



MEASUREMENT/TECHNICAL REPORT

FCC Part 15 Subpart C

Issued: May 28, 2010

Name and Address of the Applicant: **PATLITE CORPORATION**
8-8 Matsuyamachi, Chuo-ku, Osaka 542-0067 Japan

Test Item: **Wireless Data Communication System**

Identification: **WDR-L**

Serial No.: **01**

FCC ID: **XQ3WRL**

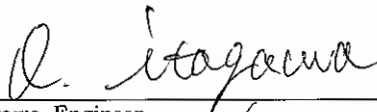
Sample Receipt Date: **April 12, 2010**

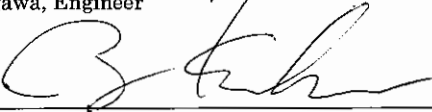
Test Specification: **FCC Part 15 Subpart C, 15.247**

Date of Testing: **April 19, 20, 22 and 28, 2010**

Test Result: **PASS**

Report Prepared by: **Cosmos Corporation**
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Tested by:  May 28, 2010
O. Itogawa, Engineer Date

Reviewed by:  May 28, 2010
Y. Kawahara, Deputy General Manager Date

Notes:

1. This report should not be reproduced except in full, without the written approval of Cosmos Corporation.
2. All measurement data contained in this report may have uncertainty. A judgment for the limitation should be taken into the count.
3. The report in this report apply only to the sample tested.

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1. Description of Equipment Under Test

1.1 Product Description

Manufacturer	: PATLITE CORPORATION
Model (referred to as the EUT)	: WDR-L
Nominal Voltage	: DC 24V
Type of Modulation	: DSSS
Mode of Operation	: <input type="checkbox"/> duplex <input type="checkbox"/> 1/2 duplex <input checked="" type="checkbox"/> simplex <input type="checkbox"/> other
The type of the equipment	: <input type="checkbox"/> Stand-alone <input checked="" type="checkbox"/> Combined Equipment <input type="checkbox"/> Plug –In Card <input type="checkbox"/> Other (Module Unit)
The type of the antenna	: <input checked="" type="checkbox"/> Integral <input type="checkbox"/> External <input type="checkbox"/> Other
The type of power source	: <input type="checkbox"/> AC mains <input type="checkbox"/> Dedicated AC adapter (V) <input checked="" type="checkbox"/> DC Voltage <input type="checkbox"/> Battery
The type of battery (if applicable)	: N/A
Type of Operation	: <input type="checkbox"/> Continuous <input type="checkbox"/> Burst <input checked="" type="checkbox"/> Intermittent
Stand by Mode	: <input type="checkbox"/> Available <input checked="" type="checkbox"/> N/A
Intended functions	: Zigbee
The bandwidth of the IF filters	: N/A
Method of Communication Link	:
The operating frequency band	: 2400MHz to 2483.5MHz
The thermal limitation	: from +5 to +40

1.2 Antenna Description

No.	Type Name	Gain	Antenna Type	Remarks
1	AHD1403-244ST01	1.64dBi (-0.5dBd)	Dielectric chip antenna	Integral

1.3 Accompanied Peripherals Description

No.	Equipment Name	Manufacturer	Type Name	Serial Number	Remarks
1	Personal Computer	Acer Inc.	ZG5	---	DC19V, 1.58A
2	AC Adapter	HIPRO	HD-A0301R3	F3-080744089001	AC100V-240V, 50/60Hz, 1A

2. General Information

2.1 Test Methodology

All measurement subject to the present report was carried out according to the procedures in ANSI C63.4: 2003.

2.2 Test Facility

All measurement was performed in the following facility;

Cosmos Corporation EMC Lab. Ohnogi

(2-3571 Ohaza-iwatachi, Ohnogi, Watarai-cho, Watarai-gun, Mie-ken 516-2102, Japan)

The test firm has been filed since March 7, 2008 under CFR 47 Part.2.948.

2.3 Traceability

The calibration of measurement equipment used in the test subject to the present report is designed and operated to ensure that the measurement is traceable to national standards of measurement or equivalent abroad.

3. Summary of Test Results

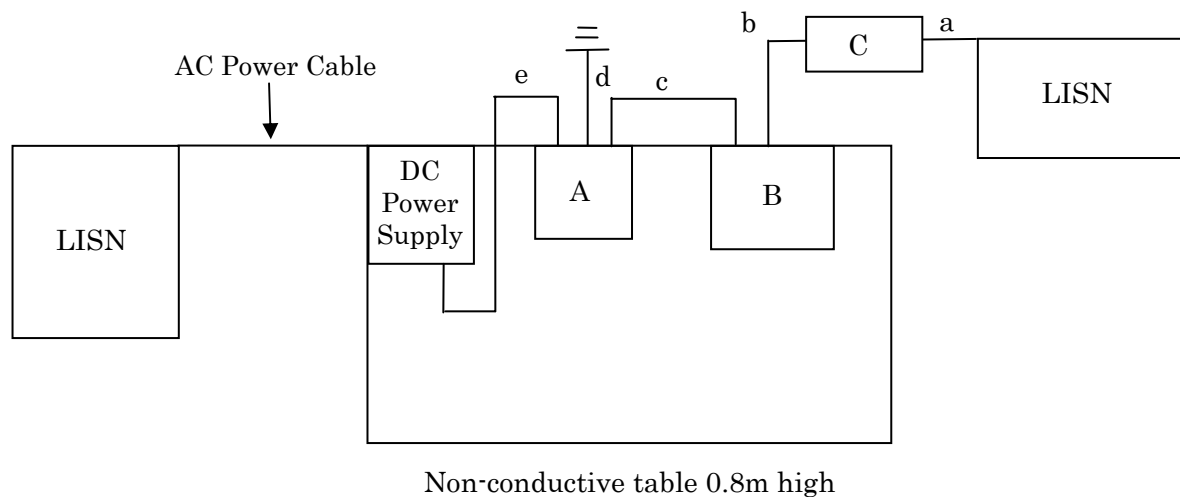
Section	Test Item	Limit	Result
15. 207	AC Power Conducted Emission	See 5.1.2	Pass
15. 247(a)(1)	Spectrum Bandwidth of Frequency Hopping Spread Spectrum System	< 1MHz if using less than 15 non-overlapping channels	N/A
15. 247(a)(1)	Channel Separation	> 2/3 of 20dB BW for systems with output power < 125mW	N/A
15. 247(a)(1)	Number of Channels	> 15 channels	N/A
15. 247(a)(1)	Time of Occupancy	< 0.4 sec in 30 sec period	N/A
15. 247(a)(2)	Spectrum Bandwidth of Direct Sequence Spread Spectrum System	Min. 500kHz	*N/A
15. 247(b)	Maximum Peak Output Power	Max. 1W (30dBm)	*N/A
15. 247(d) 15. 209	Transmitter Radiated Emissions	See 5.4.2 See 5.5.2	Pass
15. 247(e)	Power Spectrum Density	Max. 8dBm	*N/A
15. 247(d)	Band Edge Measurement	See 5.7.2	Pass

* : Since same module was used, please refer to report No, R094435-1.

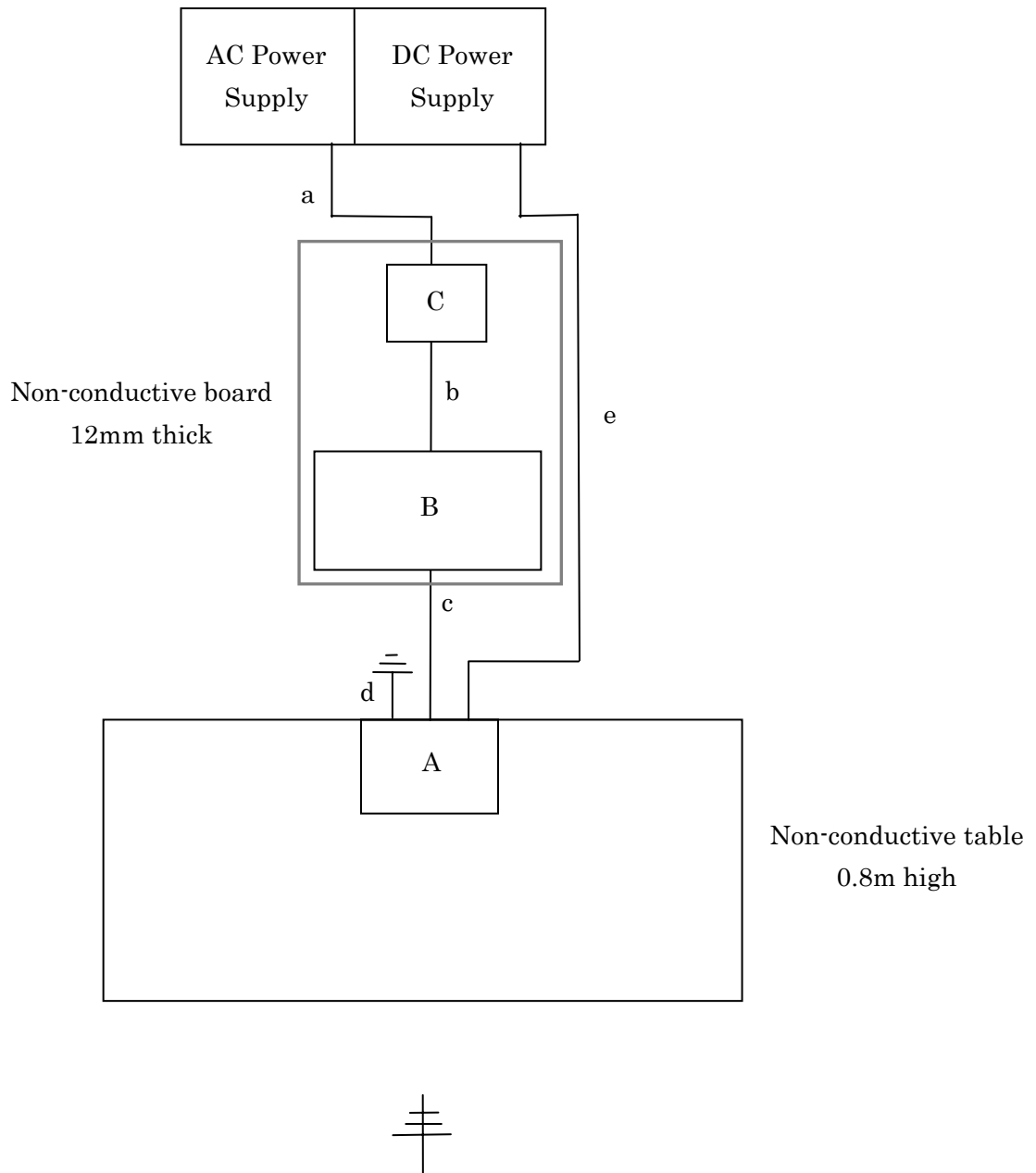
4. Test Configuration

	Instrument	Model		Cable	Length	Shield
A	EUT (Wireless Data Communication System)	WDR-L	a	AC Power Cable	1.7 m	×
B	Personal Computer	ZG5	b	DC Power Cable	1.5 m	×
C	AC Adapter	HD-A0301R3	c	USB Cable	1.0 m	
			d	Earth Cable	1.5 m	×
			e	DC Power Cable	1.0 m	×

4.1 15. 207 AC Power Conducted Emission in Shield Room



4.2 15. 247(d), 15.209 Transmitter Radiated Emissions in 3m Anechoic Chamber



4.3 Test Mode

In all test configurations above, EUT makes continuous RF transmitting with manufacturer's specified power.

5. Measurement Result

5.1 15. 207 AC Power Conducted Emission

5.1.1 Setting Remarks

- Configure the EUT System in accordance with ANSI C63.4-2003.
- Non-conductive board (12mm thick) for EUT and non-conductive table (80cm high) for personal computer were used.
- Other power cord of support equipment is connected to another LISN to isolate its emission from the measured emission of EUT.
- The measuring port of LISN for support equipment was terminated by the 50Ω
- Activate the EUT System and run the software prepared for the test, if necessary.
- Refer to test configuration figure 4.1.

5.1.2 Minimum Standard

15. 207 (a) Except as shown in paragraphs (b) and (c) of this section, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed the limits in the following table, as measured using a 50 μH/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between the frequency ranges.

Frequency of Emission (MHz)	Conducted Limit (dBuV)	
	Quasi-peak	Average
0.15-0.5	66 to 56 *	56 to 46 *
0.5-5	56	46
5-30	60	50

* Decreases with the logarithm of the frequency.

5.1.3 Result

EUT complies with the requirement.

Uncertainty of measurement : ± 2.26 dB
Temperature, Humidity : 25°C, 42 %

5.1.4 Measured Data

<<Conducted Emission>>

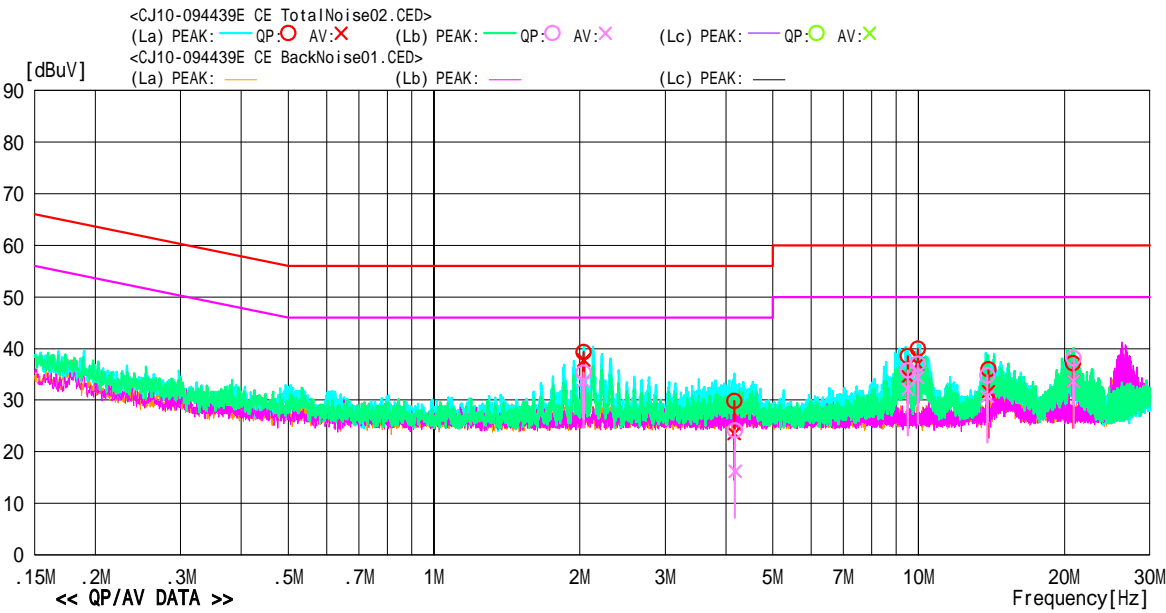
Cosmos Corporation Onoki Lab.
Date : 2010/04/28

Model Name : WDR-L
Serial No. : 01
Operator : O.Iitogawa
Power Supply : AC120V,60Hz,DC5V

Job No : CJ10-094439E
Temp/Humi : 25 /42%
Condition : Operated
Remark :

Memo :

LIMIT : FCC 15.207(QP)
FCC 15.207(AV)



No	Freq. [MHz]	Reading Level		C.Fac [dB]	Results		Limit		Margin		Phase	Comment
		QP	AV		QP	AV	QP	AV	QP	AV		
		[dBuV]	[dBuV]		[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	2.03706	29.1	27.6	10.2	39.3	37.8	56.0	46.0	16.7	8.2	La	
2	4.16142	19.4	13.1	10.4	29.8	23.5	56.0	46.0	26.2	22.5	La	
3	9.50528	27.7	23.7	10.8	38.5	34.5	60.0	50.0	21.5	15.5	La	
4	9.96601	29.2	26.1	10.8	40.0	36.9	60.0	50.0	20.1	13.1	La	
5	13.94317	24.9	20.7	11.0	35.9	31.7	60.0	50.0	24.1	18.4	La	
6	20.85380	26.0	22.4	11.2	37.2	33.6	60.0	50.0	22.8	16.4	La	
7	2.03502	25.2	23.5	10.2	35.4	33.7	56.0	46.0	20.6	12.3	Lb	
8	4.17993	13.7	5.8	10.4	24.1	16.2	56.0	46.0	31.9	29.8	Lb	
9	9.50393	25.0	21.4	10.7	35.7	32.1	60.0	50.0	24.3	17.9	Lb	
10	9.96469	26.3	23.7	10.7	37.0	34.4	60.0	50.0	23.0	15.6	Lb	
11	13.85311	23.8	19.8	10.9	34.7	30.7	60.0	50.0	25.3	19.3	Lb	
12	20.85692	27.0	22.6	11.1	38.1	33.7	60.0	50.0	21.9	16.3	Lb	

5.1.4 Measured Data (Continued)

<<Conducted Emission>>

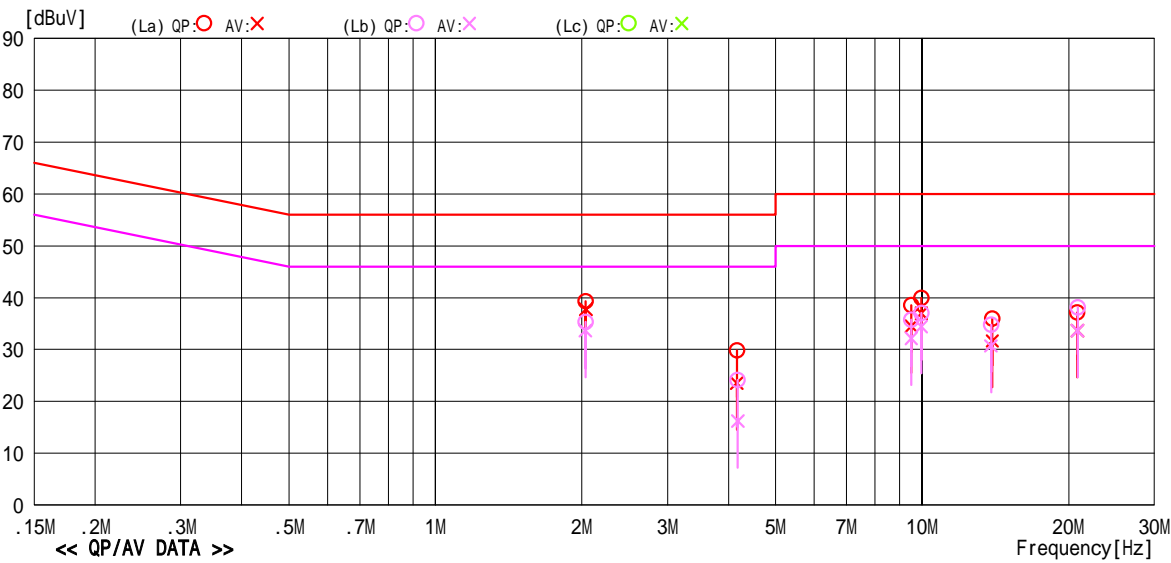
Cosmos Corporation Onoki Lab.
Date : 2010/04/28

Model Name : WDR-L
Serial No. : 01
Operator : O.Itogawa
Power Supply : AC120V,60Hz,DC5V

Job No : CJ10-094439E
Temp/Humi : 25 /42%
Condition : Operated
Remark :

Memo :

LIMIT : FCC 15.207(QP)
FCC 15.207(AV)



No	Freq. [MHz]	Reading Level		C.Fac	Results		Limit		Margin		Phase	Comment
		QP	AV		QP	AV	QP	AV	QP	AV		
		[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]		
1	2.03706	29.1	27.6	10.2	39.3	37.8	56.0	46.0	16.7	8.2	La	
2	4.16142	19.4	13.1	10.4	29.8	23.5	56.0	46.0	26.2	22.5	La	
3	9.50528	27.7	23.7	10.8	38.5	34.5	60.0	50.0	21.5	15.5	La	
4	9.96601	29.2	26.1	10.8	40.0	36.9	60.0	50.0	20.1	13.1	La	
5	13.94317	24.9	20.7	11.0	35.9	31.7	60.0	50.0	24.1	18.4	La	
6	20.85380	26.0	22.4	11.2	37.2	33.6	60.0	50.0	22.8	16.4	La	
7	2.03502	25.2	23.5	10.2	35.4	33.7	56.0	46.0	20.6	12.3	Lb	
8	4.17993	13.7	5.8	10.4	24.1	16.2	56.0	46.0	31.9	29.8	Lb	
9	9.50393	25.0	21.4	10.7	35.7	32.1	60.0	50.0	24.3	17.9	Lb	
10	9.96469	26.3	23.7	10.7	37.0	34.4	60.0	50.0	23.0	15.6	Lb	
11	13.85311	23.8	19.8	10.9	34.7	30.7	60.0	50.0	25.3	19.3	Lb	
12	20.85692	27.0	22.6	11.1	38.1	33.7	60.0	50.0	21.9	16.3	Lb	

5.2 15. 247(d) Transmitter Radiated Emissions (Radiated)

5.2.1 Setting Remarks

- The data lists in “5.5.4 Measured Data “ list the significant emission frequencies, measured levels, correction factor (includes cable and antenna corrections), the corrected reading, plus the limit.
- In the frequency range between 30MHz to 25 GHz (as 10th harmonics), the Electric Field Strength is measured in accordance with ANSI C63.4: 2003 and CISPR22: 1997.
- The test setup is made in accordance with ANSI C63.4: 2003.
- The antenna is measured at 1-4m height.
- The EUT is placed on the non-conductive table in the center of turntable. The height of this table is 0.8m.
- The measurement is carried out with both horizontal and vertical antenna polarization.
- The highest radiation from the equipment is recorded.
- By varying the configuration of the test sample and the cable routing, it is attempted to maximize the emission.
- The test receiver with Quasi Peak and Average detector is in compliance with CISPR 16-1:1993.
- The spectrum analyzer is set-up as following;

(Frequency range : 30 - 1000 MHz)

- ✓ Resolution bandwidth : 100 kHz
- ✓ Video bandwidth : 300 kHz
- ✓ Detector function : Peak
- ✓ Trace Mode : Max Hold

(Frequency range : Above 1000 MHz)

- ✓ Resolution bandwidth : 1 MHz
- ✓ Video bandwidth : 1 MHz
- ✓ Detector function : Peak
- ✓ Trace Mode : Max Hold

- EMI Test Receiver analyzer is set-up as following;

- ✓ IF bandwidth : 120 kHz (Quasi-Peak Detector)
- ✓ IF bandwidth : 1 MHz (Average Detector)

- See test configuration figure 4.2.

5.2.2 Minimum Standard

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 15.205(c)).

Frequency (MHz)	Field strength (microvolts/meter)	Measurement distance (meters)
0.009-0.490	2400/F (kHz)	300
0.490-1.705	24000/F (kHz)	30
1.705-30.0	30	30
30-88	100**	3
88-216	150**	3
216-960	200**	3
Above 960	500	3

**Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., § 15.231 and 15.241.

5.2.3 Result

EUT complies with the requirement.

Uncertainty of measurement result: ± 3.28 dB

Temperature, Humidity : Refer to each data table

5.2.4 Measured Data

30MHz to 1GHz (CH11)

<<Radiated Emission>>

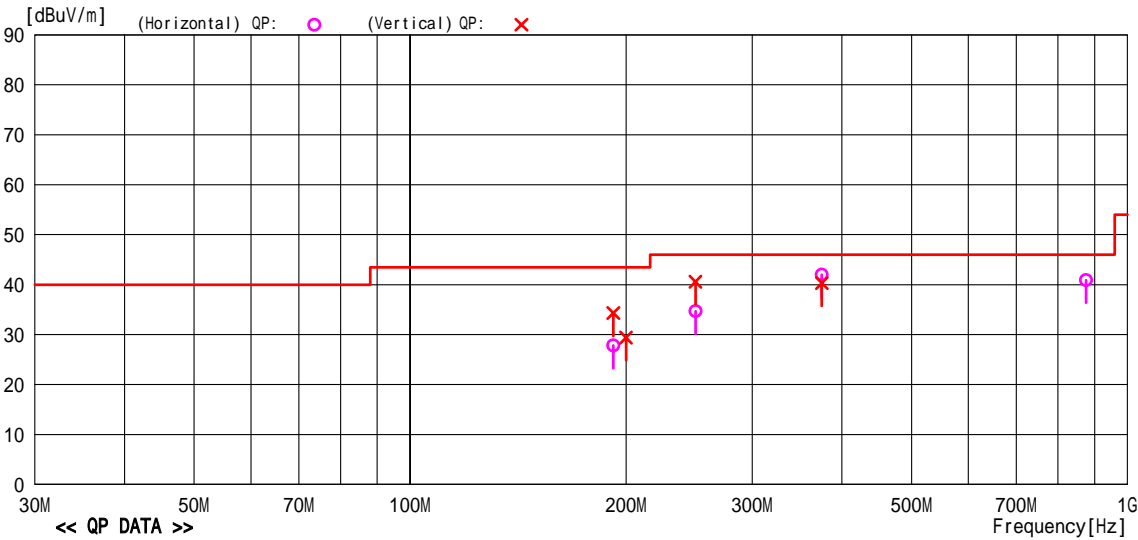
Cosmos Corporation Onoki Lab.
Date : 2010/04/22 19:53:54

Model Name : WDR-L
Serial No. : 01
Operator : O. Itogawa
Power Supply : DC24V

Job No : CJ10-094439E
Temp./Humi. : 24 /40%
Condition : Tx CH11
Remark :

Memo : RBW:30M ~ 1GHz(120kHz)

LIMIT : Fcc15C 15_209 (3m) 30MHz-1000MHz



5.2.4 Measured Data (Continued)

30MHz to 1GHz (18CH)

<<Radiated Emission>>

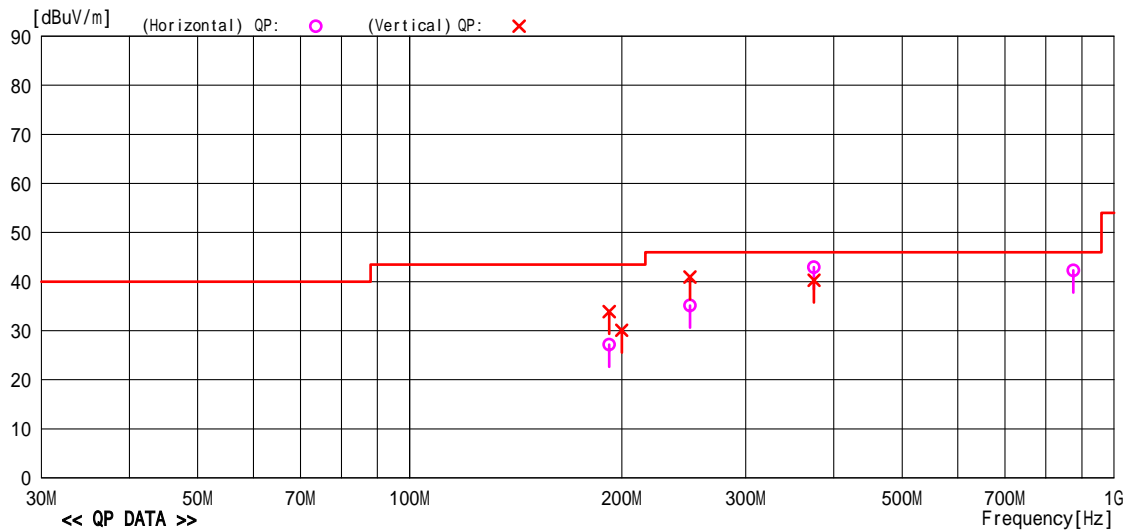
Cosmos Corporation Onoki Lab.
Date : 2010/04/22 20:44:15

Model Name : WDR-L
Serial No. : 01
Operator : O. Itogawa
Power Supply : DC24V

Job No : CJ10-094439E
Temp./Humi. : 24 /40%
Condition : Tx CH18
Remark :

Memo : RBW:30M ~ 1GHz(120kHz)

LIMIT : Fcc15C 15_209 (3m) 30MHz-1000MHz



5.2.4 Measured Data (Continued)

30GHz to 1GHz (26CH)

<<Radiated Emission>>

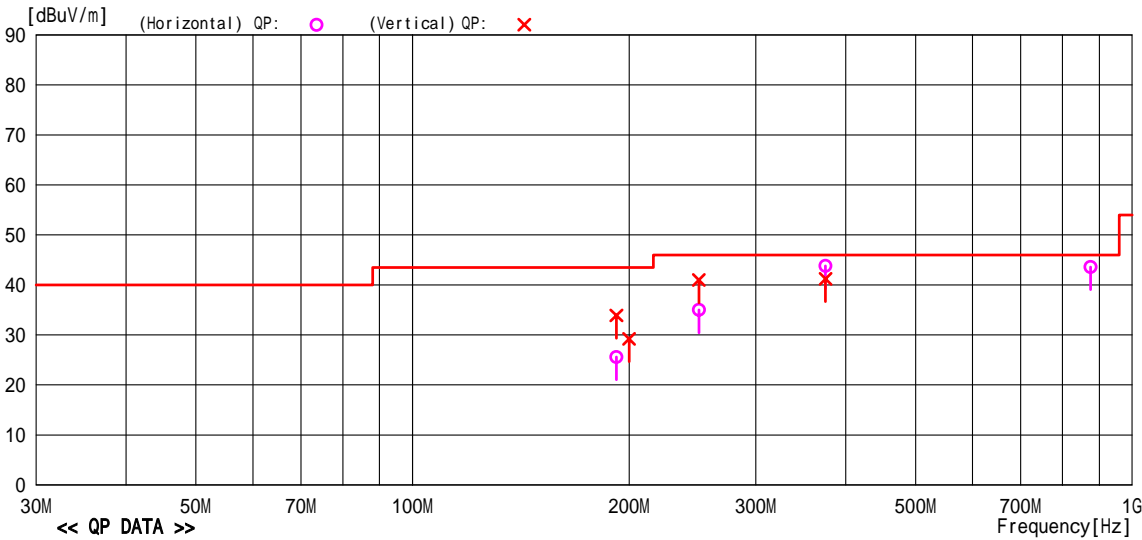
Cosmos Corporation Onoki Lab.
Date : 2010/04/22 21:36:30

Model Name : WDR-L
Serial No. : 01
Operator : O. Itogawa
Power Supply : DC24V

Job No : CJ10-094439E
Temp./Humi. : 24 /40%
Condition : Tx CH26
Remark :

Memo : RBW:30M ~ 1GHz(120kHz)

LIMIT : Fcc15C 15_209 (3m) 30MHz-1000MHz



5.2.4 Measured Data (Continued)

1GHz to 18GHz (11CH)

RADIATED EMISSION

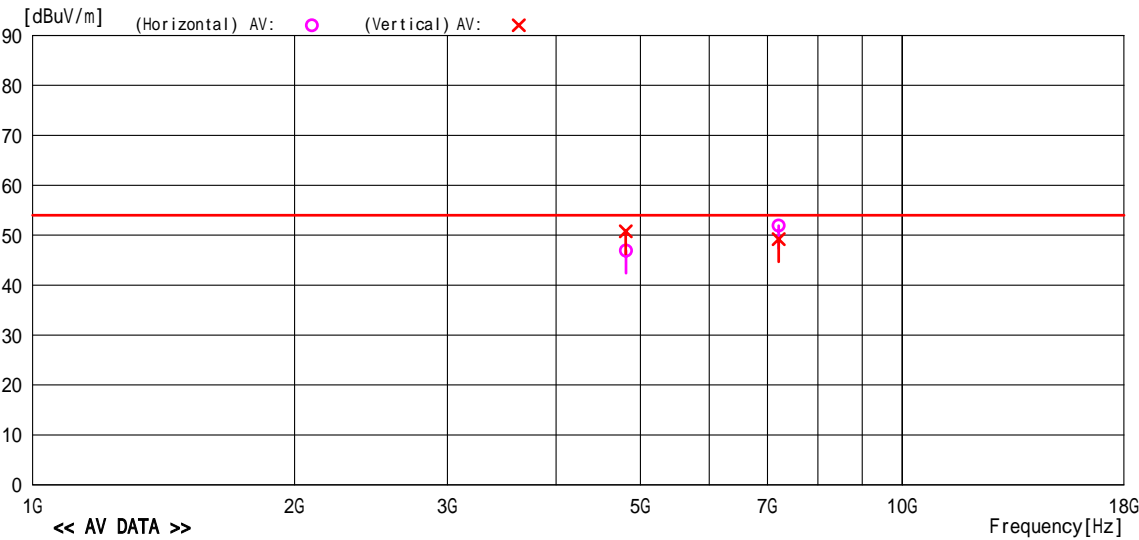
Cosmos Corporation Onoki Lab.
Date : 2010/04/19 22:29:35

Model Name : WDR-L
Serial No. : 01
Operator : O.Ito
Power Supply : DC24V

Job No. : CJ10-094439E
Temp/Humi : 22 /40%
Condition : Tx CH11
Remark :

Memo : RBW:1GHz ~ (1MHz)

LIMIT : FCC Subpart C 15.209 (3m) 1G-26.5GHz(AV)



No	Freq.	Reading	Ant.Fac	Loss	Gain	Result	Limit	Margin	Pola.	Height	Angle	Ant	Comment
	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]	Type	
1	4811.025	44.3	32.1	6.4	35.9	46.9	54.0	7.1	Hori.	197	264	AV	
2	7213.629	40.8	36.7	7.7	33.3	51.9	54.0	2.1	Hori.	150	121	AV	
3	4809.109	48.2	32.1	6.4	35.9	50.8	54.0	3.2	Vert.	127	236	AV	
4	7213.516	38.1	36.7	7.7	33.3	49.2	54.0	4.8	Vert.	100	155	AV	

5.2.4 Measured Data (Continued)

1GHz to 18GHz (11CH)

RADIATED EMISSION

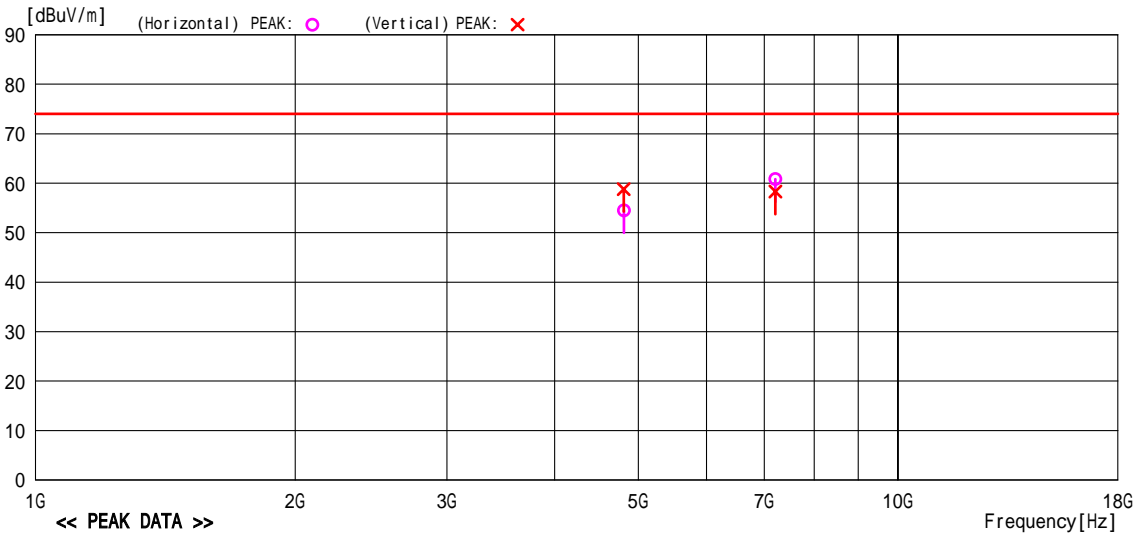
Cosmos Corporation Onoki Lab.
Date : 2010/04/19 22:29:35

Model Name : WDR-L
Serial No. : 01
Operator : O.Itogawa
Power Supply : DC24V

Job No. : CJ10-094439E
Temp/Humi : 22 /40%
Condition : Tx CH11
Remark :

Memo : RBW:1GHz ~ (1MHz)

LIMIT : FCC Subpart C 15.209 (3m) 1G-26.5GHz(PK)



No	Freq.	Reading	Ant.Fac	Loss	Gain	Result	Limit	Margin	Pola.	Height	Angle	Ant	Comment
	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]	Type	
1	4811.025	51.9	32.1	6.4	35.9	54.5	74.0	19.5	Hori.	197	264		PK
2	7213.629	49.7	36.7	7.7	33.3	60.8	74.0	13.2	Hori.	150	121		PK
3	4809.109	56.2	32.1	6.4	35.9	58.8	74.0	15.2	Vert.	127	236		PK
4	7213.516	47.2	36.7	7.7	33.3	58.3	74.0	15.7	Vert.	100	155		PK

5.2.4 Measured Data (Continued)

1GHz to 18GHz (18CH)

RADIATED EMISSION

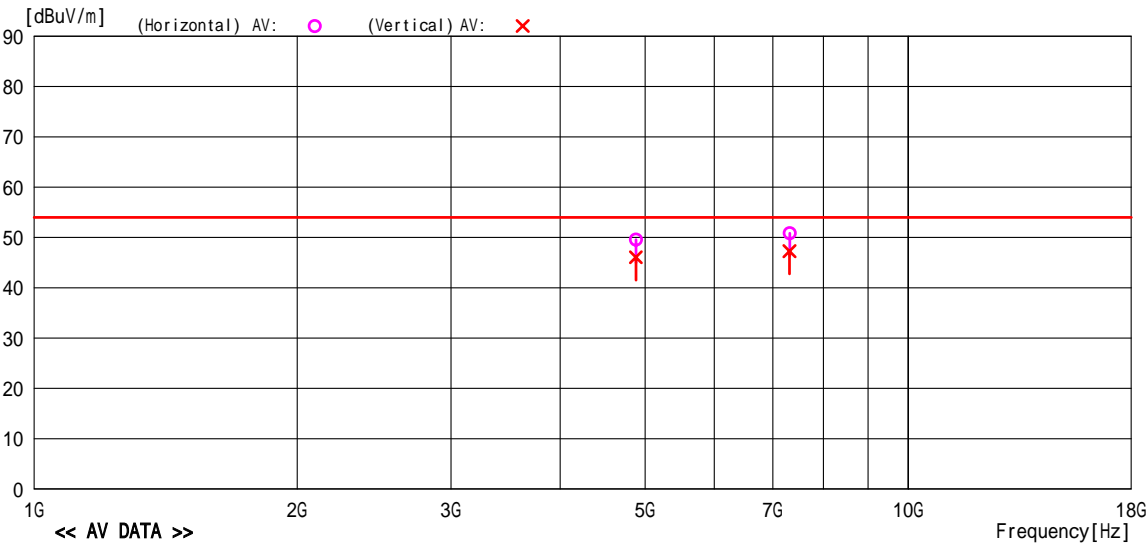
Cosmos Corporation Onoki Lab.
Date : 2010/04/19 23:26:13

Model Name : WDR-L
Serial No. : 01
Operator : O. Itogawa
Power Supply : DC24V

Job No. : CJ10-094439E
Temp/Humi : 22 /40%
Condition : Tx CH18
Remark :

Memo : RBW:1GHz ~ (1MHz)

LIMIT : FCC Subpart C 15.209 (3m) 1G-26.5GHz(AV)



No	Freq.	Reading	Ant.Fac	Loss	Gain	Result	Limit	Margin	Pola.	Height	Angle	Ant	Comment
	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]	Type	
1	4881.152	46.8	32.2	6.4	35.8	49.6	54.0	4.4	Hori.	105	232	AV	
2	7321.792	39.9	36.8	7.7	33.5	50.9	54.0	3.1	Hori.	100	197	AV	
3	4881.003	43.3	32.2	6.4	35.8	46.1	54.0	7.9	Vert.	126	235	AV	
4	7318.625	36.3	36.8	7.7	33.5	47.3	54.0	6.7	Vert.	107	155	AV	

5.2.4 Measured Data (Continued)

1GHz to 18GHz (18CH)

RADIATED EMISSION

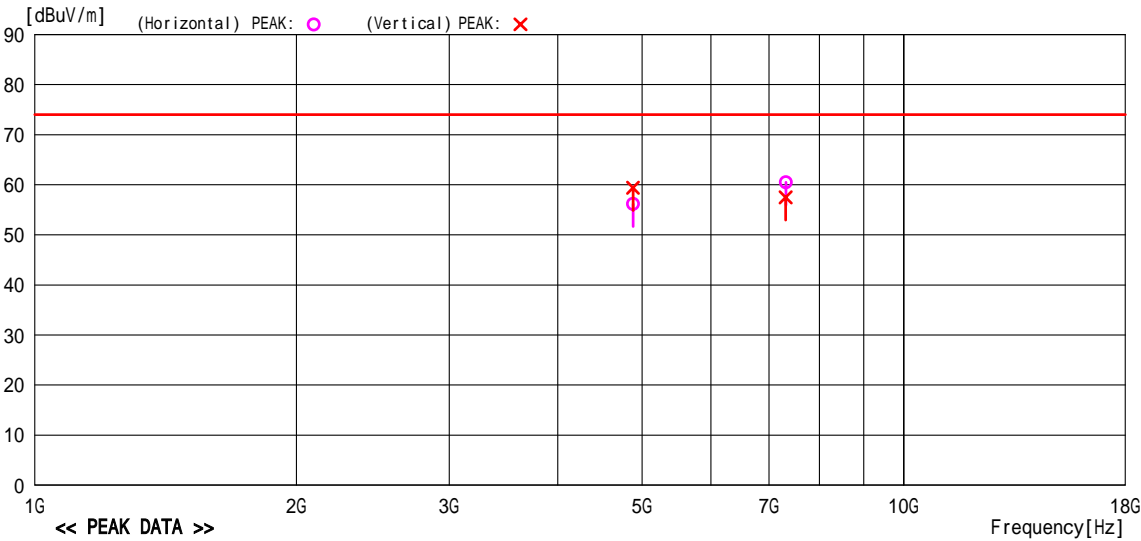
Cosmos Corporation Onoki Lab.
Date : 2010/04/19 23:26:13

Model Name : WDR-L
Serial No. : 01
Operator : O. Itogawa
Power Supply : DC24V

Job No. : CJ10-094439E
Temp/Humi : 22 /40%
Condition : Tx CH18
Remark :

Memo : RBW:1GHz ~ (1MHz)

LIMIT : FCC Subpart C 15.209 (3m) 1G-26.5GHz(PK)



No	Freq.	Reading	Ant.Fac	Loss	Gain	Result	Limit	Margin	Pola.	Height	Angle	Ant	Comment
	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]	Type	
1	4881.152	53.4	32.2	6.4	35.8	56.2	74.0	17.8	Hori.	105	232		PK
2	7321.792	49.5	36.8	7.7	33.5	60.5	74.0	13.5	Hori.	100	197		PK
3	4881.003	56.6	32.2	6.4	35.8	59.4	74.0	14.6	Vert.	126	235		PK
4	7318.625	46.5	36.8	7.7	33.5	57.5	74.0	16.5	Vert.	107	155		PK

5.2.4 Measured Data (Continued)

1GHz to 18GHz (26CH)

RADIATED EMISSION

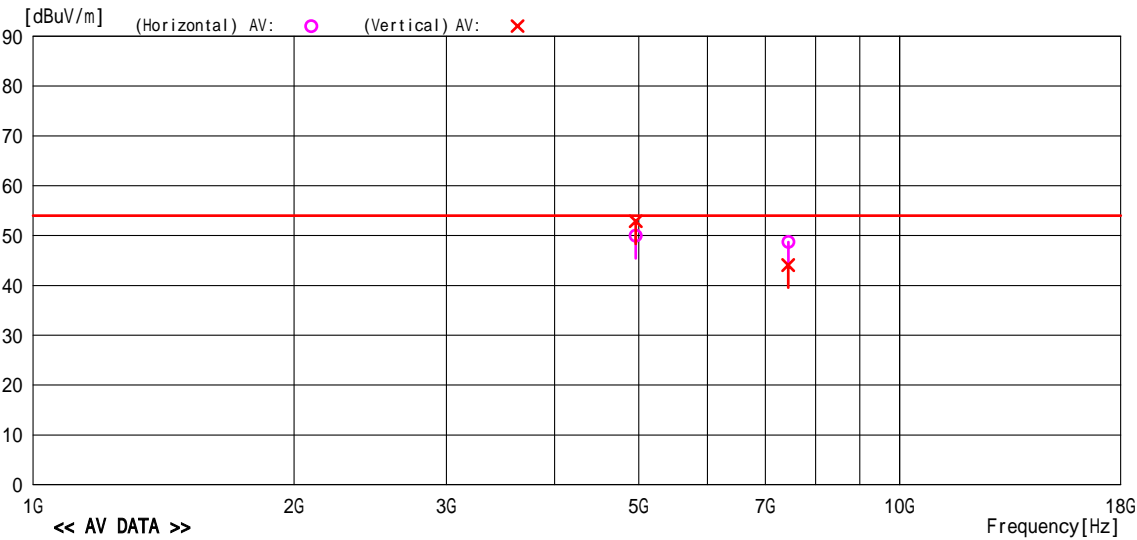
Cosmos Corporation Onoki Lab.
Date : 2010/04/20 00:14:59

Model Name : WDR-L
Serial No. : 01
Operator : O.Itogawa
Power Supply : DC24V

Job No. : CJ10-094439E
Temp/Humi : 22 /40%
Condition : Tx CH26
Remark :

Memo : RBW:1GHz ~ (1MHz)

LIMIT : FCC Subpart C 15.209 (3m) 1G-26.5GHz(AV)



No	Freq.	Reading	Ant.Fac	Loss	Gain	Result	Limit	Margin	Pola.	Height	Angle	Ant	Comment
	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]	Type	
1	4961.089	47.0	32.3	6.4	35.7	50.0	54.0	4.0	Hori.	103	162		AV
2	7441.591	37.7	36.8	7.8	33.6	48.7	54.0	5.3	Hori.	100	209		AV
3	4959.035	49.9	32.3	6.4	35.7	52.9	54.0	1.1	Vert.	107	238		AV
4	7438.545	33.1	36.8	7.8	33.6	44.1	54.0	9.9	Vert.	112	77		AV

5.2.4 Measured Data (Continued)

1GHz to 18GHz (26CH)

RADIATED EMISSION

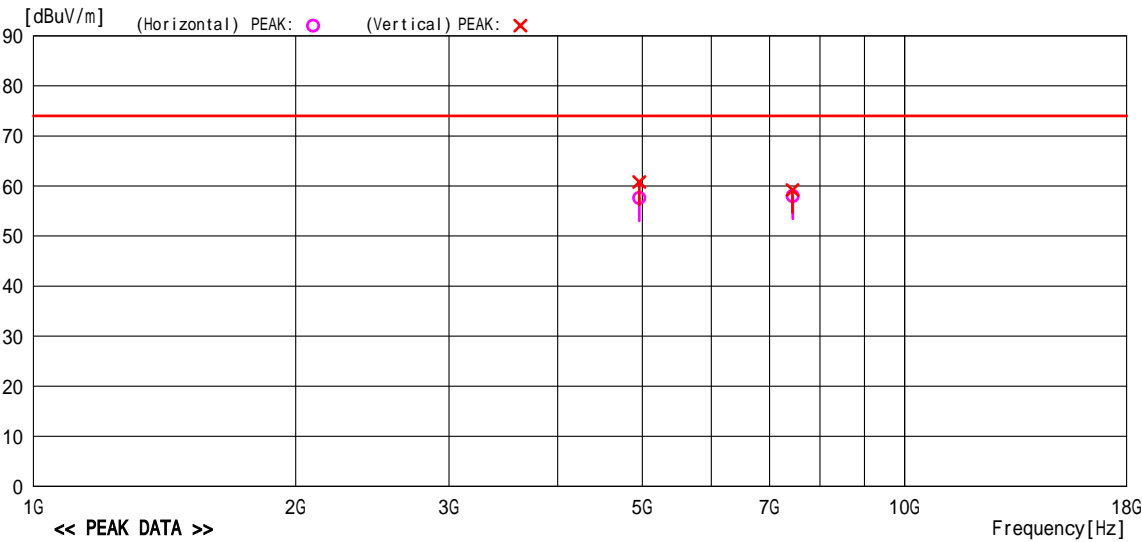
Cosmos Corporation Onoki Lab.
Date : 2010/04/20 00:14:59

Model Name : WDR-L
Serial No. : 01
Operator : O. Itogawa
Power Supply : DC24V

Job No. : CJ10-094439E
Temp/Humi : 22 /40%
Condition : Tx CH26
Remark :

Memo : RBW:1GHz ~ (1MHz)

LIMIT : FCC Subpart C 15.209 (3m) 1G-26.5GHz(PK)



No	Freq.	Reading	Ant.Fac	Loss	Gain	Result	Limit	Margin	Pola.	Height	Angle	Ant	Comment
	[MHz]	[dBuV]	[dB/m]	[dB]	[dB]	[dBuV/m]	[dBuV/m]	[dB]	[H/V]	[cm]	[deg]	Type	
1	4961.089	54.6	32.3	6.4	35.7	57.6	74.0	16.4	Hori.	103	162		PK
2	7441.591	47.0	36.8	7.8	33.6	58.0	74.0	16.0	Hori.	100	209		PK
3	4959.035	57.8	32.3	6.4	35.7	60.8	74.0	13.2	Vert.	107	238		PK
4	7438.545	48.2	36.8	7.8	33.6	59.2	74.0	14.8	Vert.	112	77		PK

5.2.4 Measured Data (Continued)

18GHz to 26.5GHz

No spurious emission for RF was found.

5.3 15. 247(d) Band Edge Measurement

5.3.1 Setting Remarks

- EUT directly connects to the spectrum analyzer via calibrated coaxial cable and 10 dB attenuator.
- The loss of the coaxial cable is maximum 1 dB.
- The emission at the band edge is measured by using the marker function of spectrum analyzer.
- The peak of the in-band emission is measured by using the marker to peak function of spectrum analyzer.
- This measurement is repeated in both side of the spectrum.
- The spectrum analyzer is set-up as following;

- ✓ Frequency Span : 30MHz
- ✓ Resolution bandwidth : 300kHz (1% of frequency span)
- ✓ Video bandwidth : > RBW
- ✓ Sweep : Auto
- ✓ Detector function : Peak
- ✓ Trace Mode : Max Hold

- Where band edge spectrum is too rough to find precise edge point, larger RBW i.e. 1MHz, 3MHz shall be applied as severer condition.

5.3.2 Minimum Standard

In any 100kHz bandwidth outside the frequency band in which the transmitter is operating, emissions shall be at least 20 dB below the fundamental emission or shall not exceed the following field strength limits. Emissions falling in the restricted bands of 15.205 shall not exceed the following field strength limits:

Frequency of Emission (MHz)	Limit of the band edge spurious emission (dB μ V)	
	Peak	Average
Below 2,390.0		
Above 2,483.5	74	54

5.3.3 Result

EUT complies with the requirement.

Uncertainty of measurement result: ± 2.6 dB

Temperature, Humidity : 24°C, 40%

5.3.4 Measured Data

The band edge emissions are calculated as following;

(Vertical)

CH	P _{max}	P _{av}	P _{dev}	P _{dav}	c.f.	E _{be}	E _{av}	Limit (E _{be})	Limit (E _{av})	Margin (E _{be})	Margin (E _{av})
11	89.32	85.81	42.07	45.56	-1.7	45.6	38.6	74.0	54.0	28.5	15.5
26	93.34	89.35	38.62	39.79	-1.7	53.0	47.9	74.0	54.0	21.0	6.1

NOTE Vertical and Horizontal were measured and Vertical was confirmed as the worst.

P_{max} : Maximum peak power of the fundamental.

P_{av} : Average of the fundamental.

P_{dev} : The amplitude delta between the peak power and the band edge emission.

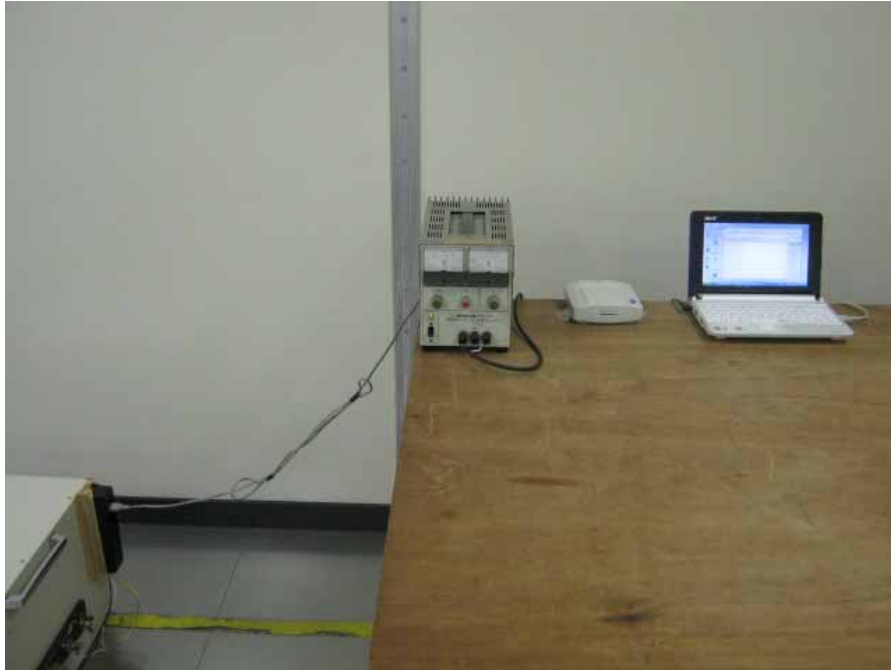
P_{dav} : The amplitude delta between the average power and the band edge emission.

E_{be} : Band edge emission.

E_{av} : Average of the band edge emission.

6. Photos

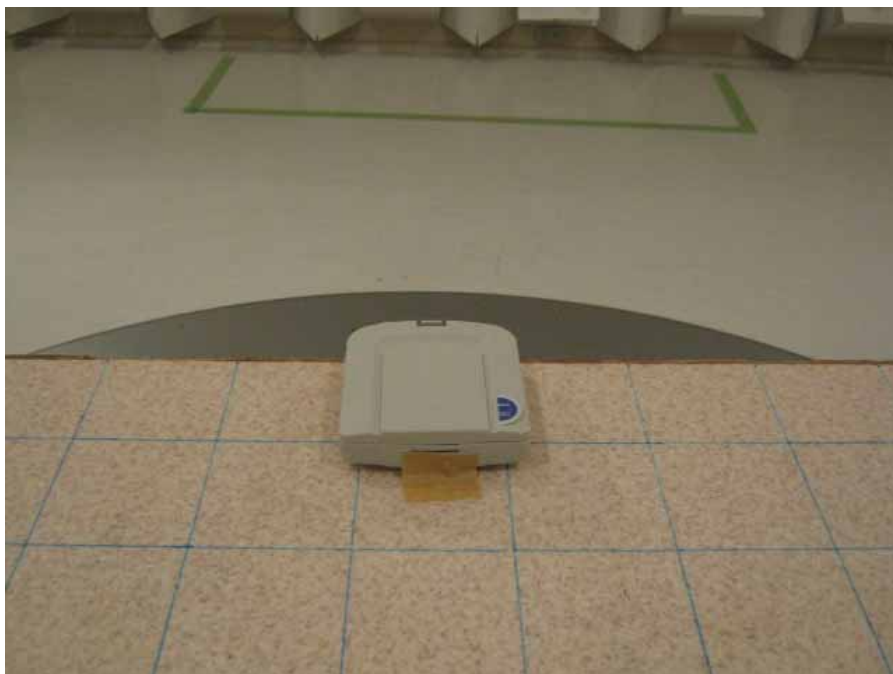
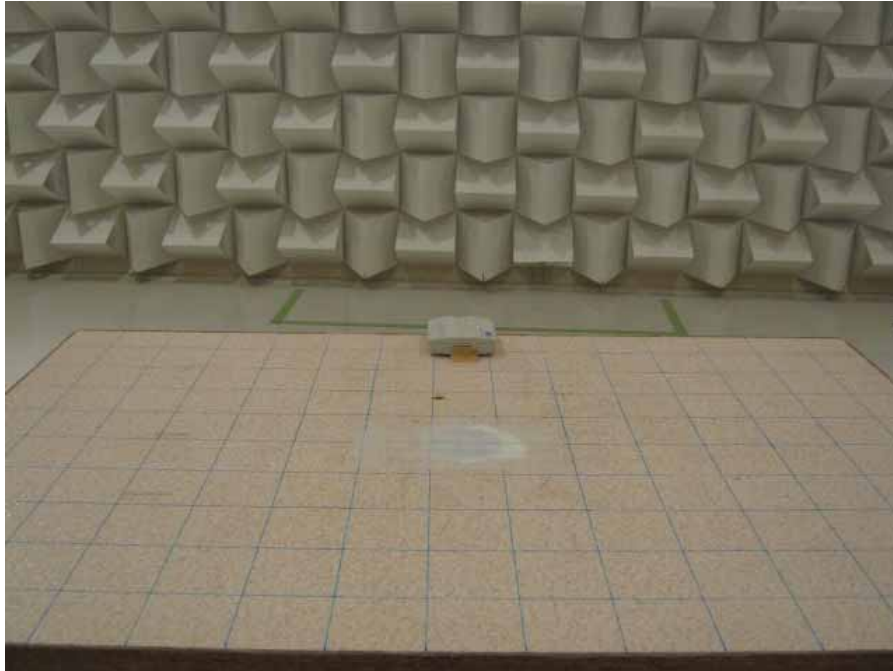
6.1 Setup Photo (AC Conducted Emission)



6.2 Setup Photo (Radiated Emission)



6.2 Setup Photo (Radiated Emission) (Continued)



7. List of Test Measurement Instruments

7.1 AC Power Conducted Emission

Instruments	Manufacturer	Model / Type	Serial No.	Calibration Date Next Calibration
Spectrum Analyzer	ADVANTEST CORPORATION	R3132	140501174	July, 2008 July, 2010
EMI Test Receiver	ROHDE & SCHWARZ	ESCS30	100335	August, 2009 August, 2010
Artificial-Mains Network	KYORITSU CORPORATION	KNW-341C (for EUT)	8-1659-1	July, 2009 July, 2010
RF Selector	Techno Science Japan Corp.	RFM-E221	3148	Confirmed before Test

7.2 Radiated Emission Measurement

Instruments	Manufacturer	Model / Type	Serial No.	Calibration Date Next Calibration
Programmable AC/DC Power Source	NF Corporation	ES18000W	425779	Confirmed Before Test
RF Selector	Techno Science Japan Corp.	RFM-E221	3148	Confirmed Before Test
EMI Test Receiver	ROHDE & SCHWARZ	ESIB40	100211	October, 2009 October, 2010
Biconical Antenna (30to 300MHz)	SCHWARZBECK	VHBB9124 BBA9106	9124-311	September, 2009 September, 2010
Log.-Periodic Antenna (300MHz to1GHz)	SCHWARZBECK	UHALP9108A	645	September, 2009 September, 2010
Horn Antenna (1~12.5GHz)	SCHWARZBECK	BBHA9120D	443	January, 2010 January, 2011
Horn Antenna (12.5~18GHz)	ETS LINDGREN	3160-08	00033782	September, 2009 September, 2010
Horn Antenna (18~26.5GHz)	ETS LINDGREN	3160-09	00034723	September, 2009 September, 2010
Pre Amp (30MHz-1GHz)	HEWLETT PACKARD	8447D	2944A07891	October, 2009 September, 2010
Pre Amp (1GHz-12.75GHz)	TSJ	MLA-0120AML -34	---	January, 2010 January, 2011

7.3 Conducted Radio Measurement

Instruments	Manufacturer	Model / Type	Serial No.	Calibration Date Next Calibration
DC Power Source	KIKUSUI	PAN60-6A	JK002503	---
Spectrum Analyzer	Anritsu	MS2687B	6200162706	April, 2010 April, 2011
Signal Generator	Agilent Technology	E8254A	US41140186	May, 2009 May, 2010
Oscilloscope	Tektronix	TDS794D	B031832	October, 2009 October, 2010
Diode Detector	Agilent Technology	423B	MY42241836	March, 2010 March, 2011