Lab Code: 200707-0

FCC PART 15.249

TEST REPORT

For

Jazwares Inc

1067 Shotgun Road, Sunrise, FL 33326, USA

FCC ID: YNIJAZWARES15295B

Report Type:	**Product Type:**
Original Report	STAR WARS - Mouse
Test Engineer:	Brown Lu
Report Number:	RSZ120420813-00
Report Date:	2012-04-28
Reviewed By:	Alvin Huang EMC Engineer
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Shenzhen) 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China Tel: +86-755-33320018 Fax: +86-755-33320008 www.baclcorp.com.cn

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Jazwares Inc* 's product, model number: *15295B (FCC ID: YNIJAZWARES15295B)* or the "EUT" in this report is a *STAR WARS - Mouse*, which was measured approximately: 11.3 cm (L) x 5.7 cm (W) x 2.1 cm (H), rated input voltage: 2×AAA 1.5V alkaline battery

All measurement and test data in this report was gathered from production sample serial number: 1204813 (Assigned by BACL, Shenzhen). The EUT was received on 2012-04-20.

Objective

This type approval report is prepared on behalf of *Jazwares Inc* in accordance with Part 2-Subpart J, and Part 15-Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.249 rules.

Related Submittal(s)/Grant(s)

No related submittal(s)

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2009, 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.

All radiated and conducted emissions measurement was performed at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Test Facility

The Test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

Additionally, Bay Area Compliance Laboratories Corp. (Shenzhen) is an ISO/IEC 17025 accredited laboratory, and is accredited by National Voluntary Laboratory Accredited Program (Lab Code 200707-0).

The current scope of accreditations can be found at http://ts.nist.gov/Standards/scopes/2007070.htm

SYSTEM TEST CONFIGURATION

Justification

The system was configured in a testing mode which provided by manufacturer.

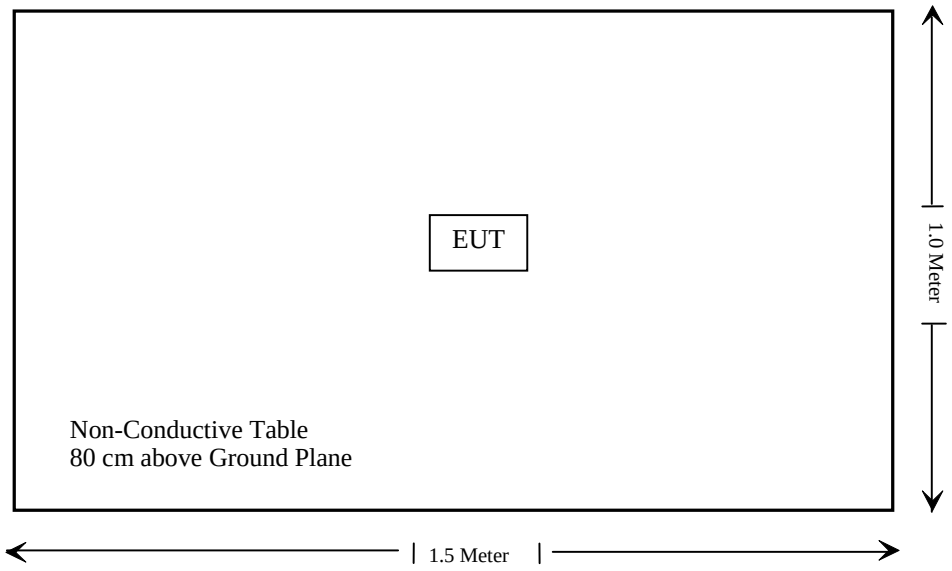
Equipment Modifications

No modifications were made to the unit tested.

Configuration of Test Setup

EUT

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§15.203	Antenna Requirement	Compliance
§15.207(a)	Conduction Emissions	N/A*
15.205, §15.209, §15.249	Radiated Emissions	Compliance
§15.249(d)	Outside of Band Emission (50dB attenuation)	Compliance

Note: EUT is powered by battery only.

FCC§15.203 - ANTENNA REQUIREMENT

Applicable Standard

For intentional device, according to §15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used.

Antenna Connector Construction

The EUT has an integrated PCB antenna arrangement, which was permanently attached and the maximum gain was 0 dBi, fulfill the requirement of this section. Please refer to the internal photos.

Result: Compliant.

FCC§15.205, §15.209&§15.249- RADIATED EMISSIONS

Applicable Standard

As per FCC§15.249 (a), 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	Field strength of fundamental (millivolts/meter)	Field strength of harmonics (microvolts/meter)
902–928 MHz	50	500
2400–2483.5 MHz	50	500
5725–5875 MHz	50	500
24.0–24.25 GHz	250	2500

As per FCC§15.249 (c), Field strength limits are specified at a distance of 3 meters.

(d) 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 §15.209, whichever is the lesser attenuation.

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-4, The Treatment of Uncertainty in EMC Measurements, the best estimate of the uncertainty of a radiation emissions measurement at Bay Area Compliance Laboratories Corp. (Shenzhen) is 4.0 dB. (k=2, 95% level of confidence).

Test Equipment Setup

The spectrum analyzer or receiver is set as:

Below 1000MHz:

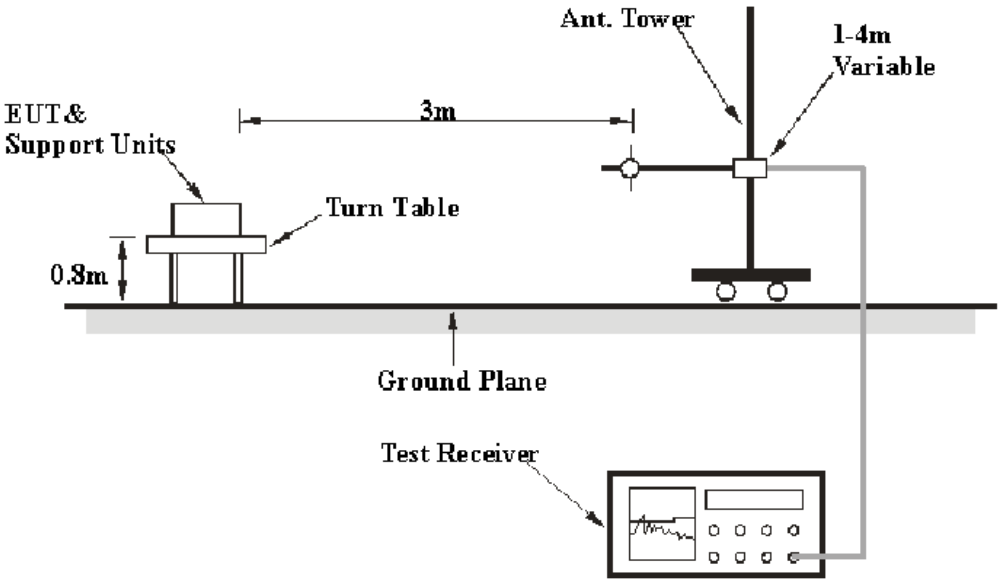
RBW = 100 kHz / VBW = 300 kHz / Sweep = Auto

Above 1000MHz:

Peak: RBW = 1MHz / VBW = 1MHz / Sweep = Auto

Average: RBW = 1MHz / VBW = 10Hz / Sweep = Auto

EUT Setup



The radiated emission and out of band emission tests were performed in the 3 meters chamber test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC 15.209/15.205 and FCC 15.249 limits.

Test Procedure

Maximizing procedure was performed on the highest emissions to ensure that the EUT complied with all installation combinations.

The EUT is set 3 meter away from the testing antenna, which is varied from 1-4 mete, and the EUT is placed on a turntable, which is 0.8 meter above ground plane, the table shall be rotated for 360 degrees to find out the highest emission. The receiving antenna should be changed the polarization both of horizontal and vertical.

Corrected Amplitude & Margin Calculation

The Corrected Amplitude is calculated by adding the Antenna Factor and Cable Loss, and subtracting the Amplifier Gain from the Meter Reading. The basic equation is as follows:

Corrected Amplitude = Meter Reading + Antenna Factor + Cable Loss - Amplifier Gain

The "**Margin**" column of the following data tables indicates the degree of compliance with the applicable limit. For example, a margin of 7dB means the emission is 7dB below the limit. The equation for margin calculation is as follows:

Margin = Limit – Corrected Amplitude

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
HP	Amplifier	8447E	1937A01046	2011-11-24	2012-11-23
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2011-11-17	2012-11-16
Sunol Sciences	Broadband Antenna	JB1	A040904-1	2012-03-17	2013-03-16
Mini-Circuits	Amplifier	ZVA-213+	2011-11-24	2012-03-08	2013-03-07
Sunol Sciences	Horn Antenna	DRH-118	A052304	2011-12-01	2012-12-01
Rohde & Schwarz	Signal Analyzer	FSIQ 26	609358	2011-07-08	2012-07-07
Electro-Mechanics	Horn antenna	3116	9510-2270	2011-10-14	2012-10-13

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Results Summary

According to the data in the following table, the EUT complied with the FCC Part 15.209 &15.205 & 15.249, with the worst margin reading of:

1.22 dB at **2396 MHz** in the **Horizontal** polarization

Test Data

Environmental Conditions

Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.2 kPa

The testing was performed by Brown Lu on 2012-04-23.

Test Mode: Transmitting

1) 30 MHz~25 GHz:

Freq. (MHz)	S.A. Reading (dBμV)	Detector PK/QP/Ave	Direction Degree	Height (m)	Polar H/V	Ant. Loss (dB)	Cable loss (dB)	Amp. Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.209/ FCC 15.249/ FCC 15.205		
										Limit (dBμV/m)	Margin (dB)	Comment
Low Channel (2408 MHz)												
2396	47.35	Ave.	150	1.3	H	28.9	3.03	26.5	52.78	54	1.22*	spurious
2408	86.65	Ave.	20	1.4	H	28.9	3.03	26.5	92.08	94	1.92*	Fund.
4816	39.18	Ave.	170	1.1	V	35.0	4.36	26.5	52.04	54	1.96*	harmonic
2384.2	45.76	Ave.	330	1.2	H	28.9	3.03	26.5	51.19	54	2.81*	spurious
7224	34.70	Ave.	160	1.0	V	36.8	5.22	26.5	50.22	54	3.78*	harmonic
2373.1	33.32	Ave.	230	1.1	H	28.9	3.03	26.5	38.75	54	15.25	spurious
2396	53.23	PK	150	1.3	H	28.9	3.03	26.5	58.66	74	15.34	spurious
2238.9	32.77	Ave.	120	1.2	V	28.8	2.90	26.5	37.97	54	16.03	spurious
7224	40.88	PK	160	1.0	V	36.8	5.22	26.5	56.40	74	17.60	harmonic
4816	43.21	PK	170	1.1	V	35.0	4.36	26.5	56.07	74	17.93	harmonic
30.16	26.81	QP	288	4.0	H	20.4	0.29	25.8	21.70	40.0	18.30	spurious
2384.2	49.97	PK	330	1.2	H	28.9	3.03	26.5	55.40	74	18.60	spurious
2408	88.16	PK	20	1.4	H	28.9	3.03	26.5	93.59	114	20.41	Fund.
192.02	37.00	QP	128	1.0	V	10.1	0.80	25.2	22.70	43.5	20.80	spurious
380.17	34.56	QP	241	2.2	V	13.5	1.64	25.6	24.10	46.0	21.90	spurious
2238.9	41.51	PK	120	1.2	V	28.8	2.90	26.5	46.71	74	27.29	spurious
2491.4	21.09	Ave.	310	1.4	V	28.9	3.11	26.5	26.60	54	27.40	spurious
2373.1	40.52	PK	230	1.1	H	28.9	3.03	26.5	45.95	74	28.05	spurious
2491.4	34.96	PK	310	1.4	V	28.9	3.11	26.5	40.47	74	33.53	spurious
Middle Channel (2440 MHz)												
4880	38.86	Ave.	80	1.6	V	35.0	4.36	26.5	51.72	54	2.28*	harmonic
2440	85.53	Ave.	240	1.2	H	28.9	3.11	26.5	91.04	94	2.96*	Fund.
2290.1	43.39	Ave.	230	1.6	H	28.8	2.99	26.5	48.68	54	5.32	spurious
7320	28.27	Ave.	270	1.1	H	36.8	5.09	26.5	43.66	54	10.34	harmonic
4880	45.18	PK	80	1.6	V	35.0	4.36	26.5	58.04	74	15.96	harmonic
30.16	27.01	QP	288	4.0	H	20.4	0.29	25.8	21.90	40.0	18.10	spurious
7320	38.76	PK	270	1.1	H	36.8	5.09	26.5	54.15	74	19.85	harmonic
192.02	36.70	QP	128	1.0	V	10.1	0.80	25.2	22.40	43.5	21.10	spurious
2440	86.92	PK	240	1.2	H	28.9	3.11	26.5	92.43	114	21.57	Fund.
380.17	34.76	QP	241	2.2	V	13.5	1.64	25.6	24.30	46.0	21.70	spurious
2290.1	45.98	PK	230	1.6	H	28.8	2.99	26.5	51.27	74	22.73	spurious
2497.4	21.32	Ave.	60	1.8	V	28.9	3.11	26.5	26.83	54	27.17	spurious
2338.1	21.49	Ave.	30	1.5	V	28.8	2.98	26.5	26.77	54	27.23	spurious
2324.7	20.58	Ave.	310	1.3	H	28.8	2.98	26.5	25.86	54	28.14	spurious
2338.1	36.77	PK	30	1.5	V	28.8	2.98	26.5	42.05	74	31.95	spurious
2497.4	35.66	PK	60	1.8	V	28.9	3.11	26.5	41.17	74	32.83	spurious
2324.7	32.43	PK	310	1.3	H	28.8	2.98	26.5	37.71	74	36.29	spurious
High Channel (2474 MHz)												
4948	39.86	Ave.	340	1.5	V	35.0	4.40	26.5	52.76	54	1.24*	harmonic
7422	35.68	Ave.	230	1.6	H	36.8	5.20	26.5	51.18	54	2.82*	harmonic
2474	84.77	Ave.	150	1.0	H	28.9	3.11	26.5	90.28	94	3.72*	Fund.

2324.1	44.28	Ave.	290	1.4	H	28.8	2.98	26.5	49.56	54	4.44	spurious
2174.3	41.76	Ave.	160	1.2	H	28.6	2.84	26.5	46.70	54	7.30	spurious
2487	38.49	Ave.	130	1.8	H	28.9	3.11	26.5	44.00	54	10.00	spurious
2485.8	36.97	Ave.	330	1.6	H	28.9	3.11	26.5	42.48	54	11.52	spurious
4948	47.12	PK	340	1.5	V	35.0	4.40	26.5	60.02	74	13.98	harmonic
2487	50.70	PK	130	1.8	H	28.9	3.11	26.5	56.21	74	17.79	spurious
30.16	26.71	QP	288	4.0	H	20.4	0.29	25.8	21.60	40.0	18.40	spurious
2497.9	29.25	Ave.	350	1.3	H	28.9	3.11	26.5	34.76	54	19.24	spurious
7422	38.98	PK	230	1.6	H	36.8	5.20	26.5	54.48	74	19.52	harmonic
192.02	36.50	QP	128	1.0	V	10.1	0.80	25.2	22.20	43.5	21.30	spurious
380.17	34.96	QP	241	2.2	V	13.5	1.64	25.6	24.50	46.0	21.50	spurious
2324.1	46.24	PK	290	1.4	H	28.8	2.98	26.5	51.52	74	22.48	spurious
2474	85.10	PK	150	1.0	H	28.9	3.11	26.5	90.61	114	23.39	Fund.
2485.8	44.41	PK	330	1.6	H	28.9	3.11	26.5	49.92	74	24.08	spurious
2174.3	44.60	PK	160	1.2	H	28.6	2.84	26.5	49.54	74	24.46	spurious
2497.9	39.03	PK	350	1.3	H	28.9	3.11	26.5	44.54	74	29.46	spurious

FCC§15.249(d) - OUT OF BAND EMISSION (50dB ATTENUATION)

Applicable Standard

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 §15.209, whichever is the lesser attenuation

Test Procedure

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
3. Set RBW to 100 kHz and VBW of spectrum analyzer to 300 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
5. Repeat above procedures until all measured frequencies were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2011-11-17	2012-11-16

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to NVLAP requirements, traceable to the NIST.

Test Data

Environmental Conditions

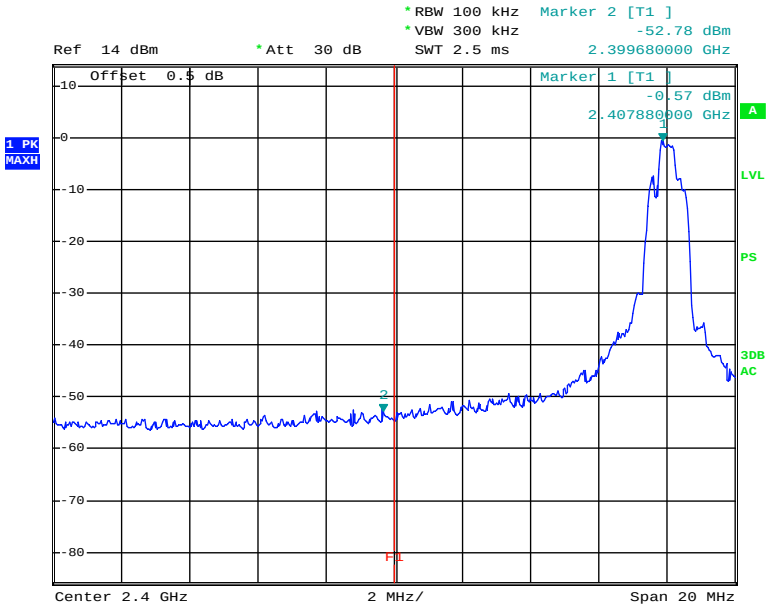
Temperature:	25 °C
Relative Humidity:	56 %
ATM Pressure:	100.9kPa

** The testing was performed by Brown Lu on 2012-04-28.*

Test Result: Compliance. Please refer to the following table and plots:

Frequency (MHz)	Delta Peak to Band Emission (dBc)	Delta Limit (dBc)
2399.680	52.21	50
2484.580	52.75	50

Band Edge: Left Side



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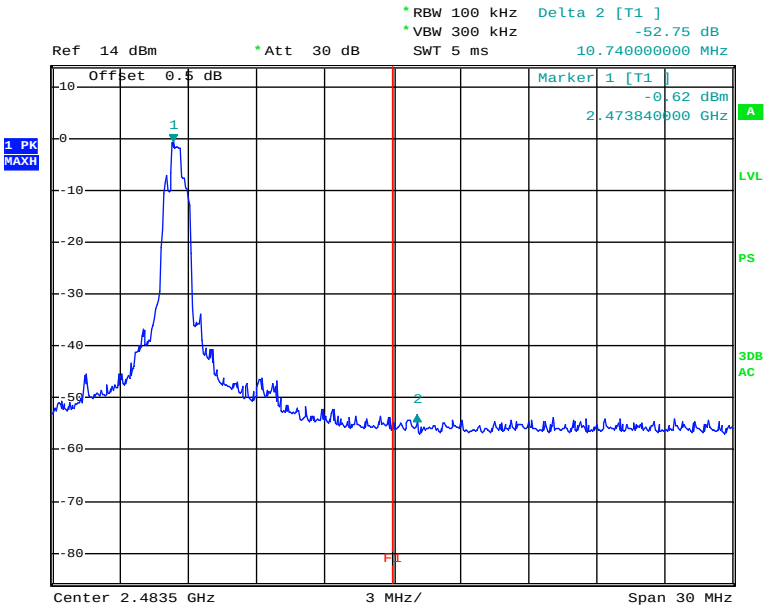
Band Edge: Right Side



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