

DECLARATION OF CONFORMITY
On Behalf of
FOSHAN NANHAI APOTON INTELLIGENT LOCK CO., LTD.

Hotel Lock
Model No.:EZ0102, EZ0202, ET0302, ES0402, ES0502, ES0402A,
EZ0602, EZ0702, EZ0802, EZ0902, ES1002, EZ1102, EZ1202

Prepared for : FOSHAN NANHAI APOTON INTELLIGENT LOCK CO., LTD.
Address : Shangsha Industrial Zone, Shachong Village, Lishui Town, Nanhai
District, Foshan City, Guangdong Province, China

Prepared By : Anbotek Compliance Laboratory Limited
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Report Number : 201101683F
Date of Test : Jan. 12~17, 2011
Date of Report : Jan. 19, 2011

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TEST REPORT VERIFICATION

Applicant : FOSHAN NANHAI APOTON INTELLIGENT LOCK CO., LTD.
Manufacturer : FOSHAN NANHAI APOTON INTELLIGENT LOCK CO., LTD.
EUT : Hotel Lock
Model No. : EZ0102, EZ0202, ET0302, ES0402, ES0502, ES0402A, EZ0602,
EZ0702, EZ0802, EZ0902, ES1002, EZ1102, EZ1202
Rating : DC 6V
Trade Mark : 

Measurement Procedure Used:

FCC Rules and Regulations Part 15 Subpart C 15.209-2010 & FCC / ANSI C63.4-2009

The device described above is tested by Anbotek Compliance Laboratory Limited To determine the maximum emission levels emanating from the device. The maximum emission levels are compared to the FCC Part 15 Subpart C limits both radiated and conducted emissions. The measurement results are contained in this test report and Anbotek Compliance Laboratory Limited Is assumed full responsibility for the accuracy and completeness of these measurements. Also, this report shows that the Equipment Under Test (EUT) is to be technically compliant with the FCC requirements.

This report applies to above tested sample only. This report shall not be reproduced in part without written approval of Anbotek Compliance Laboratory Limited

Date of Test : Jan. 12~17, 2011

Prepared by : Well Wang
(Engineer/ Well Wang)

Reviewer : Coco Xiang
(Project Manager/ Coco Xiang)

Approved & Authorized Signer : Tom. Chen
(Manager/ Tom Chen)

1. GENERAL INFORMATION

1.1. Description of Device (EUT)

Description	: Hotel Lock
Model Number	: EZ0102, EZ0202, ET0302, ES0402, ES0502, ES0402A, EZ0602, EZ0702, EZ0802, EZ0902, ES1002, EZ1102, EZ1202 (Note: The above samples are same except the model number & Shape of appliances, so we prepare “EZ0202” for EMC test only.)
Test Power Supply	: DC 6V via 4 pcs of new (full) AA Battery
Frequency	: 125KHz
Applicant	: FOSHAN NANHAI APOTON INTELLIGENT LOCK CO., LTD.
Address	: Shangsha Industrial Zone, Shachong Village, Lishui Town, Nanhai District, Foshan City, Guangdong Province, China
Manufacturer	: FOSHAN NANHAI APOTON INTELLIGENT LOCK CO., LTD.
Address	: Shangsha Industrial Zone, Shachong Village, Lishui Town, Nanhai District, Foshan City, Guangdong Province, China
Date of Sample received	: Jan. 11, 2011
Date of Test	: Jan. 12~17, 2011

1.2. Description of Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS - LAB Code: L3503

Anbotech Compliance Laboratory Limited., Laboratory has been assessed and in compliance with CNAS/CL01: 2006 accreditation criteria for testing laboratories (identical to ISO/IEC 17025:2005 General Requirements) for the Competence of Testing Laboratories.

FCC-Registration No.: 752021

Anbotech Compliance Laboratory Limited, EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 752021, August 20, 2010

IC-Registration No.: 8058A-1

Anbotech Compliance Laboratory Limited., EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration 8058A-1, August 30, 2010

Test Location

All Emissions tests were performed

Anbotech Compliance Laboratory Limited. at 1/F, 1 /Build, SEC Industrial Park, No. 4 Qianhai Road, Nanshan District, Shenzhen, 518054, China

1.3. Measurement Uncertainty

Radiation Uncertainty : Ur = 4.3dB

Conduction Uncertainty : Uc = 3.4dB

2. MEASURING DEVICE AND TEST EQUIPMENT

Equipment	Manufacturer	Model #	Serial #	Data of Cal.	Due Data
EMI Test Receiver	Rohde & Schwarz	ESCI	100119	Mar.03, 2010	Mar.02, 2011
EMI Test Receiver	Rohde & Schwarz	ESPI	1101604	Jun.21, 2010	Jun.20, 2011
EMI Test Receiver	Rohde & Schwarz	ESIB26	100249	Sep.22, 2010	Sep.21, 2011
EMI Test Software	SHURPLE	ESK1	N/A	N/A	N/A
Spectrum Analyzer	Agilent	E7405A	MY45114970	Jun.21, 2010	Jun.20, 2011
Signal Generator	Rohde & Schwarz	SMR27	100124	Jul.06, 2010	Jul.05, 2012
Signal Generator	Rohde & Schwarz	SML03	102319	Aug.01, 2010	Aug.01, 2012
AC Power Source	Sepcial power system	YF650	N/A	N/A	N/A
Absorbing Clamp	Rohde & Schwarz	MDS21	100218	Apr.30, 2010	Apr.29, 2012
Power Meter	Rohde & Schwarz	NRVD	101287	Jul.19, 2009	Jul.18, 2011
Coaxial Cable	N/A	N/A	N/A	May.31, 2010	May.30, 2011
Coaxial Cable	N/A	N/A	N/A	May.31, 2010	May.30, 2011
Coaxial Cable	N/A	N/A	N/A	May.31, 2010	May.30, 2011
Universal radio Communication tester	Rohde & Schwarz	CMU200	101724	Sep.08, 2009	Sep.07, 2011
Pulse Limiter	Rohde & Schwarz	ESH3-Z2	N/A	N/A	N/A
BiConilog Antenna	ETS-LINDGREN	3142C	00042670	Mar.03, 2010	Mar.02, 2011
BiConilog Antenna	ETS-LINDGREN	3142C	00042673	Mar.03, 2010	Mar.02, 2011
Loop Antenna	ETS-LINGREN	6502	00071730	Mar.03, 2010	Mar.02, 2011
Double-ridged Waveguide horn	ETS-LINDGREN	3117	00035926	Dec.30, 2009	Dec.29, 2011
Double-ridged Waveguide horn	ETS-LINDGREN	3117	00041545	Dec.30, 2009	Dec.29, 2011
Pre-amplifier	CD	PAM0203	804203	Jun.21, 2010	Jun.20, 2011
RF Switch	CD	RSU-M3	706543	Jun.21, 2010	Jun.20, 2011
Thermo-/Hygrometer	N/A	TH01	N/A	May.03, 2010	May.02, 2011
Shielding Room	Zhong Yu Electronic	N/A	N/A	N/A	N/A
3m Semi-Anechoic Chamber	Zhong Yu Electronic	N/A	N/A	Apr.28, 2010	Apr.27, 2012

3. Test Procedure

GENERAL: This report shall NOT be reproduced except in full without the written approval of Anbotek Compliance Laboratory Limited. The EUT was transmitting a test signal during the testing.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-2009 using a spectrum analyzer with a pre-selector. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The resolution bandwidth was 100KHz and the video bandwidth was 300KHz up to 1.0GHz and 1.0MHz with a video BW of 3.0MHz above 1.0GHz. The ambient temperature of the EUT was 74.3oF with a humidity of 69%.

FORMULA OF CONVERSION FACTORS: The Field Strength at 3m was established by adding the meter reading of the spectrum analyzer (which is set to read in units of dBuV) to the antenna correction factor supplied by the antenna manufacturer. The antenna correction factors are stated in terms of dB. The gain of the Preselector was accounted for in the Spectrum Analyzer Meter Reading.

Example:

Freq (MHz) METER READING + ACF = FS
33 20 dBuV + 10.36 dB = 30.36 dBuV/m @ 3m

ANSI STANDARD C63.4-2009 10.1.7 MEASUREMENT PROCEDURES: The EUT was placed on a table 80 cm high and with dimensions of 1m by 1.5m. The EUT was placed in the center of the table (1.5m side). The table used for radiated measurements is capable of continuous rotation.

When an emission was found, the table was rotated to produce the maximum signal strength. At this point, the antenna was raised and lowered from 1m to 4m. The antenna was placed in both the horizontal and vertical planes.

4. Radiated emission Measurement

4.1. Radiated Emission Limits

Frequency (MHz)	Field Strength Limitation		Field Strength Limitation at 3m Measurement Dist	
	(uV/m)	Dist	(uV/m)	(dBuV/m)
0.009 – 0.490	2400 / F(KHz)	300m	$10000 * 2400/F(KHz)$	$20\log 2400/F(KHz) + 80$
0.490 – 1.705	24000 / F(KHz)	30m	$100 * 24000/F(KHz)$	$20\log 24000/F(KHz) + 40$
1.705 – 30.00	30	30m	$100 * 30$	$20\log 30 + 40$
30.0 – 88.0	100	3m	100	$20\log 100$
88.0 – 216.0	150	3m	150	$20\log 150$
216.0 – 960.0	200	3m	200	$20\log 200$
Above 960.0	500	3m	500	$20\log 500$

Note:

- (1) The tighter limit shall apply at the boundary between two frequency range.
- (2) Limitation expressed in dBuV/m is calculated by $20\log$ Emission Level (uV/m).
- (3) If measurement is made at 3m distance, then F.S Limitation at 3m distance is adjusted by using the formula of $Ld1 = Ld2 * (d2/d1)^2$.

Example:

F.S Limit at 30m distance is 30uV/m , then F.S Limitation at 3m distance is adjusted as

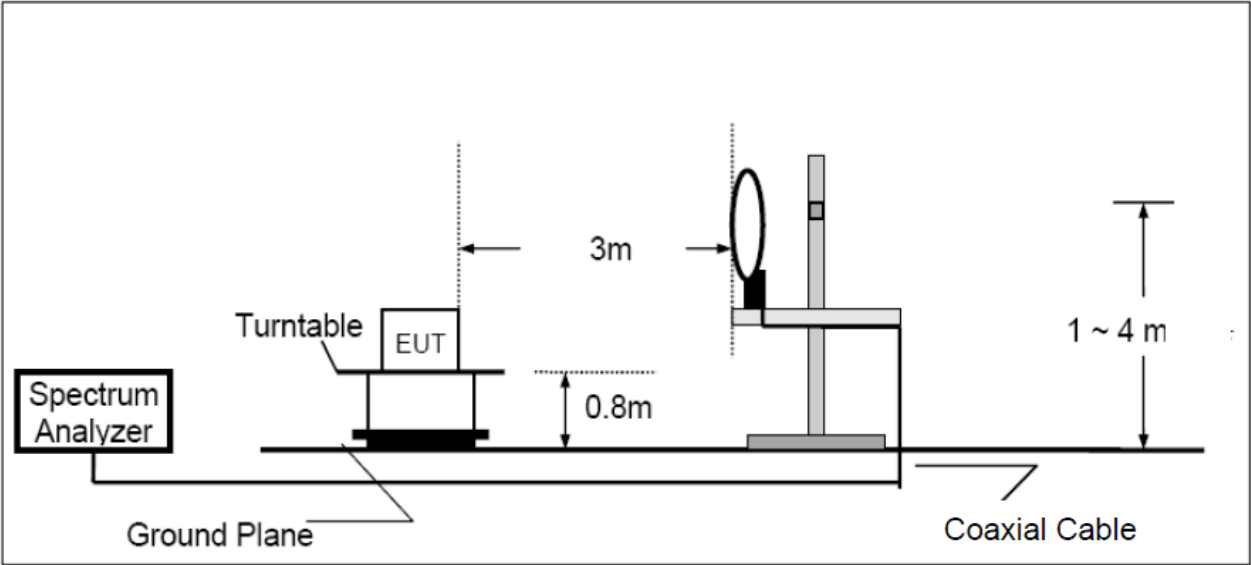
$$Ld1 = L1 = 30uV/m * (10)^2 = 100 * 30 uV/m$$

4.2. Test Procedure

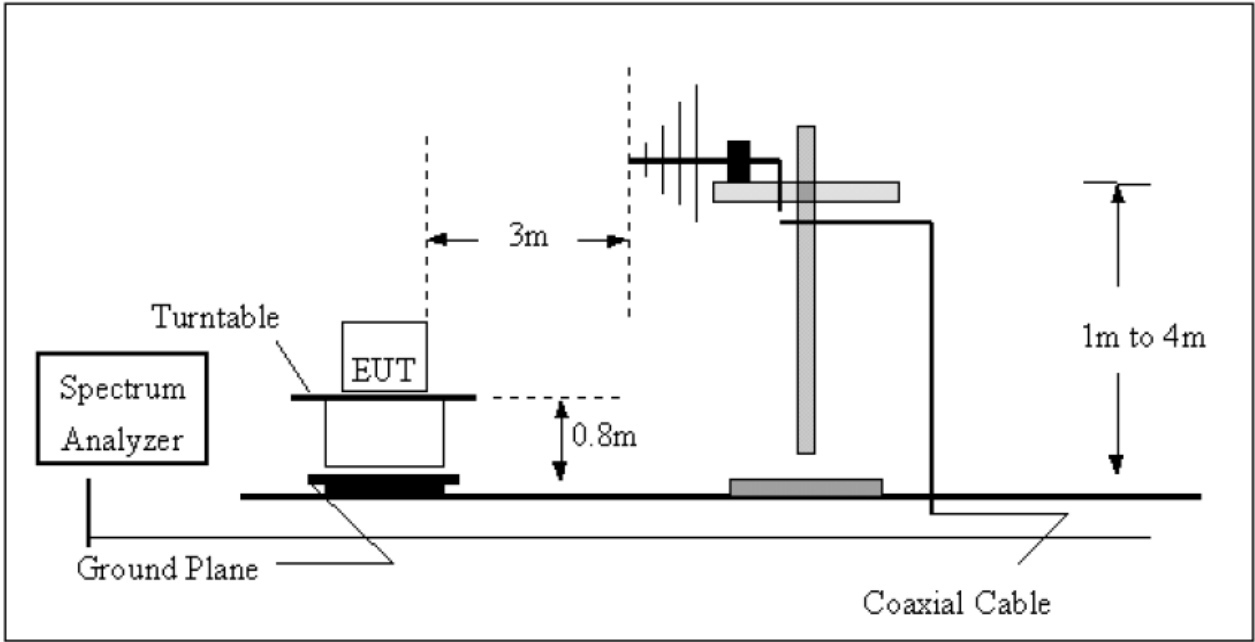
- a. The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.
- b. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3m meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.
- c. The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
- d. The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.
- e. If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed.
- f. For the actual test configuration, please refer to the related Item –EUT Test Photos.

4.3. Test Setup

(A) Radiated Emission Test Set-Up, Frequency below 30MHz



(B) Radiated Emission Test Set-Up, Frequency 30-1000MHz



4.4. Test Results (Below 30MHz)

Freq.(KHz)	Reading at 3m (dBuV/m)	Factor (dB) Cable loss	Field Strength Limit (uV/m)	Required Measurement Distance (m)	Limitation Converted 3m dist. (dBuV/m)	Over Limit (dB)	Detector (PK/AV)
125.00	83.58	13.00	19.20	300.00	105.67	-9.09	PK
250.00	70.56	13.00	9.60	300.00	99.65	-16.09	PK
375.00	64.50	12.90	6.40	300.00	96.12	-18.72	PK
500.00	41.45	12.80	48.00	30.00	73.62	-19.37	PK
625.00	38.65	12.80	38.40	30.00	71.69	-20.24	PK
750.00	36.57	12.80	32.00	30.00	70.10	-20.73	PK
875.00	--	--	--	--	--	--	--
1000.00	--	--	--	--	--	--	--
1125.00	--	--	--	--	--	--	--
1250.00	--	--	--	--	--	--	--

Remark:

(1) Spectrum Setting:

9 KHz – 150 KHz, RBW= 1 KHz, VBW=1 KHz, Sweep time = 200 ms.

150 K Hz – 30 MHz, RBW= 9 KHz, VBW=9 KHz, Sweep time = 200 ms.

(2) All readings are Peak unless otherwise stated QP in column of 『Note』 . Peak denotes that the Peak reading compliance with the QP Limits and then QP Mode measure-ment didn't perform.

(3) The Log-Bicon Antenna will use to test frequency range from 30MHz to 1000MHz and the Loop Antenna will use to test frequency below 30MHz.

(4) If the peak scan value lower limit more than 20dB, then this signal data does not show in table

4.5. Test Results (Between 30-1000MHz)

PASS.

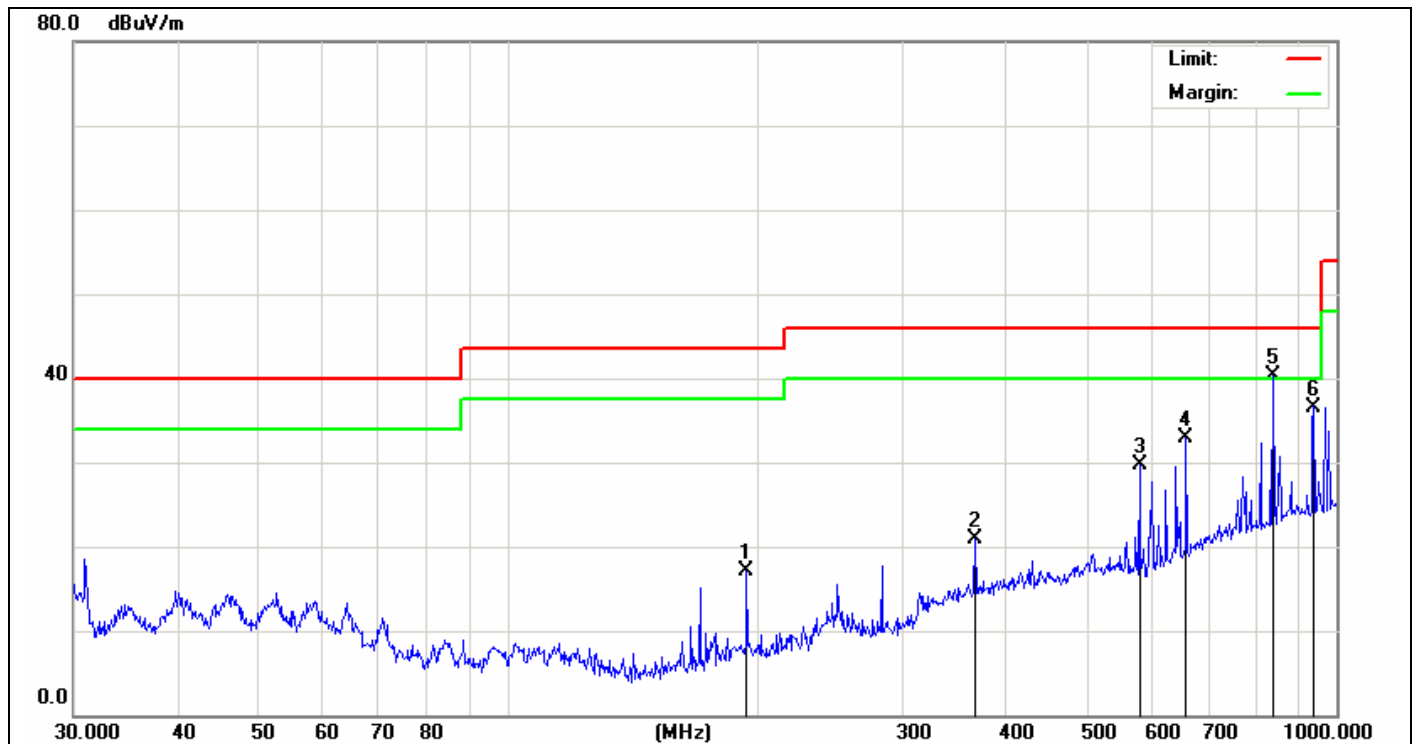
The test curves are shown in the following pages.


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Job No.:	AT1101623F	Polarization:	Horizontal
Standard:	(RE)FCC PART15 C _3m	Power Source:	DC 6V
Test item:	Radiation Test	Date:	2011/01/13
Temp.(C)/Hum.(%RH):	24.3(C)/55%RH	Time:	13:07:19
EUT:	Hotel Lock	Test By:	Well Wang
Model:	EZ0202	Distance:	3m
Note:	ON		



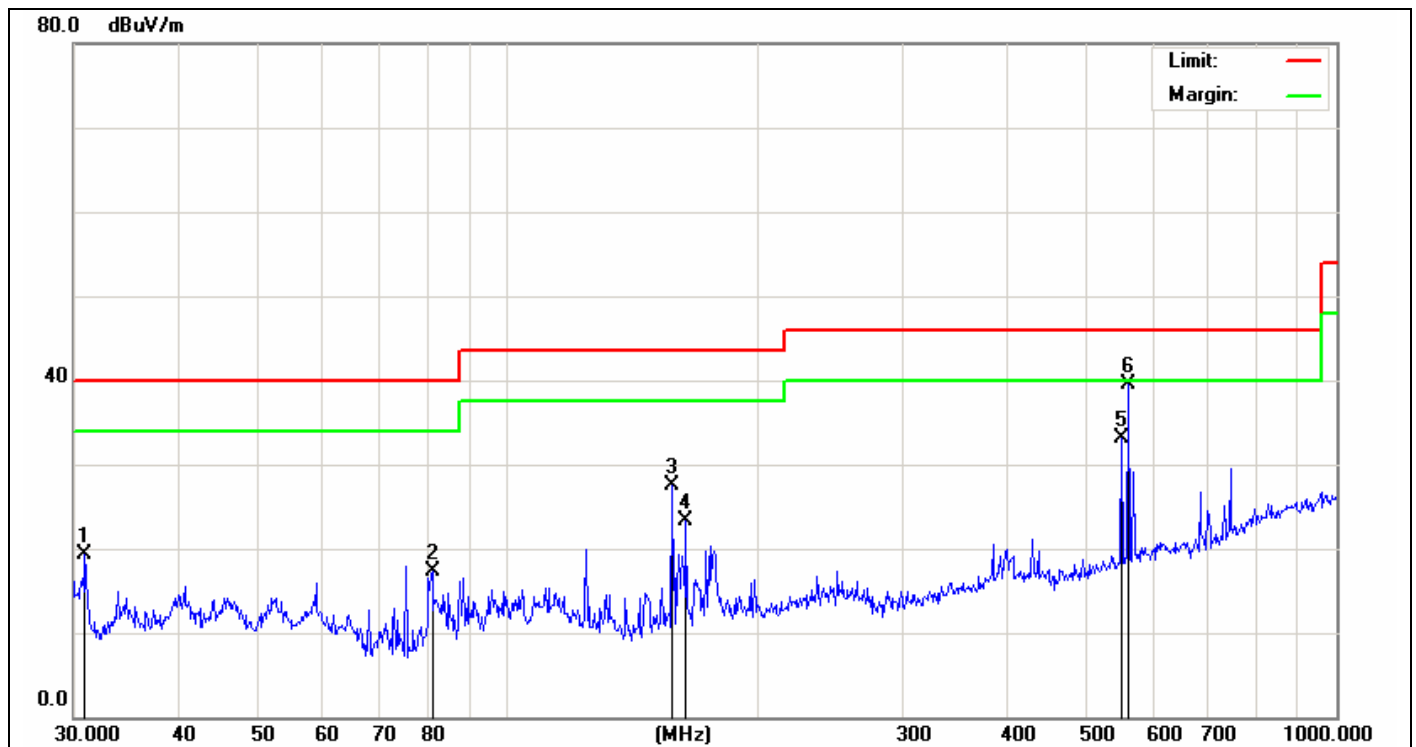
No.	Frequency	Reading	Correct	Result	Limit	Over Limit	Detector	Height	Degree
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)		(cm)	(deg)
1	194.4534	46.51	-29.44	17.07	43.50	-26.43	peak		
2	366.8231	43.07	-22.07	21.00	46.00	-25.00	peak		
3	578.6699	48.59	-18.80	29.79	46.00	-16.21	peak		
4	658.8362	49.70	-16.75	32.95	46.00	-13.05	peak		
5	839.1818	53.16	-12.82	40.34	46.00	-5.66	peak		
6	938.8326	47.87	-11.27	36.60	46.00	-9.40	peak		


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Job No.:	AT1101623F	Polarization:	Vertical
Standard:	(RE)FCC PART15 C _3m	Power Source:	DC 6V
Test item:	Radiation Test	Date:	2011/01/13
Temp.(C)/Hum.(%RH):	24.3(C)/55%RH	Time:	13:04:15
EUT:	Hotel Lock	Test By:	Well Wang
Model:	EZ0202	Distance:	3m
Note:	ON		



No.	Frequency	Reading	Correct	Result	Limit	Over Limit	Detector	Height	Degree
	(MHz)	(dBuV/m)	dB/m	(dBuV/m)	(dBuV/m)	(dB)		(cm)	(deg)
1	30.9618	45.56	-26.30	19.26	40.00	-20.74	peak		
2	81.2116	46.17	-28.93	17.24	40.00	-22.76	peak		
3	158.1123	54.13	-26.58	27.55	43.50	-15.95	peak		
4	164.3301	49.63	-26.33	23.30	43.50	-20.20	peak		
5	550.9479	51.07	-17.95	33.12	46.00	-12.88	peak		
6	560.6928	57.22	-17.70	39.52	46.00	-6.48	peak		