



**CENTRE OF TESTING SERVICE
INTERNATIONAL**

OPERATE ACCORDING TO ISO/IEC 17025

FCC ID/IC TEST REPORT

TEST REPORT NUMBER : CGZ3111231-01156-EFI



CENTRE OF TESTING SERVICE CO., LTD.

Building F, Dachuang industrial park, No.379, Zhongshan Dadao,
Guangzhou, China.



TEST REPORT For FCC ID 47 CFR PART 15 OCT, 2011 RSS-210 Issue 8	
Report Reference No.	CGZ3111231-01156-EFI
Date of issue	31 December 2011
Testing Laboratory Name	CETRE OF TESTING SERVICE CO., LTD.
Address	Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China.
Testing location/ procedure	Full application of Harmonised standards <input checked="" type="checkbox"/> Partial application of Harmonised standards <input type="checkbox"/> Other standard testing method <input type="checkbox"/>
Applicant's name	Horizon Hobby
Address	4105 Fieldstone Road, Champaign, IL 61822, USA
Test specification	
Standard	47 CFR PART 15 OCT, 2011, RSS-210 Issue 8, RSS-Gen Issue 3
Test Report Form No.	CTSEMC-1.0
TRF Originator	CENTRE OF TESTING SERVICE CO., LTD
Master TRF	Dated 2009-01
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Test item description	STRATOS
Trade Mark	/
Manufacturer	Horizon Hobby
Model/Type reference	HBZG1
Ratings	DC 6.0V by battery
Operating Frequency	2405MMHz ~2450MHz/ FHSS
Result	Positive

Compiled by:

Violet Lee / File administrators

Supervised by:

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FCC ID -- TEST REPORT

Test Report No. : CGZ3111231-01156-EFI	31 Dec. 2011 Date of issue
---	-------------------------------

Type / Model.....	HBZG1
EUT.....	STRATOS
Applicant.....	Horizon Hobby
Address.....	4105 Fieldstone Road, Champaign, IL 61822, USA
Telephone.....	+1-2174033542
Fax.....	/
Contact.....	Mr.Henry Lin
Manufacturer.....	Horizon Hobby
Address.....	4105 Fieldstone Road, Champaign, IL 61822, USA
Telephone.....	+1-2174033542
Fax.....	/
Contact.....	Mr.Henry Lin
Test report holder.....	Horizon Hobby
Address.....	4105 Fieldstone Road, Champaign, IL 61822, USA
Telephone.....	+1-2174033542
Fax.....	/
Contact.....	Mr.Henry Lin

Test Result according to the standards on page 3: **Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.



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1. TEST STANDARDS

The tests were performed according to following standards:

- 47 CFR PART 15 OCT, 2011
- RSS-210 Issue 8
- RSS-Gen Issue 3
- ANSI C63.4-2009

2. SUMMARY

2.1 GENERAL REMARKS

Date of receipt of test sample	23 Dec.2011
Testing commenced on	26 Dec.~31 Dec. 2011
Testing concluded on	31 Dec. 2011

2.2 FINAL ASSESSMENT

The FCC requirements pertaining to the technical standards and tested operation modes are

- - fulfilled.
- - **not** fulfilled.

The equipment under test

- - fulfils the FCC requirements cited on page 3.
- - **does not** fulfil the FCC requirements cited on page 3.

3. EQUIPMENT UNDER TEST

3.1 Power supply system utilised

Power supply voltage : ■ DC 6V By Battery

3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: 1

Serial number: Prototype

3.3 EUT operation mode

The equipment under test was operated during the measurement under the following conditions:

- - Standby
- TX- Y position
- TX- Z position
- TX- X position

Operation mode 1: TX-X Position Low (2405MHz) , TX-X Position Middle (2423MHz) ,
TX-X Position High (2450MHz)

Note: TX -X position of EUT is the worst case, so only these test results be recorded in the test report.



3.4 EUT configuration

3.4.1. Description of configuration (EUT)

Description	:	STRATOS
Model Number	:	HBZG1
Operation frequency	:	2405~ 2450 MHz ISM Band
Radio Technology	:	FHSS
Modulation Technology	:	FHSS modulation
Antenna	:	Integral antenna, met requirement of FCC 15.203

3.4.2. Tested Supporting System Details

N/A

4. TEST ENVIRONMENT

4.1 Address of the test laboratory

Building F, Dachuang industrial park, No.379, Zhongshan Dadao, Guangzhou, China

Tel: +86-20-85543113 (32 lines)

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4.2 Test facility

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

CNAS-Lab Code: L3394

CENTRE OF TESTING SERVICE CO., LTD has been assessed and proved to be in compliance with CNAS-CL01: 2006 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories.

IC-Registration No.: 8374A

The 3m Alternate Test Site of CENTRE OF TESTING SERVICE CO., LTD has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 8374A on June 6, 2011.

FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE CO., LTD, 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 No.791995, July 21, 2009.

4.3 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature:	15~35 ° C
Humidity:	25~75 %
Atmospheric pressure:	86~106 kPa

4.4 Definitions of symbols used in this test report

- - The black square indicates that the listed condition, standard or equipment is applicable for this report.
- - The empty square indicates that the listed condition, standard or equipment is **not** applicable for this report.

4.5 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. to CISPR 16 - 4 "Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements" and is documented in the CTS quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.



4.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	±1.22dB	(1)
Power disturbance	30MHz~300MHz	±1.38dB	(1)
Radiation emission (3m)	30MHz~300MHz	±3.14dB	(1)
	300MHz~1000MHz	±3.18dB	(1)

(1). This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

5. Summary of standards and results

5.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION		
Description of Test Item	Standard	Results
Radiated Emission Test	RSS-Gen:7.2 RSS-210 A2.9 FCC Part 15 C: 15.249 FCC Part 15 : 109 ANSI C63.4-2009	PASSED
Band Edge Compliance Test	RSS-210 Annex 8 FCC Part 15 C: 15.249 ANSI C63.4-2009	PASSED
20 dB Bandwidth test	FCC Part 15 C: 15.249 ANSI C63.4-2009 RSS-Gen:4.6.3	PASSED
99% Bandwidth	RSS-210 Annex 8 RSS-Gen 4.6.1	PASSED
N/A is an abbreviation for Not Applicable.		

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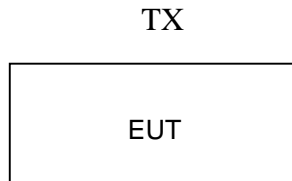
6. Radiated disturbance (electric field)

6.1. Test Equipment

Radiated disturbance (electric field)					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2011/12
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2011/12
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2011/12
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2011/12
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2011/12
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2011/12

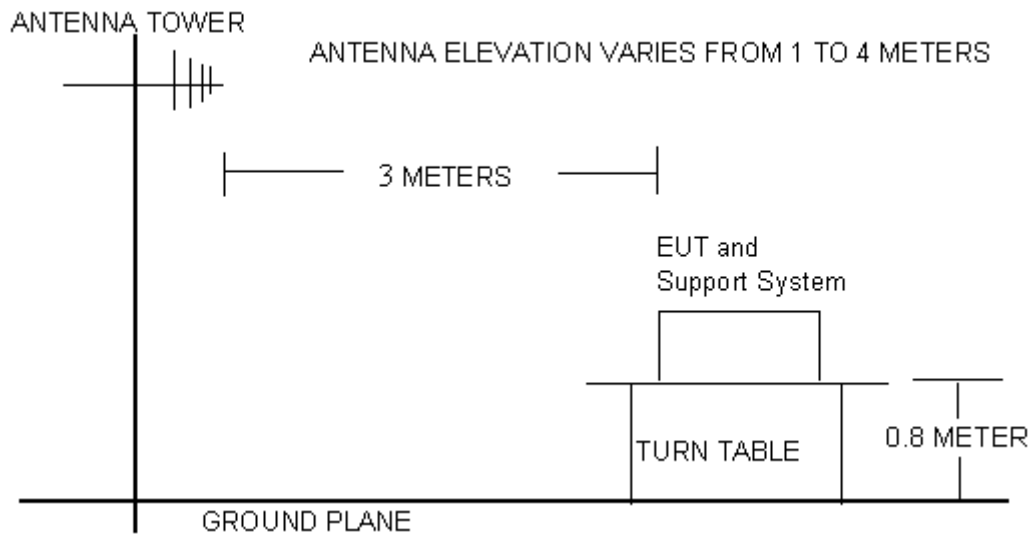
6.2. Block Diagram of Test Setup

7.2.1 Block Diagram of connection between EUT and simulators



(EUT: STRATOS)

6.2.2 Anechoic Chamber Setup Diagram



6.3. Radiated Emission Limit :

Standard: FCC 15.249 , FCC 15.209, RSS-Gen:7.2, RSS-210 A2.9

Except as provided in paragraph (a) 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 (mV/m)	Field Strength of Harmonics ($\mu\text{V}/\text{m}$)
902-928	50	500
2400-2483.5	50	500
5725-5875	50	500
24000-24250	250	2500

FREQUENCY MHz	DISTANCE Meters	FIELD STRENGTHS LIMIT	
		$\mu\text{V}/\text{m}$	$\text{dB}(\mu\text{V})/\text{m}$
0.009 ~ 0.490	3	---	63.0
0.490 ~ 1.705	3	---	43.0
1.705 ~ 30	3	----	49.5
30 ~ 88	3	100	40.0
88 ~ 216	3	150	43.5
216 ~ 960	3	200	46.0
960 ~ 1000	3	500	54.0
Above 1000	3	Other: 74.0 $\text{dB}(\mu\text{V})/\text{m}$ (Peak) 54.0 $\text{dB}(\mu\text{V})/\text{m}$ (Average)	

- Remark:
- (1) Emission level $\text{dB}\mu\text{V} = 20 \log$ Emission level $\mu\text{V}/\text{m}$
 - (2) The smaller limit shall apply at the cross point between two frequency bands.
 - (3) Distance is the distance in meters between the measuring instrument, antenna and the closest point of any part of the device or system.

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6.4. Test Procedure

The EUT and its simulators are placed on a turn table, which is 0.8 meter high above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level. The EUT is set 3 meters away from the receiving antenna, which is mounted on a antenna tower. The antenna can be moved up and down between 1 meter and 4 meters to find out the maximum emission level. Broadband antenna (calibrated bilog antenna) is used as receiving antenna. Both horizontal and vertical polarization of the antenna is set on Test. In order to find the maximum emission levels, all of the interface cables must be manipulated according to ANSI C63.4-2009 on radiated emission Test.

The frequency range from 30MHz to 1000MHz and above 1GHz. is investigated. Please see the following pages.

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 120kHz RBW below 1GHz and a Peak and Average detector with 1MHz RBW above 1GHz,

All measurements for radiated emissions within the restricted bands were performed using a Quasi-Peak detector with 300kHz VBW below 1GHz and a Peak detector with 1MHz VBW above 1GHz, A average detector with 10Hz VBW above 1GHz

Pretest x, y, z position of EUT, final, select the worst case x position test and record the test results in the report.

The test modes (TX Mode) is tested in Anechoic Chamber and all the scanning waveforms are reported on section 7.5

6.5. Radiated Emission Test Results

PASSED.

The frequency range from 9KHz~30MHz, 30MHz to 230MHz, 230MHz to 1000MHz and above 1GHz. is investigated.

Please see the following pages.



Test Mode:	TX -X Position Mode	Result:	<input checked="" type="checkbox"/> - passed
Frequency range:	9KHz~30MHz		<input type="checkbox"/> - not passed

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	4.3965	18.07	19.26	37.33	49.50	-12.17	QP
2	5.7788	18.44	23.01	41.45	49.50	-8.05	QP
3	7.1612	18.69	19.92	38.61	49.50	-10.89	QP
4	9.3849	19.09	23.56	42.65	49.50	-6.85	QP
5	13.6522	20.26	18.69	38.95	49.50	-10.55	QP
6	17.1381	21.27	6.21	27.48	49.50	-22.02	QP

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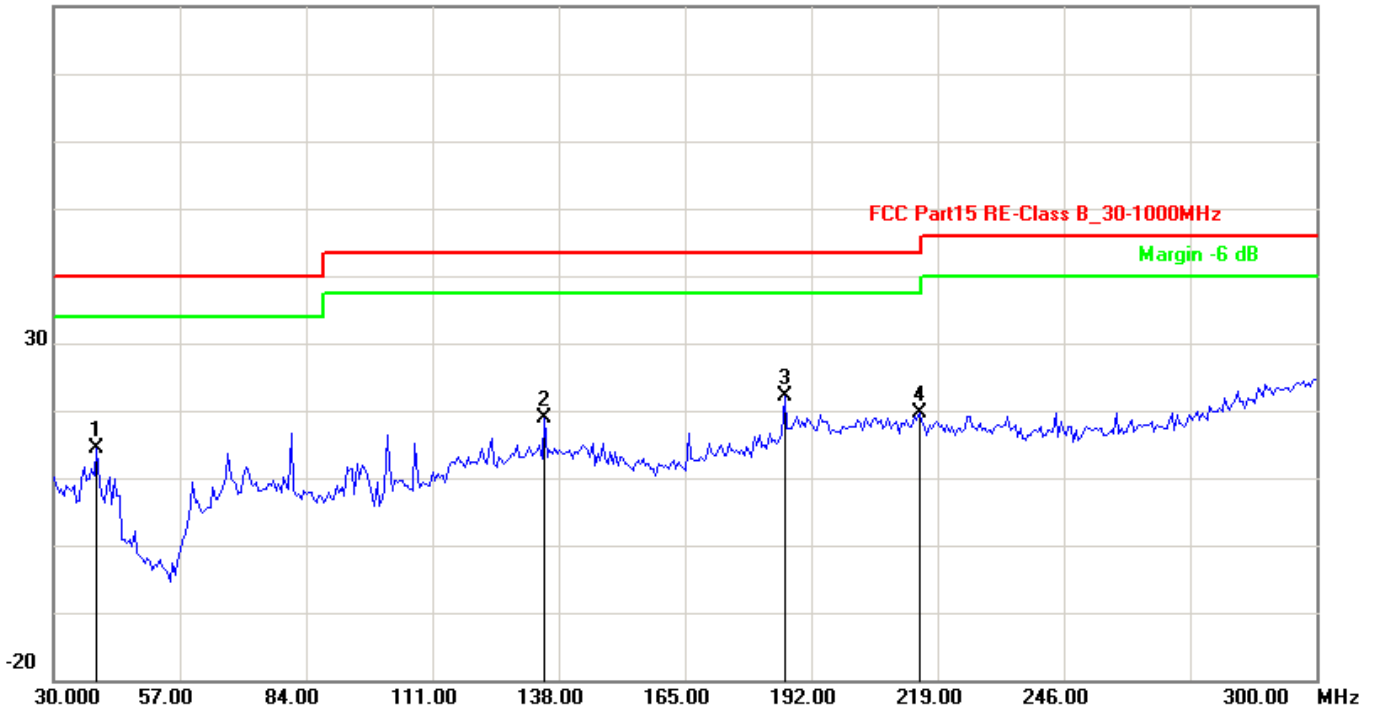
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Channel:	TX -X Position Mode	Result:	<input checked="" type="checkbox"/> - passed
Test point:	Horizontal		<input type="checkbox"/> - not passed
Frequency range:	30MHz~1000MHz		

EUT	STRATOS
Firm Name	Horizon Hobby
Operating Condition	DC 6.0V for TX
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	26 Dec.~31 Dec. 2011
Operator	Peter
MODEL NO	HBZG1

80.0 dBuV/m



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	39.1984	-27.38	41.75	14.37	40.00	-25.63	QP
2	134.9699	-18.60	37.44	18.84	43.50	-24.66	QP
3	186.3727	-15.25	37.49	22.24	43.50	-21.26	QP
4	215.0501	-14.19	33.86	19.67	43.50	-23.83	QP

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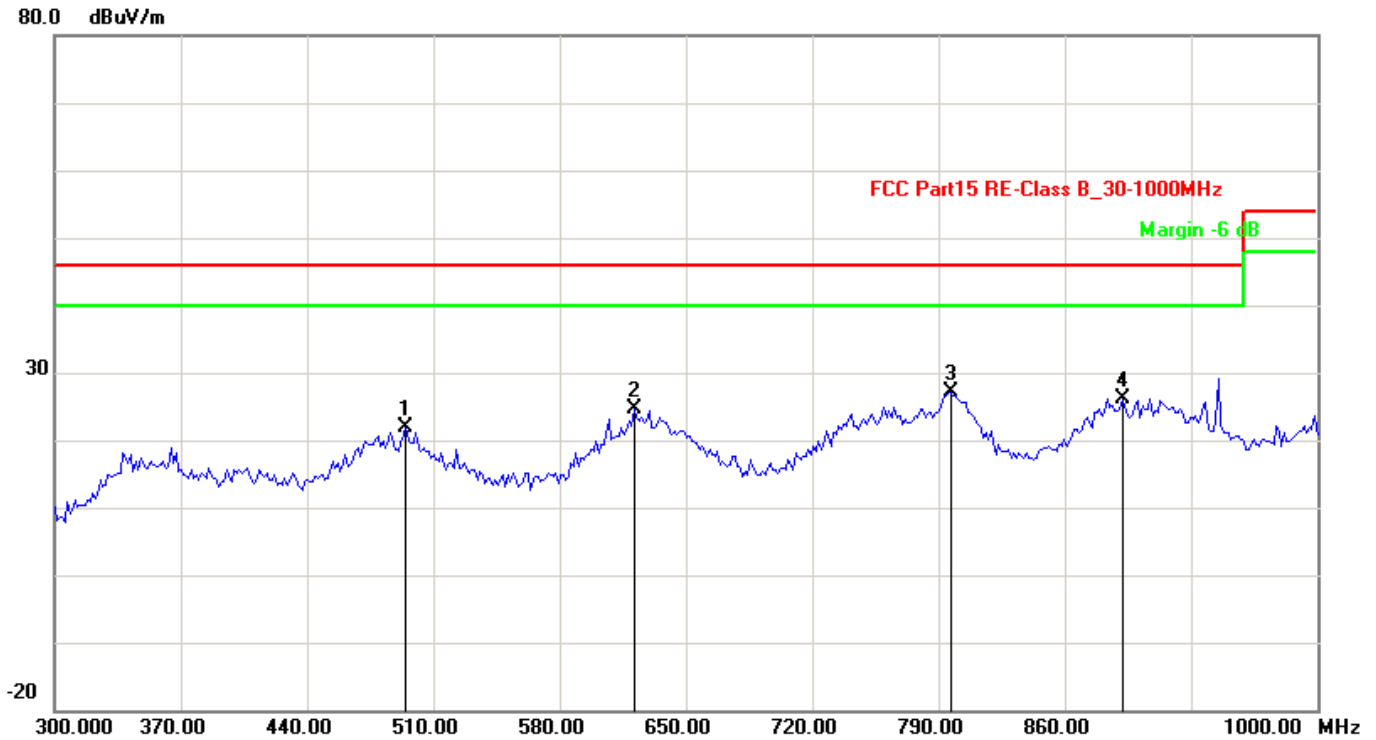
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	494.9900	-12.15	34.14	21.99	46.00	-24.01	QP
2	621.2425	-9.19	33.71	24.52	46.00	-21.48	QP
3	796.5932	-5.38	32.57	27.19	46.00	-18.81	QP
4	891.9840	-6.56	32.63	26.07	46.00	-19.93	QP

Note: 1. Emission level=Read level + Factor
 2. Factor=Antenna factor + Cable loss
 3. Margin=Level-Limit.

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Channel:	TX -X Position Mode Low 2405MHz	Result:	<input checked="" type="checkbox"/> - passed
Test point:	Horizontal		<input type="checkbox"/> - not passed
Frequency range:	1GHz-26.5GHz		

EUT	STRATOS
Firm Name	Horizon Hobby
Operating Condition	DC 6V for TX
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	26 Dec.~31 Dec. 2011
Operator	Peter
MODEL NO	HBZG1

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2405.814	11.83	92.86	104.69	114.00	-9.31	peak
2	2405.814	11.83	76.40	88.23	94.00	-5.77	AVG
3	4813.628	17.95	45.30	63.25	74.00	-10.75	peak
4	4813.628	17.95	30.74	48.69	54.00	-5.31	AVG
5	6973.948	20.16	32.84	53.00	74.00	-21.00	peak
6	6973.948	20.16	20.92	41.08	54.00	-12.92	AVG
7	8142.285	21.91	28.25	50.16	74.00	-23.84	peak
8	8142.285	21.91	19.04	40.95	54.00	-13.05	AVG
9	9288.577	22.47	28.85	51.32	74.00	-22.68	peak
10	9288.577	22.47	17.21	39.68	54.00	-14.32	AVG
11	10038.076	23.33	28.22	51.55	74.00	-22.45	peak
12	10038.076	23.33	19.22	42.55	54.00	-11.45	AVG
13	11096.192	24.40	28.29	52.69	74.00	-21.31	peak
14	11096.192	24.40	19.29	43.69	54.00	-10.31	AVG

Remark: Other frequency mini margin all >10 dB of Limit

- Note: 1. Emission level=Read level + Factor
 2. Factor=Antenna factor + Cable loss
 3. Margin=Level-Limit.

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Channel:	TX -X Position Mode Middle 2423MHz	Result:	<input checked="" type="checkbox"/> - passed
Test point:	Horizontal		<input type="checkbox"/> - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2423.162	11.90	92.12	104.02	114.00	-9.98	peak
2	2423.162	11.90	75.64	87.54	94.00	-6.46	AVG
3	1440.882	11.39	40.71	52.10	74.00	-21.90	peak
4	1440.882	11.39	28.30	39.69	54.00	-14.31	AVG
5	4846.324	18.02	49.52	67.54	74.00	-6.46	peak
6	4846.324	18.02	30.31	48.33	54.00	-5.67	AVG
7	6995.992	20.17	39.47	59.64	74.00	-14.36	peak
8	6995.992	20.17	22.46	42.63	54.00	-11.37	AVG
9	8384.770	21.97	34.49	56.46	74.00	-17.54	peak
10	8384.770	21.97	20.13	42.10	54.00	-11.90	AVG
11	10038.076	23.33	33.10	56.43	74.00	-17.57	peak
12	10038.076	23.33	17.70	41.03	54.00	-12.97	AVG
13	11515.030	24.78	35.35	60.13	74.00	-13.87	peak
14	11515.030	24.78	19.82	44.60	54.00	-9.40	AVG

Remark: Other frequency mini margin all >10 dB of Limit

- Note: 1. Emission level=Read level + Factor
 2. Factor=Antenna factor + Cable loss
 3. Margin=Level-Limit.

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Channel:	TX -X Position Mode High 2450MHz	Result:	<input checked="" type="checkbox"/> - passed
Test point:	Horizontal		<input type="checkbox"/> - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2450.241	12.01	92.18	104.19	114.00	-9.81	peak
2	2450.241	12.01	75.94	87.95	94.00	-6.05	AVG
3	1727.455	10.98	47.91	58.89	74.00	-15.11	peak
4	1727.455	10.98	29.18	40.16	54.00	-13.84	AVG
5	4900.482	18.14	42.14	60.28	74.00	-13.72	peak
6	4900.482	18.14	28.45	46.59	54.00	-7.41	AVG
7	8318.637	21.96	36.08	58.04	74.00	-15.96	peak
8	8318.637	21.96	18.37	40.33	54.00	-13.67	AVG
9	9817.635	23.08	35.98	59.06	74.00	-14.94	peak
10	9817.635	23.08	19.53	42.61	54.00	-11.39	AVG
11	10589.178	23.89	37.30	61.19	74.00	-12.81	peak
12	10589.178	23.89	19.28	43.17	54.00	-10.83	AVG
13	11272.545	24.56	36.60	61.16	74.00	-12.84	peak
14	11272.545	24.56	19.64	44.20	54.00	-9.80	AVG

Remark: Other frequency mini margin all >10 dB of Limit

- Note: 1. Emission level=Read level + Factor
 2. Factor=Antenna factor + Cable loss
 3. Margin=Level-Limit.

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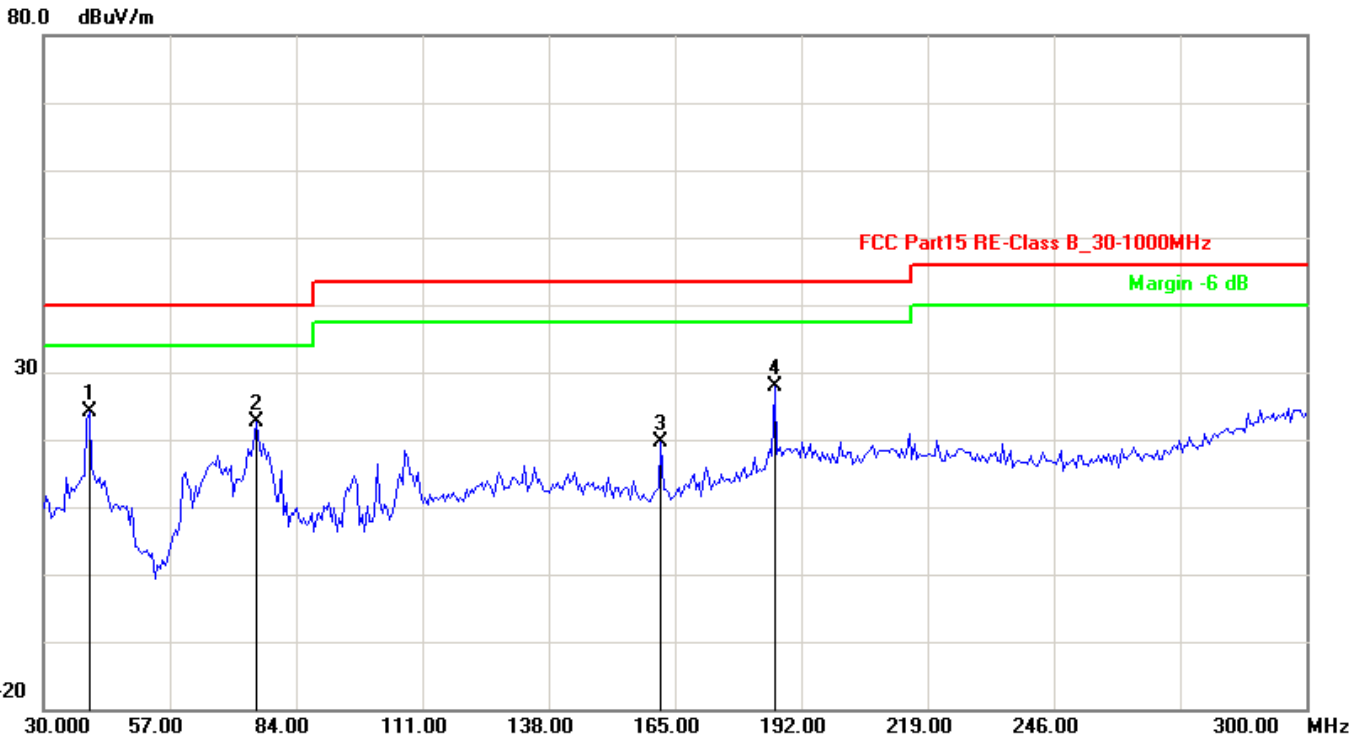
E-mail: cts@cts-lab.com.cn

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Channel:	TX -X Position Mode	Result:	<input checked="" type="checkbox"/> - passed
Test point:	Vertical		<input type="checkbox"/> - not passed
Frequency range:	30-230MHz and 230-1000MHz		

EUT	STRATOS
Firm Name	Horizon Hobby
Operating Condition	DC 6.0V for TX
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	26 Dec.~31 Dec. 2011
Operator	Peter
MODEL NO	HBZG1



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	39.7395	-27.70	51.78	24.08	40.00	-15.92	QP
2	75.4509	-23.54	46.22	22.68	40.00	-17.32	QP
3	162.0239	-20.52	40.03	19.51	43.50	-23.99	QP
4	186.3727	-15.25	43.07	27.82	43.50	-15.68	QP

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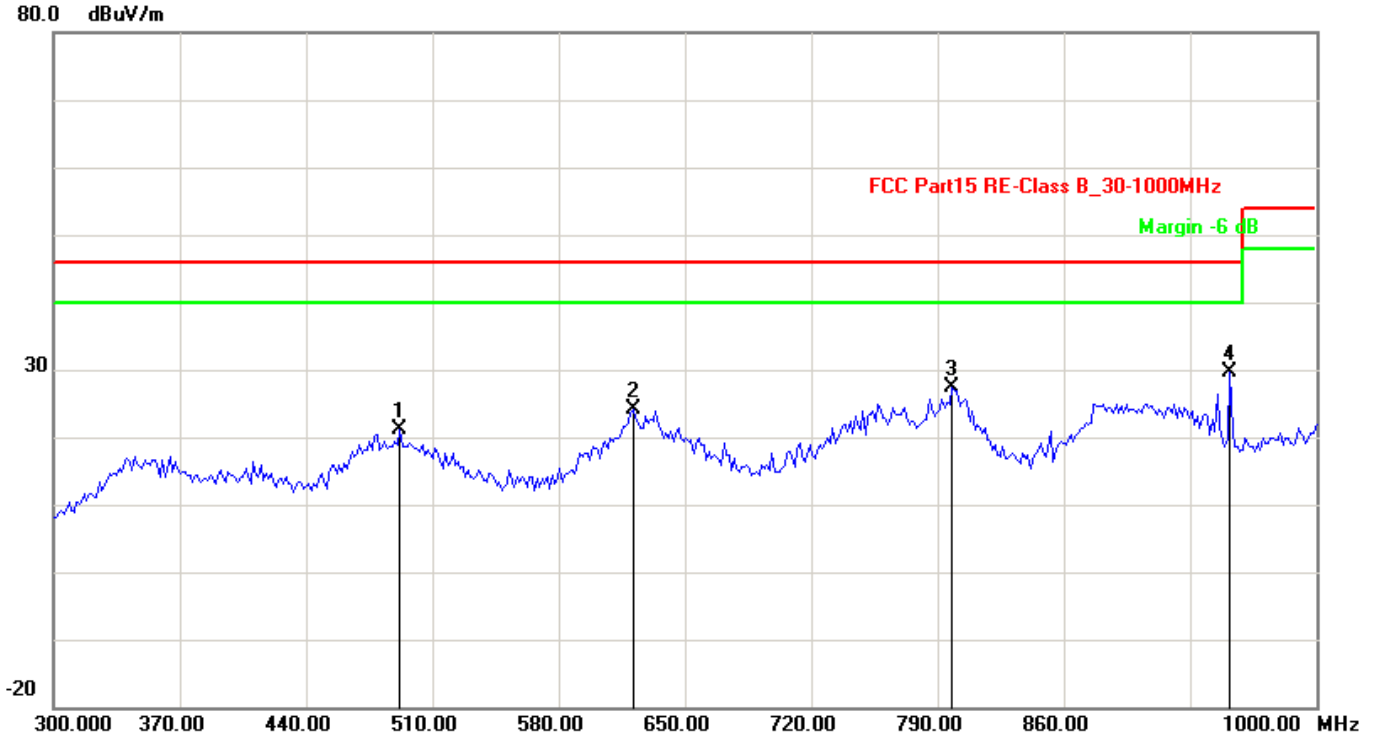
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	492.1844	-12.08	33.26	21.18	46.00	-24.82	QP
2	621.2425	-9.19	33.28	24.09	46.00	-21.91	QP
3	797.9960	-5.14	32.42	27.28	46.00	-18.72	QP
4	952.3046	-11.08	40.64	29.56	46.00	-16.44	QP

Note: 1. Emission level=Read level + Factor
 2. Factor=Antenna factor + Cable loss
 3. Margin=Level- Limit.

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Channel:	TX -X Position Mode Low 2405MHz	Result:	<input checked="" type="checkbox"/> - passed
Test point:	Vertical		<input type="checkbox"/> - not passed
Frequency range:	1GHz-26.5GHz		

EUT	STRATOS
Firm Name	Horizon Hobby
Operating Condition	DC 6.0V for TX
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	26 Dec.~31 Dec. 2011
Operator	Peter
MODEL NO	HBZG1

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2405.814	11.83	95.42	107.25	114.00	-6.75	peak
2	2405.814	11.83	79.02	90.85	94.00	-3.15	AVG
1	4813.628	17.95	42.40	60.35	74.00	-13.65	peak
2	4813.628	17.95	31.38	49.33	54.00	-4.67	AVG
3	5364.729	18.89	34.37	53.26	74.00	-20.74	peak
4	5364.729	18.89	24.13	43.02	54.00	-10.98	AVG
5	6488.978	20.00	37.05	57.05	74.00	-16.95	peak
6	6488.978	20.00	22.01	42.01	54.00	-11.99	AVG
7	7260.521	20.61	31.59	52.20	74.00	-21.80	peak
8	7260.521	20.61	20.39	41.00	54.00	-13.00	AVG
9	8142.285	21.91	29.44	51.35	74.00	-22.65	peak
10	8142.285	21.91	20.45	42.36	54.00	-11.64	AVG
11	8715.431	22.06	29.28	51.34	74.00	-22.66	peak
12	8715.431	22.06	18.83	40.89	54.00	-13.11	AVG

Remark: Other frequency mini margin all >10 dB of Limit

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Channel:	TX -X Position Mode Middle 2423MHz	Result:	<input checked="" type="checkbox"/> - passed
Test point:	Vertical		<input type="checkbox"/> - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2423.162	11.90	95.79	107.69	114.00	-6.31	peak
2	2423.162	11.90	78.87	90.77	94.00	-3.23	AVG
3	1220.441	10.42	43.66	54.08	74.00	-19.92	peak
4	1220.441	10.42	28.16	38.58	54.00	-15.42	AVG
5	4846.324	18.02	42.33	60.35	74.00	-13.65	peak
6	4846.324	18.02	29.19	47.21	54.00	-6.79	AVG
7	5937.876	19.74	38.61	58.35	74.00	-15.65	peak
8	5937.876	19.74	21.62	41.36	54.00	-12.64	AVG
9	8891.783	22.11	35.72	57.83	74.00	-16.17	peak
10	8891.783	22.11	20.91	43.02	54.00	-10.98	AVG
11	10016.032	23.31	36.39	59.70	74.00	-14.30	peak
12	10016.032	23.31	18.94	42.25	54.00	-11.75	AVG
13	11074.148	24.38	37.34	61.72	74.00	-12.28	peak
14	11074.148	24.38	20.13	44.51	54.00	-9.49	AVG

Remark: Other frequency mini margin all >10 dB of Limit

- Note: 1. Emission level=Read level + Factor
 2. Factor=Antenna factor + Cable loss
 3. Margin=Level-Limit.

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Channel:	TX -X Position Mode High 2450MHz	Result:	<input checked="" type="checkbox"/> - passed
Test point:	Vertical		<input type="checkbox"/> - not passed
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2450.241	12.01	95.41	107.42	114.00	-6.58	peak
2	2450.241	12.01	78.70	90.71	94.00	-3.29	AVG
3	1573.146	11.43	47.93	59.36	74.00	-14.64	peak
4	1573.146	11.43	29.59	41.02	54.00	-12.98	AVG
5	4900.482	18.14	45.71	63.85	74.00	-10.15	peak
6	4900.482	18.14	30.82	48.96	54.00	-5.04	AVG
7	6973.948	20.16	40.89	61.05	74.00	-12.95	peak
8	6973.948	20.16	22.09	42.25	54.00	-11.75	AVG
9	8406.814	21.98	36.33	58.31	74.00	-15.69	peak
10	8406.814	21.98	18.91	40.89	54.00	-13.11	AVG
11	10126.253	23.42	36.03	59.45	74.00	-14.55	peak
12	10126.253	23.42	18.33	41.75	54.00	-12.25	AVG
13	11603.206	24.86	36.91	61.77	74.00	-12.23	peak
14	11603.206	24.86	19.04	43.90	54.00	-10.10	AVG

Remark: Other frequency mini margin all >10 dB of Limit

- Note: 1. Emission level=Read level + Factor
 2. Factor=Antenna factor + Cable loss
 3. Margin=Level-Limit.

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8. Band Edge Compliance test

8.1. Test Equipment

Band Edge Compliance test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	10868	2011/12
2	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2011/12
3	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2011/12

8.2. Test Information

EUT	STRATOS
Firm Name	Horizon Hobby
Operating Condition	DC 6.0V for TX
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	26 Dec.~31 Dec. 2011
Operator	Peter
MODEL NO	HBZG1

8.3. Test procedure

- 1、 The EUT operates at hopping-off test mode. The lowest or highest channels are tested to verify the largest transmission and spurious emissions power at the continuous transmission mode.
- 2、 Max hold the trace of the setp 1,and the EUT operates at hopping-on test mode to verify the largest spurious emissions power.

8.4. Test Results

PASSED.

The EUT operates at hopping-off test mode. The lowest and highest channels are tested to verify the band edge emissions.

Test Mode	Channel Marked Frequency	Test Result Highest Emission (dBuv/m)			
		Horizontal		Vertical	
		Peak	Average	Peak	Average
Low Channel	2390MHz	64.97	29.42	69.59	29.54
	2400MHz	74.25	31.66	78.21	32.49
High Channel	2483.5MHz	59.02	29.00	60.15	29.03
	2500MHz	55.78	28.97	57.93	28.91

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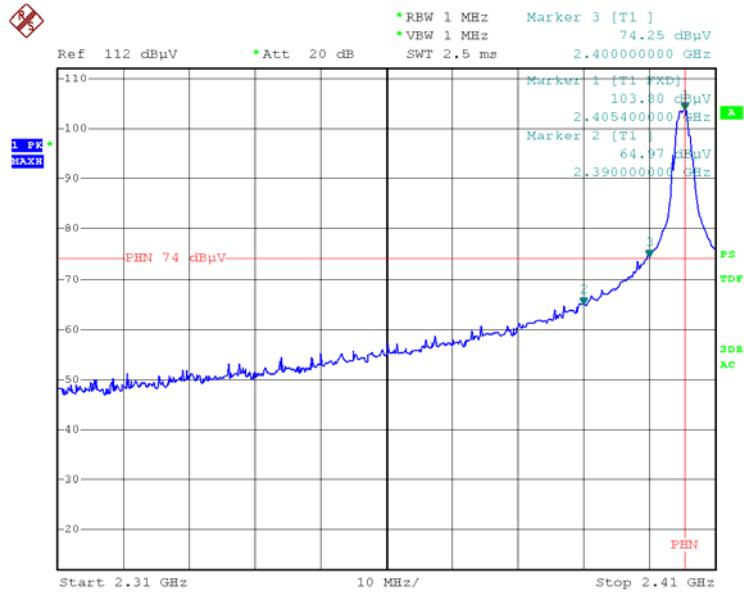
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Band Edges(CH Low)
 Detector mode:Peak

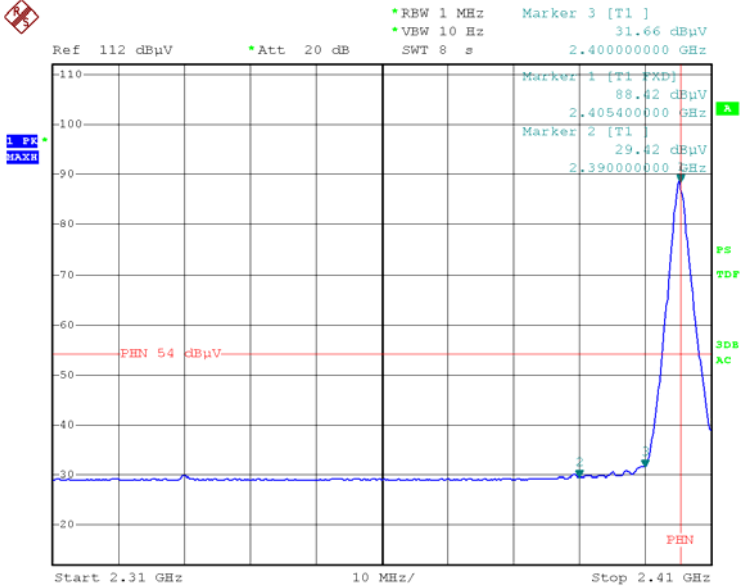
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Date: 28.DEC.2011 09:37:23

Band Edges(CH Low)
 Detector mode:Average

Polarity:Horizontal



Date: 28.DEC.2011 09:35:35

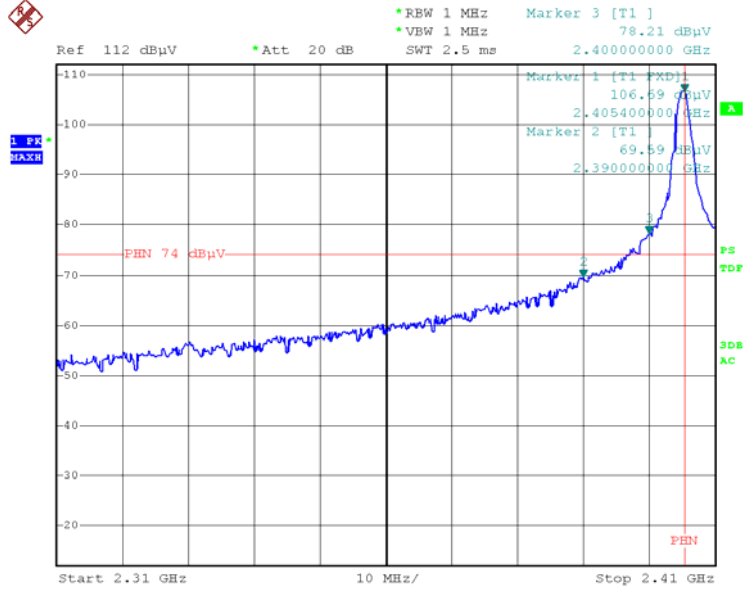
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Band Edges(CH Low)
Detector mode:Peak

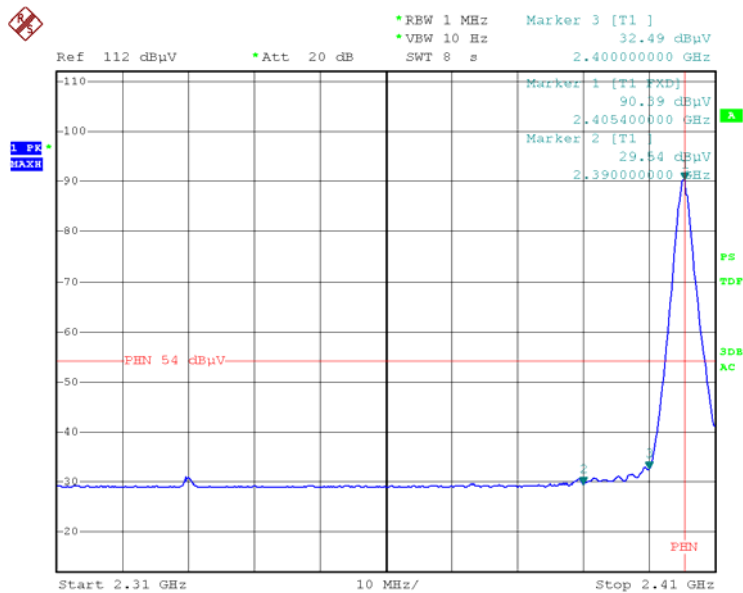
Polarity:Vertical



Date: 28.DEC.2011 09:31:37

Band Edges(CH Low)
Detector mode:Average

Polarity:Vertical



Date: 28.DEC.2011 09:34:11

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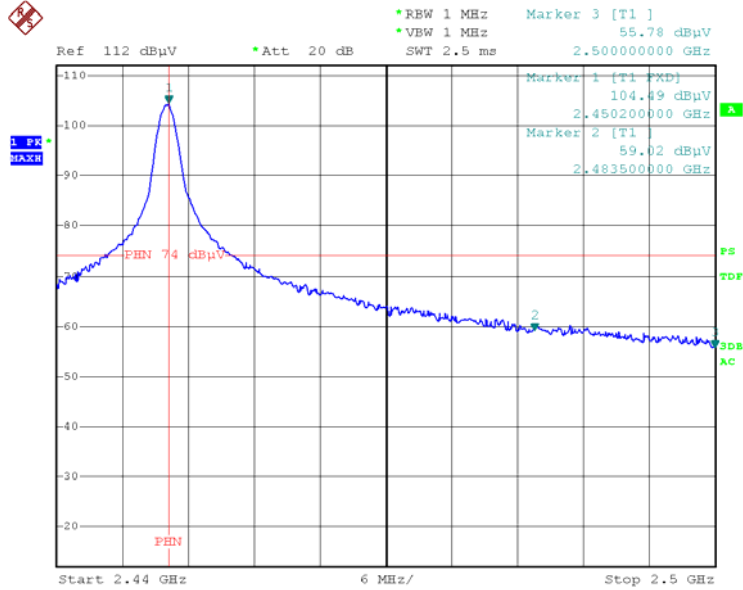
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Band Edges(CH High)
 Detector mode:Peak

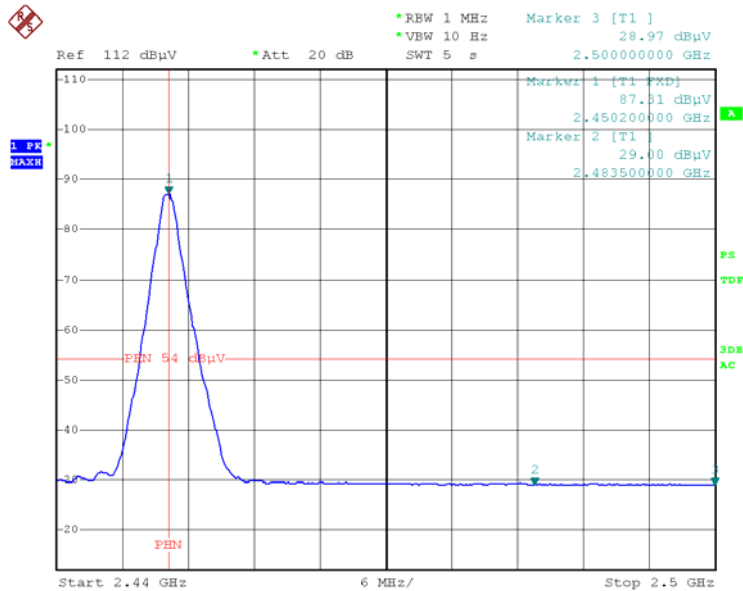
Polarity:Horizontal



Date: 28.DEC.2011 09:42:30

Band Edges(CH High)
 Detector mode:Average

Polarity:Horizontal



Date: 28.DEC.2011 09:44:01

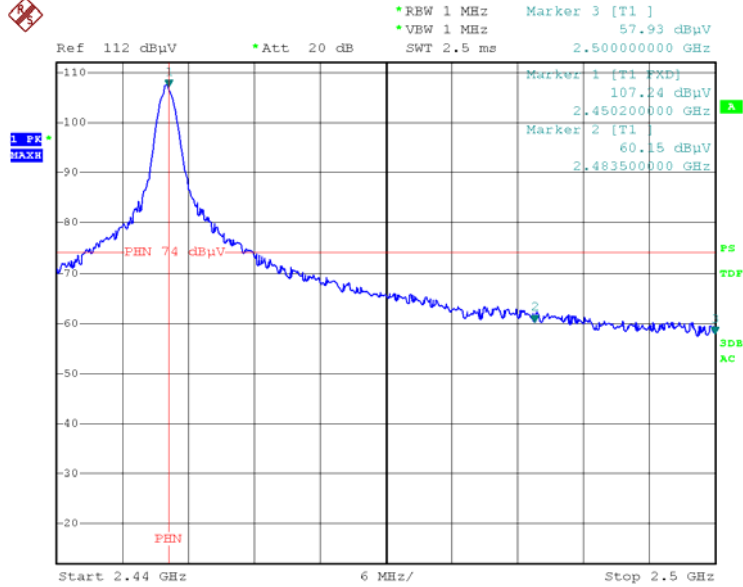
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Band Edges(CH High)
Detector mode:Peak

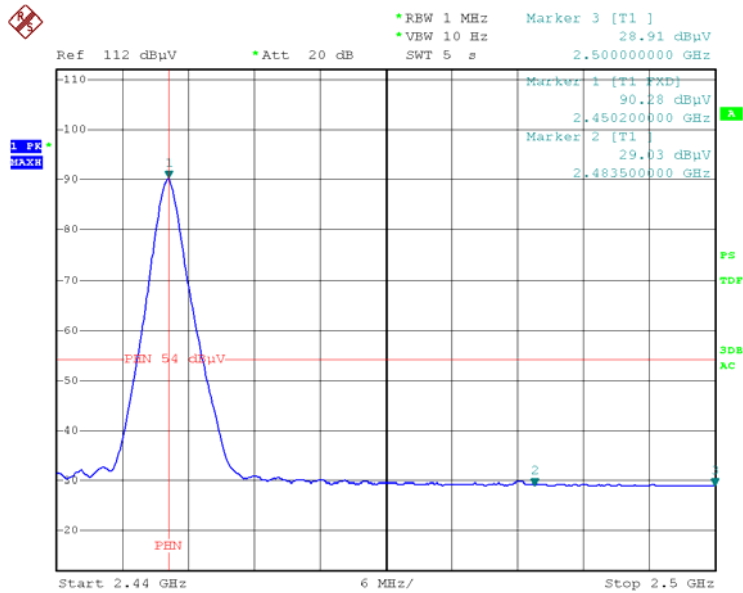
Polarity:Vertical



Date: 28.DEC.2011 09:46:24

Band Edges(CH High)
Detector mode:Average

Polarity:Vertical



Date: 28.DEC.2011 09:47:32

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9. 99% bandwidth

9.1 Test procedure

According to RSS-210 Annex 8 and RSS-Gen 4.6.1 The transmitter output is connected to the spectrum analyzer. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used given that a peak or peak hold may produce a wider bandwidth than actual. The sweep time is coupled.

9.2. Test Equipment

Band Edge Compliance test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	10868	2011/12
2	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2011/12
3	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2011/12

9.3. Test Information

EUT	STRATOS
Firm Name	Horizon Hobby
Operating Condition	DC 6.0V for TX
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test Date:	26 Dec.~31 Dec. 2011
Operator	Peter
MODEL NO	HBZG1

9.4. Test Results

PASSED.

Channel	Frequency (MHz)	Bandwidth (MHz)
Low	2405	0.546
Middle	2423	0.546
High	2450	0.546

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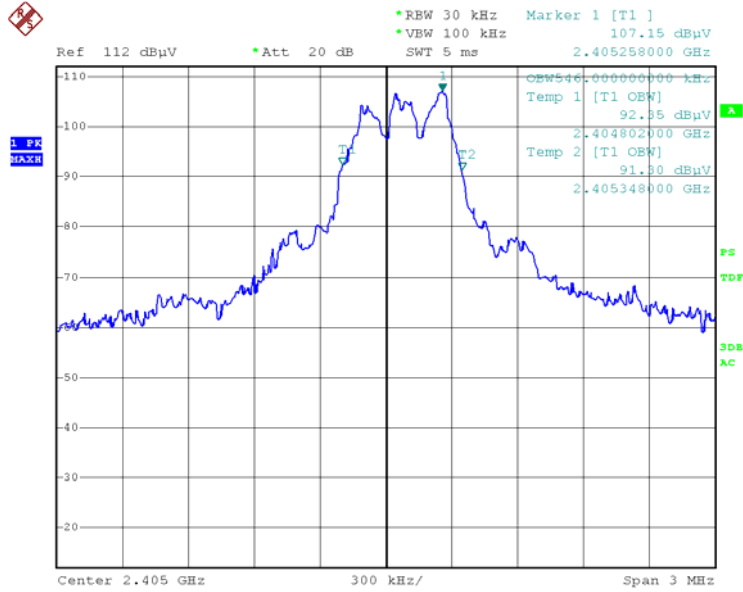
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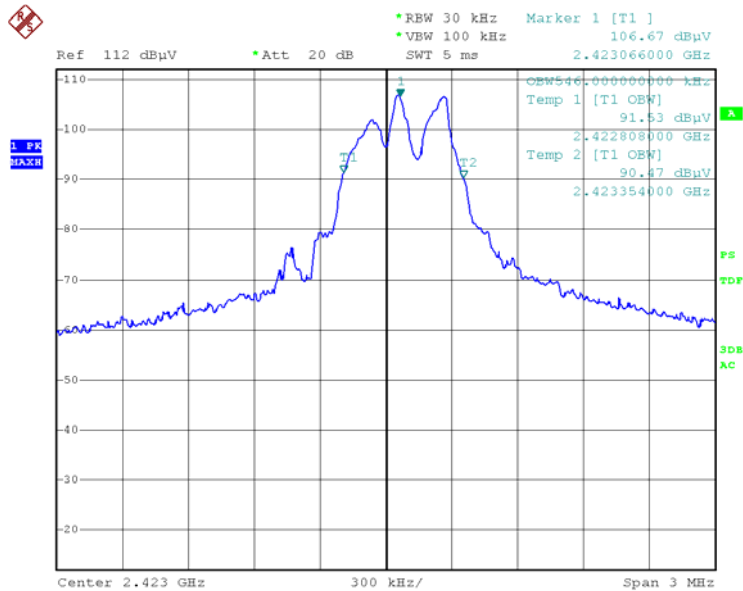


99% Bandwidth 2405 MHz



Date: 28.DEC.2011 09:56:55

99% Bandwidth 2423 MHz



Date: 28.DEC.2011 09:57:43

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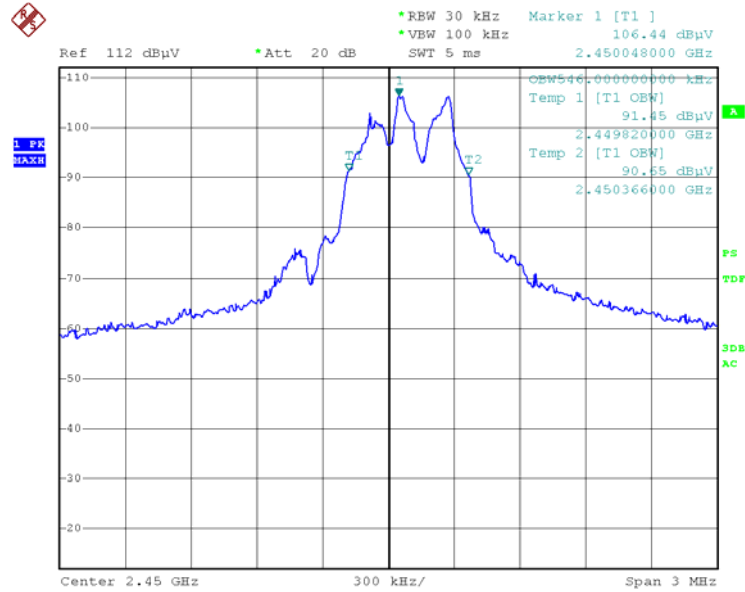
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99% Bandwidth 2450 MHz



Date: 28.DEC.2011 09:58:58

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10. 20 dB Bandwidth test

10.1. Test Equipment

20 dB Bandwidth test					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	10868	2011/12
2	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2011/12
3	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2011/12

10.2. Test Information

EUT	STRATOS
Firm Name	Horizon Hobby
Operating Condition	DC 6.0V for TX
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test Date:	26 Dec.~31 Dec. 2011
Operator	Peter
MODEL NO	HBZG1

10.3. Test Results

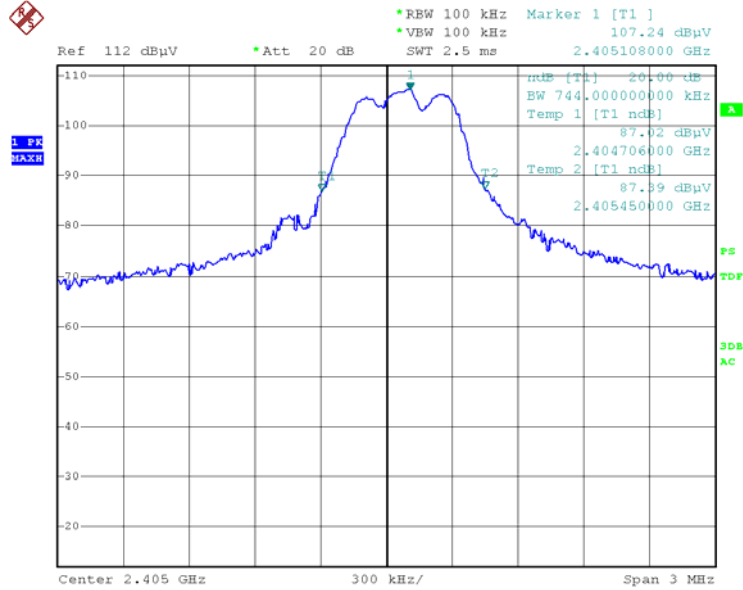
PASSED.

The testing data was attached in the next pages.

Channel	Frequency (MHz)	20dB Bandwidth (MHz)
Low	2405	0.744
Middle	2423	0.786
High	2450	0.690

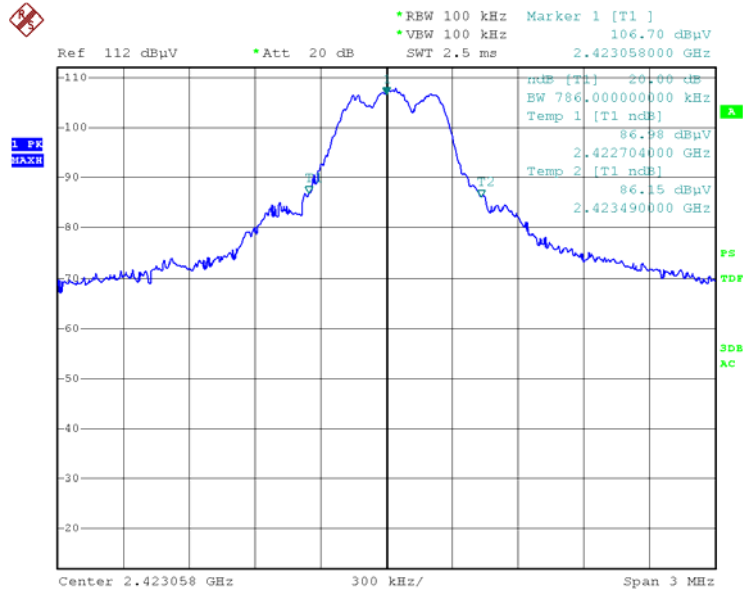


20 dB Bandwidth (2405MHz)



Date: 28.DEC.2011 09:54:37

20 dB Bandwidth (2423MHz)



Date: 28.DEC.2011 09:52:51

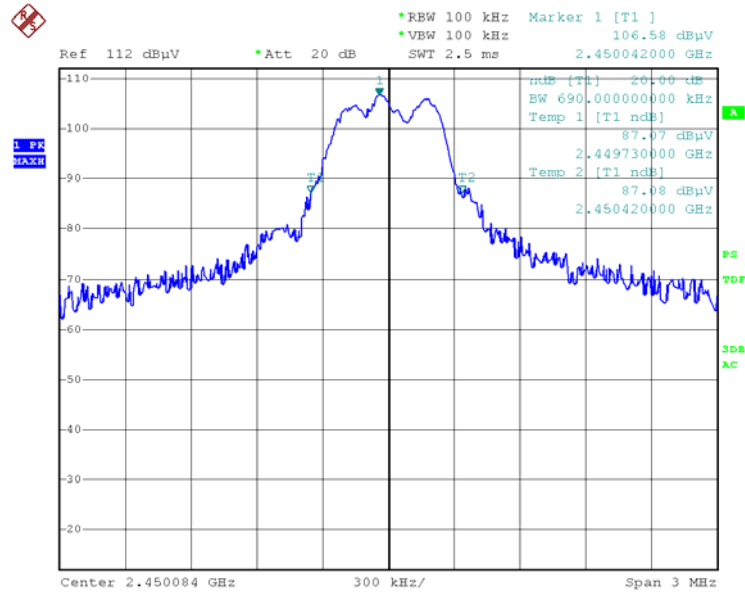
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20 dB Bandwidth (2450MHz)



Date: 28.DEC.2011 09:50:02

11.Deviation to test specifications

[NONE]

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