

FCC PART 15.247

TEST REPORT

For

Shenzhen Kaliho Technology Development Limited

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FCC ID: 2ADBRK918

Report Type: Original Report	Product Type: Smart Phone
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Report Number: RDG150121005-00A	
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *Shenzhen Kaliho Technology Development Limited's* product, model number: *K918 (FCC ID: 2ADBRK918)* (or the "EUT") in this report was a *Smart Phone*, which was measured approximately: 11.5 cm (L) x 6.15 cm (W) x 1.1cm (H), rated input voltage: DC3.7 V rechargeable Li-ion or DC5V charging from adapter.

Adapter Information: HUAJING
Model: TN-050100E2
Input : 100-240V~50/60Hz 0.15A
Output: 5V 1.0A

Note: The series product, model K918 and K928, K938, K948, K958 are electrically identical, the differences between them is model name, we selected K918 for testing, the details was explained in the attached declaration letter.

** All measurement and test data in this report was gathered from production sample serial number: 150121005 (Assigned by applicant). The EUT was received on 2015-01-21*

Objective

This report is prepared on behalf of *ENSAMBLADORA Y DISTRIBUIDORA DE TECNOLOGIA S.A.* 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: 2ADBRK918.
FCC Part 22H, 24E PCE submissions with FCC ID: 2ADBRK918.
FCC Part 15C DTS submissions with FCC ID: 2ADBRK918.

Test Methodology

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

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

Test Facility

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

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

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

FINAL

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode.

EUT Exercise Software

Test Software Version	Engineer Mode		
Test Frequency	2402MHz	2441MHz	2480MHz
GFSK	N/A	N/A	N/A
$\pi/4$ -DQPSK	N/A	N/A	N/A
8-DPSK	N/A	N/A	N/A

Equipment Modifications

No modification was made to the EUT.

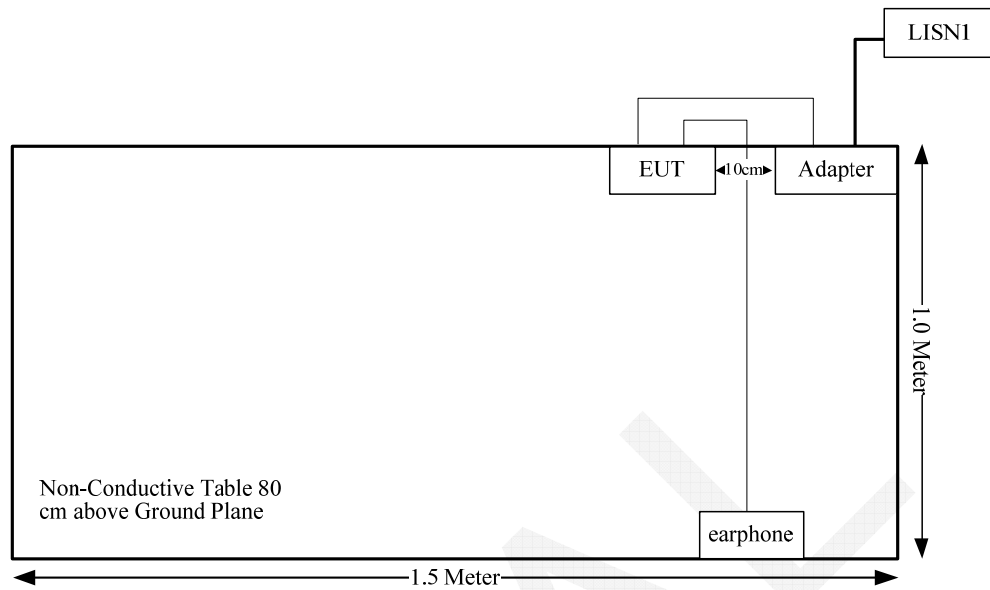
Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
/	/	/	/

External I/O Cable

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	To
USB Cable	no	no	1.0	USB port of Adapter	EUT
Earphone Cable	no	no	1.1	Aduio Port of EUT	Earphone

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)	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 & §2.1093- 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 = 7.16 dBm (5.20 mW) at 2480 MHz
 $[(\text{max. power of channel, mW})/(\text{min. test separation distance, mm})] [\sqrt{f(\text{GHz})}]$
 $= 5.20/5 \cdot (\sqrt{2.480}) = 1.64 < 3.0$

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 internal antenna arrangement and the antenna gain is 2.0 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:

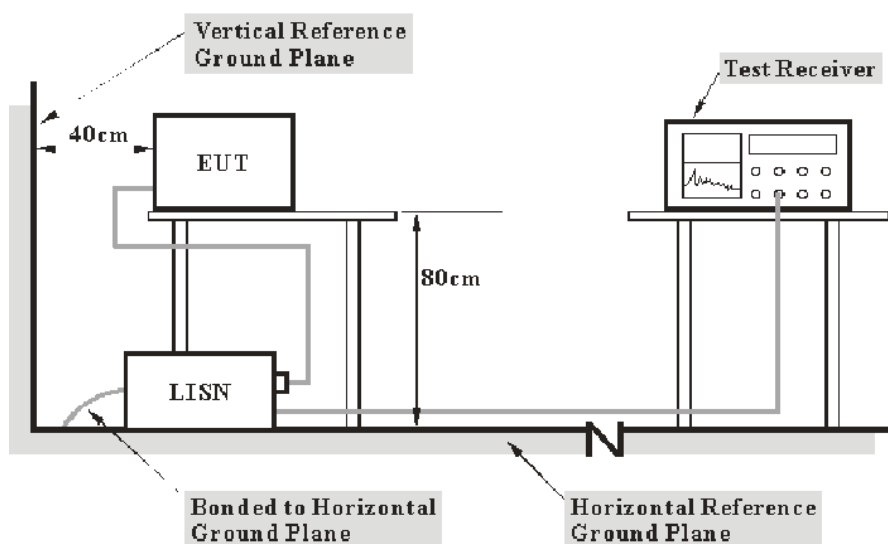
- compliance is deemed to occur if no measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level, increased by $(U_{lab} - U_{cispr})$, exceeds the disturbance limit.

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 3.46 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 C63.4-2009 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

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

EMI Test Receiver Setup

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

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

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

Test Procedure

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	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	2014-12-11	2015-12-11
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:

11.4 dB at 0.396530 MHz in the **Neutral** conducted mode

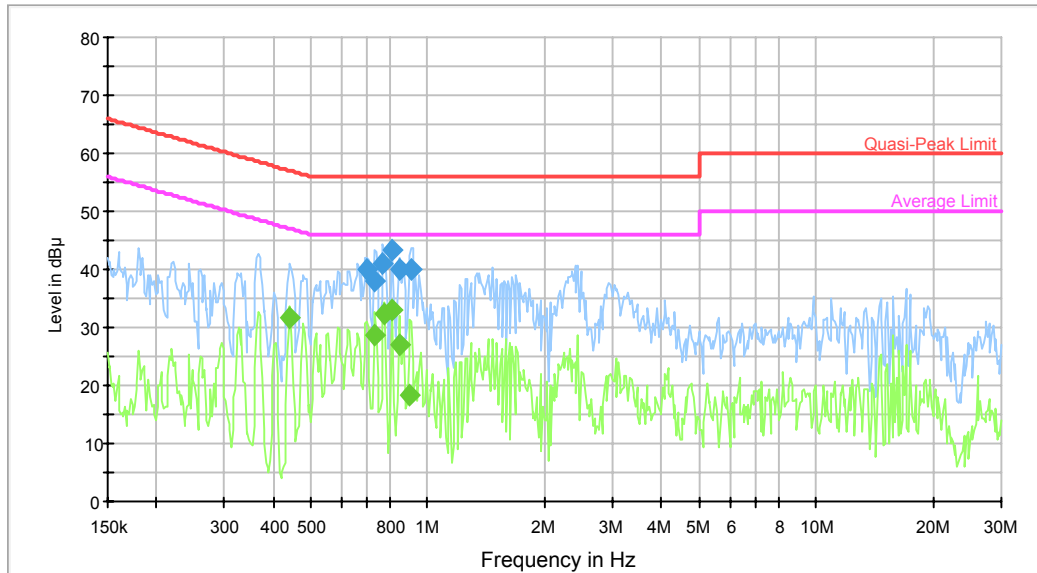
Test Data**Environmental Conditions**

Temperature:	22.4 °C
Relative Humidity:	36%
ATM Pressure:	101.7 kPa

The testing was performed by Dean Liu on 2015-01-22.

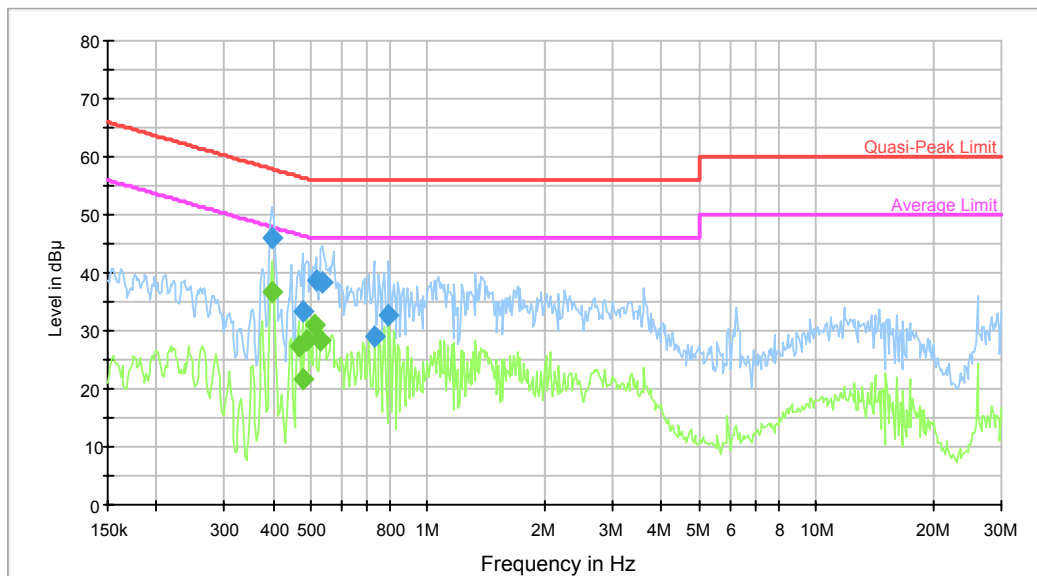
Test Mode: Transmitting

AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.698191	40	9.000	L1	10.6	16.0	56.0	Compliance
0.726569	37.9	9.000	L1	10.6	18.1	56.0	Compliance
0.768247	41	9.000	L1	10.5	15.0	56.0	Compliance
0.812315	43.2	9.000	L1	10.5	12.8	56.0	Compliance
0.845331	39.9	9.000	L1	10.5	16.1	56.0	Compliance
0.908180	40	9.000	L1	10.5	16.0	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.443327	31.8	9.000	L1	10.5	15.2	47.0	Compliance
0.732382	28.6	9.000	L1	10.6	17.4	46.0	Compliance
0.774393	32.4	9.000	L1	10.5	13.6	46.0	Compliance
0.812315	33.1	9.000	L1	10.5	12.9	46.0	Compliance
0.845331	26.9	9.000	L1	10.5	19.1	46.0	Compliance
0.900972	18.4	9.000	L1	10.5	27.6	46.0	Compliance

AC120 V, 60 Hz, Neutral:

Frequency (MHz)	QuasiPeak (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.396530	46.1	9.000	N	10.8	11.8	57.9	Compliance
0.476287	33.3	9.000	N	10.4	23.1	56.4	Compliance
0.515791	38.7	9.000	N	10.3	17.3	56.0	Compliance
0.536756	38.4	9.000	N	10.3	17.6	56.0	Compliance
0.726569	29.1	9.000	N	10.6	26.9	56.0	Compliance
0.793127	32.7	9.000	N	10.5	23.3	56.0	Compliance

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBμV)	Comment
0.396530	36.5	9.000	N	10.8	11.4	47.9	Compliance
0.465037	27.3	9.000	N	10.5	19.3	46.6	Compliance
0.476287	21.7	9.000	N	10.4	24.7	46.4	Compliance
0.487810	28.4	9.000	N	10.4	17.8	46.2	Compliance
0.511698	31.1	9.000	N	10.3	14.9	46.0	Compliance
0.532496	28.2	9.000	N	10.3	17.8	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_{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 radiated emission at a distance of 3m at Bay Area Compliance Laboratories Corp. (Dongguan) is:

30M~200MHz: 5.0 dB

200M~1GHz: 6.2 dB

1G~6GHz: 4.45 dB

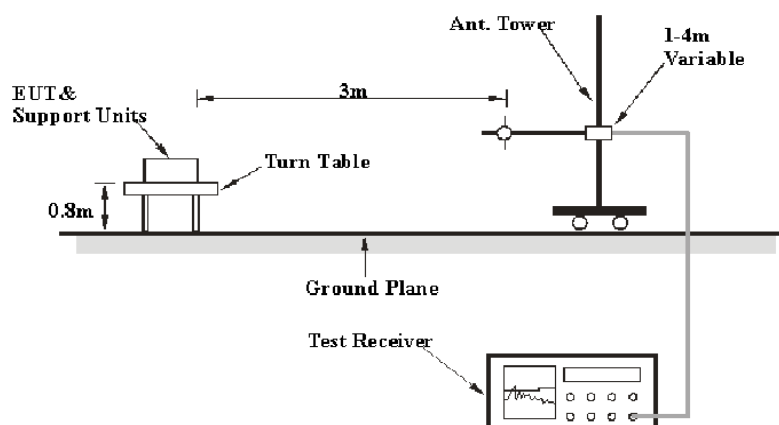
6G~18GHz: 5.23 dB

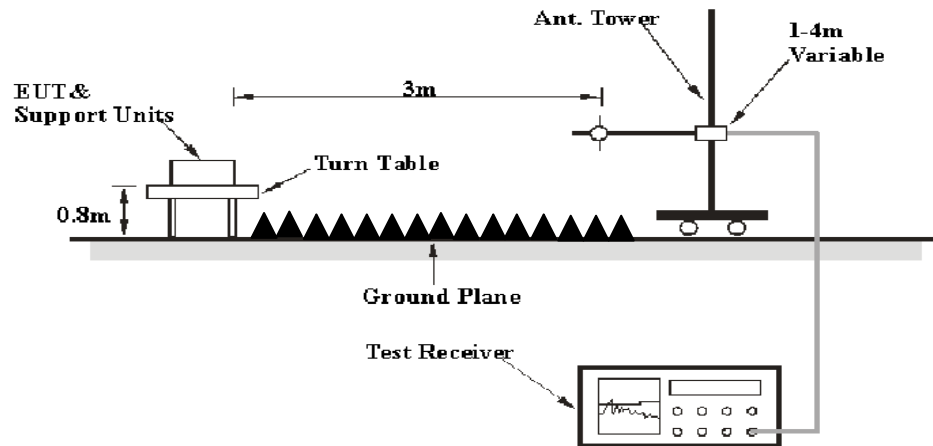
Table 1 – Values of U_{cisp}

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 C63.4-2009. The specification used was the FCC 15.209, and FCC 15.247 limits.

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

The spacing between the peripherals was 10 cm.

EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

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

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

Test Procedure

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

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

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
R&S	Spectrum Analyzer	FSP 38	100478	2014-05-09	2015-05-09
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:

0.93 dB at 4882 MHz in the Vertical polarization

Test Data**Environmental Conditions**

Temperature:	19.3°C
Relative Humidity:	62 %
ATM Pressure:	101.5 kPa

* The testing was performed by Dean Liu on 2015-01-23.

Test Mode: Transmitting

BDR Mode (GFSK):

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	67.64	PK	H	25.65	4.42	0.00	97.71	N/A	N/A
2402	59.37	AV	H	25.65	4.42	0.00	89.44	N/A	N/A
2402	68.78	PK	V	25.65	4.42	0.00	98.85	N/A	N/A
2402	60.35	AV	V	25.65	4.42	0.00	90.42	N/A	N/A
2390	26.64	PK	H	25.61	4.39	0.00	56.64	74.00	17.36
2390	14.24	AV	H	25.61	4.39	0.00	44.24	54.00	9.76
4804	52.07	PK	V	30.59	5.98	27.41	61.23	74.00	12.77
4804	41.84	AV	V	30.59	5.98	27.41	51.00	54.00	3.00
7206	43.36	PK	V	34.09	7.45	25.91	58.99	74.00	15.01
7206	31.61	AV	V	34.09	7.45	25.91	47.24	54.00	6.76
9608	30.25	PK	V	35.96	8.80	27.55	47.46	74.00	26.54
9608	18.64	AV	V	35.96	8.80	27.55	35.85	54.00	18.15
1950	37.78	PK	V	24.50	3.79	27.49	38.58	74.00	35.42
1950	25.12	AV	V	24.50	3.79	27.49	25.92	54.00	28.08
163.7	34.76	QP	V	12.51	1.56	21.44	27.39	43.50	16.11
Middle Channel: 2441 MHz									
2441	68.56	PK	H	25.75	4.40	0.00	98.71	N/A	N/A
2441	60.24	AV	H	25.75	4.40	0.00	90.39	N/A	N/A
2441	69.68	PK	V	25.75	4.40	0.00	99.83	N/A	N/A
2441	61.21	AV	V	25.75	4.40	0.00	91.36	N/A	N/A
4882	54.01	PK	V	30.79	6.08	27.42	63.46	74.00	10.54
4882	43.59	AV	V	30.79	6.08	27.42	53.04	54.00	0.96
7323	44.98	PK	V	34.38	7.51	25.88	60.99	74.00	13.01
7323	34.55	AV	V	34.38	7.51	25.88	50.56	54.00	3.44
9764	31.77	PK	V	36.33	8.83	27.20	49.73	74.00	24.27
9764	20.13	AV	V	36.33	8.83	27.20	38.09	54.00	15.91
1950	38.54	PK	V	24.50	3.79	27.49	39.34	74.00	34.66
1950	26.57	AV	V	24.50	3.79	27.49	27.37	54.00	26.63
163.7	34.88	QP	V	12.51	1.56	21.44	27.51	43.50	15.99
High Channel: 2480 MHz									
2480	70.64	PK	H	25.85	4.48	0.00	100.97	N/A	N/A
2480	62.81	AV	H	25.85	4.48	0.00	93.14	N/A	N/A
2480	71.57	PK	V	25.85	4.48	0.00	101.90	N/A	N/A
2480	63.65	AV	V	25.85	4.48	0.00	93.98	N/A	N/A
2483.5	35.85	PK	V	25.86	4.49	0.00	66.20	74.00	7.80
2483.5	18.29	AV	V	25.86	4.49	0.00	48.64	54.00	5.36
4960	52.53	PK	V	31.00	5.90	27.43	62.00	74.00	12.00
4960	42.78	AV	V	31.00	5.90	27.43	52.25	54.00	1.75
7440	44.47	PK	V	34.66	7.58	25.97	60.74	74.00	13.26
7440	34.01	AV	V	34.66	7.58	25.97	50.28	54.00	3.72
9920	31.73	PK	V	36.71	8.87	26.66	50.65	74.00	23.35
9920	19.37	AV	V	36.71	8.87	26.66	38.29	54.00	15.71
1950	37.54	PK	V	24.50	3.79	27.49	38.34	74.00	35.66
1950	25.41	AV	V	24.50	3.79	27.49	26.21	54.00	27.79
163.7	34.28	QP	V	12.51	1.56	21.44	26.91	43.50	16.59

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	68.34	PK	H	25.65	4.42	0.00	98.41	N/A	N/A
2402	58.62	AV	H	25.65	4.42	0.00	88.69	N/A	N/A
2402	69.86	PK	V	25.65	4.42	0.00	99.93	N/A	N/A
2402	59.51	AV	V	25.65	4.42	0.00	99.93	N/A	N/A
2390	27.64	PK	V	25.61	4.39	0.00	57.64	74.00	16.36
2390	16.56	AV	V	25.61	4.39	0.00	46.56	54.00	7.44
4804	52.08	PK	V	30.59	5.98	27.41	61.24	74.00	12.76
4804	40.02	AV	V	30.59	5.98	27.41	49.18	54.00	4.82
7206	43.89	PK	V	34.09	7.45	25.91	59.52	74.00	14.48
7206	32.14	AV	V	34.09	7.45	25.91	47.77	54.00	6.23
9608	30.43	PK	V	35.96	8.80	27.55	47.64	74.00	26.36
9608	18.67	AV	V	35.96	8.80	27.55	35.88	54.00	18.12
6221	34.32	PK	V	32.24	6.51	26.73	46.34	74.00	27.66
6221	22.64	AV	V	32.24	6.51	26.73	34.66	54.00	19.34
163.7	34.55	QP	V	12.51	1.56	21.44	27.18	43.50	16.32
Middle Channel: 2441 MHz									
2441	70.47	PK	H	25.75	4.40	0.00	100.62	N/A	N/A
2441	60.46	AV	H	25.75	4.40	0.00	90.61	N/A	N/A
2441	71.35	PK	V	25.75	4.40	0.00	101.50	N/A	N/A
2441	61.12	AV	V	25.75	4.40	0.00	91.27	N/A	N/A
4882	54.74	PK	V	30.79	6.08	27.42	64.19	74.00	9.81
4882	43.62	AV	V	30.79	6.08	27.42	53.07	54.00	0.93
7323	45.32	PK	V	34.38	7.51	25.88	61.33	74.00	12.67
7323	33.39	AV	V	34.38	7.51	25.88	49.40	54.00	4.60
9764	31.36	PK	V	36.33	8.83	27.20	49.32	74.00	24.68
9764	20.11	AV	V	36.33	8.83	27.20	38.07	54.00	15.93
6221	34.64	PK	V	32.24	6.51	26.73	46.66	74.00	27.34
6221	22.15	AV	V	32.24	6.51	26.73	34.17	54.00	19.83
163.7	34.39	QP	V	12.51	1.56	21.44	27.02	43.50	16.48
High Channel: 2480 MHz									
2480	71.57	PK	H	25.85	4.48	0.00	101.90	N/A	N/A
2480	61.68	AV	H	25.85	4.48	0.00	92.01	N/A	N/A
2480	72.08	PK	V	25.85	4.48	0.00	102.41	N/A	N/A
2480	62.77	AV	V	25.85	4.48	0.00	93.10	N/A	N/A
2483.5	35.43	PK	V	25.86	4.49	0.00	65.78	74.00	8.22
2483.5	18.37	AV	V	25.86	4.49	0.00	48.72	54.00	5.28
4960	53.44	PK	V	31.00	5.90	27.43	62.91	74.00	11.09
4960	42.35	AV	V	31.00	5.90	27.43	51.82	54.00	2.18
7440	45.12	PK	V	34.66	7.58	25.97	61.39	74.00	12.61
7440	33.27	AV	V	34.66	7.58	25.97	49.54	54.00	4.46
9920	30.48	PK	V	36.71	8.87	26.66	49.40	74.00	24.60
9920	19.35	AV	V	36.71	8.87	26.66	38.27	54.00	15.73
6221	34.27	PK	V	32.24	6.51	26.73	46.29	74.00	27.71
6221	22.03	AV	V	32.24	6.51	26.73	34.05	54.00	19.95
163.7	34.6	QP	V	12.51	1.56	21.44	27.23	43.50	16.27

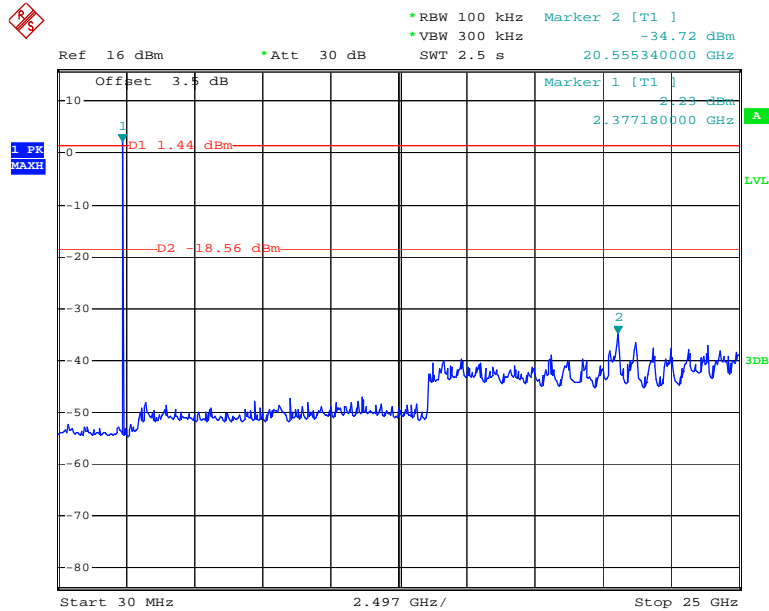
EDR Mode (8-DPSK):

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	69.03	PK	H	25.65	4.42	0.00	99.10	N/A	N/A
2402	59.12	AV	H	25.65	4.42	0.00	89.19	N/A	N/A
2402	69.63	PK	V	25.65	4.42	0.00	99.70	N/A	N/A
2402	59.54	AV	V	25.65	4.42	0.00	89.61	N/A	N/A
2390	25.15	PK	V	25.61	4.39	0.00	55.15	74.00	18.85
2390	13.6	AV	V	25.61	4.39	0.00	43.60	54.00	10.40
4804	51.49	PK	V	30.59	5.98	27.41	60.65	74.00	13.35
4804	41.44	AV	V	30.59	5.98	27.41	50.60	54.00	3.40
7206	43.37	PK	V	34.09	7.45	25.91	59.00	74.00	15.00
7206	31.85	AV	V	34.09	7.45	25.91	47.48	54.00	6.52
9608	29.64	PK	V	35.96	8.80	27.55	46.85	74.00	27.15
9608	17.57	AV	V	35.96	8.80	27.55	34.78	54.00	19.22
3733	32.58	PK	V	29.31	4.99	27.34	39.54	74.00	34.46
3733	20.14	AV	V	29.31	4.99	27.34	27.10	54.00	26.90
163.7	34.13	QP	V	12.51	1.56	21.44	26.76	43.50	16.74
Middle Channel: 2441 MHz									
2441	70.75	PK	H	25.75	4.40	0.00	100.90	N/A	N/A
2441	60.38	AV	H	25.75	4.40	0.00	90.53	N/A	N/A
2441	71.62	PK	V	25.75	4.40	0.00	101.77	N/A	N/A
2441	61.39	AV	V	25.75	4.40	0.00	91.54	N/A	N/A
4882	54.49	PK	V	30.79	6.08	27.42	63.94	74.00	10.06
4882	43.54	AV	V	30.79	6.08	27.42	52.99	54.00	1.01
7323	44.8	PK	V	34.38	7.51	25.88	60.81	74.00	13.19
7323	33.42	AV	V	34.38	7.51	25.88	49.43	54.00	4.57
9764	30.28	PK	V	36.33	8.83	27.20	48.24	74.00	25.76
9764	19.69	AV	V	36.33	8.83	27.20	37.65	54.00	16.35
3733	32.61	PK	V	29.31	4.99	27.34	39.57	74.00	34.43
3733	20.34	AV	V	29.31	4.99	27.34	27.30	54.00	26.70
163.7	34.22	QP	V	12.51	1.56	21.44	26.85	43.50	16.65
High Channel: 2480 MHz									
2480	70.87	PK	H	25.85	4.48	0.00	101.20	N/A	N/A
2480	60.67	AV	H	25.85	4.48	0.00	91.00	N/A	N/A
2480	72.34	PK	V	25.85	4.48	0.00	102.67	N/A	N/A
2480	62.25	AV	V	25.85	4.48	0.00	92.58	N/A	N/A
2483.5	30.64	PK	V	25.86	4.49	0.00	60.99	74.00	13.01
2483.5	18.67	AV	V	25.86	4.49	0.00	49.02	54.00	4.98
4960	53.4	PK	V	31.00	5.90	27.43	62.87	74.00	11.13
4960	42.06	AV	V	31.00	5.90	27.43	51.53	54.00	2.47
7440	45.09	PK	V	34.66	7.58	25.97	61.36	74.00	12.64
7440	32.89	AV	V	34.66	7.58	25.97	49.16	54.00	4.84
9920	30.54	PK	V	36.71	8.87	26.66	49.46	74.00	24.54
9920	19.61	AV	V	36.71	8.87	26.66	38.53	54.00	15.47
3733	31.66	PK	V	29.31	4.99	27.34	38.62	74.00	35.38
3733	19.68	AV	V	29.31	4.99	27.34	26.64	54.00	27.36
163.7	34.07	QP	V	12.51	1.56	21.44	26.70	43.50	16.80

Conducted Spurious Emissions at Antenna Port

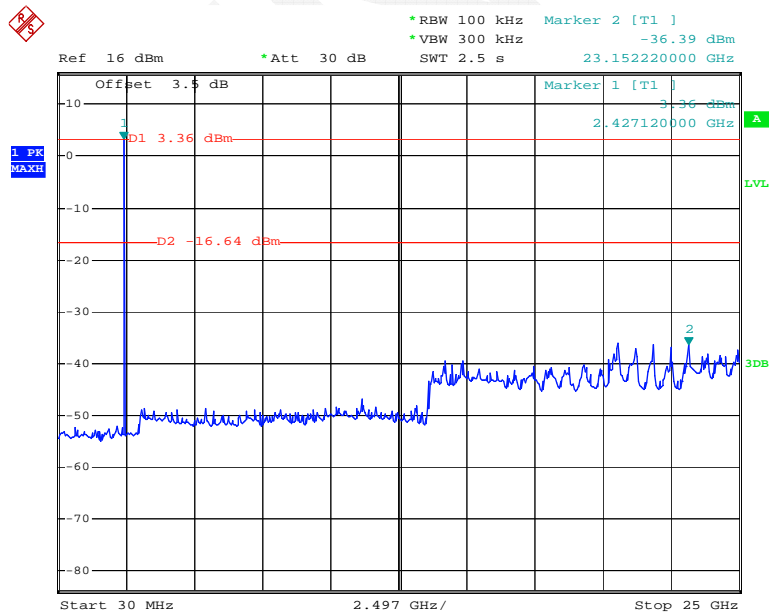
BDR Mode (GFSK):

Low Channel



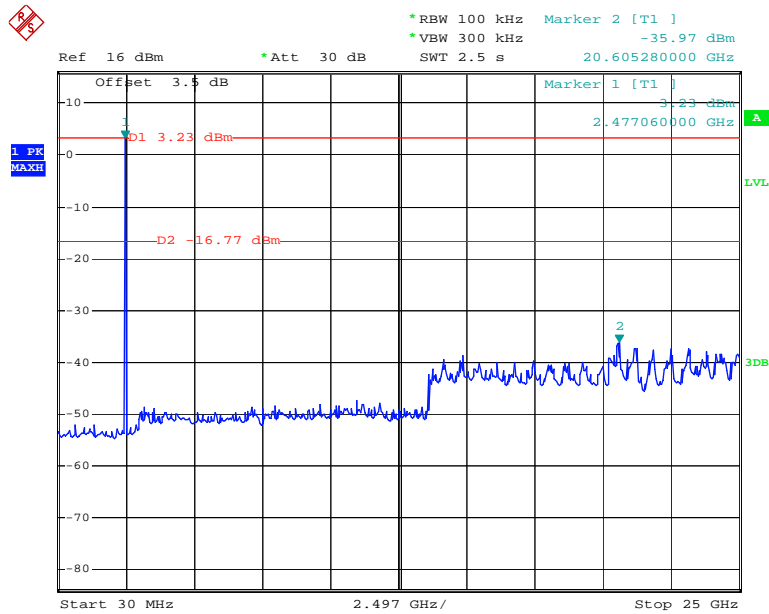
Date: 23.JAN.2015 13:44:02

Middle Channel



Date: 23.JAN.2015 13:44:32

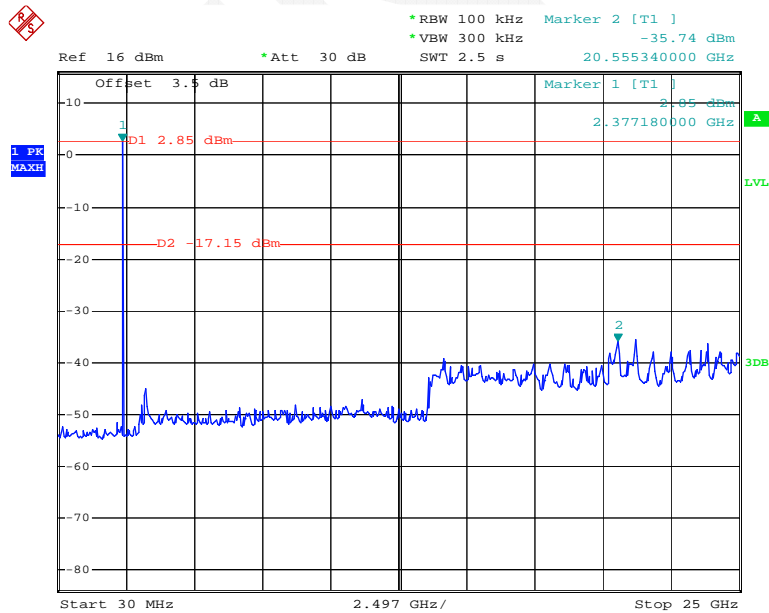
High Channel



Date: 23.JAN.2015 13:45:24

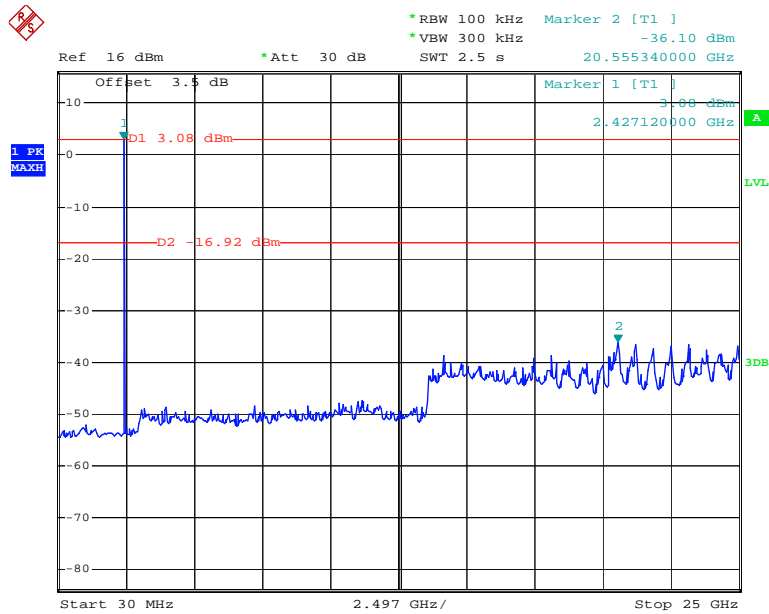
EDR Mode ($\pi/4$ -DQPSK):

Low Channel



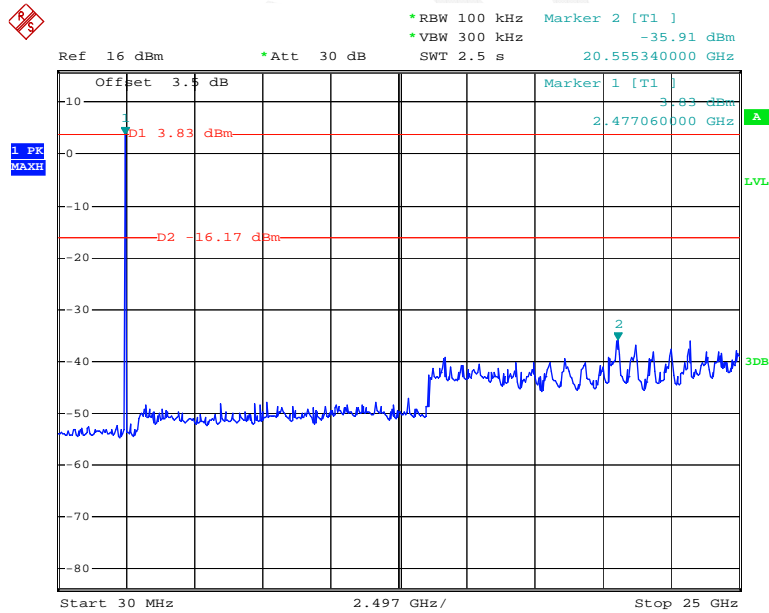
Date: 23.JAN.2015 13:43:07

Middle Channel



Date: 23.JAN.2015 13:41:19

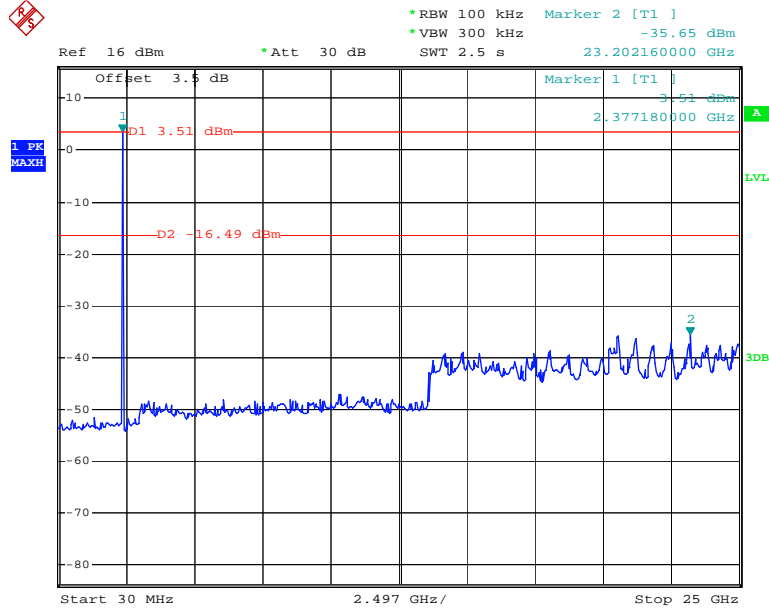
High Channel



Date: 23.JAN.2015 13:40:34

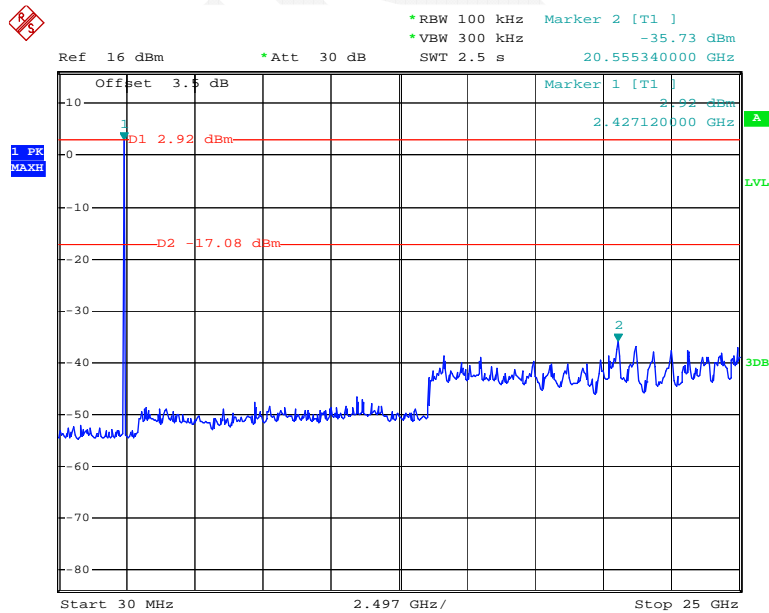
EDR Mode (8-DPSK):

Low Channel



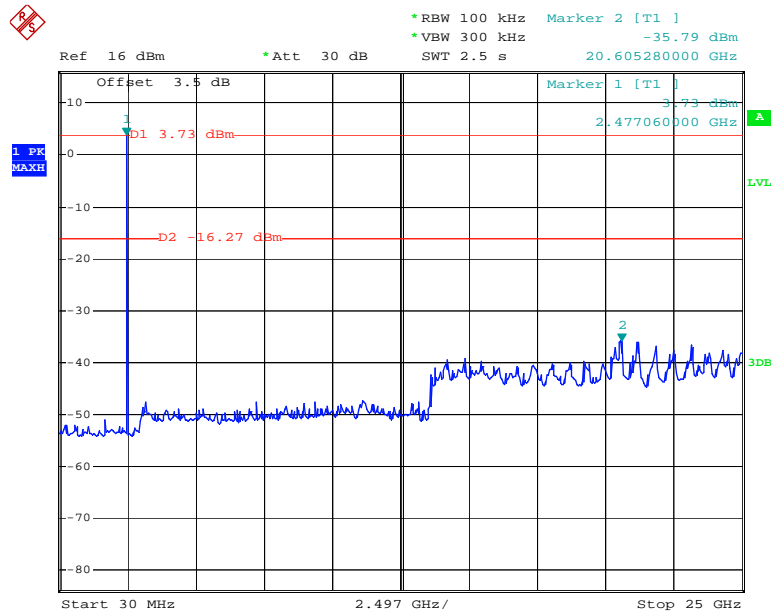
Date: 23.JAN.2015 13:36:06

Middle Channel



Date: 23.JAN.2015 13:38:27

High Channel



Date: 23.JAN.2015 13:39:32

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

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:	21.9°C
Relative Humidity:	36 %
ATM Pressure:	101.5 kPa

* The testing was performed by Dean Liu on 2015-01-23.

Test Result: Compliant.

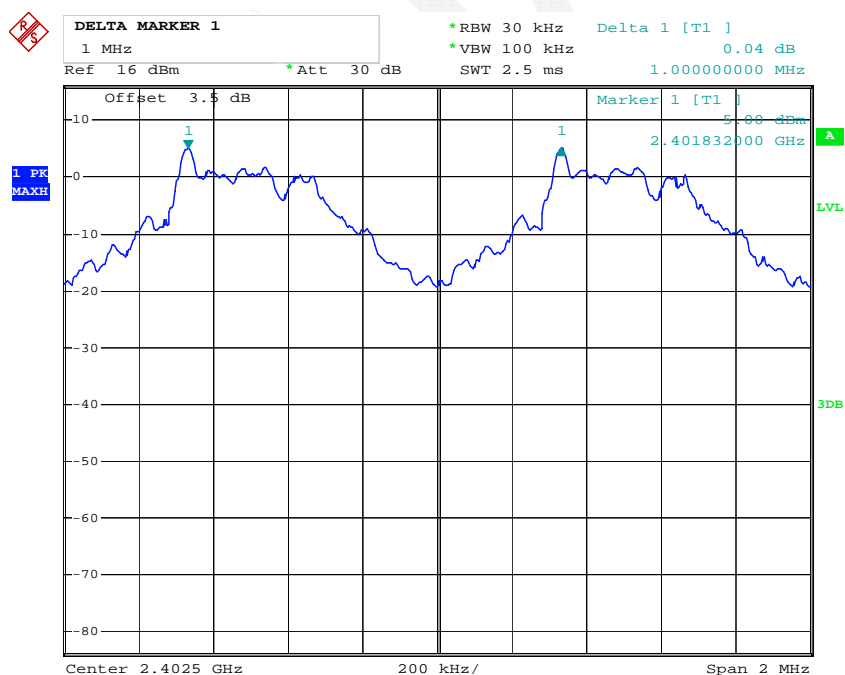
Please refer to following tables and plots

Test Mode: Transmitting

Mode	Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)	Result
BDR Mode (GFSK)	Low	2402	1	0.549	Pass
	Adjacent	2403			
	Middle	2441	1	0.549	Pass
	Adjacent	2442			
	High	2480	1	0.549	Pass
	Adjacent	2479			
EDR Mode ($\pi/4$ -DQPSK):	Low	2402	1	0.816	Pass
	Adjacent	2403			
	Middle	2441	1	0.816	Pass
	Adjacent	2442			
	High	2480	1	0.816	Pass
	Adjacent	2479			
EDR Mode (8-DPSK):	Low	2402	1	0.811	Pass
	Adjacent	2403			
	Middle	2441	1	0.811	Pass
	Adjacent	2442			
	High	2480	1	0.811	Pass
	Adjacent	2479			

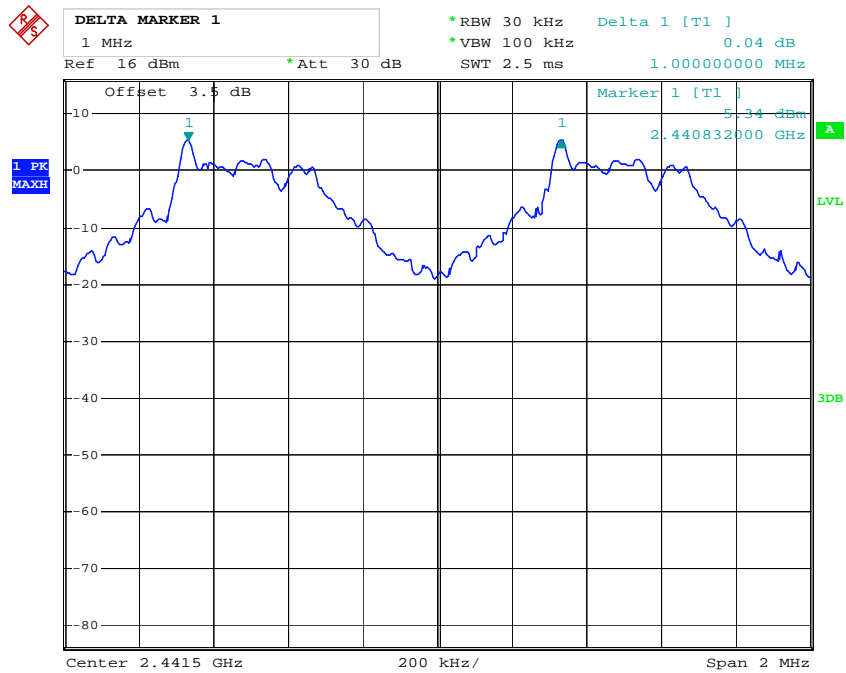
BDR Mode (GFSK):

Low Channel



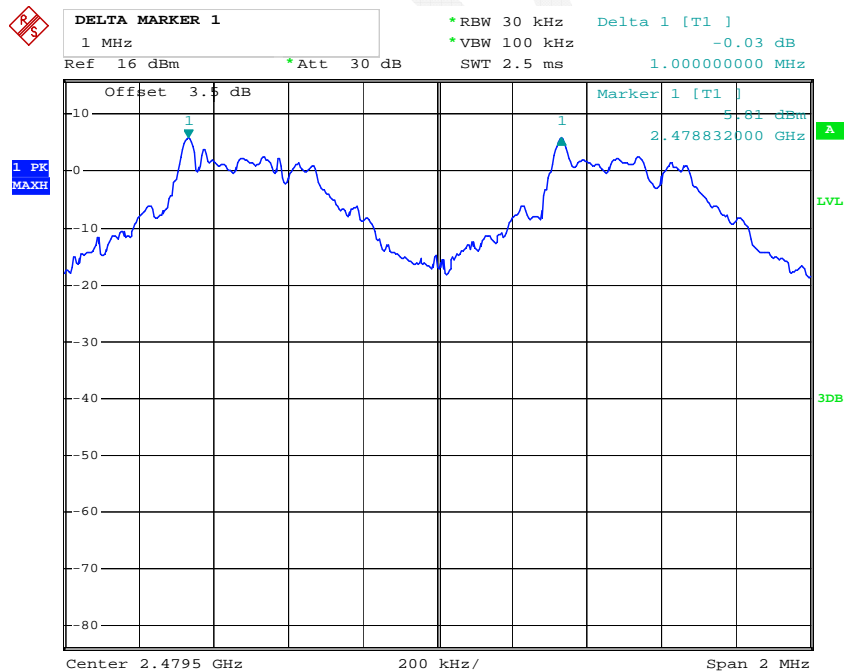
Date: 23.JAN.2015 11:29:23

Middle Channel



Date: 23.JAN.2015 11:28:48

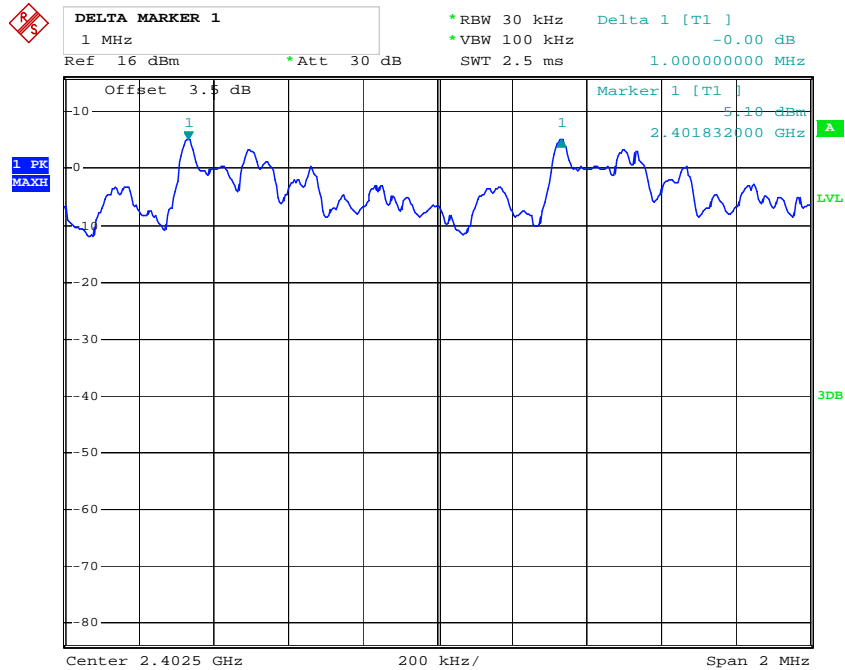
High Channel



Date: 23.JAN.2015 11:27:43

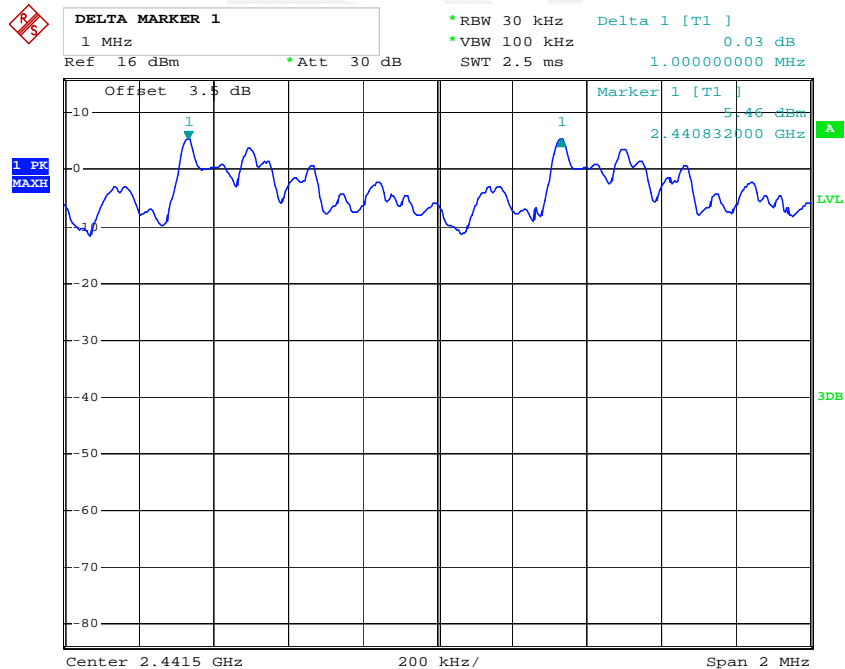
EDR Mode ($\pi/4$ -DQPSK):

Low Channel



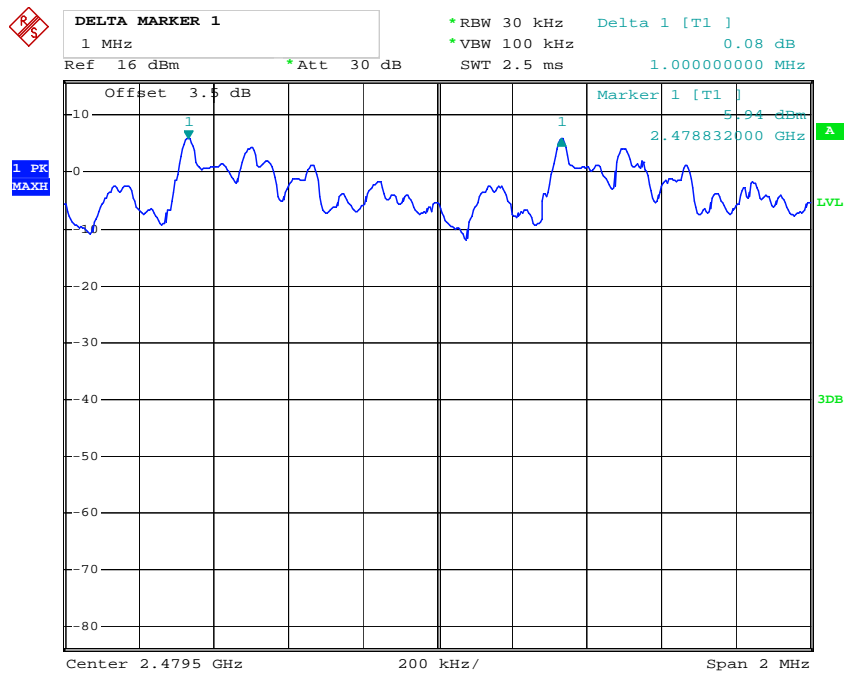
Date: 23.JAN.2015 11:30:06

Middle Channel



Date: 23.JAN.2015 11:30:57

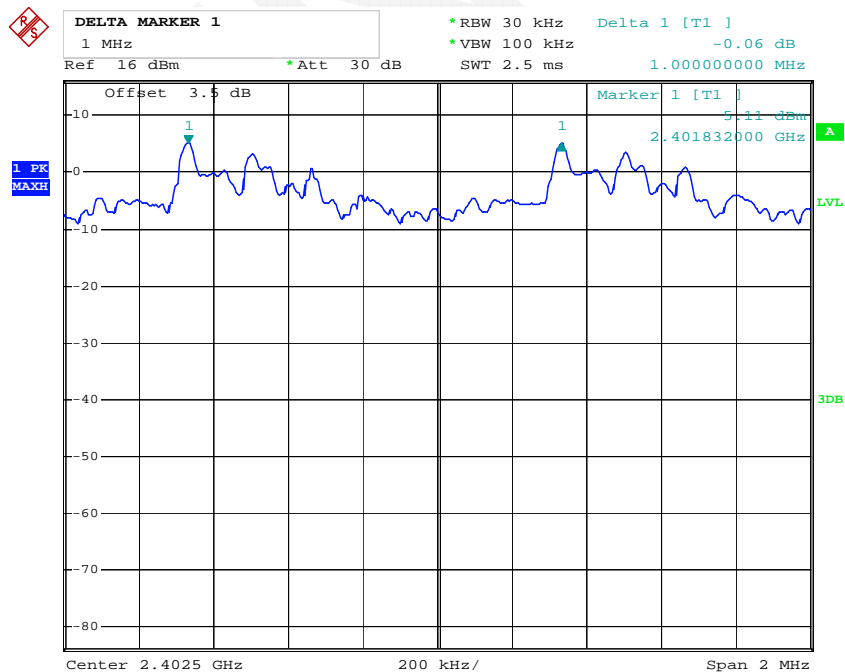
High Channel



Date: 23.JAN.2015 11:31:37

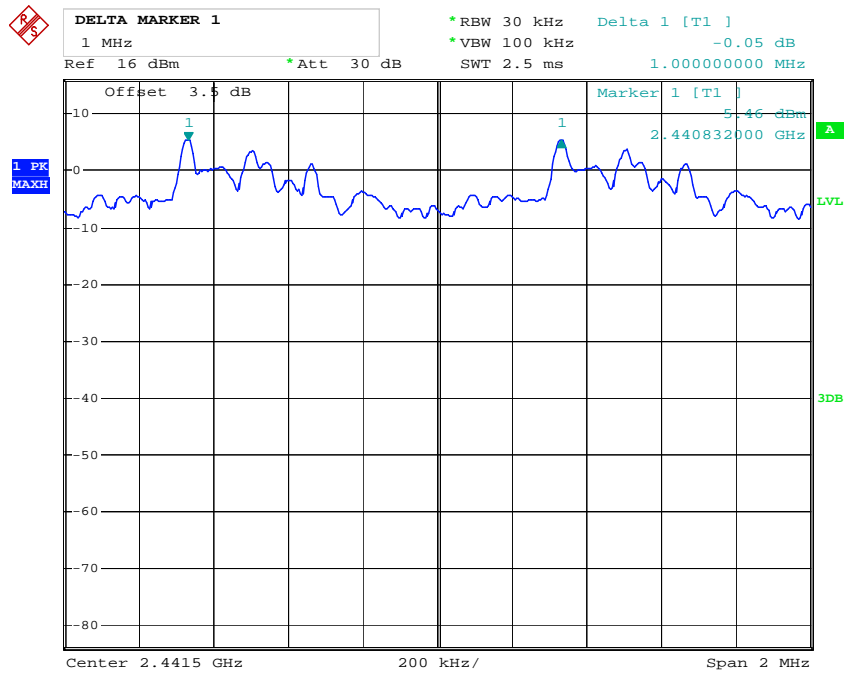
EDR Mode (8-DPSK):

Low Channel



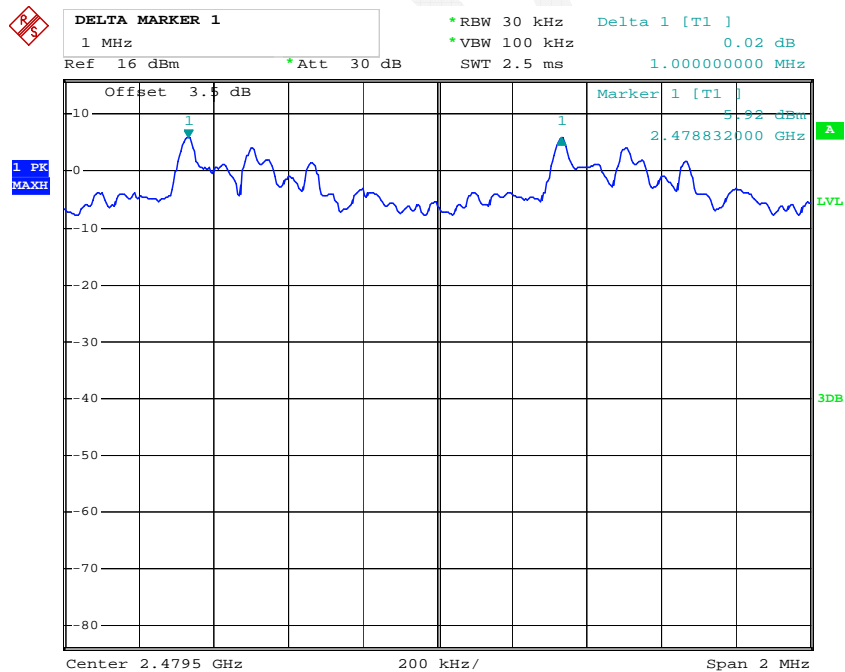
Date: 23.JAN.2015 11:34:13

Middle Channel



Date: 23.JAN.2015 11:33:10

High Channel



Date: 23.JAN.2015 11:32:23

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	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:	22.4 °C
Relative Humidity:	40 %
ATM Pressure:	101.7 kPa

* The testing was performed by Dean Liu on 2015-01-22.

Test Result: Compliant.

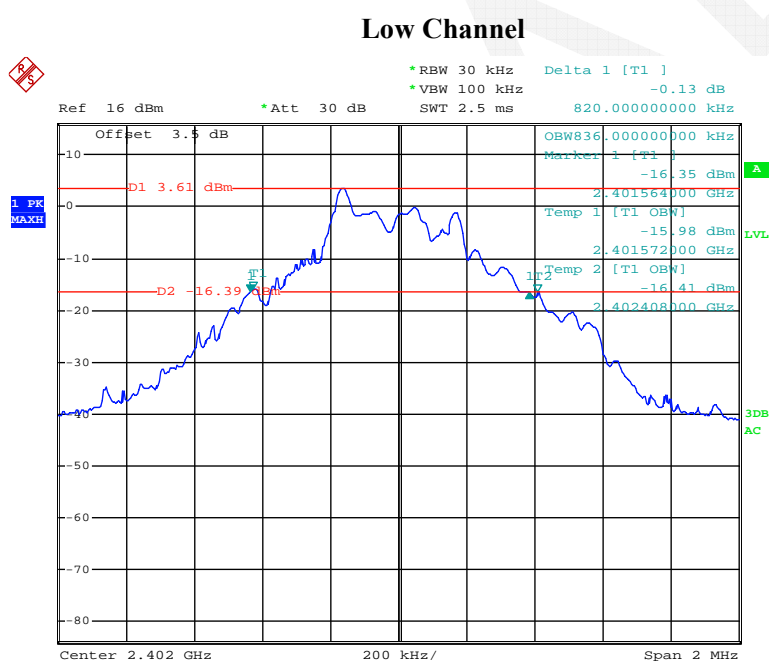
Please refer to following tables and plots

Test Mode: Transmitting

Mode	Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
BDR Mode (GFSK)	Low	2402	0.820
	Middle	2441	0.820
	High	2480	0.824
EDR Mode ($\pi/4$ -DQPSK)	Low	2402	1.224
	Middle	2441	1.224
	High	2480	1.224
EDR Mode (8-DPSK)	Low	2402	1.216
	Middle	2441	1.216
	High	2480	1.216

Please refer to the following plots.

BDR Mode (GFSK):



Date: 22.JAN.2015 21:25:44

The screenshot displays a spectrum analyzer interface. At the top, a red 'X' icon is visible. The main display area shows a blue trace of a signal with two specific points marked: 'D1' at 5.49 dBm and 'D2' at -14.51 dBm. The signal is centered at 2.441 GHz with a span of 2 MHz. The y-axis represents power in dBm, ranging from -80 to 10. The x-axis represents frequency in kHz, ranging from 200 kHz to 2 MHz. The interface includes various measurement parameters such as 'Ref 1.6 dBm', '*Att 30 dB', '*RBW 30 kHz', '*VBW 100 kHz', and 'SWT 2.5 ms'. The signal is identified as 'OBW848.000000000 kHz'.

Ref 1.6 dBm *Att 30 dB *RBW 30 kHz *VBW 100 kHz SWT 2.5 ms Delta 1 [T1] -0.31 dB 820.000000000 kHz

Offset 3.5 dB

OBW848.000000000 kHz

Marker 1 [T1] -14.47 dBm

2.440564000 GHz

Temp 1 [T1 OBW] -14.72 dBm

2.440560000 GHz

Temp 2 [T1 OBW] -15.40 dBm

2.441408000 GHz

D1 5.49 dBm

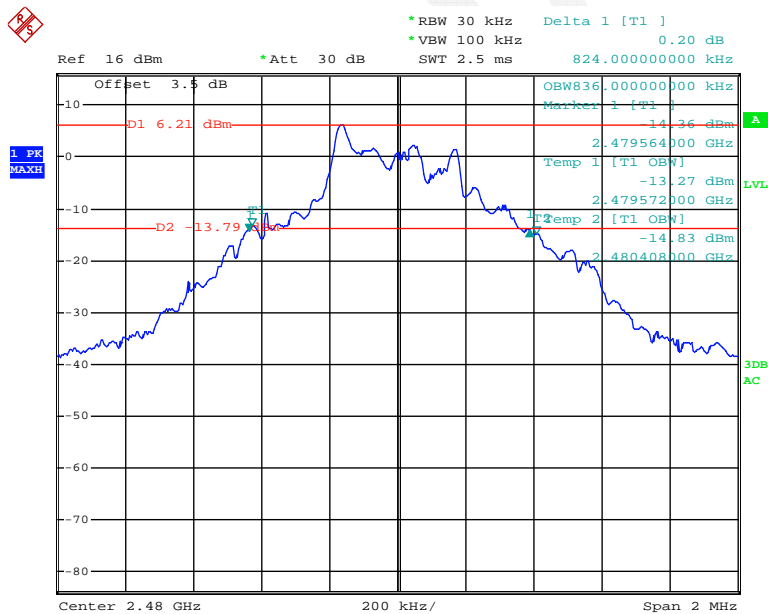
D2 -14.51 dBm

1 PK MAXH

3DB AC

Center 2.441 GHz 200 kHz/ Span 2 MHz

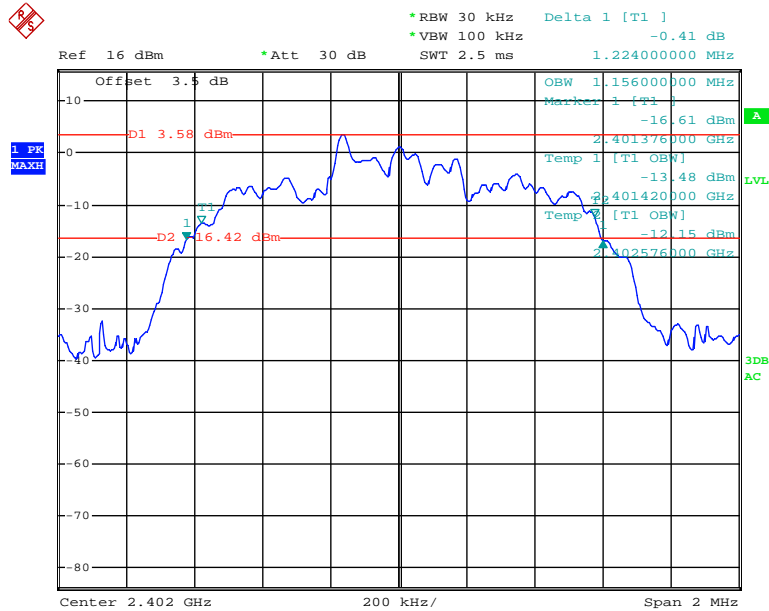
High Channel



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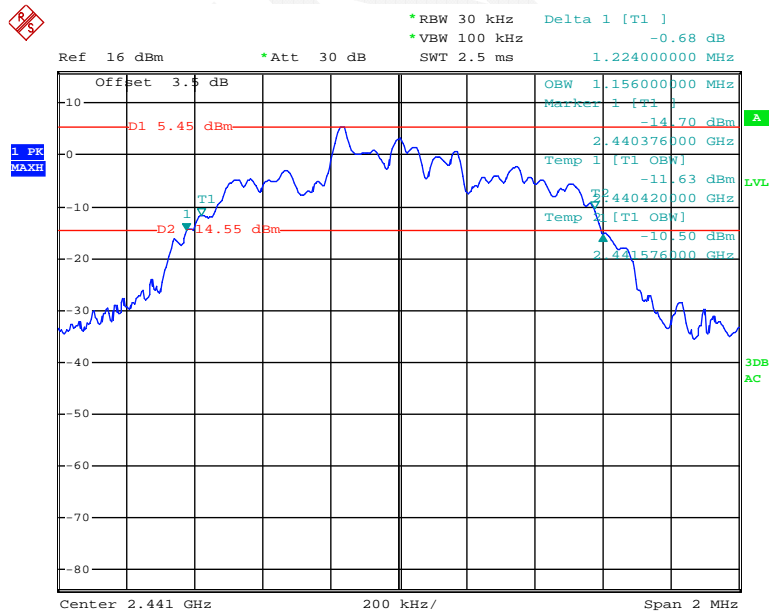
EDR Mode ($\pi/4$ -DQPSK):

Low Channel



Date: 22.JAN.2015 21:31:02

Middle Channel



Date: 22.JAN.2015 21:29:22

*RBW 30 kHz
 *VBW 100 kHz
 *Att 30 dB
 SWT 2.5 ms
 Delta 1 [T1]
 -0.31 dB
 1.224000000 MHz

Ref 16 dBm
 Offset 3.5 dB

1 PK
 MAXH

OBW 1.156000000 MHz
 Marker 1 [T1]
 14.06 dBm
 2.479376000 GHz
 Temp 1 [T1 OBW]
 T2 -10.87 dBm
 2.479420000 GHz
 Temp 2 [T1 OBW]
 -9.50 dBm
 2.480576000 GHz

D1 6.29 dBm
 D2 13.71 dBm

3DB
 AC

Center 2.48 GHz
 200 kHz/
 Span 2 MHz

EDR Mode (8-DPSK):

Ref 16 dBm *Att 30 dB

*RBW 30 kHz Delta 1 [T1]
 *VBW 100 kHz 0.42 dB
 SWT 2.5 ms 1.216000000 MHz

Offset 3.5 dB

OBW 1.144000000 MHz
 Marker 1 [T1]
 -17.34 dBm
 2.401404000 GHz
 Temp 1 [T1 OBW]
 -13.19 dBm
 2.401436000 GHz
 Temp 2 [T1 OBW]
 -14.69 dBm
 2.402580000 GHz

D1 3.64 dBm
 D2 -16.36 dBm

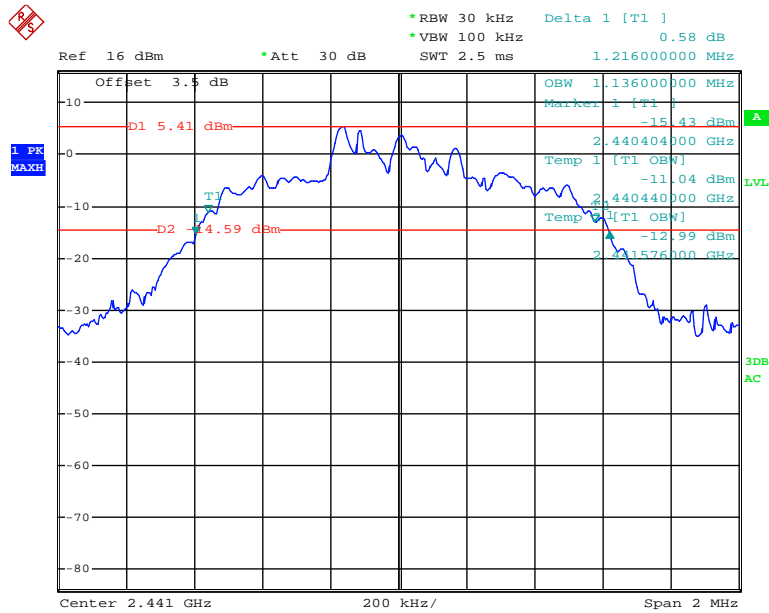
1 PK
 MAXH

3DB
 AC

Center 2.402 GHz 200 kHz/
 Span 2 MHz

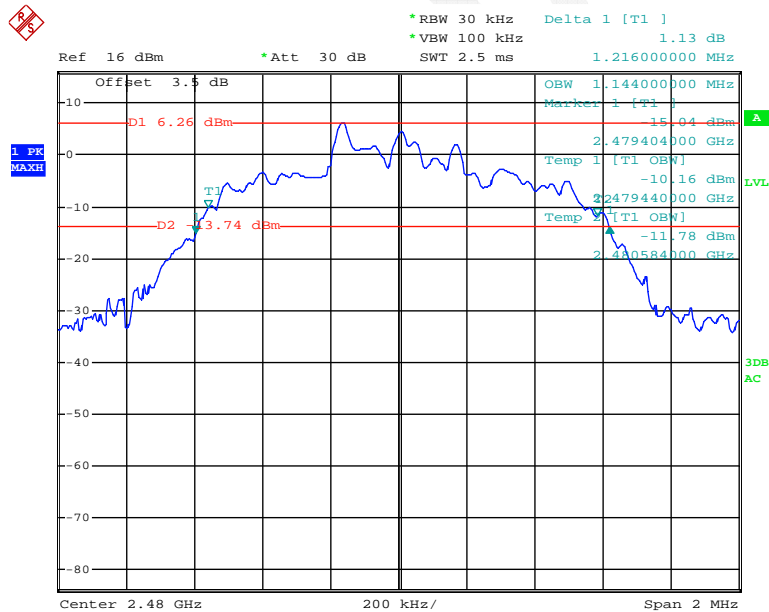
Page 37 of 69

Middle Channel



Date: 22.JAN.2015 21:34:10

High Channel



Date: 22.JAN.2015 21:35:33

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	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:	20.8 °C
Relative Humidity:	36 %
ATM Pressure:	102.1 kPa

* The testing was performed by Dean Liu on 2015-01-22.

Test Result: Compliant.

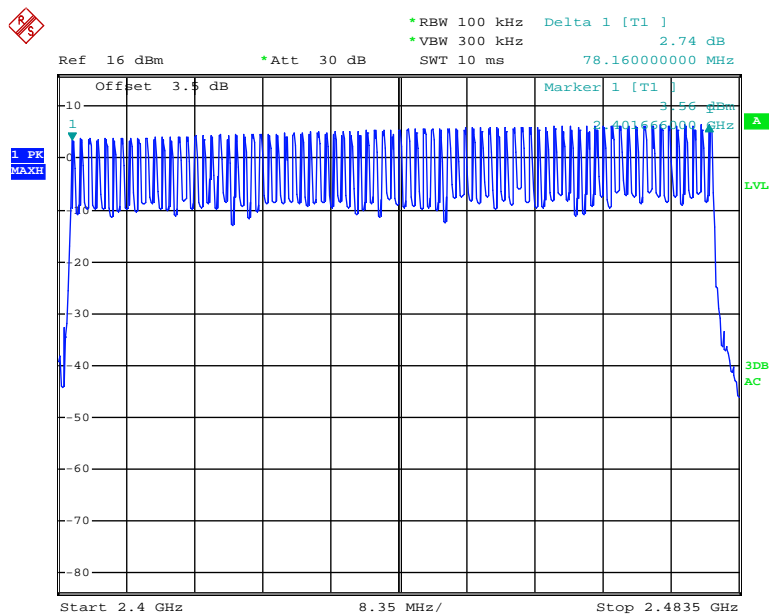
Please refer to following table and plots

Test Mode: Transmitting

BDR Mode (GFSK):

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

Number of Hopping Channels

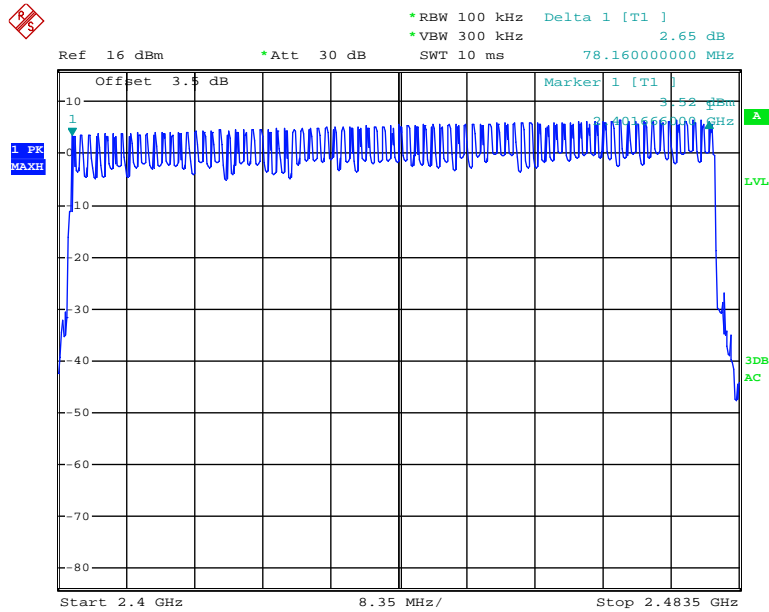


Date: 22.JAN.2015 21:00:42

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

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

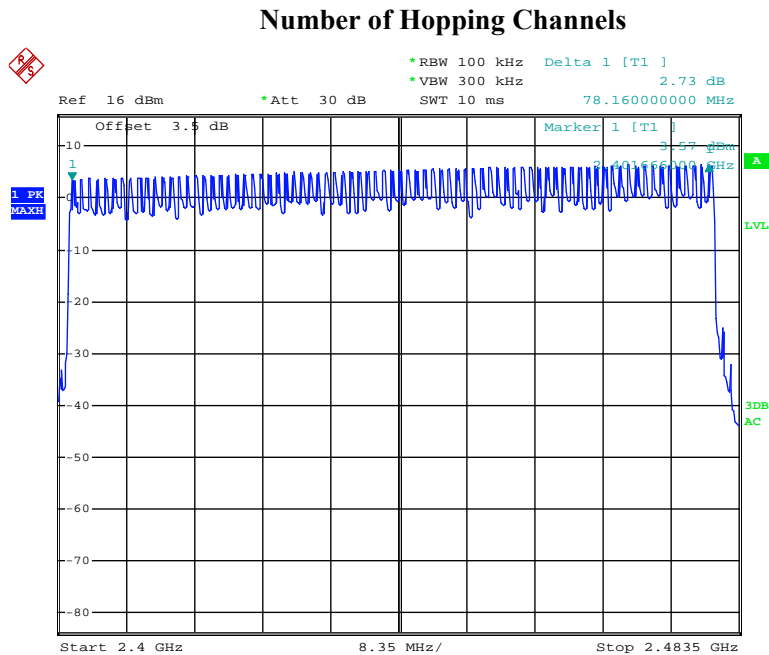
Number of Hopping Channels



Date: 22.JAN.2015 21:09:29

EDR Mode (8-DPSK):

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



Date: 22.JAN.2015 21:18:08

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 * hop 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	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:	20.8 °C
Relative Humidity:	36 %
ATM Pressure:	102.1 kPa

* The testing was performed by Dean Liu on 2015-01-23.

Test Result: Compliant.

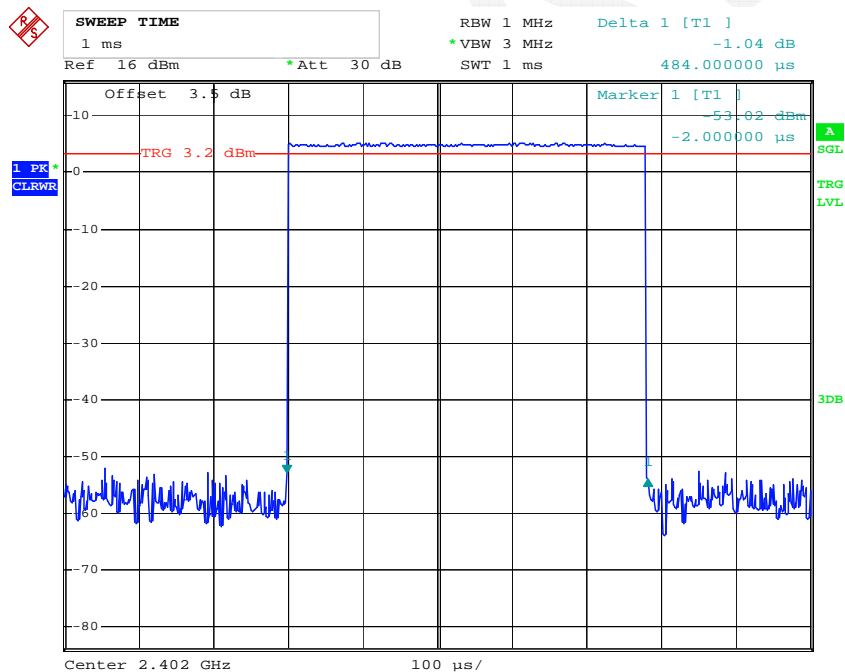
Please refer to following tables and plots

Test Mode: Transmitting

BDR Mode (GFSK):

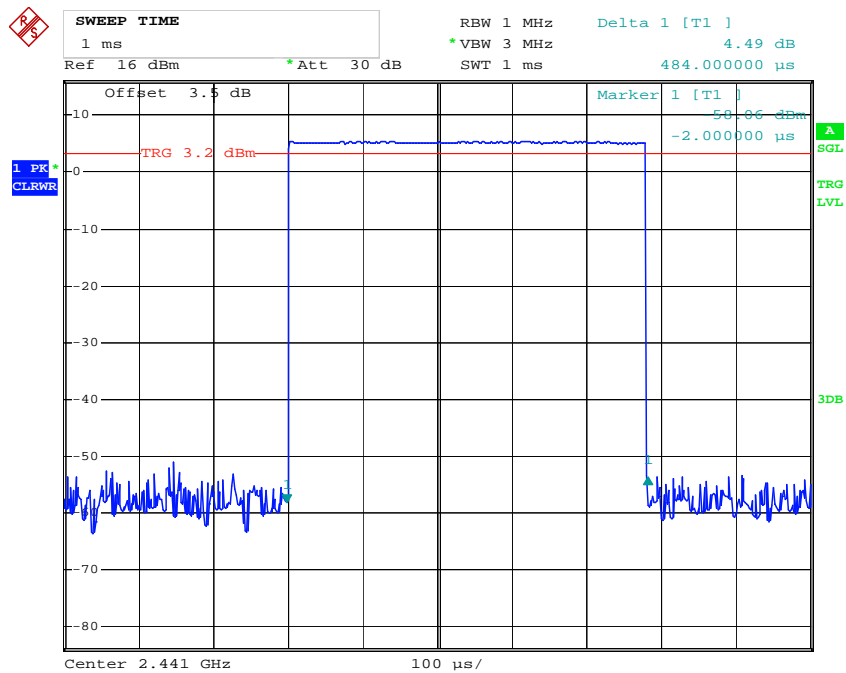
Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
DH1	Low	0.484	0.155	0.4	Pass
	Middle	0.484	0.155	0.4	Pass
	High	0.484	0.155	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/2/79) \times 31.6 s				
DH3	Low	1.758	0.281	0.4	Pass
	Middle	1.758	0.281	0.4	Pass
	High	1.758	0.281	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/4/79) \times 31.6 s				
DH5	Low	3.008	0.321	0.4	Pass
	Middle	3.008	0.321	0.4	Pass
	High	3.008	0.321	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/6/79) \times 31.6 s				

DH1: Low Channel



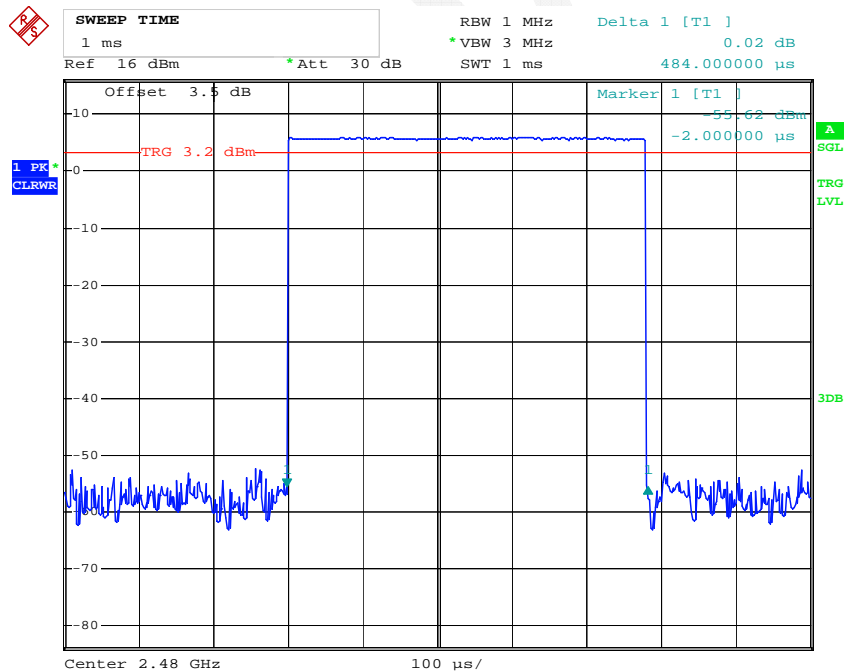
Date: 23.JAN.2015 11:18:05

DH1: Middle Channel



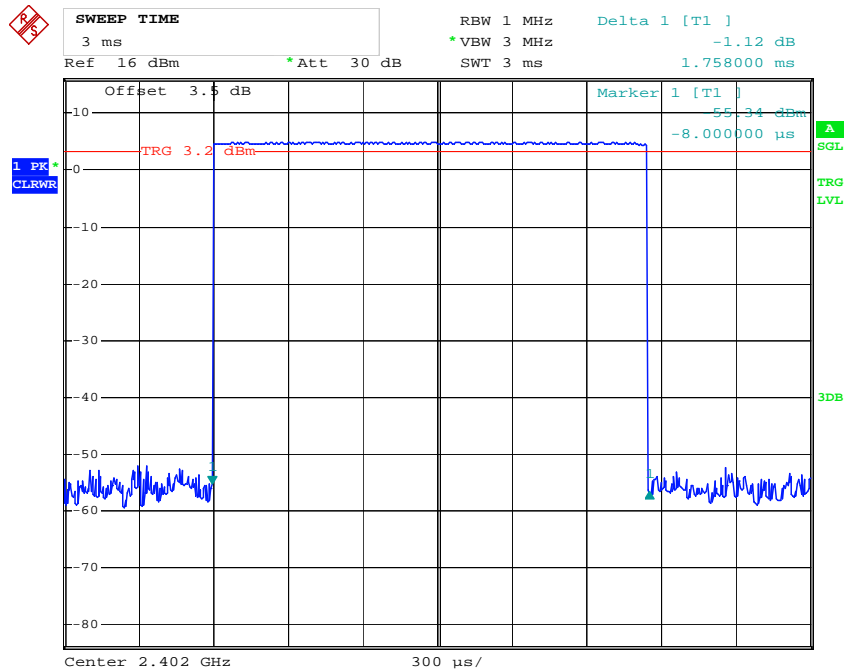
Date: 23.JAN.2015 11:18:14

DH1: High Channel



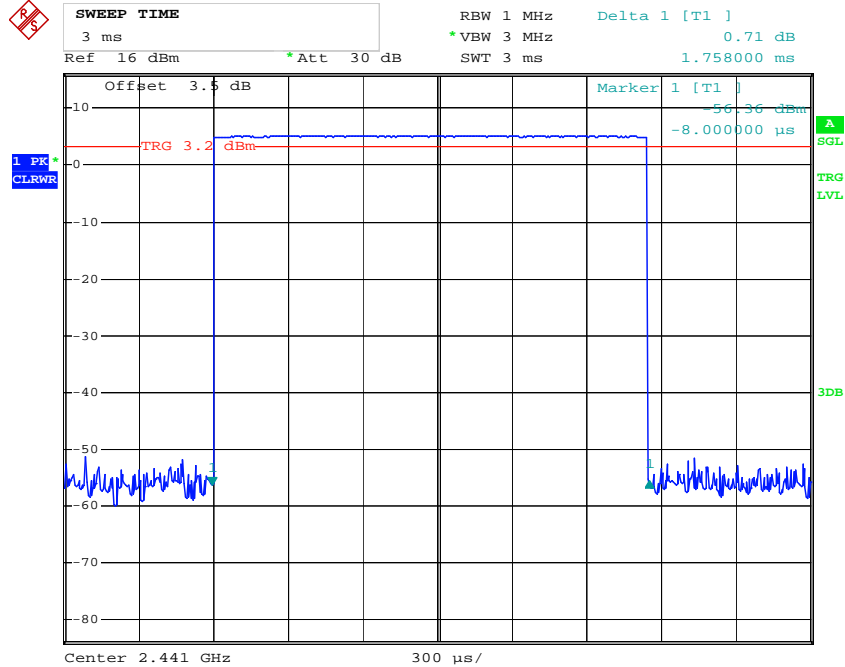
Date: 23.JAN.2015 11:18:21

DH3: Low Channel



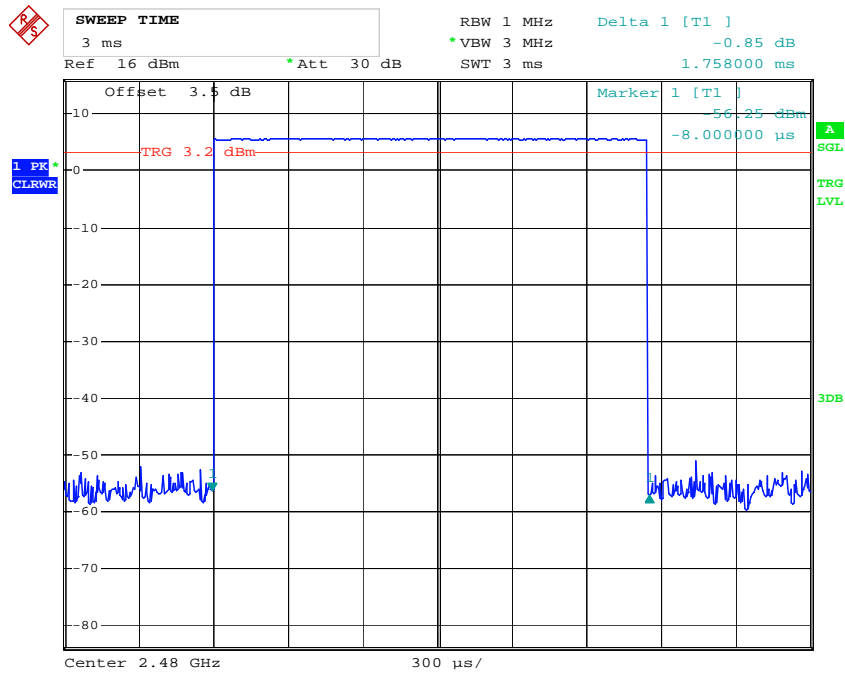
Date: 23.JAN.2015 11:19:17

DH3: Middle Channel



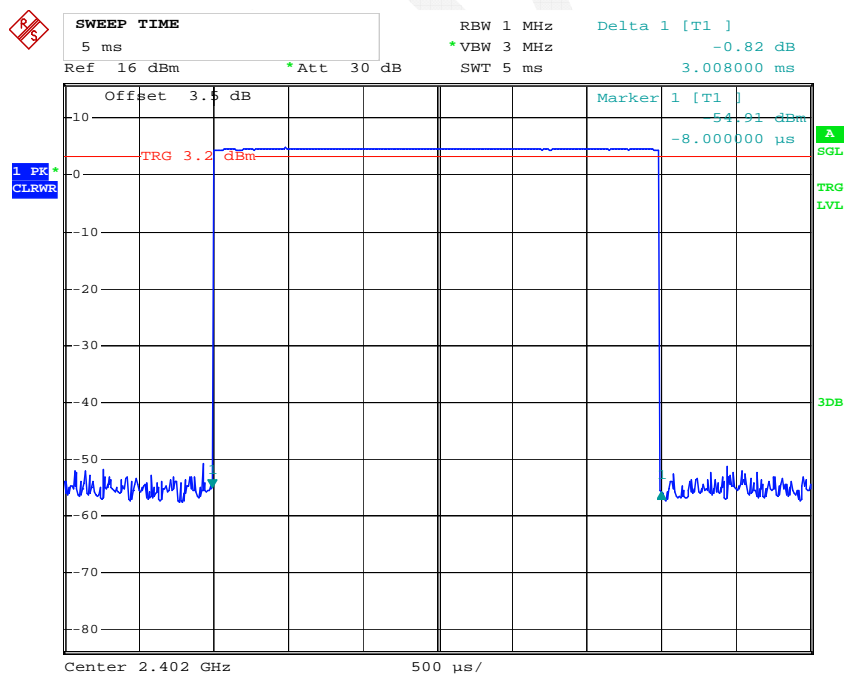
Date: 23.JAN.2015 11:19:11

DH3: High Channel



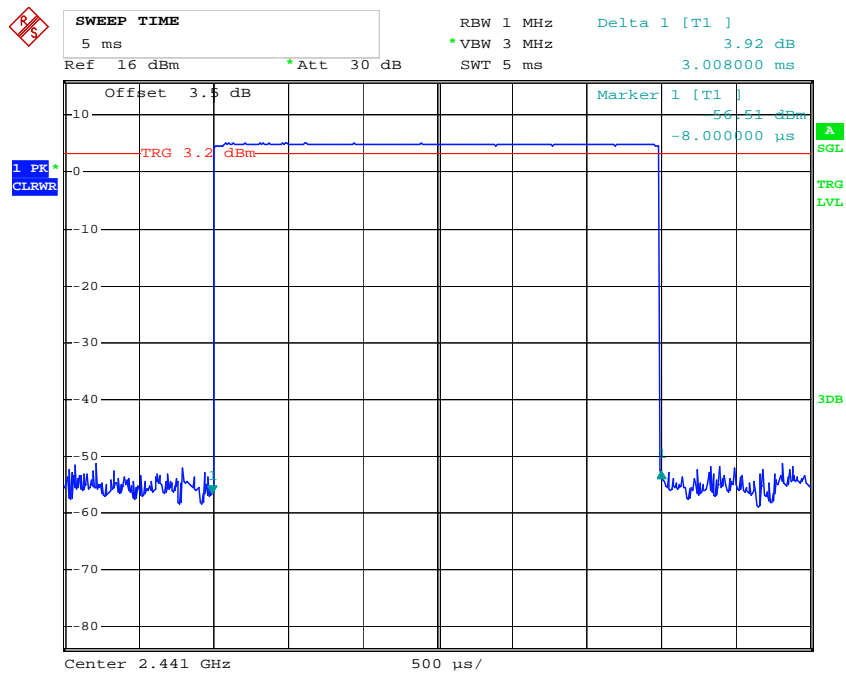
Date: 23.JAN.2015 11:19:04

DH5: Low Channel



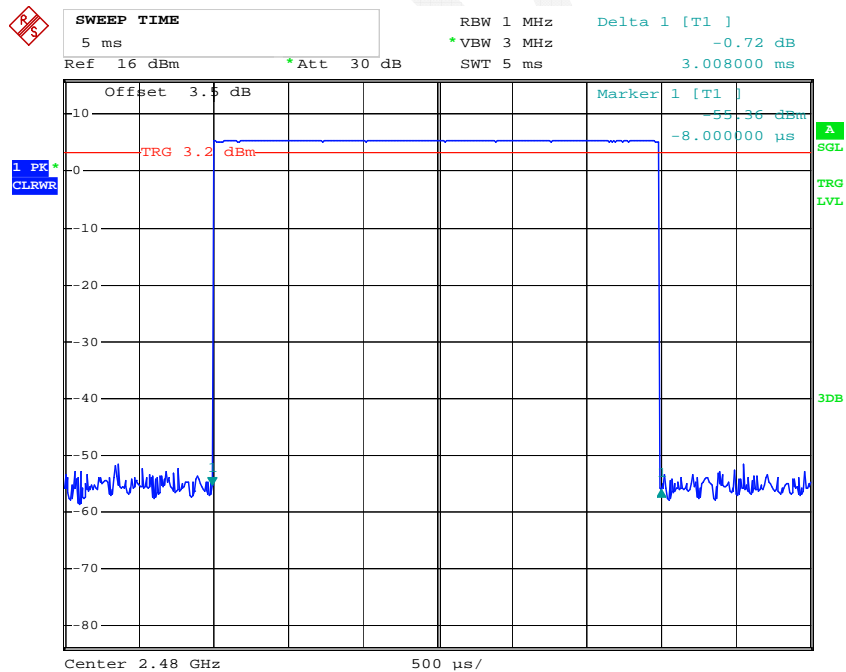
Date: 23.JAN.2015 11:22:49

DH5: Middle Channel



Date: 23.JAN.2015 11:22:56

DH5: High Channel

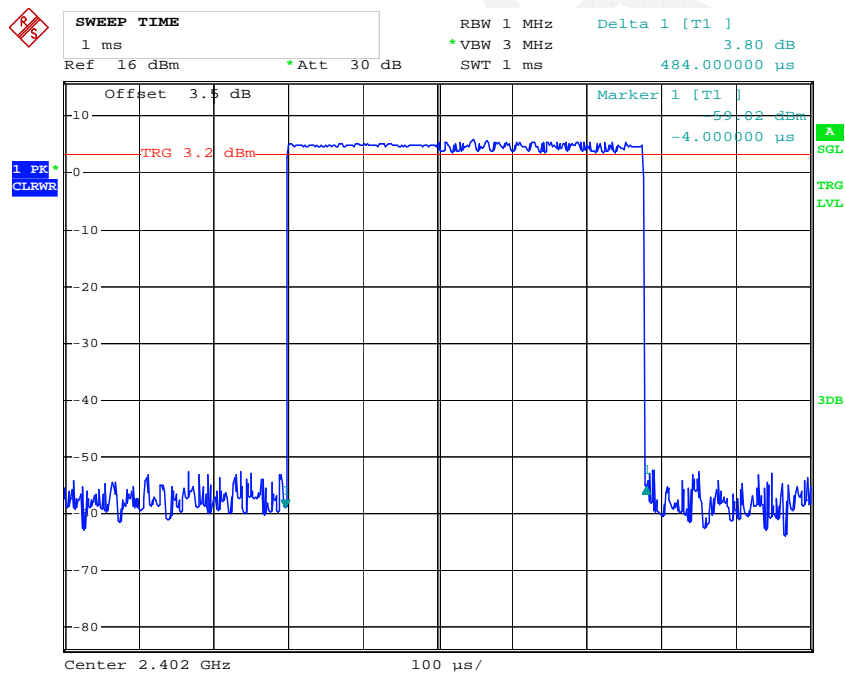


Date: 23.JAN.2015 11:23:18

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

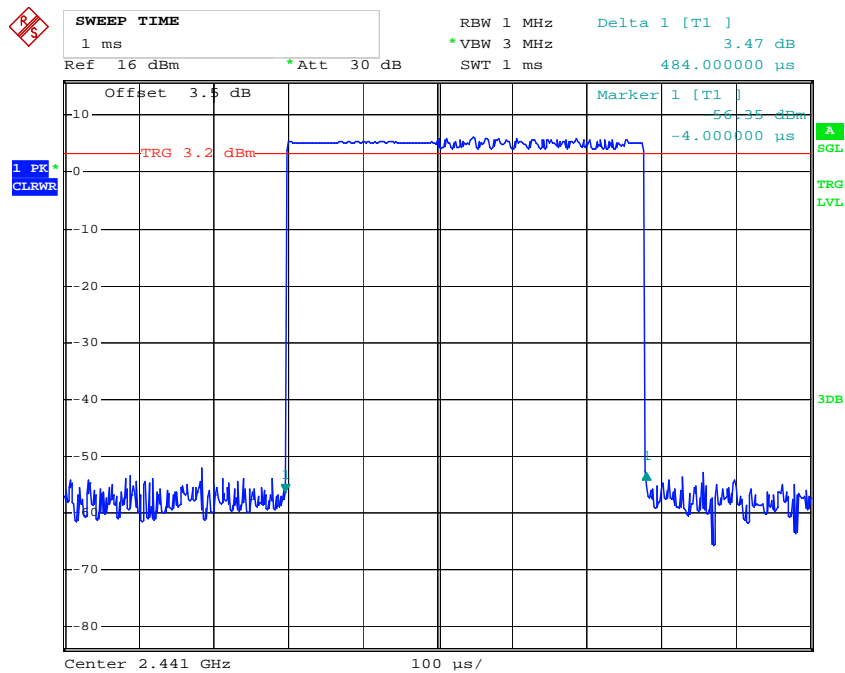
Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
DH1	Low	0.484	0.155	0.4	Pass
	Middle	0.484	0.155	0.4	Pass
	High	0.484	0.155	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/2/79) \times 31.6 s				
DH3	Low	1.758	0.281	0.4	Pass
	Middle	1.758	0.281	0.4	Pass
	High	1.758	0.281	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/4/79) \times 31.6 s				
DH5	Low	3.008	0.321	0.4	Pass
	Middle	3.008	0.321	0.4	Pass
	High	3.008	0.321	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/6/79) \times 31.6 s				

DH1: Low Channel



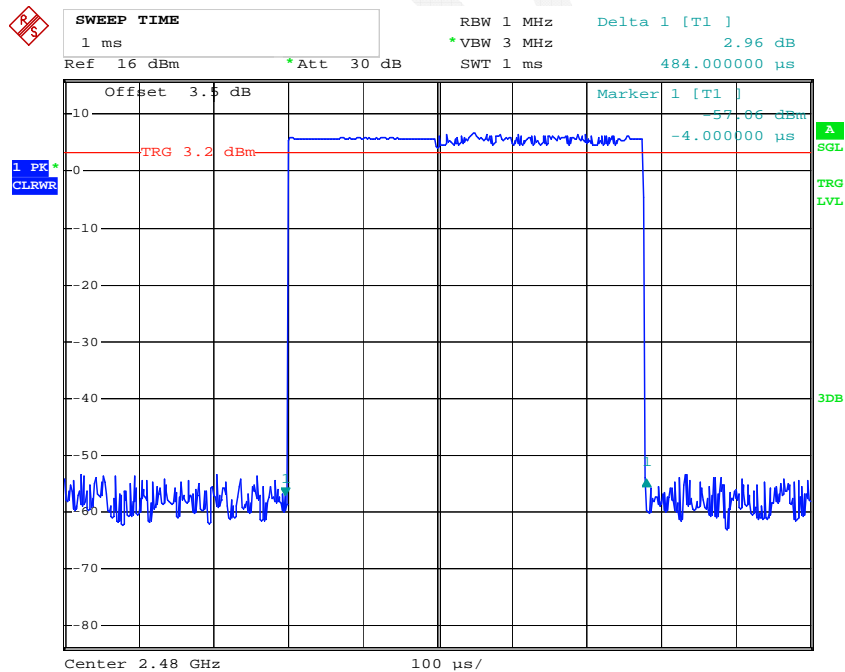
Date: 23.JAN.2015 11:17:07

DH1: Middle Channel



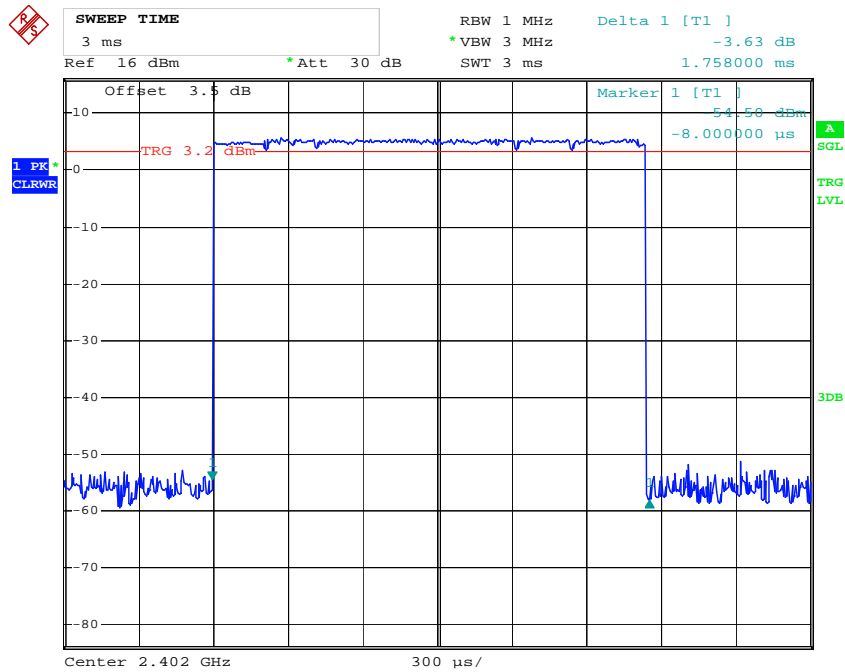
Date: 23.JAN.2015 11:17:00

DH1: High Channel



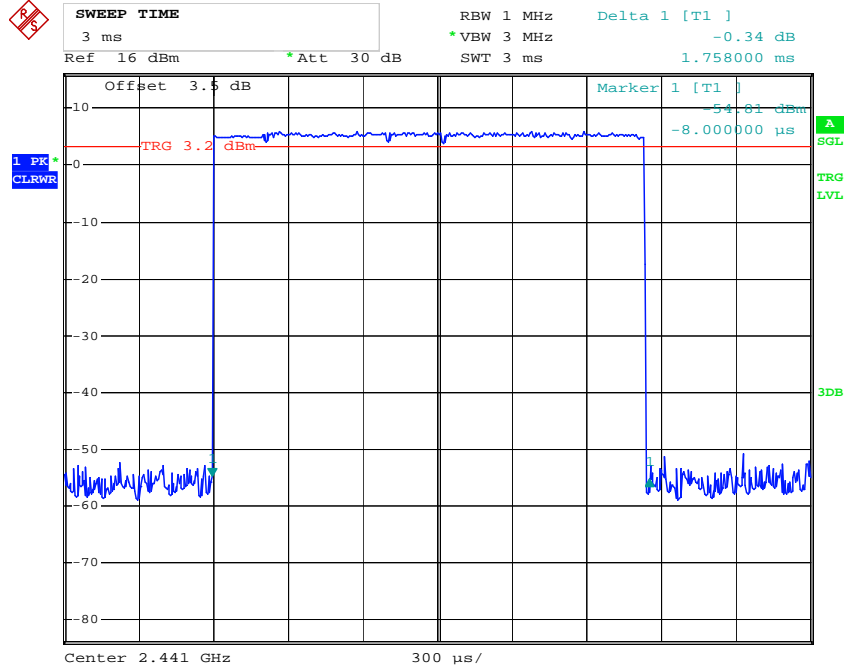
Date: 23.JAN.2015 11:16:52

DH3: Low Channel



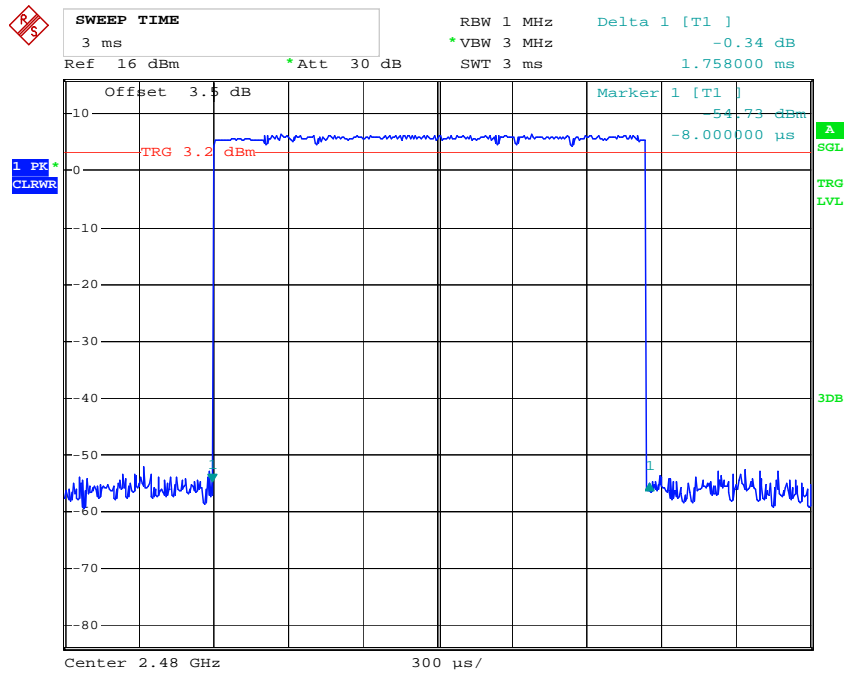
Date: 23.JAN.2015 11:19:43

DH3: Middle Channel



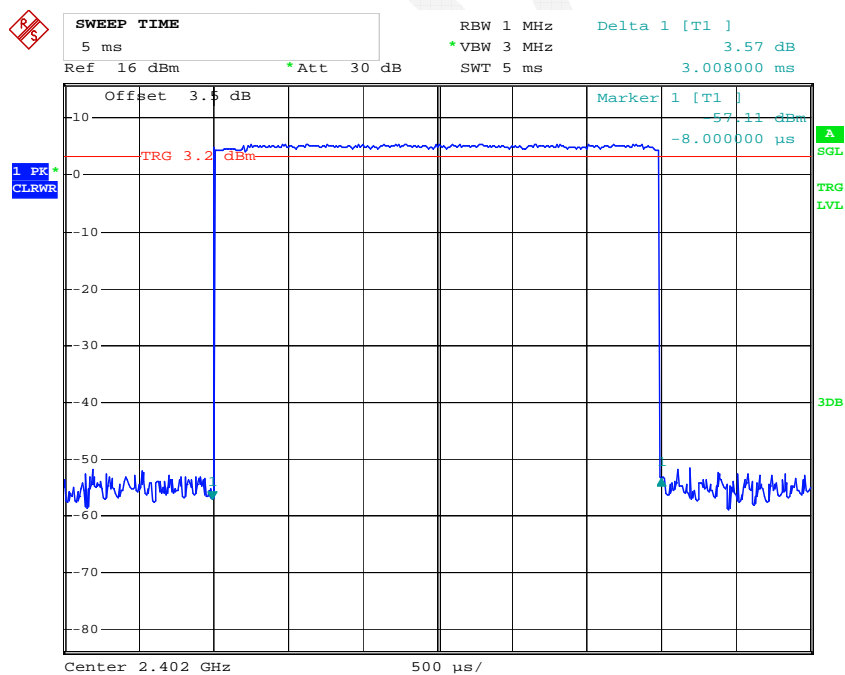
Date: 23.JAN.2015 11:19:58

DH3: High Channel



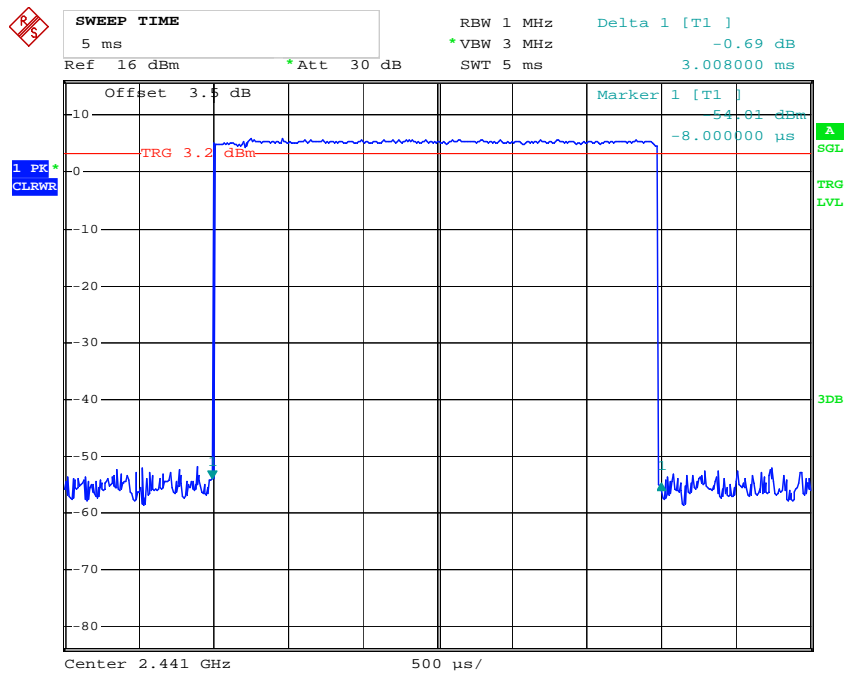
Date: 23.JAN.2015 11:20:06

DH5: Low Channel



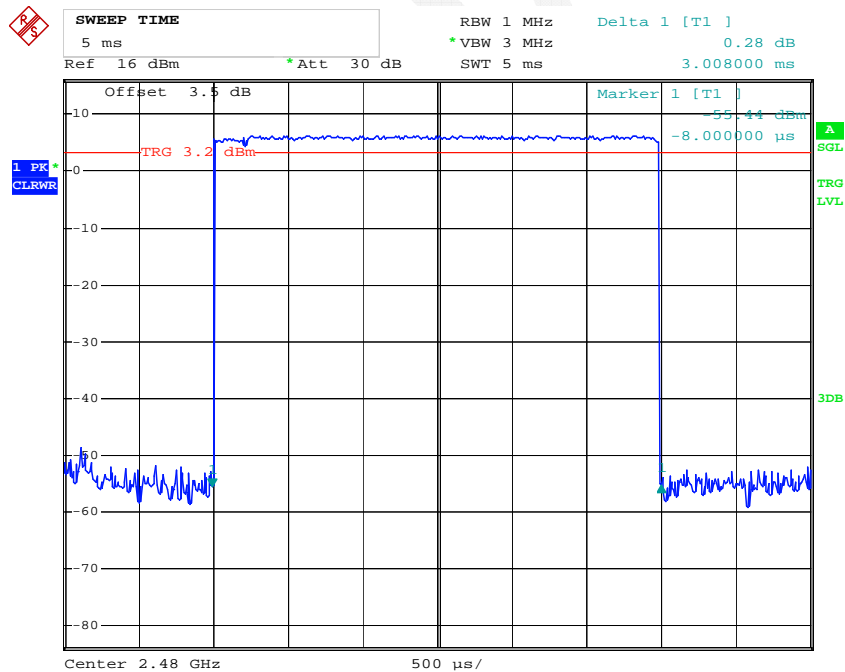
Date: 23.JAN.2015 11:22:26

DH5: Middle Channel



Date: 23.JAN.2015 11:22:17

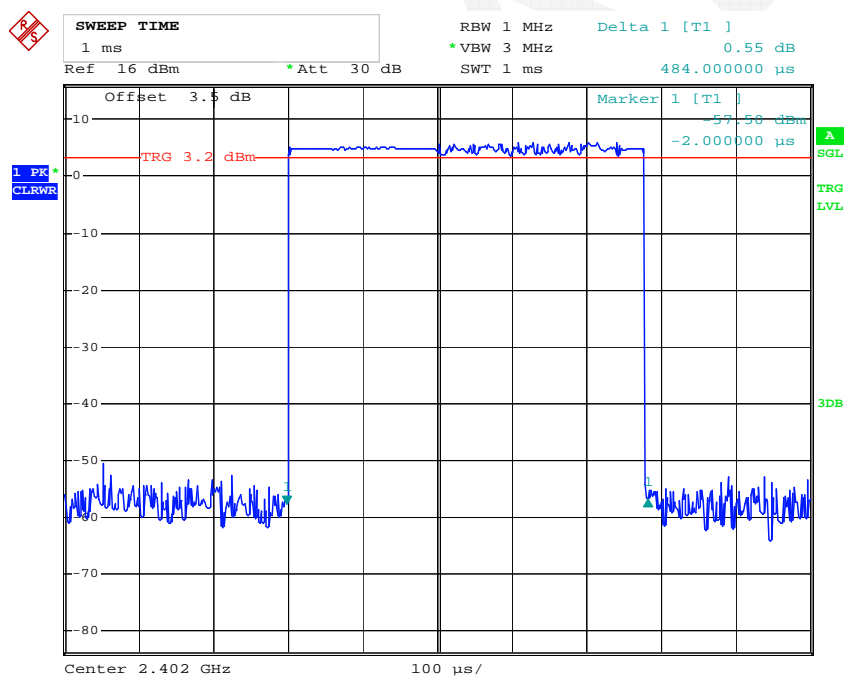
DH5: High Channel



Date: 23.JAN.2015 11:22:10

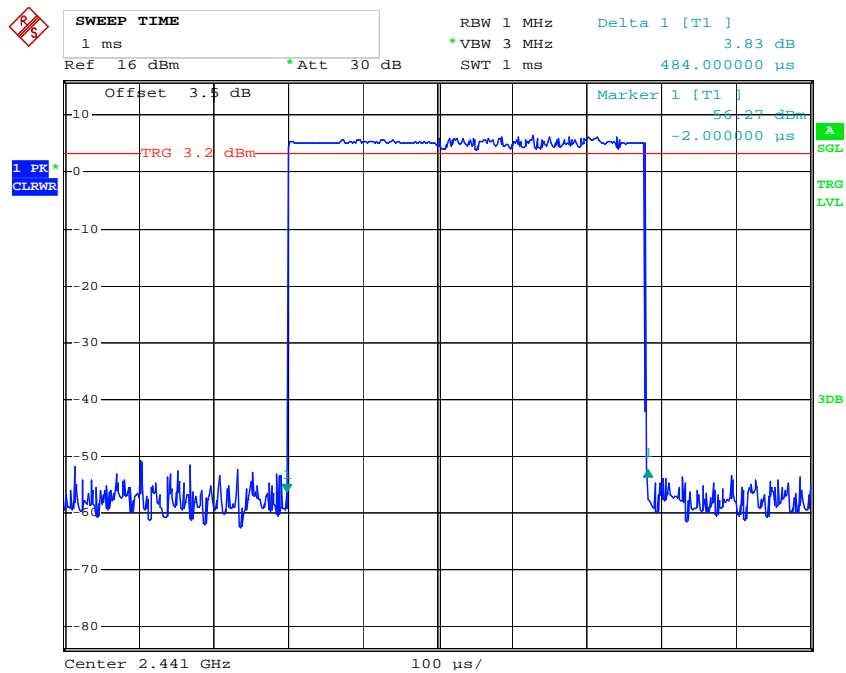
EDR Mode (8-DPSK):

Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
DH1	Low	0.484	0.155	0.4	Pass
	Middle	0.484	0.155	0.4	Pass
	High	0.484	0.155	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/2/79) \times 31.6 s				
DH3	Low	1.758	0.281	0.4	Pass
	Middle	1.758	0.281	0.4	Pass
	High	1.758	0.281	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/4/79) \times 31.6 s				
DH5	Low	3.008	0.321	0.4	Pass
	Middle	3.008	0.321	0.4	Pass
	High	3.008	0.321	0.4	Pass
	Note: Dwell time=Pulse time (ms) \times (1600/6/79) \times 31.6 s				

DH1: Low Channel

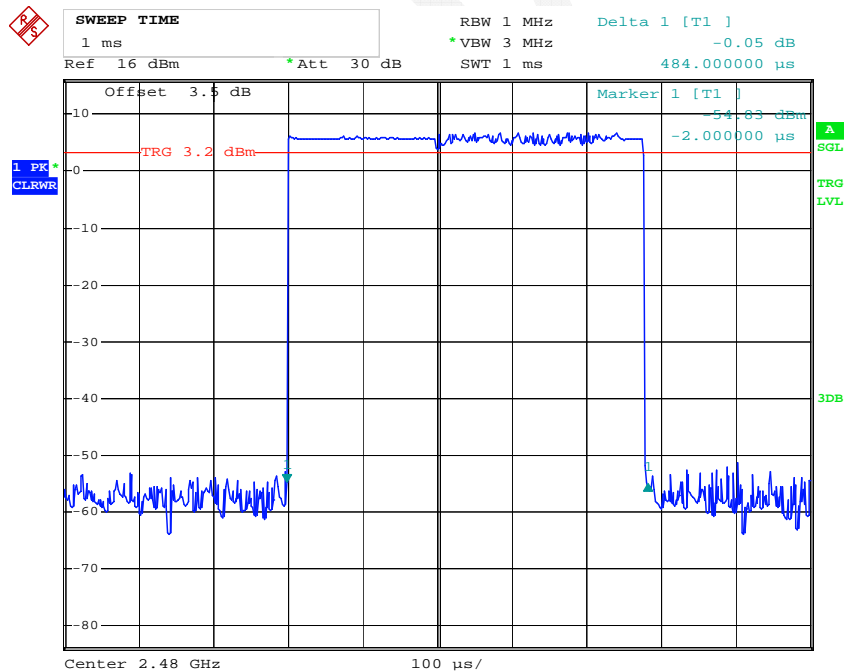
Date: 23.JAN.2015 11:14:34

DH1: Middle Channel



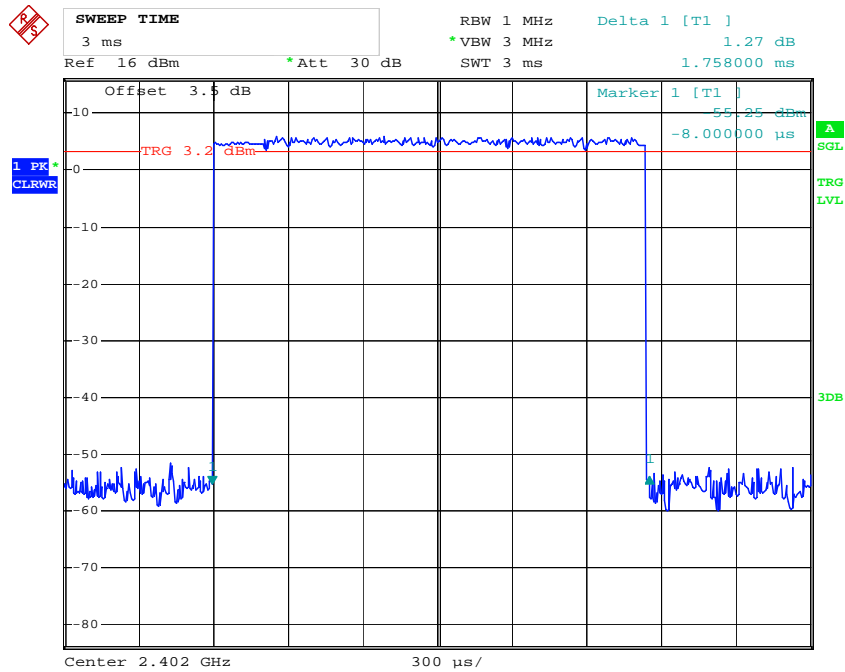
Date: 23.JAN.2015 11:16:04

DH1: High Channel



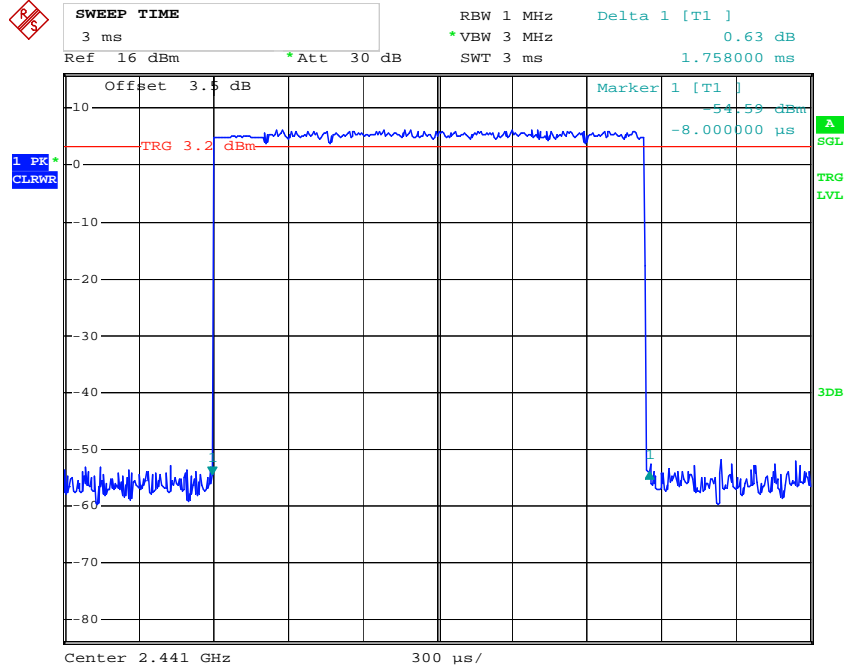
Date: 23.JAN.2015 11:16:14

DH3: Low Channel



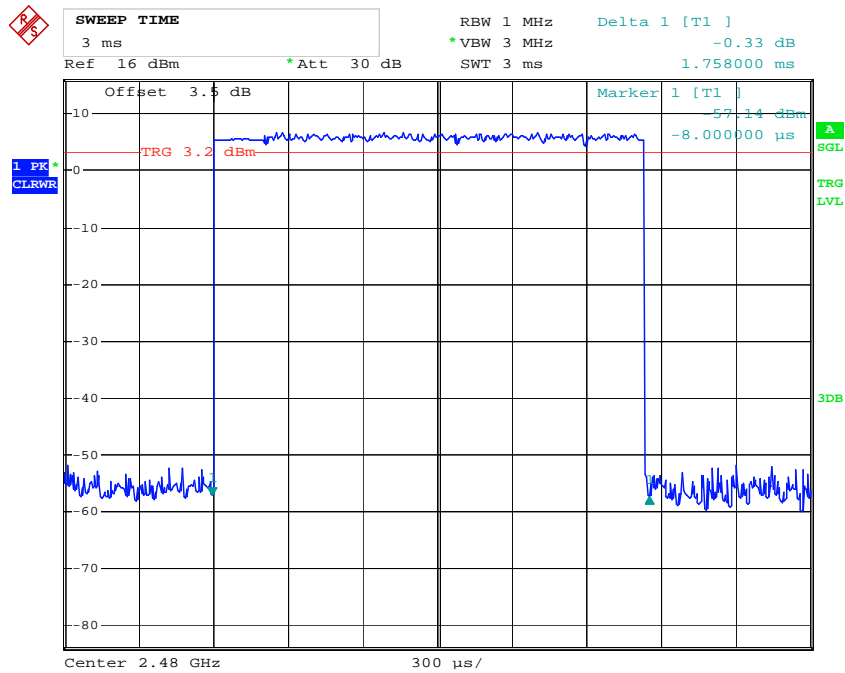
Date: 23.JAN.2015 11:20:54

DH3: Middle Channel



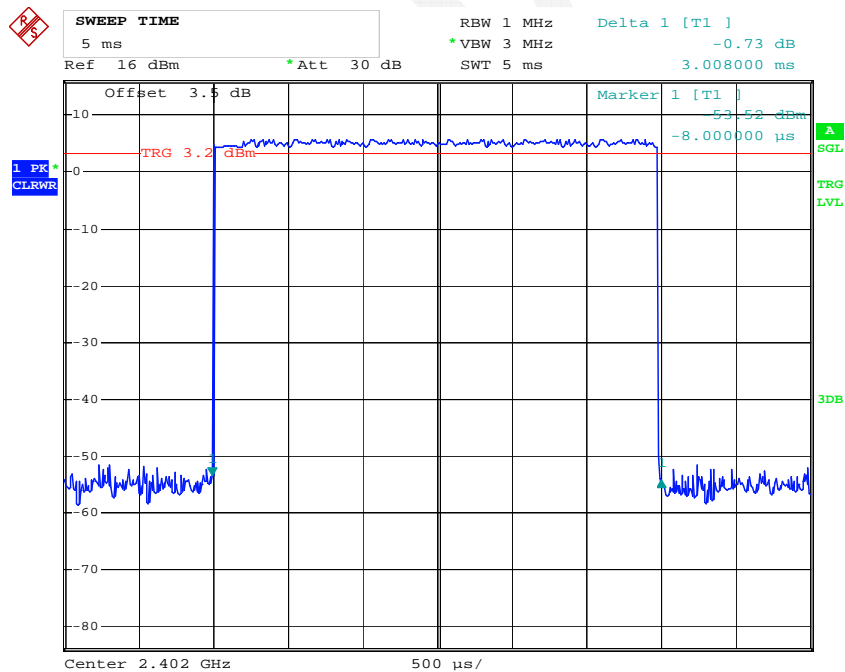
Date: 23.JAN.2015 11:20:46

DH3: High Channel



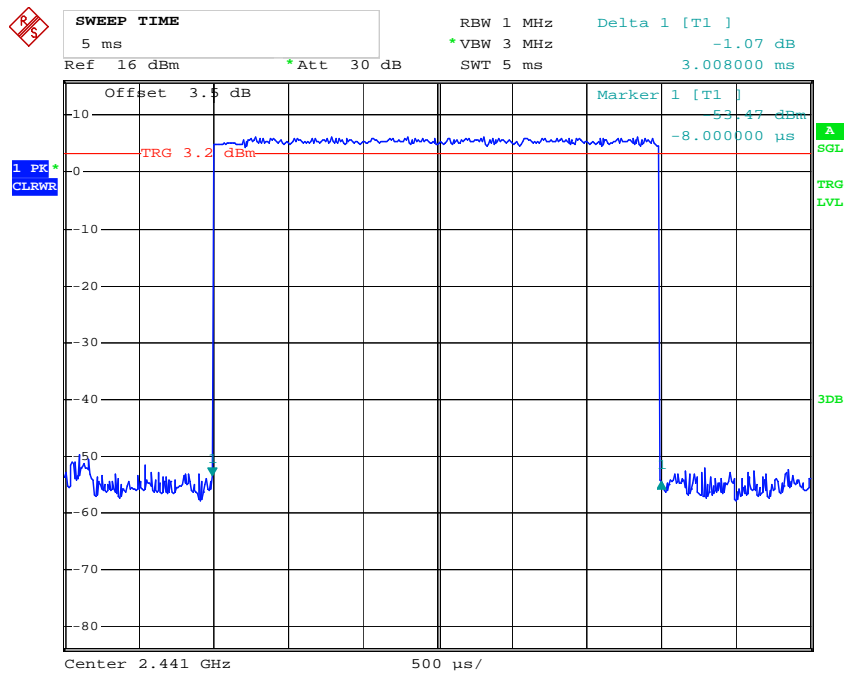
Date: 23.JAN.2015 11:20:35

DH5: Low Channel



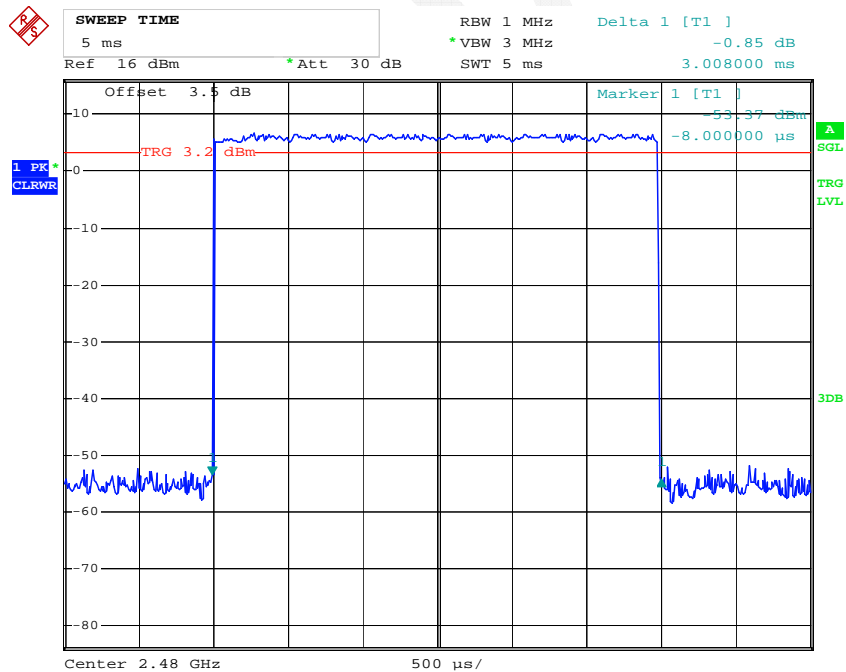
Date: 23.JAN.2015 11:21:32

DH5: Middle Channel



Date: 23.JAN.2015 11:21:40

DH5: High Channel



Date: 23.JAN.2015 11:21:49

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 an EMI test receiver.
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	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:	22.4 °C
Relative Humidity:	40 %
ATM Pressure:	101.7 kPa

* The testing was performed by Dean Liu on 2015-01-22.

Test Result: Compliant.

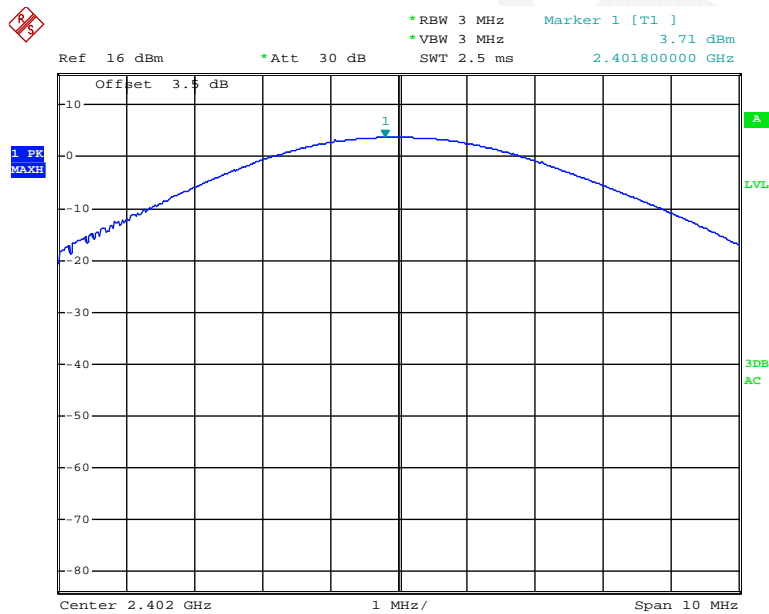
Test Mode: Transmitting

Mode	Channel	Frequency (MHz)	Peak Output Power (dBm)	Limit (dBm)
BDR Mode (GFSK)	Low	2402	3.71	30
	Middle	2441	5.47	30
	High	2480	6.32	30
EDR Mode ($\pi/4$ -DQPSK)	Low	2402	4.64	30
	Middle	2441	6.41	30
	High	2480	7.16	30
EDR Mode (8-DPSK)	Low	2402	4.60	30
	Middle	2441	6.38	30
	High	2480	7.09	30

Note: The data above was tested in conducted mode.

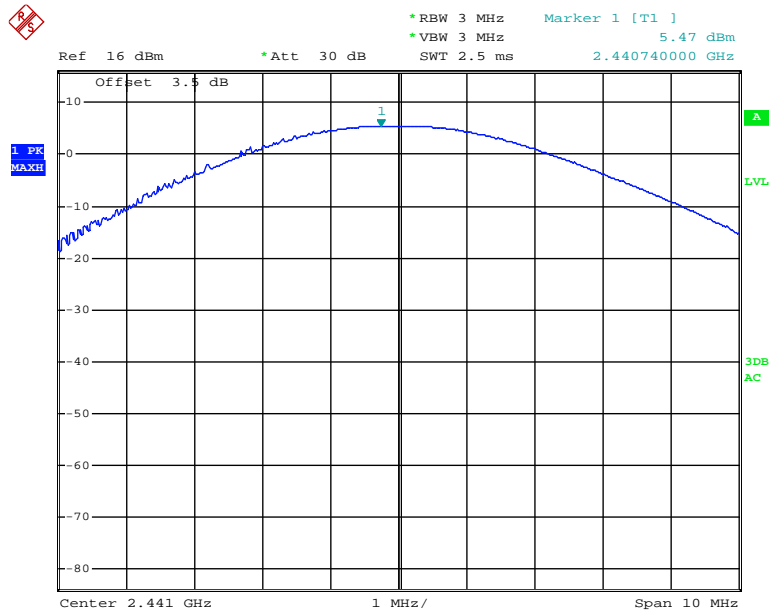
BDR Mode (GFSK):

Peak Output Power, Low Channel



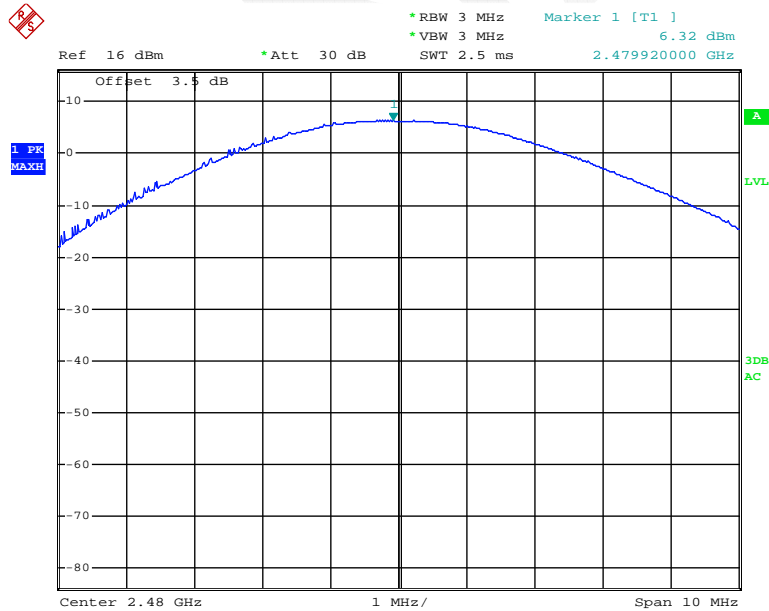
Date: 22.JAN.2015 21:21:22

Peak Output Power, Middle Channel



Date: 22.JAN.2015 21:21:40

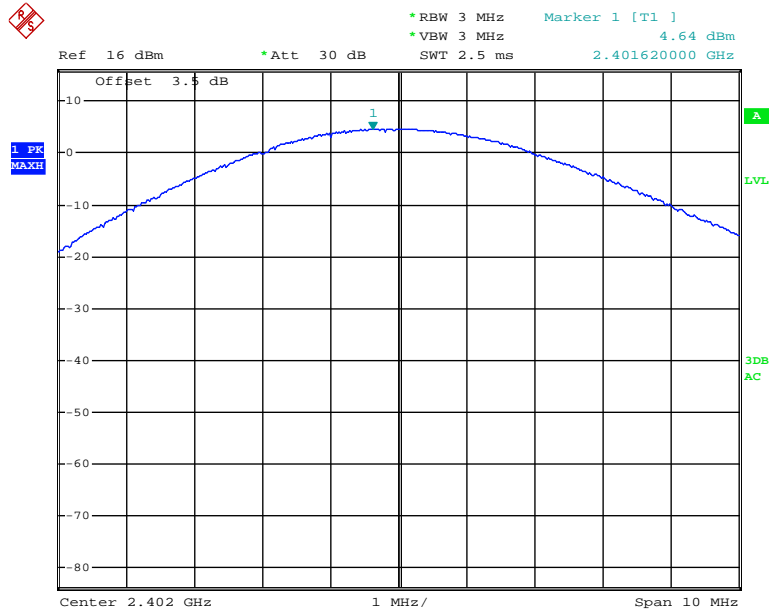
Peak Output Power, High Channel



Date: 22.JAN.2015 21:21:55

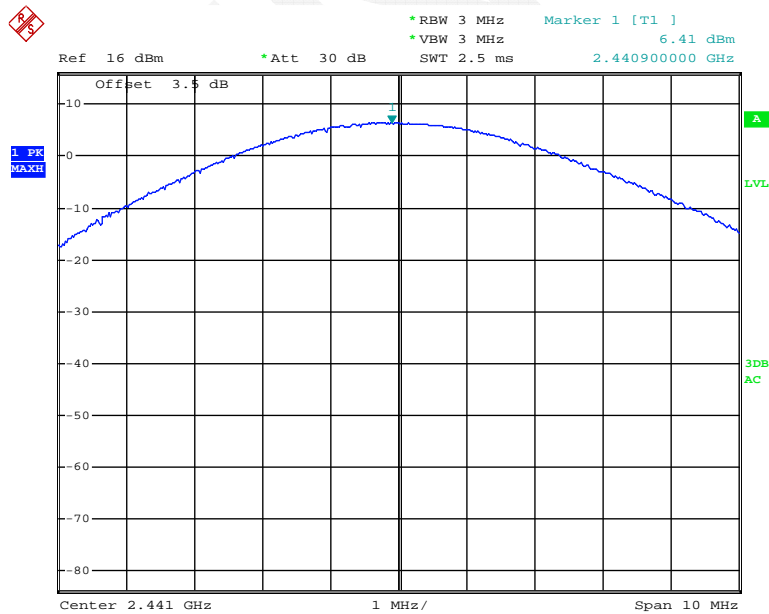
EDR Mode ($\pi/4$ -DQPSK):

Peak Output Power, Low Channel



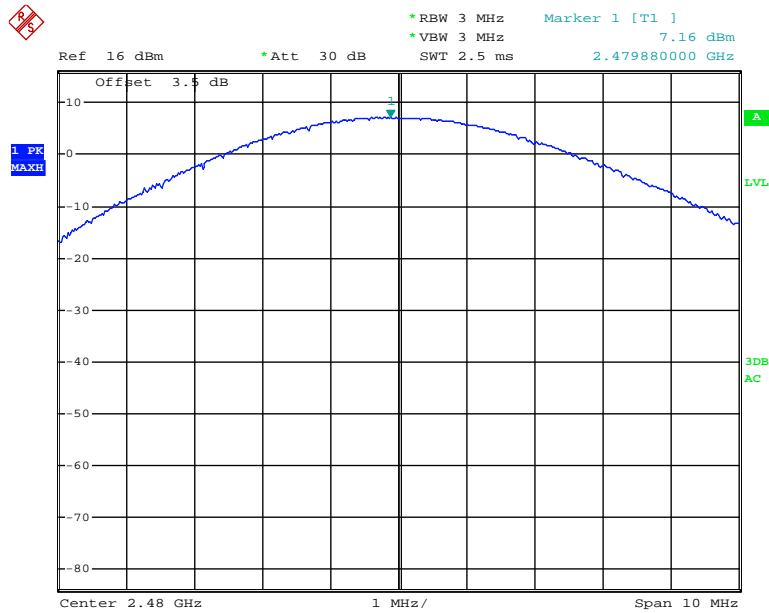
Date: 22.JAN.2015 21:20:53

Peak Output Power, Middle Channel



Date: 22.JAN.2015 21:20:33

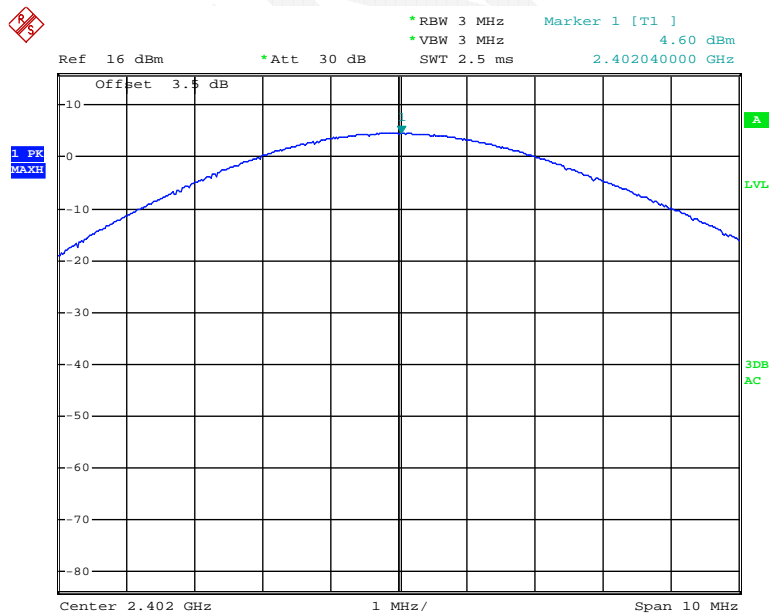
Peak Output Power, High Channel



Date: 22.JAN.2015 21:20:09

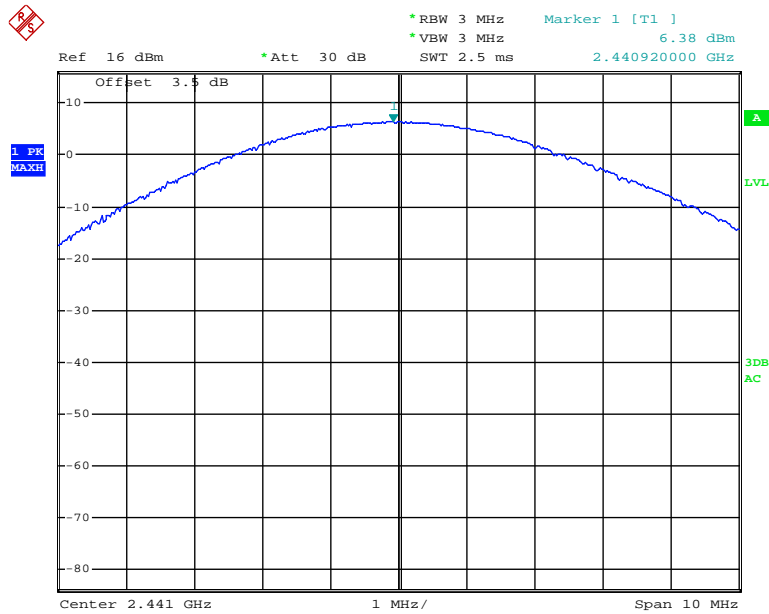
EDR Mode (8-DPSK):

Peak Output Power, Low Channel



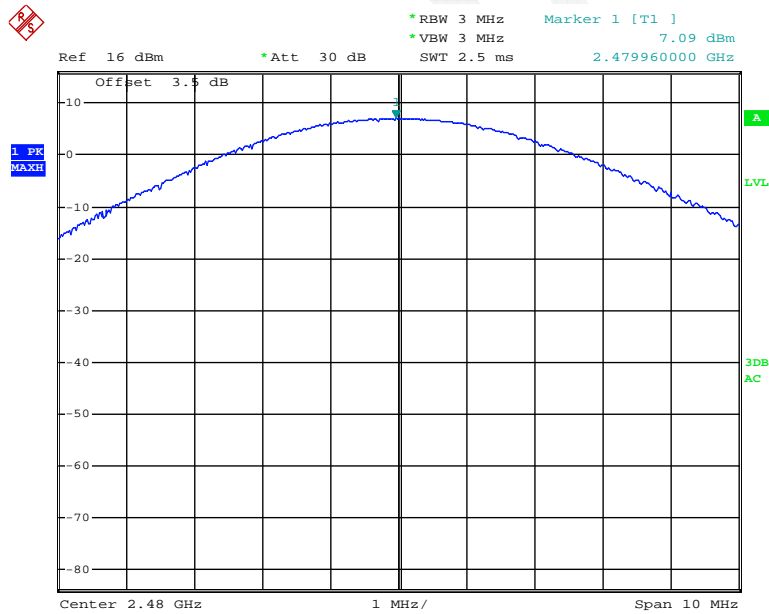
Date: 22.JAN.2015 21:18:53

Peak Output Power, Middle Channel



Date: 22.JAN.2015 21:19:19

Peak Output Power, High Channel



Date: 22.JAN.2015 21:19:47

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	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).

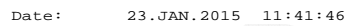
Test Data

Environmental Conditions

Temperature:	21°C
Relative Humidity:	39 %
ATM Pressure:	101.5 kPa

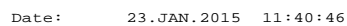
* The testing was performed by Dean Liu on 2015-01-23.

Band Edge, Left Side



Date: 23.JAN.2015 11:42:51

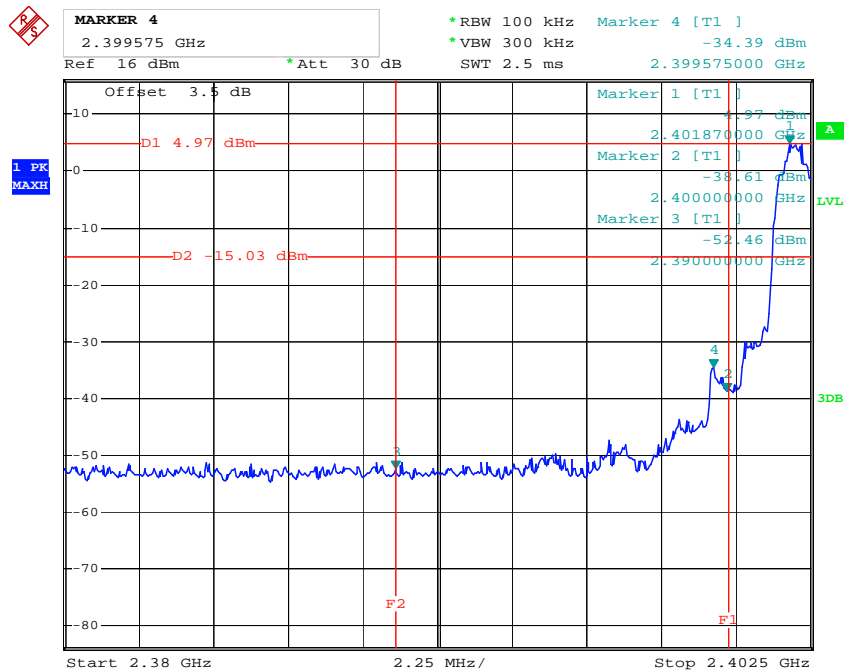
Band Edge, Left Side



Date: 23.JAN.2015 11:39:26

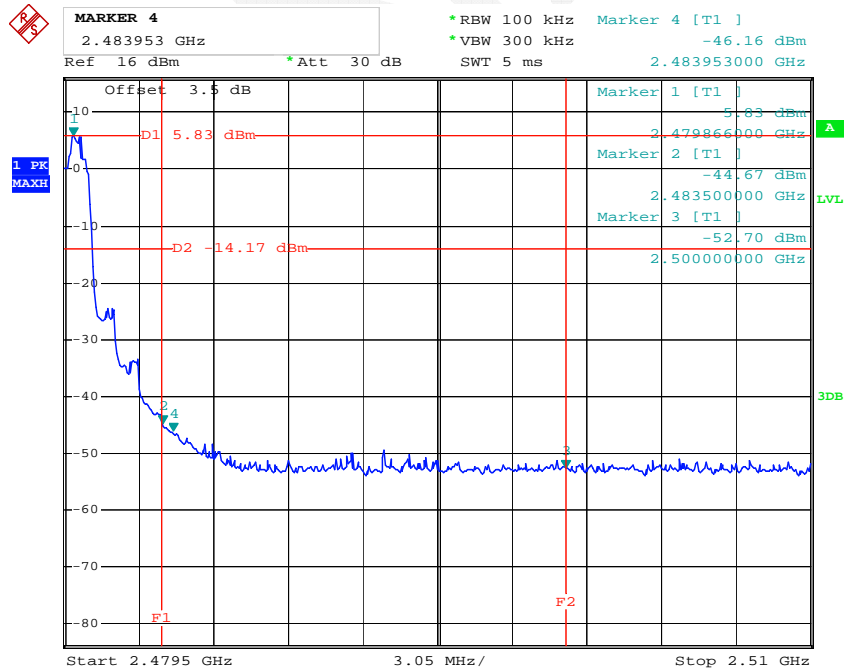
EDR Mode (8-DPSK):

Band Edge, Left Side



Date: 23.JAN.2015 11:36:36

Band Edge, Right Side



Date: 23.JAN.2015 11:38:17

DECLARATION LETTER

Shenzhen Kaliho Technology Development Limited
19F. Block A, Stars plaza, HuaQiang North Road, FuTian District, ShenZhen, China
Contact Phone: 0755-36886291 Contact Fax: 0755-36886291

Product Similarity Declaration

Date: 2015-03-17

To Whom It May Concern,

We, Shenzhen Kaliho Technology Development Limited, hereby declare that our product Smart phone, Model Number: K918, K928, K938, K948, K958 are electrically identical with the same electromagnetic emissions and electromagnetic compatibility characteristics. Model Number: K928, K938, K948, K958 is electrically identical with the Model Number: K918 that was certified by BACL. Their only difference is the model name.

The rest are the same.

Please contact me if you have any question.

Signature:

Evan Li

Manager



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