

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 271E0337-YK-D

Applicant : RICOH COMPANY, LTD.
 Kind of Equipment : Option(s) for Radiocommunications
 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Transmitting (2412MHz)
 Remarks : IEEE802.11b
 Date : 5/10/2007
 Test Distance : 3 m
 Temperature : 25 °C
 Humidity : 48 %
 Regulation : FCC Part15C § 15.209

Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	80.00	BB	40.7	39.7	6.6	28.6	1.8	5.8	26.3	25.3	40.0	13.7	14.7
2.	160.00	BB	43.6	34.1	15.3	28.2	2.6	5.8	39.1	29.6	43.5	4.4	13.9
3.	240.00	BB	39.2	32.8	17.5	27.7	3.3	5.8	38.1	31.7	46.0	7.9	14.3
4.	320.00	BB	45.5	36.6	14.8	27.6	3.9	5.9	42.5	33.6	46.0	3.5	12.4
5.	400.00	BB	34.3	38.9	17.1	28.4	4.7	5.9	33.6	38.2	46.0	12.4	7.8
6.	480.00	BB	32.8	39.8	17.8	28.9	5.0	5.9	32.6	39.6	46.0	13.4	6.4
7.	840.08	BB	29.2	28.0	21.5	28.9	6.5	5.9	34.2	33.0	46.0	11.8	13.0

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

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE: KCC-30/31/32/34 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

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 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Transmitting (2437MHz)
 Remarks : IEEE802.11b
 Date : 5/10/2007
 Test Distance : 3 m
 Temperature : 25 °C
 Humidity : 48 %
 Regulation : FCC Part15C § 15.209

Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	80.00	BB	41.9	39.1	6.6	28.6	1.8	5.8	27.5	24.7	40.0	12.5	15.3
2.	160.00	BB	43.2	34.3	15.3	28.2	2.6	5.8	38.7	29.8	43.5	4.8	13.7
3.	240.00	BB	38.9	35.6	17.5	27.7	3.3	5.8	37.8	34.5	46.0	8.2	11.5
4.	320.00	BB	45.2	38.0	14.8	27.6	3.9	5.9	42.2	35.0	46.0	3.8	11.0
5.	400.00	BB	35.6	38.5	17.1	28.4	4.7	5.9	34.9	37.8	46.0	11.1	8.2
6.	480.00	BB	33.4	39.6	17.8	28.9	5.0	5.9	33.2	39.4	46.0	12.8	6.6
7.	840.00	BB	30.6	28.2	21.5	28.9	6.5	5.9	35.6	33.2	46.0	10.4	12.8

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

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 Mode : Transmitting (2462MHz)
 Remarks : IEEE802.11b
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Engineer : Toyokazu Imamura

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1.	80.00	BB	42.2	39.8	6.6	28.6	1.8	5.8	27.8	25.4	40.0	12.2	14.6
2.	160.00	BB	43.4	35.1	15.3	28.2	2.6	5.8	38.9	30.6	43.5	4.6	12.9
3.	240.00	BB	39.5	36.2	17.5	27.7	3.3	5.8	38.4	35.1	46.0	7.6	10.9
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CALCULATION: READING + ANT. FACTOR + CABLE LOSS - AMP. GAIN + ATTEN.

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 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Transmitting (2412MHz)
 Remarks : IEEE802.11b, PK (RBW:1MHz, VBW:1MHz)
 Date : 5/28/2007
 Test Distance : 3 m
 Temperature : 22 °C Engineer : Tatsuya Arai
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209 (PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1457.01	BB	50.0	51.6	25.4	37.6	2.8	10.1	50.7	52.3	74.0	23.3	21.7
2.	2390.00	BB	46.8	47.7	29.8	37.5	3.4	10.3	52.8	53.7	74.0	21.2	20.3
3.	4824.00	BB	47.8	49.2	33.8	37.8	5.4	0.7	49.9	51.3	74.0	24.1	22.7
4.	7236.00	BB	41.0	42.2	37.5	37.3	6.1	0.1	47.4	48.6	74.0	26.6	25.4
5.	9648.00	BB	40.5	40.1	38.9	37.3	7.9	0.6	50.6	50.2	74.0	23.4	23.8
6.	12060.00	BB	41.4	41.3	40.6	36.5	8.6	0.5	54.6	54.5	74.0	19.4	19.5

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

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 Model No. : R-WL54CG
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 Power : AC120V/60Hz
 Mode : Transmitting (2412MHz)
 Remarks : IEEE802.11b, AV (RBW:1MHz, VBW:10Hz)
 Date : 5/28/2007
 Test Distance : 3 m
 Temperature : 22 °C Engineer : Tatsuya Arai
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209 (AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1457.01	BB	34.9	35.2	25.4	37.6	2.8	10.1	35.6	35.9	54.0	18.4	18.1
2.	2390.00	BB	35.4	34.8	29.8	37.5	3.4	10.3	41.4	40.8	54.0	12.6	13.2
3.	4824.00	BB	35.9	34.2	33.8	37.8	5.4	0.7	38.0	36.3	54.0	16.0	17.7
4.	7236.00	BB	27.6	27.5	37.5	37.3	6.1	0.1	34.0	33.9	54.0	20.0	20.1
5.	9648.00	BB	26.6	26.6	38.9	37.3	7.9	0.6	36.7	36.7	54.0	17.3	17.3
6.	12060.00	BB	28.1	28.0	40.6	36.5	8.6	0.5	41.3	41.2	54.0	12.7	12.8

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
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Mode : Transmitting (2437MHz)
Remarks : IEEE802.11b, PK (RBW:1MHz, VBW:1MHz)
Date : 5/28/2007
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Temperature : 22 °C Engineer : Tatsuya Arai
Humidity : 51 %
Regulation : FCC Part15C § 15.209 (PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μV/m]	MARGIN	
			HOR [dB μV]	VER					HOR [dB μV/m]	VER		HOR [dB]	VER
1.	1463.64	BB	49.2	51.2	25.4	37.6	2.8	10.1	49.9	51.9	74.0	24.1	22.1
2.	4874.00	BB	50.2	48.6	34.0	37.7	5.4	0.7	52.6	51.0	74.0	21.4	23.0
3.	7311.00	BB	41.2	40.4	37.6	37.6	6.1	0.1	47.4	46.6	74.0	26.6	27.4
4.	9748.00	BB	40.5	40.7	38.8	37.1	7.8	0.6	50.6	50.8	74.0	23.4	23.2
5.	12185.00	BB	40.8	40.9	40.6	36.4	8.8	0.4	54.2	54.3	74.0	19.8	19.7

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

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
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No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1463.64	BB	34.8	34.9	25.4	37.6	2.8	10.1	35.5	35.6	54.0	18.5	18.4
2.	4874.00	BB	35.1	34.2	34.0	37.7	5.4	0.7	37.5	36.6	54.0	16.5	17.4
3.	7311.00	BB	27.7	27.6	37.6	37.6	6.1	0.1	33.9	33.8	54.0	20.1	20.2
4.	9748.00	BB	26.8	26.9	38.8	37.1	7.8	0.6	36.9	37.0	54.0	17.1	17.0
5.	12185.00	BB	27.8	27.8	40.6	36.4	8.8	0.4	41.2	41.2	54.0	12.8	12.8

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

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			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1457.20	BB	49.5	51.2	25.4	37.6	2.8	10.1	50.2	51.9	74.0	23.8	22.1
2.	2483.50	BB	51.2	48.7	29.7	37.6	3.4	10.4	57.1	54.6	74.0	16.9	19.4
3.	4924.00	BB	48.2	51.5	34.1	37.6	5.4	0.7	50.8	54.1	74.0	23.2	19.9
4.	7386.00	BB	40.1	40.4	37.7	37.8	6.1	0.1	46.2	46.5	74.0	27.8	27.5
5.	9848.00	BB	40.8	40.0	38.8	36.9	7.6	0.6	50.9	50.1	74.0	23.1	23.9
6.	12310.00	BB	41.1	41.8	40.5	36.3	9.0	0.4	54.7	55.4	74.0	19.3	18.6

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

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3.	4924.00	BB	33.5	37.2	34.1	37.6	5.4	0.7	36.1	39.8	54.0	17.9	14.2
4.	7386.00	BB	27.2	27.2	37.7	37.8	6.1	0.1	33.3	33.3	54.0	20.7	20.7
5.	9848.00	BB	26.8	26.7	38.8	36.9	7.6	0.6	36.9	36.8	54.0	17.1	17.2
6.	12310.00	BB	27.9	28.0	40.5	36.3	9.0	0.4	41.5	41.6	54.0	12.5	12.4

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3.	240.00	BB	38.7	35.9	17.5	27.7	3.3	5.8	37.6	34.8	46.0	8.4	11.2
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UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 271E0337-YK-D

Applicant : RICOH COMPANY, LTD.
 Kind of Equipment : Option(s) for Radiocommunications
 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Transmitting (2462MHz)
 Remarks : IEEE802.11g
 Date : 5/10/2007
 Test Distance : 3 m
 Temperature : 25 °C
 Humidity : 48 %
 Regulation : FCC Part15C § 15.209

Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	80.00	BB	42.8	38.7	6.6	28.6	1.8	5.8	28.4	24.3	40.0	11.6	15.7
2.	160.00	BB	38.2	35.3	15.3	28.2	2.6	5.8	33.7	30.8	43.5	9.8	12.7
3.	240.00	BB	37.0	36.0	17.5	27.7	3.3	5.8	35.9	34.9	46.0	10.1	11.1
4.	320.00	BB	45.9	39.2	14.8	27.6	3.9	5.9	42.9	36.2	46.0	3.1	9.8
5.	400.00	BB	36.0	39.3	17.1	28.4	4.7	5.9	35.3	38.6	46.0	10.7	7.4
6.	480.00	BB	34.5	40.6	17.8	28.9	5.0	5.9	34.3	40.4	46.0	11.7	5.6
7.	840.08	BB	28.6	27.8	21.5	28.9	6.5	5.9	33.6	32.8	46.0	12.4	13.2

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

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE: KCC-30/31/32/34 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 271E0337-YK-D

Applicant : RICOH COMPANY, LTD.
 Kind of Equipment : Option(s) for Radiocommunications
 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Transmitting (2412MHz)
 Remarks : IEEE802.11g, PK (RBW:1MHz, VBW:1MHz)
 Date : 5/28/2007
 Test Distance : 3 m
 Temperature : 22 °C Engineer : Tatsuya Arai
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209 (PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1464.66	BB	48.8	50.3	25.4	37.6	2.8	10.1	49.5	51.0	74.0	24.5	23.0
2.	2390.00	BB	52.9	48.9	29.8	37.5	3.4	10.3	58.9	54.9	74.0	15.1	19.1
3.	4824.00	BB	46.2	45.5	33.8	37.8	5.4	0.7	48.3	47.6	74.0	25.7	26.4
4.	7236.00	BB	40.5	40.9	37.5	37.3	6.1	0.1	46.9	47.3	74.0	27.1	26.7
5.	9648.00	BB	40.2	39.9	38.9	37.3	7.9	0.6	50.3	50.0	74.0	23.7	24.0
6.	12060.00	BB	42.7	41.2	40.6	36.5	8.6	0.5	55.9	54.4	74.0	18.1	19.6

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 271E0337-YK-D

Applicant : RICOH COMPANY, LTD.
 Kind of Equipment : Option(s) for Radiocommunications
 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Transmitting (2412MHz)
 Remarks : IEEE802.11g, AV (RBW:1MHz, VBW:10Hz)
 Date : 5/28/2007
 Test Distance : 3 m
 Temperature : 22 °C Engineer : Tatsuya Arai
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209 (AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1464.66	BB	34.4	35.0	25.4	37.6	2.8	10.1	35.1	35.7	54.0	18.9	18.3
2.	2390.00	BB	35.7	33.4	29.8	37.5	3.4	10.3	41.7	39.4	54.0	12.3	14.6
3.	4824.00	BB	33.4	32.2	33.8	37.8	5.4	0.7	35.5	34.3	54.0	18.5	19.7
4.	7236.00	BB	27.5	27.6	37.5	37.3	6.1	0.1	33.9	34.0	54.0	20.1	20.0
5.	9648.00	BB	26.8	26.5	38.9	37.3	7.9	0.6	36.9	36.6	54.0	17.1	17.4
6.	12060.00	BB	28.3	28.0	40.6	36.5	8.6	0.5	41.5	41.2	54.0	12.5	12.8

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 271E0337-YK-D

Applicant : RICOH COMPANY, LTD.
 Kind of Equipment : Option(s) for Radiocommunications
 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Transmitting (2437MHz)
 Remarks : IEEE802.11g, PK (RBW:1MHz, VBW:1MHz)
 Date : 5/28/2007
 Test Distance : 3 m
 Temperature : 22 °C Engineer : Tatsuya Arai
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209 (PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1457.69	BB	49.9	50.8	25.4	37.6	2.8	10.1	50.6	51.5	74.0	23.4	22.5
2.	4874.00	BB	46.6	46.8	34.0	37.7	5.4	0.7	49.0	49.2	74.0	25.0	24.8
3.	7331.00	BB	40.6	40.8	37.6	37.6	6.1	0.1	46.8	47.0	74.0	27.2	27.0
4.	9748.00	BB	40.1	39.8	38.8	37.1	7.8	0.6	50.2	49.9	74.0	23.8	24.1
5.	12185.00	BB	40.9	40.5	40.6	36.4	8.8	0.4	54.3	53.9	74.0	19.7	20.1

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 271E0337-YK-D

Applicant : RICOH COMPANY, LTD.
 Kind of Equipment : Option(s) for Radiocommunications
 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Transmitting (2437MHz)
 Remarks : IEEE802.11g, AV (RBW:1MHz, VBW:10Hz)
 Date : 5/28/2007
 Test Distance : 3 m
 Temperature : 22 °C Engineer : Tatsuya Arai
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209 (AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1457.69	BB	34.6	35.1	25.4	37.6	2.8	10.1	35.3	35.8	54.0	18.7	18.2
2.	4874.00	BB	33.1	32.1	34.0	37.7	5.4	0.7	35.5	34.5	54.0	18.5	19.5
3.	7331.00	BB	27.5	27.5	37.6	37.6	6.1	0.1	33.7	33.7	54.0	20.3	20.3
4.	9748.00	BB	26.7	26.6	38.8	37.1	7.8	0.6	36.8	36.7	54.0	17.2	17.3
5.	12185.00	BB	27.7	27.8	40.6	36.4	8.8	0.4	41.1	41.2	54.0	12.9	12.8

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

■ ANTENNA:KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■ CABLE:KCC-D16/D17 ■ PREAMP:KAF-02 (8449B) ■ EMI RECEIVER:KTR-01 (ES140)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 271E0337-YK-D

Applicant : RICOH COMPANY, LTD.
 Kind of Equipment : Option(s) for Radiocommunications
 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Transmitting (2462MHz)
 Remarks : IEEE802.11g, PK (RBW:1MHz, VBW:1MHz)
 Date : 5/28/2007
 Test Distance : 3 m
 Temperature : 22 °C Engineer : Tatsuya Arai
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209 (PK Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1458.71	BB	49.4	51.1	25.4	37.6	2.8	10.1	50.1	51.8	74.0	23.9	22.2
2.	2483.50	BB	55.9	48.5	29.7	37.6	3.4	10.4	61.8	54.4	74.0	12.2	19.6
3.	4924.00	BB	47.3	51.1	34.1	37.6	5.4	0.7	49.9	53.7	74.0	24.1	20.3
4.	7386.00	BB	40.8	40.5	37.7	37.8	6.1	0.1	46.9	46.6	74.0	27.1	27.4
5.	9848.00	BB	39.9	40.3	38.8	36.9	7.6	0.6	50.0	50.4	74.0	24.0	23.6
6.	12310.00	BB	41.1	41.6	40.5	36.3	9.0	0.4	54.7	55.2	74.0	19.3	18.8

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 271E0337-YK-D

Applicant : RICOH COMPANY, LTD.
 Kind of Equipment : Option(s) for Radiocommunications
 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Transmitting (2462MHz)
 Remarks : IEEE802.11g, AV (RBW:1MHz, VBW:10Hz)
 Date : 5/28/2007
 Test Distance : 3 m
 Temperature : 22 °C Engineer : Tatsuya Arai
 Humidity : 51 %
 Regulation : FCC Part15C § 15.209 (AV Detection)

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1458.71	BB	34.4	35.1	25.4	37.6	2.8	10.1	35.1	35.8	54.0	18.9	18.2
2.	2483.50	BB	34.8	32.3	29.7	37.6	3.4	10.4	40.7	38.2	54.0	13.3	15.8
3.	4924.00	BB	32.4	35.4	34.1	37.6	5.4	0.7	35.0	38.0	54.0	19.0	16.0
4.	7386.00	BB	27.2	27.1	37.7	37.8	6.1	0.1	33.3	33.2	54.0	20.7	20.8
5.	9848.00	BB	26.6	26.7	38.8	36.9	7.6	0.6	36.7	36.8	54.0	17.3	17.2
6.	12310.00	BB	28.0	28.0	40.5	36.3	9.0	0.4	41.6	41.6	54.0	12.4	12.4

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-03 (3160-09) 18-26GHz
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-02 (8449B) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 271E0337-YK-D

Applicant : RICOH COMPANY, LTD.
 Kind of Equipment : Option(s) for Radiocommunications
 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Receiving(2437MHz)
 Remarks : IEEE802.11b/g
 Date : 5/11/2007
 Test Distance : 3 m
 Temperature : 22 °C
 Humidity : 46 %
 Regulation : FCC Part15B § 15.109(a)

Engineer : Toyokazu Imamura

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	80.00	BB	42.8	39.7	6.6	28.6	1.8	5.8	28.4	25.3	40.0	11.6	14.7
2.	160.00	BB	36.4	30.3	15.3	28.2	2.6	5.8	31.9	25.8	43.5	11.6	17.7
3.	240.00	BB	37.8	34.4	17.5	27.7	3.3	5.8	36.7	33.3	46.0	9.3	12.7
4.	320.00	BB	45.7	38.5	14.8	27.6	3.9	5.9	42.7	35.5	46.0	3.3	10.5
5.	400.00	BB	35.2	39.6	17.1	28.4	4.7	5.9	34.5	38.9	46.0	11.5	7.1
6.	480.00	BB	32.9	40.3	17.8	28.9	5.0	5.9	32.7	40.1	46.0	13.3	5.9
7.	840.08	BB	29.3	28.5	21.5	28.9	6.5	5.9	34.3	33.5	46.0	11.7	12.5

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

■ ANTENNA: KBA-03 (BBA9106) 30-299.99MHz/KLA-03 (USLP9143) 300-1000MHz
 ■ CABLE: KCC-30/31/32/34 ■ PREAMP: KAF-05 (8447D) ■ EMI RECEIVER: KTR-01 (ES140)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 271E0337-YK-D

Applicant : RICOH COMPANY, LTD.
 Kind of Equipment : Option(s) for Radiocommunications
 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Receiving(2437MHz)
 Remarks : IEEE802.11b/g PK (RBW:1MHz, VBW:1MHz)
 Date : 5/28/2007
 Test Distance : 3 m
 Temperature : 22 °C
 Humidity : 51 %
 Regulation : FCC Part15B CLASS B (PK)

Engineer : Ichiro Isozaki

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1478.45	BB	45.4	46.0	25.5	37.6	2.8	10.1	46.2	46.8	74.0	27.8	27.2
2.	2437.00	BB	44.5	43.4	29.7	37.5	3.4	10.4	50.5	49.4	74.0	23.5	24.6
3.	4874.00	BB	41.9	41.9	34.0	37.7	5.4	0.7	44.3	44.3	74.0	29.7	29.7
4.	7311.00	BB	39.2	43.5	37.6	37.6	6.1	0.1	45.4	49.7	74.0	28.6	24.3
5.	9748.00	BB	41.7	43.9	38.8	37.1	7.8	0.6	51.8	54.0	74.0	22.2	20.0

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-06 (3116) 18-26GHz
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-02, KAF-06 ■ SPECTRUMANALYZER: KTR-01 (ES140)

DATA OF RADIATION TEST

UL Japan, Inc.
YAMAKITA No.1 ANECHOIC CHAMBER
Report No. : 271E0337-YK-D

Applicant : RICOH COMPANY, LTD.
 Kind of Equipment : Option(s) for Radiocommunications
 Model No. : R-WL54CG
 Serial No. : 61290054
 Power : AC120V/60Hz
 Mode : Receiving(2437MHz)
 Remarks : IEEE802.11b/g AV (RBW:1MHz, VBW:10Hz)
 Date : 5/28/2007
 Test Distance : 3 m
 Temperature : 22 °C
 Humidity : 51 %
 Regulation : FCC Part15B § 15.109(a)

Engineer : Ichiro Isozaki

No.	FREQ. [MHz]	ANT TYPE	READING		ANT FACTOR [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	ATTEN. [dB]	RESULT		LIMITS [dB μ V/m]	MARGIN	
			HOR [dB μ V]	VER					HOR [dB μ V/m]	VER		HOR [dB]	VER
1.	1478.45	BB	33.2	33.2	25.5	37.6	2.8	10.1	34.0	34.0	54.0	20.0	20.0
2.	2437.00	BB	32.3	31.6	29.7	37.5	3.4	10.4	38.3	37.6	54.0	15.7	16.4
3.	4874.00	BB	30.3	29.3	34.0	37.7	5.4	0.7	32.7	31.7	54.0	21.3	22.3
4.	7311.00	BB	28.7	30.8	37.6	37.6	6.1	0.1	34.9	37.0	54.0	19.1	17.0
5.	9748.00	BB	29.0	31.9	38.8	37.1	7.8	0.6	39.1	42.0	54.0	14.9	12.0

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

■ ANTENNA: KHA-01 (SAS-200 571) 1-18GHz/KHA-06 (3116) 18-26GHz
 ■ CABLE: KCC-D16/D17 ■ PREAMP: KAF-02, KAF-06 ■ SPECTRUMANALYZER: KTR-01 (ES140)

Power Density (Conducted)

UL Japan, Inc.
YAMAKITA NO.2 Shielded Room

COMPANY : RICOH COMPANY, LTD
EQUIPMENT : Option(s) for Radiocommunications
MODEL NUMBER : R-WL54CG
SERIAL NUMBER : 61290054
FCC ID : BBP-WLRW54G1
POWER : AC120V/60Hz
TEST MODE : Transmitting

REPORT NO : 27IE0337-YK-D
REGULATION : Fcc Part15SubpartC 247(e)
DATE : 2007/05/29
TEMP./HUMI : 25°C/42%

ENGINEER : Tatsuya Arai

IEEE802.11b(11Mbps)

CH	FREQ [GHz]	S/A Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit [dBm]	MARGIN [dB]
Low	2.41173	-12.54	3.0	-9.54	8.0	17.5
Mid	2.43711	-12.56	3.0	-9.56	8.0	17.6
High	2.46192	-13.67	3.0	-10.67	8.0	18.7

IEEE802.11g(54Mbps)

CH	FREQ [GHz]	S/A Reading [dBm]	Cable Loss [dB]	Results [dBm]	Limit [dBm]	MARGIN [dB]
Low	2.41198	-16.62	3.0	-13.62	8.0	21.6
Mid	2.43698	-16.14	3.0	-13.14	8.0	21.1
High	2.46198	-16.76	3.0	-13.76	8.0	21.8

Sample Calculation:

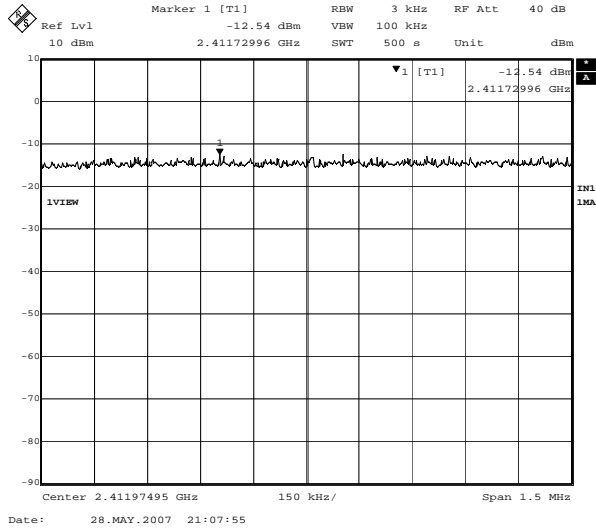
Result = Reading + Cable Loss

Power Density: FCC 15.247(e)

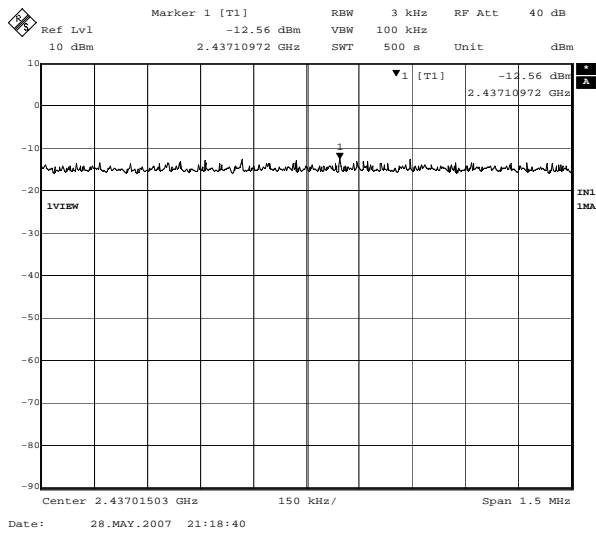
COMPANY : RICOH COMPANY, LTD
EQUIPMENT : Option(s) for Radiocommunications
MODEL NUMBER: R-WL54CG
SERIAL NUMBER: 61290054
FCC ID : BBP-WLRW54G1
POWER : AC120V/60Hz
[IEEE802.11b(11Mbps)]

UL Japan, Inc. Yamakita No.2 Shielded Room
REPORT NO : 27IE0337-YK-D
REGULATION : FCC Part15SubpartC 247(e)
DATE : 2007/05/29
TEMP./HUMI : 25°C/42%
TEST MODE : Transmitting
ENGINEER : Tatsuya Arai

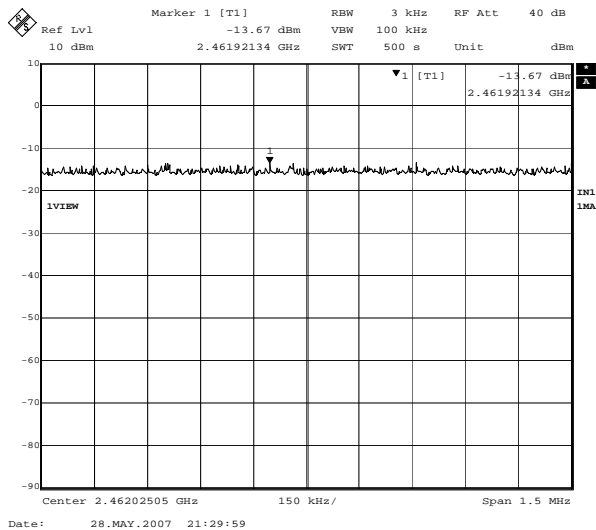
1. ch 1: 2412MHz



2. ch 6: 2437MHz



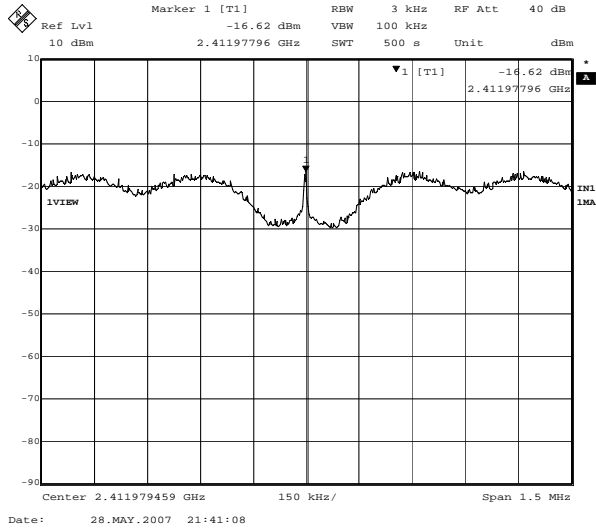
3. ch 11: 2462MHz



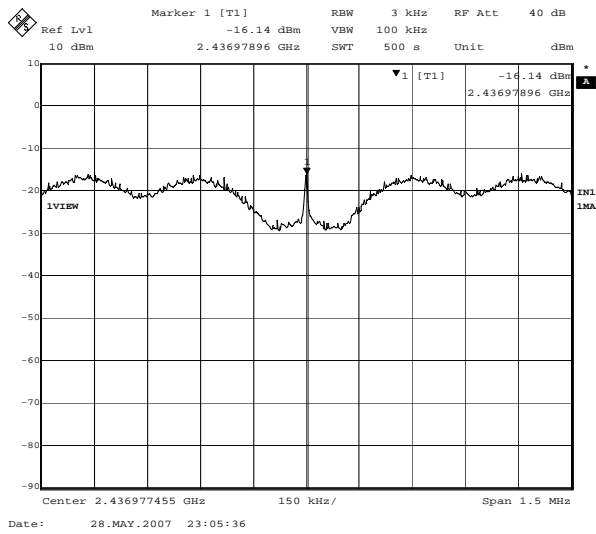
Power Density: FCC 15.247(e)

COMPANY : RICOH COMPANY, LTD
EQUIPMENT : Option(s) for Radiocommunications
MODEL NUMBER: R-WL54CG
SERIAL NUMBER: 61290054
FCC ID : BBP-WLRW54G1
POWER : AC120V/60Hz
 [IEEE802.11g(54Mbps)]
1. ch 1: 2412MHz

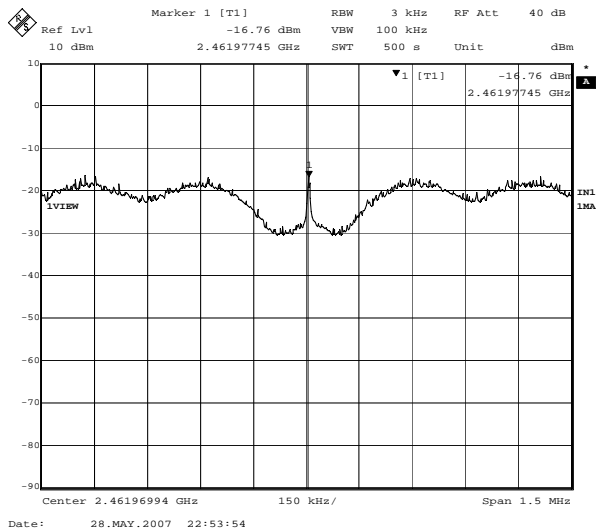
UL Japan, Inc. Yamakita No.2 Shielded Room
REPORT NO : 27IE0337-YK-D
REGULATION : FCC Part15SubpartC 247(e)
DATE : 2007/05/29
TEMP./HUMI : 25°C/42%
TEST MODE : Transmitting
ENGINEER : Tatsuya Arai



2. ch 6: 2437MHz



3. ch 11: 2462MHz

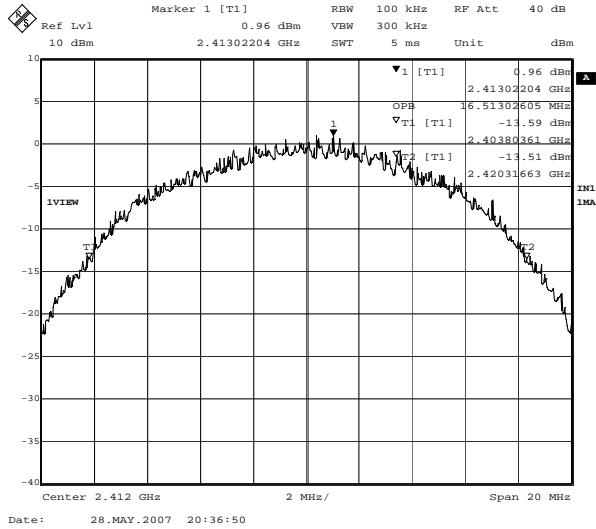


Occupied Bandwidth(99%)

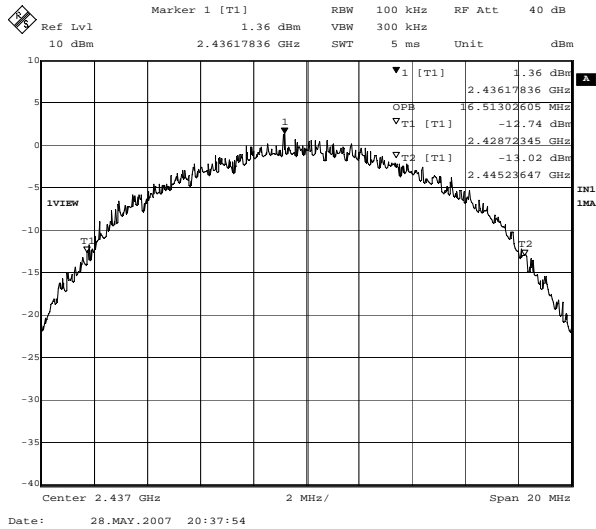
COMPANY : RICOH COMPANY, LTD
EQUIPMENT : Option(s) for Radiocommunications
MODEL NUMBER: R-WL54CG
SERIAL NUMBER: 61290054
FCC ID : BBP-WLRW54G1
POWER : AC120V/60Hz
 [IEEE802.11b(11Mbps)]

UL Japan, Inc. Yamakita No.2 Shielded Room
REPORT NO : 27IE0337-YK-D
REGULATION : RSS-210
DATE : 2007/05/29
TEMP./HUMI : 25°C/42%
TEST MODE : Transmitting
ENGINEER : Tatsuya Arai

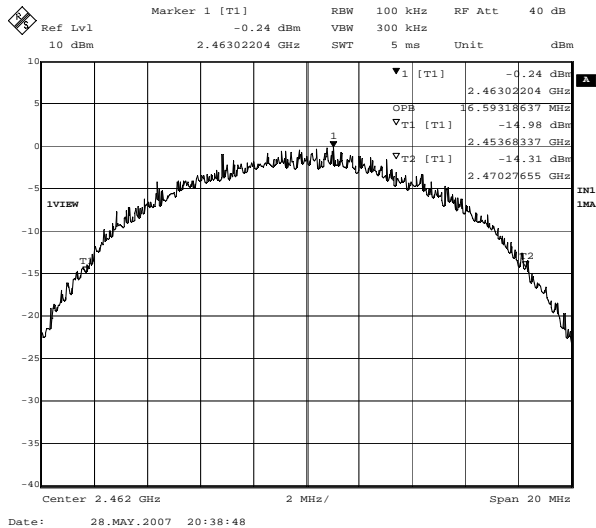
1. ch 1: 2412MHz/ Occupied Bandwidth:16.51MHz



2. ch 6: 2437MHz/ Occupied Bandwidth:16.51MHz



3. ch 11: 2462MHz/ Occupied Bandwidth:16.59MHz

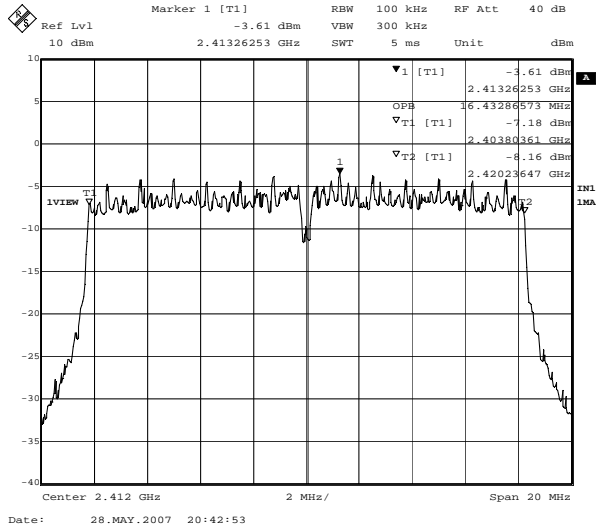


Occupied Bandwidth(99%)

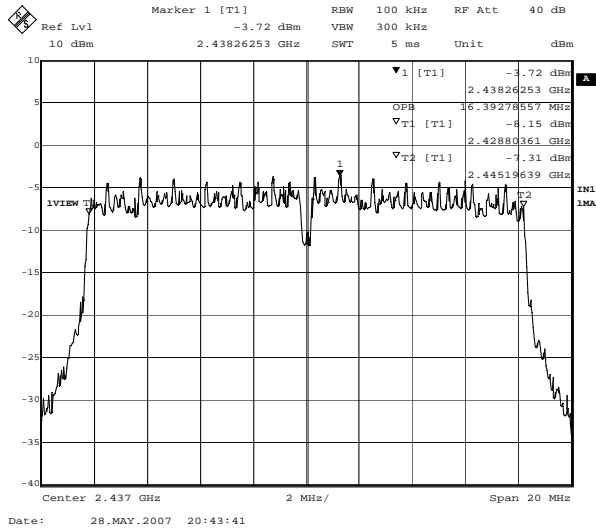
COMPANY : RICOH COMPANY, LTD
EQUIPMENT : Option(s) for Radiocommunications
MODEL NUMBER : R-WL54CG
SERIAL NUMBER : 61290054
FCC ID : BBP-WLRW54G1
POWER : AC120V/60Hz
[IEEE802.11g(54Mbps)]

UL Japan, Inc. Yamakita No.2 Shielded Room
REPORT NO : 27IE0337-YK-D
REGULATION : RSS-210
DATE : 2007/05/29
TEMP./HUMI : 25°C/42%
TEST MODE : Transmitting
ENGINEER : Tatsuya Arai

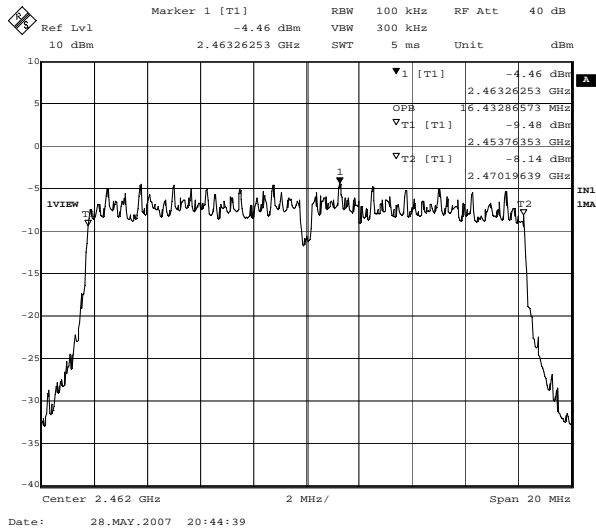
1. ch 1: 2412MHz/ Occupied Bandwidth:16.43MHz



2. ch 6: 2437MHz/ Occupied Bandwidth:16.39MHz



3. ch 11: 2462MHz/ Occupied Bandwidth:16.43MHz



APPENDIX 3 Test Instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
YA-CE	Conducted emission(software)	UL Japan	CE(Ver.1.6)	CE	-
YA-RE	Radiated emission(software)	UL Japan	RE(Ver.1.5)	RE	-
KAEC-01(NSA)	Anechoic Chamber	JSE	Semi 3m	RE	2006/08/31 * 12
KAF-05	Pre Amplifier	Agilent	8447D	RE	2007/04/13 * 12
KAT6-01	Attenuator	INMET	18N-6dB	RE	2007/03/28 * 12
KCC-30/31/32 /34/KRM-03	Coaxial Cable/RF Relay Matrix	Fujikura/Suhner/TSJ	5D-2W/S04272B/RFM-E421	RE	2006/11/27 * 12
KCC-33/34/KRM-03	Coaxial Cable/RF Relay Matrix	Fujikura/Suhner/TSJ	5D-2W/S04272B/RFM-E421	CE	2006/11/27 * 12
KLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2007/01/06 * 12
KLS-02	LISN(AMN)	Schwarzbeck	NSLK8127	CE	2006/09/25 * 12
KSA-04	Spectrum Analyzer	Advantest	R3271A	CE/RE	2006/09/05 * 12
KOS-01	Humidity Indicator	Custom	CTH-190	CE/AT all	2006/07/14 * 24
KOS-02	Humidity Indicator	Custom	CTH-190	RE	2006/07/10 * 24
KAT10-S1	Attenuator	Agilent	8490D 010	RE	2007/04/11 * 12
KCC-D16/D17	Coaxial Cable	INSULATED WIRE INC	KPS-1501-200-KPS/KPS-1501-2000-KPS	RE	2007/02/05 * 12
KFL-01	Highpass Filter	Hewlett Packard	84300 80038	RE	2007/04/11 * 12
KHA-01	Horn Antenna	A.H.Systems	SAS-200/571	RE	2006/08/17 * 12
KHA-06	Horn Antenna	ETS LINDGREN	3116	RE	2006/08/17 * 12
APPRA05	Pre Amplifier	Hewlett Packard	8449B	RE	2006/12/21 * 12
MPM-09	Power Meter	Anritsu	ML2495A	AT 2	2006/09/20 * 12
MPSE-12	Power sensor	Anritsu	MA2411B	AT 2	2006/09/20 * 12
KTR-01	Test Receiver	Rohde & Schwarz	ESI40	CE/RE/AT 1,3,4	2007/04/12 * 12
KBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2007/01/06 * 12
KCC-D16	Coaxial Cable	INSULATED WIRE INC	KPS-1501-200-KPS	AT	2007/02/05 * 12
KHA-03	Horn Antenna	EMCO	3160-09	RE	2007/04/14 * 12
KAF-02	Pre Amplifier	Hewlett Packard	8449B	RE	2007/04/24 * 12

The expiration date of the calibration is the end of the expired month .

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

Test Item :

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