

Application for FCC Certificate
On Behalf of
Jiaxing Shufude Electric Bed Co., Ltd.

Remote Control

Model No.: SFD-NR-M003

Serial No.: E2009040901

FCC ID : WKZSFDNR3-1

Prepared For : Jiaxing Shufude Electric Bed Co., Ltd.
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TEST REPORT FOR FCC CERTIFICATION

Applicant : Jiaxing Shufude Electric Bed Co., Ltd.
Manufacturer : Jiaxing Shufude Electric Bed Co., Ltd..
EUT Description : Remote Control
(A) Model No. : SFD-NR-M003
(B) Serial No. : E2009040901
(C) Power Supply : DC 4.5V (AAA Battery*3)

Test Procedure Used:

*FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2008
AND ANSI C63.4:2003*

The device described above is tested by Audix Technology (Shanghai) Co., Ltd. to determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits radiated emission.

The test results are contained in this test report and Audix Technology (Shanghai) Co., Ltd. is assumed full responsibility for the accuracy and completeness of these measurements. This report shows that the EUT (M/N: SFD-NR-M003; S/N: E2009040901), which was tested in 3m anechoic chamber on Apr 14 – 17, 2009 to be technically compliant with the FCC official limits also.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Audix Technology (Shanghai) Co., Ltd.


This report contains data that are not covered by the NVLAP accreditation.

This report must not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government by the client.

Date of Test : Apr 14 – 17, 2009 Date of Report : Apr 18, 2009

Producer : Dio Yang
DIO YANG / Supervisor

Review : Sammy Chen
SAMMY CHEN / Assistant Manager

 For and on behalf of
Audix Technology (Shanghai) Co., Ltd.

Signatory : Byron Kwo
Authorized Signature EMC BYRON KWO / Manager

1 SUMMARY OF STANDARDS AND RESULTS

1.1 Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below:

Description / Test Item	Test Standard	Meets Limit	Results
Conducted Emission at the Mains Terminal	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2008 AND ANSI C63.4:2003	15.207	N/A
Radiated Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2008 AND ANSI C63.4:2003	15.209	Pass
Fundamental and Harmonics Emission	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2008 AND ANSI C63.4:2003	15.249	Pass
Bandwidth Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2008 AND ANSI C63.4:2003	15.231	Pass
Band-Edge Measurement	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2008 AND ANSI C63.4:2003	15.249	Pass
N/A is an abbreviation for Not Applicable.			

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	Remote Control
Type of EUT	:	<input checked="" type="checkbox"/> Production <input type="checkbox"/> Pre-product <input type="checkbox"/> Pro-type
Model No.	:	SFD-NR-M003
Serial No.	:	E2009040901
Applicant	:	Jiaxing Shufude Electric Bed Co., Ltd. East No.07 Provincial Road, Tengyun Village, Wangjiangjing Development Area, Jiaxing, Zhejiang, China
Manufacturer	:	Jiaxing Shufude Electric Bed Co., Ltd. No.773 Furun Road, Dongshan Industrial Park, Jiaxing, Zhejiang, China
Power Supply	:	Battery Operated DC 4.5V (AAA Battery*3) The tests were performed using new batteries
Modulation	:	MSK 500kbps
Operation Frequency	:	2464 MHz, 2465 MHz, 2466 MHz, 2467 MHz, 2468 MHz, 2469 MHz, 2470 MHz, 2471 MHz The above frequencies can be set through the 8-dip SW on the back of the Remote Control (only No.1-3 SW, the No.4 SW has not function)
Frequency Channel	:	8 Channels
Tested Frequency	:	2464 MHz (Channel 01) 2468 MHz (Channel 05) 2471 MHz (Channel 08)
Antenna Location	:	Top of the RF module Please see Figure 6 in APPENDIX III, Photographs of EUT for further information.
Antenna Type	:	Internal permanently attached antenna

2.2 Description of Test Facility

Site Description (Semi-Anechoic Chamber)	:	Sept. 17, 1998 file on July 26, 2006 Renewed Federal Communications Commission FCC Engineering Laboratory 7435 Oakland Mills Road Columbia, MD 21046, USA
Name of Firm	:	Audix Technology (Shanghai) Co., Ltd.
Site Location	:	3F 34Bldg 680 Guiping Rd., Caohejing Hi-Tech Park, Shanghai 200233, China
FCC registration Number	:	91789
Accredited by NVLAP, Lab Code	:	200371-0

2.3 Measurement Uncertainty

Radiated Emission Expanded Uncertainty : $U = 3.02\text{dB}$

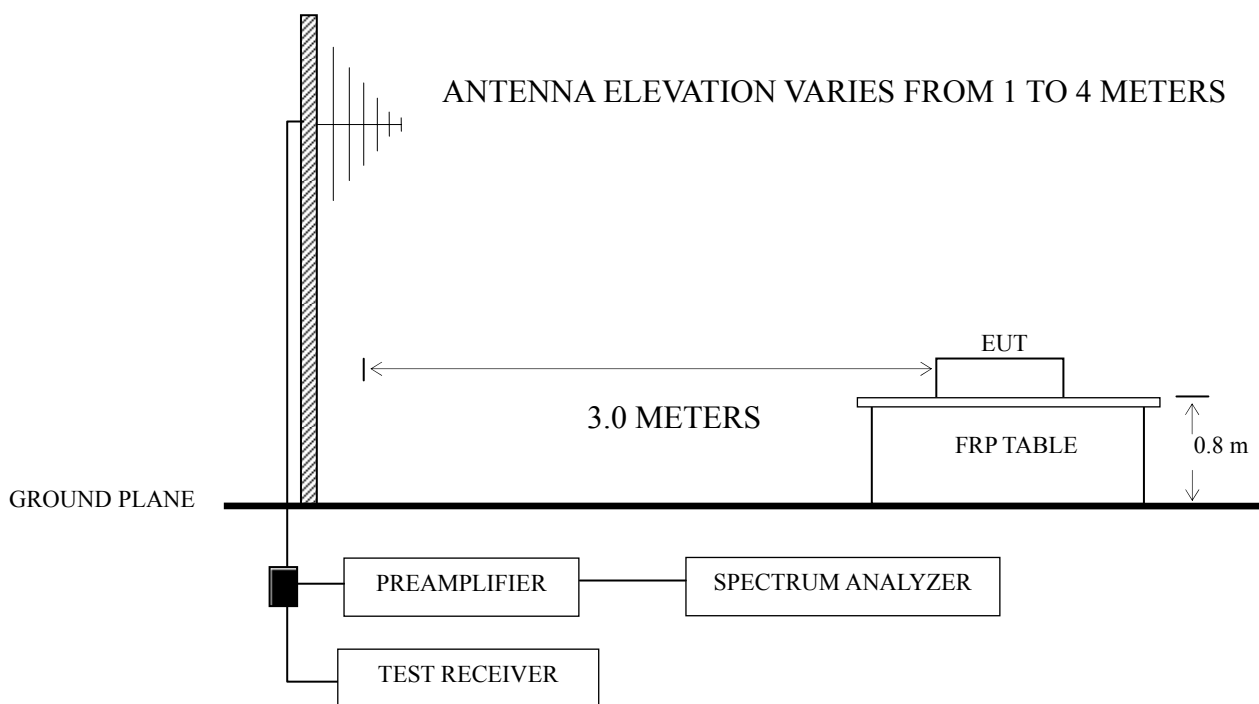
3 RADIATED EMISSION TEST

3.1 Test Equipment

The following test equipments are used during the radiated emission test in a semi-anechoic chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Preamplifier	HP	8447D	2944A06849	Mar 18, 2009	Sep 19, 2009
2.	Preamplifier	HP	8449B	3008A00864	May 19, 2008	May 19, 2009
3.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2008	May 19, 2009
4.	Test Receiver	R&S	ESVS10	832699/004	Apr 02, 2009	Apr 02, 2010
5.	Bilog Antenna	TESEQ	CBL6112D	23193	May 14, 2008	May 14, 2009
6.	Horn Antenna	EMCO	3115	9607-4878	Apr 24, 2008	Apr 24, 2009
7.	Horn Antenna	EMCO	3116	00062643	Apr 24, 2008	Apr 24, 2009
8.	50Ω Coaxial Switch	Anritsu	MP59B	6200426390	Mar 18, 2009	Sep 19, 2009
9.	Software	Audix	E3	SET00200 9912M295-2	-	-

3.2 Block Diagram of Test Setup



■ : 50 ohm Coaxial Switch

3.3 Radiated Emission Limit [FCC Part 15 Subpart C 15.209]

Frequency (MHz)	Distance (m)	Field strength limits (μV/m)	
		(μV/m)	dB (μV/m)
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
Above 960	3	500	54.0
NOTE 1 - Emission Level dB (μV/m) = 20 lg Emission Level (μV/m) NOTE 2 - The tighter limit applies at the band edges. NOTE 3 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system. NOTE 4 - The limits shown are based on Quasi-peak value detector below or equal to 1GHz and Average value detector above 1GHz. NOTE 5 - Above 1 GHz, the limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT			

3.4 Test Configuration

The EUT was installed as show on Sec. 3.2 in radiated emission test to meet FCC requirement and operating in a manner, which tend to maximize emission level in a normal application.

3.5 Operating Condition of EUT

- 3.5.1 Setup the EUT as shown in Sec. 3.2.
- 3.5.2 Turn on the power of all equipment.
- 3.5.3 Set the EUT on the test mode (Transmitting).
- 3.5.4 Configured the EUT in three axis: Lying, Side, Stand, and test separately.

3.6 Test Procedures

The EUT was placed on a FRP turntable that is 0.8 meter above ground. The FRP turntable rotated 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 an antenna tower. Broadband antenna (Calibrated Bilog Antenna) and horn antenna was used as receiving antenna. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Both horizontal and vertical polarizations of the antenna were set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to ANSI C63.4:2003 requirements during radiated emission test.

The bandwidth of Test Receiver R&S ESVS10 was set at 120 kHz for frequency range from 30MHz to 1000MHz.

The bandwidth of the VBW was set at 1MHz and RBW was set at 1MHz for peak emission measurement above 1GHz and 1MHz RBW, 10Hz VBW for average emission above 1GHz for Spectrum Agilent E7405A.

The frequency range from 30 MHz to 25 GHz (Up to 10th harmonics from fundamental frequency) was checked.

The EUT was tested under the following test modes:

Mode	Operation	Channel	Fundamental Frequency
1.	Transmitting	01	2464 MHz
2.		05	2468 MHz
3.		08	2471 MHz

The test mode (Transmitting) was done on radiated emission test.

Please refer to Sec.3.7.

3.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Mode	Operation	Channel	Fundamental Frequency	Data Page
1.	Transmitting	01	2464 MHz	P11
2.		05	2468 MHz	P12
3.		08	2471 MHz	P13

NOTE 1 – Level = Read Level + Antenna Factor + Cable Loss (<1GHz)

NOTE 2 – Level = Read Level + Antenna Factor + Cable Loss

- Preamp Factor (>1GHz)

NOTE 3 – 0° was the table front facing the antenna. Degree is calculated from 0° clockwise facing the antenna.

NOTE 4 – The emission levels which not reported are too low against the official limit.

NOTE 5 – The emission levels recorded below is data of EUT configured in Lying direction, for Lying direction was the maximum emission direction during the test. The data of Side & Stand direction are too low against the official limit to be reported.

NOTE 6 – All reading are Quasi-Peak values below or equal to 1GHz and Peak values above 1GHz. For measurements above 1 GHz, the peak measured value complies with the average limit, it is unnecessary to perform an average measurement.

EUT : Remote Control Temperature : 23°C

Model No. : SFD-NR-M003 Humidity : 56%RH

Serial No. : E2009040901 Date of Test : Apr 15, 2009

Test Mode : Transmitting Ch01
2464MHz

Polarization	Frequency (MHz)	Read Level dB (μV)	Antenna Factor (dB/m)	Preamplifier Factor (dB)	Cable Loss (dB)	Factor (dB/m)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	31.94	-2.07	18.49	--	0.59	19.08	17.01	40	22.99	QP
	92.08	-2.56	9.82	--	0.85	10.67	8.11	43	35.39	
	245.34	-3.19	12.72	--	1.25	13.97	10.78	46	35.22	
	482.99	-2.01	17.70	--	2.33	20.03	18.02	46	27.98	
	627.52	-2.69	19.34	--	2.71	22.05	19.36	46	26.64	
	869.05	-1.94	21.42	--	3.46	24.88	22.94	46	23.06	
	1240.00	46.43	25.18	37.08	4.27	-7.63	38.80	74	35.20	PK
	1540.00	45.97	26.27	36.45	4.81	-5.37	40.60	74	33.40	
	2416.00	45.46	28.95	35.28	5.30	-1.03	44.43	74	29.57	
	3772.00	44.76	32.16	33.85	8.02	6.33	51.09	74	22.91	
	7948.00	36.57	36.07	34.40	12.89	14.56	51.13	74	22.87	
	12112.00	31.80	38.00	34.02	16.72	20.70	52.50	74	21.50	
Vertical	31.94	-2.88	18.49	--	0.59	19.08	16.20	40	23.80	QP
	129.91	-2.09	12.52	--	0.90	13.42	11.33	43.5	32.17	
	244.37	-2.07	12.68	--	1.25	13.93	11.86	46	34.14	
	429.64	-1.38	16.92	--	2.14	19.06	17.68	46	28.32	
	685.72	-2.67	19.63	--	2.99	22.62	19.95	46	26.05	
	946.65	-2.31	22.05	--	3.68	25.73	23.42	46	22.58	
	1192.00	46.35	24.99	37.19	4.18	-8.02	38.33	74	35.67	PK
	2008.00	46.41	27.62	35.69	5.30	-2.77	43.64	74	30.36	
	2740.00	46.30	29.86	35.01	6.17	1.02	47.32	74	26.68	
	3940.00	43.87	32.47	33.66	8.47	7.28	51.15	74	22.85	
	4816.00	43.63	33.26	34.61	9.86	8.51	52.14	74	21.86	
	10120.00	35.48	36.63	35.10	15.10	16.63	52.11	74	21.89	

TEST ENGINEER: DIO YANG

EUT : Remote Control Temperature : 23°C

Model No. : SFD-NR-M003 Humidity : 56%RH

Serial No. : E2009040901 Date of Test : Apr 15, 2009

Test Mode : Transmitting Ch05
2468MHz

Polarization	Frequency (MHz)	Read Level dB (μV)	Antenna Factor (dB/m)	Preamplifier Factor (dB)	Cable Loss (dB)	Factor (dB/m)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	33.88	-3.20	17.44	--	0.61	18.05	14.85	40	25.15	QP
	115.36	-2.36	12.71	--	0.88	13.59	11.23	43.5	32.27	
	242.43	-2.54	12.64	--	1.24	13.88	11.34	46	34.66	
	361.74	-2.62	15.65	--	1.87	17.52	14.90	46	31.10	
	695.42	-2.81	19.67	--	3.03	22.70	19.89	46	26.11	
	908.82	-2.39	21.76	--	3.56	25.32	22.93	46	23.07	
	1072.00	46.20	24.45	37.50	3.99	-9.06	37.14	74	36.86	PK
	2344.00	44.98	28.74	35.35	5.30	-1.31	43.67	74	30.33	
	3868.00	43.36	32.35	33.74	8.30	6.91	50.27	74	23.73	
	7048.00	38.57	35.35	34.50	11.67	12.52	51.09	74	22.91	
	9220.00	35.73	37.16	35.28	14.09	15.97	51.70	74	22.30	
	10876.00	33.44	38.07	34.48	15.80	19.39	52.83	74	21.17	
Vertical	30.97	-2.33	19.03	--	0.57	19.60	17.27	40	22.73	QP
	112.45	0.22	12.51	--	0.87	13.38	13.60	43.5	29.90	
	201.69	-1.45	10.78	--	1.09	11.87	10.42	43.5	33.08	
	378.23	-2.47	16.03	--	1.93	17.96	15.49	46	30.51	
	668.26	-2.64	19.55	--	2.91	22.46	19.82	46	26.18	
	929.19	-2.48	21.90	--	3.60	25.50	23.02	46	22.98	
	1180.00	46.23	24.93	37.22	4.18	-8.11	38.12	74	35.88	PK
	2212.00	45.27	28.33	35.47	5.30	-1.84	43.43	74	30.57	
	3232.00	45.95	31.05	34.49	7.19	3.75	49.70	74	24.30	
	5200.00	42.96	33.61	34.74	9.98	8.85	51.81	74	22.19	
	9496.00	36.43	36.89	35.25	14.24	15.88	52.31	74	21.69	
	12052.00	31.01	37.73	34.16	16.64	20.21	51.22	74	22.78	

TEST ENGINEER: DIO YANG

EUT : Remote Control Temperature : 23℃

Model No. : SFD-NR-M003 Humidity : 56%RH

Serial No. : E2009040901 Date of Test : Apr 15, 2009

Test Mode : Transmitting Ch08
2471MHz

Polarization	Frequency (MHz)	Read Level dB (μV)	Antenna Factor (dB/m)	Preamplifier Factor (dB)	Cable Loss (dB)	Factor (dB/m)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	34.85	-1.19	16.97	--	0.62	17.59	16.40	40	23.60	QP
	117.30	-0.55	12.84	--	0.88	13.72	13.17	43.5	30.33	
	281.23	-0.18	13.57	--	1.44	15.01	14.83	46	31.17	
	461.65	0.23	17.40	--	2.26	19.66	19.89	46	26.11	
	682.81	-0.73	19.62	--	2.99	22.61	21.88	46	24.12	
	932.10	-0.74	21.93	--	3.64	25.57	24.83	46	21.17	
	1324.00	46.06	25.51	36.89	4.42	-6.96	39.10	74	34.90	PK
	2572.00	45.49	29.40	35.14	5.68	-0.06	45.43	74	28.57	
	3712.00	44.85	32.05	33.91	7.89	6.03	50.88	74	23.12	
	8068.00	36.33	36.20	34.47	13.06	14.79	51.12	74	22.88	
	9892.00	34.43	36.51	35.21	14.92	16.22	50.65	74	23.35	
	12208.00	31.28	38.40	33.88	16.85	21.37	52.65	74	21.35	
Vertical	31.94	0.08	18.49	--	0.59	19.08	19.16	40	20.84	QP
	141.55	-1.64	12.01	--	0.91	12.92	11.28	43.5	32.22	
	315.18	1.56	14.32	--	1.62	15.94	17.50	46	28.50	
	526.64	0.38	18.24	--	2.43	20.67	21.05	46	24.95	
	601.33	-1.17	19.21	--	2.59	21.80	20.63	46	25.37	
	851.59	4.16	21.24	--	3.42	24.66	28.82	46	17.18	
	1048.00	46.86	24.33	37.56	3.96	-9.27	37.59	74	36.41	PK
	2044.00	46.74	27.75	35.65	5.30	-2.60	44.14	74	29.86	
	3028.00	45.04	30.56	34.76	7.05	2.85	47.89	74	26.11	
	4588.00	43.40	33.09	34.35	9.82	8.56	51.96	74	22.04	
	7228.00	39.27	35.49	34.48	11.96	12.97	52.24	74	21.76	
	9448.00	34.19	36.94	35.25	14.18	15.87	50.06	74	23.94	

TEST ENGINEER: DIO YANG

4 FUNDAMENTAL AND HARMONICS EMISSIONS TEST

4.1 Test Equipment

The following test equipments are used during the fundamental and spurious emission test in a semi-anechoic chamber:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Preamplifier	HP	8449B	3008A00864	May 19, 2008	May 19, 2009
2.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2008	May 19, 2009
3.	Horn Antenna	EMCO	3115	9607-4878	Apr 24, 2008	Apr 24, 2009
4.	Horn Antenna	EMCO	3116	00062643	Apr 24, 2008	Apr 24, 2009

4.2 Block Diagram of Test Setup

Same as Sec 3.2

4.3 Fundamental and Harmonics Emission Limit [FCC Part 15 Subpart C 15.249(a)]

Fundamental Frequency (MHz)	Distance (m)	Field Strength of Fundamental		Field Strength of Harmonics	
		(millivolts/meter)	dB (μV/m)	(microvolts/meter)	dB (μV/m)
2400 ~ 2483.5	3	50	94	500	54
NOTE 1 - Emission Level dB (μV/m) = 20 lg Emission Level (μV/m) NOTE 2 - Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system. NOTE 3 - The limits shown are based on Average value detector. NOTE 4 - The limit on peak emission is 20 dB above the maximum permitted average emission limit applicable to the EUT					

4.4 Test Configuration

The EUT was installed as show on Sec. 3.2 in fundamental and spurious emission test to meet ANSI C63.4:2003 requirements and operating in a manner that tend to maximize emission level in a normal application.

4.5 Operating Condition of EUT

- 4.5.1 Setup the EUT as shown in Sec. 3.2.
- 4.5.2 Turn on the power of all equipment.
- 4.5.3 Set the EUT on the test mode (Transmitting).
- 4.5.4 Configured the EUT in three axis: Lying, Side, Stand, and test separately.

4.6 Test Procedures

The EUT was placed on a FRP turntable that is 0.8 meter above ground. The turntable rotated 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 an antenna tower. Both horizontal and vertical polarization of the antenna was set on measurement. In order to find the maximum emission, all of the interference cables were manipulated according to FCC PART 15 Subpart C and ANSI C63.4:2003 requirements during fundamental and harmonics emission test.

The bandwidth of the VBW was set at 1MHz and RBW was set at 1MHz for peak emission measurement and 1MHz RBW, 10Hz VBW for average emission measurement.

The frequency range from 2.4 GHz to 25 GHz (Up to 10th harmonics from fundamental frequency) was checked.

The EUT was tested under the following test modes:

Mode	Operation	Channel	Fundamental Frequency
1.	Transmitting	01	2464 MHz
2.		05	2468 MHz
3.		08	2471 MHz

The test mode (Transmitting) was done on Fundamental and Harmonics Emission test.

4.7 Test Results

<PASS>

The frequency and amplitude of the highest radiated emission relative the limit is reported. All the emissions not reported below are too low against the FCC limit.

Mode	Operation	Channel	Fundamental Frequency	Data Page
1.	Transmitting	01	2464 MHz	P17
2.		05	2468 MHz	P18
3.		08	2471 MHz	P19

NOTE 1 - All readings are Peak values and Average values

NOTE 2 - The emission levels recorded below is data of EUT configured in Lying direction, for Lying direction was the maximum emission direction during the test. The data of Side & Stand direction are too low against the official limit to be reported.

NOTE 3 - The harmonics emission levels which not reported are too low against the official limit.

NOTE 4 – PK Level = Read Level + Factor

AV Level = PK Level – Correction Factor.

NOTE 5 - Factor = Antenna Factor + Cable Loss - Preamp Factor

NOTE 6 - Correction factor is measured as follows:

Duty Cycle x = Tx on / (Tx on + Tx off) = 7.145 / 15.651 = 0.46
Correction Factor = $ 20\log(\text{Duty Cycle}) $ = 6.74 dB

NOTE 7 – The duty cycle was calculated according to the plot in Appendix I

EUT : Remote Control Temperature : 22°C

Model No. : SFD-NR-M003 Humidity : 57% RH

Serial No. : E2009040901 Date of Test : Apr 16, 2009

Test Mode Transmitting Ch01
2464 MHz

Polarization	Frequency (MHz)	Read Level dB (μV)	Factor (dB/m)	Correction factor (dB)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2464	95.81	-0.17	--	95.64	114	18.36	PK
	4928	46.28	8.52	--	54.80	74	19.20	
	7392	42.61	13.41	--	56.02	74	17.98	
	9856	43.16	15.33	--	58.49	74	15.51	
	2464	95.81	-0.17	6.74	88.9	94	5.10	AV
	4928	46.28	8.52	6.74	48.06	54	5.94	
	7392	42.61	13.41	6.74	49.28	54	4.72	
	9856	43.16	15.33	6.74	51.75	54	2.25	
Vertical	2464	87.62	-0.17	--	87.45	114	26.55	PK
	4928	44.40	8.52	--	52.92	74	21.08	
	7392	42.45	13.41	--	55.86	74	18.14	
	9856	43.62	15.33	--	58.95	74	15.05	
	2464	87.62	-0.17	6.74	80.71	94	13.29	AV
	4928	44.40	8.52	6.74	46.18	54	7.82	
	7392	42.45	13.41	6.74	49.12	54	4.88	
	9856	43.62	15.33	6.74	52.21	54	1.79	

TEST ENGINEER: DIO YANG

EUT : Remote Control Temperature : 22°C

Model No. : SFD-NR-M003 Humidity : 57% RH

Serial No. : E2009040901 Date of Test : Apr 16, 2009

Test Mode Transmitting Ch05
2468 MHz

Polarization	Frequency (MHz)	Read Level dB (μV)	Factor (dB/m)	Correction factor (dB)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2468	91.94	-0.14	--	91.80	114	22.20	PK
	4936	49.30	8.50	--	57.80	74	16.20	
	7404	42.47	13.46	--	55.93	74	18.07	
	9872	43.02	15.33	--	58.35	74	15.65	
	2468	91.94	-0.14	6.74	85.06	94	8.94	AV
	4936	49.30	8.50	6.74	51.06	54	2.94	
	7404	42.47	13.46	6.74	49.19	54	4.81	
	9872	43.02	15.33	6.74	51.61	54	2.39	
Vertical	2468	89.43	-0.14	--	89.29	114	24.71	PK
	4936	51.83	8.50	--	60.33	74	13.67	
	7404	42.50	13.46	--	55.96	74	18.04	
	9872	43.54	15.33	--	58.87	74	15.13	
	2468	89.43	-0.14	6.74	82.55	94	11.45	AV
	4936	51.83	8.50	6.74	53.59	54	0.41	
	7404	42.50	13.46	6.74	49.22	54	4.78	
	9872	43.54	15.33	6.74	52.13	54	1.87	

TEST ENGINEER: DIO YANG

EUT : Remote Control Temperature : 22°C

Model No. : SFD-NR-M003 Humidity : 57% RH

Serial No. : E2009040901 Date of Test : Apr 16, 2009

Test Mode Transmitting Ch08
2471MHz

Polarization	Frequency (MHz)	Read Level dB (μV)	Factor (dB/m)	Correction factor (dB)	Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)	Remark
Horizontal	2471	93.59	-0.14	--	93.45	114	20.55	PK
	4942	49.64	8.51	--	58.15	74	15.85	
	7413	42.18	13.46	--	55.64	74	18.36	
	9884	44.08	15.36	--	59.44	74	14.56	
	2471	93.59	-0.14	6.74	86.71	94	7.29	AV
	4942	49.64	8.51	6.74	51.41	54	2.59	
	7413	42.18	13.46	6.74	48.90	54	5.10	
	9884	44.08	15.36	6.74	52.70	54	1.30	
Vertical	2471	87.60	-0.14	--	87.46	114	26.54	PK
	4942	51.66	8.51	--	60.17	74	13.83	
	7413	42.3	13.46	--	55.76	74	18.24	
	9884	43.78	15.36	--	59.14	74	14.86	
	2471	87.60	-0.14	6.74	80.72	94	13.28	AV
	4942	51.66	8.51	6.74	53.43	54	0.57	
	7413	42.3	13.46	6.74	49.02	54	4.98	
	9884	43.78	15.36	6.74	52.40	54	1.60	

TEST ENGINEER: DIO YANG

5 BANDWIDTH MEASUREMENT

5.1 Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2008	May 19,2009
2.	Horn Antenna	EMCO	3115	9607-4878	Apr 24, 2008	Apr 24, 2009
3.	Preamplifier	HP	8449B	3008A00864	May 19, 2008	May 19,2009
4.	Software	Audix	E3	SET00200 9912M295-2	--	--

5.2 Bandwidth Limit [FCC Part 15 Subpart C 15.231(c)]

Bandwidth is determined at the point 20dB down from the modulated carrier.

The 20dB bandwidth of the emission shall be contained within the frequency band designated in the rule section under which the equipment is operated.

5.3 Test Results

<PASS>

Channel	Fundamental Frequency	20dB Bandwidth $F_{\text{end}} - F_{\text{start}}$	Bandwidth Limit $(F_{\text{center}} * 0.5\%)$	Result
01	2464 MHz	0.158 MHz	12.32 MHz	Pass
05	2468 MHz	0.156 MHz	13.24 MHz	Pass
08	2471 MHz	0.156 MHz	12.36 MHz	Pass

All the test results are attached in next pages.

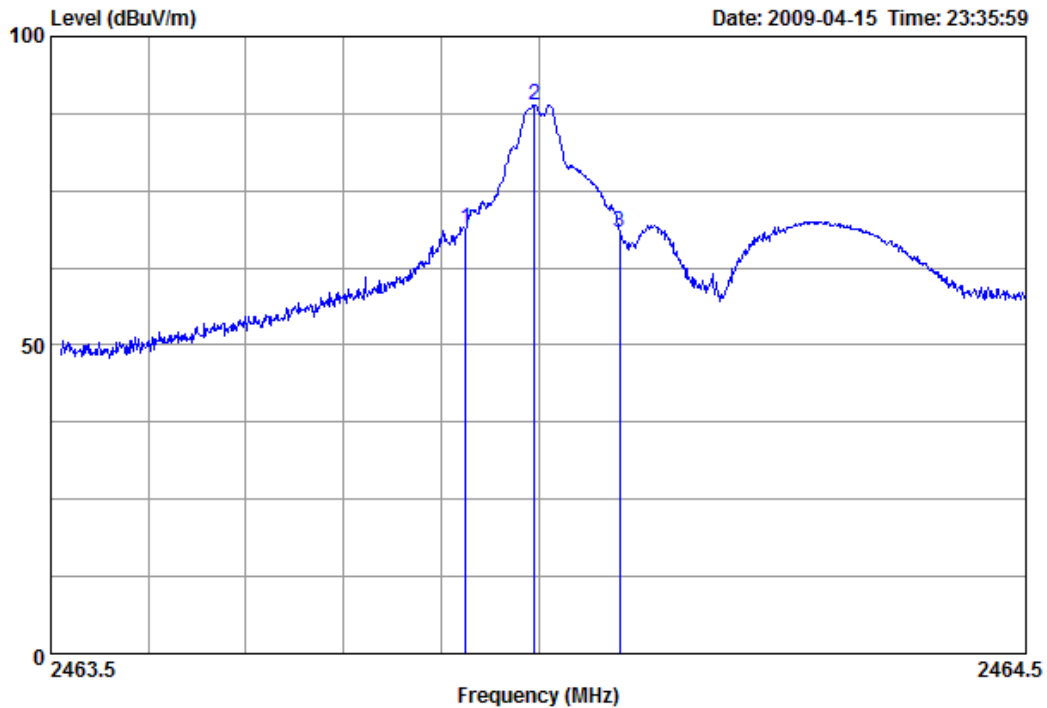
Channel	Fundamental Frequency	Pages
01	2464 MHz	P21
05	2468 MHz	P22
08	2471 MHz	P23



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Data: 321

File: D:\TEST DATA\D\TINGFENG RF.EM6 (323)



Site no : Audix ACI (3m Chamber)
Dis. / Ant. : 3m /EMCO3115

Data no. : 321

Env. / Ins. : 22'C 51% / E7405A
EUT : remote control
M/N : SFD-NR-M003
S/N : E2009040901
Power Rating: DC 4.5V
Test Mode : CH1 2464MHz

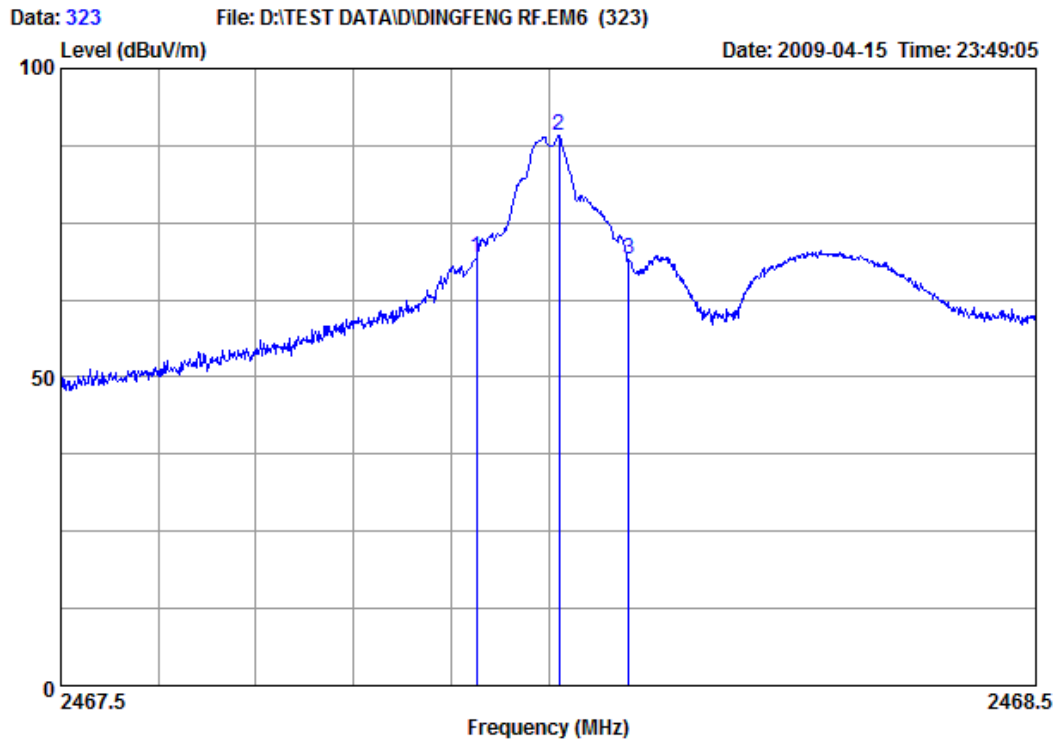
Ant. pol. : HORIZONTAL
Engineer : Dio

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)
1	2463.925	29.09	5.98	69.03	68.86
2	2463.996	29.09	5.98	89.14	88.97
3	2464.083	29.09	5.98	68.54	68.37

Remark: Emission Level= Antenna Factor + Cable Loss + Reading.



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Site no : Audix ACI (3m Chamber)
Dis. / Ant. : 3m /EMCO3115
Env. / Ins. : 22'C 51% / E7405A
EUT : remote control
M/N : SFD-NR-M003
S/N : E2009040901
Power Rating: DC 4.5V
Test Mode : CH5 2468MHz

Data no. : 323
Ant. pol. : HORIZONTAL
Engineer : Dio

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)
1	2467.926	29.11	5.98	69.42	69.28
2	2468.011	29.11	5.98	89.19	89.05
3	2468.082	29.11	5.98	69.20	69.06

Remark: Emission Level= Antenna Factor + Cable Loss + Reading.

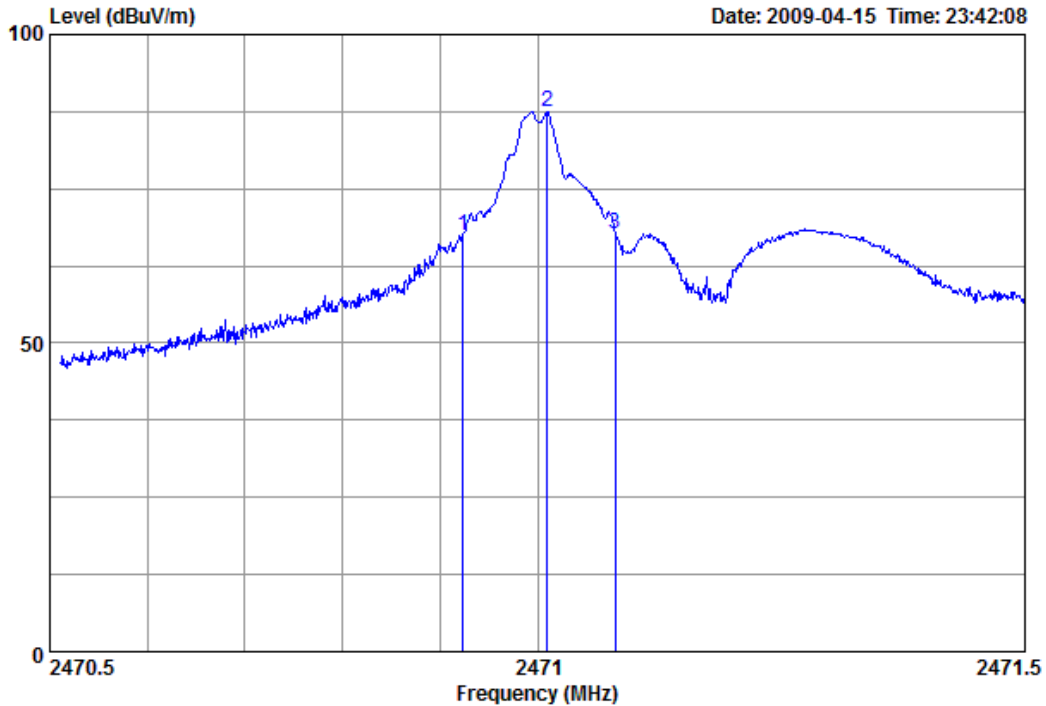


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audixaci@audix.com

Data: 322

File: D:\TEST DATA\ID\IDINGFENG RF.EM6 (323)

Date: 2009-04-15 Time: 23:42:08



Site no : Audix ACI (3m Chamber)
Dis. / Ant. : 3m /EMCO3115

Data no. : 322

Env. / Ins. : 22'C 51% / E7405A
EUT : remote control
M/N : SFD-NR-M003
S/N : E2009040901
Power Rating: DC 4.5V
Test Mode : CH11 2471MHz

Ant. pol. : HORIZONTAL
Engineer : Dio

	Freq. (MHz)	Antenna Factor (dB/m)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)
1	2470.924	29.11	5.98	67.49	67.35
2	2471.010	29.11	5.98	87.57	87.43
3	2471.080	29.11	5.98	67.71	67.57

Remark: Emission Level= Antenna Factor + Cable Loss + Reading.

6 BAND-EDGE MEASUREMENT

6.1 Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	Agilent	E7405A	MY45106600	May 19, 2008	May 19,2009
2.	Horn Antenna	EMCO	3115	9607-4878	Apr 24, 2008	Apr 24, 2009
3.	Preamplifier	HP	8449B	3008A00864	May 19, 2008	May 19,2009

6.2 Band-Edge Limit [FCC Part 15 Subpart C 15.249(d)]

Emissions radiated outside of the specified frequency bands, except for harmonic, 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 whichever is the lesser attenuation.

6.3 Test Results

<PASS>

All the test results are attached in next pages.

Channel	Fundamental Frequency	Pages
01	2464 MHz	P25-26
08	2471 MHz	P27-28

NOTE 1 – PK Level = Read Level + Factor

AV Level = PK Level – Correction Factor.

NOTE 2 - Factor = Antenna Factor + Cable Loss - Preamp Factor

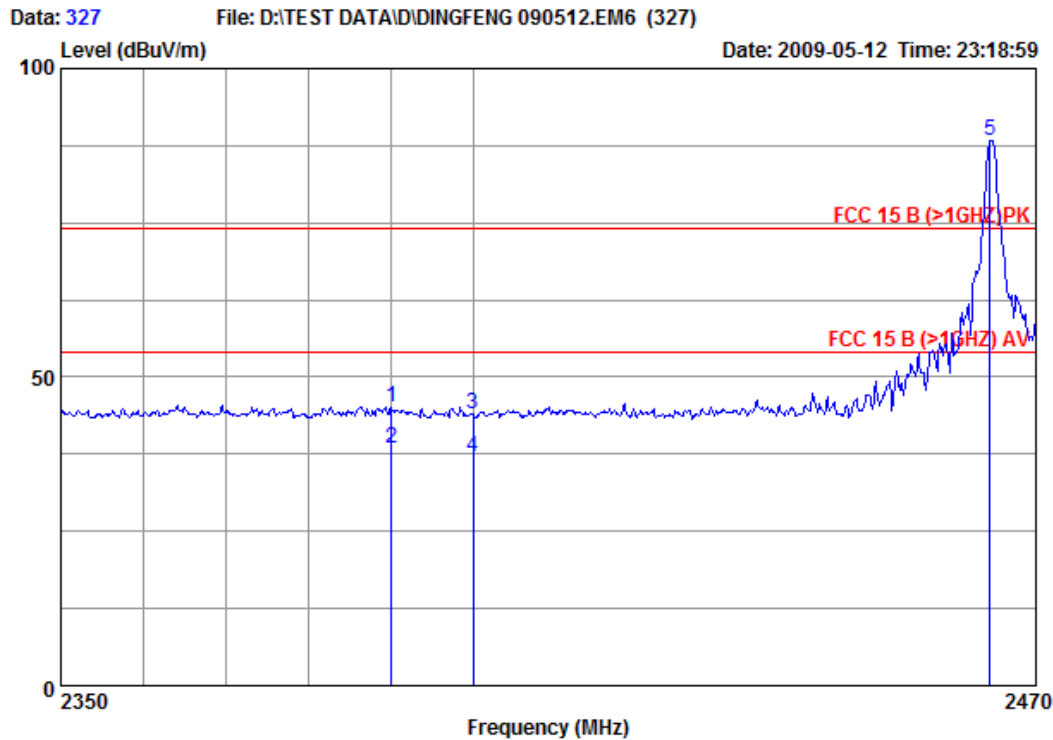
NOTE 3 - Correction factor is measured as follows:

Duty Cycle x = Tx on / (Tx on + Tx off) = 7.145 / 15.651 = 0.46
Correction Factor = $ 20\log(\text{Duty Cycle}) = 6.74 \text{ dB}$

NOTE 4 – The duty cycle was calculated according to the plot in Appendix I



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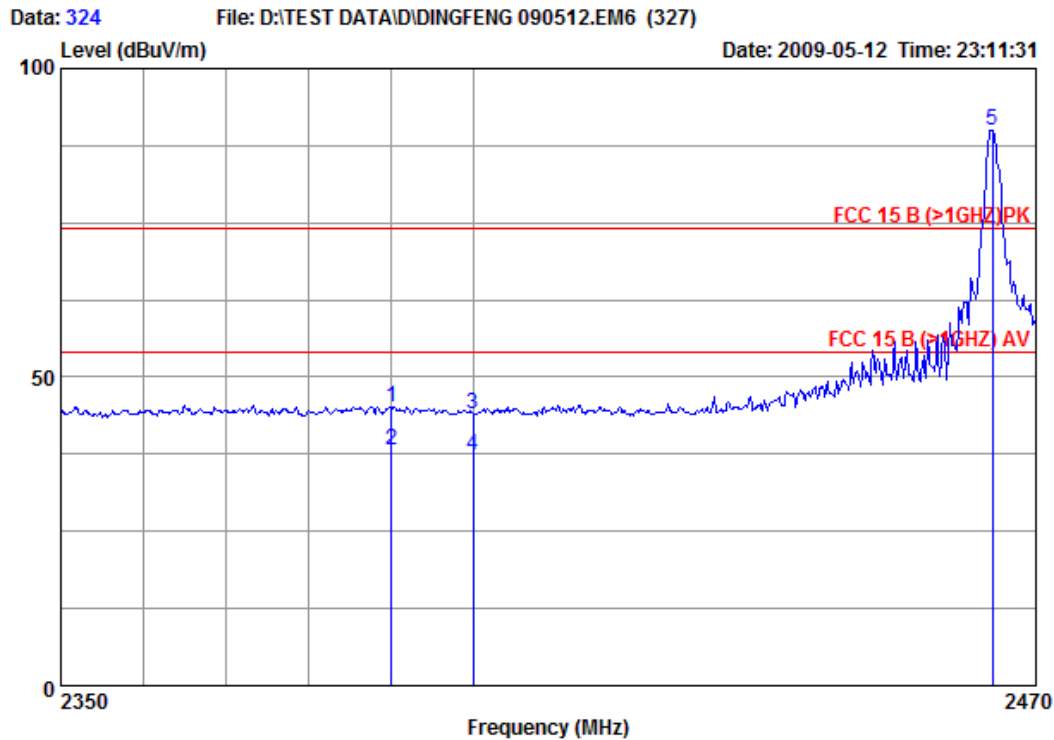
Site no : Audix ACI (3m Chamber) Data no. : 327
 Dis. / Ant. : 3m /EMC03115
 Limit : FCC 15 B (>1GHZ)PK Ant. pol. : HORIZONTAL
 Env. / Ins. : 22'C 51% / E7405A Engineer : Dio
 EUT : Remote Control
 M/N : SFD-NR-M003
 S/N : E2009040901
 Power Rating: DC 4.5V
 Test Mode : Transmitting Ch01 2464MHz

	Freq. (MHz)	Antenna Factor (dB/m)	Preamp Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	28.86	35.30	5.93	45.68	45.17	74.00	28.83	Peak
2	2390.000	28.86	35.30	5.93	38.94	38.43	54.00	15.57	Average
3	2400.000	28.91	35.30	5.94	44.37	43.92	74.00	30.08	Peak
4	2400.000	28.91	35.30	5.94	37.63	37.18	54.00	16.82	Average
5	2464.240	29.09	35.24	5.98	88.37	88.20	74.00	-14.20	Peak

Remarks: Emission Level= Antenna Factor + Cable Loss - Preamp Factor + Reading.



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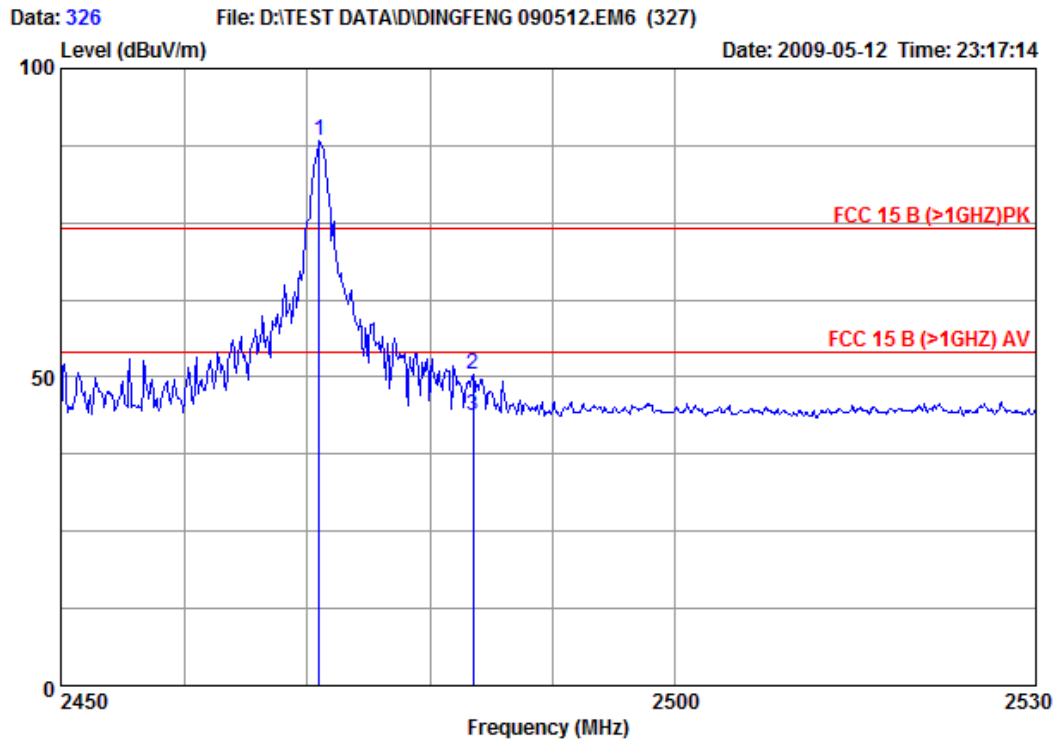
Site no : Audix ACI (3m Chamber) Data no. : 324
 Dis. / Ant. : 3m /EMC03115
 Limit : FCC 15 B (>1GHZ)PK Ant. pol. : VERTICAL
 Env. / Ins. : 22'C 51% / E7405A Engineer : Dio
 EUT : Remote Control
 M/N : SFD-NR-M003
 S/N : E2009040901
 Power Rating: DC 4.5V
 Test Mode : Transmitting Ch01 2464MHz

	Freq. (MHz)	Antenna Factor (dB/m)	Preamp Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2390.000	28.86	35.30	5.93	45.55	45.04	74.00	28.96	Peak
2	2390.000	28.86	35.30	5.93	38.81	38.30	54.00	15.70	Average
3	2400.000	28.91	35.30	5.94	44.47	44.02	74.00	29.98	Peak
4	2400.000	28.91	35.30	5.94	37.73	37.28	54.00	16.72	Average
5	2464.480	29.09	35.24	5.98	90.21	90.04	74.00	-16.04	Peak

Remarks: Emission Level= Antenna Factor + Cable Loss - Preamp Factor + Reading.



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Site no : Audix ACI (3m Chamber) Data no. : 326
Dis. / Ant. : 3m /EMCO3115
Limit : FCC 15 B (>1GHZ)PK Ant. pol. : HORIZONTAL
Env. / Ins. : 22'C 51% / E7405A Engineer : Dio
EUT : Remote Control
M/N : SFD-NR-M003
S/N : E2009040901
Power Rating: DC 4.5V
Test Mode : Transmitting Ch08 2471MHz

	Freq. (MHz)	Antenna Factor (dB/m)	Preamp Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2470.960	29.11	35.23	5.98	88.38	88.24	74.00	-14.24	Peak
2	2483.500	29.15	35.22	5.99	50.46	50.38	74.00	23.62	Peak
3	2483.500	29.15	35.22	5.99	43.72	43.64	54.00	10.36	Average

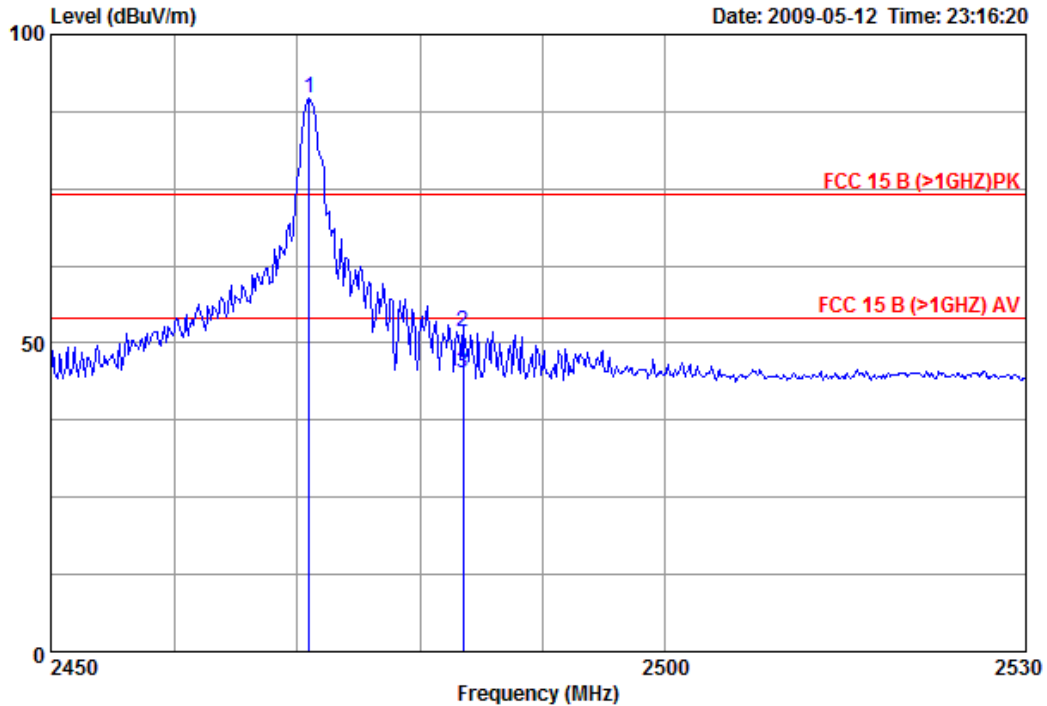
Remarks: Emission Level= Antenna Factor + Cable Loss - Preamp Factor + Reading.



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Data: 325

File: D:\TEST DATA\D\TINGFENG 090512.EM6 (327)



Site no : Audix ACI (3m Chamber)
 Dis. / Ant. : 3m /EMC03115
 Limit : FCC 15 B (>1GHZ)PK
 Env. / Ins. : 22'C 51% / E7405A
 EUT : Remote Control
 M/N : SFD-NR-M003
 S/N : E2009040901
 Power Rating: DC 4.5V
 Test Mode : Transmitting Ch08 2471MHz

Data no. : 325
 Ant. pol. : VERTICAL
 Engineer : Dio

	Freq. (MHz)	Antenna Factor (dB/m)	Preamp Factor (dB)	Cable Loss (dB)	Reading (dBuV)	Emission Level (dBuV/m)	Limits (dBuV/m)	Margin (dB)	Remark
1	2470.960	29.11	35.23	5.98	89.73	89.59	74.00	-15.59	Peak
2	2483.500	29.15	35.22	5.99	51.94	51.86	74.00	22.14	Peak
3	2483.500	29.15	35.22	5.99	45.20	45.12	54.00	8.88	Average

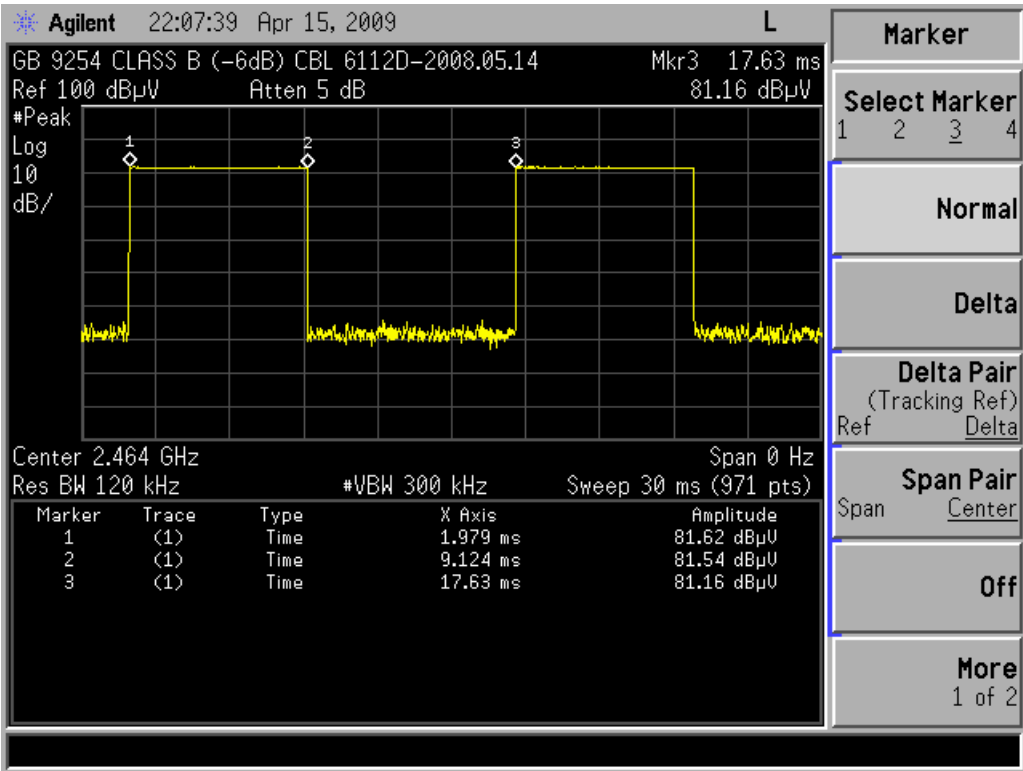
Remarks: Emission Level= Antenna Factor + Cable Loss - Preamp Factor + Reading.

7 DEVIATION TO TEST SPECIFICATIONS

None.

APPENDIX I

PLOT OF DUTY CYCLE



DUTY CYCLE