

## Global United Technology Services Co., Ltd.

Report No.: GTSE14120224701

# **FCC REPORT**

Applicant: SHENZHEN QI SHENGLONG INDUSTRIALIST CO.,LTD.

Address of Applicant: 5F., Blk 6A, Jing Nan Industry, Bai Ge long, Buji, Shenzhen,

China

**Equipment Under Test (EUT)** 

Product Name: VIDEO GAME

Model No.: C-12

FCC ID: Y56QSLC12

**Applicable standards:** FCC CFR Title 47 Part 15 Subpart C Section 15.249:2013

Date of sample receipt: December 26, 2014

Date of Test: January 15-21, 2015

Date of report issued: January 21, 2015

Test Result: PASS \*

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

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.

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## 2 Version

Version No.	Date	Description
00	January 21, 2015	Original

Prepared By:	Sam. Gao	Date:	January 21, 2015	
	Project Engineer	<u> </u>		
Check By:	hank. yan	Date:	January 21, 2015	_
	Reviewer			



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## 4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	N/A
Field strength of the fundamental signal	15.249 (a)	Pass
Spurious emissions	15.249 (a) (d)/15.209	Pass
Band edge	15.249 (d)/15.205	Pass
20dB Occupied Bandwidth	15.215 (c)	Pass

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



## **5** General Information

## 5.1 Client Information

Applicant:	SHENZHEN QI SHENGLONG INDUSTRIALIST CO.,LTD.
Address of Applicant:	5F.,Blk 6A, Jing Nan Industry, Bai Ge long, Buji, Shenzhen, China
Manufacturer/Factory:	DONGGUAN FEIHAO INDUSTRIALIST CO.,LTD
Address of Manufacturer/ Factory:	No.8, Fengyi Road, Dakan Village, Huangjiang, DongGuan, China

## 5.2 General Description of EUT

Product Name:	VIDEO GAME
Model No.:	C-12
Operation Frequency:	2407MHz~2471MHz
Channel numbers:	65
Channel separation:	1MHz
Modulation type:	GFSK
Antenna Type:	Internal Antenna
Antenna gain:	2.0dBi
Power supply:	DC 3.0V (2*"AAA" battery)

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Operation	Operation Frequency each of channel							
Channel	Frequency	Channel	Frequency	Channel	Frequency	Channel	Frequency	
1	2407 MHz	18	2424 MHz	35	2441 MHz	52	2458 MHz	
2	2408 MHz	19	2425 MHz	36	2442 MHz	53	2459 MHz	
3	2409 MHz	20	2426 MHz	37	2443 MHz	54	2460 MHz	
4	2410 MHz	21	2427 MHz	38	2444 MHz	55	2461 MHz	
5	2411 MHz	22	2428 MHz	39	2445 MHz	56	2462 MHz	
6	2412 MHz	23	2429 MHz	40	2446 MHz	57	2463 MHz	
7	2413 MHz	24	2430 MHz	41	2447 MHz	58	2464 MHz	
8	2414 MHz	25	2431 MHz	42	2448 MHz	59	2465 MHz	
9	2415 MHz	26	2432 MHz	43	2449 MHz	60	2466 MHz	
10	2416 MHz	27	2433 MHz	44	2450 MHz	61	2467 MHz	
11	2417 MHz	28	2434 MHz	45	2451 MHz	62	2468 MHz	
12	2418 MHz	29	2435 MHz	46	2452 MHz	63	2469 MHz	
13	2419 MHz	30	2436 MHz	47	2453 MHz	64	2470 MHz	
14	2420 MHz	31	2437 MHz	48	2454 MHz	65	2471 MHz	
15	2421 MHz	32	2438 MHz	49	2455 MHz			
16	2422 MHz	33	2439 MHz	50	2456 MHz	]		
17	2423 MHz	34	2440 MHz	51	2457 MHz			

#### Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Channel	Frequency
The lowest channel	2407MHz
The middle channel	2439MHz
The Highest channel	2471MHz



#### 5.3 Test mode

Transmitting mode Keep the EUT in continuously transmitting mode

Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.

#### Per-test mode.

We have 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:

Axis	Х	Υ	Z
Field Strength(dBuV/m)	93.24	95.21	94.06

#### **Final Test Mode:**

REMARK: NEW BATTERY IS USED DURING ALL TEST

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 Description of Support Units

None

#### 5.5 Test Facility

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

#### • CNAS —Registration No.: CNAS L5775

CNAS has accredited Global United Technology Services Co., Ltd. To ISO/IEC 17025 General Requirements for the competence of testing and calibration laboratories (CNAS-CL01 Accreditation Criteria for the Competence of Testing and Calibration Laboratories) for the competence in the field of testing.

#### • FCC —Registration No.: 600491

Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fuly described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 600491, June 28, 2013.

#### Industry Canada (IC) —Registration No.: 9079A-2

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-2, June 26, 2013.

#### 5.6 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

#### 5.7 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

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## 6 Test Instruments list

Radi	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. 29 2014	Mar. 28 2015			
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A			
3	Spectrum Analyzer	Agilent	E4440A	GTS533	Jul. 01 2014	Jun 30 2015			
4	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	Jul. 01 2014	Jun 30 2015			
5	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	Jul. 01 2014	Jun 30 2015			
6	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	9120D-829	GTS208 June 27 2014	June 26 2015				
7	Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 28 2014	Mar. 27 2015			
8	EMI Test Software	AUDIX	E3	N/A	N/A	N/A			
9	Coaxial Cable	GTS	N/A	GTS213	Mar. 29 2014	Mar. 28 2015			
10	Coaxial Cable	GTS	N/A	GTS211	Mar. 29 2014	Mar. 28 2015			
11	Coaxial cable	GTS	N/A	GTS210	Mar. 29 2014	Mar. 28 2015			
12	Coaxial Cable	GTS	N/A	GTS212	Mar. 29 2014	Mar. 28 2015			
13	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	Jul. 01 2014	Jun. 30, 2015			
14	Amplifier(2GHz-20GHz)	HP	8349B	GTS206	Jul. 01 2014	Jun. 30, 2015			
15	Amplifier (18-26GHz) Rohde & Schwarz		AFS33-18002 650-30-8P-44	GTS218	June 27 2014	June 26 2015			
16	Band filter	Amindeon	82346	GTS219	Mar. 29 2014	Mar. 28 2015			

Conducted Emission:									
Item	Test Equipment	Manufacturer	Manufacturer Model No.		Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)			
1	Shielding Room	ZhongYu Electron	7.0(L)x3.0(W)x3.0(H)	GTS264	July 01 2014	June 30 2015			
2	EMI Test Receiver	Rohde & Schwarz	ESCS30	GTS223	July 01 2014	June 30 2015			
3	10dB Pulse Limita	Rohde & Schwarz	N/A	GTS224	July 01 2014	June 30 2015			
4	Coaxial Switch	ANRITSU CORP	MP59B	GTS225	July 01 2014	June 30 2015			
5	LISN	SCHWARZBECK MESS-ELEKTRONIK	NSLK 8127	GTS226	July 01 2014	June 30 2015			
6	Coaxial Cable	GTS	N/A	GTS227	July 01 2014	June 30 2015			
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A			



### 7 Test results and Measurement Data

### 7.1 Antenna requirement

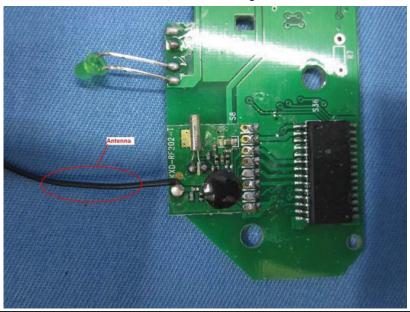
Standard requirement: FCC Part15 C Section 15.203

#### 15.203 requirement:

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.

#### E.U.T Antenna:

The antenna is PCB Antenna, the best case gain of the antenna is 2.0dBi





## 7.2 Radiated Emission Method

1.Z F	Radiated Ellission Me	tiiou					
Т	Test Requirement:	FCC Part15 C Section 15.209					
Т	Test Method:	ANSI C63.4:200	03				
Т	Test Frequency Range:	30MHz to 25GH	łz				
Т	Гest site:	Measurement D	Distance: 3m				
F	Receiver setup:	Frequency	Detector	RB	W	VBW	Remark
		30MHz- 1GHz	Quasi-pea	( 120K	(Hz	300KHz	Quasi-peak Value
		Above 1GHz	Peak	1MH	Hz	3MHz	Peak Value
		Above IGHZ	Peak	1MH	Hz	10Hz	Average Value
L	_imit:	Freque	ency	Limit (d	lBuV/r	m @3m)	Remark
(	Field strength of the	2400MHz-24	183.5MHz		94.00		Average Value
fı	undamental signal)			,	114.00	0	Peak Value
L	₋imit:	Freque				m @3m)	Remark
(:	Spurious Emissions)	30MHz-8			40.00		Quasi-peak Value
		88MHz-2 <sup>-</sup> 216MHz-9			43.50 46.00		Quasi-peak Value Quasi-peak Value
		960MHz-9			54.00		Quasi-peak Value
				54.00			Average Value
		Above 1	IGHZ	74.00		)	Peak Value
	Limit: band edge)	harmonics, shall	ll be attenuat to the genera	ed by at leal radiated	east 5	0 dB belov	bands, except for w the level of the in Section 15.209,
Т	Test setup:	EUT	4m 4m 0.8m lm			Sear Anten	



	Report No.: GTSE14120224701			
	Antenna Tower  Horn Antenna  Spectrum  Analyzer  Turn Table  A  A  Amplifier			
Test Procedure:	The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter camber. 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.			
	3. 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.			
	4. 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 rota 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.			
	6. 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 average method as specified and then reported in a data sheet.			
Test Instruments:	Refer to section 6.0 for details			
Test mode:	Refer to section 5.3 for details			
Test results:	Pass			

#### Measurement data:

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## 7.2.1 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
2407.00	92.58	27.57	5.40	33.99	91.56	114.00	-22.44	Vertical
2407.00	95.81	27.57	5.40	33.99	94.79	114.00	-19.21	Horizontal
2439.00	93.66	27.48	5.43	33.96	92.61	114.00	-21.39	Vertical
2439.00	95.19	27.48	5.43	33.96	94.14	114.00	-19.86	Horizontal
2471.00	90.83	27.50	5.46	33.92	89.87	114.00	-24.13	Vertical
2471.00	96.17	27.50	5.46	33.92	95.21	114.00	-18.79	Horizontal

### 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
2407.00	72.74	27.57	5.40	33.99	71.72	94.00	-22.28	Vertical
2407.00	77.13	27.57	5.40	33.99	76.11	94.00	-17.89	Horizontal
2439.00	75.11	27.48	5.43	33.96	74.06	94.00	-19.94	Vertical
2439.00	76.81	27.48	5.43	33.96	75.76	94.00	-18.24	Horizontal
2471.00	72.26	27.50	5.46	33.92	71.30	94.00	-22.70	Vertical
2471.00	77.56	27.50	5.46	33.92	76.60	94.00	-17.40	Horizontal

Remark: RBW 3MHz, VBW 10MHz, peak detector for PK value, RBW 3MHz, VBW 10MHz AV detector for AV value

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## 7.2.2 Spurious emissions

### ■ Below 1GHz

	= Bdow 1012							
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
31.40	30.04	14.32	0.57	30.09	14.84	40.00	-25.16	Vertical
95.76	28.95	14.90	1.16	29.72	15.29	43.50	-28.21	Vertical
167.82	35.91	10.90	1.67	29.33	19.15	43.50	-24.35	Vertical
324.46	26.48	15.53	2.49	29.86	14.64	46.00	-31.36	Vertical
497.68	22.36	18.52	3.29	29.31	14.86	46.00	-31.14	Vertical
684.75	22.53	20.75	4.04	29.21	18.11	46.00	-27.89	Vertical
31.51	26.40	14.32	0.57	30.09	11.20	40.00	-28.80	Horizontal
41.86	22.88	15.57	0.68	30.03	9.10	40.00	-30.90	Horizontal
95.76	23.09	14.90	1.16	29.72	9.43	43.50	-34.07	Horizontal
279.04	23.20	14.63	2.27	29.86	10.24	46.00	-35.76	Horizontal
552.88	22.70	19.62	3.53	29.30	16.55	46.00	-29.45	Horizontal
790.62	23.04	21.96	4.42	29.20	20.22	46.00	-25.78	Horizontal



#### Above 1GHz

Т	Fest channel:	Lowest channel
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## 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
4814.00	33.69	31.79	8.61	32.09	42.00	74.00	-32.00	Vertical
7221.00	28.55	36.19	11.66	31.99	44.41	74.00	-29.59	Vertical
9628.00	24.36	38.01	14.16	31.58	44.95	74.00	-29.05	Vertical
12035.00	*					74.00		Vertical
14442.00	*					74.00		Vertical
4814.00	34.11	31.79	8.61	32.09	42.42	74.00	-31.58	Horizontal
7221.00	27.74	36.19	11.66	31.99	43.60	74.00	-30.40	Horizontal
9628.00	23.36	38.01	14.16	31.58	43.95	74.00	-30.05	Horizontal
12035.00	*					74.00		Horizontal
14442.00	*					74.00		Horizontal

#### 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
4814.00	23.46	31.79	8.61	32.09	31.77	54.00	-22.23	Vertical
7221.00	18.66	36.19	11.66	31.99	34.52	54.00	-19.48	Vertical
9628.00	14.87	38.01	14.16	31.58	35.46	54.00	-18.54	Vertical
12035.00	*					54.00		Vertical
14442.00	*					54.00		Vertical
4814.00	24.48	31.79	8.61	32.09	32.79	54.00	-21.21	Horizontal
7221.00	17.65	36.19	11.66	31.99	33.51	54.00	-20.49	Horizontal
9628.00	13.67	38.01	14.16	31.58	34.26	54.00	-19.74	Horizontal
12035.00	*					54.00		Horizontal
14442.00	*					54.00		Horizontal

#### Remark:

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 3. "\*", means this data is the too weak instrument of signal is unable to test.



Test channel: Middle channel

#### 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
4878.00	34.25	31.85	8.66	32.12	42.64	74.00	-31.36	Vertical
7317.00	26.12	36.37	11.72	31.89	42.32	74.00	-31.68	Vertical
9756.00	22.96	38.35	14.25	31.59	43.97	74.00	-30.03	Vertical
12195.00	*					74.00		Vertical
14634.00	*					74.00		Vertical
4878.00	34.43	31.85	8.66	32.12	42.82	74.00	-31.18	Horizontal
7317.00	26.27	36.37	11.72	31.89	42.47	74.00	-31.53	Horizontal
9756.00	22.04	38.35	14.25	31.59	43.05	74.00	-30.95	Horizontal
12195.00	*					74.00		Horizontal
14634.00	*					74.00		Horizontal

#### 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
4878.00	26.64	31.85	8.66	32.12	35.03	54.00	-18.97	Vertical
7317.00	16.78	36.37	11.72	31.89	32.98	54.00	-21.02	Vertical
9756.00	12.56	38.35	14.25	31.59	33.57	54.00	-20.43	Vertical
12195.00	*					54.00		Vertical
14634.00	*					54.00		Vertical
4878.00	24.63	31.85	8.66	32.12	33.02	54.00	-20.98	Horizontal
7317.00	16.54	36.37	11.72	31.89	32.74	54.00	-21.26	Horizontal
9756.00	12.96	38.35	14.25	31.59	33.97	54.00	-20.03	Horizontal
12195.00	*					54.00		Horizontal
14634.00	*					54.00		Horizontal

#### Remark:

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 3. "\*", means this data is the too weak instrument of signal is unable to test.



Test channel: Highest channel

#### 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
4942.00	33.81	31.91	8.71	32.16	42.27	74.00	-31.73	Vertical
7413.00	27.34	36.56	11.77	31.81	43.86	74.00	-30.14	Vertical
9884.00	23.47	38.72	14.35	31.82	44.72	74.00	-29.28	Vertical
12355.00	*					74.00		Vertical
14826.00	*					74.00		Vertical
4942.00	33.97	31.91	8.71	32.16	42.43	74.00	-31.57	Horizontal
7413.00	26.99	36.56	11.77	31.81	43.51	74.00	-30.49	Horizontal
9884.00	22.66	38.72	14.35	31.82	43.91	74.00	-30.09	Horizontal
12355.00	*					74.00		Horizontal
14826.00	*					74.00		Horizontal

#### 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
4942.00	23.06	31.91	8.71	32.16	31.52	54.00	-22.48	Vertical
7413.00	17.56	36.56	11.77	31.81	34.08	54.00	-19.92	Vertical
9884.00	13.46	38.72	14.35	31.82	34.71	54.00	-19.29	Vertical
12355.00	*					54.00		Vertical
14826.00	*					54.00		Vertical
4942.00	23.45	31.91	8.71	32.16	31.91	54.00	-22.09	Horizontal
7413.00	16.07	36.56	11.77	31.81	32.59	54.00	-21.41	Horizontal
9884.00	12.78	38.72	14.35	31.82	34.03	54.00	-19.97	Horizontal
12355.00	*					54.00		Horizontal
14826.00	*					54.00		Horizontal

#### Remark:

- 1. Final Level =Receiver Read level + Antenna Factor + Cable Loss Preamplifier Factor
- 2. The emission levels of other frequencies are very lower than the limit and not show in test report.
- 3. "\*", means this data is the too weak instrument of signal is unable to test.



## 7.2.3 Bandedge emissions

All of the restriction bands were tested, and only the data of worst case was exhibited.

Test channel:	Lowest channel
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
2310.00	38.90	27.91	5.30	34.11	38.00	74.00	-36.00	Horizontal
2390.00	44.89	27.59	5.38	34.01	43.85	74.00	-30.15	Horizontal
2400.00	50.38	27.58	5.39	34.01	49.34	74.00	-24.66	Horizontal
2310.00	37.84	27.91	5.30	34.11	36.94	74.00	-37.06	Vertical
2390.00	41.98	27.59	5.38	34.01	40.94	74.00	-33.06	Vertical
2400.00	47.49	27.58	5.39	34.01	46.45	74.00	-27.55	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
2310.00	27.02	27.91	5.30	34.11	26.12	54.00	-27.88	Horizontal
2390.00	27.33	27.59	5.38	34.01	26.29	54.00	-27.71	Horizontal
2400.00	27.90	27.58	5.39	34.01	26.86	54.00	-27.14	Horizontal
2310.00	27.02	27.91	5.30	34.11	26.12	54.00	-27.88	Vertical
2390.00	27.14	27.59	5.38	34.01	26.10	54.00	-27.90	Vertical
2400.00	27.48	27.58	5.39	34.01	26.44	54.00	-27.56	Vertical

Test channel:	Highest channel

## 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
2483.50	44.76	27.53	5.47	33.92	43.84	74.00	-30.16	Horizontal
2500.00	40.78	27.55	5.49	33.90	39.92	74.00	-34.08	Horizontal
2483.50	41.93	27.53	5.47	33.92	41.01	74.00	-32.99	Vertical
2500.00	38.40	27.55	5.49	33.90	37.54	74.00	-36.46	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
2483.50	27.26	27.53	5.47	33.92	26.34	54.00	-27.66	Horizontal
2500.00	26.34	27.55	5.49	33.90	25.48	54.00	-28.52	Horizontal
2483.50	26.31	27.53	5.47	33.92	25.39	54.00	-28.61	Vertical
2500.00	26.25	27.55	5.49	33.90	25.39	54.00	-28.61	Vertical

#### Remark:

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<sup>1.</sup> Final Level =Receiver Read level + Antenna Factor + Cable Loss - Preamplifier Factor



## 7.3 20dB Occupy Bandwidth

Test Requirement:	FCC Part15 C Section 15.249/15.215			
Test Method:	ANSI C63.4:2003			
Limit:	Operation Frequency range 2400MHz~2483.5MHz			
Test setup:	Spectrum Analyzer  E.U.T  Non-Conducted Table  Ground Reference Plane			
Test Instruments:	Refer to section 6.0 for details			
Test mode:	Refer to section 5.3 for details			
Test results:	Pass			

#### **Measurement Data**

Test channel	20dB bandwidth(MHz)	Result
Lowest	1.562	Pass
Middle	1.348	Pass
Highest	1.189	Pass

Test plot as follows:

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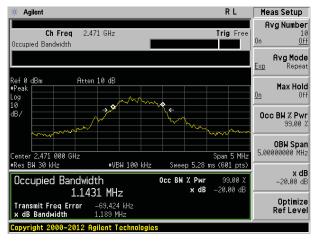




#### Lowest channel



#### Middle channel



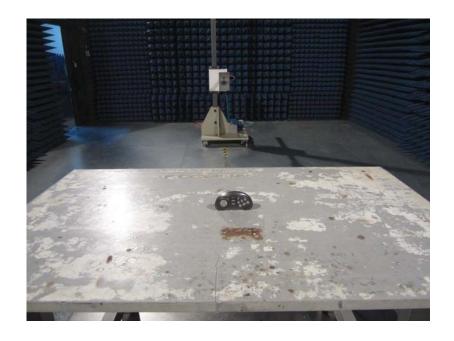
Highest channel



## 8 Test Setup Photo

Radiated Emission







## 9 EUT Constructional Details

















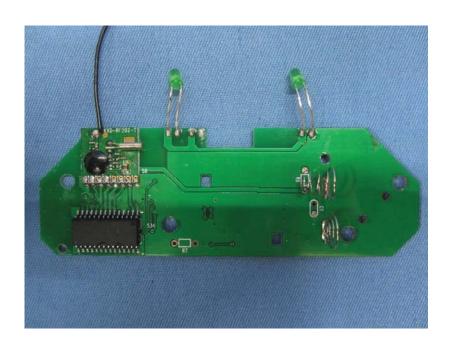




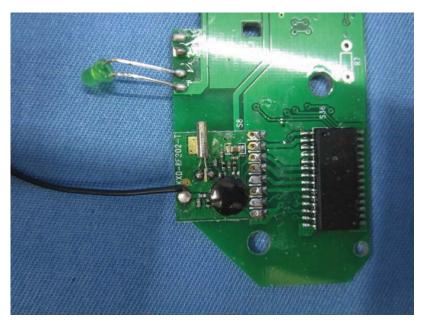












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