

FCC REPORT

Applicant: Sky Channel Technologies (Shenzhen) Ltd.

Address of Applicant: Room 567,5th Floor, Build 1, Zhongxing Industrial Park, Chuangye Road, Nanshan District, Shenzhen P.R. China

Equipment Under Test (EUT)

Product Name: Pour Spout

Model No.: SF03

Trade mark: Skyflo

FCC ID: ZQHSF1107

Applicable standards: FCC CFR Title 47 Part 15 Subpart C Section 15.249:2010

Date of sample receipt: 27 Jun., 2011

Date of Test: 27-30 Jun., 2011

Date of report issued: 04 Jul., 2011

Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Robinson Lo
Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the GTS product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards. Any mention of GTS International Electrical Approvals or testing done by GTS International Electrical Approvals in connection with, distribution or use of the product described in this report must be approved by GTS International Electrical Approvals in writing.

This document cannot be reproduced except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only."

2 Version

Version No.	Date	Description
00	2011-07-04	<i>Original</i>

Prepared By:

Collin. He

Date:

2011-07-04

Project Engineer

Check By:

Hans. Hu

Date:

2011-07-04

Reviewer

3 Contents

	Page
1 COVER PAGE	1
2 VERSION	2
3 CONTENTS	3
4 TEST SUMMARY	4
5 GENERAL INFORMATION	5
5.1 CLIENT INFORMATION	5
5.2 GENERAL DESCRIPTION OF E.U.T	5
5.3 TEST MODE	6
5.4 TEST FACILITY	6
5.5 TEST LOCATION	6
5.6 OTHER INFORMATION REQUESTED BY THE CUSTOMER	6
5.7 TEST INSTRUMENTS LIST	7
6 TEST RESULTS AND MEASUREMENT DATA	8
6.1 ANTENNA REQUIREMENT:	8
6.2 RADIATED EMISSION	9
6.2.1 <i>Field Strength Of The Fundamental Signal</i>	11
6.2.2 <i>Spurious Emissions</i>	11
6.3 20dB BANDWIDTH	13
7 TEST SETUP PHOTO	15
8 EUT CONSTRUCTIONAL DETAILS	16

4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

Remark:

Pass: The EUT complies with the essential requirements in the standard.

5 General Information

5.1 Client Information

Applicant:	Sky Channel Technologies (Shenzhen) Ltd.
Address of Applicant:	Room 567,5th Floor, Build 1, Zhongxing Industrial Park, Chuangye Road, Nanshan District, Shenzhen P.R. China
Manufacturer/ Factory:	Sky Channel Technologies (Shenzhen) Ltd.
Address of Manufacturer/ Factory:	Room 567,5th Floor, Build 1, Zhongxing Industrial Park, Chuangye Road, Nanshan District, Shenzhen P.R. China

5.2 General Description of E.U.T.

Product Name:	Pour Spout
Model No.:	SF03
Operation Frequency:	908.30MHz, 908.95MHz
Test Frequency:	908.95MHz
Modulation type:	GFSK
Antenna Type:	Integral
Antenna gain:	-3dBi
Power supply:	DC 3.7V (Lithium battery)

5.3 Test mode

Transmitting mode:	Keep the EUT in transmitting mode with modulation.										
Pre-Test Mode:											
GTS has verified the construction and function in typical operation, The EUT was placed on three different polar directions; i.e. X axis, Y axis, Z axis. which was shown in this test report and defined as follows:											
<table border="1"><thead><tr><th>Axis</th><th>X</th><th>Y</th><th>Z</th></tr></thead><tbody><tr><td>Field Strength(dBuV/m)</td><td>91.21</td><td>92.98</td><td>90.46</td></tr></tbody></table>				Axis	X	Y	Z	Field Strength(dBuV/m)	91.21	92.98	90.46
Axis	X	Y	Z								
Field Strength(dBuV/m)	91.21	92.98	90.46								
Final Test Mode:											
According to ANSI C63.4 standards, the test results are both the "worst case" and "worst setup": Y axis (see the test setup photo)											

5.4 Test Facility

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

● **FCC —Registration No.: 600491**

Global United Technology Services Co., Ltd., Shenzhen 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 files. Registration 600491, July 20, 2010.

● **Industry Canada (IC)**

The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A-1.

5.5 Test Location

All tests were performed at:

Global United Technology Services Co., Ltd.

Address: 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China

Tel: 0755-27798480

Fax: 0755-27798960

5.6 Other Information Requested by the Customer

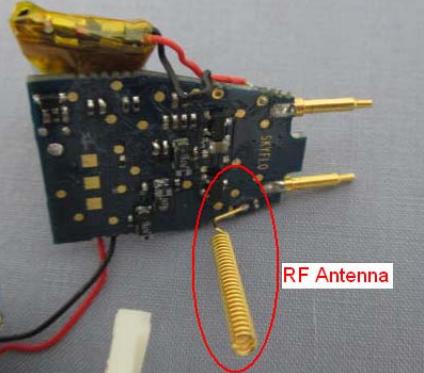
None.

5.7 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	Mar. 30 2011	Mar. 29 2012
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Sept. 10 2010	Sept. 09 2011
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Feb. 26 2011	Feb. 25 2012
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208	Aug. 03 2010	Aug. 02 2011
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	Aug. 03 2010	Aug. 02 2011
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	Apr. 01 2011	Mar. 31 2012
9	Coaxial Cable	GTS	N/A	GTS211	Apr. 01 2011	Mar. 31 2012
9	Coaxial cable	GTS	N/A	GTS210	Apr. 01 2011	Mar. 31 2012
11	Coaxial Cable	GTS	N/A	GTS212	Apr. 01 2011	Mar. 31 2012
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Aug. 03 2010	Aug. 02 2011
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Aug. 03 2010	Aug. 02 2011
14	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	Aug. 03 2010	Aug. 02 2011
15	Band filter	Amindeon	82346	GTS219	Aug. 03 2010	Aug. 02 2011

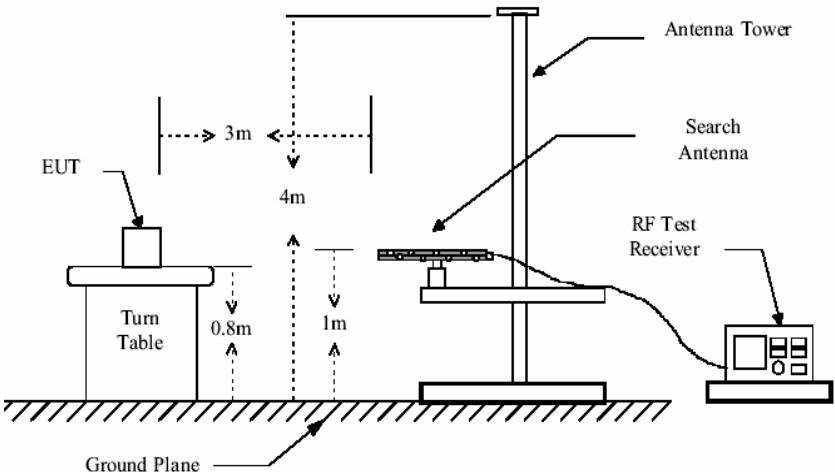
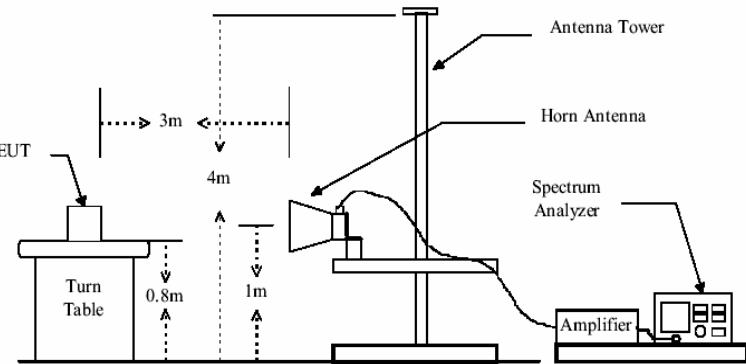
6 Test results and Measurement Data

6.1 Antenna requirement:

Standard requirement:	FCC Part15 C Section 15.203
15.203 requirement:	<p><i>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, 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.</i></p>
E.U.T Antenna:	<p><i>The antenna is no consideration of replacement. The best case gain of the antenna is -3dBi.</i></p> 

6.2 Radiated Emission

Test Requirement:	FCC Part15 C Section 15.249 and 15.209																									
Test Method:	ANSI C63.4:2003																									
Test Frequency Range:	30MHz to 10000MHz																									
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)																									
Receiver setup:	<table border="1"> <thead> <tr> <th>Frequency</th><th>Detector</th><th>RBW</th><th>VBW</th><th>Remark</th></tr> </thead> <tbody> <tr> <td>30MHz-1GHz</td><td>Quasi-peak</td><td>100KHz</td><td>300KHz</td><td>Quasi-peak Value</td></tr> <tr> <td>Above 1GHz</td><td>Peak</td><td>1MHz</td><td>3MHz</td><td>Peak Value</td></tr> <tr> <td></td><td>Peak</td><td>1MHz</td><td>10Hz</td><td>Average Value</td></tr> </tbody> </table>					Frequency	Detector	RBW	VBW	Remark	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value	Above 1GHz	Peak	1MHz	3MHz	Peak Value		Peak	1MHz	10Hz	Average Value	
Frequency	Detector	RBW	VBW	Remark																						
30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value																						
Above 1GHz	Peak	1MHz	3MHz	Peak Value																						
	Peak	1MHz	10Hz	Average Value																						
Limit: (Field strength of the fundamental signal)	<table border="1"> <thead> <tr> <th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr> </thead> <tbody> <tr> <td>902MHz-928MHz</td><td>94.0</td><td>Average Value</td></tr> <tr> <td></td><td>114.0</td><td>Peak Value</td></tr> </tbody> </table>					Frequency	Limit (dBuV/m @3m)	Remark	902MHz-928MHz	94.0	Average Value		114.0	Peak Value												
Frequency	Limit (dBuV/m @3m)	Remark																								
902MHz-928MHz	94.0	Average Value																								
	114.0	Peak Value																								
Limit: (Spurious Emissions)	<table border="1"> <thead> <tr> <th>Frequency</th><th>Limit (dBuV/m @3m)</th><th>Remark</th></tr> </thead> <tbody> <tr> <td>30MHz-88MHz</td><td>40.0</td><td>Quasi-peak Value</td></tr> <tr> <td>88MHz-216MHz</td><td>43.5</td><td>Quasi-peak Value</td></tr> <tr> <td>216MHz-960MHz</td><td>46.0</td><td>Quasi-peak Value</td></tr> <tr> <td>960MHz-1GHz</td><td>54.0</td><td>Quasi-peak Value</td></tr> <tr> <td>Above 1GHz</td><td>54.0</td><td>Average Value</td></tr> <tr> <td></td><td>74.0</td><td>Peak Value</td></tr> </tbody> </table>					Frequency	Limit (dBuV/m @3m)	Remark	30MHz-88MHz	40.0	Quasi-peak Value	88MHz-216MHz	43.5	Quasi-peak Value	216MHz-960MHz	46.0	Quasi-peak Value	960MHz-1GHz	54.0	Quasi-peak Value	Above 1GHz	54.0	Average Value		74.0	Peak Value
Frequency	Limit (dBuV/m @3m)	Remark																								
30MHz-88MHz	40.0	Quasi-peak Value																								
88MHz-216MHz	43.5	Quasi-peak Value																								
216MHz-960MHz	46.0	Quasi-peak Value																								
960MHz-1GHz	54.0	Quasi-peak Value																								
Above 1GHz	54.0	Average Value																								
	74.0	Peak Value																								
Limit: (band edge)	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, whichever is the lesser attenuation.																									
Test Procedure:	<ol style="list-style-type: none"> The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic chamber. The table was rotated 360 degrees to determine the position of the highest radiation. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak and average methods. 																									

	peak or average method as specified and then reported in a data sheet.
Test setup:	<p>Below 1GHz</p>  <p>Above 1GHz</p> 
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Note:

The field strength is calculated by adding the Antenna Factor, Cable Factor & Preamplifier. The basic equation with a sample calculation is as follows:

Final Test Level = Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor

Measurement Data

6.2.1 Field Strength Of The Fundamental Signal

Peak value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
908.95	96.07	25.03	3.35	31.47	92.98	114.00	-21.02	Horizontal
908.95	95.56	24.35	3.35	31.47	91.79	114.00	-22.21	Vertical

Average value:

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	polarization
908.95	92.40	25.03	3.35	31.47	89.31	94.00	-4.69	Horizontal
908.95	90.31	24.35	3.35	31.47	86.54	94.00	-7.46	Vertical

6.2.2 Spurious Emissions

30MHz~1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
39.70	35.20	11.30	0.60	28.09	19.01	40.00	-20.99	Vertical
118.27	41.99	8.02	1.25	27.70	23.56	43.50	-19.94	Vertical
129.91	44.29	7.70	1.28	27.61	25.66	43.50	-17.84	Vertical
144.46	41.35	8.53	1.31	27.49	23.70	43.50	-19.80	Vertical
432.55	37.40	16.56	2.34	27.52	28.78	46.00	-17.22	Vertical
78.50	34.12	7.59	1.05	28.00	14.76	40.00	-25.24	Horizontal
118.27	38.50	8.02	1.25	27.70	20.07	43.50	-23.43	Horizontal
129.91	46.67	7.70	1.28	27.61	28.04	43.50	-15.46	Horizontal
144.46	36.60	8.53	1.31	27.49	18.95	43.50	-24.55	Horizontal
710.94	32.50	21.60	2.94	27.24	29.80	46.00	-16.20	Horizontal

Above 1GHz

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
1817.90	47.78	25.31	2.64	29.38	46.35	74.00	-27.65	Vertical
2726.85	47.01	28.20	3.75	30.38	48.58	74.00	-25.42	Vertical
3635.80	43.80	29.17	4.18	27.65	49.50	74.00	-24.50	Vertical
4544.75	41.27	31.42	4.88	24.47	53.10	74.00	-20.90	Vertical
5453.70	38.96	31.89	5.78	23.81	52.82	74.00	-21.18	Vertical
1817.90	46.49	25.31	2.64	29.38	45.06	74.00	-28.94	Horizontal
2726.85	45.55	28.20	3.75	30.38	47.12	74.00	-26.88	Horizontal
3635.80	41.81	29.17	4.18	27.65	47.51	74.00	-26.49	Horizontal
4544.75	39.91	31.42	4.88	24.47	51.74	74.00	-22.26	Horizontal
5453.70	37.32	31.89	5.78	23.81	51.18	74.00	-22.82	Horizontal

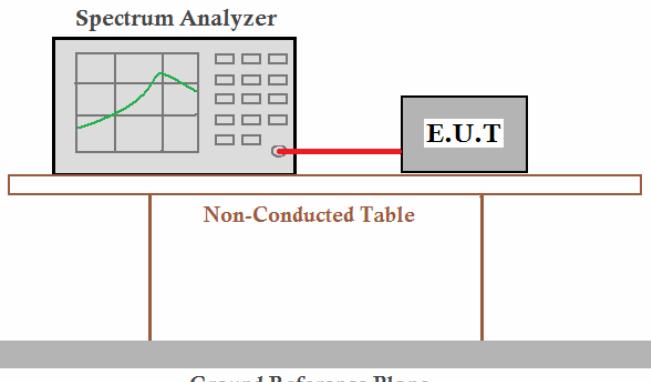
Test mode:	Transmitting	Test channel:	Lowest	Remark:	average
------------	--------------	---------------	--------	---------	---------

Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
1817.90	38.21	25.31	2.64	29.38	36.78	54.00	-17.22	Vertical
2726.85	37.82	28.20	3.75	30.38	39.39	54.00	-14.61	Vertical
3635.80	34.78	29.17	4.18	27.65	40.48	54.00	-13.52	Vertical
4544.75	31.50	31.42	4.88	24.47	43.33	54.00	-10.67	Vertical
5453.70	29.23	31.89	5.78	23.81	43.09	54.00	-10.91	Vertical
1817.90	36.35	25.31	2.64	29.38	34.92	54.00	-19.08	Horizontal
2726.85	36.46	28.20	3.75	30.38	38.03	54.00	-15.97	Horizontal
3635.80	33.22	29.17	4.18	27.65	38.92	54.00	-15.08	Horizontal
4544.75	29.66	31.42	4.88	24.47	41.49	54.00	-12.51	Horizontal
5453.70	27.95	31.89	5.78	23.81	41.81	54.00	-12.19	Horizontal

Remark:

1. Final Test Level =Receiver Reading + Antenna Factor + Cable Factor – Preamplifier Factor
2. The emission levels of other frequencies are very lower than the limit and not show in test report.

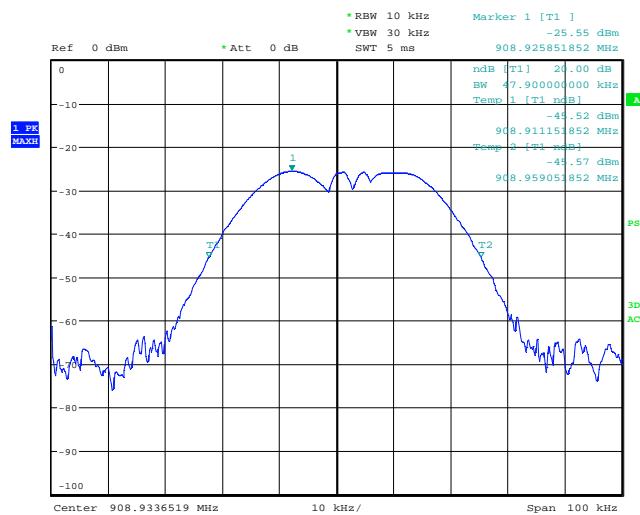
6.3 20dB Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215
Test Method:	ANSI C63.4:2003
Receiver setup:	RBW=10KHz, VBW=30KHz, detector: Peak
Limit:	Within operation frequency range 902MHz-928MHz
Test Procedure:	<ol style="list-style-type: none"> 1. According to the follow Test-setup, keep the relative position between the artificial antenna and the EUT. 2. Set the EUT to proper test channel. 3. Max hold the radiated emissions, mark the peak power frequency point and the -20dB upper and lower frequency points. 4. Read 20dB bandwidth.
Test setup:	
Test Instruments:	Refer to section 5.7 for details
Test mode:	Refer to section 5.3 for details
Test results:	Pass

Measurement Data

Test Frequency(MHz)	20dB bandwidth (kHz)	Results
908.95	47.90	Pass

Test plot as follows:



Date: 4.JUL.2011 11:07:11