

Global United Technology Services Co., Ltd.

Report No: GTSE11110092702

TEST REPORT

Applicant: CARRIN ELECTRONICS COMPANY LIMITED

UNIT 2105~2106, TOWER A, REGENT CENTRE, 63 WO YI HOP Address of Applicant:

RD, KWAI CHUNG, HONG KONG

Equipment Under Test (EUT)

Product Name: WEATHER STATION

Model No.: KW9007, 47022RX, 47023RX

FCC ID: X6I-9007

Applicable standards: FCC CFR Title 47 Part 15 Subpart B:2010

Date of sample receipt: Nov. 18, 2011

Date of Test: Nov. 18-22, 2011

Nov. 23, 2011 Date of report issued:

PASS * Test Result:

Authorized Signature:



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."

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



2 Version

Version No.	Date	Description
00	Nov. 23, 2011	Original

Prepared by:	Collan He	Date:	Nov. 23, 2011	
	Project Engineer			
Reviewed by:	Hams. Hu	Date:	Nov. 23, 2011	
	Reviewer			



3 Contents

			Page
1	CO	VER PAGE	1
2	VFF	RSION	,
3	COI	NTENTS	3
4	TES	ST SUMMARY	4
5	GEN	NERAL INFORMATION	5
5	5.1	CLIENT INFORMATION	5
5	5.2	GENERAL DESCRIPTION OF E.U.T.	
5	5.3	TEST MODE AND VOLTAGE	
_	5.4	TEST FACILITY	
	5.5	TEST LOCATION	
_	5.6	DESCRIPTION OF SUPPORT UNITS	
_	5.7	DEVIATION FROM STANDARDS	
_	5.8	ABNORMALITIES FROM STANDARD CONDITIONS	
5	5.9	OTHER INFORMATION REQUESTED BY THE CUSTOMER	
6	TES	ST INSTRUMENTS LIST	7
7	TES	ST RESULTS AND MEASUREMENT DATA	8
7	7 .1	RADIATED EMISSION	
8	TES	ST SETUP PHOTO	14
9	FIII	T CONSTRUCTIONAL DETAILS	15

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



4 Test Summary

Test Item	Section in CFR 47	Result
Conducted Emission	Part15.107	N/A
Radiated Emissions	Part15.109	PASS

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

N/A: not applicable.

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



5 General Information

5.1 Client Information

Applicant:	CARRIN ELECTRONICS COMPANY LIMITED
Address of Applicant:	UNIT 2105~2106, TOWER A, REGENT CENTRE, 63 WO YI HOP RD, KWAI CHUNG, HONG KONG
Manufacturer/Factory:	CARRIN ELECTRONICS COMPANY LIMITED
Address of Manufacturer/ Factory:	UNIT 2105~2106, TOWER A, REGENT CENTRE, 63 WO YI HOP RD, KWAI CHUNG, HONG KONG

5.2 General Description of E.U.T.

Product Name:	WEATHER STATION
Model No.:	KW9007, 47022RX, 47023RX
Power supply:	DC 4.5V (3x1.5 "AA" Size)
Remark:	1. Only the model KW9007 was tested.
	KW9007, 47022RX, 47023RX are identical in the same PCB layout,
	interior structure and electrical circuits. The only differences are the
	model name and appearance color for commercial purpose.
	2. The test battery is new battery.

5.3 Test mode and voltage

Test mode:	
Receiver mode	Keep the EUT in receiver mode
Remark:	Signal generators transmit an unmodulated carrier on the receiver frequency from an antenna in the proximity of the receiver. Care was taken to avoid overload of the receiver, vary the amplitude and frequency of the stabilizing signal to obtain the highest level of the spurious emissions from the receiver.

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.

Global United Technology Services Co., Ltd. 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China 518102

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960

Page 5 of 20



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 Description of Support Units

None.

5.7 Deviation from Standards

Biconical, log.per. antenna and horn antenna were used instead of dipole antenna. Semi-anechoic Chamber was used as alternation of open air test sites, and all test suites were performed with radiated method in it.

5.8 Abnormalities from Standard Conditions

None.

5.9 Other Information Requested by the Customer

None.

Global United Technology Services Co., Ltd. 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China 518102

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



6 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	Jul. 04 2011	Jul. 03 2012			
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	June 30 2011	June 29 2012			
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 30 2011	Mar. 29 2012			
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	Jul. 04 2011	Jul. 03 2012			
13	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 04 2011	Jul. 03 2012			
14	Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June 30 2011	June 29 2012			
15	Band filter	Amindeon	82346	GTS219	June 30 2011	June 29 2012			
16	Signal generator	Rohde & Schwarz	1090.3000.12	GTS330	June 30 2011	June 29 2012			

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



7 Test results and Measurement Data

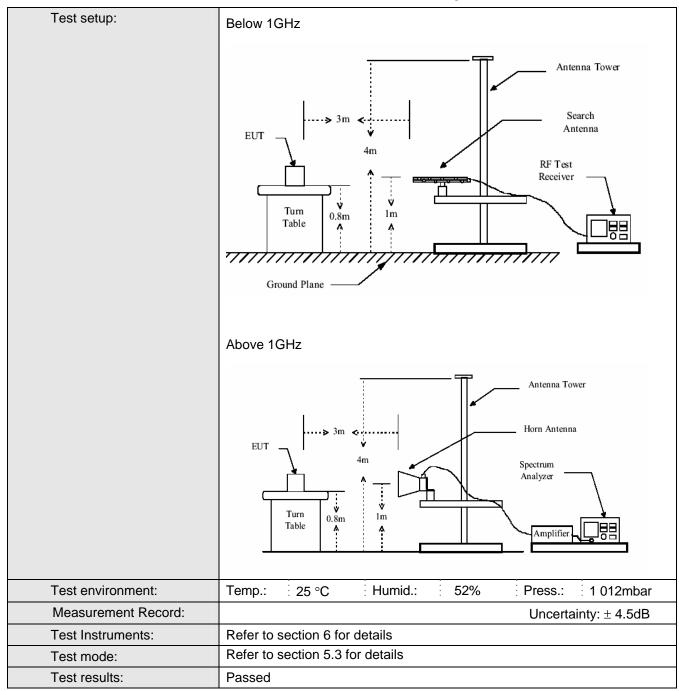
7.1 Radiated Emission

Test Requirement:	FCC Part15 B S	Section 15.10	9				
Test Method:	ANSI C63.4:2003						
Test Frequency Range:	30MHz to 2GHz						
. , ,							
Class / Severity:	Class B		<i>.</i>		`		
Test site:	Measurement Distance: 3m (Semi-Anechoic Chamber)						
Receiver setup:	Frequency Detector RRW VRW Remark						
	Frequency	Detector	RBW	VBW	Remark		
	30MHz- 1GHz	Quasi-pea	k 100KHz	300KHz	Quasi-peak Value		
	Above 1CHz	Peak	1MHz	3MHz	Peak Value		
	Above 1GHz	Peak	1MHz	3MHz	Average Value		
Limit:	Freque	ency	Limit (dBuV	/m @3m)	Remark		
	30MHz-8	8MHz	40.0	0	Quasi-peak Value		
	88MHz-2	88MHz-216MHz 43.50 Quasi					
	216MHz-9	60MHz	46.0	0	Quasi-peak Value		
	960MHz-	Quasi-peak Value					
	Above 1GHz 54.00				Average Value		
	Above	IGHZ	74.00		Peak Value		
Test Procedure:	 a. The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter semi-anechoic camber. The table was rotated 360 degrees to determine the position of the highest radiation. b. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. c. 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. d. 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. e. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. f. 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 or 						

Global United Technology Services Co., Ltd. 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China 518102 Project No.: GTSE111100927RF

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960





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

Global United Technology Services Co., Ltd. 2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road Baoan District, Shenzhen, China 518102

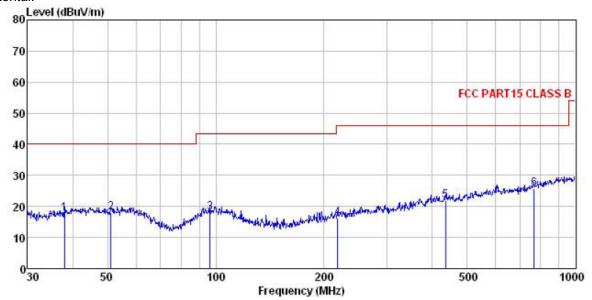
Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



Measurement Data

Below 1 G:

Horizontal:



Site Condition : 3m chamber : FCC PART15 CLASS B 3m VULB9163 HORIZONTAL

Job No. : 927RF

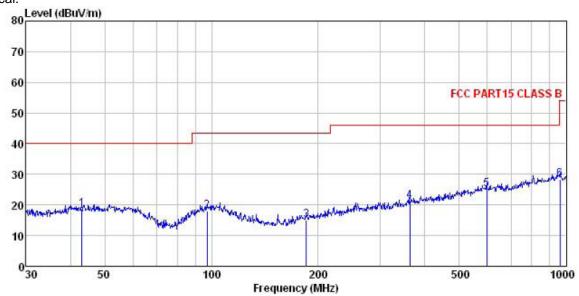
Test mode : Receiving mode Test Engineer: Aarons

THE THUCK .	mar one							
50	Read	Antenna	Cable	Preamp		Limit	Over	
Freq	Level	Factor	Loss	Factor	Level	Line	Limit	Remark
MHz	dBu∜	dB/m	₫B	<u>dB</u>	dBuV/m	dBuV/m	dB	
37.94	36.53	13.06	0.25	32.16	17.68	40.00	-22.32	QP
51.12	36.39	13.21	0.32	32.01	17.91	40.00	-22.09	QP
96.44	36.28	12.94	0.47	31.71	17.98	43.50	-25.52	QP
218.31	36.62	11.13	0.78	32.28	16.25	46.00	-29.75	QP
435.59	37.19	15.54	1.33	32.07	21.99	46.00	-24.01	QP
766.06	35.62	19.63	2.00	31.56	25.69	46.00	-20.31	QP
	Freq MHz 37.94 51.12 96.44 218.31 435.59	MHz dBuV 37.94 36.53 51.12 36.39 96.44 36.28 218.31 36.62 435.59 37.19	ReadAntenna Freq Level Factor MHz dBuV dB/m 37.94 36.53 13.06 51.12 36.39 13.21 96.44 36.28 12.94 218.31 36.62 11.13 435.59 37.19 15.54	ReadAntenna Cable Freq Level Factor Loss MHz dBuV dB/m dB 37.94 36.53 13.06 0.25 51.12 36.39 13.21 0.32 96.44 36.28 12.94 0.47 218.31 36.62 11.13 0.78 435.59 37.19 15.54 1.33	ReadAntenna Cable Preamp Level Factor Loss Factor	ReadAntenna Cable Preamp Freq Level Factor Loss Factor Level MHz dBuV dB/m dB dB dBuV/m 37.94 36.53 13.06 0.25 32.16 17.68 51.12 36.39 13.21 0.32 32.01 17.91 96.44 36.28 12.94 0.47 31.71 17.98 218.31 36.62 11.13 0.78 32.28 16.25 435.59 37.19 15.54 1.33 32.07 21.99	ReadAntenna Cable Preamp Limit Level Factor Loss Factor Level Line	ReadAntenna Cable Preamp Limit Over Level Factor Loss Factor Level Line Limit

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960



Vertical:



: 3m chamber : FCC PART15 CLASS B 3m VULB9163 VERTICAL : 927RF Site Condition

Job No.

Test mode Test Engin : Receiving mode

est	Engineer:		Antenna	Cable	Preamn		Limit	Over	
	Freq		Factor						Remark
	MHz	dBu∀	<u>dB</u> /m	₫B	<u>dB</u>	dBuV/m	dBuV/m	<u>dB</u>	
1	43.05	36.77	13.56	0.28	32.12	18.49	40.00	-21.51	QP
2	97.11	36.18	12.97	0.47	31.71	17.91	43.50	-25.59	QP
2	185.14	36.43	10.16	0.68	32.18	15.09	43.50	-28.41	QP
4	362.98	37.89	14.45	1.19	32.31	21.22	46.00	-24.78	QP
5	597.22	36.29	18.40	1.67	31.30	25.06	46.00	-20.94	QP
6	962.16	36.08	21.49	2.23	31.50	28.30	54.00	-25.70	QP

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960

Project No.: GTSE111100927RF

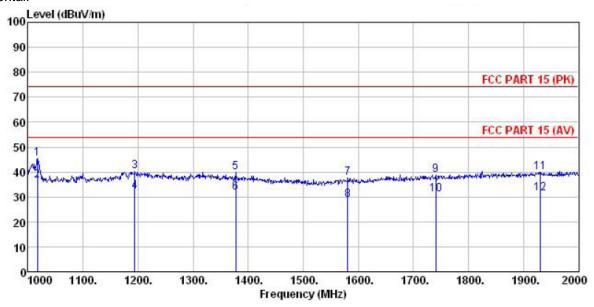
Page 11 of 20



Project No.: GTSE111100927RF

Above 1 G:

Horizontal:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(>1GHZ) HORIZONTAL Condition

: 927RF Job No.

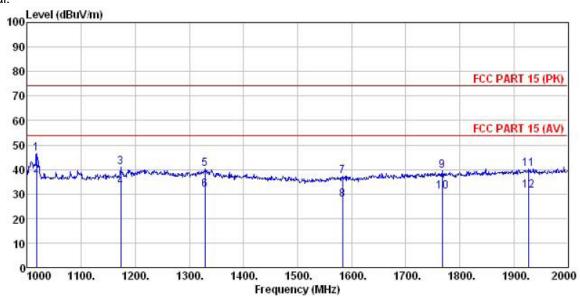
Test mode Test Engin Receiving mode

lest	Engineer:		A	C-11-	D		T 2-24	O	
	Freq		Antenna Factor		Preamp Factor		Limit Line	Over Limit	Remark
	MHz	dBu∀	dB/m	₫B	dB	dBuV/m	$\overline{dBuV/m}$	dB	
1	1017.00	53.13	24.44	2.32	34.51	45.38	74.00	-28.62	Peak
2	1017.00	44.37	24.44	2.32	34.51	36.62	54.00	-17.38	Average
3	1194.00	47.44	24.88	2.59	34.55	40.36	74.00	-33.64	Peak
4 5 6	1194.00	39.13	24.88	2.59	34.55	32.05	54.00	-21.95	Average
5	1377.00	46.06	25.50	2.84	34.59	39.81	74.00	-34.19	Peak
6	1377.00	37.82	25.50	2.84	34.59	31.57	54.00	-22.43	Average
7	1581.00	44.24	25.02	3.08	34.63	37.71	74.00	-36.29	Peak
8	1581.00	35.17	25.02	3.08	34.63	28.64	54.00	-25.36	Average
9	1741.00	45.27	25.04	3.26	34.66	38.91	74.00	-35.09	Peak
10	1741.00	37.28	25.04	3.26	34.66	30.92	54.00	-23.08	Average
11	1931.00	45.30	25.87	3.44	34.69	39.92	74.00	-34.08	Peak
12	1931.00	36.81	25.87	3.44	34.69	31.43	54.00	-22.57	Average



Project No.: GTSE111100927RF

Vertical:



Site

: 3m chamber : FCC PART 15 (PK) 3m BBHA9120(>1GHZ) VERTICAL : 927RF Condition

Job No.

Test mode : Receiving mode Test Engineer: Aarons

	Freq		Antenna Factor		Preamp Factor		Limit Line	Over Limit	Remark
	MHz	dBu∀	dB/m	₫B	<u>dB</u>	$\overline{dBuV/m}$	dBuV/m	dB	
1	1017.00	54.37	24.44	2.32	34.51	46.62	74.00	-27.38	Peak
2	1017.00	45.38	24.44	2.32	34.51	37.63	54.00	-16.37	Average
2	1173.00	48.28	24.75	2.57	34.55	41.05	74.00	-32.95	Peak
4	1173.00	40.13	24.75	2.57	34.55	32.90	54.00	-21.10	Average
4 5 6	1329.00	46.27	25.65	2.78	34.58	40.12	74.00	-33.88	Peak
6	1329.00	37.81	25.65	2.78	34.58	31.66	54.00	-22.34	Average
7	1583.00	43.95	25.02	3.10	34.63	37.44	74.00	-36.56	Peak
8	1583.00	34.28	25.02	3.10	34.63	27.77	54.00	-26.23	Average
9	1768.00	45.56	25.17	3.29	34.66	39.36	74.00	-34.64	Peak
10	1768.00	37.20	25.17	3.29	34.66	31.00	54.00	-23.00	Average
11	1927.00	45.47	25.87	3.44	34.69	40.09	74.00	-33.91	Peak
12	1927.00	36.57	25.87	3.44	34.69	31.19	54.00	-22.81	Average

Telephone: +86 (0) 755 2779 8480 Fax: +86 (0) 755 2779 8960 Page 13 of 20