



TEST REPORT

REPORT NUMBER : ANKK-101422
APPLICANT : Sony Corporation
MODEL NUMBER : PCWA-A500
FCC ID : AK8PCWAA500
REGULATION : FCC Part15 Subpart E



NVLAP accreditation is valid for
FCC Part15 (Digital Devices),
CISPR22 and AS/NZS 3548.
NVLAP accreditation does not cover
ICES-003.

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TABLE OF CONTENTS

	Page
ABBREVIATIONS.....	3
SECTION 1. TEST CERTIFICATION	4
SECTION 2. SUMMARY OF RESULTS	5
SECTION 3. EQUIPMENT UNDER TEST.....	6
SECTION 4. SUPPORT EQUIPMENT USED.....	8
SECTION 5. CABLE (S) USED.....	9
SECTION 6. CONSTRUCTION OF EQUIPMENT.....	10
SECTION 7. GENERAL TEST CONDITIONS	12
SECTION 8. TEST PROCEDURE(S)	13
SECTION 9. TEST DATA.....	17
9.1 26dB Emission Bandwidth [15.407(a)(1), 15.407(a)(2)]	17
9.2 Maximum Peak Output Power [15.407(a)(1), 15.407(a)(2)]	19
9.3 Peak Power Spectral Density [15.407(a)(1), 15.407(a)(2)]	24
9.4 Peak Excursion Ratio [15.407(a)(6)]	28
9.5 Spurious Emissions – RF Antenna Conducted [15.407(b)(1), 15.407(b)(2)]	32
9.6 Spurious Emissions – Radiated Emissions (below 1GHz) [15.407(b)(5), 15.209].....	34
9.7 Spurious Emissions – Radiated Emissions (above 1 GHz) [15.407(b)(6), 15.205].....	38
9.8 Spurious Emissions – Radiated Emissions (Band Edge) [15.407(b)(6), 15.205]	42
9.9 AC Conducted Emissions [15.407(b)(5),15.207]	52
SECTION 10. PHOTOGRAPHS OF MAXIMUM EMISSION SET-UP	55
SECTION 11. MEASUREMENT UNCERTAINTY.....	56
SECTION 12. VALIDITY OF TEST REPORT	57
SECTION 13. DESCRIPTION OF TEST LABORATORY	58

ABBREVIATIONS

LISN	= Line Impedance Stabilization Network
AMN	= Artificial Mains Network
ANT	= Antenna
BBA	= Broad-band Antenna
DIP	= Dipole Antenna
AMP	= Amplifier
ATT	= Attenuator
EUT	= Equipment Under Test
Q-P	= Quasi-peak
AVG	= Average
Ch	= Channel
OFDM	= Orthogonal Frequency Division Multiplexing
BPSK	= Binary Phase Shift Keying
QPSK	= Quadrature Phase Shift Keying
QAM	= Quadrature Amplitude Modulation
EIRP	= Effective Isotropic Radiated Power

SECTION 1. TEST CERTIFICATION**APPLICANT INFORMATION**

Company	: Sony Corporation
Address	: 6-7-35, Kitashinagawa, Shinagawa-ku, Tokyo, 141-0001 Japan
Telephone number	: +81 3 5795 8712
Fax number	: +81 3 5795 8981

DESCRIPTION OF TEST ITEM

Kind of equipment	: Wireless LAN Access Point
Condition of equipment	: Pre-Production
Type	: Tabletop
Trademark	: SONY
FCC ID	: AK8PCWAA500
Model number	: PCWA-A500
Serial number	: 0000001

TEST PERFORMED

Location	: Kashima No. 1 Test Site (FCC File No. : 31040/SIT)
EUT received	: November 22, 2001
Test started	: December 14, 2001
Test completed	: January 24, 2002
Regulation	: FCC Part15 Subpart E Section 407 Intentional Radiators
Test setup	: ANSI C63.4-1992

Report number : ANKK-101422

Report issue date : January 24, 2002

Test engineer : Kazuhiro Ando

Report approved by : Junichi Okada
[Site Manager]

On the basis of the measurements made, the equipment tested is capable of operation in compliance with the requirements of Part 15 of the FCC Rules under normal use and maintenance.

SECTION 2. SUMMARY OF RESULTS

Test	Reference	Result
26dB Emission Bandwidth	15.407(a)(1) 15.407(a)(2)	N.A.
Maximum Peak Output Power	15.407(a)(1) 15.407(a)(2)	Pass
Peak Power Spectral Density	15.407(a)(1) 15.407(a)(2)	Pass
Peak Excursion Ratio	15.407(a)(6)	Pass
Spurious Emissions - RF Antenna Conducted	15.407(b)(1) 15.407(b)(2)	Pass
Spurious Emissions - Radiated Emissions (below 1 GHz)	15.407(b)(5) 15.209	Pass
Spurious Emissions - Radiated Emissions (above 1 GHz)	15.407(b)(6) 15.205	Pass
Spurious Emissions - Radiated Emissions (Band Edge)	15.407(b)(6) 15.205	Pass
AC Conducted Emissions	15.407(b)(5) 15.207	Pass
Automatic Discontinuance of Transmission	15.407(c)	Pass ^{Note 1}
Antenna Requirement	15.407(d) 15.203	Pass ^{Note 2}
Indoor Operation	15.407(e)	Pass ^{Note 3}
Frequency Stability	15.407(g)	Pass ^{Note 4}
Unintentional Radiators	15.107 15.109	^{Note 5}

Note 1 : Refer to page 1 of the “Theory of Operations” in separate attachment.

Note 2 : The EUT uses Integral antenna. As for the requirement in Section 15.203, refer to “Antenna Structure” in separate attachment.

Note 3 : Refer to page 3 of the user’s manual in separate attachment for the statement regarding restriction of indoor operation.

Note 4 : Frequency Stability is ± 20 ppm. Refer to the data in separate attachment.

Note 5 : As for the FCC Part 15 Subpart B-Unintentional Radiators, the EUT has been measured and declared as DoC.

SECTION 3. EQUIPMENT UNDER TEST

The equipment under test (EUT) consisted of the following equipment.
Indication in the following left side column corresponds to Section 6.

Symbol	Item	Model No.	Serial	FCC ID / DoC	Manufacturer	Remarks
A)	Wireless LAN Access Point	PCWA-A500	0000001	AK8PCWAA500	Sony Corporation	
B)	AC Adapter	PCWA-AC01	0000012	N.A.	Sony Corporation	

Power ratings of EUT :

Wireless LAN Access Point : DC 10V

AC Adapter : (Input) AC 100-240V, 0.5 A, 50/60 Hz

(Output) DC 10V, 1.5A

DoC : Device for Declaration of Conformity

3.1 Overview of EUT

Operating Frequency Range	5.15 - 5.35 GHz	
Modulation Method	OFDM	
Number of Operating Channel	8	
Data Rate and Modulation	6 Mbps	BPSK
	9 Mbps	BPSK
	12 Mbps	QPSK
	18 Mbps	QPSK
	24 Mbps	16-QAM
	36 Mbps	16-QAM
	48 Mbps	64-QAM
	54 Mbps	64-QAM
Antenna Gain	Antenna A	5.15 dBi
	Antenna B	5.15 dBi
Output Power	12.0 mW	
EIRP	39.4 mW	

3.2 Operating channels and frequencies

Ch	Frequency (GHz)
6	5.18
8	5.20
10	5.22
12	5.24
14	5.26
16	5.28
18	5.30
20	5.32

Note:

1. This is for sure that all frequencies are in 5.18GHz to 5.32GHz.
2. Section 15.31(m): Measurements on intentional radiators or receivers shall be performed at three frequencies for operating frequency range over 10 MHz. (The locations of these frequencies one near the low, one near the middle and one near the high.)
3. After test, the EUT operating frequencies are in 5.18GHz to 5.32GHz. So all the items as followed in testing report are need to test these three frequencies: low: ch 6, middle: ch 12, high: ch 20.

3.3 Port(s)/Connector(s) :

Port name	Connector type	Connector pin	Remarks
NETWORK 1	RJ45	8 pin	
NETWORK 2	RJ45	8 pin	
DC IN 10V	EIAJ RC-5320	2 pin	

3.4 Oscillator(s)/Crystal(s) :

Oscillator	Operating frequency	Board name	Remarks
8.3 MHz	133 MHz	MP-35	
	66 MHz	MP-35	
	33 MHz	MP-35	
25 MHz	25 MHz	MP-35	
280±10% kHz	280±10% kHz	MP-35	
32 MHz	4.144 GHz	IFX-188	
	5.18-5.32 GHz	IFX-188	Highest frequency

SECTION 4. SUPPORT EQUIPMENT USED

The EUT was supported by the following equipment during the test.
Indication in the following left side column corresponds to Section 6.

Symbol	Item	Model No.	Serial No.	FCC ID / DoC	Manufacturer	Remarks
C)	Computer	PVC-MXS20	100000060	DoC	SONY Corporation	
D)	CRT Display	D2813	TW70830537	A3KM043	HEWLETT PACKARD	
E)	Keyboard	PCVA-KB2P/JC	100000058	DoC	SONY Corporation	
F)	Mouse	1-996-183-31	100000060	DoC	SONY Corporation	
G)	Hub	ES3008A	FKJ1300802	N.A.	Accton	
H)	Server	CUBE3	3301CW1280010	DoC	COBALT	
I)	AC Adapter	PSA65U-301	C10701493A1	N.A.	PHIHONG	

DoC : Device was tested and authorized under a Declaration of Conformity to the applicable FCC rules.

SECTION 5. CABLE (S) USED

The following cable(s) was used for the test.

Indication number in the following left side column corresponds to Section 6.

Number	Name	Length	Shield	Connector	Core
1)	LAN cable	10.00 m	None	Plastic	
2)	LAN cable	10.00 m	None	Plastic	
3)	LAN cable	0.95 m	None	Plastic	
4)	Video cable	1.50 m	Yes	Metal	
5)	Keyboard cable	1.80 m	Yes	Metal	
6)	Mouse cable	1.80 m	Yes	Metal	
7)	Power cable for AC Adapter(B) (DC)	1.80 m	None		Fixed ×1
8)	Power cable for AC Adapter(B) (AC)	0.70 m	None		
9)	Power cable for Computer	2.40 m	None		
10)	Power cable for CRT Display	1.80 m	None		
11)	Power cable for Hub	1.80 m	None		
12)	Power cable for AC Adapter(I) (DC)	1.25 m	None		Fixed ×1
13)	Power cable for AC Adapter(I) (AC)	1.95 m	None		

Note :

- a. No.7 cable is supplied together with EUT by the applicant.

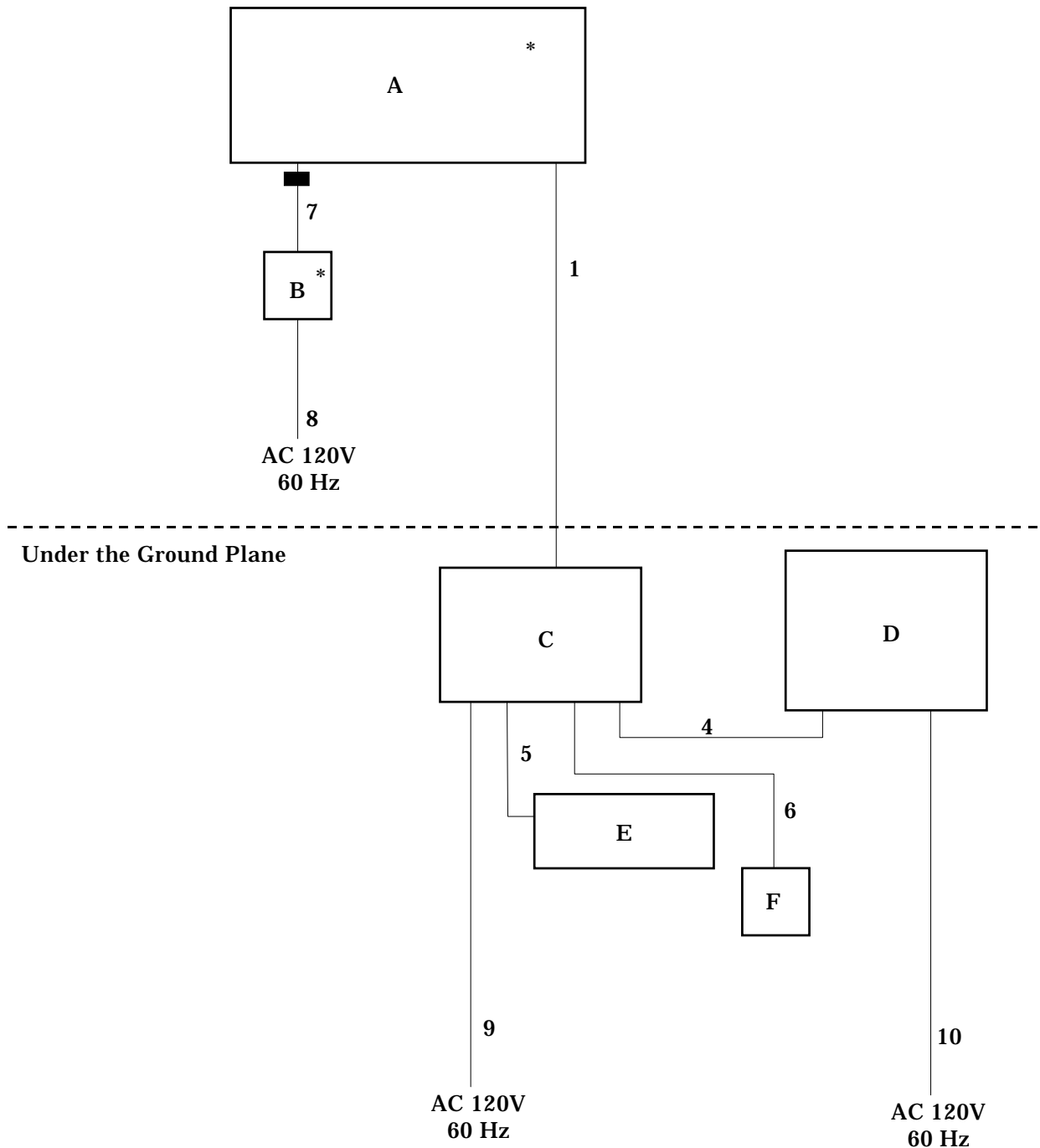
SECTION 6. CONSTRUCTION OF EQUIPMENT

The construction of EUT during the test was as follows.

6.1 RF Conducted Measurement

System configuration

* : EUT
 ■ : Ferrite core

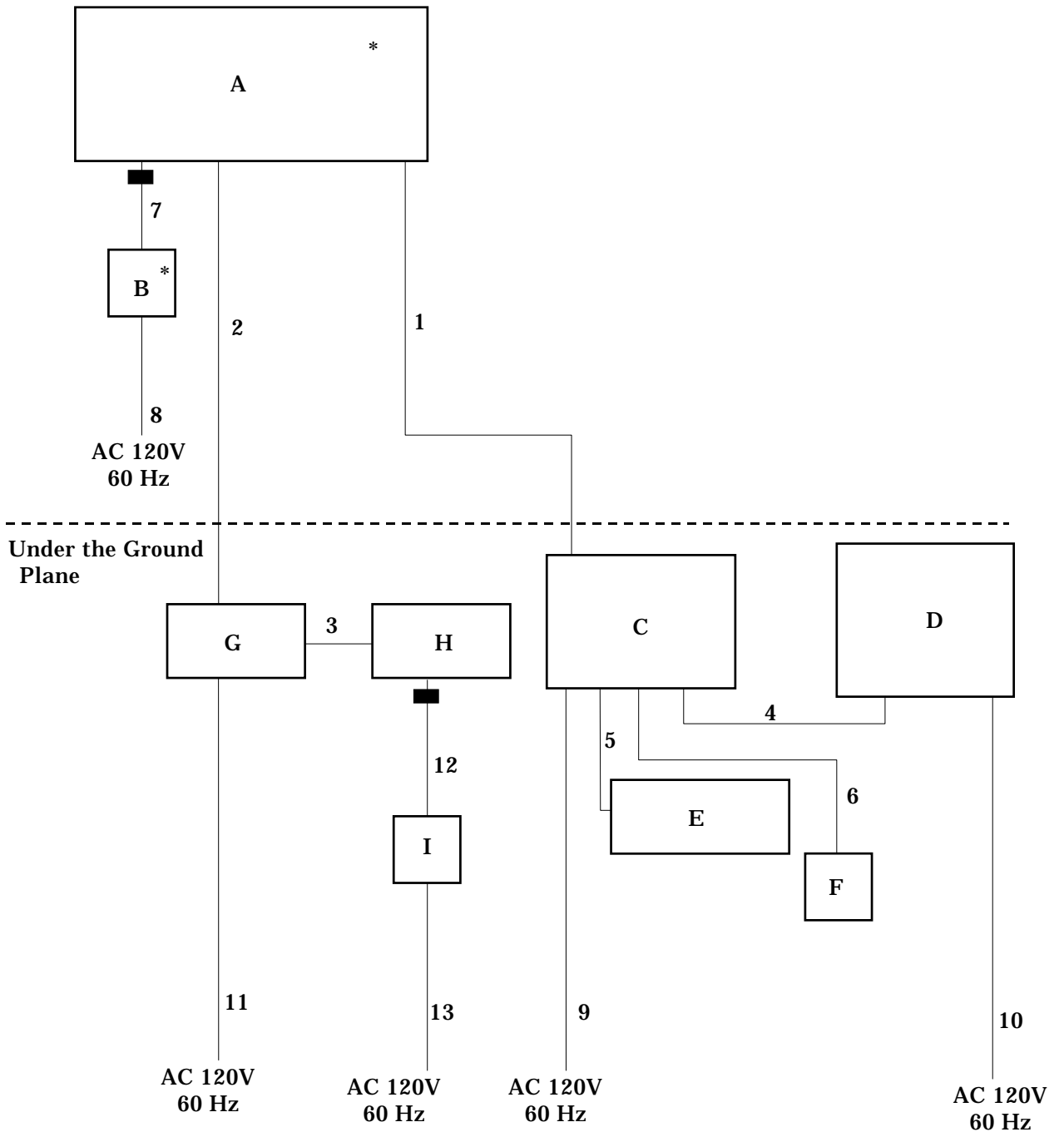


Symbols or numbers assigned to equipment or cables on this diagram are corresponded to the symbols or numbers assigned to equipment or cables on tables in Sections 3 to 5.

6.2 Other Measurements

System configuration

* : EUT
 ■ : Ferrite core



Symbols or numbers assigned to equipment or cables on this diagram are corresponded to the symbols or numbers assigned to equipment or cables on tables in Sections 3 to 5.

SECTION 7. GENERAL TEST CONDITIONS

The EUT was operated under the following conditions during the test.

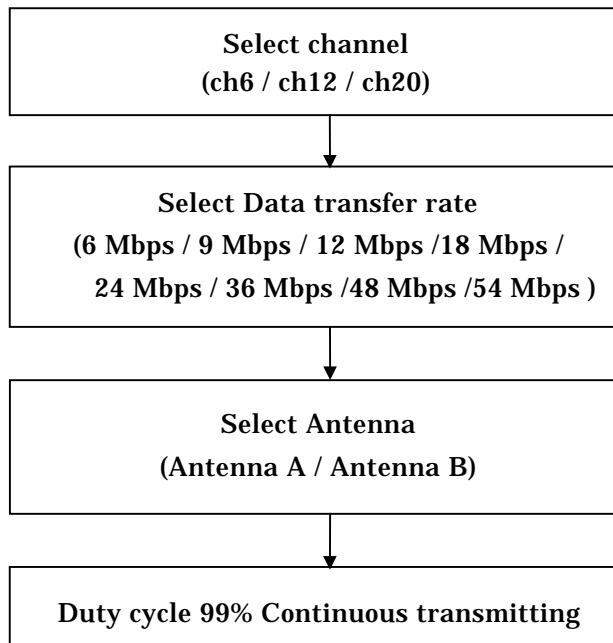
7.1 Operating condition

The test was carried out with the transmitter set at maximum power in Test mode. EUT was examined in the operating conditions that had maximum emissions.

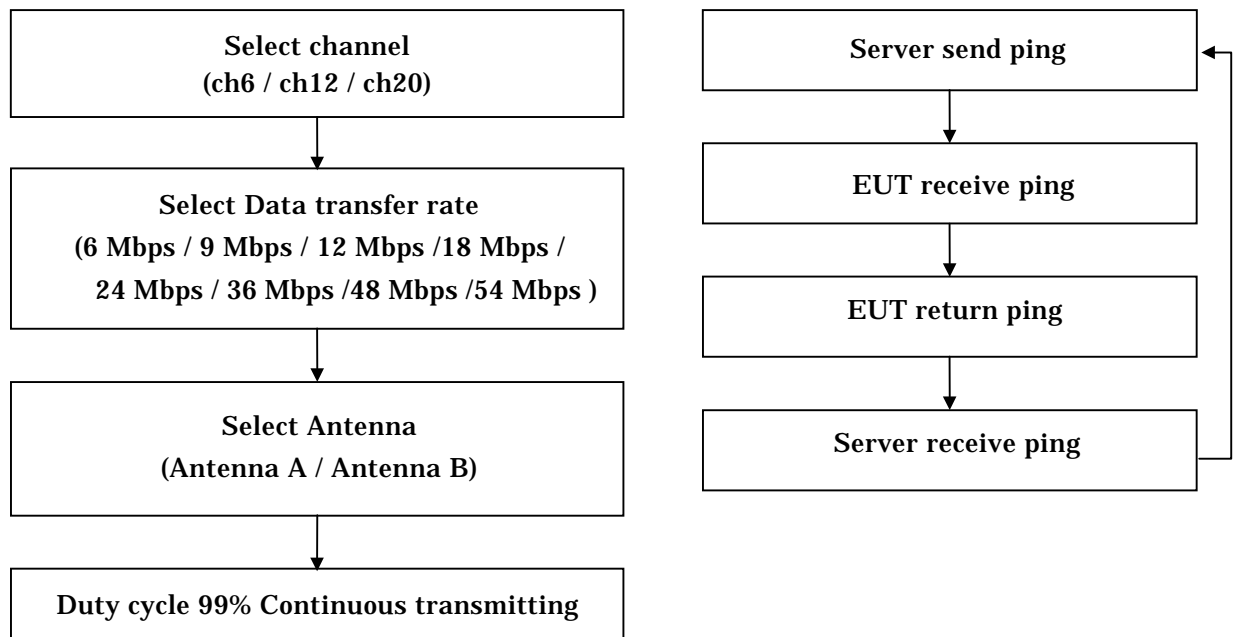
7.2 Operating flow

Following operations were performed continuously.

7.2.1 RF Conducted Measurement



7.2.2 Other Measurements



SECTION 8. TEST PROCEDURE(S)

Test was carried out under the following conditions.

Test was carried out with no deviations from standards and test methods.

8.1 Conducted Emission Test [15.407(b), 15.207]

8.1.1 Equipment Setup

System configuration and Equipment setup are shown on Section 6 and Section 10.

8.1.1.1 Table-Top Equipment

EUT is placed on the wooden table raised 0.8meter above the metal ground plane.

8.1.1.2 Interconnecting Cables

Excess part of the interconnecting cables longer than 1 meter are bundled in the center. Cables that hang closer than 40 cm to the ground plane is folded back and forth forming bundle 30 to 40 cm long, hanging approx, in the middle between ground plane and table.

8.1.1.3 AC Power Cable

AC power cable for EUT is connected to one LISN which is placed on the ground plane. The LISN is placed in 80 cm from the nearest part of EUT chassis. The excess power cable is bundled in the center, or shortened to appropriate length. AC cables except from the EUT are connected second LISN.

8.1.2 Measuring Instruments

Brief description of Measuring Instruments are as follows;

8.1.2.1 Spectrum Analyzer

The Spectrum analyzer is used for preliminary measurement.

8.1.2.2 EMI Test Receiver

The Quasi-peak detector (IF bandwidth : 10 kHz) and average detector (IF bandwidth : 10 kHz) built in test receiver is used for final measurement. The test receiver is complied with the specification of the CISPR publication 16.

8.1.2.3 LISN

Two 50 μ H//50 Ω LISN are used. The chassis of the LISN is bonded to the ground plane by the copper blade. One LISN is connected to the EUT. Other LISN (2nd LISN) is connected to the support equipment. The signal output of the 2nd LISN is terminated with a 50 Ω termination.

8.1.3 Test Procedure

8.1.3.1 Preliminary Measurement

EUT is tested on all operating conditions.

The spectrum analyzer is controlled by the computer program to sweep regulation frequency, then spectrum chart are plotted out to detect the worst conditions in operating mode and/or configuration for the final test.

All leads other than safety ground are tested.

8.1.3.2 Final Measurement

The EUT is operated in the worst condition where maximum emission is detected by the preliminary test. The equipment and cables are arranged or manipulated within the range of the test standard in the above condition.

The each spectrum to be tested are measured in quasi-peak using the test receiver. When the value in the quasi-peak mode is higher than the limit in the standard, the measurement in the average mode is done to compare to the value in the quasi-peak mode. If the value in the quasi-peak mode exceeds the value in the average mode by more than 6 dB, the value reducing 13 dB from the value in the quasi-peak mode is used to compare to the limit.

8.2 Radiated Emission Test [15.407(b), 15.205, 15.209]

8.2.1 Equipment Setup

System configuration and Equipment setup are shown on Section 6 and Section 10.

8.2.1.1 Table-Top Equipment

EUT is placed on the wooden table raised 0.8meter above the metal ground plane (turntable).

8.2.1.2 Interconnecting Cables

Excess part of the interconnecting cables longer than 1 meter are bundled in the center. Cables that hang closer than 40 cm to the ground plane is folded back and forth forming bundle 30 to 40 cm long, hanging approx, in the middle between ground plane and table.

8.2.2 Measuring Instruments

Brief description of Measuring Instruments are as follows;

8.2.2.1 Antennas

The Double ridged guide antenna and the Standard gain horn antennas are used for frequency higher than 1000 MHz.

If uncertain result was obtained, the broadband antenna is replaced by the half wave length dipole, then measurement is carried out over again.

8.2.2.2 Pre-amplifier

The broadband pre-amplifier is used for radiated emission measurement.

The signal to noise ratio is improved by using pre-amplifier.

8.2.2.3 Spectrum Analyzer

The spectrum analyzer is used for preliminary measurement of frequency range 30 – 1000 MHz, and also used for final measurement of higher than 1000 MHz

8.2.2.4 EMI Test Receiver

The Quasi-peak detector (IF bandwidth : 120 kHz) built in test receiver is used for final measurement of the frequency 30 – 1000 MHz.

The test receiver is complied with the specification of the CISPR publication 16.

8.2.2.5 Turntable

The turntable is capable for EUT weight and rotatable 0 to 360 degree horizontally by remote control in the test room.

8.2.2.6 Antenna Mast

The antenna mast is attachable to all antennas described on clause 8.2.2.1 and antenna height is adjustable 1 to 4 meters continuously by remote control at the test room, and antenna polarization is also changed by the remote control.

8.2.3 Test Procedure

8.2.3.1 Preliminary Measurement

EUT is tested on all operating conditions.

The spectrum analyzer is set max-hold mode and swept during turntable was rotated 0 to 360 degree. Then spectrum chart are plotted out to detect the worst conditions in configuration, operating mode, or ambient noise notation.

8.2.3.2 Final Measurement

The EUT operated in the condition where maximum emission is detected in the preliminary test.

The turntable azimuth (EUT direction) and antenna height are adjusted the position so that maximum field strength is obtained for each frequency spectrum to be measured. The equipment and cables are arranged or manipulated within the range of the test standard in the above condition.

When the uncertain result was obtained, the measurement is retried by using the half wave dipole antenna instead of the broadband antenna.

SECTION 9. TEST DATA

9.1 26dB Emission Bandwidth [15.407(a)(1), 15.407(a)(2)]

MEASUREMENT PROCEDURE:

1. The EUT was set to operate with following conditions.
 - Antenna A / Antenna B
 - ch6 / ch12 / ch20
 - Data Transfer Rate (6 Mbps/9 Mbps/12 Mbps/18 Mbps/24 Mbps/36 Mbps/48 Mbps/54 Mbps)
2. The Spectrum Analyzer was connected directly to the transmitter output.
3. The Spectrum Analyzer was set up using RBW = 300kHz, VBW = 300kHz.
4. As for the typical chart of the observed RF profiles, refer to Annex A.
5. Following data is the worst case.

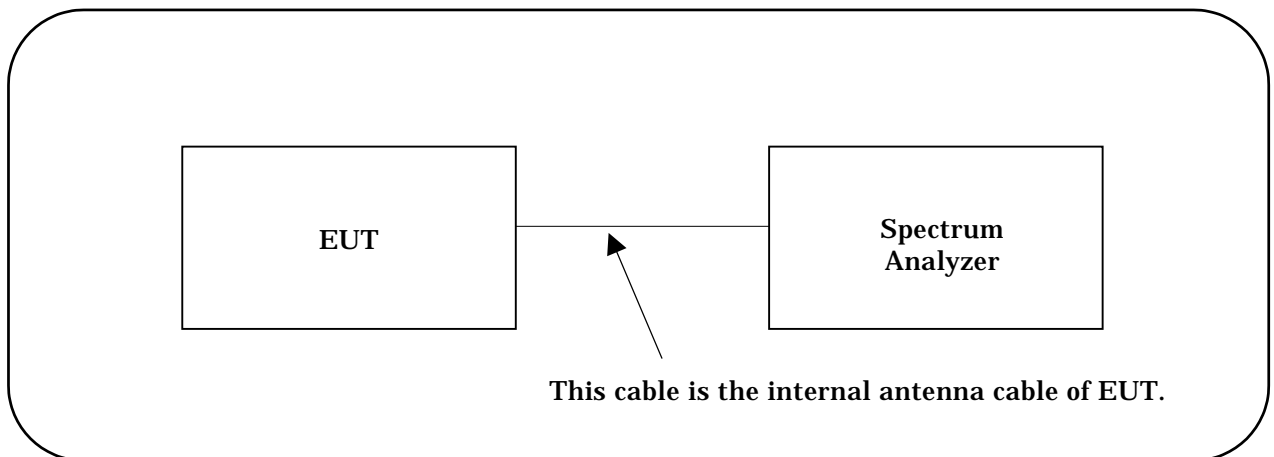
Test date : December 14, 2001
 Temperature variation : 18 °C
 Humidity variation : 41 %

Antenna A

ch	Frequency (GHz)	Data Rate (Mbps)	26dB Emission Bandwidth (MHz)	Chart
6	5.18	6	23.6	Annex A Page 2
		9	23.6	Annex A Page 2
		12	23.0	Annex A Page 3
		18	23.0	Annex A Page 3
		24	22.8	Annex A Page 4
		36	22.5	Annex A Page 4
		48	22.7	Annex A Page 5
		54	23.7	Annex A Page 5
12	5.24	6	23.9	-
		9	23.6	-
		12	22.9	-
		18	23.0	-
		24	22.2	-
		36	22.8	-
		48	22.7	-
		54	23.1	-
20	5.32	6	24.6	-
		9	23.8	-
		12	23.5	-
		18	23.8	-
		24	23.3	-
		36	24.2	-
		48	23.3	-
		54	23.2	-

Antenna B

ch	Frequency (GHz)	Data Rate (Mbps)	26dB Emission Bandwidth (MHz)	Chart
6	5.18	6	23.4	-
		9	23.3	-
		12	23.6	-
		18	23.0	-
		24	22.6	-
		36	22.4	-
		48	23.4	-
		54	22.6	-
12	5.24	6	23.7	-
		9	23.4	-
		12	23.1	-
		18	23.2	-
		24	23.3	-
		36	22.8	-
		48	21.8	-
		54	22.5	-
20	5.32	6	24.2	-
		9	22.7	-
		12	22.8	-
		18	23.3	-
		24	23.2	-
		36	22.4	-
		48	23.4	-
		54	22.3	-

TEST INSTRUMENTS CONFIGURATION**TEST INSTRUMENTS**

Instrument	Model No.	Serial No.	Manufacturer	Last cal. date	Period
Spectrum analyzer	8564E	3643A00665	HEWLETT PACKARD	July 9, 01	1 Year

9.2 Maximum Peak Output Power [15.407(a)(1), 15.407(a)(2)]**MEASUREMENT PROCEDURE:**

- The EUT was set to operate with following conditions.
 - Antenna A / Antenna B
 - ch6 / ch12 / ch20
 - Data Transfer Rate (6 Mbps/9 Mbps/12 Mbps/18 Mbps/24 Mbps/36 Mbps/48 Mbps/54 Mbps)
- Either of Power Meter and Spectrum Analyzer was connected directly to the transmitter output.
- The Spectrum Analyzer was set up using RBW = 1MHz, VBW = 30kHz.
- Following limit was applied for the measurement.
 - 5.15-5.25 GHz : lessor of 17dBm or 4dBm+10logB, where B is the 26dB emission bandwidth
 - 5.25-5.35 GHz : lessor of 24dBm or 11dBm +10logB, where B is the 26dB emission bandwidth
- Maximum Antenna Gain : Antenna A = 5.15 dBi
Antenna B = 5.15 dBi
- As for the typical chart of the observed RF profiles, refer to page 22-23.

Test date : December 14, 2001
 Temperature variation : 18 °C
 Humidity variation : 41 %

Antenna A

ch	Frequency (GHz)	Data Rate (Mbps)	Maximum Peak Output Power (dBm)		FCC Limit (dBm)	Chart
			Power Meter	Spectrum Analyzer		
6	5.18	6	8.1	8.0	17	-
		9	8.0	8.0	17	-
		12	8.0	7.9	17	-
		18	8.0	7.8	17	-
		24	8.0	8.6	17	-
		36	8.0	8.7	17	-
		48	8.0	9.0	17	-
		54	6.5	7.4	17	-
12	5.24	6	9.0	9.6	17	-
		9	9.0	9.6	17	-
		12	9.0	9.4	17	-
		18	9.0	9.3	17	-
		24	9.0	10.0	17	-
		36	9.0	10.2	17	-
		48	8.9	10.7	17	-
		54	7.1	8.2	17	-
20	5.32	6	7.9	9.0	24	-
		9	7.9	9.0	24	-
		12	7.9	8.8	24	-
		18	7.9	8.8	24	-
		24	7.8	9.4	24	-
		36	7.8	9.4	24	-
		48	7.8	9.8	24	-
		54	6.9	8.5	24	-

Note : Maximum peak output power level with spectrum analyzer was calculated as follows;

$$\begin{aligned} &\text{Maximum peak output power} \\ &= \text{Reading Level} + \text{Cable Loss} + \text{Factor}(10 \log \text{ emissionBW}/1\text{MHz}) \end{aligned}$$

Maximum peak output power was detected at ch12 with 24Mbps in Antenna A.

$$= 10.7\text{dBm} (= 11.7\text{mW})$$

$$\text{Therefore, the Maximum EIRP} = 10.7\text{dBm} + 5.15\text{dBm} = 15.85\text{dBm} (= 38.5\text{mW})$$

Antenna B

ch	Frequency (GHz)	Data Rate (Mbps)	Maximum Peak Output Power (dBm)		FCC Limit (dBm)	Chart
			Power Meter	Spectrum Analyzer		
6	5.18	6	8.2	8.5	17	-
		9	8.2	8.4	17	-
		12	8.2	8.1	17	-
		18	8.2	8.1	17	-
		24	8.2	8.8	17	-
		36	8.2	8.9	17	-
		48	8.2	9.2	17	Page 22
		54	6.8	7.4	17	-
12	5.24	6	9.2	9.8	17	-
		9	9.2	9.9	17	-
		12	9.2	9.6	17	-
		18	9.2	9.7	17	-
		24	9.1	10.4	17	-
		36	9.1	10.4	17	-
		48	9.1	10.8	17	Page 22
		54	7.3	8.6	17	-
20	5.32	6	7.9	8.7	24	-
		9	7.9	8.5	24	-
		12	7.9	8.6	24	-
		18	7.9	8.3	24	-
		24	7.9	9.1	24	-
		36	7.9	9.2	24	-
		48	7.9	9.4	24	Page 23
		54	6.9	8.7	24	-

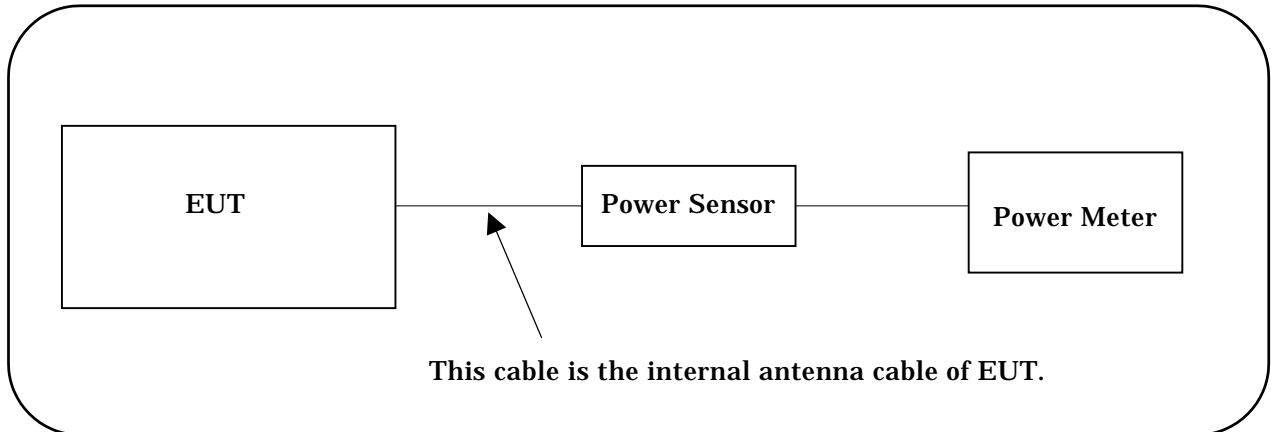
Note : Maximum peak output power level with spectrum analyzer was calculated as follows;
Maximum peak output power
= Reading Level +Cable Loss + Factor(10 log emissionBW/1MHz)

Maximum peak output power was detected at ch12 with 24Mbps in Antenna B.
= 10.8dBm (= 12.0mW)

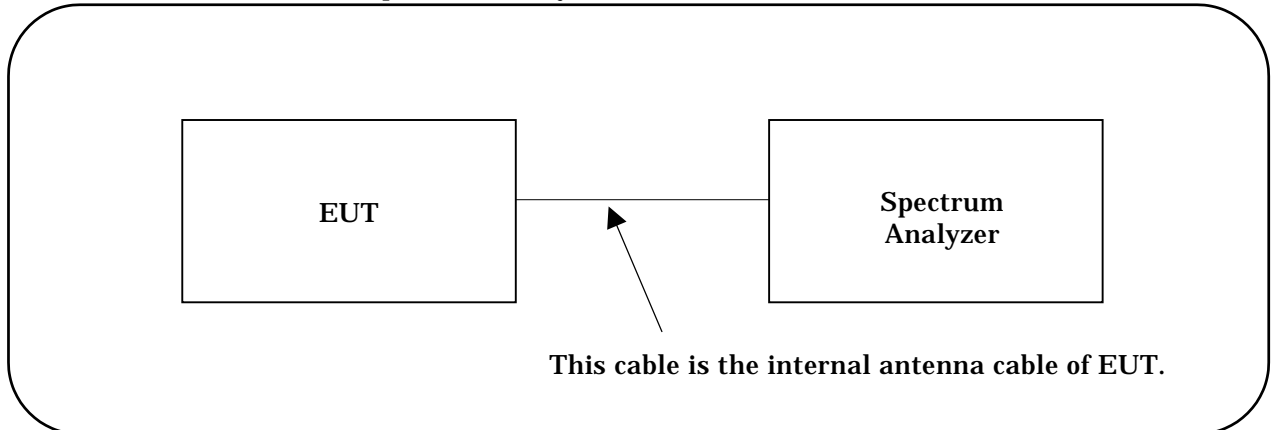
Therefore, the Maximum EIRP = 10.8dBm + 5.15dBm = 15.95dBm (= 39.4mW)

TEST INSTRUMENTS CONFIGURATION

[Measurement with Power Meter]



[Measurement with Spectrum Analyzer]



TEST INSTRUMENTS

Instrument	Model No.	Serial No.	Manufacturer	Last cal. date	Period
Power Meter	E4418B	GB38410265	HEWLETT PACKARD	Feb. 14, 01	1 Year
Power Sensor	8481A	3318A99780	HEWLETT PACKARD	Feb. 7, 01	1 Year
Spectrum analyzer	8564E	3643A00665	HEWLETT PACKARD	July 9, 01	1 Year

Chart of ch 6 with 48 Mbps in Antenna B



Chart of ch 12 with 48 Mbps in Antenna B



Chart of ch 20 with 48 Mbps in Antenna B



9.3 Peak Power Spectral Density [15.407(a)(1), 15.407(a)(2)]**MEASUREMENT PROCEDURE:**

1. The EUT was set to operate with following conditions.
 - Antenna A / Antenna B
 - ch6 / ch12 / ch20
 - Data Transfer Rate (6 Mbps/9 Mbps/12 Mbps/18 Mbps/24 Mbps/36 Mbps/48 Mbps/54 Mbps)
2. Spectrum Analyzer was connected directly to the transmitter output.
3. The Spectrum Analyzer was setup using RBW = 1MHz, VBW = 3MHz and Video average.
4. Maximum Antenna Gain : Antenna A = 5.15 dBi
Antenna B = 5.15 dBi
5. As for the typical chart of the observed RF profiles, refer to page 26-27.

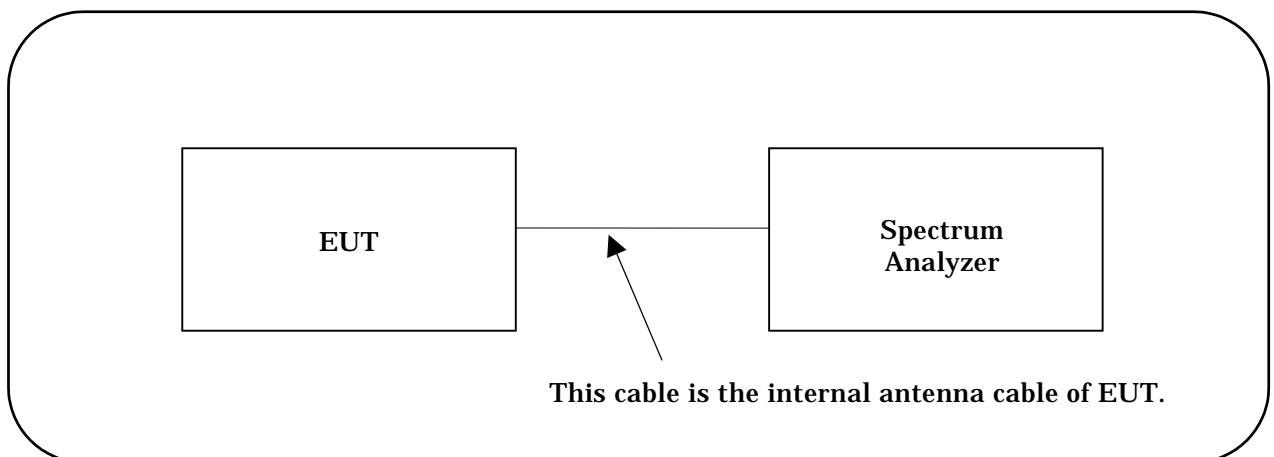
Test date : December 18, 2001
 Temperature variation : 18 °C
 Humidity variation : 21 %

Antenna A

ch	Frequency (GHz)	Data Rate (Mbps)	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
6	5.18	6	-6.8	4	Page 26
		9	-7.5	4	-
		12	-7.6	4	-
		18	-7.7	4	-
		24	-7.6	4	-
		36	-7.0	4	-
		48	-8.1	4	-
		54	-8.4	4	-
12	5.24	6	-5.3	4	Page 26
		9	-6.0	4	-
		12	-5.8	4	-
		18	-6.1	4	-
		24	-6.1	4	-
		36	-5.7	4	-
		48	-5.3	4	-
		54	-7.4	4	-
20	5.32	6	-6.5	11	-
		9	-6.9	11	-
		12	-7.8	11	-
		18	-7.0	11	-
		24	-7.0	11	-
		36	-6.5	11	-
		48	-6.3	11	Page 27
		54	-7.5	11	-

Antenna B

ch	Frequency (GHz)	Data Rate (Mbps)	Peak Power Spectral Density (dBm)	FCC Limit (dBm)	Chart
6	5.18	6	-6.3	4	-
		9	-7.3	4	-
		12	-7.4	4	-
		18	-7.1	4	-
		24	-7.3	4	-
		36	-6.5	4	-
		48	-6.4	4	-
		54	-7.8	4	-
12	5.24	6	-5.4	4	-
		9	-5.7	4	-
		12	-5.9	4	-
		18	-5.8	4	-
		24	-5.9	4	-
		36	-5.5	4	-
		48	-5.7	4	-
		54	-7.6	4	-
20	5.32	6	-6.4	11	-
		9	-6.8	11	-
		12	-7.0	11	-
		18	-6.8	11	-
		24	-7.1	11	-
		36	-6.8	11	-
		48	-6.6	11	-
		54	-7.3	11	-

TEST INSTRUMENTS CONFIGURATION**TEST INSTRUMENTS**

Instrument	Model No.	Serial No.	Manufacturer	Last cal. date	Period
Spectrum analyzer	8564E	3643A00665	HEWLETT PACKARD	July 9, 01	1 Year

Chart of ch 6 with 6 Mbps in Antenna A

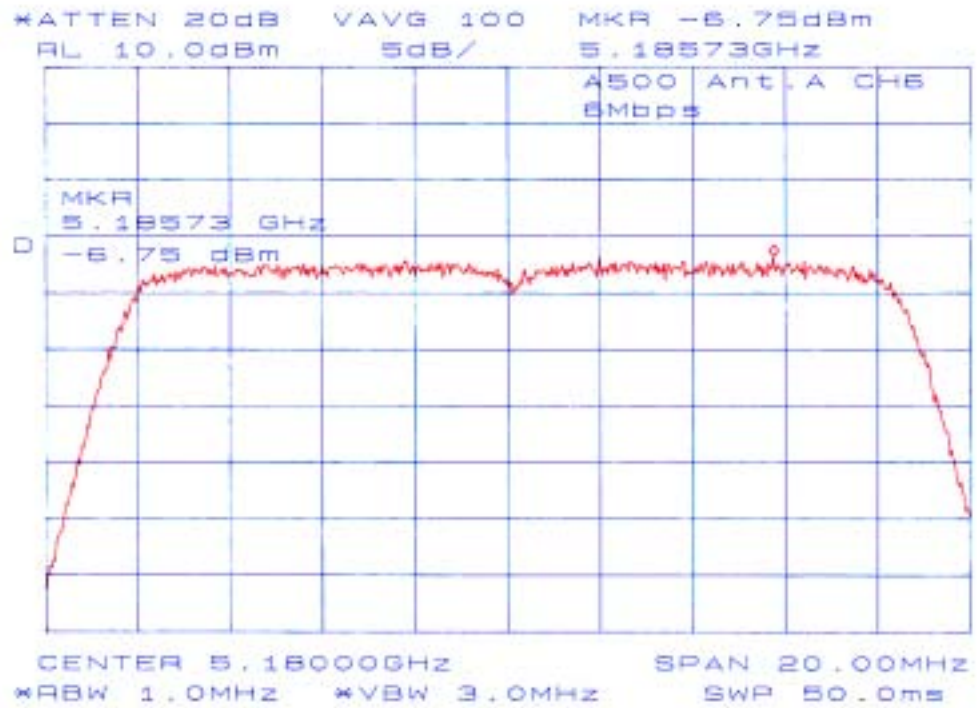


Chart of ch 12 with 6 Mbps in Antenna A

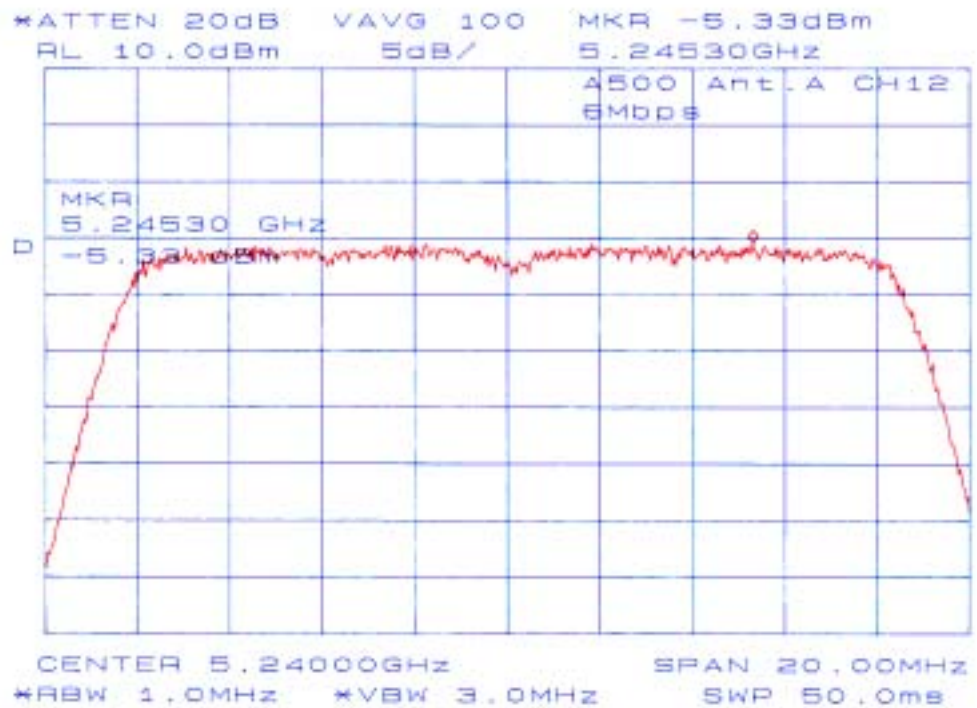


Chart of ch 20 with 48 Mbps in Antenna A



9.4 Peak Excursion Ratio [15.407(a)(6)]

MEASUREMENT PROCEDURE:

- The EUT was set to operate with following conditions.
 - Antenna A / Antenna B
 - ch6 / ch12 / ch20
 - Data Transfer Rate (6 Mbps/9 Mbps/12 Mbps/18 Mbps/24 Mbps/36 Mbps/48 Mbps/54 Mbps)
- Spectrum Analyzer was connected directly to the transmitter output.
- The Spectrum Analyzer was set up using
 - 1st Trace : RBW = VBW = 1MHz
 - 2nd Trace : RBW = 1MHz, VBW = 30kHz
- As for the typical chart of the observed RF profiles, refer to page 30-31.

Test date : December 19, 2001
 Temperature variation : 20 °C
 Humidity variation : 45 %

Antenna A

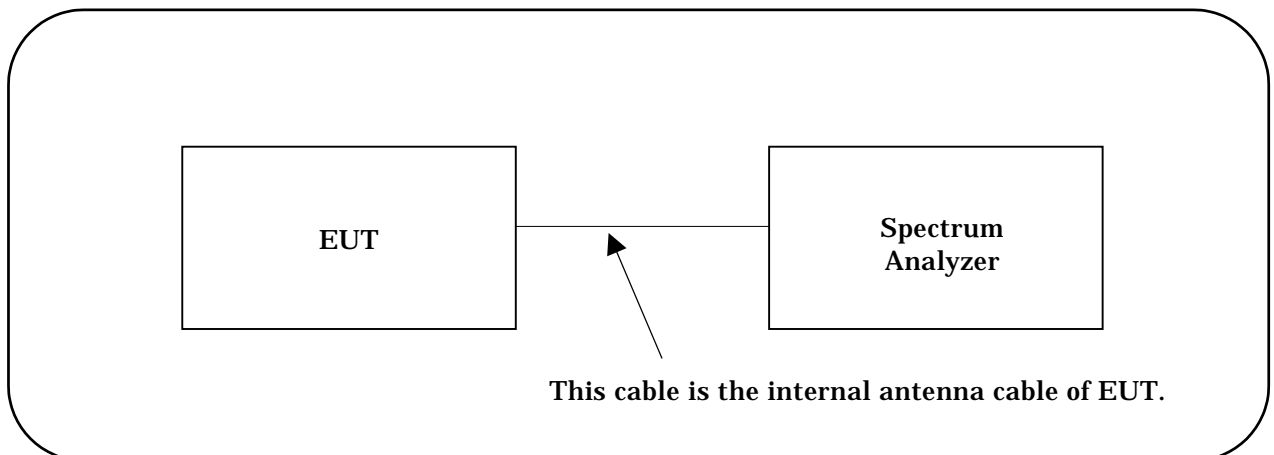
ch	Frequency (GHz)	Data Rate (Mbps)	Peak Excursion (dB)	FCC Limit (dB)	Chart
6	5.18	6	8.5	13	-
		9	8.8	13	-
		12	8.9	13	-
		18	8.8	13	-
		24	9.0	13	-
		36	9.0	13	-
		48	8.8	13	-
		54	8.5	13	-
12	5.24	6	8.9	13	-
		9	8.5	13	-
		12	9.1	13	-
		18	9.1	13	-
		24	9.2	13	-
		36	8.7	13	-
		48	8.6	13	-
		54	8.7	13	-
20	5.32	6	8.8	13	-
		9	9.1	13	-
		12	9.3	13	-
		18	9.3	13	-
		24	8.8	13	-
		36	8.9	13	-
		48	8.7	13	-
		54	8.6	13	-

Note : Peak Excursion Ratio is the largest difference between two traces.

Antenna B

ch	Frequency (GHz)	Data Rate (Mbps)	Peak Excursion (dB)	FCC Limit (dB)	Chart
6	5.18	6	8.5	13	-
		9	9.0	13	-
		12	9.5	13	Page 30
		18	9.1	13	-
		24	8.9	13	-
		36	8.8	13	-
		48	8.9	13	-
		54	8.4	13	-
12	5.24	6	8.5	13	-
		9	8.8	13	-
		12	9.1	13	-
		18	8.9	13	-
		24	9.1	13	Page 30
		36	9.0	13	-
		48	8.8	13	-
		54	8.7	13	-
20	5.32	6	8.8	13	-
		9	8.8	13	-
		12	8.8	13	-
		18	9.2	13	Page 31
		24	8.8	13	-
		36	8.8	13	-
		48	8.7	13	-
		54	8.5	13	-

Note : Peak Excursion Ratio is the largest difference between two traces.

TEST INSTRUMENTS CONFIGURATION**TEST INSTRUMENTS**

Instrument	Model No.	Serial No.	Manufacturer	Last cal. date	Period
Spectrum analyzer	8564E	3643A00665	HEWLETT PACKARD	July 9, 01	1 Year

Chart of ch 6 with 12 Mbps in Antenna B

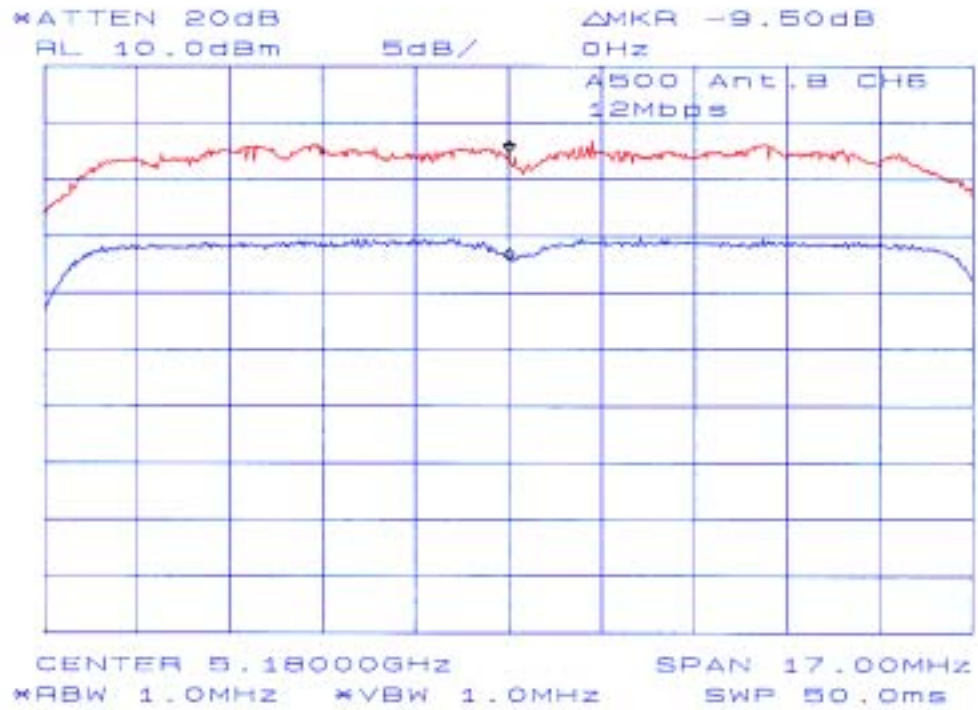


Chart of ch 12 with 24 Mbps in Antenna B

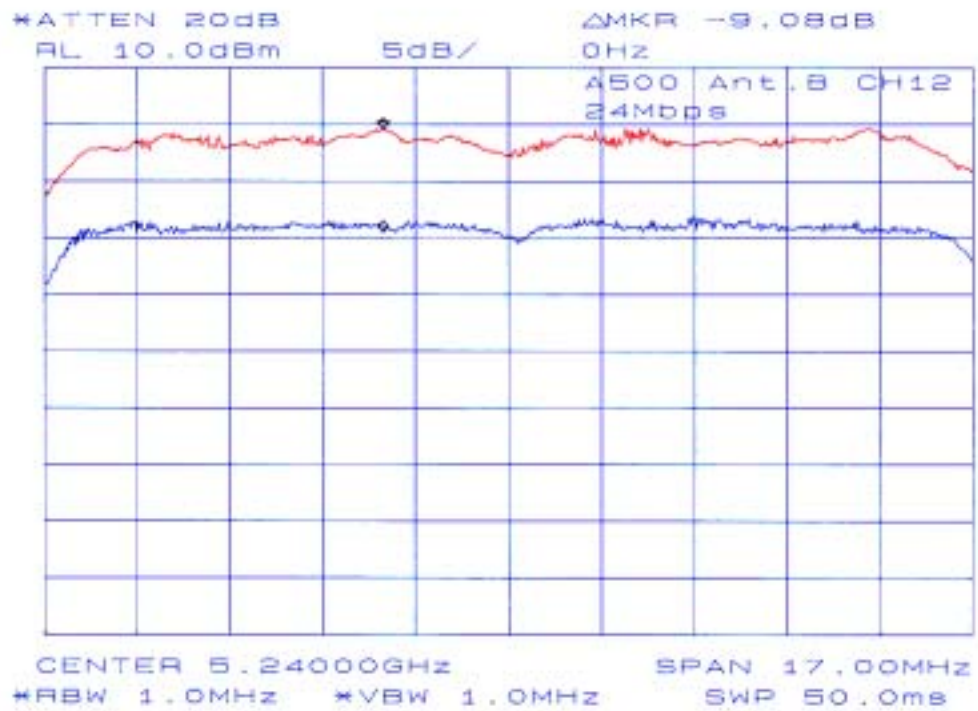
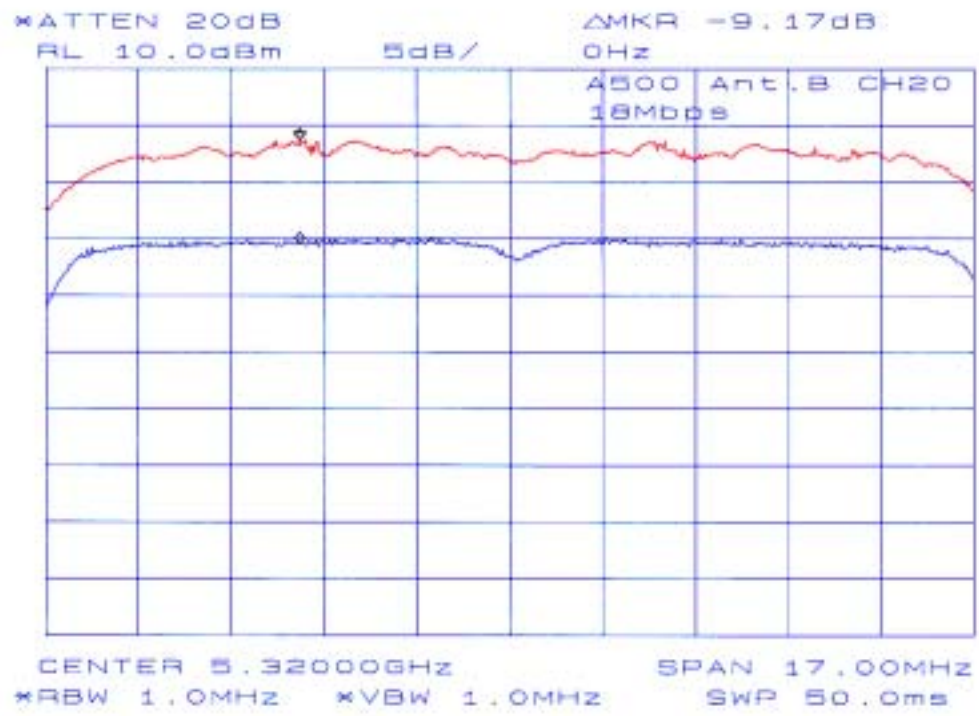


Chart of ch 20 with 18 Mbps in Antenna B



9.5 Spurious Emissions – RF Antenna Conducted [15.407(b)(1), 15.407(b)(2)]

MEASUREMENT PROCEDURE:

- The EUT was set to operate with following conditions.
 - Antenna A / Antenna B
 - ch6 / ch12 / ch20
 - Data Transfer Rate (6 Mbps/9 Mbps/12 Mbps/18 Mbps/24 Mbps/36 Mbps/48 Mbps/54 Mbps)
- The Spectrum Analyzer was connected directly to the transmitter output.
- The Spectrum Analyzer was set up using RBW = 1MHz, VBW = 1MHz.
- As for the typical chart of the observed RF profiles, refer to Annex B.

Test date : December 18, 2001
 Temperature variation : 18 °C
 Humidity variation : 41 %

Antenna A

ch	Frequency (MHz)	Chart
6	5.18	Annex B page 2-4
12	5.24	Annex B page 5-7
20	5.32	Annex B page 8-10

Note:

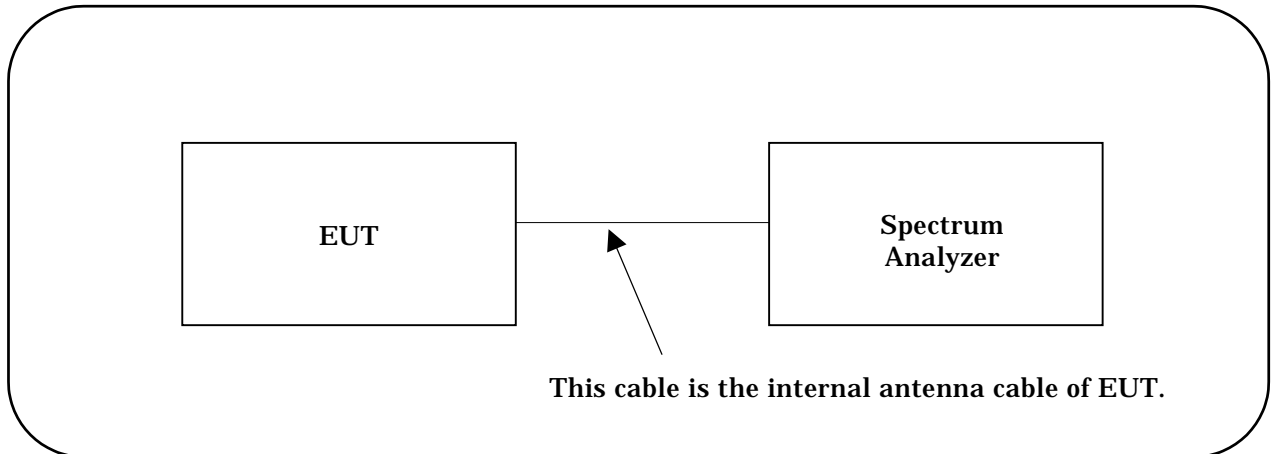
- All out-of-band conducted emissions were more than 27 dB below a carrier.

Antenna B

ch	Frequency (MHz)	Chart
6	5.18	Annex B page 11-13
12	5.24	Annex B page 14-16
20	5.32	Annex B page 17-19

Note:

- All out-of-band conducted emissions were more than 27 dB below a carrier.

TEST INSTRUMENTS CONFIGURATION**TEST INSTRUMENTS**

Instrument	Model No.	Serial No.	Manufacturer	Last cal. date	Period
Spectrum analyzer	8564E	3643A00665	HEWLETT PACKARD	July 9, 01	1 Year

9.6 Spurious Emissions – Radiated Emissions (below 1GHz) [15.407(b)(5), 15.209]**MEASUREMENT PROCEDURE:**

1. The EUT was set to operate with following conditions.
 - Antenna A / Antenna B
 - ch6 / ch12 / ch20
 - Data Transfer Rate (6 Mbps/9 Mbps/12 Mbps/18 Mbps/24 Mbps/36 Mbps/48 Mbps/54 Mbps)
2. The Test Receiver is complied with the specification of the CISPR publication 16.
3. Measurement distance was 3 meters.
4. Following data is the worst case.

Data of ch 12 with 54 Mbps in Antenna A

Akzo Nobel K. K.

Kashima No.1 Test Site

Radiated Electric Field

APPLICANT	: Sony Corporation	FILE NO.	: ANKK-101422
EUT NAME	: Wireless LAN Access Point	REGULATION	: FCC 15.407(b), 15.209
MODEL NO.	: PCWA-A500	TEST METHOD	: ANSI C63.4-1992
SERIAL NO.	: 0000001	DISTANCE	: 3.0 [m]
TEST MODE	: Tx 5.24GHz 54Mbps Ant:A	TEMPERATURE	: 20.0 [degC]
POWER SOURCE	: AC120V/60Hz	HUMIDITY	: 38.0 [%]
DATE TESTED	: Dec 17 2001		

ENGINEER : Kazuhiro Ando

FREQUENCY No	[MHz]	READING [dBuV]		FACTOR [dB/m]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
		Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	42.30	-	33.4	-4.3	-4.3	-	29.1	40.0	-	10.9
2	148.13	40.8	-	-10.5	-10.5	30.3	-	43.5	13.2	-
3	365.20	-	41.2	-2.9	-2.9	-	38.3	46.0	-	7.7
4	431.60	-	37.0	-1.3	-1.3	-	35.7	46.0	-	10.3
5	498.00	-	33.0	0.4	0.4	-	33.4	46.0	-	12.6
6	564.40	-	29.0	2.0	2.0	-	31.0	46.0	-	15.0
7	750.00	-	25.6	5.4	5.4	-	31.0	46.0	-	15.0
8	796.80	26.3	31.2	6.0	6.0	32.3	37.2	46.0	13.7	8.8
9	800.01	26.8	30.4	6.1	6.1	32.9	36.5	46.0	13.1	9.5
10	830.02	31.7	32.2	6.8	6.8	38.5	39.0	46.0	7.5	7.0
11	896.40	27.2	29.5	7.3	7.3	34.5	36.8	46.0	11.5	9.2

Other frequencies : Below the FCC 15.407(b), 15.209 limit
Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

Data of ch 6 with 54 Mbps in Antenna B

**Akzo Nobel K. K.
Kashima No.1 Test Site
Radiated Electric Field**

APPLICANT : Sony Corporation
 EUT NAME : Wireless LAN Access Point
 MODEL NO. : PCWA-A500
 SERIAL NO. : 0000001
 TEST MODE : Tx 5.18GHz 54Mbps Ant:B
 POWER SOURCE : AC120V/60Hz
 DATE TESTED : Dec 17 2001

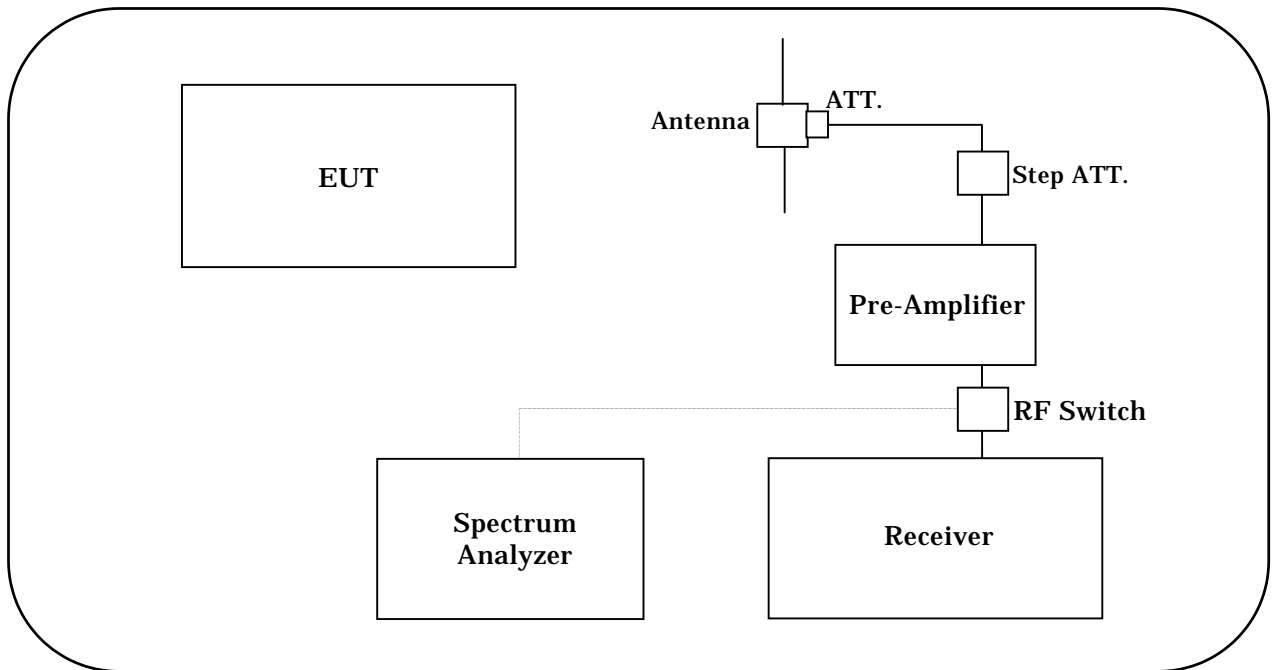
FILE NO. : ANKK-101422
 REGULATION : FCC 15.407(b), 15.209
 TEST METHOD : ANSI C63.4-1992
 DISTANCE : 3.0 [m]
 TEMPERATURE : 20.0 [degC]
 HUMIDITY : 38.0 [%]

ENGINEER : Kazuhiro Ando

FREQUENCY No	[MHz]	READING [dBuV]		FACTOR [dB/m]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
		Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	42.30	-	33.0	-4.3	-4.3	-	28.7	40.0	-	11.3
2	132.80	-	35.5	-8.8	-8.8	-	26.7	43.5	-	16.8
3	148.13	41.6	-	-10.5	-10.5	31.1	-	43.5	12.4	-
4	232.40	38.4	36.6	-6.6	-6.6	31.8	30.0	46.0	14.2	16.0
5	365.20	-	39.8	-2.9	-2.9	-	36.9	46.0	-	9.1
6	431.60	-	37.5	-1.3	-1.3	-	36.2	46.0	-	9.8
7	498.00	-	33.2	0.4	0.4	-	33.6	46.0	-	12.4
8	564.40	-	29.2	2.0	2.0	-	31.2	46.0	-	14.8
9	750.00	28.1	25.6	5.4	5.4	33.5	31.0	46.0	12.5	15.0
10	796.80	24.6	31.5	6.0	6.0	30.6	37.5	46.0	15.4	8.5
11	800.01	26.4	30.7	6.1	6.1	32.5	36.8	46.0	13.5	9.2
12	830.02	31.9	32.2	6.8	6.8	38.7	39.0	46.0	7.3	7.0
13	896.40	27.1	29.1	7.3	7.3	34.4	36.4	46.0	11.6	9.6
14	929.60	21.9	23.6	8.1	8.1	30.0	31.7	46.0	16.0	14.3
15	962.80	23.2	26.5	8.4	8.4	31.6	34.9	54.0	22.4	19.1

Other frequencies : Below the FCC 15.407(b), 15.209 limit
 Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

TEST INSTRUMENTS CONFIGURATION



TEST INSTRUMENTS

Instrument	Model No.	Serial No.	Manufacturer	Last cal. date	Period
Test Receiver	ESS	844861/004	ROHDE & SCHWARZ	Apr. 11, 01	1 Year
Pre-Amplifier	8447D	1937A03130	HEWLETT PACKARD	Oct. 4, 01	1 Year
6dB Attenuator	MP721B	M57593	ANRITSU	Oct. 4, 01	1 Year
Step Attenuator	8494B	2726A14513	HEWLETT PACKARD	Oct. 4, 01	1 Year
RF Switch	ACX-150	None	AKZO NOBEL	Oct. 4, 01	1 Year
Bi-Cog Antenna	LPB-2513-A	1103	ARA	May 17, 01	1 Year

9.7 Spurious Emissions – Radiated Emissions (above 1 GHz) [15.407(b)(6), 15.205]

MEASUREMENT PROCEDURE:

1. The EUT was set to operate with following conditions.
 - Antenna A / Antenna B
 - ch6 / ch12 / ch20
 - Data Transfer Rate (6 Mbps/9 Mbps/12 Mbps/18 Mbps/24 Mbps/36 Mbps/48 Mbps/54 Mbps)
2. For the measurements in restricted bands, the Spectrum Analyzer was set up using
 - Peak mode: RBW = 1MHz, VBW = 1MHz
 - Average mode: RBW = 1MHz, VBW = 10Hz
 And for the measurements out of restricted bands, the Spectrum Analyzer was set up using
 - RBW = 1MHz, VBW = 30kHz.
3. Measurement distance was 3 meter.
4. Limit for emissions outside of restricted bands : EIRP < -27dBm/MHz
 In case of 3 meter measurement distance, the limit was calculated as follows:

$$P = (E * d)^2 / 30G$$

$$E = \frac{\sqrt{30xPxG}}{d}$$

$$= 2.58 \times 10^{-3} \text{ V/m}$$

$$\text{Limit : } 20\log(2.58 \times 10^{-3}) = 68.2\text{dBuV/m}$$

where

P is the power, in Watts

E is the measured peak field strength, in Volts/meter

d is the distance at which the measurement was made, in meters

G is the numeric gain of the radiating element

5. Following data is the worst case.

Data of ch 12 with 24 Mbps in Antenna A

**Akzo Nobel K. K.
Kashima No.1 Test Site
Spurious Emissions**

APPLICANT : Sony Corporation
 EUT NAME : Wireless LAN Access Point
 MODEL NO. : PCWA-A500
 SERIAL NO. : 0000001
 TEST MODE : Tx 5.24GHz 24Mbps Ant:A
 POWER SOURCE : AC120V/60Hz
 DATE TESTED : Jan 24 2002

FILE NO. : ANKK-101422
 REGULATION : FCC 15.407(b), 15.209, 15.205
 TEST METHOD : ANSI C63.4:1992
 DISTANCE : 3.0 [m]
 TEMPERATURE : 23.0 [degC]
 HUMIDITY : 31.0 [%]

ENGINEER : Kazuhiro Ando

FREQUENCY No	MODE [MHz]	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
		Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	1760.00	37.5	33.8	3.0	3.0	40.5	36.8	68.2	27.7	31.4
2	2128.00	-	35.1	4.9	4.9	-	40.0	68.2	-	28.2
3	10482.50	30.9	29.8	25.7	25.7	56.6	55.5	68.2	11.6	12.7

Other frequencies : Below the FCC 15.407(b), 15.209, 15.205 limit
 Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

Data of ch 12 with 24 Mbps in Antenna B

**Akzo Nobel K. K.
Kashima No.1 Test Site
Spurious Emissions**

APPLICANT : Sony Corporation
 EUT NAME : Wireless LAN Access Point
 MODEL NO. : PCWA-A500
 SERIAL NO. : 0000001
 TEST MODE : Tx 5.24GHz 24Mbps Ant:B
 POWER SOURCE : AC120V/60Hz
 DATE TESTED : Jan 24 2002

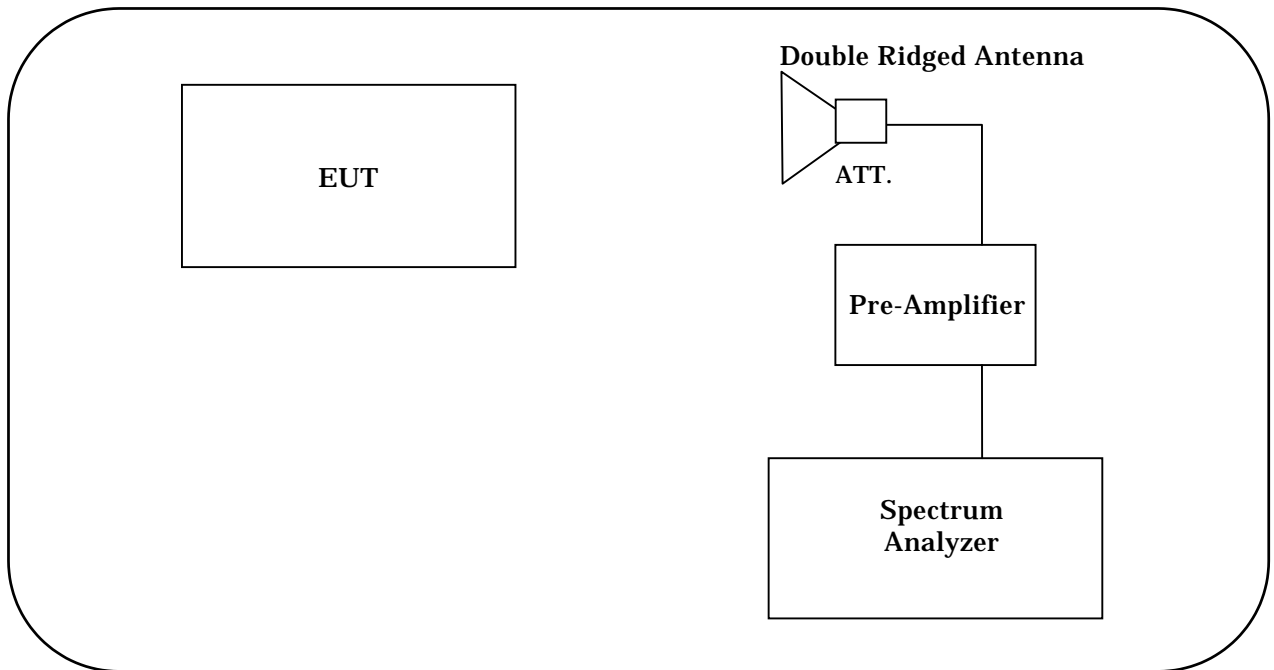
FILE NO. : ANKK-101422
 REGULATION : FCC 15.407(b), 15.209, 15.205
 TEST METHOD : ANSI C63.4:1992
 DISTANCE : 3.0 [m]
 TEMPERATURE : 23.0 [degC]
 HUMIDITY : 31.0 [%]

ENGINEER : Kazuhiro Ando

FREQUENCY No	MODE [MHz]	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
		Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	1760.06	38.0	34.7	3.0	3.0	41.0	37.7	68.2	27.2	30.5
2	2124.80	37.7	36.7	4.9	4.9	42.6	41.6	68.2	25.6	26.6
3	10481.20	33.9	30.4	25.7	25.7	59.6	56.1	68.2	8.6	12.1

Other frequencies : Below the FCC 15.407(b), 15.209, 15.205 limit
 Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

TEST INSTRUMENTS CONFIGURATION



TEST INSTRUMENTS

Instrument	Model No.	Serial No.	Manufacturer	Last cal. date	Period
Spectrum analyzer	8564E	3643A00665	HEWLETT PACKARD	Jun. 14, 01	1 Year
Pre-Amplifier	83051A	3332A00329	HEWLETT PACKARD	Jan. 5, 01	1 Year
3dB Attenuator	6803.17B	None	SUHNER	Mar. 18, 01	1 Year
Double Ridged Antenna	3115	5044	EMCO	Jul. 16, 01	1 Year
	3116	9612-2320	EMCO	Jul. 7, 01	1 Year

9.8 Spurious Emissions – Radiated Emissions (Band Edge) [15.407(b)(6), 15.205]**MEASUREMENT PROCEDURE:**

1. The EUT was set to operate with following conditions.
 - Antenna A / Antenna B
 - ch6 / ch20
 - Data Transfer Rate (6 Mbps/9 Mbps/12 Mbps/18 Mbps/24 Mbps/36 Mbps/48 Mbps/54 Mbps)
2. The Spectrum Analyzer was setup using
 - Peak mode: RBW = 1MHz, VBW = 1MHz
 - Average mode: RBW = 1MHz, VBW = 10Hz
3. Measurement distance was 3 meter.
4. Following data is the worst case.
5. As for the typical chart of the observed RF profiles, refer to page 47-50.

Data of ch 6 with 48 Mbps in Antenna A

Akzo Nobel K. K.

Kashima No.1 Test Site

Spurious Emissions -Band Edge

APPLICANT	: Sony Corporation	FILE NO.	: ANKK-101422
EUT NAME	: Wireless LAN Access Point	REGULATION	: FCC 15.407(b), 15.209, 15.205
MODEL NO.	: PCWA-A500	TEST METHOD	: ANSI C63.4:1992
SERIAL NO.	: 0000001	DISTANCE	: 3.0 [m]
TEST MODE	: Tx 5.18GHz 48Mbps Ant:A	TEMPERATURE	: 20.0 [degC]
POWER SOURCE	: AC120V/60Hz	HUMIDITY	: 38.0 [%]
DATE TESTED	: Dec 17 2001		

ENGINEER : Kazuhiro Ando

No	FREQUENCY [MHz]	MODE	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert	
1	5148.08	PEK	44.0	-	16.0	16.0	60.0	-	74.0	14.0	-
2	5148.08	AVG	32.7	-	16.0	16.0	48.7	-	54.0	5.3	-
3	5150.00	PEK	43.3	-	16.0	16.0	59.3	-	74.0	14.7	-
4	5150.00	AVG	30.8	-	16.0	16.0	46.8	-	54.0	7.2	-

Other frequencies : Below the FCC 15.407(b), 15.209, 15.205 limit
Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

Data of ch 6 with 36 Mbps in Antenna B

**Akzo Nobel K. K.
Kashima No.1 Test Site
Spurious Emissions -Band Edge**

APPLICANT	: Sony Corporation	FILE NO.	: ANKK-101422
EUT NAME	: Wireless LAN Access Point	REGULATION	: FCC 15.407(b), 15.209, 15.205
MODEL NO.	: PCWA-A500	TEST METHOD	: ANSI C63.4:1992
SERIAL NO.	: 0000001	DISTANCE	: 3.0 [m]
TEST MODE	: Tx 5.18GHz 36Mbps Ant:B	TEMPERATURE	: 20.0 [degC]
POWER SOURCE	: AC120V/60Hz	HUMIDITY	: 38.0 [%]
DATE TESTED	: Dec 17 2001		

ENGINEER : Kazuhiro Ando

No	FREQUENCY [MHz]	MODE	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert		Hori	Vert
1	5148.08	PEK	42.5	-	16.0	16.0	58.5	-	74.0	15.5	-
2	5148.08	AVG	31.7	-	16.0	16.0	47.7	-	54.0	6.3	-
3	5150.00	PEK	42.8	-	16.0	16.0	58.8	-	74.0	15.2	-
4	5150.00	AVG	30.5	-	16.0	16.0	46.5	-	54.0	7.5	-

Other frequencies : Below the FCC 15.407(b), 15.209, 15.205 limit
Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

Data of ch 20 with 18 Mbps in Antenna A

Akzo Nobel K. K.
Kashima No.1 Test Site
Spurious Emissions -Band Edge

APPLICANT	: Sony Corporation	FILE NO.	: ANKK-101422
EUT NAME	: Wireless LAN Access Point	REGULATION	: FCC 15.407(b), 15.209, 15.205
MODEL NO.	: PCWA-A500	TEST METHOD	: ANSI C63.4:1992
SERIAL NO.	: 0000001	DISTANCE	: 3.0 [m]
TEST MODE	: Tx 5.32GHz 18Mbps Ant:A	TEMPERATURE	: 20.0 [degC]
POWER SOURCE	: AC120V/60Hz	HUMIDITY	: 38.0 [%]
DATE TESTED	: Dec 17 2001		

ENGINEER : Kazuhiro Ando

FREQUENCY No	MODE [MHz]		READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert	
1	5350.00	PEK	41.0	-	16.5	16.5	57.5	-	74.0	16.5	-
2	5350.00	AVG	30.3	-	16.5	16.5	46.8	-	54.0	7.2	-
3	5352.08	PEK	43.0	-	16.6	16.6	59.6	-	74.0	14.4	-
4	5352.08	AVG	31.7	-	16.6	16.6	48.3	-	54.0	5.7	-

Other frequencies : Below the FCC 15.407(b), 15.209, 15.205 limit
 Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

Data of ch 20 with 18 Mbps in Antenna B

Akzo Nobel K. K.

Kashima No.1 Test Site

Spurious Emissions -Band Edge

APPLICANT	: Sony Corporation	FILE NO.	: ANKK-101422
EUT NAME	: Wireless LAN Access Point	REGULATION	: FCC 15.407(b), 15.209, 15.205
MODEL NO.	: PCWA-A500	TEST METHOD	: ANSI C63.4:1992
SERIAL NO.	: 0000001	DISTANCE	: 3.0 [m]
TEST MODE	: Tx 5.32GHz 18Mbps Ant:B	TEMPERATURE	: 20.0 [degC]
POWER SOURCE	: AC120V/60Hz	HUMIDITY	: 38.0 [%]
DATE TESTED	: Dec 17 2001		

ENGINEER : Kazuhiro Ando

No	FREQUENCY [MHz]	MODE	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV/m]		LIMIT [dBuV/m]	MARGIN [dB]	
			Hori	Vert	Hori	Vert	Hori	Vert	Hori	Vert	
1	5350.00	PEK	41.0	-	16.5	16.5	57.5	-	74.0	16.5	-
2	5350.00	AVG	30.3	-	16.5	16.5	46.8	-	54.0	7.2	-
3	5352.17	PEK	42.8	-	16.6	16.6	59.4	-	74.0	14.6	-
4	5352.17	AVG	31.3	-	16.6	16.6	47.9	-	54.0	6.1	-

Other frequencies : Below the FCC 15.407(b), 15.209, 15.205 limit
Emission Level = Read + Factor(Antenna,Antenna Pad,Cable,Preamp)

Chart of ch 6 with 48 Mbps in Antenna A

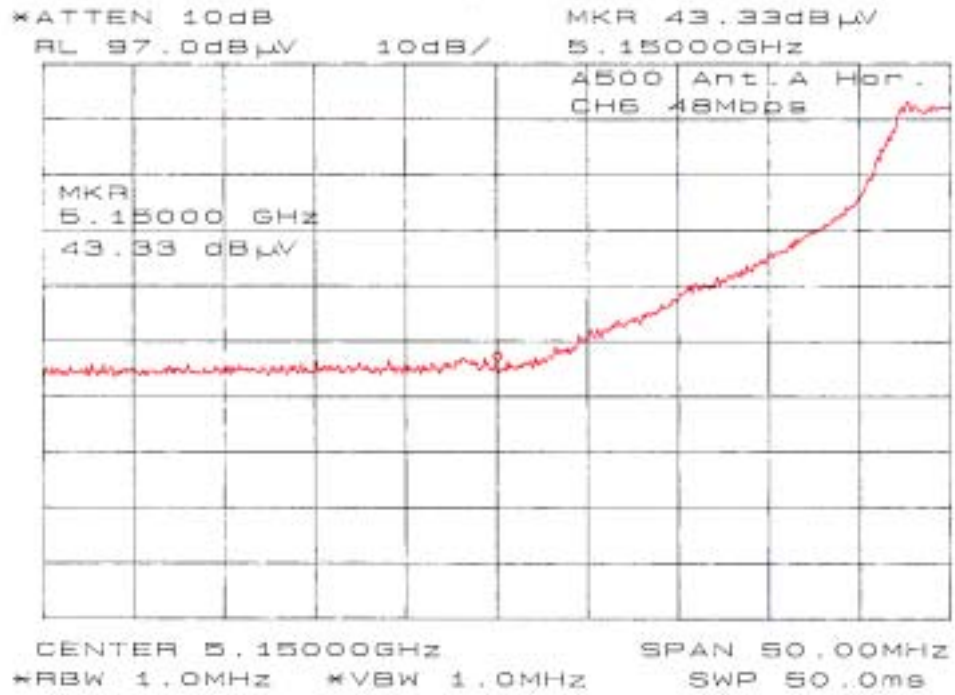


Chart of ch 6 with 48 Mbps in Antenna A

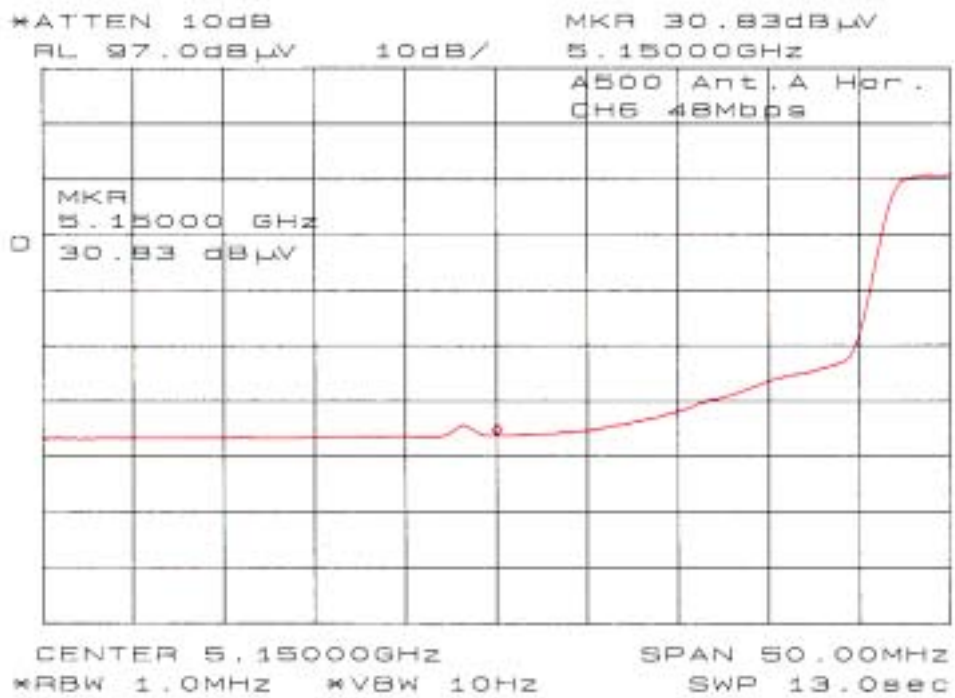


Chart of ch 6 with 36 Mbps in Antenna B

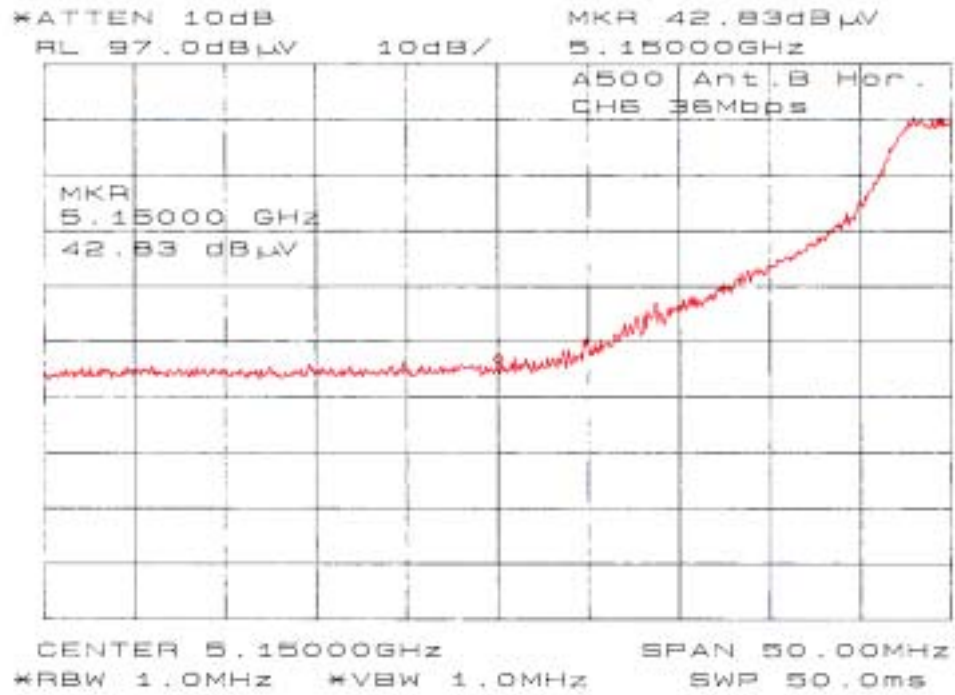


Chart of ch 6 with 36 Mbps in Antenna B

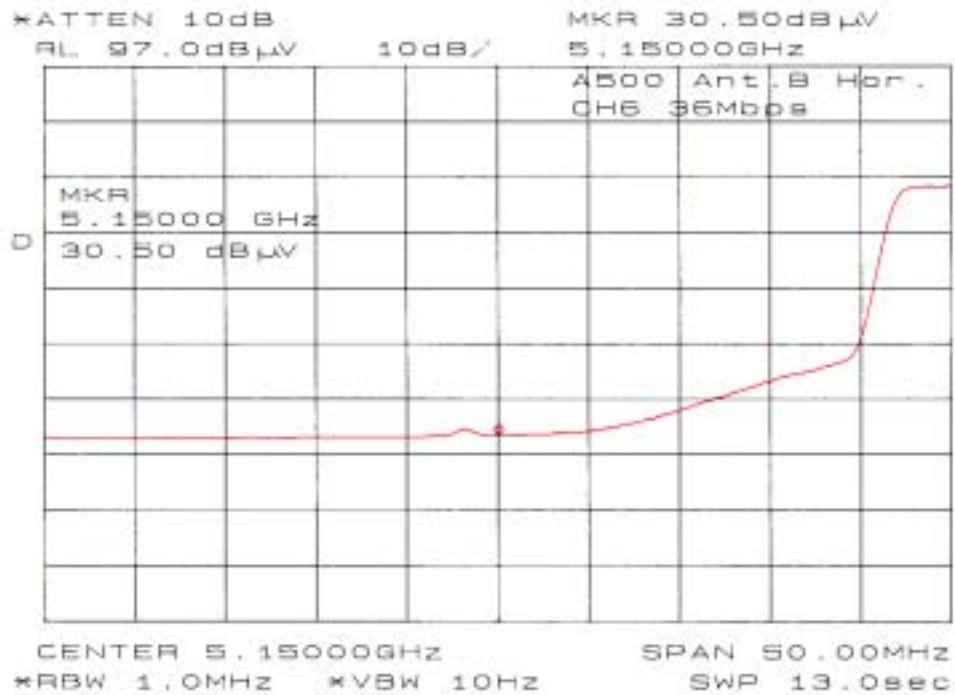


Chart of ch 20 with 18 Mbps in Antenna A

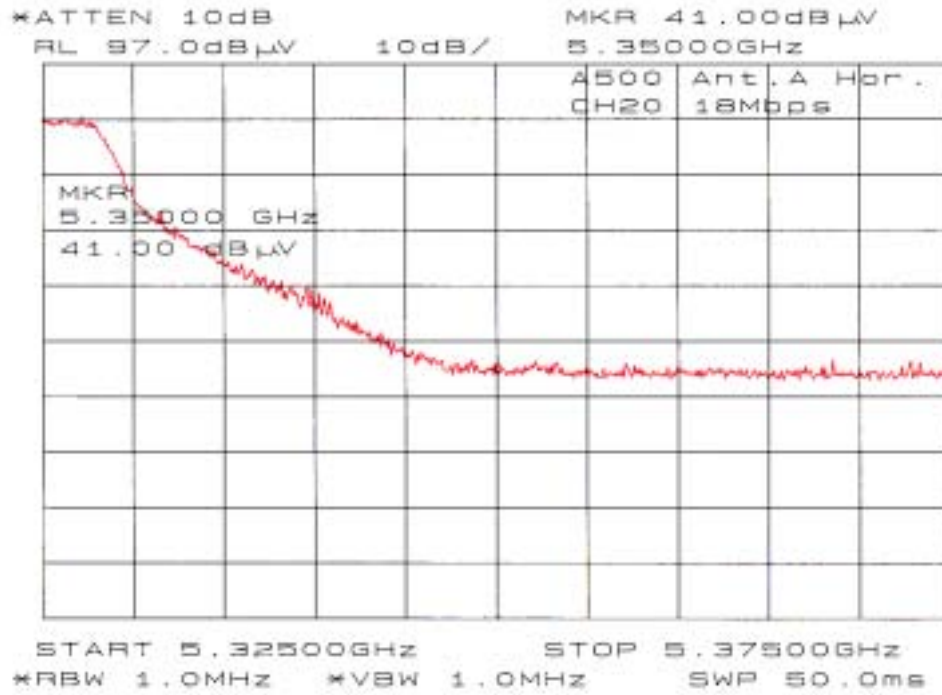


Chart of ch 20 with 18 Mbps in Antenna A

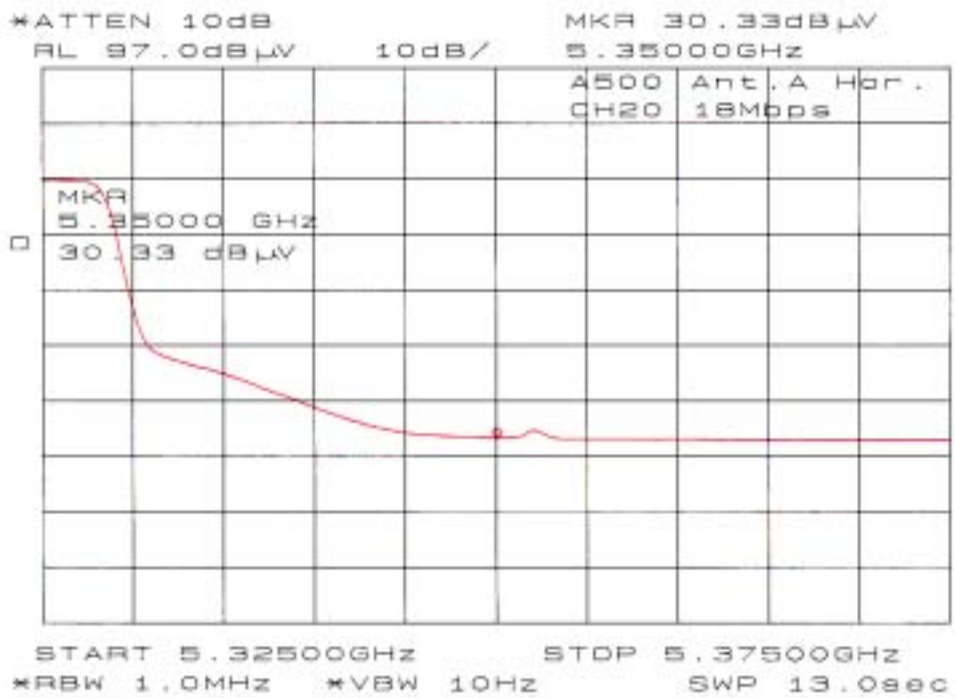


Chart of ch 20 with 18 Mbps in Antenna B

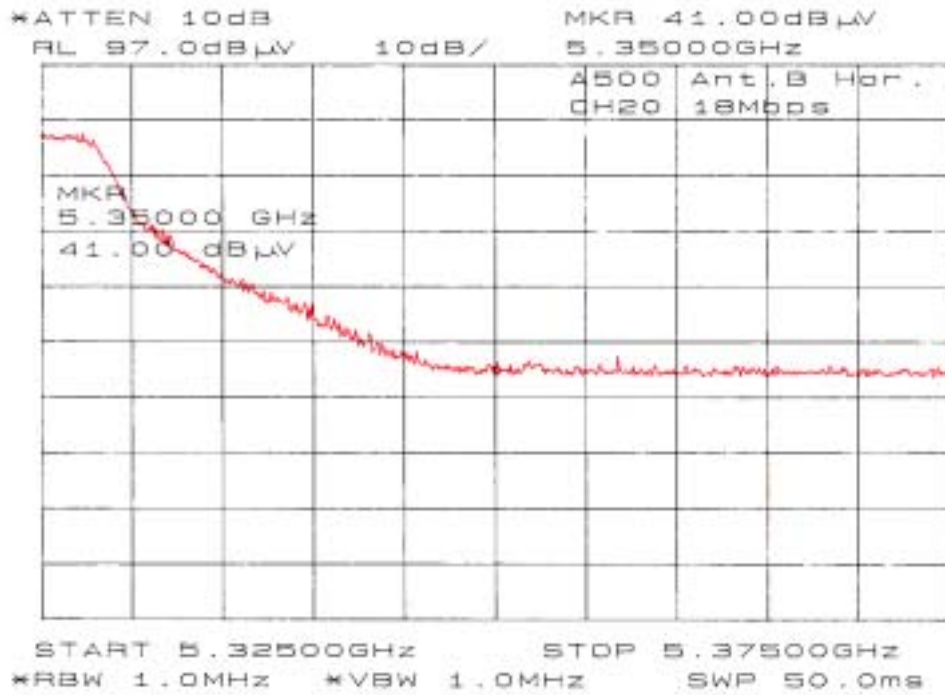
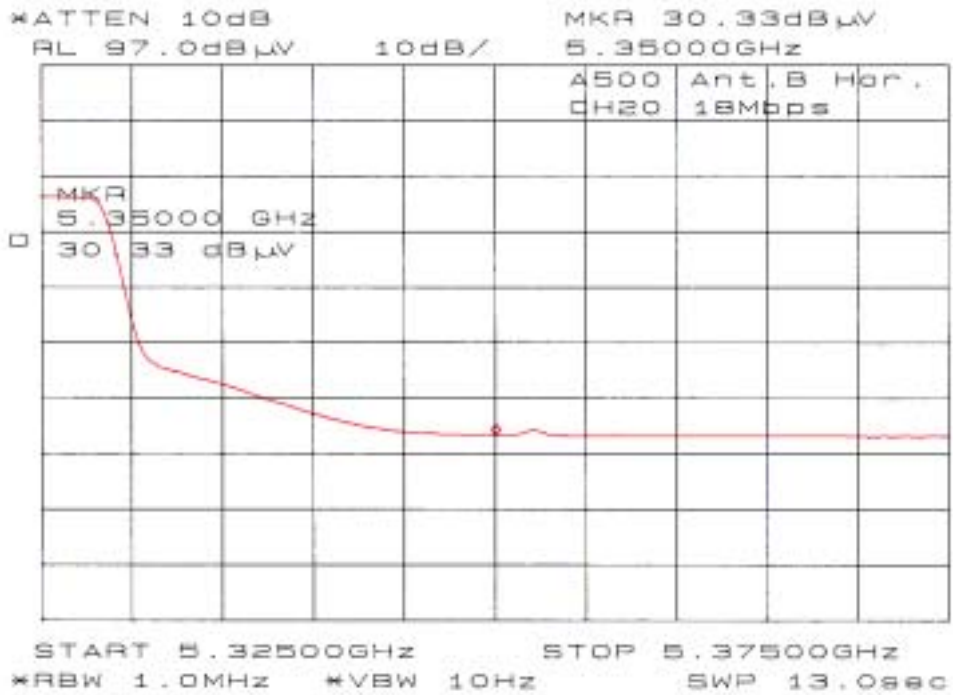
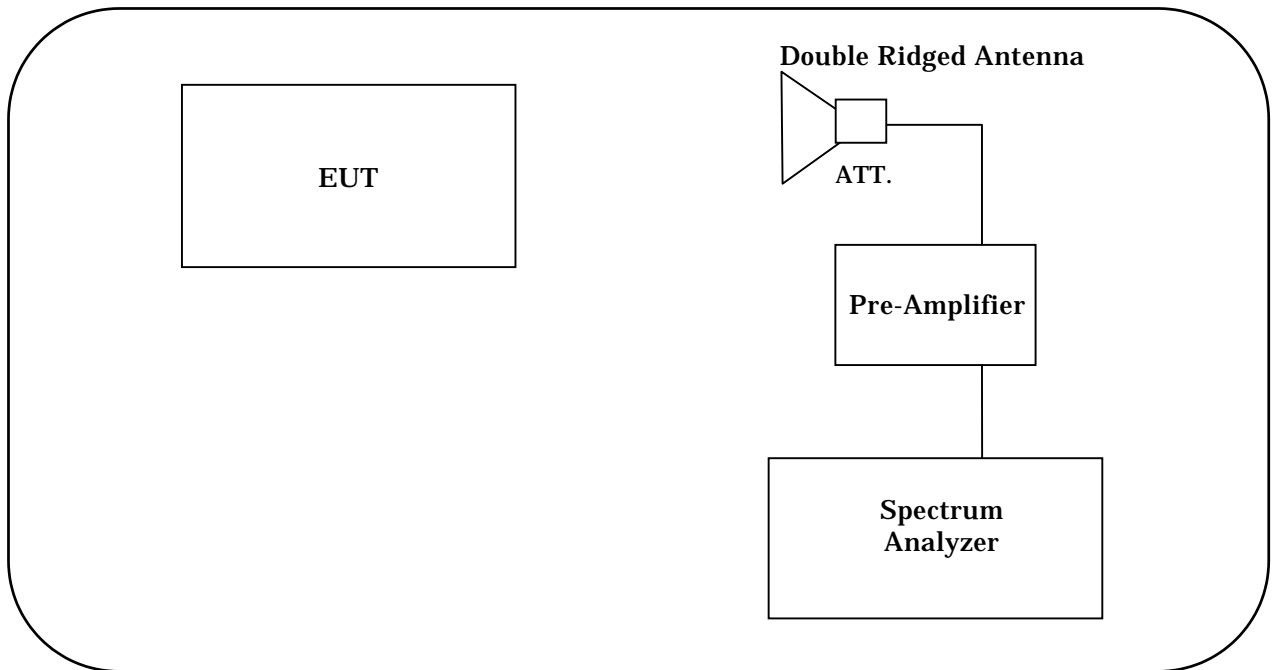


Chart of ch 20 with 18 Mbps in Antenna B



TEST INSTRUMENTS CONFIGURATION



TEST INSTRUMENTS

Instrument	Model No.	Serial No.	Manufacturer	Last cal. date	Period
Spectrum analyzer	8564E	3643A00665	HEWLETT PACKARD	Jun. 14, 01	1 Year
Pre-Amplifier	83051A	3332A00329	HEWLETT PACKARD	Jan. 5, 01	1 Year
3dB Attenuator	6803.17B	None	SUHNER	Mar. 18, 01	1 Year
Double Ridged Antenna	3115	5044	EMCO	Jul. 16, 01	1 Year

9.9 AC Conducted Emissions [15.407(b)(5),15.207]**MEASUREMENT PROCEDURE:**

- 1. The EUT was set to operate with following conditions.**
 - Antenna A / Antenna B
 - ch6 / ch12 / ch20
 - Data Transfer Rate (6 Mbps/9 Mbps/12 Mbps/18 Mbps/24 Mbps/36 Mbps/48 Mbps/54 Mbps)
- 2. The Test Receiver is complied with the specification of the CISPR publication 16.**
- 3. Following data is the worst case.**

Data of ch 12 with 24 Mbps in Antenna B

**Akzo Nobel K. K.
Kashima No.1 Test Site
Conducted Voltages on Mains Port**

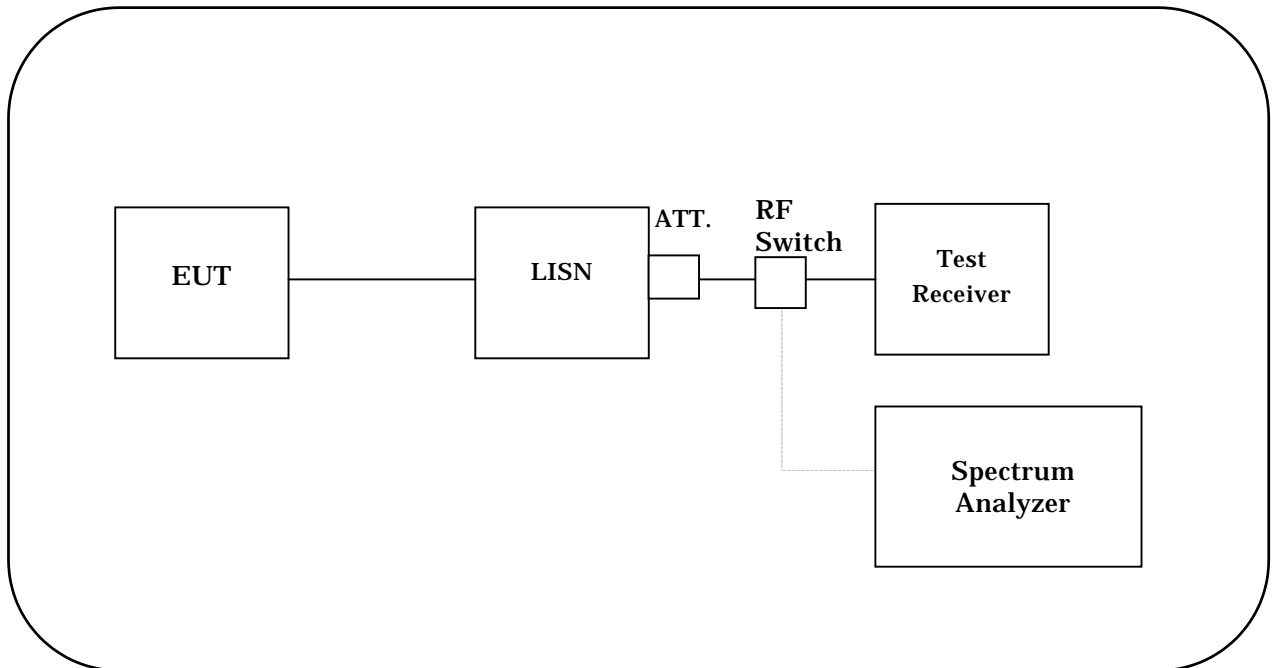
APPLICANT	: Sony Corporation	FILE NO.	: ANKK-101422
EUT NAME	: Wireless LAN Access Point	REGULATION	: FCC 15.407(b), 15.207
MODEL NO.	: PCWA-A500	TEST METHOD	: ANSI C63.4-1992
SERIAL NO.	: 0000001		
TEST MODE	: Tx 5.24GHz 24Mbps Ant.B	TEMPERATURE	: 18.0 [degC]
POWER SOURCE	: AC120V/60Hz	HUMIDITY	: 41.0 [%]
DATE TESTED	: Dec 14 2001		

ENGINEER : Kazuhiro Ando

FREQUENCY No	[MHz]	READING [dBuV]		FACTOR [dB]		EMISSION [dBuV]		LIMIT [dBuV]	MARGIN [dB]	
		Line1	Line2	Line1	Line2	Line1	Line2		Line1	Line2
1	0.6250	21.7	21.7	5.9	5.9	27.6	27.6	48.0	20.4	20.4
2	0.8141	21.5	21.3	5.9	6.0	27.4	27.3	48.0	20.6	20.7
3	1.2524	22.9	21.2	6.1	6.1	29.0	27.3	48.0	19.0	20.7
4	1.9390	24.1	22.5	6.1	6.1	30.2	28.6	48.0	17.8	19.4
5	2.0032	24.0	22.6	6.1	6.1	30.1	28.7	48.0	17.9	19.3
6	2.1275	23.6	22.5	6.1	6.1	29.7	28.6	48.0	18.3	19.4
7	2.8792	24.0	23.7	6.2	6.2	30.2	29.9	48.0	17.8	18.1
8	4.3811	22.0	21.2	6.2	6.2	28.2	27.4	48.0	19.8	20.6
9	6.0721	23.0	20.3	6.3	6.4	29.3	26.7	48.0	18.7	21.3
10	25.8767	20.5	19.9	6.5	6.9	27.0	26.8	48.0	21.0	21.2

Other frequencies : Below the FCC 15.407(b), 15.207 limit
Emission Level = Read + Factor(LISN,Pad,Cable)

TEST INSTRUMENTS CONFIGURATION



TEST INSTRUMENTS

Instrument	Model No.	Serial No.	Manufacturer	Last cal. date	Period
Test receiver	ESS	844861/004	ROHDE & SCHWARZ	Apr. 11, 01	1 Year
LISN (EUT)	ESH2-Z5	881492/014	ROHDE & SCHWARZ	Oct. 3, 01	1 Year
6dB Attenuator	CFA-01	None	TME	Oct. 4, 01	1 Year
LISN (Peripheral)	KNW-242	8-851-21	KYORITSU	Feb. 20, 01	1 Year
50Ω Termination	CT-01	A010CON50	TME	Feb. 20, 01	1 Year
RF Switch	ACX-150	None	AKZO NOBEL	Oct. 4, 01	1 Year

SECTION 10. PHOTOGRAPHS OF MAXIMUM EMISSION SET-UP

10.1 RF Conducted Emission Test

Test setup in accordance with ANSI C63.4-1992



Front view

10.2 Radiated Emission Test

Test setup in accordance with ANSI C63.4-1992



Front view



Rear view

10.3 Conducted Emission Test

Test setup in accordance with ANSI C63.4-1992



Front view



Side view

SECTION 11. MEASUREMENT UNCERTAINTY

The uncertainty of the measurements performed for this report lies:

26dB Emission Bandwidth	[15.407(a)(1),15.407(a)(2)]	
Above 1 GHz		+/- 46.7kHz
Maximum Peak Output Power (Spectrum Analyzer)	[15.407(a)(1),15.407(a)(2)]	
Above 1 GHz		+/- 3.9 dB
Peak Power Spectral Density	[15.407(a)(1),15.407(a)(2)]	
Above 1 GHz		+/- 2.9 dB
Spurious Emissions - RF Antenna Conducted Test	[15.407(b)(1),15.407(b)(2)]	
Above 1 GHz		+/- 2.9 dB
Spurious Emissions - Radiated Emission Test	[15.407(b)(5), 15.209]	
Below 1 GHz		+/- 3.9 dB
Spurious Emissions - Radiated Emission Test	[15.407(b)(6), 15.205]	
Above 1 GHz		+/- 3.9 dB
Spurious Emissions - Radiated Emission Test	[15.407(b)(6), 15.205]	
Band Edge		+/- 3.9 dB
AC Conducted Emission	[15.407(b)(5),15.207]	
9 kHz – 30 MHz		+/- 1.8 dB

Note on Radiated Emission measurement uncertainty

The following items are not included in the calculations in spite of their own uncertainty components because it is impracticable to find the value. It is our problem awaiting solution in future.

(1)Repeatability of measurement

It is not possible to calculate repeatability since the measurement was carried out only one time.

(2)Antenna factor variation

The definition of measured (radiated electric field strength) is not completed on the referred standard(s).

(3)Loss of EUT radiation propagation

It is certainly one of the uncertainty components, however is not able to calculate.

Please note that these uncertainties are not reflected to the compliance judgement of the test results in this report.

SECTION 12. VALIDITY OF TEST REPORT

- 12.1 The test result of this report is effective for equipment under test itself and under the test configuration described on the report.**
- 12.2 This test report does not assure that whether the test result taken in other testing laboratory is compatible or reproducible to the test result on this report or not.**
- 12.3 This test report shall not be reproduced except in full, without issuer's permission.**

SECTION 13. DESCRIPTION OF TEST LABORATORY

13.1 Outline of Akzo Nobel K. K. (formerly Akzo Kashima Limited), EMC Division

Akzo Nobel K. K., the country organization in Japan for Akzo Nobel NV, was established in 1968. The shares are owned by Akzo Nobel NV (100%). Akzo Nobel NV, headquartered in the Netherlands, is one of the world's leading companies in selected areas of chemicals, coatings, healthcare products and fibers with work force of approximately 70,000 people in over 50 countries.

In 1984, in order to respond to the growing testing demand, in particular, for FCC filing, Akzo Nobel K. K. started EMI testing business, installing the first open air test site in Kashima, Ibaraki prefecture. Further the business has been expanded by installing additional testing facilities not only in Ibaraki but also in other areas such as Shizuoka, Nagano, Kanagawa and Tochigi. As results, Akzo Nobel K. K. has now 16 open air test sites and 4 anechoic chambers for EMI/EMC testing. As the largest EMC testing laboratory in number of testing facilities and staffs, EMC Division has been organized separately in the company and independently operated in conformity with the requirements of ISO Guide 25 (EN 45000) for its competency as a testing laboratory.

Akzo Nobel K. K. EMC Division is the first foreign private laboratory accredited by NVLAP, National Voluntary Laboratory Accreditation Program-NIST, USA. The division has been certified, authorized and/or filed as a competent testing laboratory by various testing organizations/authorities as described below.

13.2 Filing, certification, authorization and accreditation list

EMI/EMC testing

FCC	(USA)
NVLAP	(USA)
NEMKO	(Norway)
VCCI	(Japan)
ETL SEMKO Japan	(Sweden)
TÜV PRODUCT SERVICE	(Germany)

Telecommunications terminal testing

FCC	(USA)
NVLAP	(USA)
NATA	(Australia)
IC	(Canada)

Note 1 : NVLAP accreditation does not constitute any product endorsement by NVLAP or any agent of the U.S. Government.