

# CENTRE OF TESTING SERVICE INTERNATIONAL

**OPERATE ACCORDING TO ISO/IEC 17025** 

# FCC ID TEST REPORT

TEST REPORT NUMBER: CGZ3130902-00801 & 802-E



CENTRE OF TESTING SERVICE CO., LTD.

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China







	TEST REPORT For FCC ID			
47 CFR PART 15 OCT, 2012				
Report Reference No	•			
Date of issue	05 December 2013			
Testing Laboratory Name	CETRE OF TESTING SERVICE CO., LTD.			
Address	A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China			
Testing location/ procedure	Full application of Harmonised standards ■			
	Partial application of Harmonised standards $\square$			
	Other standard testing method $\square$			
Applicant's name	Brilliant Technology Inc.			
Address	3579 East Foothill Blvd Suite 183 Pasadena CA 91107			
Test specification				
Standard	47 CFR PART 15 OCT, 2012			
Test Report Form No	CTSEMC-1.0			
TRF Originator	CENTRE OF TESTING SERVICE CO., LTD.			
Master TRF	Dated 2009-01			
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Test item description	: Wifi+BT combo card			
Trade Mark	Brillianttek			
Manufacturer	Brilliant Technology Inc.			
Model/Type reference	WLU6300B(T-RoHS)			
Ratings	DC 3.3V			
Operating Frequency	2402.0 MHz ~2480.0 MHz			
Result	Positive			

Compiled by:

Supervised by:

Approved by:

Kate zhang / Fileadministrators

Duke yang / Technique principal

Vincent yao / Manager

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# FCCID-TEST REPORT

Test Report No. : CGZ3130902-00801 & 802-E 05 December 2013 Date of issue

Type / Model	WLU6300B(T-RoHS)
EUT	Wifi+BT combo card
Applicant	Brilliant Technology Inc.
Address	3579 East Foothill Blvd Suite 183 Pasadena CA 91107
Telephone	408-472-1230
Fax	626-551-0407
Contact	Benny Lee
Manufacturer	Brilliant Technology Inc.
Address	3579 East Foothill Blvd Suite 183 Pasadena CA 91107
Telephone	408-472-1230
Fax	626-551-0407
Contact	Benny Lee
Test report holder	Brilliant Technology Inc.
Address	3579 East Foothill Blvd Suite 183 Pasadena CA 91107
Telephone	408-472-1230
Fax	626-551-0407
Contact	Benny Lee

# Test Result according to the standards on page 1: PASSED

The test report merely corresponds to the test sample.

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15.0 ANTENNA REQUIREMENTS ......100

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# 1.0 TEST STANDARDS

The tests were performed according to following standards:

- 47 CFR PART 15 OCT, 2012
- ANSI C63.4-2009

#### 2.0 SUMMARY

#### 2.1 GENERAL REMARKS

Date of receipt of test sample	02 September 2013	
Testing commenced on	02 September ~05 December 2013	
Testing concluded on	05 December 2013	

#### 2.2 FINAL ASSESSMENT

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

□ - **not** fulfilled.

The equipment under test

- fulfils the FCC requirements cited on page 1.
  - does not fulfil the FCC requirements cited on page 1.

#### 3.0 EQUIPMENT UNDER TEST

## 3.1 Power supply system utilised

Power supply voltage : ■ DC 3.3V

# 3.2 Short description of the Equipment under Test (EUT)

Number of tested samples: 1

Serial number: Prototype

#### 3.3 EUT operation mode

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

П	- Stand	b١
$\Box$	- Stariu	IJΝ

☐ TX- Y position

☐ TX- Zposition

TX- X position

Operation mode 1:TX-X Position Low (2402.0 MHz) , TX-X Position Middle (2442.0 MHz ),

TX-X Position High (2480.0 MHz)

Note:Operation mode 1 TX -X position of EUT is the radiated test worst case. so only these test results be recorded in the test report.

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# 3.4 EUT configuration

### 3.4.1. Description of configuration (EUT)

Description	:	Wifi+BT combo card
Model Number	:	WLU6300B(T-RoHS)
Operation frequency	:	2402.0 MHz~ 2480.0 MHz ISM Band
Buletooth Version	:	3.0(Include 2.0, 2.1)
Modulation Technology	:	GFSK for (1Mbps), π/4-DQPSK for (2Mbps), 8DPSK for (3Mbps) modulation
Antenna 1	:	PCB antenna, met requirement of FCC 15.203
Antenna 2		Chip antenna, met requirement of FCC 15.203

#### 3.4.2. Tested Supporting System Details

#### 3.4.2.1. Notebook

M/N	:	F83VF
S/N		AEN0AS64740305D
Manufacturer		ASUS
Power Cord		Unshielded, Detachabled, 1.5m , 3Pin
FCC ID	:	By DoC

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#### 4.0 TEST ENVIRONMENT

## 4.1 Address of the test laboratory

A101, No.65, Zhuji Highway, Tianhe District, Guangzhou, China

Tel: +86-20-85543113 (32 lines) Fax: +86-20-38780406

#### 4.2 Test facility

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

CNAS-Lab Code: L3394

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

#### IC-Registration No.: 8374A

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

#### FCC-Registration No.: 971995

CENTRE OF TESTING SERVICE CO., LTD, EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration No.791995, July 13,2012.

#### 4.3 Environmental conditions

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

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

#### 4.4 Definitions of symbols used in this test report

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

#### 4.5 Statement of the measurement uncertainty

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

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#### 4.6 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Conduction disturbance	150kHz~30MHz	±1.22dB	(1)
Power disturbance	30MHz~300MHz	±1.38dB	(1)
Radiation emission (3m)	30MHz~300MHz	±3.14dB	(1)
	300MHz~1000MHz	±3.18dB	(1)
	1GHz~26.5GHz	±3.54dB	(1)

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

# 5.0 Summary of standards and results

# 5.1. Description of Standards and Results

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

EMISSION				
Description of Test Item	Standard	Results		
Conducted Emission Test	FCC Part 15 : 15.207 ANSI C63.4-2009	PASSED		
20dB Bandwidth	FCC Part 15.247(a)(1) ANSI C63.4-2009	PASSED		
Peak Power	FCC Part 15.247(b)(1) ANSI C63.4-2009	PASSED		
Peak Power Spectral Density	15.247(e) Power Density ANSI C63.4-2009	N/A		
Rand added maggurament	FCC Part 15.247(d)	PASSED		
Band edges measurement	ANSI C63.4-2009	PASSED		
Fraguency Sonaration	FCC Part 15.247(a)(1)	PASSED		
Frequency Separation	ANSI C63.4-2009	PASSED		
Number of Henning Fraguency	FCC Part 15.247(a)(1)(iii)	PASSED		
Number of Hopping Frequency	ANSI C63.4-2009	PASSED		
Dwell Time	FCC Part 15.247(a)(1)(iii) ANSI C63.4-2009	PASSED		
Courieus Emissieus	FCC Part 15: 15.209	DACCED		
Spurious Emissions	ANSI C63.4-2009	PASSED		
Antonno Doguiromento	FCC Part 15: 15.203	DASSED		
Antenna Requirements	ANSI C63.4-2009	PASSED		
N/A is an abbreviation for Not Applicable.				

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#### 6.0 Power Line Conducted Emission Test

#### 6.1.Test Equipment

Conduc	Conducted Disturbance					
Item	em Test Equipment Manufacturer M		Model No.	Serial No.	Last Cal.	
1	EMI Test Receiver	ROHDE & SCHWARZ	ESHS10	842884/012	2012/11	
2	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/025	2012/11	
3	Artificial Mains	ROHDE & SCHWARZ	ESH3-Z5	832479/026	2012/11	
4	Pulse Limiter	ROHDE & SCHWARZ	ESHSZ2	100301	2012/11	
5	EMI Test Software	EZ-EMC	Farad	N/A	N/A	

### 6.2. Block Diagram of Test Setup



(EUT: Wifi+BT combo card)

#### 6.3. Power Line Conducted Emission Test Limits

Standard: FCC Part 15: 15.207, ANSI C63.4-2009

		Maximum RF I	_ine Voltage
Frequency		Quasi-Peak Level	Average Level
	<b>,</b>	dB(μV)	dB(μV)
150kHz	~ 500kHz	66 ~ 56*	56 ~ 46*
500kHz	~ 5MHz	56	46
5MHz	~ 30MHz	60	50

Notes: 1. \* Decreasing linearly with logarithm of frequency.

#### 6.4.Test Procedure

The XBOX Power connected to the power mains through a line impedance stabilization network (L.I.S.N.#2). This provides a 50 ohm coupling impedance for the EUT. Please refer the block diagram of the test setup and photographs. The other peripheral devices power cord connected to the power mains through a line impedance stabilization network (L.I.S.N.#1). Power on the PC and let it work normally, we use a keyboard test soft ware, let EUT working in test mode, then test it. Both sides of AC line are checked to find out the maximum conducted emission. In order to find the maximum emission levels, the relative positions of equipment and all of the interface cables shall be changed according to FCC Part 15C on Conducted Emission Test.

#### 6.5. Power Line Conducted Emission Test Results

#### PASSED.

The frequency range from 150KHz~30MHz is investigated. Please see the following pages.

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<sup>2.</sup> The lower limit shall apply at the transition frequencies.

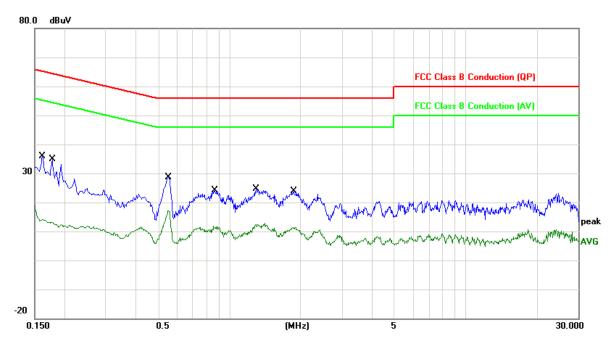






Test point:	L	Result:	■ - passed
Frequency range:	0.15MHz~30MHz		☐ - not passed

EUT	Wifi+BT combo card
Operating Condition	TX
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test Date:	02~23 September 2013
Operator	Duke
MODEL NO	WLU6300B(T-RoHS)



No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.	
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	0.1620	9.78	14.80	24.58	65.36	-40.78	QP	
2	0.1620	9.78	3.81	13.59	55.36	-41.77	AVG	
3	0.1780	9.78	12.64	22.42	64.58	-42.16	QP	
4	0.1780	9.78	2.96	12.74	54.58	-41.84	AVG	
5	0.5540	9.84	15.60	25.44	56.00	-30.56	QP	
6	0.5540	9.84	7.03	16.87	46.00	-29.13	AVG	
7	0.8700	9.83	8.78	18.61	56.00	-37.39	QP	
8	0.8700	9.83	1.73	11.56	46.00	-34.44	AVG	
9	1.2980	9.84	8.58	18.42	56.00	-37.58	QP	
10	1.2980	9.84	1.54	11.38	46.00	-34.62	AVG	
11	1.8740	9.86	8.50	18.36	56.00	-37.64	QP	
12	1.8740	9.86	1.39	11.25	46.00	-34.75	AVG	
Remark:	Remark: Other frequency mini margin all >6 dB of Limit							

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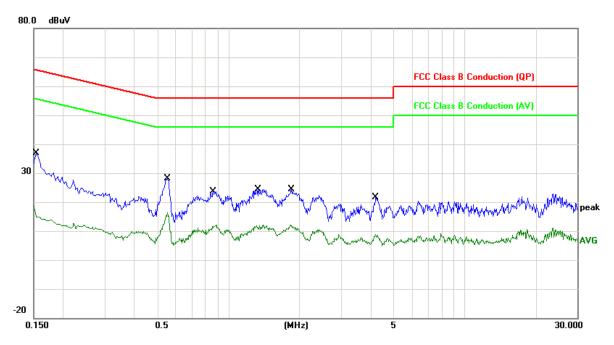


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Test point: N Result: ■ - passed Frequency range: 0.15MHz~30MHz □ - not passed



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	0.1540	9.78	19.25	29.03	65.78	-36.75	QP
2	0.1540	9.78	5.07	14.85	55.78	-40.93	AVG
3	0.5540	9.84	15.25	25.09	56.00	-30.91	QP
4	0.5540	9.84	6.78	16.62	46.00	-29.38	AVG
5	0.8620	9.83	8.08	17.91	56.00	-38.09	QP
6	0.8620	9.83	1.17	11.00	46.00	-35.00	AVG
7	1.3420	9.84	8.16	18.00	56.00	-38.00	QP
8	1.3420	9.84	1.26	11.10	46.00	-34.90	AVG
9	1.8540	9.86	8.50	18.36	56.00	-37.64	QP
10	1.8540	9.86	1.41	11.27	46.00	-34.73	AVG
11	4.2220	9.91	5.19	15.10	56.00	-40.90	QP
12	4.2220	9.91	-2.13	7.78	46.00	-38.22	AVG
Remark	Other frequen	icy mini ma	rgin all >6 dB	of Limit			

Note:Level=Reading+Factor. Margin= Level-Limit

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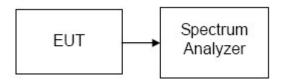


#### 7.0 20dB BANDWIDTH

#### 7.1 MEASUREMENT EQUIPMENT USED

20dB	20dB Bandwidth				
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2013/03

#### 7.2 TEST CONFIGURATION



#### 7.3 TEST PROCEDURE

- 1. Place the EUT on the table and set it in the transmitting mode.
- 2. Remove the antenna from the EUT, then connect a low loss RF cable from antenna port to the spectrum analyzer.
- 3. Set the spectrum analyzer as RBW=100kHz, VBW=300kHz, Span=3MHz, Sweep = auto.
- 4. Mark the peak frequency and 20dB (upper and lower) frequency.
- 5. Repeat until all the test channels are investigated.

#### 7.4 TEST RESULTS

Passed

#### **Test Plot**

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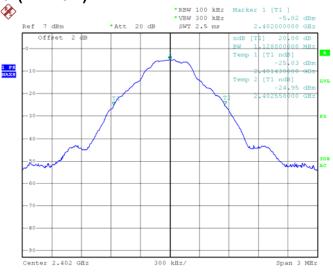
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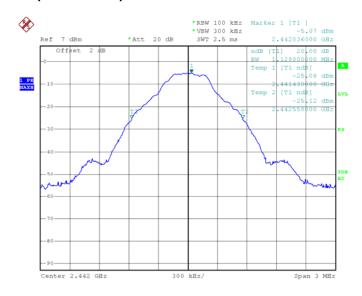
#### **GFSK**

# 20dB Bandwidth(CH Low)



Date: 3.DEC.2013 16:25:02

# 20dB Bandwidth(CH Middle)



Date: 3.DEC.2013 16:49:36

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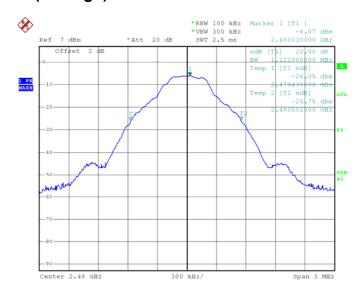
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#### **CENTRE OF TESTING SERVICE**





# 20dB Bandwidth(CH High)



Date: 3.DEC.2013 16:50:40

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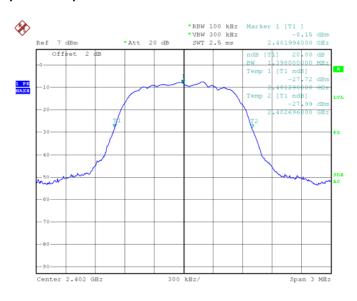
Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn





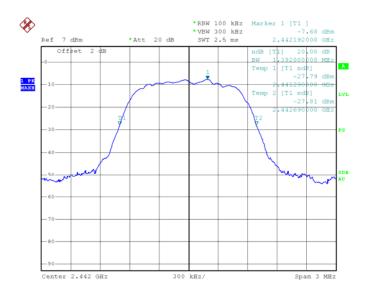
#### π/4-DQPSK

# 20dB Bandwidth(CH Low)



Date: 3.DEC.2013 16:44:48

# 20dB Bandwidth(CH Middle)



Date: 3.DEC.2013 16:48:33

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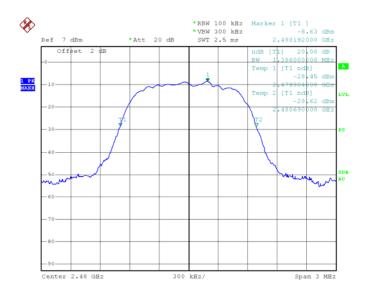
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# 20dB Bandwidth(CH High)



Date: 3.DEC.2013 16:54:02

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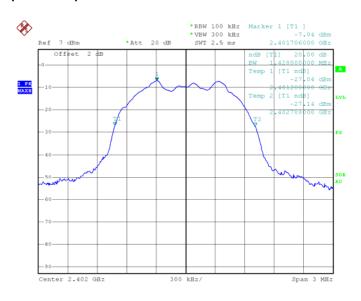
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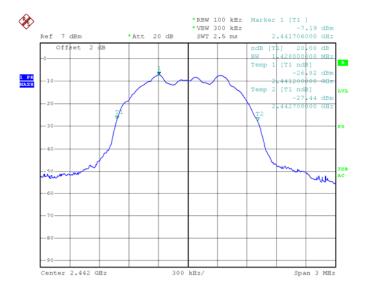
#### 8DPSK

# 20dB Bandwidth(CH Low)



Date: 3.DEC.2013 16:45:57

# 20dB Bandwidth(CH Middle)



Date: 3.DEC.2013 16:47:29

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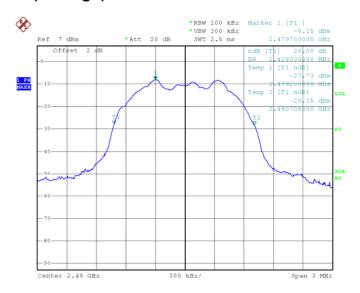
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# 20dB Bandwidth(CH High)



Date: 3.DEC.2013 16:56:30

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#### 8.0 PEAK POWER

#### **8.1 LIMIT**

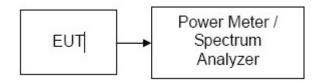
The maximum peak output power of the intentional radiator shall not exceed the following:

- 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.
- 2. Except as shown in paragraphs (b)(3) (i), (ii) and (iii) of this section, if transmitting antennas of directional gain greater than 6dBi are used the peak output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1) or (b)(2) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6dBi.
- 3. 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 MEASUREMENT EQUIPMENT USED**

Peak Power					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2013/03
2	Power meter	ROHDE & SCHWARZ	NRVS	842856/049	2013/03

#### **8.3 TEST CONDIGURATION**



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#### **8.4 TEST PROCEDURE**

- 1. Set span to encompass the entire emission bandwidth (EBW) of the signal.
- 2. Set RBW = 1 MHz.
- 3. Set VBW = 1 MHz.
- 4. Use sample detector mode if bin width (i.e., span/number of points in spectrum display) < 0.5 RBW. Otherwise use peak detector mode.
- 5. Use a video trigger with the trigger level set to enable triggering only on full power pulses. Transmitter must operate at full control power for entire sweep of every sweep. If the device transmits continuously, with no off intervals or reduced power Intervals, the trigger may be set to "free run".
- 6. Trace average 100 traces in power averaging mode.
- 7. Compute power by integrating the spectrum across the 26 dB EBW of the signal. The integration can be performed using the spectrum analyzer's band power measurement function with band limits set equal to the EBW band edges or by summing power levels in each 1 MHz band in linear power terms. The 1 MHz band power levels to be summed can be obtained by averaging, in linear power terms, power levels in each frequency bin across the 1 MHz.

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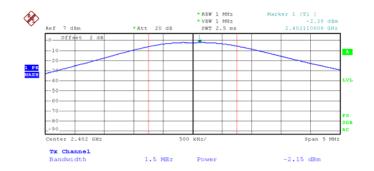


#### **8.5 TEST RESULTS**

# Passed Test Data GFSK

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Result
Low	2402	-2.15	30	PASS
Middle	2442	-2.27	30	PASS
High	2480	-3.19	30	PASS

#### **CH Low**



Date: 4.DEC.2013 16:13:19

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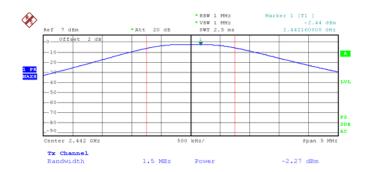
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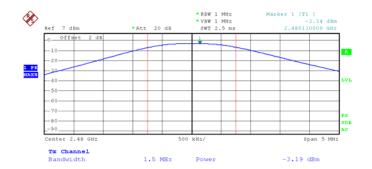


#### **CH Middle**



Date: 4.DEC.2013 16:12:40

# **CH High**



Date: 4.DEC.2013 16:11:51

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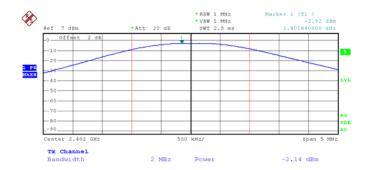




#### π/4-DQPSK

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Result
Low	2402	-2.14	30	PASS
Middle	2442	-2.20	30	PASS
High	2480	-3.13	30	PASS

#### **CH Low**



Date: 4.DEC.2013 16:07:13

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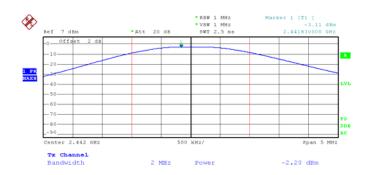
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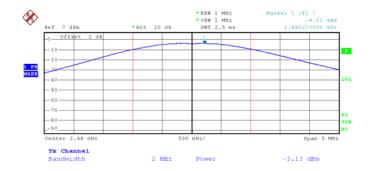


#### **CH Middle**



Date: 3.DEC.2013 17:09:34

# **CH High**



Date: 3.DEC.2013 17:08:24

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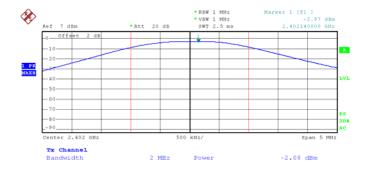




#### 8DPSK

Channel	Frequency (MHz)	Output Power (dBm)	Limit (dBm)	Result
Low	2402	-2.08	30	PASS
Middle	2442	-2.20	30	PASS
High	2480	-3.09	30	PASS

#### **CH Low**



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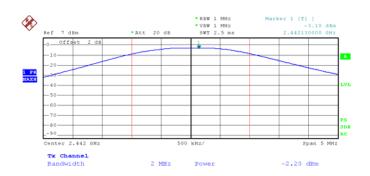
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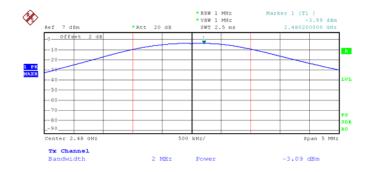


#### **CH Middle**



Date: 3.DEC.2013 17:10:20

# **CH High**



Date: 3.DEC.2013 17:06:35

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#### 9.0 PEAK POWER SPECTRAL DENSITY

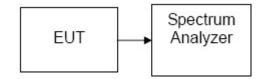
#### **9.1 LIMIT**

- 1. For direct sequence systems, the peak power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3kHz band during any time interval of continuous transmission.
- 2. The direct sequence operating of the hybrid system, with the frequency hopping operation turned off, shall comply with the power density requirements of paragraph (d) of this section

#### 9.2 MEASUREMENT EQUIPMENT USED

Peak Power Spectral Density								
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.			
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2013/03			

#### 9.2 TEST CONFIGURATION



#### 9.3 TEST PROCEDURE

- 1. Place the EUT on the table and set it in 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. Set the spectrum analyzer as RBW = 3kHz, VBW = 10kHz, Span = 300kHz, Sweep=100s
- 4. Record the max. reading.
- 5. Repeat the above procedure until the measurements for all frequencies are completed.

#### 9.4 TEST RESULTS

Not applicable for Bluetooth 3.0 device.

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#### 10.0 BAND EDGES MEASUREMENT

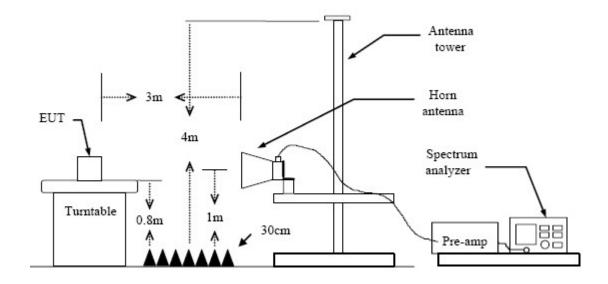
#### **10.1 LIMIT**

According to §15.247(c), in any 100 kHz bandwidth outside the frequency bands in which the spread spectrum intentional radiator in operating, the radio frequency power that is produced by the intentional radiator shall be at least 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, 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 in15.209(a).

#### **10.2 MEASUREMENT EQUIPMENT USED**

Radiated disturbance (electric field)								
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.			
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2012/11			
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2013/03			
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2013/03			
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2013/03			
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2013/03			
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2012/11			
7	EMI Test Software	EZ-EMC	Farad	N/A	N/A			

### 10.3 Test Configuration



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#### **10.4 TEST PROCEDURE**

- 1. The EUT is placed on a turntable, which is 0.8m above the 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 emission.
- 4. Set the spectrum analyzer in the following setting in order to capture the lower and upper band-edges of the emission:
  - (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
  - (b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO
- 5. Repeat the procedures until all the PEAK and AVERAGE versus POLARIZATION are measured.

#### **10.5 TEST RESULTS**

Refer to attach spectrum analyzer data chart.

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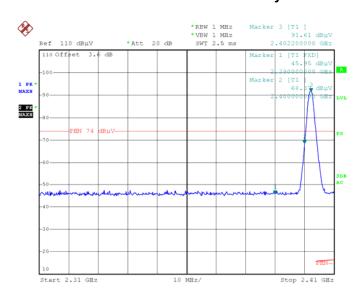


### Chip antenna

#### **QPSK**

# Band Edges (CH-Low) Detector mode: Peak

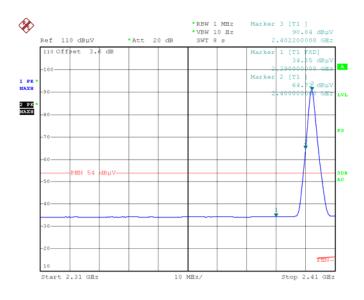
#### **Polarity: Horizontal**



Date: 5.DEC.2013 14:51:21

# Band Edges (CH-Low) Detector mode: Average

#### **Polarity: Horizontal**



Date: 5.DEC.2013 14:50:34

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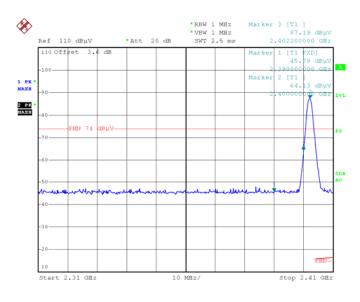
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# Band Edges (CH-Low) Detector mode: Peak

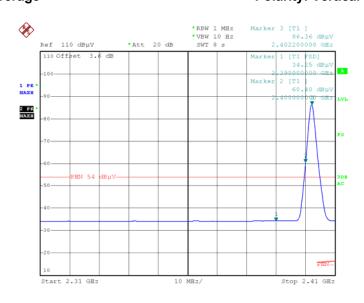
### **Polarity: Vertical**



Date: 5.DEC.2013 15:13:47

# Band Edges (CH-Low) Detector mode: Average

#### **Polarity: Vertical**



Date: 5.DEC.2013 15:14:54

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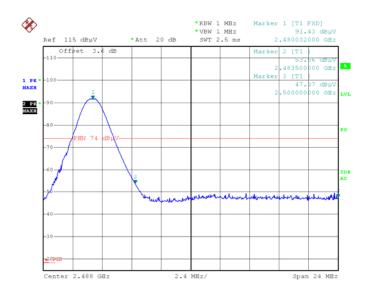
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# Band Edges (CH-High) Detector mode: Peak

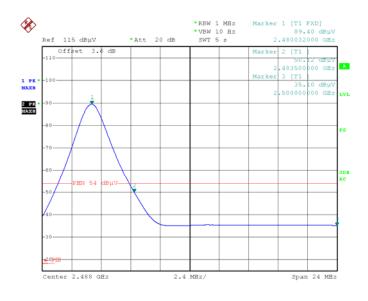
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Date: 2.DEC.2013 16:46:59

# Band Edges (CH-High) Detector mode: Average

#### **Polarity: Horizontal**



Date: 2.DEC.2013 16:46:13

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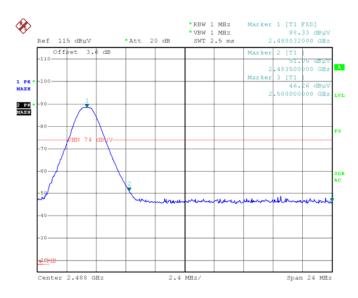
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# Band Edges (CH-High) Detector mode: Peak

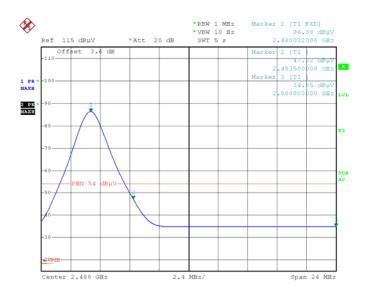
### **Polarity: Vertical**



Date: 2.DEC.2013 16:35:08

# Band Edges (CH-High) Detector mode: Average

#### **Polarity: Vertical**



Date: 2.DEC.2013 16:35:34

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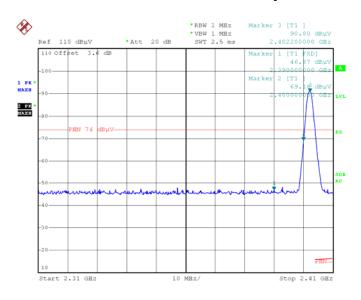


#### π/4-DQPSK

# **Band Edges (CH-Low)**

**Detector mode: Peak** 

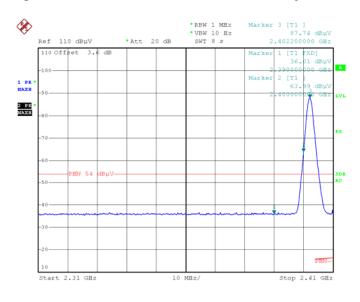
#### **Polarity: Horizontal**



Date: 5.DEC.2013 15:02:06

# Band Edges (CH-Low) Detector mode: Average

#### **Polarity: Horizontal**



Date: 5.DEC.2013 14:57:00

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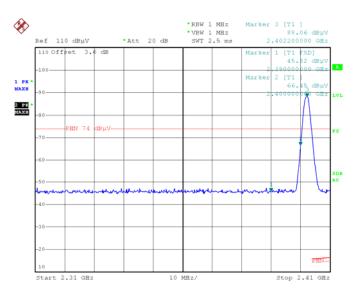
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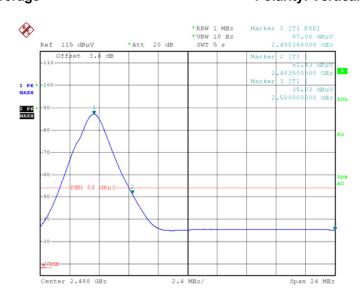
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Date: 5.DEC.2013 15:07:44

# Band Edges (CH-Low) Detector mode: Average

## **Polarity: Vertical**



Date: 2.DEC.2013 16:54:28

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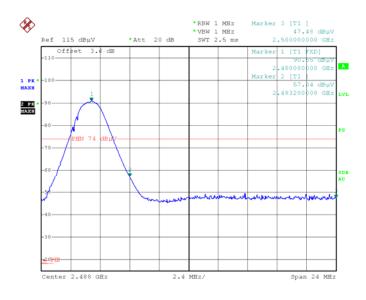
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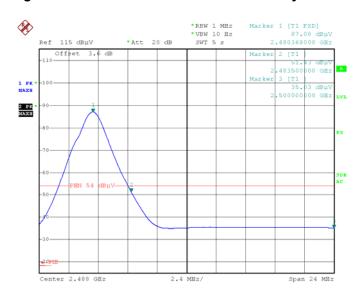
## **Polarity: Horizontal**



Date: 2.DEC.2013 16:57:15

# Band Edges (CH-High) Detector mode: Average

## **Polarity: Horizontal**



Date: 2.DEC.2013 16:54:28

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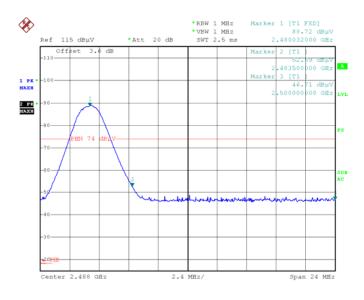
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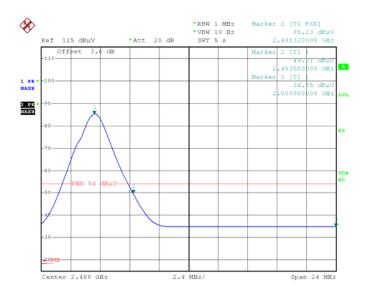
## **Polarity: Vertical**



Date: 2.DEC.2013 16:33:23

# Band Edges (CH-High) Detector mode: Average

**Polarity: Vertical** 



Date: 2.DEC.2013 16:31:44

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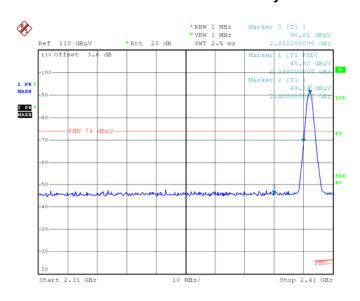




## 8DPSK

# Band Edges (CH-Low) Detector mode: Peak

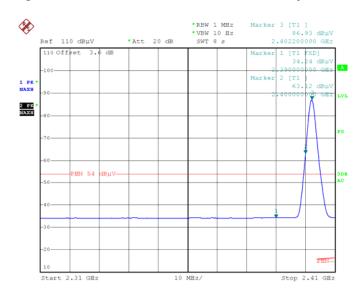
## **Polarity: Horizontal**



Date: 5.DEC.2013 15:00:37

# Band Edges (CH-Low) Detector mode: Average

## **Polarity: Horizontal**



Date: 5.DEC.2013 14:59:00

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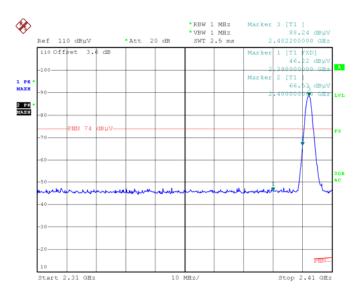
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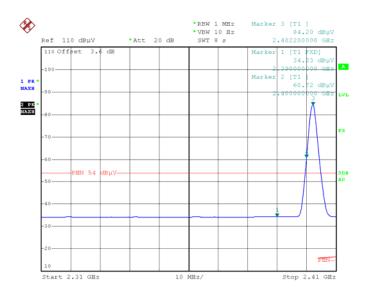
## **Polarity: Vertical**



Date: 5.DEC.2013 15:12:07

# Band Edges (CH-Low) Detector mode: Average

### **Polarity: Vertical**



Date: 5.DEC.2013 15:11:10

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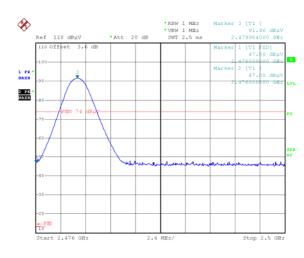
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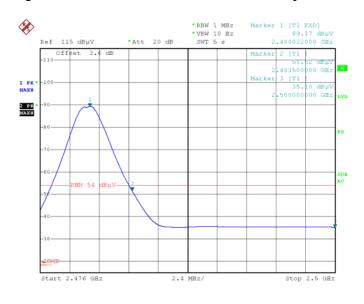
## **Polarity: Horizontal**



Date: 5.DEC.2013 15:38:12

# Band Edges (CH-High) Detector mode: Average

## **Polarity: Horizontal**



Date: 2.DEC.2013 16:20:35

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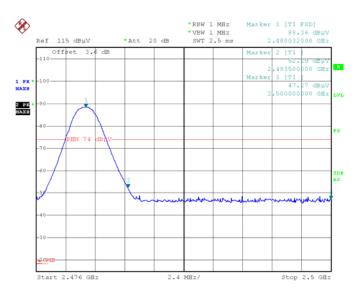
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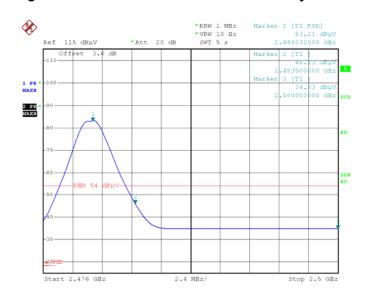
## tector mode: Peak Polarity: Vertical



Date: 2.DEC.2013 16:24:24

## Band Edges (CH-High) Detector mode: Average

**Polarity: Vertical** 



Date: 2.DEC.2013 16:25:12

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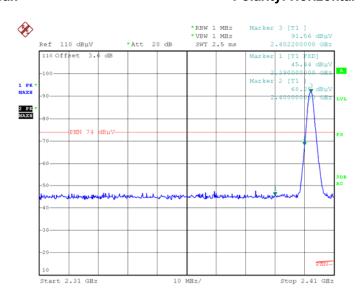


### **PCB Antenna**

## **QPSK**

# Band Edges (CH-Low) Detector mode: Peak

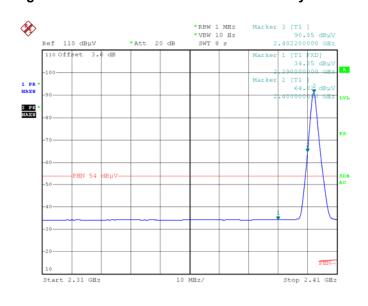
## **Polarity: Horizontal**



Date: 5.DEC.2013 14:51:32

# Band Edges (CH-Low) Detector mode: Average

## **Polarity: Horizontal**



Date: 5.DEC.2013 14:52:04

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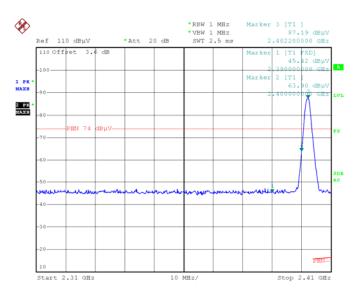
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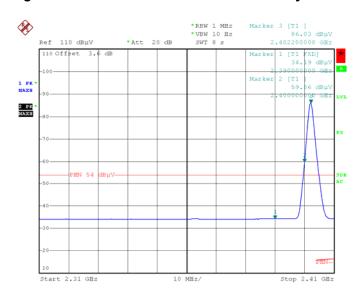
## **Polarity: Vertical**



Date: 5.DEC.2013 15:14:07

# Band Edges (CH-Low) Detector mode: Average

## **Polarity: Vertical**



Date: 5.DEC.2013 15:15:35

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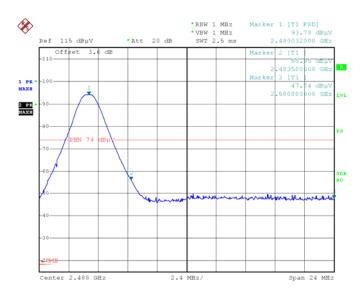
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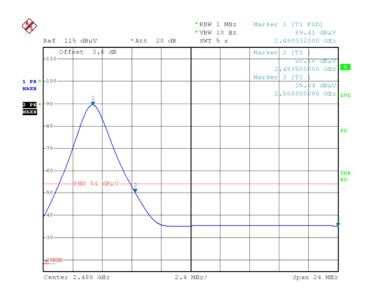
## **Polarity: Horizontal**



Date: 2.DEC.2013 16:40:23

## Band Edges (CH-High) Detector mode: Average

### **Polarity: Horizontal**



Date: 2.DEC.2013 16:49:31

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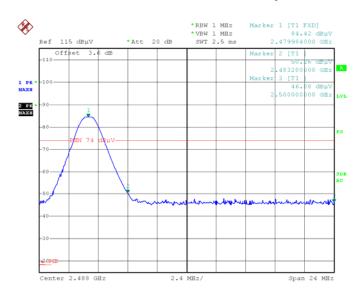
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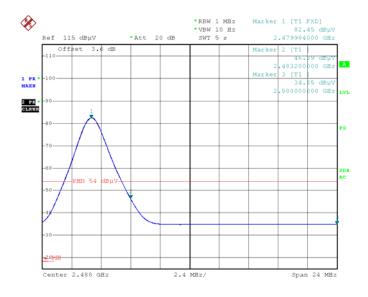
## **Polarity: Vertical**



Date: 2.DEC.2013 17:07:19

## Band Edges (CH-High) Detector mode: Average

## **Polarity: Vertical**



Date: 2.DEC.2013 17:06:44

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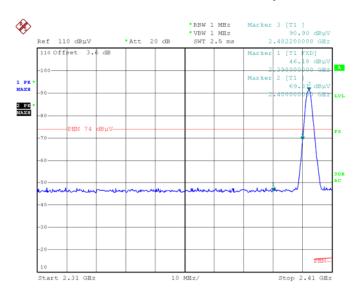




## π/4-DQPSK

# Band Edges (CH-Low) Detector mode: Peak

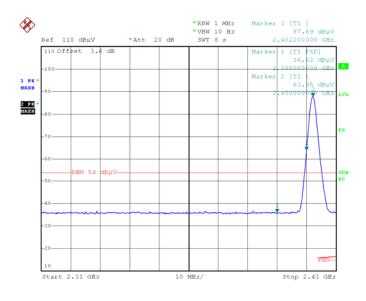
## **Polarity: Horizontal**



Date: 5.DEC.2013 15:03:47

# Band Edges (CH-Low) Detector mode: Average

## **Polarity: Horizontal**



Date: 5.DEC.2013 14:57:13

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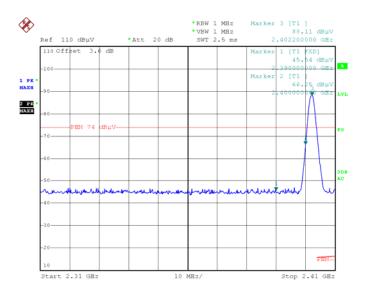
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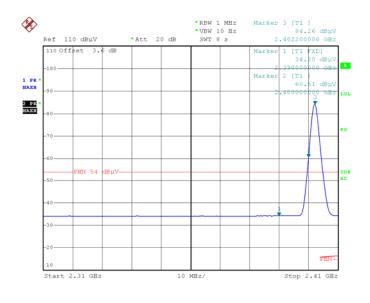
## **Polarity: Vertical**



Date: 5.DEC.2013 15:08:05

# Band Edges (CH-Low) Detector mode: Average

**Polarity: Vertical** 



Date: 5.DEC.2013 15:08:57

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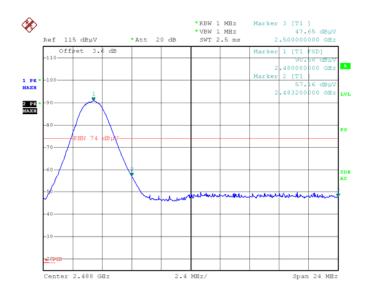
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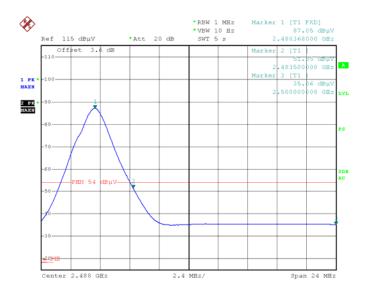
## **Polarity: Horizontal**



Date: 2.DEC.2013 16:56:50

## Band Edges (CH-High) Detector mode: Average

## **Polarity: Horizontal**



Date: 2.DEC.2013 16:55:13

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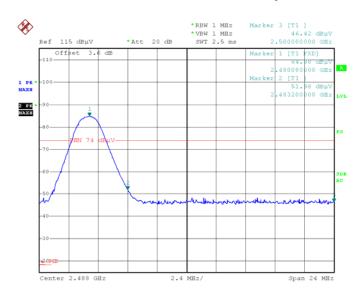
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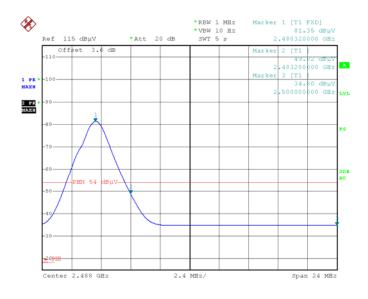
## **Polarity: Vertical**



Date: 2.DEC.2013 17:03:34

## Band Edges (CH-High) Detector mode: Average

**Polarity: Vertical** 



Date: 2.DEC.2013 17:04:09

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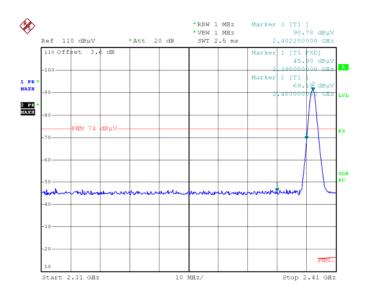




## 8DPSK

# Band Edges (CH-Low) Detector mode: Peak

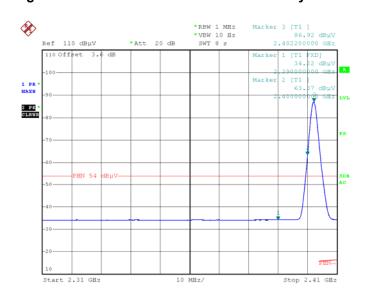
## **Polarity: Horizontal**



Date: 5.DEC.2013 15:01:03

# Band Edges (CH-Low) Detector mode: Average

## **Polarity: Horizontal**



Date: 5.DEC.2013 15:00:01

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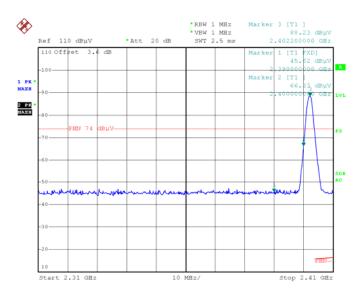
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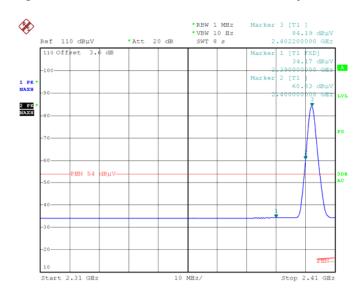
## **Polarity: Vertical**



Date: 5.DEC.2013 15:12:19

# Band Edges (CH-Low) Detector mode: Average

### **Polarity: Vertical**



Date: 5.DEC.2013 15:11:39

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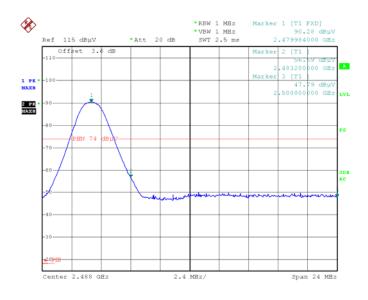
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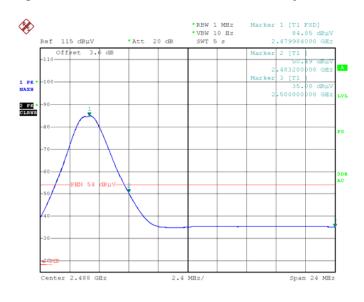
## **Polarity: Horizontal**



Date: 2.DEC.2013 17:23:03

# Band Edges (CH-High) Detector mode: Average

## **Polarity: Horizontal**



Date: 2.DEC.2013 17:16:02

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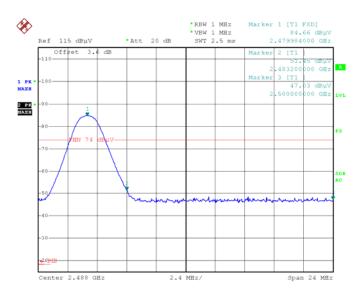
Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn

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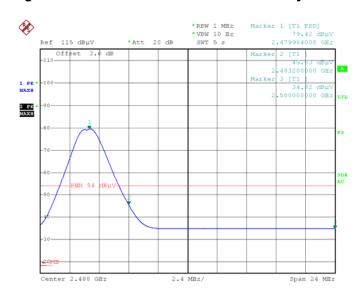
## **Polarity: Vertical**



Date: 2.DEC.2013 17:10:20

# Band Edges (CH-High) Detector mode: Average

### **Polarity: Vertical**



Date: 2.DEC.2013 17:12:05

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## 11.0 FREQUENCY SEPARATION

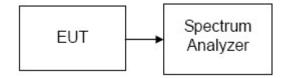
## **11.1 LIMIT**

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.

## 11.2 MEASUREMENT EQUIPMENT USED

Frequency Separation					
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2013/03

#### 11.3 TEST CONFIGURATION



#### 11.4 TEST PROCEDURE

- 1. Place the EUT on the table and set it in 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. Set center frequency of spectrum analyzer = middle of hopping channel.
- 4. Set the spectrum analyzer as RBW=30kHz, VBW=30kHz, Adjust Span to 4 MHz, Sweep = auto.
- 5. Max hold. Mark 3 Peaks of hopping channel and record the 3 peaks frequency.

#### 11.5 TEST RESULTS

**PASSED** 

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## FCC ID:2AAYDWLU6300B



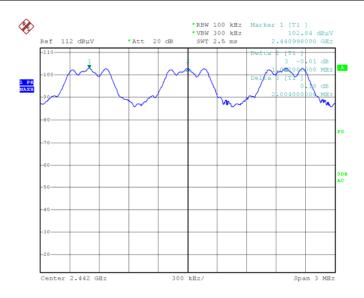




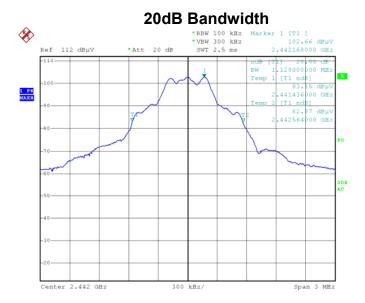
#### **Test Data**

## **GFSK**

Channel Separation (MHz)	Two-thirds of the 20dB Bandwidth (MHz)	Channel Separation Limit	Result	
1MHz	0.752	> Two-thirds of the 20 dB Bandwidth	PASSED	



Date: 23.SEP.2013 17:08:49



Date: 23.SEP.2013 16:59:30

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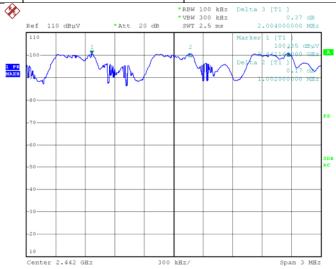
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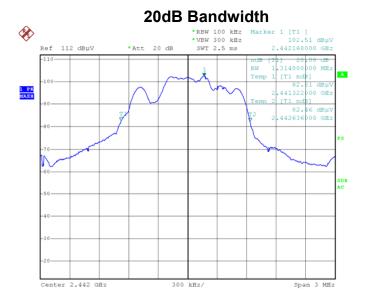


## π/4-DQPSK

Channel Separation (MHz)	Two-thirds of the 20dB Bandwidth (MHz)	Channel Separation Limit	Result	
1MHz	0.876	> Two-thirds of the 20 dB Bandwidth	PASSED	



Date: 25.SEP.2013 13:49:27



Date: 23.SEP.2013 16:58:11

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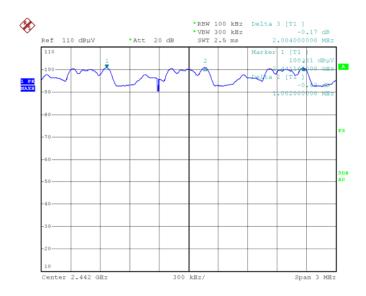
Complaint line: +86-20-85533471 E-mail: cts@cts-lab.com.cn



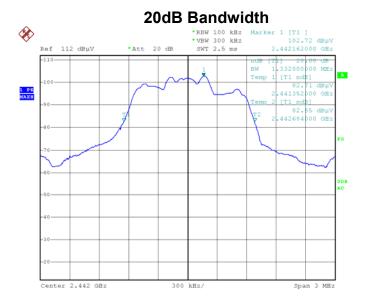


#### 8DPSK

Channel Separation (MHz)	Two-thirds of the 20dB Bandwidth (MHz)	Channel Separation Limit	Result
1MHz	0.888	> Two-thirds of the 20 dB Bandwidth	PASSED



Date: 25.SEP.2013 13:54:04



Date: 23.SEP.2013 15:07:03

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## 12.0 NUMBER OF HOPPING FREQUENCY

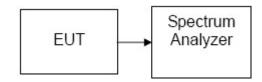
#### **12.1 LIMIT**

According to §15.247(a)(1)(ii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands shall use at least 15 hopping frequencies.

#### 12.2 MEASUREMENT EQUIPMENT USED

Peak	Power Spectral Density						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.		
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2013/03		

#### 12.3 TEST CONFIGURATION



## **12.4 TEST PROCEDURE**

- 1. Place the EUT on the table and set it in 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. Set spectrum analyzer Start=2400MHz, Stop = 2442 MHz, Sweep = 1ms and Start=2441MHz, Stop = 2483.5MHz, Sweep = 1ms.
- 4. Set the spectrum analyzer as RBW, VBW=300kHz,
- 5. Max hold, view and count how many channel in the band.

### 12.5 TEST RESULTS

**PASSED** 

## 12.6 Test Data

Result(No. of CH)	Limit	Result	
79	>15	Pass	

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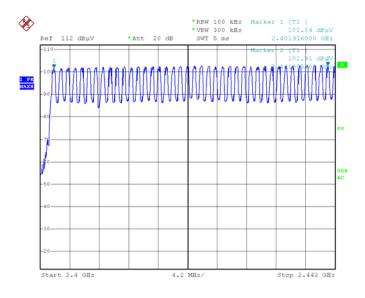
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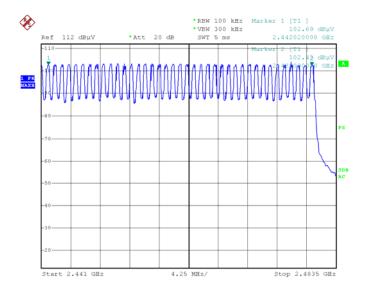




## **Test Plot GFSK**



Date: 23.SEP.2013 17:24:46



Date: 23.SEP.2013 17:44:17

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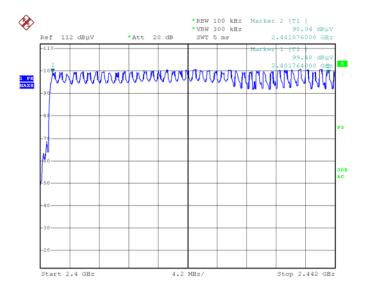
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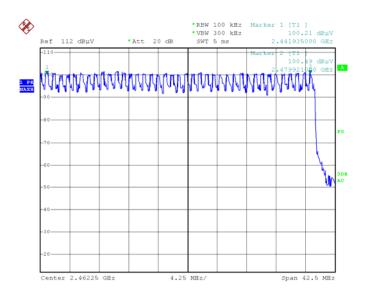




## Test Plot π/4-DQPSK



Date: 25.SEP.2013 14:15:21



Date: 25.SEP.2013 14:32:13

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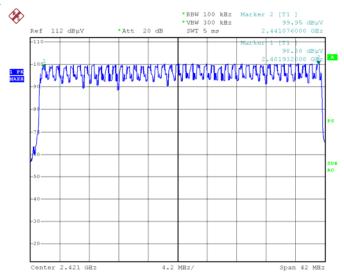
### FCC ID:2AAYDWLU6300B



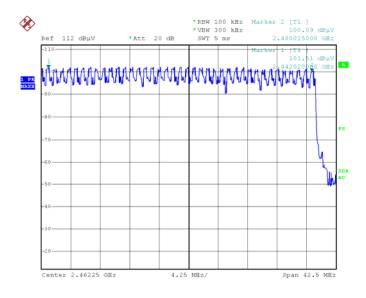




## **Test Plot 8DPSK**



Date: 25.SEP.2013 14:59:12



Date: 25.SEP.2013 14:44:33

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# 13.0 TIME OF OCCUPANCY (DWELL TIME)

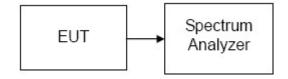
### **13.1 LIMIT**

According to §15.247(a)(1)(iii), Frequency hopping systems operating in the 2400MHz-2483.5 MHz bands. The average time of occupancy on any channels shall not greater than 0.4 s within a period 0.4 s multiplied by the number of hopping channels employed.

## 13.2 MEASUREMENT EQUIPMENT USED

Frequency Separation						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	
1	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2013/03	

#### 13.3 TEST CONFIGURATION



## **13.4 TEST PROCEDURE**

- 1. Place the EUT on the table and set it in 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. Set center frequency of spectrum analyzer = operating frequency.
- 4. Set the spectrum analyzer as RBW, VBW=1MHz, Span = 0Hz, Sweep = auto.
- 5. Repeat above procedures until all frequency measured were complete.

#### 13.5 TEST RESULTS

**PASSED** 

13.6 Test Data

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#### FCC ID:2AAYDWLU6300B







GFSK DH1

CH Middle: 0.385\*(1600/2)/79\*31.6=123.2(ms)

СН	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
Middle	0.385	123.2	31.6	400	Pass

DH3

CH Middle: 1.650\*(1600/4)/79\*31.6=264.0(ms)

СН	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
Middle	1.650	264.0	31.6	400	Pass

DH<sub>5</sub>

CH Middle: 2.89\*(1600/6)/79\*31.6=308.27(ms)

СН	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
Middle	2.89	308.27	31.6	400	Pass

## π/4-DQPSK

DH1

CH Middle: 0.390\*(1600/2)/79\*31.6=124.8(ms)

СН	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
Middle	0.390	124.8	31.6	400	Pass

DH3

CH Middle: 1.650\*(1600/4)/79\*31.6=264.0(ms)

OTT IVII G GIOT	000 (1000/1)/1	<u> </u>			
СН	Pulse Time	Total of Dwell	Period Time	Limit	Result
СП	(ms)	(ms)	(s)	(ms)	Result
Middle	1.650	264.0	31.6	400	Pass

DH<sub>5</sub>

CH Middle: 2.885\*(1600/6)/79\*31.6=307.73(ms)

СН	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
Middle	2.885	307.73	31.6	400	Pass

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#### FCC ID:2AAYDWLU6300B







8DPSK DH1

CH Middle: 0.390\*(1600/2)/79\*31.6=124.8 (ms)

СН	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
Middle	0.390	124.8	31.6	400	Pass

DH3

CH Middle: 1.650\*(1600/4)/79\*31.6=264.0(ms)

СН	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
Middle	1.650	264.0	31.6	400	Pass

DH<sub>5</sub>

CH Middle: 2.885\*(1600/6)/79\*31.6=307.73 (ms)

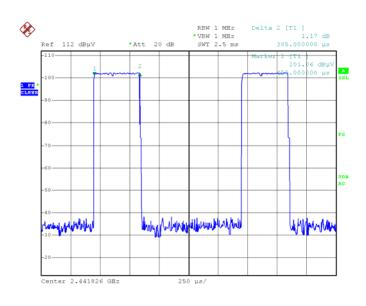
СН	Pulse Time (ms)	Total of Dwell (ms)	Period Time (s)	Limit (ms)	Result
Middle	2.885	307.73	31.6	400	Pass

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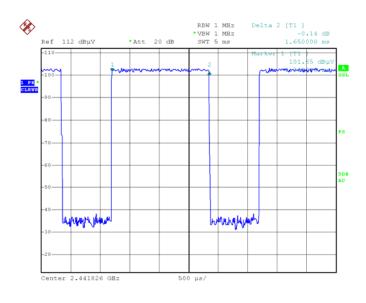


# Test Plot GFSK DH 1 (CH Mid)



Date: 23.SEP.2013 18:02:39

# DH 3 (CH Mid)



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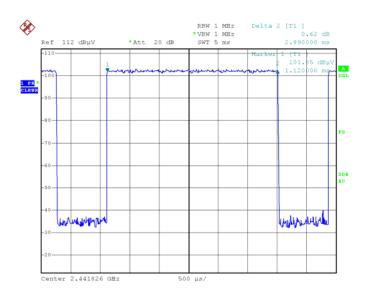
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## DH 5 (CH Mid)



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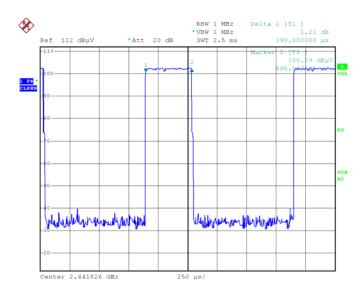
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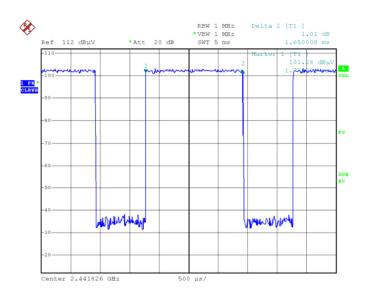


## π/4-DQPSK DH 1 (CH Mid)



Date: 23.SEP.2013 18:22:12

# DH 3 (CH Mid)



Date: 23.SEP.2013 18:18:24

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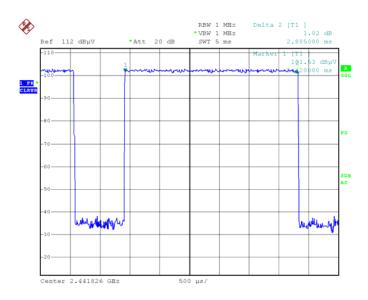
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# DH 5 (CH Mid)



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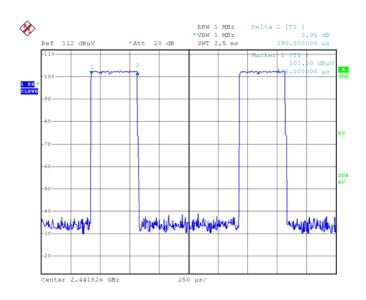
Complaint line: +86-20-85533471

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



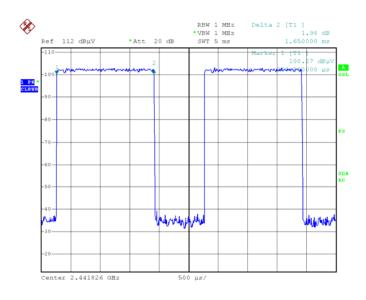


## 8DPSK DH 1 (CH Mid)



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# DH 3 (CH Mid)



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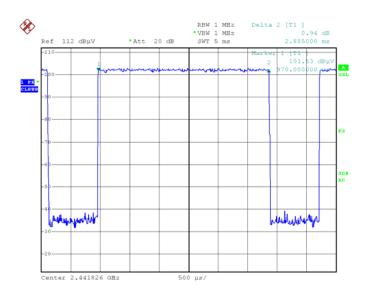
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## DH 5 (CH Mid)



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## 14.0 SPURIOUS EMISSIONS

#### **14.1 LIMIT**

Except as provided elsewhere in this Subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

FREQUENCY			DISTANCE	FIELD STREN	GTHS LIMIT
	MHz		Meters	μV/m	dB(μV)/m
0.009	~	0.490	300	2400/F(kHz)	
0.490	~	1.705	30	24000/F(kHz)	
1.705	~	30	30	30	
30	~	88	3	100	40.0
88	~	216	3	150	43.5
216	~	960	3	200	46.0
960	~	1000	3	500	54.0
Λ,	Above 1000		3	Other:74.0 dB(μV)/m (Peak)	
A			3	54.0 dB(μV)/m (Average)	

Note: Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

## 14.2 Test Equipment

Radia	Radiated disturbance (electric field)									
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.					
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	100868	2012/11					
2	Biconical Antenna	ROHDE & SCHWARZ	HK116	100221	2013/03					
3	Log per Antenna	ROHDE & SCHWARZ	HL223	100226	2013/03					
4	Log per Antenna	ROHDE & SCHWARZ	HL050	100186	2013/03					
5	Signal analyzer	ROHDE & SCHWARZ	FSIQ26	100311	2013/03					
6	Loop Antenna	A.R.A	PLA-1030/B	1030	2012/11					
7	EMI Test Software	EZ-EMC	Farad	N/A	N/A					

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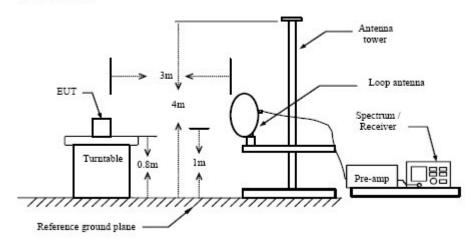
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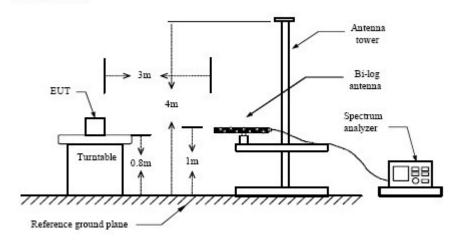


## 14.3 TEST CONFIGURATION

Below 30MHz



Below 1 GHz



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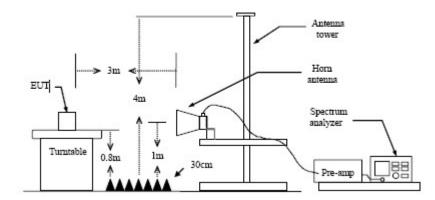
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#### Above 1 GHz



#### 14.4 TEST PROCEDURE

- 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.
- EUT is set 3m away from the receiving antenna, which is varied from 1m to 4m to find out the highest emissions.
- Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
- 5. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.
- 6. Repeat above procedures until the measurements for all frequencies are complete.

## 14.5 TEST RESULTS

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

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Test Mode:	TX –X Position Mode	Result:	■ - passed
Frequency range:	9KHz~30MHz		☐ - not passed

No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.	
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
Rem	Remark: The test result reading value is to low, margin all > 10dB of the limit.							

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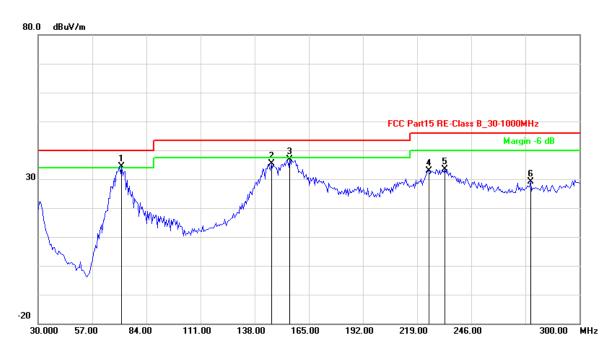
**Report No.:** CGZ3130902-00801 & 802-E Page 75 of 100



## **CENTRE OF TESTING SERVICE**

EUT	Wifi+BT combo card
Antenna Type	PCB Antenna
Operating Condition	DC 3.3V
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	02~23 September 2013
Operator	Duke
MODEL NO	WLU6300B(T-RoHS)

Channel:	TX –X Position	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	30MHz-1GHz		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	71.6633	-22.57	56.89	34.32	40.00	-5.68	QP	
2	146.3327	-16.99	52.47	35.48	43.50	-8.02	QP	
3	155.5311	-18.22	54.98	36.76	43.50	-6.74	QP	
4	224.7896	-12.39	45.33	32.94	46.00	-13.06	QP	
5	232.9058	-12.57	46.07	33.50	46.00	-12.50	QP	
6	275.6513	-10.39	39.43	29.04	46.00	-16.96	QP	
Remark	Remark: Other frequency mini margin all >10 dB of Limit							

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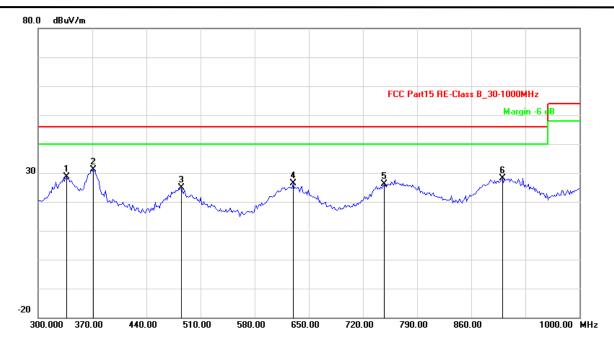
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## **CENTRE OF TESTING SERVICE**







No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	336.4729	-13.97	42.62	28.65	46.00	-17.35	QP
2	371.5431	-14.45	45.49	31.04	46.00	-14.96	QP
3	485.1703	-9.81	34.68	24.87	46.00	-21.13	QP
4	629.6593	-7.33	33.63	26.30	46.00	-19.70	QP
5	747.4950	-6.54	32.76	26.22	46.00	-19.78	QP
6	900.4008	-3.92	31.99	28.07	46.00	-17.93	QP
Remark	: Other frequen	icy mini ma	rgin all >10 dB	of Limit			

Mode:	GFSK	Result:	■ - passed
Channel:	Low Channel		☐ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2829.659	5.64	44.43	50.07	74.00	-23.93	peak
2	2829.659	5.64	30.04	35.68	54.00	-18.32	AVG
3	3336.673	7.68	43.17	50.85	74.00	-23.15	peak
4	3336.673	7.68	27.21	34.89	54.00	-19.11	AVG
5	3997.996	9.80	40.61	50.41	74.00	-23.59	peak
6	3997.996	9.80	25.45	35.25	54.00	-18.75	AVG
7	5144.289	12.62	38.58	51.20	74.00	-22.80	peak
8	5144.289	12.62	24.12	36.74	54.00	-17.26	AVG
9	7194.389	18.07	38.18	56.25	74.00	-17.75	peak
10	7194.389	18.07	23.18	41.25	54.00	-12.75	AVG
11	7635.271	18.68	38.31	56.99	74.00	-17.01	peak
12	7635.271	18.68	22.29	40.97	54.00	-13.03	AVG
Remark:	Other frequen	icy mini ma	rgin all >10 dB	of Limit			·

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## **CENTRE OF TESTING SERVICE**

Mode: GFSK
Channel: Middle Channel
Test point: Horizontal
Frequency range: 1GHz-26.5GHz

Result: □ - passed
□ - not passed

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	1947.896	-1.17	44.87	43.70	74.00	-30.30	peak	
2	1947.896	-1.17	30.03	28.86	54.00	-25.14	AVG	
3	3424.850	7.96	42.56	50.52	74.00	-23.48	peak	
4	3424.850	7.96	27.73	35.69	54.00	-18.31	AVG	
5	4350.701	10.63	39.37	50.00	74.00	-24.00	peak	
6	4350.701	10.63	25.33	35.96	54.00	-18.04	AVG	
7	5342.685	13.26	38.40	51.66	74.00	-22.34	peak	
8	5342.685	13.26	22.98	36.24	54.00	-17.76	AVG	
9	7657.315	18.71	38.88	57.59	74.00	-16.41	peak	
10	7657.315	18.71	23.44	42.15	54.00	-11.85	AVG	
11	7899.800	19.05	38.74	57.79	74.00	-16.21	peak	
12	7899.800	19.05	23.12	42.17	54.00	-11.83	AVG	
Remark	Remark: Other frequency mini margin all >10 dB of Limit							

Mode:	GFSK	Result:	■ - passed
Channel:	High Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2212.425	0.94	40.42	41.36	74.00	-32.64	peak
2	2212.425	0.94	25.41	26.35	54.00	-27.65	AVG
3	3468.938	8.11	38.95	47.06	74.00	-26.94	peak
4	3468.938	8.11	24.57	32.68	54.00	-21.32	AVG
5	4350.701	10.63	36.43	47.06	74.00	-26.94	peak
6	4350.701	10.63	21.78	32.41	54.00	-21.59	AVG
7	4923.848	11.98	36.93	48.91	74.00	-25.09	peak
8	4923.848	11.98	21.67	33.65	54.00	-20.35	AVG
9	7282.565	18.19	36.05	54.24	74.00	-19.76	peak
10	7282.565	18.19	21.93	40.12	54.00	-13.88	AVG
11	7855.711	18.99	34.53	53.52	74.00	-20.48	peak
12	7855.711	18.99	19.28	38.27	54.00	-15.73	AVG
Remark:	Other frequen	icy mini ma	rgin all >10 dB	of Limit			

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**Report No.:** CGZ3130902-00801 & 802-E Page 78 of 100







 Mode:
 π/4-DQPSK
 Result:
 - passed

 Channel:
 Low Channel
 □ - not passed

 Test point:
 Horizontal

 Frequency range:
 1GHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2917.836	6.13	43.67	49.80	74.00	-24.20	peak
2	2917.836	6.13	28.43	34.56	54.00	-19.44	AVG
3	3468.938	8.11	43.09	51.20	74.00	-22.80	peak
4	3468.938	8.11	28.64	36.75	54.00	-17.25	AVG
5	4108.216	10.06	39.88	49.94	74.00	-24.06	peak
6	4108.216	10.06	24.06	34.12	54.00	-19.88	AVG
7	4791.583	11.67	38.89	50.56	74.00	-23.44	peak
8	4791.583	11.67	24.01	35.68	54.00	-18.32	AVG
9	5761.523	14.61	40.12	54.73	74.00	-19.27	peak
10	5761.523	14.61	25.25	39.86	54.00	-14.14	AVG
11	7282.565	18.19	37.81	56.00	74.00	-18.00	peak
12	7282.565	18.19	23.38	41.57	54.00	-12.43	AVG
Remark:	Other frequen	cy mini ma	rgin all >10 dB	of Limit			

Mode:	π/4-DQPSK	Result:	■ - passed
Channel:	Middle Channel		☐ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	2300.601	1.81	41.08	42.89	74.00	-31.11	peak
2	2300.601	1.81	25.77	27.58	54.00	-26.42	AVG
3	3601.202	8.53	41.06	49.59	74.00	-24.41	peak
4	3601.202	8.53	26.09	34.62	54.00	-19.38	AVG
5	4350.701	10.63	36.72	47.35	74.00	-26.65	peak
6	4350.701	10.63	21.51	32.14	54.00	-21.86	AVG
7	4879.760	11.88	36.49	48.37	74.00	-25.63	peak
8	4879.760	11.88	21.73	33.61	54.00	-20.39	AVG
9	5651.303	14.26	37.85	52.11	74.00	-21.89	peak
10	5651.303	14.26	23.22	37.48	54.00	-16.52	AVG
11	7370.742	18.32	35.09	53.41	74.00	-20.59	peak
12	7370.742	18.32	20.35	38.67	54.00	-15.33	AVG
Remark:	Other frequen	icy mini ma	rgin all >10 dB	of Limit			·

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## **CENTRE OF TESTING SERVICE**

 Mode:
 π/4-DQPSK
 Result:
 ■ - passed

 Channel:
 High Channel
 □ - not passed

 Test point:
 Horizontal

 Frequency range:
 1GHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	4086.172	10.01	37.08	47.09	74.00	-26.91	peak
2	4086.172	10.01	22.64	32.65	54.00	-21.35	AVG
3	4703.407	11.46	37.52	48.98	74.00	-25.02	peak
4	4703.407	11.46	22.02	33.48	54.00	-20.52	AVG
5	5144.289	12.62	38.06	50.68	74.00	-23.32	peak
6	5144.289	12.62	22.65	35.27	54.00	-18.73	AVG
7	5651.303	14.26	38.79	53.05	74.00	-20.95	peak
8	5651.303	14.26	24.21	38.47	54.00	-15.53	AVG
9	7304.609	18.22	36.33	54.55	74.00	-19.45	peak
10	7304.609	18.22	21.79	40.01	54.00	-13.99	AVG
11	7855.711	18.99	35.93	54.92	74.00	-19.08	peak
12	7855.711	18.99	20.87	39.86	54.00	-14.14	AVG
Remark	: Other frequen	icy mini ma	rgin all >10 dB	of Limit			

Mode: 8DPSK F	Result:	- passed
Channel: Low Channel		☐ - not passed
Test point: Horizontal		
Frequency range: 1GHz-26.5GHz		

No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	3050.100	6.76	42.56	49.32	74.00	-24.68	peak
2	3050.100	6.76	27.50	34.26	54.00	-19.74	AVG
3	3865.731	9.38	40.01	49.39	74.00	-24.61	peak
4	3865.731	9.38	25.13	34.51	54.00	-19.49	AVG
5	4615.230	11.26	38.12	49.38	74.00	-24.62	peak
6	4615.230	11.26	23.48	34.74	54.00	-19.26	AVG
7	5629.258	14.19	40.02	54.21	74.00	-19.79	peak
8	5629.258	14.19	25.43	39.62	54.00	-14.38	AVG
9	7547.094	18.56	38.61	57.17	74.00	-16.83	peak
10	7547.094	18.56	23.59	42.15	54.00	-11.85	AVG
11	8539.078	20.71	38.77	59.48	74.00	-14.52	peak
12	8539.078	20.71	23.61	44.32	54.00	-9.68	AVG
Remark	Other frequen	cy mini ma	rgin all >10 dB	of Limit			

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Mode:8DPSKResult:■ - passedChannel:Middle Channel□ - not passedTest point:HorizontalFrequency range:1GHz-26.5GHz

No.	Frequency (MHz)	Factor	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin	Det.
		(dB)				(dB)	_
1	1551.102	-1.36	40.78	39.42	74.00	-34.58	peak
2	1551.102	-1.36	25.36	24.00	54.00	-30.00	AVG
3	2234.469	1.16	43.49	44.65	74.00	-29.35	peak
4	2234.469	1.16	28.49	29.65	54.00	-24.35	AVG
5	2851.703	5.76	43.37	49.13	74.00	-24.87	peak
6	2851.703	5.76	28.69	34.45	54.00	-19.55	AVG
7	3711.423	8.88	40.25	49.13	74.00	-24.87	peak
8	3711.423	8.88	25.38	34.26	54.00	-19.74	AVG
9	4659.319	11.36	38.19	49.55	74.00	-24.45	peak
10	4659.319	11.36	23.66	35.02	54.00	-18.98	AVG
11	7304.609	18.22	36.72	54.94	74.00	-19.06	peak
12	7304.609	18.22	21.65	39.87	54.00	-14.13	AVG
Remark:	Other frequen	cy mini ma	rgin all >10 dB	of Limit			·

Mode:	8DPSK	Result:	■ - passed
Channel:	High Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1727.455	-1.28	43.98	42.70	74.00	-31.30	peak
2	1727.455	-1.28	28.73	27.45	54.00	-26.55	AVG
3	1969.940	-1.16	44.67	43.51	74.00	-30.49	peak
4	1969.940	-1.16	29.80	28.64	54.00	-25.36	AVG
5	3050.100	6.76	43.89	50.65	74.00	-23.35	peak
6	3050.100	6.76	28.50	35.26	54.00	-18.74	AVG
7	4108.216	10.06	39.79	49.85	74.00	-24.15	peak
8	4108.216	10.06	24.12	34.18	54.00	-19.82	AVG
9	5100.200	12.48	38.47	50.95	74.00	-23.05	peak
10	5100.200	12.48	22.80	35.28	54.00	-18.72	AVG
11	7238.477	18.13	37.73	55.86	74.00	-18.14	peak
12	7238.477	18.13	22.00	40.13	54.00	-13.87	AVG
Remark:	Other frequen	icy mini ma	rgin all >10 dB	of Limit			

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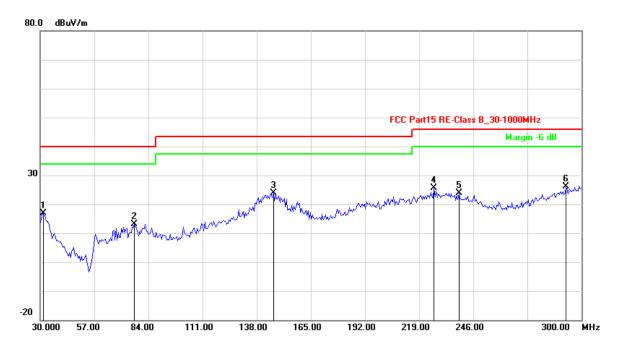
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	31.6232	-19.92	36.91	16.99	40.00	-23.01	QP		
2	77.0741	-21.43	34.68	13.25	40.00	-26.75	QP		
3	146.3327	-16.99	40.96	23.97	43.50	-19.53	QP		
4	226.4128	-12.37	37.89	25.52	46.00	-20.48	QP		
5	238.8577	-13.04	36.92	23.88	46.00	-22.12	QP		
6	292.4249	-6.70	32.90	26.20	46.00	-19.80	QP		
Remark	Remark: Other frequency mini margin all >10 dB of Limit								

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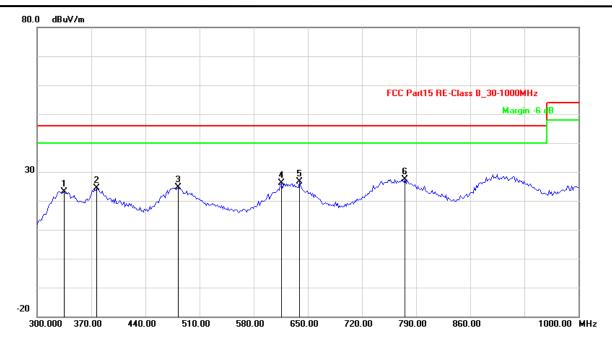
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## **CENTRE OF TESTING SERVICE**







No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	335.0701	-14.31	37.56	23.25	46.00	-22.75	QP		
2	377.1543	-14.72	39.10	24.38	46.00	-21.62	QP		
3	482.3647	-9.75	34.49	24.74	46.00	-21.26	QP		
4	615.6313	-7.92	33.93	26.01	46.00	-19.99	QP		
5	639.4790	-7.60	34.14	26.54	46.00	-19.46	QP		
6	775.5511	-5.85	33.24	27.39	46.00	-18.61	QP		
Remark	Remark: Other frequency mini margin all >10 dB of Limit								

Mode:	GFSK	Result:	■ - passed
Channel:	Low Channel		☐ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	1947.896	-1.17	48.70	47.53	74.00	-26.47	peak		
2	1947.896	-1.17	33.53	32.36	54.00	-21.64	AVG		
3	3050.100	6.76	42.84	49.60	74.00	-24.40	peak		
4	3050.100	6.76	27.76	34.52	54.00	-19.48	AVG		
5	3777.555	9.10	42.60	51.70	74.00	-22.30	peak		
6	3777.555	9.10	27.79	36.89	54.00	-17.11	AVG		
7	4923.848	11.98	38.18	50.16	74.00	-23.84	peak		
8	4923.848	11.98	23.16	35.14	54.00	-18.86	AVG		
9	5695.391	14.40	40.25	54.65	74.00	-19.35	peak		
10	5695.391	14.40	25.31	39.71	54.00	-14.29	AVG		
11	8142.285	19.59	40.05	59.64	74.00	-14.36	peak		
12	8142.285	19.59	25.09	44.68	54.00	-9.32	AVG		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

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## **CENTRE OF TESTING SERVICE**

Mode:GFSKResult:■ - passedChannel:Middle Channel□ - not passedTest point:VerticalFrequency range:1GHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3270.541	7.47	42.38	49.85	74.00	-24.15	peak		
2	3270.541	7.47	26.78	34.25	54.00	-19.75	AVG		
3	3711.423	8.88	41.39	50.27	74.00	-23.73	peak		
4	3711.423	8.88	26.81	35.69	54.00	-18.31	AVG		
5	4196.393	10.27	39.80	50.07	74.00	-23.93	peak		
6	4196.393	10.27	24.52	34.79	54.00	-19.21	AVG		
7	5122.244	12.55	40.03	52.58	74.00	-21.42	peak		
8	5122.244	12.55	24.74	37.29	54.00	-16.71	AVG		
9	5629.259	14.19	39.16	53.35	74.00	-20.65	peak		
10	5629.259	14.19	24.27	38.46	54.00	-15.54	AVG		
11	7921.844	19.08	38.74	57.82	74.00	-16.18	peak		
12	7921.844	19.08	23.57	42.65	54.00	-11.35	AVG		
Remark	Remark: Other frequency mini margin all >10 dB of Limit								

Mode:	GFSK	Result:	■ - passed
Channel:	High Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.		
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)			
1	3226.453	7.33	40.72	48.05	74.00	-25.95	peak		
2	3226.453	7.33	26.29	33.62	54.00	-20.38	AVG		
3	3557.114	8.39	40.36	48.75	74.00	-25.25	peak		
4	3557.114	8.39	24.75	33.14	54.00	-20.86	AVG		
5	4284.569	10.48	38.16	48.64	74.00	-25.36	peak		
6	4284.569	10.48	22.80	33.28	54.00	-20.72	AVG		
7	5452.906	13.62	36.77	50.39	74.00	-23.61	peak		
8	5452.906	13.62	22.02	35.64	54.00	-18.36	AVG		
9	7216.433	18.10	36.67	54.77	74.00	-19.23	peak		
10	7216.433	18.10	21.65	39.75	54.00	-14.25	AVG		
11	7613.226	18.65	36.93	55.58	74.00	-18.42	peak		
12	7613.226	18.65	21.48	40.13	54.00	-13.87	AVG		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

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## **CENTRE OF TESTING SERVICE**

 Mode:
 π/4-DQPSK
 Result:
 - passed

 Channel:
 Low Channel
 □ - not passed

 Test point:
 Vertical

 Frequency range:
 1GHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	1595.190	-1.34	43.28	41.94	74.00	-32.06	peak		
2	1595.190	-1.34	27.66	26.32	54.00	-27.68	AVG		
3	2080.160	-0.36	42.48	42.12	74.00	-31.88	peak		
4	2080.160	-0.36	27.82	27.46	54.00	-26.54	AVG		
5	3006.012	6.62	43.53	50.15	74.00	-23.85	peak		
6	3006.012	6.62	28.64	35.26	54.00	-18.74	AVG		
7	3733.467	8.95	40.76	49.71	74.00	-24.29	peak		
8	3733.467	8.95	25.90	34.85	54.00	-19.15	AVG		
9	4989.980	12.14	38.31	50.45	74.00	-23.55	peak		
10	4989.980	12.14	23.47	35.61	54.00	-18.39	AVG		
11	7370.742	18.32	38.35	56.67	74.00	-17.33	peak		
12	7370.742	18.32	22.96	41.28	54.00	-12.72	AVG		
Remark	Remark: Other frequency mini margin all >10 dB of Limit								

Mode:	π/4-DQPSK	Result:	■ - passed
Channel:	Middle Channel		☐ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	1595.190	-1.34	42.00	40.66	74.00	-33.34	peak		
2	1595.190	-1.34	26.68	25.34	54.00	-28.66	AVG		
3	2168.337	0.51	41.69	42.20	74.00	-31.80	peak		
4	2168.337	0.51	26.64	27.15	54.00	-26.85	AVG		
5	2961.924	6.38	42.32	48.70	74.00	-25.30	peak		
6	2961.924	6.38	27.07	33.45	54.00	-20.55	AVG		
7	3557.114	8.39	40.42	48.81	74.00	-25.19	peak		
8	3557.114	8.39	24.81	33.20	54.00	-20.80	AVG		
9	5100.200	12.48	37.39	49.87	74.00	-24.13	peak		
10	5100.200	12.48	22.10	34.58	54.00	-19.42	AVG		
11	7216.433	18.10	36.79	54.89	74.00	-19.11	peak		
12	7216.433	18.10	21.58	39.68	54.00	-14.32	AVG		
Remark	Remark: Other frequency mini margin all >10 dB of Limit								

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 Mode:
 π/4-DQPSK
 Result:
 ■ - passed

 Channel:
 High Channel
 □ - not passed

 Test point:
 Vertical

 Frequency range:
 1GHz-26.5GHz

No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)	
1	1837.675	-1.22	40.25	39.03	74.00	-34.97	peak
2	1837.675	-1.22	25.80	24.58	54.00	-29.42	AVG
3	3270.541	7.47	40.22	47.69	74.00	-26.31	peak
4	3270.541	7.47	25.17	32.64	54.00	-21.36	AVG
5	4064.128	9.96	38.09	48.05	74.00	-25.95	peak
6	4064.128	9.96	23.46	33.42	54.00	-20.58	AVG
7	5122.244	12.55	37.40	49.95	74.00	-24.05	peak
8	5122.244	12.55	22.02	34.57	54.00	-19.43	AVG
9	5893.788	15.04	38.63	53.67	74.00	-20.33	peak
10	5893.788	15.04	23.67	38.71	54.00	-15.29	AVG
11	7569.138	18.59	35.59	54.18	74.00	-19.82	peak
12	7569.138	18.59	21.06	39.65	54.00	-14.35	AVG
Remark:	Other frequen	cy mini ma	rgin all >10 dB	of Limit			

Mode:	8DPSK	Result:	- passed
Channel:	Low Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	2895.792	6.01	43.46	49.47	74.00	-24.53	peak		
2	2895.792	6.01	28.14	34.15	54.00	-19.85	AVG		
3	3821.643	9.24	40.44	49.68	74.00	-24.32	peak		
4	3821.643	9.24	25.61	34.85	54.00	-19.15	AVG		
5	4460.922	10.89	38.87	49.76	74.00	-24.24	peak		
6	4460.922	10.89	23.73	34.62	54.00	-19.38	AVG		
7	5452.906	13.62	40.28	53.90	74.00	-20.10	peak		
8	5452.906	13.62	24.54	38.16	54.00	-15.84	AVG		
9	7525.050	18.53	38.66	57.19	74.00	-16.81	peak		
10	7525.050	18.53	24.04	42.57	54.00	-11.43	AVG		
11	8693.387	21.15	38.32	59.47	74.00	-14.53	peak		
12	8693.387	21.15	23.57	44.72	54.00	-9.28	AVG		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

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Mode:8DPSKResult:- passedChannel:Middle Channel□ - not passedTest point:VerticalFrequency range:1GHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2609.218	4.39	43.29	47.68	74.00	-26.32	peak
2	2609.218	4.39	28.06	32.45	54.00	-21.55	AVG
3	3138.277	7.04	40.32	47.36	74.00	-26.64	peak
4	3138.277	7.04	25.57	32.61	54.00	-21.39	AVG
5	4174.349	10.22	37.38	47.60	74.00	-26.40	peak
6	4174.349	10.22	22.42	32.64	54.00	-21.36	AVG
7	4923.848	11.98	36.67	48.65	74.00	-25.35	peak
8	4923.848	11.98	21.98	33.96	54.00	-20.04	AVG
9	6158.317	15.76	37.75	53.51	74.00	-20.49	peak
10	6158.317	15.76	23.39	39.15	54.00	-14.85	AVG
11	7370.742	18.32	35.80	54.12	74.00	-19.88	peak
12	7370.742	18.32	21.42	39.74	54.00	-14.26	AVG
Remark	: Other frequen	cy mini ma	rgin all >10 dB	of Limit			

Mode:	8DPSK	Result:	■ - passed
Channel:	High Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	2807.615	5.51	44.69	50.20	74.00	-23.80	peak
2	2807.615	5.51	29.70	35.21	54.00	-18.79	AVG
3	3402.806	7.89	42.04	49.93	74.00	-24.07	peak
4	3402.806	7.89	26.26	34.15	54.00	-19.85	AVG
5	3733.467	8.95	41.89	50.84	74.00	-23.16	peak
6	3733.467	8.95	26.67	35.62	54.00	-18.38	AVG
7	4527.054	11.05	38.47	49.52	74.00	-24.48	peak
8	4527.054	11.05	23.13	34.18	54.00	-19.82	AVG
9	7018.036	17.83	38.05	55.88	74.00	-18.12	peak
10	7018.036	17.83	22.30	40.13	54.00	-13.87	AVG
11	7943.888	19.11	38.39	57.50	74.00	-16.50	peak
12	7943.888	19.11	23.47	42.58	54.00	-11.42	AVG
Remark:	Other frequen	icy mini ma	rgin all >10 dB	of Limit			

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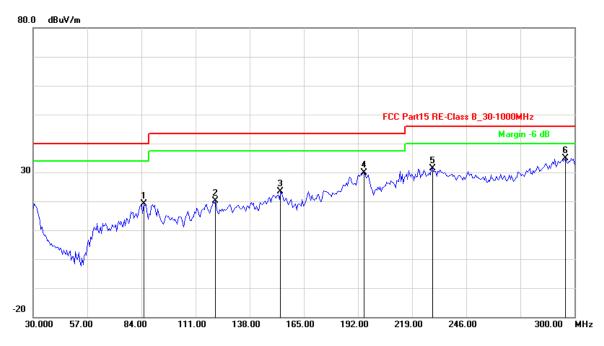


## **CENTRE OF TESTING SERVICE**



EUT	Wifi+BT combo card
Antenna Type	Chip antenna
Operating Condition	DC 3.3V
Test Condition	Ambient Temperature: 25°C Humidity: 56%
Test distance	3 Meter
Test Date:	02~23 September 2013
Operator	Duke
MODEL NO	WLU6300B(T-RoHS)

Channel:	TX –X Position	Result:	■ - passed
Test point:	Horizontal		□ - not passed
Frequency range:	30MHz-1GHz		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	85.1904	-22.51	41.70	19.19	40.00	-20.81	QP
2	120.9018	-18.03	38.15	20.12	43.50	-23.38	QP
3	153.3667	-17.88	41.26	23.38	43.50	-20.12	QP
4	195.0301	-12.34	42.10	29.76	43.50	-13.74	QP
5	229.1182	-12.35	43.77	31.42	46.00	-14.58	QP
6	295.6713	-6.21	41.01	34.80	46.00	-11.20	QP
Remark:	Other frequen	cy mini ma	rgin all >10 dB	of Limit			

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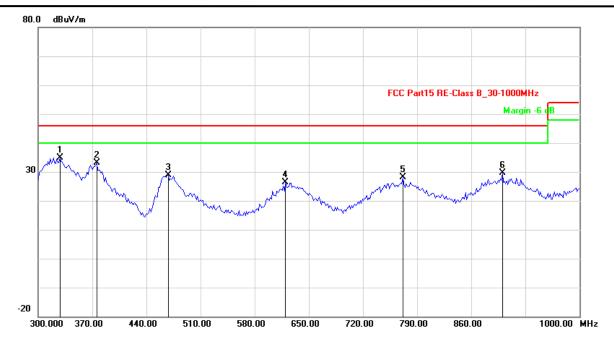
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	328.0561	-16.02	50.97	34.95	46.00	-11.05	QP
2	375.7515	-14.65	47.75	33.10	46.00	-12.90	QP
3	468.3367	-11.81	40.61	28.80	46.00	-17.20	QP
4	619.8397	-7.10	33.54	26.44	46.00	-19.56	QP
5	771.3427	-5.75	33.98	28.23	46.00	-17.77	QP
6	900.4008	-3.92	33.64	29.72	46.00	-16.28	QP
Remark	: Other frequen	icy mini ma	rgin all >10 dB	of Limit			

Mode:	GFSK	Result:	■ - passed
Channel:	Low Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1176.353	-4.21	47.41	43.20	74.00	-30.80	peak
2	1176.353	-4.21	32.84	28.63	54.00	-25.37	AVG
3	5474.950	13.69	38.87	52.56	74.00	-21.44	peak
4	5474.950	13.69	23.75	37.44	54.00	-16.56	AVG
5	7458.918	18.44	38.25	56.69	74.00	-17.31	peak
6	7458.918	18.44	22.92	41.36	54.00	-12.64	AVG
Remark	Other frequen	icy mini ma	rgin all >10 dB	of Limit			

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## **CENTRE OF TESTING SERVICE**

Mode:GFSKResult:- passedChannel:Middle Channel□ - not passedTest point:HorizontalFrequency range:1GHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1595.190	-1.34	40.87	39.53	74.00	-34.47	peak
2	1595.190	-1.34	25.90	24.56	54.00	-29.44	AVG
3	3468.938	8.11	40.95	49.06	74.00	-24.94	peak
4	3468.938	8.11	26.56	34.67	54.00	-19.33	AVG
5	6092.184	15.60	37.89	53.49	74.00	-20.51	peak
6	6092.184	15.60	22.53	38.13	54.00	-15.87	AVG
Remark	: Other frequen	icy mini ma	rgin all >10 dB	of Limit			

Mode:	GFSK	Result:	■ - passed
Channel:	High Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	2719.439	5.01	42.79	47.80	74.00	-26.20	peak		
2	2719.439	5.01	27.64	32.65	54.00	-21.35	AVG		
3	4174.349	10.22	39.46	49.68	74.00	-24.32	peak		
4	4174.349	10.22	24.07	34.29	54.00	-19.71	AVG		
5	7503.006	18.50	37.71	56.21	74.00	-17.79	peak		
6	7503.006	18.50	22.53	41.03	54.00	-12.97	AVG		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

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Mode:	π/4-DQPSK	Result:	■ - passed
Channel:	Low Channel		☐ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	1352.705	-2.67	45.43	42.76	74.00	-31.24	peak		
2	1352.705	-2.67	30.15	27.48	54.00	-26.52	AVG		
3	4901.804	11.93	38.11	50.04	74.00	-23.96	peak		
4	4901.804	11.93	23.23	35.16	54.00	-18.84	AVG		
5	7326.653	18.25	37.68	55.93	74.00	-18.07	peak		
6	7326.653	18.25	22.60	40.85	54.00	-13.15	AVG		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

Mode:	π/4-DQPSK	Result:	■ - passed
Channel:	Middle Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	2146.293	0.29	42.23	42.52	74.00	-31.48	peak		
2	2146.293	0.29	27.07	27.36	54.00	-26.64	AVG		
3	5474.950	13.69	39.40	53.09	74.00	-20.91	peak		
4	5474.950	13.69	25.05	38.74	54.00	-15.26	AVG		
5	7767.535	18.87	37.41	56.28	74.00	-17.72	peak		
6	7767.535	18.87	22.82	41.69	54.00	-12.31	AVG		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

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**Report No.:** CGZ3130902-00801 & 802-E Page 91 of 100







Mode:	π/4-DQPSK	Result:	■ - passed
Channel:	High Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	2631.262	4.51	42.87	47.38	74.00	-26.62	peak		
2	2631.262	4.51	28.13	32.64	54.00	-21.36	AVG		
3	5651.303	14.26	37.81	52.07	74.00	-21.93	peak		
4	5651.303	14.26	22.71	36.97	54.00	-17.03	AVG		
5	8032.064	19.28	36.44	55.72	74.00	-18.28	peak		
6	8032.064	19.28	20.90	40.18	54.00	-13.82	AVG		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

Mode:	8DPSK	Result:	■ - passed
Channel:	Low Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.		
1	3446.894	8.03	42.10	50.13	74.00	-23.87	peak		
2	3446.894	8.03	27.21	35.24	54.00	-18.76	AVG		
3	5761.523	14.61	37.85	52.46	74.00	-21.54	peak		
4	5761.523	14.61	23.34	37.95	54.00	-16.05	AVG		
5	8340.681	20.15	37.16	57.31	74.00	-16.69	peak		
6	8340.681	20.15	22.48	42.63	54.00	-11.37	AVG		
Remark:	Remark: Other frequency mini margin all >10 dB of Limit								

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## **CENTRE OF TESTING SERVICE**

Mode:8DPSKResult:■ - passedChannel:Middle Channel□ - not passedTest point:HorizontalFrequency range:1GHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	3601.202	8.53	41.36	49.89	74.00	-24.11	peak	
2	3601.202	8.53	26.05	34.58	54.00	-19.42	AVG	
3	5519.038	13.83	39.20	53.03	74.00	-20.97	peak	
4	5519.038	13.83	24.33	38.16	54.00	-15.84	AVG	
5	8891.784	21.70	38.07	59.77	74.00	-14.23	peak	
6	8891.784	21.70	22.87	44.57	54.00	-9.43	AVG	
Remark	Remark: Other frequency mini margin all >10 dB of Limit							

Mode:	8DPSK	Result:	■ - passed
Channel:	High Channel		□ - not passed
Test point:	Horizontal		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	2344.689	2.24	43.39	45.63	74.00	-28.37	peak	
2	2344.689	2.24	28.41	30.65	54.00	-23.35	AVG	
3	5408.818	13.48	38.28	51.76	74.00	-22.24	peak	
4	5408.818	13.48	23.49	36.97	54.00	-17.03	AVG	
5	8120.240	19.53	38.69	58.22	74.00	-15.78	peak	
6	8120.240	19.53	23.99	43.52	54.00	-10.48	AVG	
Remark:	Remark: Other frequency mini margin all >10 dB of Limit							

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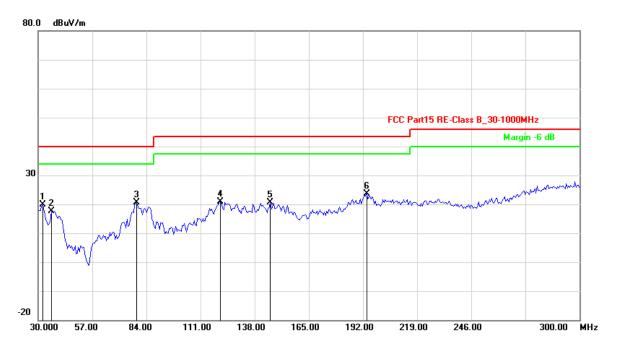
**Report No.:** CGZ3130902-00801 & 802-E Page 93 of 100







Channel:	TX –X Position	Result:	■ - passed
Test point:	Vertical		☐ - not passed
Frequency range:	30MHz-1GHz		



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	32.1643	-20.42	40.39	19.97	40.00	-20.03	QP
2	36.4930	-23.89	41.56	17.67	40.00	-22.33	QP
3	79.2385	-21.42	42.03	20.61	40.00	-19.39	QP
4	120.9018	-18.03	38.86	20.83	43.50	-22.67	QP
5	145.7916	-16.94	37.62	20.68	43.50	-22.82	QP
6	193.9479	-12.27	36.02	23.75	43.50	-19.75	QP
Remark:	Other frequen	ıcy mini ma	rgin all >10 dB	of Limit			

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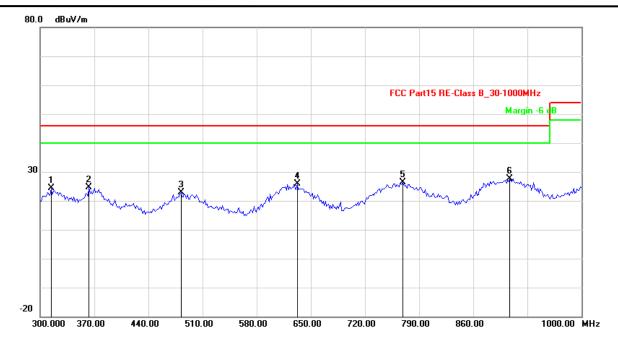
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No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	314.0281	-18.87	43.27	24.40	46.00	-21.60	QP
2	363.1263	-14.04	38.64	24.60	46.00	-21.40	QP
3	482.3647	-9.75	32.64	22.89	46.00	-23.11	QP
4	632.4649	-7.41	33.17	25.76	46.00	-20.24	QP
5	768.5371	-5.69	31.96	26.27	46.00	-19.73	QP
6	907.4148	-4.14	31.80	27.66	46.00	-18.34	QP
Remark	: Other frequen	icy mini ma	rgin all >10 dB	of Limit			

Mode:	GFSK	Result:	■ - passed
Channel:	Low Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1176.353	-4.21	56.01	51.80	74.00	-22.20	peak
2	1176.353	-4.21	40.44	36.23	54.00	-17.77	AVG
3	5651.303	14.26	39.27	53.53	74.00	-20.47	peak
4	5651.303	14.26	24.38	38.64	54.00	-15.36	AVG
5	7591.182	18.62	37.88	56.50	74.00	-17.50	peak
6	7591.182	18.62	22.67	41.29	54.00	-12.71	AVG
Remark	Other frequen	cv mini ma	rgin all >10 dB	of Limit			

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Mode:GFSKResult:- passedChannel:Middle Channel□ - not passedTest point:VerticalFrequency range:1GHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	1771.543	-1.26	41.64	40.38	74.00	-33.62	peak	
2	1771.543	-1.26	26.62	25.36	54.00	-28.64	AVG	
3	4945.892	12.03	37.31	49.34	74.00	-24.66	peak	
4	4945.892	12.03	22.58	34.61	54.00	-19.39	AVG	
5	7436.874	18.41	36.74	55.15	74.00	-18.85	peak	
6	7436.874	18.41	21.82	40.23	54.00	-13.77	AVG	
Remark:	Remark: Other frequency mini margin all >10 dB of Limit							

Mode:	GFSK	Result:	■ - passed
Channel:	High Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1991.984	-1.15	45.78	44.63	74.00	-29.37	peak
2	1991.984	-1.15	31.30	30.15	54.00	-23.85	AVG
3	5981.964	15.32	40.66	55.98	74.00	-18.02	peak
4	5981.964	15.32	25.42	40.74	54.00	-13.26	AVG
5	7965.932	19.14	36.17	55.31	74.00	-18.69	peak
6	7965.932	19.14	21.17	40.31	54.00	-13.69	AVG
12	7613.226	18.65	21.48	40.13	54.00	-13.87	AVG
Remark:	Remark: Other frequency mini margin all >10 dB of Limit						

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Mode:π/4-DQPSKResult:■ - passedChannel:Low Channel□ - not passedTest point:VerticalFrequency range:1GHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	1176.353	-4.21	55.65	51.44	74.00	-22.56	peak	
2	1176.353	-4.21	40.45	36.24	54.00	-17.76	AVG	
3	4482.966	10.94	39.93	50.87	74.00	-23.13	peak	
4	4482.966	10.94	24.19	35.13	54.00	-18.87	AVG	
5	7480.962	18.47	38.34	56.81	74.00	-17.19	peak	
6	7480.962	18.47	23.40	41.87	54.00	-12.13	AVG	
Remark:	Remark: Other frequency mini margin all >10 dB of Limit							

Mode:	π/4-DQPSK	Result:	■ - passed
Channel:	Middle Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1991.984	-1.15	45.46	44.31	74.00	-29.69	peak
2	1991.984	-1.15	31.26	30.11	54.00	-23.89	AVG
3	5320.641	13.19	36.43	49.62	74.00	-24.38	peak
4	5320.641	13.19	21.39	34.58	54.00	-19.42	AVG
5	7172.345	18.04	36.87	54.91	74.00	-19.09	peak
6	7172.345	18.04	22.08	40.12	54.00	-13.88	AVG
Remark:	Other frequen	icy mini ma	rgin all >10 dB	of Limit			

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## **CENTRE OF TESTING SERVICE**

 Mode:
 π/4-DQPSK
 Result:
 - passed

 Channel:
 High Channel
 □ - not passed

 Test point:
 Vertical

 Frequency range:
 1GHz-26.5GHz

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	1176.353	-4.21	49.60	45.39	74.00	-28.61	peak	
2	1176.353	-4.21	34.50	30.29	54.00	-23.71	AVG	
3	5210.421	12.84	37.20	50.04	74.00	-23.96	peak	
4	5210.421	12.84	23.00	35.84	54.00	-18.16	AVG	
5	8472.946	20.52	36.65	57.17	74.00	-16.83	peak	
6	8472.946	20.52	22.06	42.58	54.00	-11.42	AVG	
Remark	Remark: Other frequency mini margin all >10 dB of Limit							

Mode:	8DPSK	Result:	■ - passed
Channel:	Low Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency	Factor	Reading	Level	Limit	Margin	Det.	
	(MHz)	(dB)	(dBuV)	(dBuV/m)	(dBuV/m)	(dB)		
1	1396.794	-2.28	50.50	48.22	74.00	-25.78	peak	
2	1396.794	-2.28	35.89	33.61	54.00	-20.39	AVG	
3	4615.230	11.26	39.03	50.29	74.00	-23.71	peak	
4	4615.230	11.26	24.42	35.68	54.00	-18.32	AVG	
5	7503.006	18.50	37.27	55.77	74.00	-18.23	peak	
6	7503.006	18.50	21.73	40.23	54.00	-13.77	AVG	
Remark:	Remark: Other frequency mini margin all >10 dB of Limit							

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Mode: 8DPSK
Channel: Middle Channel
Test point: Vertical
Frequency range: 1GHz-26.5GHz

Result: ■ - passed
□ - not passed

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.
1	1991.984	-1.15	45.87	44.72	74.00	-29.28	peak
2	1991.984	-1.15	31.43	30.28	54.00	-23.72	AVG
3	5717.435	14.47	38.55	53.02	74.00	-20.98	peak
4	5717.435	14.47	24.17	38.64	54.00	-15.36	AVG
5	7503.006	18.50	38.37	56.87	74.00	-17.13	peak
6	7503.006	18.50	22.86	41.36	54.00	-12.64	AVG
Remark: Other frequency mini margin all >10 dB of Limit							

Mode:	8DPSK	Result:	■ - passed
Channel:	High Channel		□ - not passed
Test point:	Vertical		
Frequency range:	1GHz-26.5GHz		

No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Det.	
1	1396.794	-2.28	51.09	48.81	74.00	-25.19	peak	
2	1396.794	-2.28	35.95	33.67	54.00	-20.33	AVG	
3	5541.082	13.90	39.64	53.54	74.00	-20.46	peak	
4	5541.082	13.90	24.72	38.62	54.00	-15.38	AVG	
5	7657.315	18.71	37.70	56.41	74.00	-17.59	peak	
6	7657.315	18.71	22.96	41.67	54.00	-12.33	AVG	
Remark:	Remark: Other frequency mini margin all >10 dB of Limit							

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#### **CENTRE OF TESTING SERVICE**





# 15.0 Antenna Requirements

## 15.1 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 transmitting antennas of directional gain greater than 6dBi are used, the power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6dBi.

### 15.2 Antenna Construction and Directional Gain

Antenna 1:

Antenna type: PCB Antenna

Antenna Gain: 2 dBi

Antenna 2:

Antenna type: Chip antenna

Antenna Gain: 2 dBi

## 16. Deviation to test specifications

The following identical model(s):

N/A

Belong to the tested device:

Product description: Wifi+BT combo card Model name: WLU6300B(T-RoHS)

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