



Hong Kong

## FCC - TEST REPORT

Report Number : **60/790.13.024.03** (Revision 2.0) Date of Issue: 07<sup>th</sup> November 2013

Model : **Y-400Xt**

Product Type : **Wireless Gaming Headset (Decoder)**

Applicant : **Guillemot Corporation S.A.**

Address : **Place du Granier, B.P 97143, Chantepie, 35171, France**

Test Result :  **Positive**  **Negative**

Total pages including Appendices : **34**

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## 2. Details about the Test Laboratory

### Details about the Test Laboratory

Test site 1:

Company name: TÜV SÜD HONG KONG LTD.  
3/F, West Wing, Lakeside 2,  
10 Science Park West Avenue,  
Science Park, Shatin  
HK.

Telephone: 852 2776 1323

Fax: 852 2776 1372

Test site 2:

Company name: Global United Technology Service Co., Ltd.  
2nd Floor, Block No.2, Laodong Industrial Zone, Xixiang Road, Baoan  
District, Shenzhen, China

All measurement was performed on test site 2

### 3. Description of the Equipment Under Test

#### Description of the Equipment Under Test

Product: Decoder

Model no.: Y-400Xt

Serial number: NIL

Options and accessories: Audio cable

Rated Voltage: 5.0VDC – USB 5V

Rated Current: NIL

Rated Power: NIL

Frequency: NIL

Modulation type: shaped-8PSK

Antenna gain: 4.95 dBi

RF Transmission Frequency: 2406MHz-2474MHz

#### Auxiliary Equipment Used during Test:

DESCRIPTION	MANUFACTURER	MODEL NO.(SHIELD)	S/N(LENGTH)
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Hong Kong

#### 4. Summary of Test Standards

<b>Test Standards</b>	
FCC Part 15 Subpart C, Intentional Radiators, 10-1-12 Edition	PART 15 – RADIO FREQUENCY DEVICES Subpart C – Intentional Radiators

## 5. Summary of Test Results

Technical Requirements					
FCC Part 15					
Test Condition	Pages	Test site	Test Result		
			Pass	Fail	N/A
Conducted Emission AC Power Port	8	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conducted peak output power	10	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Band edge compliance of RF emissions	12	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spurious RF conducted emissions	17	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Spurious radiated emissions	21	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6dB bandwidth	26	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Power spectral density	30	Site 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## 6. General Remarks

### Remarks

This submittal(s) (test report) is intended for FCC ID: NAM4460089T complies with Section, 15.207, 15.209, 15.247 of the FCC Part 15.

All the configurations of the product were tested and only the worst test results listed in the report.

### SUMMARY:

All tests according to the regulations cited on page 5 were

■ - Performed

□ - **Not** Performed

The Equipment Under Test

■ - **Fulfills** the general approval requirements.

□ - **Does not** fulfill the general approval requirements.

Sample Received Date: 21<sup>st</sup> May 2013

Testing Start Date: 21<sup>st</sup> May 2013

Testing End Date: 30<sup>th</sup> May 2013

- TÜV SÜD HONG KONG LTD. -

Reviewed by:



Edmond FUNG



Prepared by:



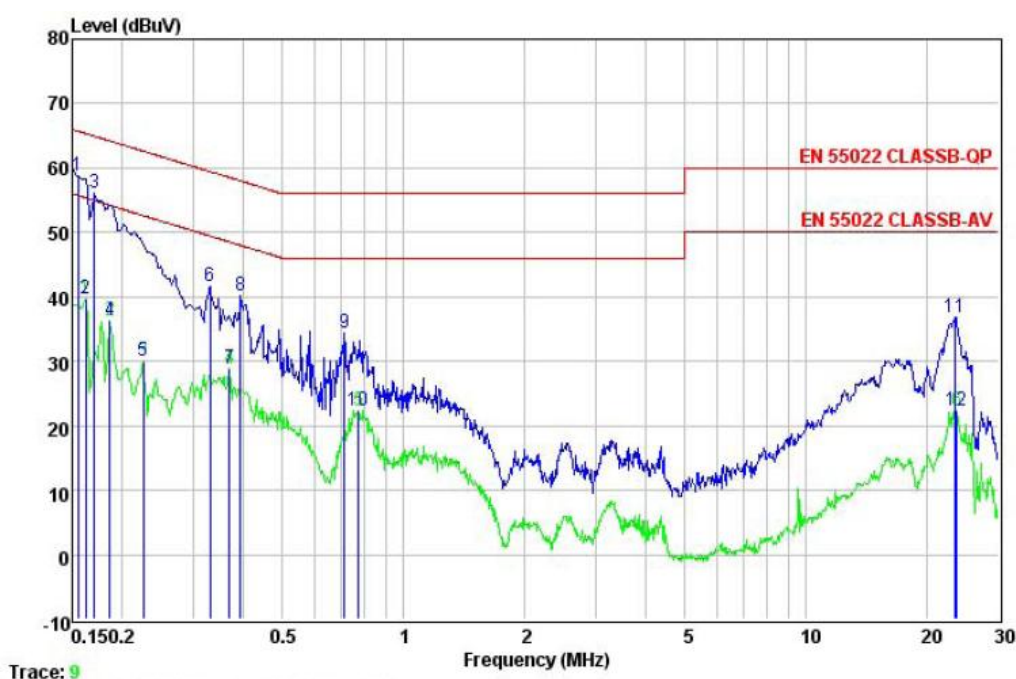
Chan Kwong Ngai

## 7. Technical Requirement

### 7.1 Conducted Emission Test 150kHz – 30MHz

Date of test : 29<sup>th</sup> May 2013  
 Operating mode : Xbox connect mode  
 Tested on : Xbox AC Mains, Live  
 Remarks : NIL

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



Trace: 9

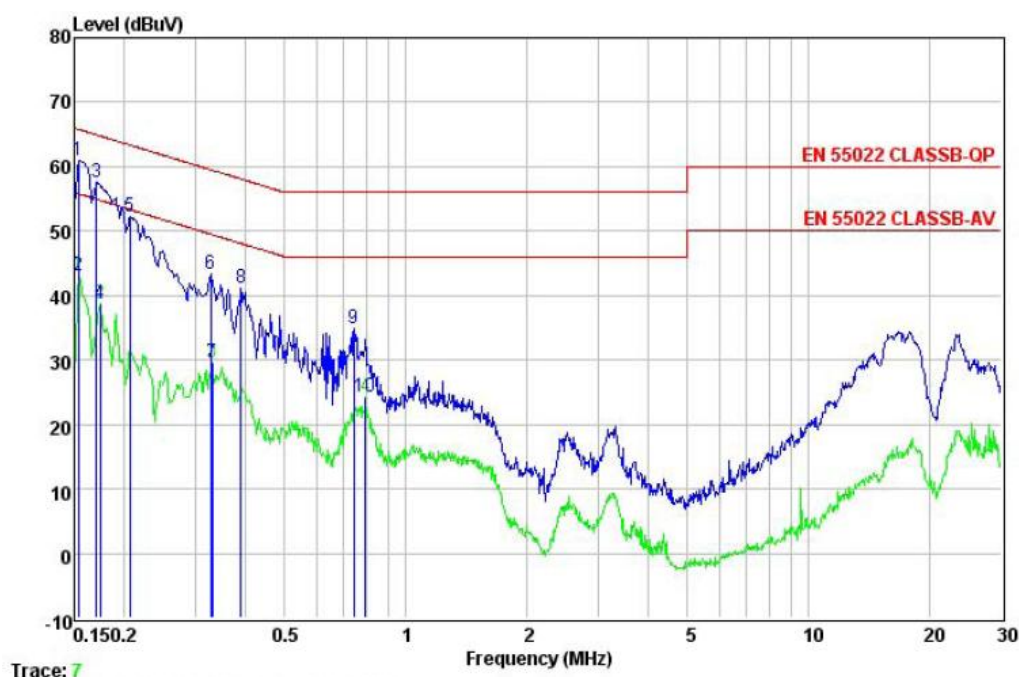
	Read Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.155	47.71	10.25	0.79	58.75	65.74	-6.99	QP
2	0.162	28.70	10.24	0.78	39.72	55.34	-15.62	Average
3	0.170	45.06	10.23	0.78	56.07	64.94	-8.87	QP
4	0.186	25.29	10.22	0.76	36.27	54.20	-17.93	Average
5	0.226	19.05	10.23	0.76	30.04	52.61	-22.57	Average
6	0.330	30.71	10.27	0.73	41.71	59.44	-17.73	QP
7	0.369	17.87	10.27	0.72	28.86	48.52	-19.66	Average
8	0.393	29.25	10.28	0.72	40.25	57.99	-17.74	QP
9	0.712	23.34	10.18	0.77	34.29	56.00	-21.71	QP
10	0.771	11.30	10.19	0.79	22.28	46.00	-23.72	Average
11	23.387	25.49	10.48	0.89	36.86	60.00	-23.14	QP
12	23.636	10.97	10.49	0.88	22.34	50.00	-27.66	Average



### Conducted Emission Test 150kHz – 30MHz

Date of test : 29<sup>th</sup> May 2013  
 Operating mode : Xbox connect mode  
 Tested on : Xbox AC Mains, Neutral  
 Remarks : NIL

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed



Trace: 7

	Freq	Read Level	LISN Factor	Cable Loss	Level	Limit Line	Over Limit	Remark
	MHz	dBuV	dB	dB	dBuV	dBuV	dB	
1	0.154	49.87	10.27	0.79	60.93	65.78	-4.85	QP
2	0.154	32.08	10.27	0.79	43.14	55.78	-12.64	Average
3	0.170	46.59	10.25	0.78	57.62	64.94	-7.32	QP
4	0.174	27.68	10.25	0.77	38.70	54.77	-16.07	Average
5	0.206	41.34	10.23	0.76	52.33	63.36	-11.03	QP
6	0.327	32.22	10.25	0.74	43.21	59.53	-16.32	QP
7	0.330	18.50	10.25	0.73	29.48	49.44	-19.96	Average
8	0.389	30.24	10.26	0.72	41.22	58.08	-16.86	QP
9	0.743	24.03	10.17	0.78	34.98	56.00	-21.02	QP
10	0.792	13.18	10.17	0.80	24.15	46.00	-21.85	Average

## 7.2 Conducted peak output power

### Test Method

The transmitter output connected to the Spectrum analyzer and set to the peak power detection.

### Limits for conducted peak output power measurements

Frequency Range MHz	Limit W	Limit dBm
2400-2483.5	≤1.0	≤30.0



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### Conducted peak output power

Date of test : 29<sup>th</sup> May 2013

Remarks : NIL

Test Result

Passed

Not Passed

Type	Channel		
	2406 MHz	2442 MHz	2474 MHz
shaped-8PSK	1.64 dBm	-0.37 dBm	-0.33 dBm

## 7.3 Band edge Measurement

### Test Method

The band edge compliance of RF radiated emission should be measured by following the guidance in ANSI C63.4 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW and VBW to 1MHz to measure the peak field strength and set RBW to 1MHz and VBW to 10Hz to measure the average radiated field strength.

The conducted RF band edge was measured by using a spectrum analyzer. Set span wide enough to capture the highest in-band emission and the emission at the band edge. Set RBW and VBW to 100kHz, to measure the conducted peak band edge.

### Limits

According to §15.247(d), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in 15.209(a) (see Section 15.205(c)).

Frequency MHz	Limit Average dBuV/m	Limit Peak dBuV/m
Below 2390 Above 2483.5	54	74

## Band edge Measurement

Date of test : 29<sup>th</sup> May 2013

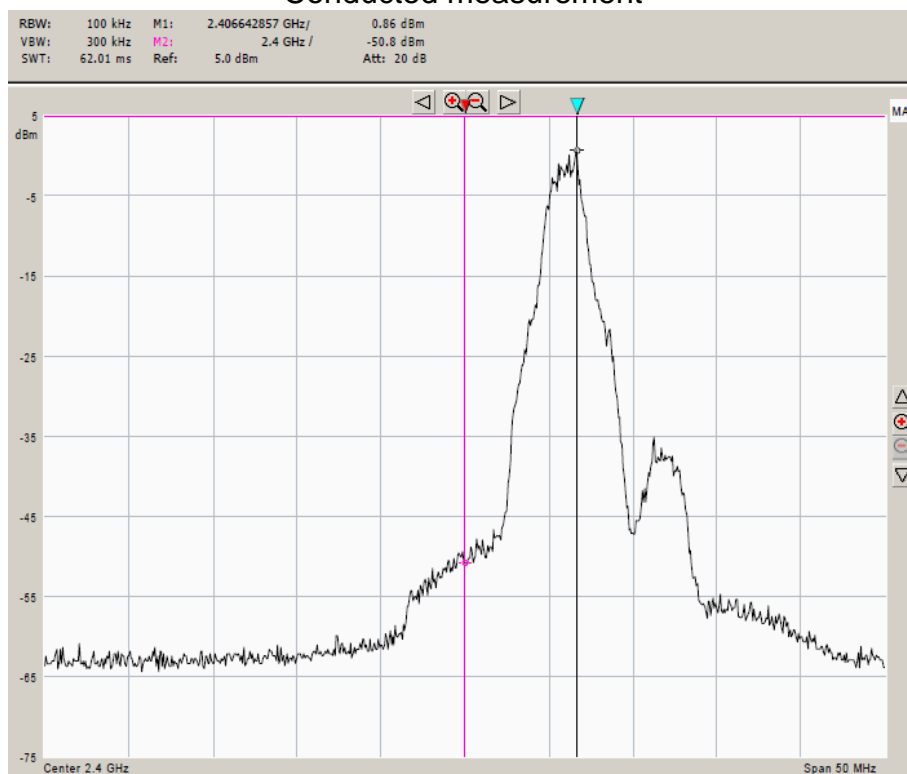
Remarks : NIL

Test Result

Passed

Not Passed

### Conducted measurement



Frequency (MHz)	Reading (dBm)	Limit (-20dBc)	Margin (dB)
2400.000	-50.8	-20.86	-29.94
2406.642	-0.86	-	-

## Band edge Measurement

Date of test : 29<sup>th</sup> May 2013

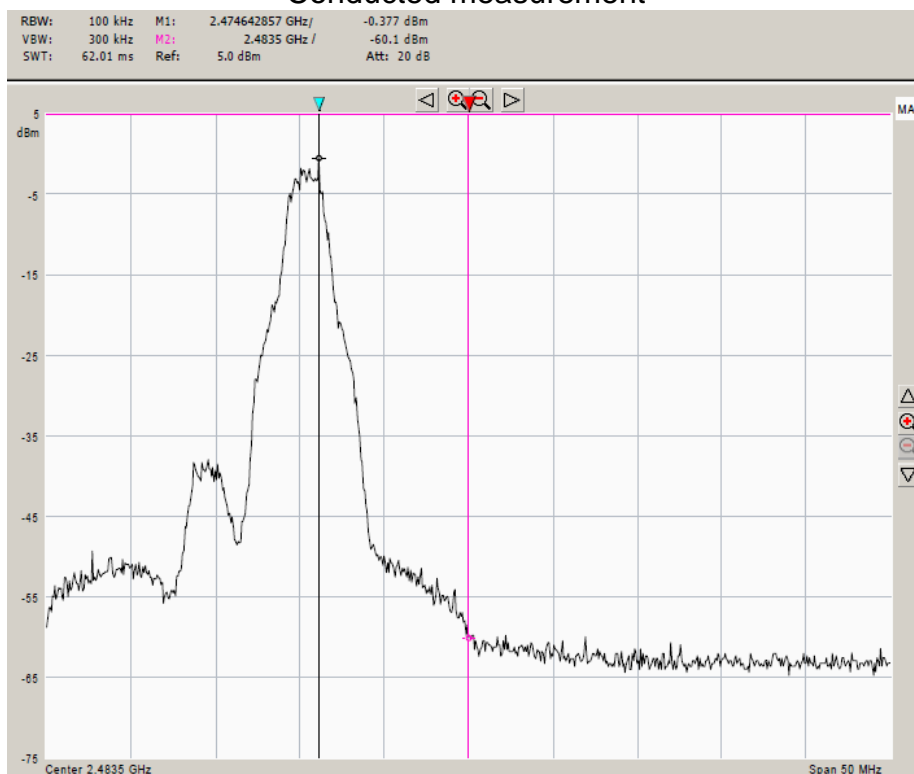
Remarks : NIL

Test Result

Passed

Not Passed

### Conducted measurement



Frequency (MHz)	Reading (dBm)	Limit (-20dBc)	Margin (dB)
2474.642	-0.38	-	-
2483.500	-60.1	-20.38	-39.72

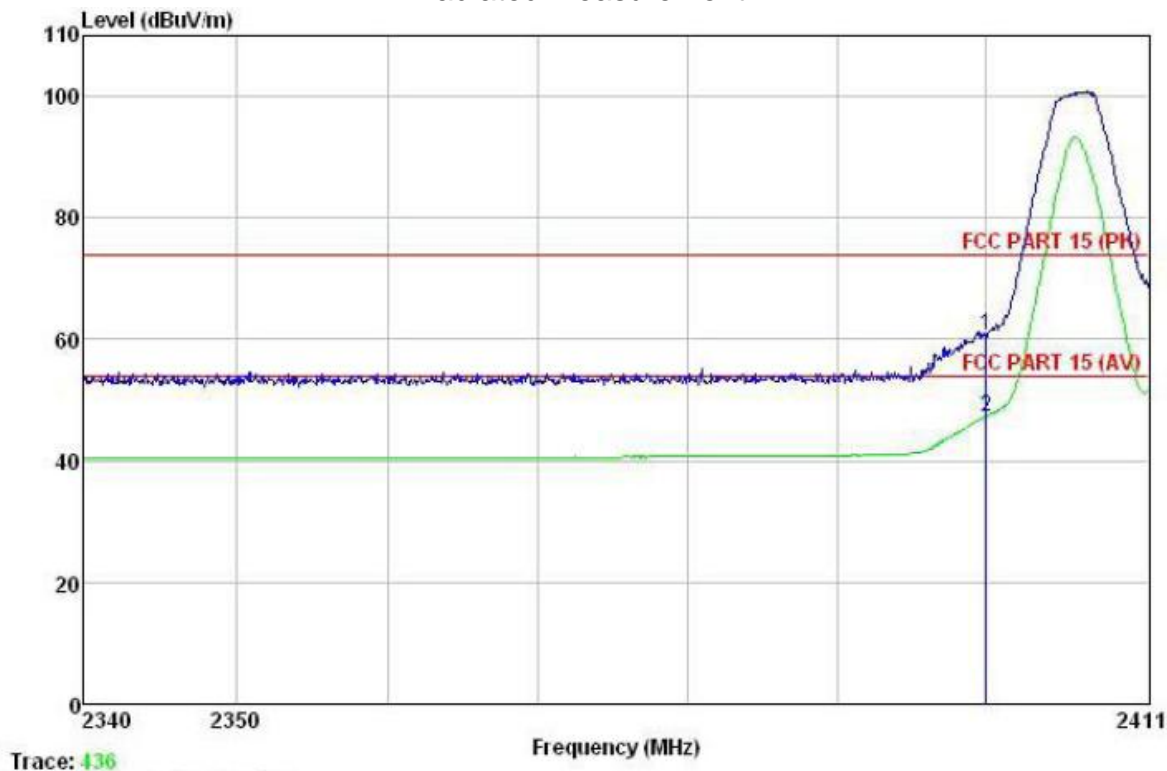
### Band edge Measurement

Date of test : 29<sup>th</sup> May 2013

Remarks : NIL

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Radiated measurement



Frequency (MHz)	Reading (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector
2400.000	60.68	74.0	-13.32	PK
2400.000	47.21	54.0	-6.79	AV

### Band edge Measurement

Date of test : 29<sup>th</sup> May 2013

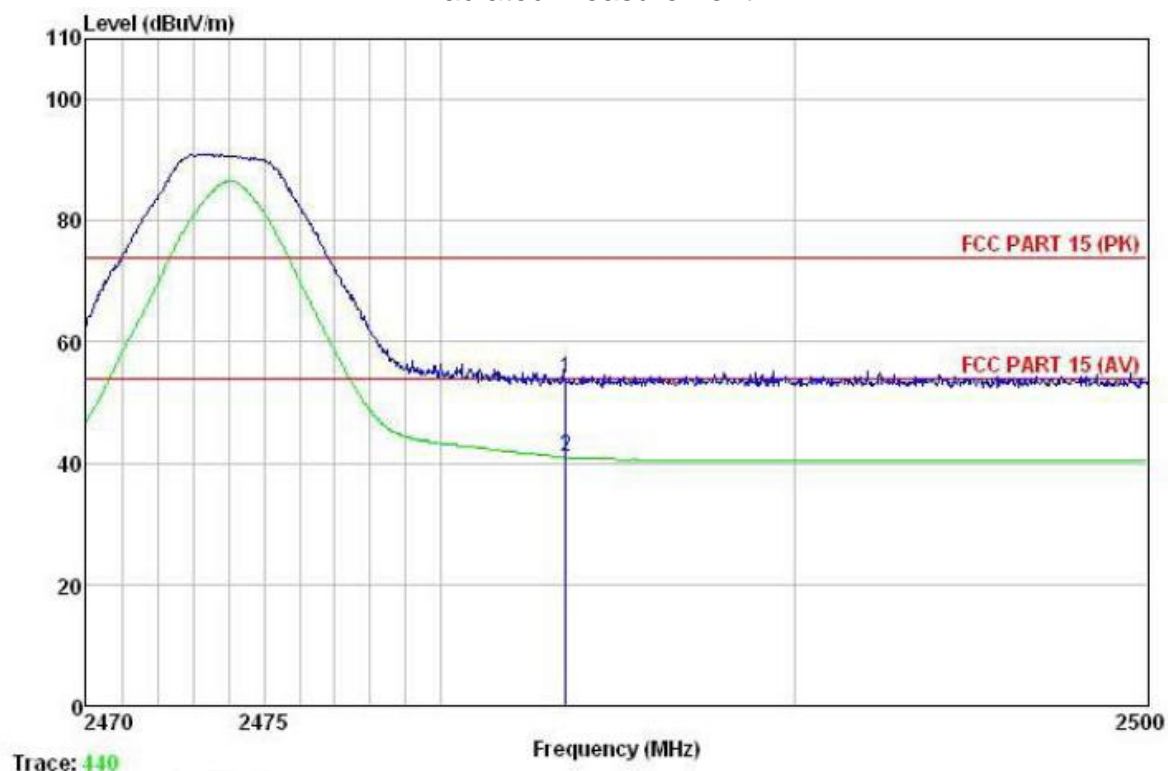
Remarks : NIL

Test Result

Passed

Not Passed

#### Radiated measurement



Frequency (MHz)	Reading (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector
2483.500	54.08	74.0	-19.92	PK
2483.500	40.96	54.0	-13.04	AV



## 7.4 Spurious RF conducted emissions

### Test Method

The transmitter output is connected to the Spectrum analyzer. The Spectrum analyzer is set to the peak power detection.

Conducted RF measurements of the transmitter output were made to confirm that the EUT antenna port conducted emissions meet the specified limit and to identify any spurious signals that require further investigation or measurements on the radiated emissions site.

The resolution bandwidth(RBW) and the video bandwidth (VBW) of the spectrum analyzer were respectively set to 100kHz and 100kHz.

### Limit

Frequency Range MHz	Limit (dBc)
1000-25000	-20

## Spurious RF conducted emissions

Date of test : 29<sup>th</sup> May 2013

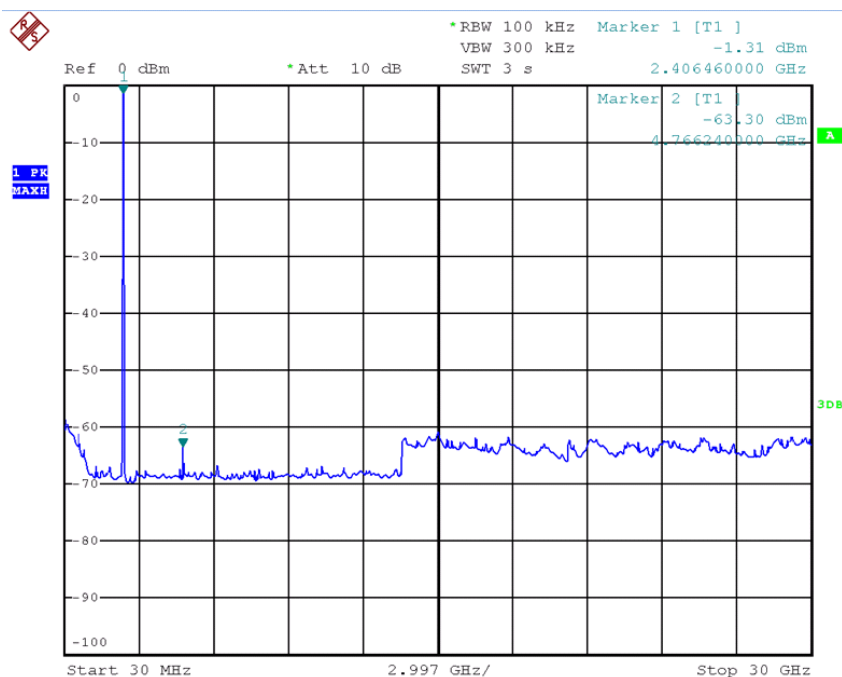
Channel : 2406 MHz

Remark : NIL

Test Result

Passed

Not Passed



## Spurious RF conducted emissions

Date of test : 29<sup>th</sup> May 2013

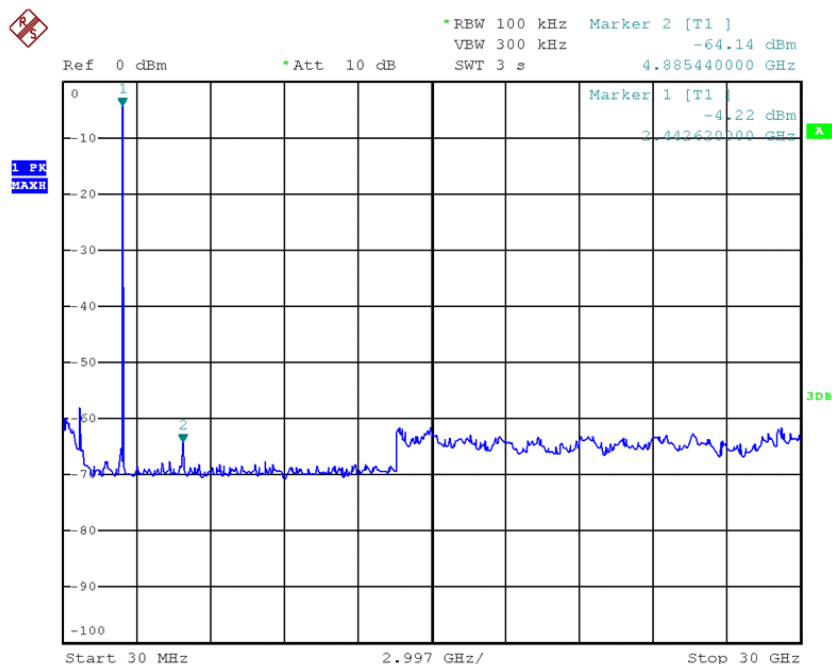
Channel : 2442MHz

Remark : NIL

Test Result

Passed

Not Passed



## Spurious RF conducted emissions

Date of test : 29<sup>th</sup> May 2013

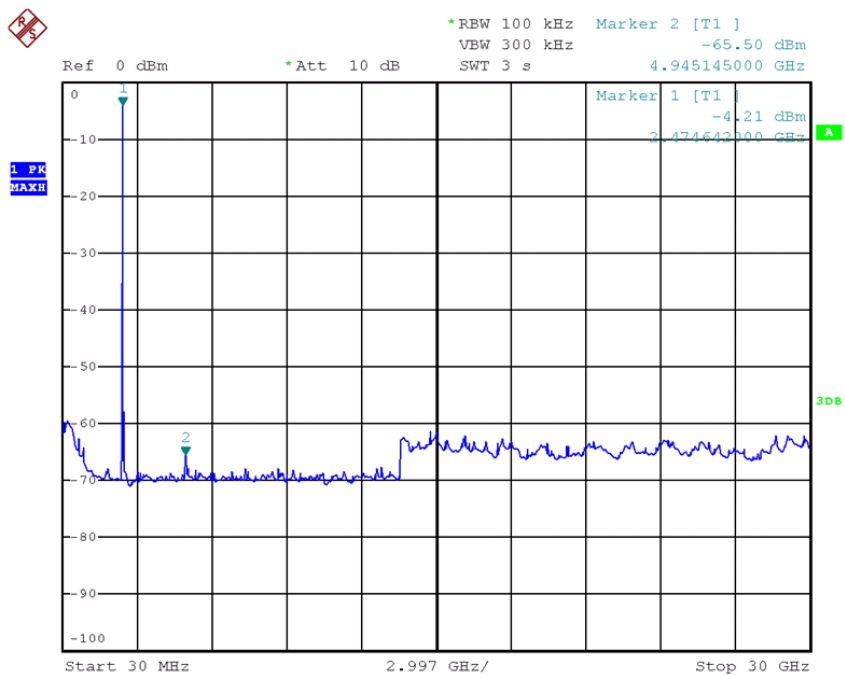
Channel : 2474MHz

Remark : NIL

Test Result

Passed

Not Passed



## 7.5 Spurious radiated emissions

### Test Method

- 1 The EUT is placed on a turntable, which is 0.8m above ground plane.
- 2 The turntable shall be rotated for 360 degrees to determine the position of maximum emission level
- 3 EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- 4 Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5 Each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

### Limit

Frequency MHz	Field Strength uV/m	Field Strength dB $\mu$ V/m	Detector
30-88	100	40	QP
88-216	150	43.5	QP
216-960	200	46	QP
960-1000	500	54	QP
Above 1000	500	54	AV
Above 1000	5000	74	PK

### Spurious radiated emissions

Date of test : 29<sup>th</sup> May 2013  
 Operating mode : Transmitter mode  
 Frequency : 2406MHz  
 Remark : NIL

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency (MHz)	Polarity (H/V)	Read Level (dB $\mu$ V)	Corr. (dB)	Result (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector
44.431	V	46.50	-12.91	33.59	40.0	-6.41	QP
2406.000	V	64.99	33.22	98.21	/	/	PK
2406.000	V	56.86	33.22	90.08	/	/	Ave.
6570.000	V	47.83	3.75	51.58	74.0	-22.42	PK
6570.000	V	39.56	3.75	43.31	54.0	-10.69	Ave.

Frequency (MHz)	Polarity (H/V)	Read Level (dB $\mu$ V)	Corr. (dB)	Result (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Detector
44.587	H	35.52	-12.93	22.59	40.0	-17.41	QP
2406.000	H	55.55	33.22	88.77	/	/	PK
2406.000	H	49.96	33.22	83.18	/	/	Ave.
6603.000	H	47.41	3.73	51.14	74.0	-22.86	PK
6603.000	H	39.57	3.73	43.30	54.0	-10.70	Ave.

“\*” means the emission(s) appear within the restricted bands shall follow the requirement of section 15.205.

### Spurious radiated emissions

Date of test : 29<sup>th</sup> May 2013  
 Operating mode : Transmitter mode  
 Frequency : 2442MHz  
 Remark : NIL

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency (MHz)	Polarity (H/V)	Read Level (dBμV)	Corr. (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
44.743	V	49.03	-12.94	36.09	40.0	-3.91	QP
2442.000	V	66.70	33.15	99.85	/	/	PK
2442.000	V	58.96	33.15	92.11	/	/	Ave.
6603.000	V	47.74	3.73	51.47	74.0	-22.53	PK
6603.000	V	39.86	3.73	43.59	54.0	-10.41	Ave.

Frequency (MHz)	Polarity (H/V)	Read Level (dBμV)	Corr. (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
44.275	H	33.28	-12.89	20.39	40.0	-19.61	QP
2442.000	H	58.55	33.15	91.70	/	/	PK
2442.000	H	51.97	33.15	85.12	/	/	Ave.
6658.000	H	48.60	3.62	52.22	74.0	-21.78	PK
6658.000	H	41.65	3.62	45.27	54.0	-8.73	Ave.

“\*” means the emission(s) appear within the restricted bands shall follow the requirement of section 15.205.

## Spurious radiated emissions

Date of test : 29<sup>th</sup> May 2013  
 Operating mode : Transmitter mode  
 Frequency : 2474MHz  
 Remark : NIL

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency (MHz)	Polarity (H/V)	Read Level (dBμV)	Corr. (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
44.743	V	45.76	-12.94	32.82	40.0	-7.18	QP
2474.000	V	66.02	33.19	99.21	/	/	PK
2474.000	V	59.69	33.19	92.88	/	/	Ave.
6988.000	V	48.01	4.48	52.49	74.0	-21.51	PK
6988.000	V	40.85	4.48	45.33	54.0	-8.67	Ave.

Frequency (MHz)	Polarity (H/V)	Read Level (dBμV)	Corr. (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
44.743	H	34.58	-12.94	21.64	40.0	-18.36	QP
2474.000	H	56.49	33.19	89.68	/	/	PK
2474.000	H	49.85	33.19	83.04	/	/	Ave.
6993.500	H	48.37	4.47	52.84	74.0	-21.16	PK
6993.500	H	41.99	4.47	46.46	54.0	-7.54	Ave.

“\*” means the emission(s) appear within the restricted bands shall follow the requirement of section 15.205.



## Spurious radiated emissions

Date of test : 29<sup>th</sup> May 2013  
 Operating mode : Xbox connect mode  
 Remark : NIL

Test Result	
<input checked="" type="checkbox"/>	Passed
<input type="checkbox"/>	Not Passed

Frequency (MHz)	Polarity (H/V)	Read Level (dBμV)	Corr. (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
37.416	V	49.91	-12.96	36.95	40.0	-3.05	QP
45.375	V	49.86	-13.00	36.86	40.0	-3.14	QP
58.615	V	51.15	-14.93	36.22	40.0	-3.78	QP
407.515	V	43.01	-11.68	31.33	46.0	-14.67	QP
586.844	V	49.88	-8.38	41.50	46.0	-4.50	QP
2410.306	V	52.49	0.69	53.18	74.0	-20.82	PK
2410.306	V	45.69	0.69	46.38	54.0	-7.62	Ave.

Frequency (MHz)	Polarity (H/V)	Read Level (dBμV)	Corr. (dB)	Result (dBμV/m)	Limit (dBμV/m)	Margin (dB)	Detector
39.576	H	38.41	-12.51	25.90	40.0	-14.10	QP
45.695	H	36.80	-13.06	23.74	40.0	-16.26	QP
73.103	H	47.76	-20.42	27.34	40.0	-12.66	PK
82.938	H	48.48	-18.78	29.70	40.0	-10.30	Ave.
410.383	H	39.49	-11.65	27.84	46.0	-18.16	PK
552.883	H	39.13	-9.03	30.10	46.0	-15.90	Ave.
2393.094	H	45.94	1.90	47.84	74.0	-26.16	PK
2393.094	H	39.68	1.90	41.58	54.0	-12.42	Ave.

## 7.6 6dB bandwidth

### Test Method

- 1 Place the EUT on the table and set it in the transmitting mode.
- 2 Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 3 Mark the peak frequency and 6dB (upper and lower) frequency.

### Limit

Limit [kHz]

---

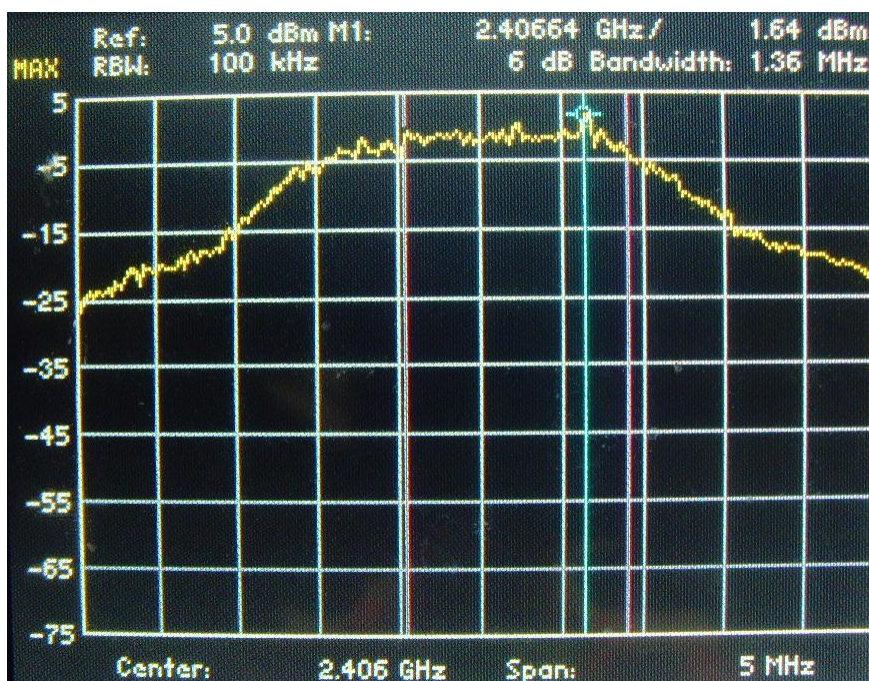
≥500

## 6dB bandwidth

6dB bandwidth test result

Bandwidth MHz	Result
1.36	Pass

Remark : NIL

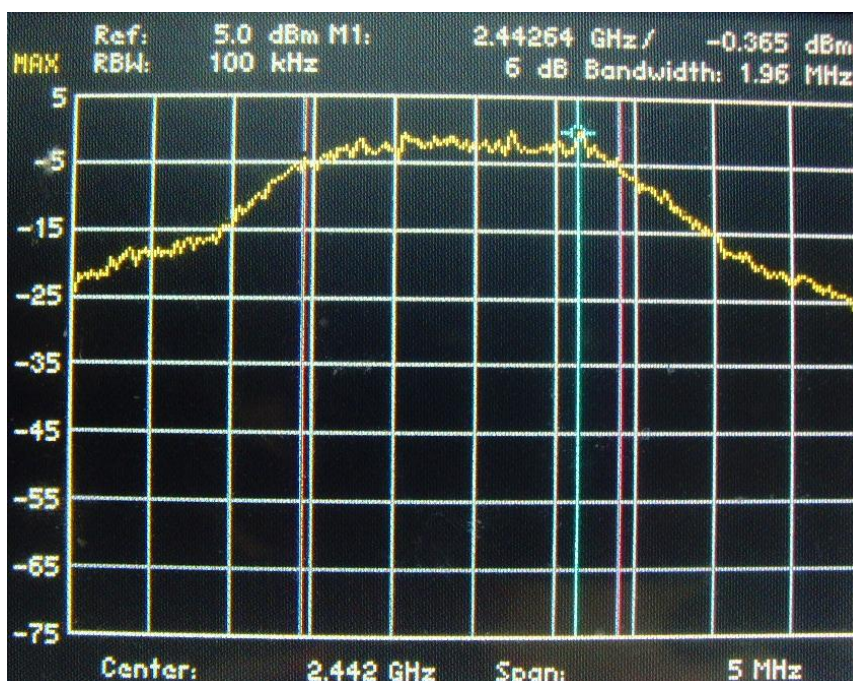


### 6dB bandwidth

6dB bandwidth test result

Bandwidth MHz	Result
1.96	Pass

Remark : NIL



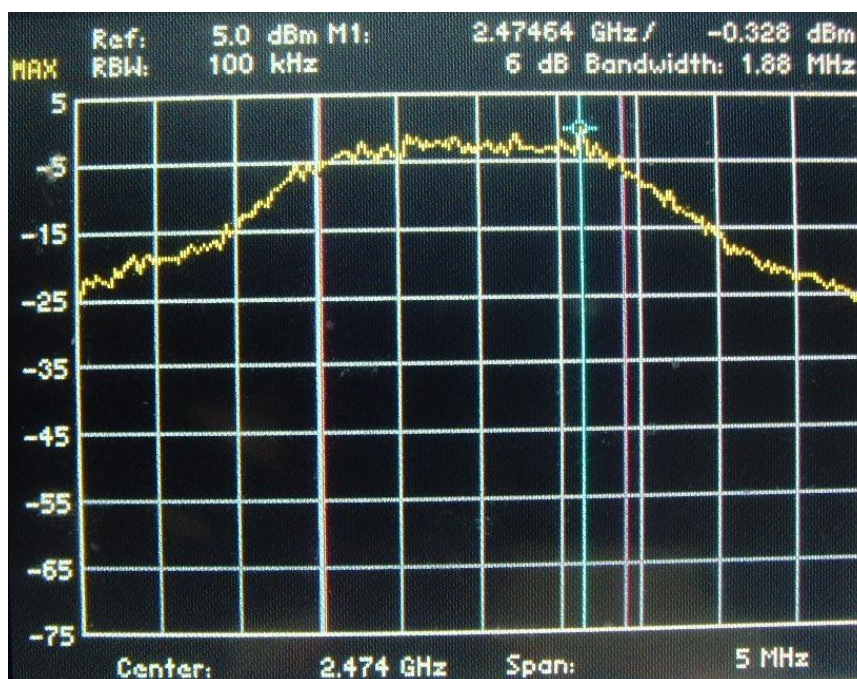


### 6dB bandwidth

6dB bandwidth test result

Bandwidth MHz	Result
1.88	Pass

Remark : NIL



## 7.7 Power spectral density

### Test Method

- 1 Place the EUT on the table and set it in transmitting mode. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the spectrum analyzer.
- 2 Set the spectrum analyzer as RBW = 3 kHz, VBW = 10 kHz, Span = 300 kHz, Sweep = 500s
- 3 Record the max reading.

### Limit

Limit  
dBm / 3kHz

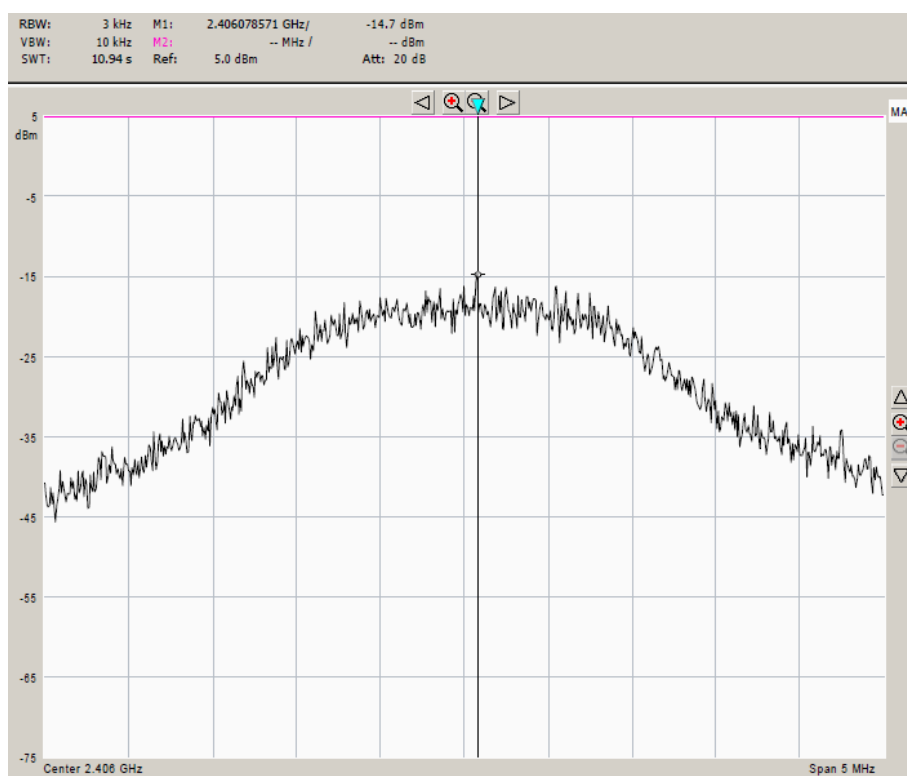
---

8

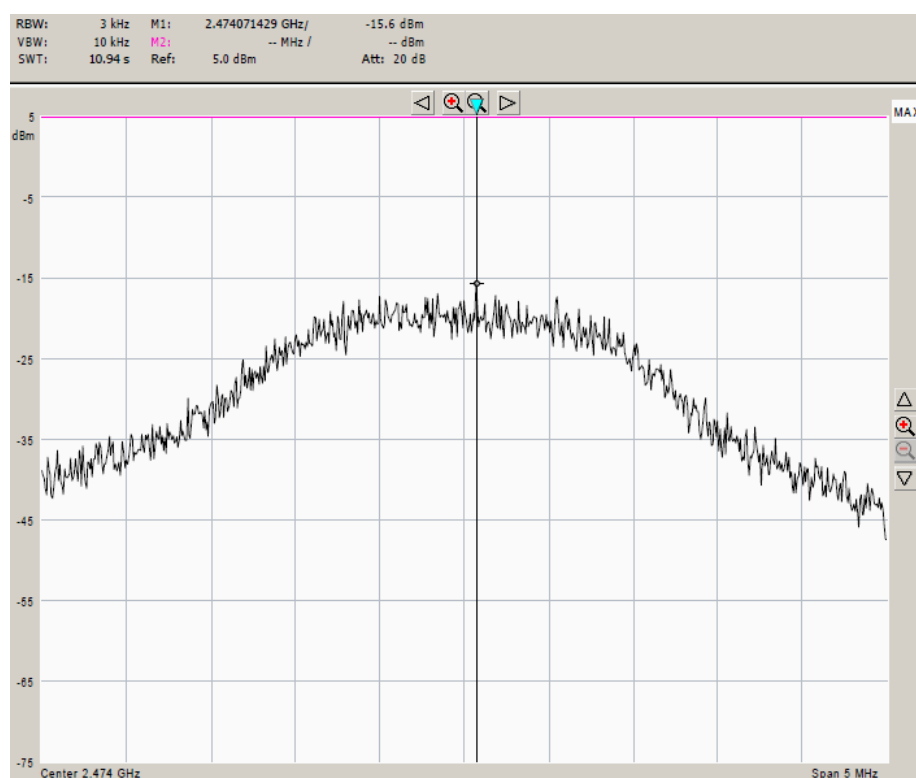
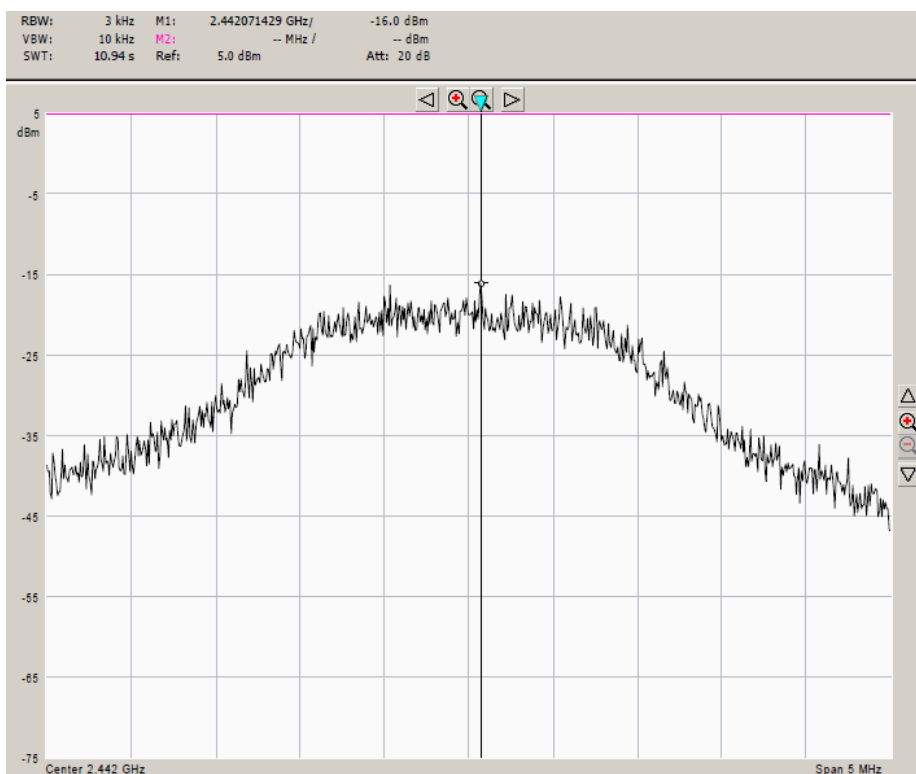
## Power spectral density

Test result

Frequency (MHz)	Power spectral density (dBm)	Result
2406	-14.7	Pass
2442	-16.0	Pass
2474	-15.6	Pass



## Power spectral density





## 8. System Measurement Uncertainty

For a 95% confidence level, the measurement expanded uncertainties for defined systems, in accordance with the recommendations of ISO 17025 were:

### System Measurement Uncertainty

Items		Extended Uncertainty
RE	Field strength (dB $\mu$ V/m)	U=5.12dB (30MHz-1GHz) U=4.63dB (1GHz-6GHz)
CE	Disturbance Voltage (dB $\mu$ V)	U=3.1dB

## 9. Test Equipment List

Test Equipment	Manufacturer	Model No.	Inventory No.	Cal. Due date (mm-dd-yy)
EMI Test Receiver	Rohde & Schwarz	ESCI	CCIS0002	Mar. 31 2014
LISN	CHASE	MN2050D	CCIS0074	Mar. 31 2014
EMI Test Software	AUDIX	E3	N/A	N/A
BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	CCIS0005	May 24 2014
Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	CCIS0006	May 24 2014
EMI Test Software	AUDIX	E3	N/A	N/A
Coaxial Cable	CCIS	N/A	CCIS0016	May 31 2013
Coaxial Cable	CCIS	N/A	CCIS0017	May 31 2013
Coaxial cable	CCIS	N/A	CCIS0018	May 31 2013
Coaxial Cable	CCIS	N/A	CCIS0019	May 31 2013
Coaxial Cable	CCIS	N/A	CCIS0086	Mar. 31 2014
Coaxial Cable	CCIS	N/A	CCIS0087	May 31 2013
Amplifier(10kHz-1.3GHz)	HP	8447D	CCIS0003	May 31 2013
Amplifier(1GHz-18GHz)	Compliance Direction Systems Inc.	PAP-1G18	CCIS0011	Jun 08 2014
Pre-amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	May 31 2013
Horn Antenna	ETS-LINDGREN	3160	GTS217	Mar. 29 2014
Positioning Controller	UC	UC3000	CCIS0015	N/A
Spectrum analyzer 9k-30GHz	Rohde & Schwarz	FSP	CCIS0023	May. 28 2014
Loop antenna	Laplace instrument	RF300	EMC0701	Aug. 11 2014
EMI Test Receiver	Rohde & Schwarz	ESPI	CCIS0022	May 24 2014
Spectrum Analyzer	Agilent	E4440A	US	Jan.10 2014