FCC Test Report

Report No.: AGC00B120903-2F2B

FCC ID	: NW75005R
PRODUCT DESIGNATION	: Remote Kit/Remote PODZ/Remote Controller
BRAND NAME	: iON
TEST MODEL	: 5005(Receiver), 5015
CLIENT	: World Wide Licenses Ltd.
DATE OF ISSUE	: Oct.26, 2012
STANDARD(S)	: FCC Part 15 Rules

Attestation of Global Compliance (Shenzhen) Co., Ltd.

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1. VERIFICATION OF COMPLIANCE

Applicant:	World Wide Licenses Ltd.
Applicant Address:	14F Hong Kong Pacific Centre 28 Hankow Road, Tsimshatsui, Kowloon, Hong Kong
Manufacturer:	SKY LIGHT Electronic (ShenZhen) Limited
Manufacturer Address:	No. 6 Building, JinBi Industrial Area, Huang Tian, BaoAn, Shenzhen, China.
Product Description:	Remote Kit/Remote PODZ/Remote Controller
Brand Name:	iON
Model Name:	5005(Receiver), 5015
Model Difference:	All the same except for the model name and the main test model is 5005(Receiver).
FCC ID:	NW75005R
Report Number:	AGC00B120903-2F2B
Date of Test:	Oct. 21 to Oct. 24, 2012

WE HEREBY CERTIFY THAT:

The above equipment was tested by Attestation of Global Compliance (Shenzhen) Co., Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rules Part 15.249.

Tested By :	Wall Buany		
	Wall Huang	Oct. 26, 2012	
Review By :	Former	Ann	
	Forrest Lei	Oct. 26, 2012	
Approved By:	Solger	2hang	
	Solger Zhang	Oct. 26, 2012	

2. GENERAL INFORMATION

2.1. PRODUCT DESCRIPTION FOR EQUIPMENT UNDER TEST (EUT)

Operation Frequency	2.405 GHz to 2.480GHz
Maximum Output Power	5.175dBm
Modulation	DSSS
Number of channels	16
Hardware Version	EP-SVA73MB-04
Antenna Designation	Integrated Antenna
Antenna Gain	0dBi
Power Supply	DC 3.0V by 19-pin PODZ slot

Note: The 19-pin PODZ slot only provide DC 3.0V power for EUT.

2.2. TEST STANDARDS

The following report of is prepared on behalf of the Attestation of Global Compliance Co., Ltd. in accordance with FCC Part 15, Subpart C, and section 15.249, 15.203 and 15.209 of the Federal Communication Commission rules.

The objective is to determine compliance with FCC Part 15, Subpart C, and section 15.249, 15.203 and 15.209 of the Federal Communication Commission rules.

Maintenance of compliance is the responsibility of the manufacturer. Any modification of the product, which result in lowering the emission/immunity, should be checked to ensure compliance has been maintained.

2.3. RELATED SUBMITTAL(S)/GRANT(S)

This submittal(s) (test report) is intended for **FCC ID**: NW75005R filing to comply with Section 15.249 of the FCC Part 15, Subpart C Rules.

2.4. TEST METHODOLOGY

All measurements contained in this report were conducted with ANSI C63.4-2003, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

The equipment under test (EUT) was configured to measure its highest possible emission level. The test modes were adapted accordingly in reference to the Operating Instructions. The EUT was tested in all three orthogonal planes and the worse case was showed.

2.5. TEST FACILITY

All measurement facilities used to collect the measurement data are located at

Attestation of Global Compliance (Shenzhen) Co., Ltd.

2/F., Building 2, No.1-No.4, Chaxi Sanwei Technical Industrial Park, Gushu, Xixiang, Bao'an District, Shenzhen, Guangdong, China

The test site is constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC register No.: 259865

2.6. ACCESSORIES EQUIPMENT LIST AND DETAILS

Device Type	Manufacturer	Model Name	Serial No.	Data Cable	Power Cable
Notebook	Dell			1.5m, unshielded	1.5m, unshielded
Control Panel	iON			1.0m, unshielded	

2.7. EUT PORT&CABLE LIST AND DETAILS

I/O Port Type	Q'TY	Cable	Tested with
19-pin PODZ slot	1	0	1

3. SUMMARY OF TEST RESULTS

Description of Test	Result
§15.203 Antenna Requirement	Compliant
§15.207 Power Line Conducted Emission	N/A
§15.209 General Requirement	Compliant
§15.249 Emission Bandwidth	Compliant
§15.249 Spurious Emission	Compliant

NOTE:

1. N/A- Not Applicable.

4. TEST MODES

No	TEST MODES	
INO.		
1	2405MHZ TX	
2	2440MHZ TX	
3	2480MHZ TX	
Note: Above 3 modes have performed at maximum emission conditions.3 axis have been tested and only the worst mode data recorded in the test report.		

5. § 15.203 - ANTENNA REQUIREMENT

5.1. STANDARD APPLICABLE

According to FCC 15.203, An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited. This requirement does not apply to carrier current devices or to devices operated under the provisions of Sections 15.211, 15.213, 15.217, 15.219, or 15.221. Further, this requirement does not apply to intentional radiators that must be professionally installed, such as perimeter protection systems and some field disturbance sensors, or to other intentional radiators which, in accordance with Section 15.31(d), must be measured at the installation site. However, the installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this Part are not exceeded.

5.2. TEST RESULT

This product has a permanent antenna, fulfill the requirement of this section.

6. §15.209, §15.249 RADIATED EMISSION

6.1. MEASUREMENT UNCERTAINTY

Based on NIS 81, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement is +/-3.2 dB.

6.2. STANDARD APPLICABLE

Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency (MHz)	Field Strength of Fundamental Field Strength (mV/m)	Field Strength of Harmonics (μV/m)
902-928 MHz	50	500
2400 - 2483.5 MHz	50	500
5725 - 5875 MHz	50	500
24.0 - 24.25 GHz	250	2500

Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
30-88	100*	3
88-216	150*	3
216-960	200*	3
Above 960	500	3

In the above emission table, the tighter limit applies at the band edges.

Frequency (MHz)	Field Strength (μV/m at 3-meter)	Field Strength (dBµV/m at 3-meter)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	07/18/2012	07/17/2013
BICONICAL ANTENNA	A.H.	SAS-521-4	128	07/18/2012	07/17/2013
LOOP ANTENNA	R&S	HM525	N/A	07/18/2012	07/17/2013
HORN ANTENNA	EM	EM-AH-10180	N/A	07/18/2012	07/17/2013
AMPLIFIER	EM	EM30180	0607030	07/18/2012	07/17/2013
COAXIAL CABLE	SCHWARZBECK	AK9513	9513-10	07/18/2012	07/17/2013
POSITIONING CONTROLLER	MF	MF-7802	MF780208147	07/18/2012	07/17/2013

6.3. TEST EQUIPMENT LIST AND DETAILS

6.4. TEST PROCEDURE

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.249 and FCC Part 15.209 Limit.

6.5. TEST SET-UP (BLOCK DIAGRAM OF CONFIGURATION)

BELOW 30MHz:



30MHz-1000MHz:



ABOVE 1000MHz:



6.6. TEST RESULTS

6.6.1TEST RESULT OF RADIATED EMISSION TEST (9KHZ-30MHZ)

Freq. (MHz)	Level (dB uV)	Over Limit (dB)	Limit Line (dB uV)	Remark
				Seen to Note

**Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be report.

6.6.2TEST RESULT OF RADIATED EMISSION TEST (30MHZ-1GHZ)



The Result of Line Radiated Emission Test-Horizontal (Low Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		90.6250	16.89	16.94	33.83	43.50	-9.67	peak			
2	*	185.2000	26.90	9.96	36.86	43.50	-6.64	peak			
3		270.0750	19.02	17.22	36.24	46.00	-9.76	peak			
4		352.5250	15.93	19.06	34.99	46.00	-11.01	peak			
5		461.6500	14.00	21.53	35.53	46.00	-10.47	peak			
6		837.5250	7.06	30.94	38.00	46.00	-8.00	peak			



The Result of Line Radiated Emission Test-Vertical (Low Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dΒ		cm	degree	
1		129.4250	24.81	10.25	35.06	43.50	-8.44	peak			
2		148.8250	18.19	18.11	36.30	43.50	-7.20	peak			
3	*	207.0250	28.58	7.85	36.43	43.50	-7.07	peak			
4		282.2000	18.43	17.17	35.60	46.00	-10.40	peak			
5		837.5250	9.43	28.71	38.14	46.00	-7.86	peak			
6		961.2000	9.94	28.86	38.80	54.00	-15.20	peak			



The Result of Line Radiated Emission Test-Horizontal (Middle Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		90.6250	18.39	16.94	35.33	43.50	-8.17	peak			
2	*	185.2000	27.40	9.96	37.36	43.50	-6.14	peak			
3		199.7500	29.35	7.21	36.56	43.50	-6.94	peak			
4		270.0750	21.52	17.22	38.74	46.00	-7.26	peak			
5		837.5250	8.06	30.94	39.00	46.00	-7.00	peak			
6		881.1750	9.66	29.09	38.75	46.00	-7.25	peak			



The Result of Line Radiated Emission Test-Vertical (Middle Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dΒ		cm	degree	
1		90.6250	27.29	8.12	35.41	43.50	-8.09	peak			
2		129.4250	26.81	10.25	37.06	43.50	-6.44	peak			
3	*	148.8250	19.19	18.11	37.30	43.50	-6.20	peak			
4		243.4000	22.36	14.23	36.59	46.00	-9.41	peak			
5		282.2000	19.93	17.17	37.10	46.00	-8.90	peak			
6		837.5250	10.43	28.71	39.14	46.00	-6.86	peak			



The Result of Line Radiated Emission Test-Horizontal (High Channel)

Mode: High Channel TX Note:

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		127.0000	21.55	13.30	34.85	43.50	-8.65	peak			
2		224.0000	25.36	12.48	37.84	46.00	-8.16	peak			
3		270.0750	20.52	17.22	37.74	46.00	-8.26	peak			
4		570.7750	12.51	24.36	36.87	46.00	-9.13	peak			
5		755.0750	10.46	27.04	37.50	46.00	-8.50	peak			
6	*	837.5250	7.06	30.94	38.00	46.00	-8.00	peak			



The Result of Line Radiated Emission Test-Vertical (High Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dΒ		cm	degree	
1		90.6250	26.29	8.12	34.41	43.50	-9.09	peak			
2		129.4250	25.81	10.25	36.06	43.50	-7.44	peak			
3	*	148.8250	18.19	18.11	36.30	43.50	-7.20	peak			
4		182.7750	27.72	8.01	35.73	43.50	-7.77	peak			
5		628.9750	12.55	24.92	37.47	46.00	-8.53	peak			
6		878.7500	7.86	30.36	38.22	46.00	-7.78	peak			

6.6.3TEST RESULT OF RADIATED EMISSION TEST (1000MHZ~5000MHZ)



The Result of Line Radiated Emission Test-Horizontal (Low Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	·	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2405.000	91.54	-9.67	81.87	74.00	7.87	peak			
2		3060.000	50.94	-8.30	42.64	74.00	-31.36	peak			
3		4440.000	46.83	-3.31	43.52	74.00	-30.48	peak			



The Result of Line Radiated Emission Test-Vertical (Low Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2405.000	87.55	-9.67	77.88	74.00	3.88	peak			
2		3270.000	50.36	-8.11	42.25	74.00	-31.75	peak			
3		3790.000	49.08	-6.10	42.98	74.00	-31.02	peak			



The Result of Line Radiated Emission Test-Horizontal (Middle Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		1310.000	55.32	-15.46	39.86	74.00	-34.14	peak			
2	*	2440.000	91.66	-9.64	82.02	74.00	8.02	peak			
3		2760.000	50.97	-8.94	42.03	74.00	-31.97	peak			
4		4140.000	48.76	-4.33	44.43	74.00	-29.57	peak			



The Result of Line Radiated Emission Test-Vertical (Middle Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		1640.000	50.69	-13.91	36.78	74.00	-37.22	peak			
2		2110.000	48.94	-10.00	38.94	74.00	-35.06	peak			
3	*	2440.000	84.27	-9.64	74.63	74.00	0.63	peak			
4		3380.000	49.83	-8.00	41.83	74.00	-32.17	peak			



The Result of Line Radiated Emission Test-Horizontal (High Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	92.09	-9.59	82.50	74.00	8.50	peak			
2		3260.000	49.00	-8.12	40.88	74.00	-33.12	peak			
3		4020.000	47.20	-4.74	42.46	74.00	-31.54	peak			



The Result of Line Radiated Emission Test-Vertical (High Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1	*	2480.000	87.62	-9.59	78.03	74.00	4.03	peak			
2		3150.000	49.33	-8.22	41.11	74.00	-32.89	peak			
3		3980.000	46.72	-4.93	41.79	74.00	-32.21	peak			

**Note:

- 1. The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be report.
- 2. The operating frequency limit is 94dBuV/m.

6.6.4TEST RESULT OF RADIATED EMISSION TEST (5000MHZ~25000MHZ)



The Result of Line Radiated Emission Test-Horizontal (Low Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Over	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		12066.667	31.87	0.00	31.87	74.00	-42.13	peak			
2		16233.333	33.04	0.00	33.04	74.00	-40.96	peak			
3	*	21500.000	34.14	0.00	34.14	74.00	-39.86	peak			



The Result of Line Radiated Emission Test-Vertical (Low Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dΒ		cm	degree	
1		10133.333	31.71	0.00	31.71	74.00	-42.29	peak			
2		13366.667	31.51	0.00	31.51	74.00	-42.49	peak			
3	*	19000.000	34.33	0.00	34.33	74.00	-39.67	peak			



The Result of Line Radiated Emission Test-Horizontal (Middle Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dΒ		cm	degree	
1		12066.667	28.87	0.00	28.87	74.00	-45.13	peak			
2		14433.333	29.46	0.00	29.46	74.00	-44.54	peak			
3	*	19000.000	30.93	0.00	30.93	74.00	-43.07	peak			



The Result of Line Radiated Emission Test-Vertical (Middle Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dB		cm	degree	
1		10133.333	30.21	0.00	30.21	74.00	-43.79	peak			
2		13366.667	31.01	0.00	31.01	74.00	-42.99	peak			
3	*	19333.333	32.85	0.00	32.85	74.00	-41.15	peak			



The Result of Line Radiated Emission Test-Horizontal (High Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dΒ		an	degree	
1		11000.000	30.97	0.00	30.97	74.00	-43.03	peak			
2		15000.000	32.13	0.00	32.13	74.00	-41.87	peak			
3	*	21500.000	34.14	0.00	34.14	74.00	-39.86	peak			



The Result of Line Radiated Emission Test-Vertical (High Channel)

No.	Mk	Freq.	Reading	Factor	Measurement	Limit	Ov er	Detector	Antenna Height	Table Degree	Comment
	•	MHz	dBuV	dB/m	dBuV/m	dBuV/m	dΒ		cm	degree	
1		8933.333	31.67	0.00	31.67	74.00	-42.33	peak			
2		12600.000	31.98	0.00	31.98	74.00	-42.02	peak			
3	*	16466.667	32.31	0.00	32.31	74.00	-41.69	peak			

7. §15.249 EMISSION BANDWIDTH

7.1. STANDARD APPLICABLE

None: for reporting purposes only.

7.2. TEST EQUIPMENT LIST AND DETAILS

Equipment	Manufacturer	Model	S/N	Cal. Date	Cal. Due
PSA SERIES SPECTRUM ANALYZER	AGILENT	E4440A	US41421290	07/18/2012	07/17/2013
RECEIVER ANTENNA	ETS	2175	57337	07/18/2012	07/17/2013
COAXIAL CABLE	ETS	SUCOFLEX 104	25498514	07/18/2012	07/17/2013

7.3. TEST PROCEDURE

With the EUT's antenna attached, the EUT's 20dB Bandwidth power was received by the test antenna, which was connected to the spectrum analyzer with the START, and STOP frequencies set to the EUT's operation band.

7.4. SUMMARY OF TEST RESULTS/PLOTS

Channel	Emission Bandwidth (MHz)	Limit (KHz)
Low	2.773	
Middle	2.796	N/A
High	2.821	

Test Result: Pass



Low Channel Test Plot

Middle Channel Test Plot





High Channel Test Plot

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APPENDIX 1 PHOTOGRAPHS OF TEST SETUP RADIATED EMISSION TEST SETUP



APPENDIX 2 PHOTOGRAPHS OF EUT TOP VIEW OF EUT



BOTTOM VIEW OF EUT





FRONT VIEW OF EUT

BACK VIEW OF EUT





LEFT VIEW OF EUT

RIGHT VIEW OF EUT





OPEN VIEW OF EUT

INTERNAL VIEW-1 OF ET





INTERNAL VIEW-2 OF EUT

INTERNAL VIEW-3 OF EUT



----- END OF REPORT-----