

# FCC PART 15.247 TEST REPORT

For

## **Posh Mobile Limited**

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FCC ID: 2ABN6S240

Report Type: Product Type: Micro X Original Report Allen Rious Test Engineer: Allen Qiao Report Number: RDG150525003-00A **Report Date:** 2015-06-17 Sola Hugof Sula Huang RF Leader **Reviewed By:** Bay Area Compliance Laboratories Corp. (Dongguan) **Test Laboratory:** No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China Tel: +86-769-86858888 Fax: +86-769-86858891 www.baclcorp.com.cn

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## **GENERAL INFORMATION**

#### **Product Description for Equipment under Test (EUT)**

The *Posh Mobile Limited*'s product, model number: *S240B (FCC ID: 2ABN6S240)* (the "EUT") in this report was a *Micro X*, which was measured approximately: 9 cm (L) x 4.5 cm (W) x 1.2 cm (H), rated input voltage: DC 3.8V rechargeable Li-ion battery or DC5V charging from adapter.

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Note: The series product, model S240B, S240A are electrically identical, the difference between them is just the model name, we selected S240B for fully testing, the detail was explained in the attached declaration letter.

All measurement and test data in this report was gathered from production sample serial number: 150525003 (Assigned by BACL, Dongguan). The EUT was received on 2015-05-27.

#### **Objective**

This report is prepared on behalf of *Posh Mobile Limited* in accordance with Part 2, Subpart J, Part 15, Subparts A, B and C of the Federal Communications Commission's rules

The tests were performed in order to determine the Bluetooth BDR and EDR mode of EUT compliance with FCC Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

#### Related Submittal(s)/Grant(s)

FCC Part 15B JBP submissions with FCC ID: 2ABN6S240. FCC Part 15C DTS submissions with FCC ID: 2ABN6S240.

FCC Part 22H, 24E PCE submissions with FCC ID: 2ABN6S240.

#### **Test Methodology**

All measurements contained in this report were conducted with ANSI C63.4-2009, American National Standard for Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the range of 9 kHz to 40 GHz.

All emissions measurement was performed and Bay Area Compliance Laboratories Corp. (Dongguan).

#### **Test Facility**

The Test site used by Bay Area Compliance Laboratories Corp. (Dongguan) to collect test data is located on the No.69 Pulongcun, Puxinhu Industrial Zone, Tangxia, Dongguan, Guangdong, China

Test site at Bay Area Compliance Laboratories Corp. (Dongguan) has been fully described in reports submitted to the Federal Communications Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on February 06, 2015. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2009.

The Federal Communications Commission has the reports on file and is listed under FCC Registration No.: 273710. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

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## **SYSTEM TEST CONFIGURATION**

## **Description of Test Configuration**

The system was configured for testing in an engineering mode.

## **EUT Exercise Software**

Test Softv	vare Version	Enginnering Mode			
Test Frequency		2402MHz 2441MHz 2480MHz			
DI1	GFSK	N/A	N/A	N/A	
Power Level Setting	π/4-DQPSK	N/A	N/A	N/A	
Setting	8DPSK	N/A	N/A	N/A	

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## **Equipment Modifications**

No modification was made to the EUT.

## **Support Equipment List and Details**

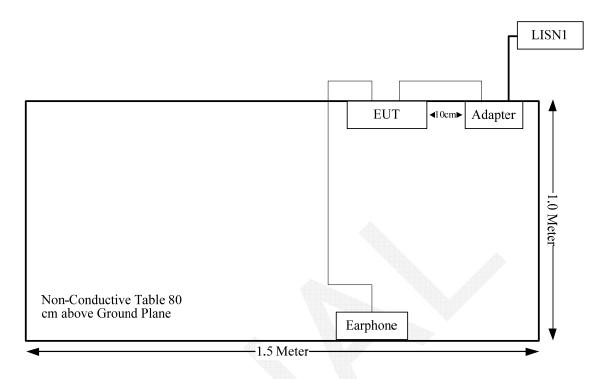
Manufacturer	Description	Model	Serial Number	
/	1	/	/	

## **External Cable**

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	yes	no	1.0	USB Port of Adapter	EUT
Earphone Cable	no	no	1.2	Audio Port of EUT	Earphone

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## **Block Diagram of Test Setup**



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## SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.247 (i) & \$1.1310 & \$2.1093	RF Exposure	Compliace
§15.203	Antenna Requirement	Compliance
§15.207 (a)	Conducted Emissions	Compliace
§15.205, §15.209, §15.247(d)	Spurious Emissions	Compliance
§15.247 (a)(1)	20 dB Bandwidth	Compliance
§15.247(a)(1)	Channel Separation Test	Compliance
§15.247(a)(1)(iii)	Time of Occupancy (Dwell Time)	Compliance
§15.247(a)(1)(iii)	Quantity of hopping channel Test	Compliance
§15.247(b)(1)	Peak Output Power Measurement	Compliance
§15.247(d)	Band Edges	Compliance

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## FCC §15.247 (i) & §1.1310 & §2.1093- RF EXPOSURE

## **Applicable Standard**

According to §15.247(i) and §1.1310, systems operating under the provisions of this section shall be operated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline.

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According to KDB447498 D01 General RF Exposure Guidance v05r02:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances  $\leq$  50 mm are determined by:

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance,

mm)]  $\cdot [\sqrt{f(GHz)}] \le 3.0$  for 1-g SAR and  $\le 7.5$  for 10-g extremity SAR, where

- f(GHz) is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison
- 3.0 and 7.5 are referred to as the numeric thresholds in the step 2 below

The test exclusions are applicable only when the minimum test separation distance is  $\leq$  50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is  $\leq$  5 mm, a distance of 5 mm according to 5) in section 4.1 is applied to determine SAR test exclusion.

#### **Measurement Result**

The maximum target output power= 5.52 dBm (3.56mW) at 2480 MHz [(max. power of channel, mW)/(min. test separation distance, mm)][ $\sqrt{f(GHz)}$ ] = 3.56/5\*( $\sqrt{2.48}$ ) = 1.12 < 3.0

So the stand-alone SAR evaluation is not necessary.

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## FCC §15.203 - ANTENNA REQUIREMENT

#### **Applicable Standard**

According to FCC § 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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

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#### **Antenna Connector Construction**

The EUT has one integral antenna arrangement for BT, which was permanently attached and the antenna gain is -1.1 dBi, fulfill the requirement of this section. Please refer to the EUT photos.

Result: Compliance.

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## FCC §15.207 (a) - AC LINE CONDUCTED EMISSIONS

#### **Applicable Standard**

FCC§15.207

#### **Measurement Uncertainty**

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

If  $U_{\rm lab}$  is less than or equal to  $U_{\rm cispr}$  of Table 1, then:

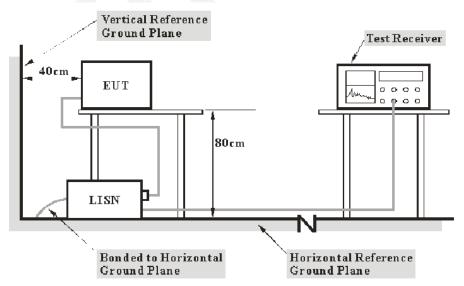
- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit. If  $U_{\text{lab}}$  is greater than  $U_{\text{cispr}}$  of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{\text{lab}} U_{\text{cispr}})$ , exceeds the disturbance limit;
- non compliance is deemed to occur if any measured disturbance level, increased by  $(U_{\text{lab}} U_{\text{cispr}})$ , exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of conducted disturbance at mains port using AMN at Bay Area Compliance Laboratories Corp. (Dongguan) is 3.46 dB (150 kHz to 30 MHz).

Table 1 – Values of 
$$U_{\text{cispr}}$$

Measurement	$U_{ m cispr}$
Conducted disturbance at mains port using AMN (150 kHz to 30 MHz)	3.4 dB

## **EUT Setup**



Note: 1. Support units were connected to second LISN.

2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

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The setup of EUT is according with per ANSI C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to a 120 VAC/60 Hz power source.

#### **EMI Test Receiver Setup**

The EMI test receiver was set to investigate the spectrum from 150 kHz to 30 MHz.

During the conducted emission test, the EMI test receiver was set with the following configurations:

Frequency Range	IF B/W	
150 kHz – 30 MHz	9 kHz	

#### **Test Procedure**

During the conducted emission test, the adapter was connected to the outlet of the first LISN.

Maximizing procedure was performed on the six (6) highest emissions of the EUT.

All data was recorded in the Quasi-peak and average detection mode.

#### **Corrected Amplitude & Margin Calculation**

The basic equation is as follows:

$$V_C = V_R + A_C + VDF$$

Herein,

V<sub>C</sub>: corrected voltage amplitude V<sub>R</sub>: reading voltage amplitude A<sub>c</sub>: attenuation caused by cable loss

VDF: voltage division factor of AMN or ISN

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

Margin = Limit – Corrected Amplitude

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## **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2014-10-20	2015-10-20
R&S	L.I.S.N	ESH2-Z5	892107/021	2015-06-09	2016-06-09
R&S	Two-line V-network	ENV 216	3560.6550.12	2014-12-11	2015-12-11
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A

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## **Test Results Summary**

According to the recorded data in following table, the EUT complied with the <u>FCC Part 15.207</u>, with the worst margin reading of:

#### 11.1 dB at 0.151200 MHz in the Neutral conducted mode

#### **Test Data**

#### **Environmental Conditions**

Temperature:	29.1 °C
Relative Humidity:	60 %
ATM Pressure:	100 kPa

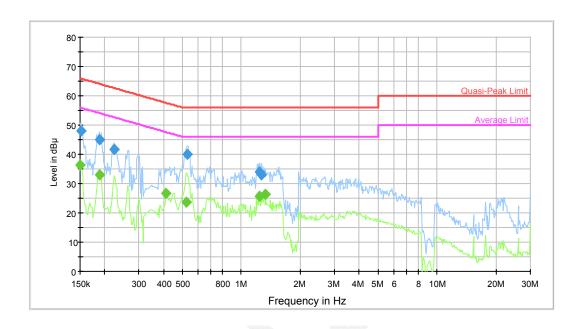
The testing was performed by Allen Qiao on 2015-05-29.

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<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Mode: Transmitting

## AC120 V, 60 Hz, Line:



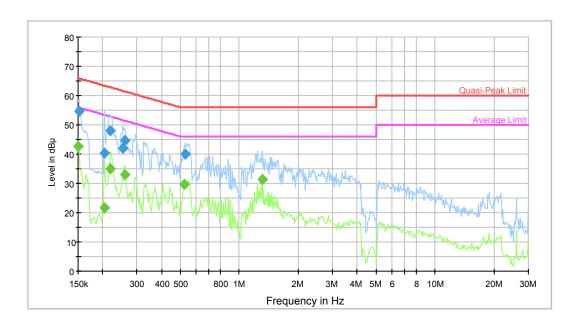
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Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.152410	48.2	9.000	L1	10.2	17.7	65.9	Compliance
0.188994	45.2	9.000	L1	10.2	18.9	64.1	Compliance
0.223418	41.6	9.000	L1	10.2	21.1	62.7	Compliance
0.532496	39.9	9.000	L1	10.1	16.1	56.0	Compliance
1.239175	34.1	9.000	L1	10.4	21.9	56.0	Compliance
1.259081	33.1	9.000	L1	10.4	22.9	56.0	Compliance

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	36.3	9.000	L1	10.2	19.7	56.0	Compliance
0.188994	33.0	9.000	L1	10.2	21.1	54.1	Compliance
0.412647	26.8	9.000	L1	10.2	20.8	47.6	Compliance
0.524077	23.8	9.000	L1	10.1	22.2	46.0	Compliance
1.239175	25.7	9.000	L1	10.4	20.3	46.0	Compliance
1.331304	26.2	9.000	L1	10.4	19.8	46.0	Compliance

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## AC120 V, 60 Hz, Neutral:



				V100100100	700   20   20   20   20   20   20   20		
Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.151200	54.8	9.000	N	10.2	11.1	65.9	Compliance
0.204669	40.3	9.000	N	10.2	23.1	63.4	Compliance
0.219886	48.1	9.000	N	10.2	14.7	62.8	Compliance
0.253797	42.1	9.000	N	10.2	19.5	61.6	Compliance
0.259937	44.5	9.000	N	10.2	16.9	61.4	Compliance
0.528270	40.1	9.000	N	10.1	15.9	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)	Comment
0.150000	42.8	9.000	N	10.2	13.2	56.0	Compliance
0.204669	21.5	9.000	N	10.2	31.9	53.4	Compliance
0.219886	35.1	9.000	N	10.2	17.7	52.8	Compliance
0.259937	32.8	9.000	N	10.2	18.6	51.4	Compliance
0.524077	29.6	9.000	N	10.1	16.4	46.0	Compliance
1.310256	31.5	9.000	N	10.4	14.5	46.0	Compliance

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#### **Applicable Standard**

FCC §15.247 (d); §15.209; §15.205;

## **Measurement Uncertainty**

Compliance or non- compliance with a disturbance limit shall be determined in the following manner:

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If  $U_{\text{lab}}$  is less than or equal to  $U_{\text{cispr}}$  of Table 1, then:

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit. If  $U_{\text{lab}}$  is greater than  $U_{\text{cispr}}$  of Table 1, then:
- compliance is deemed to occur if no measured disturbance level, increased by  $(U_{\text{lab}} U_{\text{cispr}})$ , exceeds the disturbance limit;
- non compliance is deemed to occur if any measured disturbance level, increased by  $(U_{\text{lab}} U_{\text{cispr}})$ , exceeds the disturbance limit.

Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:

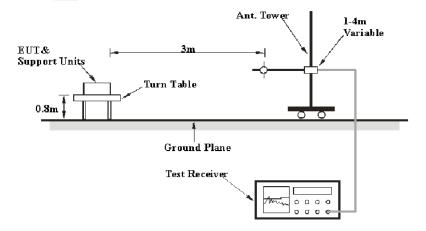
30M~200MHz: 5.0 dB 200M~1GHz: 6.2 dB 1G~6GHz: 4.45 dB 6G~18GHz: 5.23 dB

Table 1 – Values of  $U_{\rm cispr}$ 

Measurement					
Radiated disturbance (electric field strength at an OATS or in a SAC) (30 MHz to 1000 MHz)	6.3 dB				
Radiated disturbance (electric field strength in a FAR) (1 GHz to 6 GHz)	5.2 dB				
Radiated disturbance (electric field strength in a FAR) (6 GHz to 18 GHz)	5.5 dB				

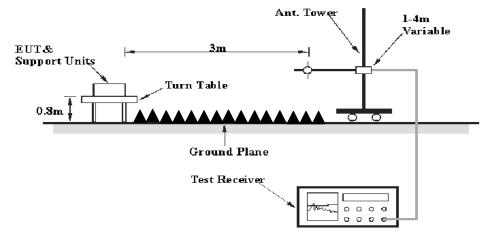
#### **EUT Setup**

#### **Below 1GHz:**



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#### **Above 1GHz:**



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.4-2009. The specification used was the FCC 15.209, and FCC 15.247 limits.

The external I/O cables were draped along the test table and formed a bundle 30 to 40 cm long in the middle.

The spacing between the peripherals was 10 cm.

#### **EMI Test Receiver & Spectrum Analyzer Setup**

The system was investigated from 30 MHz to 25 GHz.

During the radiated emission test, the EMI test receiver & Spectrum Analyzer Setup were set with the following configurations:

Frequency Range	RBW	Video B/W	IF B/W	Detector
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 CHz	1MHz	3 MHz	/	PK
Above 1 GHz	1MHz	10 Hz	/	Ave.

## **Test Procedure**

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

Data was recorded in Quasi-peak detection mode for frequency range of 30 MHz - 1 GHz, peak and average detection modes for frequencies above 1 GHz.

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#### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2015-05-09	2016-05-09
Sunol Sciences	Antenna	JB3	A060611-3	2014-07-28	2017-07-27
HP	Amplifier	8447E	2434A02181	2014-09-01	2015-09-01
Agilent	Spectrum Analyzer	E4440A	SG43360054	2014-12-04	2015-12-04
ETS LINDGREN	Horn Antenna	3115	000 527 35	2012-09-06	2015-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2015-02-19	2016-02-19
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW- 18405536-JO	15964001001	2014-09-06	2015-09-06

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#### **Corrected Amplitude & Margin Calculation**

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

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

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

Margin = Limit – Corrected Amplitude

#### **Test Results Summary**

According to the recorded data in following table, the EUT complied with the <u>FCC Title 47, Part 15, Subpart C, and section 15.205, 15.209 and 15.247</u>, with the worst margin reading of:

10.18 dB at 34.620 MHz in the Horizontal polarization

#### **Test Data**

#### **Environmental Conditions**

Temperature:	24.3 °C
Relative Humidity:	58 %
ATM Pressure:	100.1 kPa

<sup>\*</sup> The testing was performed by Allen Qiao on 2015-05-30.

Test Mode: Transmitting

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<sup>\*</sup> **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

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BDR Mode (GFSK):

Frequency	Re	eceiver	Rx A	ntenna	Cable	Amplifier	Corrected	FCC 1	5.247
(MHz)	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)	loss (dB)	Gain (dB)	Amplitude (dBμV/m)	Limit (dBµV/m)	Margin (dB)
2402	65.04	DIZ		Low Chann			04.25	<b>&gt;</b> T/A	NT/ A
2402	65.04	PK	H	25.65	3.66	0.00	94.35	N/A	N/A
2402 2402	54.69	AV PK	H V	25.65 25.65	3.66	0.00	84.00 95.38	N/A N/A	N/A
2402	66.07 55.49	AV	V	25.65	3.66 3.66	0.00	95.38 84.80	N/A N/A	N/A N/A
2390	26.97	PK	V	25.61	3.63	0.00	56.21	74.00	17.79
2390	14.26	AV	V	25.61	3.63	0.00	43.50	54.00	10.50
4804	33.08	PK	V	30.59	5.06	27.41	41.32	74.00	32.68
4804	19.61	AV	V	30.59	5.06	27.41	27.85	54.00	26.15
7206	31.28	PK	V	34.09	6.61	25.91	46.07	74.00	27.93
7206	18.65	AV	V	34.09	6.61	25.91	33.44	54.00	20.56
9608	29.75	PK	V	35.96	8.53	27.55	46.69	74.00	27.31
9608	17.29	AV	V	35.96	8.53	27.55	34.23	54.00	19.77
1717	35.01	PK	V	24.03	2.79	27.65	34.18	74.00	39.82
1717	21.83	AV	V	24.03	2.79	27.65	21.00	54.00	33.00
34.620	31.5	QP	Н	18.64	0.80	21.42	29.52	40.00	10.48
118.140	32.8	QP	V	13.99	1.31	21.41	26.69	43.50	16.81
			M	Iiddle Chan	nel: 2441	MHz			
2441	65.55	PK	Н	25.75	3.76	0.00	95.06	N/A	N/A
2441	55.16	AV	Н	25.75	3.76	0.00	84.67	N/A	N/A
2441	66.9	PK	V	25.75	3.76	0.00	96.41	N/A	N/A
2441	55.59	AV	V	25.75	3.76	0.00	85.10	N/A	N/A
4882	33.31	PK	V	30.79	5.19	27.42	41.87	74.00	32.13
4882	19.88	AV	V	30.79	5.19	27.42	28.44	54.00	25.56
7323	31.56	PK	V	34.38	6.75	25.88	46.81	74.00	27.19
7323	18.91	AV	V	34.38	6.75	25.88	34.16	54.00	19.84
9764	29.99	PK	V	36.33	8.62	27.20	47.74	74.00	26.26
9764	17.36	AV	V	36.33	8.62	27.20	35.11	54.00	18.89
4365	35.1	PK	V	29.83	5.00	26.92	43.01	74.00	30.99 23.99
4365	22.1	AV	V	29.83	5.00	26.92	30.01	54.00	
1883 1883	34.26 21.58	PK AV	V	24.37 24.37	3.06	27.51 27.51	34.18 21.50	74.00 54.00	39.82 32.50
34.620	31.3	OP OP	H	18.64	0.80	21.42	29.32	40.00	10.68
118.140	32.6	OP OP	V	13.99	1.31	21.42	26.49	43.50	17.01
110.170	32.0	l Qi		High Chann			20.43	JJ.JU	17.01
2480	66.24	PK	Н	25.85	3.68	0.00	95.77	N/A	N/A
2480	55.73	AV	Н	25.85	3.68	0.00	85.26	N/A	N/A
2480	67.31	PK	V	25.85	3.68	0.00	96.84	N/A	N/A
2480	56.03	AV	V	25.85	3.68	0.00	85.56	N/A	N/A
2483.5	26.71	PK	V	25.86	3.67	0.00	56.24	74.00	17.76
2483.5	14.06	AV	V	25.86	3.67	0.00	43.59	54.00	10.41
4960	33.34	PK	V	31.00	5.34	27.43	42.25	74.00	31.75
4960	20.15	AV	V	31.00	5.34	27.43	29.06	54.00	24.94
7440	31.58	PK	V	34.66	6.89	25.97	47.16	74.00	26.84
7440	19.02	AV	V	34.66	6.89	25.97	34.60	54.00	19.40
9920	30.12	PK	V	36.71	8.71	26.66	48.88	74.00	25.12
9920	17.43	AV	V	36.71	8.71	26.66	36.19	54.00	17.81
4365	35.26	PK	V	29.83	5.00	26.92	43.17	74.00	30.83
4365	22.28	AV	V	29.83	5.00	26.92	30.19	54.00	23.81
34.620	31.7	QP	Н	18.64	0.80	21.42	29.72	40.00	10.28
118.140	32.7	QP	V	13.99	1.31	21.41	26.59	43.50	16.91

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EDR Mode ( $\pi/4$ -DQPSK):

Frequency	Re	eceiver	Rx A	ntenna	Cable	Amplifier	Corrected	FCC 1	5.247
(MHz)	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)	loss (dB)	Gain (dB)	Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)
Low Channel: 2402 MHz									
2402	64.26	PK	Н	25.65	3.66	0.00	93.57	N/A	N/A
2402	52.04	AV	Н	25.65	3.66	0.00	81.35	N/A	N/A
2402	65.42	PK	V	25.65	3.66	0.00	94.73	N/A	N/A
2402	52.79	AV	V	25.65	3.66	0.00	82.10	N/A	N/A
2390	25.64	PK	V	25.61	3.63	0.00	54.88	74.00	19.12
2390	14.03	AV	V	25.61	3.63	0.00	43.27	54.00	10.73
4804	32.98	PK	V	30.59	5.06	27.41	41.22	74.00	32.78
4804	19.48	AV	V	30.59	5.06	27.41	27.72	54.00	26.28
7206	31.05	PK	V	34.09	6.61	25.91	45.84	74.00	28.16
7206	18.47	AV	V	34.09	6.61	25.91	33.26	54.00	20.74
9608	29.56	PK	V	35.96	8.53	27.55	46.50	74.00	27.50
9608	17.11	AV	V	35.96	8.53	27.55	34.05	54.00	19.95
1717	34.77	PK	V	24.03	2.79	27.65	33.94	74.00	40.06
1717	21.82	AV	V	24.03	2.79	27.65	20.99	54.00	33.01
34.620	31.6	QP	Н	18.64	0.80	21.42	29.62	40.00	10.38
118.140	32.4	QP	V	13.99	1.31	21.41	26.29	43.50	17.21
	64.04	DV		iddle Chan			0.1.12	37/4	37/4
2441	64.91	PK	H	25.75	3.76	0.00	94.42	N/A	N/A
2441	52.5	AV	Н	25.75	3.76	0.00	82.01	N/A	N/A
2441	65.87	PK	V	25.75	3.76	0.00	95.38	N/A	N/A
2441	53.22	AV	V	25.75	3.76	0.00	82.73	N/A	N/A
4882	33.11	PK	V	30.79	5.19	27.42	41.67	74.00	32.33
4882	19.81	AV	V	30.79	5.19	27.42	28.37	54.00	25.63
7323	31.3	PK	V	34.38	6.75	25.88	46.55	74.00	27.45
7323	18.89	AV	V	34.38	6.75	25.88	34.14	54.00	19.86
9764	29.84	PK	V	36.33	8.62	27.20	47.59	74.00	26.41
9764	17.13	AV	V	36.33	8.62	27.20	34.88	54.00	19.12
4365	34.84	PK	V	29.83	5.00	26.92	42.75	74.00	31.25
4365	21.82	AV	V	29.83 24.37	5.00	26.92 27.51	29.73 33.93	54.00 74.00	24.27
1883 1883	34.01 21.4	PK AV	V	24.37	3.06	27.51	21.32	54.00	40.07 32.68
				18.64					
34.620 118.140	31.5 32.7	QP QP	H V	13.99	0.80 1.31	21.42 21.41	29.52 26.59	40.00 43.50	10.48 16.91
110.140	32.7	Qr		High Chann			20.39	43.30	10.91
2480	65.51	PK	Н	25.85	3.68	0.00	95.04	N/A	N/A
2480	53.12	AV	Н	25.85	3.68	0.00	82.65	N/A N/A	N/A
2480	66.34	PK	V	25.85	3.68	0.00	95.87	N/A	N/A
2480	53.68	AV	V	25.85	3.68	0.00	83.21	N/A N/A	N/A
2483.5	26.43	PK	V	25.86	3.67	0.00	55.96	74.00	18.04
2483.5	14.27	AV	V	25.86	3.67	0.00	43.80	54.00	10.20
4960	33.06	PK	V	31.00	5.34	27.43	41.97	74.00	32.03
4960	19.86	AV	V	31.00	5.34	27.43	28.77	54.00	25.23
7440	31.55	PK	V	34.66	6.89	25.97	47.13	74.00	26.87
7440	18.79	AV	V	34.66	6.89	25.97	34.37	54.00	19.63
9920	29.84	PK	V	36.71	8.71	26.66	48.60	74.00	25.40
9920	17.35	AV	V	36.71	8.71	26.66	36.11	54.00	17.89
4365	35.11	PK	V	29.83	5.00	26.92	43.02	74.00	30.98
4365	22.06	AV	V	29.83	5.00	26.92	29.97	54.00	24.03
34.620	31.4	QP	H	18.64	0.80	21.42	29.42	40.00	10.58
118.140	32.5	QP	V	13.99	1.31	21.41	26.39	43.50	17.11

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EDR Mode (8-DPSK):

EDR Mod	EDR Mode (8-DPSK):									
Frequency	Re	eceiver	Rx A	ntenna	Cable	Amplifier	Corrected	FCC 1	15.247	
(MHz)	Reading (dBµV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)	loss (dB)	Gain (dB)	Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)	
			]	Low Chann	el: 2402 N	MHz				
2402	62.48	PK	Н	25.65	3.66	0.00	91.79	N/A	N/A	
2402	49.67	AV	Н	25.65	3.66	0.00	78.98	N/A	N/A	
2402	64.51	PK	V	25.65	3.66	0.00	93.82	N/A	N/A	
2402	51.02	AV	V	25.65	3.66	0.00	80.33	N/A	N/A	
2390	25.64	PK	V	25.61	3.63	0.00	54.88	74.00	19.12	
2390	14.11	AV	V	25.61	3.63	0.00	43.35	54.00	10.65	
4804	32.91	PK	V	30.59	5.06	27.41	41.15	74.00	32.85	
4804	19.35	AV	V	30.59	5.06	27.41	27.59	54.00	26.41	
7206	31.02	PK	V	34.09	6.61	25.91	45.81	74.00	28.19	
7206	18.27	AV	V	34.09	6.61	25.91	33.06	54.00	20.94	
9608	29.55	PK	V	35.96	8.53	27.55	46.49	74.00	27.51	
9608	17.09	AV	V	35.96	8.53	27.55	34.03	54.00	19.97	
1717	34.6	PK	V	24.03	2.79	27.65	33.77	74.00	40.23	
1717	21.63	AV	V	24.03	2.79	27.65	20.80	54.00	33.20	
34.62	31.8	QP	Н	18.64	0.80	21.42	29.82	40.00	10.18	
118.14	32.5	QP	V	13.99	1.31	21.41	26.39	43.50	17.11	
2441	(2.00	DIV		iddle Chan			02.40	27/4	37/4	
2441	62.89	PK	H	25.75	3.76	0.00	92.40	N/A	N/A	
2441	50.12	AV	H	25.75	3.76	0.00	79.63	N/A	N/A	
2441	65.14	PK	V	25.75	3.76	0.00	94.65	N/A	N/A	
2441	51.46	AV	V	25.75	3.76	0.00	80.97	N/A	N/A	
4882	33.09 19.8	PK AV	V	30.79	5.19 5.19	27.42 27.42	41.65	74.00	32.35	
4882 7323	31.17	PK	V	34.38	6.75	25.88	28.36 46.42	54.00 74.00	25.64 27.58	
7323	18.75	AV	V	34.38	6.75	25.88	34.00	54.00	20.00	
9764	29.69	PK	V	36.33	8.62	27.20	47.44	74.00	26.56	
9764	17.07	AV	V	36.33	8.62	27.20	34.82	54.00	19.18	
4365	34.82	PK	V	29.83	5.00	26.92	42.73	74.00	31.27	
4365	21.66	AV	V	29.83	5.00	26.92	29.57	54.00	24.43	
1883	33.96	PK	V	24.37	3.06	27.51	33.88	74.00	40.12	
1883	21.28	AV	V	24.37	3.06	27.51	21.20	54.00	32.80	
34.62	31.7	QP	Н	18.64	0.80	21.42	29.72	40.00	10.28	
118.14	32.6	QP	V	13.99	1.31	21.41	26.49	43.50	17.01	
			I	High Chann			•	•		
2480	63.38	PK	Н	25.85	3.68	0.00	92.91	N/A	N/A	
2480	50.66	AV	Н	25.85	3.68	0.00	80.19	N/A	N/A	
2480	65.66	PK	V	25.85	3.68	0.00	95.19	N/A	N/A	
2480	51.94	AV	V	25.85	3.68	0.00	81.47	N/A	N/A	
2483.5	26.38	PK	V	25.86	3.67	0.00	55.91	74.00	18.09	
2483.5	14.16	AV	V	25.86	3.67	0.00	43.69	54.00	10.31	
4960	32.93	PK	V	31.00	5.34	27.43	41.84	74.00	32.16	
4960	19.82	AV	V	31.00	5.34	27.43	28.73	54.00	25.27	
7440	31.51	PK	V	34.66	6.89	25.97	47.09	74.00	26.91	
7440	18.75	AV	V	34.66	6.89	25.97	34.33	54.00	19.67	
9920	29.8	PK	V	36.71	8.71	26.66	48.56	74.00	25.44	
9920	17.24	AV	V	36.71	8.71	26.66	36.00	54.00	18.00	
4365	34.99	PK	V	29.83	5.00	26.92	42.90	74.00	31.10	
4365	22.03	AV	V	29.83	5.00	26.92	29.94	54.00	24.06	
34.62	31.8	QP	H	18.64	0.80	21.42	29.82	40.00	10.18	
118.14	32.5	QP	V	13.99	1.31	21.41	26.39	43.50	17.11	

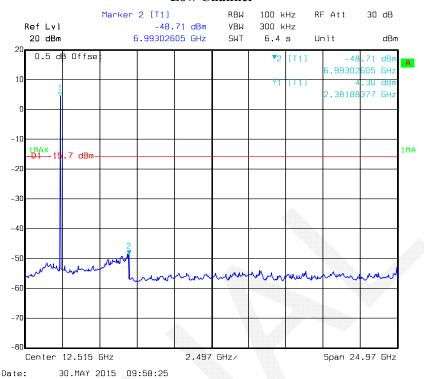
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## **Conducted Spurious Emissions at Antenna Port**

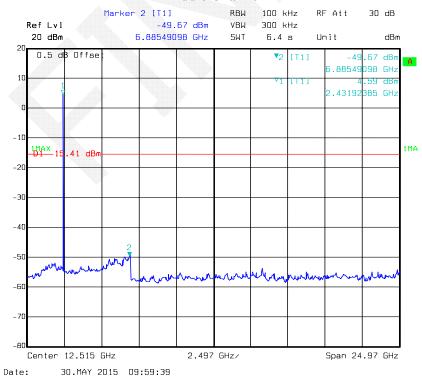
Report No.: RDG150525003-00A

BDR Mode (GFSK):

#### **Low Channel**

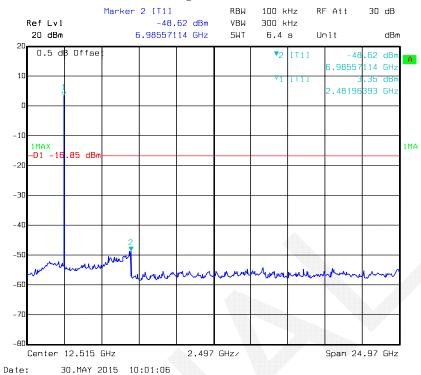


#### Middle Channel



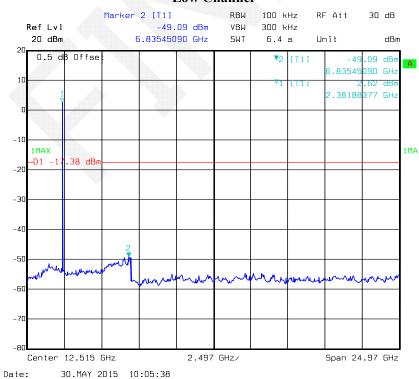
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## **High Channel**



#### EDR Mode ( $\pi/4$ -DQPSK):

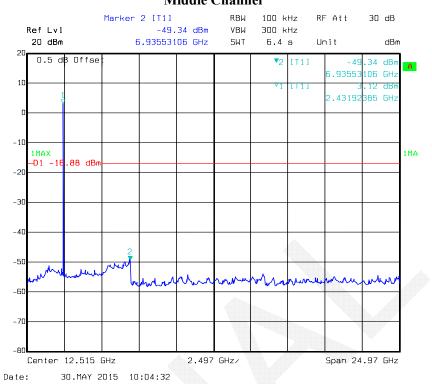
## Low Channel



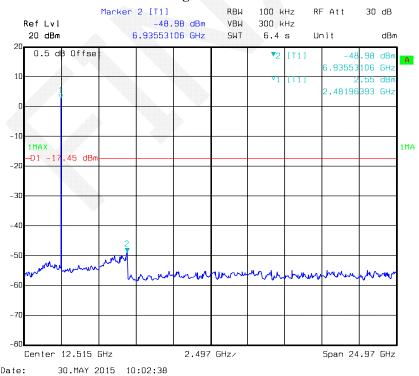
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## Middle Channel

Report No.: RDG150525003-00A



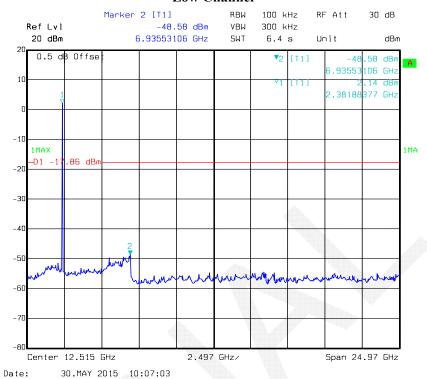
#### **High Channel**



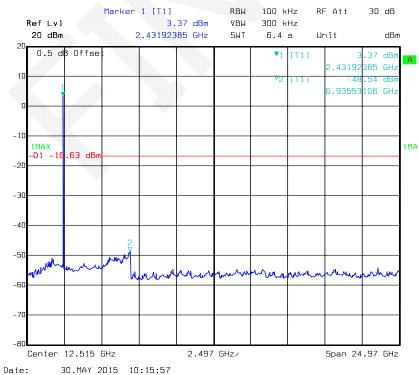
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#### Low Channel

Report No.: RDG150525003-00A

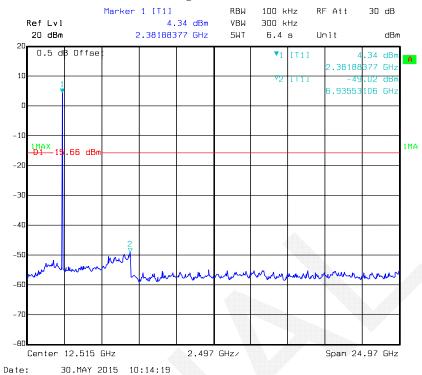


#### Middle Channel



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## **High Channel**



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#### **Applicable Standard**

Frequency hopping systems shall have hoping channel carrier frequencies separated by a minimum of 25 kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.50 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW.

Report No.: RDG150525003-00A

#### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

#### **Test Procedure**

According to PUBLIC NOTICE DA 00-705
Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems

#### **Test Data**

#### **Environmental Conditions**

Temperature:	24.3°C
Relative Humidity:	58 %
ATM Pressure:	100.1 kPa

<sup>\*</sup> The testing was performed by Allen Qiao on 2015-05-30.

Test Result: Compliance.

Please refer to following tables and plots

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Test Mode: Transmitting

Mode	Channel	Frequency	Channel Seperation	Limit	Result	
		MHz	MHz	MHz		
	Low	2402	1.002			
	Adjacent	2403	1.002			
BDR	Middle	2441	1.002	0.559	Pass	
(GFSK)	Adjacent	2442	1.002	0.339	rass	
	High	2480	1.006			
	Adjacent	2479	1.006			
	Low	2402	0.998			
	Adjacent	2403	0.998			
EDR	Middle	2441	0.998	0.756	Pass	
$(\pi/4\text{-DQPSK})$	Adjacent	2442	0.998	0.730	rass	
	High	2480	0.998			
	Adjacent	2479	0.998			
	Low	2402	0.998		<b></b>	
	Adjacent	2403	0.998		D	
EDR	Middle	2441	1 006	0.783		
(8DPSK)	Adjacent	2442	1.006	0.783	Pass	
	High	2480	1 006			
	Adjacent	2479	1.006			

*Note: Limit= (2/3)\*20dB bandwidth* 

## BDR Mode (GFSK):

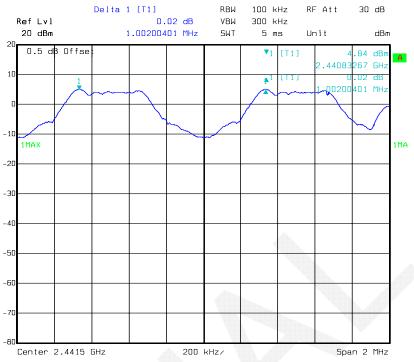
#### **Low Channel**



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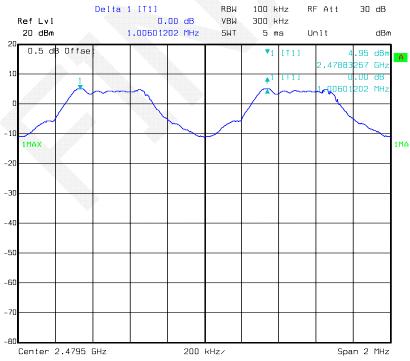
## Middle Channel

Report No.: RDG150525003-00A



Date: 30.MAY 2015 10:49:34

#### **High Channel**



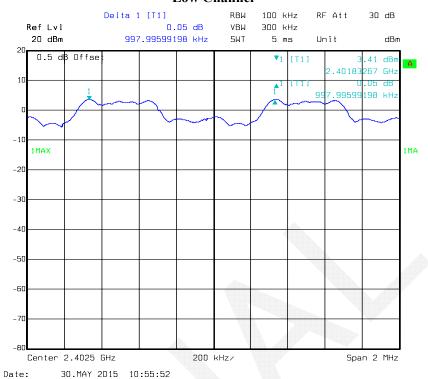
Date: 30.MAY 2015 10:50:49

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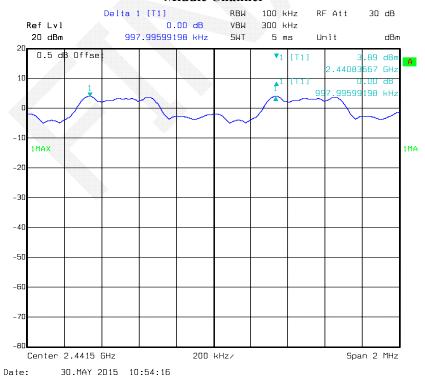
*EDR Mode (\pi/4-DQPSK):* 

#### **Low Channel**

Report No.: RDG150525003-00A

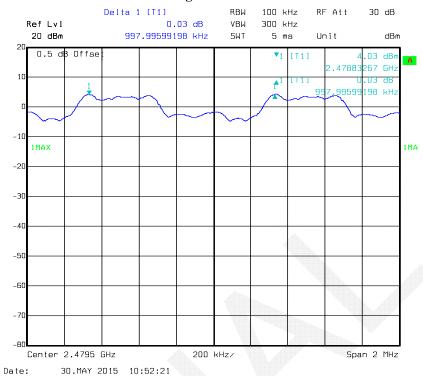


#### **Middle Channel**



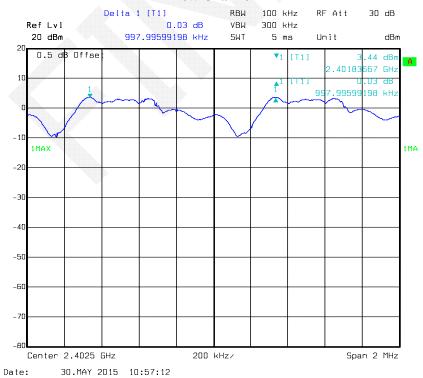
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## **High Channel**



#### EDR Mode (8-DPSK):

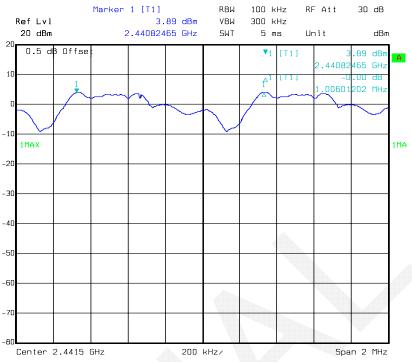
#### **Low Channel**



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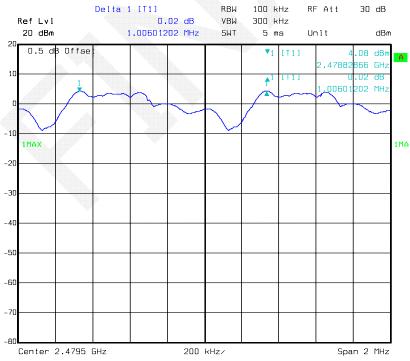
## Middle Channel

Report No.: RDG150525003-00A



Date: 30.MAY 2015 10:59:56

#### **High Channel**



Date: 30.MAY 2015 11:01:21

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## FCC $\S15.247(a)$ (1) – 20 dB BANDWIDTH TESTING

#### **Applicable Standard**

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.

Report No.: RDG150525003-00A

#### **Test Procedure**

According to PUBLIC NOTICE DA 00-705 Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems

#### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

#### **Test Data**

#### **Environmental Conditions**

Temperature:	24.8~25.9°C	
Relative Humidity:	56~59 %	
ATM Pressure:	100~100.2 kPa	

<sup>\*</sup> The testing was performed by Allen Qiao on 2015-05-29 and 2015-06-17.

Test Result: Compliance.

Please refer to following tables and plots

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Test Mode: Transmitting

Mode	Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
BDR Mode (GFSK)	Low	2402	0.842
	Middle	2441	0.830
	High	2480	0.838
	Low	2402	1.134
EDR Mode (π/4-DQPSK):	Middle	2441	1.130
(M+DQI SK).	High	2480	1.134
EDD 14.1	Low	2402	1.166
EDR Mode (8-DPSK):	Middle	2441	1.166
(0-DI 5K).	High	2480	1.174

Please refer to the following plots.

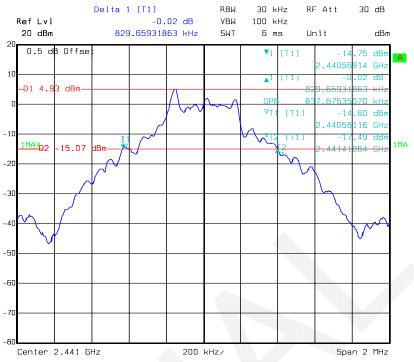
## BDR Mode (GFSK):

#### **Low Channel**



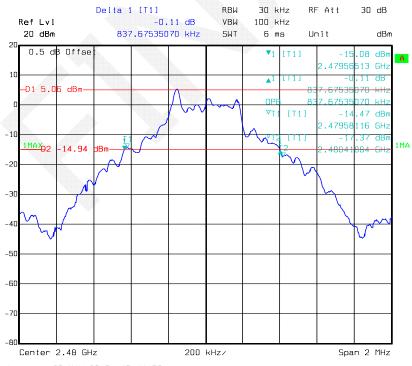
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#### Middle Channel



Date: 29.MAY 2015 15:44:07

#### **High Channel**

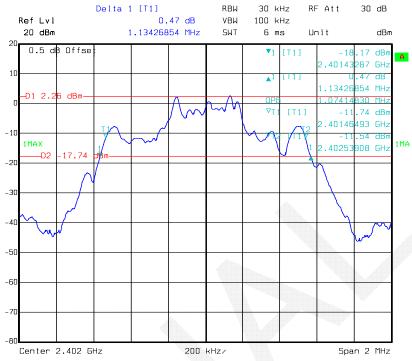


Date: 29.MAY 2015 15:41:56

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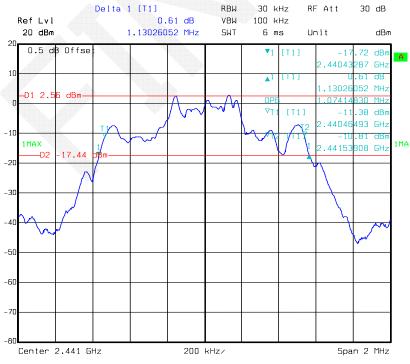
## *EDR Mode (\pi/4-DQPSK):*





#### Date: 29.MAY 2015 15:37:54

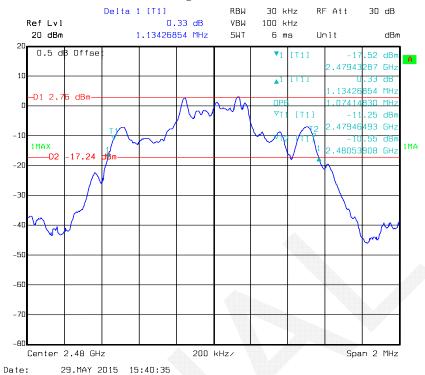
#### Middle Channel



Date: 29.MAY 2015 15:39:21

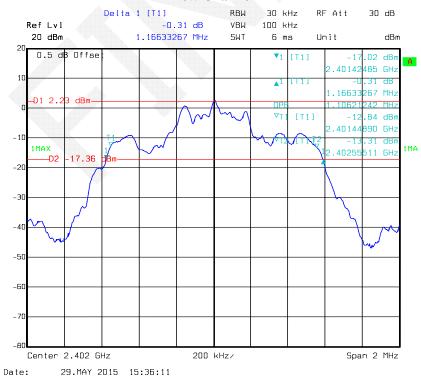
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## **High Channel**



#### EDR Mode (8-DPSK):

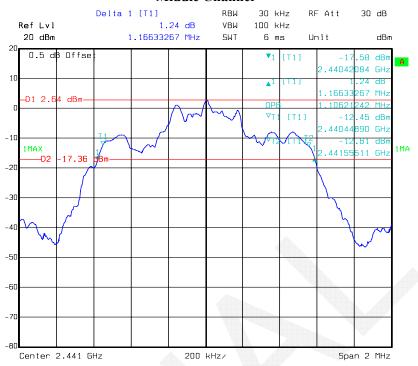
#### **Low Channel**



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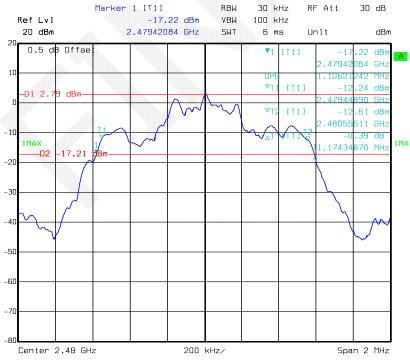
# Middle Channel

Report No.: RDG150525003-00A



#### Date: 29.MAY 2015 15:33:54

## **High Channel**



Date: 29.MAY 2015 15:32:24

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# FCC §15.247(a) (1) (iii) - QUANTITY OF HOPPING CHANNEL TEST

Report No.: RDG150525003-00A

### **Applicable Standard**

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

#### **Test Procedure**

- 1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- 2. Set the EUT in hopping mode from first channel to last.
- 3. By using the Max-Hold function record the Quantity of the channel.

## **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

#### **Test Data**

#### **Environmental Conditions**

Temperature:	25.9°C
Relative Humidity:	56 %
ATM Pressure:	100 kPa

<sup>\*</sup> The testing was performed by Allen Qiao on 2015-05-29.

Test Result: Compliance.

Please refer to following tables and plots

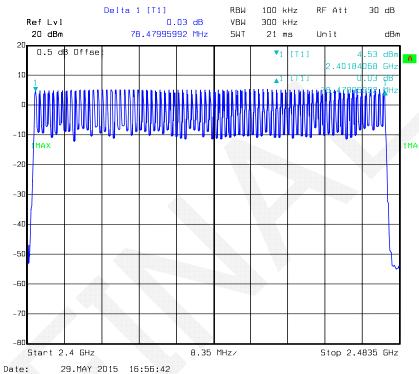
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Test Mode: Transmitting

BDR Mode (GFSK):

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.5	79	≥15

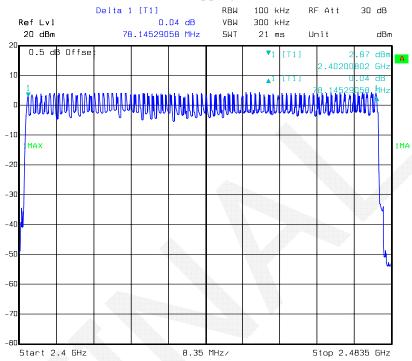
# **Number of Hopping Channels**



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Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.5	79	≥15

# **Number of Hopping Channels**



Date: 29.MAY 2015 16:53:35

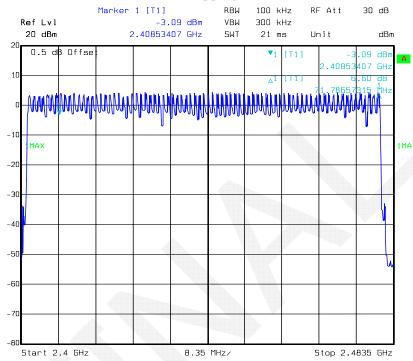
FCC Part 15.247 Page 40 of 68

EDR Mode (8-DPSK):

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.5	79	≥15

Report No.: RDG150525003-00A

### **Number of Hopping Channels**



Date: 29.MAY 2015 17:03:34

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# FCC §15.247(a) (1) (iii) - TIME OF OCCUPANCY (DWELL TIME)

### **Applicable Standard**

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

Report No.: RDG150525003-00A

#### **Test Procedure**

The EUT was worked in channel hopping; Spectrum SPAN was set as 0. Sweep was set as 0.4 \* channel no. (s), the quantity of pulse was get from single sweep. In addition, the time of single pulses was tested.

Dwell Time= time slot length \* hope rate/ number of hopping channels \* 31.6s Hop rate=1600/s

## **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

# **Test Data**

#### **Environmental Conditions**

Temperature:	26.8~28.8 °C
Relative Humidity:	54~67 %
ATM Pressure:	99.8~100.3 kPa

<sup>\*</sup> The testing was performed by Allen Qiao on 2015-05-30, 2015-06-16 and 2015-06-17.

Test Result: Compliance.

Please refer to following tables and plots

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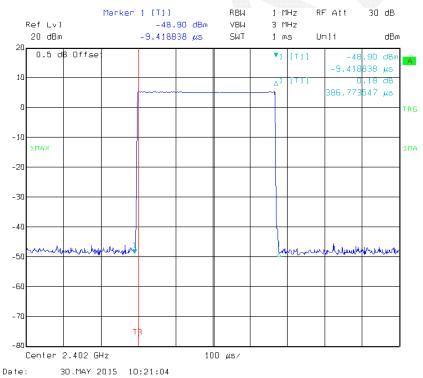
Test Mode: Transmitting

BDR Mode (GFSK):

Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result	
	Low	0.387	0.124	0.4	Pass	
DH1	Middle	0.387	0.124	0.4	Pass	
	High	0.387	0.124	0.4	Pass	
	Note: Dwell time=Pulse time (ms) $\times$ (1600/2/79) $\times$ 31.6 s					
	Low	1.657	0.265	0.4	Pass	
DH3	Middle	1.657	0.265	0.4	Pass	
	High	1.657	0.265	0.4	Pass	
	Note: Dwell time	=Pulse time (ms	$(1600/4/7) \times (1600/4/7)$	<sup>7</sup> 9) ×31.6 s		
	Low	2.920	0.311	0.4	Pass	
DH5	Middle	2.920	0.311	0.4	Pass	
	High	2.920	0.311	0.4	Pass	
	Note: Dwell time=Pulse time (ms) $\times$ (1600/6/79) $\times$ 31.6 s					

Report No.: RDG150525003-00A

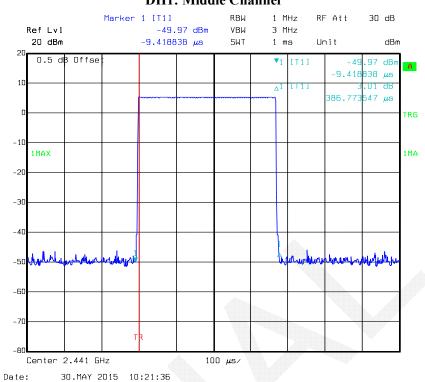
### **DH1: Low Channel**



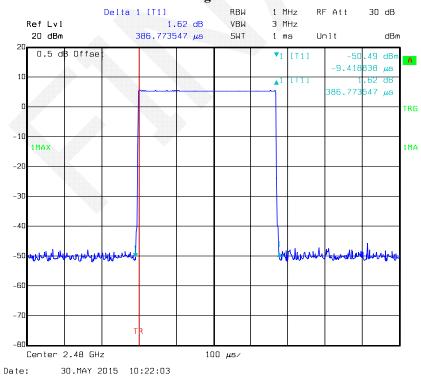
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# DH1: Middle Channel

Report No.: RDG150525003-00A

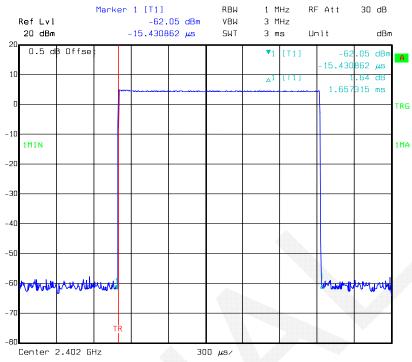


### **DH1: High Channel**



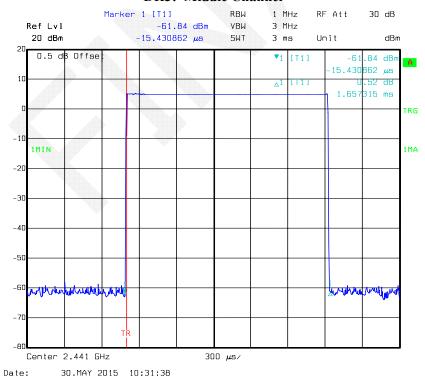
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#### **DH3:** Low Channel



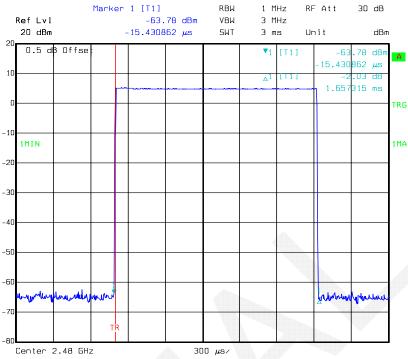
#### Date: 30.MAY 2015 10:32:02

### DH3: Middle Channel



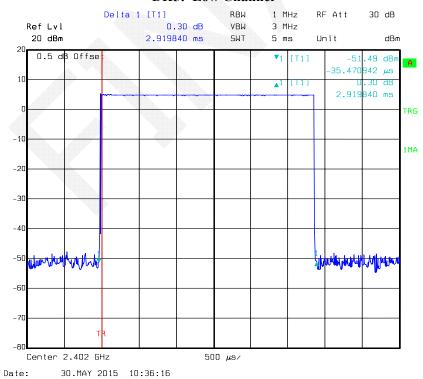
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### **DH3: High Channel**



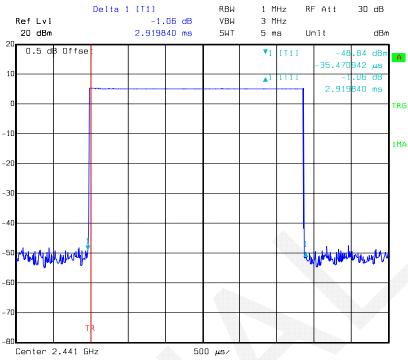
#### Date: 30.MAY 2015 10:31:10

### **DH5: Low Channel**



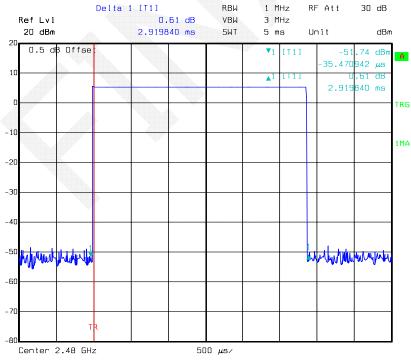
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### **DH5: Middle Channel**



Date: 30.MAY 2015 10:37:10

### **DH5: High Channel**

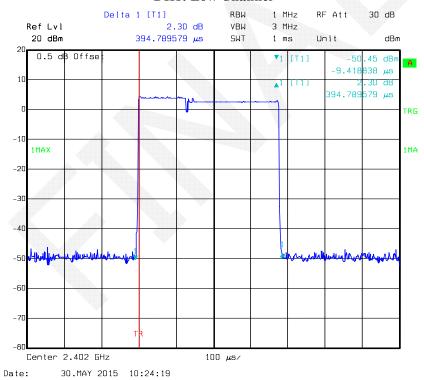


Date: 30.MAY 2015 10:37:27

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Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result	
	Low	0.395	0.126	0.4	Pass	
DH1	Middle	0.395	0.126	0.4	Pass	
DHI	High	0.395	0.126	0.4	Pass	
	Note: Dwell time=Pulse time (ms) $\times$ (1600/2/79) $\times$ 31.6 s					
	Low	1.657	0.265	0.4	Pass	
DH3	Middle	1.657	0.265	0.4	Pass	
DHS	High	1.657	0.265	0.4	Pass	
	Note: Dwell time=Pulse time (ms) $\times$ (1600/4/79) $\times$ 31.6 s					
	Low	2.926	0.312	0.4	Pass	
DH5	Middle	2.926	0.312	0.4	Pass	
DIIS	High	2.926	0.312	0.4	Pass	
	Note: Dwell time=Pulse time (ms) $\times$ (1600/6/79) $\times$ 31.6 s					

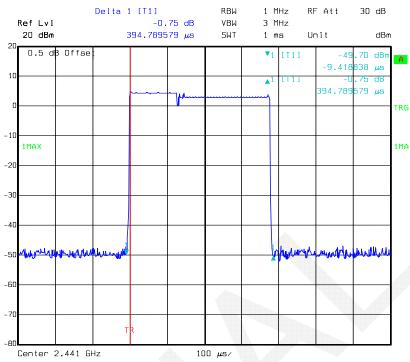
# **DH1: Low Channel**



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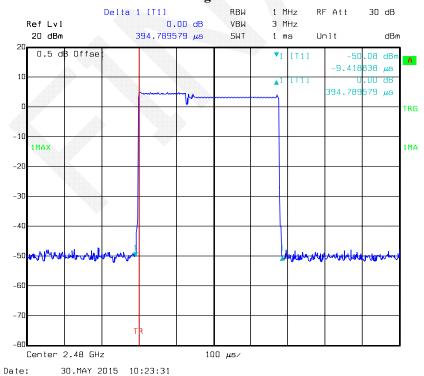
# DH1: Middle Channel

Report No.: RDG150525003-00A



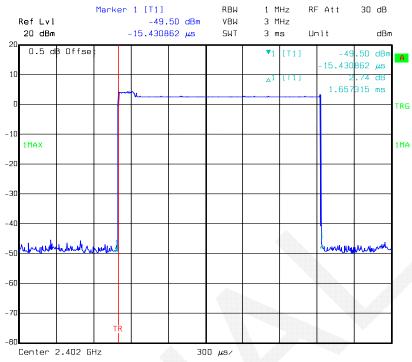
#### Date: 30.MAY 2015 10:23:58

### **DH1: High Channel**



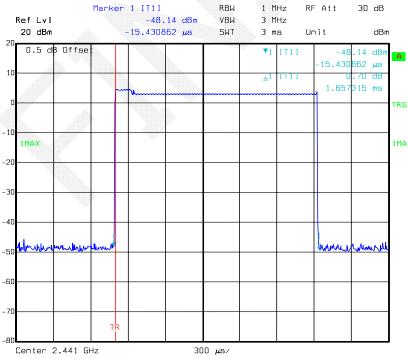
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### **DH3:** Low Channel



#### Date: 30.MAY 2015 10:32:43

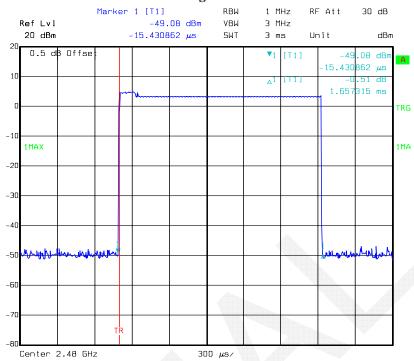
### DH3: Middle Channel



Date: 30.MAY 2015 10:33:13

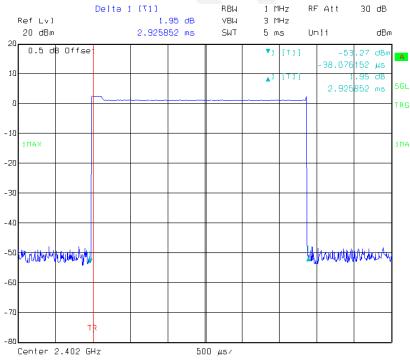
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### **DH3: High Channel**



Date: 30.MAY 2015 10:33:32

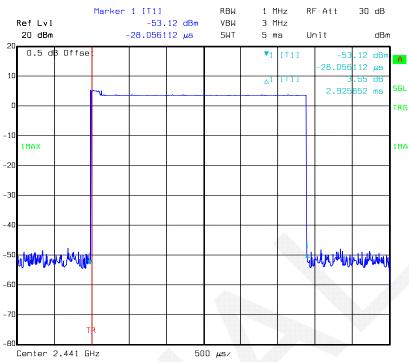
#### **DH5:** Low Channel



Date: 16.JUN.2015 10:27:15

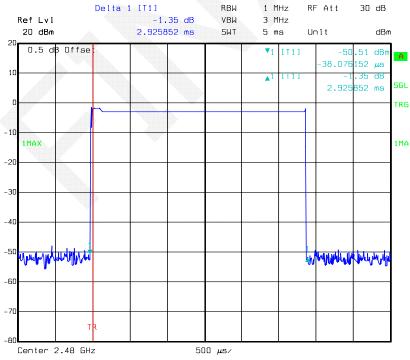
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### **DH5: Middle Channel**



Date: 17.JUN.2015 11:52:58

### **DH5: High Channel**



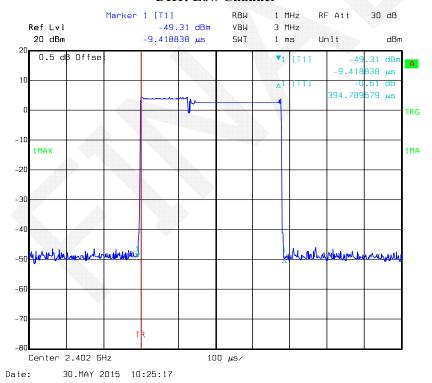
Date: 16.JUN.2015 10:32:41

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# EDR Mode (8-DPSK):

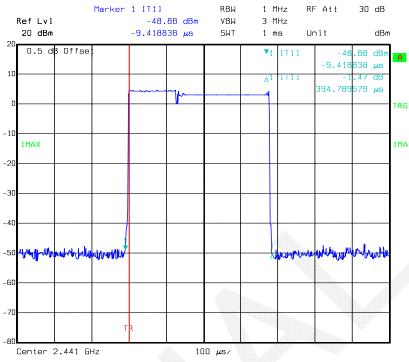
Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result	
	Low	0.395	0.126	0.4	Pass	
DH1	Middle	0.395	0.126	0.4	Pass	
DIII	High	0.395	0.126	0.4	Pass	
	Note: Dwell time=Pulse time (ms) × (1600/2/79) ×31.6 s					
	Low	1.657	0.265	0.4	Pass	
DH3	Middle	1.657	0.265	0.4	Pass	
DHS	High	1.657	0.265	0.4	Pass	
	Note: Dwell time=Pulse time (ms) $\times$ (1600/4/79) $\times$ 31.6 s					
	Low	2.920	0.311	0.4	Pass	
DH5	Middle	2.920	0.311	0.4	Pass	
DHS	High	2.920	0.311	0.4	Pass	
	Note: Dwell time=Pulse time (ms) $\times$ (1600/6/79) $\times$ 31.6 s					

# **DH1: Low Channel**



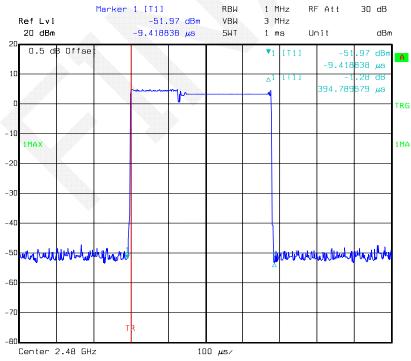
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### **DH1: Middle Channel**



#### Date: 30.MAY 2015 10:25:51

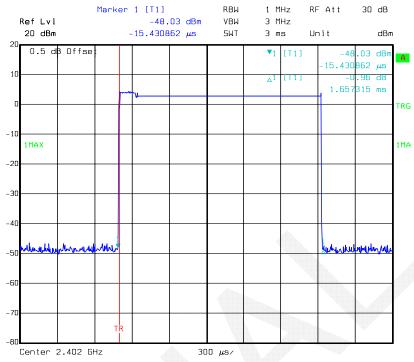
### **DH1: High Channel**



Date: 30.MAY 2015 10:26:07

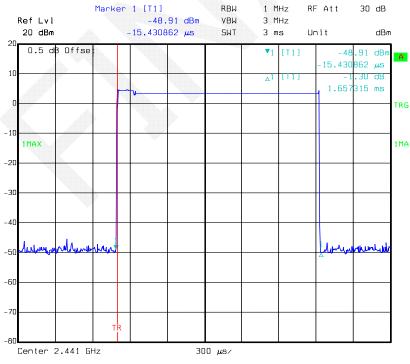
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#### **DH3:** Low Channel



#### Date: 30.MAY 2015 10:34:48

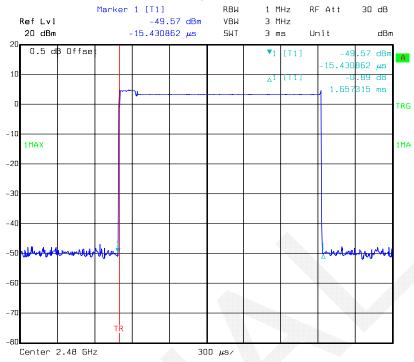
### DH3: Middle Channel



Date: 30.MAY 2015 10:34:31

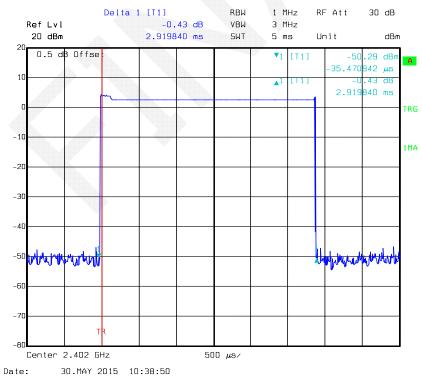
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### **DH3: High Channel**



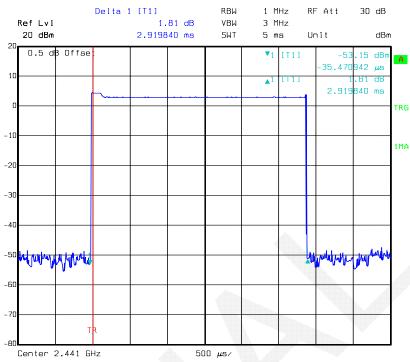
#### Date: 30.MAY 2015 10:34:10

### **DH5: Low Channel**



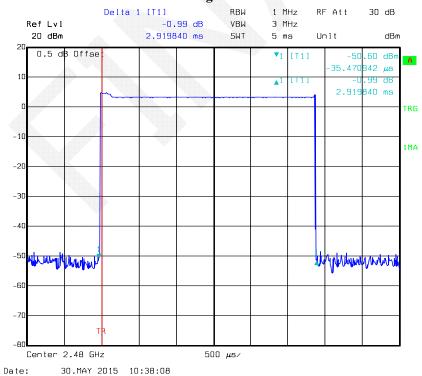
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### **DH5: Middle Channel**



Date: 30.MAY 2015 10:38:28

### **DH5: High Channel**



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# FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

### **Applicable Standard**

According to §15.247(b) (1), for frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts.

Report No.: RDG150525003-00A

#### **Test Procedure**

According to PUBLIC NOTICE DA 00-705

Filing and Measurement Guidelines for Frequency Hopping Spread Spectrum Systems

- 1. Place the EUT on a bench and set in transmitting mode.
- 2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to an test equipment.
- 3. Add a correction factor to the display.

### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

#### **Test Data**

#### **Environmental Conditions**

	ASSET VERSION
Temperature:	25.7 °C
Relative Humidity:	55 %
ATM Pressure:	100.1 kPa

<sup>\*</sup> The testing was performed by Allen Qiao on 2015-05-29.

Test Result: Compliance.

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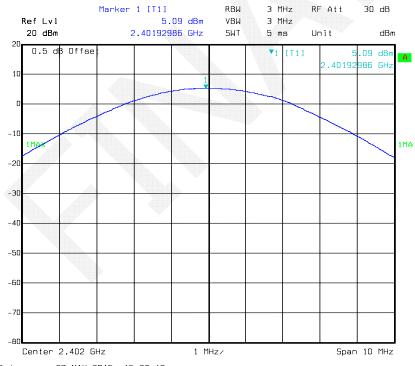
Test Mode: Transmitting

Mode	Channel	Frequency	Output power	Limit	
Mode		MHz	dBm	dBm	
BDR	Low	2402	5.09	30	
	Middle	2441	5.28	30	
(GFSK)	High	2480	5.52	30	
EDD	Low	2402	4.42	30	
EDR	Middle	2441	4.81	30	
$(\pi/4\text{-DQPSK})$	High	2480	5.00	30	
EDD	Low	2402	4.49	30	
EDR (8DPSK)	Middle	2441	4.82	30	
(oDF SK)	High	2480	5.06	30	

Note: The data above was tested in conducted mode.

# BDR Mode (GFSK):

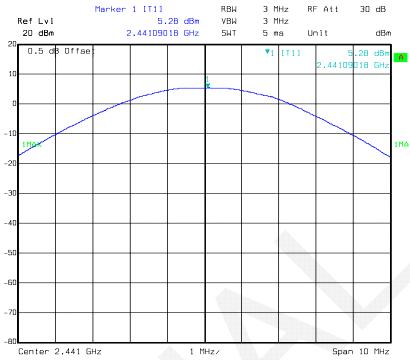
# **Output Power, Low Channel**



Date: 29.MAY 2015 15:22:12

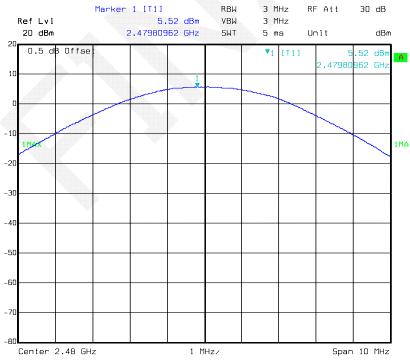
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# **Output Power, Middle Channel**



#### Date: 29.MAY 2015 15:22:51

# **Output Power, High Channel**

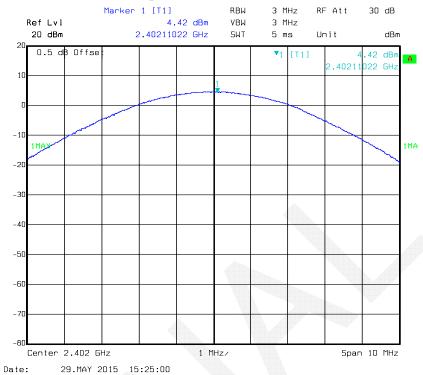


Date: 29.MAY 2015 15:23:18

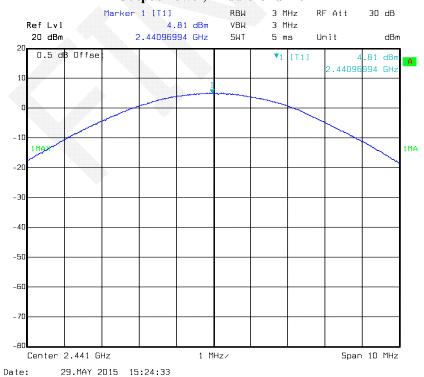
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# *EDR Mode (\pi/4-DQPSK):*

# **Output Power, Low Channel**

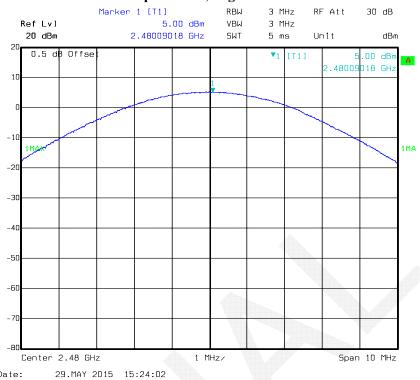


### **Output Power, Middle Channel**



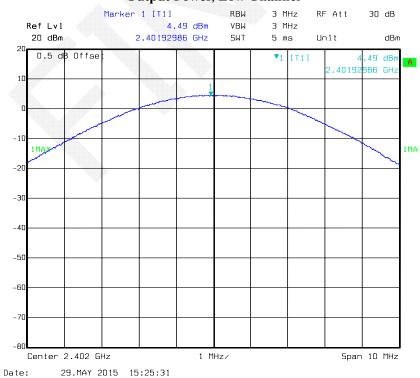
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### **Output Power, High Channel**



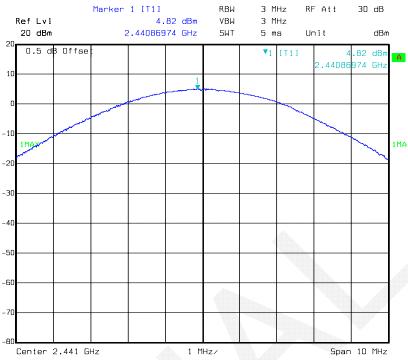
### EDR Mode (8-DPSK):

# **Output Power, Low Channel**



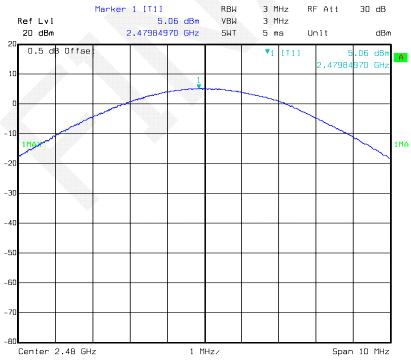
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# **Output Power, Middle Channel**



#### Date: 29.MAY 2015 15:25:55

### **Output Power, High Channel**



Date: 29.MAY 2015 15:26:15

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# FCC §15.247(d) - BAND EDGES TESTING

#### **Applicable Standard**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in §15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in §15.205(a), must also comply with the radiated emission limits specified in §15.209(a) (see §15.205(c)).

Report No.: RDG150525003-00A

#### **Test Procedure**

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Remove the antenna from the EUT and then connect to a low loss RF cable from the antenna port to a EMI test receiver, then turn on the EUT and make it operate in transmitting mode. Then set it to Low Channel and High Channel within its operating range, and make sure the instrument is operated in its linear range.
- 3. Set both RBW and VBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
- 4. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
- 5. Repeat above procedures until all measured frequencies were complete.

#### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-05-09	2016-05-09

<sup>\*</sup> Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

#### **Test Data**

#### **Environmental Conditions**

Temperature:	25.7°C	
Relative Humidity:	55 %	
ATM Pressure:	100.1 kPa	

<sup>\*</sup> The testing was performed by Allen Qiao on 2015-05-29.

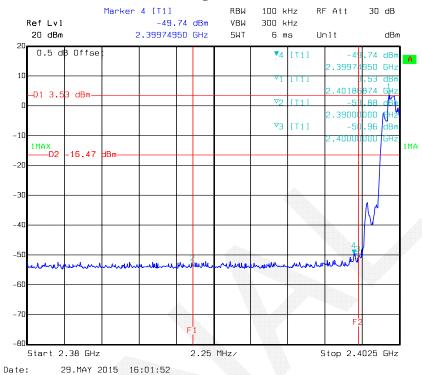
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# Test Result: Compliance

### BDR Mode (GFSK):

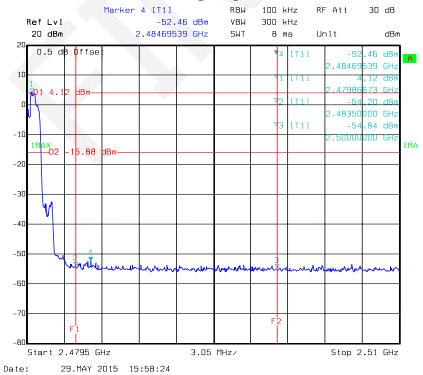
# Band Edge, Left Side

Report No.: RDG150525003-00A



ate: 29.000 2010 10:01:02

### Band Edge, Right Side

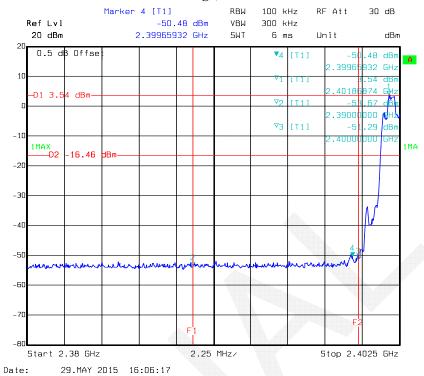


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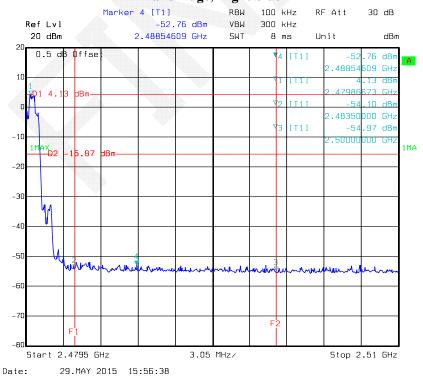
# EDR Mode ( $\pi/4$ -DQPSK):

### Band Edge, Left Side

Report No.: RDG150525003-00A



### Band Edge, Right Side

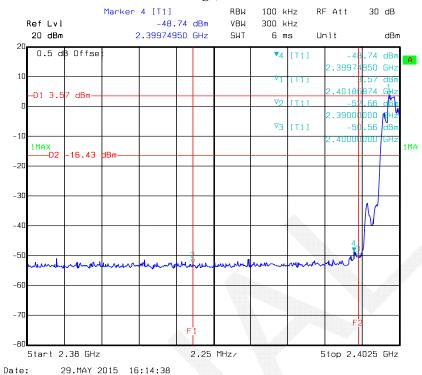


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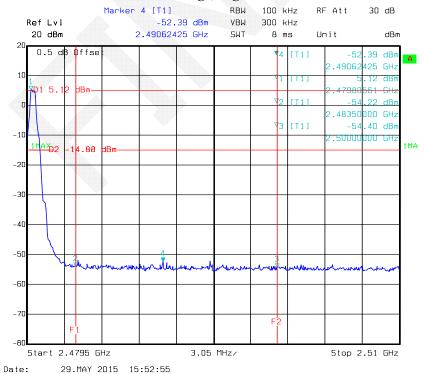
# EDR Mode (8-DPSK):

### Band Edge, Left Side

Report No.: RDG150525003-00A



### Band Edge, Right Side



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# **DECLARATION LETTER**

### **Declaration of Alteration**

To Whom It May Concern,

We, Posh Mobile Limited, hereby declare that there are some differences between our Multiple Models and testing products. Details as below:

(This is for your reference only.)

(This is for your reference only.)						
Name		Micro X				
Products	Brand		POSH			
Description	Manu	ıfacturer	acturer Shenzhen Posh Mobile Limited			
Project No.		RDG150525003, RDG150525003-20				
Differences Description						
Testing Products Multip		le Models	Differences Items	Details		
S240B S240A			Model	They are same		
				name	motherboard, and just	
					have the different model	
					name.	

Notes: Testing products-the products tested by BACL

Multiple Model- have the same or similar appearance, structure, PCB, Material and function to the testing products, and only are different for little parameters.

Besides the differences in the table above, we declare the products are identical We guarantee all the information provided above is true, and notice that we'll bear all the consequences caused by any false information or concealing

Best Regards,

Signature:

Print Name: K.N. Chong

Title: Manager