

FCC PART 15.247

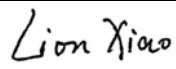
TEST REPORT

For

AKUVOX(XIAMEN) NETWORKS CO., LTD.

10/F, No.56, Software Park II, Xiamen, China

FCC ID: 2AHCR-VPR47P

Report Type: Original Report	Product Type: SIP IP Phone
Test Engineer: Lion Xiao	
Report Number: RXM160122050-00A	
Report Date: 2016-02-03	
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Note: This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or used in part without prior written consent from Bay Area Compliance Laboratories Corp. (Dongguan).

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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *AKUVOX(XIAMEN) NETWORKS CO., LTD.*'s product, model number: *VP-R47P(FCC ID: 2AHCR-VPR47P)* (the "EUT") in this report was a *SIP IP Phone*, which was measured approximately: 24.0 cm (L) x 19.7 cm (W) x 10.2cm (H), rated input voltage: DC12V from adapter or DC48V from POE.

Adapter information:

Model: RD1201000-C55-HMG

Input: 100-240V~50/60 Hz 0.6A MAX

Output: 12V~ 1A

DATE : 20141211

PN: RK120100-UC5C-HH00

Note: The series product, models VP-R47P, MIRUPHONEIII, VP-R47G and SVP3300W are electrically identical, the differences between them are model name, the details was explained in the attached declaration letter.

All measurement and test data in this report was gathered from production sample serial number: 160122050 (Assigned by BACL, Dongguan). The EUT was received on 2016-01-20.

Objective

This report is prepared on behalf of *AKUVOX(XIAMEN) NETWORKS 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 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: 2AHCR-VPR47P

FCC Part 15C DTS submissions with FCC ID: 2AHCR-VPR47P

Test Methodology

All measurements contained in this report were conducted with ANSI C63.10-2013, American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

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 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.

FINAL

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in engineering mode.

EUT Exercise Software

Test Software Version		AmpakRFTestTool(VER:5.3)		
Test Frequency		2402MHz	2441MHz	2480MHz
Power Level Setting	GFSK	N/A	N/A	N/A
	$\pi/4$ -DQPSK	N/A	N/A	N/A
	8DPSK	N/A	N/A	N/A

Equipment Modifications

No modification was made to the EUT.

Support Equipment List and Details

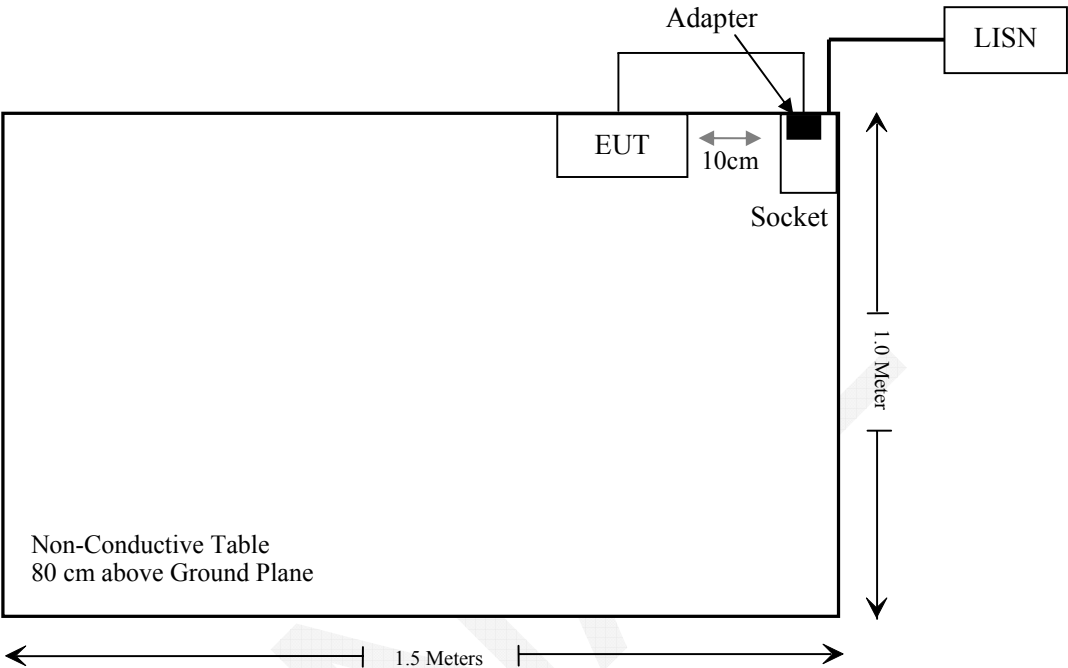
Manufacturer	Description	Model	Serial Number
/	/	/	/

External Cable

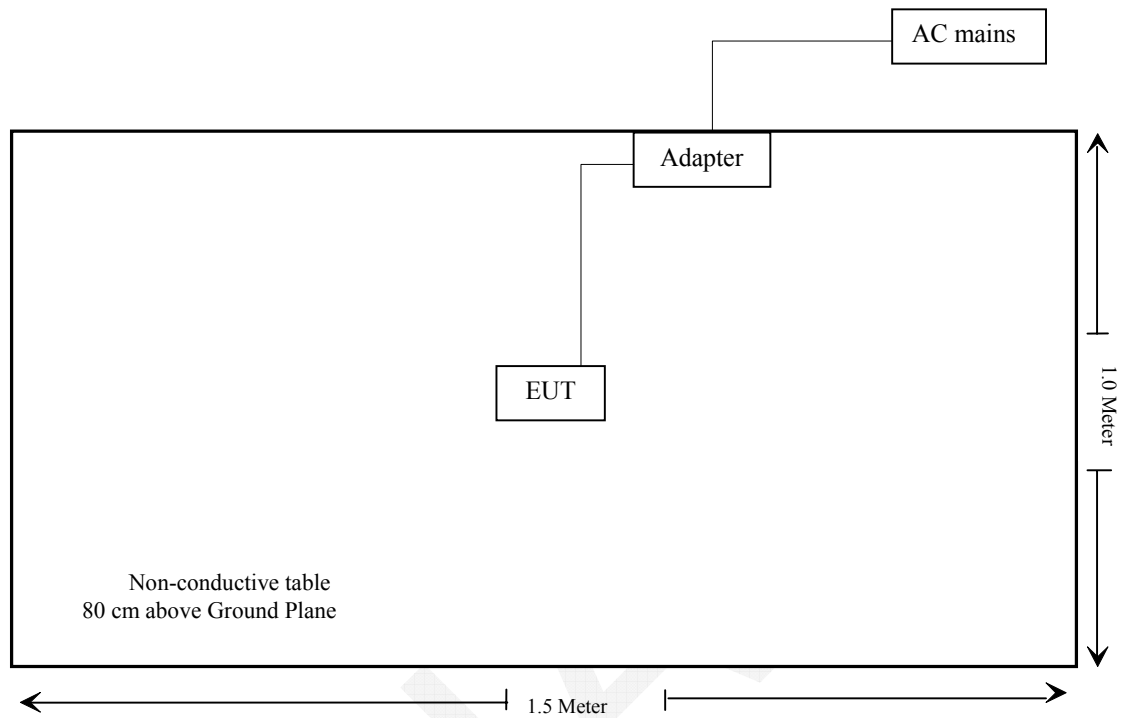
Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
Adapter Cable	no	no	1.5	DC Port of EUT	Adapter

Block Diagram of Test Setup

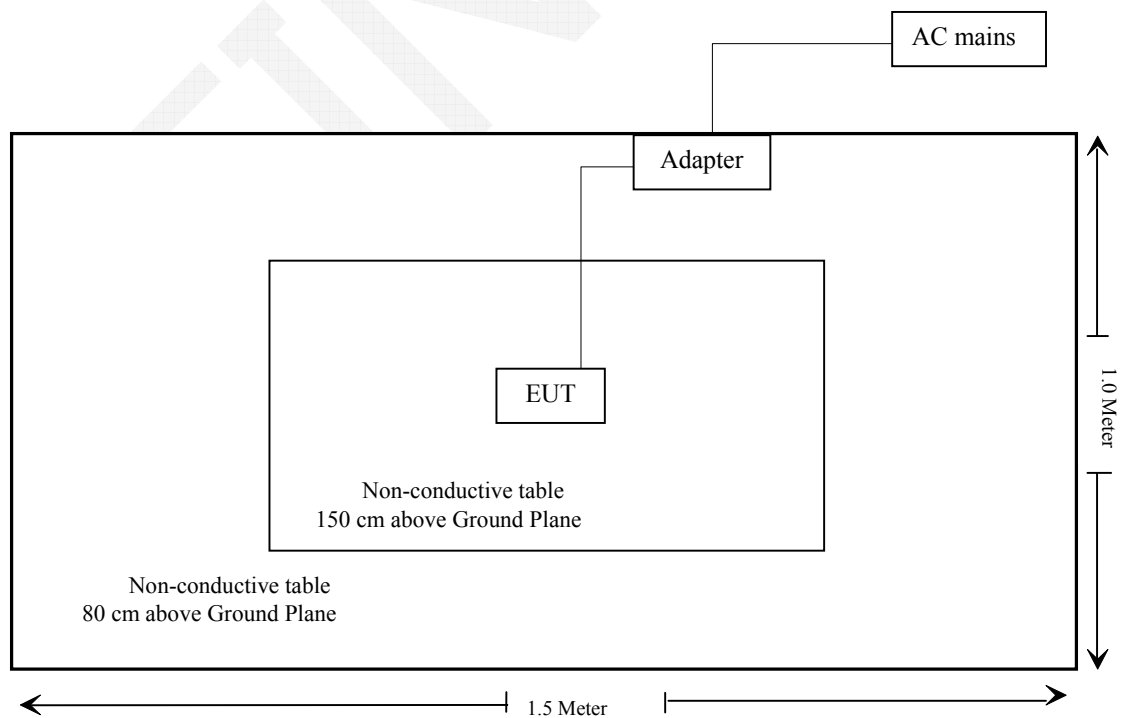
AC Line Conducted Emissions



Below 1 GHz:



Above 1 GHz:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.247 (i) & §1.1310 & §2.1091	Maximum Permissible Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.207 (a)	Conducted Emissions	Compliance
§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

FCC §15.247 (I) & §1.1310 & §2.1091- MAXIMUM PERMISSIBLE EXPOSURE (MPE)

Applicable Standard

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

Limits for Maximum Permissible Exposure (MPE) (§1.1310, §2.1091)

(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time (minutes)
0.3–1.34	614	1.63	*(100)	30
1.34–30	824/f	2.19/f	*(180/f ²)	30
30–300	27.5	0.073	0.2	30
300–1500	/	/	f/1500	30
1500–100,000	/	/	1.0	30

f = frequency in MHz; * = Plane-wave equivalent power density;

According to §1.1310 and §2.1091 RF exposure is calculated.

Calculated Formulary:

Predication of MPE limit at a given distance

$S = PG/4\pi R^2$ = power density (in appropriate units, e.g. mW/cm²);

P = power input to the antenna (in appropriate units, e.g., mW);

G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;

R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

Calculated Data:

Frequency Range (MHz)	Antenna Gain		Tune-up Power		Evaluation Distance (cm)	Power Density (mW/cm ²)	MPE Limit (mW/cm ²)
	(dBi)	(numeric)	(dBm)	(mW)			
2402-2480	2.0	1.58	9.0	7.94	20	0.002	1.0

Result: The device meet FCC MPE at 20 cm distance.

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 the antenna gain is 2 dBi, which 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_{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_{lab} is greater than U_{cispr} of Table 1, then:

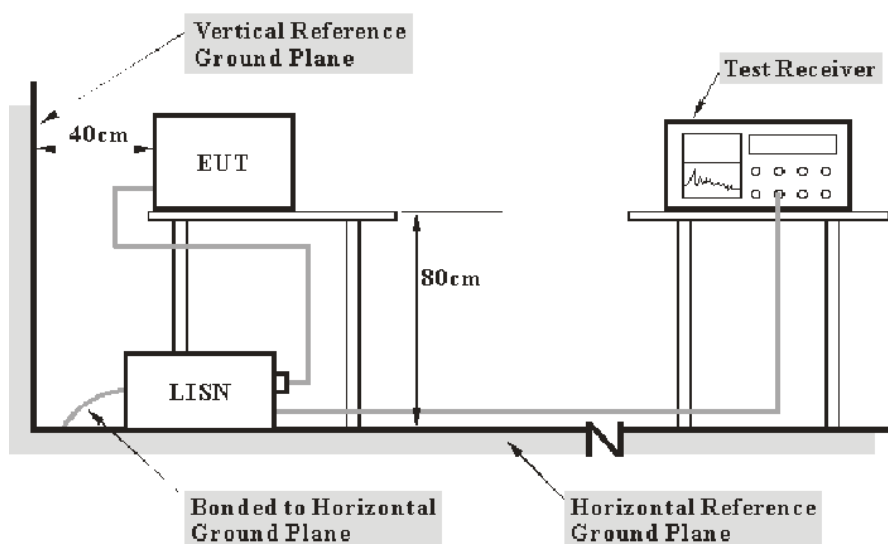
- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

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 3.12 dB (150 kHz to 30 MHz).

Table 1 – Values of U_{cispr}

Measurement	U_{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.

The setup of EUT is according with per ANSI C63.10-2013 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_C : corrected voltage amplitude

V_R : reading voltage amplitude

A_C : 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:

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	EMI Test Receiver	ESCS 30	830245/006	2015-12-10	2016-12-09
R&S	L.I.S.N	ESH2-Z5	892107/021	2015-07-16	2016-07-15
R&S	Two-line V-network	ENV 216	3560.6550.12	2015-11-26	2016-11-25
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:

4.6 dB at 0.487810 MHz in the **Line** conducted mode

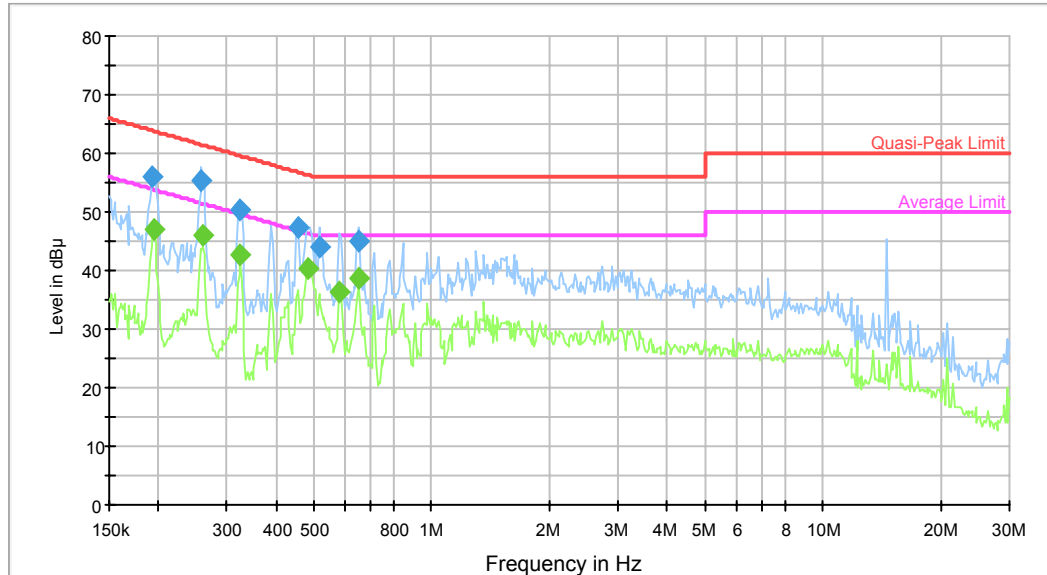
Test Data**Environmental Conditions**

Temperature:	16.6°C
Relative Humidity:	27%
ATM Pressure:	102.8 kPa

The testing was performed by Lion Xiao on 2016-01-25.

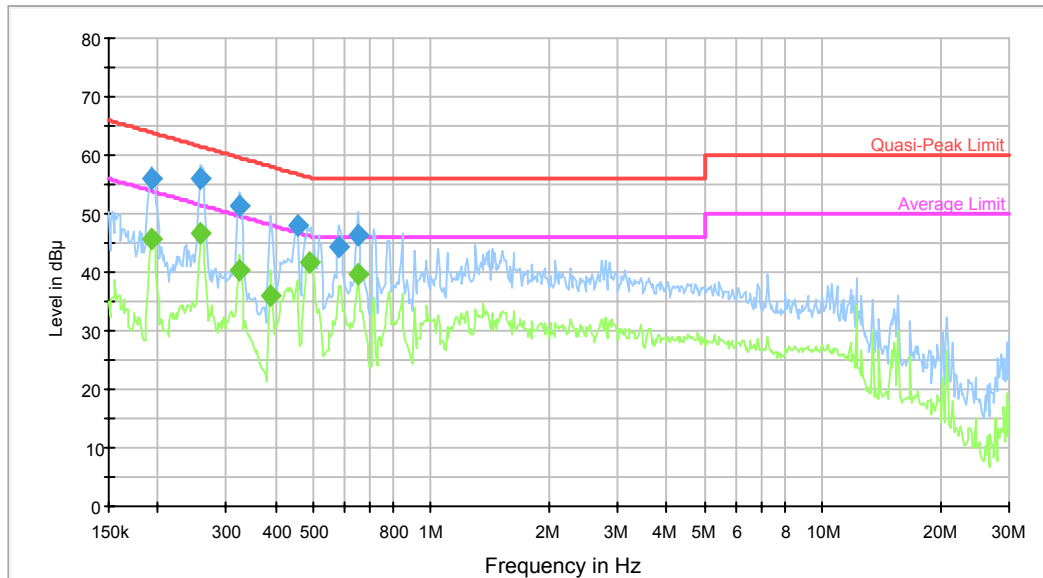
Test Mode: Transmitting(Powered by adapter)-worst case

AC120 V, 60 Hz, Line:



Frequency (MHz)	Quasi Peak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.193566	55.9	9.000	L1	9.7	8.0	63.9	Compliance
0.257874	55.3	9.000	L1	9.7	6.2	61.5	Compliance
0.324910	50.5	9.000	L1	9.7	9.1	59.6	Compliance
0.454052	47.5	9.000	L1	9.8	9.3	56.8	Compliance
0.515791	44.1	9.000	L1	9.8	11.9	56.0	Compliance
0.649874	45.0	9.000	L1	9.8	11.0	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.195114	47.1	9.000	L1	9.7	6.7	53.8	Compliance
0.259937	45.8	9.000	L1	9.7	5.6	51.4	Compliance
0.324910	42.7	9.000	L1	9.7	6.9	49.6	Compliance
0.483938	40.2	9.000	L1	9.8	6.1	46.3	Compliance
0.581275	36.2	9.000	L1	9.8	9.8	46.0	Compliance
0.649874	38.5	9.000	L1	9.8	7.5	46.0	Compliance

AC120 V, 60 Hz, Neutral:

Frequency (MHz)	Quasi Peak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.193566	56.0	9.000	N	9.7	7.9	63.9	Compliance
0.257874	56.1	9.000	N	9.7	5.4	61.5	Compliance
0.324910	51.4	9.000	N	9.7	8.2	59.6	Compliance
0.454052	47.9	9.000	N	9.7	8.9	56.8	Compliance
0.581275	44.5	9.000	N	9.7	11.5	56.0	Compliance
0.649874	46.2	9.000	N	9.7	9.8	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.193566	45.6	9.000	N	9.7	8.3	53.9	Compliance
0.257874	46.7	9.000	N	9.7	4.8	51.5	Compliance
0.324910	40.4	9.000	N	9.7	9.2	49.6	Compliance
0.390261	35.9	9.000	N	9.7	12.2	48.1	Compliance
0.487810	41.6	9.000	N	9.7	4.6	46.2	Compliance
0.649874	39.6	9.000	N	9.7	6.4	46.0	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_{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_{lab} is greater than U_{cispr} of Table 1, then:

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

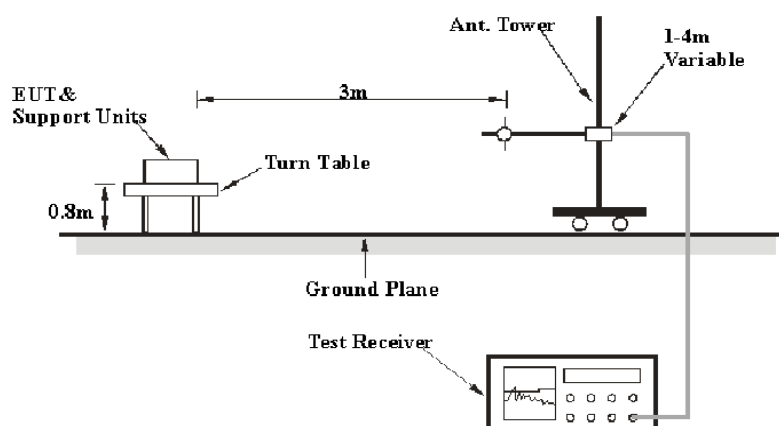
Based on CISPR 16-4-2: 2011, measurement uncertainty of radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is: 30M~200MHz: 4.58 dB for Horizontal, 4.59 dB for Vertical; 200M~1GHz: 4.83 dB for Horizontal, 5.85 dB for Vertical; 1G~6GHz: 4.45 dB, 6G~18GHz: 5.23 dB

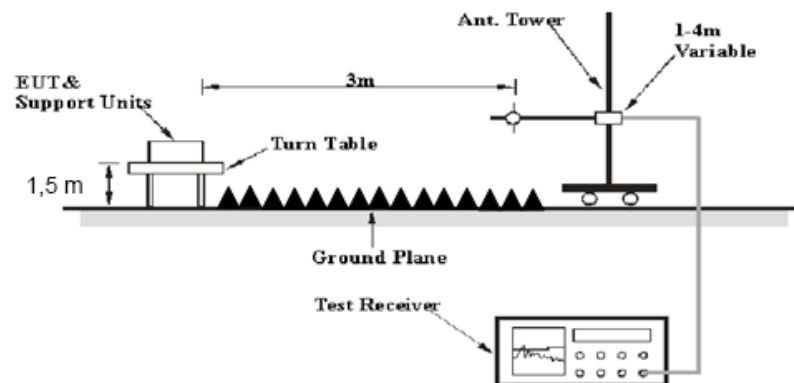
Table 1 – Values of U_{cispr}

Measurement	U_{cispr}
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 C63.10-2013. 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 GHz	1MHz	3 MHz	/	PK
	1MHz	10 Hz	/	Ave.

Test Procedure

During the radiated emission test, the adapter was connected to the first 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	2015-08-03	2016-08-02
Sunol Sciences	Antenna	JB3	A060611-3	2014-11-06	2017-11-05
HP	Amplifier	8447E	2434A02181	2015-09-01	2016-09-01
Agilent	Spectrum Analyzer	E4440A	SG43360054	2015-11-23	2016-11-22
ETS-Lindgren	Horn Antenna	3115	9808-5557	2015-09-06	2018-09-06
Mini-Circuit	Amplifier	ZVA-213-S+	054201245	2015-02-19	2016-02-19
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22
Ducommun Technologies	Horn Antenna	ARH-4223-02	1007726-01 1304	2014-06-16	2017-06-15
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2015-09-06	2016-09-06

* **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:

8.84 dB at 2483.5 MHZ in the **horizontal** polarization for **EDR Mode (8-DPSK)**

Test Data**Environmental Conditions**

Temperature:	22.2°C
Relative Humidity:	51 %
ATM Pressure:	101.7kPa

* The testing was performed by Lion Xiao on 2016-02-01.

Test Mode: Transmitting(Powered by adaper)

BDR Mode (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	71.72	PK	H	25.65	3.66	0.00	101.03	N/A	N/A
2402	61.28	AV	H	25.65	3.66	0.00	90.59	N/A	N/A
2402	67.49	PK	V	25.65	3.66	0.00	96.80	N/A	N/A
2402	57.17	AV	V	25.65	3.66	0.00	86.48	N/A	N/A
2390	25.27	PK	H	25.61	3.63	0.00	54.51	74.00	19.49
2390	13.82	AV	H	25.61	3.63	0.00	43.06	54.00	10.94
4804	38.17	PK	H	30.59	5.06	27.41	46.41	74.00	27.59
4804	26.16	AV	H	30.59	5.06	27.41	34.40	54.00	19.60
7206	41.79	PK	H	34.09	6.61	25.91	56.58	74.00	17.42
7206	29.98	AV	H	34.09	6.61	25.91	44.77	54.00	9.23
9608	32.33	PK	H	35.96	8.53	27.55	49.27	74.00	24.73
9608	20.77	AV	H	35.96	8.53	27.55	37.71	54.00	16.29
3283	40.41	PK	H	28.11	5.54	27.30	46.76	74.00	27.24
3283	28.21	AV	H	28.11	5.54	27.30	34.56	54.00	19.44
244.9	37.5	QP	H	12.25	1.88	21.49	30.14	46.00	15.86
Middle Channel: 2441 MHz									
2441	71.49	PK	H	25.75	3.76	0.00	101.00	N/A	N/A
2441	61.11	AV	H	25.75	3.76	0.00	90.62	N/A	N/A
2441	67.18	PK	V	25.75	3.76	0.00	96.69	N/A	N/A
2441	57.02	AV	V	25.75	3.76	0.00	86.53	N/A	N/A
4882	38.43	PK	H	30.79	5.19	27.42	46.99	74.00	27.01
4882	26.18	AV	H	30.79	5.19	27.42	34.74	54.00	19.26
7323	41.58	PK	H	34.38	6.75	25.88	56.83	74.00	17.17
7323	29.86	AV	H	34.38	6.75	25.88	45.11	54.00	8.89
9764	32.22	PK	H	36.33	8.62	27.20	49.97	74.00	24.03
9764	20.67	AV	H	36.33	8.62	27.20	38.42	54.00	15.58
4365	38.01	PK	H	29.83	5.00	26.92	45.92	74.00	28.08
4365	26.26	AV	H	29.83	5.00	26.92	34.17	54.00	19.83
3283	40.97	PK	H	28.11	5.54	27.30	47.32	74.00	26.68
3283	28.75	AV	H	28.11	5.54	27.30	35.10	54.00	18.90
244.9	37.1	QP	H	12.25	1.88	21.49	29.74	46.00	16.26
High Channel: 2480 MHz									
2480	71.67	PK	H	25.85	3.68	0.00	101.20	N/A	N/A
2480	61.55	AV	H	25.85	3.68	0.00	91.08	N/A	N/A
2480	67.39	PK	V	25.85	3.68	0.00	96.92	N/A	N/A
2480	57.24	AV	V	25.85	3.68	0.00	86.77	N/A	N/A
2483.5	26.07	PK	H	25.86	3.67	0.00	55.60	74.00	18.40
2483.5	14.03	AV	H	25.86	3.67	0.00	43.56	54.00	10.44
4960	38.47	PK	H	31.00	5.34	27.43	47.38	74.00	26.62
4960	26.23	AV	H	31.00	5.34	27.43	35.14	54.00	18.86
7440	41.84	PK	H	34.66	6.89	25.97	57.42	74.00	16.58
7440	29.02	AV	H	34.66	6.89	25.97	44.60	54.00	9.40
9920	32.41	PK	H	36.71	8.71	26.66	51.17	74.00	22.83
9920	20.08	AV	H	36.71	8.71	26.66	38.84	54.00	15.16
3283	40.66	PK	H	28.11	5.54	27.30	47.01	74.00	26.99
3283	28.09	AV	H	28.11	5.54	27.30	34.44	54.00	19.56
244.9	37.8	QP	H	12.25	1.88	21.49	30.44	46.00	15.56

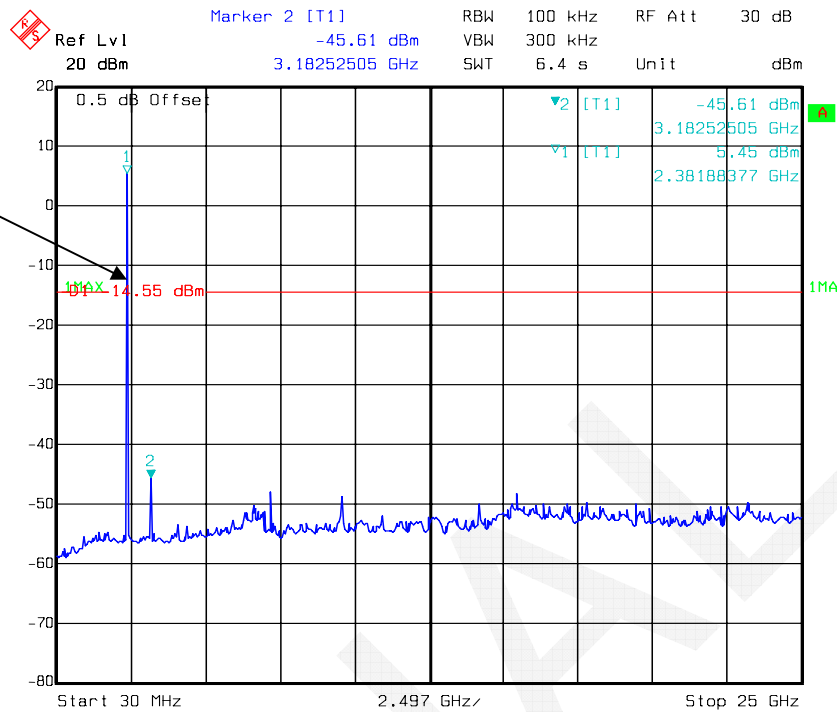
EDR Mode ($\pi/4$ -DQPSK):

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	71.56	PK	H	25.65	3.66	0.00	100.87	N/A	N/A
2402	59.27	AV	H	25.65	3.66	0.00	88.58	N/A	N/A
2402	67.79	PK	V	25.65	3.66	0.00	97.10	N/A	N/A
2402	56.54	AV	V	25.65	3.66	0.00	85.85	N/A	N/A
2390	27.46	PK	H	25.61	3.63	0.00	56.70	74.00	17.30
2390	15.18	AV	H	25.61	3.63	0.00	44.42	54.00	9.58
4804	37.28	PK	H	30.59	5.06	27.41	45.52	74.00	28.48
4804	25.9	AV	H	30.59	5.06	27.41	34.14	54.00	19.86
7206	40.7	PK	H	34.09	6.61	25.91	55.49	74.00	18.51
7206	28.54	AV	H	34.09	6.61	25.91	43.33	54.00	10.67
9608	31.49	PK	H	35.96	8.53	27.55	48.43	74.00	25.57
9608	19.82	AV	H	35.96	8.53	27.55	36.76	54.00	17.24
3283	40.39	PK	H	28.11	5.54	27.30	46.74	74.00	27.26
3283	28.91	AV	H	28.11	5.54	27.30	35.26	54.00	18.74
244.9	37.4	QP	H	12.25	1.88	21.49	30.04	46.00	15.96
Middle Channel: 2441 MHz									
2441	71.22	PK	H	25.75	3.76	0.00	100.73	N/A	N/A
2441	59.16	AV	H	25.75	3.76	0.00	88.67	N/A	N/A
2441	67.79	PK	V	25.75	3.76	0.00	97.30	N/A	N/A
2441	56.27	AV	V	25.75	3.76	0.00	85.78	N/A	N/A
4882	38.48	PK	H	30.79	5.19	27.42	47.04	74.00	26.96
4882	26.52	AV	H	30.79	5.19	27.42	35.08	54.00	18.92
7323	40.84	PK	H	34.38	6.75	25.88	56.09	74.00	17.91
7323	28.18	AV	H	34.38	6.75	25.88	43.43	54.00	10.57
9764	30.85	PK	H	36.33	8.62	27.20	48.60	74.00	25.40
9764	18.69	AV	H	36.33	8.62	27.20	36.44	54.00	17.56
3283	40.34	PK	H	28.11	5.54	27.30	46.69	74.00	27.31
3283	28.73	AV	H	28.11	5.54	27.30	35.08	54.00	18.92
4365	38.19	PK	H	29.83	5.00	26.92	46.10	74.00	27.90
4365	26.11	AV	H	29.83	5.00	26.92	34.02	54.00	19.98
244.9	37.7	QP	H	12.25	1.88	21.49	30.34	46.00	15.66
High Channel: 2480 MHz									
2480	71.38	PK	H	25.85	3.68	0.00	100.91	N/A	N/A
2480	59.30	AV	H	25.85	3.68	0.00	88.83	N/A	N/A
2480	67.56	PK	V	25.85	3.68	0.00	97.09	N/A	N/A
2480	56.29	AV	V	25.85	3.68	0.00	85.82	N/A	N/A
2483.5	27.20	PK	H	25.86	3.67	0.00	56.73	74.00	17.27
2483.5	15.47	AV	H	25.86	3.67	0.00	45.00	54.00	9.00
4960	37.56	PK	H	31.00	5.34	27.43	46.47	74.00	27.53
4960	25.69	AV	H	31.00	5.34	27.43	34.60	54.00	19.40
7440	40.73	PK	H	34.66	6.89	25.97	56.31	74.00	17.69
7440	28.79	AV	H	34.66	6.89	25.97	44.37	54.00	9.63
9920	31.75	PK	H	36.71	8.71	26.66	50.51	74.00	23.49
9920	20.01	AV	H	36.71	8.71	26.66	38.77	54.00	15.23
3283	40.52	PK	H	28.11	5.54	27.30	46.87	74.00	27.13
3283	28.77	AV	H	28.11	5.54	27.30	35.12	54.00	18.88
244.9	37.0	OP	H	12.25	1.88	21.49	29.64	46.00	16.36

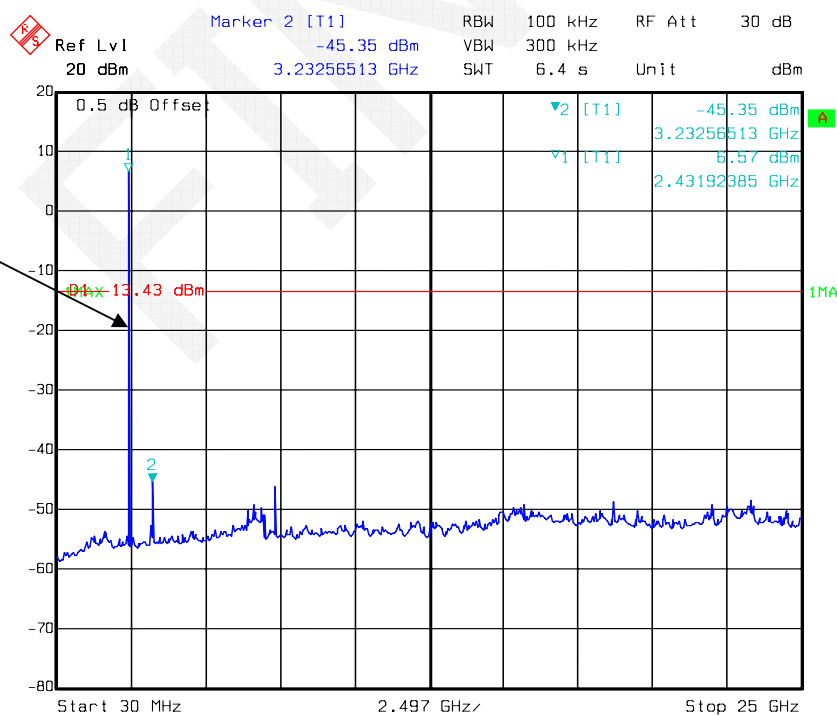
EDR Mode (8-DPSK):

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	71.90	PK	H	25.65	3.66	0.00	101.21	N/A	N/A
2402	61.01	AV	H	25.65	3.66	0.00	90.32	N/A	N/A
2402	68.00	PK	V	25.65	3.66	0.00	97.31	N/A	N/A
2402	56.23	AV	V	25.65	3.66	0.00	85.54	N/A	N/A
2390	27.17	PK	H	25.61	3.63	0.00	56.41	74.00	17.59
2390	15.86	AV	H	25.61	3.63	0.00	45.10	54.00	8.90
4804	37.76	PK	H	30.59	5.06	27.41	46.00	74.00	28.00
4804	25.99	AV	H	30.59	5.06	27.41	34.23	54.00	19.77
7206	40.49	PK	H	34.09	6.61	25.91	55.28	74.00	18.72
7206	28.6	AV	H	34.09	6.61	25.91	43.39	54.00	10.61
9608	30.91	PK	H	35.96	8.53	27.55	47.85	74.00	26.15
9608	19.21	AV	H	35.96	8.53	27.55	36.15	54.00	17.85
3283	40.41	PK	H	28.11	5.54	27.30	46.76	74.00	27.24
3283	28.52	AV	H	28.11	5.54	27.30	34.87	54.00	19.13
244.9	37.6	QP	H	12.25	1.88	21.49	30.24	46.00	15.76
Middle Channel: 2441 MHz									
2441	72.05	PK	H	25.75	3.76	0.00	101.56	N/A	N/A
2441	60.3	AV	H	25.75	3.76	0.00	89.81	N/A	N/A
2441	68.35	PK	V	25.75	3.76	0.00	97.86	N/A	N/A
2441	56.62	AV	V	25.75	3.76	0.00	86.13	N/A	N/A
4882	37.14	PK	H	30.79	5.19	27.42	45.70	74.00	28.30
4882	25.56	AV	H	30.79	5.19	27.42	34.12	54.00	19.88
7323	41.09	PK	H	34.38	6.75	25.88	56.34	74.00	17.66
7323	27.95	AV	H	34.38	6.75	25.88	43.20	54.00	10.80
9764	29.56	PK	H	36.33	8.62	27.20	47.31	74.00	26.69
9764	17.63	AV	H	36.33	8.62	27.20	35.38	54.00	18.62
3283	39.97	PK	H	28.11	5.54	27.30	46.32	74.00	27.68
3283	28.57	AV	H	28.11	5.54	27.30	34.92	54.00	19.08
4365	38.98	PK	H	29.83	5.00	26.92	46.89	74.00	27.11
4365	26.45	AV	H	29.83	5.00	26.92	34.36	54.00	19.64
244.9	37.3	QP	H	12.25	1.88	21.49	29.94	46.00	16.06
High Channel: 2480 MHz									
2480	72.04	PK	H	25.85	3.68	0.00	101.57	N/A	N/A
2480	60.9	AV	H	25.85	3.68	0.00	90.43	N/A	N/A
2480	68.21	PK	V	25.85	3.68	0.00	97.74	N/A	N/A
2480	56.04	AV	V	25.85	3.68	0.00	85.57	N/A	N/A
2483.5	27.07	PK	H	25.86	3.67	0.00	56.60	74.00	17.40
2483.5	15.63	AV	H	25.86	3.67	0.00	45.16	54.00	8.84
4960	36.96	PK	H	31.00	5.34	27.43	45.87	74.00	28.13
4960	25.87	AV	H	31.00	5.34	27.43	34.78	54.00	19.22
7440	40.31	PK	H	34.66	6.89	25.97	55.89	74.00	18.11
7440	28.78	AV	H	34.66	6.89	25.97	44.36	54.00	9.64
9920	35.85	PK	H	36.71	8.71	26.66	54.61	74.00	19.39
9920	23.22	AV	H	36.71	8.71	26.66	41.98	54.00	12.02
3283	41.34	PK	H	28.11	5.54	27.30	47.69	74.00	26.31
3283	29.54	AV	H	28.11	5.54	27.30	35.89	54.00	18.11
244.9	37.9	QP	H	12.25	1.88	21.49	30.54	46.00	15.46

BDR Mode (GFSK):

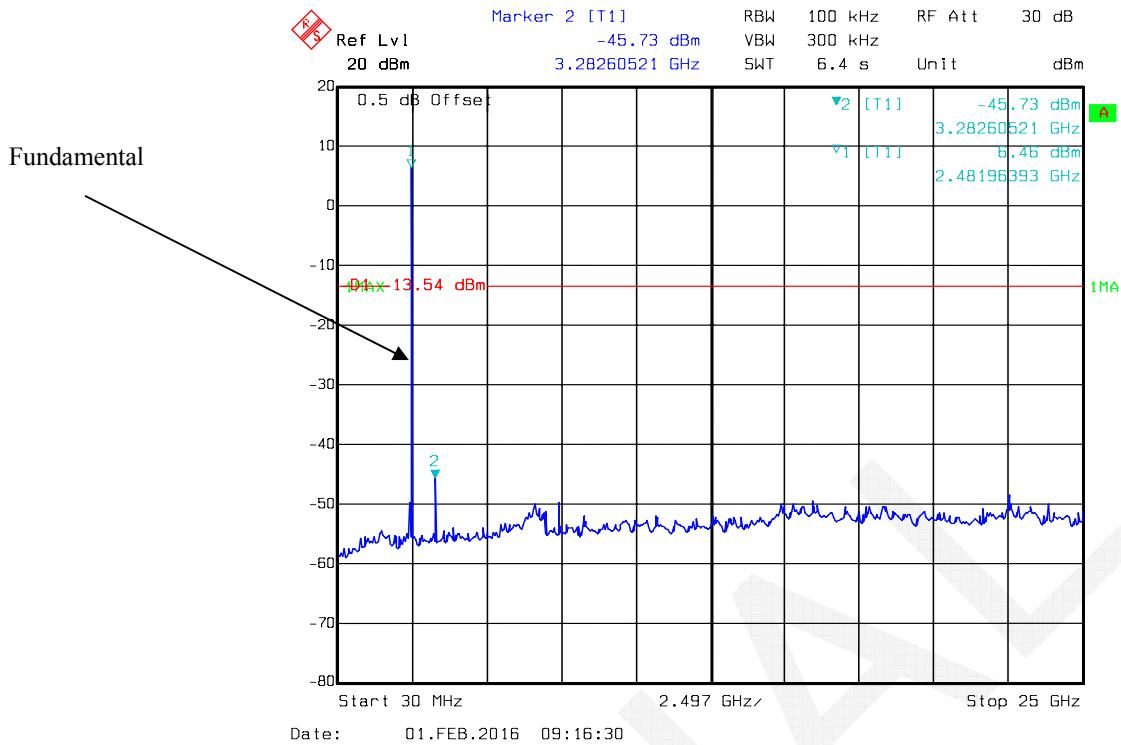


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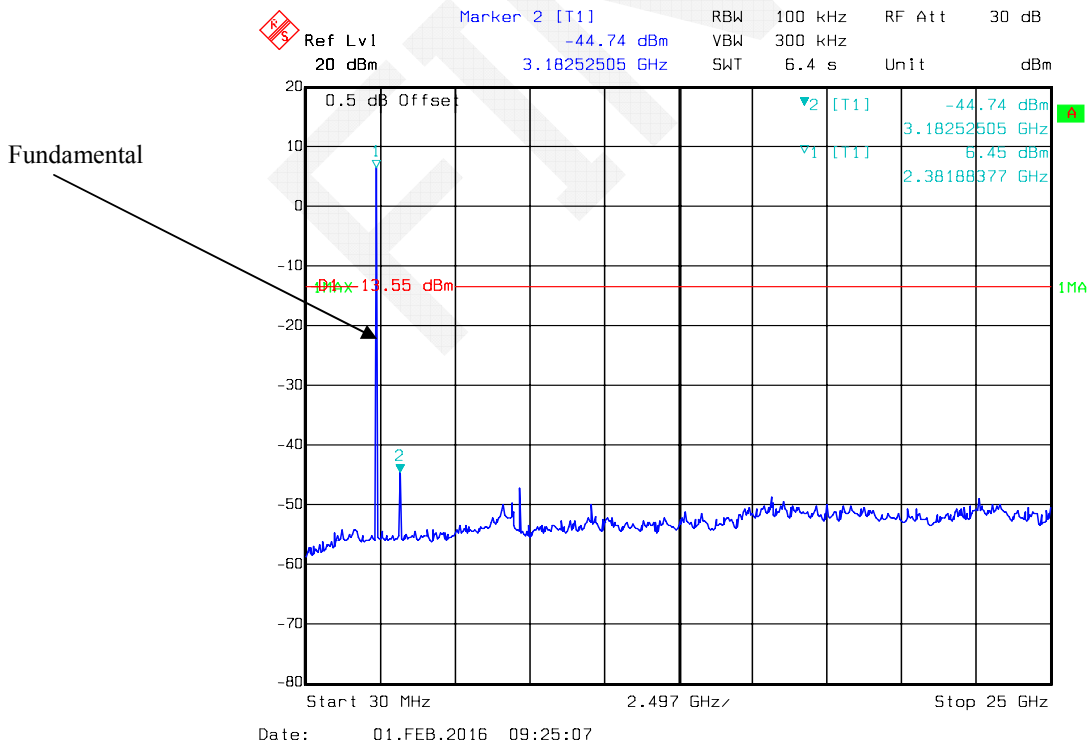
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High Channel

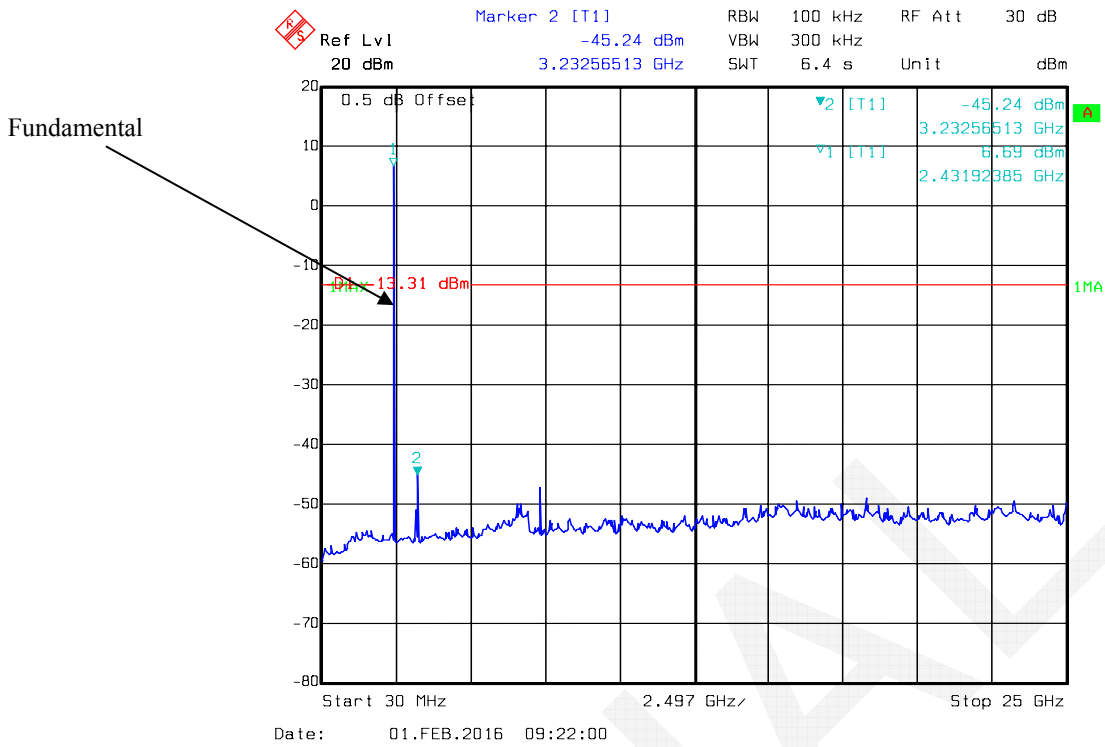


EDR Mode ($\pi/4$ -DQPSK):

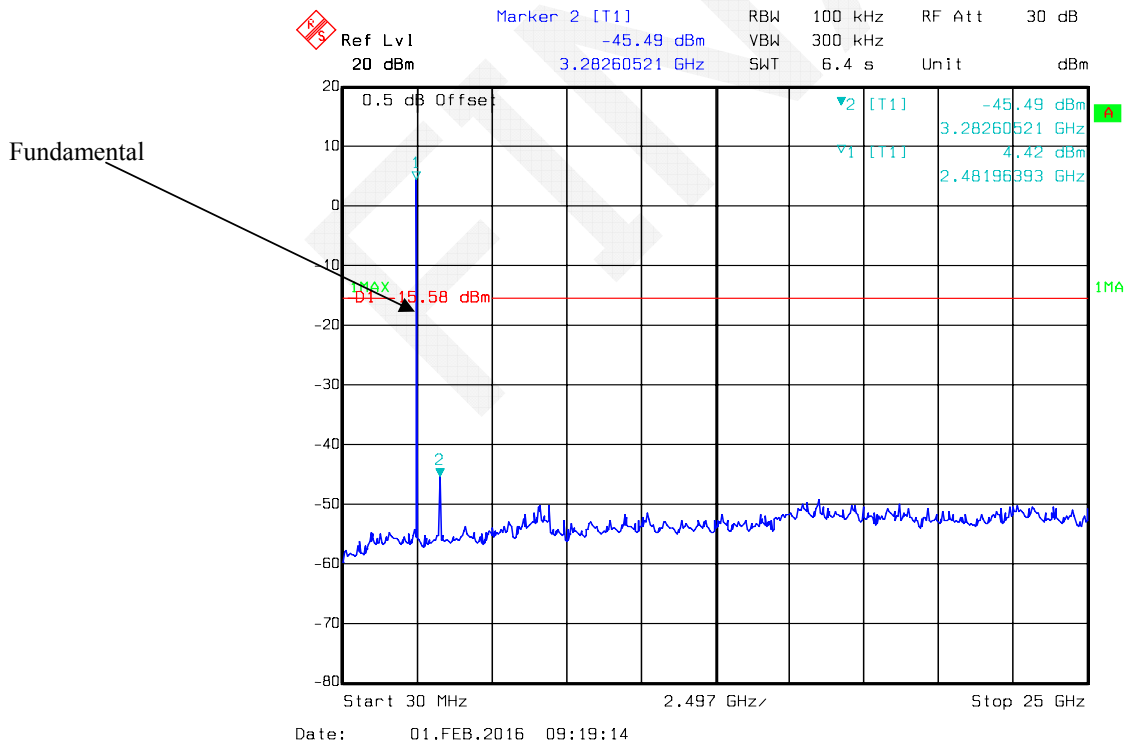
Low Channel



Middle Channel

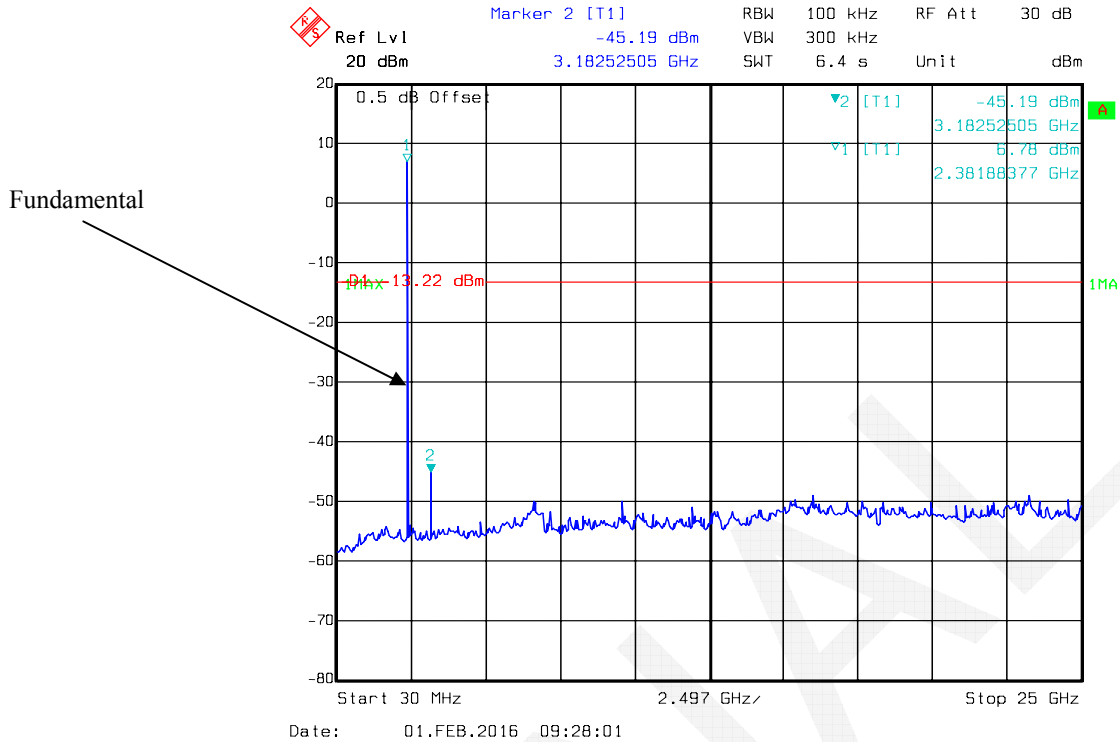


High Channel

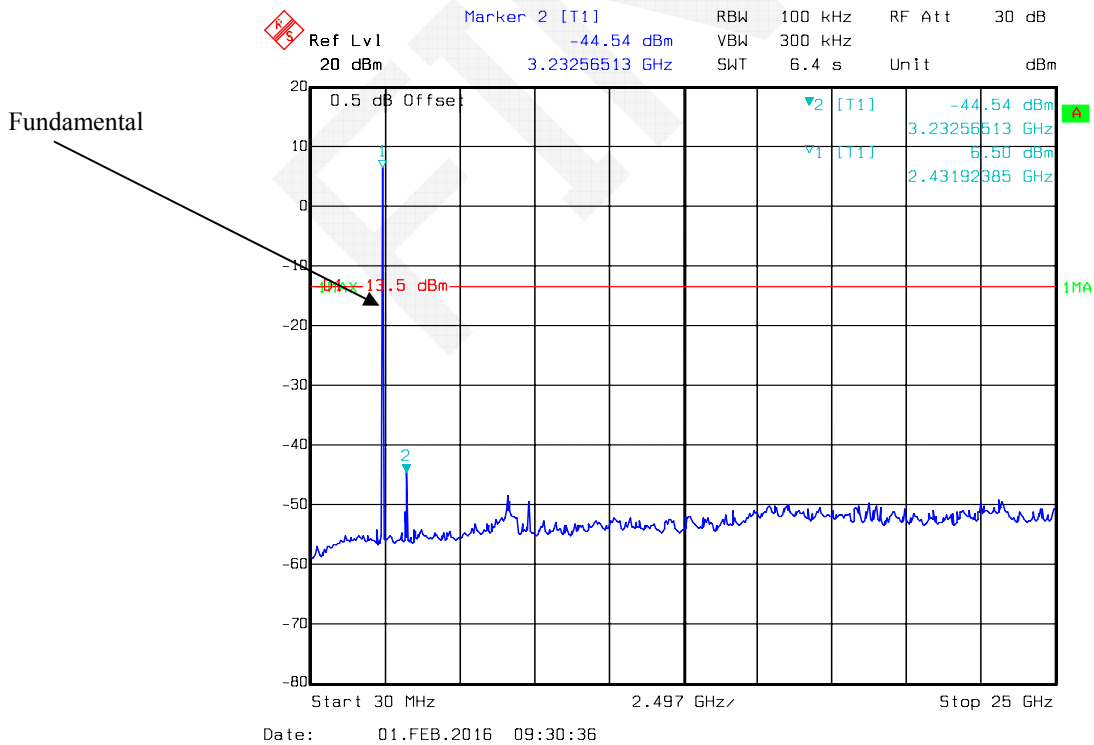


EDR Mode (8-DPSK):

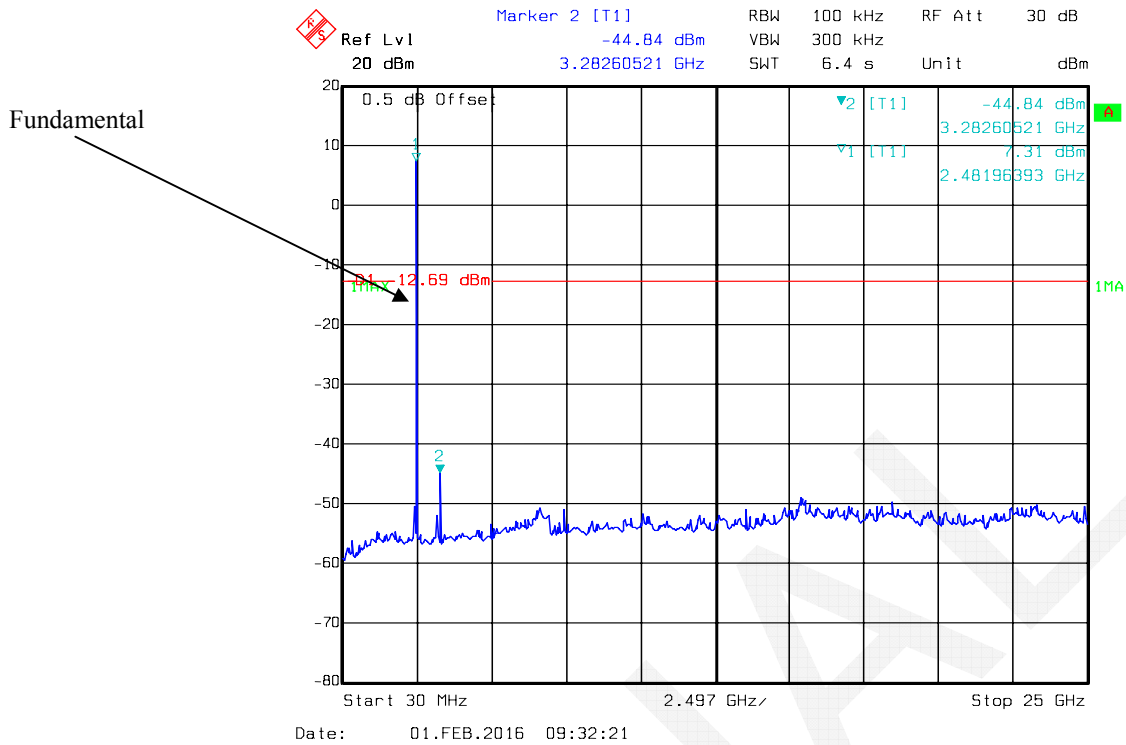
Low Channel



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	2015-11-23	2016-11-22

* **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

1. Set the EUT in transmitting mode, spectrum Bandwidth was set at 30 kHz, maxhold the channel.
2. Set the adjacent channel of the EUT maxhold another trace.
3. Measure the channel separation.

Test Data**Environmental Conditions**

Temperature:	22.2°C
Relative Humidity:	51 %
ATM Pressure:	101.7 kPa

* The testing was performed by Lion Xiao on 2016-02-01.

Test Result: Compliance.

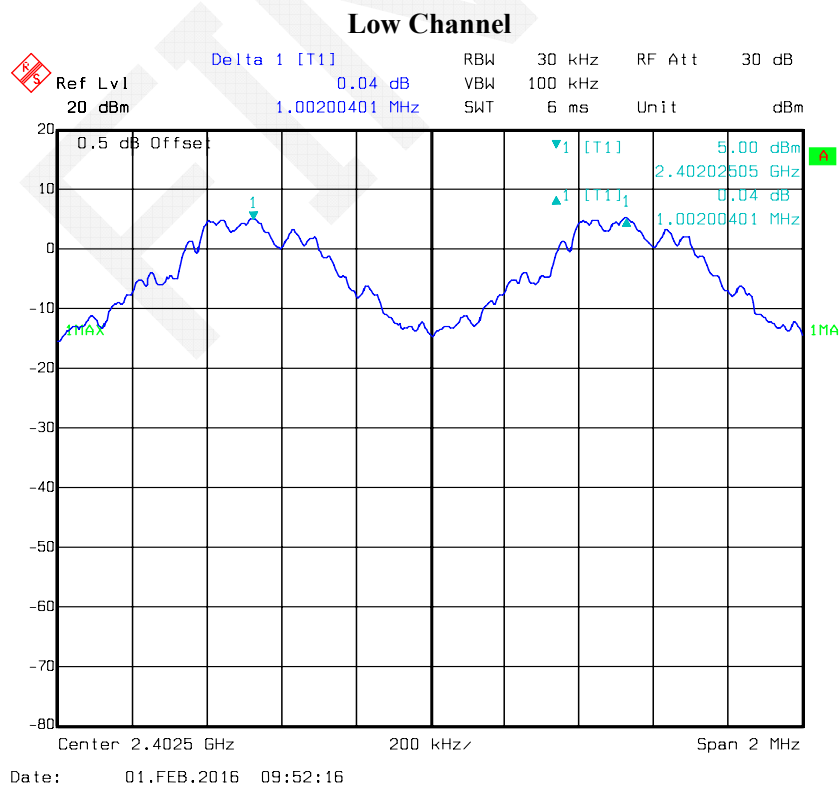
Please refer to following tables and plots

Test Mode: Transmitting

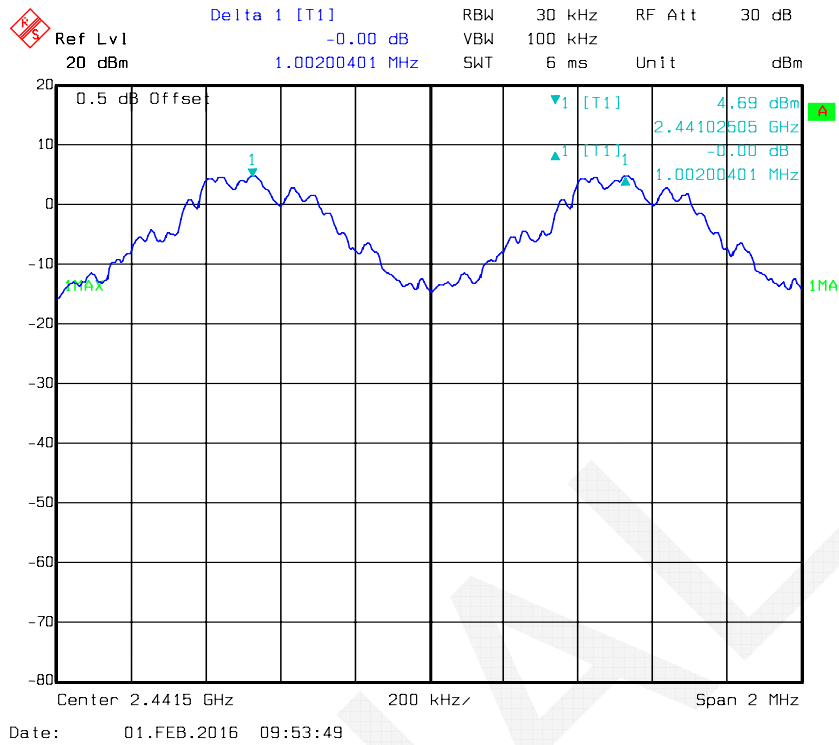
Mode	Channel	Frequency	Channel Separation	Limit	Result
		MHz	MHz	MHz	
BDR (GFSK)	Low	2402	1.002	0.687	Compliance
	Adjacent	2403			
	Middle	2441	1.002	0.692	
	Adjacent	2442			
	High	2480	1.002	0.695	
	Adjacent	2479			
EDR ($\pi/4$ -DQPSK)	Low	2402	1.002	0.842	Compliance
	Adjacent	2403			
	Middle	2441	1.002	0.842	
	Adjacent	2442			
	High	2480	1.002	0.842	
	Adjacent	2479			
EDR (8DPSK)	Low	2402	1.002	0.829	Compliance
	Adjacent	2403			
	Middle	2441	1.002	0.825	
	Adjacent	2442			
	High	2480	1.002	0.829	
	Adjacent	2479			

Note: Limit = $(2/3) \times 20\text{dB bandwidth}$

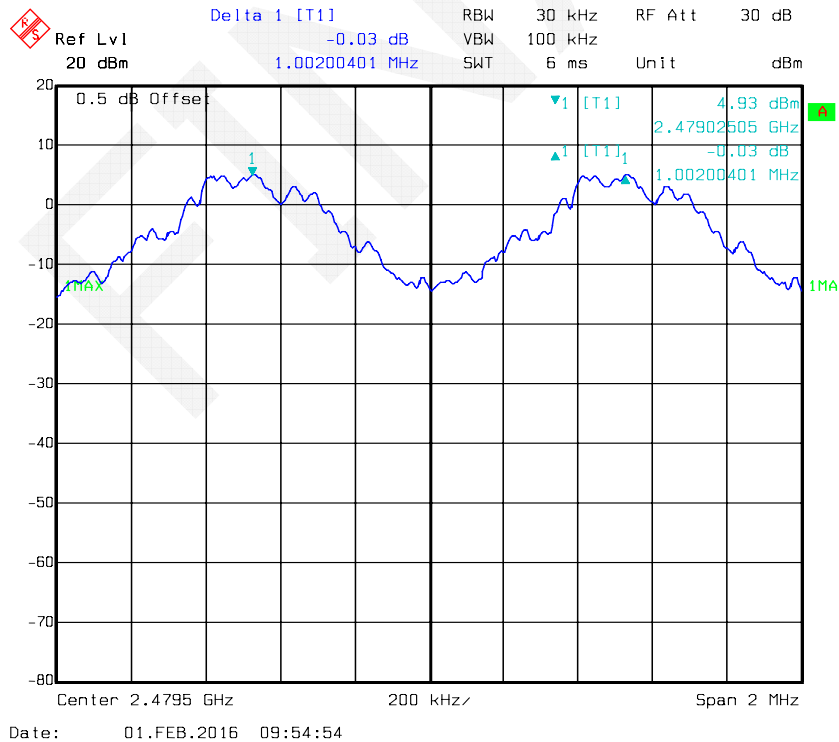
BDR Mode (GFSK):



Middle Channel

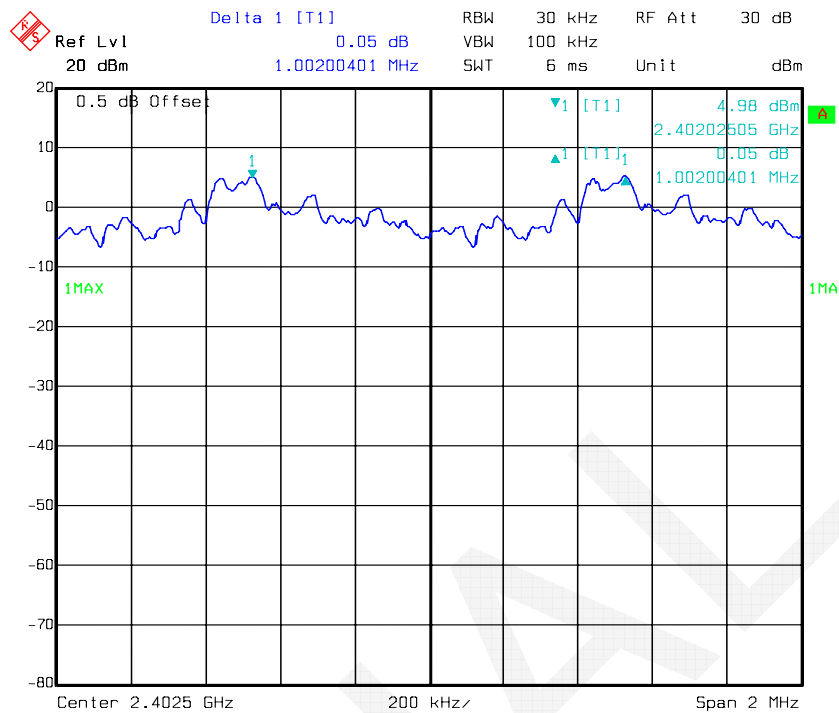


High Channel



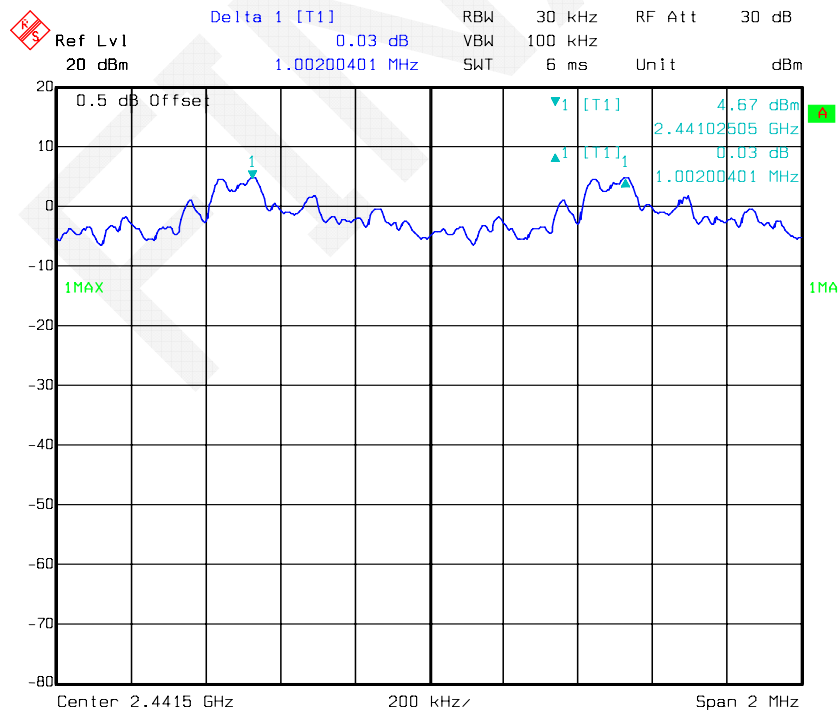
EDR Mode ($\pi/4$ -DQPSK):

Low Channel



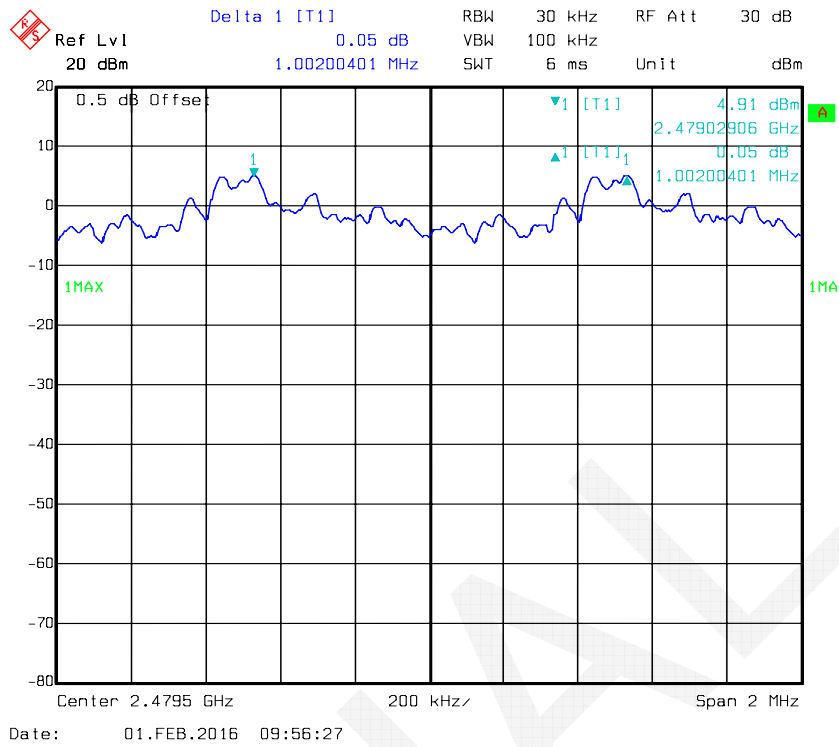
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Middle Channel



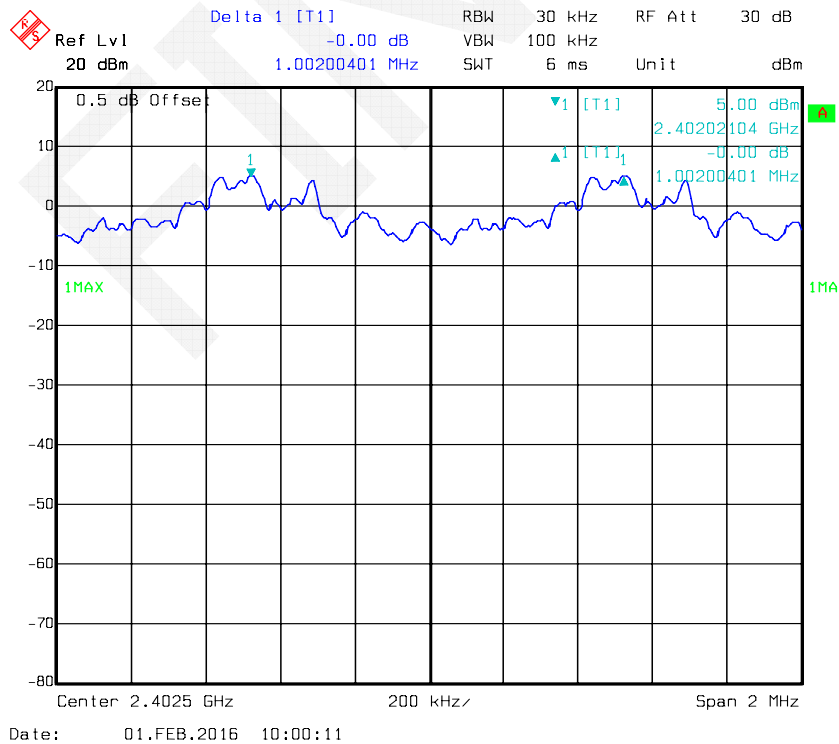
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High Channel

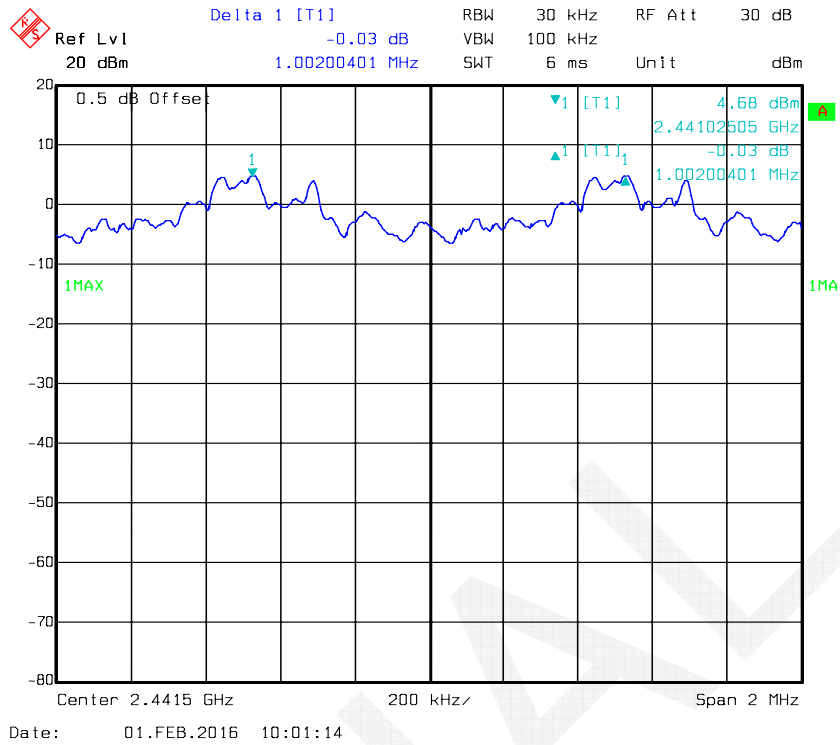


EDR Mode (8-DPSK):

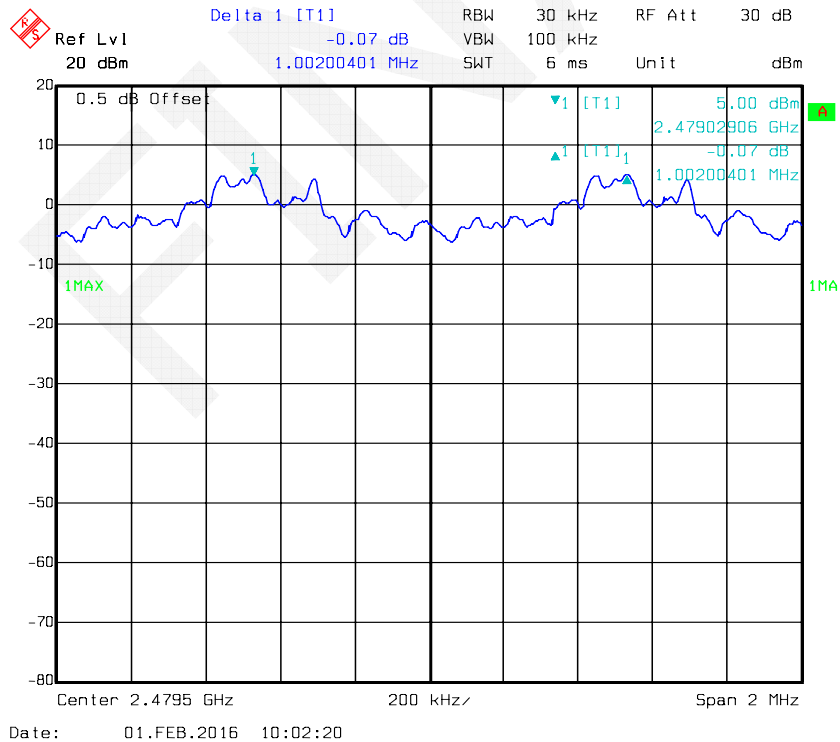
Low Channel



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

1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
2. Position the EUT on the test table without connection to measurement instrument. Turn on the EUT. Then set it to any one convenient frequency within its operating range. Set a reference level on the measuring instrument equal to the highest peak value.
3. Measure the frequency difference of two frequencies that were attenuated 20 dB from the reference level. Record the frequency difference as the emission bandwidth.
4. Repeat above procedures until all frequencies measured were complete.

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSP 38	100478	2015-11-23	2016-11-22

* **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:	22.2°C
Relative Humidity:	51 %
ATM Pressure:	101.7 kPa

* The testing was performed by Lion Xiao on 2016-02-01.

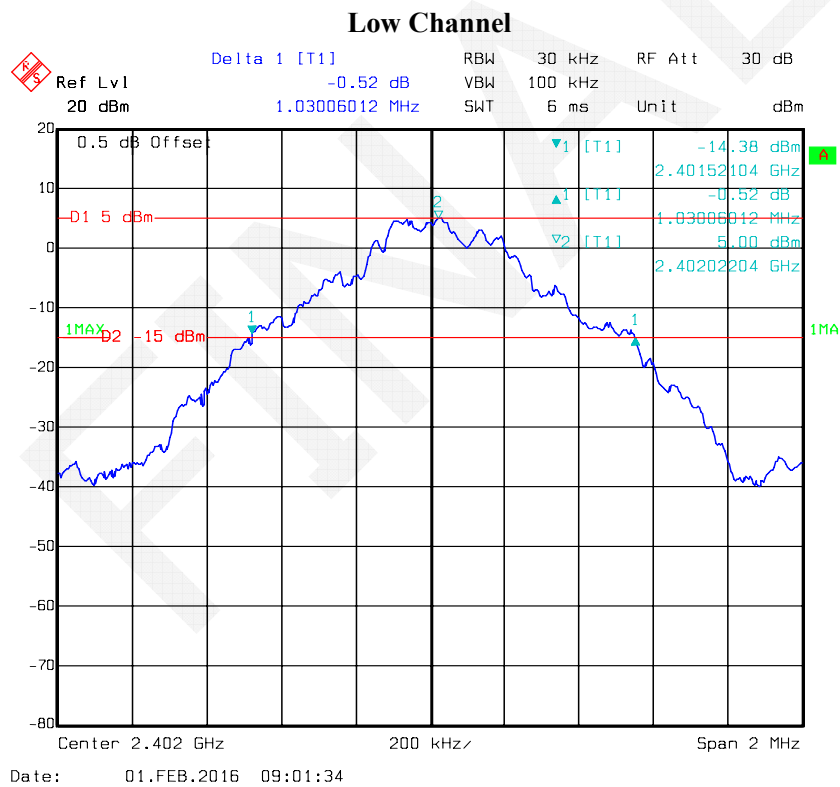
Test Result: Compliance.

Please refer to following tables and plots

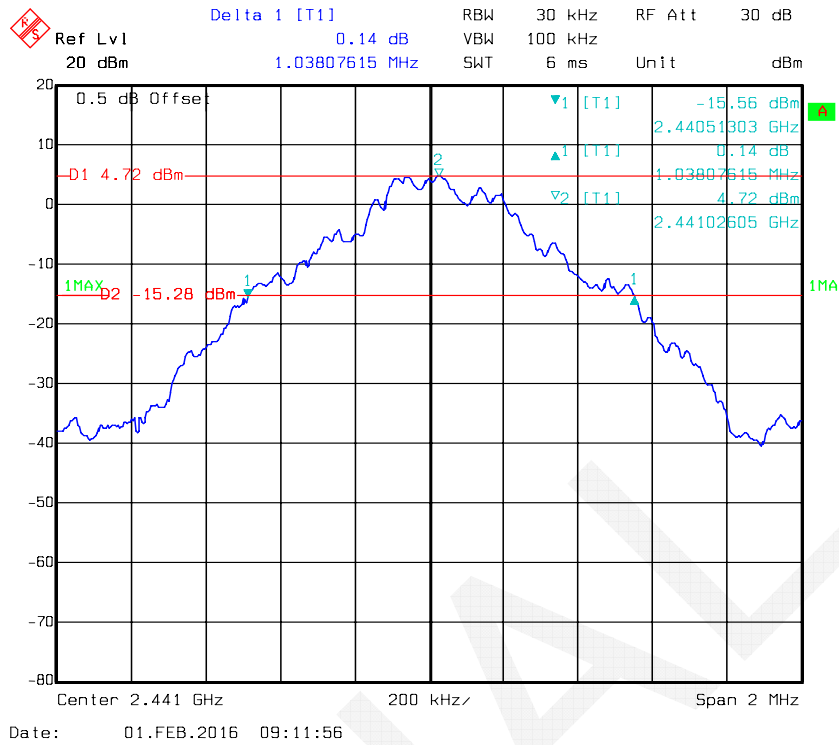
Test Mode: Transmitting

Mode	Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
BDR Mode (GFSK)	Low	2402	1.030
	Middle	2441	1.038
	High	2480	1.042
EDR Mode ($\pi/4$ -DQPSK):	Low	2402	1.263
	Middle	2441	1.263
	High	2480	1.263
EDR Mode (8-DPSK):	Low	2402	1.244
	Middle	2441	1.238
	High	2480	1.244

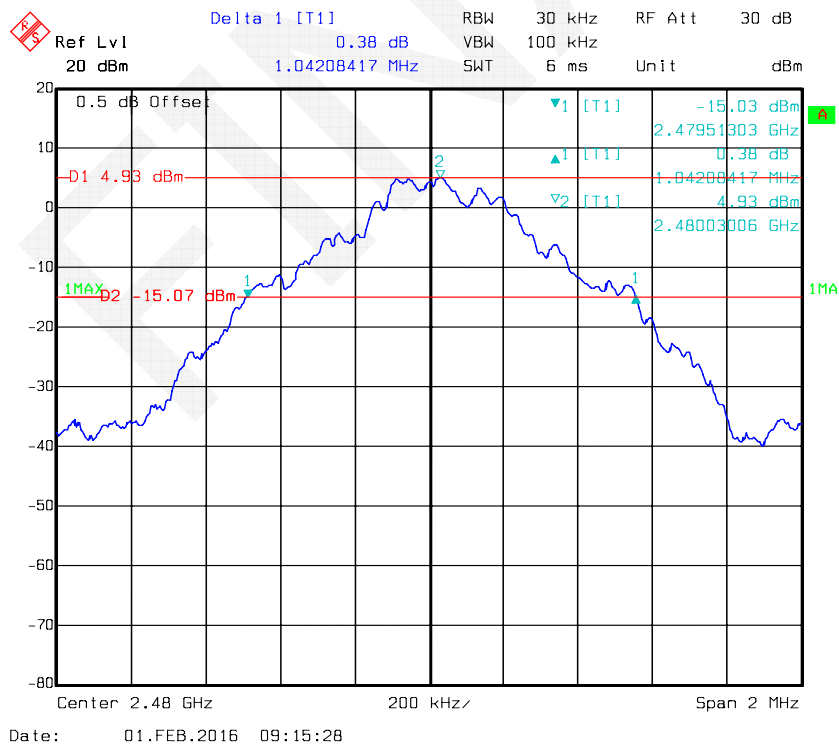
BDR Mode (GFSK):



Middle Channel

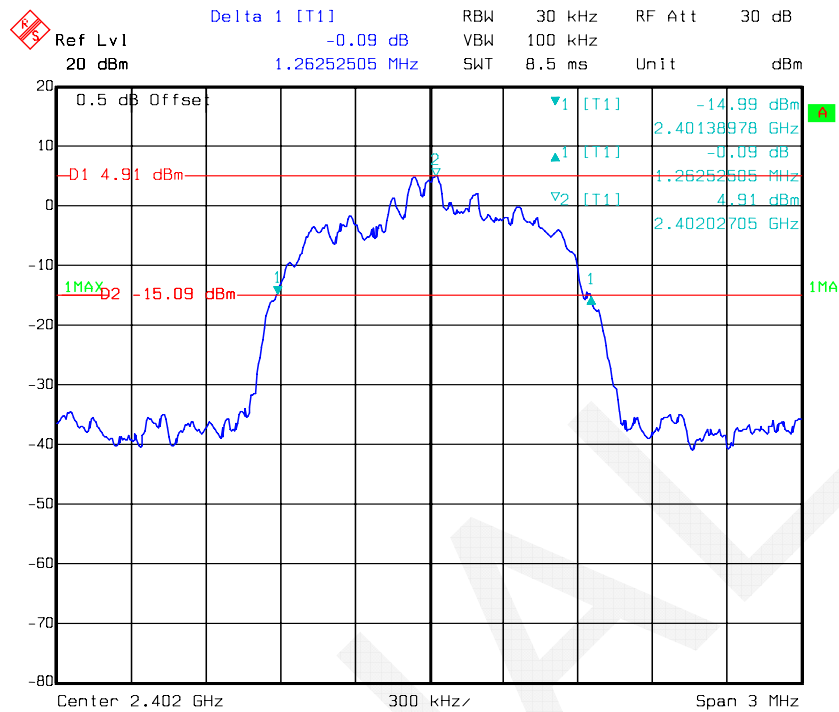


High Channel



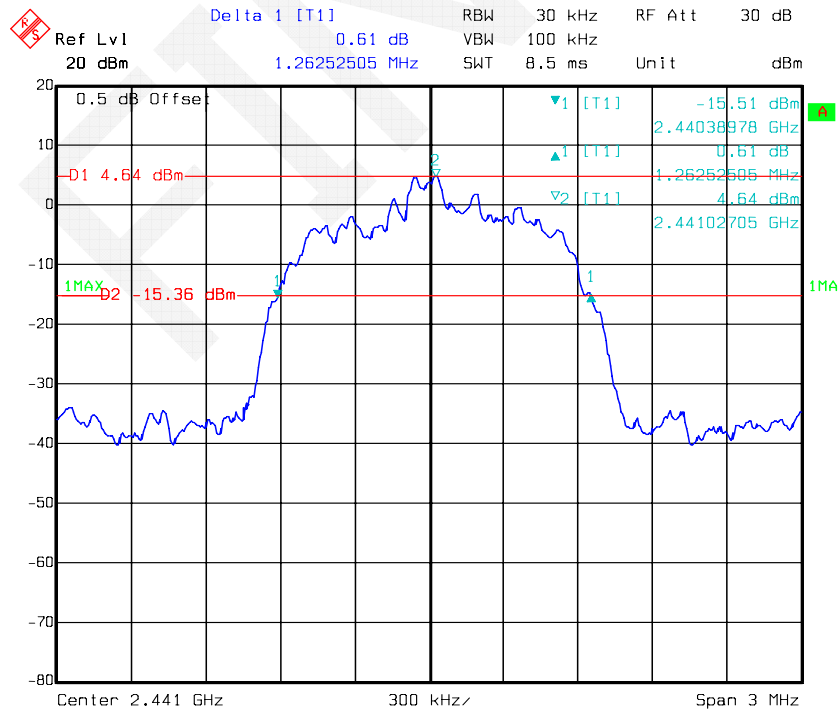
EDR Mode ($\pi/4$ -DQPSK):

Low Channel



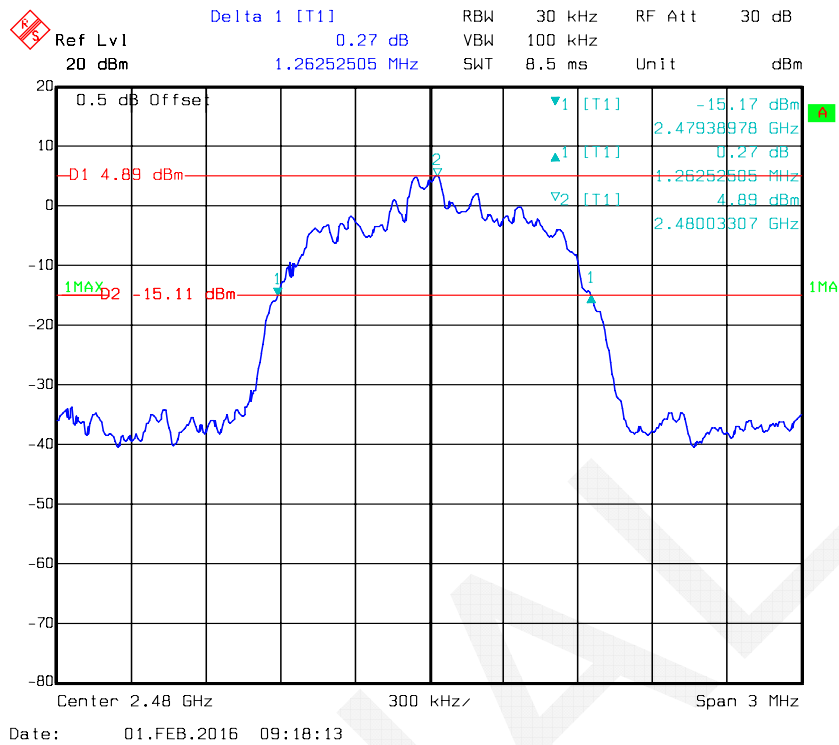
Date: 01.FEB.2016 09:22:56

Middle Channel



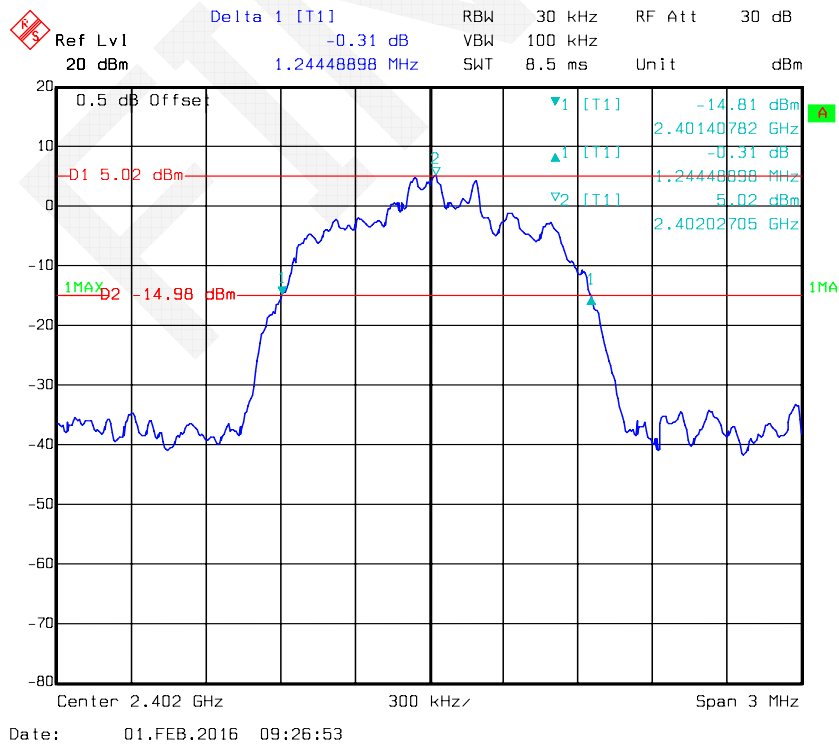
Date: 01.FEB.2016 09:20:46

High Channel

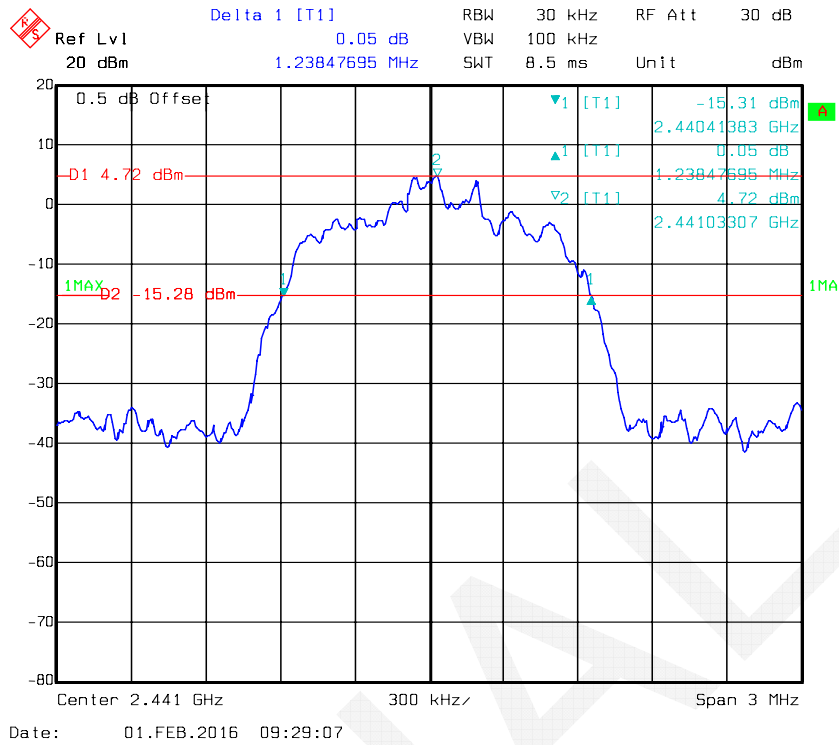


EDR Mode (8-DPSK):

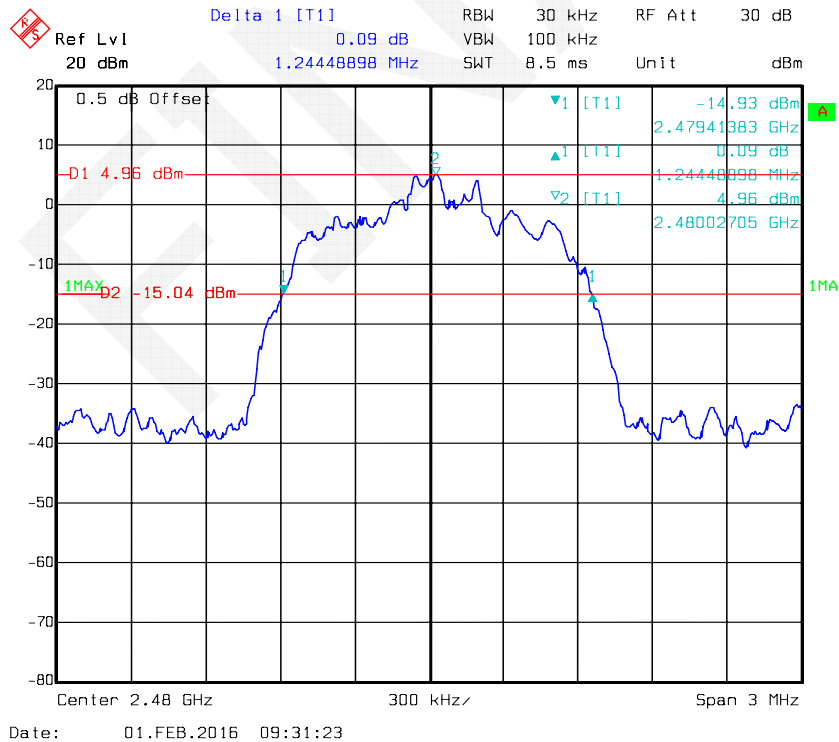
Low Channel



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

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	2015-11-23	2016-11-22

* **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:	22.2°C
Relative Humidity:	51 %
ATM Pressure:	101.7kPa

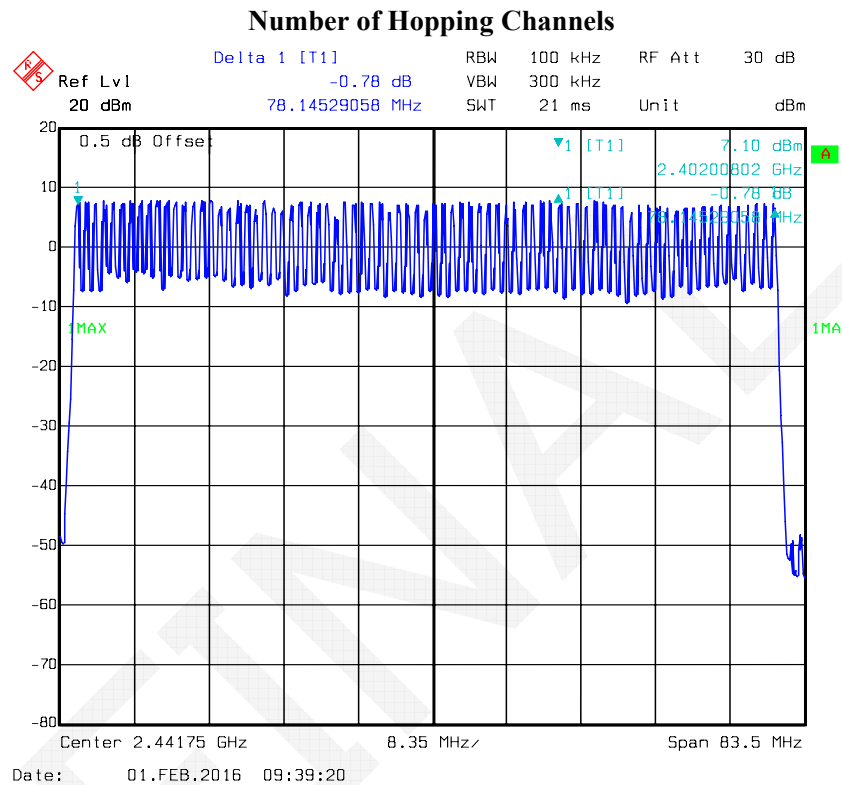
* The testing was performed by Lion Xiao on 2016-02-01.

Test Result: Compliance.

Please refer to following tables and plots

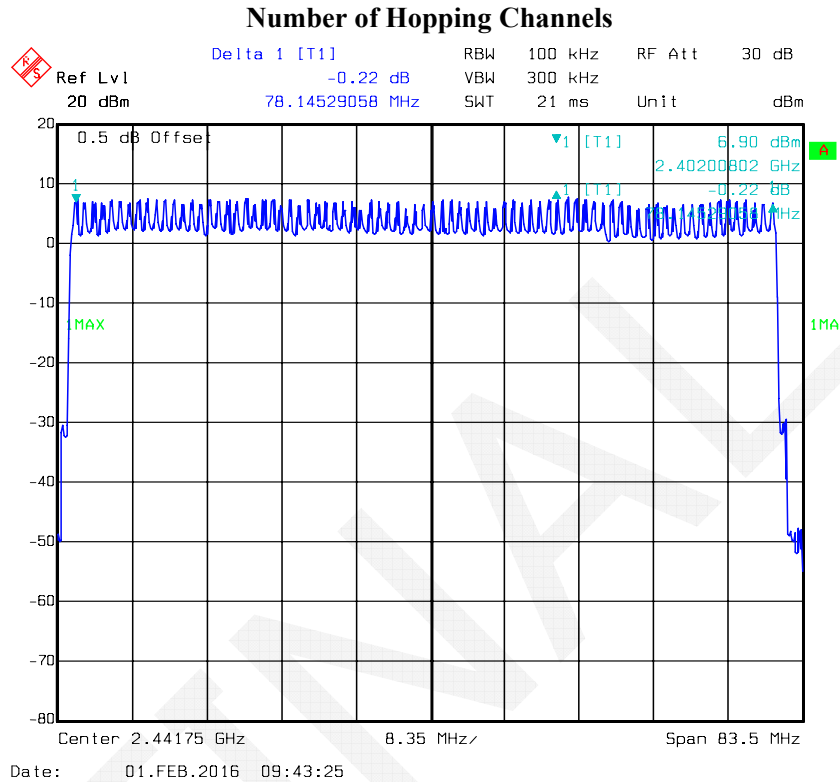
BDR Mode (GFSK):

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



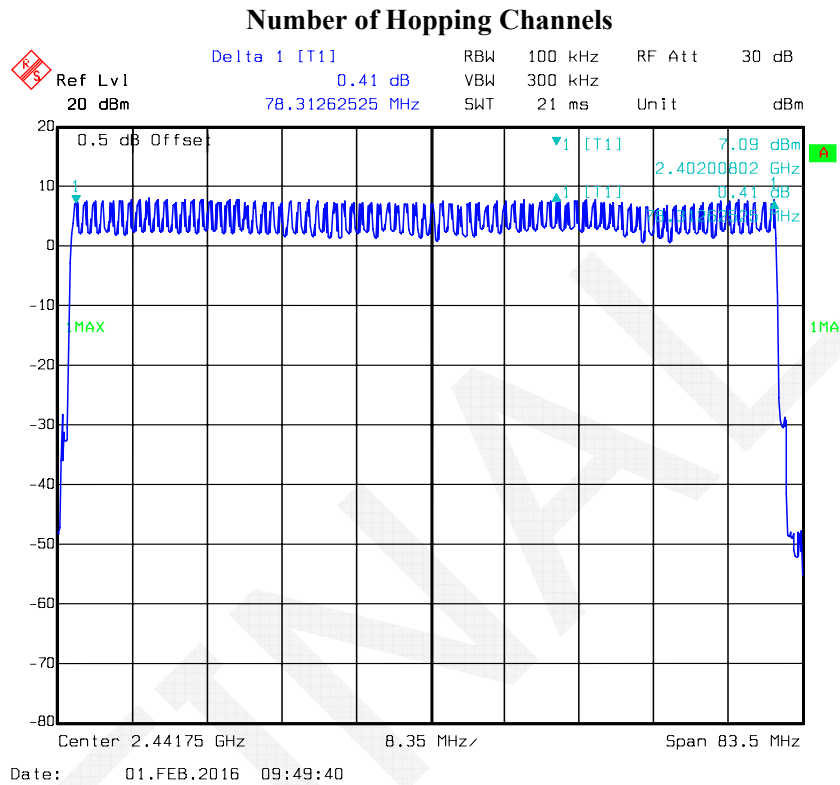
EDR Mode ($\pi/4$ -DQPSK):

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



EDR Mode (8-DPSK):

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



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 * 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	2015-11-23	2016-11-22

* **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:	22.2°C
Relative Humidity:	51 %
ATM Pressure:	101.7 kPa

* The testing was performed by Lion Xiao on 2016-02-01.

Test Result: Compliance.

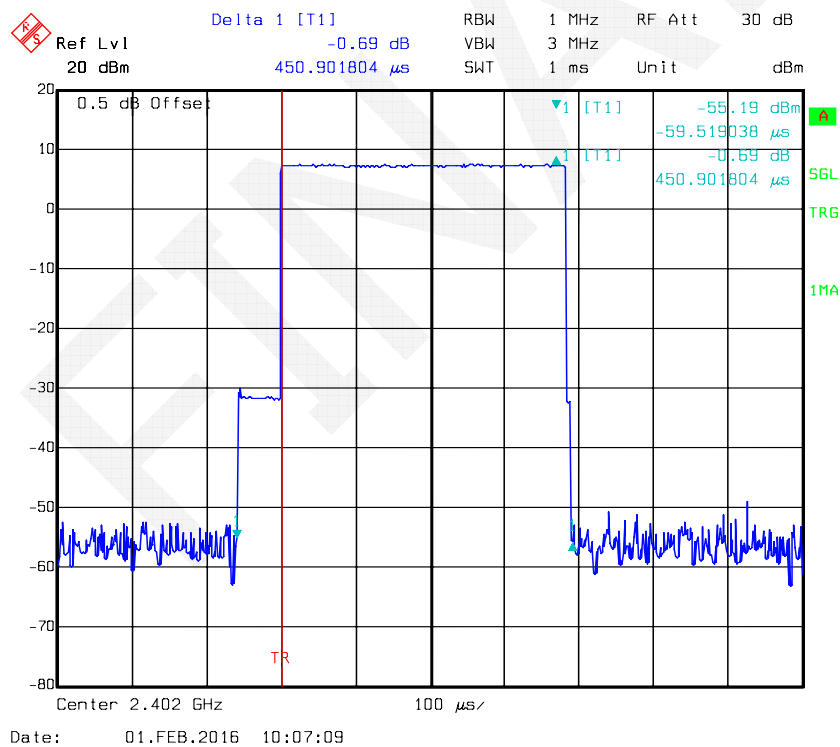
Please refer to following tables and plots

Test Mode: Transmitting

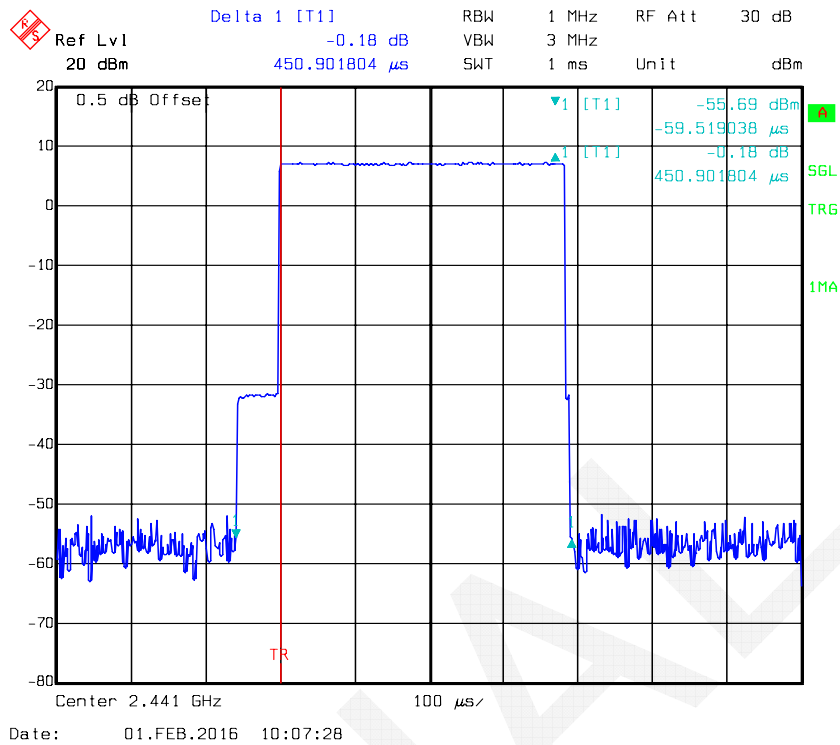
BDR Mode (GFSK):

Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
DH1	Low	0.451	0.144	0.4	Compliance
	Middle	0.451	0.144	0.4	Compliance
	High	0.451	0.144	0.4	Compliance
	Note: Dwell time=Pulse time (ms) $\times$ (1600/2/79) $\times$ 31.6 s				
DH3	Low	1.719	0.275	0.4	Compliance
	Middle	1.719	0.275	0.4	Compliance
	High	1.719	0.275	0.4	Compliance
	Note: Dwell time=Pulse time (ms) $\times$ (1600/4/79) $\times$ 31.6 s				
DH5	Low	2.972	0.317	0.4	Compliance
	Middle	2.972	0.317	0.4	Compliance
	High	2.972	0.317	0.4	Compliance
	Note: Dwell time=Pulse time (ms) $\times$ (1600/6/79) $\times$ 31.6 s				

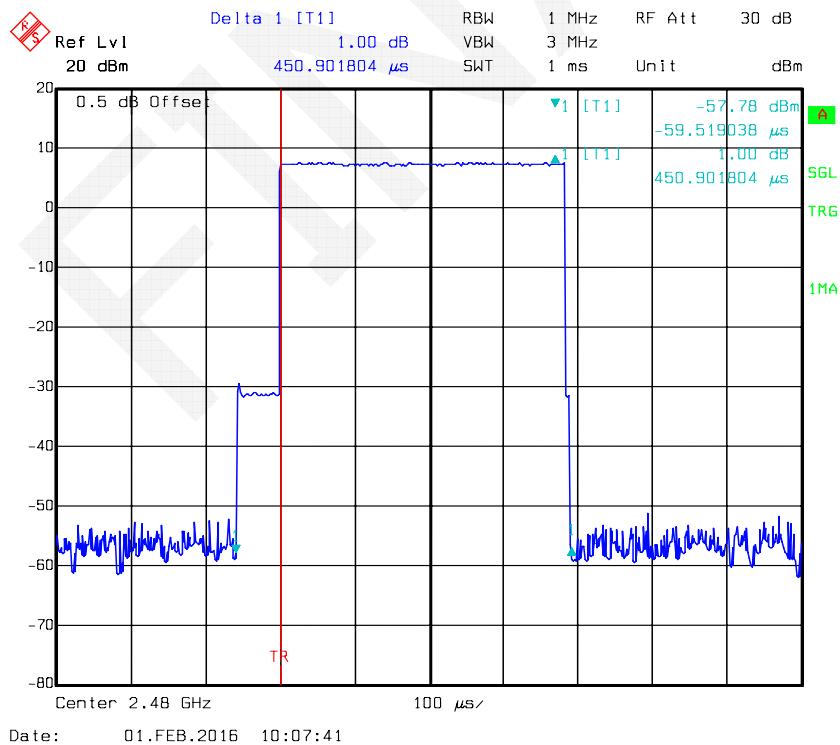
DH1: Low Channel



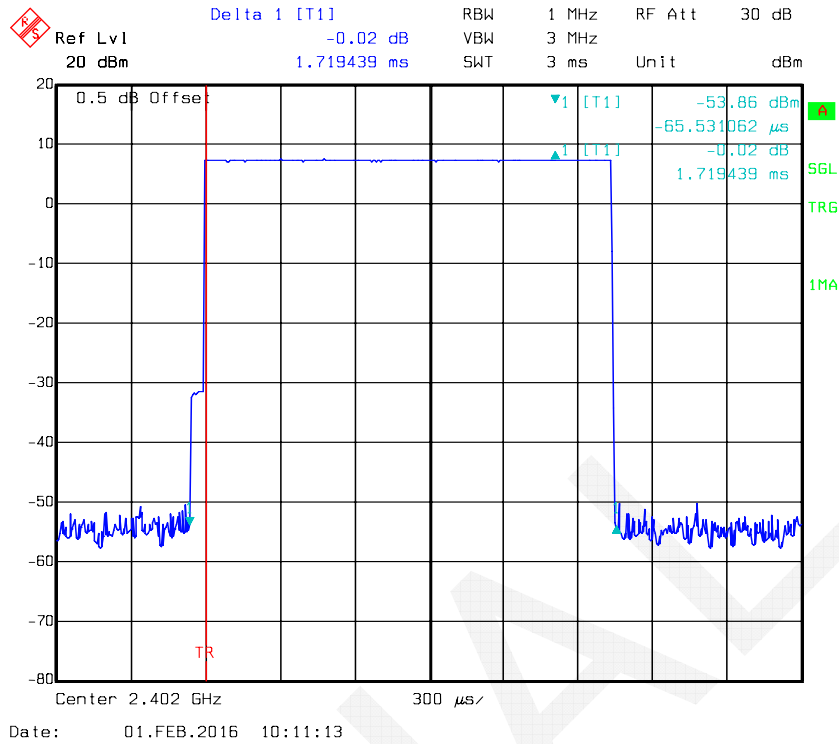
DH1: Middle Channel



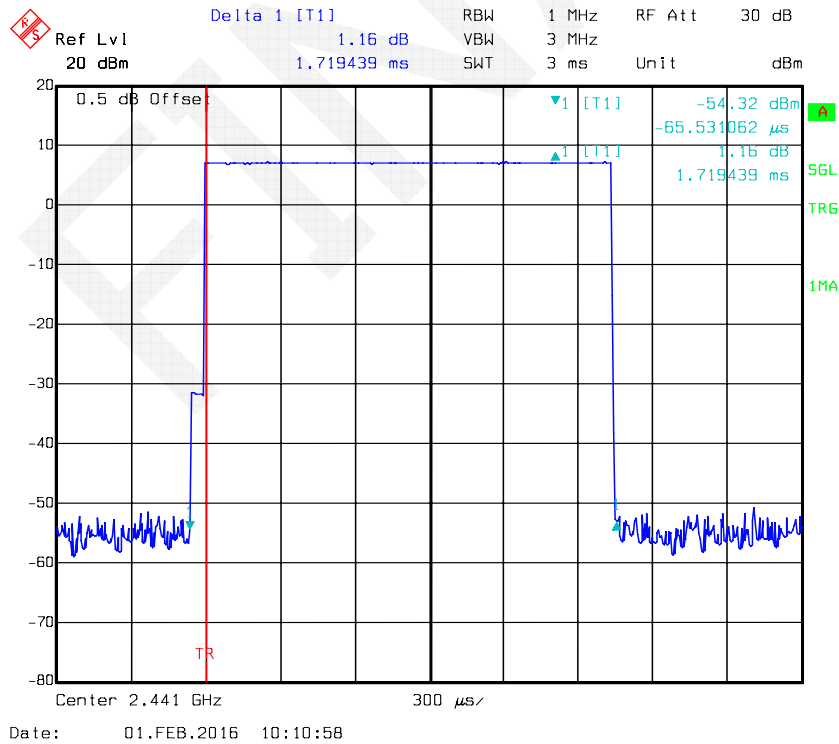
DH1: High Channel



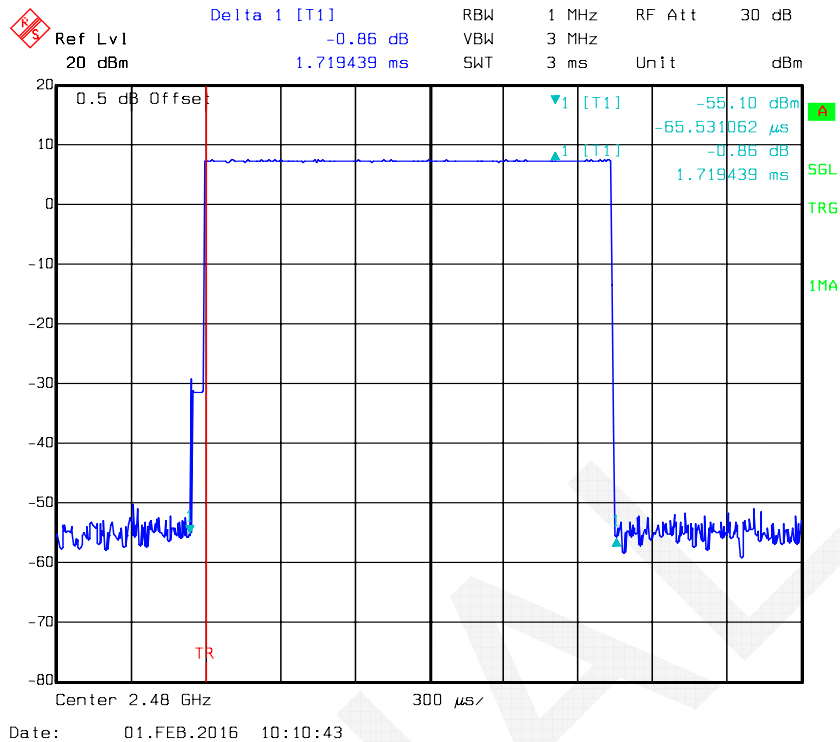
DH3: Low Channel



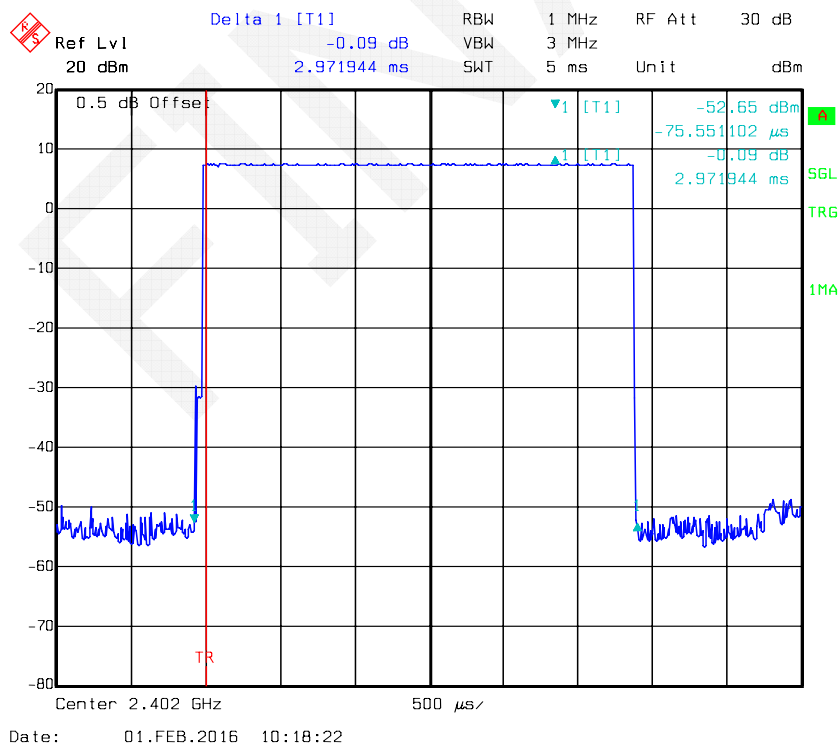
DH3: Middle Channel



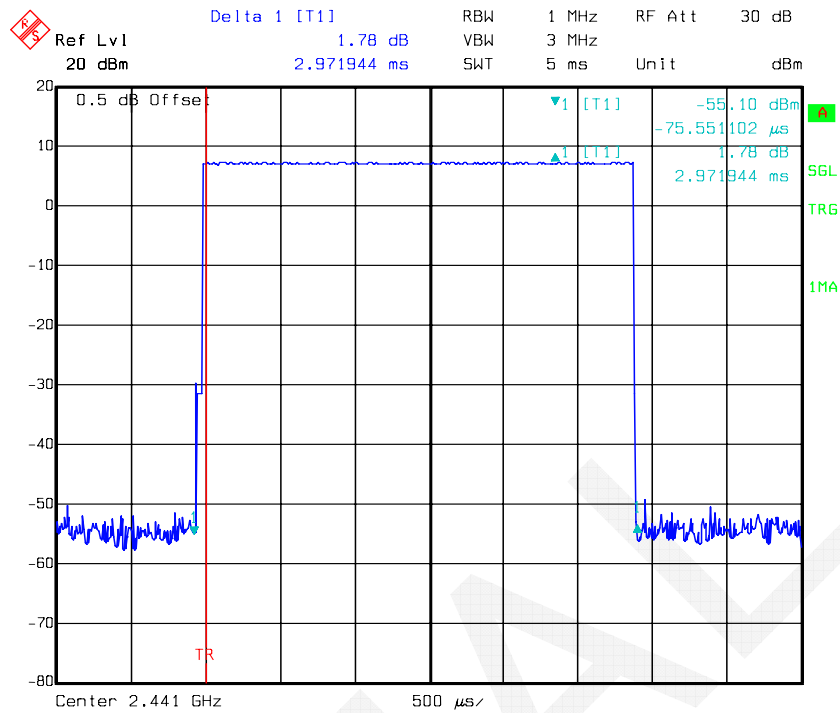
DH3: High Channel



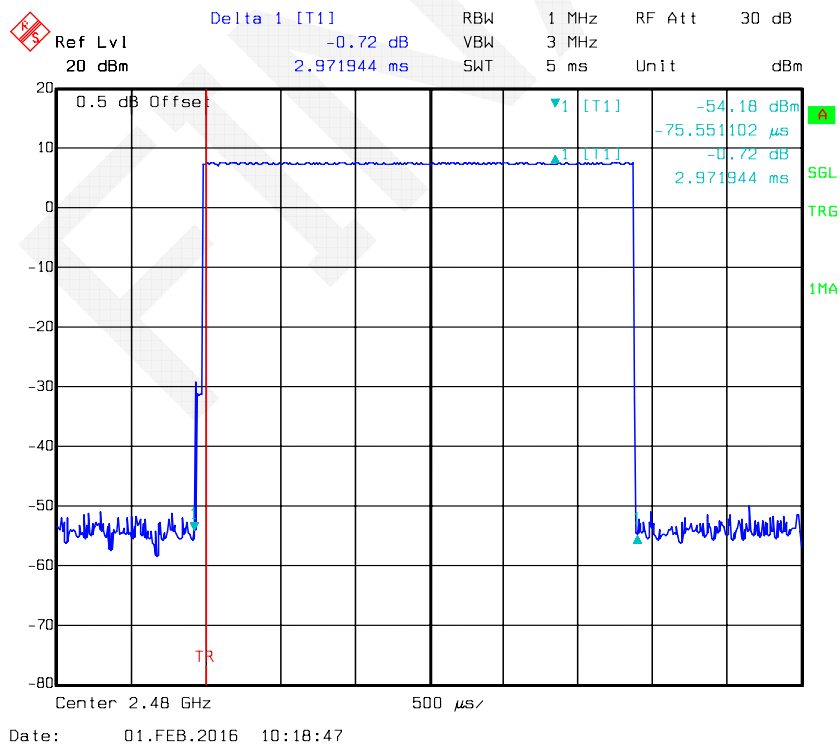
DH5: Low Channel



DH5: Middle Channel



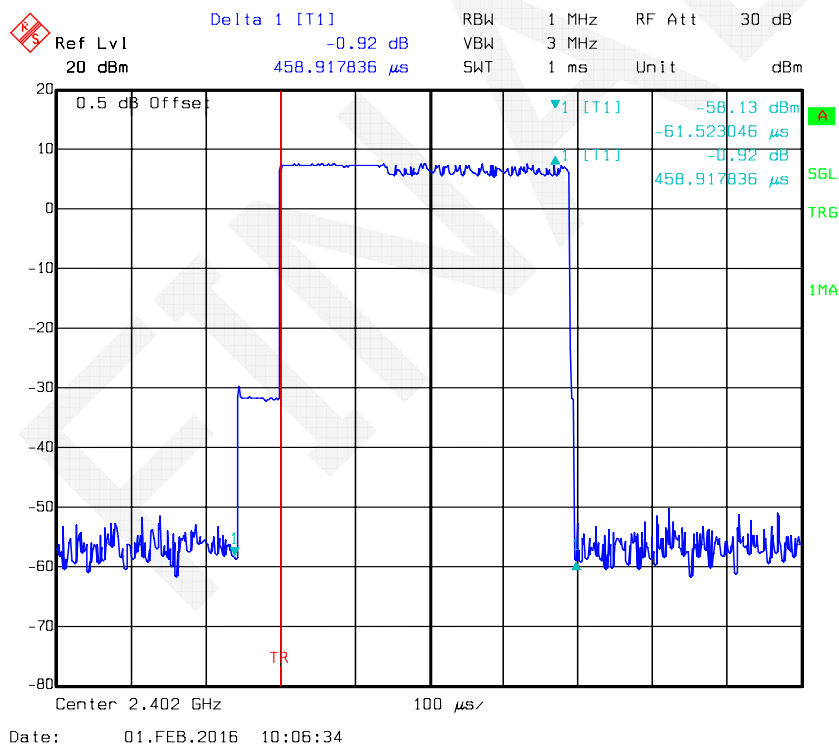
DH5: High Channel



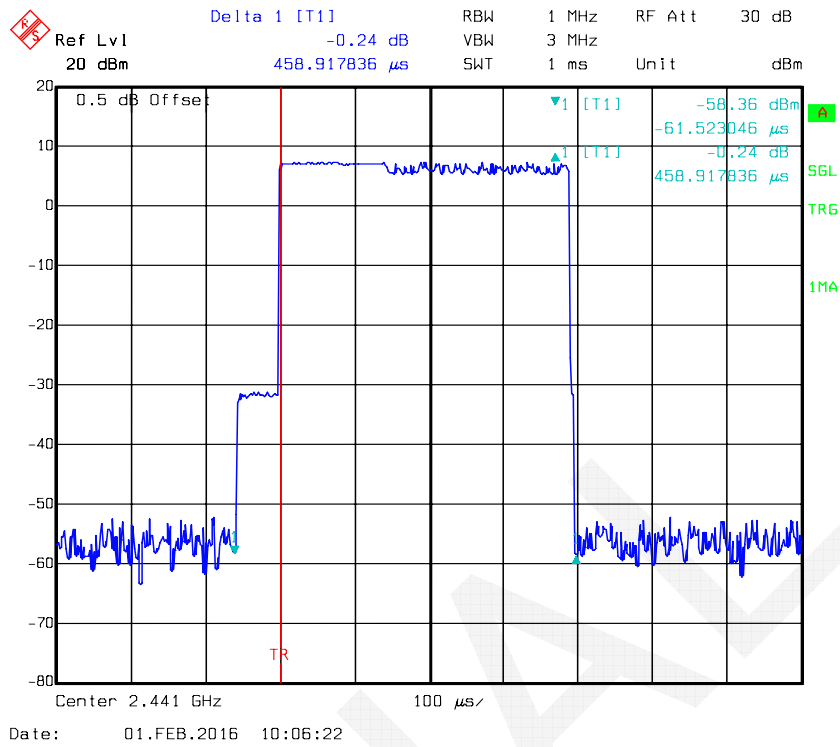
EDR Mode ($\pi/4$ -DQPSK):

Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
2DH1	Low	0.459	0.147	0.4	Compliance
	Middle	0.459	0.147	0.4	Compliance
	High	0.459	0.147	0.4	Compliance
	Note: Dwell time=Pulse time (ms) $\times$ (1600/2/79) $\times$ 31.6 s				
2DH3	Low	1.719	0.275	0.4	Compliance
	Middle	1.719	0.275	0.4	Compliance
	High	1.719	0.275	0.4	Compliance
	Note: Dwell time=Pulse time (ms) $\times$ (1600/4/79) $\times$ 31.6 s				
2DH5	Low	2.972	0.317	0.4	Compliance
	Middle	2.972	0.317	0.4	Compliance
	High	2.972	0.317	0.4	Compliance
	Note: Dwell time=Pulse time (ms) $\times$ (1600/6/79) $\times$ 31.6 s				

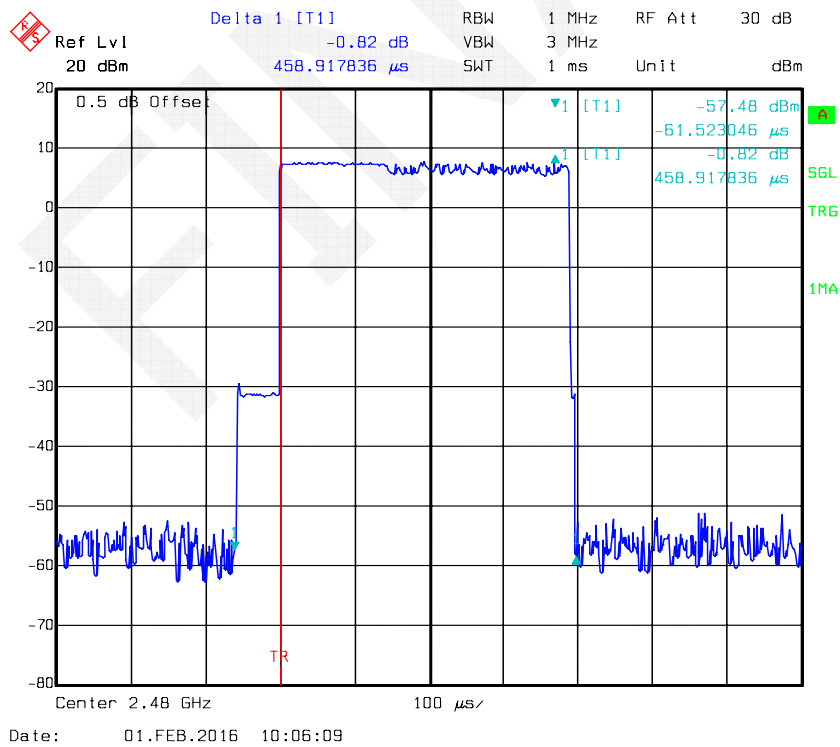
2DH1: Low Channel



2DH1: Middle Channel



2DH1: High Channel



Ref Lvl 20 dBm

Delta 1 [T1] 0.95 dB 1.719439 ms

RBW 1 MHz RF Att 30 dB

VBW 3 MHz

SWT 3 ms Unit dBm

0.5 dB Offse

TR

Center 2.402 GHz

300 μ s

54.80 dBm

65.53 μ s

0.95 dB

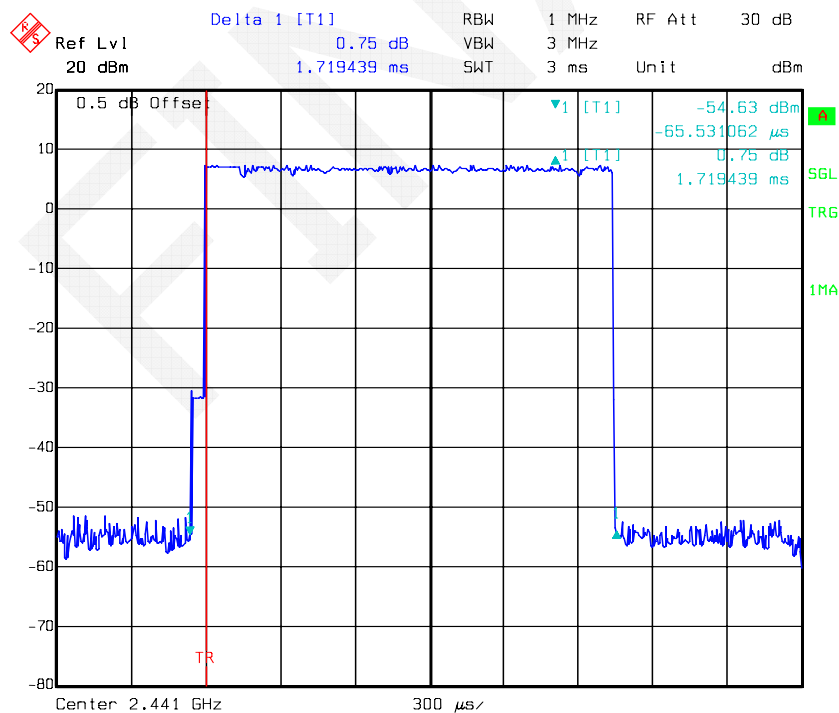
1.719439 ms

SGL

TRG

1MA

2DH3: Middle Channel



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Ref Lvl 20 dBm Delta 1 [T1] -0.13 dB RBW 1 MHz RF Att 30 dB
 0.5 dB Offse 1.719439 ms VBW 3 MHz SWT 3 ms Unit dBm

0.5 dB Offse TR

Center 2.48 GHz 300 μs

Delta 1 [T1] -55.49 dBm -65.53 dBm -0.13 dB 1.719439 ms

SGL TRG 1MA

Date: 01.FEB.2016 10:12:20

[illegible]

Ref Lvl 20 dBm

Delta 1 [T1] -0.10 dB

RBW 1 MHz

VBW 3 MHz

SWT 5 ms

RF Att 30 dB

Unit dBm

0.5 dB Offse

TR

Center 2.441 GHz

500 μ s/div

53.19 dBm

-75.55102 μ s

-0.10 dB

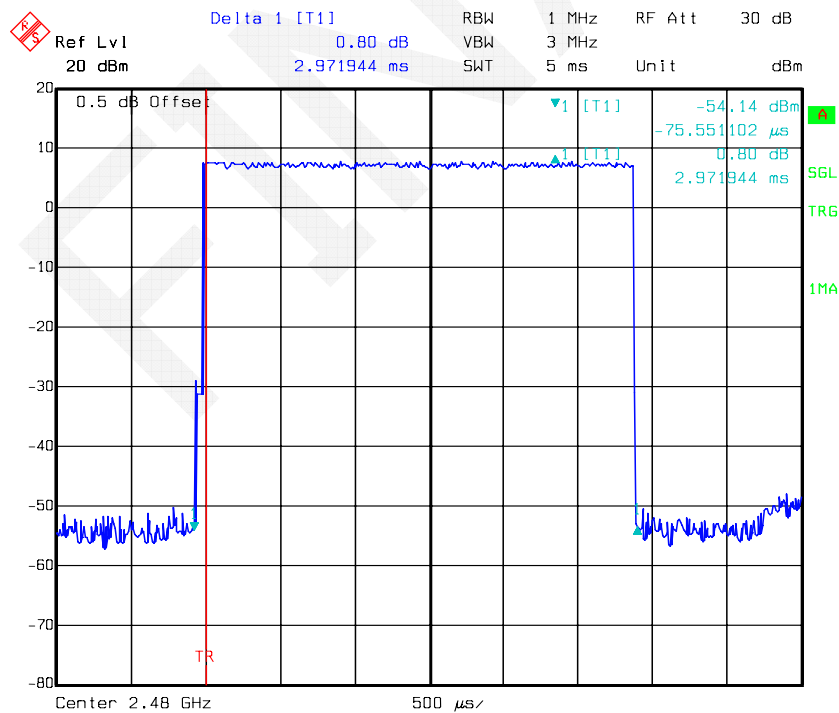
2.971944 ms

SGL

TRG

1MA

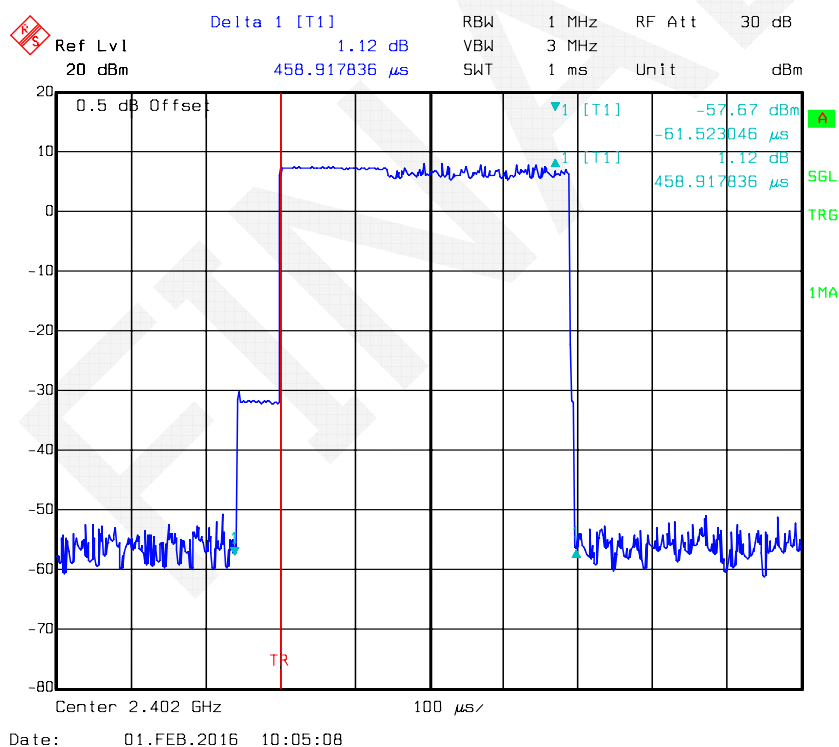
2DH5: High Channel



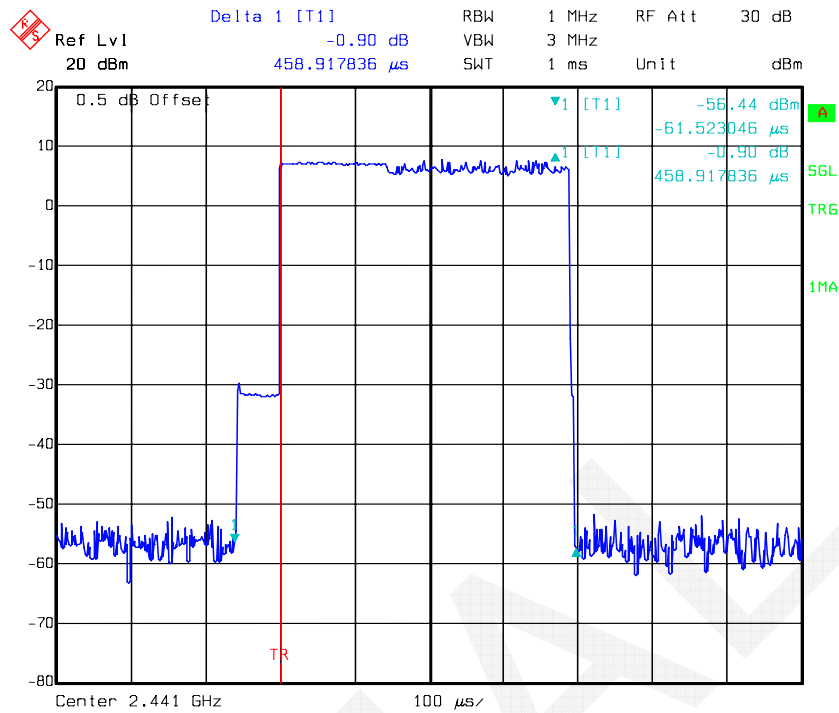
Page 54 of 70

EDR Mode (8-DPSK):

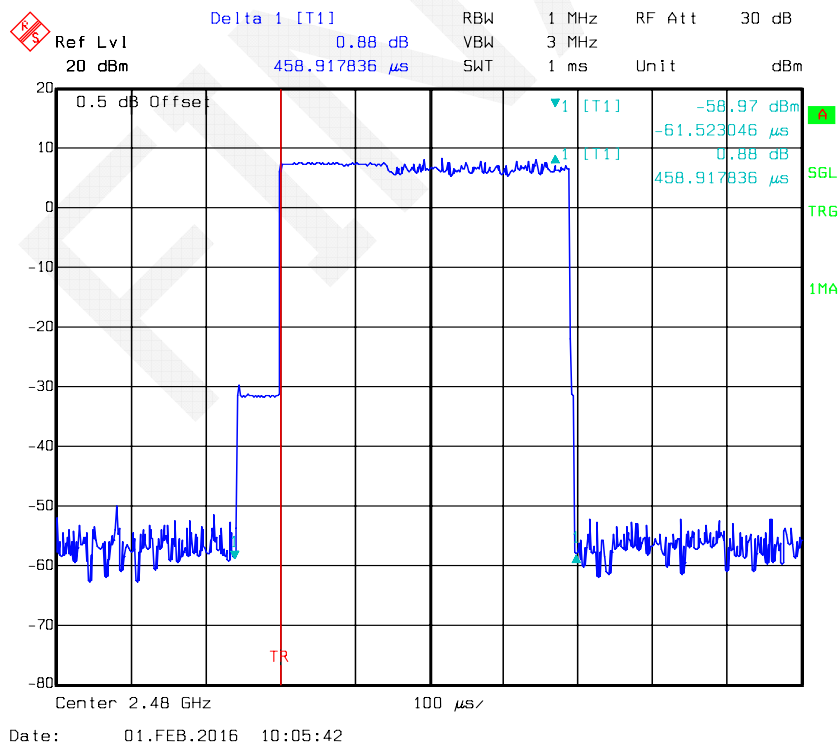
Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
3DH1	Low	0.459	0.147	0.4	Compliance
	Middle	0.459	0.147	0.4	Compliance
	High	0.459	0.147	0.4	Compliance
	Note: Dwell time=Pulse time (ms) $\times$ (1600/2/79) $\times$ 31.6 s				
3DH3	Low	1.719	0.275	0.4	Compliance
	Middle	1.719	0.275	0.4	Compliance
	High	1.719	0.275	0.4	Compliance
	Note: Dwell time=Pulse time (ms) $\times$ (1600/4/79) $\times$ 31.6 s				
3DH5	Low	2.972	0.317	0.4	Compliance
	Middle	2.972	0.317	0.4	Compliance
	High	2.972	0.317	0.4	Compliance
	Note: Dwell time=Pulse time (ms) $\times$ (1600/6/79) $\times$ 31.6 s				

3DH1: Low Channel

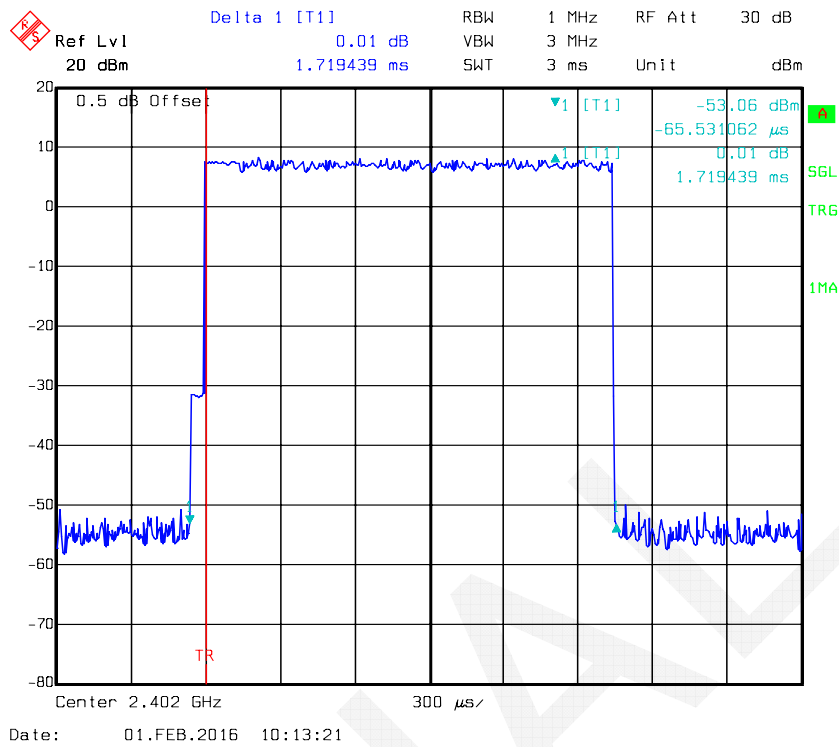
3DH1: Middle Channel



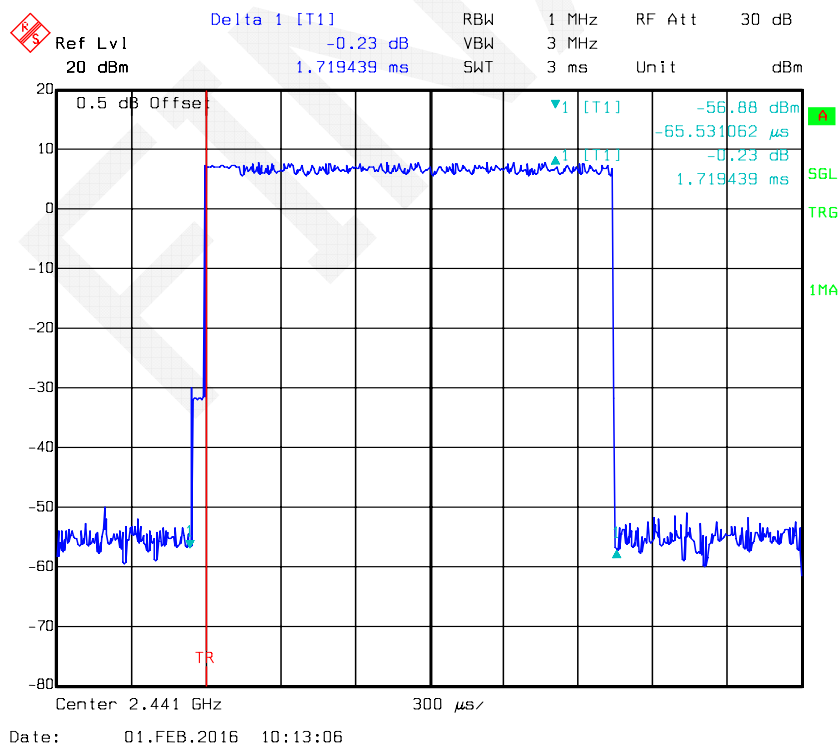
3DH1: High Channel

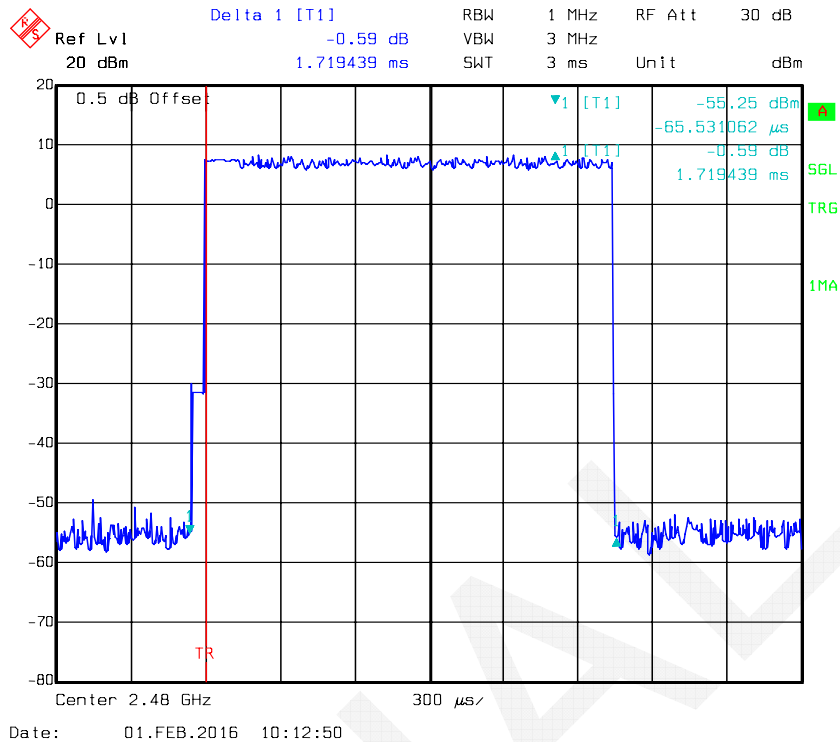
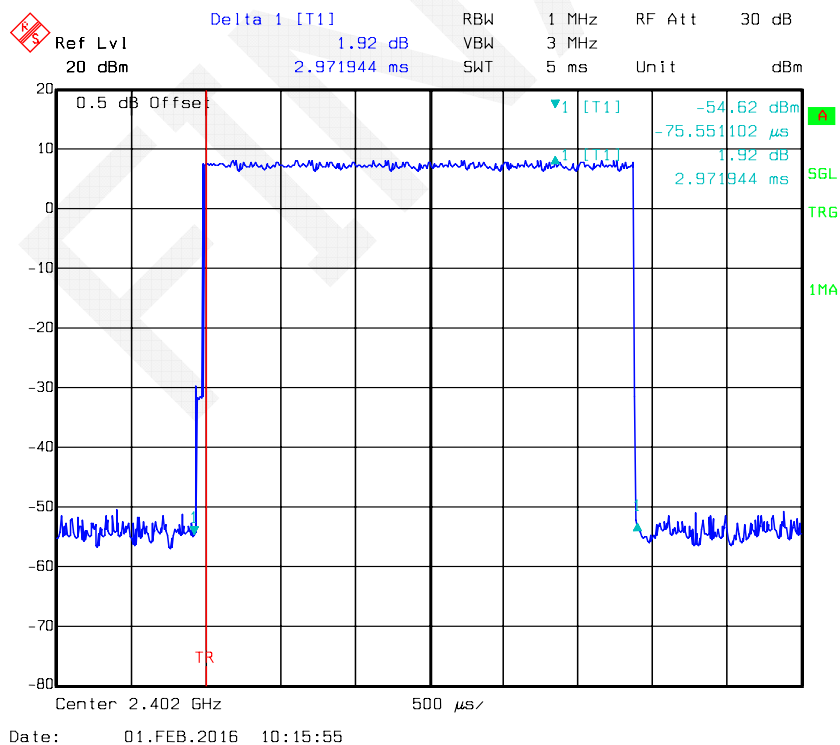


3DH3: Low Channel

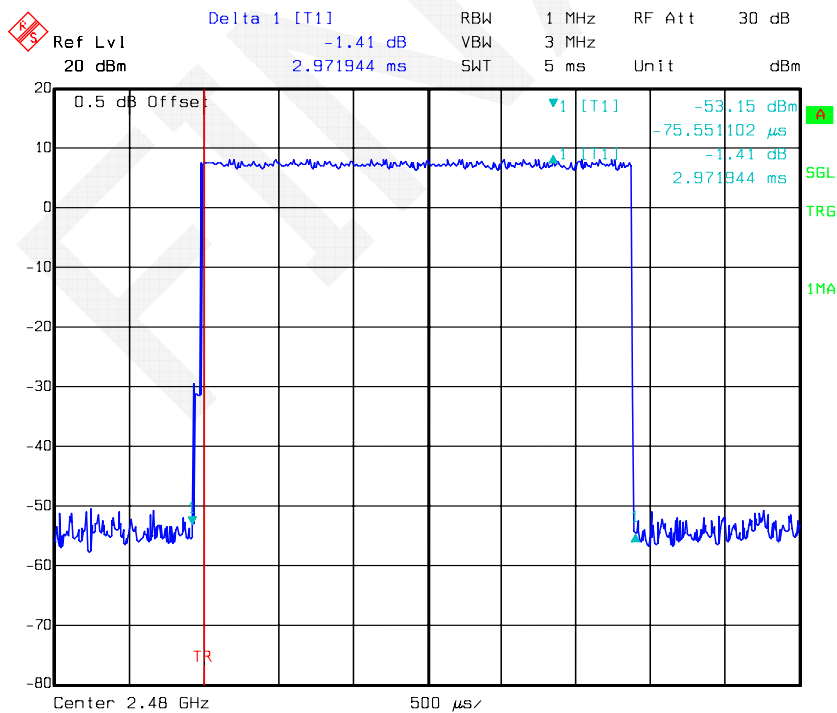


3DH3: Middle Channel



3DH3: High Channel**3DH5: Low Channel**

3DH5: 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

Test Procedure

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 one 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	2015-11-23	2016-11-22

* **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:	22.2 °C
Relative Humidity:	51 %
ATM Pressure:	101.7 kPa

* The testing was performed by Lion Xiao on 2016-02-01.

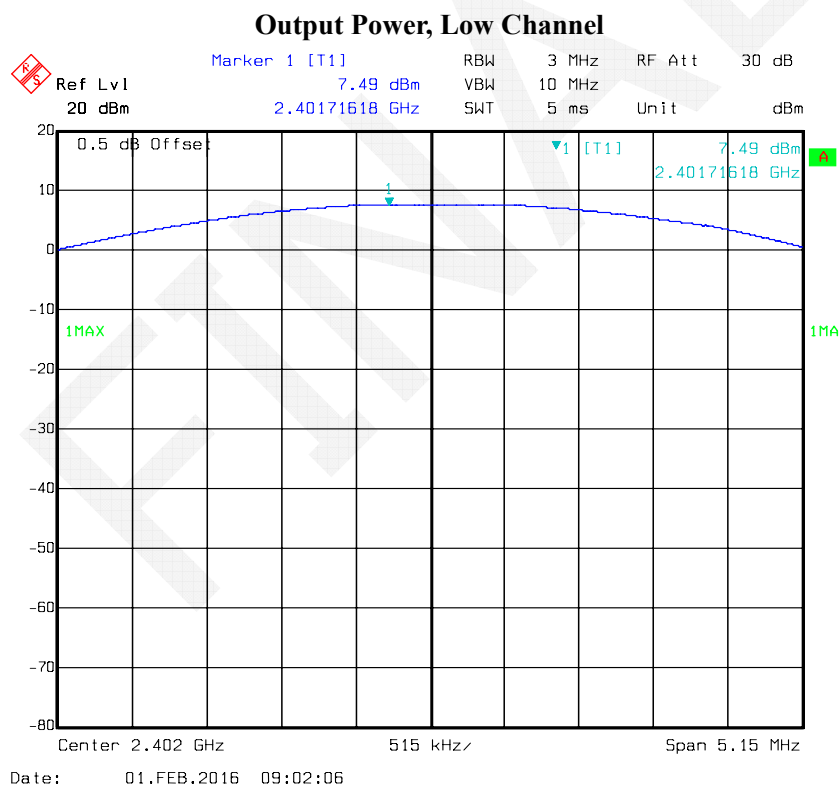
Test Result: Compliance.

Test Mode: Transmitting

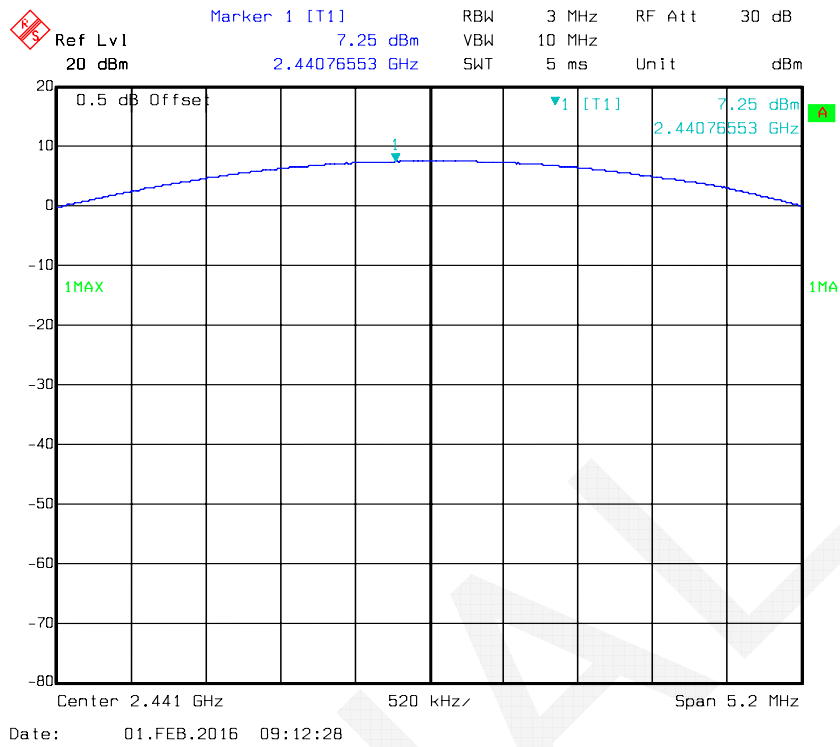
Mode	Channel	Frequency (MHz)	Output power (dBm)	Limit (dBm)
BDR Mode (GFSK)	Low	2402	7.49	30
	Middle	2441	7.25	30
	High	2480	7.49	30
EDR Mode ($\pi/4$ -DQPSK)	Low	2402	8.32	30
	Middle	2441	7.99	30
	High	2480	8.22	30
EDR Mode (8-DPSK)	Low	2402	8.58	30
	Middle	2441	8.45	30
	High	2480	8.80	30

Note: The data above was tested in conducted mode.

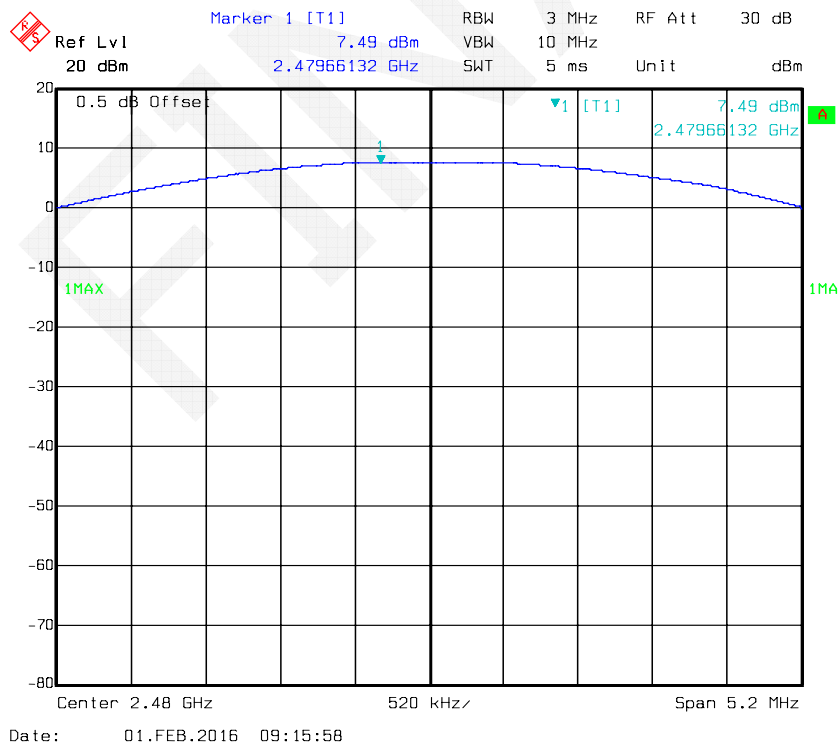
BDR Mode (GFSK):



Output Power, Middle Channel

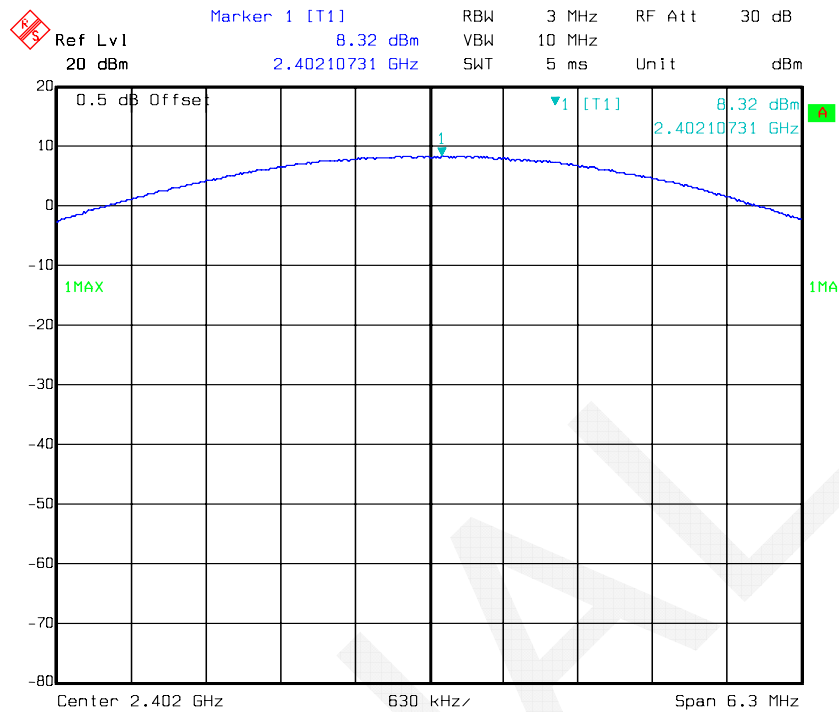


Output Power, High Channel



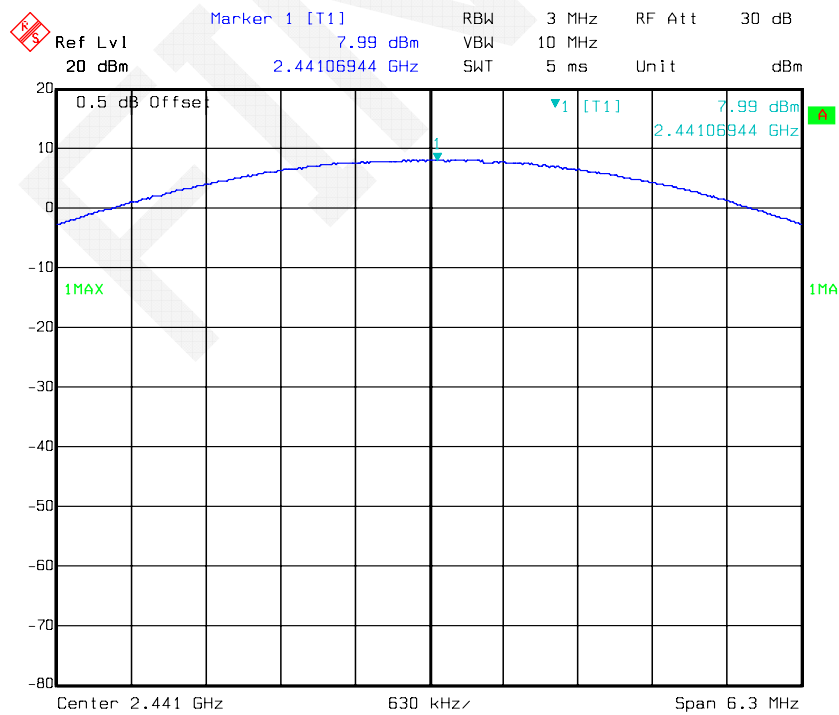
EDR Mode ($\pi/4$ -DQPSK):

Output Power, Low Channel



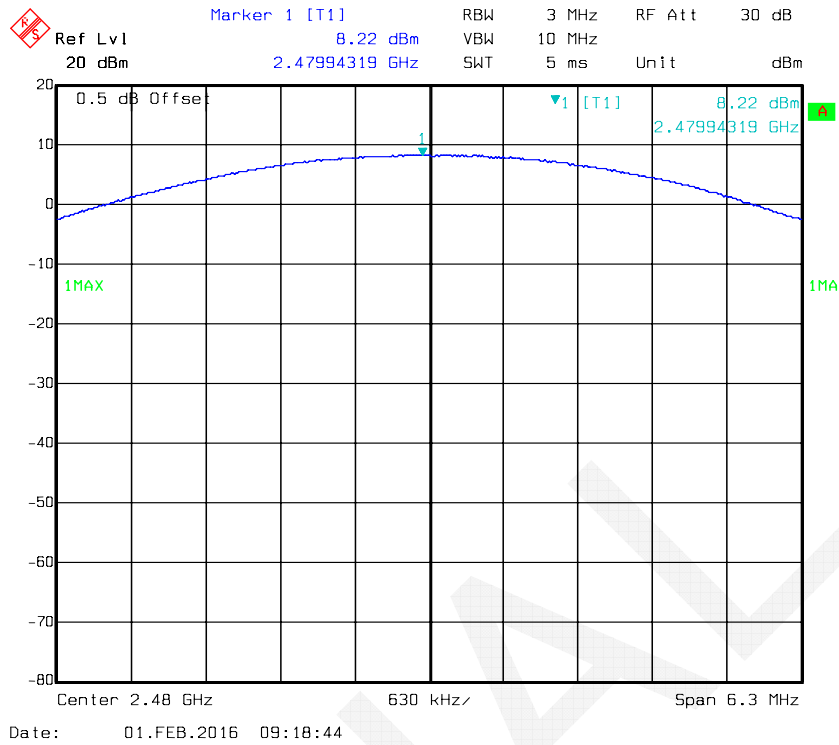
Date: 01.FEB.2016 09:23:26

Output Power, Middle Channel



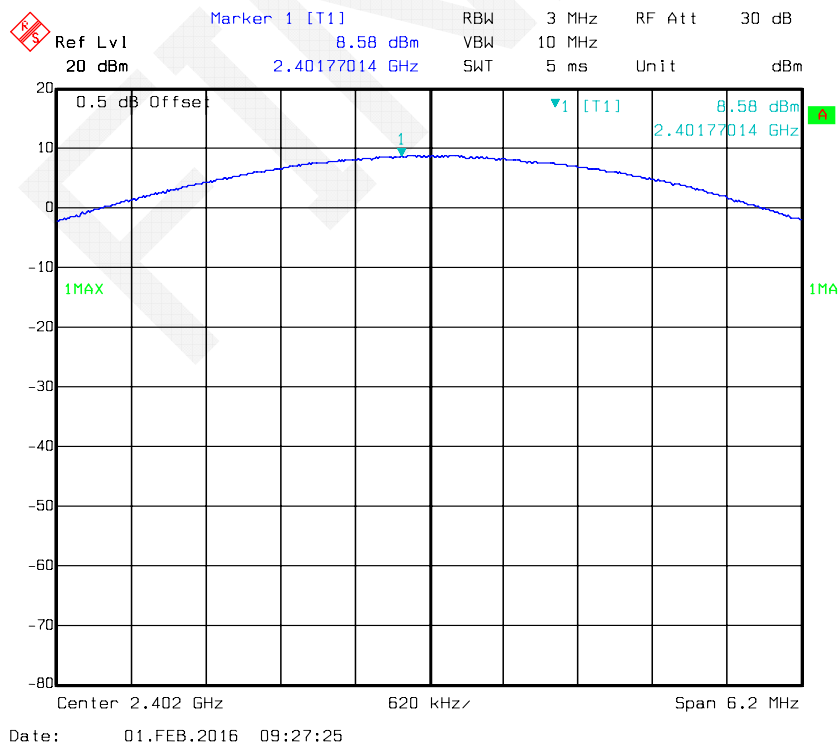
Date: 01.FEB.2016 09:21:17

Output Power, High Channel

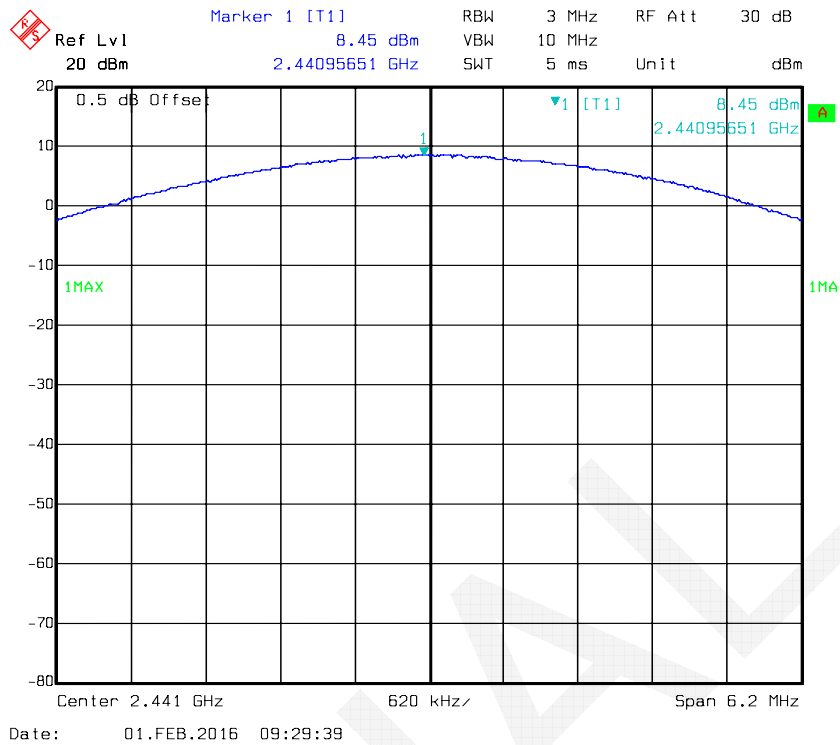


EDR Mode (8-DPSK):

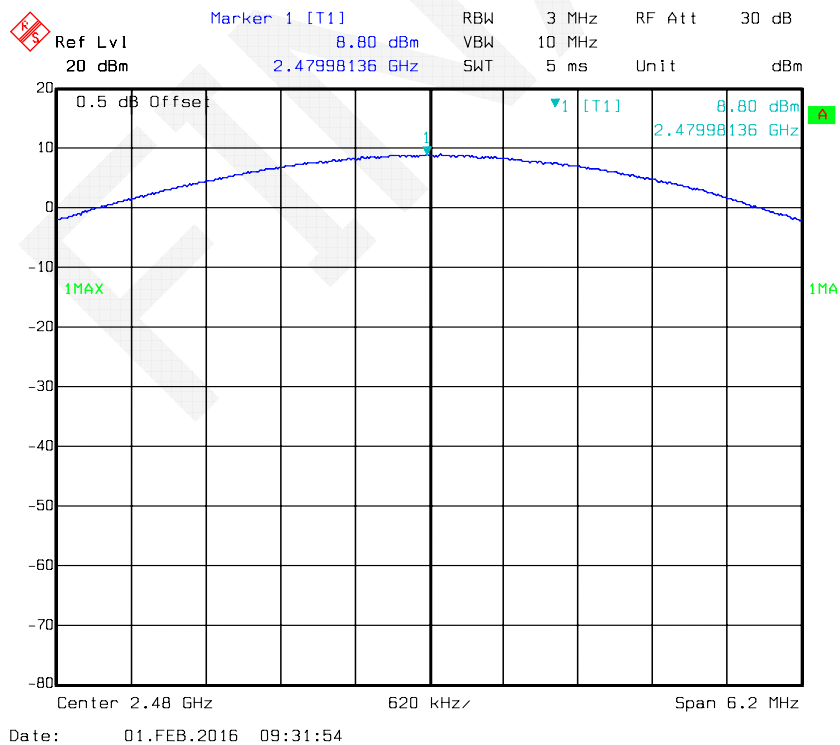
Output Power, Low Channel



Output Power, Middle Channel



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. 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	2015-11-23	2016-11-22

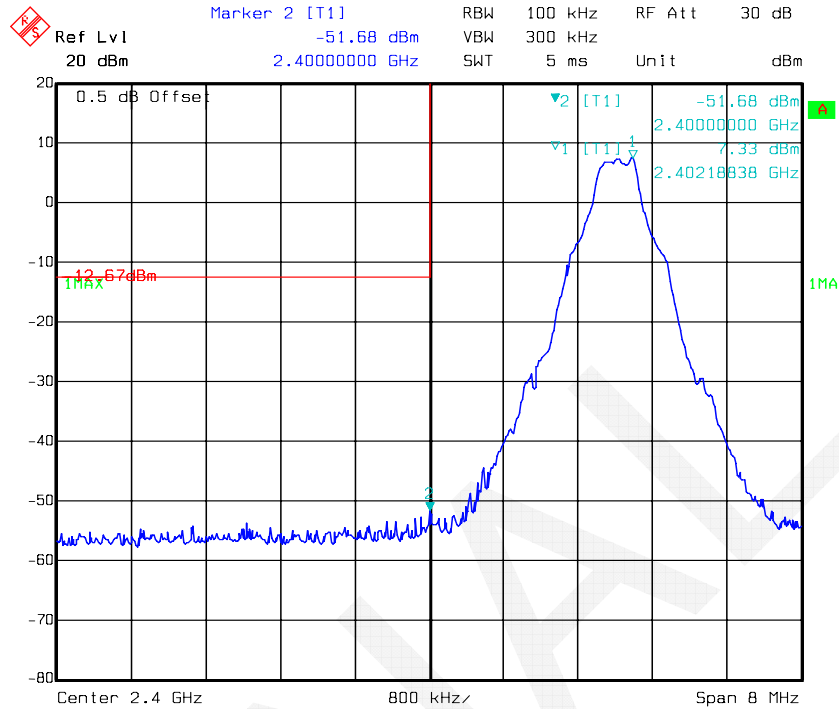
* **Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Test Data

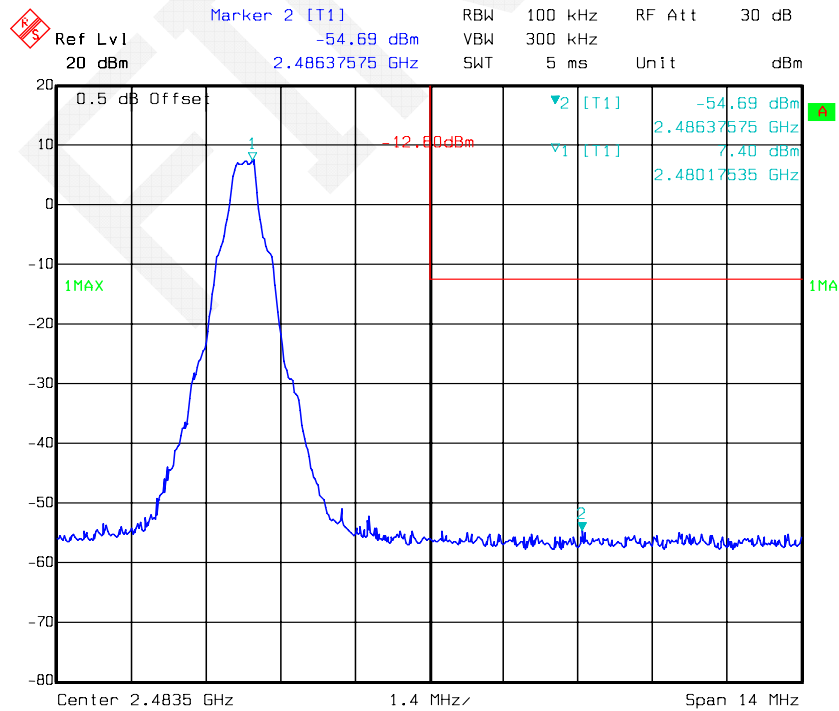
Environmental Conditions

Temperature:	22.2°C
Relative Humidity:	51 %
ATM Pressure:	101.7 kPa

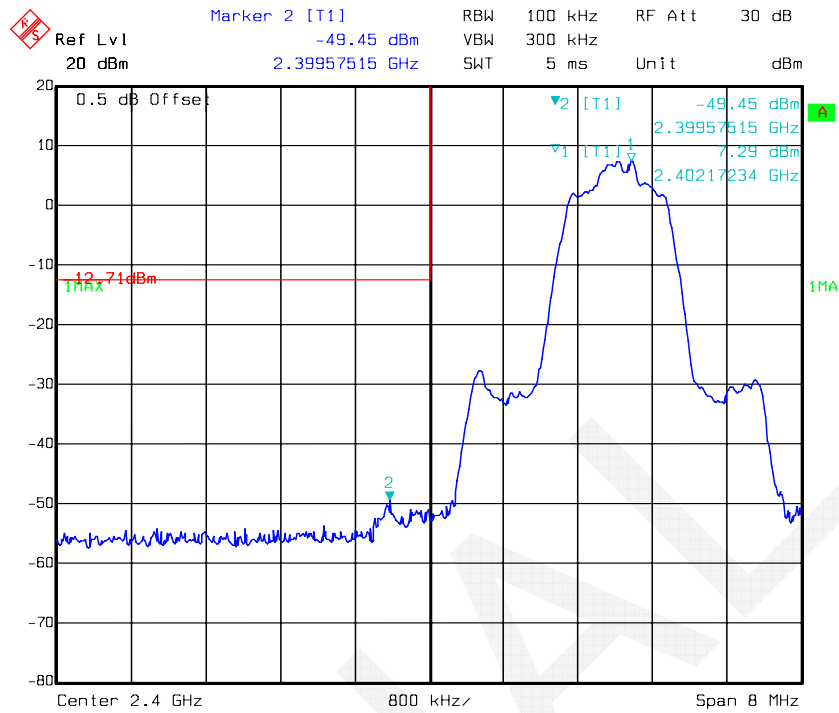
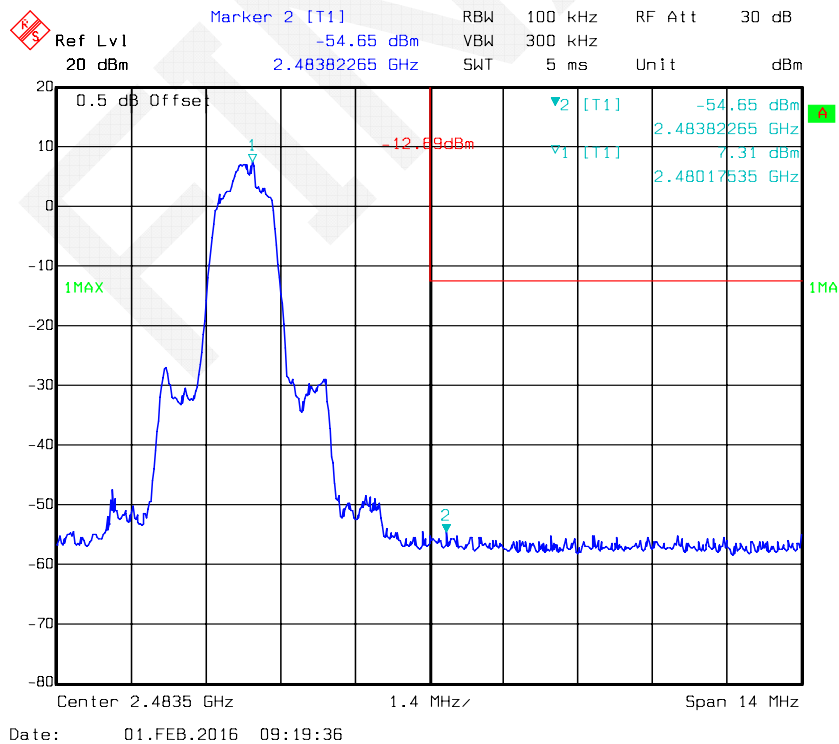
* The testing was performed by Lion Xiao on 2016-02-01.

Test Result: Compliance*BDR Mode (GFSK):***Band Edge, Left Side**

Date: 01.FEB.2016 09:03:05

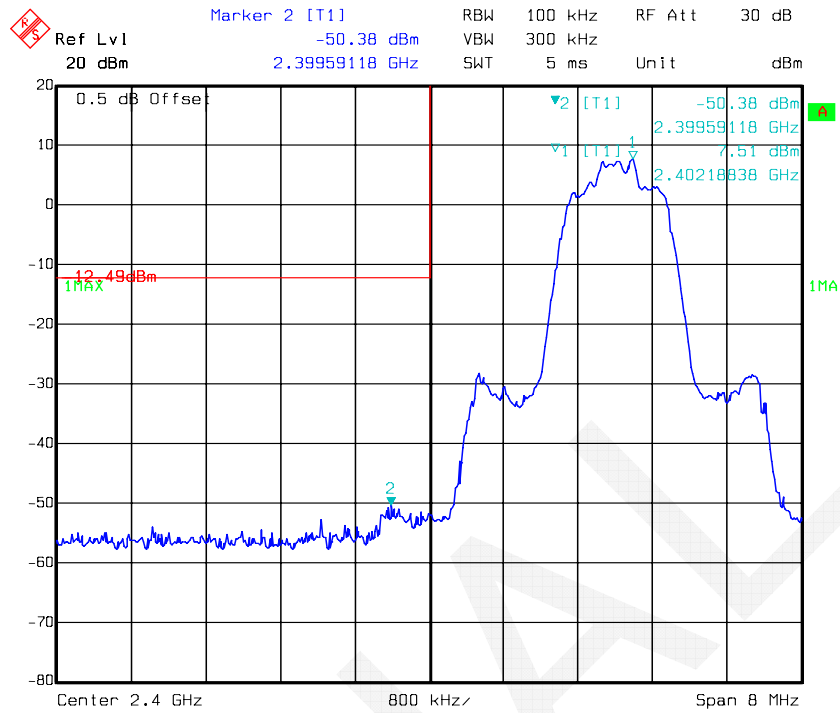
Band Edge, Right Side

Date: 01.FEB.2016 09:17:00

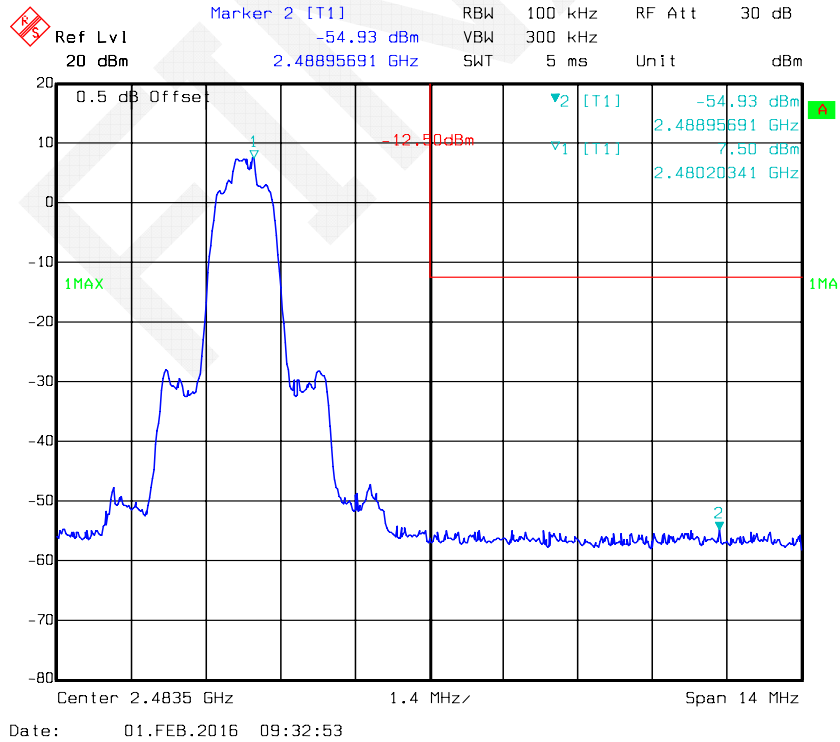
*EDR Mode ($\pi/4$ -DQPSK):***Band Edge, Left Side****Band Edge, Right Side**

EDR Mode (8-DPSK):

Band Edge, Left Side



Band Edge, Right Side



DECLARATION LETTER

Akuvox

Akuvox (Xiamen) Networks Co., Ltd

Add: 10/F, No. 56, Software Park II, Xiamen, China. 361008;CN

Tel: 0592-2133061

Fax: 0592-2133061

DECLARATION OF SIMILARITY

2016-02-04

To:

Bay Area Compliance Laboratories Corp. (Dongguan)

69#Pulongcun, Puxinhu Industrial Zone, Tangxia Town Dongguan, Guangdong,
China

Tel: +86 769 86858888 Fax: +86 769 86858891

<http://www.bac1corp.com>

Dear Sir or Madam:

We Akuvox (Xiamen) Networks Co., Ltd. hereby declare that our product: SIP IP
phone, model number(s): VP-R47P and MIRUPHONEIII, SVP3300W, VP-R47G, the
only difference is the model name.

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

Best Regards,

Sign:

Typed or Printed Name: Xiang Bo

Title: Sales Manager



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