

FCC PART 15.247

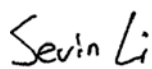

TEST REPORT

For

Dongguan DINGKU Technology Co.,Ltd

Suizhan Building, xingyi Road, Wusha, Chang'an Town, Dongguan, Guangdong, China

FCC ID: 2ADGT-LE505

Report Type: Original Report	Product Type: earbud in powerbank
Test Engineer: Sevin Li	
Report Number: RDG141028002-00A	
Report Date: 2015-01-13	
Reviewed By: Sula Huang RF Engineer	
Test Laboratory:	Bay Area Compliance Laboratories Corp. (Dongguan) 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 Dongguan DINGKU Technology Co.,Ltd's product, model number: LE505 (FCC ID: 2ADGT-LE505) or ("EUT") in this report is a *earbud in powerbank*, which was measured approximately: DC3.7V from rechargeable Li-ion battery or DC 5V from USB port.

** All measurement and test data in this report was gathered from production sample serial number: 141028002 (Assigned by BACL, Dongguan). The EUT was received on 2014-10-28*

Note: The series product, model LE505 and BE-1003 are electrically identical, the difference between them is just the model name, we selected LE505 for fully testing, the details were explained in the attached declaration letter.

Objective

This report is prepared on behalf of Dongguan DINGKU Technology Co.,Ltd. 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 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)

No related submittal(s).

Test Methodology

All measurements contained in this report were conducted with ANSI C63.4-2003, 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). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

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 Communication 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 02, 2012. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2003.

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.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode.

The software “Airoha AB1500 Family LAB Test Tool” was used for testing, which was provided by manufacturer. The worst condition (maximum power) was setting by the software as following table:

Test Software Version		Airoha AB1500 Family LAB Test Tool		
Test Frequency		2402MHz	2441MHz	2480MHz
Power Level Setting	GFSK	53	53	53
	$\pi/4$ -DQPSK	53	53	53
	8DPSK	53	53	53

Equipment Modifications

No modification was made to the EUT.

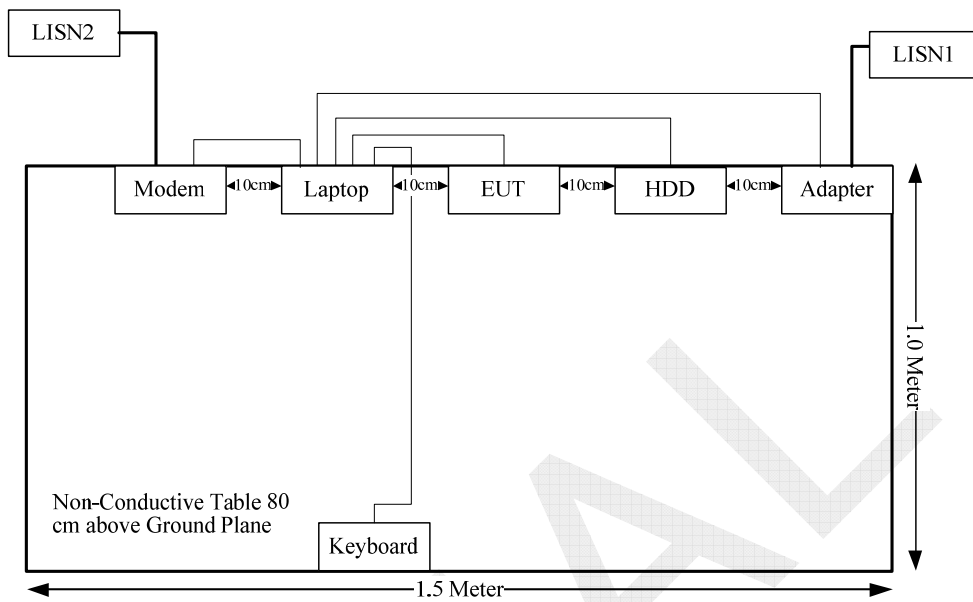
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	PP11L	QDS-BRCM1017
TOSHIBA	HDD	B-S250SU	7491000065
DELL	Keyboard	L100	CNORH656658907BL05DC
SAST	Modem	AEM-2100	0293

External Cable

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Serial Cable	yes	no	1.2	Serial Port of Laptop	Modem
USB Cable	yes	no	0.5	USB Port of Laptop	HDD
Keyboard Cable	yes	no	1.8	USB Port of Laptop	Keyboard
Charging Cable	no	no	0.78	USB Port of Laptop	EUT

Block Diagram of Test Setup



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.247 (i) & §1.1310 & §2.1093	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	Conducted Emissions	Compliance
§15.205, §15.209, §15.247(d)	Radiated 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

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.

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 ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW})/(\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

- $f(\text{GHz})$ 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 ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 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 conducted output power=6.77 dBm (4.75 mW) at 2402 MHz
 $[(\text{max. power of channel, mW})/(\text{min. test separation distance, mm})] [\sqrt{f(\text{GHz})}]$
 $= 4.75/5 \cdot (\sqrt{2.402}) = 1.47 < 3.0$

So the stand-alone SAR evaluation is not necessary.

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.

Antenna Connector Construction

The EUT has one integral antenna arrangement and antenna gain is 1.4 dBi, which was permanently attached, fulfill the requirement of this section, please refer to the EUT photos.

Result: Compliance.

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_{lab} is less than or equal to U_{cisp} 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_{lab} is greater than U_{cisp} of Table 1, then:

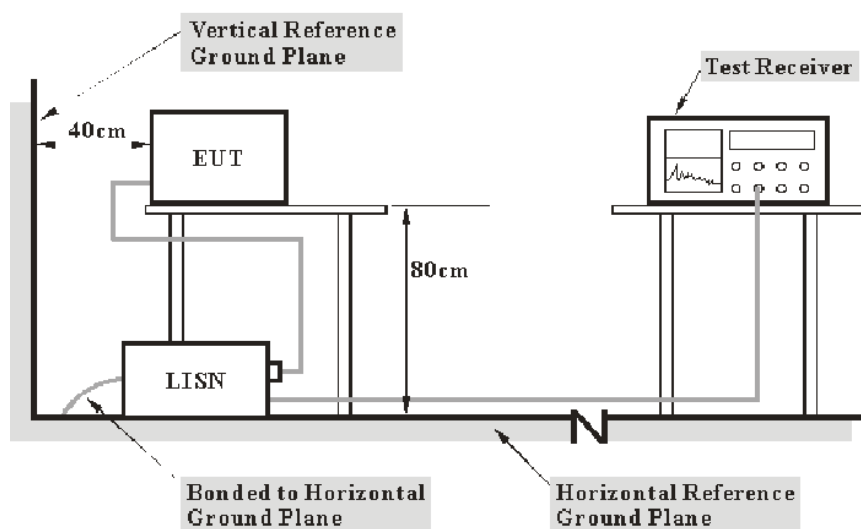
- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cisp})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cisp})$, exceeds the disturbance limit.

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_{cisp}

Measurement	U_{cisp}
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.

The setup of EUT is according with per ANSI C63.4-2003 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

The adapter of laptop 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 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:

$$V_C = V_R + A_C + VDF$$

$$C_f = A_C + VDF$$

Herein,

V_C (cord. Reading): corrected voltage amplitude

V_R : reading voltage amplitude

A_C : attenuation caused by cable loss

VDF: voltage division factor of AMN

C_f : Correction Factor

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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2014-10-16	2015-10-16
R&S	L.I.S.N	ESH3-Z5	843331/015	N/A	N/A
R&S	Two-line V-network	ENV 216	3560.6550.12	2014-01-22	2015-01-22
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A

* **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 Results Summary

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

23.20 dB at 0.175915 MHz in the **Neutral** conducted mode

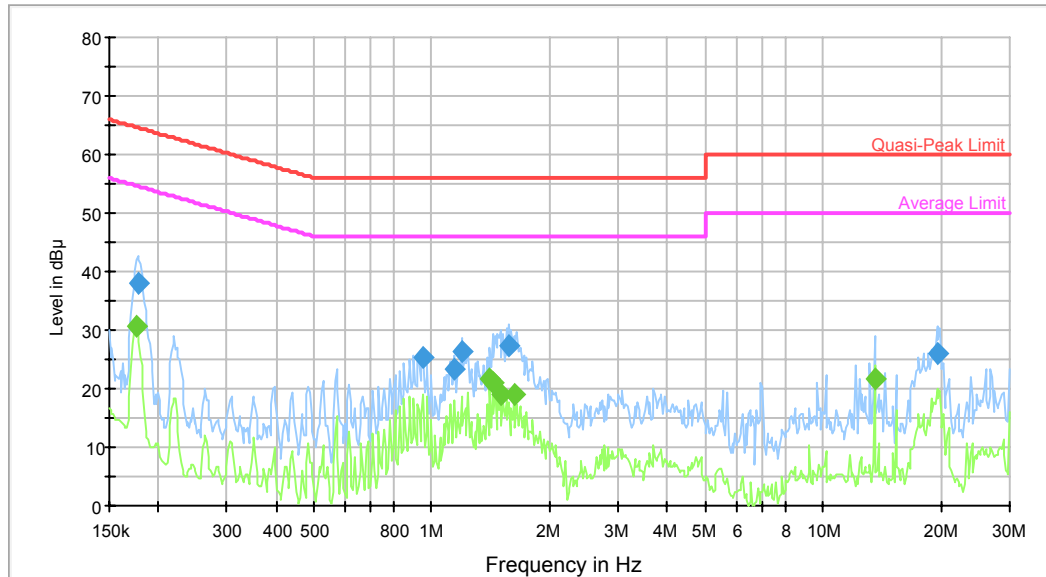
Test Data**Environmental Conditions**

Temperature:	25.4 °C
Relative Humidity:	46 %
ATM Pressure:	101.2 kPa

The testing was performed by Sevin Li on 2014-11-14

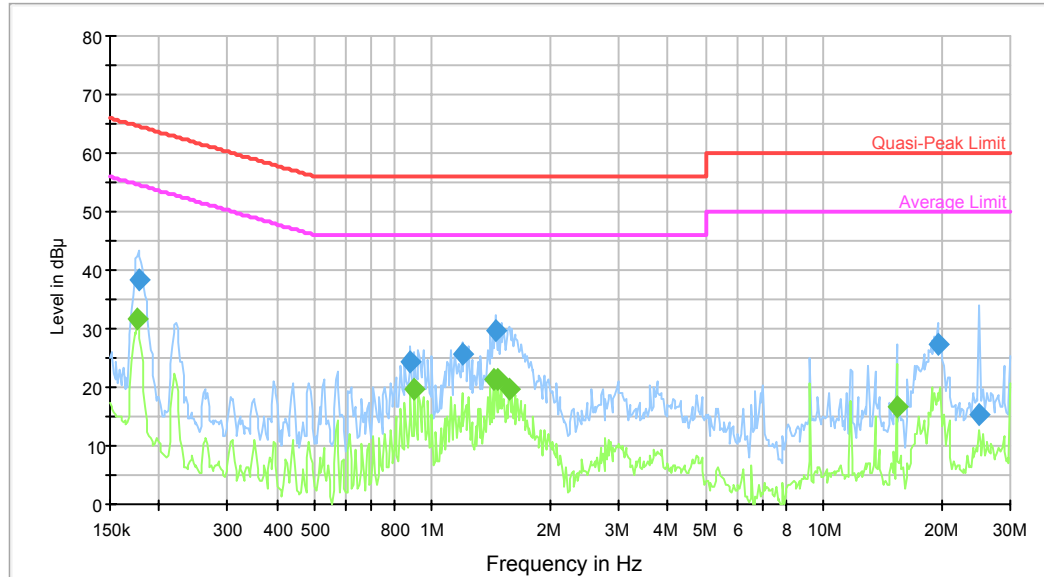
Test Mode: Charging&Transmitting

AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.177322	37.8	9.000	L1	10.4	26.8	64.6	Compliance
0.952654	25.2	9.000	L1	10.4	30.8	56.0	Compliance
1.144267	23.4	9.000	L1	10.4	32.6	56.0	Compliance
1.190776	26.3	9.000	L1	10.4	29.7	56.0	Compliance
1.573796	27.2	9.000	L1	10.4	28.8	56.0	Compliance
19.519859	26.0	9.000	L1	11.0	34.0	60.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.175915	30.6	9.000	L1	10.4	24.1	54.7	Compliance
1.407671	21.8	9.000	L1	10.4	24.2	46.0	Compliance
1.430284	20.9	9.000	L1	10.4	25.1	46.0	Compliance
1.500325	18.9	9.000	L1	10.4	27.1	46.0	Compliance
1.624765	19.0	9.000	L1	10.4	27.0	46.0	Compliance
13.529825	21.8	9.000	L1	10.5	28.2	50.0	Compliance

AC120 V, 60 Hz, Neutral:

Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.177322	38.2	9.000	N	10.8	26.4	64.6	Compliance
0.879690	24.4	9.000	N	10.5	31.6	56.0	Compliance
1.190776	25.5	9.000	N	10.5	30.5	56.0	Compliance
1.453260	29.7	9.000	N	10.5	26.3	56.0	Compliance
19.519859	27.4	9.000	N	11.0	32.6	60.0	Compliance
24.989247	15.3	9.000	N	10.9	44.7	60.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.175915	31.5	9.000	N	10.8	23.2	54.7	Compliance
0.900972	19.6	9.000	N	10.6	26.4	46.0	Compliance
1.430284	21.2	9.000	N	10.5	24.8	46.0	Compliance
1.476605	21.2	9.000	N	10.5	24.8	46.0	Compliance
1.573796	19.8	9.000	N	10.5	26.2	46.0	Compliance
15.369534	16.7	9.000	N	10.6	33.3	50.0	Compliance

FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

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:

If U_{lab} is less than or equal to U_{cisp} of Table 2, 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_{lab} is greater than U_{cisp} of Table 1, then:

- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cisp})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cisp})$, 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 2 – Values of U_{cisp}

Measurement	U_{cisp}
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:



Above 1GHz:

The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.4-2003. 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.

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

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 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

For the radiated emissions test, the adapter was connected to the AC floor outlet.

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.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCI	100224	2014-05-09	2015-05-09
Sunol Sciences	Antenna	JB3	A060611-3	2014-07-28	2017-07-27
HP	Amplifier	8447E	2434A02181	2014-09-01	2015-09-01
R&S	Spectrum Analyzer	FSEM	DE31388	2014-05-09	2015-05-09
ETS LINDGREN	Horn Antenna	3115	000 527 35	2012-09-06	2015-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2014-02-19	2015-02-19
Ducommun Technologies	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

* **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).

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:

$$\text{Corrected Amplitude} = \text{Meter Reading} + \text{Antenna Factor} + \text{Cable Loss} - \text{Amplifier Gain}$$

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:

$$\text{Margin} = \text{Limit} - \text{Corrected Amplitude}$$

Test Results Summary

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

2.33 dB at 2483.5 MHz in the Vertical polarization

Test Data**Environmental Conditions**

Temperature:	25.4 °C
Relative Humidity:	51 %
ATM Pressure:	100.7 kPa

The testing was performed by Sevin Li on 2014-11-18

Test Mode: Transmitting

BDR(GFSK):

Frequency (MHz)	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
Low Channel: 2402 MHz									
2402	67.50	PK	H	25.65	4.42	0.00	97.57	N/A	N/A
2402	57.79	AV	H	25.65	4.42	0.00	87.86	N/A	N/A
2402	67.02	PK	V	25.65	4.42	0.00	97.09	N/A	N/A
2402	57.52	AV	V	25.65	4.42	0.00	87.59	N/A	N/A
2390	26.14	PK	H	25.61	4.39	0.00	56.14	74.00	17.86
2390	14.61	AV	H	25.61	4.39	0.00	44.61	54.00	9.39
4804	35.82	PK	V	30.59	5.98	27.41	44.98	74.00	29.02
4804	25.12	AV	V	30.59	5.98	27.41	34.28	54.00	19.72
7206	31.18	PK	V	34.09	7.45	25.91	46.81	74.00	27.19
7206	18.35	AV	V	34.09	7.45	25.91	33.98	54.00	20.02
9608	30.45	PK	V	35.96	8.80	27.55	47.66	74.00	26.34
9608	18.25	AV	V	35.96	8.80	27.55	35.46	54.00	18.54
6990	30.72	PK	V	33.57	7.33	26.26	45.36	74.00	28.64
6990	18.86	AV	V	33.57	7.33	26.26	33.50	54.00	20.50
239.5	32.64	QP	V	12.21	1.86	21.48	25.23	46.00	20.77
Middle Channel: 2441 MHz									
2441	68.93	PK	H	25.75	4.40	0.00	99.08	N/A	N/A
2441	59.24	AV	H	25.75	4.40	0.00	89.39	N/A	N/A
2441	67.66	PK	V	25.75	4.40	0.00	97.81	N/A	N/A
2441	57.03	AV	V	25.75	4.40	0.00	87.18	N/A	N/A
4882	37.65	PK	V	30.79	6.08	27.42	47.10	74.00	26.90
4882	27.21	AV	V	30.79	6.08	27.42	36.66	54.00	17.34
7323	32.69	PK	V	34.38	7.51	25.88	48.70	74.00	25.30
7323	21.28	AV	V	34.38	7.51	25.88	37.29	54.00	16.71
9764	29.88	PK	V	36.33	8.83	27.20	47.84	74.00	26.16
9764	18.27	AV	V	36.33	8.83	27.20	36.23	54.00	17.77
6990	30.04	PK	H	33.57	7.33	26.26	44.68	74.00	29.32
6990	18.47	AV	H	33.57	7.33	26.26	33.11	54.00	20.89
239.5	32.75	QP	V	12.21	1.86	21.48	25.34	46.00	20.66
High Channel: 2480 MHz									
2480	68.23	PK	H	25.85	4.48	0.00	98.56	N/A	N/A
2480	58.54	AV	H	25.85	4.48	0.00	88.87	N/A	N/A
2480	68.08	PK	V	25.85	4.48	0.00	98.41	N/A	N/A
2480	58.60	AV	V	25.85	4.48	0.00	88.93	N/A	N/A
2483.5	41.12	PK	H	25.86	4.49	0.00	71.47	74.00	2.53 *
2483.5	17.36	AV	H	25.86	4.49	0.00	47.71	54.00	6.29
4960	33.05	PK	V	31.00	5.90	27.43	42.52	74.00	31.48
4960	22.15	AV	V	31.00	5.90	27.43	31.62	54.00	22.38
7440	34.62	PK	V	34.66	7.58	25.97	50.89	74.00	23.11
7440	22.62	AV	V	34.66	7.58	25.97	38.89	54.00	15.11
9920	30.15	PK	V	36.71	8.87	26.66	49.07	74.00	24.93
9920	18.46	AV	V	36.71	8.87	26.66	37.38	54.00	16.62
6990	30.13	PK	V	33.57	7.33	26.26	44.77	74.00	29.23
6990	18.41	AV	V	33.57	7.33	26.26	33.05	54.00	20.95
239.5	32.38	QP	V	12.21	1.86	21.48	24.97	46.00	21.03

*Within measurement uncertainty!

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

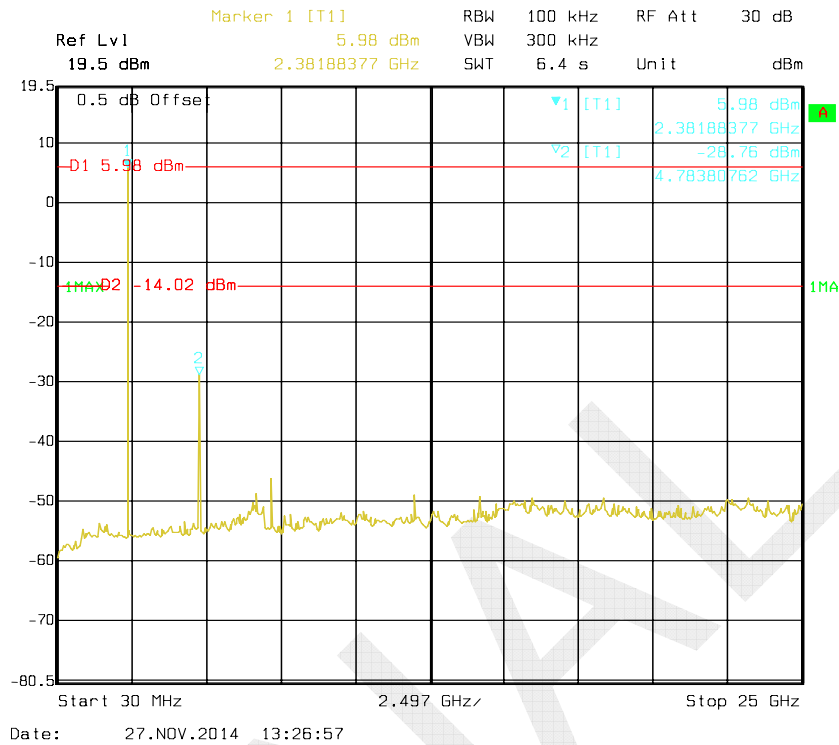
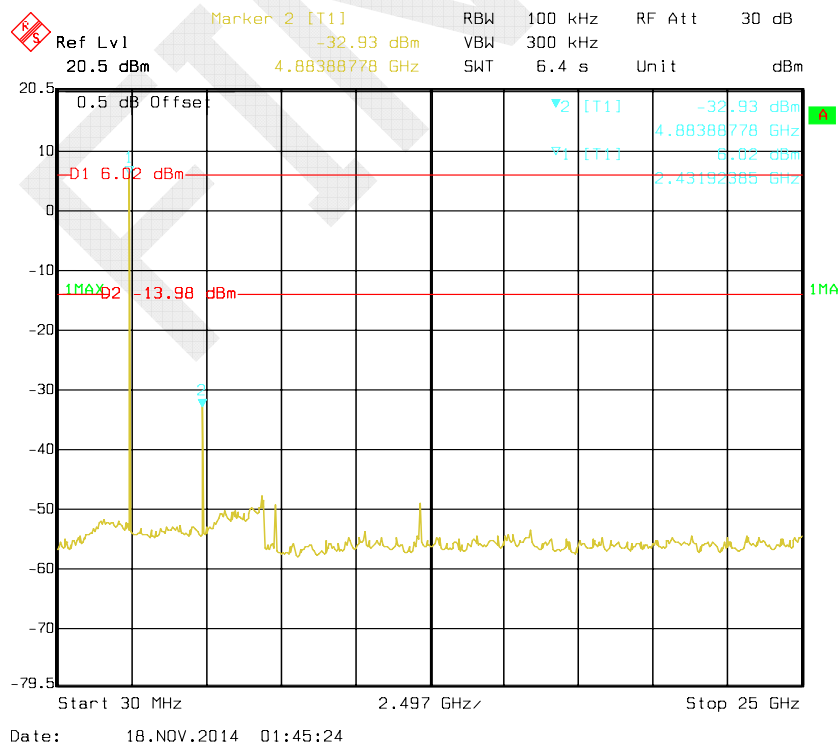
Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
Low Channel: 2402 MHz									
2402	65.98	PK	H	25.65	4.42	0.00	96.05	N/A	N/A
2402	54.40	AV	H	25.65	4.42	0.00	84.47	N/A	N/A
2402	68.06	PK	V	25.65	4.42	0.00	98.13	N/A	N/A
2402	56.84	AV	V	25.65	4.42	0.00	86.91	N/A	N/A
2390	25.23	PK	V	25.61	4.39	0.00	55.23	74.00	18.77
2390	13.69	AV	V	25.61	4.39	0.00	43.69	54.00	10.31
4804	37.12	PK	V	30.59	5.98	27.41	46.28	74.00	27.72
4804	25.53	AV	V	30.59	5.98	27.41	34.69	54.00	19.31
7206	31.24	PK	V	34.09	7.45	25.91	46.87	74.00	27.13
7206	18.31	AV	V	34.09	7.45	25.91	33.94	54.00	20.06
9608	29.44	PK	V	35.96	8.80	27.55	46.65	74.00	27.35
9608	17.77	AV	V	35.96	8.80	27.55	34.98	54.00	19.02
6860	29.91	PK	H	33.24	7.21	26.54	43.82	74.00	30.18
6860	18.91	AV	H	33.24	7.21	26.54	32.82	54.00	21.18
239.5	32.29	QP	V	12.21	1.86	21.48	24.88	46.00	21.12
Middle Channel: 2441 MHz									
2441	69.63	PK	H	25.75	4.40	0.00	99.78	N/A	N/A
2441	58.71	AV	H	25.75	4.40	0.00	88.86	N/A	N/A
2441	67.07	PK	V	25.75	4.40	0.00	97.22	N/A	N/A
2441	55.93	AV	V	25.75	4.40	0.00	86.08	N/A	N/A
4882	37.53	PK	V	30.79	6.08	27.42	46.98	74.00	27.02
4882	26.26	AV	V	30.79	6.08	27.42	35.71	54.00	18.29
7323	32.45	PK	V	34.38	7.51	25.88	48.46	74.00	25.54
7323	20.47	AV	V	34.38	7.51	25.88	36.48	54.00	17.52
9764	29.87	PK	V	36.33	8.83	27.20	47.83	74.00	26.17
9764	18.79	AV	V	36.33	8.83	27.20	36.75	54.00	17.25
6860	29.54	PK	H	33.24	7.21	26.54	43.45	74.00	30.55
6860	18.57	AV	H	33.24	7.21	26.54	32.48	54.00	21.52
239.5	32.62	QP	V	12.21	1.86	21.48	25.21	46.00	20.79
High Channel: 2480 MHz									
2480	68.45	PK	H	25.85	4.48	0.00	98.78	N/A	N/A
2480	57.55	AV	H	25.85	4.48	0.00	87.88	N/A	N/A
2480	68.43	PK	V	25.85	4.48	0.00	98.76	N/A	N/A
2480	57.79	AV	V	25.85	4.48	0.00	88.12	N/A	N/A
2483.5	41.32	PK	V	25.86	4.49	0.00	71.67	74.00	2.33 *
2483.5	17.45	AV	V	25.86	4.49	0.00	47.80	54.00	6.20
4960	32.87	PK	V	31.00	5.90	27.43	42.34	74.00	31.66
4960	21.55	AV	V	31.00	5.90	27.43	31.02	54.00	22.98
7440	33.43	PK	V	34.66	7.58	25.97	49.70	74.00	24.30
7440	22.21	AV	V	34.66	7.58	25.97	38.48	54.00	15.52
9920	30.12	PK	V	36.71	8.87	26.66	49.04	74.00	24.96
9920	17.21	AV	V	36.71	8.87	26.66	36.13	54.00	17.87
6860	29.78	PK	V	33.24	7.21	26.54	43.69	74.00	30.31
6860	18.98	AV	V	33.24	7.21	26.54	32.89	54.00	21.11
239.5	32.12	QP	V	12.21	1.86	21.48	24.71	46.00	21.29

*Within measurement uncertainty!

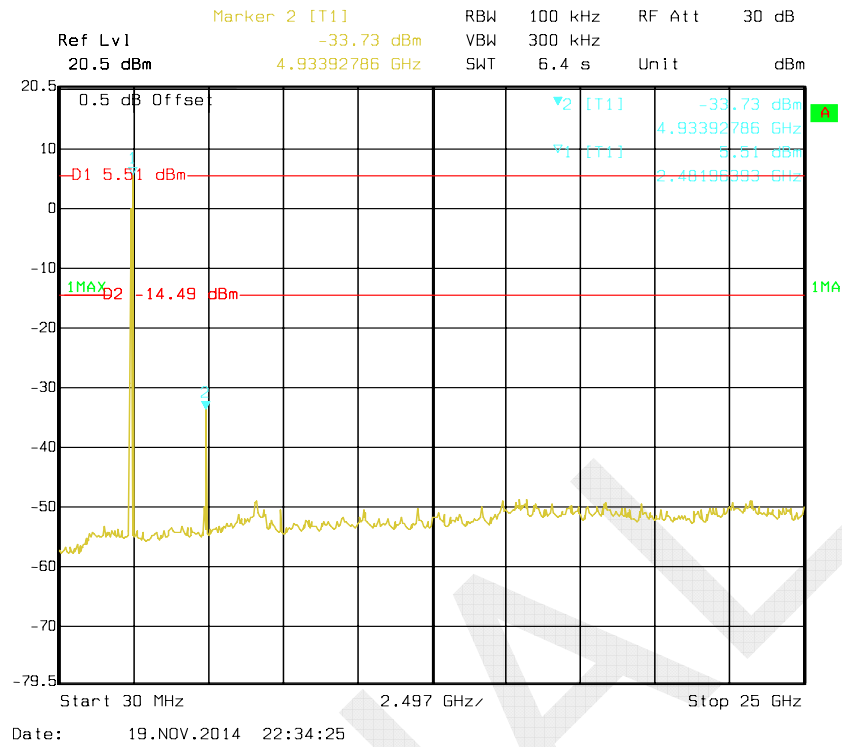
EDR(8DPSK):

Frequency	Receiver		Rx Antenna		Cable loss (dB)	Amplifier Gain (dB)	Corrected Amplitude (dBμV/m)	FCC 15.247	
(MHz)	Reading (dBμV)	Detector (PK/QP/AV)	Polar (H/V)	Factor (dB)				Limit (dBμV/m)	Margin (dB)
Low Channel: 2402 MHz									
2402	65.68	PK	H	25.65	4.42	0.00	95.75	N/A	N/A
2402	54.39	AV	H	25.65	4.42	0.00	84.46	N/A	N/A
2402	67.55	PK	V	25.65	4.42	0.00	97.62	N/A	N/A
2402	56.51	AV	V	25.65	4.42	0.00	86.58	N/A	N/A
2390	25.89	PK	V	25.61	4.39	0.00	55.89	74.00	18.11
2390	13.78	AV	V	25.61	4.39	0.00	43.78	54.00	10.22
4804	38.05	PK	V	30.59	5.98	27.41	47.21	74.00	26.79
4804	26.56	AV	V	30.59	5.98	27.41	35.72	54.00	18.28
7206	30.25	PK	V	34.09	7.45	25.91	45.88	74.00	28.12
7206	19.43	AV	V	34.09	7.45	25.91	35.06	54.00	18.94
9608	29.42	PK	V	35.96	8.80	27.55	46.63	74.00	27.37
9608	18.31	AV	V	35.96	8.80	27.55	35.52	54.00	18.48
7153	30.07	PK	V	33.97	7.42	25.99	45.47	74.00	28.53
7153	18.56	AV	V	33.97	7.42	25.99	33.96	54.00	20.04
239.5	32.74	QP	V	12.21	1.86	21.48	25.33	46.00	20.67
Middle Channel: 2441 MHz									
2441	68.59	PK	H	25.75	4.40	0.00	98.74	N/A	N/A
2441	57.11	AV	H	25.75	4.40	0.00	87.26	N/A	N/A
2441	68.07	PK	V	25.75	4.40	0.00	98.22	N/A	N/A
2441	57.01	AV	V	25.75	4.40	0.00	87.16	N/A	N/A
4882	37.63	PK	V	30.79	6.08	27.42	47.08	74.00	26.92
4882	26.28	AV	V	30.79	6.08	27.42	35.73	54.00	18.27
7323	31.67	PK	V	34.38	7.51	25.88	47.68	74.00	26.32
7323	20.41	AV	V	34.38	7.51	25.88	36.42	54.00	17.58
9764	29.78	PK	V	36.33	8.83	27.20	47.74	74.00	26.26
9764	18.23	AV	V	36.33	8.83	27.20	36.19	54.00	17.81
7265	30.77	PK	V	34.24	7.48	25.89	46.60	74.00	27.40
7265	18.62	AV	V	34.24	7.48	25.89	34.45	54.00	19.55
239.5	32.35	QP	V	12.21	1.86	21.48	24.94	46.00	21.06
High Channel: 2480 MHz									
2480	67.07	PK	H	25.85	4.48	0.00	97.40	N/A	N/A
2480	56.21	AV	H	25.85	4.48	0.00	86.54	N/A	N/A
2480	68.54	PK	V	25.85	4.48	0.00	98.87	N/A	N/A
2480	57.75	AV	V	25.85	4.48	0.00	88.08	N/A	N/A
2483.5	40.93	PK	V	25.86	4.49	0.00	71.28	74.00	2.72 *
2483.5	17.11	AV	V	25.86	4.49	0.00	47.46	54.00	6.54
4960	33.15	PK	V	31.00	5.90	27.43	42.62	74.00	31.38
4960	21.73	AV	V	31.00	5.90	27.43	31.20	54.00	22.80
7440	33.21	PK	V	34.66	7.58	25.97	49.48	74.00	24.52
7440	21.74	AV	V	34.66	7.58	25.97	38.01	54.00	15.99
9920	29.43	PK	V	36.71	8.87	26.66	48.35	74.00	25.65
9920	18.35	AV	V	36.71	8.87	26.66	37.27	54.00	16.73
7265	30.72	PK	V	34.24	7.48	25.89	46.55	74.00	27.45
7265	18.61	AV	V	34.24	7.48	25.89	34.44	54.00	19.56
239.5	32.07	QP	V	12.21	1.86	21.48	24.66	46.00	21.34

*Within measurement uncertainty!

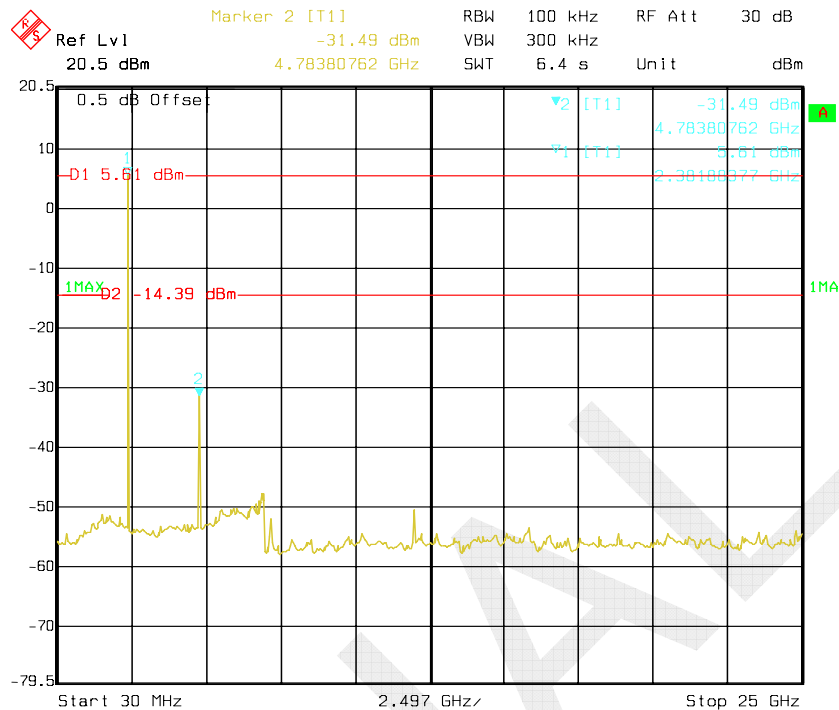
Conducted Spurious Emissions at Antenna Port*BDR(GFSK):***Low Channel****Middle Channel**

High Channel

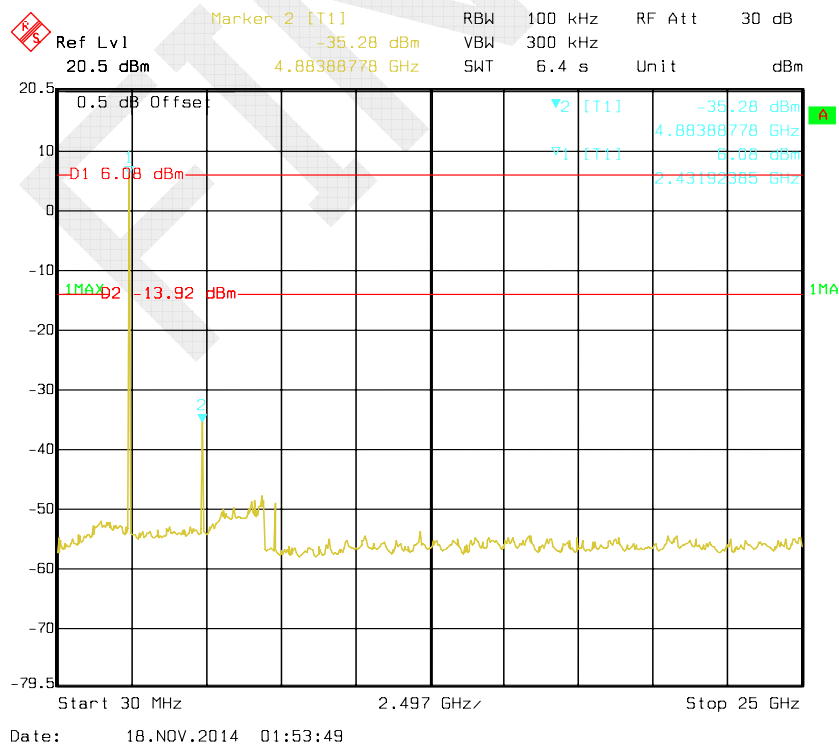


$EDR(\pi/4\text{-DQPSK})$:

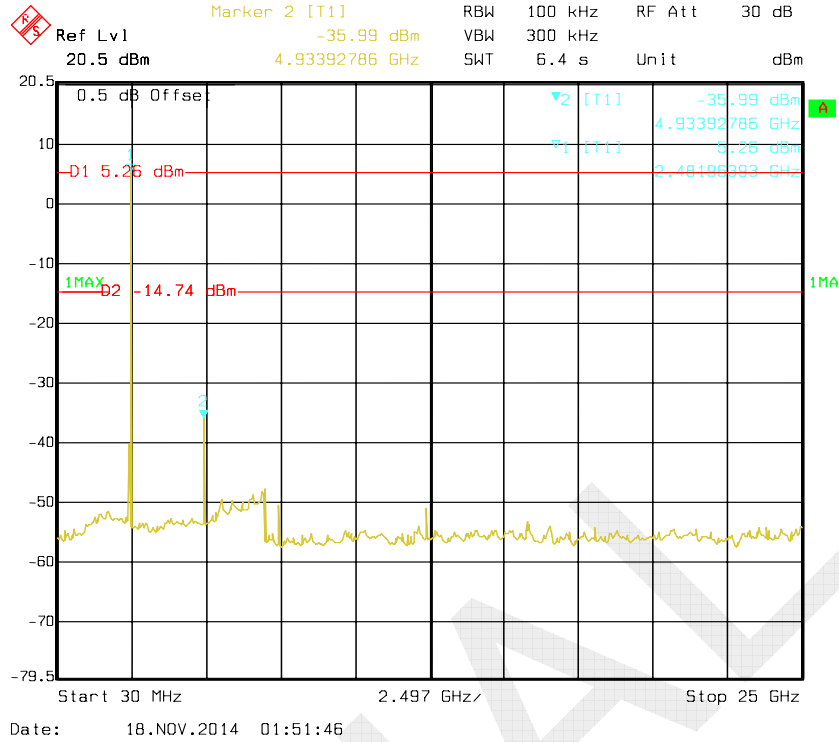
Low Channel



Middle Channel

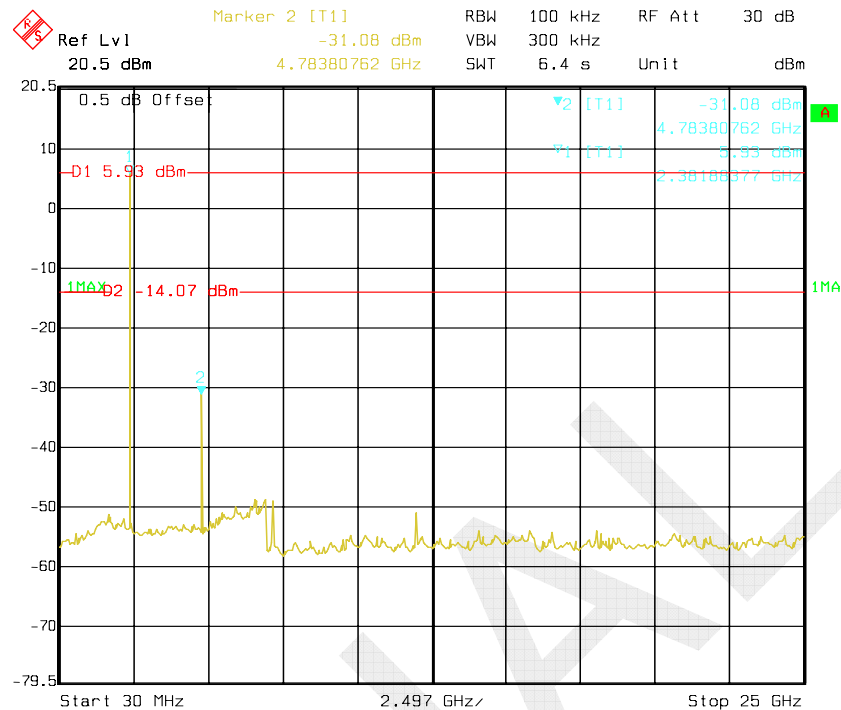


High Channel

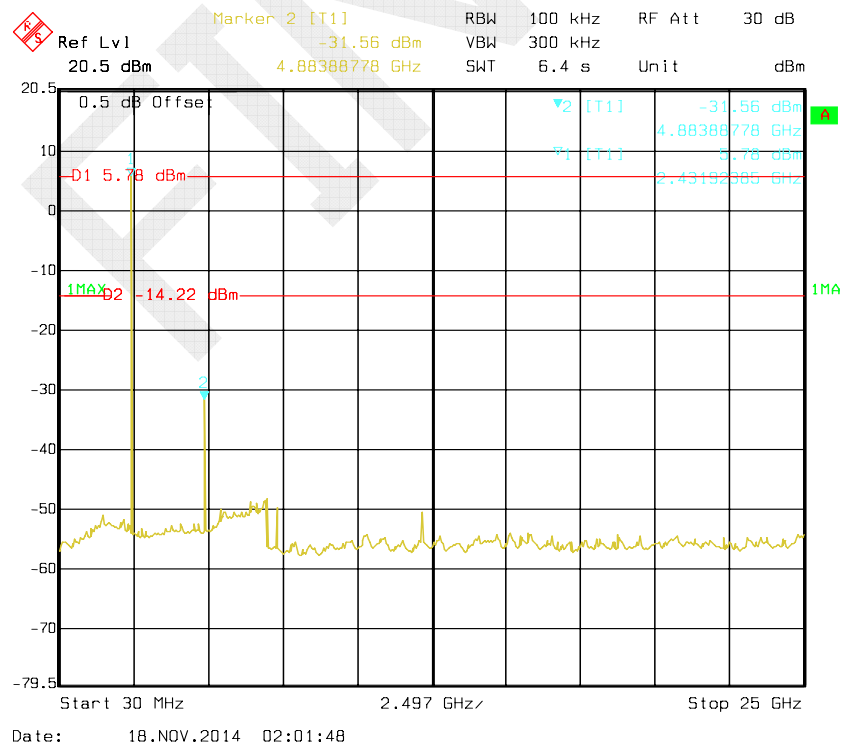


EDR(8DPSK):

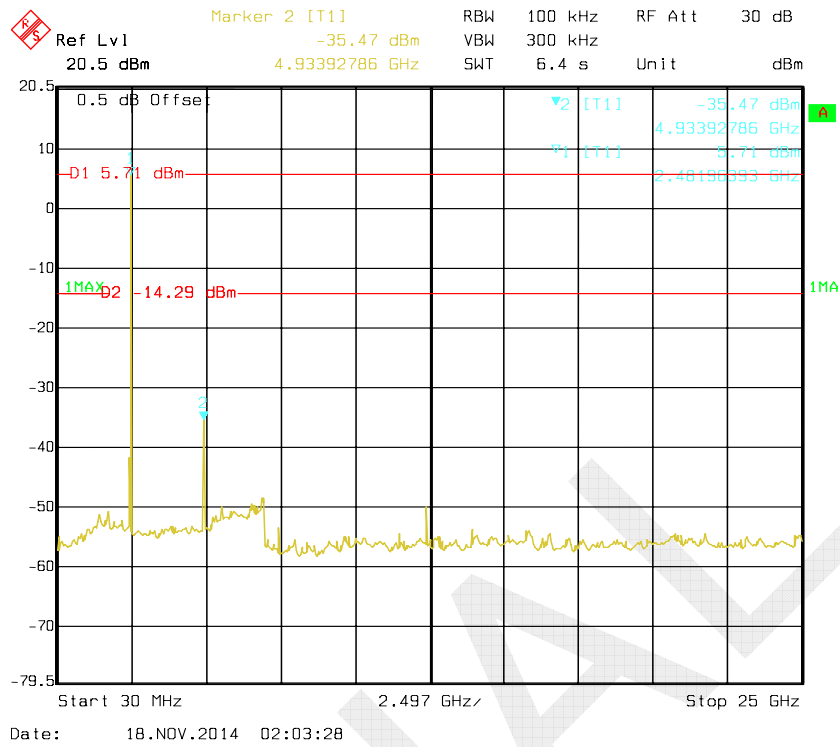
Low Channel



Middle Channel



High Channel



FCC §15.247(a) (1) - CHANNEL SEPARATION TEST**Applicable Standard**

Frequency hopping systems shall have hopping 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.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2014-05-09	2015-05-09

* **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

Set the EUT in transmitting mode, maxhold the trace, allow it to stabilize. Use the marker-delta function to determine the separation between the peaks of the adjacent channels.

Test Data**Environmental Conditions**

Temperature:	25.9 °C
Relative Humidity:	44 %
ATM Pressure:	101.7 kPa

The testing was performed by Sevin Li on 2014-11-18

Test Result: Compliance.

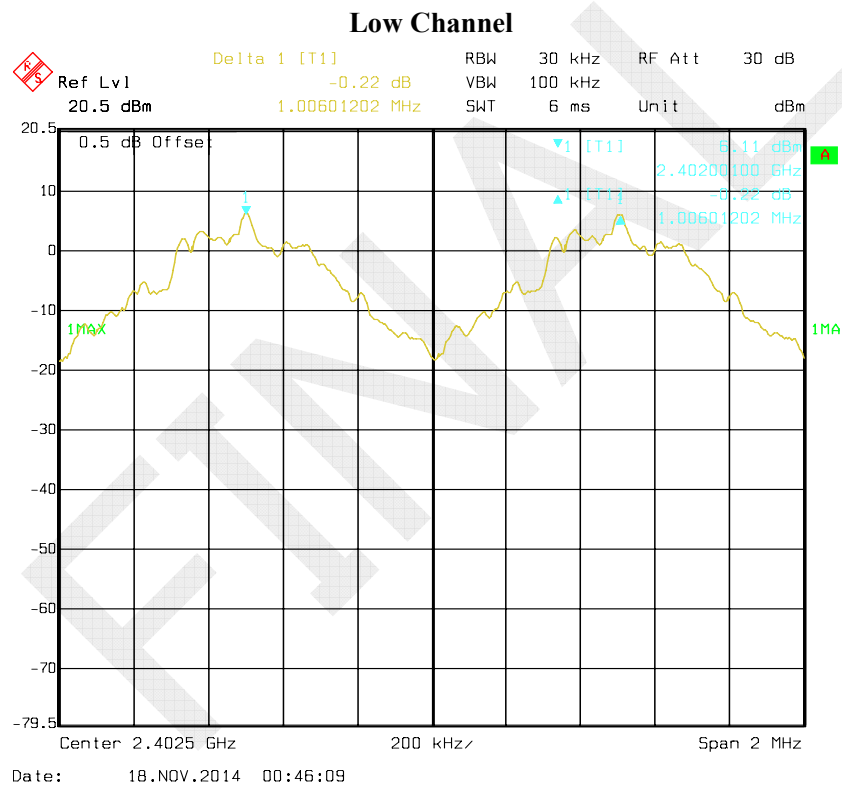
Please refer to following tables and plots

Test Mode: Transmitting

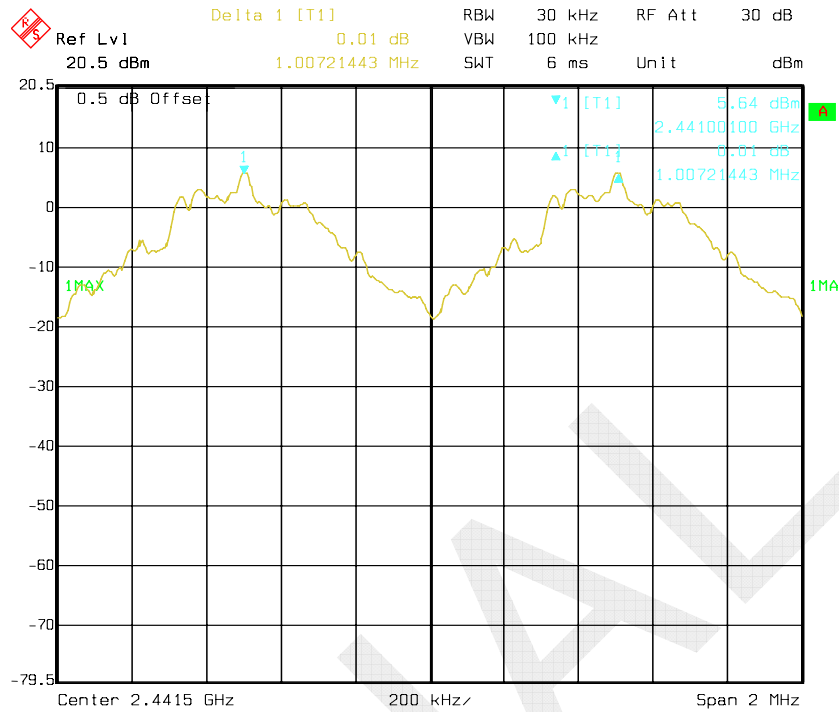
BDR(GFSK):

Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
Low	2402	1.006	0.591	Pass
Adjacent	2403			
Middle	2441	1.007	0.591	Pass
Adjacent	2442			
High	2479	1.003	0.591	Pass
Adjacent	2480			

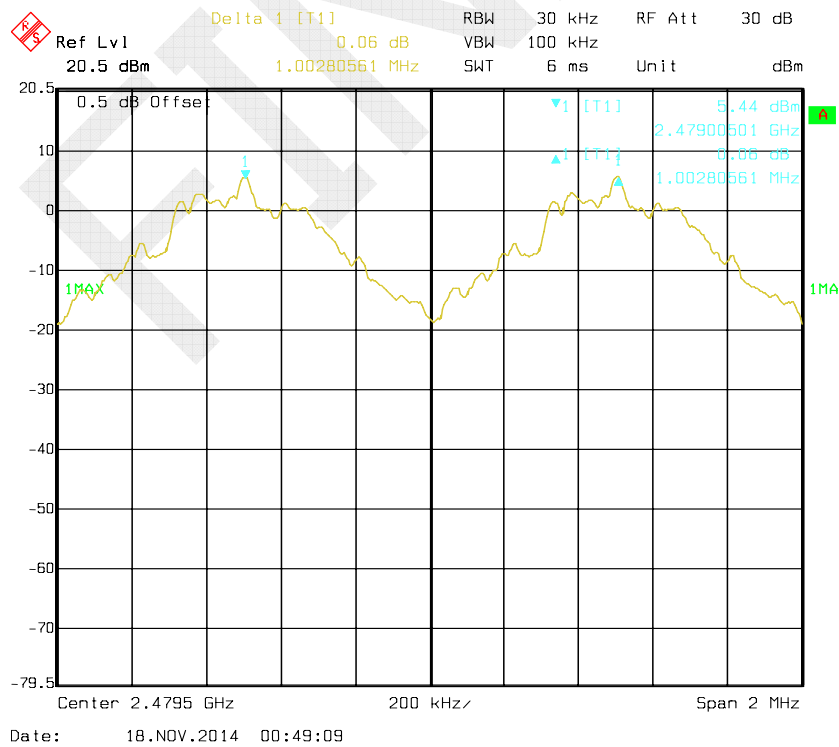
Note: Limit= (2/3) of 20 dB bandwidth



Middle Channel



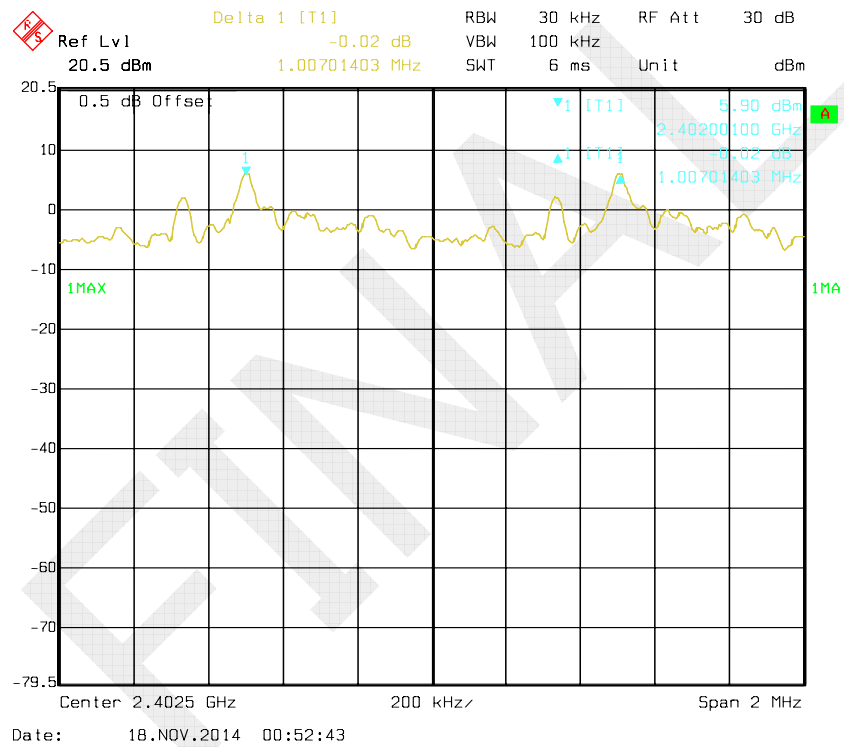
High Channel



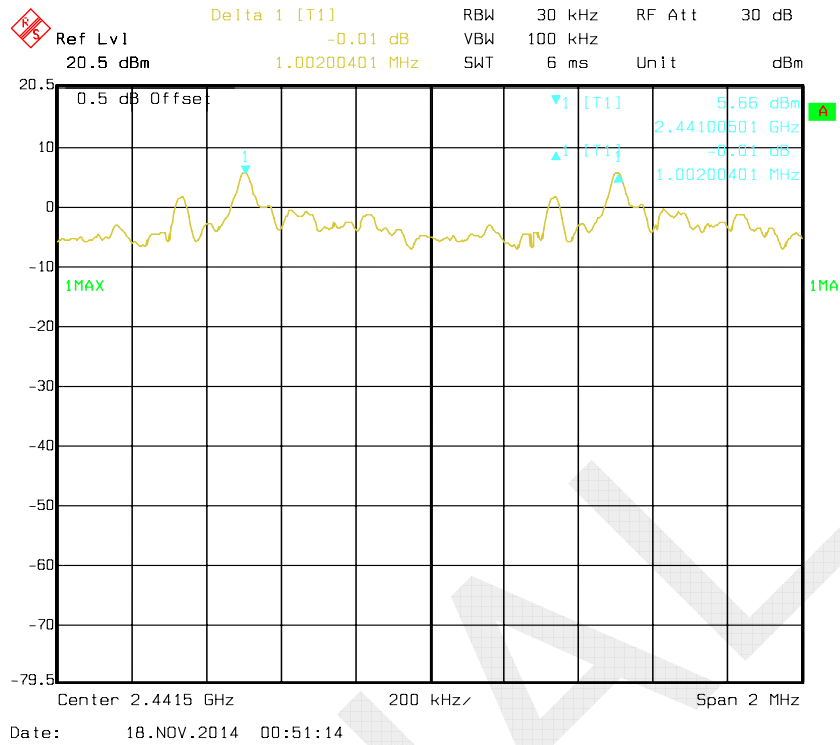
EDR($\pi/4$ -DQPSK):

Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
Low	2402	1.007	0.812	Pass
Adjacent	2403			
Middle	2441	1.002	0.812	Pass
Adjacent	2442			
High	2479	1.003	0.812	Pass
Adjacent	2480			

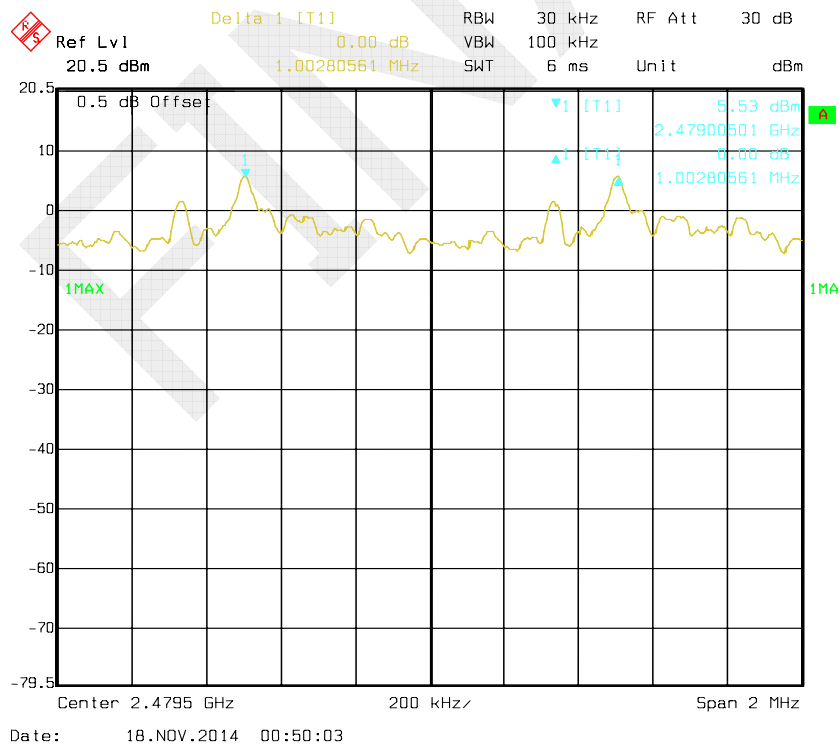
Note: Limit= (2/3) of 20 dB bandwidth

Low Channel

Middle Channel



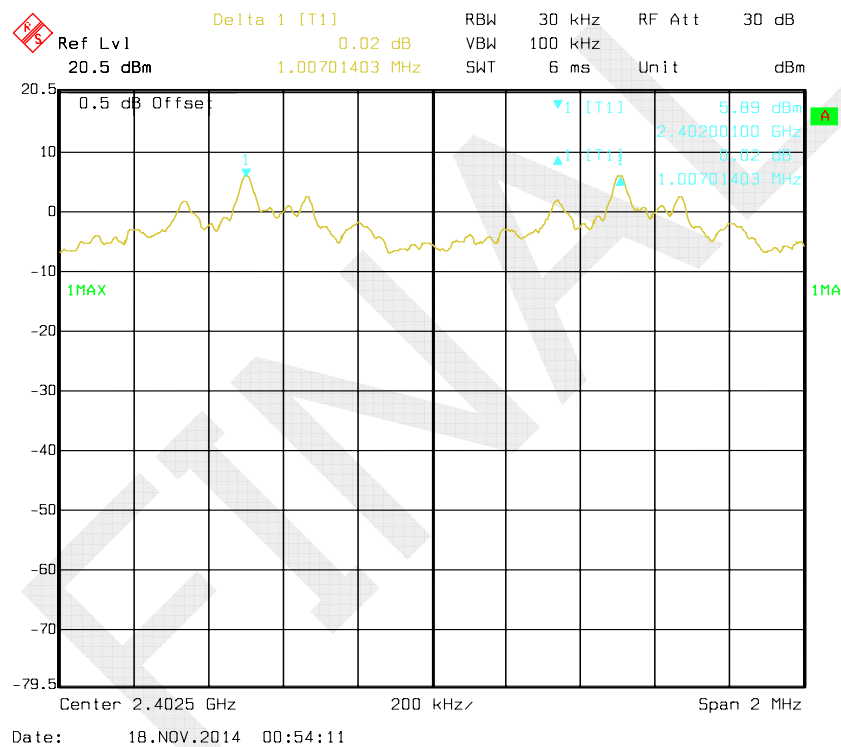
High Channel



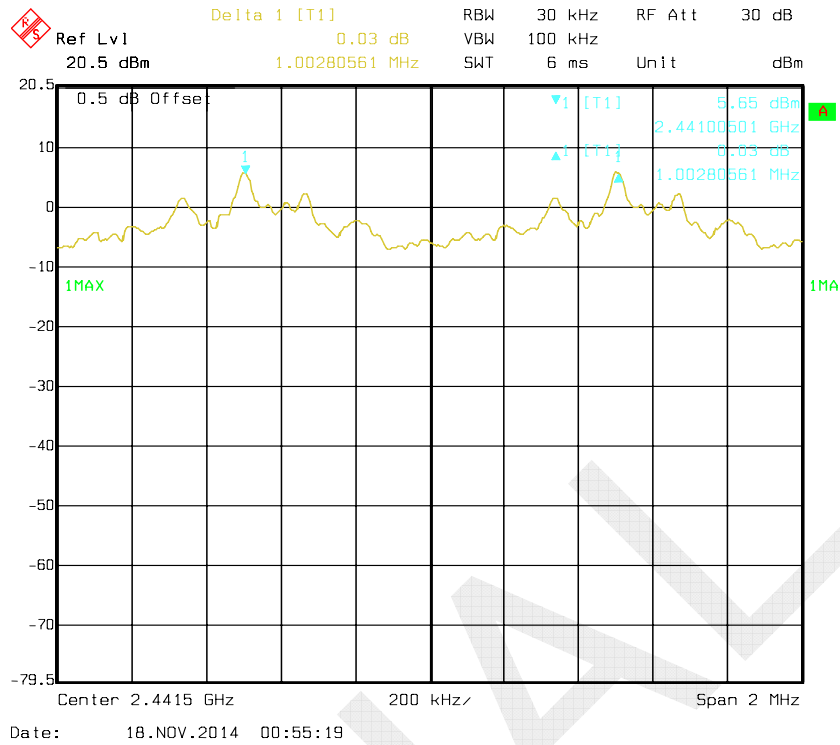
EDR(DPFSK):

Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
Low	2402	1.007	0.812	Pass
Adjacent	2403			
Middle	2441	1.003	0.812	Pass
Adjacent	2442			
High	2479	1.003	0.812	Pass
Adjacent	2480			

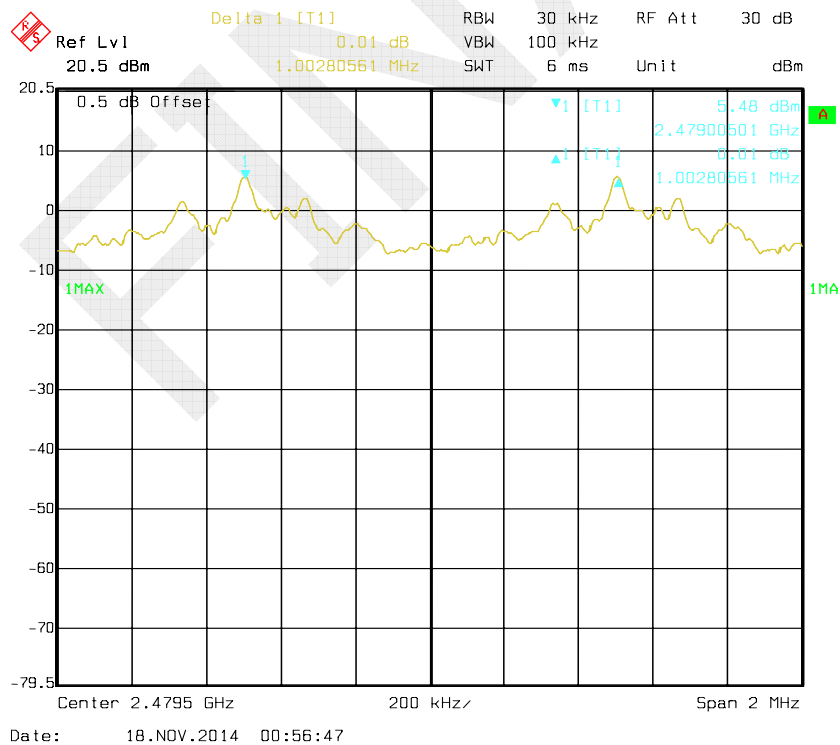
Note: Limit= (2/3) of 20 dB bandwidth

Low Channel

Middle Channel



High Channel



FCC §15.247(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.

Test Procedure

Set the EUT in transmitting mode, maxhold the trace, Allow it to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission. Use the marker-delta function to measure 20 dB down one side of the emission. Reset the marker-delta function, and move the marker to the other side of the emission, until it is (as close as possible to) even with the reference marker level.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2014-05-09	2015-05-09

* **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:	44 %
ATM Pressure:	100.7kPa

The testing was performed by Sevin Li on 2014-11-18

Test Result: Compliance.

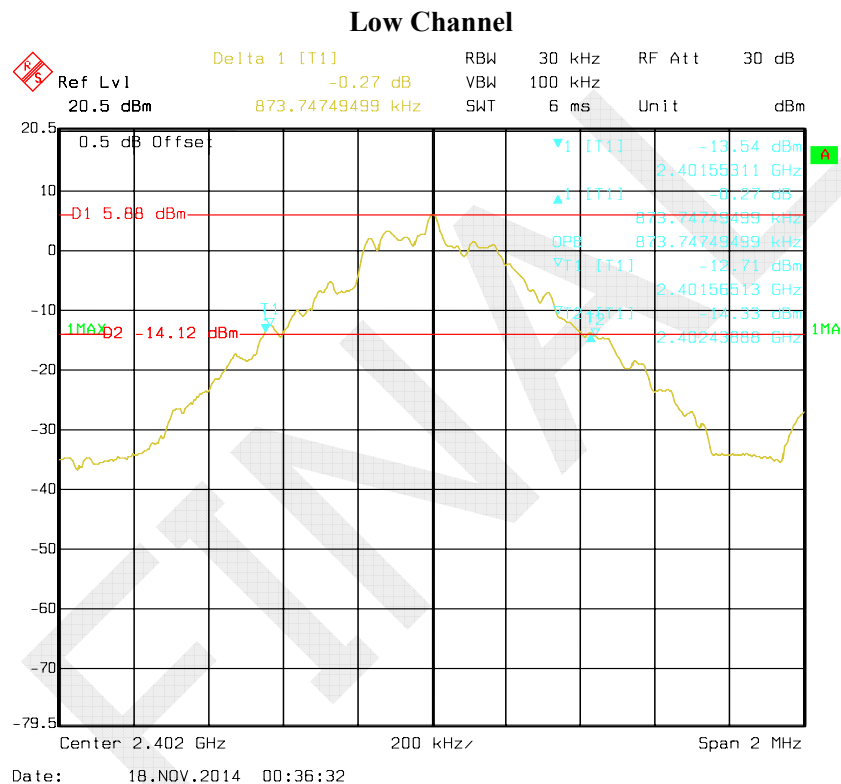
Please refer to following tables and plots

Test Mode: Transmitting

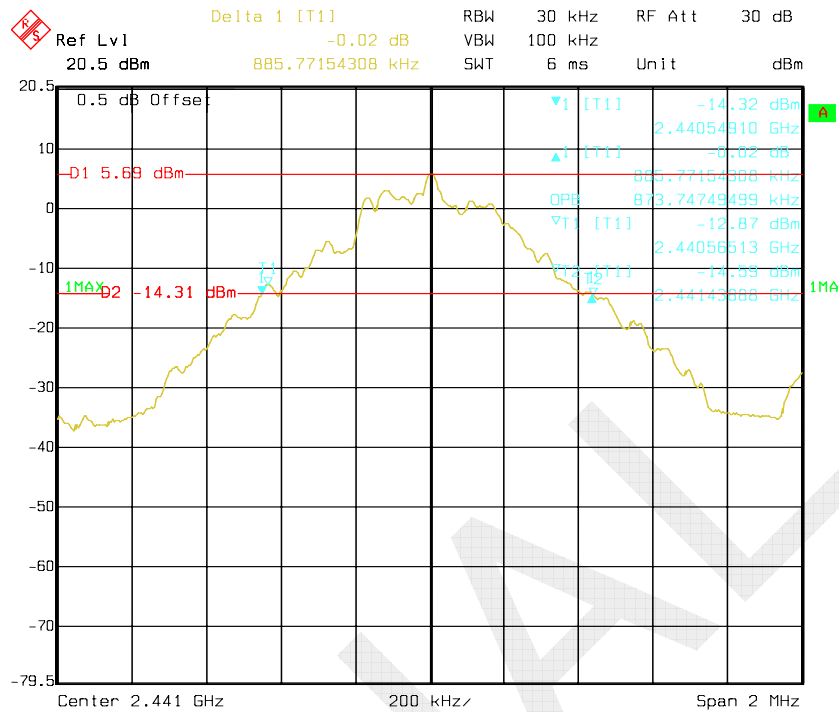
BDR(GFSK):

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
Low	2402	0.874
Middle	2441	0.886
High	2480	0.883

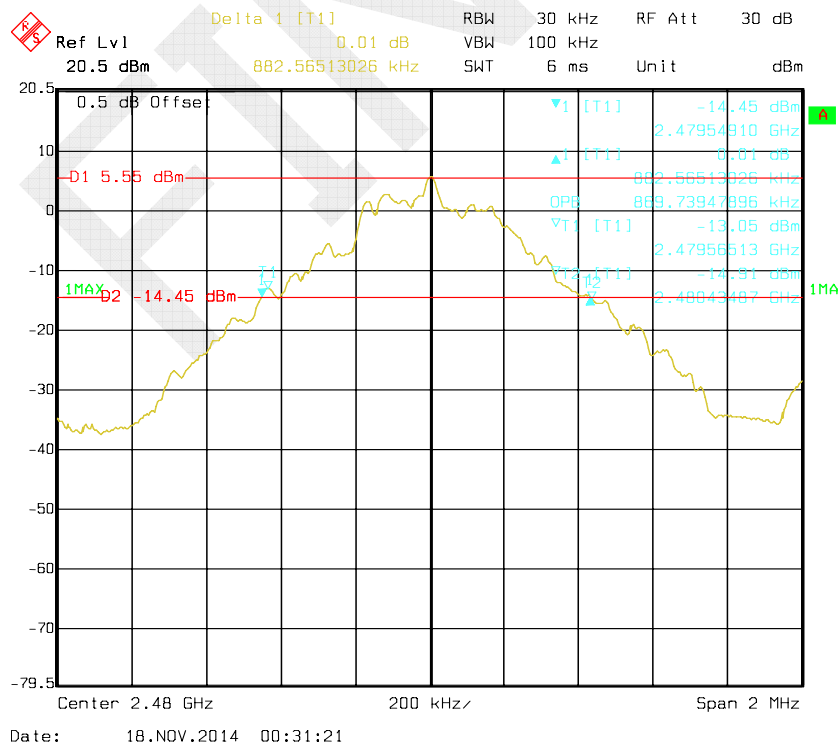
Please refer to the following plots.



Middle Channel



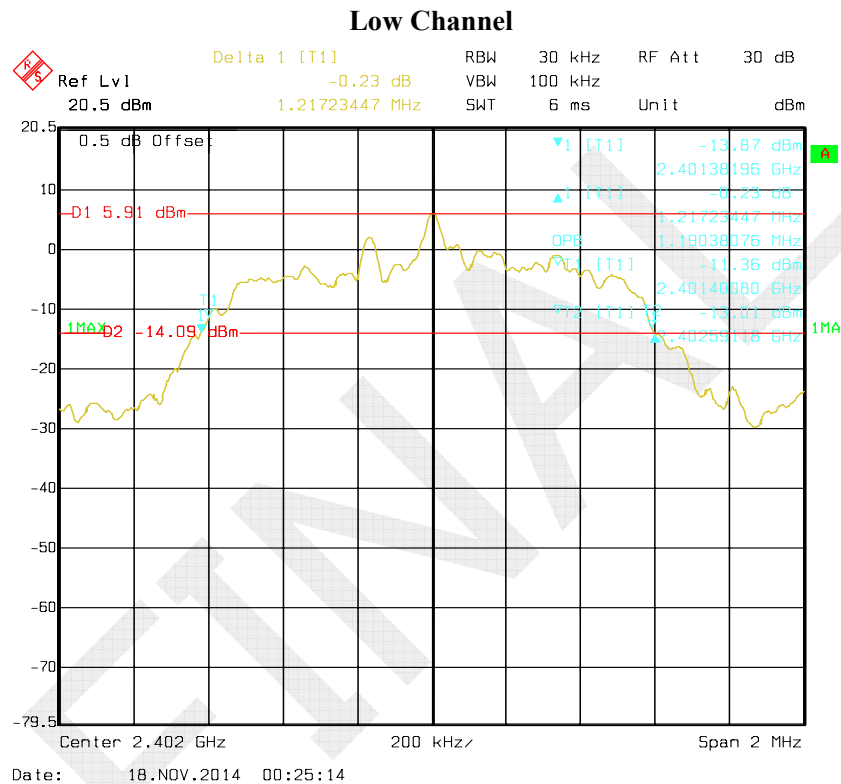
High Channel



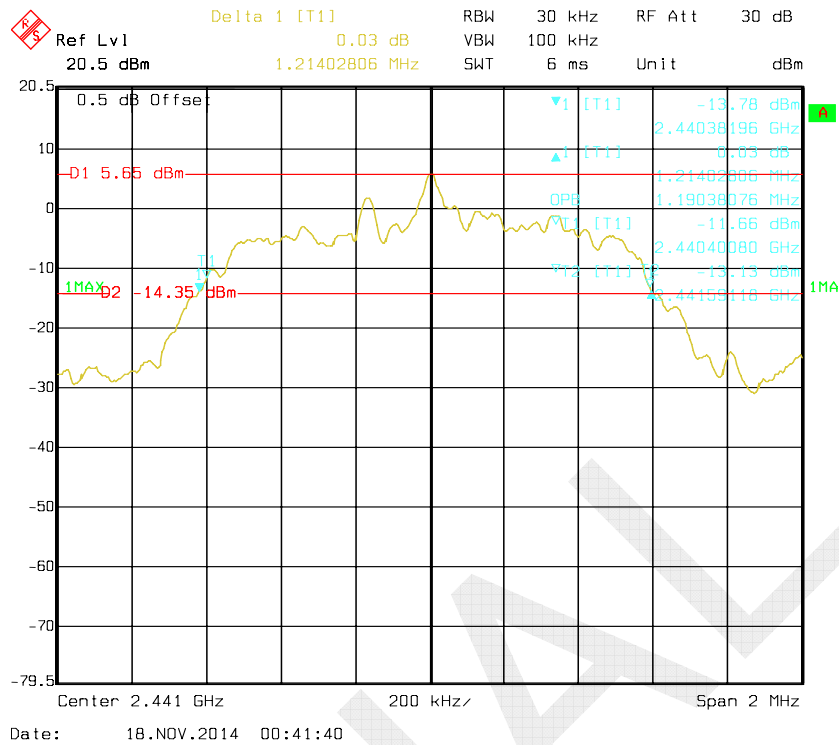
EDR($\pi/4$ -DQPSK):

Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
Low	2402	1.217
Middle	2441	1.214
High	2480	1.218

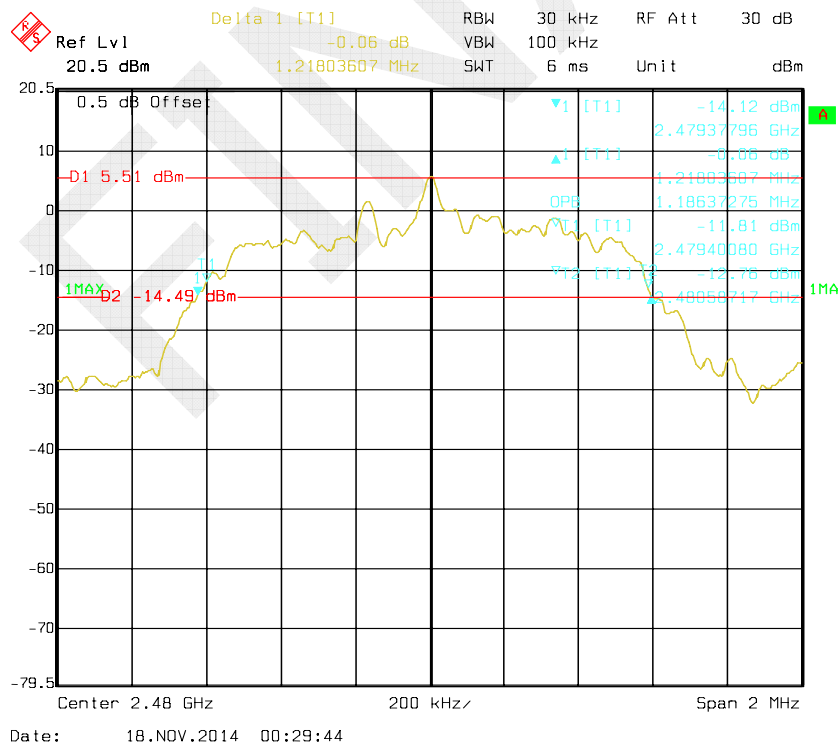
Please refer to the following plots.



Middle Channel

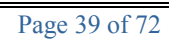


High Channel

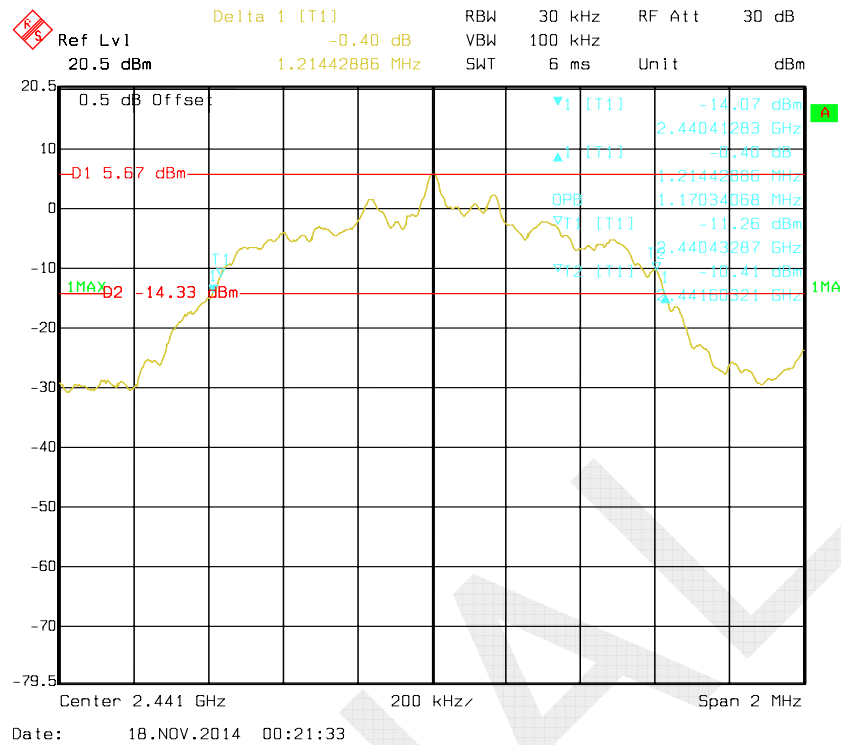


Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
Low	2402	1.214
Middle	2441	1.214
High	2480	1.218

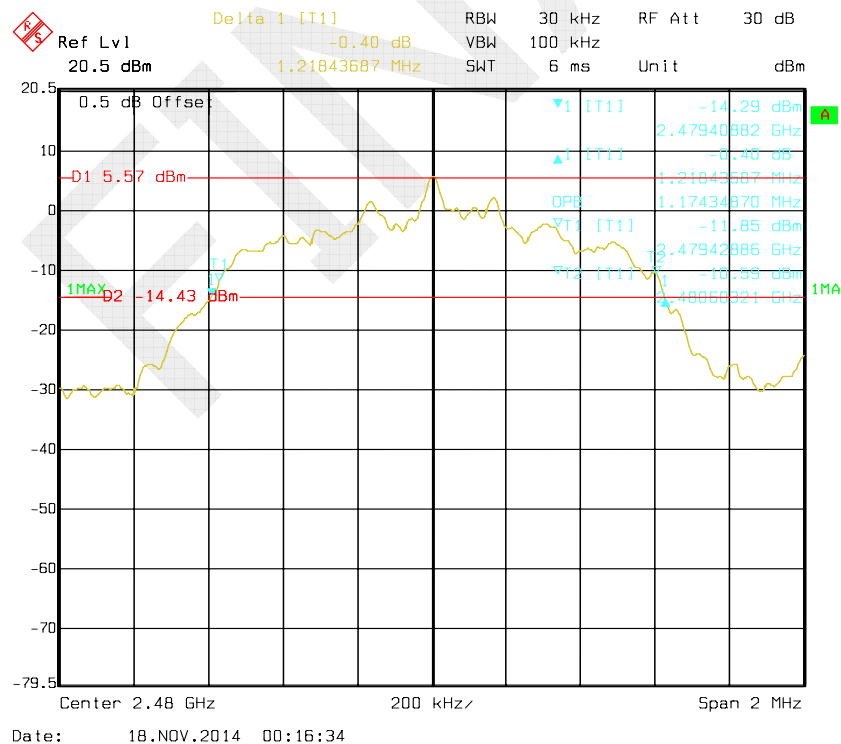
Low Channel



Middle Channel



High Channel



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

Set the EUT in hopping mode, maxhold the trace, allow it to stabilize.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2014-05-09	2015-05-09

* **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:	44 %
ATM Pressure:	101.7 kPa

The testing was performed by Sevin Li on 2014-11-18

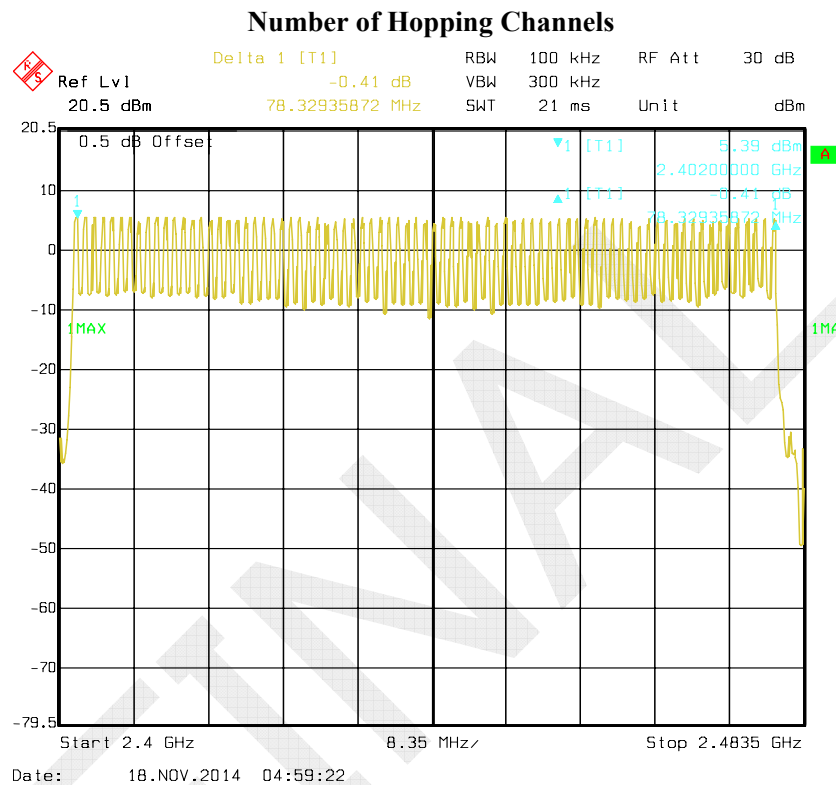
Test Result: Compliance.

Please refer to following tables and plots

Test Mode: Transmitting

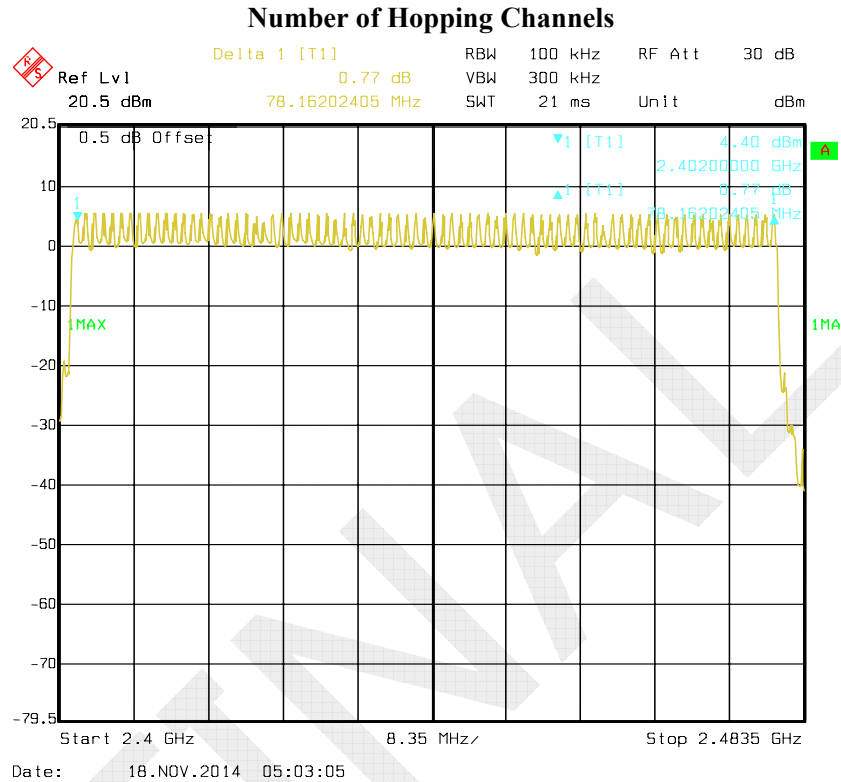
BDR(GFSK):

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.5	79	≥ 75



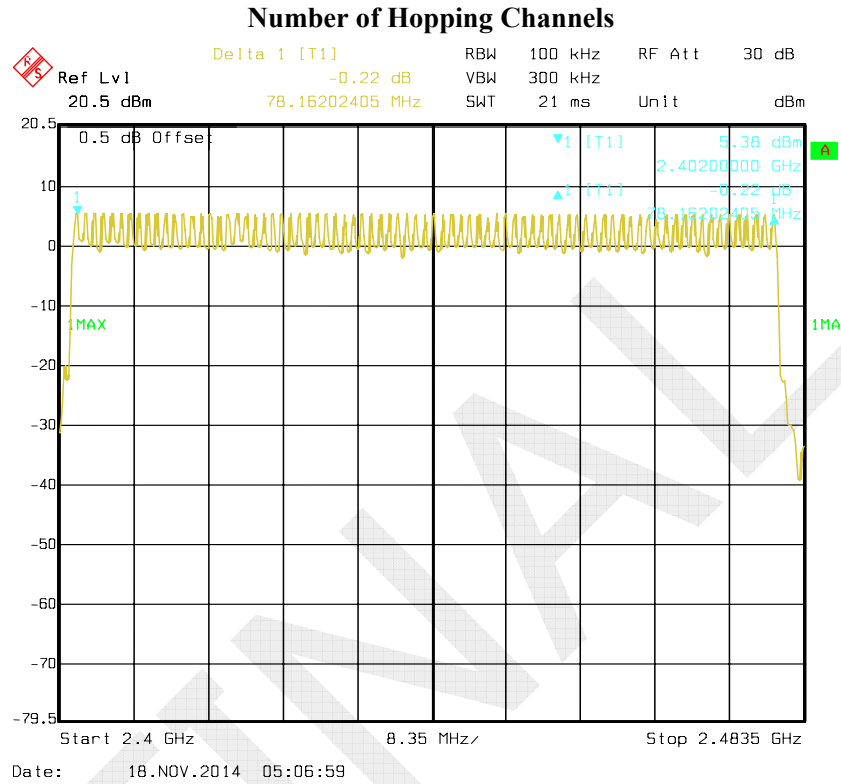
EDR($\pi/4$ -DQPSK):

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.5	79	≥ 75



EDR(8DPSK):

Frequency Range (MHz)	Number of Hopping Channel	Limit
2400-2483.5	79	≥ 75



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.

Test Procedure

The EUT was worked in channel hopping; Spectrum SPAN was set as 0. Sweep was set as $0.4 \times \text{channel no. (s)}$, 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	FSEM	DE31388	2014-05-09	2015-05-09

* **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:	25.4 °C
Relative Humidity:	44 %
ATM Pressure:	100.7 kPa

* The testing was performed by Dean Liu on 2014-11-18.

Test Result: Compliant.

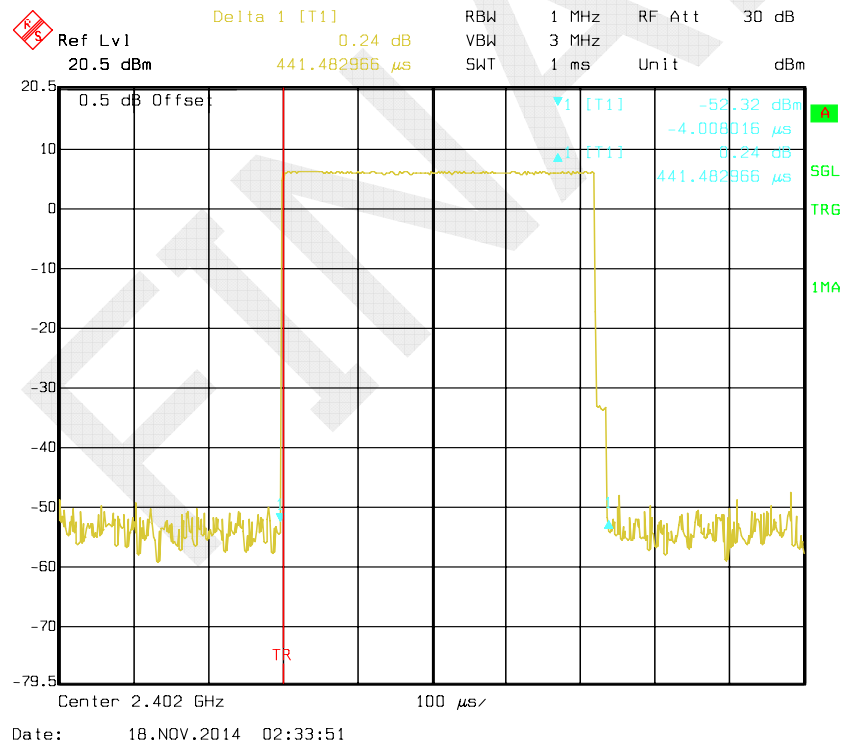
Please refer to following tables and plots

Test Mode: Transmitting

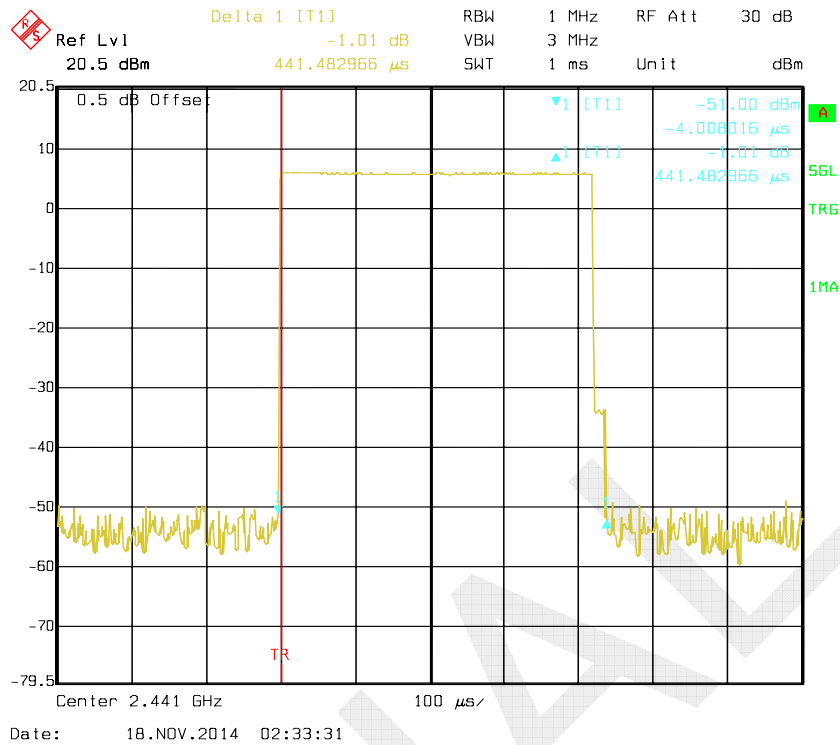
BDR Mode (GFSK):

Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
DH1	Low	0.441	0.141	0.4	Pass
	Middle	0.441	0.141	0.4	Pass
	High	0.441	0.141	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/2/79) \times 31.6 s				
DH3	Low	1.704	0.273	0.4	Pass
	Middle	1.704	0.273	0.4	Pass
	High	1.704	0.273	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/4/79) \times 31.6 s				
DH5	Low	2.959	0.316	0.4	Pass
	Middle	2.959	0.316	0.4	Pass
	High	2.959	0.316	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/6/79) \times 31.6 s				

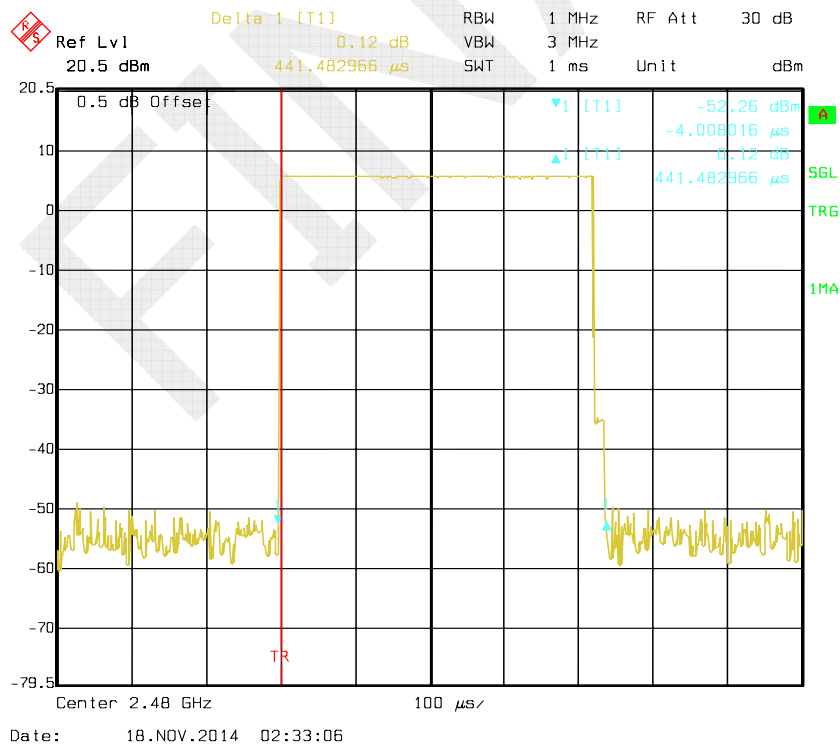
DH1: Low Channel



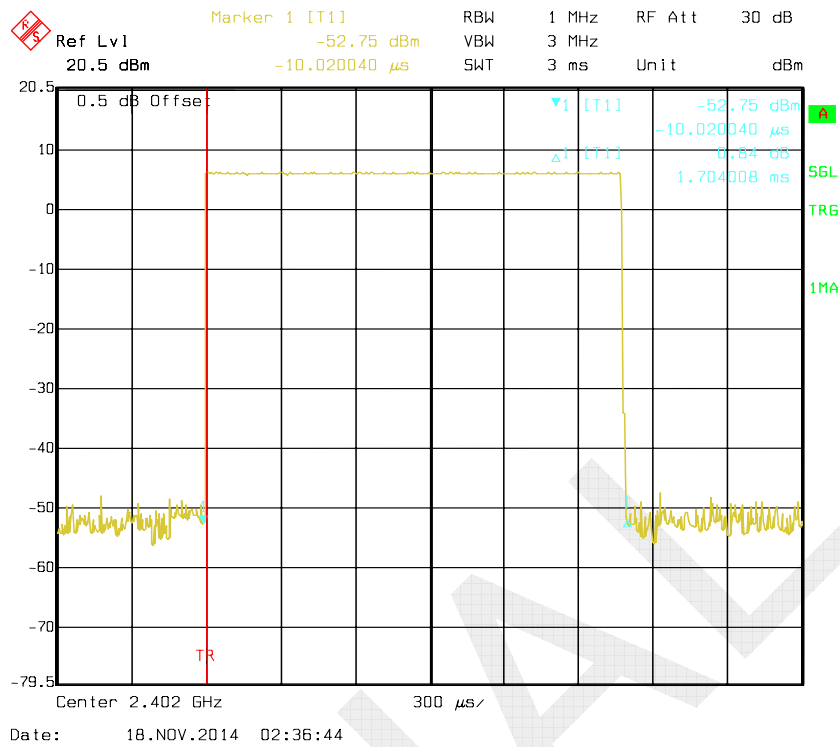
DH1: Middle Channel



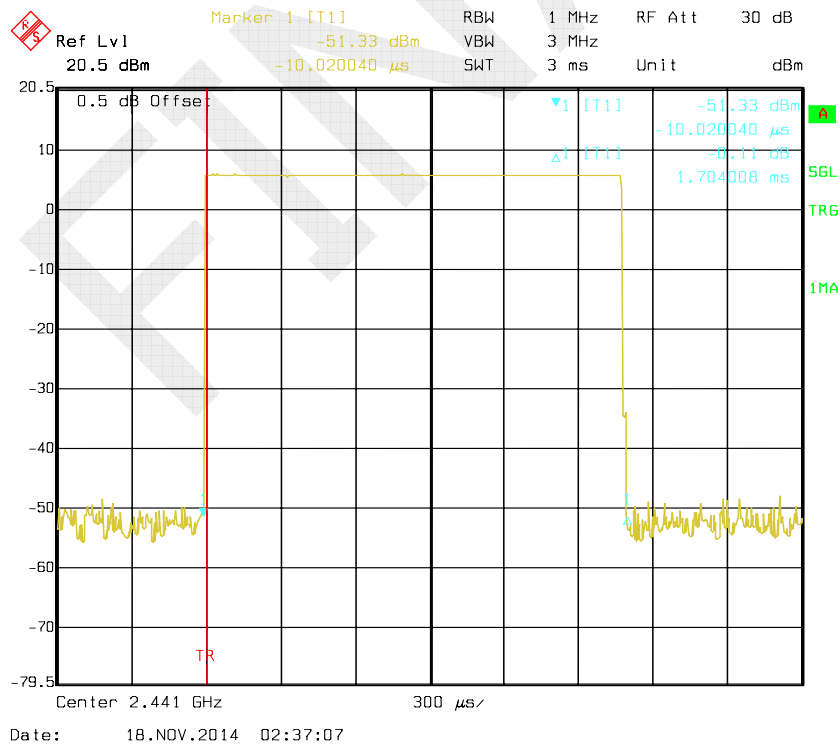
DH1: High Channel



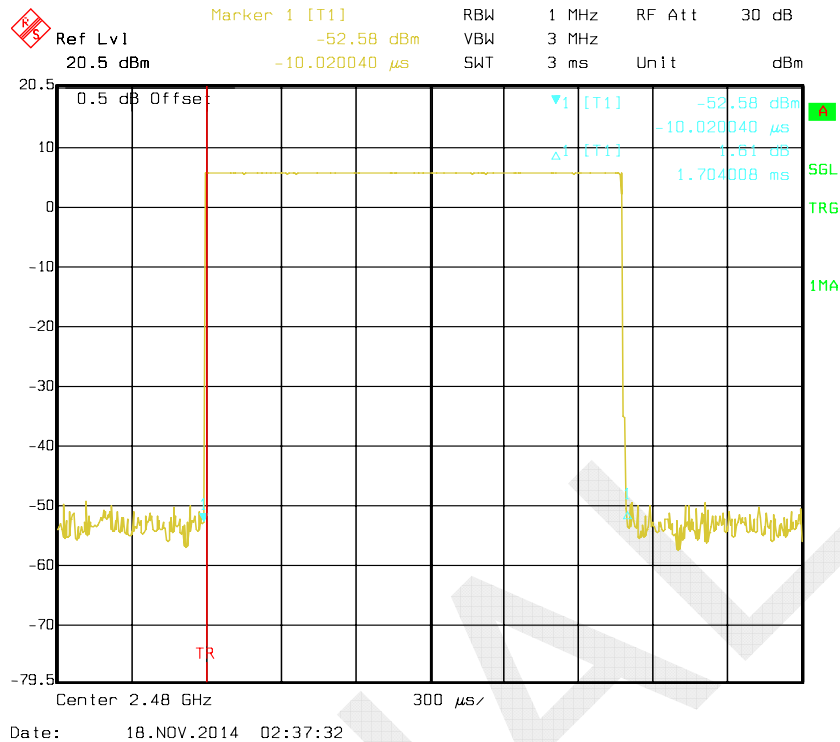
DH3: Low Channel



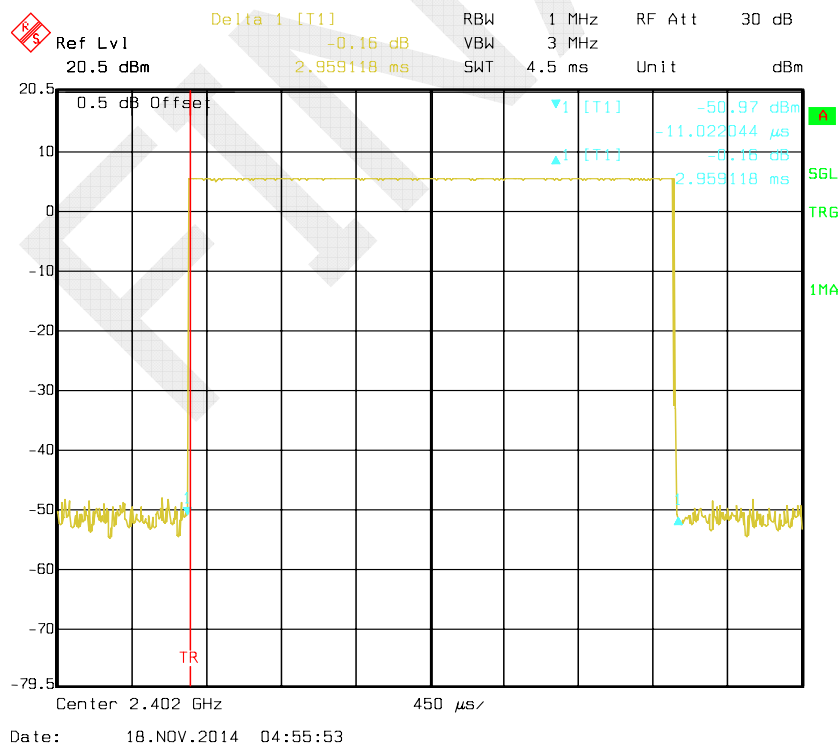
DH3: Middle Channel

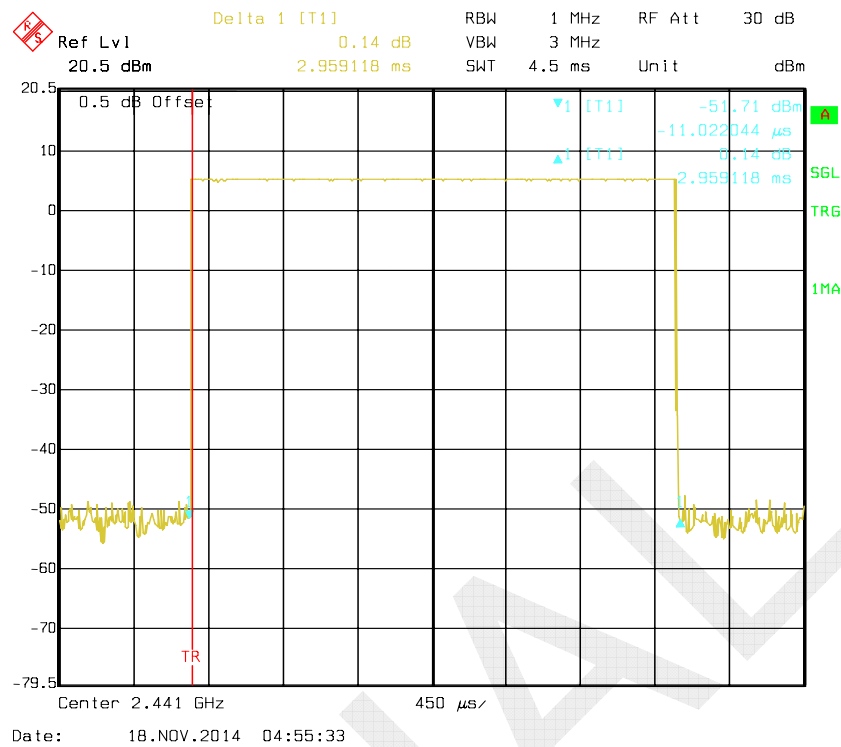
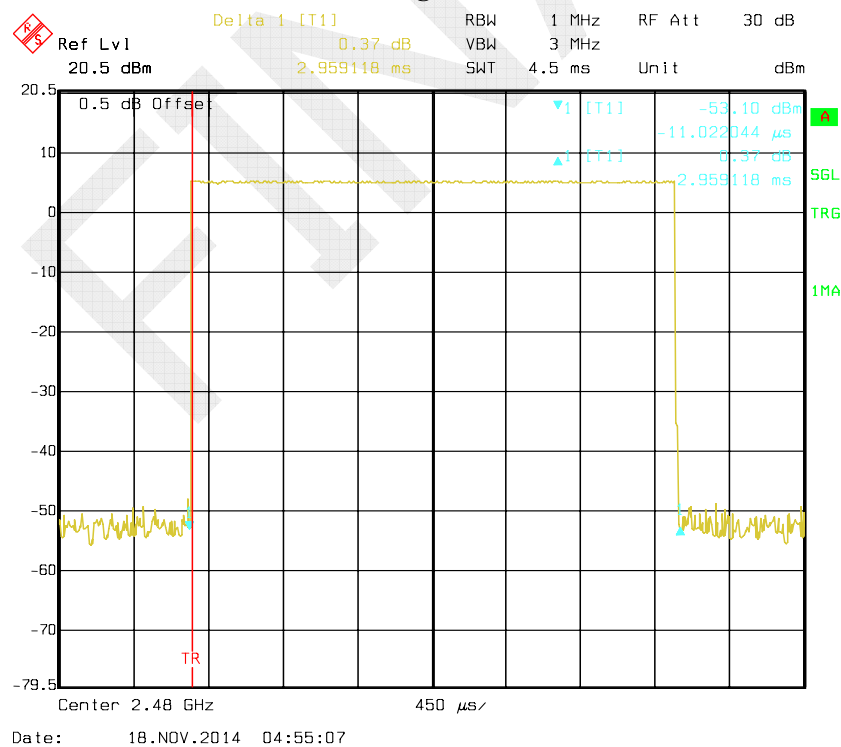


DH3: High Channel



DH5: Low Channel

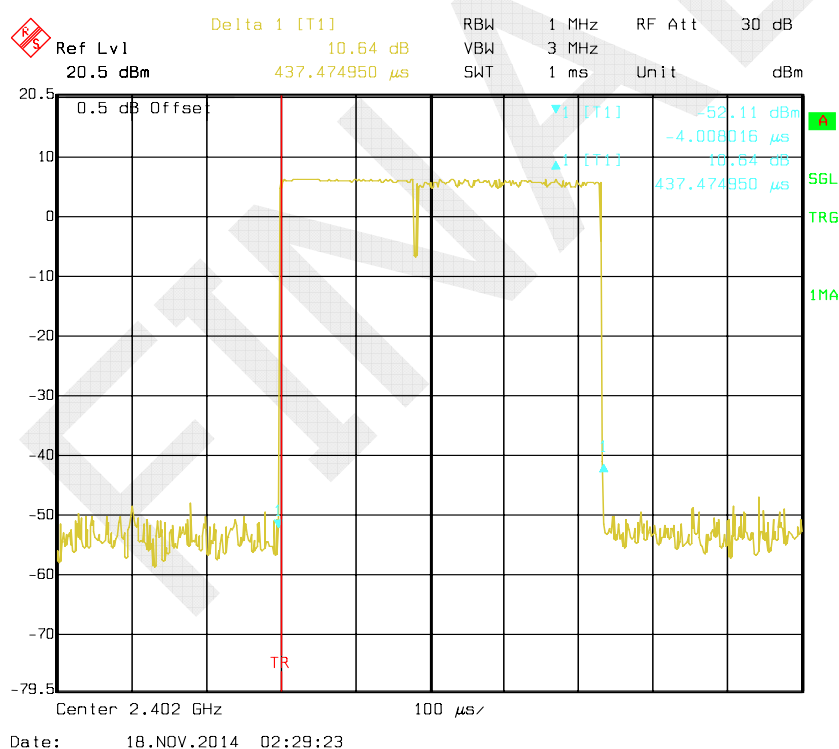


DH5: Middle Channel**DH5: High Channel**

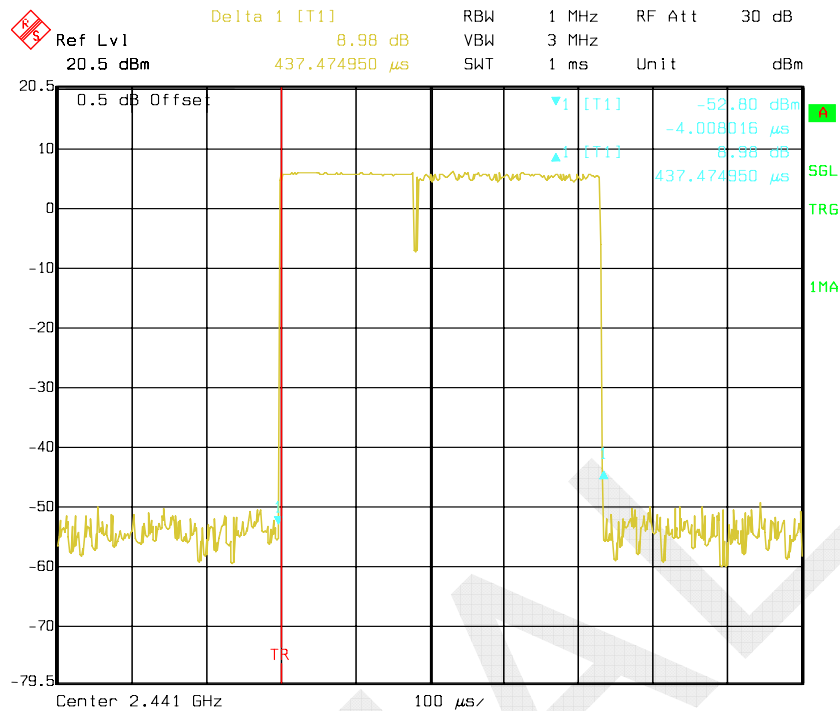
EDR Mode ($\pi/4$ -DQPSK):

Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
DH1	Low	0.437	0.140	0.4	Pass
	Middle	0.437	0.140	0.4	Pass
	High	0.437	0.140	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/2/79) \times 31.6 s				
DH3	Low	1.698	0.272	0.4	Pass
	Middle	1.698	0.272	0.4	Pass
	High	1.698	0.272	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/4/79) \times 31.6 s				
DH5	Low	2.959	0.316	0.4	Pass
	Middle	2.959	0.316	0.4	Pass
	High	2.959	0.316	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/6/79) \times 31.6 s				

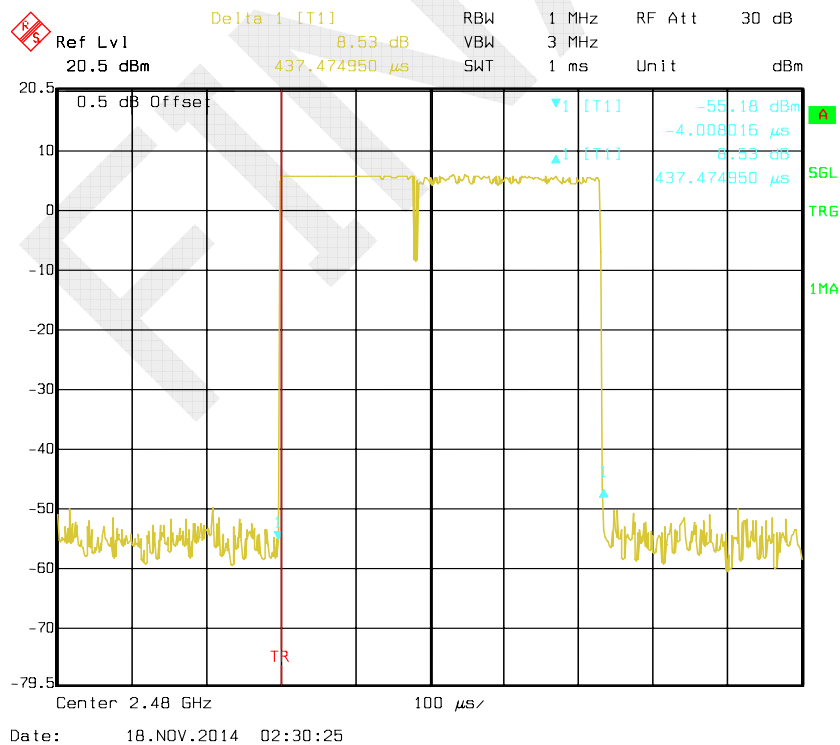
DH1: Low Channel



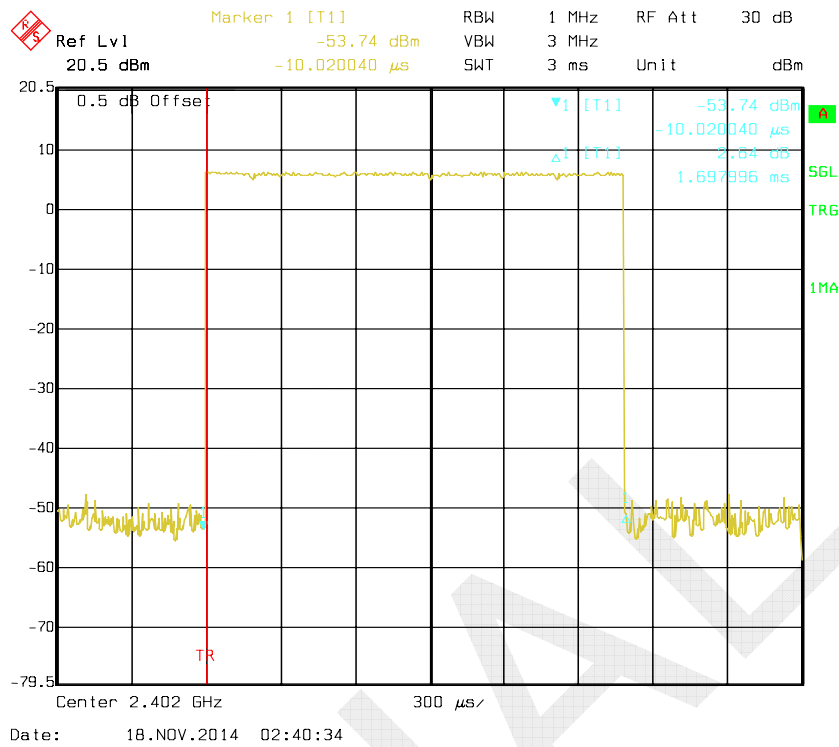
DH1: Middle Channel



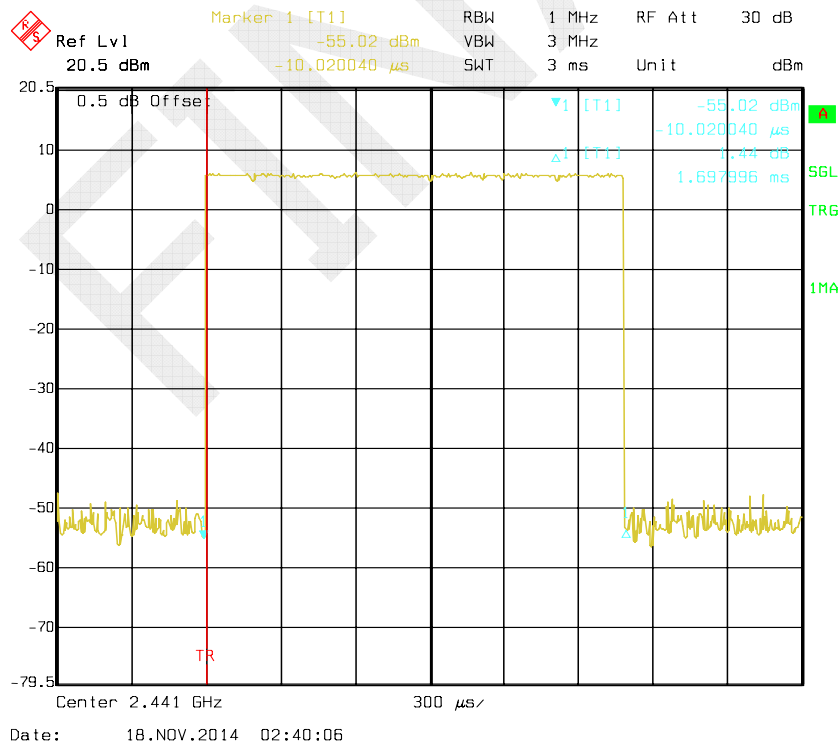
DH1: High Channel



DH3: Low Channel



DH3: Middle Channel



Ref Lvl 0.08 dB Delta 1 [T1] 1.697996 ms

20.5 dBm 30 dB Unit dBm

0.5 dB Offse

Center 2.48 GHz 300 μ s

Date: 18.NOV.2014 02:39:22

Ref Lvl 20.5 dBm

Delta 1 [T1] -2.53 dB

RBW 1 MHz

VBW 3 MHz

SWT 4.5 ms

RF Att 30 dB

Unit dBm

0.5 dB Offset

2.959118 ms

-48.50 dBm

-200.400802 μs

-2.53 dB

2.959118 ms

SGL

TRG

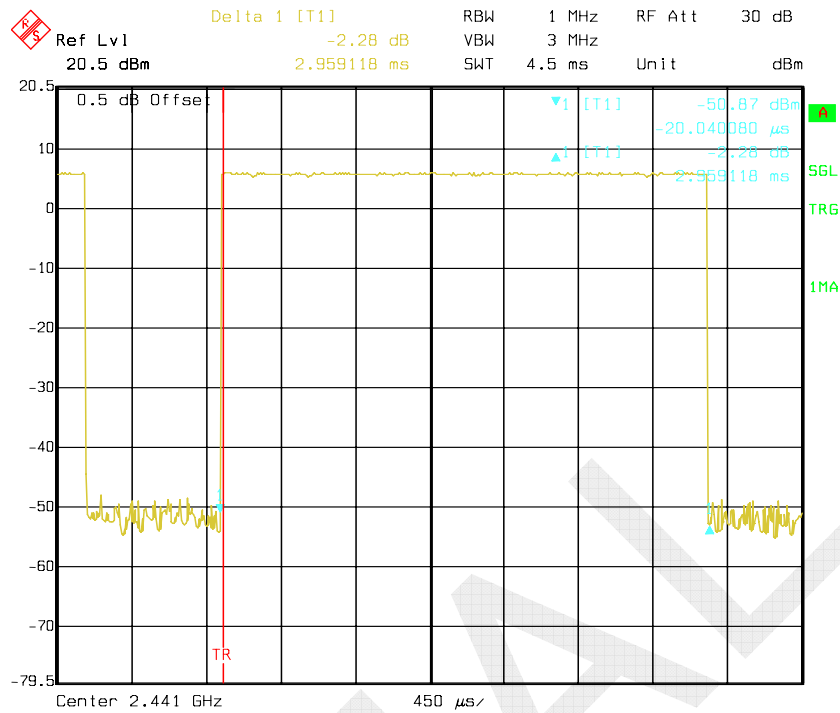
1MA

Center 2.402 GHz

450 μs

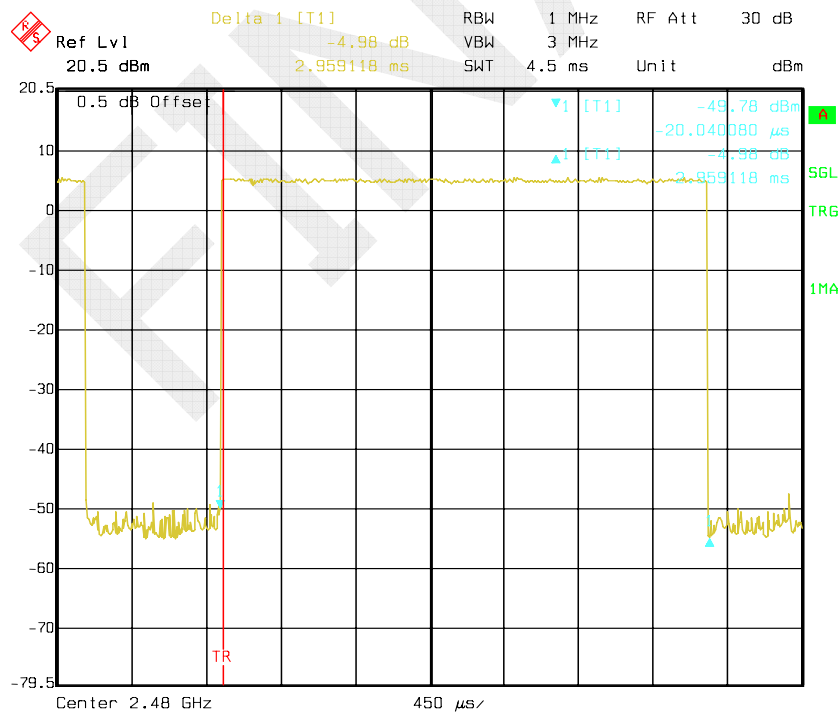
Date: 18.NOV.2014 04:38:18

DH5: Middle Channel



Date: 18.NOV.2014 04:39:12

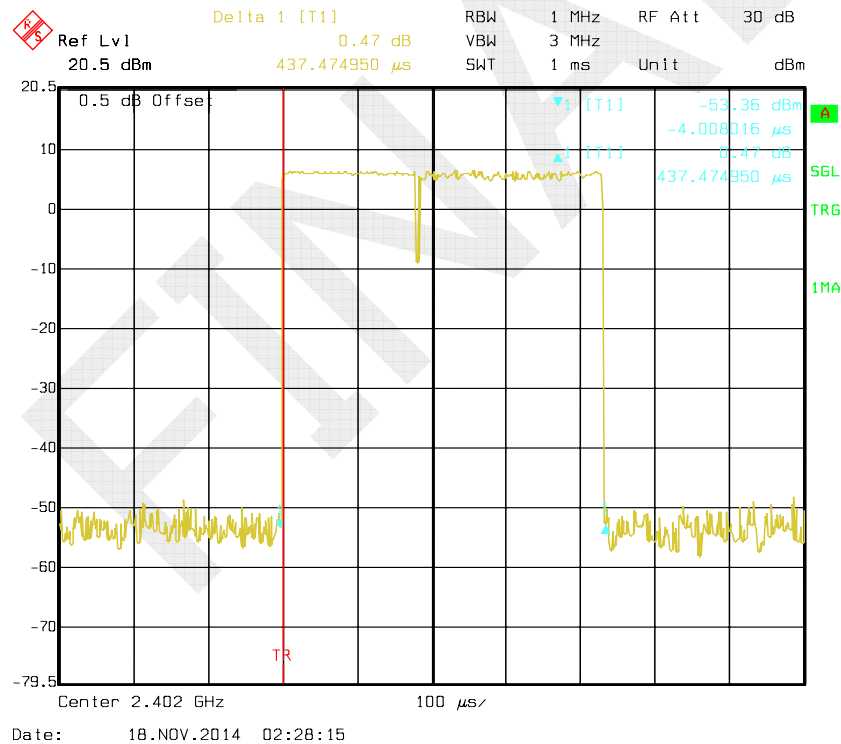
DH5: High Channel



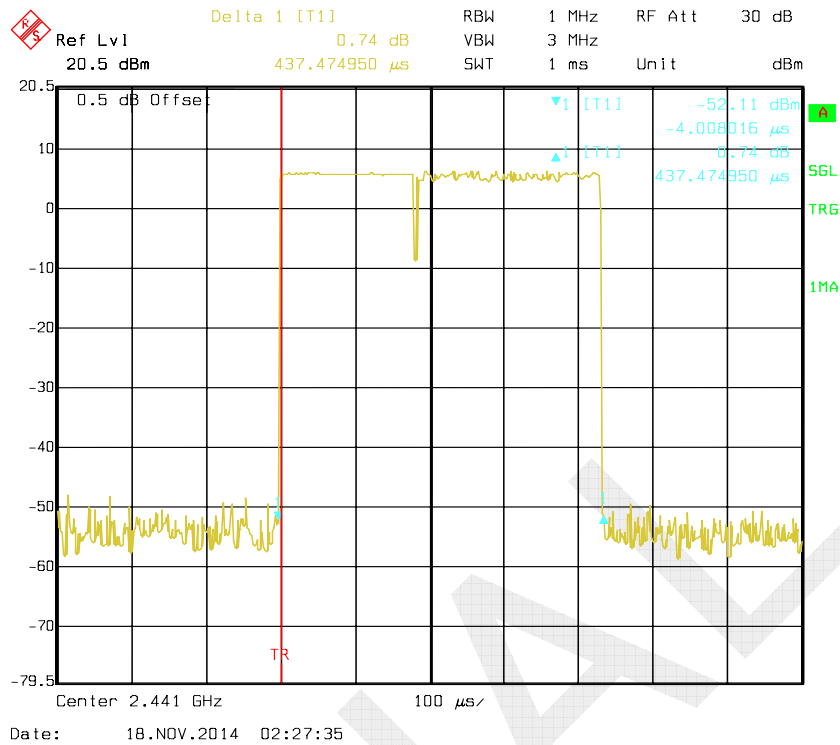
Date: 18.NOV.2014 04:53:45

EDR Mode (8DPSK):

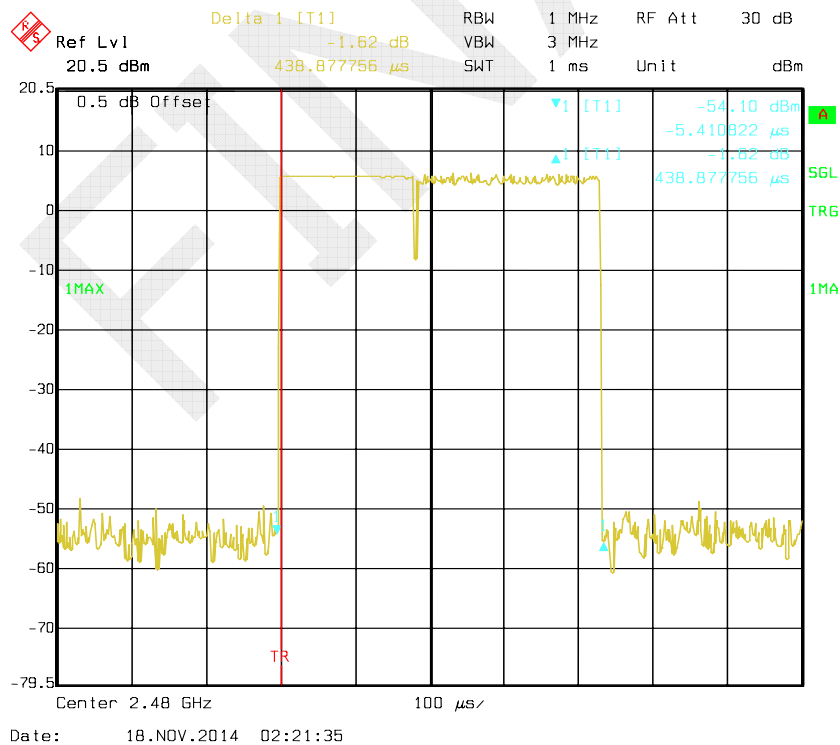
Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
DH1	Low	0.437	0.140	0.4	Pass
	Middle	0.437	0.140	0.4	Pass
	High	0.439	0.140	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/2/79) \times 31.6 s				
DH3	Low	1.698	0.272	0.4	Pass
	Middle	1.698	0.272	0.4	Pass
	High	1.698	0.272	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/4/79) \times 31.6 s				
DH5	Low	2.959	0.316	0.4	Pass
	Middle	2.959	0.316	0.4	Pass
	High	2.959	0.316	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/6/79) \times 31.6 s				

DH1: Low Channel

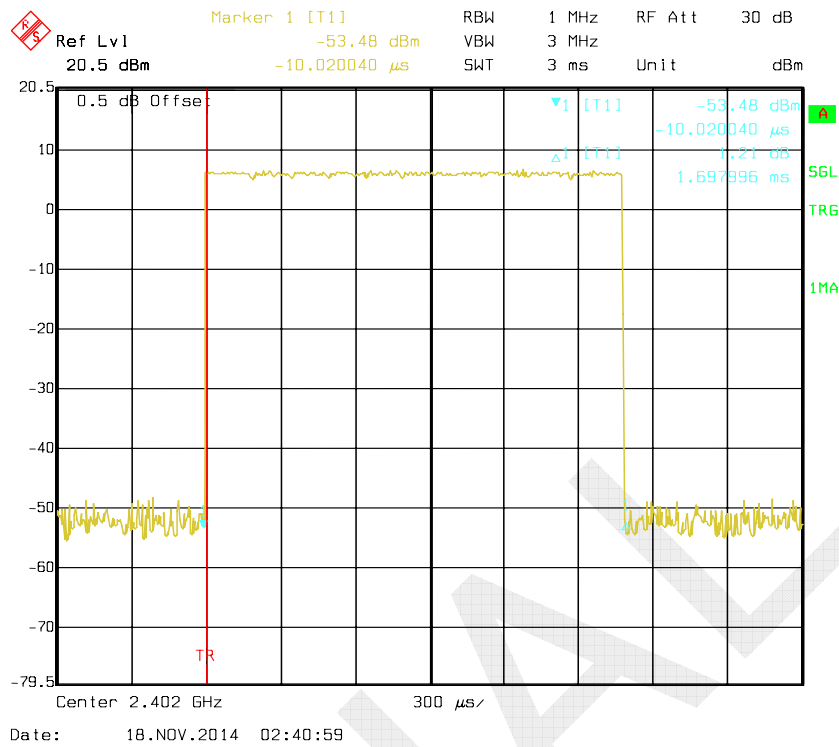
DH1: Middle Channel



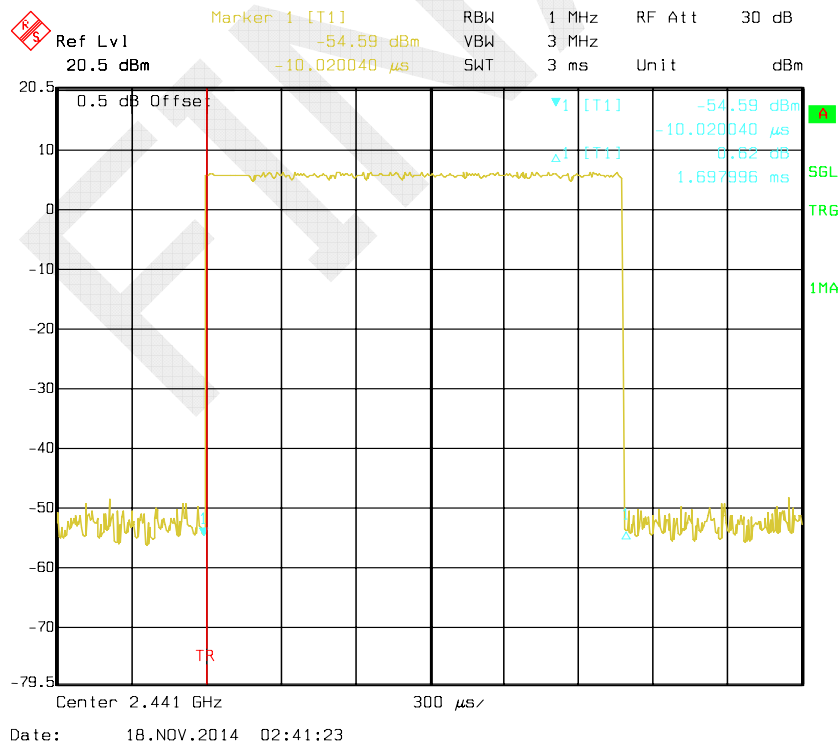
DH1: High Channel



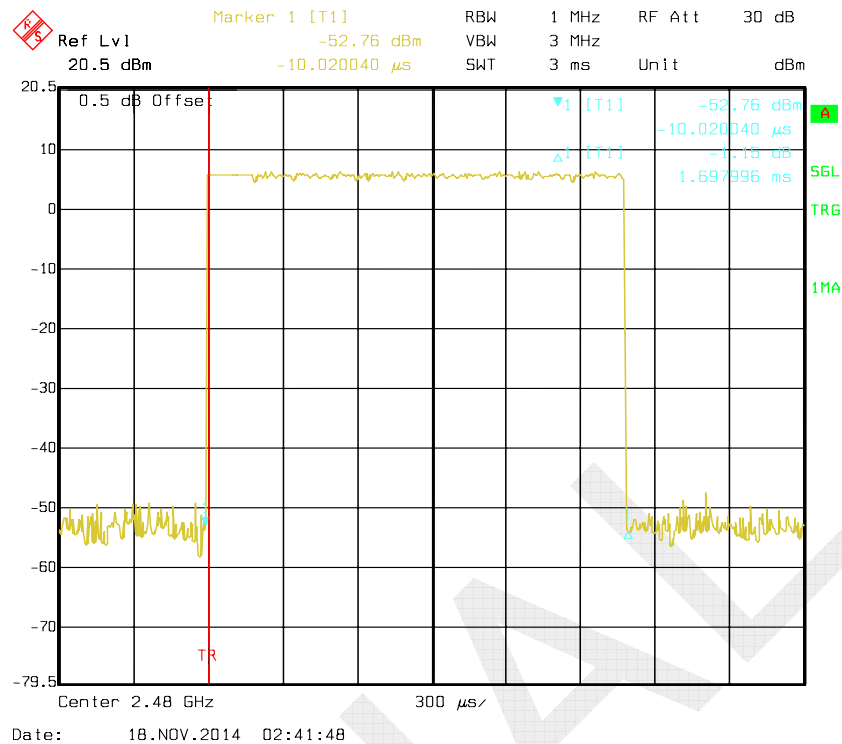
DH3: Low Channel



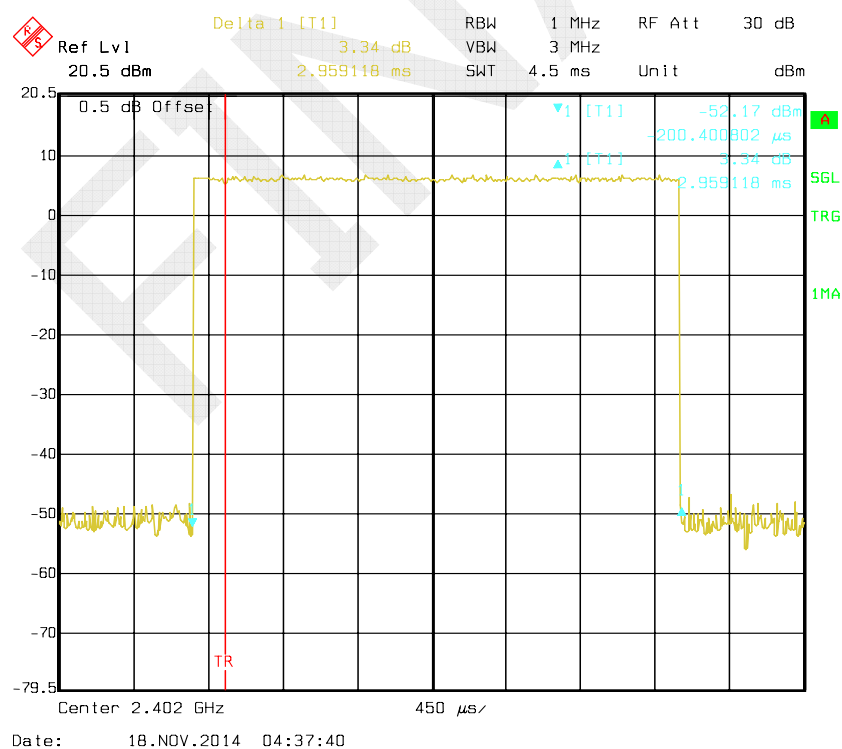
DH3: Middle Channel



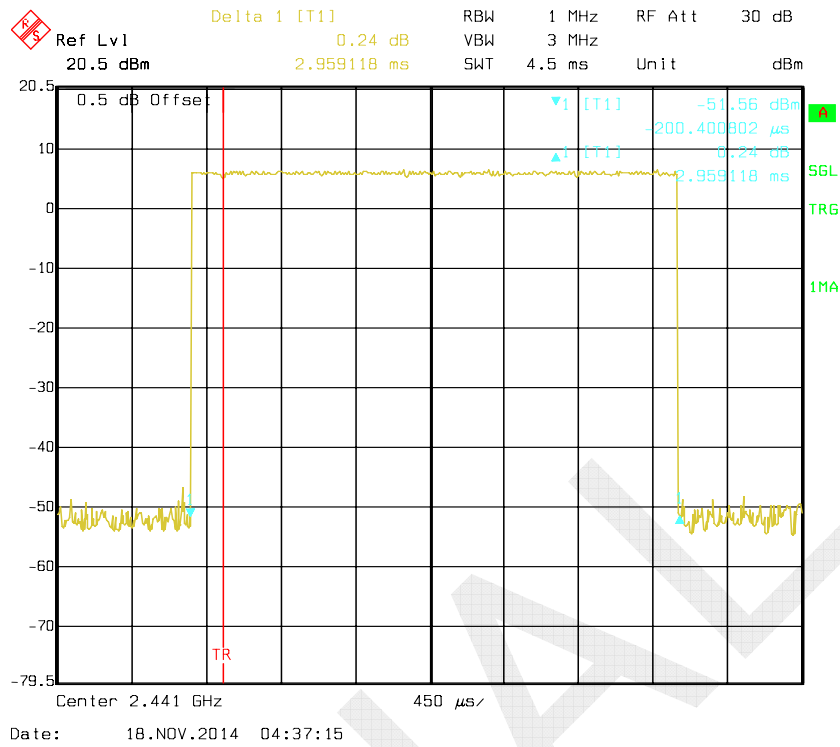
DH3: High Channel



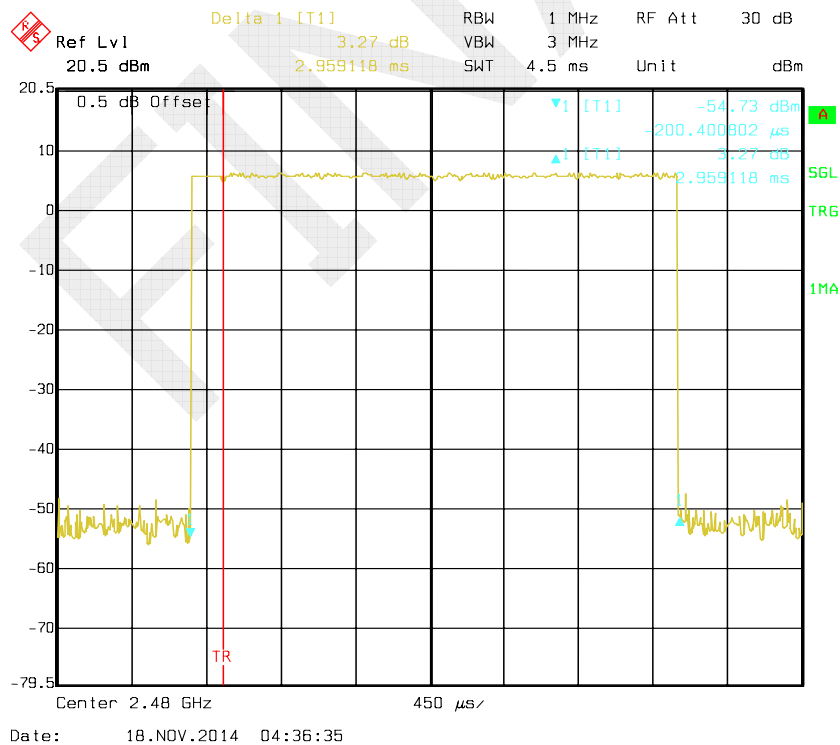
DH5: Low Channel



DH5: Middle Channel



DH5: High Channel



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

Test Procedure

Set the EUT in transmitting mode, maxhold the trace, Allow it to stabilize. Use the marker-to-peak function to set the marker to the peak of the emission.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2014-05-09	2015-05-09

* **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:	25.4 °C
Relative Humidity:	44 %
ATM Pressure:	100.7 kPa

The testing was performed by Sevin Li on 2014-11-18.

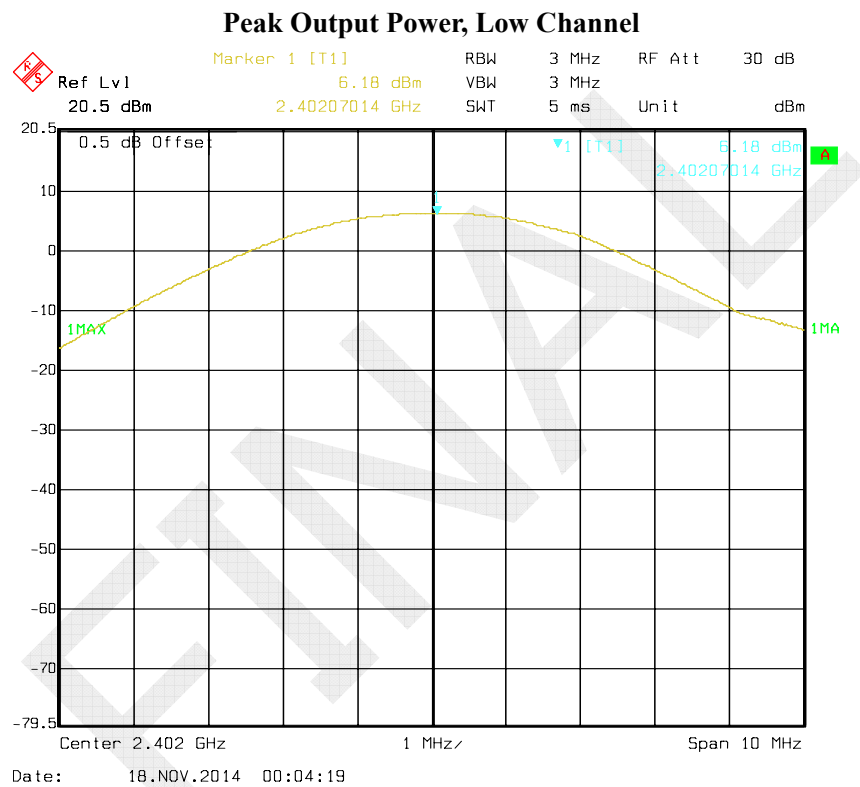
Test Result: Compliance.

Test Mode: Transmitting

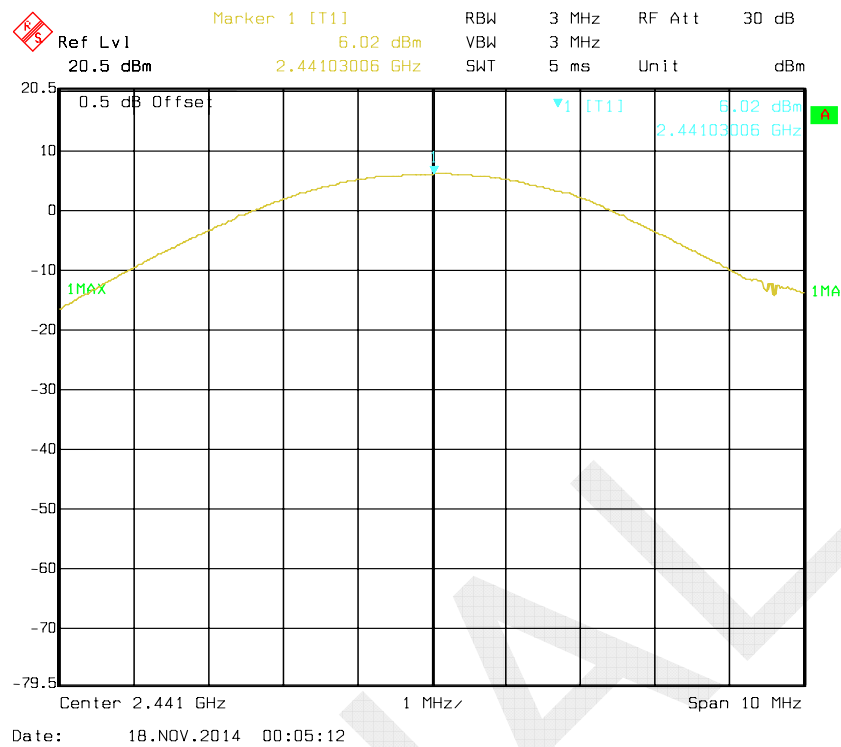
BDR (GFSK):

Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
Low	2402	6.18	30
Middle	2441	6.02	30
High	2480	5.79	30

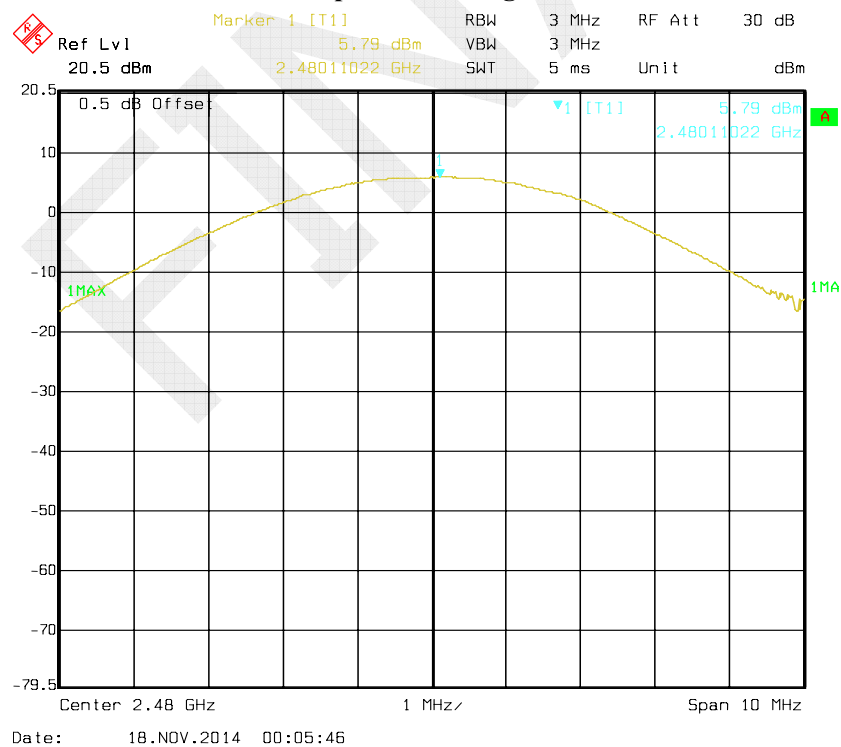
Note: The data above was tested in conducted mode.



Peak Output Power, Middle Channel



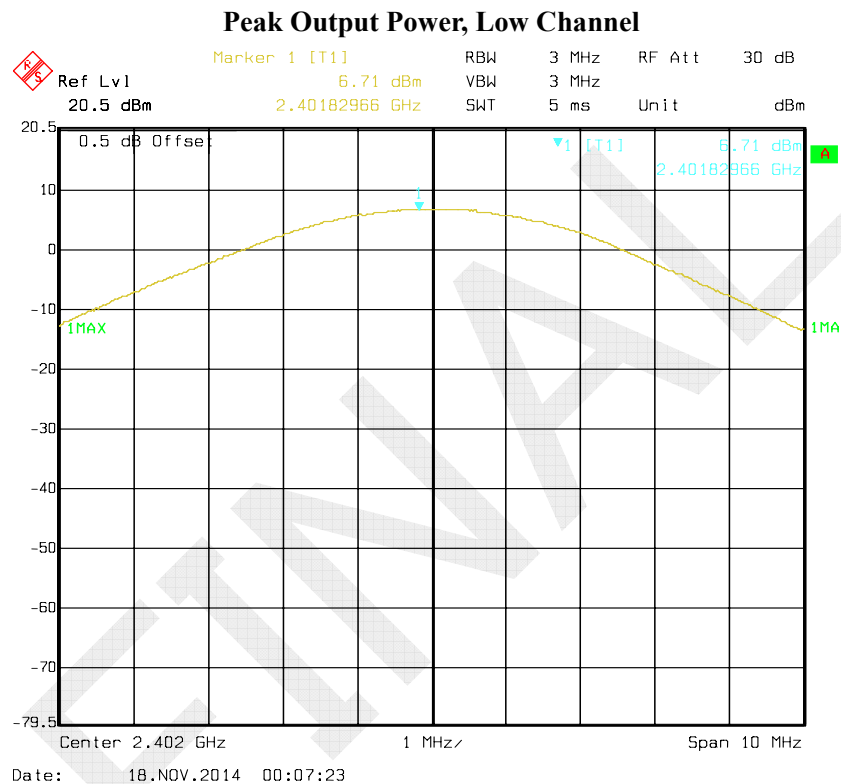
Peak Output Power, High Channel



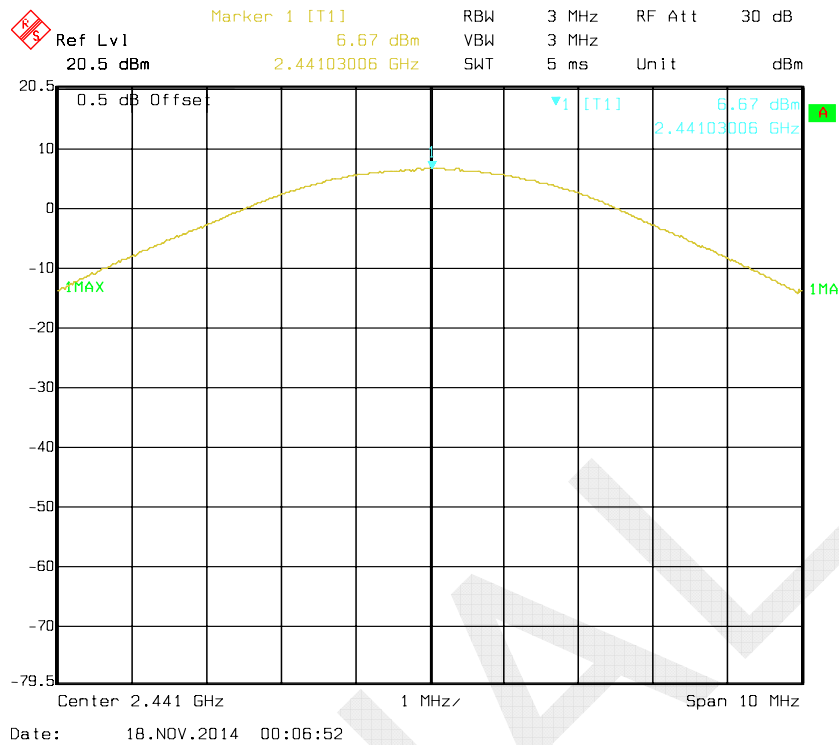
EDR ($\pi/4$ -DQPSK):

Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
Low	2402	6.71	30
Middle	2441	6.67	30
High	2480	6.50	30

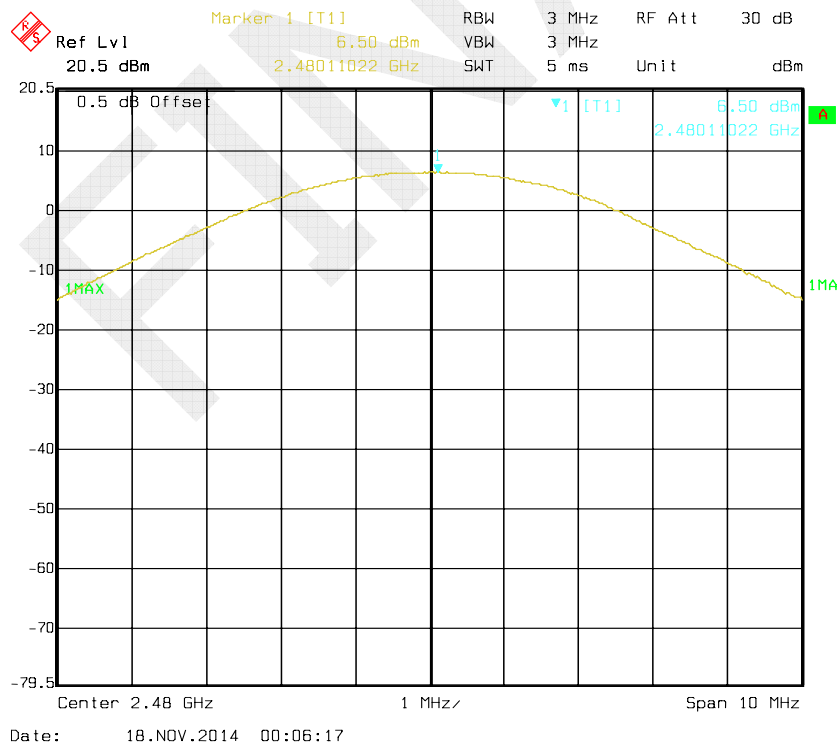
Note: The data above was tested in conducted mode.



Peak Output Power, Middle Channel



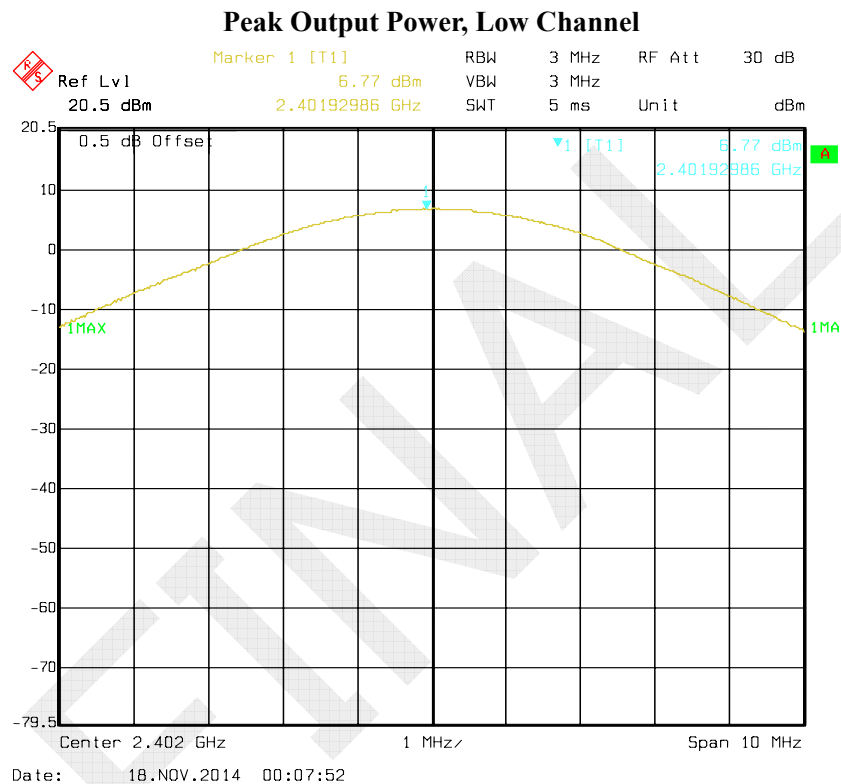
Peak Output Power, High Channel



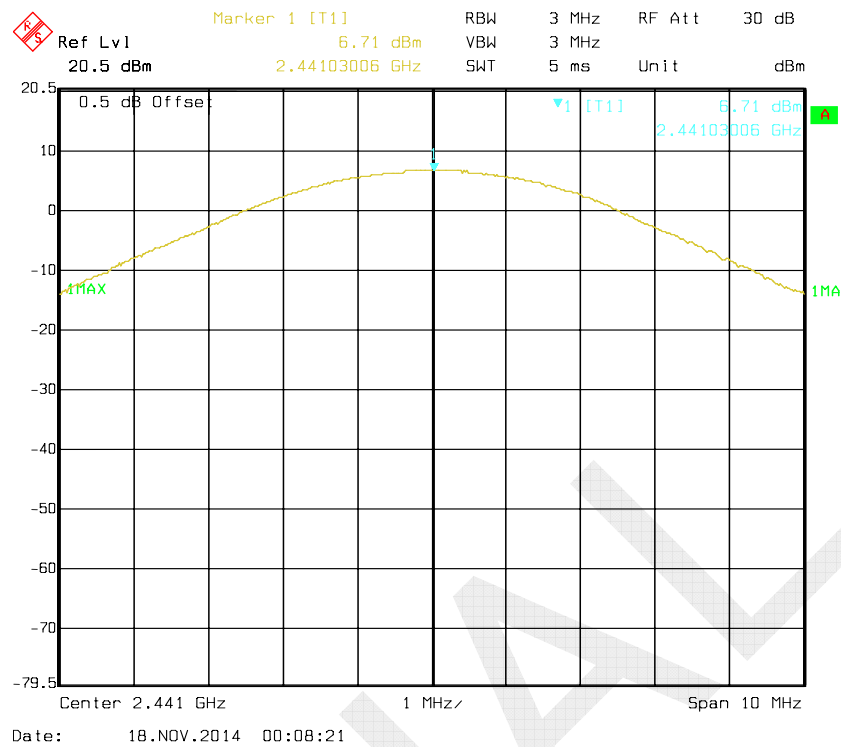
EDR (8DPSK):

Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
Low	2402	6.77	30
Middle	2441	6.71	30
High	2480	6.58	30

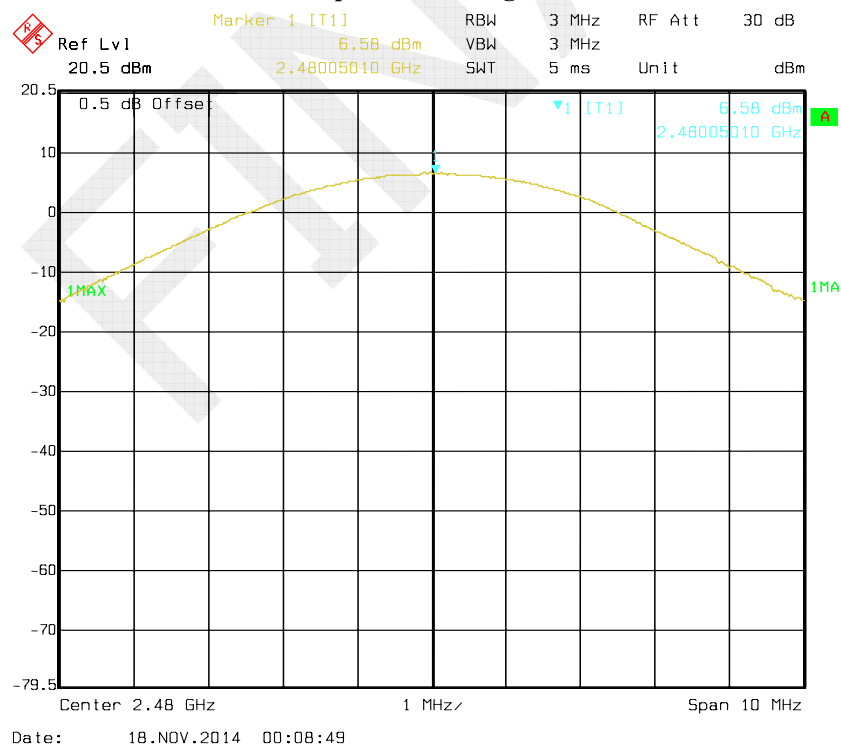
Note: The data above was tested in conducted mode.



Peak Output Power, Middle Channel



Peak Output Power, High Channel



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)).

Test Procedure

1. Set RBW of spectrum analyzer to 100 kHz with a convenient frequency span including 100 kHz bandwidth from band edge.
2. 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.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2014-05-09	2015-05-09

* **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

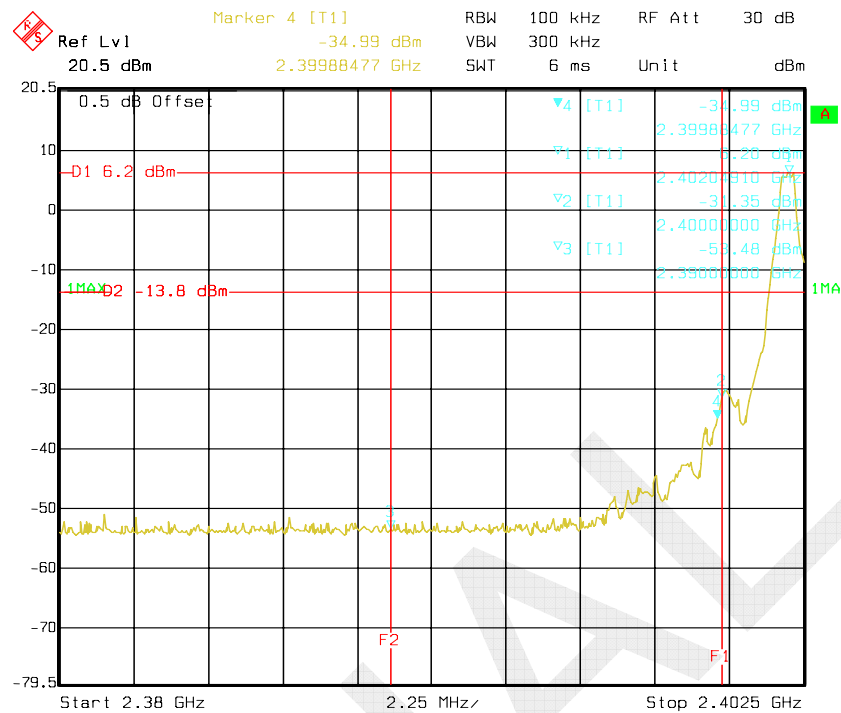
Temperature:	25.4 °C
Relative Humidity:	44 %
ATM Pressure:	100.7 kPa

The testing was performed by Sevin Li on 2014-11-18 and 2014-11-19

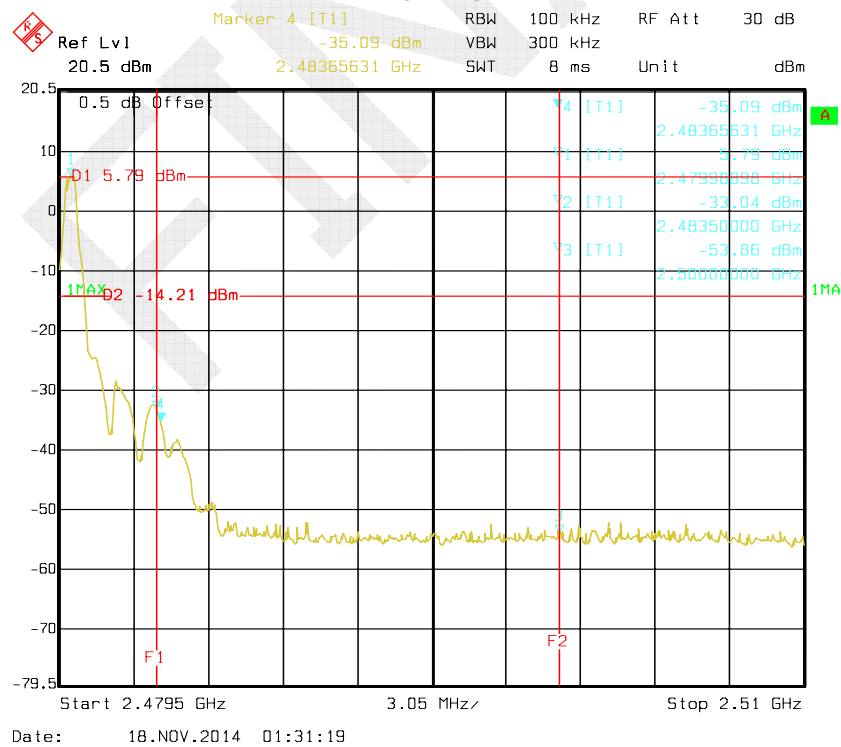
Test Result: Compliance

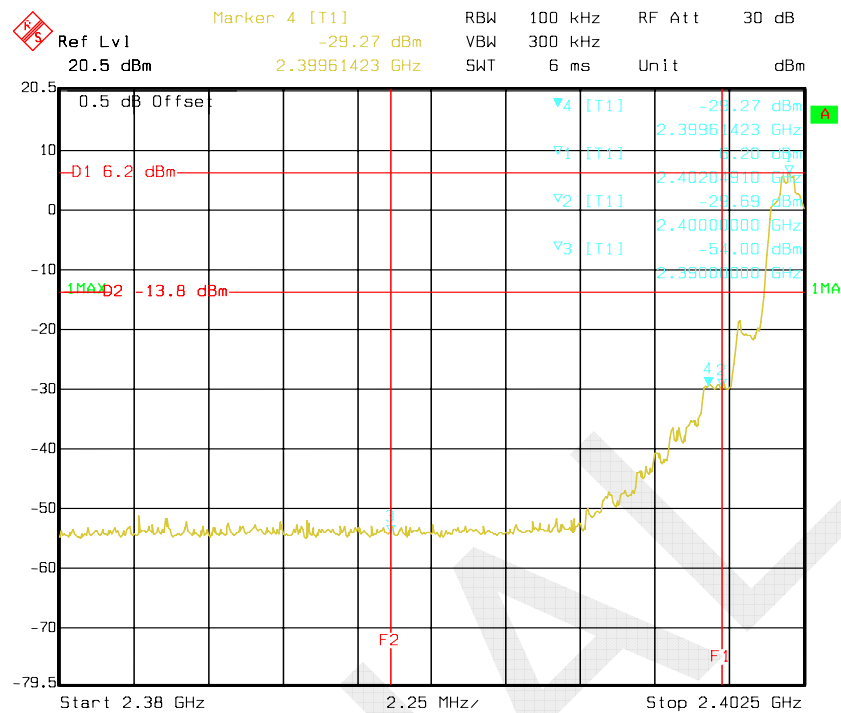
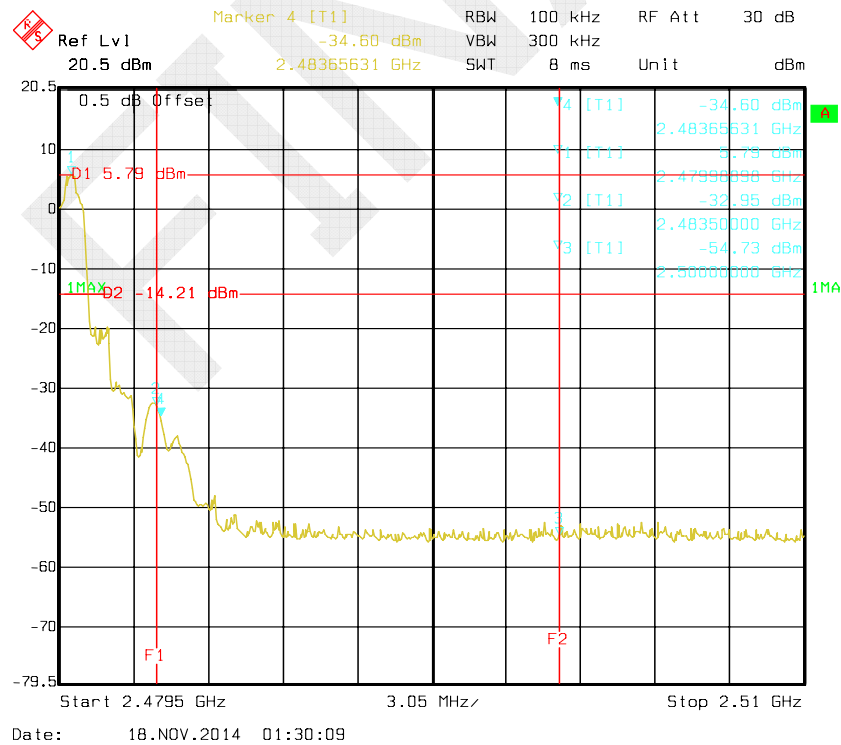
BDR(GFSK):

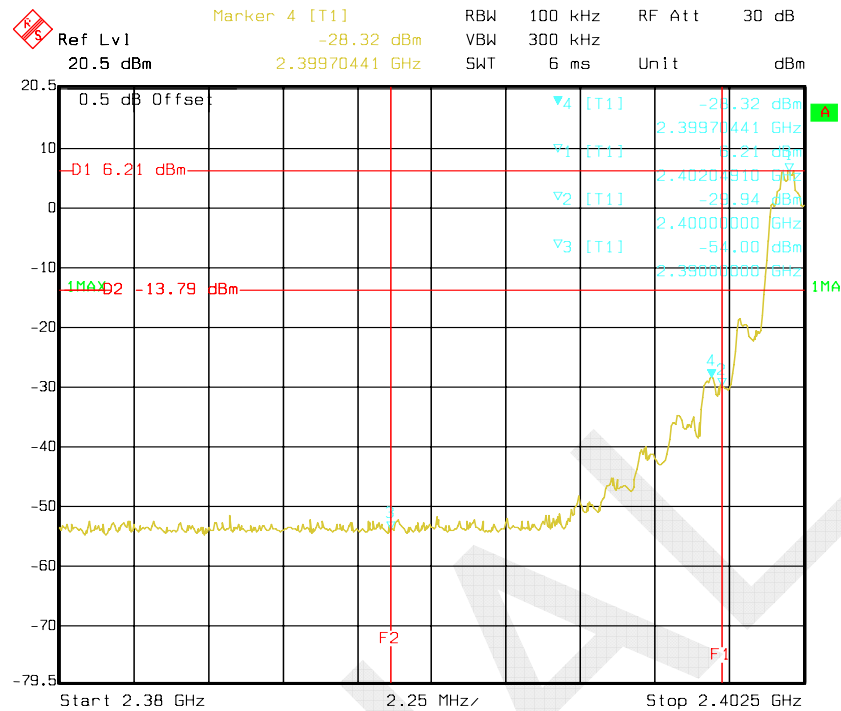
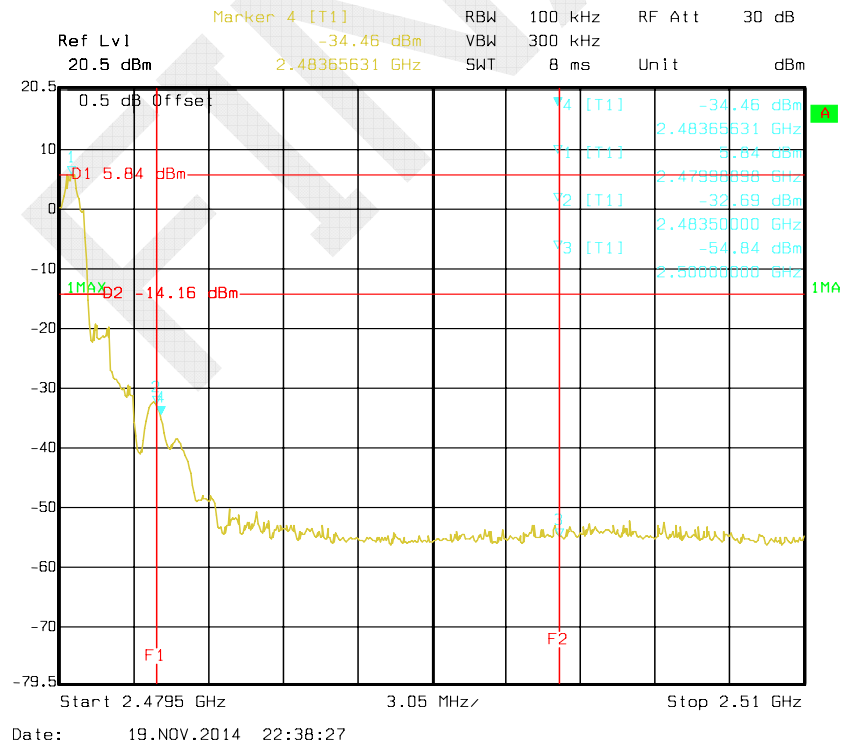
Band Edge, Left Side



Band Edge, Right Side



EDR($\pi/4$ -DQPSK):**Band Edge, Left Side****Band Edge, Right Side**

EDR(8DPSK):**Band Edge, Left Side****Band Edge, Right Side**

DECLARATION LETTER

Dongguan DINGKU Technology Co.,Ltd
Suizhan building, Xingyi Road, Wusha, Chang'an Town, Dongguan, Guangdong,
China
Tel: +86-0755-61962976 Fax: +86-0755-36886277

DECLARATION OF SIMILARITY

2015-01-09

To:

Dear Sir or Madam:

We, Dongguan DINGKU Technology Co.,Ltd, hereby declare that product: earbud in powerbank, Model numbers: LE505, BE-1003 are electrically identical with the same electromagnetic emissions and electromagnetic compatibility characteristics. Model Number: BE-1003 is electrically identical with the Model Number: LE505 that was certified by BACL. Their only difference is the model name.

Please contact me should there be need for any additional clarification or information.

Best Regards,

Quanzhuang Huang
Manager



***** END OF REPORT *****