Application for FCC Certification
On behalf of
APEK SECURE LITE CO., LTD.

Motion sensor with RF transmitter

Model No.: 7938D

Serial No.: F05020101

FCC ID : S8M9K10000A

Prepared For : APEK SECURE LITE CO., LTD.
NO.171, 13F/2, SUNGTEH ROAD,
TAIPEI, TAIWAN

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Report No. : ACI-F05023
Date of Test : Apr 11-13, 2005
Date of Report : Apr 15, 2005

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TEST REPORT FOR FCC CERTIFICATION

Applicant	:	APEK SECURE LITE CO., LTD.
Manufacturer	:	NINGBO LUXPERT ELECTRONICS INDUSTRIAL CO., LTD. FOUNDTON INDUSTRIAL CO., LTD.
EUT Description	:	Motion sensor with RF transmitter

(A) Model No. : 7938D
(B) Serial No. : F05020101
(C) Power Supply : 120V/60Hz
(D) Crystal Frequency : 433.92MHz

Test Procedure Used:

FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2004 AND ANSI C63.4:2001

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: 7938D; S/N: F05020101), which was tested in 3m anechoic chamber on Apr 11-13, 2005 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 11-13, 2005

Prepared By: Sarah Liu 2005.4.20
SARAH LIU / Assistant

Reviewer: For and on behalf of
Audix Technology (Shanghai) Co., Ltd.
SAMMY CHEN / Supervisor

Approved Signatory: 27/Apr/05
Authorized Signature(s) YO / Deputy 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	Results	Meets Limit
Conducted Disturbance At main terminal	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2004 AND ANSI C63.4:2001	Pass	15.207 Class B
Radiated Disturbance	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2004 AND ANSI C63.4:2001	Pass	15.209 Class B
Fundamental and Spurious	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2004 AND ANSI C63.4:2001	Pass	15.231 (b)
Bandwidth	FCC RULES AND REGULATIONS PART 15 SUBPART C OCTOBER 2004 AND ANSI C63.4:2001	Pass	15.231 (c)

2 GENERAL INFORMATION

2.1 Description of Equipment Under Test

Description	:	Motion sensor with RF transmitter
Type of EUT	:	☑ Production ☐ Pre-product ☐ Pro-type
Model No.	:	7938D
Serial No.	:	F05020101
Applicant	:	APEK SECURE LITE CO., LTD. NO.171, 13F/2, SUNGTEH ROAD, TAIPEI, TAIWAN
Manufacturer 1#	:	NINGBO LUXPERT ELECTRONICS INDUSTRIAL CO., LTD NINGHAI TECHNOLOGIC INDUSTRIAL DISTRICT, ZHEJIANG, CHINA
Manufacturer 2#	:	FOUNDTON INDUSTRIAL CO., LTD. BLOCK C NO.012, JIANGRU ROAD, SHANGLIAO VILLAGE, NO.30, WANGJIANG OF JIANGBEI DISTRICT, HUIZHOU, GUANGDONG, CHINA

2.2 Description of Test Facility

Site Description (Semi-Anechoic Chamber)	:	Sept. 17, 1998 file on 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, China 200233
FCC registration Number	:	91789
Accredited by NVLAP, Lab Code	:	200371-0

2.3 Measurement Uncertainty

Conducted Disturbance Expanded Uncertainty	:	U =1.84dB
Radiated Emission Expanded Uncertainty	:	U = 2.96dB

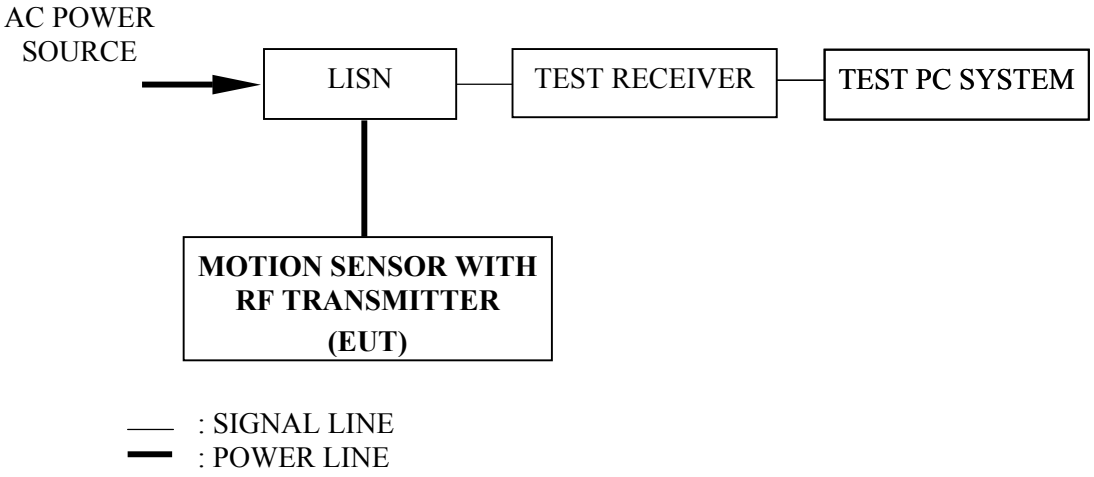
3 CONDUCTED EMISSION TEST

3.1 Test Equipment

The following test equipment are used during the conducted emission test in a shielded room:

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Test Receiver	R&S	ESHS10	844077/020	Jan 28, 2005	Jan 28, 2006
2.	Line Impedance Stabilization Network (LISN#2)	Kyoritsu	KNW-407	8-1280-5	Apr 27, 2004	Apr 27, 2005
3.	Attenuator	Yalian	TTS-1	#1	Mar 18, 2005	Sep 18, 2005
4.	Software	Audix	E3	SET00200 9804M592	--	--

3.2 Block Diagram of Test Setup



3.3 Conducted Emission Limit

Frequency Range (MHz)	Limits dB(μV)	
	Quasi-peak	Average
0.15 ~ 0.5	66~56	56~46
0.5 ~ 5	56	46
5 ~ 30	60	50
NOTE 1 – The lower limit shall apply at the transition frequencies. NOTE 2 – The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz~0.50 MHz NOTE 3 – If the average limit is met when using a quasi-peak detector, the EUT shall be deemed to meet both limits and measurement with the average detector is unnecessary.		

3.4 Test Configuration

The EUT was installed as shown on Sec.3.2 to meet FCC requirement and operating in a manner which tends to maximize its 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 and the EUT.

3.5.3 Set the EUT on the test mode, and then test.

3.6 Test Procedures

The EUT was connected to the power mains through a Line Impedance Stabilization Network (LISN). This provided a 50 ohm coupling impedance for the measuring equipment.

Both sides of AC line (VA & VB) were checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables were changed or manipulated according to FCC Part 15 during conducted emission test.

The bandwidth of Test Receiver ESHS10 was set at 10 kHz.

The frequency range from 150 kHz to 30 MHz was checked.

The test modes (normal) were done on conducted disturbance test and all the test results are listed in Sec. 3.7.

3.7 Test Results

< PASS >

The frequency and amplitude of the highest conducted emission relative to the limit is reported. All emissions not reported below are too low against the prescribed limits.

The worst emission is detected at 0.524 MHz with corrected signal level of 30.44 dB(μV) (limit is 56.00 dB(μV)), when the VB of the EUT is connected to LISN.

NOTE 1 - Probe Factor means insertion loss of LISN.

NOTE 2 - Factor = Cable Loss + Probe Factor.

NOTE 3 - Emission Level = Meter Reading + Factor.

EUT	:	Motion sensor with RF transmitter	Temperature :	21℃	
Model No.	:	7938D	Humidity	:	54%
Serial No.	:	F05020101			
Test Mode	:	Normal	Date of Test	:	Apr 12, 2005

Test Line	Frequency (MHz)	Factor (dB)	Meter Reading dB(μV)	Emission Level dB(μV)	Limits dB(μV)	Margin (dB)
VA	0.160	10.37	13.70	24.07	65.47	41.40
	0.524	10.28	19.34	29.62	56.00	26.38
	2.237	10.35	9.64	19.99	56.00	36.01
	6.252	10.45	5.03	15.48	60.00	44.52
	14.060	10.76	4.06	14.82	60.00	45.18
	23.387	11.22	6.00	17.22	60.00	42.78
VB	0.160	10.40	13.92	24.32	65.47	41.15
	0.214	10.34	12.74	23.08	63.05	39.97
	0.524	10.31	20.13	30.44	56.00	25.56
	2.237	10.41	9.46	19.87	56.00	36.13
	5.898	10.51	4.30	14.81	60.00	45.19
	14.440	10.76	3.58	14.34	60.00	45.66

TEST ENGINEER: Dennis Zhang
(DENNIS ZHANG)

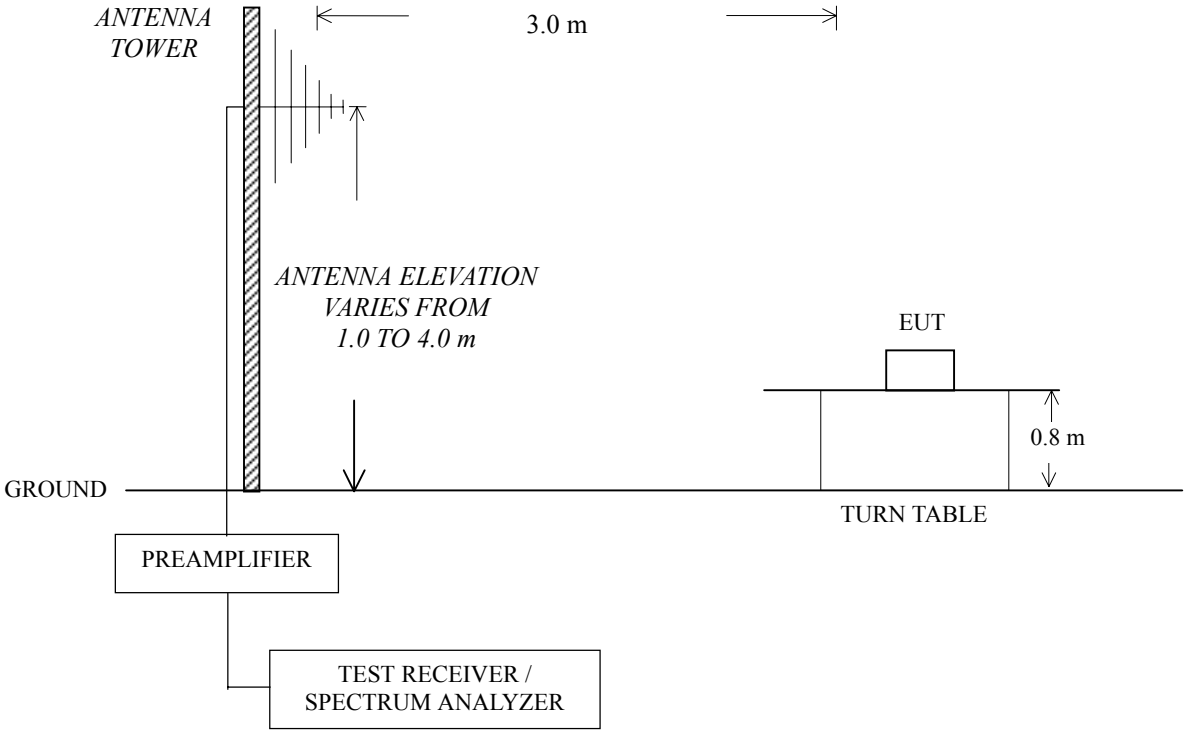
4 RADIATED EMISSION TEST

4.1 Test Equipment

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

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8593EM	3628A00167	Apr 22, 2004	Apr 22, 2005
2.	Bilog Antenna	Chase	CBL6111	1146	Mar 18, 2005	Sep 18, 2005
3.	Test Receiver	R&S	ESVS10	832699/004	May 24, 2004	May 24, 2005
4.	Preamplifier	HP	8447D	2944A06849	Mar 20, 2005	Sep 18, 2005
5.	50ΩCoaxial Switch	ANRITSU	MP59B	M73389	Mar 19, 2005	Sep 19, 2005
6.	Software	Audix	E3	SET00200 9912M295-2	--	--

4.2 Block Diagram of Test Setup



4.3 Radiated Emission Limit

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 log 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.

4.4 Test Configuration

The EUT was installed as show on Sec. 4.2 in radiated emission test to meet FCC requirement and operating in a manner, which 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. 4.2.

4.5.2 Turn on the power of all equipments and the EUT.

4.5.3 Set the EUT on the test modes (lying, side, stand), and then test.

4.6 Test Procedures

The EUT was placed on a turntable, which is 0.8 meter above the 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. The antenna moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (Calibrated Bilog Antenna) was used as a receiving antenna. 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.
The bandwidth setting on Test Receiver ESVS10 is 120 kHz below 1000 MHz.

The frequency range from 30 MHz to 1G Hz was checked.

The test modes (lying, side, stand) were done on radiated disturbance test. Please refer to Sec.4.7.

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.

The worst test mode is for Stand. The worst emission at horizontal polarization was detected at 812.790 MHz with corrected signal level of 33.54 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was height 1.18m and the turntable was at 220°. The worst emission at vertical polarization was detected at 783.690 MHz with corrected signal level of 32.69 dB (μV/m) (limit is 46.00 dB (μV/m)), when the antenna was height 1.00m and the turntable was at 110°.

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

NOTE 1 – Probe Factor means Antenna Factor.

NOTE 2 – Emission Level = Meter Reading + Antenna Factor + Cable Loss – Preamp Factor.

NOTE 3 – All readings are Quasi-Peak values.

NOTE 4 – The Test Receiver was used in measuring Quasi-Peak values when the frequency range is from 30MHz to 1000MHz.

EUT	:	Motion sensor with RF transmitter	Temperature :	20℃	
Model No.	:	7938D	Humidity :	40%	
Serial No.	:	F05020101			
Test Mode	:	Lying	Date of Test :	Apr 11, 2004	

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	34.850	30.71	14.33	1.05	28.85	17.24	40.00	22.76
	104.690	31.63	11.39	1.82	28.47	16.37	43.50	27.13
	140.580	34.73	11.97	2.11	28.30	20.51	43.50	22.99
	256.980	31.34	13.44	3.04	27.68	20.14	46.00	25.86
	356.890	33.38	16.10	3.57	28.02	25.03	46.00	20.97
	689.330	32.37	23.02	5.30	28.80	31.89	46.00	14.11
Vertical	34.850	31.25	14.33	1.05	28.85	17.78	40.00	22.22
	109.540	32.43	11.79	1.84	28.45	17.61	43.50	25.89
	255.040	31.37	13.39	3.03	27.69	20.10	46.00	25.90
	376.290	31.28	16.59	3.69	28.15	23.41	46.00	22.59
	591.630	32.23	20.57	4.77	29.00	28.57	46.00	17.43
	749.740	33.32	22.74	5.57	28.64	32.99	46.00	13.01

TEST ENGINEER: Dennis Zhang
(DENNIS ZHANG)

EUT	:	Motion sensor with RF transmitter	Temperature :	20℃	
Model No.	:	7938D	Humidity :	40%	
Serial No.	:	F05020101			
Test Mode	:	Side	Date of Test :	Apr 11, 2004	

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	31.940	30.97	14.31	1.02	28.88	17.42	40.00	22.58
	111.480	31.15	11.64	1.84	28.44	16.19	43.50	27.31
	218.180	36.11	10.29	2.83	27.82	21.41	46.00	24.59
	295.780	31.70	14.22	3.19	27.61	21.50	46.00	24.50
	487.840	32.60	18.29	4.33	28.92	26.30	46.00	19.70
	667.290	32.09	21.56	5.17	28.86	29.96	46.00	16.04
Vertical	33.880	33.40	14.35	1.04	28.86	19.93	40.00	20.07
	126.030	34.32	12.10	1.95	28.37	20.00	43.50	23.50
	252.130	31.82	13.18	3.01	27.70	20.31	46.00	25.69
	366.590	31.20	16.17	3.62	28.09	22.90	46.00	23.10
	541.190	31.73	20.35	4.60	29.00	27.68	46.00	18.32
	746.830	32.61	22.77	5.56	28.65	32.29	46.00	13.71

TEST ENGINEER: Denn's Zhang
(DENNIS ZHANG)

EUT	:	Motion sensor with RF transmitter	Temperature :	20℃	
Model No.	:	7938D	Humidity :	40%	
Serial No.	:	F05020101			
Test Mode	:	Stand	Date of Test :	Apr 11, 2004	

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	31.940	32.83	14.31	1.02	28.88	19.28	40.00	20.72
	51.340	40.99	6.96	1.24	28.79	20.40	40.00	19.60
	106.630	30.83	11.98	1.83	28.46	16.18	43.50	27.32
	218.180	36.95	10.29	2.83	27.82	22.25	46.00	23.75
	615.880	32.40	21.31	4.91	28.96	29.66	46.00	16.34
	812.790	33.09	23.04	5.88	28.47	33.54	46.00	12.46
Vertical	31.940	30.69	14.31	1.02	28.88	17.14	40.00	22.86
	46.490	33.43	9.40	1.17	28.73	15.27	40.00	24.73
	109.540	32.57	11.79	1.84	28.45	17.75	43.50	25.75
	259.890	31.29	13.25	3.05	27.68	19.91	46.00	26.09
	528.580	33.27	19.40	4.53	29.00	28.20	46.00	17.80
	783.690	32.76	22.75	5.73	28.55	32.69	46.00	13.31

TEST ENGINEER: Dennis Zhang
(DENNIS ZHANG)

5 FUNDAMENTAL AND SPURIOUS EMISSIONS TEST

5.1 Test Equipment

The following test equipment 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	8447D	2944A06849	Mar 20, 2005	Sep 20, 2005
2.	Bilog Antenna	Chase	CBL6111	1146	Mar 20, 2005	Sep 20, 2005
3.	Test Receiver	R&S	ESVS10	832699/004	May 24, 2004	May 24, 2005
4.	Amplifier	HP	8449B	3008A00864	Apr 20, 2004	Apr 20, 2005
5.	Spectrum Analyzer	HP	8593EM	3628A00167	Apr 22, 2004	Apr 22, 2005
6.	Horn Antenna	EMCO	3115	9607-4878	Apr 20, 2004	Oct 20, 2005
7.	Oscilloscope	HP	54602B	US36181094	Mar 19, 2005	Sep 19, 2005

5.2 Block Diagram of Test Setup

Same as Sec 4.2

5.3 Fundamental and Spurious Emission Limit

Frequency (MHz)	Distance (m)	Field strength limits of fundamental	Field strength limits of spurious emissions
		(μV/m)	(μV/m)
260 ~ 470	3	3750-12500*	375-1250*

NOTE 1 - Emission Level dB (μV/m) = 20 log 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 - "*"means linear interpolation.
NOTE 5 - The fundamental frequency of the EUT is 433.92MHz, Emission Level dB (μV/m)=20log(41.6667*433.92-7083.3333)= 80.55 dB (μV/m) and the limit of the Harmonic is 60.55μV/m).

5.4 Test Configuration

The EUT was installed as show on Sec. 4.2 in fundamental and spurious emission test to meet ANSI C63.4:2001 requirements and operating in a manner that tend to maximize emission level in a normal application.

5.5 Operating Condition of EUT

5.5.1 Setup the EUT as shown in Sec. 4.2.

5.5.2 Turn on the power of all equipments and the EUT.

5.5.3 Set the EUT on the test modes (Lying, Side, Stand), and then test.

5.6 Test Procedures

The EUT was placed on a table 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. Broadband antenna (Calibrated antenna) was used as receiving antenna below 1000MHz. Horn antenna were used as receiving antenna above 1000MHz. 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 C63.4:2001 requirements during fundamental and spurious emission test.

The bandwidth setting on Test Receiver ESVS10 is 120 kHz below 1000 MHz.
The bandwidth setting on Spectrum analyzer 8593EM is 1 MHz above 1000 MHz.

The frequency range from 30 MHz to 4339.2 MHz (the tenth harmonic) was checked. The EUT rotated through three orthogonal axes to determine which attitude and configuration produces the highest emission.

5.7 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.

NOTE 1 - All readings are Peak Values.
NOTE 2 - Emission Level = Meter Reading + Antenna Factor + Cable Loss
– Preamp Factor – Correction Factor
NOTE 3 - Correction factor is calculated by averaging the sum of the pulse train.
Correction factor is measured as follows:
Turn on the EUT and set the spectrum to the fundamental frequency and set the scan width to 0 Hz. Then connect a storage oscilloscope to the video output of the spectrum that is used to detect the pulse train. Adjust the oscilloscope settings to observe the pulse train and determine the number and width of the pulses, as well as the period of the train.
Correction Factor = |20log((15*1+7*3)/87))|
= |-7.63 dB| = 7.63 dB
(See Appendix I)

EUT	:	Motion sensor with RF transmitter	Temperature :	20℃
Model No.	:	7938D	Humidity :	40%
Serial No.	:	F05020101		
Test Mode	:	Lying	Date of Test :	Apr 13, 2005

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Correction factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	433.92	69.82	17.72	4.03	28.56	7.63	55.38	80.55	25.17
	867.84	39.13	22.88	6.12	28.36	7.63	32.14	60.55	28.41
	1301.76	44.41	25.40	7.58	36.73	7.63	33.03	60.55	27.52
	1735.68	43.49	26.81	9.27	35.90	7.63	36.04	60.55	24.51
Vertical	433.92	72.73	17.72	4.03	28.56	7.63	58.29	80.55	22.26
	867.84	36.87	22.88	6.12	28.36	7.63	29.88	60.55	30.67
	1301.76	44.50	25.40	7.58	36.73	7.63	33.12	60.55	27.43
	1735.68	43.99	26.81	9.27	35.90	7.63	36.54	60.55	24.01

TEST ENGINEER: Denn's Zhang
(DENNIS ZHANG)

EUT	:	Motion sensor with RF transmitter	Temperature :	20℃
Model No.	:	7938D	Humidity :	40%
Serial No.	:	F05020101		
Test Mode	:	Side	Date of Test :	Apr 13, 2005

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Correction factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	433.92	69.31	17.72	4.03	28.56	7.63	54.87	80.55	25.68
	867.84	38.70	22.88	6.12	28.36	7.63	31.71	60.55	28.84
	1301.76	44.93	25.40	7.58	36.73	7.63	33.55	60.55	27.00
	1735.68	44.43	26.81	9.27	35.90	7.63	36.98	60.55	23.57
Vertical	433.92	67.79	17.72	4.03	28.56	7.63	53.35	80.55	27.20
	867.84	39.27	22.88	6.12	28.36	7.63	32.28	60.55	28.27
	1301.76	44.98	25.40	7.58	36.73	7.63	33.60	60.55	26.95
	1735.68	44.45	26.81	9.27	35.90	7.63	37.00	60.55	23.55

TEST ENGINEER: Denn's Zhang
(DENNIS ZHANG)

EUT	:	Motion sensor with RF transmitter	Temperature :	20℃
Model No.	:	7938D	Humidity :	40%
Serial No.	:	F05020101		
Test Mode	:	Stand	Date of Test :	Apr 13, 2005

Polarization	Frequency (MHz)	Meter Reading dB (μV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Correction factor (dB)	Emission Level dB (μV/m)	Limits dB (μV/m)	Margin (dB)
Horizontal	433.92	68.55	17.72	4.03	28.56	7.63	54.11	80.55	26.44
	867.84	41.75	22.88	6.12	28.36	7.63	34.76	60.55	25.79
	1301.76	44.66	25.40	7.58	36.73	7.63	33.28	60.55	27.27
	1735.68	44.76	26.81	9.27	35.90	7.63	37.31	60.55	23.24
Vertical	433.92	68.25	17.72	4.03	28.56	7.63	53.81	80.55	26.74
	867.84	37.10	22.88	6.12	28.36	7.63	30.11	60.55	30.44
	1301.76	44.93	25.40	7.58	36.73	7.63	33.55	60.55	27.00
	1735.68	43.81	26.81	9.27	35.90	7.63	36.36	60.55	24.19

TEST ENGINEER: Denni's Zhang
(DENNIS ZHANG)

6 BANDWIDTH MEASUREMENT

6.1 Test Equipment

Item	Type	Manufacturer	Model No.	Serial No.	Last Cal.	Next Cal.
1.	Spectrum Analyzer	HP	8593EM	3628A00167	Apr 22, 2004	Apr 22, 2005
2.	Bilog Antenna	Chase	CBL6111	1146	Mar 18, 2005	Sep 18, 2005
3.	Preamplifier	HP	8447D	2944A06849	Mar 20, 2005	Sep 20, 2005
4.	Software	Audix	E3	SET00200 9912M295-2	--	--

6.2 Bandwidth Limit

The bandwidth of the emission shall be no wider than 0.25% of the center frequency. Bandwidth is determined at the point 20dB down from the modulated carrier. Bandwidth Limit is:

Limit= 0.25% × 433.911(MHz) = 1.0848(MHz) (Test mode: Horizontal)
Limit= 0.25% × 433.905(MHz) = 1.0848(MHz) (Test mode: Vertical)

The bandwidth of Spectrum Analyzer (M/N: 8593EM) is 120kHz in the test.

6.3 Test Results

<PASS>
The bandwidth of the Fundament emission is:

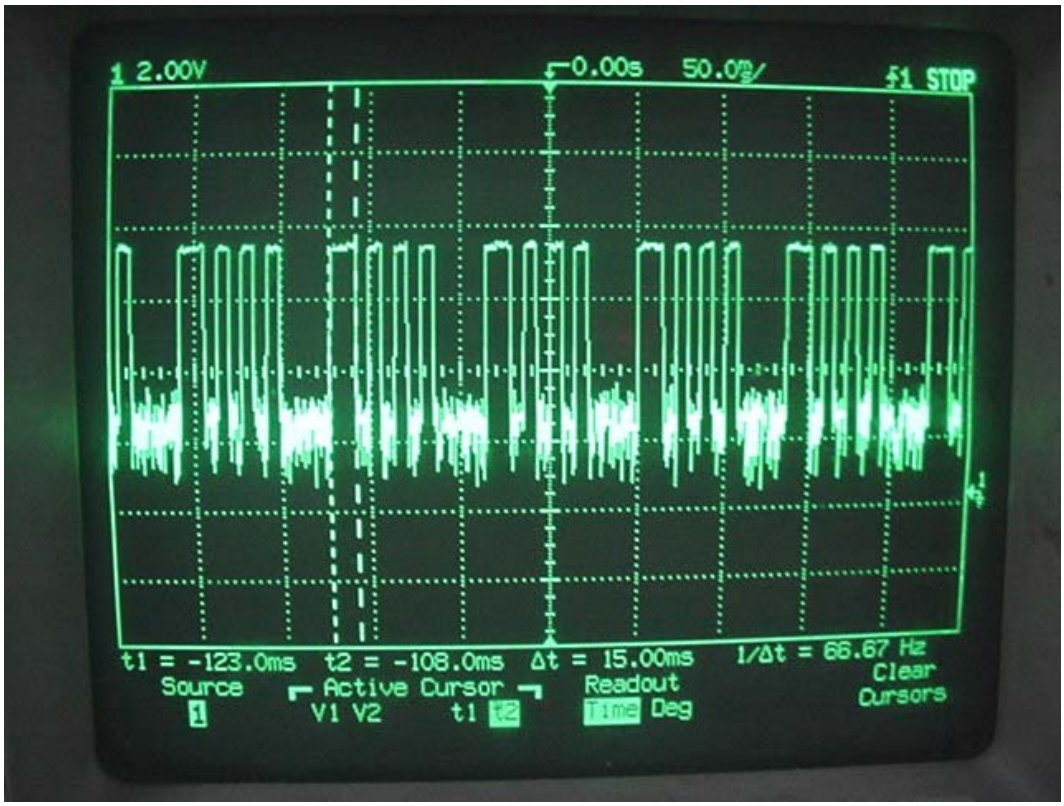
B.W. = 434.076 – 433.696 = 0.380MHz (Test mode: Horizontal)
B.W. = 434.077 – 433.700 = 0.377MHz (Test mode: Vertical)
(See Appendix II)

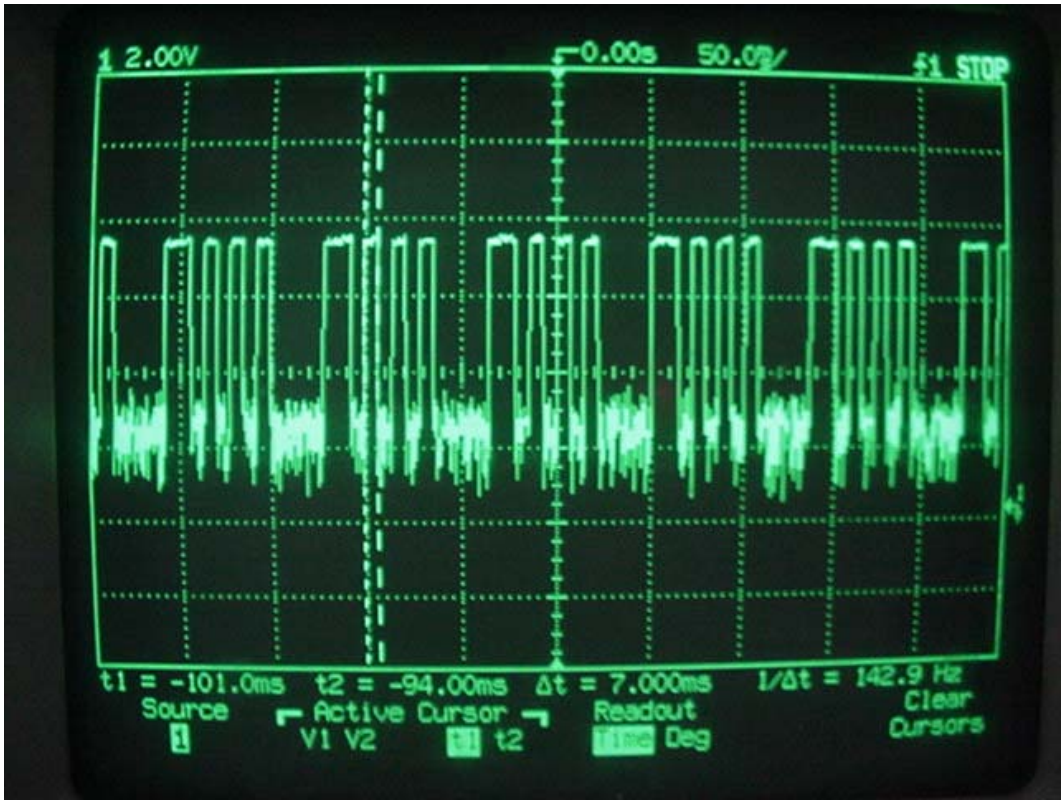
7 OPERATION DESCRIPTION

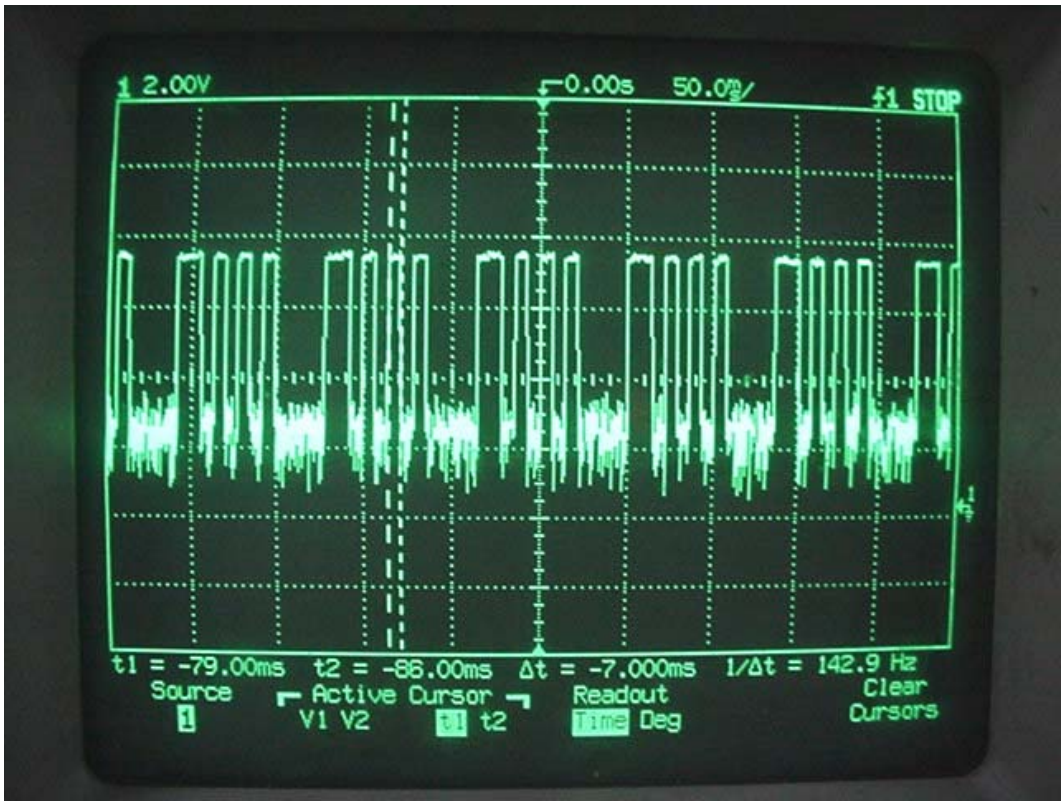
Motion sensor with RF transmitter (M/N: 7938D) employs a switch that will automatically deactivate the Controller within not more than 5 seconds of being released.

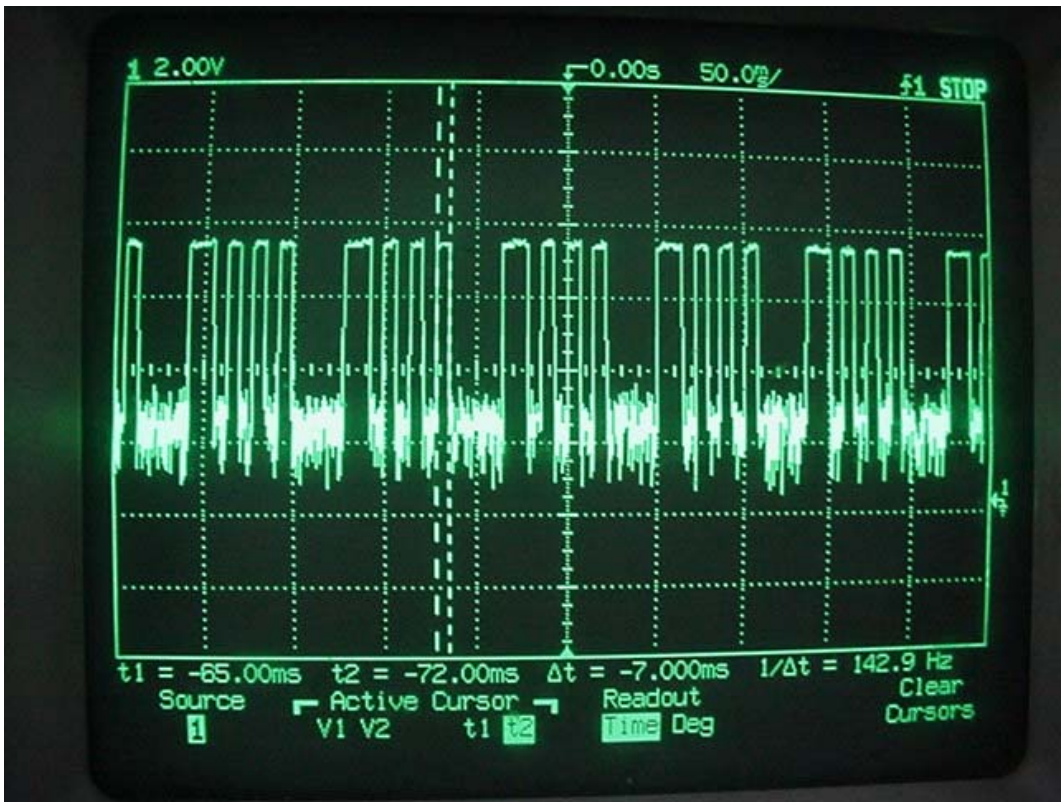
APPENDIX I

PLOT OF THE PULSE TRAIN

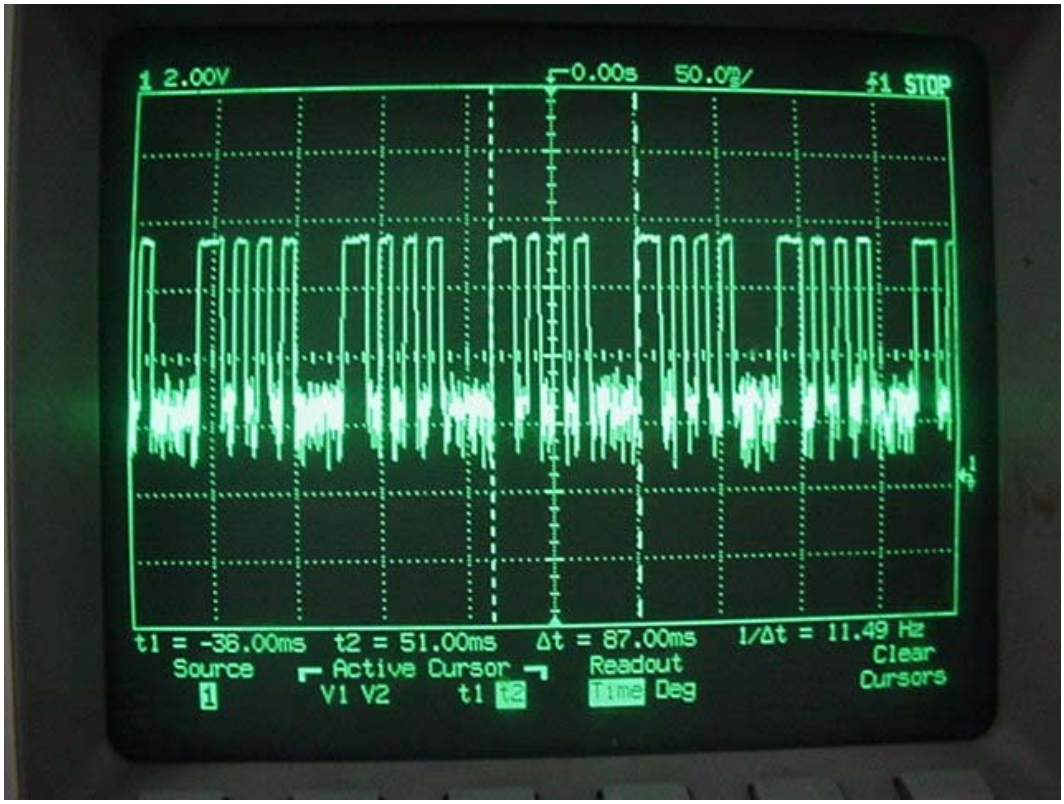

1 2.00V
0.00s 50.0
STOP
t1 = -123.0ms t2 = -108.0ms Δt = 15.00ms 1/Δt = 66.67 Hz
Source Active Cursor Readout Clear
1 V1 V2 t1 t2 Time Deg Cursors


1 2.00V
0.00s 50.0
STOP
t1 = -101.0ms t2 = -94.00ms Δt = 7.000ms 1/Δt = 142.9 Hz
Source Active Cursor Readout Clear
1 V1 V2 t1 t2 Time Deg Cursors


1 2.00V
0.00s 50.0
1 STOP
t1 = -79.00ms t2 = -86.00ms Δt = -7.000ms 1/Δt = 142.9 Hz
Source
1
Active Cursor
V1 V2
t1 t2
Readout
Time Deg
Clear
Cursors


1 2.00V
0.00s 50.0
1 STOP
t1 = -65.00ms t2 = -72.00ms Δt = -7.000ms 1/Δt = 142.9 Hz
Source
1
Active Cursor
V1 V2
t1 t2
Readout
Time Deg
Clear
Cursors


1 2.00V
0.00s
50.0
STOP
t1 = -36.00ms t2 = -123.0ms Δt = -87.00ms 1/Δt = 11.49 Hz
Source
Active Cursor
V1 V2 t1 t2
Readout
Time Deg
Clear Cursors

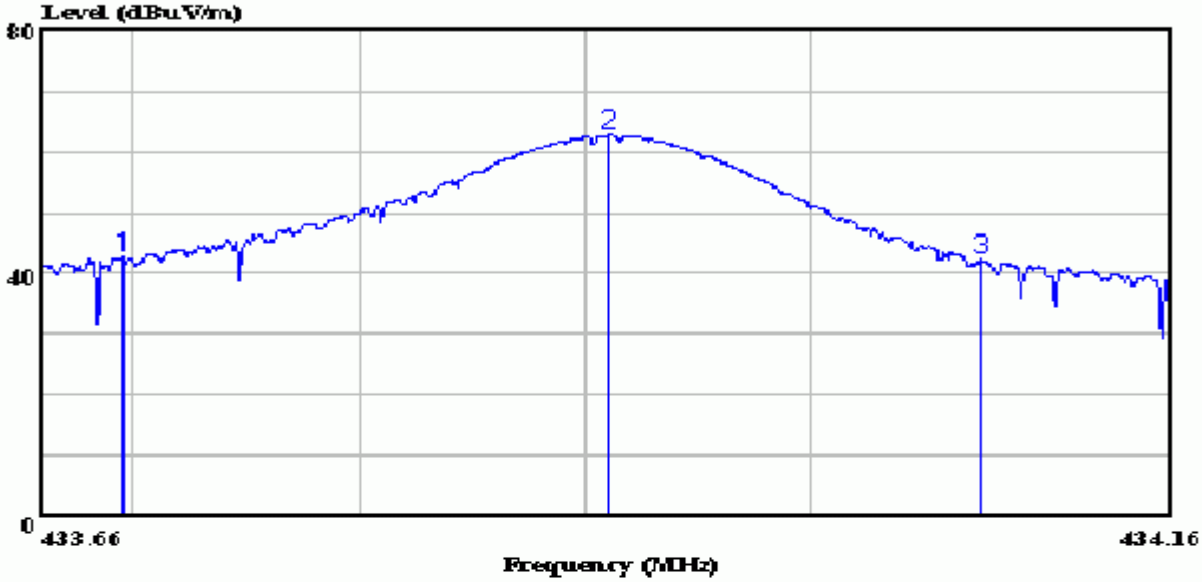

1 2.00V
0.00s
50.0
STOP
t1 = -36.00ms t2 = 51.00ms Δt = 87.00ms 1/Δt = 11.49 Hz
Source
Active Cursor
V1 V2 t1 t2
Readout
Time Deg
Clear Cursors

APPENDIX II

PLOT OF THE OCCUPIED BANDWIDTH

Audix Technology (Shanghai) Co., Ltd.
3F #34Bldg. No.680 GuiPing Rd.,
CaoHeJing Hi-Tech Park,
Shanghai, China 200233
Tel:+86-21-64955500 Fax:+86-21-64955491
audixaci@audix.com

Data#: 34 File#: D:\Test-Data\A\Apek.emi Date: 2005-04-11 Time: 19:33:43



Site : Chamber 3
Condition : 3m HORIZONTAL
Project No. : AOE-000846
Applicant : APEK SECURE LITE CO., LTD.
EUT : Motion sensor with RF transmitter
M/N : 7938D
S/N : F05020101
Power Supply : 120V/60Hz
Ambient : 20'C 40%RH
Test Mode : Stand
Test Engineer: Denm's Zhang
Memo :

Page: 1

	Freq	Level
	MHz	dBuV/m
1	433.696	42.56
2	433.911	62.61
3	434.076	42.20

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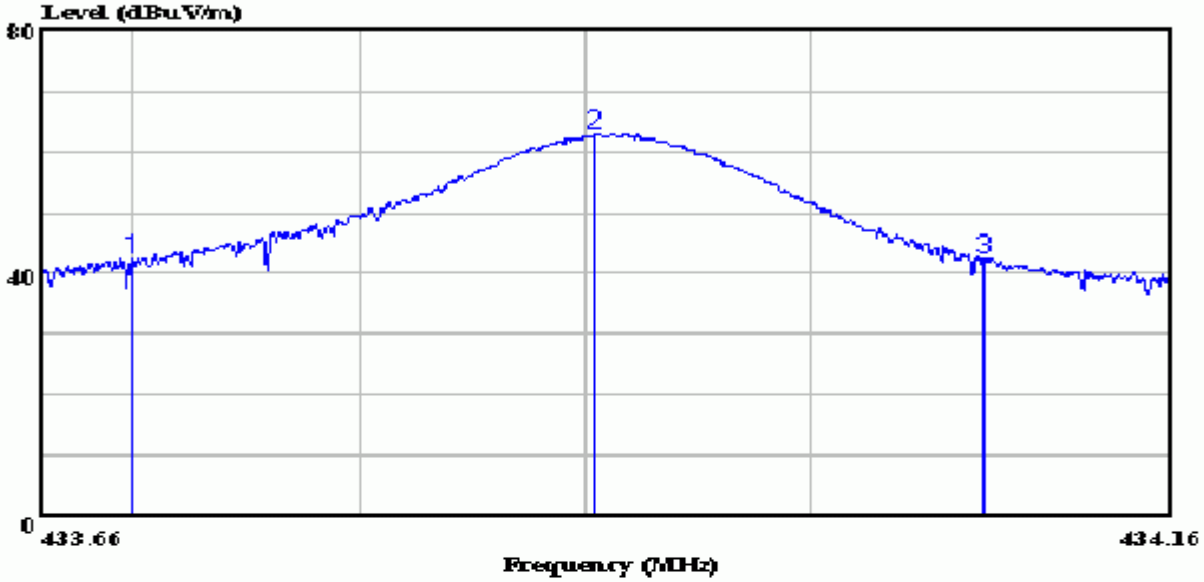
audixaci@audix.com

Data#: 35 File#: D:\Test-Data\A\Apek.emi Date: 2005-04-11 Time: 19:35:36



Site : Chamber 3
Condition : 3m VERTICAL
Project No. : AOE-000846
Applicant : APEK SECURE LITE CO., LTD.
EUT : Motion sensor with RF transmitter
M/N : 7938D
S/N : F05020101
Power Supply : 120V/60Hz
Ambient : 20'C 40%RH
Test Mode : Stand
Test Engineer: Denni's Zhang
Memo :

Page: 1

	Freq	Level
	MHz	dBuV/m
1	433.700	42.50
2	433.905	62.84
3	434.077	42.34