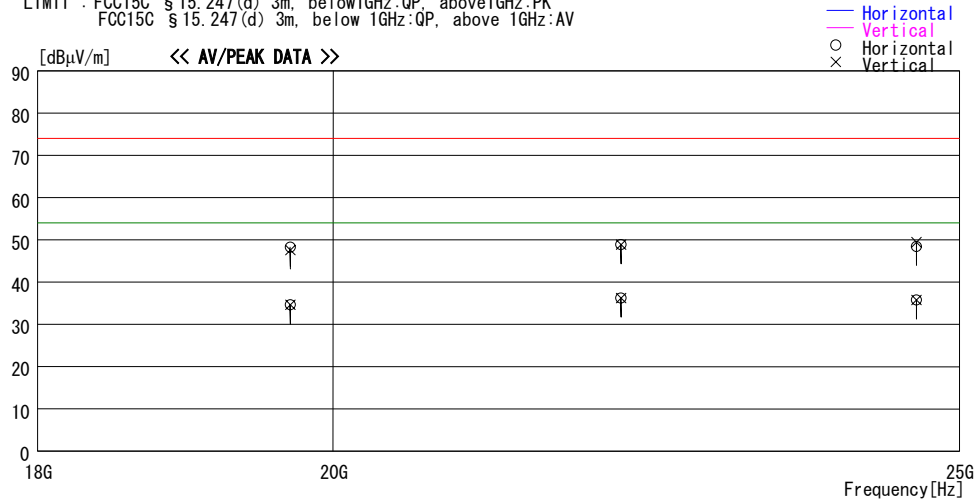
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 16:15:30

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks : Transmitting 11b 11Mbps CH11:2462MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBμV]	DET	Antenna	Loss	Level [dBμV/m]	Angle [Deg]	Height [cm]	Polar.	Limit	Margin	Comment
			Factor [dB/m]	Gain [dB]					[dBμV/m]	[dB]	
19696.000	42.6	PK	41.2	-36.2	47.6			Vert.	74.0	26.4	3m->1m Dfac=-9.54dB
19696.000	43.3	PK	41.2	-36.2	48.3			Hori.	74.0	25.8	3m->1m Dfac=-9.54dB
19696.000	29.6	AV	41.2	-36.2	34.6			Vert.	54.0	19.4	3m->1m Dfac=-9.54dB
19696.000	29.7	AV	41.2	-36.2	34.7			Hori.	54.0	19.3	3m->1m Dfac=-9.54dB
22158.000	43.8	PK	40.5	-35.4	48.9			Vert.	74.0	25.1	3m->1m Dfac=-9.54dB
22158.000	43.9	PK	40.5	-35.4	49.0			Hori.	74.0	25.1	3m->1m Dfac=-9.54dB
22158.000	31.1	AV	40.5	-35.4	36.2			Vert.	54.0	17.8	3m->1m Dfac=-9.54dB
22158.000	31.2	AV	40.5	-35.4	36.3			Hori.	54.0	17.8	3m->1m Dfac=-9.54dB
24620.000	44.7	PK	41.1	-36.4	49.4			Vert.	74.0	24.6	3m->1m Dfac=-9.54dB
24620.000	43.8	PK	41.1	-36.4	48.5			Hori.	74.0	25.5	3m->1m Dfac=-9.54dB
24620.000	31.1	AV	41.1	-36.4	35.8			Vert.	54.0	18.2	3m->1m Dfac=-9.54dB
24620.000	31.1	AV	41.1	-36.4	35.8			Hori.	54.0	18.2	3m->1m Dfac=-9.54dB

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation EQUIPMENT : Wireless LAN Module MODEL : IRF303JU, LFANT103 SAMPLE NO. : 002 POWER : DC3.3V(AC120V/60Hz) MODE : Transmitting (11g / 54Mbps / CH1:2412MHz) : Antenna Port 1	UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber REGULATION : Fcc Part15 Subpart C 15.247 (d) TEST DISTANCE : 3m / 1m DATE : 06/13/2005 TEMPERATURE : 26deg.C HUMIDITY : 49% ENGINEER : Hiroka Umeyama
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PK DETECT (RBW: 1MHz, VBW:1MHz)												
No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2390.0	49.9	50.5	30.9	36.4	3.7	20.0	68.1	68.7	74.0	5.9	5.3
2	4824.0	33.8	36.1	35.0	36.0	5.4	1.0	39.2	41.5	74.0	34.8	32.5
3	7234.1	34.4	33.9	37.6	36.0	6.7	0.4	43.1	42.6	74.0	30.9	31.4
4	9649.7	34.6	34.0	36.3	36.4	8.0	0.2	42.7	42.1	74.0	31.3	31.9

AV DETECT (RBW: 1MHz, VBW:10Hz)												
No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2390.0	32.2	32.4	30.9	36.4	3.7	20.0	50.4	50.6	54.0	3.6	3.4
2	4824.0	21.6	23.1	35.0	36.0	5.4	1.0	27.0	28.5	54.0	27.0	25.5
3	7234.1	22.0	22.1	37.6	36.0	6.7	0.4	30.7	30.8	54.0	23.3	23.2
4	9649.7	22.3	22.2	36.3	36.4	8.0	0.2	30.4	30.3	54.0	23.6	23.7

20dBc(Fundamental 2412MHz)												
(RBW: 100kHz, VBW:300kHz)												
No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Atten. or Filter [dB]	RESULT		Limit 20dBc [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]					[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Band Pass												
1	2412.0	83.1	83.8	30.9	36.3	3.6	20.0	101.3	102.0	-	-	-
2	2400.0	45.4	45.5	30.9	36.4	3.6	20.0	63.5	63.6	Funda-20dB	17.8	18.4

* Except for the above table : All other spurious emissions were less than 20dB for the limit.
* Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.
* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

DATA OF RADIATED EMISSION TEST

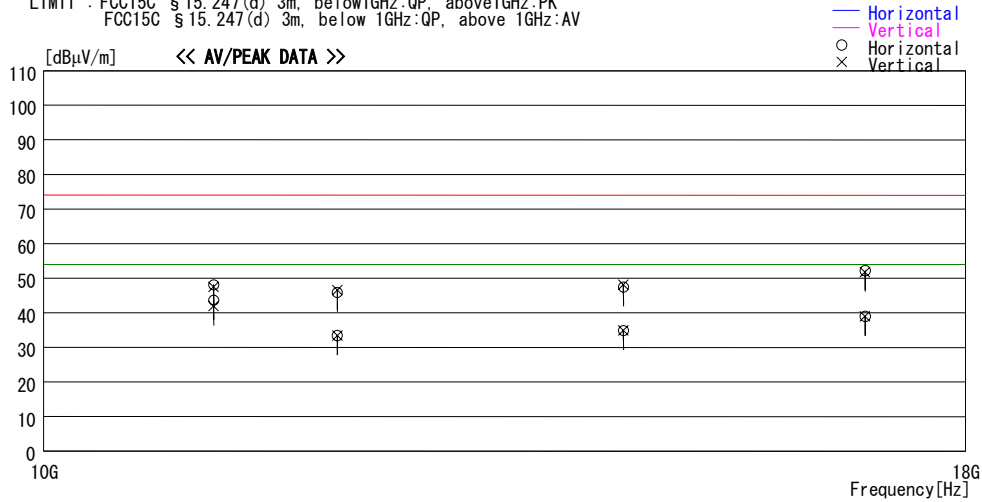
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 14:17:59

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks : Transmitting 11g 54Mbps CH1:2412MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency	Reading	DET	Antenna	Loss	Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Gain					[dBμV/m]	[dB]	
[MHz]	[dBμV]		[dB/m]	[dB]	[dBμV/m]	[Deg]	[cm]				
11144.000	48.5	PK	37.9	-38.2	48.2			Hori.	74.0	25.8	3m>1m Dfac=-9.54dB
11144.010	47.9	PK	37.9	-38.2	47.6			Vert.	74.0	26.5	3m>1m Dfac=-9.54dB
11144.000	43.9	AV	37.9	-38.2	43.6			Hori.	54.0	10.4	3m>1m Dfac=-9.54dB
11144.010	42.3	AV	37.9	-38.2	42.0			Vert.	54.0	12.0	3m>1m Dfac=-9.54dB
12060.000	42.9	PK	41.4	-38.4	45.9			Hori.	74.0	28.1	3m>1m Dfac=-9.54dB
12060.000	43.6	PK	41.4	-38.4	46.6			Vert.	74.0	27.4	3m>1m Dfac=-9.54dB
12060.000	30.5	AV	41.4	-38.4	33.5			Hori.	54.0	20.5	3m>1m Dfac=-9.54dB
12060.000	30.4	AV	41.4	-38.4	33.4			Vert.	54.0	20.6	3m>1m Dfac=-9.54dB
14472.000	42.5	PK	41.8	-36.8	47.5			Hori.	74.0	26.5	3m>1m Dfac=-9.54dB
14472.000	43.1	PK	41.8	-36.8	48.1			Vert.	74.0	25.9	3m>1m Dfac=-9.54dB
14472.000	29.9	AV	41.8	-36.8	34.9			Hori.	54.0	19.1	3m>1m Dfac=-9.54dB
14472.000	29.9	AV	41.8	-36.8	34.9			Vert.	54.0	19.1	3m>1m Dfac=-9.54dB
16884.000	42.7	PK	44.6	-35.1	52.2			Hori.	74.0	21.8	3m>1m Dfac=-9.54dB
16884.000	42.3	PK	44.6	-35.1	51.8			Vert.	74.0	22.2	3m>1m Dfac=-9.54dB
16884.000	29.5	AV	44.6	-35.1	39.0			Hori.	54.0	15.0	3m>1m Dfac=-9.54dB
16884.000	29.5	AV	44.6	-35.1	39.0			Vert.	54.0	15.0	3m>1m Dfac=-9.54dB

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

DATA OF RADIATED EMISSION TEST

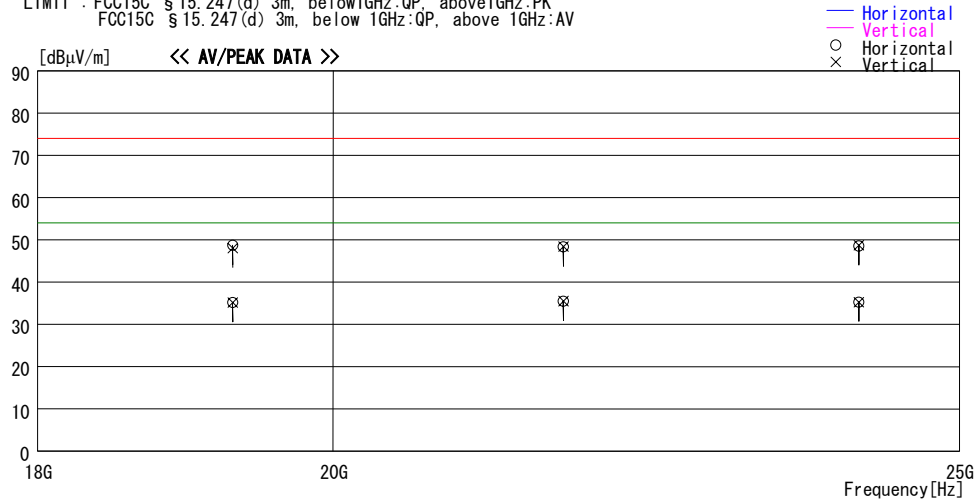
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 16:29:43

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks: Transmitting 11g 54Mbps CH1:2412MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency	Reading	DET	Antenna	Loss&	Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Gain					[dBuV/m]	[dB]	
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
19296.000	42.4	PK	41.6	-35.9	48.1			Vert.	74.0	26.0	3m->1m Dfac=-9.54dB
19296.000	43.0	PK	41.6	-35.9	48.7			Hori.	74.0	25.3	3m->1m Dfac=-9.54dB
19296.000	29.5	AV	41.6	-35.9	35.2			Vert.	54.0	18.8	3m->1m Dfac=-9.54dB
19296.000	29.5	AV	41.6	-35.9	35.2			Hori.	54.0	18.8	3m->1m Dfac=-9.54dB
21708.000	44.0	PK	40.4	-36.0	48.4			Vert.	74.0	25.6	3m->1m Dfac=-9.54dB
21708.000	44.0	PK	40.4	-36.0	48.4			Hori.	74.0	25.6	3m->1m Dfac=-9.54dB
21708.000	31.1	AV	40.4	-36.0	35.5			Vert.	54.0	18.5	3m->1m Dfac=-9.54dB
21708.000	31.1	AV	40.4	-36.0	35.5			Hori.	54.0	18.5	3m->1m Dfac=-9.54dB
24120.000	44.6	PK	41.0	-36.9	48.7			Vert.	74.0	25.3	3m->1m Dfac=-9.54dB
24120.000	44.4	PK	41.0	-36.9	48.5			Hori.	74.0	25.5	3m->1m Dfac=-9.54dB
24120.000	31.2	AV	41.0	-36.9	35.3			Vert.	54.0	18.8	3m->1m Dfac=-9.54dB
24120.000	31.2	AV	41.0	-36.9	35.3			Hori.	54.0	18.8	3m->1m Dfac=-9.54dB

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation EQUIPMENT : Wireless LAN Module MODEL : IRF303JU, LFANT103 SAMPLE NO. : 002 POWER : DC3.3V(AC120V/60Hz) MODE : Transmitting (11g / 54Mbps / CH6:2437MHz) : Antenna Port 1	UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber REGULATION : Fcc Part15 Subpart C 15.247 (d) TEST DISTANCE : 3m / 1m DATE : 06/13/2005 TEMPERATURE : 26deg.C HUMIDITY : 49% ENGINEER : Hiroka Umeyama
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PK DETECT (RBW: 1MHz, VBW:1MHz)												
No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit PK [dBuV/m]	Margin	
		HOR [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER [dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	4875.0	34.0	34.3	35.3	36.0	5.4	1.0	39.7	40.0	74.0	34.3	34.0
2	7311.7	34.4	34.4	37.7	36.0	6.7	0.5	43.3	43.3	74.0	30.7	30.7
3	9747.0	34.3	34.2	36.3	36.4	8.0	0.2	42.4	42.3	74.0	31.7	31.8

AV DETECT (RBW: 1MHz, VBW:10Hz)												
No.	Freq. [MHz]	Reading [dBuV]		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result [dBuV/m]		Limit AV [dBuV/m]	Margin [dB]	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	4875.0	21.7	21.6	35.3	36.0	5.4	1.0	27.4	27.3	54.0	26.6	26.7
2	7311.7	22.3	22.2	37.7	36.0	6.7	0.5	31.2	31.1	54.0	22.8	22.9
3	9747.0	21.9	21.9	36.3	36.4	8.0	0.2	30.0	30.0	54.0	24.1	24.1

* Except for the above table : All other spurious emissions were less than 20dB for the limit.
* Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.
* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 14:44:44

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks : Transmitting 11g 54Mbps CH6:2437MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:AV

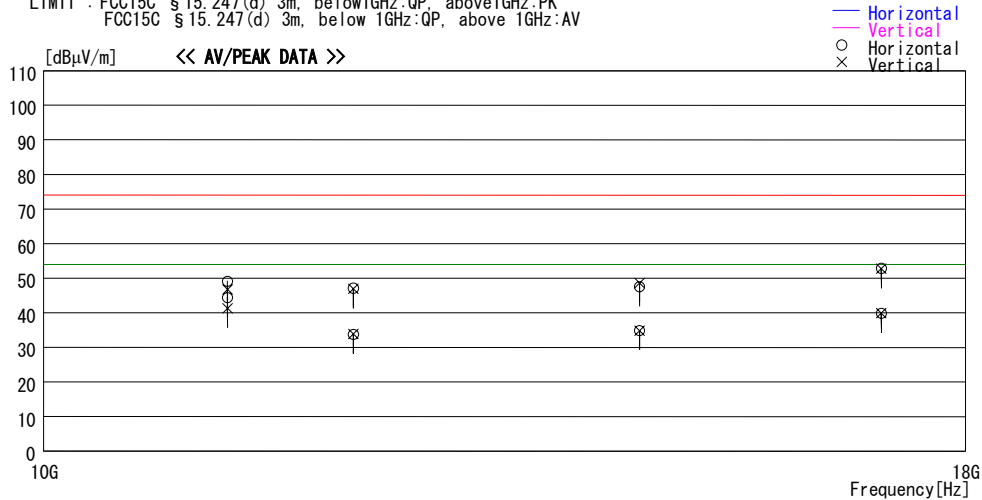


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

DATA OF RADIATED EMISSION TEST

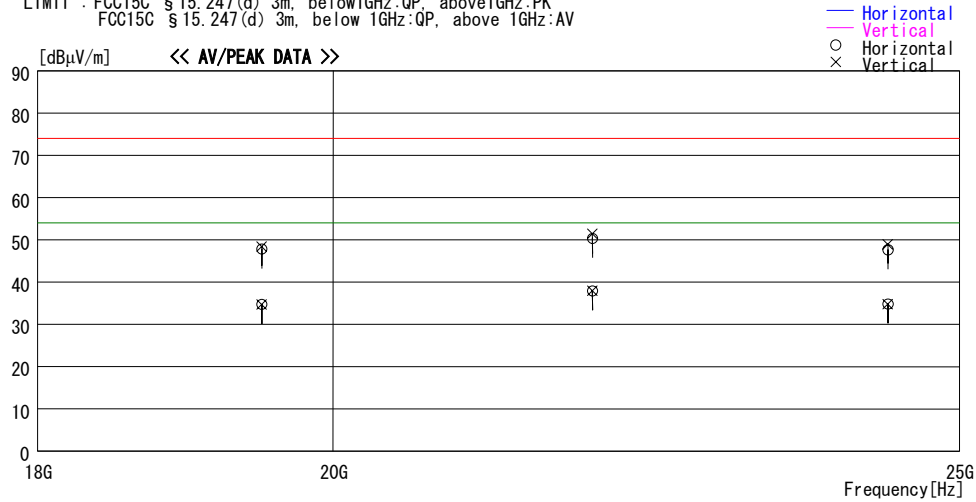
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 16:37:40

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks : Transmitting 11g 54Mbps CH6:2437MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBμV]	DET	Antenna	Loss&	Level [dBμV/m]	Angle [Deg]	Height [cm]	Polar.	Limit	Margin	Comment
			Factor [dB/m]	Gain [dB]					[dBμV/m]	[dB]	
19496.000	42.4	PK	41.4	-36.0	47.8			Hori.	74.0	26.2	3m->1m Dfac=-9.54dB
19496.000	43.1	PK	41.4	-36.0	48.5			Vert.	74.0	25.6	3m->1m Dfac=-9.54dB
19496.000	29.3	AV	41.4	-36.0	34.7			Hori.	54.0	19.3	3m->1m Dfac=-9.54dB
19496.000	29.3	AV	41.4	-36.0	34.7			Vert.	54.0	19.3	3m->1m Dfac=-9.54dB
21933.000	45.4	PK	40.5	-35.5	50.4			Hori.	74.0	23.6	3m->1m Dfac=-9.54dB
21933.000	46.4	PK	40.5	-35.5	51.4			Vert.	74.0	22.6	3m->1m Dfac=-9.54dB
21933.000	33.0	AV	40.5	-35.5	38.0			Hori.	54.0	16.0	3m->1m Dfac=-9.54dB
21933.000	33.0	AV	40.5	-35.5	38.0			Vert.	54.0	16.1	3m->1m Dfac=-9.54dB
24370.000	43.4	PK	41.1	-36.9	47.6			Hori.	74.0	26.4	3m->1m Dfac=-9.54dB
24370.000	44.8	PK	41.1	-36.9	49.0			Vert.	74.0	25.0	3m->1m Dfac=-9.54dB
24370.000	30.6	AV	41.1	-36.9	34.8			Hori.	54.0	19.2	3m->1m Dfac=-9.54dB
24370.000	30.6	AV	41.1	-36.9	34.8			Vert.	54.0	19.2	3m->1m Dfac=-9.54dB

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

Radiated Spurious Emission(DSSS and other forms of modulation)

COMPANY : Sony Corporation
EQUIPMENT : Wireless LAN Module
MODEL : IRF303JU, LFANT103
SAMPLE NO. : 002
POWER : DC3.3V(AC120V/60Hz)
MODE : Transmitting (11g / 54Mbps / CH11:2462MHz)
: Antenna Port 1

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber
REGULATION : Fcc Part15 Subpart C 15.247 (d)
TEST DISTANCE : 3m / 1m
DATE : 06/13/2005
TEMPERATURE : 26deg.C
HUMIDITY : 49%
ENGINEER : Hiroka Umeyama

PK DETECT (RBW: 1MHz, VBW:1MHz)												
No.	Freq. [MHz]	Reading [dBuV]		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result [dBuV/m]		Limit PK [dBuV/m]	Margin [dB]	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2483.5	55.0	52.1	30.8	36.4	3.6	20.0	73.0	70.1	74.0	1.0	3.9
2	4923.4	34.4	34.2	35.6	35.9	5.4	1.0	40.5	40.3	74.0	33.5	33.7
3	7386.1	34.4	34.7	37.8	36.0	6.7	0.6	43.5	43.8	74.0	30.5	30.2
4	9848.3	34.0	34.8	36.2	36.4	8.3	0.2	42.3	43.1	74.0	31.7	30.9

AV DETECT (RBW: 1MHz , VBW:10Hz)												
No.	Freq. [MHz]	Reading		Ant. Factor [dB/m]	Amp. Gain [dB]	Cable Loss [dB]	Atten. or Filter [dB]	Result		Limit AV [dBuV/m]	Margin	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV]						[dBuV/m]			[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Attenuator (or Filter)												
1	2483.5	33.0	32.3	30.8	36.4	3.6	20.0	51.0	50.3	54.0	3.0	3.7
2	4923.4	22.1	22.0	35.6	35.9	5.4	1.0	28.2	28.1	54.0	25.8	25.9
3	7386.1	22.2	22.2	37.8	36.0	6.7	0.6	31.3	31.3	54.0	22.7	22.7
4	9848.3	21.9	21.9	36.2	36.4	8.3	0.2	30.2	30.2	54.0	23.8	23.8

* Except for the above table : All other spurious emissions were less than 20dB for the limit.
* Atten. : 1 to 3.5GHz, Filter : 3.5 to 26GHz
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.
* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

DATA OF RADIATED EMISSION TEST

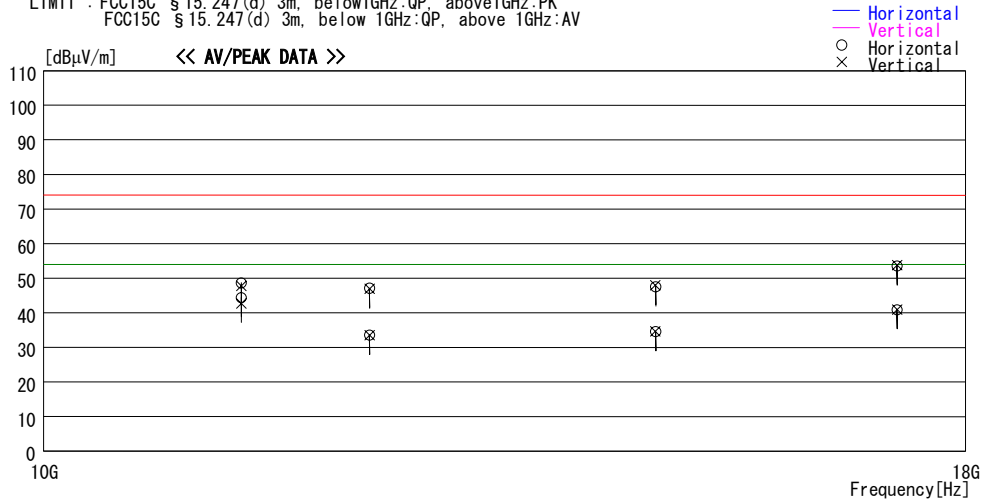
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 15:02:42

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks : Transmitting 11g 54Mbps CH11:2462MHz MAX_Axis(H:Z V:Y)

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C § 15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency	Reading	DET	Antenna		Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Loss&Gain							
[MHz]	[dBμV]		[dB/m]	[dB]	[dBμV/m]	[Deg]	[cm]		[dBμV/m]	[dB]	
11343.980	49.1	PK	38.1	-38.6	48.6			Hori.	74.0	25.4	3m->1m Dfac=-9.54dB
11344.010	48.2	PK	38.1	-38.6	47.7			Vert.	74.0	26.3	3m->1m Dfac=-9.54dB
11343.980	45.0	AV	38.1	-38.6	44.5			Hori.	54.0	9.5	3m->1m Dfac=-9.54dB
11344.010	43.3	AV	38.1	-38.6	42.8			Vert.	54.0	11.3	3m->1m Dfac=-9.54dB
12310.000	43.9	PK	41.5	-38.2	47.2			Hori.	74.0	26.8	3m->1m Dfac=-9.54dB
12310.000	43.7	PK	41.5	-38.2	47.0			Vert.	74.0	27.1	3m->1m Dfac=-9.54dB
12310.000	30.2	AV	41.5	-38.2	33.5			Hori.	54.0	20.5	3m->1m Dfac=-9.54dB
12310.000	30.2	AV	41.5	-38.2	33.5			Vert.	54.0	20.5	3m->1m Dfac=-9.54dB
14772.000	42.8	PK	42.4	-37.6	47.6			Hori.	74.0	26.4	3m->1m Dfac=-9.54dB
14772.000	43.2	PK	42.4	-37.6	48.0			Vert.	74.0	26.0	3m->1m Dfac=-9.54dB
14772.000	29.8	AV	42.4	-37.6	34.6			Hori.	54.0	19.4	3m->1m Dfac=-9.54dB
14772.000	29.9	AV	42.4	-37.6	34.7			Vert.	54.0	19.3	3m->1m Dfac=-9.54dB
17234.000	42.0	PK	44.5	-33.0	53.5			Hori.	74.0	20.5	3m->1m Dfac=-9.54dB
17234.000	42.3	PK	44.5	-33.0	53.8			Vert.	74.0	20.2	3m->1m Dfac=-9.54dB
17234.000	29.4	AV	44.5	-33.0	40.9			Hori.	54.0	13.1	3m->1m Dfac=-9.54dB
17234.000	29.5	AV	44.5	-33.0	41.0			Vert.	54.0	13.0	3m->1m Dfac=-9.54dB

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

DATA OF RADIATED EMISSION TEST

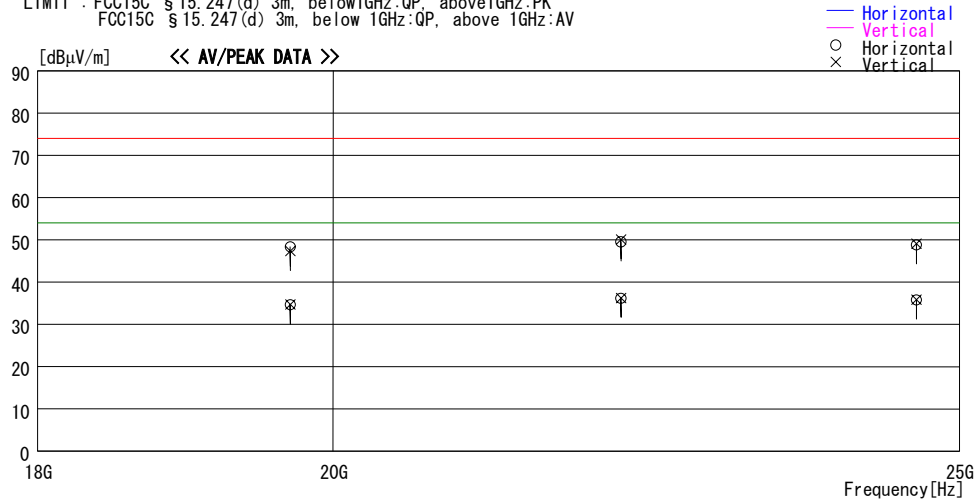
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2005/06/17 16:46:58

Applicant : Sony Corporation
Kind of EUT : Wireless LAN Module
Model No. : IRF303JU, LFANT103
Serial No. : 002

Report No. : 25IE0245-HO
Power : DC3.3V (AC120V/60Hz)
Temp°C/Humi% : 26deg.C / 60%
Operator : Yutaka Yoshida

Mode / Remarks : Transmitting 11g 54Mbps CH11:2462MHz MAX_Axis(H:Z V:Y)

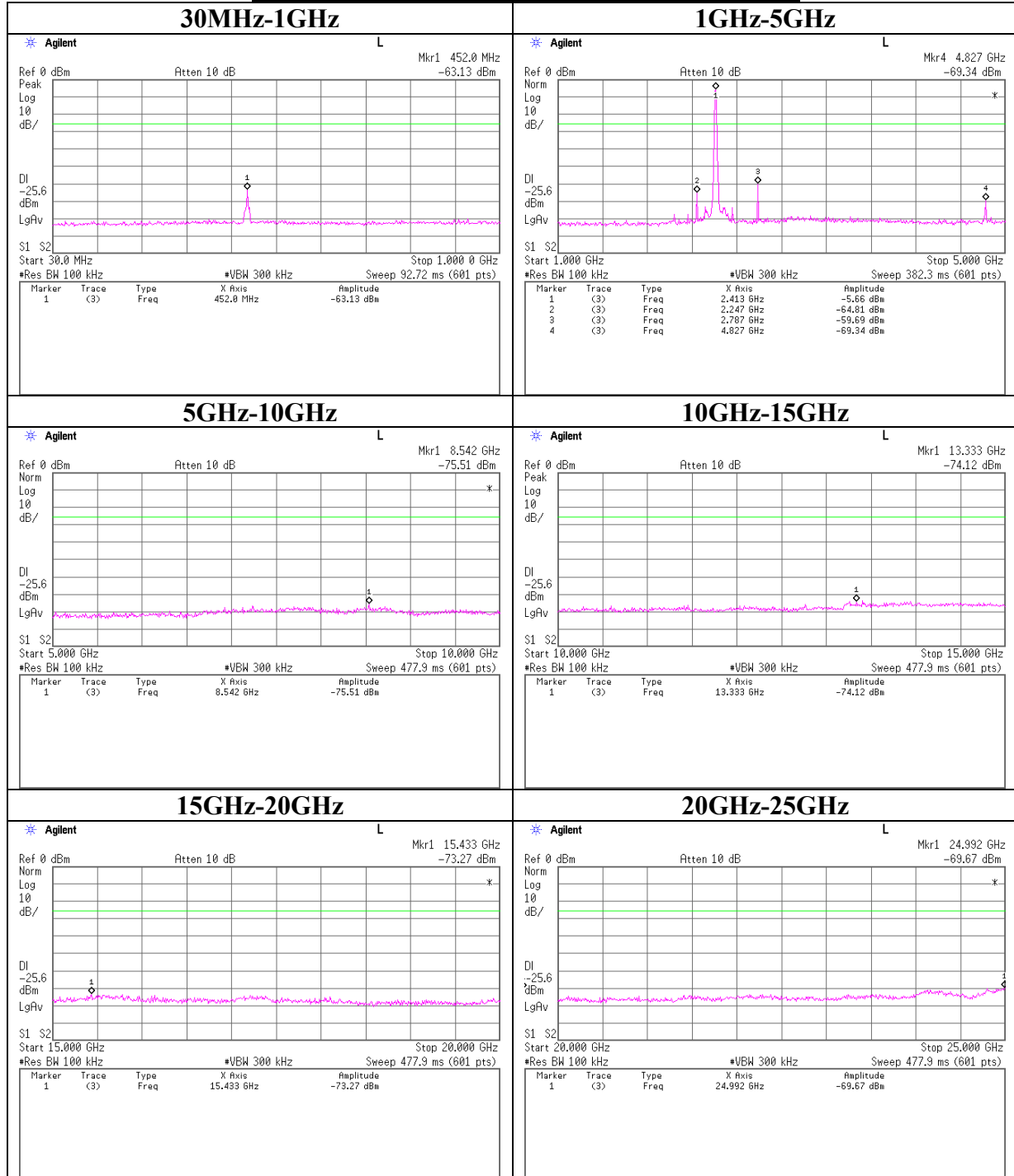
LIMIT : FCC15C §15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15C §15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



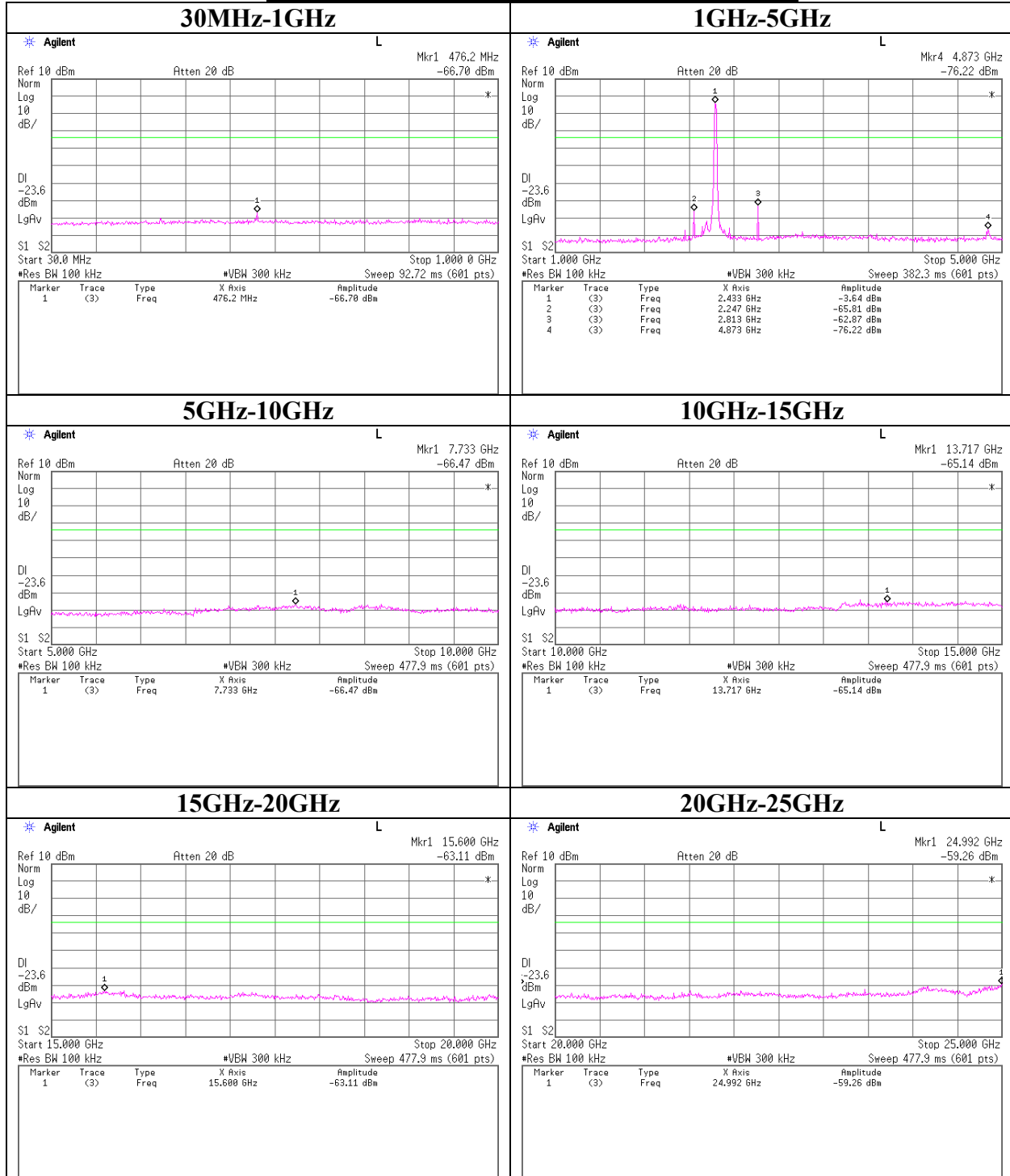
Frequency [MHz]	Reading [dBμV]	DET	Antenna	Loss	Level [dBμV/m]	Angle [Deg]	Height [cm]	Polar.	Limit	Margin	Comment
			Factor [dB/m]	Gain [dB]					[dBμV/m]	[dB]	
19696.000	43.4	PK	41.2	-36.2	48.4			Hori.	74.0	25.6	3m->1m Dfac=-9.54dB
19696.000	42.3	PK	41.2	-36.2	47.3			Vert.	74.0	26.7	3m->1m Dfac=-9.54dB
19696.000	29.7	AV	41.2	-36.2	34.7			Hori.	54.0	19.3	3m->1m Dfac=-9.54dB
19696.000	29.7	AV	41.2	-36.2	34.7			Vert.	54.0	19.3	3m->1m Dfac=-9.54dB
22158.000	44.5	PK	40.5	-35.4	49.6			Hori.	74.0	24.4	3m->1m Dfac=-9.54dB
22158.000	45.0	PK	40.5	-35.4	50.1			Vert.	74.0	23.9	3m->1m Dfac=-9.54dB
22158.000	31.1	AV	40.5	-35.4	36.2			Hori.	54.0	17.8	3m->1m Dfac=-9.54dB
22158.000	31.1	AV	40.5	-35.4	36.2			Vert.	54.0	17.8	3m->1m Dfac=-9.54dB
24620.000	44.1	PK	41.1	-36.4	48.8			Hori.	74.0	25.2	3m->1m Dfac=-9.54dB
24620.000	44.4	PK	41.1	-36.4	49.1			Vert.	74.0	24.9	3m->1m Dfac=-9.54dB
24620.000	31.1	AV	41.1	-36.4	35.8			Hori.	54.0	18.2	3m->1m Dfac=-9.54dB
24620.000	31.1	AV	41.1	-36.4	35.8			Vert.	54.0	18.2	3m->1m Dfac=-9.54dB

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz Dipole, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN
Page:

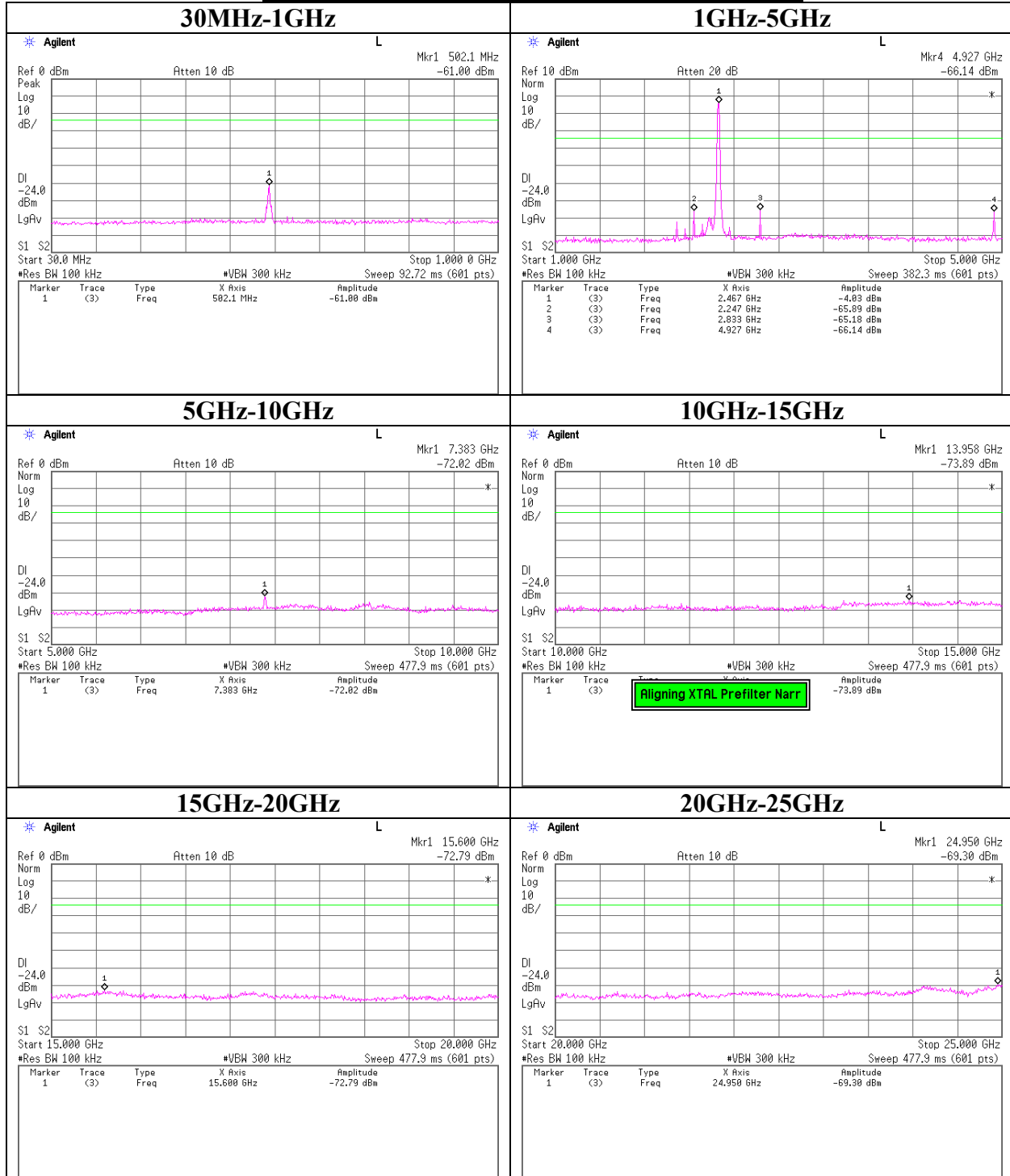
Conducted Spurious Emission(DSSS and other forms of modulation)
IEEE802.11b 11Mbps Antenna Port: 2 Ch : Low



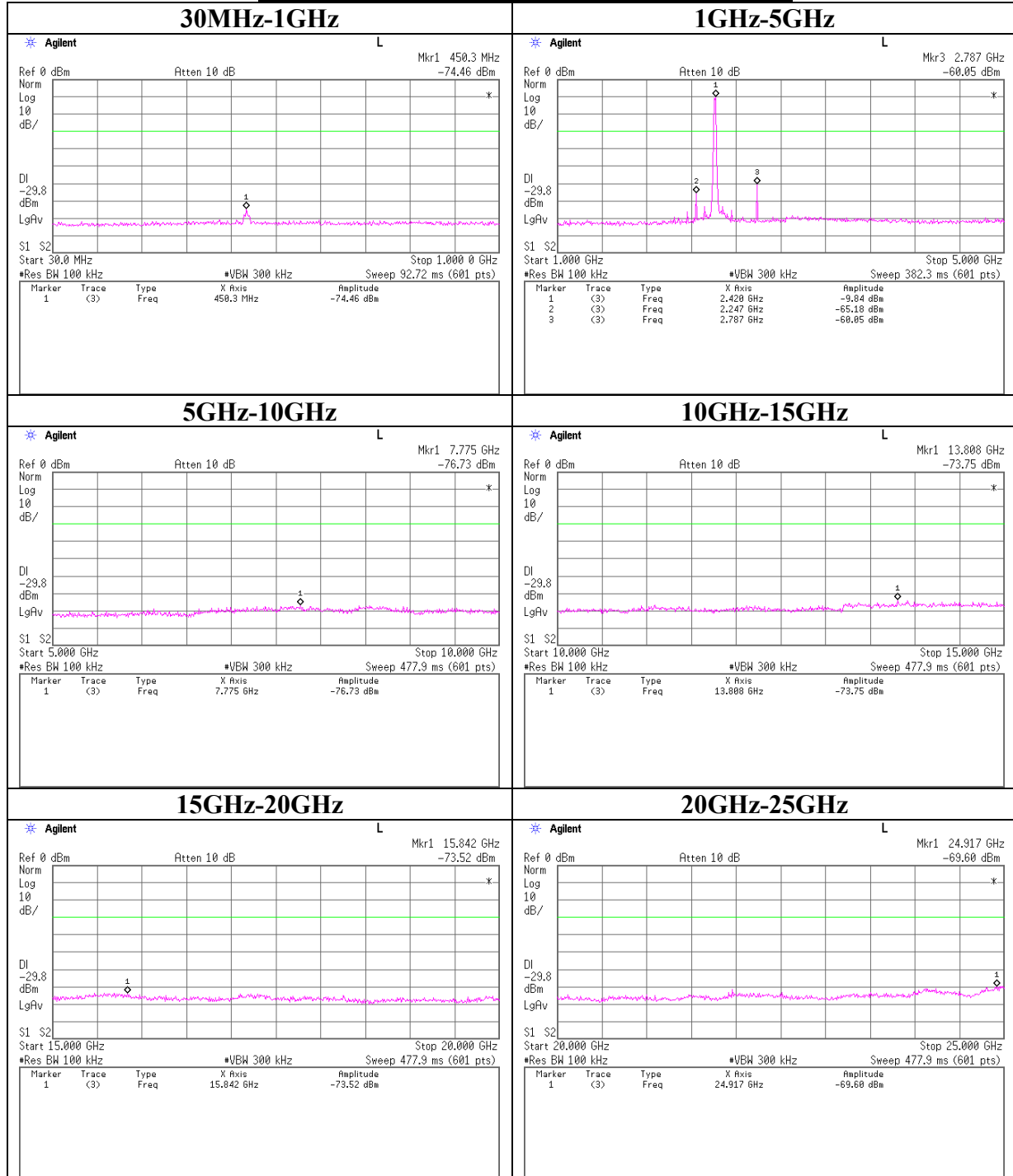
Conducted Spurious Emission(DSSS and other forms of modulation)
IEEE802.11b 11Mbps Antenna Port:2 Ch : Mid



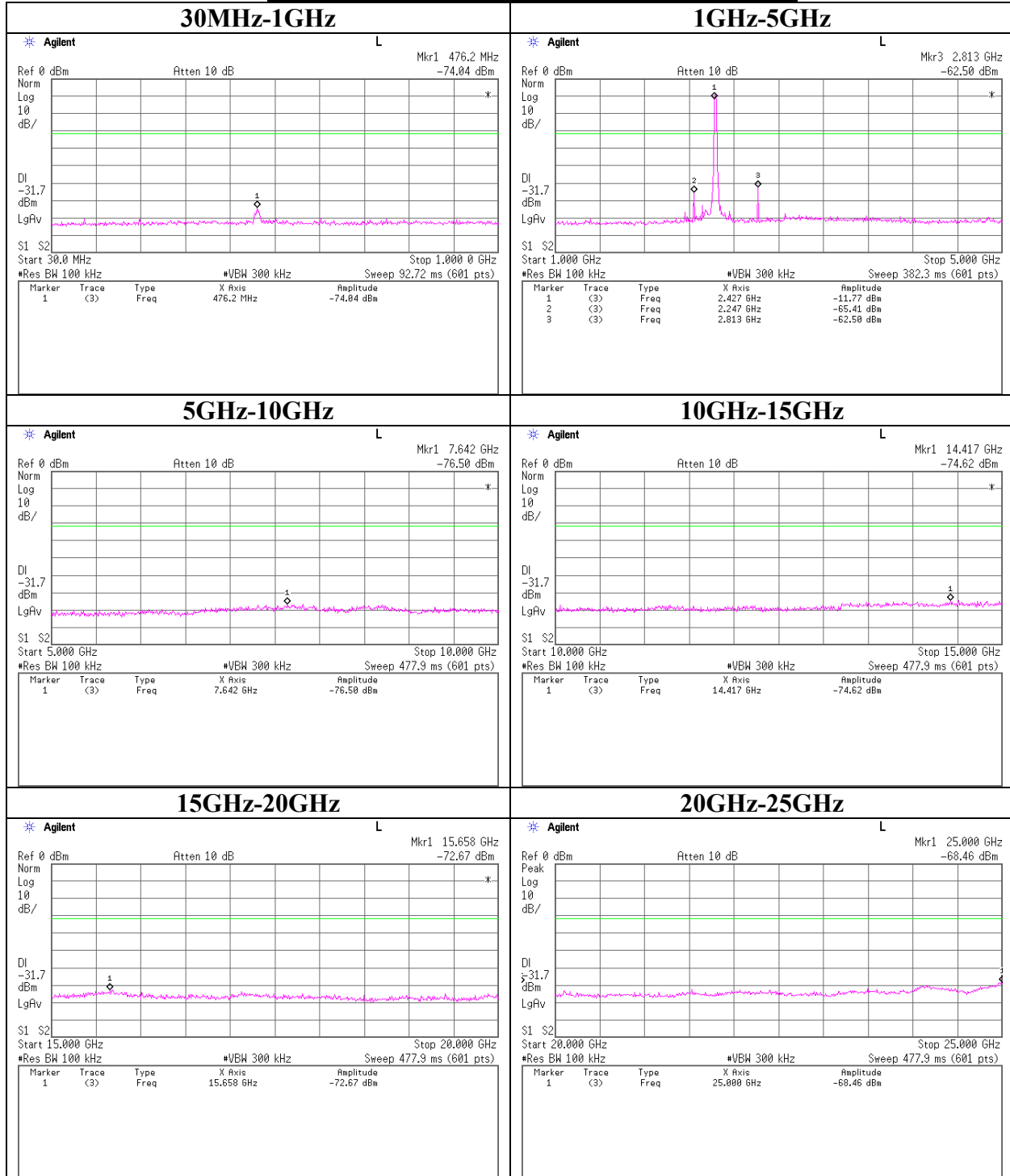
Conducted Spurious Emission(DSSS and other forms of modulation)
IEEE802.11b 11Mbps Antenna Port:2 Ch : High



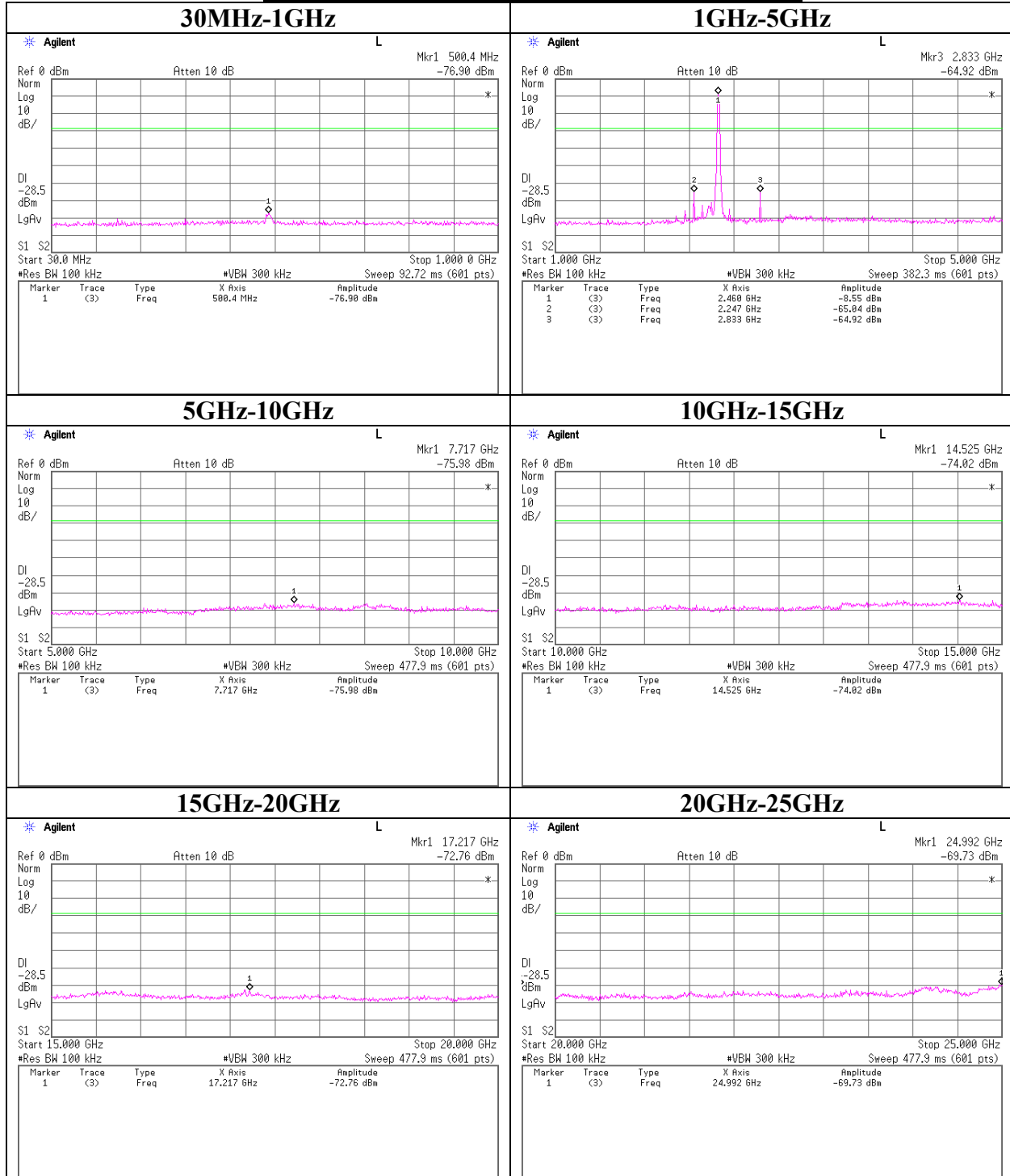
Conducted Spurious Emission(DSSS and other forms of modulation)
IEEE802.11g 54Mbps Antenna Port:2 Ch : Low



Conducted Spurious Emission(DSSS and other forms of modulation)
IEEE802.11g 54Mbps Antenna Port:2 Ch : Mid

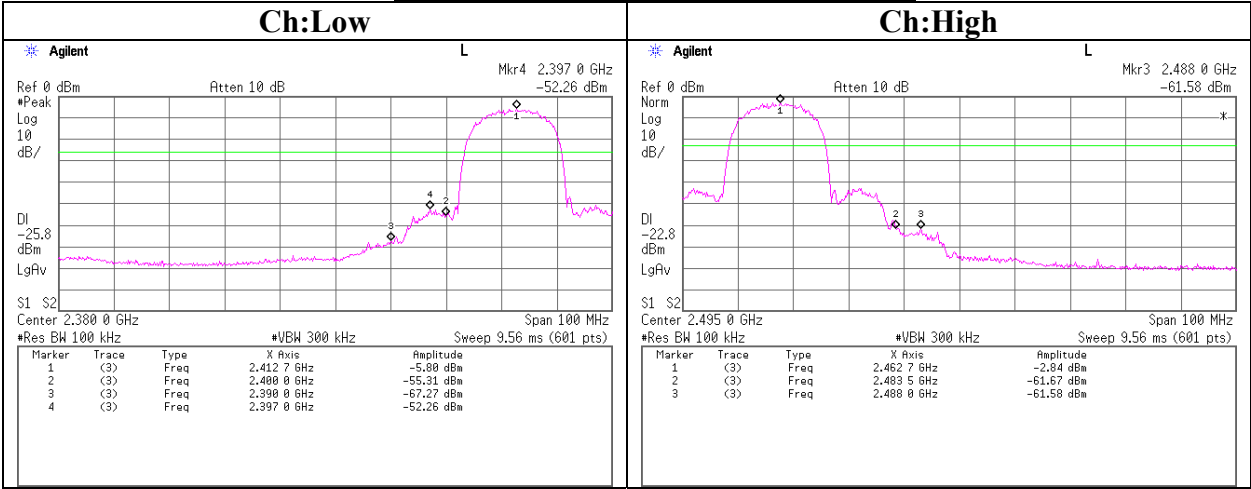


Conducted Spurious Emission(DSSS and other forms of modulation)
IEEE802.11g 54Mbps Antenna Port:2 Ch : High



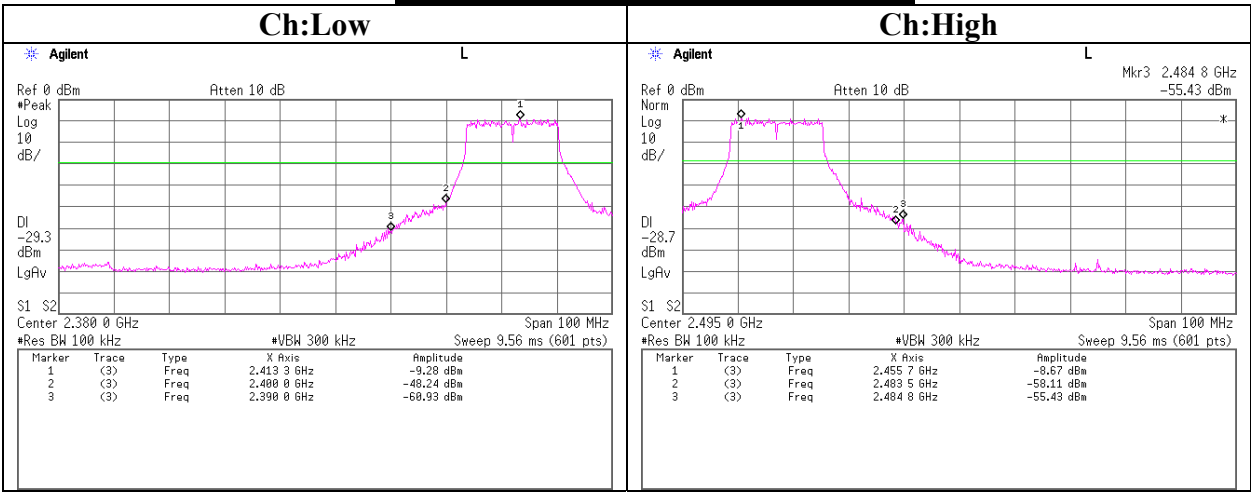
Conducted emission Band Edge compliance (DSSS and other forms of modulation)

IEEE802.11b 11Mbps Antenna Port:2



Conducted emission Band Edge compliance (DSSS and other forms of modulation)

IEEE802.11g 54Mbps Antenna Port:2



Power Density (DSSS and other forms of modulation)

UL Apex Co., Ltd.
Head Office EMC Lab. No.4 Measurement Room

Company : Sony Corporation
Equipment : Wireless LAN Module
Model : IRF303JU
Sample No. : 001
Power : DC3.3V
Mode : Tx IEEE 802.11b/g
Antenna Port : 2

REPORT NO : 25IE0245-HO
REGULATION : FCC 15.247(e)
TEST DISTANCE : -
DATE : 06/16/2005
TEMPERATURE : 26deg.C
HUMIDITY : 46%
ENGINEER : Hiroka Umeyama

[IEEE802.11b : 11Mbps]

Ch	Freq. [MHz]	Reading [dBm]	Cable [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	2412.0	-19.48	0.49	10.0	-9.0	8.0	17.0
Mid	2437.0	-19.03	0.49	10.0	-8.5	8.0	16.5
High	2462.0	-18.48	0.49	10.0	-8.0	8.0	16.0

[IEEE802.11g : 54Mbps]

Ch	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	2412.0	-22.95	0.49	10.0	-12.5	8.0	20.5
Mid	2437.0	-22.86	0.49	10.0	-12.4	8.0	20.4
High	2462.0	-22.79	0.49	10.0	-12.3	8.0	20.3

Sample Calculation:

Result = Reading + Cable Loss + Attenuator

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

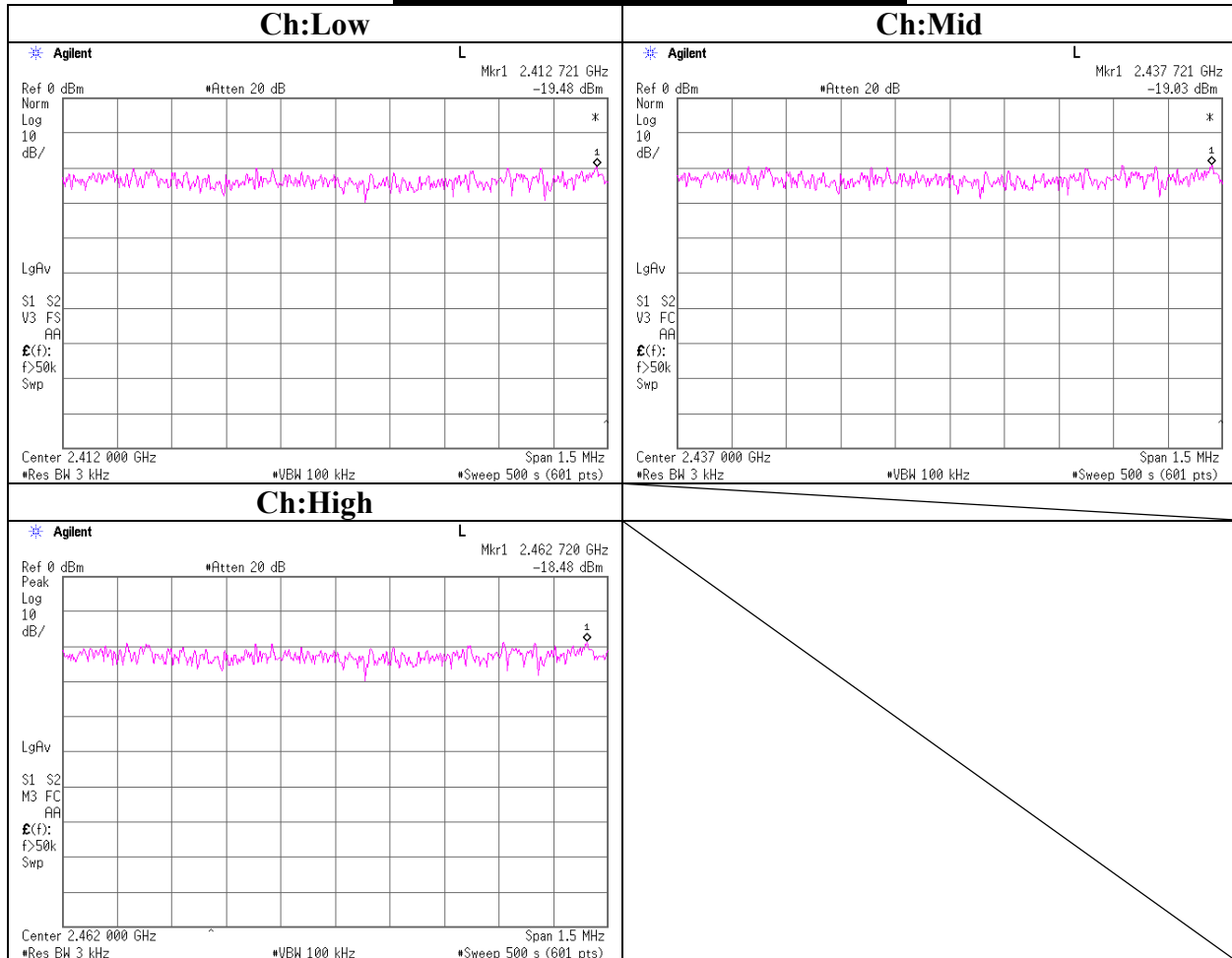
Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

MF060b(10.04.03)

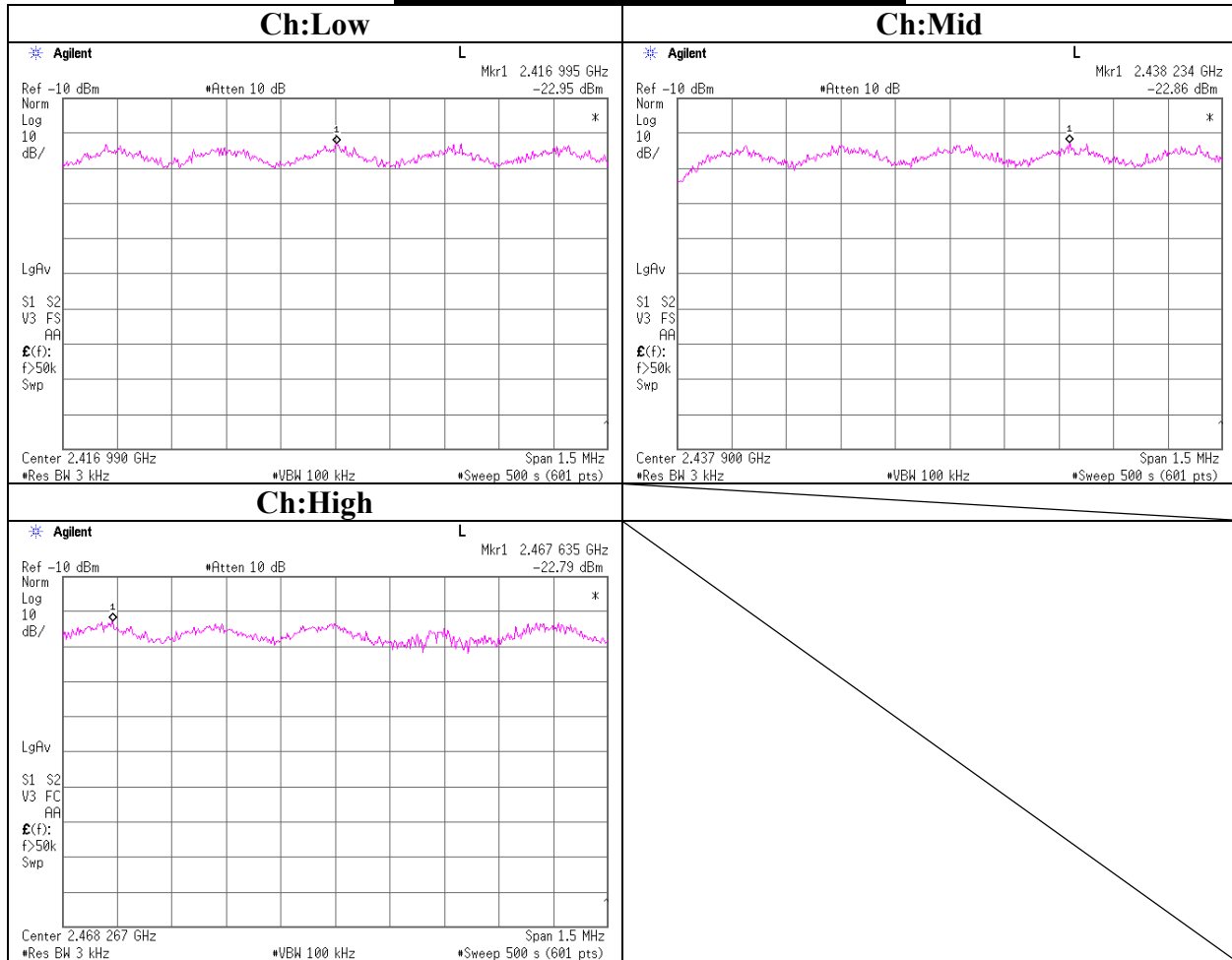
Power Density(DSSS and other forms of modulation)

IEEE802.11b 11Mbps Antenna Port:2



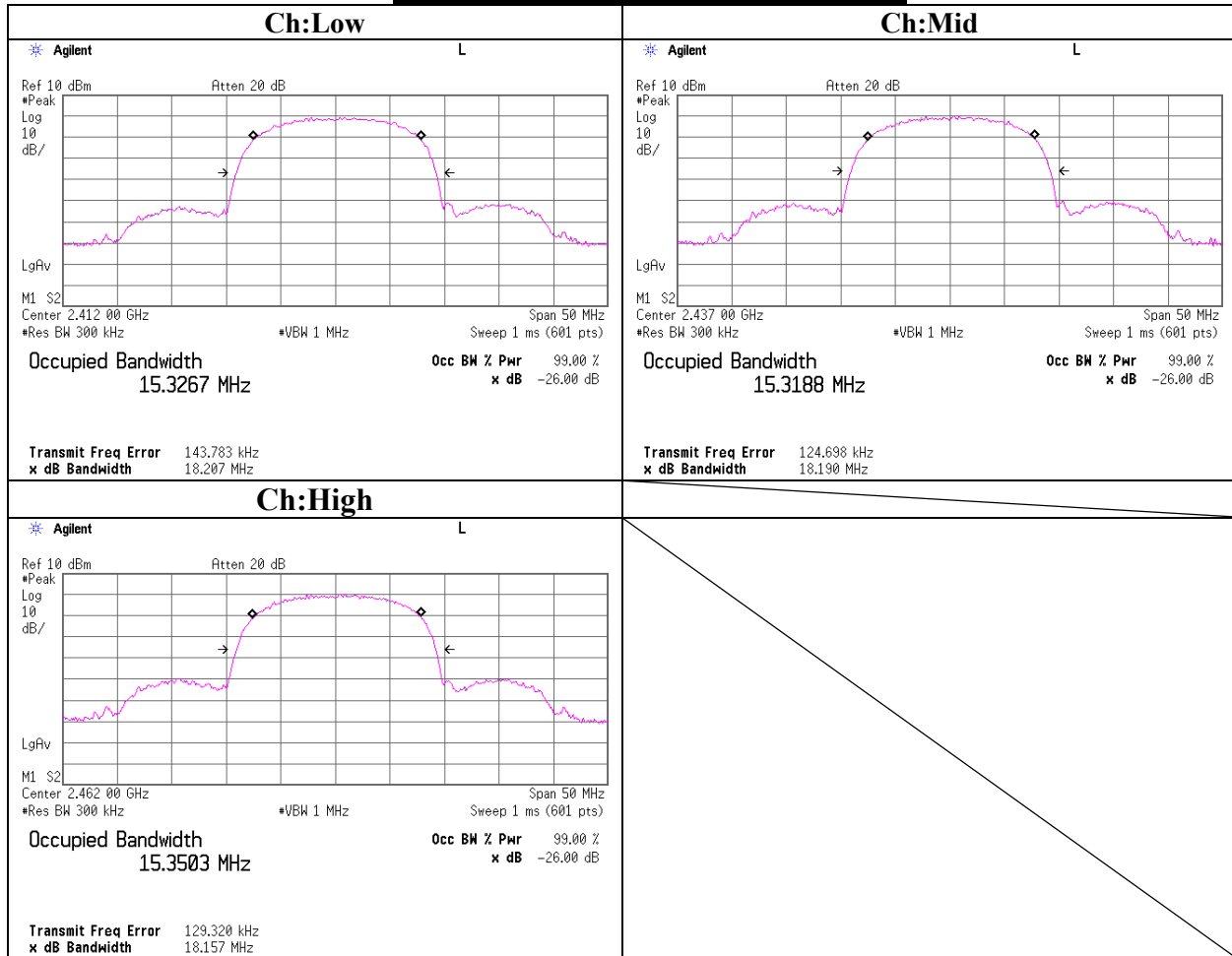
Power Density(DSSS and other forms of modulation)

IEEE802.11g 54Mbps Antenna Port:2



99%Occupied Bandwidth(DSSS and other forms of modulation)

IEEE802.11b 11Mbps Antenna Port:2



99%Occupied Bandwidth(DSSS and other forms of modulation)

IEEE802.11g 54Mbps Antenna Port:2

