FCC and IC TEST REPORT

for

Harman Consumer,Inc

Remote Control Box

Model Number: MS-WBC

Prepared for : Harman Consumer,Inc
Address : 8500 Balboa blvd.,Northridge,CA 91329 USA

Prepared By : NS Technology Co., Ltd.
Address : Chenwu Industrial Zone, Houjie Town, Dongguan City, Guangdong, China

Tel: +86-769-85935656
Fax: +86-769-85991080

Report Number : NSE-F10064978
Date of Test : May 12~May 23, 2010
Date of Report : May 25, 2010

TABLE OF CONTENTS

NS Technology Co., Ltd.

Applicant: **Address:**	Harman Consumer,Inc 8500 Balboa blvd.,Northridge,CA 91329 USA		
Manufacturer: **Address:**	Asian Elite International Ltd. NO 681 FENGTING ROAD WEITING TOWNSHIP SUZHOU INDUSTRIAL PARK JIANGSU PROVINCE CHINA 215122		
E.U.T:	Remote Control Box		
Model Number:	MS-WBC		
Trade Name:	JBL	**Operating Frequency:**	2440MHz
Date of Receipt:	May 10, 2010	**Date of Test:**	May 12~May 23, 2010
Test Specification:	FCC Part 15 Subpart C: Oct. 2009 ANSI C63.4:2009 RSS-210,Issue 7 June 2007, RSS-GEN, Issue 2 June 2007		
Test Result:	The equipment under test was found to be compliance with the requirements of the standards applied. **Issue Date: May 25 ,2010**		

Tested by:	Reviewed by:	Approved by:
Jade	Iceman	Steven
Jade/ Engineer	Iceman Hu / Supervisor	Steven Lee / Manager

Other Aspects:
None.

Abbreviations: OK/P=passed fail/F=failed n.a/N=not applicable E.U.T=equipment under tested

1. GENERAL PRODUCT INFORMATION

1.1. Product Function

Details please refer to Technical Construction Form and User Manual.

1.2. Description of Device (EUT)

E.U.T.	:	Remote Control Box
Model No.	:	MS-WBC
Operating Frequency	:	2440MHz
Number of Channels	:	1 Channels
Type of Modulation	:	GFSK
Antenna Type	:	Integral
System Input Voltage	:	Nominal Voltage: DC 3V; DC 12V
Temperature Range(Operating)	:	0 ~+ 40℃

1.3. Difference between Model Numbers

1.4. Independent Operation Modes

The basic operation modes are:

1.4.1. TX Mode

2. TEST SITES

2.1. Test Facilities

EMC Lab : Certificated by TUV Rheinland, Germany.
Date of registration: July 28, 2003

Certificated by FCC, USA
Registration No.: 502831
Date of registration: February 09, 2009

Certificated by VCCI, Japan
Registration No.: R-2527 & C-2770
Date of registration: March 23, 2007

Certificated by CNAL, CHINA
Registration No.: L1744
Date of registration: November 25, 2004

Certificated by Intertek ETL SEMKO
Registration No.: TMP-013
Date of registration: June 11, 2005

Certificated by TUV/PS, Hong Kong
Date of registration: December 1, 2005

Certificated by Industry Canada
Registration No.: 5936A
Date of registration: March 4, 2009

Certificated by ATCB, America
Date of registration: August 03, 2006

Name of Firm : NS Technology Co., Ltd.

Site Location : Chenwu Industrial Zone, Houjie Town, Dongguan City, Guangdong, China

2.2. List of Test and Measurement Instruments

2.2.1.For radiated emission test (30MHz-1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
EMI Test Receiver	Rohde & Schwarz	ESCS30	100340	May 31,09	May 31,10
Spectrum Analyzer	Agilent	E7405A	MY45118807	May 31,09	May 31,10
Bilog Antenna	Teseq	CBL 6111D	25758	Oct. 15,09	Oct. 15,10
Signal Amplifier	Agilent	8447D	2944A10488	May 2,10	May 2,11
50Ω Coaxial Switch	ANRITSU	MP59B	6200530577	May 2,10	May 2,11
RF Cable	IMRO	IMRO-400	966 Cable 1#	May 2,10	May 2,11
RF Cable	DRAKA	M17/84-RG 223	966 Cable 2#	May 2,10	May 2,11

2.2.2.For radiated emission and band edge test(above 1GHz)

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Agilent	E7405A	MY45118807	May 31,09	May 31,10
Horn Antenna	EMCO	3117	00062558	Jan. 19,09	Jan. 19,11
Signal Amplifier	BURGEON	PEC-38-30M18G -12-SFF	NSEMC001	May 31,09	May 31,11
RF Cable	DRAKA	M06/25-RG102	966Cable 3#24G	May 2,10	May 2,11

2.2.3.For 99% bandwidth and 20dB bandwidth test

Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
Spectrum Analyzer	Rohde&Schwarz	FSL3	101507	May 31,09	May 31,10

3. TEST SET-UP AND OPERATION MODES

3.1. Principle of Configuration Selection

The equipment under test (EUT) was configured to measure its highest possible radiated level. The test modes were adapted accordingly in reference to the Operating Instructions.

3.2. Block Diagram of Test Set-up

System Diagram of Connections Between EUT and Simulators

***Note**: We test X-axis, Y-axis, and Z-axis,. The Y-axis is the worst mode, so only the worst mode test data was included in the report.*

(EUT : Remote Control Box)

3.3. Test Operation Mode and Test Software

Refer to clause 1.4

3.4. Special Accessories and Auxiliary Equipment

None.

3.5. Countermeasures to Achieve EMC Compliance

None.

4. TEST SUMMARY

Test items and result lists

No.	Item	Standard	Results
1	Conduction Emission Test	FCC Part15C: 15.209 ANSI C63.4-2003 RSS-210 RSS-GEN 7.2.2	N/A
2	Radiated Emission Test	FCC Part15C: 15.249 ANSI C63.4-2003 RSS-210 A2.9 RSS-GEN	PASS
3	Band Edge Compliance Test	FCC Part15: 15.249 RSS-210 RSS-GEN	PASS
4	20dB（99%） Bandwidth Test	FCC Part 15: 15.215 RSS-210 RSS-GEN	PASS

Note: N/A is an abbreviation for Not Applicable.

5. EMISSION TEST RESULTS

5.1. Radiated Emission

5.1.1. Test limits

1) FCC part 15C section 15.209
2) FCC part 15C section 15.249(a)
3) RSS-210 A2.9

5.1.2. Test procedure

The EUT was placed on a turn table which was 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on a antenna tower. At the frequency band of 30MHz to 1GHz,The measuring antenna moved up and down to find out the maximum emission level. It moved from 1 to 4 m for horizontal and vertical polarizations. The broadband antenna (calibrated by dipole antenna) was used as a receiving antenna. At the frequency band of 1GHz to 10GHz,The measuring antenna moved from 1 to 4 m for horizontal and vertical polarization. The horn antenna was used as a receiving antenna.

The resolution bandwidth and video bandwidth of the test receiver was 120 kHz and 300kHz for Quasi-peak detection at frequency below 1GHz.

The resolution bandwidth and video bandwidth of the test receiver was1MHz and 1MHz for Peak detection at frequency above 1GHz.

For Average measurement at frequency above 1GHz.The resolution bandwidth of the test receiver was 1MHz ; due to the shortest pulse width T is 116us, according the video bandwidth should not smaller than 1/T,so the video bandwidth is 10Hz.

In 18GHz to 25GHz, The EUT was checked by Horn ANT . But the test result is background.

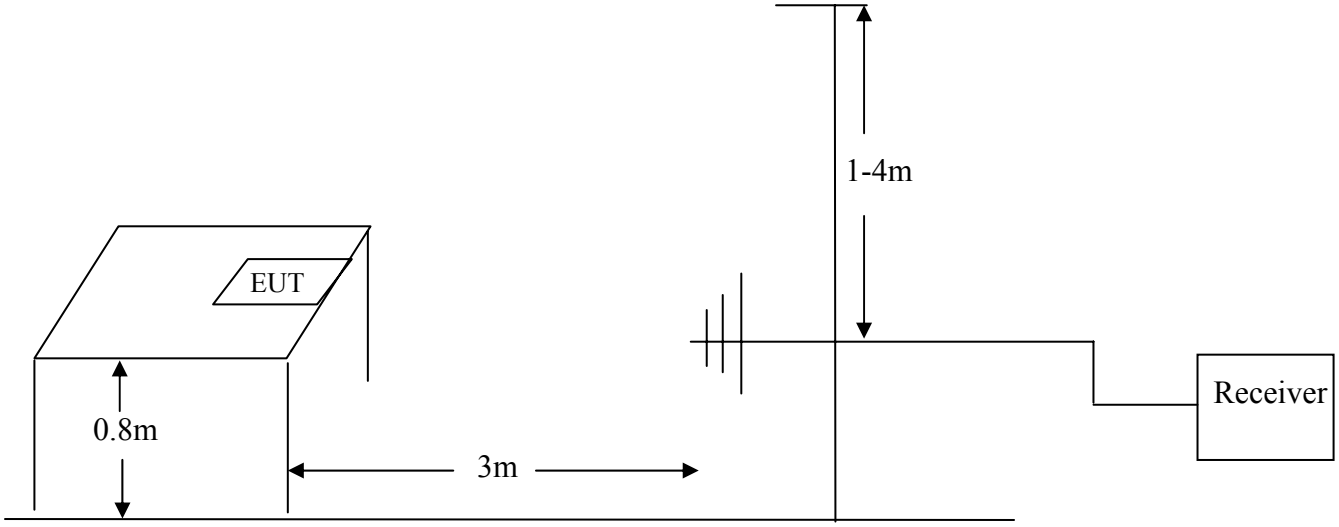
The EUT position(X. Y. Z) were checked and worse case was happened in Y position. So Y position was chose for find measurement.
The EUT was tested in Chamber Site.

The EUT is no RX module,so it's needn't to test RX mode.

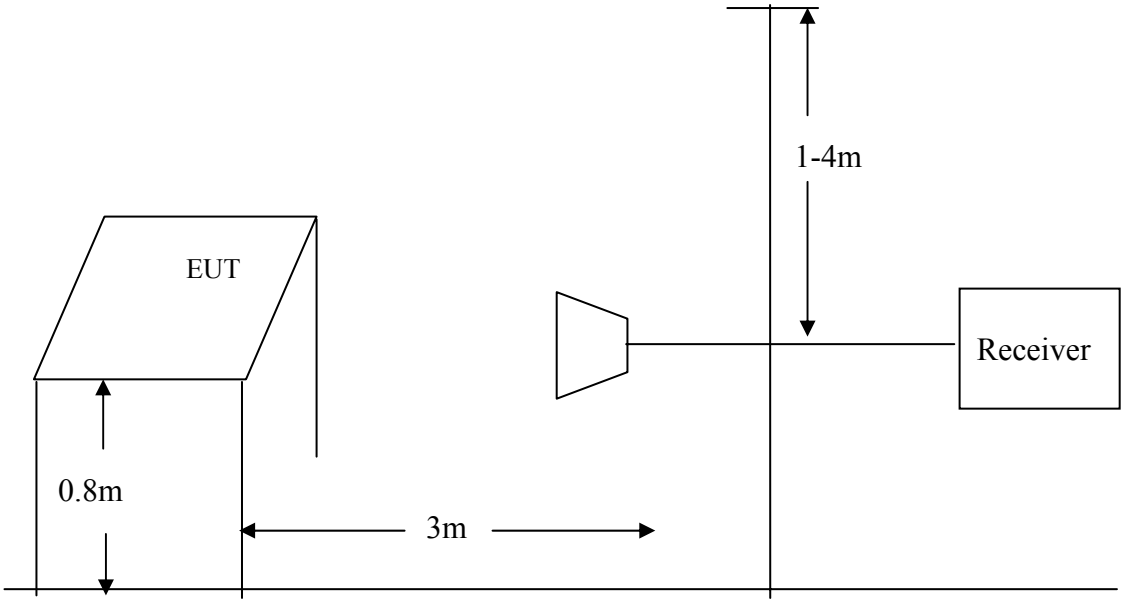
The DC12V is worst mode,so the data is only DC 12V about 1GHz~18GHz.

5.1.3.Test Setup Diagram

5.1.3.1. Frequency range: 30MHz-1000MHz

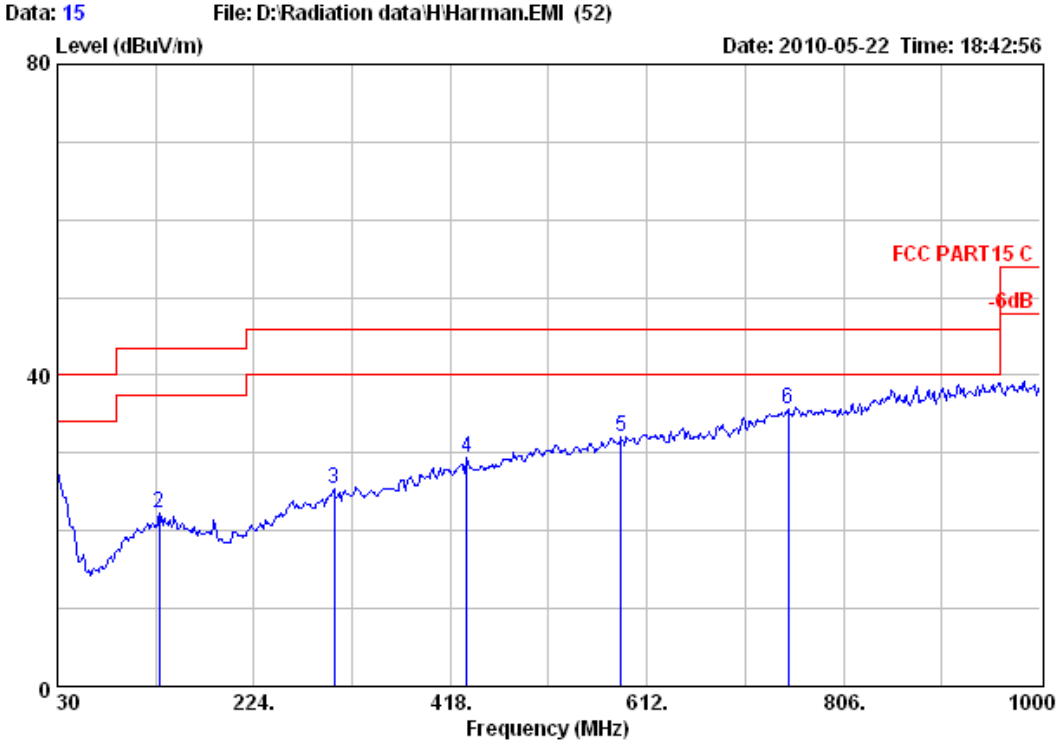


5.1.3.2. Frequency range: above 1 GHz



NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

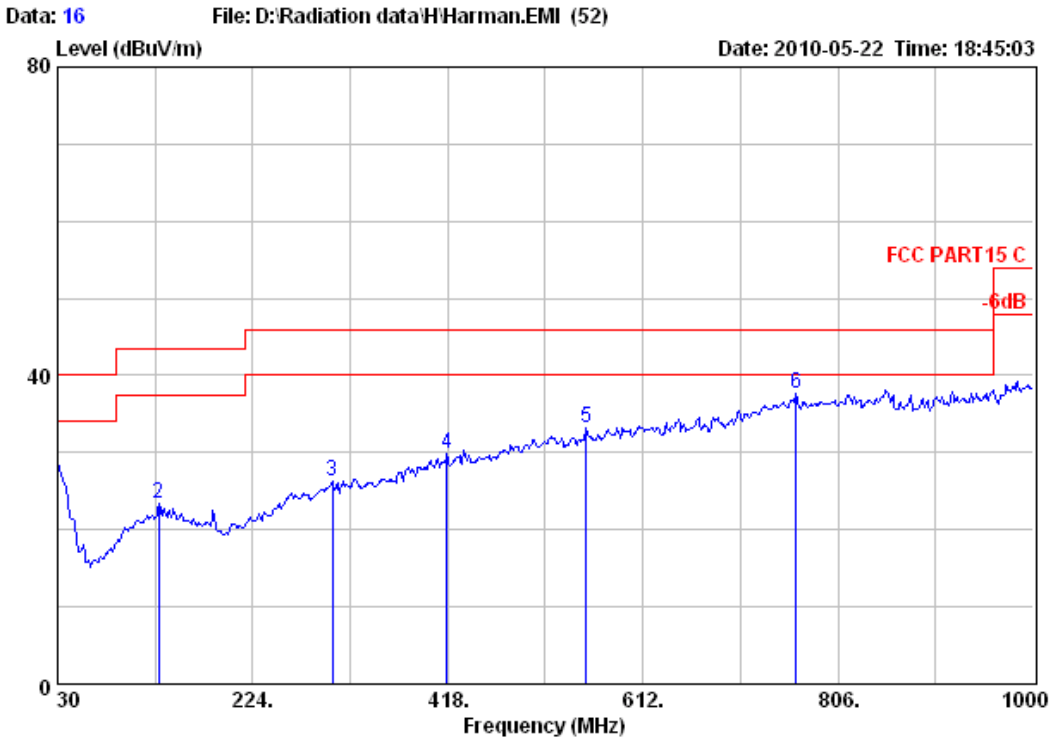


Test Site : 10m Chamber
Limit : FCC PART15 C
Dis. / Ant. : 3m 25758-3 Ant. Pol.: VERTICAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 3V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	30.00	27.66	40.00	12.34	6.08	21.00	0.58	QP
2	130.88	22.31	43.50	21.19	9.08	12.02	1.21	QP
3	303.54	25.32	46.00	20.68	9.81	13.62	1.89	QP
4	434.49	29.39	46.00	16.61	10.07	17.07	2.25	QP
5	586.78	32.14	46.00	13.86	9.86	19.59	2.69	QP
6	751.68	35.57	46.00	10.43	9.32	23.22	3.03	QP

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

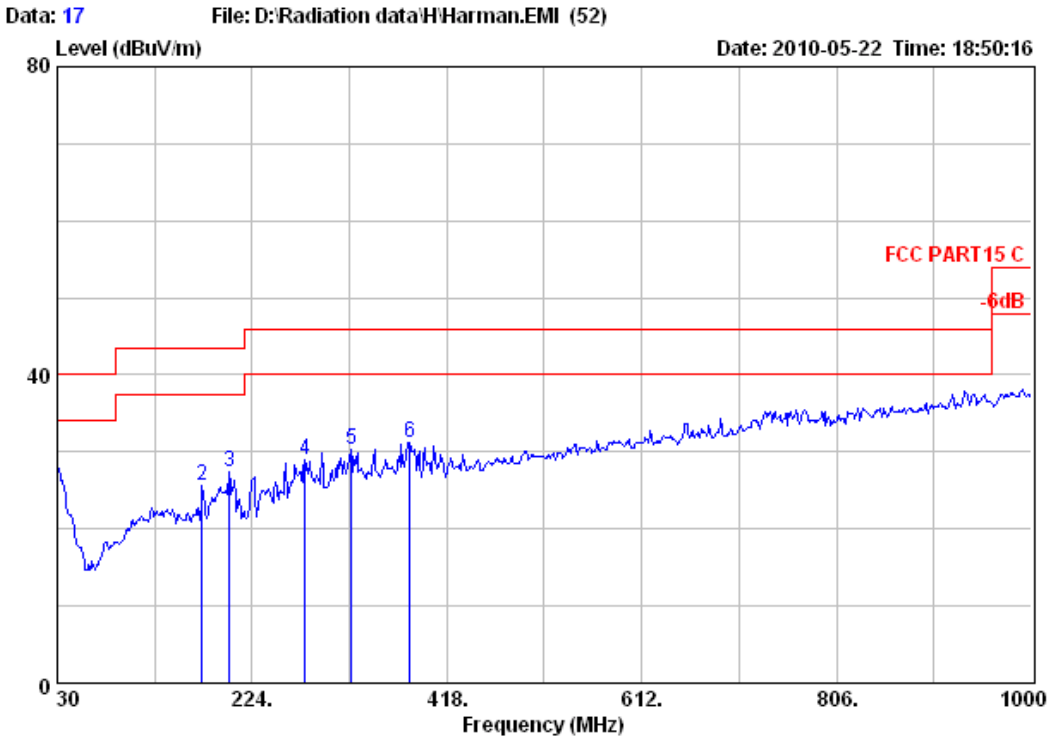


Test Site : 10m Chamber
Limit : FCC PART15 C
Dis. / Ant. : 3m 25758-3 Ant. Pol.: HORIZONTAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 3V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	30.00	28.66	40.00	11.34	7.08	21.00	0.58	QP
2	130.88	23.31	43.50	20.19	10.08	12.02	1.21	QP
3	303.54	26.32	46.00	19.68	10.81	13.62	1.89	QP
4	417.03	29.83	46.00	16.17	10.54	17.07	2.22	QP
5	555.74	33.31	46.00	12.69	10.78	19.91	2.62	QP
6	764.29	37.71	46.00	8.29	12.17	22.46	3.08	QP

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

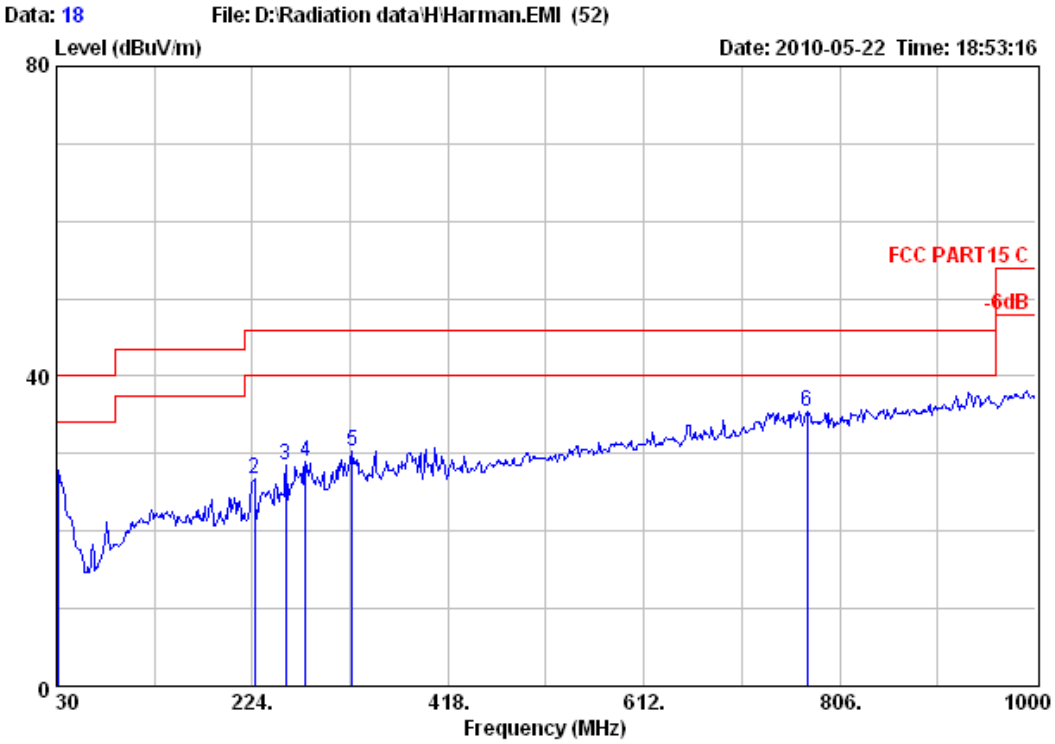


Test Site : 10m Chamber
Limit : FCC PART15 C
Dis. / Ant. : 3m 25758-3 Ant. Pol.: HORIZONTAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 12V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	30.13	28.13	40.00	11.87	35.11	21.00	0.58	QP
2	174.53	25.55	43.50	17.95	41.36	9.84	1.42	QP
3	201.69	27.32	43.50	16.18	44.57	8.27	1.53	QP
4	276.38	29.01	46.00	16.99	41.73	12.81	1.80	QP
5	322.94	30.34	46.00	15.66	41.50	14.15	1.97	QP
6	381.14	31.11	46.00	14.89	40.38	16.03	2.10	QP

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

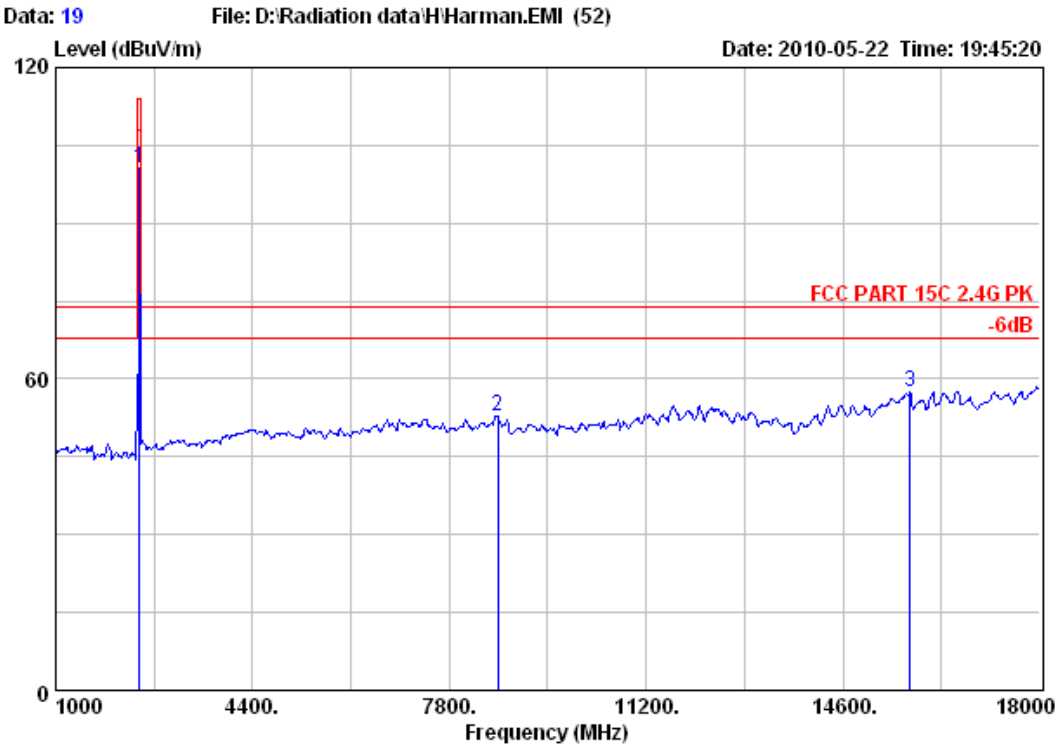


Test Site : 10m Chamber
Limit : FCC PART15 C
Dis. / Ant. : 3m 25758-3 Ant. Pol.: VERTICAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 12V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	30.97	27.84	40.00	12.16	35.23	20.40	0.58	QP
2	225.94	26.77	46.00	19.23	42.26	10.10	1.62	QP
3	256.98	28.47	46.00	17.53	41.32	12.78	1.72	QP
4	276.38	29.01	46.00	16.99	41.73	12.81	1.80	QP
5	322.94	30.34	46.00	15.66	41.50	14.15	1.97	QP
6	773.99	35.43	46.00	10.57	36.55	22.56	3.10	QP

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

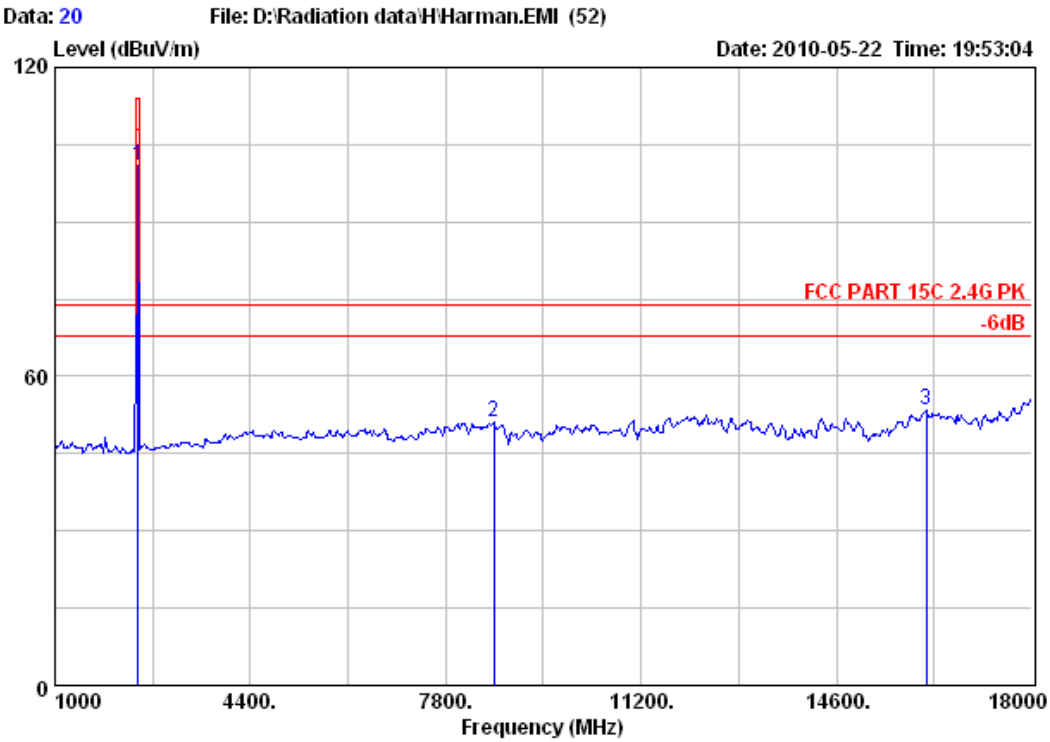



```
Test Site      : 10m Chamber
Limit          : FCC PART 15C 2.4G PK
Dis. / Ant.    : 3m   3117                Ant. Pol.: HORIZONTAL
EUT            : Remote Control Box
M/N            : MS-WBC
Power          : DC 12V
Test Engineer  : Jade
Comment        : Temp.:25.2'C  Humi.:55%  Press:101.53kPa
Test Mode      : TX Mode
```

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2440.00	100.55	114.00	13.45	66.78	31.54	2.23	Peak
2	8633.00	52.88	74.00	21.12	13.31	36.95	2.62	Peak
	315756.00	57.49	74.00	16.51	12.36	42.08	3.05	Peak

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

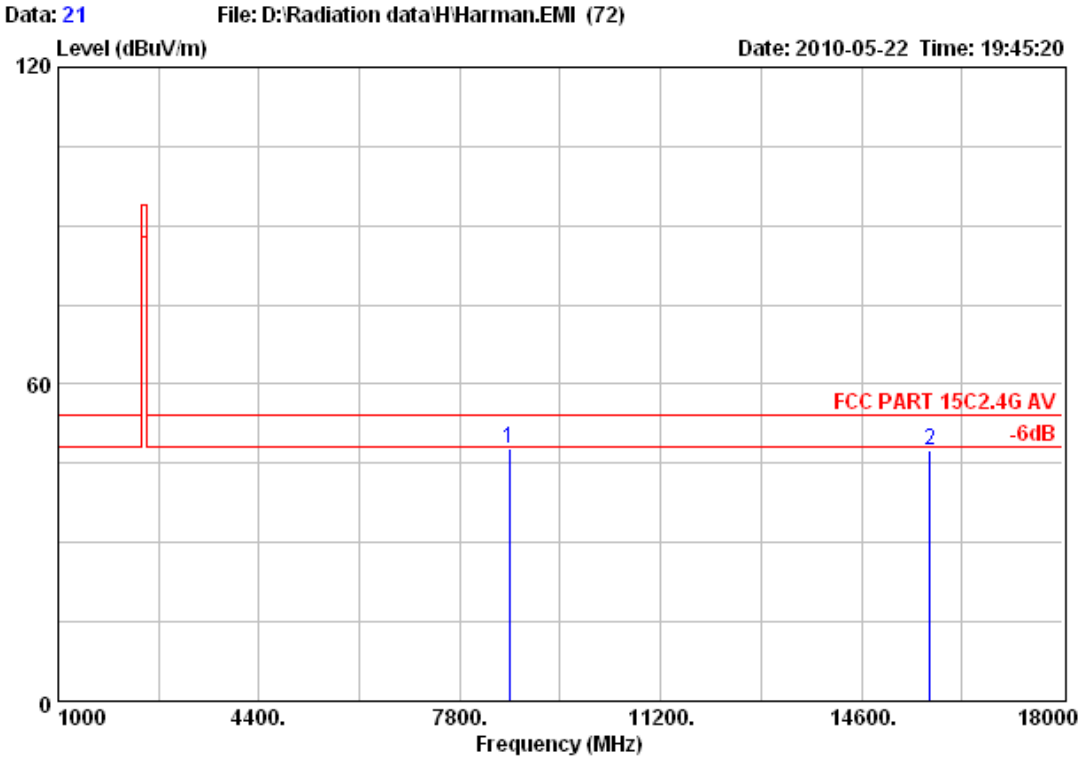


Test Site : 10m Chamber
Limit : FCC PART 15C 2.4G PK
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 12V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2440.00	100.94	114.00	13.06	67.17	31.54	2.23	Peak
2	8633.00	51.07	74.00	22.93	11.50	36.95	2.62	Peak
	316164.00	53.50	74.00	20.50	7.90	42.53	3.07	Peak

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080




```
Test Site      : 10m Chamber
Limit          : FCC PART 15C2.4G AV
Dis. / Ant.    : 3m   3117                Ant. Pol.: HORIZONTAL
EUT            : Remote Control Box
M/N            : MS-WBC
Power          : DC 12V
Test Engineer  : Jade
Comment        : Temp.:25.2'C  Humi.:55%  Press:101.53kPa
Test Mode      : TX Mode
```

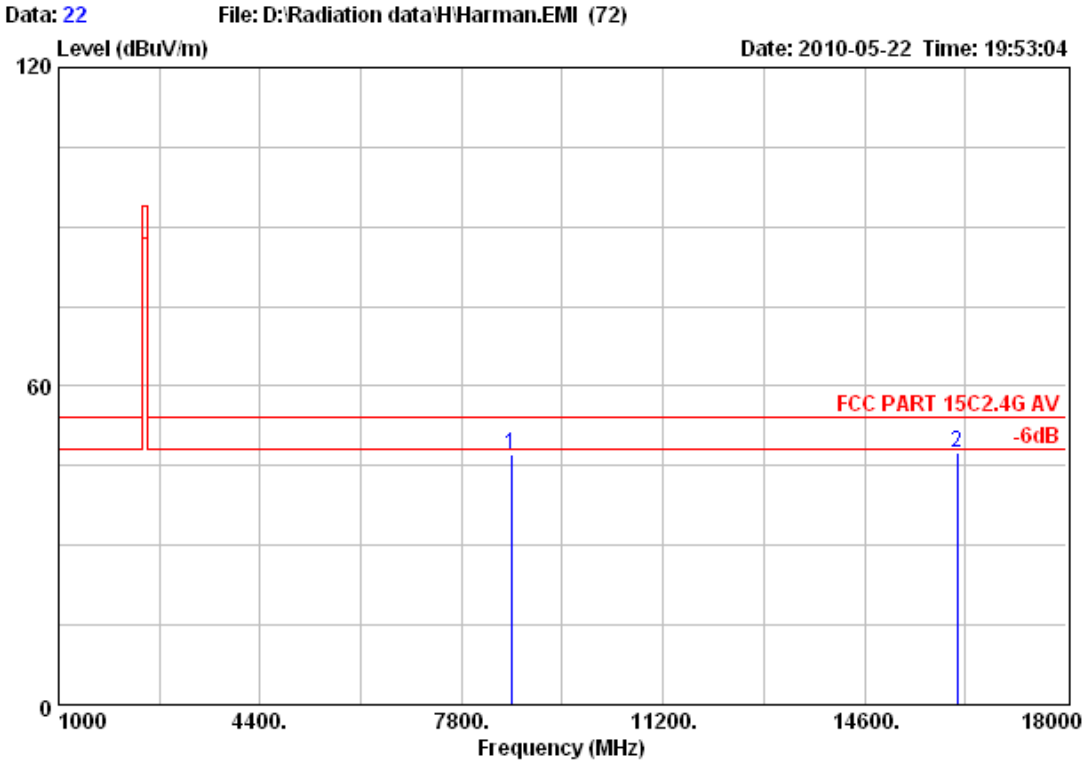
	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	8633.00	47.88	54.00	6.12	8.31	36.95	2.62	Average
	215756.00	47.49	54.00	6.51	2.36	42.08	3.05	Average

2440(Average value)=100.55-17.03=83.52

Average value = Peak value +20log(Duty cycle)
20log(Duty cycle) = 20log(14.07%)= -17.03dB
Please see page 27 for Attached Duty Cycle Test

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080




```
Test Site      : 10m Chamber
Limit          : FCC PART 15C2.4G AV
Dis. / Ant.    : 3m   3117                Ant. Pol.: VERTICAL
EUT            : Remote Control Box
M/N            : MS-WBC
Power          : DC 12V
Test Engineer  : Jade
Comment        : Temp.:25.2'C  Humi.:55%  Press:101.53kPa
Test Mode      : TX Mode
```

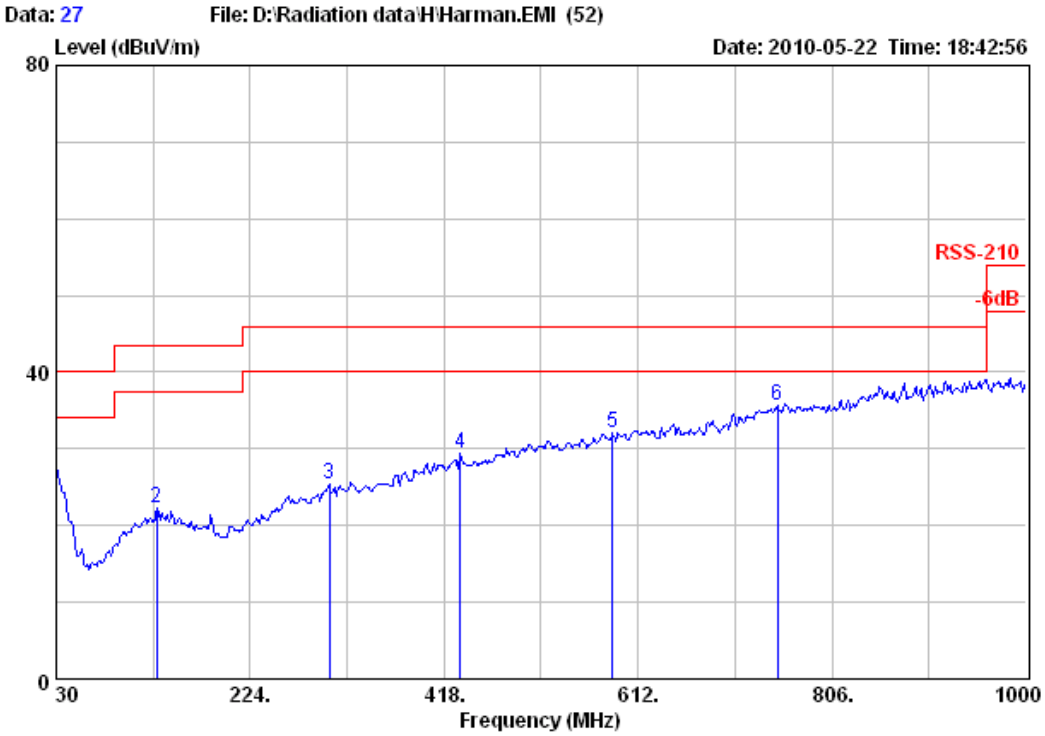
	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	8633.00	47.07	54.00	6.93	7.50	36.95	2.62	Average
	216164.00	47.50	54.00	6.50	1.90	42.53	3.07	Average

2440(Average value)=100.94-17.03=83.91

Average value = Peak value +20log(Duty cycle)
20log(Duty cycle) = 20log(14.07%)= -17.03dB
Please see page 27 for Attached Duty Cycle Test

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

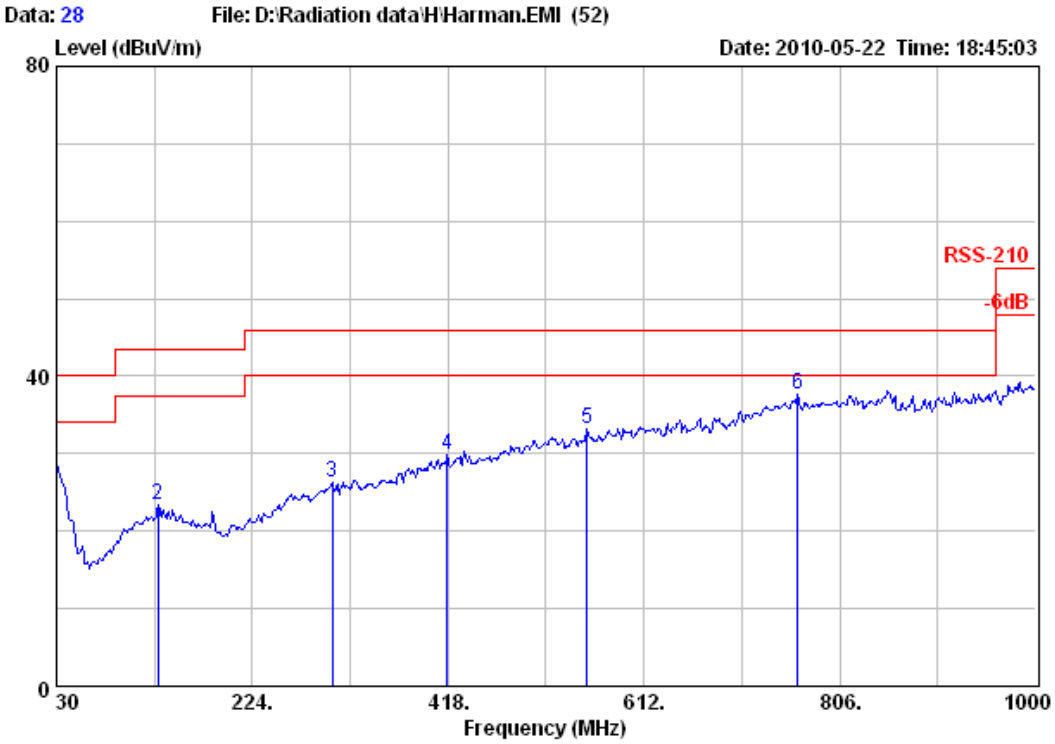


Test Site : 10m Chamber
Limit : RSS-210
Dis. / Ant. : 3m 25758-3 Ant. Pol.: VERTICAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 3V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	30.00	27.66	40.00	12.34	6.08	21.00	0.58	QP
2	130.88	22.31	43.50	21.19	9.08	12.02	1.21	QP
3	303.54	25.32	46.00	20.68	9.81	13.62	1.89	QP
4	434.49	29.39	46.00	16.61	10.07	17.07	2.25	QP
5	586.78	32.14	46.00	13.86	9.86	19.59	2.69	QP
6	751.68	35.57	46.00	10.43	9.32	23.22	3.03	QP

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

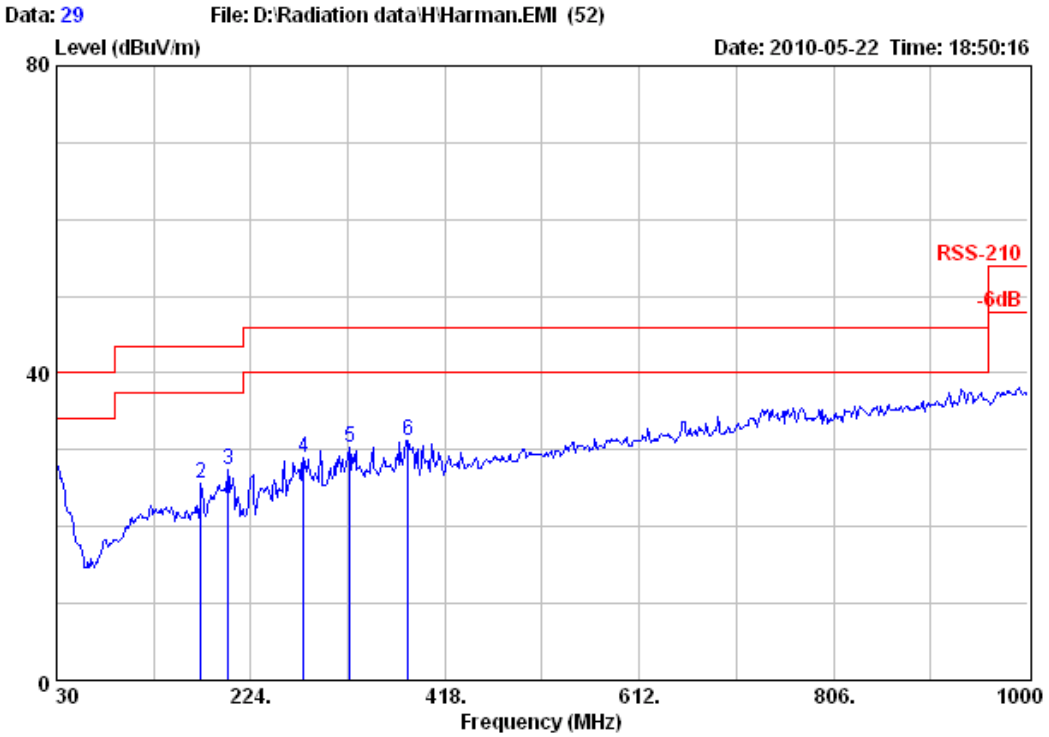


Test Site : 10m Chamber
Limit : RSS-210
Dis. / Ant. : 3m 25758-3 Ant. Pol.: HORIZONTAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 3V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	30.00	28.66	40.00	11.34	7.08	21.00	0.58	QP
2	130.88	23.31	43.50	20.19	10.08	12.02	1.21	QP
3	303.54	26.32	46.00	19.68	10.81	13.62	1.89	QP
4	417.03	29.83	46.00	16.17	10.54	17.07	2.22	QP
5	555.74	33.31	46.00	12.69	10.78	19.91	2.62	QP
6	764.29	37.71	46.00	8.29	12.17	22.46	3.08	QP

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

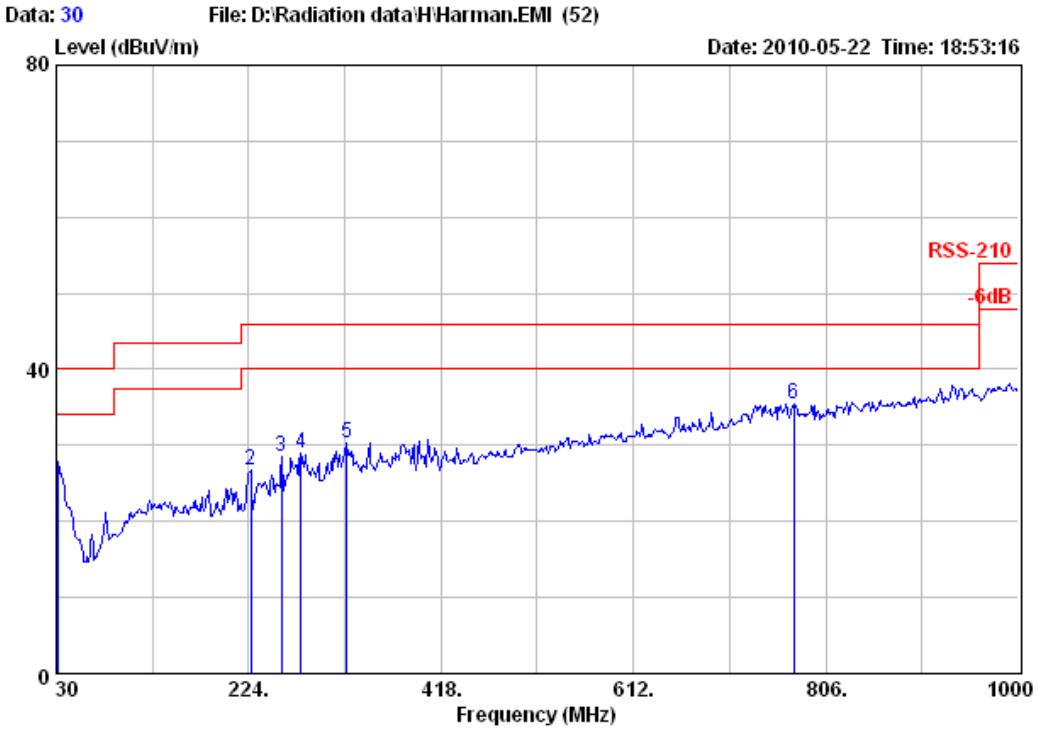


Test Site : 10m Chamber
Limit : RSS-210
Dis. / Ant. : 3m 25758-3 Ant. Pol.: HORIZONTAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 12V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	30.13	28.13	40.00	11.87	35.11	21.00	0.58	QP
2	174.53	25.55	43.50	17.95	41.36	9.84	1.42	QP
3	201.69	27.32	43.50	16.18	44.57	8.27	1.53	QP
4	276.38	29.01	46.00	16.99	41.73	12.81	1.80	QP
5	322.94	30.34	46.00	15.66	41.50	14.15	1.97	QP
6	381.14	31.11	46.00	14.89	40.38	16.03	2.10	QP

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

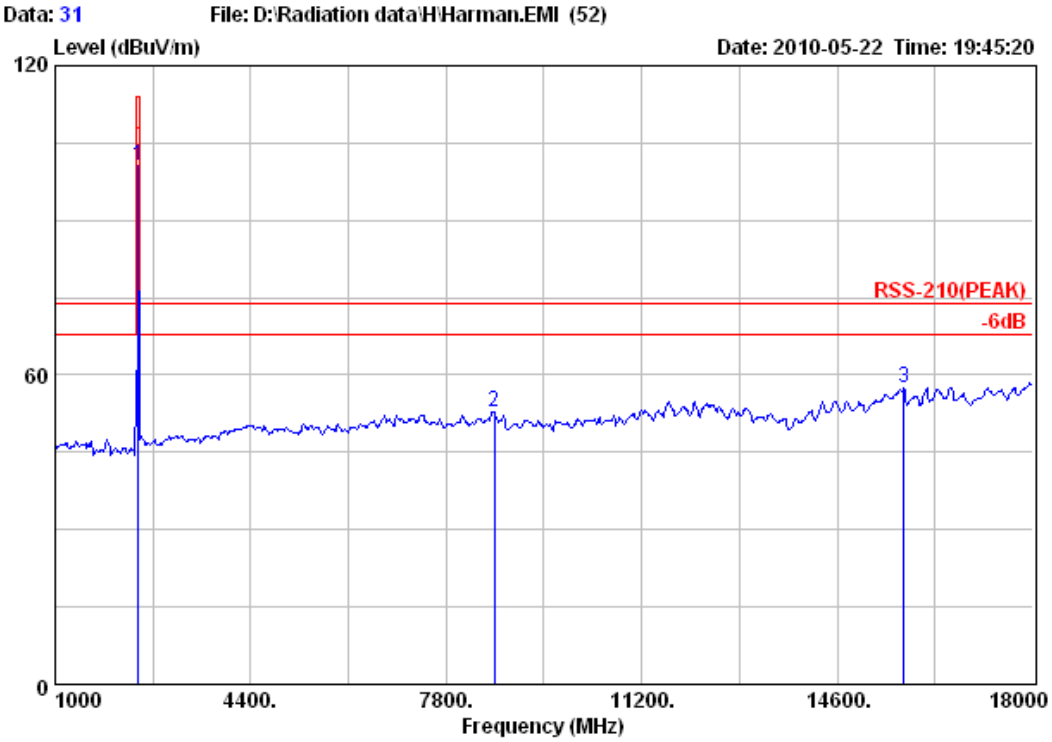


Test Site : 10m Chamber
Limit : RSS-210
Dis. / Ant. : 3m 25758-3 Ant. Pol.: VERTICAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 12V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	30.97	27.84	40.00	12.16	35.23	20.40	0.58	QP
2	225.94	26.77	46.00	19.23	42.26	10.10	1.62	QP
3	256.98	28.47	46.00	17.53	41.32	12.78	1.72	QP
4	276.38	29.01	46.00	16.99	41.73	12.81	1.80	QP
5	322.94	30.34	46.00	15.66	41.50	14.15	1.97	QP
6	773.99	35.43	46.00	10.57	36.55	22.56	3.10	QP

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

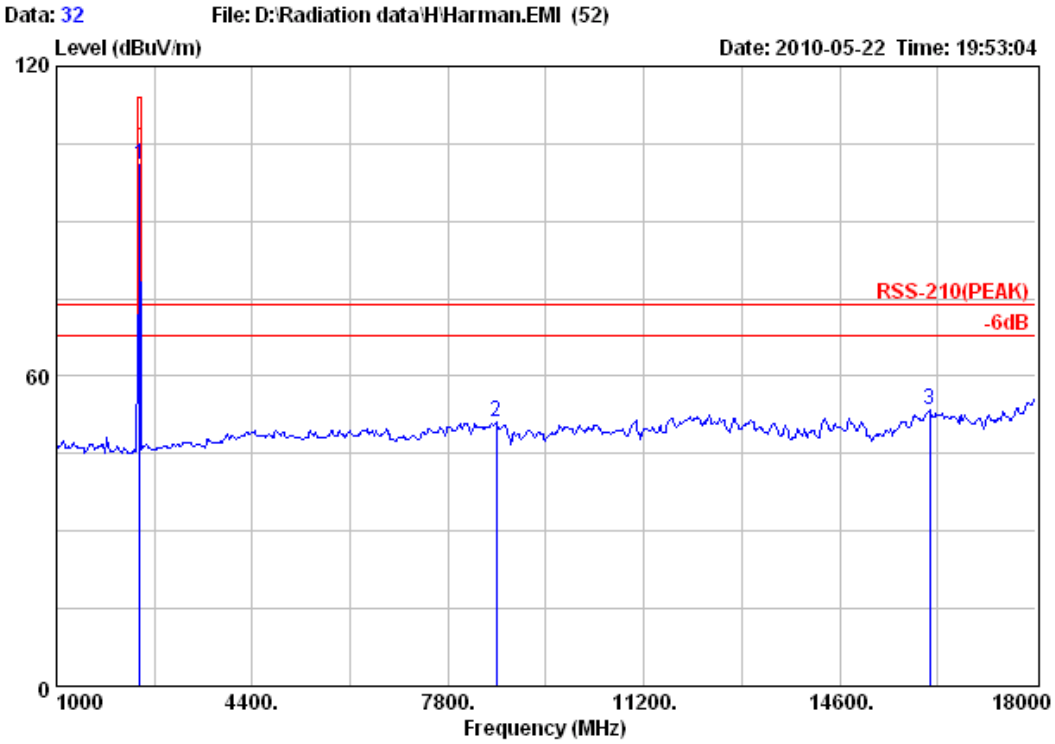


Test Site : 10m Chamber
Limit : RSS-210(PEAK)
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 12V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2440.00	100.55	114.00	13.45	66.78	31.54	2.23	Peak
2	8633.00	52.88	74.00	21.12	13.31	36.95	2.62	Peak
	315756.00	57.49	74.00	16.51	12.36	42.08	3.05	Peak

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

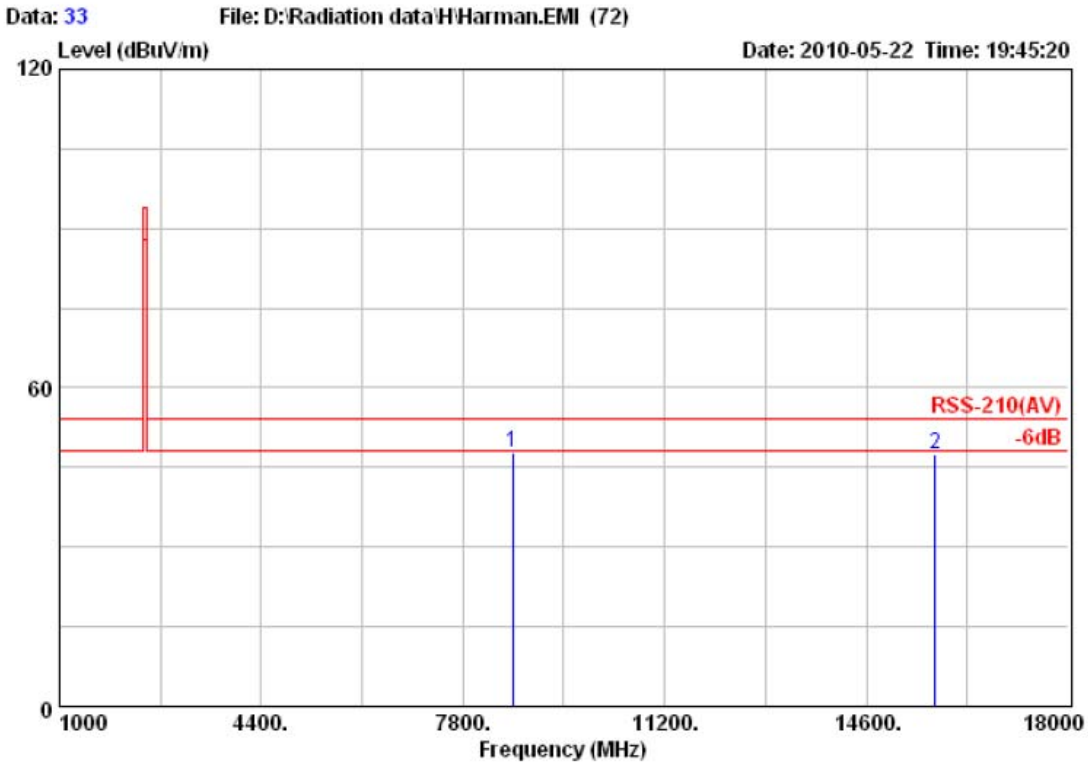



```
Test Site      : 10m Chamber
Limit          : RSS-210(PEAK)
Dis. / Ant.    : 3m   3117                Ant. Pol.: VERTICAL
EUT            : Remote Control Box
M/N            : MS-WBC
Power          : DC 12V
Test Engineer  : Jade
Comment        : Temp.:25.2'C  Humi.:55%  Press:101.53kPa
Test Mode      : TX Mode
```

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2440.00	100.94	114.00	13.06	67.17	31.54	2.23	Peak
2	8633.00	51.07	74.00	22.93	11.50	36.95	2.62	Peak
	316164.00	53.50	74.00	20.50	7.90	42.53	3.07	Peak

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080



Test Site : 10m Chamber
Limit : RSS-210(AV)
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 12V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

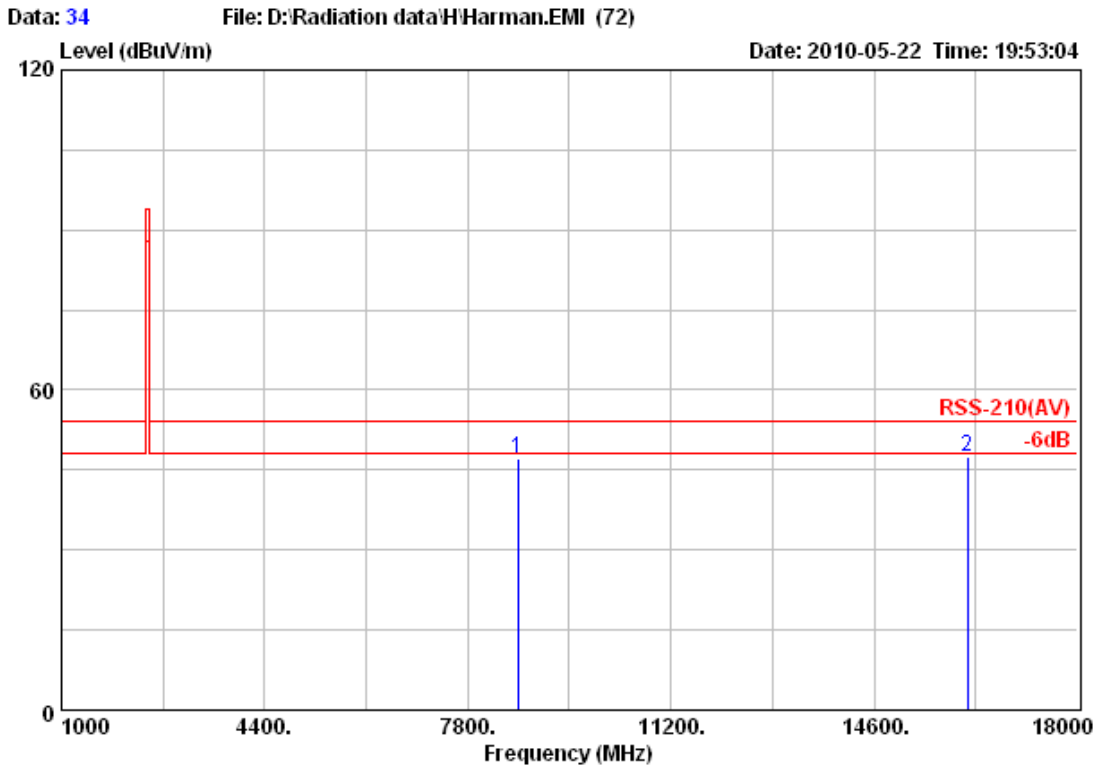
	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	8633.00	47.88	54.00	6.12	8.31	36.95	2.62	Average
	215756.00	47.49	54.00	6.51	2.36	42.08	3.05	Average

2440(Average value)=100.55-17.03=83.52

Average value = Peak value +20log(Duty cycle)
20log(Duty cycle) = 20log(14.07%)= -17.03dB
Please see page 27 for Attached Duty Cycle Test

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080




```
Test Site      : 10m Chamber
Limit          : RSS-210(AV)
Dis. / Ant.    : 3m   3117                 Ant. Pol.: VERTICAL
EUT            : Remote Control Box
M/N            : MS-WBC
Power          : DC 12V
Test Engineer  : Jade
Comment        : Temp.:25.2'C  Humi.:55%  Press:101.53kPa
Test Mode      : TX Mode
```

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	8633.00	47.07	54.00	6.93	7.50	36.95	2.62	Average
	216164.00	47.50	54.00	6.50	1.90	42.53	3.07	Average

2440(Average value)=100.94-17.03=83.91

Average value = Peak value +20log(Duty cycle)
20log(Duty cycle) = 20log(14.07%)= -17.03dB
Please see page 27 for Attached Duty Cycle Test

5.2. Attached Duty Cycle Test

The duty cycle was determined by the following equation :

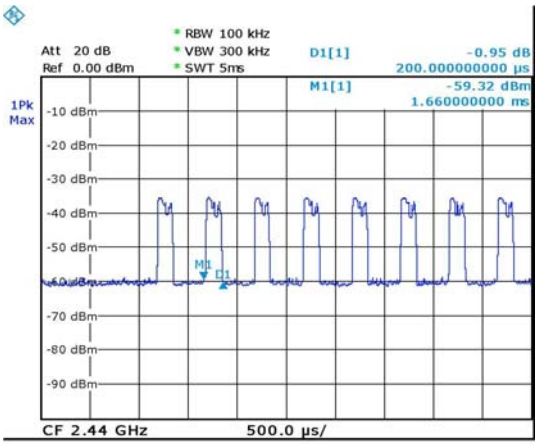
$$\text{Duty Cycle}(\%) = \frac{\text{(Total On Interval in a Complete Pulse Train)}}{\text{(Length of a Complete Pulse Train)}} \text{ X100\%}$$

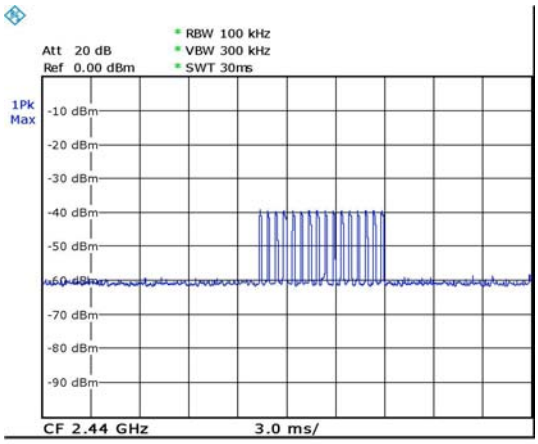
Test Data

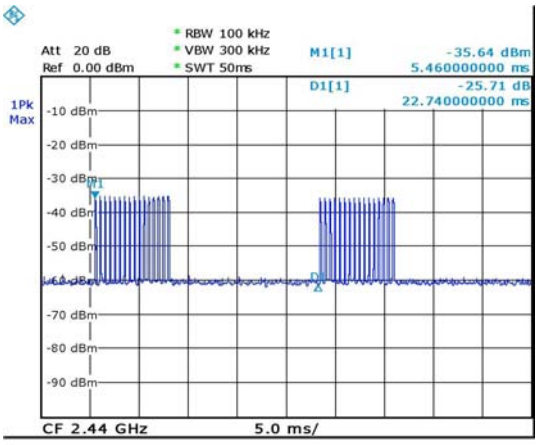
Pulse Train	Number of Pulse	T(ms)	Total Time
Pulse	16	0.2ms	3.2ms

Total ON interval in a complete pulse train(ms)	3.2ms
Length of a complete Pulse train(ms)	22.74ms
Duty Cycle(%)	14.07%

The test plots as following:







5.3. 20dB Bandwidth

5.3.1. Test limits

No requirement.

5.3.2. Test procedure

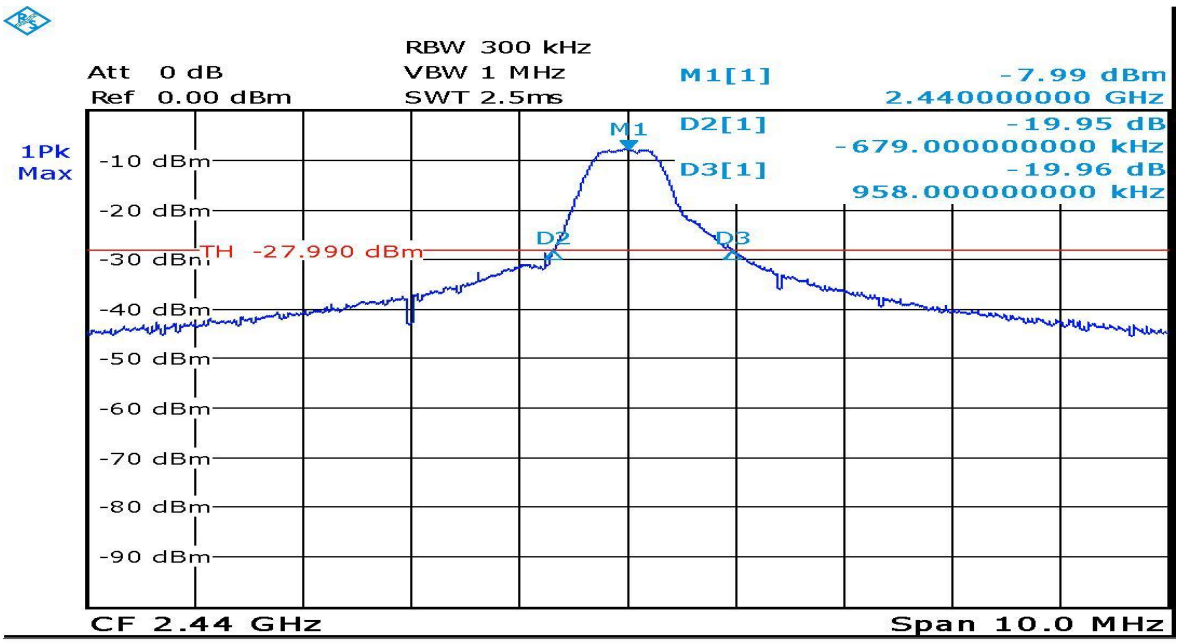
1. The EUT was placed on a table which is 0.8m above ground plane.
2. Connect EUT RF output port to the spectrum analyzer through an RF attenuator.
3. Set SA Center Frequency = Operation frequency, RBW=300kHz,VBW=1MHz.
4. Set SA trace max hold, then view.

5.3.3. Test result

Pass

Frequency MHz	20dB bandwidth MHz
2440	1.637

The test plots as following:



5.4. 99% Bandwidth

5.4.1.Test procedure

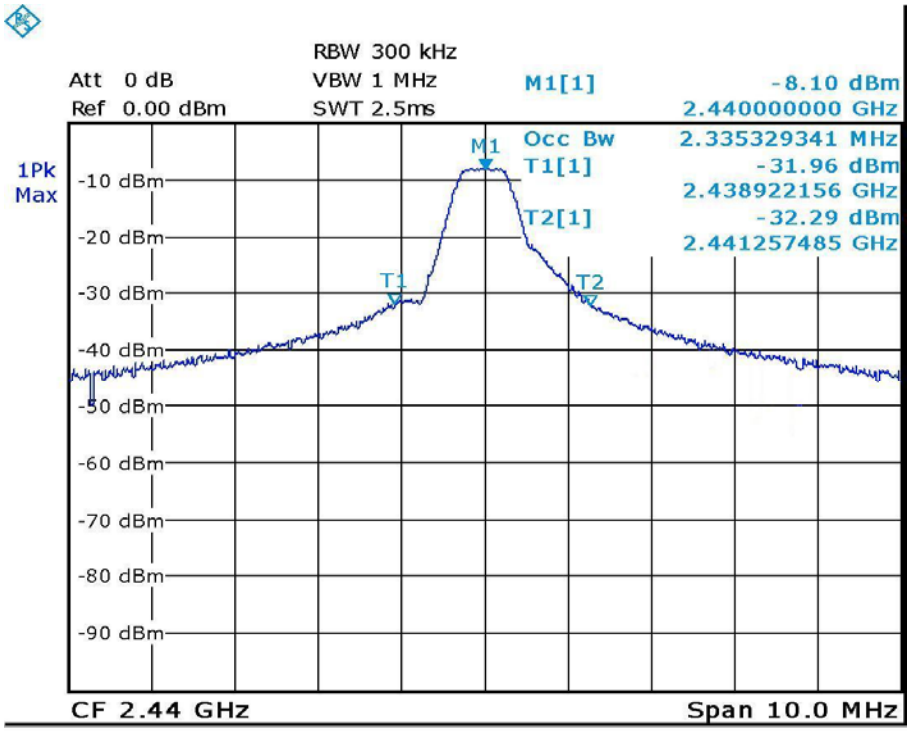
1. The EUT was placed on a table which is 0.8m above ground plane.
2. Connect EUT RF output port to the spectrum analyzer through an RF attenuator.
3. Set SA Center Frequency = Operation frequency, RBW=300kHz,VBW=1MHz.
4. Set SA trace max hold, then view.

5.4.2. Test result

Pass

Frequency MHz	99% bandwidth MHz
2440	2.335

The test plots as following:



5.5. Band Edge

5.5.1. Test limits

Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in Section 15.209 and RSS-210 , whichever is the lesser attenuation.

5.5.2. Test procedure

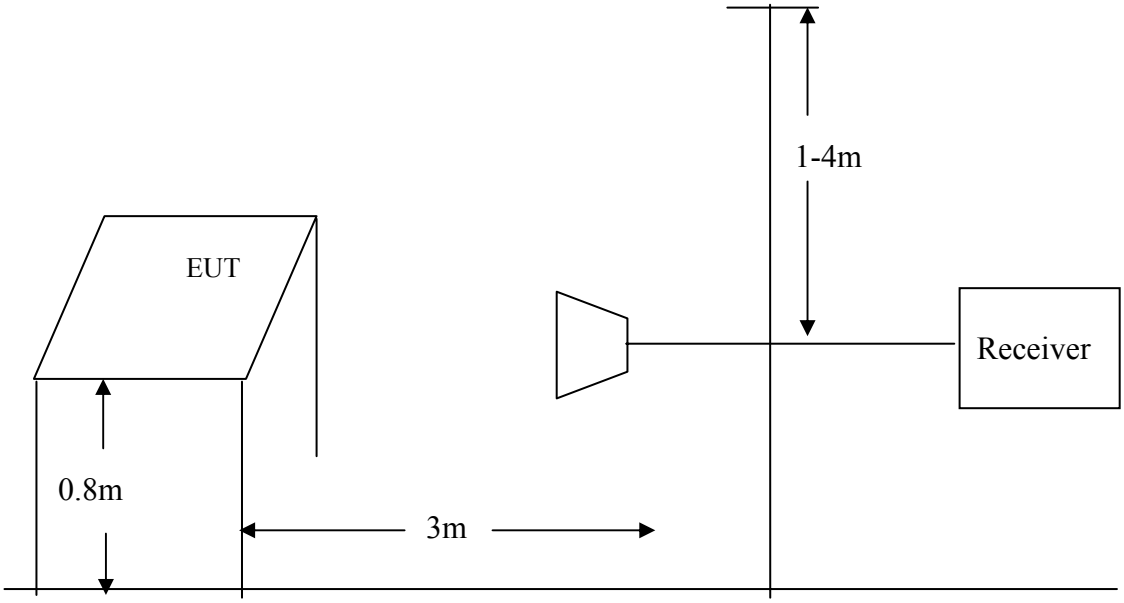
The EUT was placed on a turn table which was 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT was set 3 meters away from the receiving antenna which was mounted on a antenna tower. At the frequency band of 30MHz to 1GHz,The measuring antenna moved from 1 to 4 m for horizontal and vertical polarization. The broadband antenna was used was a receiving antenna.

The resolution bandwidth and video bandwidth of the test receiver was1MHz and 1MHz for Peak detection at frequency above 1GHz.

For Average measurement at frequency above 1GHz.The resolution bandwidth of the test receiver was 1MHz ; the video bandwidth is 10Hz.

The EUT position(X. Y. Z) were checked and worse case was happened in Y position. So Y position was chose for find measurement.
The EUT was tested in Chamber Site.

5.5.3. Test Setup Diagram



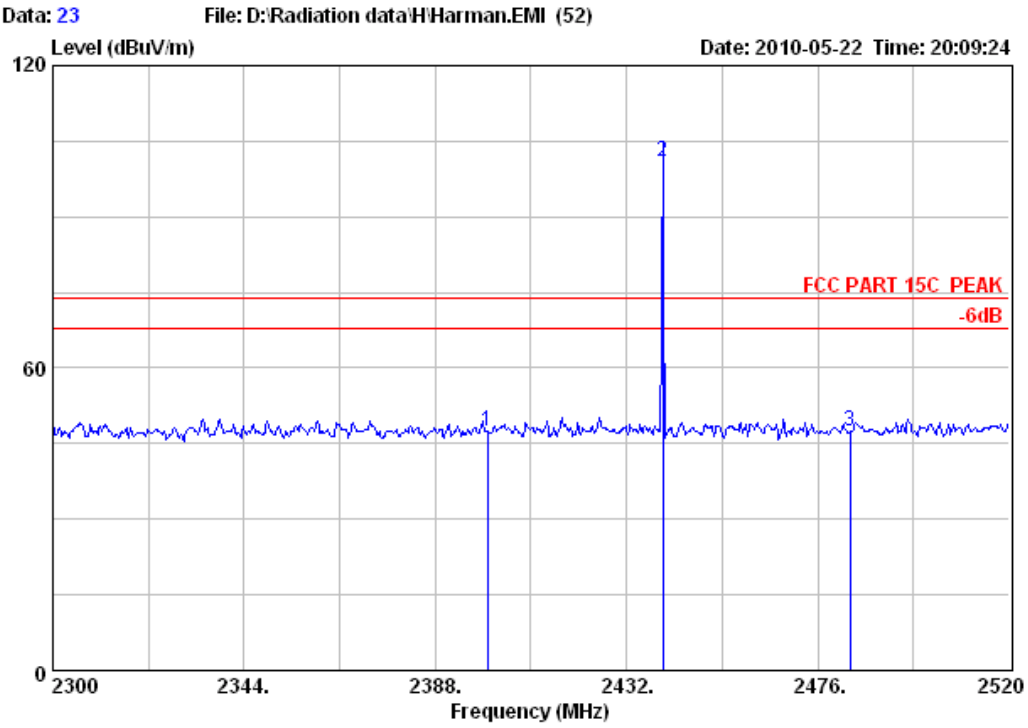
5.5.4. Test result

PASS.

The test plots as following:

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

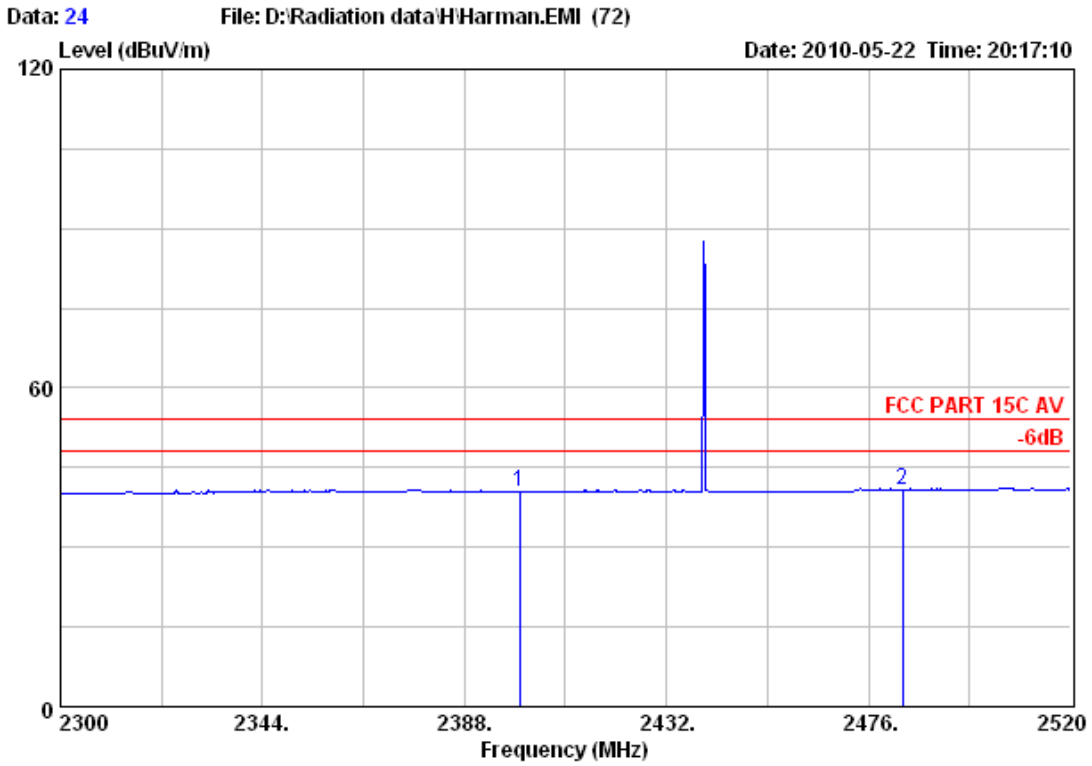


Test Site : 10m Chamber
Limit : FCC PART 15C PEAK
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 12V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2400.00	47.37	74.00	26.63	13.64	31.50	2.23	Peak
2	2440.36	100.87	74.00	-26.87	67.10	31.54	2.23	Peak
3	2483.50	47.33	74.00	26.67	13.52	31.58	2.23	Peak

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080




```
Test Site      : 10m Chamber
Limit          : FCC PART 15C AV
Dis. / Ant.    : 3m   3117                 Ant. Pol.: VERTICAL
EUT            : Remote Control Box
M/N            : MS-WBC
Power          : DC 12V
Test Engineer  : Jade
Comment        : Temp.:25.2'C  Humi.:55%  Press:101.53kPa
Test Mode      : TX Mode
```

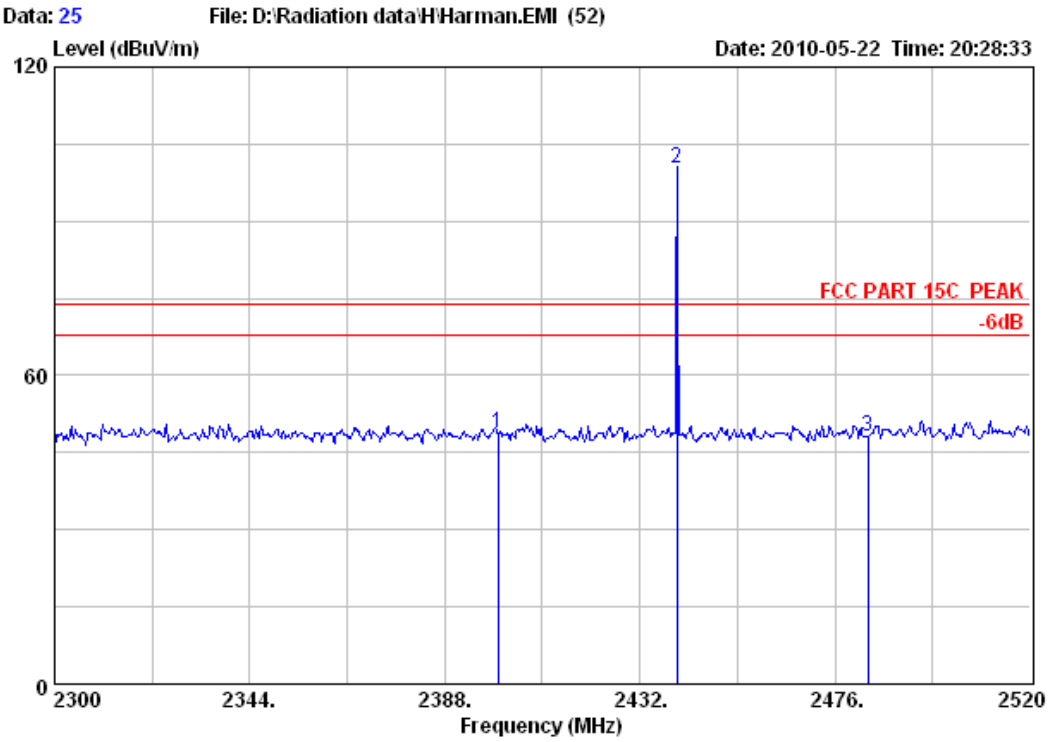
	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2400.10	40.37	54.00	13.63	6.64	31.50	2.23	Average
2	2483.48	40.66	54.00	13.34	6.85	31.58	2.23	Average

2440(Average value)=100.87-17.03=83.84

Average value = Peak value +20log(Duty cycle)
20log(Duty cycle) = 20log(14.07%)= -17.03dB
Please see page 27 for Attached Duty Cycle Test

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

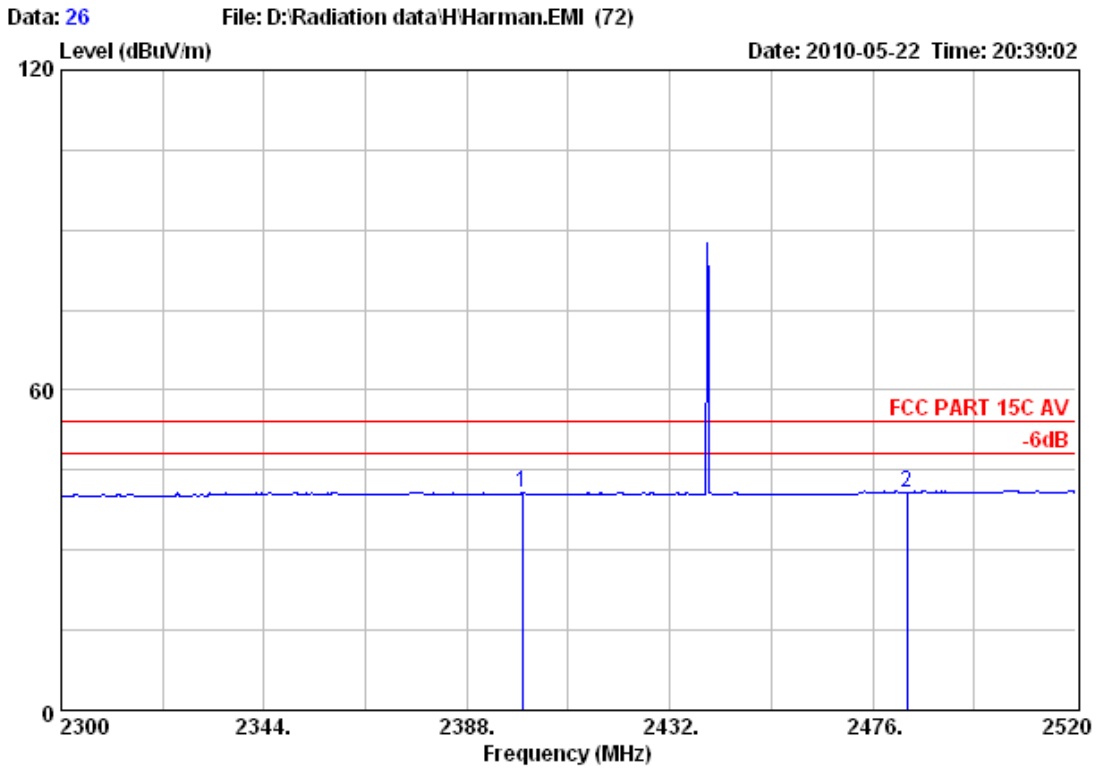



```
Test Site      : 10m Chamber
Limit          : FCC PART 15C  PEAK
Dis. / Ant.    : 3m   3117                Ant. Pol.: HORIZONTAL
EUT            : Remote Control Box
M/N            : MS-WBC
Power          : DC 12V
Test Engineer  : Jade
Comment        : Temp.:25.2'C  Humi.:55%  Press:101.53kPa
Test Mode      : TX Mode
```

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2400.00	48.88	74.00	25.12	15.15	31.50	2.23	Peak
2	2440.36	100.21	74.00	-26.21	66.44	31.54	2.23	Peak
3	2483.50	47.99	74.00	26.01	14.18	31.58	2.23	Peak

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080




```
Test Site      : 10m Chamber
Limit          : FCC PART 15C AV
Dis. / Ant.    : 3m   3117                Ant. Pol.: HORIZONTAL
EUT            : Remote Control Box
M/N            : MS-WBC
Power          : DC 12V
Test Engineer  : Jade
Comment        : Temp.:25.2'C  Humi.:55%  Press:101.53kPa
Test Mode      : TX Mode
```

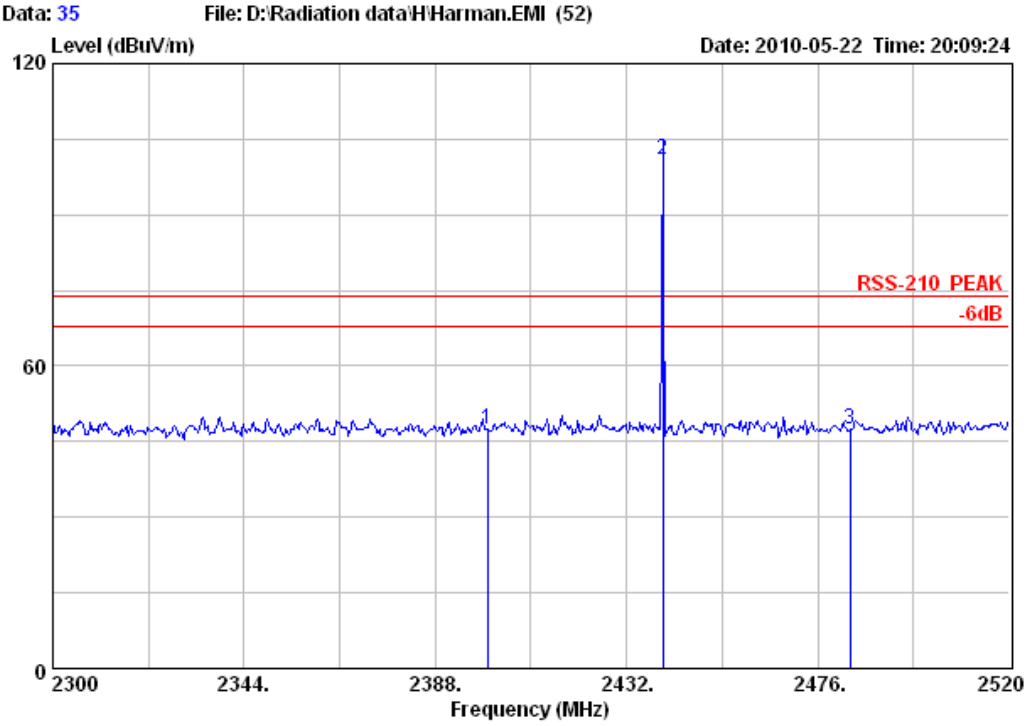
	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2400.10	40.73	54.00	13.27	7.00	31.50	2.23	Average
2	2483.48	40.66	54.00	13.34	6.85	31.58	2.23	Average

2440(Average value)=100.21-17.03=83.18

Average value = Peak value +20log(Duty cycle)
20log(Duty cycle) = 20log(14.07%)= -17.03dB
Please see page 27 for Attached Duty Cycle Test

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

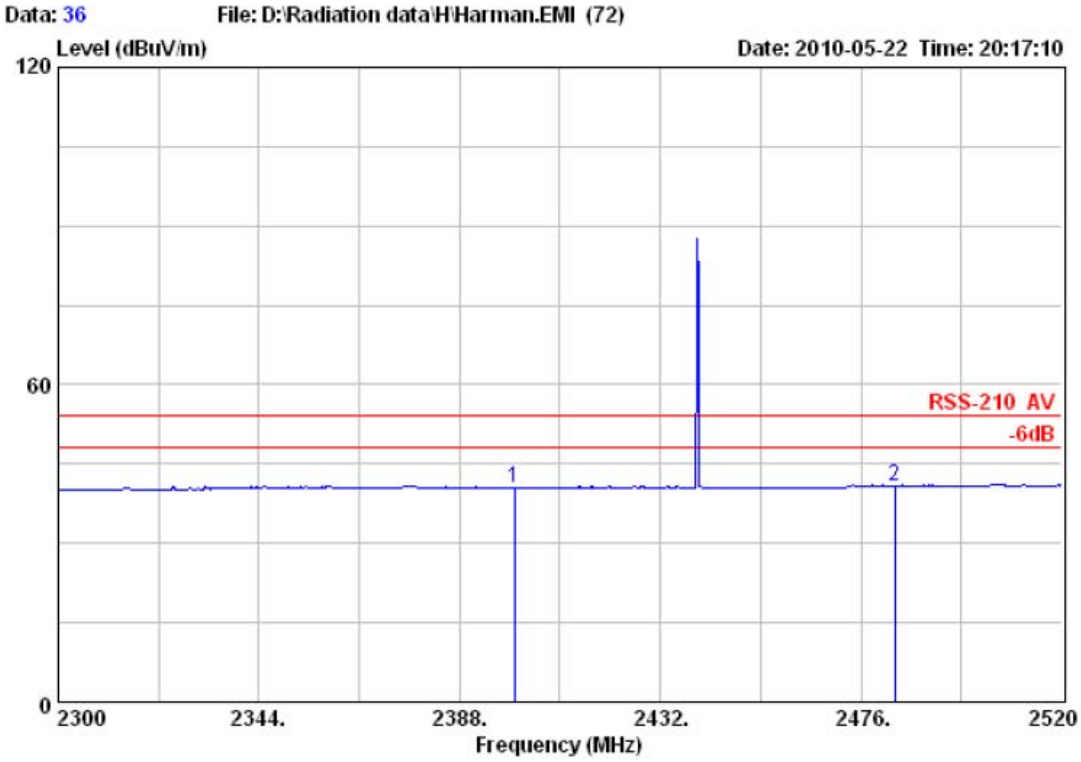


Test Site : 10m Chamber
Limit : RSS-210 PEAK
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 12V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2400.00	47.37	74.00	26.63	13.64	31.50	2.23	Peak
2	2440.36	100.87	74.00	-26.87	67.10	31.54	2.23	Peak
3	2483.50	47.33	74.00	26.67	13.52	31.58	2.23	Peak

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080



Test Site : 10m Chamber
Limit : RSS-210 AV
Dis. / Ant. : 3m 3117 Ant. Pol.: VERTICAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 12V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

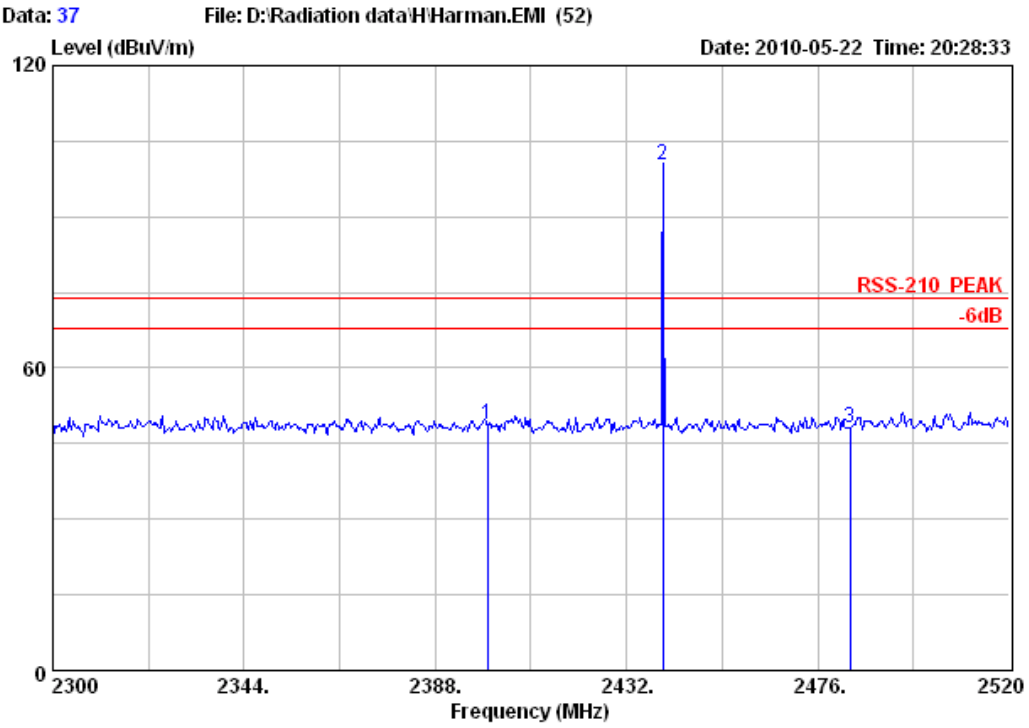
	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2400.10	40.37	54.00	13.63	6.64	31.50	2.23	Average
2	2483.48	40.66	54.00	13.34	6.85	31.58	2.23	Average

2440(Average value)=100.87-17.03=83.84

Average value = Peak value +20log(Duty cycle)
20log(Duty cycle) = 20log(14.07%)= -17.03dB
Please see page 27 for Attached Duty Cycle Test

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080

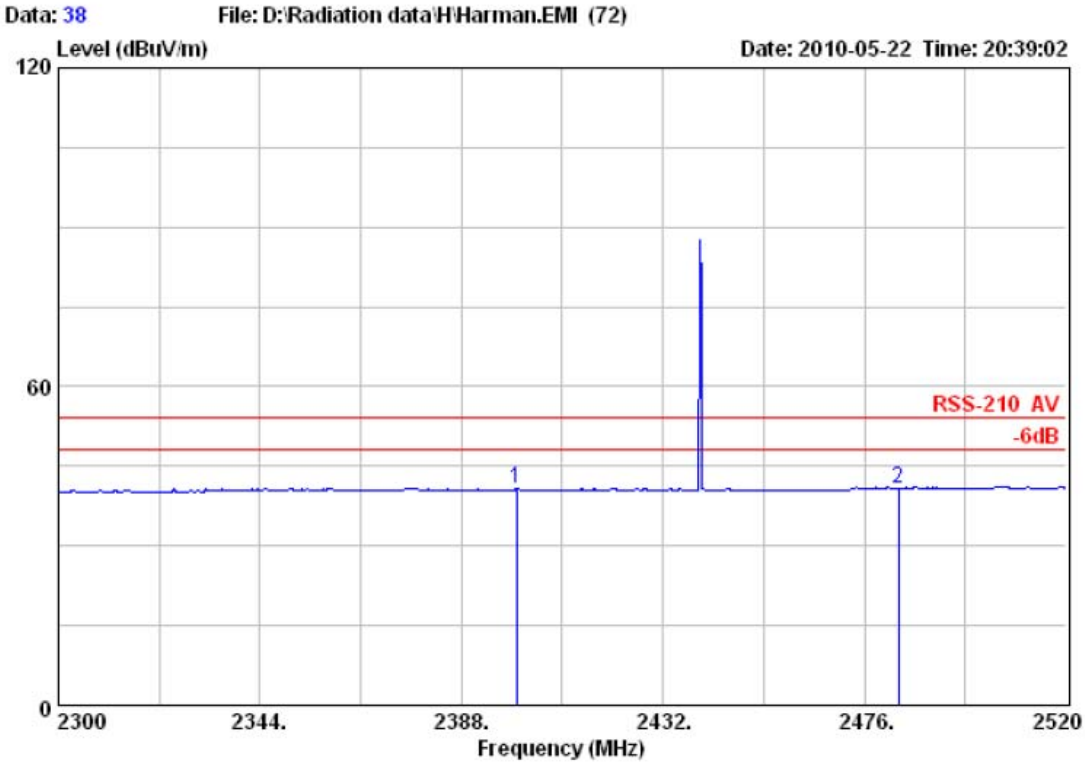


Test Site : 10m Chamber
Limit : RSS-210 PEAK
Dis. / Ant. : 3m 3117 Ant. Pol.: HORIZONTAL
EUT : Remote Control Box
M/N : MS-WBC
Power : DC 12V
Test Engineer : Jade
Comment : Temp.:25.2'C Humi.:55% Press:101.53kPa
Test Mode : TX Mode

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2400.00	48.88	74.00	25.12	15.15	31.50	2.23	Peak
2	2440.36	100.21	74.00	-26.21	66.44	31.54	2.23	Peak
3	2483.50	47.99	74.00	26.01	14.18	31.58	2.23	Peak

NS Technology

Chenwu Industrial Zone,Houjie Town,
Dongguan,Guangdong,China
Tel:+86-769-85935656
Fax:+86-769-85991080




```
Test Site      : 10m Chamber
Limit          : RSS-210  AV
Dis. / Ant.    : 3m   3117                Ant. Pol.: HORIZONTAL
EUT            : Remote Control Box
M/N            : MS-WBC
Power          : DC 12V
Test Engineer  : Jade
Comment        : Temp.:25.2'C  Humi.:55%  Press:101.53kPa
Test Mode      : TX Mode
```

	Freq. (MHz)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Reading (dBuV)	Ant. Factor (dB/m)	Cable Loss (dB)	Remark
1	2400.10	40.73	54.00	13.27	7.00	31.50	2.23	Average
2	2483.48	40.66	54.00	13.34	6.85	31.58	2.23	Average

2440(Average value)=100.21-17.03=83.18

Average value = Peak value +20log(Duty cycle)
20log(Duty cycle) = 20log(14.07%)= -17.03dB
Please see page 27 for Attached Duty Cycle Test