







ISO/IEC17025Accredited Lab.

Report No: FCC 1309080-02 File reference No: 2013-09-18

Applicant: PlayJam Ltd

Product: GameStick

Model No: PJGS2367

Trademark: N/A

Test Standards: FCC Part 15.247 and RSS-210 Issue 8

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.4, FCC Part 15 Subpart C, Paragraph 15.247 regulations and RSS-210 Issue 8 for the

evaluation of electromagnetic compatibility

Approved By

Jack Chung

Jack Chung Manager

Dated: Sep 18, 2013

Results appearing herein relate only to the sample tested

The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD

5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District, Shenzhen,CHINA.

Tel (755) 83448688 Fax (755) 83442996

Report No: 1309080-02 Page 2 of 106

Date: 2013-09-18



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meets with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

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

CNAS-LAB Code: L2292

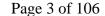
The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 899988

The 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.:899988.

IC- Registration No.: IC5205A-02

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration No.: IC 5205A-02.



Date: 2013-09-18



Test Report Conclusion

Content

1.0	General Details	4
1.1	Test Lab Details.	4
1.2	Applicant Details	4
1.3	Description of EUT	4
1.4	Submitted Sample	4
1.5	Test Duration.	4
1.6	Test Uncertainty.	5
1.7	Test By	5
2.0	List of Measurement Equipment.	6
3.0	Technical Details	7
3.1	Summary of Test Results	7
3.2	Test Standards	7
4.0	EUT Modification.	7
5.0	Power Line Conducted Emission Test.	8
5.1	Schematics of the Test.	8
5.2	Test Method and Test Procedure.	8
5.3	Configuration of the EUT	8
5.4	EUT Operating Condition.	9
5.5	Conducted Emission Limit	9
5.6	Test Result.	9
6.0	Radiated Emission test	12
5.1	Test Method and Test Procedure.	12
5.2	Configuration of the EUT	12
5.3	EUT Operation Condition.	12
5.4	Radiated Emission Limit	13
7.0	20dB and 99% Bandwidth Measurement.	27
8.0	Maximum Peak Output Power	51
9.0	Carrier Frequency Separation.	54
10.0	Number of Hopping Channel.	58
11.0	Time of Occupancy (Dwell Time)	62
12.0	Out of Band Measurement.	75
13.0	Antenna Requirement.	96
14.0	FCC IC Label.	97
15.0	Photo of Test Setup and EUT View	98

Report No: 1309080-02 Page 4 of 106

Date: 2013-09-18



1.0 General Details

1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO., LTD

Address: 5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District,

Shenzhen, CHINA.

Telephone: (755) 83448688 Fax: (755) 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 899988

For 3m & 10 m OATS

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205A-02

For 3m & 10 m OATS

1.2 Applicant Details

Applicant: PlayJam Ltd

Address: Centre Point 103 New Oxford Street London WC1A 1DD

Telephone: +44 (0) 781 330 2009

Fax: --

1.3 Description of EUT

Product: GameStick
Manufacturer: PlayJam Ltd

Address: Centre Point 103 New Oxford Street London WC1A 1DD

Brand Name: N/A

Model Number: PJGS2367

Additional Model Number: N/A

Power Adapter Model No.: PSEA050150U USB2

Input: 100-240V, 50/60Hz, 0.25A; Output: 5V, 1.5A

Type of Modulation IEEE 802.11b : DSSS (CCK, QPSK, DBPSK)

IEEE 802.11g/n (HT20): OFDM(64QAM, 16QAM, QPSK, BPSK)

GFSK, 月/4QPSK, 8DPSK for Bluetooth

Frequency range IEEE 802.11b/g/n (HT20): 2412-2462MHz; 2402-2480MHz for Bluetooth

Channel Spacing IEEE 802.11b/g/n (HT20): 5MHz, 1MHz for Bluetooth

Air Data Rate IEEE 802.11b : 11, 5.5, 2, 1 Mbps

IEEE 802.11g: 54, 48,36, 24, 18, 12, 9, 6 Mbps

IEEE 802.11n HT20: 150, 117, 104, 78, 65, 58.5, 52, 39, 26, 19.5, 13, 6 Mbps

Frequency Selection By software

Channel Number IEEE 802.11b/g/n (HT20): 11 Channels, 79 channel for Bluetooth

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

Report No: 1309080-02 Page 5 of 106

Date: 2013-09-18



Antenna:

Ceramic Antenna with maximum gain 2.0dBi

1.4 Submitted Sample: 2 Samples

1.5 Test Duration

2013-08-08 to 2013-09-18

1.6 Test Uncertainty

Conducted Emissions Uncertainty =3.6dB Radiated Emissions Uncertainty =4.7dB

1.7 Test Engineer

Terry Tang

The sample tested by

Print Name: Terry Tang

Page 6 of 106

Report No: 1309080-02

Date: 2013-09-18



2.0	2.0 Test Equipments					
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date	
ESPI Test Receiver	ROHDE&SCHWARZ	ESPI 3	100379	2013-08-23	2014-08-22	
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100294	2013-08-23	2014-08-22	
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100253	2013-08-23	2014-08-22	
Ultra Broadband ANT	ROHDE&SCHWARZ	HL562	100157	2013-08-25	2014-08-24	
ESDV Test Receiver	ROHDE&SCHWARZ	ESDV	100008	2013-08-23	2014-08-22	
Impuls-Begrenzer	ROHDE&SCHWARZ	ESH3-Z2	100281	2013-08-24	2014-08-23	
System Controller	CT	SC100	-			
Printer	EPSON	РНОТО ЕХЗ	CFNH234850			
Computer	IBM	8434	1S8434KCE99BLXL O*	-	-	
Loop Antenna	EMCO	6502	00042960	2013-08-23	2014-08-22	
ESPI Test Receiver	ROHDE&SCHWARZ	ESI26	838786/013	2013-08-23	2014-08-22	
3m OATS			N/A	2013-08-22	2014-08-21	
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170265	2013-08-24	2014-08-23	
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-631	2013-08-24	2014-08-23	
Power meter	Anritsu	ML2487A	6K00003613	2013-08-24	2014-08-23	
Power sensor	Anritsu	MA2491A	32263	2013-08-24	2014-08-23	
Bilog Antenna	Schwarebeck	VULB9163	9163/340	2013-08-21	2014-08-20	
LISN	AFJ	LS16C	10010947251	2013-08-21	2014-08-20	
LISN (Three Phase)	Schwarebeck	NSLK 8126	8126453	2013-08-23	2014-08-22	
9*6*6 Anechoic			N/A	2013-08-22	2014-08-21	
EMI Test Receiver	RS	ESCS30	100139	2013-08-23	2014-08-22	
LISN	AFJ	LS16C	10010947251	2013-08-23	2014-08-22	
LISN (Three Phase)	Schwarebeck	NSLK 8126	8126453	2013-08-23	2014-08-22	

Report No: 1309080-02 Page 7 of 106

Date: 2013-09-18



3.0 Technical Details

3.1 Summary of test results

The EUT has been tested according to the following specifications:

Requirement	CFR 47 Section	Result	Notes
Antenna Requirement	15.203, 15.247(b)(4)	PASS	Complies
	& RSS-210 Issue 8		
Maximum Peak Out Power	15.247 (b)(1), (4)	DACC	Complies
Maximum Peak Out Power	& RSS-210 Issue 8	PASS	
	15.247(a)(1)		
Carrier Frequency Separation	& RSS-210 Issue 8	PASS	Complies
	C RSS-210 Issue 0		
20dB Channel Bandwidth	15.247 (a)(1)	PASS	Complies
	& RSS-210 Issue 8		
Number of Hopping Channels	15.247(a)(iii), 15.247(b)(1)	PASS	Complies
	& RSS-210 Issue 8		
Time of Occupancy (Dwell Time)	15.247(a)(iii)	PASS	Complies
	& RSS-210 Issue 8		
Spurious Emission, Band Edge, and	15.247(d),15.205(a),	PASS	Complies
Restricted bands	15.209 (a),15.109		
	& RSS-210 Issue 8		
Conducted Emissions	15.207(a), 15.107	PASS	Complies
	& RSS-210 Issue 8		
RF Exposure	15.247(i), 1.1307(b)(1)	PASS	Complies

3.2 Test Standards

FCC Part 15 Subpart & Subpart C, Paragraph 15.247 and RSS-210 Issue 8

4.0 EUT Modification

No modification by Shenzhen Timeway Technology Consulting Co., Ltd

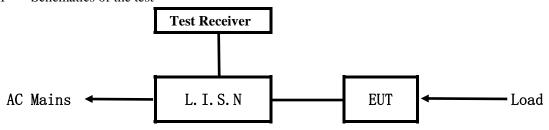
Report No: 1309080-02 Page 8 of 106

Date: 2013-09-18



5. Power Line Conducted Emission Test

5.1 Schematics of the test

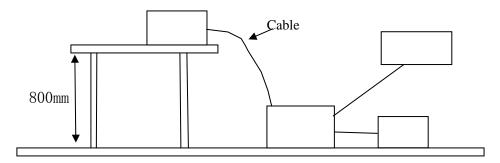


EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2003. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 –2003.

Test Voltage: 120V~60Hz Block diagram of Test setup



5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2003. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

Page 9 of 106

Report No: 1309080-02

Date: 2013-09-18



A. EUT

Device	Manufacturer	Model	FCC ID
C Ct.: -1-	DI I III DIGGOZGO	DICC2267	IC: 11079A-GTPJ2367,
GameStick	PlayJam Ltd	PJGS2367	FCC ID: 2AATX-GTPJ2367

B. Internal Device

Device	Manufacturer	Model	Rating

C. Peripherals

Device	Manufacturer	Model	FCC ID/DOC	Cable

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2003.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.107, 15.207

Frequency	equency Class A Limits (dB \(\mu \)		Class B Limits (dB \(\mu \) V)		
(MHz) Quasi-peak Lev		asi-peak Level Average Level		Average Level	
$0.15 \sim 0.50$	79.0	66.0	66.0~56.0*	56.0~46.0*	
$0.50 \sim 5.00$	73.0	60.0	56.0	46.0	
5.00 ~ 30.00	73.0	60.0	60.0	50.0	

Notes:

- 1. *Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

The report refers only to the sample tested and does not apply to the bulk.

Date: 2013-09-18



A: Conducted Emission on Live Terminal (150kHz to 30MHz)

EUT Operating Environment

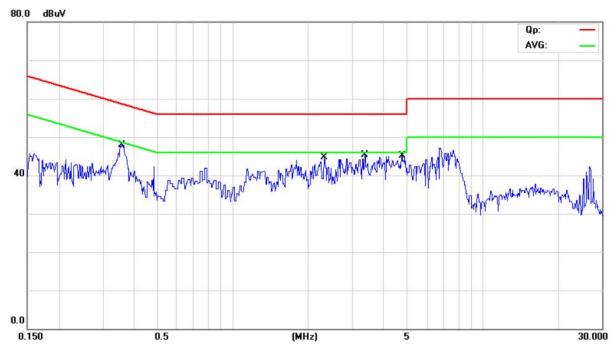
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep Transmitting

Equipment Level: Class B

Results: PASS

Please refer to following diagram for individual



Frequency	Line	Reading(dBμV)	Limit(dBμV)
(MHz)	Line	Quasi-peak	Average	Quasi-peak	Average
0.358	Live	45.72	31.02	58.77	48.77
2.304	Live	38.52	24.02	56.00	46.00
3.351	Live	38.24	25.84	56.00	46.00
4.724	Live	39.19	27.29	56.00	46.00

Date: 2013-09-18



B: Conducted Emission on Neutral Terminal (150kHz to 30MHz)

EUT Operating Environment

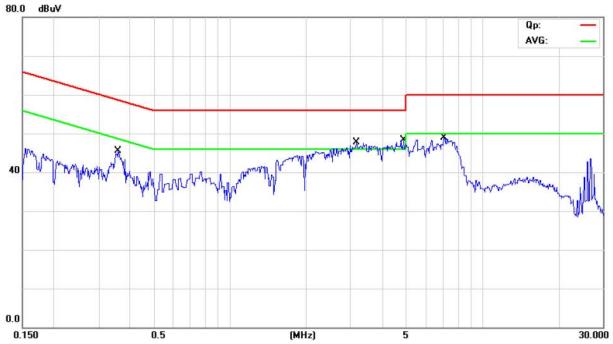
Temperature: 26°C Humidity: 65%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep Transmitting

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



Frequency	Line	Reading(dBμV)	Limit(dBμV)
(MHz)	Line	Quasi-peak	Average	Quasi-peak	Average
0.360	Neutral	41.82	27.62	58.73	48.73
3.158	Neutral	44.86	30.36	56.00	46.00
4.864	Neutral	44.55	31.35	56.00	46.00
7.106	Neutral	45.82	35.22	60.00	50.00

Report No: 1309080-02 Page 12 of 106

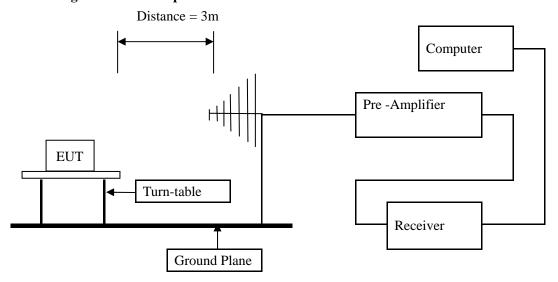
Date: 2013-09-18



6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.4 –2003. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
- (3) The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. For measurement above 1GHz, peak values with RBW=VBW=1MHz and PK detector. AV value with RBW=1MHz, VBW=10Hz and PK detector. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization: Vertical polarization and Horizontal polarization.

Block diagram of Test setup



- 6.2 Configuration of The EUT

 Same as section 5.3 of this report
- 6.3 EUT Operating Condition
 Same as section 5.4 of this report.

The report refers only to the sample tested and does not apply to the bulk.

Report No: 1309080-02 Page 13 of 106

Date: 2013-09-18



6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

Frequencies in restricted band are complied to limit on Paragraph 15.209 and 15.109 and RSS-210

Frequency Range (MHz)	Distance (m)	Field strength (dB μ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note:

- 1. RF Voltage $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 2. In the Above Table, the higher limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

Report No: 1309080-02 Page 14 of 106

Date: 2013-09-18



Test result

General Radiated Emission Data and Harmonics Radiated Emission Data

Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: Keep Receiving

Results: Pass

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \(\mu \)V/m)
456.040	41.70	Н	46.00
159.480	39.64	Н	43.50
101.360	28.96	Н	43.50
205.920	30.72	Н	43.50
456.000	38.74	V	46.00
154.080	39.19	V	43.50
77.800	36.94	V	40.00
101.040	39.54	V	43.50

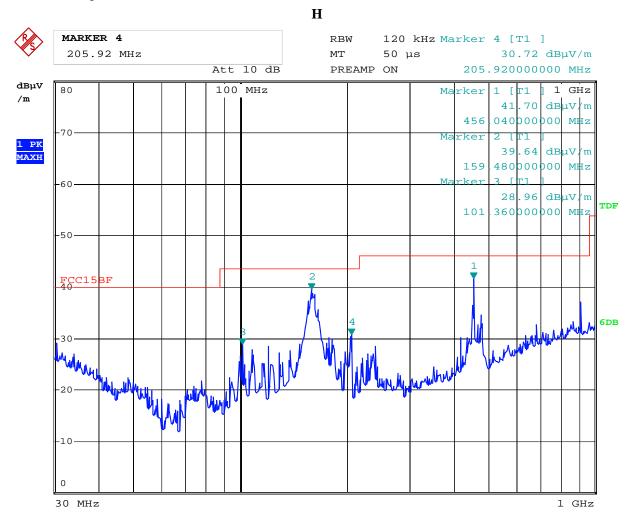
Page 15 of 106

Report No: 1309080-02

Date: 2013-09-18



Test Figure:



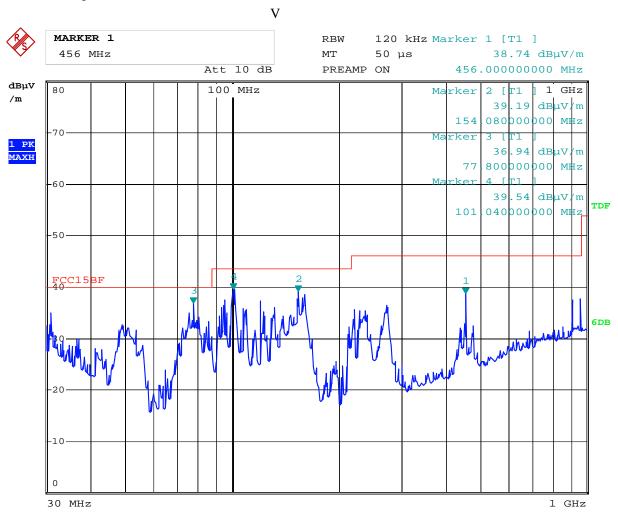
Date: 17.SEP.2013 10:54:46

Report No: 1309080-02 Page 16 of 106

Date: 2013-09-18



Test Figure:



Date: 17.SEP.2013 10:52:45

Report No: 1309080-02 Page 17 of 106

Date: 2013-09-18



Radiated Disturbance (1000MHz----18000MHz)

EUT Operating Environment

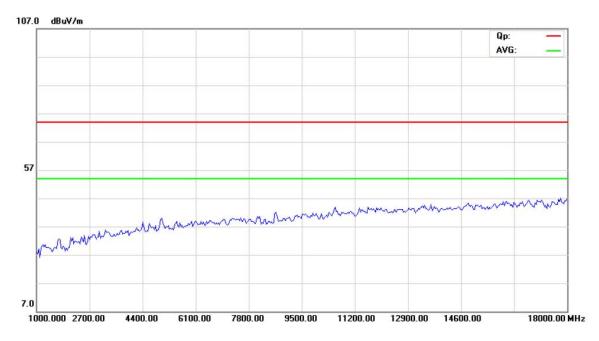
Temperature:25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep Receiving

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



Frequency (MHz)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)
		Н	54(AV)

Note: 1. Due to the final radiated level much less than the limit, so necessary take down final radiated level

2. For radiated Emissions from 18-25GHz, it is only the floor noise.

Report No: 1309080-02 Page 18 of 106

Date: 2013-09-18



Radiated Disturbance (1000MHz----18000MHz)

EUT Operating Environment

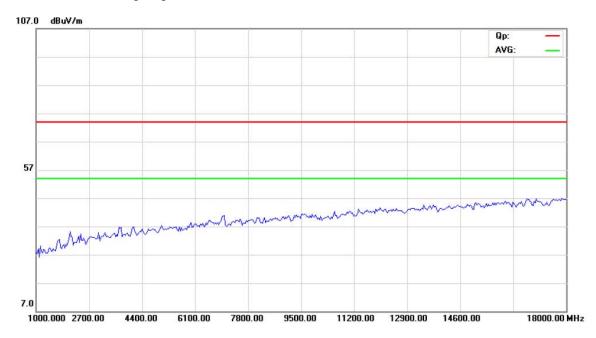
Temperature:25°C Humidity: 75%RH Atmospheric Pressure: 101 KPa

EUT set Condition: Keep Receiving

Equipment Level: Class B

Results: Pass

Please refer to following diagram for individual



Frequency (MHz)	Level@3m (dBµV/m)	Antenna Polarity	Limit@3m (dBµV/m)
		V	54(AV)

Note: 1. Due to the final radiated level much less than the limit, so necessary take down final radiated level

2. For radiated Emissions from 18-25GHz, it is only the floor noise.

Report No: 1309080-02 Page 19 of 106

Date: 2013-09-18



Test result

General Radiated Emission Data and Harmonics Radiated Emission Data

Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: **Keep Transmitting**

Results: Pass

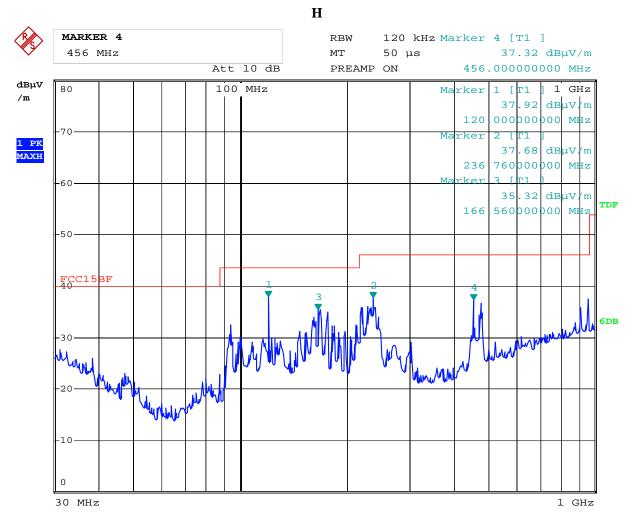
Frequency (MHz)	Level@3m (dB \mu V/m)	Antenna Polarity	Limit@3m (dB \(\mu \)V/m)
120.000	37.92	Н	43.50
236.760	37.68	Н	46.00
166.560	35.32	Н	43.50
456.000	37.32	Н	46.00
456.000	35.85	V	46.00
93.160	34.97	V	43.50
168.640	36.97	V	43.50
154.720	38.52	V	43.50

Report No: 1309080-02 Page 20 of 106

Date: 2013-09-18



Test Figure:



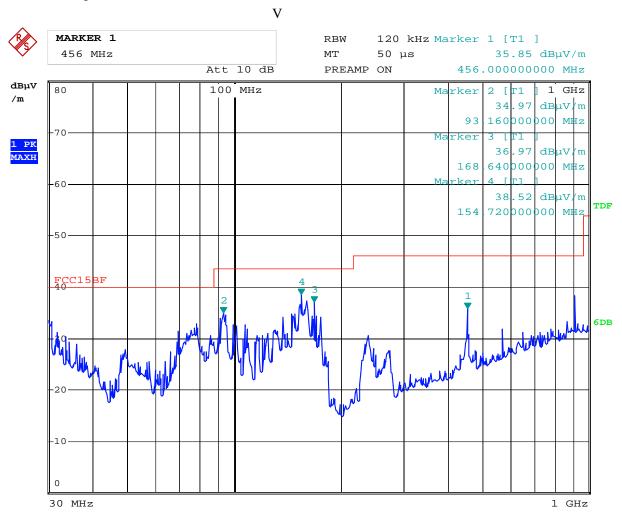
Date: 16.SEP.2013 18:38:34

Report No: 1309080-02 Page 21 of 106

Date: 2013-09-18



Test Figure:



Date: 16.SEP.2013 18:41:49

Report No: 1309080-02 Page 22 of 106

Date: 2013-09-18



Operation Mode: Transmitting under Low Channel (2402MHz)

Frequency (MHz)	Level@3m (dB \u03bc V/m)	Antenna Polarity	Limit@3m (dB \mu V/m)
2402	89.98 (PK)	Н	Fundamental Frequency
2402	89.08 (PK)	V	Fundamental Frequency
4804	47.31 (PK)	Н	74(Peak)/ 54(AV)
4804	48.23 (PK)	V	74(Peak)/ 54(AV)
7206		H/V	74(Peak)/ 54(AV)
9608		H/V	74(Peak)/ 54(AV)
12010		H/V	74(Peak)/ 54(AV)
14412		H/V	74(Peak)/ 54(AV)
16814		H/V	74(Peak)/ 54(AV)
19216		H/V	74(Peak)/ 54(AV)
21618		H/V	74(Peak)/ 54(AV)
24020		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

Operation Mode: Transmitting g under Middle Channel (2441MHz)

	0.0	`	<u> </u>
Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB \(\mu \)V/m)
2441	88.28 (PK)	Н	Fundamental Frequency
2441	88.02 (PK)	V	Fundamental Frequency
4882	46.58 (PK)	Н	74(Peak)/ 54(AV)
4882	47.04 (PK)	V	74(Peak)/ 54(AV)
7323		H/V	74(Peak)/ 54(AV)
9764		H/V	74(Peak)/ 54(AV)
12205		H/V	74(Peak)/ 54(AV)
14646		H/V	74(Peak)/ 54(AV)
17087		H/V	74(Peak)/ 54(AV)
19528		H/V	74(Peak)/ 54(AV)
21969		H/V	74(Peak)/ 54(AV)
24410		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

The report refers only to the sample tested and does not apply to the bulk.

Report No: 1309080-02 Page 23 of 106

Date: 2013-09-18



Operation Mode: Transmitting under High Channel (2480MHz)

Frequency (MHz)	Level@3m (dB µ V/m)	Antenna Polarity	Limit@3m (dB \(\mu \)V/m)
2480	88.06 (PK)	Н	Fundamental Frequency
2480	88.57 (PK)	V	Tundamental Frequency
4960.	48.39 (PK)	Н	74(Peak)/ 54(AV)
4960.	48.19 (PK)	V	74(Peak)/ 54(AV)
7440		H/V	74(Peak)/ 54(AV)
9920		H/V	74(Peak)/ 54(AV)
12400		H/V	74(Peak)/ 54(AV)
14880		H/V	74(Peak)/ 54(AV)
17360		H/V	74(Peak)/ 54(AV)
19840		H/V	74(Peak)/ 54(AV)
22320		H/V	74(Peak)/ 54(AV)
24800		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

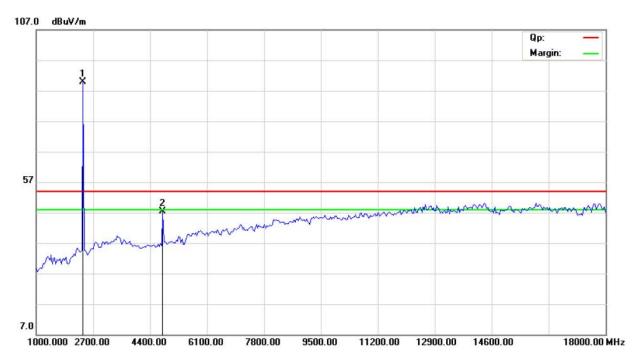
^{2.} Remark "---" means that the emissions level is too low to be measured

Date: 2013-09-18

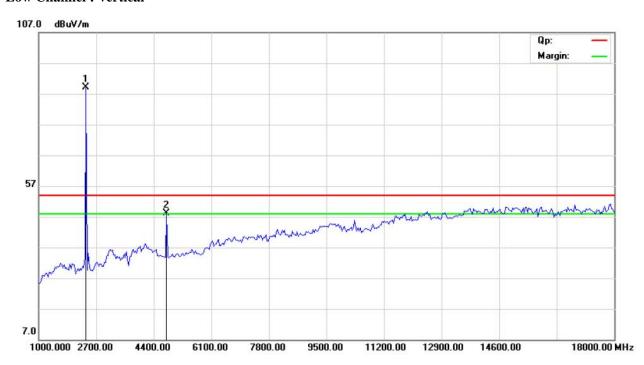


Please refer to the following test plots for details:

Low Channel: Horizontal



Low Channel: Vertical



The report refers only to the sample tested and does not apply to the bulk.

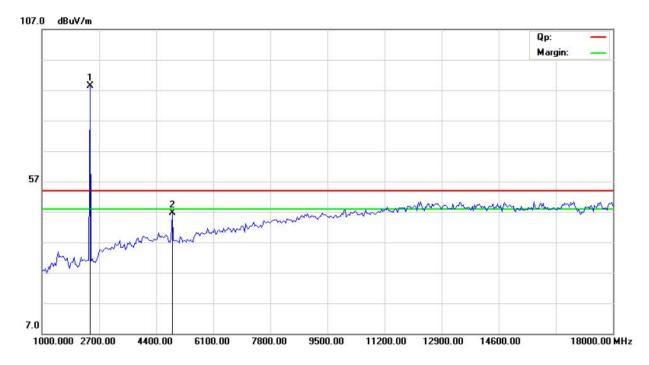
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co.,Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

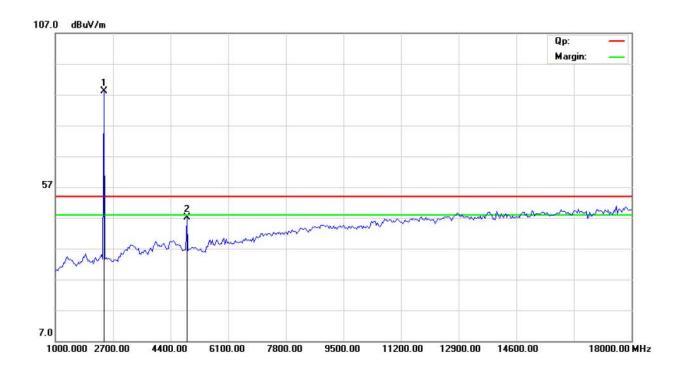
Date: 2013-09-18



Middle Channel: Horizontal



Middle Channel :: Vertical



The report refers only to the sample tested and does not apply to the bulk.

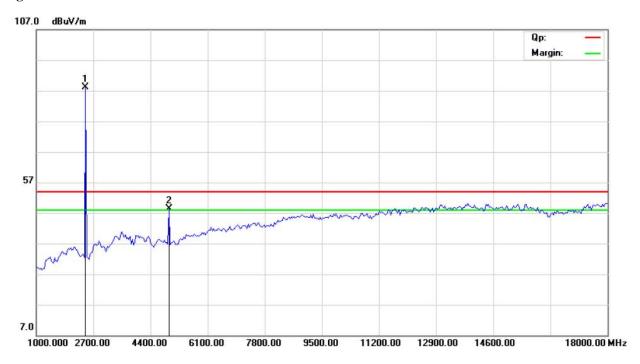
This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

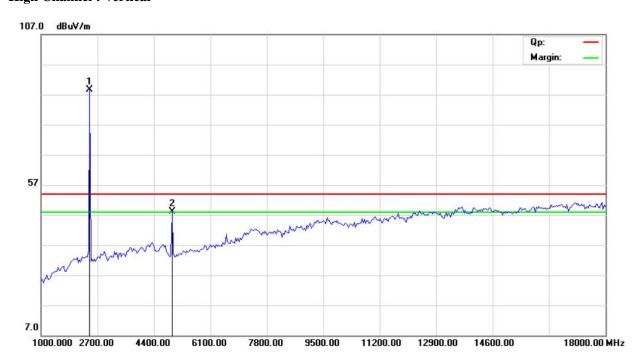
Date: 2013-09-18



High Channel: Horizontal



High Channel: Vertical



Note: for the radiated emissions above 18G, it is the floor noise.

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

Report No: 1309080-02 Page 27 of 106

Date: 2013-09-18



7.0 20dB Bandwidth Measurement

7.1 Regulation

Intentional radiators operating under the alternative provisions to the general emission limits, as contained in §§ 15.217 through 15.257 and in Subpart E of this part, must be designed to ensure that the 20 dB bandwidth of the emission, or whatever bandwidth may otherwise be specified in the specific rule section under which the equipment operates, is contained within the frequency band designated in the rule section under which the equipment is operated.

7.2 Limits of 20dB Bandwidth Measurement

N/A

7.3 Test Procedure.

- 1. Check the calibration of the measuring instrument (spectrum analyzer) using either an internal calibrator or a known signal from an external generator.
- 2. Set the spectrum analyzer as follows: Span =5MHz, VBW =30 kHz, RBW=100 kHz, Sweep = auto Detector function = peak, Trace = max hold
- 3. Measure the highest amplitude appearing on spectral display and record the level to calculate results. 6. Repeat above procedures until all frequencies measured were complete.

7.4 Test Result

Type of Modulation: GFSK

EUT	<u> </u>	GameStick	Model	PJGS2367
Mode	Ko	Keep Transmitting		120V
Temperat	ure	24 deg. C,		56% RH
Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)	Maximum Limit (kHz)	Pass/ Fail
Low	2402	864		Pass
Middle	2441	840		Pass
High	2480	864		Pass

Page 28 of 106

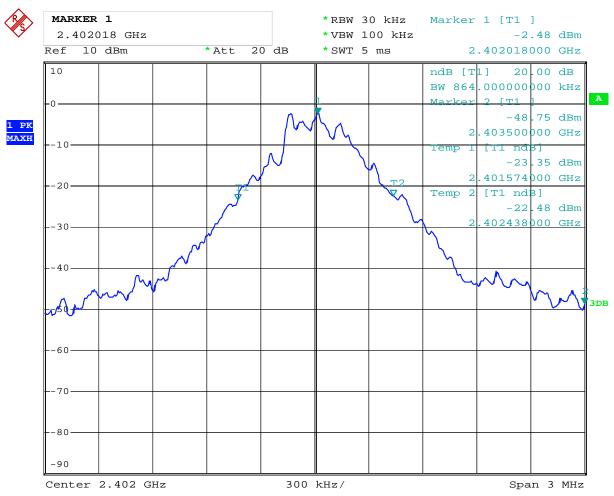
Report No: 1309080-02

Date: 2013-09-18



Test Figure:

1. Condition: Low Channel



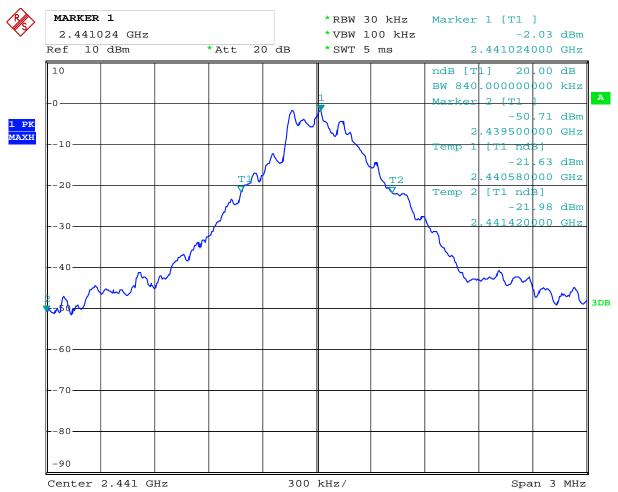
Date: 11.SEP.2013 18:02:27

Report No: 1309080-02 Page 29 of 106

Date: 2013-09-18



2. Condition: Middle Channel



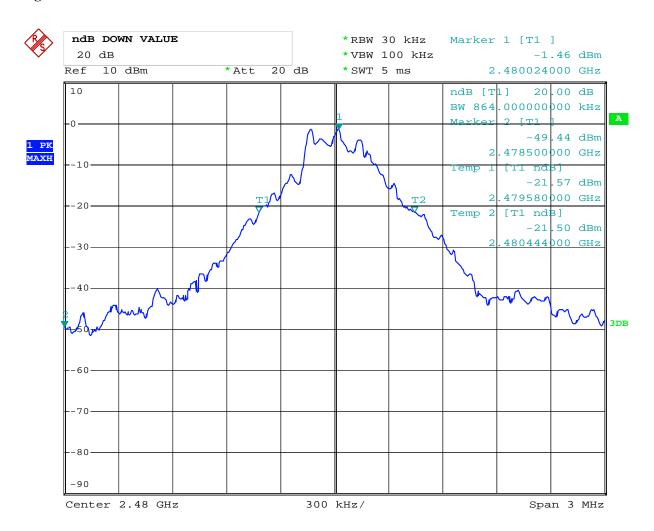
Date: 11.SEP.2013 18:05:28

Report No: 1309080-02 Page 30 of 106

Date: 2013-09-18



3. High Channel



Date: 11.SEP.2013 18:06:46

Report No: 1309080-02 Page 31 of 106

Date: 2013-09-18



Test Result

Type of Modulation: JI/4QPSK

EUT		GameStick	Model	PJGS2367
Mode	Ko	Keep Transmitting		120V
Temperat	ure	24 deg. C,		56% RH
Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)	Maximum Limit (kHz)	Pass/ Fail
Low	2402	1242		Pass
Middle	2441	1224		Pass
High	2480	1218		Pass

Page 32 of 106

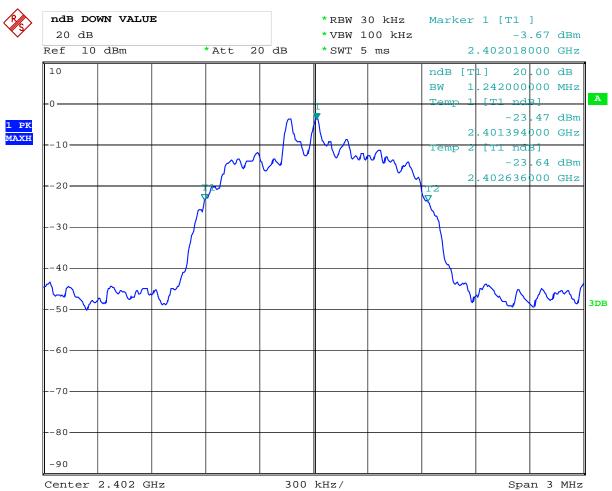
Report No: 1309080-02

Date: 2013-09-18



Test Figure:

1. Condition: Low Channel



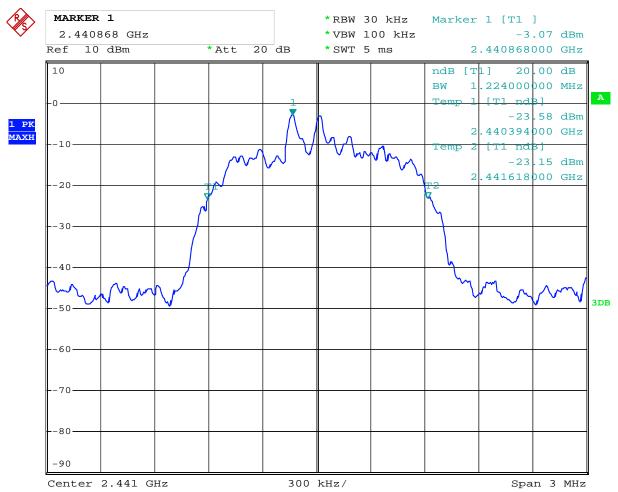
Date: 11.SEP.2013 18:35:08

Report No: 1309080-02 Page 33 of 106

Date: 2013-09-18



2. Condition: Middle Channel



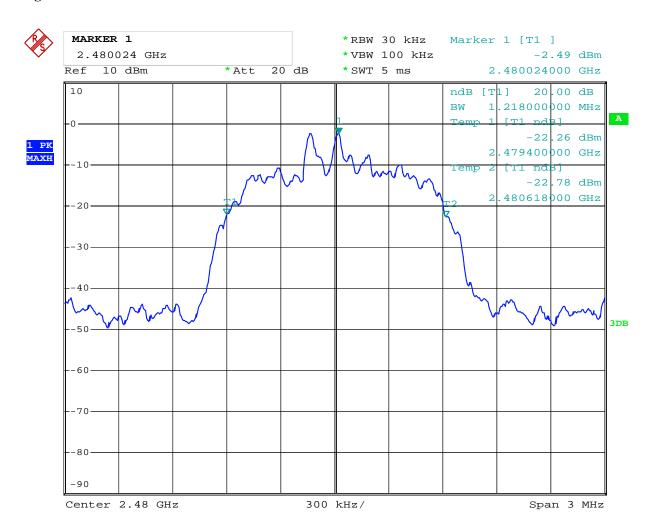
Date: 11.SEP.2013 18:37:54

Report No: 1309080-02 Page 34 of 106

Date: 2013-09-18



3. High Channel



Date: 11.SEP.2013 18:38:37

Report No: 1309080-02 Page 35 of 106

Date: 2013-09-18



Test Result

Type of Modulation: 8DPSK

EUT		GameStick	Model	PJGS2367
Mode	Ko	Keep Transmitting		120V
Temperat	ure	24 deg. C,		56% RH
Channel	Channel Frequency (MHz)	20 dB Bandwidth (kHz)	Maximum Limit (kHz)	Pass/ Fail
Low	2402	1212		Pass
Middle	2441	1212		Pass
High	2480	1212		Pass

Page 36 of 106

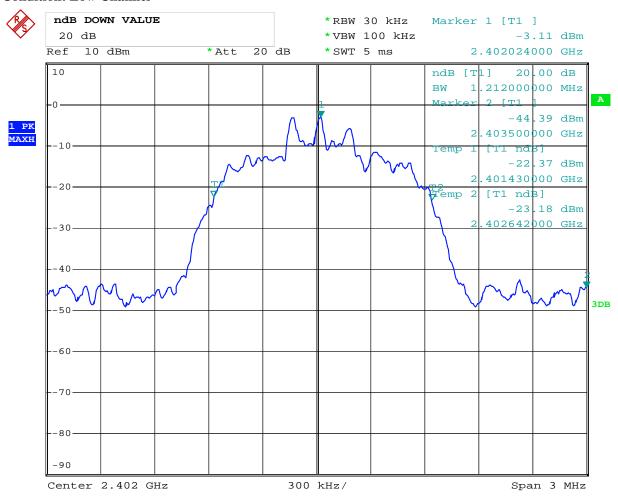
Report No: 1309080-02

Date: 2013-09-18



Test Figure:

1. Condition: Low Channel



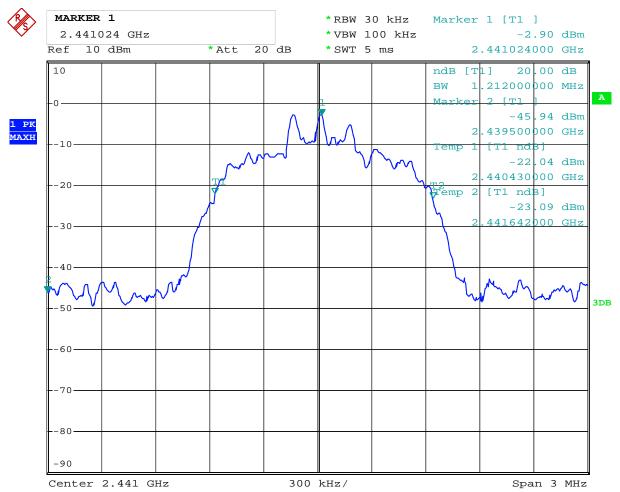
Date: 12.SEP.2013 10:24:02

Report No: 1309080-02 Page 37 of 106

Date: 2013-09-18



2. Condition: Middle Channel



Date: 12.SEP.2013 10:27:34

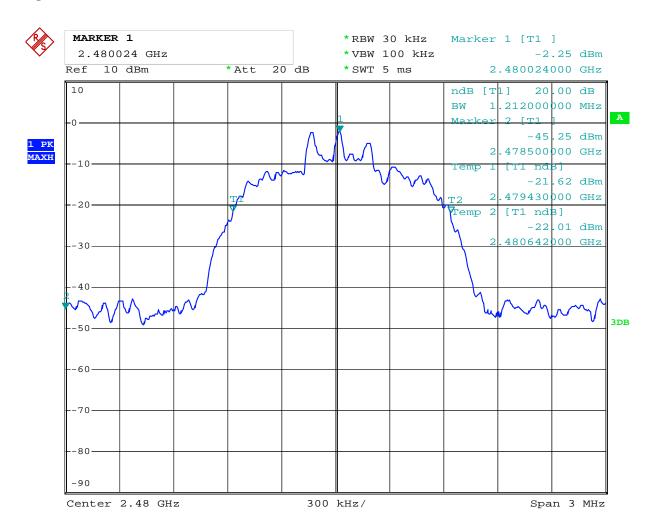
Page 38 of 106

Report No: 1309080-02

Date: 2013-09-18



3. High Channel



Date: 12.SEP.2013 10:28:52

Report No: 1309080-02 Page 39 of 106

Date: 2013-09-18



99% Occupied Bandwidth

Type of Modulation: GFSK

EUT		GameStick		PJGS2367
Mode	le Keep Transmitting		Input Voltage	120V
Temperat	ure	24 deg. C,	Humidity	56% RH
Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)	Maximum Limit (kHz)	Pass/ Fail
Low	2402	846		Pass
Middle	2441	840		Pass
High	2480	834		Pass

Page 40 of 106

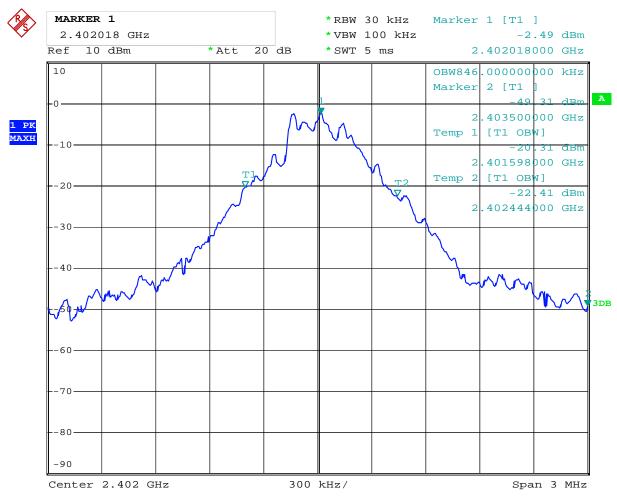
Report No: 1309080-02

Date: 2013-09-18



Test Figure:

1. Condition: Low Channel



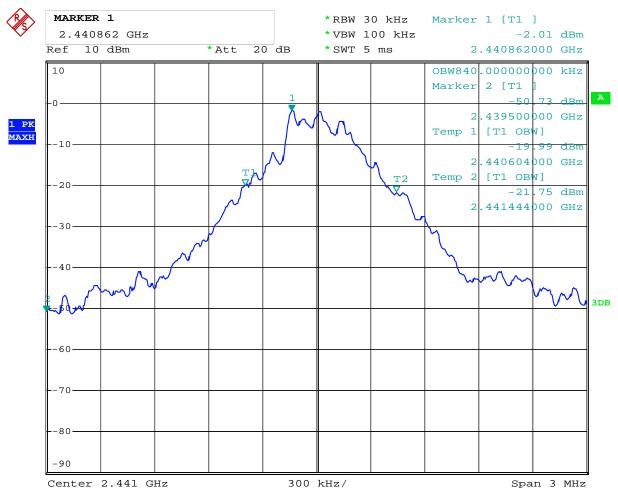
Date: 11.SEP.2013 18:03:21

Report No: 1309080-02 Page 41 of 106

Date: 2013-09-18



2. Condition: Middle Channel



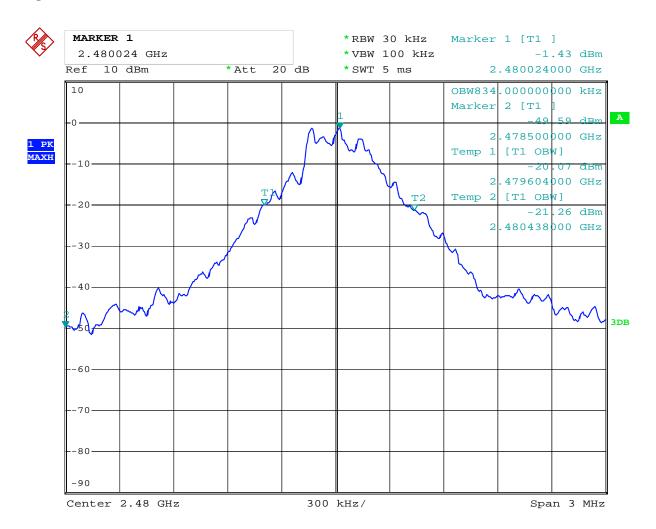
Date: 11.SEP.2013 18:04:41

Report No: 1309080-02 Page 42 of 106

Date: 2013-09-18



3. High Channel



Date: 11.SEP.2013 18:08:01

Report No: 1309080-02 Page 43 of 106

Date: 2013-09-18



99% Occupied Bandwidth

Test Result

Type of Modulation: JI/4QPSK

EUT		GameStick		PJGS2367
Mode	e Keep Transmitting		Input Voltage	120V
Temperat	ure	24 deg. C,	Humidity	56% RH
Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)	Maximum Limit (kHz)	Pass/ Fail
Low	2402	1152		Pass
Middle	2441	2441 1152		Pass
High	2480	1152		Pass

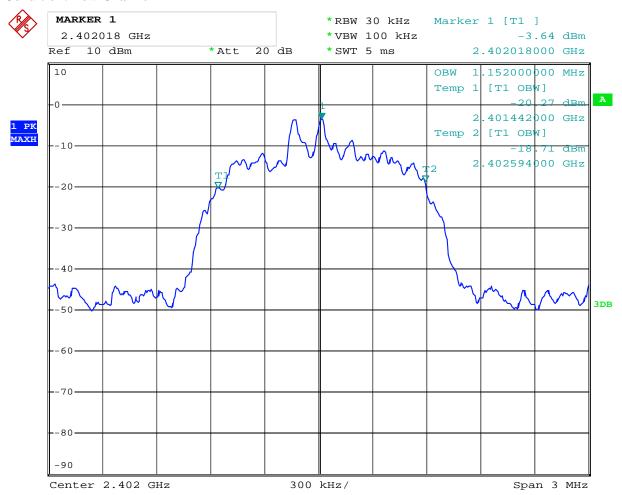
Report No: 1309080-02 Page 44 of 106

Date: 2013-09-18



Test Figure:

1. Condition: Low Channel



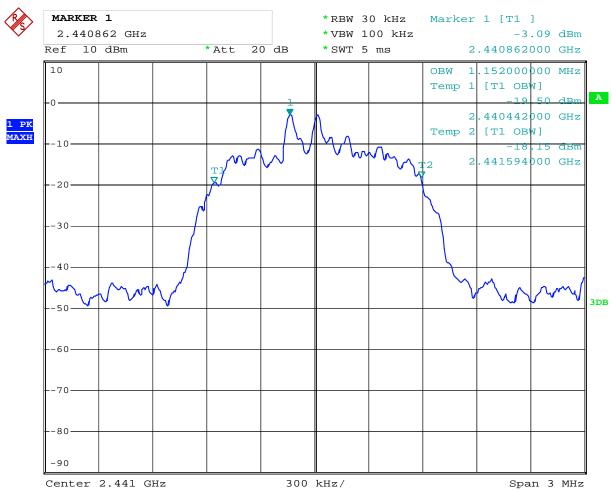
Date: 11.SEP.2013 18:35:49

Report No: 1309080-02 Page 45 of 106

Date: 2013-09-18



2. Condition: Middle Channel



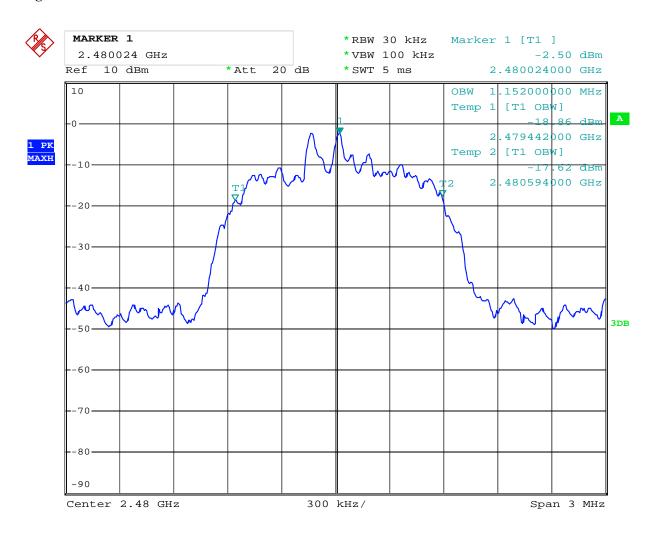
Date: 11.SEP.2013 18:37:14

Report No: 1309080-02 Page 46 of 106

Date: 2013-09-18



3. High Channel



Date: 11.SEP.2013 18:39:24

Report No: 1309080-02 Page 47 of 106

Date: 2013-09-18



99% Occupied Bandwidth

Test Result

Type of Modulation: 8DPSK

EUT		GameStick		PJGS2367
Mode	Keep Transmitting		Input Voltage	120V
Temperat	ure	24 deg. C,	Humidity	56% RH
Channel	Channel Frequency (MHz)	99% Bandwidth (kHz)	Maximum Limit (kHz)	Pass/ Fail
Low	2402	1140		Pass
Middle	2441	2441 1134		Pass
High	2480	1134		Pass

Page 48 of 106

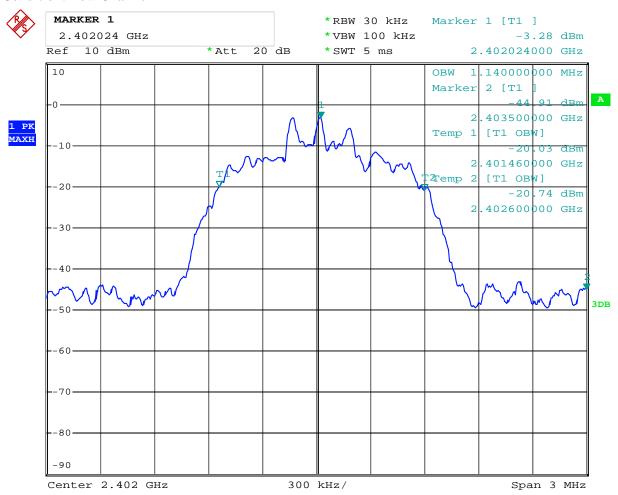
Report No: 1309080-02

Date: 2013-09-18



Test Figure:

1. Condition: Low Channel



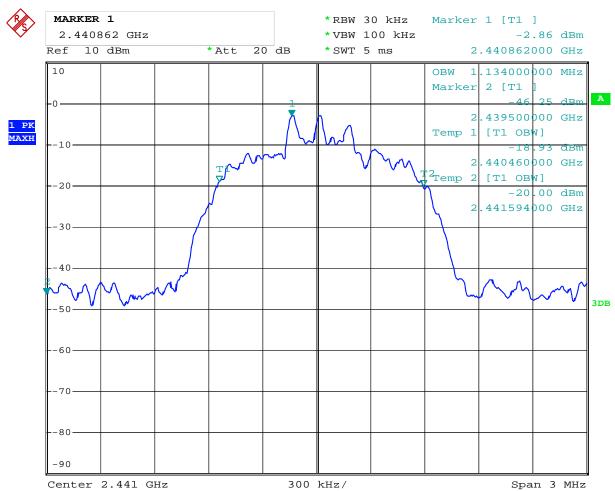
Date: 12.SEP.2013 10:25:07

Report No: 1309080-02 Page 49 of 106

Date: 2013-09-18



2. Condition: Middle Channel



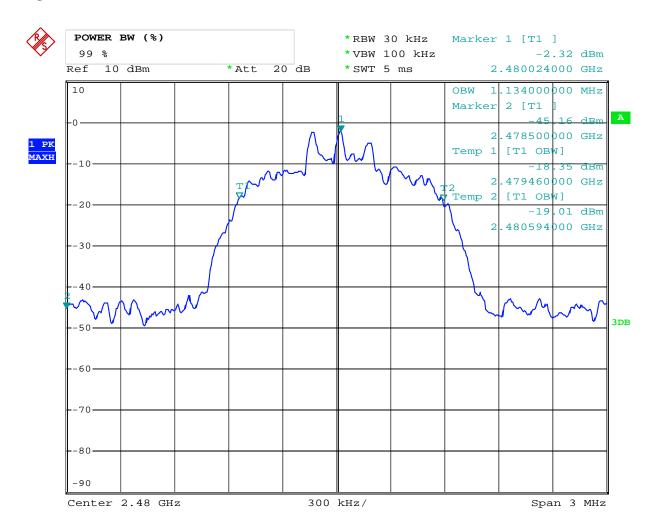
Date: 12.SEP.2013 10:27:00

Report No: 1309080-02 Page 50 of 106

Date: 2013-09-18



3. High Channel



Date: 12.SEP.2013 10:30:03

Report No: 1309080-02 Page 51 of 106

Date: 2013-09-18



8. Maximum Peak Output Power

8.1 Regulation

According to §15.247(b)(1), for frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5MHz band:0.125 watts. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

8.2 Limits of Maximum Peak Output Power

The Maximum Peak Output Power Measurement is 30dBm.

8.3 Test Procedure

- 1. Check the calibration of the measuring instrument (spectrum analyzer) using either an internal calibrator or a known signal from an external generator.
- 2. Set the spectrum analyzer as follows: Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel; RBW > the 20 dB bandwidth of the emission being measured; VBW = RBW=3MHz; Sweep = auto; Detector function = peak; Trace = max hold
- 3. Measure the highest amplitude appearing on spectral display and record the level to calculate results.
- 4. Repeat above procedures until all frequencies measured were complete.

Page 52 of 106

Report No: 1309080-02

Date: 2013-09-18



8.4Test Results

Type of Modulation: GFSK

EUT		GameStick	Model		PJGS2367
Mode Ke		eep Transmitting		ıt Voltage	120V
Temperatur	re	24 deg. C, Humidity		umidity	56% RH
Channel	Channel Frequency (MHz)	Peak Power Output (dBm)	Peak Power Limit (dBm)	Pass/ Fail
Low	2402	-0.93		30	Pass
Middle	2441	-0.56		30	Pass
High	2480	-0.72		30	Pass

Note: 1. the result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss + Attenuator

2. The worse case was recorded

Type of Modulation: J\(J\)/4OPSK

-1, pro 01 1120 animitori								
EUT		GameStick		Model	PJGS2367			
Mode Ke		eep Transmitting		t Voltage	120V			
Temperatur	Temperature 24 deg. C, Hu		Humidity		56% RH			
Channel	Channel Frequency (MHz)	Peak Power Output (dBm)	Peak Power Limit (dBm)	Pass/ Fail			
Low	2402	-1.54		21	Pass			
Middle	2441	-1.02		21	Pass			
High	2480	-0.50		21	Pass			

Note: 1. the result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss + Attenuator

2. The worse case was recorded

Report No: 1309080-02 Page 53 of 106

Date: 2013-09-18



Type of Modulation: 8DPSK

EUT		GameStick	Model		PJGS2367
Mode	Ke	eep Transmitting		t Voltage	120V
Temperatur	re	24 deg. C,	Humidity		56% RH
Channel	Channel Frequency (MHz)	Peak Power Output (dBm)		Peak Power Limit (dBm)	Pass/ Fail
Low	2402	-1.14		21	Pass
Middle	2441	-0.65		21	Pass
High	2480	-0.10		21	Pass

Note: 1. the result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss + Attenuator

2. The worse case was recorded

Report No: 1309080-02 Page 54 of 106

Date: 2013-09-18



9. Carrier Frequency Separation

9.1 Regulation

According to §15.247(a)(1), frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

9.2 Limits of Carrier Frequency Separation

The Maximum Power Spectral Density Measurement is 25kHz or two-thirds of the 20dB bandwidth of the hopping Channel which is great.

9.3 Test Procedure

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Set the spectrum analyzer as follows: Span = wide enough to capture the peaks of two adjacent channels: Resolution (or IF) Bandwidth (RBW) \geq 1% of the span; Video (or Average) Bandwidth (VBW) \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold
- 3. Measure the separation between the peaks of the adjacent channels using the marker-delta function.
- 4. Repeat above procedures until all frequencies measured were complete.

Page 55 of 106

Report No: 1309080-02

Date: 2013-09-18

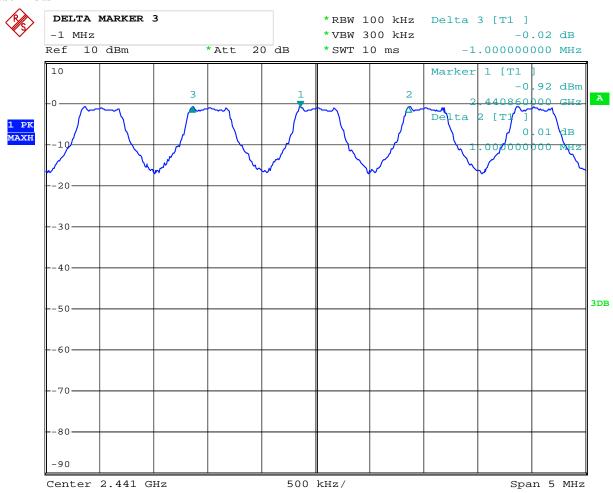


9.4Test Result

Type of Modulation: GFSK

EUT	GameStick	Model		PJGS2367			
Mode	Hopping On		Input Voltage		120V		
Temperature	24 deg. C,		Humidity		56% RH		
Carrier Frequency Separation		Limit			Pass/ Fail		
	1000kHz	≥ 25 kHz (≥ 25 kHz or 20 dB bandwidth		Pass		

Test Plots



Date: 11.SEP.2013 18:28:14

Page 56 of 106

Report No: 1309080-02

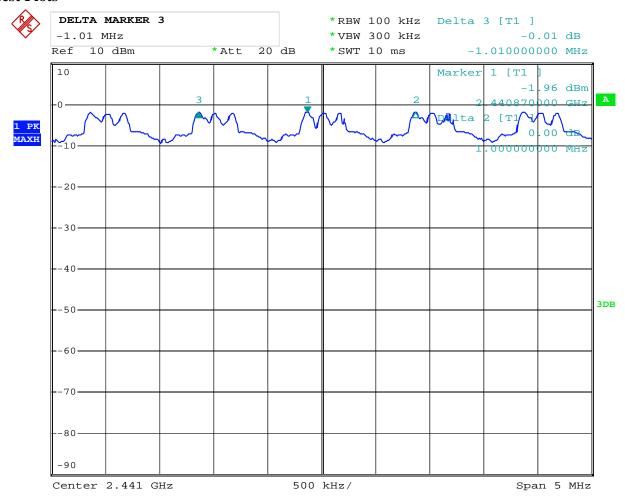
Date: 2013-09-18



Type of Modulation: $\sqrt{1/4}$ QPSK

EUT	GameStick	Model	PJGS2367				
Mode	Hopping On		Input Voltage		120V		
Temperature	24 deg. C,		Humidity		56% RH		
Carrier Frequency Separation		Limit			Pass/ Fail		
	1.000MHz	≥ 25 kHz or 2	2/3 of 20 dB bandy	width	Pass		

Test Plots



Date: 11.SEP.2013 19:09:55

Page 57 of 106

Report No: 1309080-02

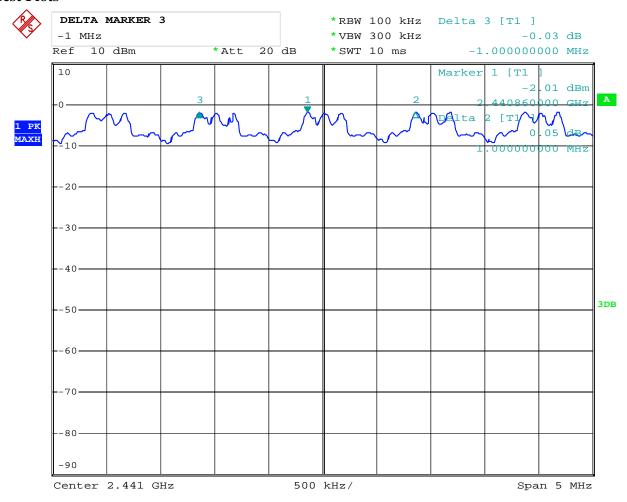
Date: 2013-09-18



Type of Modulation: 8DPSK

EUT	GameStick	Model		PJGS2367		
Mode	Hopping On		Input Voltage		120V	
Temperature	24 deg. C,	Humidity		56% RH		
Carrier I	Carrier Frequency Separation		Limit		Pass/ Fail	
1.000MHz		≥ 25 kHz or 2/3 of 20 dB bandwidth		Pass		

Test Plots



Date: 12.SEP.2013 11:03:34

Report No: 1309080-02 Page 58 of 106

Date: 2013-09-18



10. Number of Hopping Channels

10.1 Regulation

According to §15.247(a)(1)(iii), frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used. According to §15.247(b)(1), for frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

10.2 Limits of Number of Hopping Channels

The frequency hopping systems in the 2400-2483.5MHz band shall use at least 15 channels.

10.3 Test Procedure

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Set the spectrum analyzer as follows: Span = the frequency band of operation; RBW=VBW=100 kHz; Sweep = auto; Detector function = peak; Trace = max hold
- 3. Record the number of hopping channels.

Page 59 of 106

Report No: 1309080-02

Date: 2013-09-18

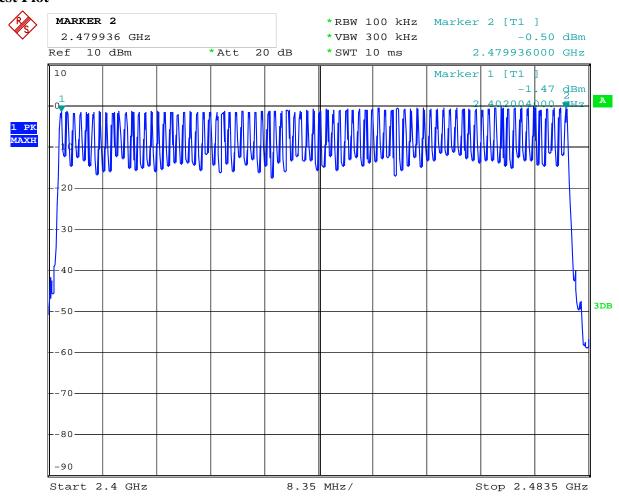


10.4Test Result

Type of Modulation: GFSK

EUT	GameStick		Model]	PJGS2367
Mode	Hopping On		Input Voltage	120V	
Temperature	24 deg. C,		Humidity	56% RH	
Operating Frequ	Operating Frequency Number of hopping channels		ping channels	Limit	Pass/ Fail
2402-2480MHz		79		≥ 15	Pass

Test Plot



Date: 11.SEP.2013 18:32:15

Page 60 of 106

Report No: 1309080-02

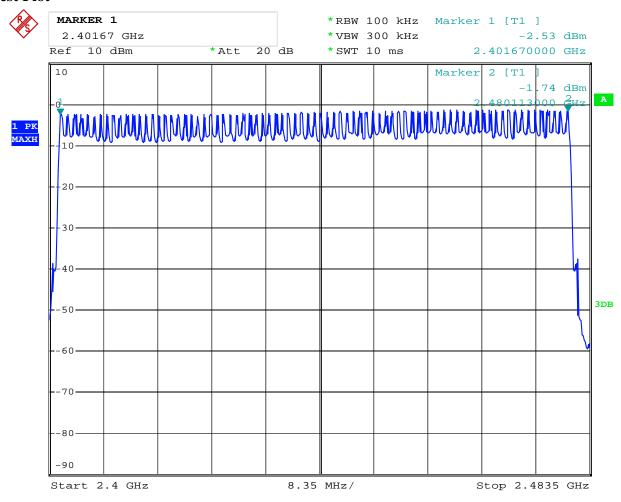
Date: 2013-09-18



Type of Modulation: $\pi/4$ QPSK

EUT	GameStick		Model		PJGS2367	
Mode	Hopping On		Input Voltage		120V	
Temperature	24 deg. C,		Humidity		56% RH	
Operating Frequency		Number of hopp channels	oing	Liı	nit	Pass/ Fail
2402-2480MHz		79		≥ 15		Pass

Test Plot



Date: 11.SEP.2013 19:22:43

Page 61 of 106

Report No: 1309080-02

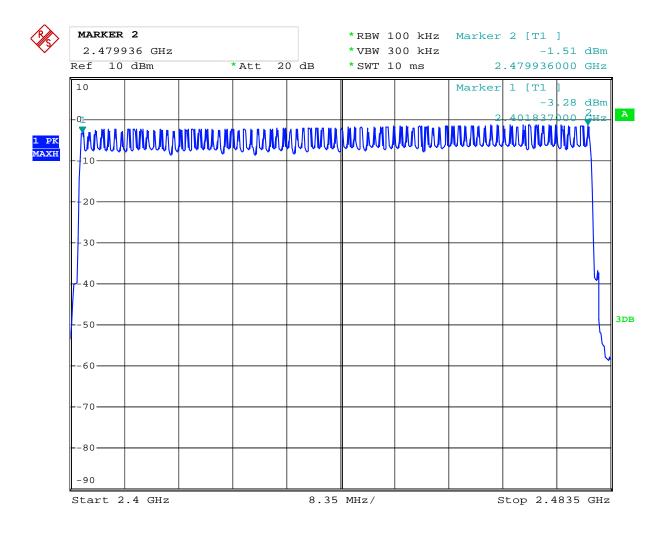
Date: 2013-09-18



Type of Modulation: 8DPSK

EUT	GameStick		Model		PJGS2367	
Mode	Hopping On		Input Voltage		120V	
Temperature	24 deg. C,		Humidity		56% RH	
Operating Frequency		Number of hopp channels	oing	Liı	nit	Pass/ Fail
2402-2480MHz		79		≥ 15		Pass

Test Plot



Date: 12.SEP.2013 11:33:02

Report No: 1309080-02

Date: 2013-09-18



Page 62 of 106

11. Time of Occupancy (Dwell Time)

11.1 Regulation

According to §15.247(a)(1)(iii), frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

11.2 Limits of Carrier Frequency Separation

The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed

11.3 Test Procedure

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Set the spectrum analyzer as follows: Span = zero span, centered on a hopping channel; RBW = 1 MHz; VBW
- ≥ RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak; Trace = max hold

3. Measure the dwell time using the marker-delta function.

- 4. Repeat above procedures until all frequencies measured were complete.
- 5. Repeat this test for different modes of operation (e.g., data rate, modulation format, etc.), if applicable.

Report No: 1309080-02 Page 63 of 106

Date: 2013-09-18



11.4 Test Result

Type of Modulation: GFSK

EUT		GameStick		Model		PJGS2367	
Mode		Keep Transmitting		Input Voltage		120V	
Temperature		24 deg. C,		Humidity		56% RH	
Channel	Reading		Hoping Rate		Actual	Limit	
Low	2.98		266.667 hop/s		0.318	0.4s	
Middle	2.98		266.667 hop/s		0.318	0.4s	
High	2.98		266.667 hop/s		0.318	0.4s	

Actual = Reading \times (Hopping rate / Number of channels) \times Test period, Test period = 0.4 [seconds / channel] \times 79 [channel] = 31.6 [seconds] NOTE: The EUT makes worst case 1600 hops per second or 1 time slot has a length of 625 μ s with 79 channels. A DH5 Packet needs 5 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 266.667 hops per second with 79 channels.

Note: DH5 was the worse case

Page 64 of 106

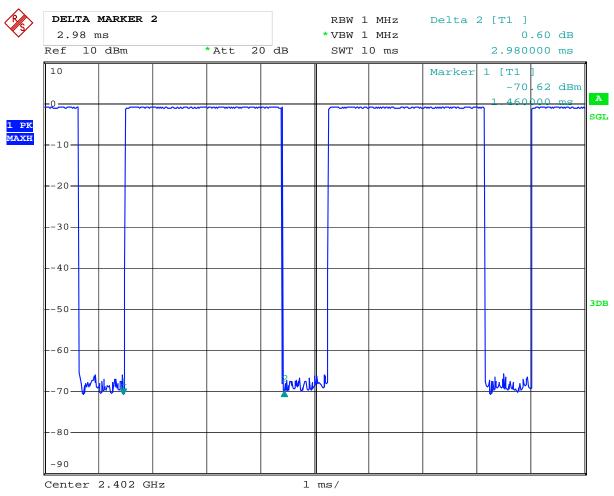
Report No: 1309080-02

Date: 2013-09-18



Test Plots:

Low Channel:



Date: 11.SEP.2013 18:12:50

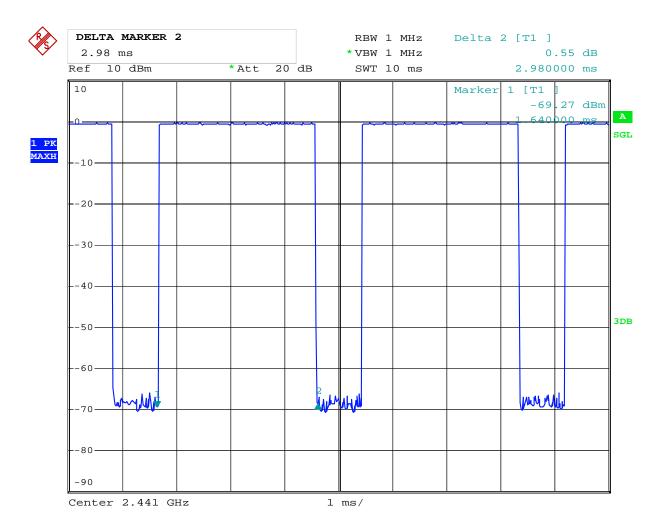
Page 65 of 106

Report No: 1309080-02

Date: 2013-09-18



Middle Channel:



Date: 11.SEP.2013 18:13:48

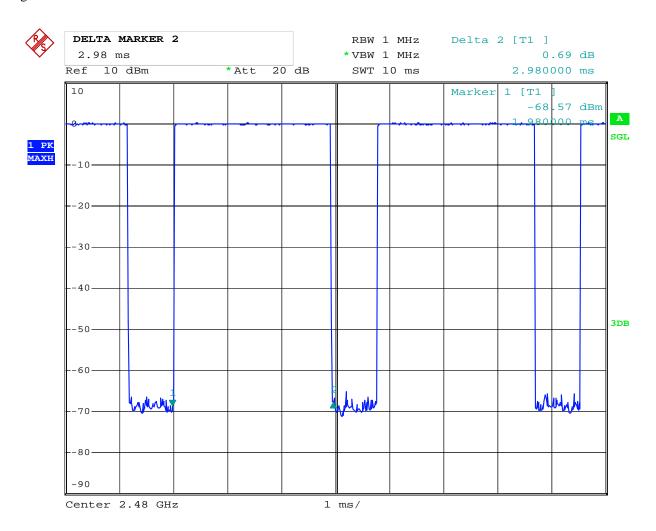
Page 66 of 106

Report No: 1309080-02

Date: 2013-09-18



High Channel



Date: 11.SEP.2013 18:15:05

Report No: 1309080-02 Page 67 of 106

Date: 2013-09-18



Test Result

Type of Modulation: Л/4QPSK

EUT		GameStick		Model		PJGS2367	
Mode		Keep Transmitting		Input Voltage		120V	
Temperature		24 deg. C,		Humidity		56% RH	
Channel	Reading		Hoping Rate		Actual		Limit
Low	2.96		266.667 hop/s		0.316		0.4s
Middle		2.96	266.667 hop/s		0.316		0.4s
High		2.96	266.667 hop/s		0.316		0.4s

Actual = Reading \times (Hopping rate / Number of channels) \times Test period, Test period = 0.4 [seconds / channel] \times 79 [channel] = 31.6 [seconds] NOTE: The EUT makes worst case 1600 hops per second or 1 time slot has a length of 625 μ s with 79 channels. A DH5 Packet needs 5 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 266.667 hops per second with 79 channels.

Note: DH5 was the worse case

Page 68 of 106

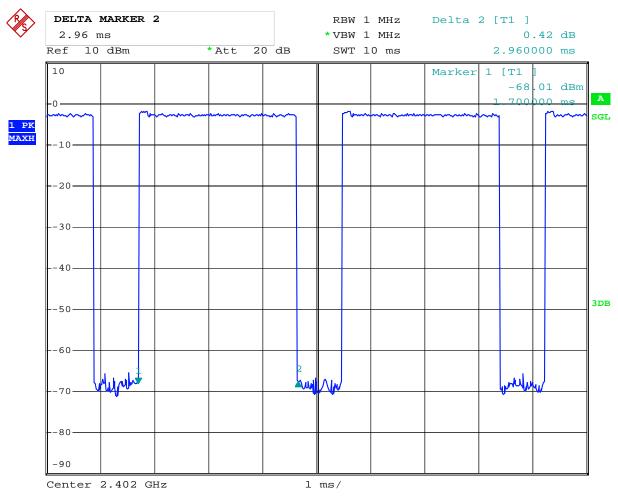
Report No: 1309080-02

Date: 2013-09-18



Test Plots:

Low Channel:



Date: 11.SEP.2013 18:42:24

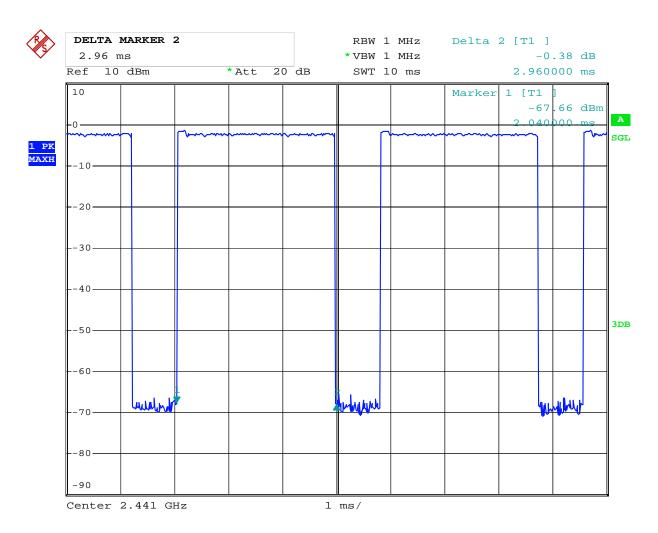
Page 69 of 106

Report No: 1309080-02

Date: 2013-09-18



Middle Channel:



Date: 11.SEP.2013 18:43:31

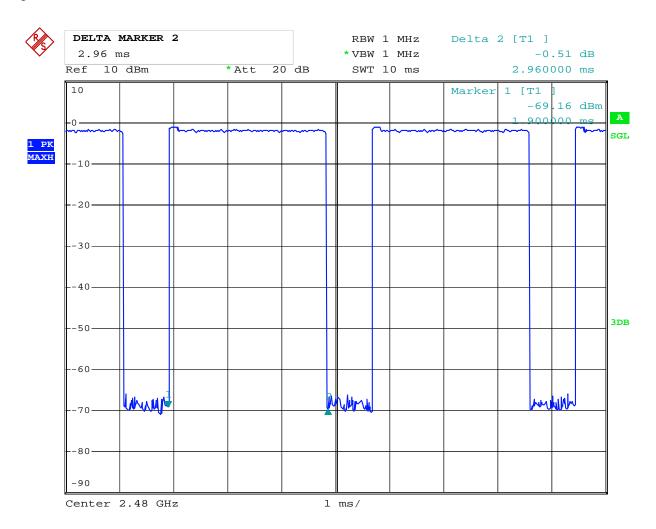
Page 70 of 106

Report No: 1309080-02

Date: 2013-09-18



High Channel



Date: 11.SEP.2013 18:45:31

Report No: 1309080-02 Page 71 of 106

Date: 2013-09-18



Type of Modulation: 8DPSK

EUT		GameStick		Model		PJGS2367	
Mode		Keep Transmitting		Input Voltage		120V	
Temperature		24 deg. C,		Humidity		56% RH	
Channel		Reading	Hoping Rate		Actual		Limit
Low	2.96		266.667 hop/s		0.316		0.4s
Middle	3.04		266.667 hop/s		0.324		0.4s
High	2.98		266.667 hop/s		0.318		0.4s

Actual = Reading \times (Hopping rate / Number of channels) \times Test period, Test period = 0.4 [seconds / channel] \times 79 [channel] = 31.6 [seconds] NOTE: The EUT makes worst case 1600 hops per second or 1 time slot has a length of 625 μ s with 79 channels. A DH5 Packet needs 5 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 266.667 hops per second with 79 channels.

Note: DH5 was the worse case

Page 72 of 106

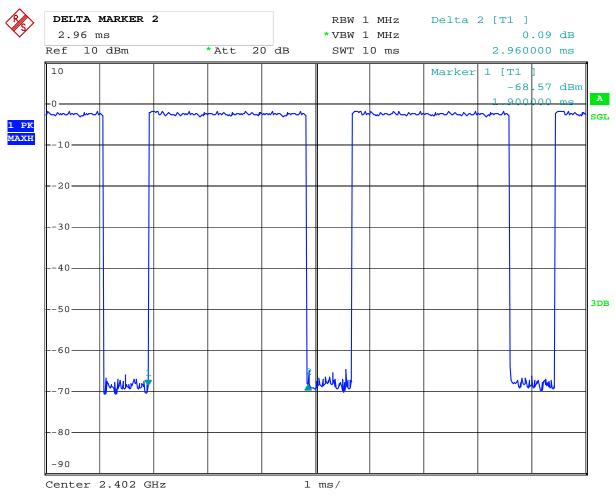
Report No: 1309080-02

Date: 2013-09-18



Test Plots:

Low Channel:



Date: 12.SEP.2013 10:33:32

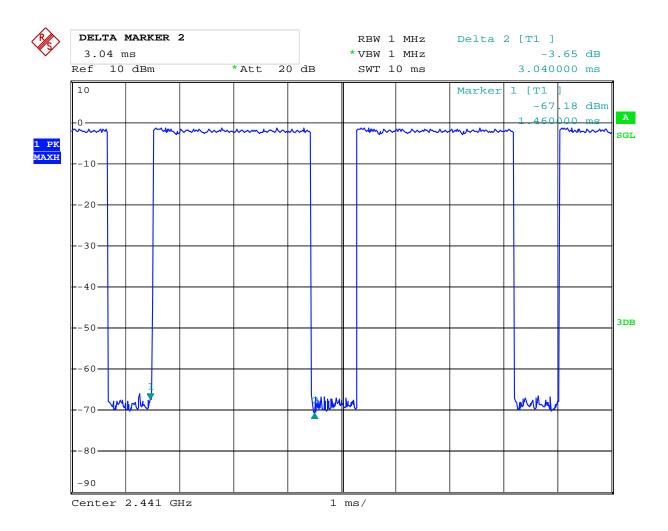
Page 73 of 106

Report No: 1309080-02

Date: 2013-09-18



Middle Channel:



Date: 12.SEP.2013 10:34:43

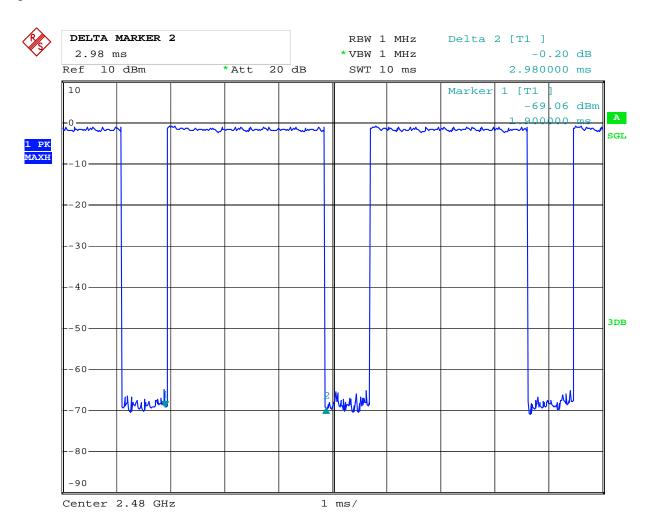
Page 74 of 106

Report No: 1309080-02

Date: 2013-09-18



High Channel



Date: 12.SEP.2013 10:35:55

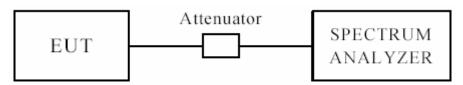
Report No: 1309080-02 Page 75 of 106

Date: 2013-09-18



12 Out of Band Measurement

12.1 Test Setup



The restricted band requirement based on radiated emission test; please see the clause 6 for the test setup

12.2 Limits of Out of Band Emissions Measurement

- 1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

12.3 Test Procedure

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of radiated emission test. Peak values with RBW=VBW=1MHz and PK detector.

For bandage test, the spectrum set as follows: RBW=100, VBW=300 kHz. A conducted measurement used

Note: 1. For band-edge measurement, the frequency from 30MHz-25GHz was tested. And It met the FCC rule.

2. For Restrict band measurement, only the worse case was recorded. GSKF was the worse case.

Page 76 of 106

Report No: 1309080-02

Date: 2013-09-18

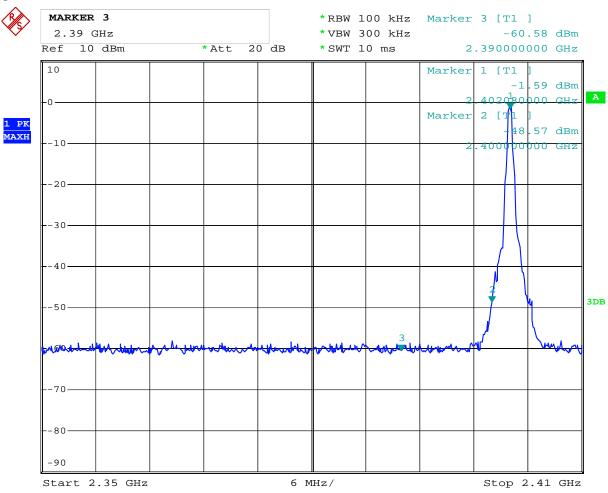


Type of Modulation: GFSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	Low Channel
Mode	Keeping Transmitting	Input Voltage	120V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 11.SEP.2013 18:17:18

Page 77 of 106

Report No: 1309080-02

Date: 2013-09-18

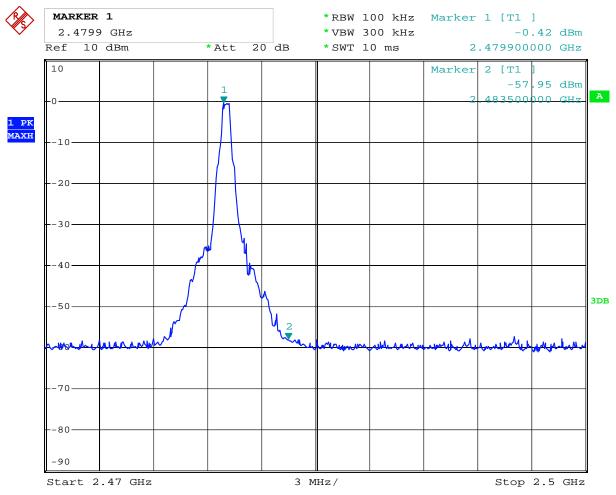


Type of Modulation: GFSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	High Channel
Mode	Keeping Transmitting	Input Voltage	120V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 11.SEP.2013 18:22:49

Page 78 of 106

Report No: 1309080-02

Date: 2013-09-18

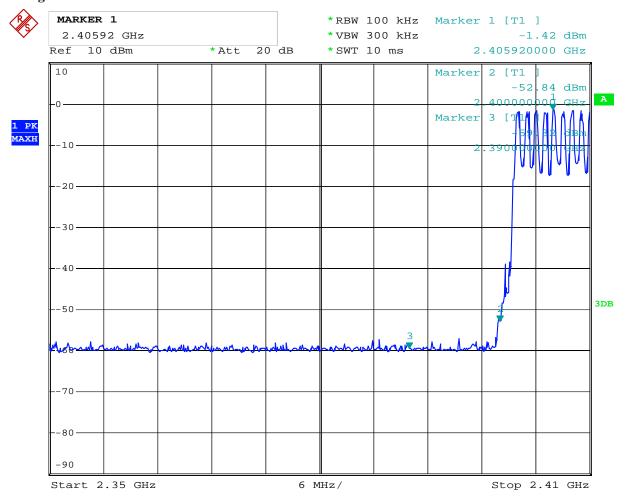


Type of Modulation: GFSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 11.SEP.2013 18:19:33

Report No: 1309080-02 Page 79 of 106

Date: 2013-09-18

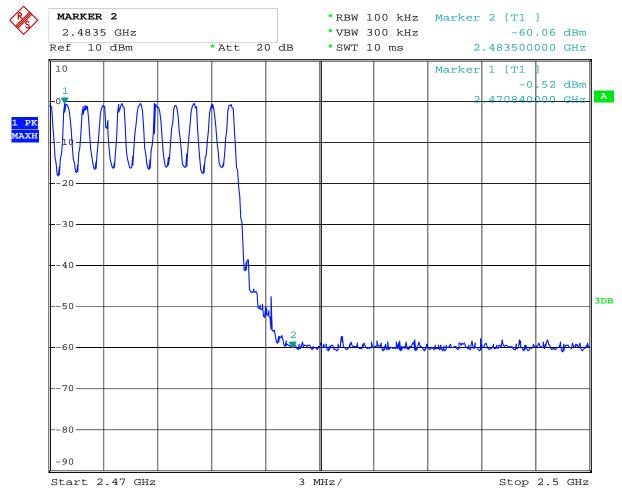


Type of Modulation: GFSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 11.SEP.2013 18:21:37

Page 80 of 106

Report No: 1309080-02

Date: 2013-09-18

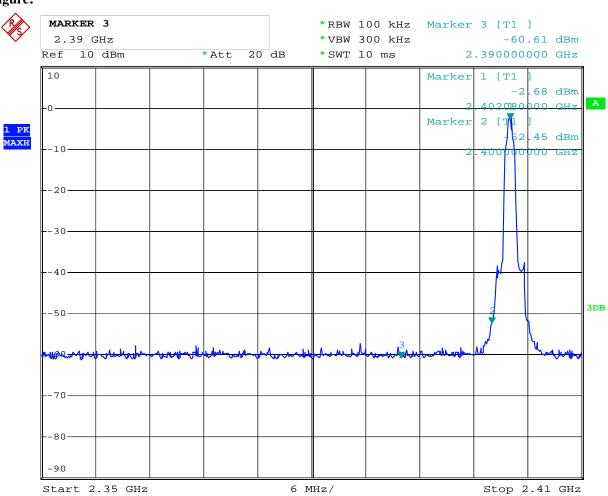


Type of Modulation: JI/4QPSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	Low Channel
Mode	Keeping Transmitting	Input Voltage	120V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 11.SEP.2013 18:47:03

Page 81 of 106

Report No: 1309080-02

Date: 2013-09-18

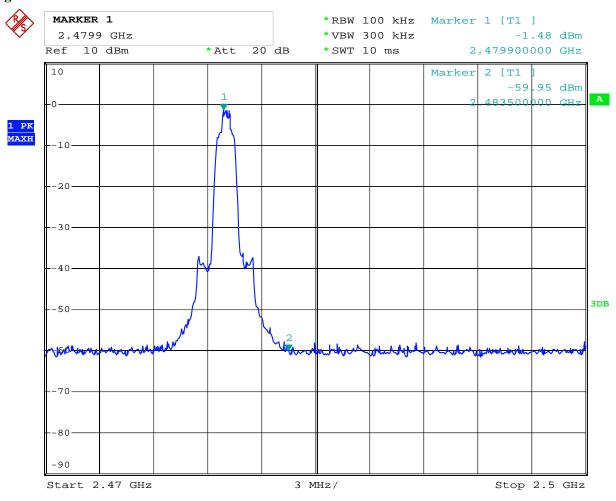


Type of Modulation: JI/4QPSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	High Channel
Mode	Keeping Transmitting	Input Voltage	120V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 11.SEP.2013 18:57:34

Page 82 of 106

Date: 2013-09-18

Report No: 1309080-02

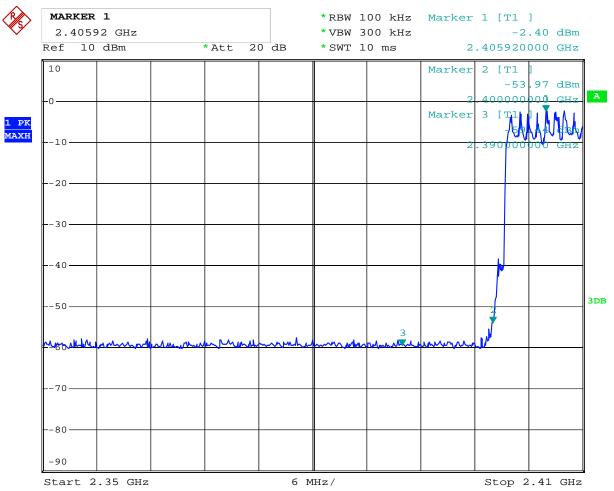


Type of Modulation: JI/4QPSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 11.SEP.2013 18:50:10

Report No: 1309080-02 Page 83 of 106

Date: 2013-09-18

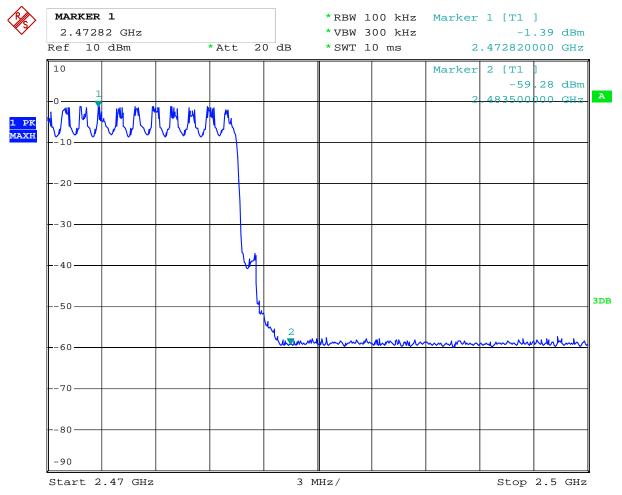


Type of Modulation: JI/4QPSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 11.SEP.2013 18:56:46

Page 84 of 106

Report No: 1309080-02

Date: 2013-09-18

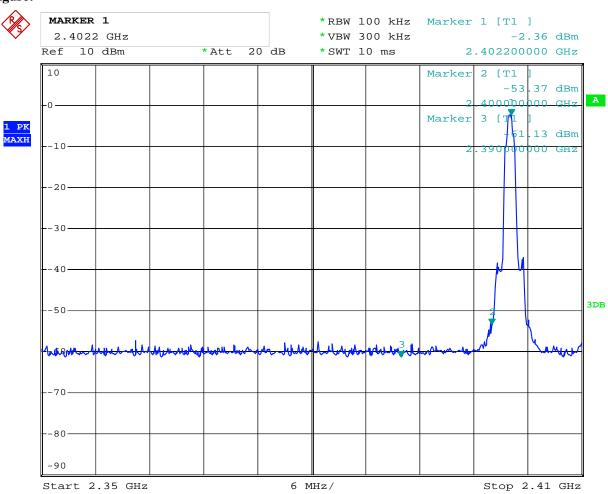


Type of Modulation: 8DPSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	Low Channel
Mode	Keeping Transmitting	Input Voltage	120V
Temperature	24 deg. C	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 12.SEP.2013 10:37:46

Page 85 of 106

Report No: 1309080-02

Date: 2013-09-18

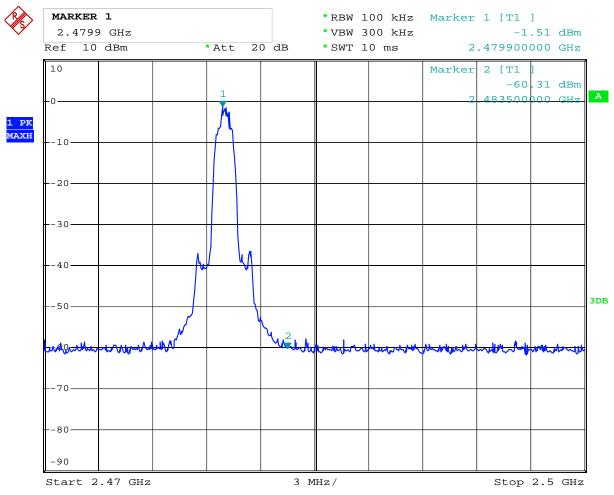


Type of Modulation: 8DPSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	High Channel
Mode	Keeping Transmitting	Input Voltage	120V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 12.SEP.2013 10:50:22

Page 86 of 106

Report No: 1309080-02

Date: 2013-09-18

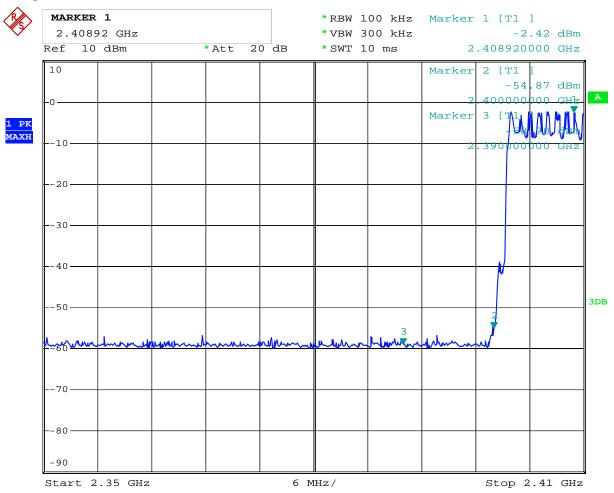


Type of Modulation: 8DPSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 12.SEP.2013 10:44:16

Page 87 of 106

Report No: 1309080-02

Date: 2013-09-18

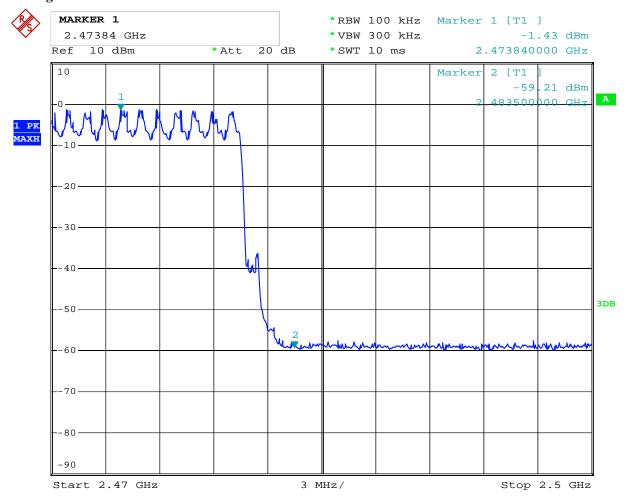


Type of Modulation: 8DPSK

12.4 Out of Band Test Result

Product:	GameStick	Test Mode:	Hopping mode
Mode	Hopping On	Input Voltage	120V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 12.SEP.2013 10:49:48

Report No: 1309080-02 Page 88 of 106

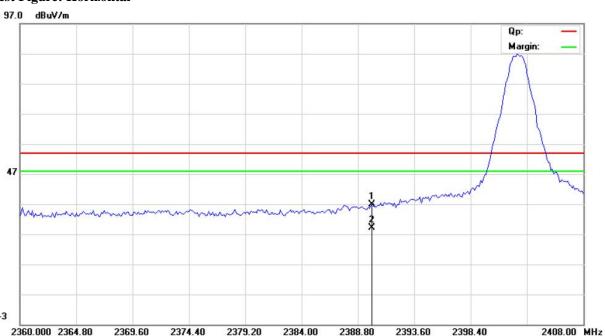
Date: 2013-09-18



12.4 Restricted band Measurement (Worse case: GFSK Mode)

Product:	GameStick		Test Mode:	Low Channel
Mode	Keeping Transmitting		Input Voltage	120V~
Temperature	24 deg. C		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in	PK (dBμV/m) 36.97			$74(dB\mu V/m)$
Restrict Band	AV(dBμV/m) 29.19		Limit	54(dBµV/m)
2390MHz				

Test Figure: Horizontal



Report No: 1309080-02 Page 89 of 106

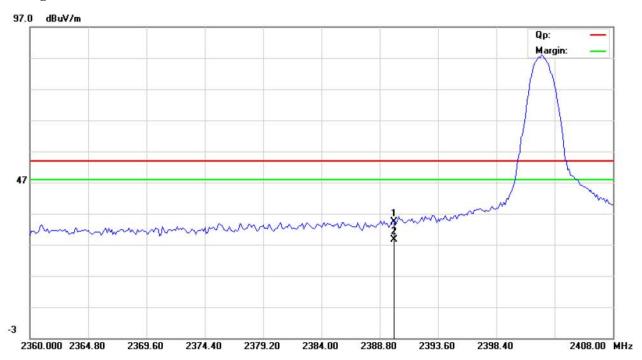
Date: 2013-09-18



12.4 Restricted band Measurement (Worse case: GFSK Mode)

Product:	GameStick		Test Mode:	Low Channel
Mode	Keeping Transmitting		Input Voltage	120V~
Temperature	24 deg. C		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in	PK (dBμV/m) 34.49			74(dBµV/m)
Restrict Band	AV(dBμV/m) 28.67		Limit	54(dBµV/m)
2390MHz				

Test Figure: Vertical



Report No: 1309080-02 Page 90 of 106

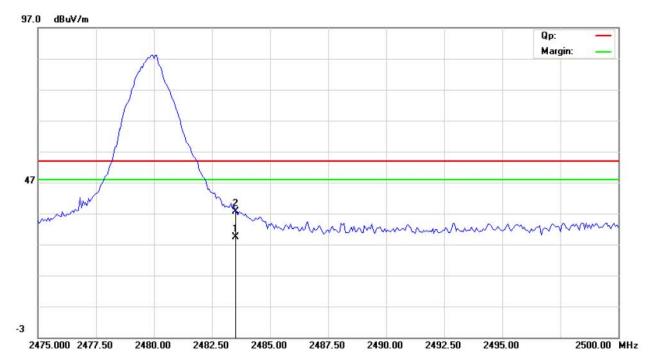
Date: 2013-09-18



12.4 Restricted band Measurement (Worse case: GFSK Mode)

Product:	GameStick		Test Mode:	High Channel
Mode	Keeping Transmitting		Input Voltage	120V~
Temperature	24 deg. C		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in	PK (dBμV/m) 29.31			$74(dB\mu V/m)$
Restrict Band	AV(dBμV/m) 37.56		Limit	$54(dB\mu V/m)$
2483.5MHz				

Test Figure: Horizontal



Report No: 1309080-02 Page 91 of 106

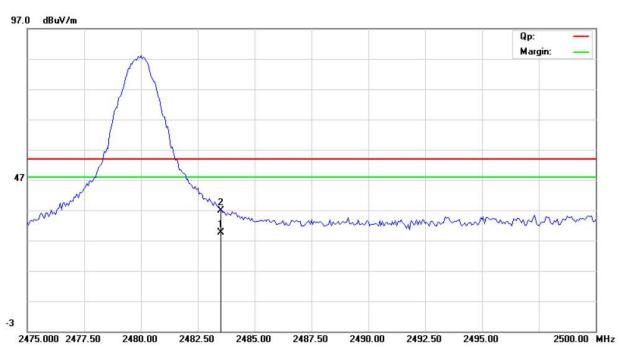
Date: 2013-09-18



12.4 Restricted band Measurement (Worse case: GFSK Mode)

Product:	GameStick		Test Mode:	High Channel
Mode	Keeping Transmitting		Input Voltage	120V~
Temperature	24 deg. C		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in	PK (dBμV/m) 36.98			$74(dB\mu V/m)$
Restrict Band	AV(dBμV/m) 29.55		Limit	54(dBµV/m)
2483.5MHz				

Test Figure: Vertical



Report No: 1309080-02 Page 92 of 106

Date: 2013-09-18

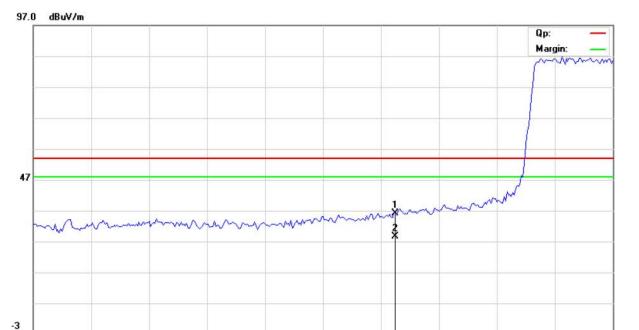


12.4 Restricted band Measurement (Worse case: GFSK Mode)

		· ·		
Product:	GameStick		Test Mode:	Hopping Mode
Mode	Keeping Transmitting		Input Voltage	120V~
Temperature	24 deg. C		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in	PK (dBµV/m)	36.19		$74(dB\mu V/m)$
Restrict Band	AV(dBμV/m) 28.75		Limit	54(dBμV/m)
2390MHz				

Test Figure: Horizontal

2360.000 2364.80



2384.00

2388.80

2393.60

2398.40

2408.00 MHz

2369.60

2374.40

2379.20

Report No: 1309080-02 Page 93 of 106

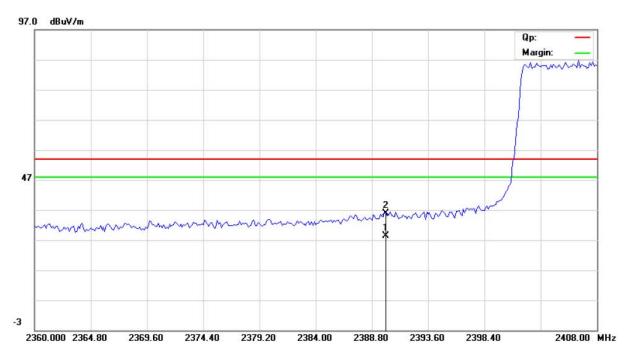
Date: 2013-09-18



12.4 Restricted band Measurement (Worse case: GFSK Mode)

Product:	GameStick		Test Mode:	Hopping Mode
Mode	Keeping Transmitting		Input Voltage	120V~
Temperature	24 deg. C		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in	PK (dBμV/m) 28.36			$74(dB\mu V/m)$
Restrict Band	AV(dBμV/m) 35.82		Limit	$54(dB\mu V/m)$
2390MHz				

Test Figure: Vertical



Report No: 1309080-02 Page 94 of 106

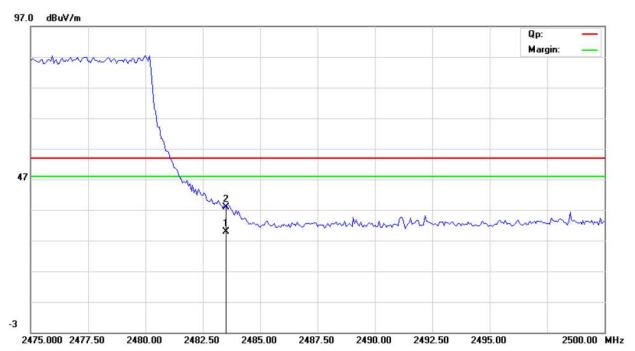
Date: 2013-09-18



12.4 Restricted band Measurement (Worse case: GFSK Mode)

Product:	GameStick		Test Mode:	Hopping Mode
Mode	Keeping Transmitting		Input Voltage	120V~
Temperature	24 deg. C		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in	PK (dBμV/m) 29.96			$74(dB\mu V/m)$
Restrict Band	AV(dBμV/m) 37.80		Limit	54(dBµV/m)
2483.5MHz				

Test Figure: Horizontal



Report No: 1309080-02 Page 95 of 106

Date: 2013-09-18

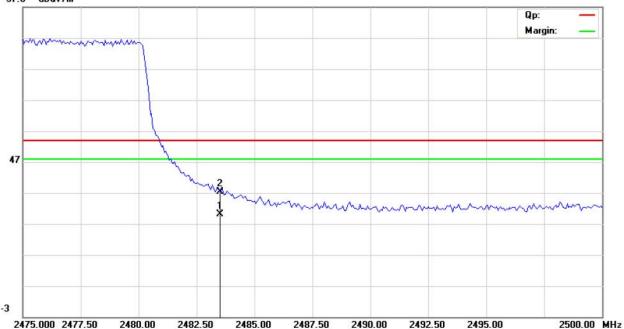


12.4 Restricted band Measurement (Worse case: GFSK Mode)

Product:	GameStick		Test Mode:	Hopping Mode
Mode	Keeping Transmitting		Input Voltage	120V~
Temperature	24 deg. C		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in	PK (dBμV/m) 37.47			$74(dB\mu V/m)$
Restrict Band	AV(dBμV/m) 30.22		Limit	$54(dB\mu V/m)$
2483.5MHz				

Test Figure: Vertical





Report No: 1309080-02 Page 96 of 106

Date: 2013-09-18



13.0 Antenna Requirement

13.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, 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.

And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

13.2 Antenna Connected constructions

Ceramic antenna used. The maximum Gain of the antennas is 2.0dBi.

Report No: 1309080-02 Page 97 of 106

Date: 2013-09-18



14.0 FCC ID Label

IC: 11079A-GTPJ2367 FCC ID: 2AATX-GTPJ2367

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



FCC ID Label Location

Report No: 1309080-02 Page 98 of 106

Date: 2013-09-18



15.0 Photo of testing

Conducted Emission Test Setup:



Page 99 of 106

Report No: 1309080-02

Date: 2013-09-18



Radiated Emission Test Setup:





The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it. or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co.,Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to adopt any other remedies which may be appropriate.

Report No: 1309080-02

Date: 2013-09-18



Photographs - EUT

Outside view





The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to

Page 101 of 106

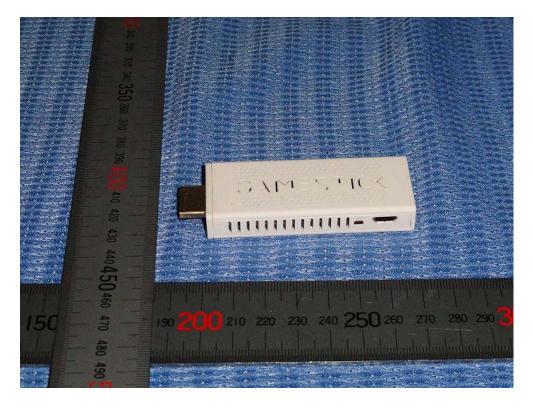
Report No: 1309080-02

Date: 2013-09-18



Outside view





The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co .,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to

Page 102 of 106

Report No: 1309080-02

Date: 2013-09-18



Outside view





The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co., Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co .,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to

Page 103 of 106

Report No: 1309080-02

Date: 2013-09-18



Outside view





The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co.,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to

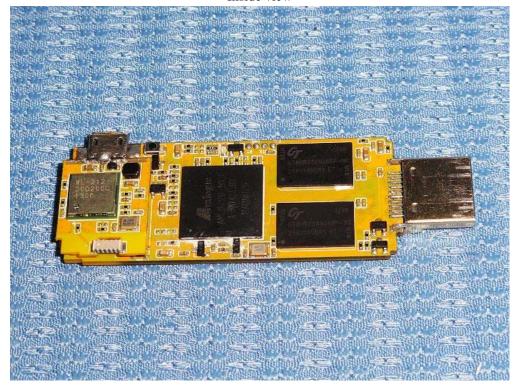
Page 104 of 106

Report No: 1309080-02

Date: 2013-09-18



Inside view





The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co .,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to

Page 105 of 106

Report No: 1309080-02

Date: 2013-09-18



Inside view





The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co .,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to

Page 106 of 106

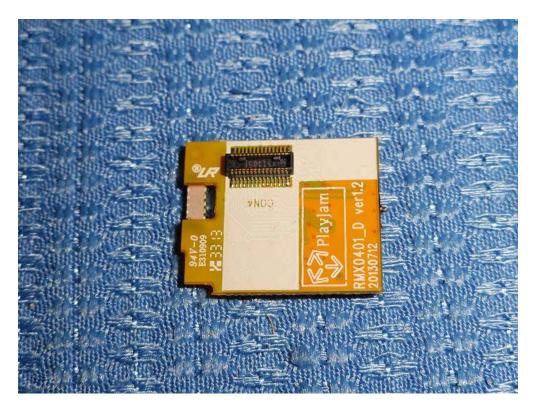
Report No: 1309080-02

Date: 2013-09-18



Inside view





End of the report

The report refers only to the sample tested and does not apply to the bulk.

This report is issued in confidence to the client and it will be strictly treated as such by the Shenzhen Timeway Technology Consulting Co.,Ltd. It may not be reproduced rather in its entirety or in part and it may not be used for adverting. The client to whom the report is issued may, however, show or send it . or a certified copy there of prepared by the Shenzhen Timeway Technology Consulting co .,Ltd to his customer. Supplier or others persons directly concerned. Shenzhen Timeway Technology Consulting co., Ltd will not, without the consent of the client enter into any discussion of correspondence with any third party concerning the contents of the report.

In the event of the improper use of the report. The Shenzhen Timeway Technology Consulting co .,Ltd reserves the rights to withdraw it and to