FCC PART 15.247
TEST REPORT

For

RTX Hong Kong Limited

8/F Corporation Square, 8 Lam Lok Street, Kowloon Bay, Hong Kong

FCC ID: T7HCT8152

Report Type:	Product Type:
Original Report	DECT Handset

Test Engineer:	Gardon Zhang
Report Number:	RSZ130924008-00B
Report Date:	2014-03-25
Reviewed By:	Jimmy Xiao RF Engineer
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GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

The *RTX Hong Kong Limited*'s product, model number: *G966 DECT Handset (FCC ID: T7HCT8152)* or the "EUT" in this report was a *DECT Handset*, which was measured approximately: 13.0 cm (L) x 6.4 cm (W) x 1.3 cm (H), rated with input voltage: DC 3.7V battery.

Note: The product, series model G966 DECT Handset, RTX8152 are electrically identical, they are just different in model number due to market purposes, which was explained in the attached declaration letter. And the model G966 DECT Handset was selected for fully testing.

** All measurement and test data in this report was gathered from production sample serial number: 1309071 (Assigned by BACL, Shenzhen). The EUT supplied by the applicant was received on 2013-09-24.*

Objective

This test report is prepared on behalf of *RTX Hong Kong Limited* in accordance with Part 2-Subpart J, Part 15-Subparts A, B and C of the Federal Communication Commissions rules.

The tests were performed in order to determine compliance with FCC Part 15, Subpart C, section 15.203, 15.205, 15.207, 15.209 and 15.247 rules.

Related Submittal(s)/Grant(s)

FCC part 15D PUE, part 15.247 DTS, part 15B JBP and part 15.407 NII submissions with FCC ID: T7HCT8152.

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 at Bay Area Compliance Laboratories Corp. (Shenzhen). The radiated testing was performed at an antenna-to-EUT distance of 3 meters.

Measurement uncertainty with radiated emission is 5.91 dB for 30MHz-1GHz, and 4.92 dB for above 1GHz, 1.95dB for conducted measurement.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Shenzhen) to collect test data is located on the 6/F, the 3rd Phase of WanLi Industrial Building, ShiHua Road, FuTian Free Trade Zone Shenzhen, Guangdong, China.

Test site at Bay Area Compliance Laboratories Corp. (Shenzhen) has been fully described in reports submitted to the Federal Communication Commission (FCC). The details of these reports have been found to be in compliance with the requirements of Section 2.948 of the FCC Rules on December 06, 2010. 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.: 382179. The test site has been approved by the FCC for public use and is listed in the FCC Public Access Link (PAL) database.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in an engineering mode which was controlled by the equipment Bluetooth tester.

Equipment Modifications

No modification was made to the EUT tested.

Support Equipment List and Details

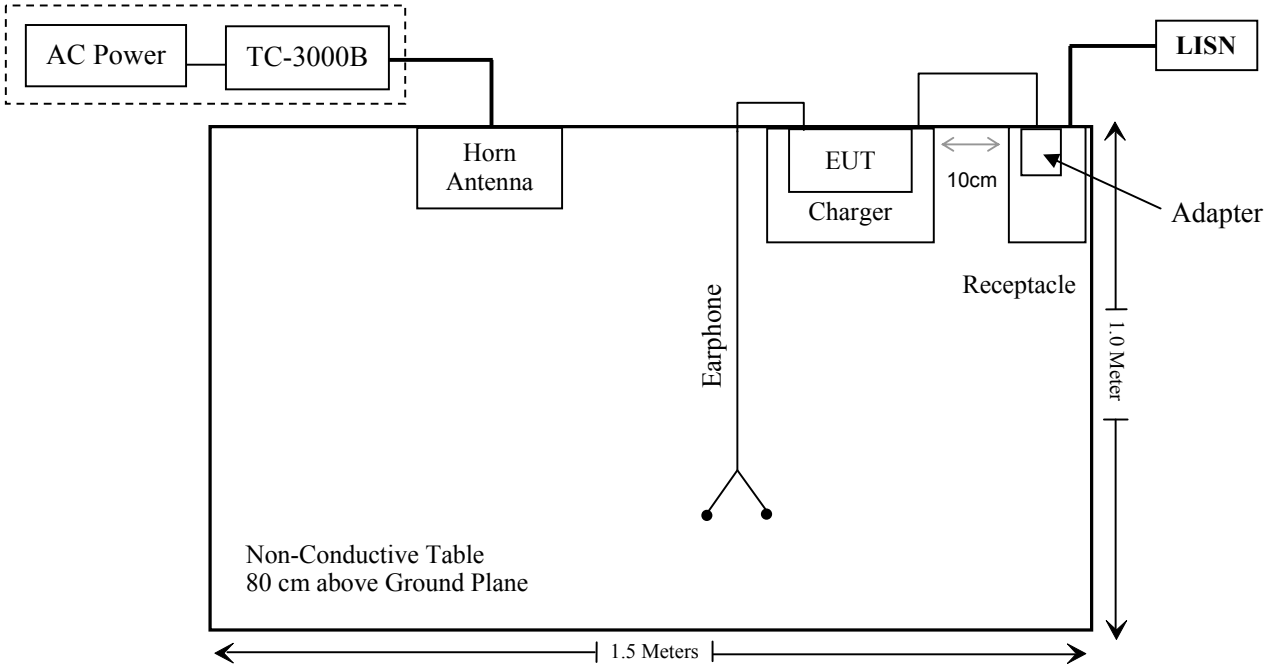
Manufacturer	Description	Model	Serial Number
TESCOM	Bluetooth Tester	TC-3000B	3000B630010
RTX	CHARGER	Gx66 Desktop Charger	000PPPPPXXXXX
RTX	Adapter	FW7712	/

External I/O Cable

Cable Description	Length (m)	From/Port	To
Unshielded Detectable DC Power Cable	2.0	Charger	Adapter

Block Diagram of Test Setup

For Conducted Emission:



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
§ 15.319 (i)&2.1093	RF Exposure	Compliance
§15.203	Antenna Requirement	Compliance
§15.207(a)	AC Line Conducted Emissions	Compliance
§15.205, §15.209 & §15.247(d)	Radiated Emissions	Compliance
§15.247(a)(1)	20 dB Emission 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. 319 (i) & §2.1093 - RF EXPOSURE

Applicable Standard

According to FCC Part15.319 (i), Unlicensed PCS devices are subject to the radiofrequency radiation exposure requirements specified in§1.1307(b) and 2.1093 of this chapter, as appropriate. All equipment shall be considered to operate in a "general population/uncontrolled" environment. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

Result:

Please refer to SAR test report RSZ130924008-20B.

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 monopole antenna arrangement for bluetooth, which was permanently attached and the antenna gain is 1dBi, fulfill the requirement of this section. Please refer to the internal photos.

Result: Compliance.

FCC§15.315 & §15.207 - CONDUCTED EMISSIONS

Applicable Standard

FCC§15.315, an unlicensed PCS device that is designed to be connected to the public utility (AC) power line must meet the limits specified in §15.207.

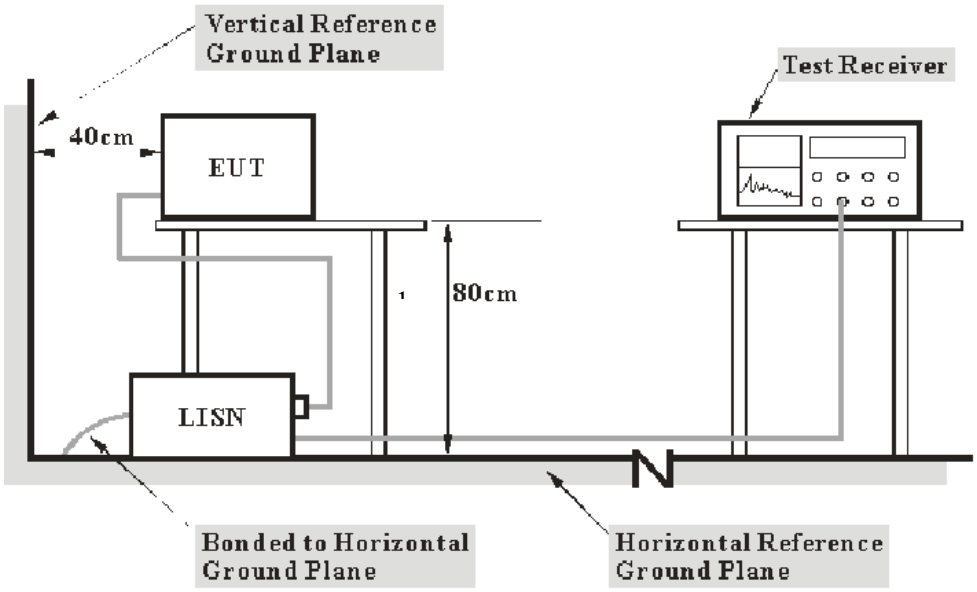
Measurement Uncertainty

Input quantities to be considered for conducted disturbance measurements maybe receiver reading, attenuation of the connection between AMN/ISN and receiver, AMN/ISN voltage division factor, AMN/ISN VDF frequency interpolation and receiver related input quantities, etc.

Based on CISPR 16-4-2:2011, the expended combined standard uncertainty of conducted disturbance test at Bay Area Compliance Laboratories Corp. (Shenzhen) is shown as below. And the uncertainty will not be taken into consideration for the test data recorded in the report

Port	Measurement uncertainty
AC Mains	3.26 dB (k=2, 95% level of confidence)
CAT 3	3.70 dB (k=2, 95% level of confidence)
CAT 5	3.86 dB (k=2, 95% level of confidence)
CAT 6	4.64 dB (k=2, 95% level of confidence)

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 15.315 and FCC 15.207 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 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, adapter was connected to the outlet of the LISN.

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

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

Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	EMI Test Receiver	ESCS30	100176	2013-06-17	2014-06-17
Rohde & Schwarz	LISN	ENV216	3560.6650.12-101613-Yb	2013-05-07	2014-05-07
Rohde & Schwarz	Transient Limitor	ESH3Z2	DE25985	2013-10-15	2014-10-15
Rohde & Schwarz	CE Test software	EMC 32	V8.53	-	-

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

Corrected Factor & Margin Calculation

The Corrected factor is calculated by adding LISN/ISN VDF (Voltage Division Factor), Cable Loss and Transient Limiter Attenuation. The basic equation is as follows:

Correction Factor = LISN VDF + Cable Loss + Transient Limiter Attenuation

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

Margin = Limit – Corrected Amplitude

Test Results Summary

According to the recorded data in following table, with the worst margin reading of:

7.7 dB at **0.545690 MHz** in the **Neutral** conducted mode

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + U_{(Lm)} \leq L_{lim} + U_{cispr}$$

In BACL, $U_{(Lm)}$ is less than U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

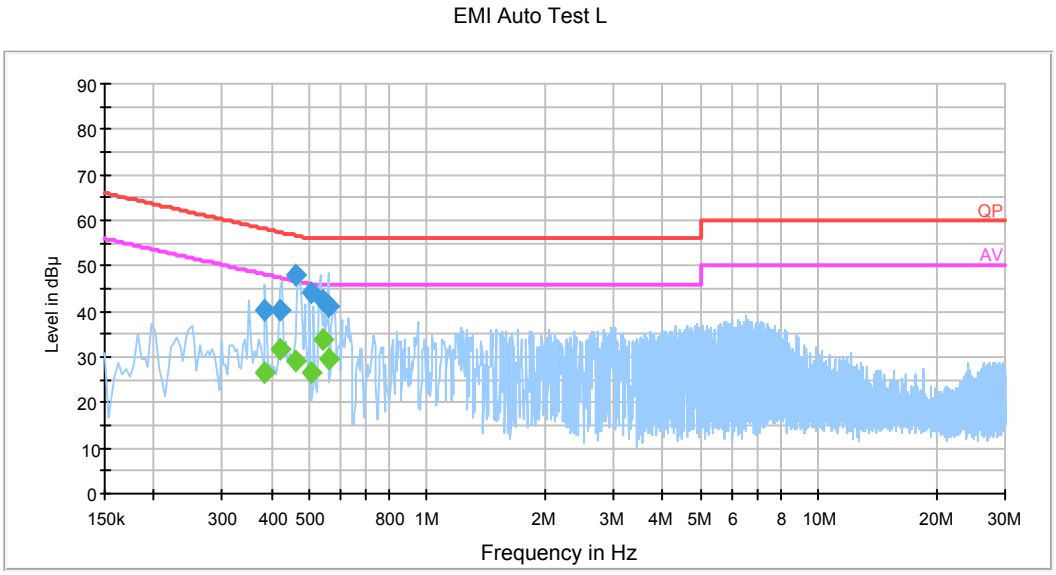
Environmental Conditions

Temperature:	20 ℃
Relative Humidity:	50 %
ATM Pressure:	101.0 kPa

The testing was performed by Gardon Zhang on 2014-02-14.

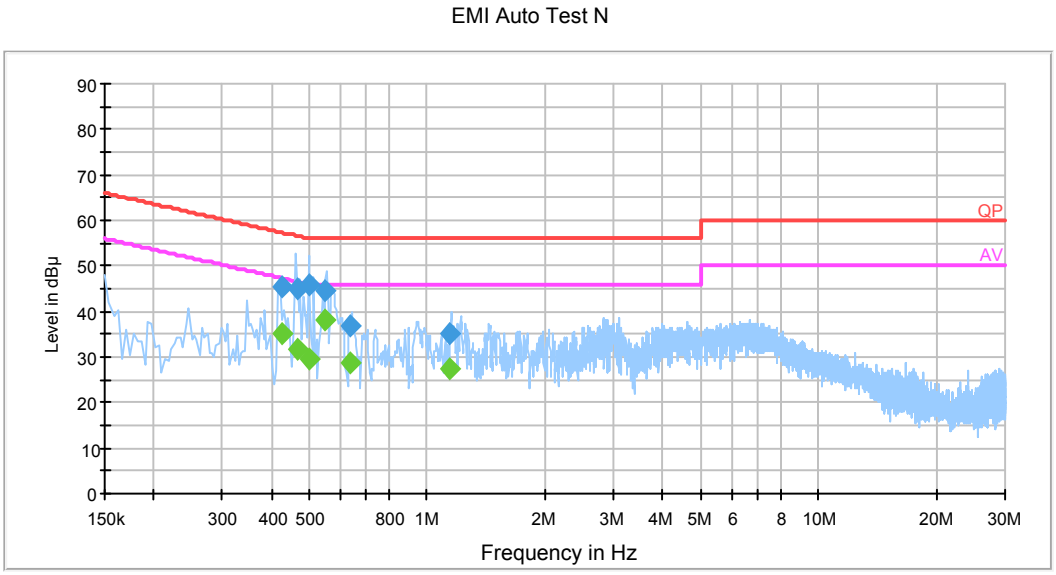
Test mode: Transmitting / Charging

AC 120V/60 Hz, Line



Frequency (MHz)	Corrected Amplitude (dBµV)	Corrected Factor (dB)	Limit (dBµV)	Margin (dB)	Remark (PK/QP/Ave)
0.384210	40.1	19.5	58.2	18.1	QP
0.384210	26.7	19.5	48.2	21.5	Ave.
0.419610	40.5	19.5	57.5	17.0	QP
0.419610	31.9	19.5	47.5	15.6	Ave.
0.459010	48.1	19.6	56.7	8.6	QP
0.459010	29.0	19.6	46.7	17.7	Ave.
0.506470	44.0	19.6	56.0	12.0	QP
0.506470	26.6	19.6	46.0	19.4	Ave.
0.541990	42.2	19.6	56.0	13.8	QP
0.541990	33.9	19.6	46.0	12.1	Ave.
0.561630	41.3	19.6	56.0	14.7	QP
0.561630	29.6	19.6	46.0	16.4	Ave.

AC 120V/60 Hz, Neutral



Frequency (MHz)	Corrected Amplitude (dBµV)	Corrected Factor (dB)	Limit (dBµV)	Margin (dB)	Remark (PK/QP/Ave)
0.428330	45.3	19.6	57.3	12.0	QP
0.468930	45.0	19.6	56.5	11.5	QP
0.502530	46.0	19.7	56.0	10.0	QP
0.545690	44.7	19.6	56.0	11.3	QP
0.636370	36.7	19.6	56.0	19.3	QP
1.144690	35.3	19.5	56.0	20.7	QP
0.428330	35.3	19.6	47.3	12.0	Ave.
0.468930	31.5	19.6	46.5	15.0	Ave.
0.502530	29.7	19.7	46.0	16.3	Ave.
0.545690	38.3	19.6	46.0	7.7	Ave.
0.636370	28.9	19.6	46.0	17.1	Ave.
1.144690	27.4	19.5	46.0	18.6	Ave.

Note:
1) Correction Factor =LISN VDF (Voltage Division Factor) + Cable Loss + Transient Limiter Attenuation
The corrected factor has been input into the transducer of the test software.
2) Corrected Amplitude = Reading + Correction Factor
3) Margin = Limit – Corrected Amplitude

FCC §15.205, §15.209 & §15.247(d) – RADIATED EMISSIONS

Applicable Standard

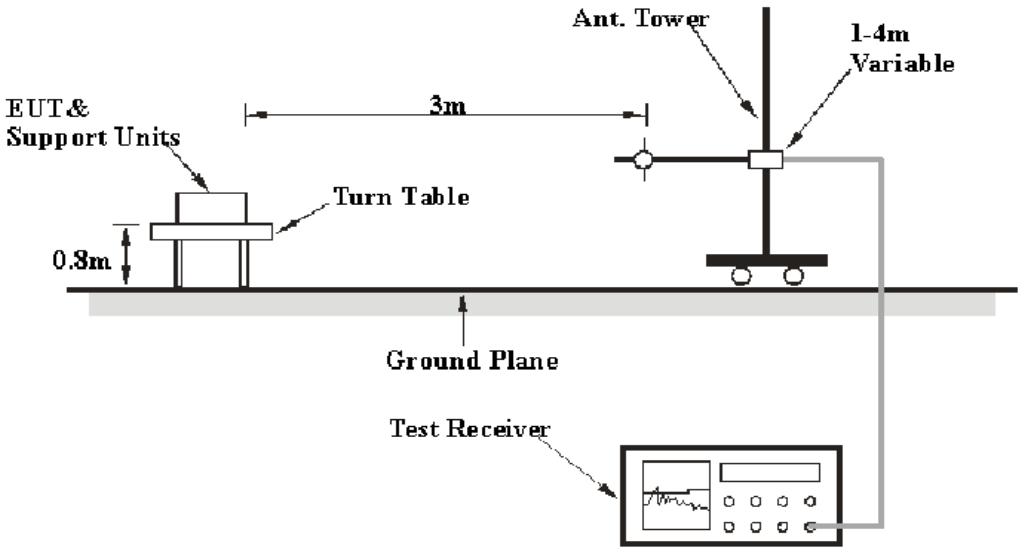
FCC §15.205; §15.209; §15.247(d)

Measurement Uncertainty

All measurements involve certain levels of uncertainties, especially in field of EMC. The factors contributing to uncertainties are spectrum analyzer, cable loss, antenna factor calibration, antenna directivity, antenna factor variation with height, antenna phase center variation, antenna factor frequency interpolation, measurement distance variation, site imperfections, mismatch (average), and system repeatability.

Based on CISPR 16-4-2:2011, the expended combined standard uncertainty of radiation emissions at Bay Area Compliance Laboratories Corp. (Shenzhen) is 5.91 dB for 30MHz-1GHz, and 4.92 dB for above 1GHz. And this uncertainty will not be taken into consideration for the test data recorded in the report.

EUT Setup



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

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	100 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1 MHz	3 MHz	/	PK
	1 MHz	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 and 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
HP	Amplifier	8447E	1937A01046	2013-09-30	2014-09-30
Rohde & Schwarz	EMI Test Receiver	ESCI	101122	2013-09-17	2014-09-17
Sunol Sciences	Broadband Antenna	JB1	A040904-2	2011-11-28	2014-11-27
Mini	Amplifier	ZVA-183-S+	5969001149	2013-04-03	2014-04-03
DUCOMMUN	Pre-amplifier	ALN-22093530-01	991373-01	2013-08-03	2014-08-03
A.H. System	Horn Antenna	SAS-200/571	135	2012-02-11	2015-02-10
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31
the electro-Mechanics Co.	Horn Antenna	3116	9510-2270	2013-10-14	2016-10-13
Rohde & Schwarz	Test software	EMC 32	V9.10	-	-

*** Statement of Traceability:** Bay Area Compliance Laboratories Corp. (Shenzhen) attests that all calibrations have been performed in accordance to requirements that 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:

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

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

Margin = Limit – Corrected Amplitude

Test Results Summary

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

6.72 dB at **4804.0 MHz** in the **Horizontal** polarization

Refer to CISPR16-4-2:2011 and CISPR 16-4-1:2009, the measured level is in compliance with the limit if

$$L_m + + U_{(Lm)} \leq L_{lim} + + U_{cispr}$$

in BACL., $U_{(Lm)}$ is less than + U_{cispr}, if L_m is less than L_{lim}, it implies that the EUT complies with the limit.

Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Gardon Zhang on 2013-10-21.

EUT operation mode: Transmitting

30 MHz -25 GHz: (*Scan with GFSK, π/4-DQPSK, 8-DPSK, the worst case is BDR Mode (GFSK)*)

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
Low Channel (2402 MHz)									
151.1	45.00	QP	90	1.0	H	-14.9	30.10	43.5	13.40
2402.0	90.89	PK	80	1.3	H	6.13	97.02	/	
2402.0	79.60	Ave.	80	1.3	H	6.13	85.73	/	/
2402.0	93.61	PK	220	1.3	V	6.13	99.74	/	/
2402.0	78.90	Ave.	220	1.3	V	6.13	85.03	/	/
2335.4	35.41	PK	229	1.4	V	5.48	40.89	74	33.11
2335.4	21.14	Ave.	229	1.4	V	5.48	26.62	54	27.38
2387.2	35.41	PK	251	1.4	V	6.13	41.54	74	32.46
2387.2	21.96	Ave.	251	1.4	V	6.13	28.09	54	25.91
2491.0	35.81	PK	225	1.4	H	7.21	43.02	74	30.98
2491.0	21.44	Ave.	225	1.4	H	7.21	28.65	54	25.35
4804.0	46.81	PK	291	1.5	H	12.40	59.21	74	14.79
4804.0	34.88	Ave.	291	1.5	H	12.40	47.28	54	6.72
7206.0	34.54	PK	85	1.3	V	17.06	51.60	74	22.40
7206.0	19.50	Ave.	85	1.3	V	17.06	36.56	54	17.44
9608.0	34.30	PK	32	1.2	H	19.28	53.58	74	20.42
9608.0	18.49	Ave.	32	1.2	H	19.28	37.77	54	16.23
Middle Channel (2441 MHz)									
151.1	44.78	QP	248	1.2	H	-14.9	29.88	43.5	13.62
2441.0	90.59	PK	143	1.6	H	7.21	97.80	/	/
2441.0	79.04	Ave.	143	1.6	H	7.21	86.25	/	/
2441.0	95.83	PK	171	1.3	V	7.21	103.04	/	/
2441.0	85.09	Ave.	171	1.3	V	7.21	92.30	/	/
2380.4	36.24	PK	104	1.3	H	6.13	42.37	74	31.63
2380.4	21.53	Ave.	104	1.3	H	6.13	27.66	54	26.34
2488.7	37.34	PK	172	1.4	V	7.21	44.55	74	29.45
2488.7	21.82	Ave.	172	1.4	V	7.21	29.03	54	24.97
2492.4	38.64	PK	107	1.2	V	7.21	45.85	74	28.15
2492.4	23.42	Ave.	107	1.2	V	7.21	30.63	54	23.37
4882.0	45.61	PK	232	1.3	V	12.46	58.07	74	15.93
4882.0	32.80	Ave.	232	1.3	V	12.46	45.26	54	8.74
7323.0	41.24	PK	72	1.2	V	16.49	57.73	74	16.27
7323.0	28.67	Ave.	72	1.2	V	16.49	45.16	54	8.84
9764.0	35.64	PK	35	1.3	V	19.40	55.04	74	18.96
9764.0	22.10	Ave.	35	1.3	V	19.40	41.50	54	12.50

Frequency (MHz)	Receiver		Turntable Degree	Rx Antenna		Corrected Factor (dB)	Corrected Amplitude (dBμV/m)	FCC Part 15.247/205/209	
	Reading (dBμV)	Detector (PK/QP/Ave.)		Height (m)	Polar (H/V)			Limit (dBμV/m)	Margin (dB)
High Channel (2480 MHz)									
151.1	45.96	QP	25	1.5	H	-14.9	31.06	43.5	13.44
2480.0	93.35	PK	160	1.3	H	7.21	100.56	/	/
2480.0	81.61	Ave.	160	1.3	H	7.21	88.82	/	/
2480.0	87.39	PK	138	1.3	V	7.21	94.60	/	/
2480.0	76.07	Ave.	138	1.3	V	7.21	83.28	/	/
2360.4	35.54	PK	111	1.5	H	5.48	41.02	74	32.98
2360.4	21.64	Ave.	111	1.5	H	5.48	27.12	54	26.88
2483.8	41.23	PK	291	1.5	V	7.21	48.44	74	25.56
2483.8	22.34	Ave.	291	1.5	V	7.21	29.55	54	24.45
2491.5	40.57	PK	339	1.3	V	7.21	47.78	74	26.22
2491.5	22.25	Ave.	339	1.3	V	7.21	29.46	54	24.54
4960.0	46.96	PK	180	1.2	H	12.50	59.46	74	14.54
4960.0	34.69	Ave.	180	1.2	H	12.50	47.19	54	6.81
7440.0	39.31	PK	7	1.3	H	15.90	55.21	74	18.79
7440.0	26.04	Ave.	7	1.3	H	15.90	41.94	54	12.06
9920.0	36.24	PK	142	1.3	V	19.38	55.62	74	18.38
9920.0	21.35	Ave.	142	1.3	V	19.38	40.73	54	13.27

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor = Antenna Factor (Rx) + Cable Loss – Amplifier Factor
Margin = Limit - Corr. Amplitude

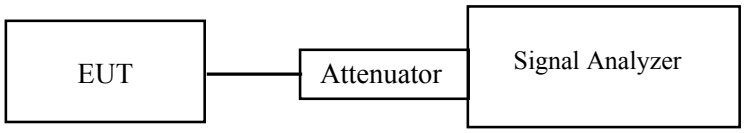
FCC §15.247(a) (1)-CHANNEL SEPARATION TEST

Applicable Standard

Frequency hopping systems shall have hoping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW.

Test Procedure

1. Set the EUT in transmitting mode, maxhold the channel.
2. Set the adjacent channel of the EUT and maxhold another trace.
3. Measure the channel separation.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

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

Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Gardon Zhang on 2013-10-21.

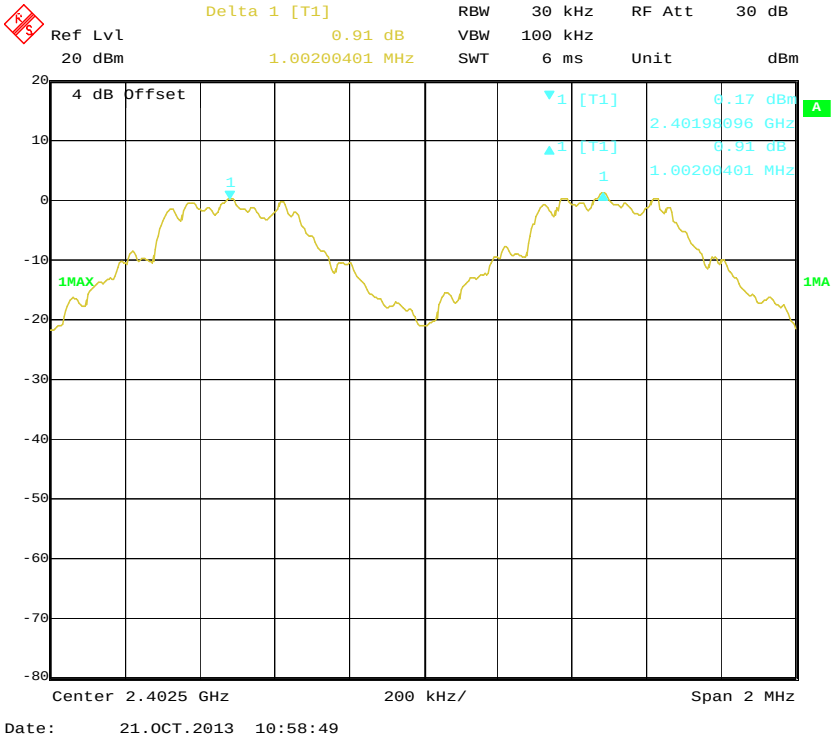
EUT operation mode: Transmitting

Test Result: Compliance. Please refer to following tables and plots

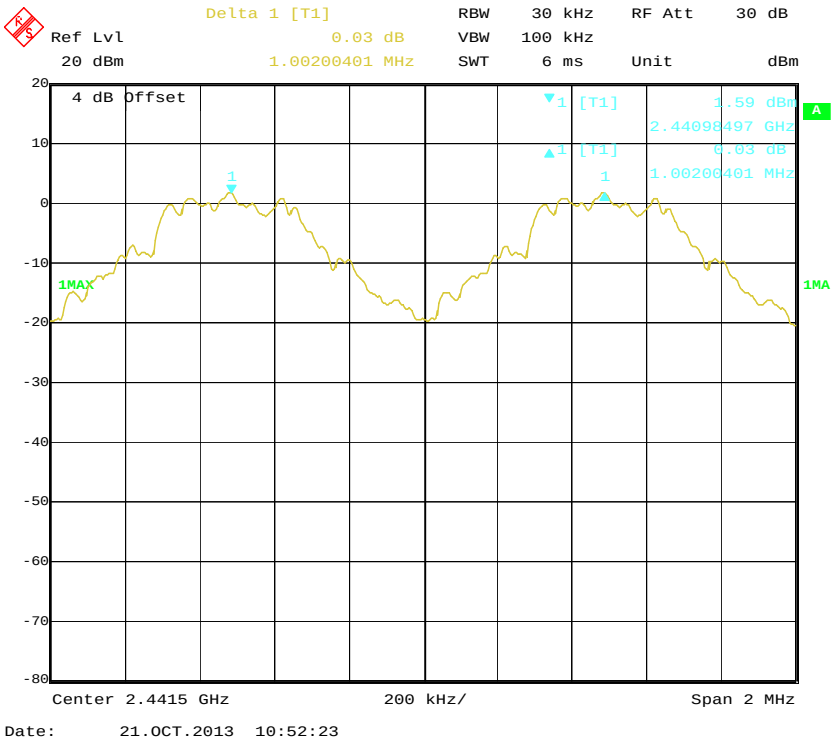
Mode	Channel	Frequency (MHz)	Channel Separation (MHz)	≥Limit (MHz)	Result
BDR (GFSK)	Low	2402	1.002	0.633	Pass
	Adjacent	2403			
	Middle	2441	1.002	0.631	Pass
	Adjacent	2442			
	High	2480	1.002	0.631	Pass
	Adjacent	2479			
EDR (π/4-DQPSK)	Low	2402	1.004	0.850	Pass
	Adjacent	2403			
	Middle	2441	1.004	0.850	Pass
	Adjacent	2442			
	High	2480	1.004	0.850	Pass
	Adjacent	2479			
EDR (8DPSK)	Low	2402	1.004	0.834	Pass
	Adjacent	2403			
	Middle	2441	1.004	0.834	Pass
	Adjacent	2442			
	High	2480	1.004	0.834	Pass
	Adjacent	2479			

Note: Limit = 20 dB bandwidth *2/3

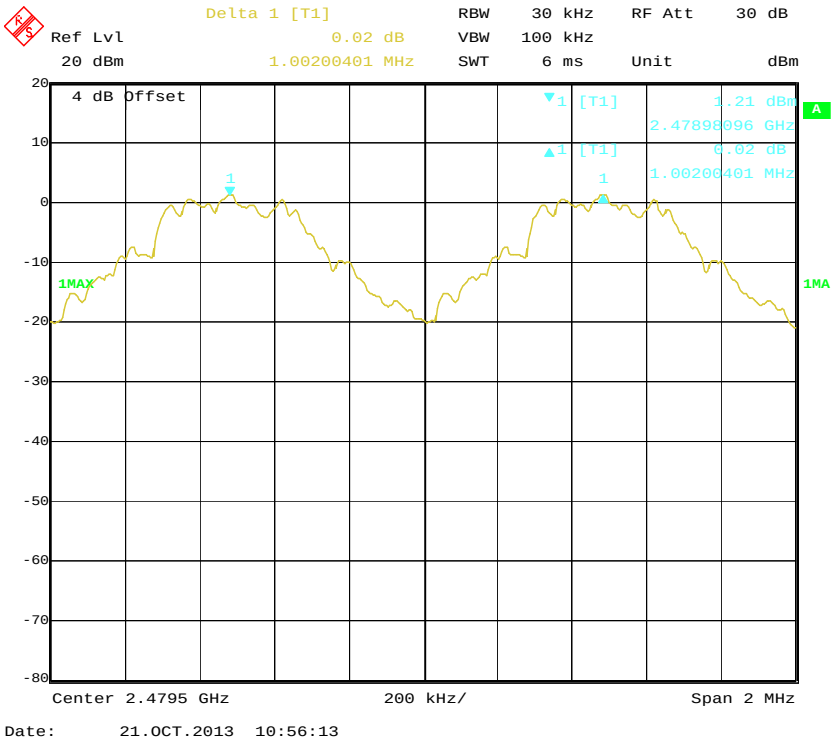
BDR (GFSK): Low Channel



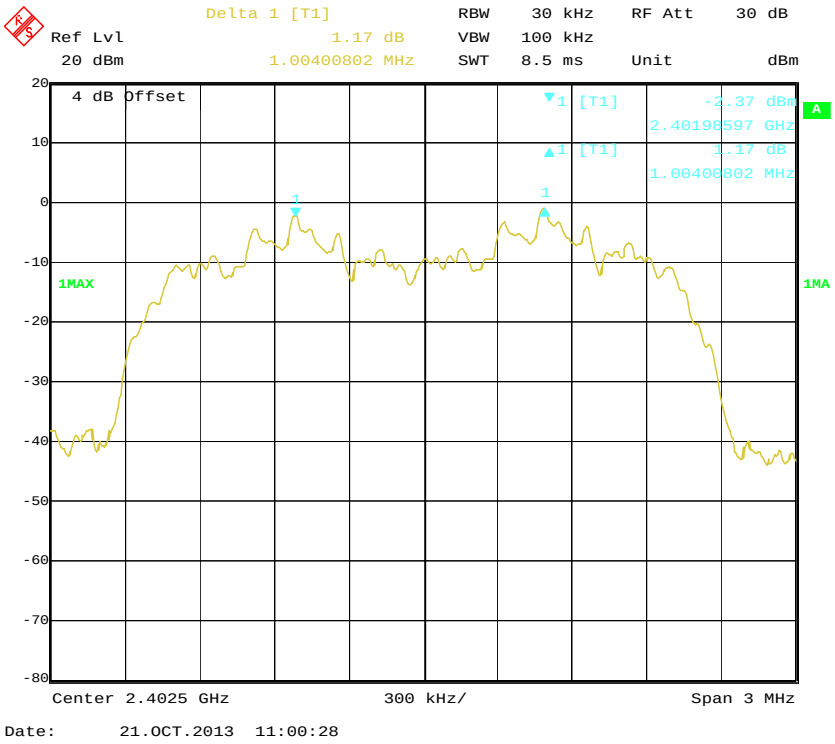
BDR (GFSK): Middle Channel



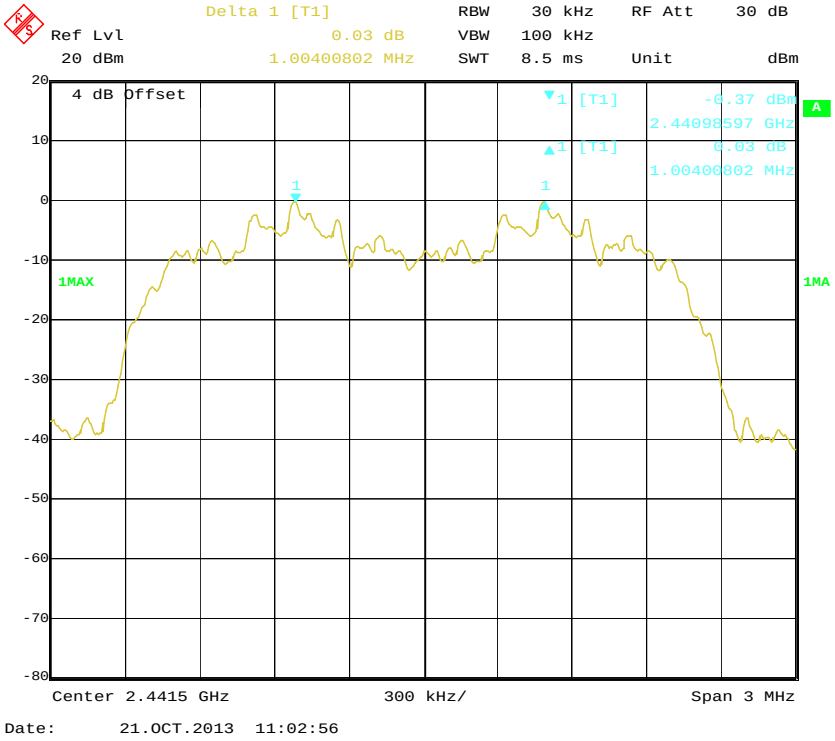
BDR (GFSK): High Channel



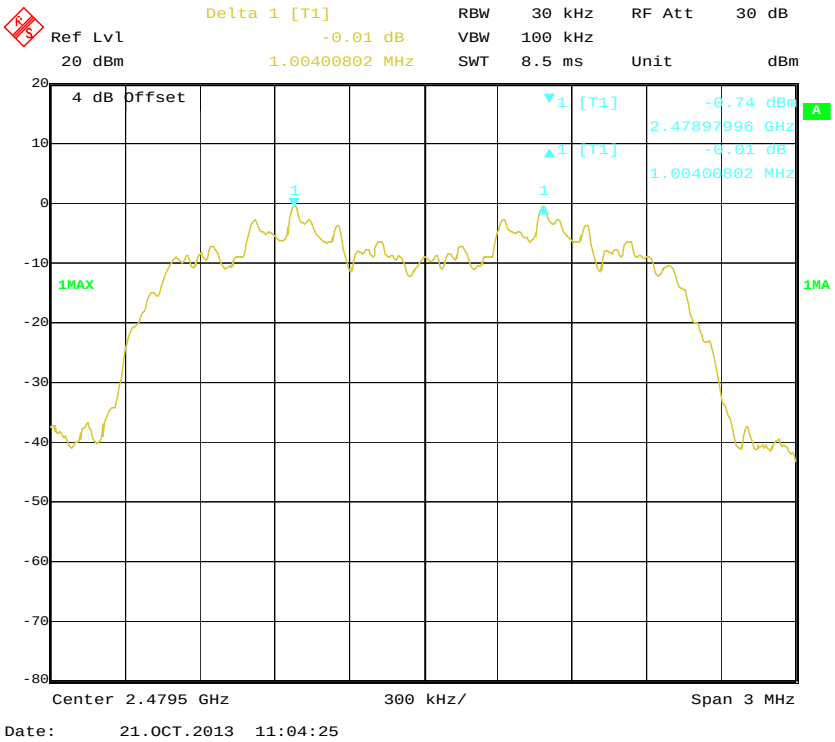
EDR (π/4-DQPSK): Low Channel



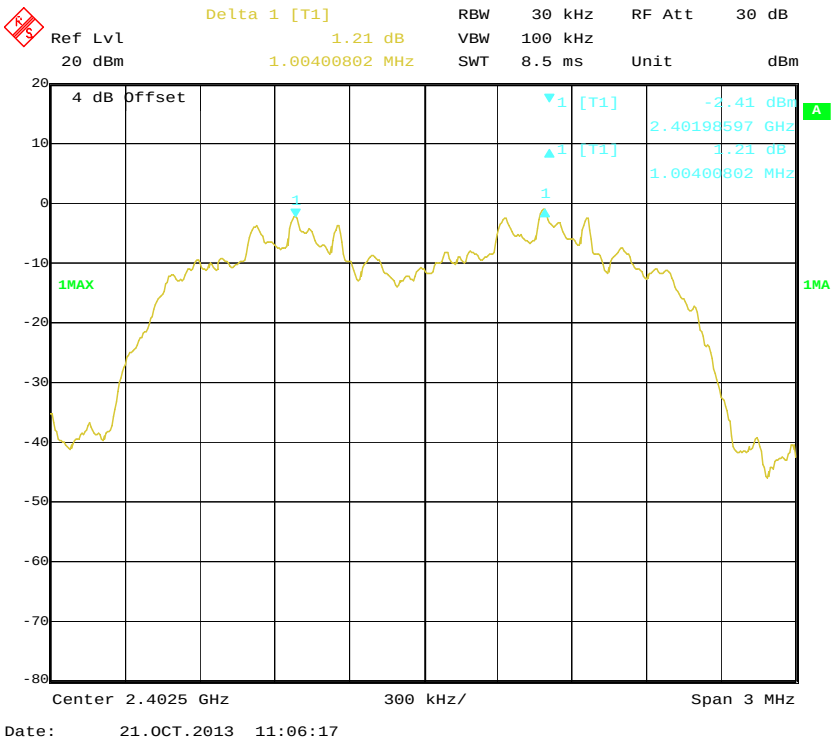
EDR (π/4-DQPSK): Middle Channel



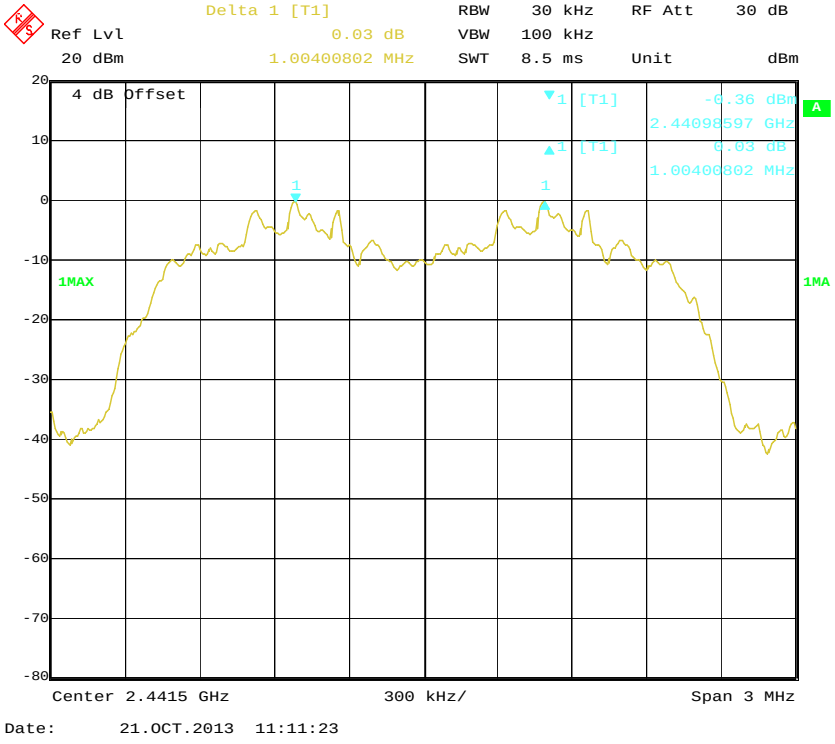
EDR (π/4-DQPSK): High Channel



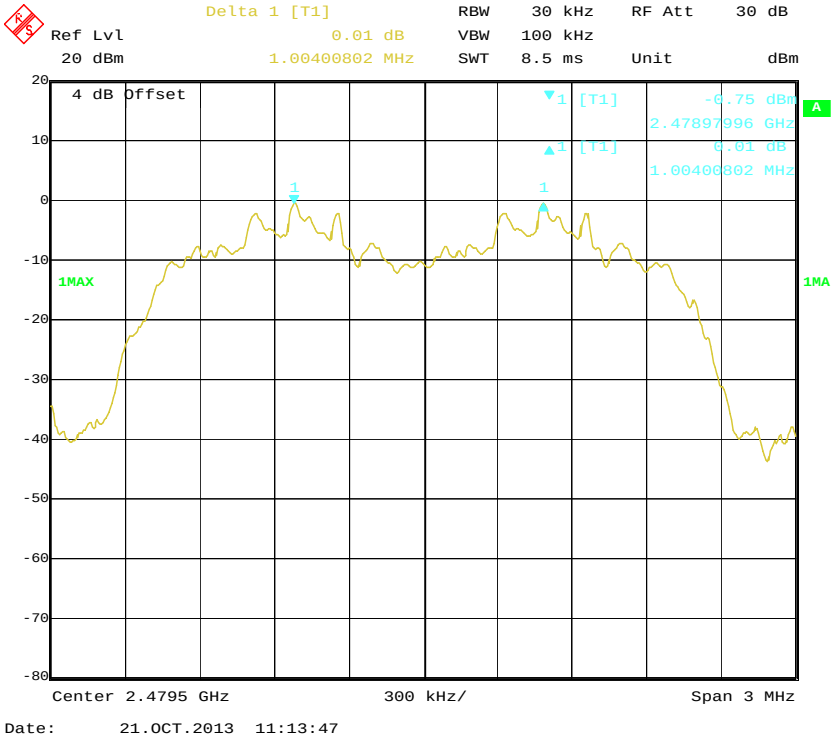
EDR (8DPSK): Low Channel



EDR (8DPSK): Middle Channel



EDR (8DPSK): High Channel



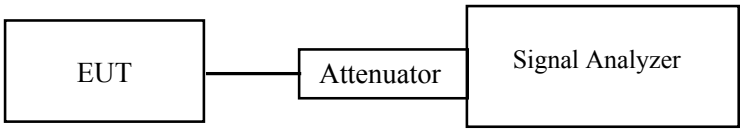
FCC §15.247(a) (1) – 20 dB EMISSION BANDWIDTH

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 without connection to measurement instrument. Turn on the EUT and connect it to measurement instrument. 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
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

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

Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

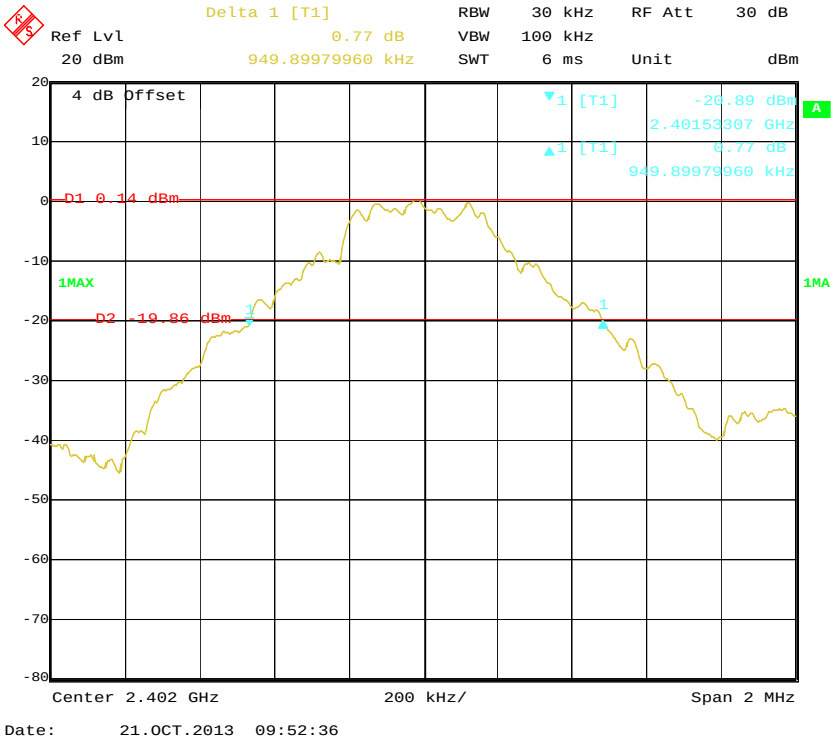
The testing was performed by Gardon Zhang on 2013-10-21.

EUT operation mode: Transmitting

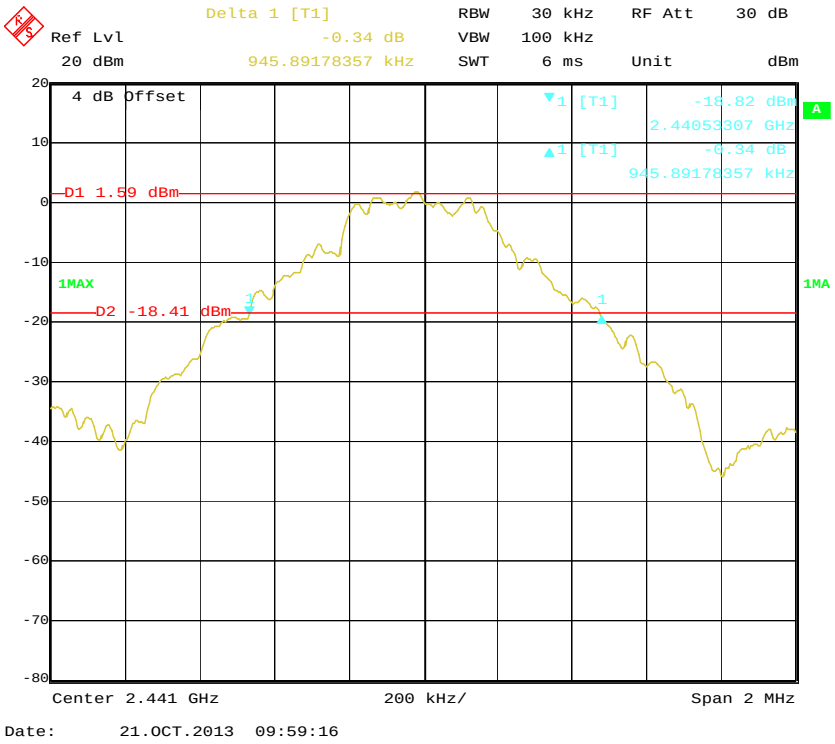
Test Result: Compliance. Please refer to following tables and plots

Mode	Channel	Frequency (MHz)	20 dB Emission Bandwidth (MHz)
BDR (GFSK)	Low	2402	0.950
	Middle	2441	0.946
	High	2480	0.946
EDR (π/4-DQPSK)	Low	2402	1.275
	Middle	2441	1.275
	High	2480	1.275
EDR (8DPSK)	Low	2402	1.251
	Middle	2441	1.251
	High	2480	1.251

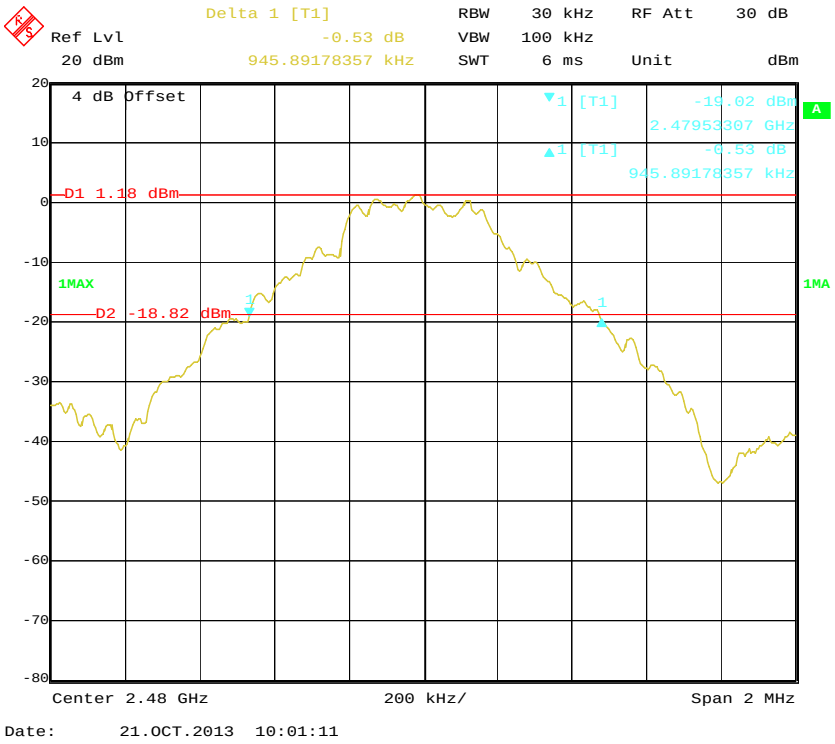
BDR (GFSK): Low Channel



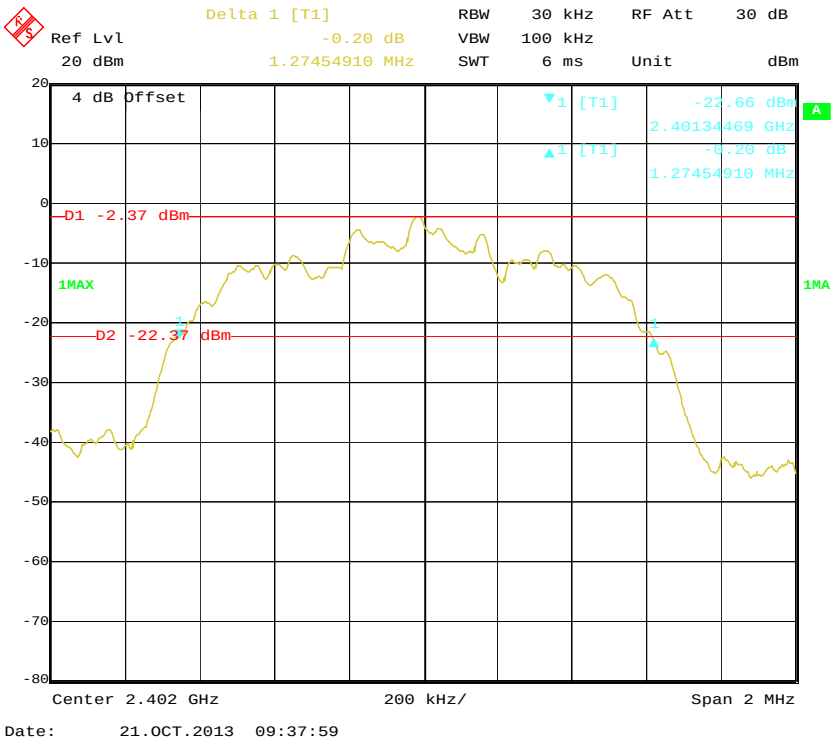
BDR (GFSK): Middle Channel



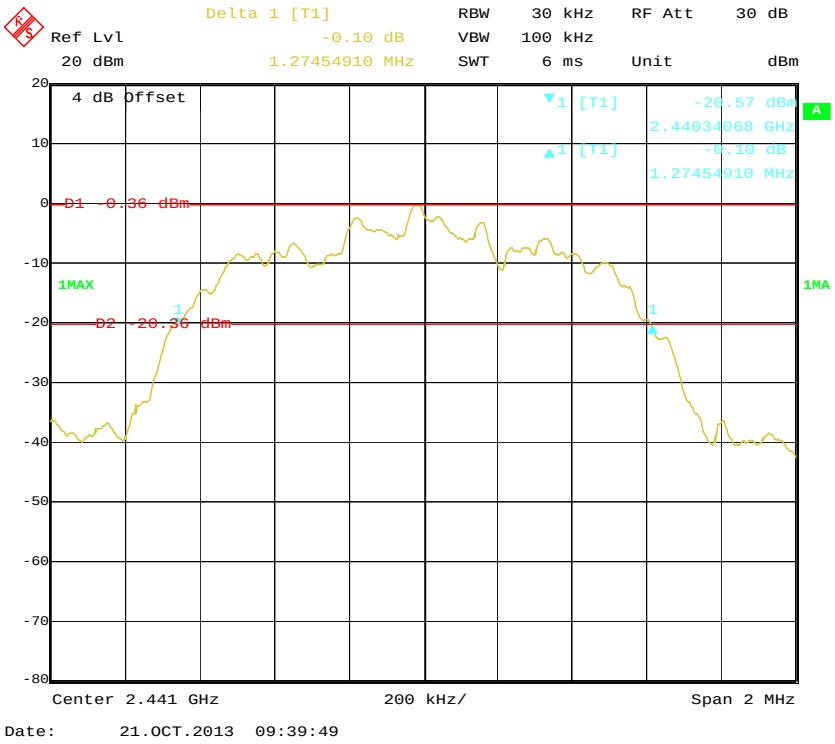
BDR (GFSK): High Channel



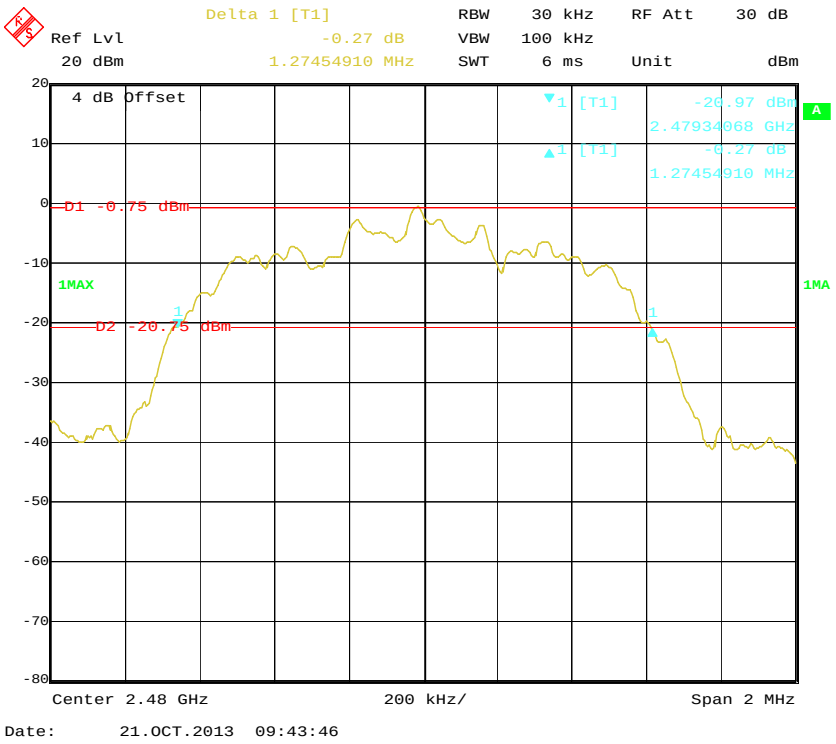
EDR (π/4-DQPSK): Low Channel



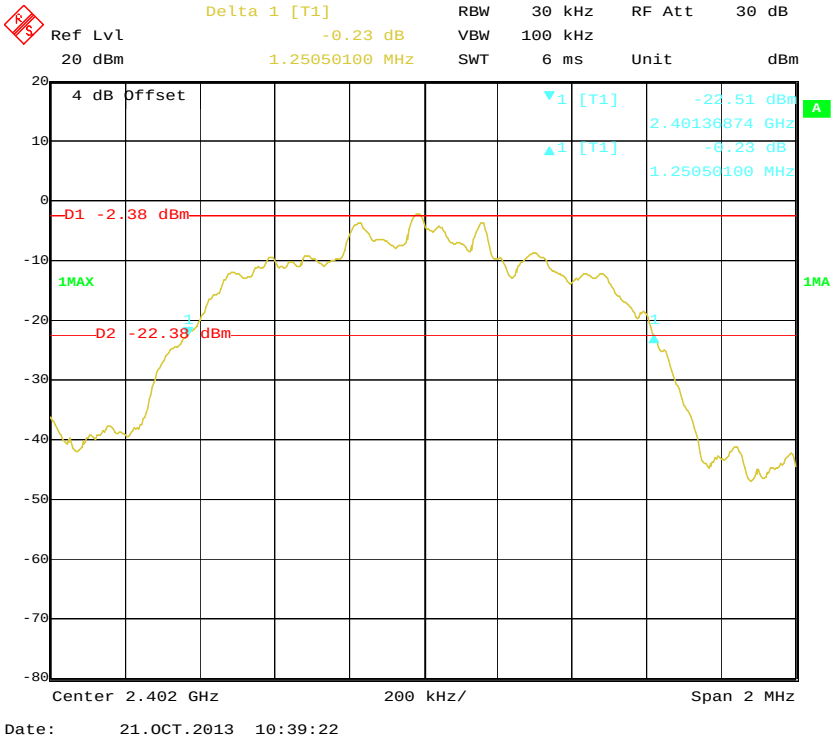
EDR (π/4-DQPSK): Middle Channel



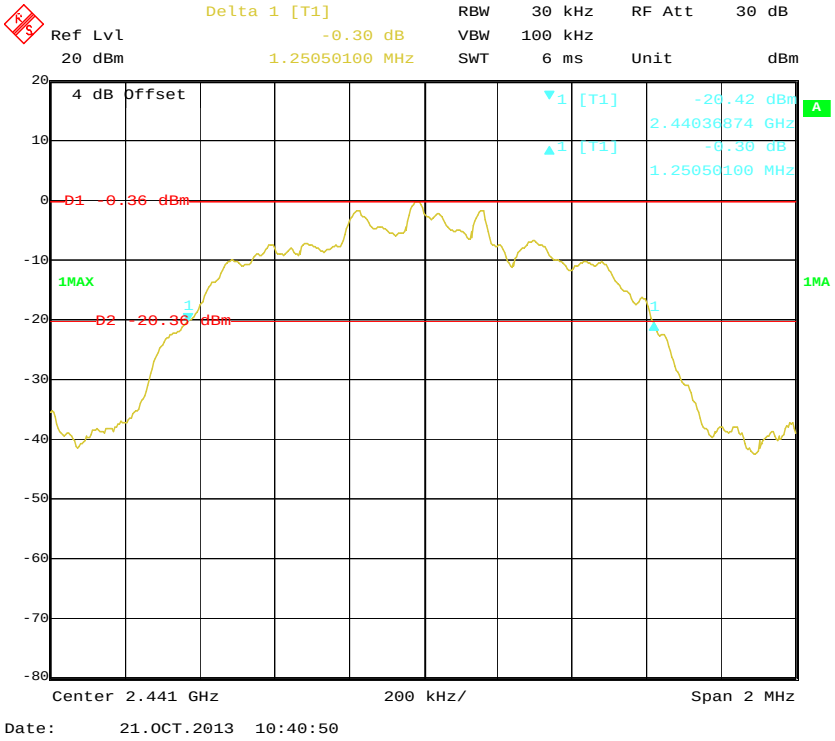
EDR (π/4-DQPSK): High Channel



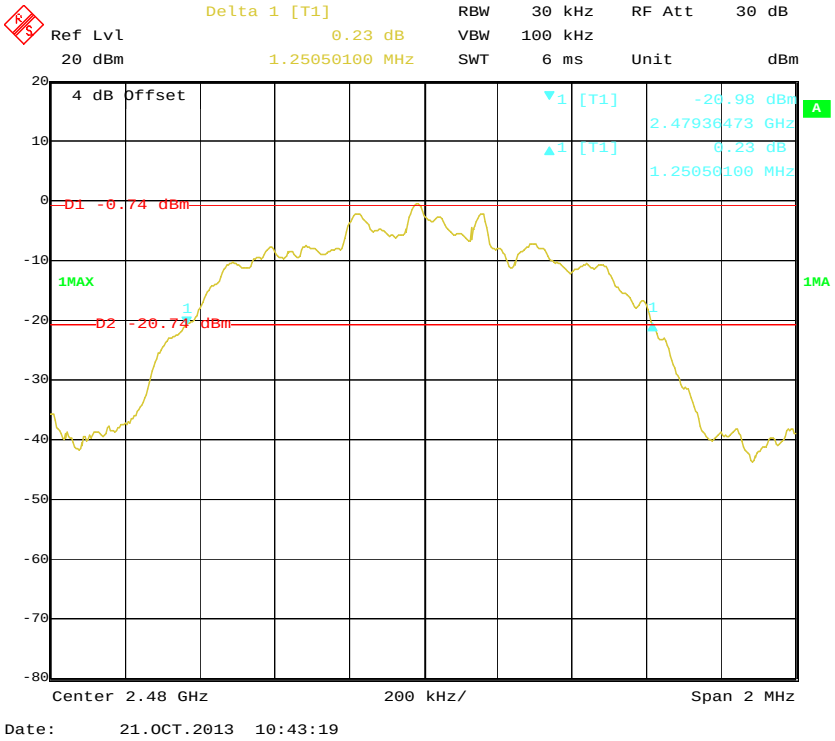
EDR (8DPSK): Low Channel



EDR (8DPSK): Middle Channel



EDR (8DPSK): High Channel



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

Applicable Standard

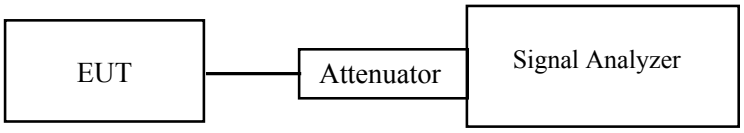
Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress 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
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

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

Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

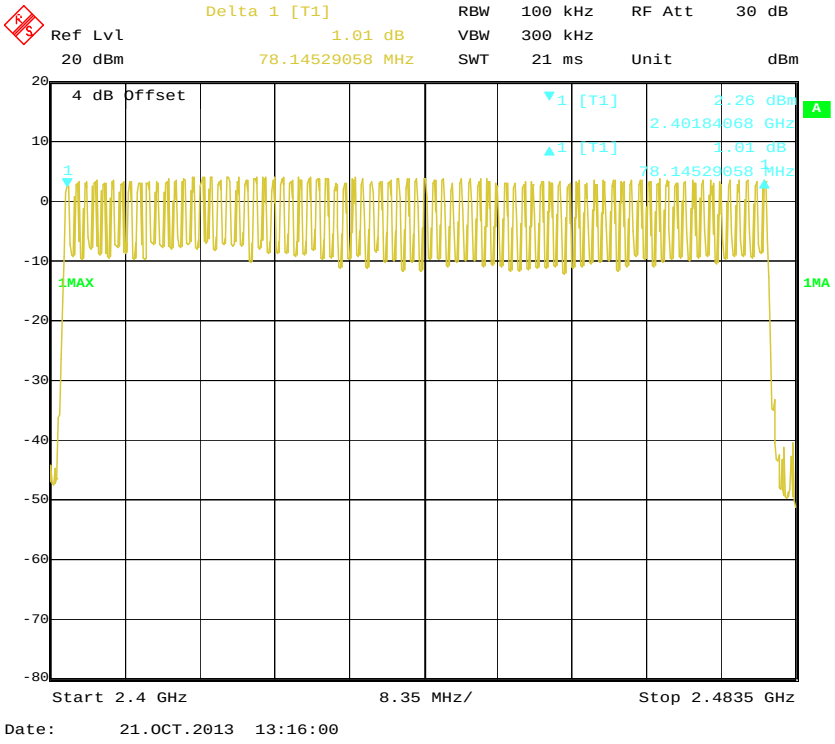
The testing was performed by Gardon Zhang on 2013-10-21.

EUT operation mode: Transmitting

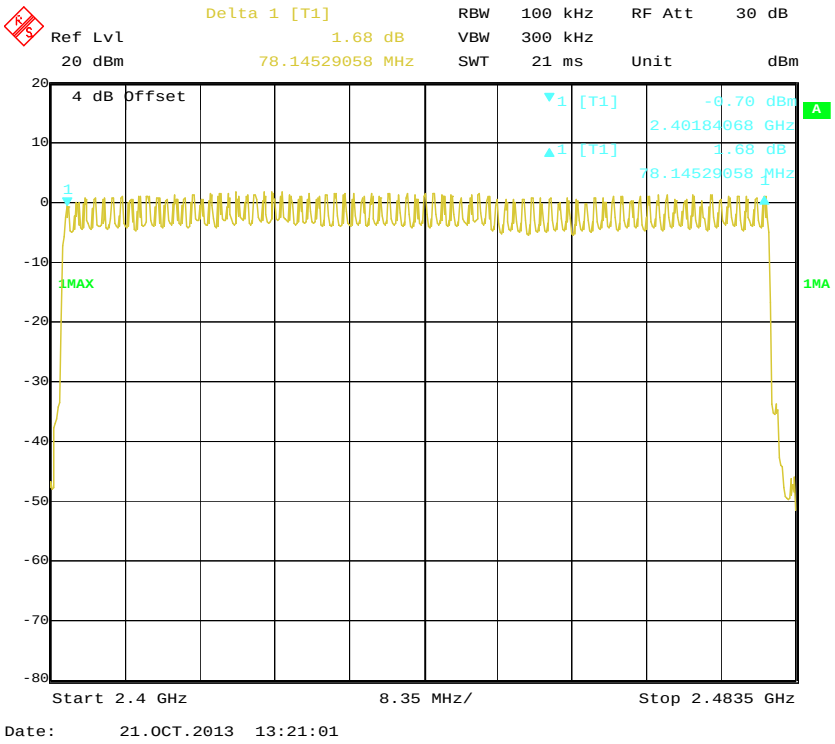
Test Result: Compliance. Please refer to following tables and plots

Mode	Frequency Range (MHz)	Number of Hopping Channel (CH)	Limit (CH)
BDR (GFSK)	2400-2483.5	79	≥15
EDR (π/4-DQPSK)	2400-2483.5	79	≥15
EDR (8DPSK)	2400-2483.5	79	≥15

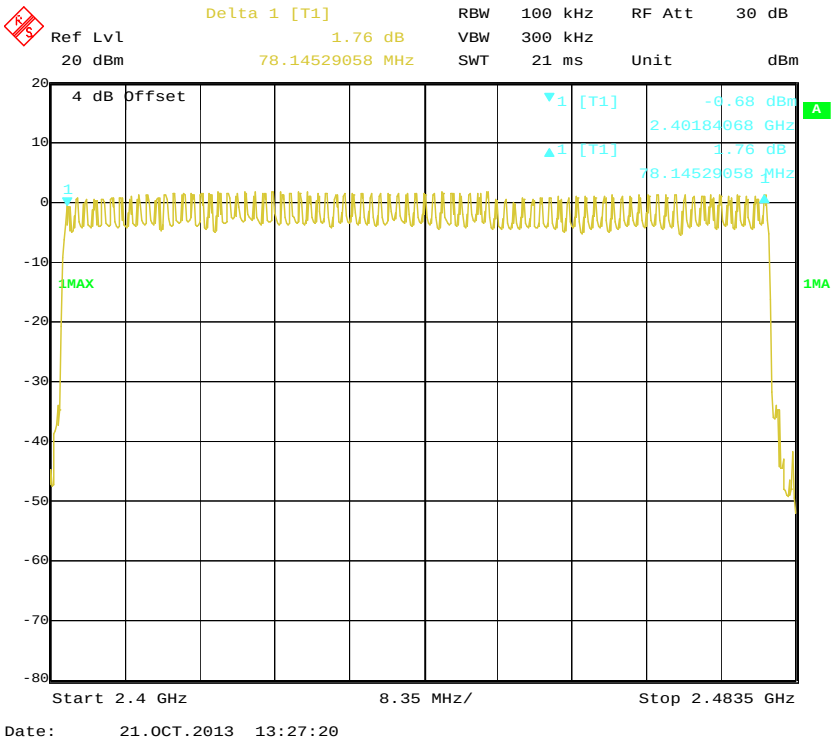
BDR (GFSK): Number of Hopping Channels



EDR (π/4-DQPSK): Number of Hopping Channels



EDR (8DPSK): Number of Hopping Channels



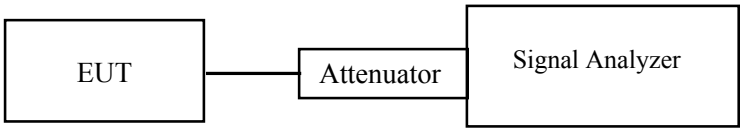
FCC §15.247(a) (1) (iii) - TIME OF OCCUPANCY (DWELL TIME)

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 X channel no. (s), the quantity of pulse was get from single sweep. In addition, the time of single pulses was tested.



Test Equipment List and Details

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

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

Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

The testing was performed by Gardon Zhang on 2013-10-21.

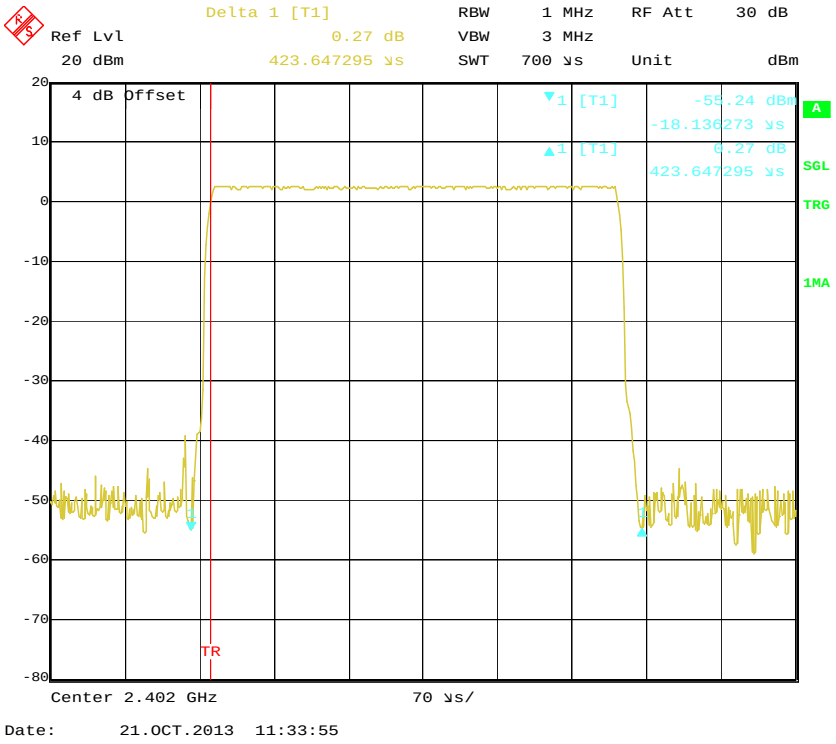
EUT operation mode: Transmitting

Test Result: Compliance. Please refer to following tables and plots

Mode		Channel	Pulse Width (ms)	Dwell Time (S)	Limit (S)	Result
BDR (GFSK)	DH 1	Low	0.4236	0.1356	0.4	Pass
		Middle	0.4236	0.1356	0.4	Pass
		High	0.4236	0.1356	0.4	Pass
		Note: DH1:Dwell time = Pulse time*(1600/2/79)*31.6S				
	DH 3	Low	1.7002	0.2720	0.4	Pass
		Middle	1.7002	0.2720	0.4	Pass
		High	1.7002	0.2720	0.4	Pass
		Note: DH3:Dwell time = Pulse time*(1600/4/79)*31.6S				
	DH 5	Low	2.9644	0.3162	0.4	Pass
		Middle	2.9644	0.3162	0.4	Pass
		High	2.9644	0.3162	0.4	Pass
		Note: DH5:Dwell time = Pulse time*(1600/6/79)*31.6S				
EDR (π/4-DQPSK)	DH 1	Low	0.4377	0.1401	0.4	Pass
		Middle	0.4377	0.1401	0.4	Pass
		High	0.4377	0.1401	0.4	Pass
		Note: 2DH1:Dwell time = Pulse time*(1600/2/79)*31.6S				
	DH 3	Low	1.7058	0.2729	0.4	Pass
		Middle	1.7058	0.2729	0.4	Pass
		High	1.7058	0.2729	0.4	Pass
		Note: 2DH3:Dwell time = Pulse time*(1600/4/79)*31.6S				
	DH 5	Low	2.9734	0.3172	0.4	Pass
		Middle	2.9734	0.3172	0.4	Pass
		High	2.9734	0.3172	0.4	Pass
		Note: 2DH5:Dwell time = Pulse time*(1600/6/79)*31.6S				
EDR (8DPSK)	DH 1	Low	0.4377	0.1401	0.4	Pass
		Middle	0.4377	0.1401	0.4	Pass
		High	0.4377	0.1401	0.4	Pass
		Note: 3DH1:Dwell time = Pulse time*(1600/2/79)*31.6S				
	DH 3	Low	1.7058	0.2729	0.4	Pass
		Middle	1.7058	0.2729	0.4	Pass
		High	1.7058	0.2729	0.4	Pass
		Note: 3DH3:Dwell time = Pulse time*(1600/4/79)*31.6S				
	DH 5	Low	2.9734	0.3172	0.4	Pass
		Middle	2.9734	0.3172	0.4	Pass
		High	2.9734	0.3172	0.4	Pass
		Note: 3DH5:Dwell time = Pulse time*(1600/6/79)*31.6S				

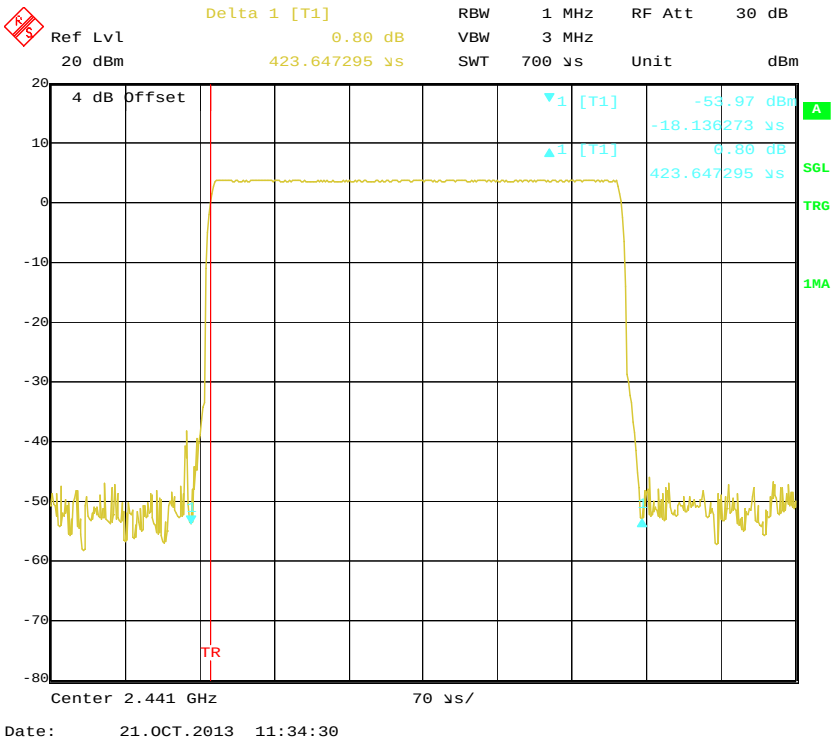
BDR (GFSK):

Pulse time, Low Channel, DH1



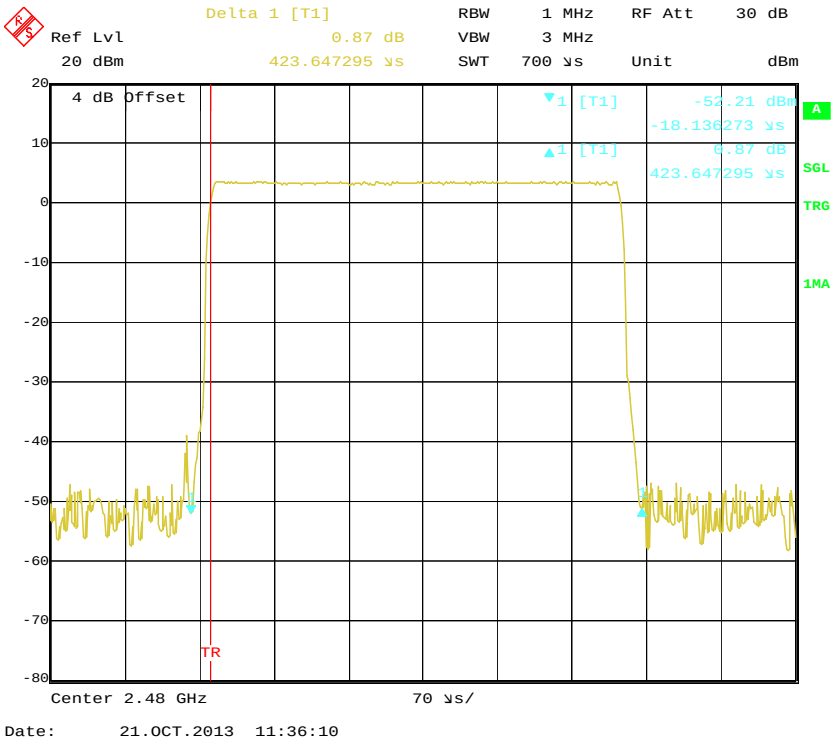
Date: 21.OCT.2013 11:33:55

Pulse time, Middle Channel, DH1

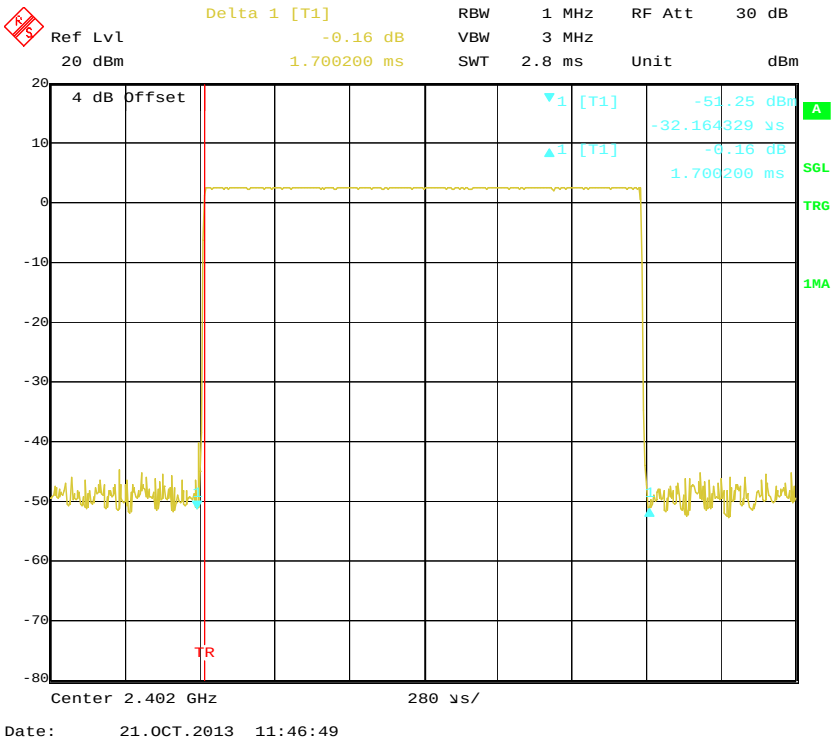


Date: 21.OCT.2013 11:34:30

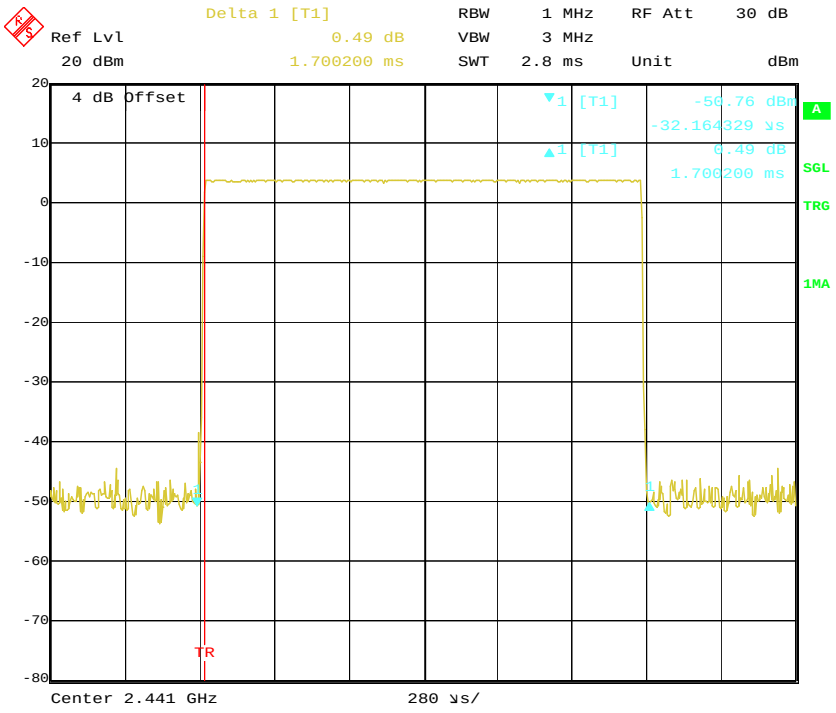
Pulse time, High Channel, DH1



Pulse time, Low Channel, DH3

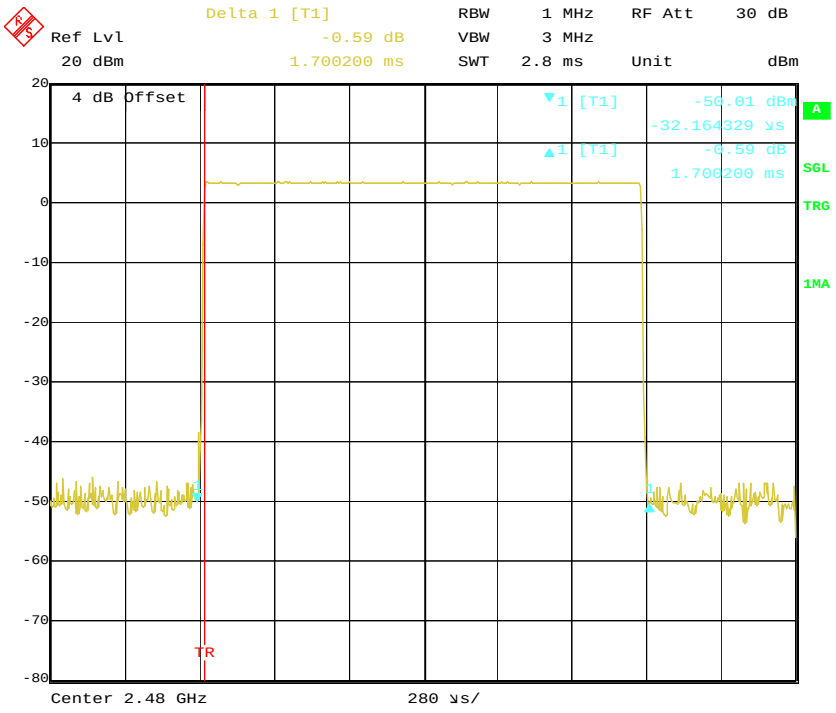


Pulse time, Middle Channel, DH3



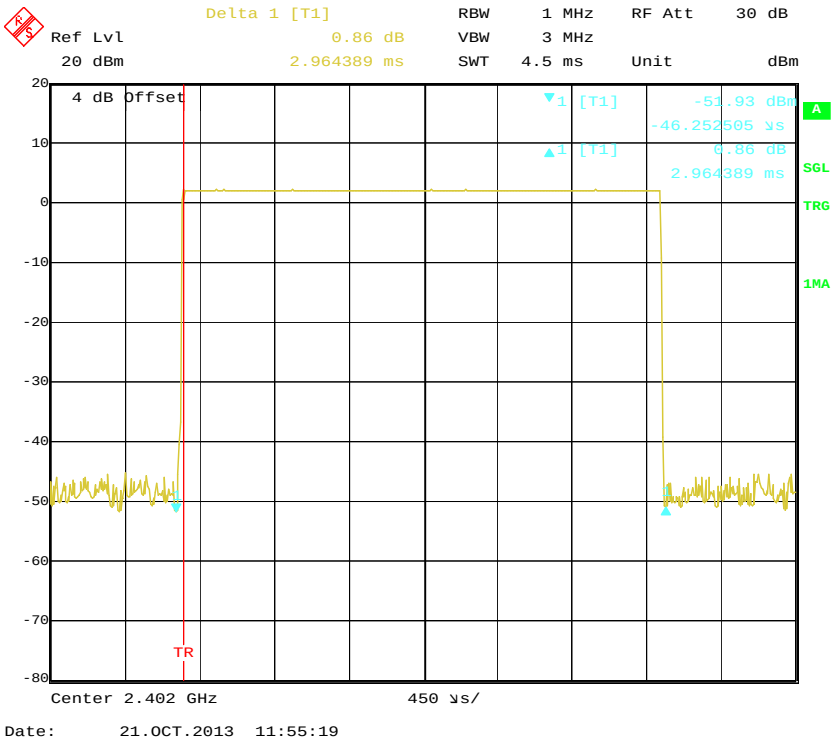
Date: 21.OCT.2013 11:47:24

Pulse time, High Channel, DH3

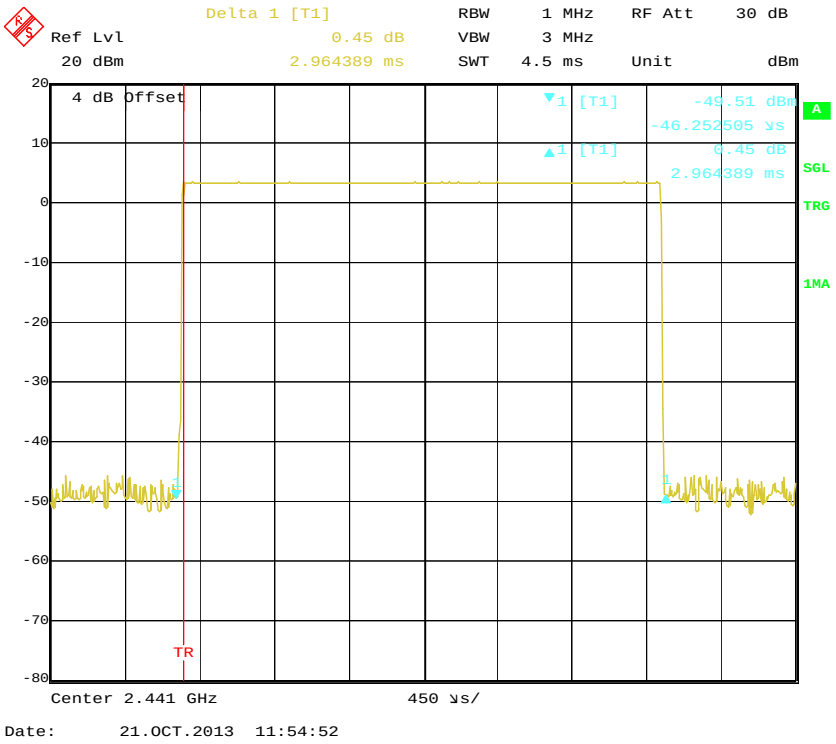


Date: 21.OCT.2013 11:49:19

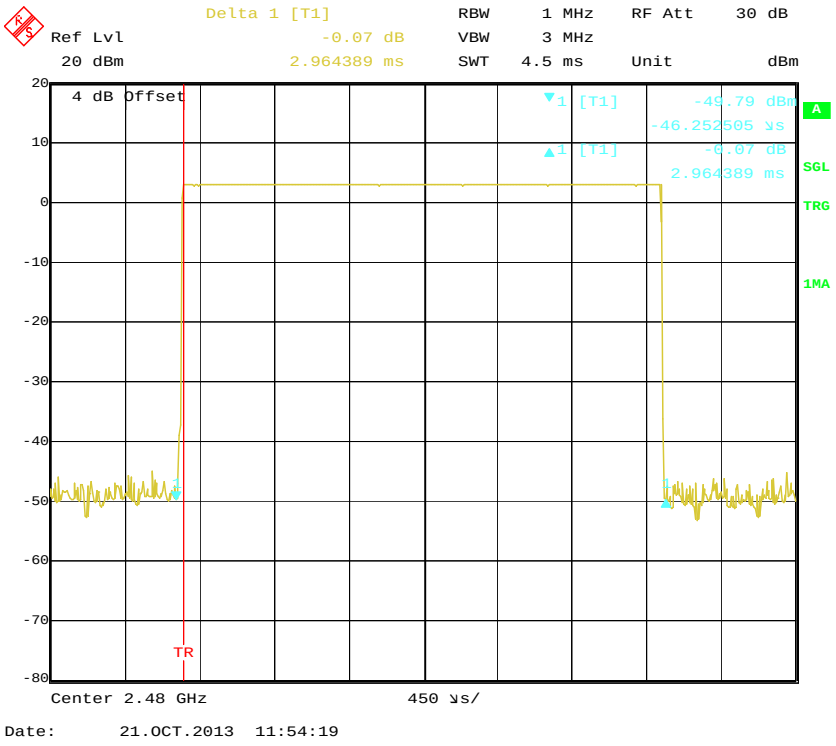
Pulse time, Low Channel, DH5



Pulse time, Middle Channel, DH5

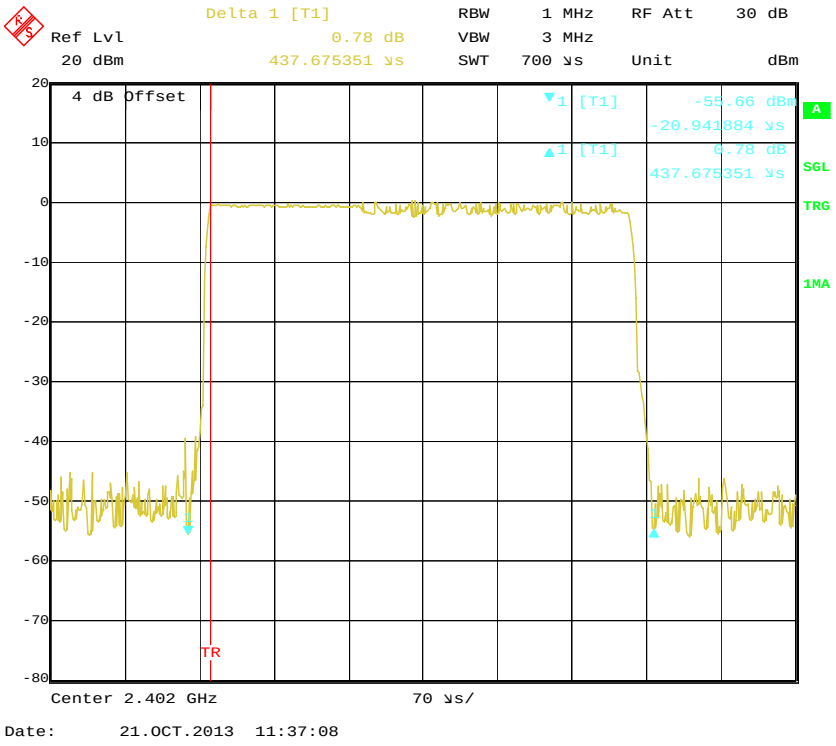


Pulse time, High Channel, DH5

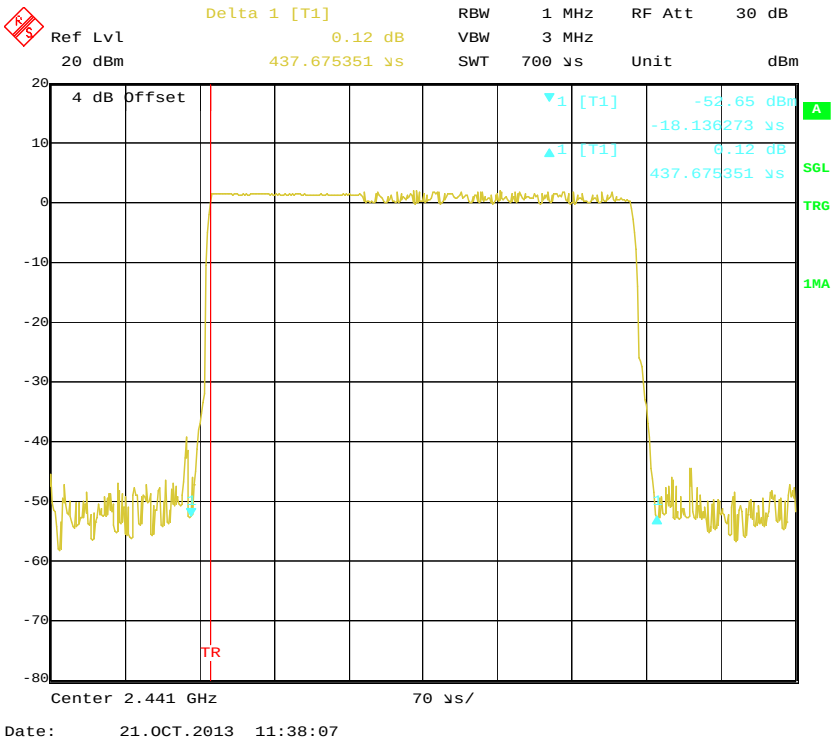


EDR (π/4-DQPSK):

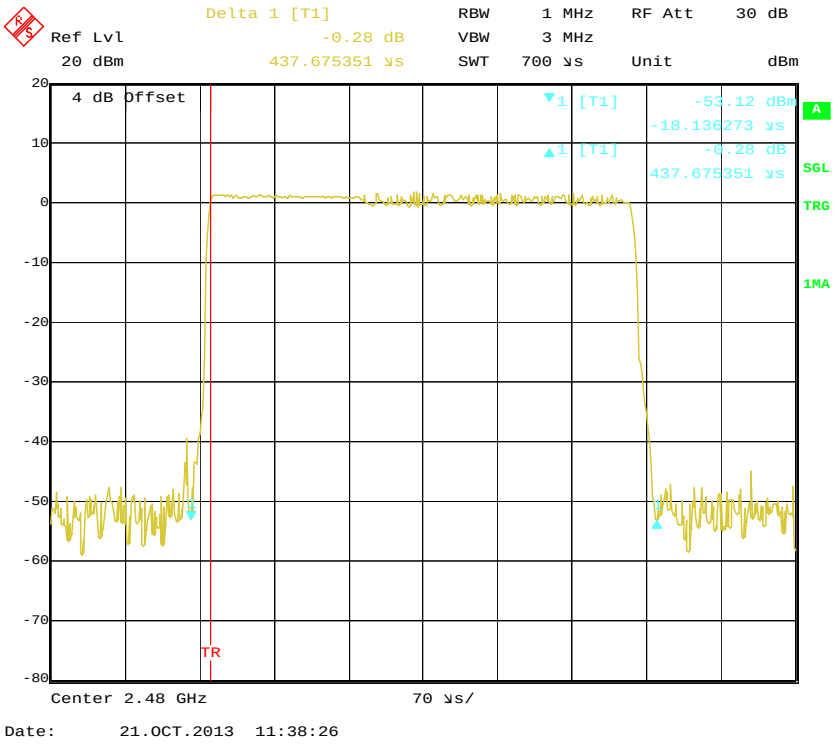
Pulse time, Low Channel, 2DH1



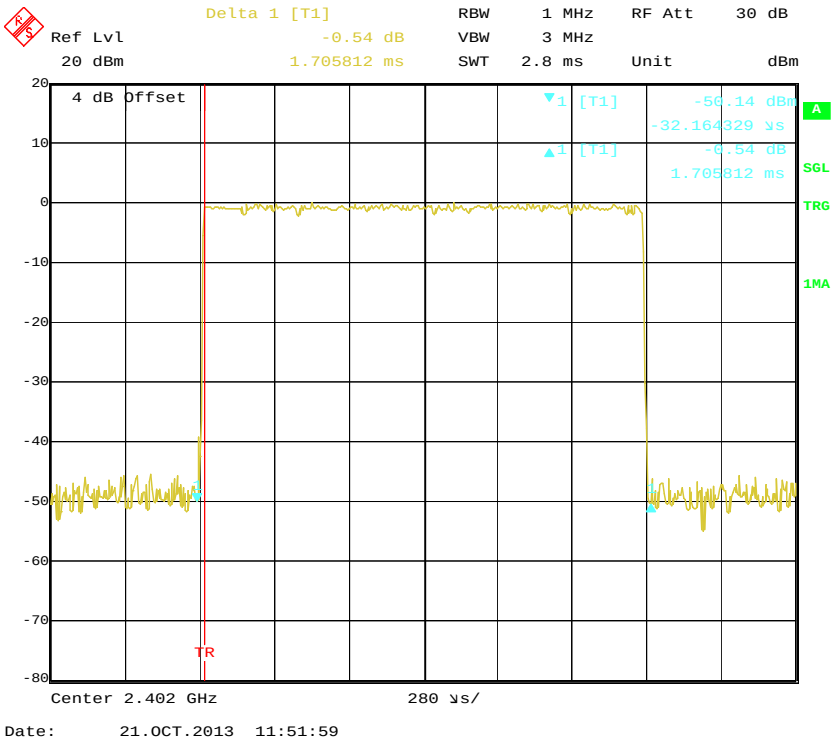
Pulse time, Middle Channel, 2DH1



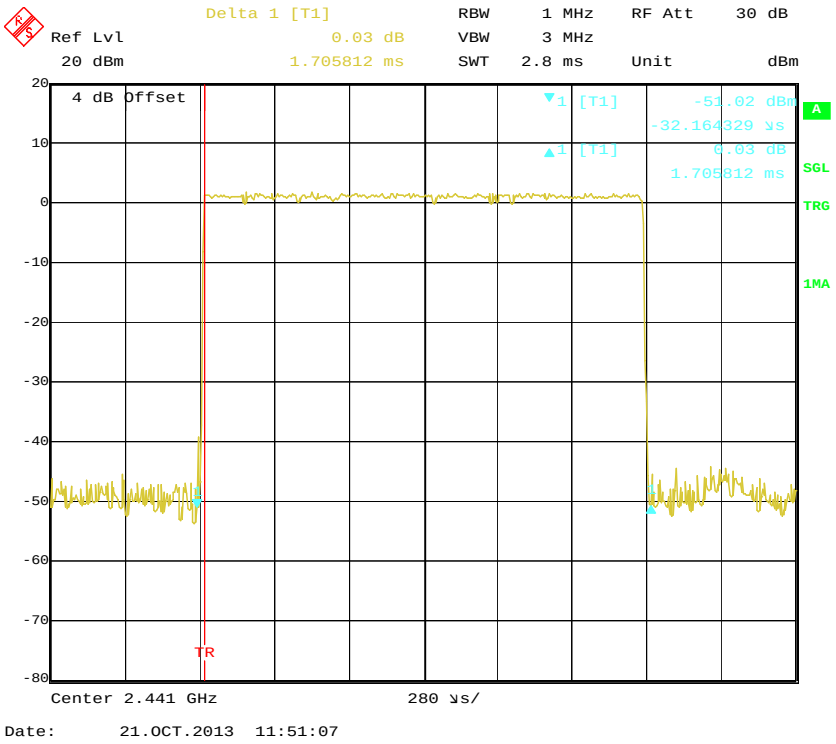
Pulse time, High Channel, 2DH1



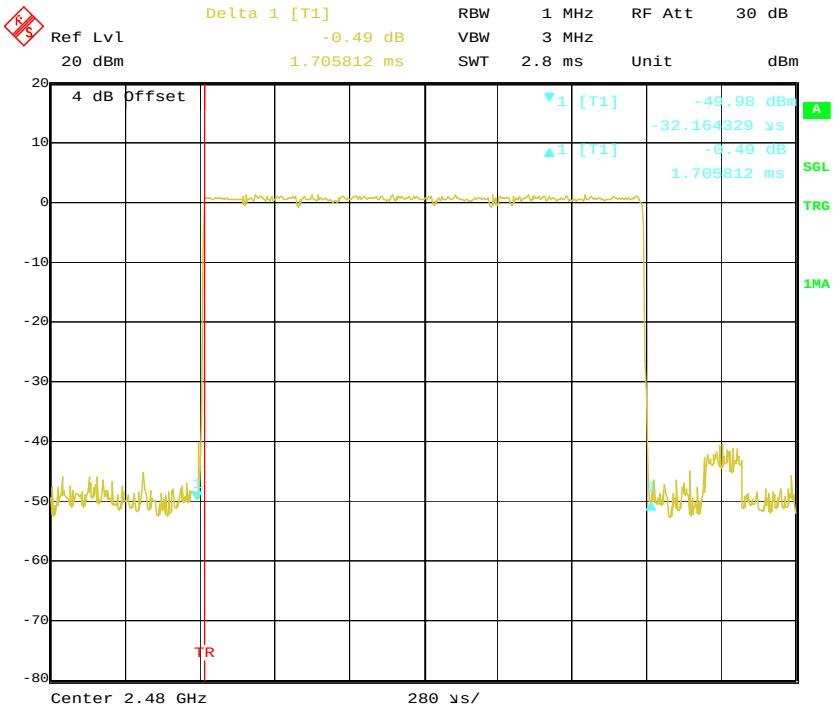
Pulse time, Low Channel, 2DH3



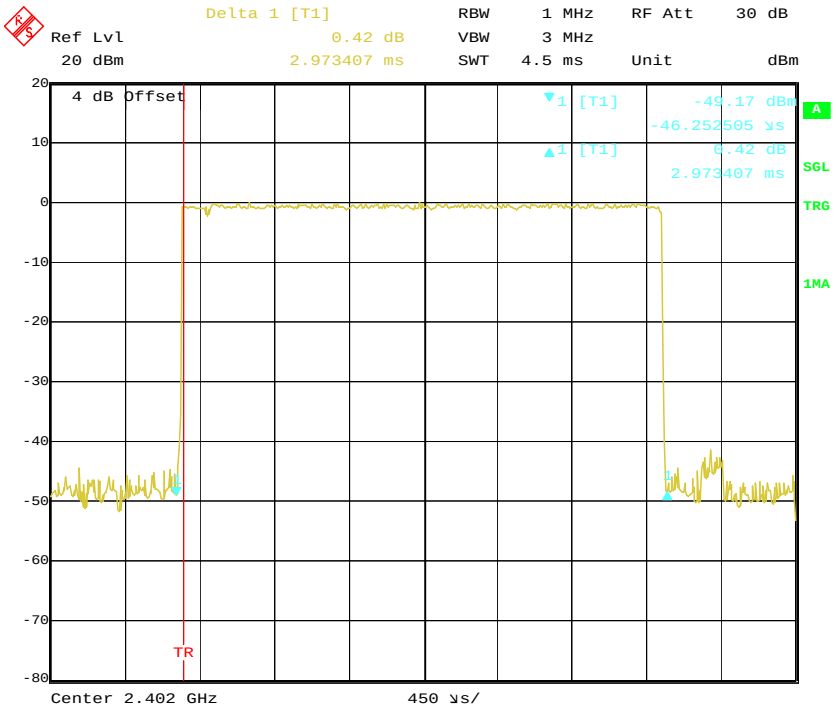
Pulse time, Middle Channel, 2DH3



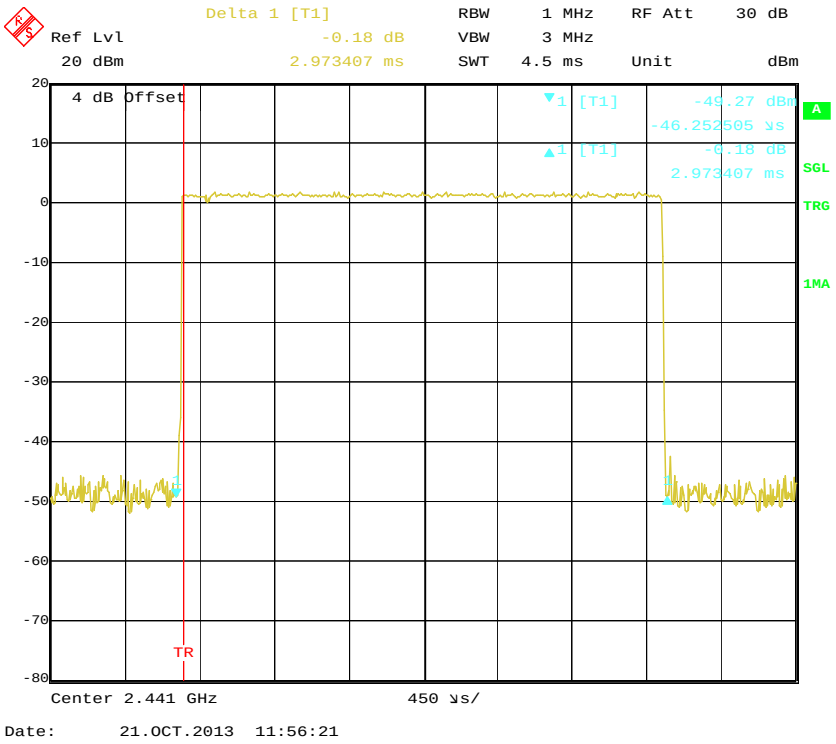
Pulse time, High Channel, 2DH3



Pulse time, Low Channel, 2DH5

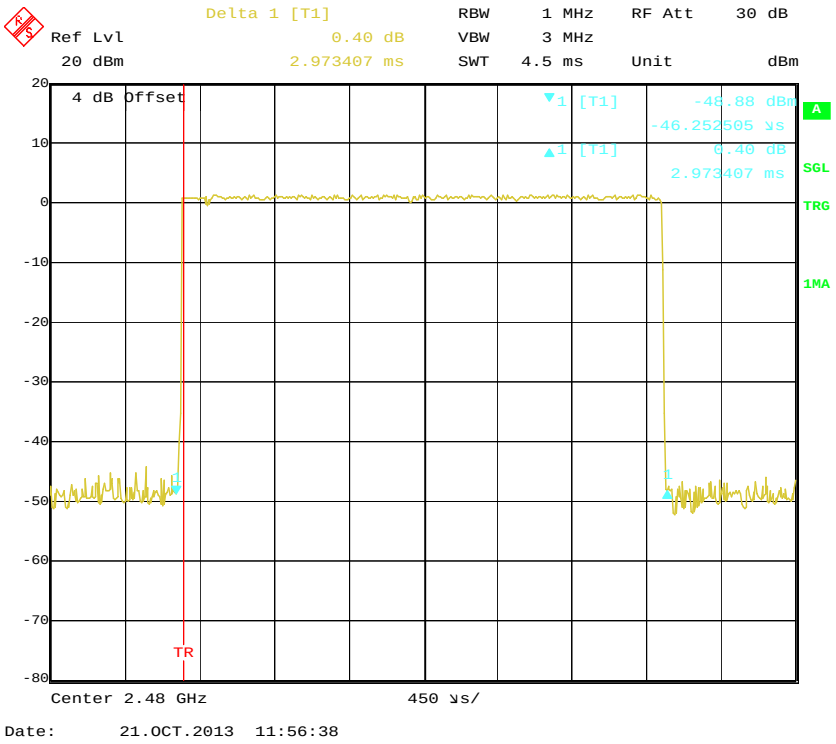


Pulse time, Middle Channel, 2DH5



Date: 21.OCT.2013 11:56:21

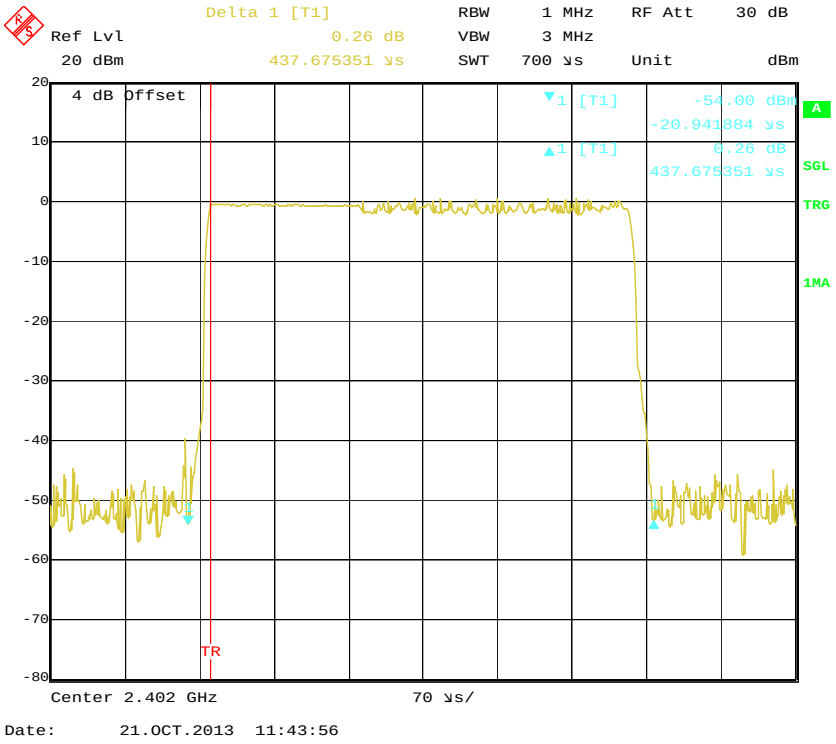
Pulse time, High Channel, 2DH5



Date: 21.OCT.2013 11:56:38

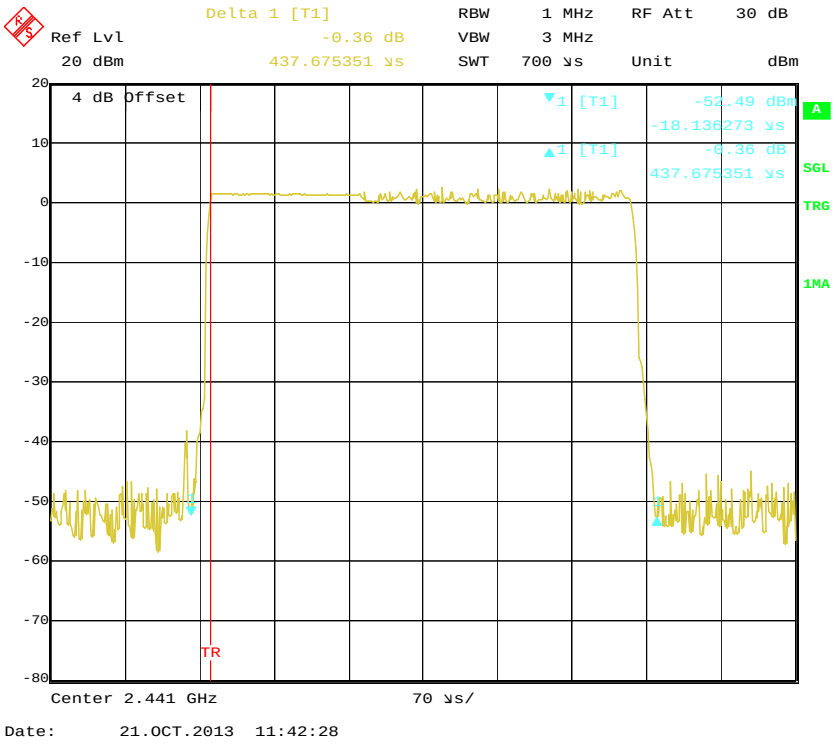
EDR (8DPSK):

Pulse time, Low Channel, 3DH1



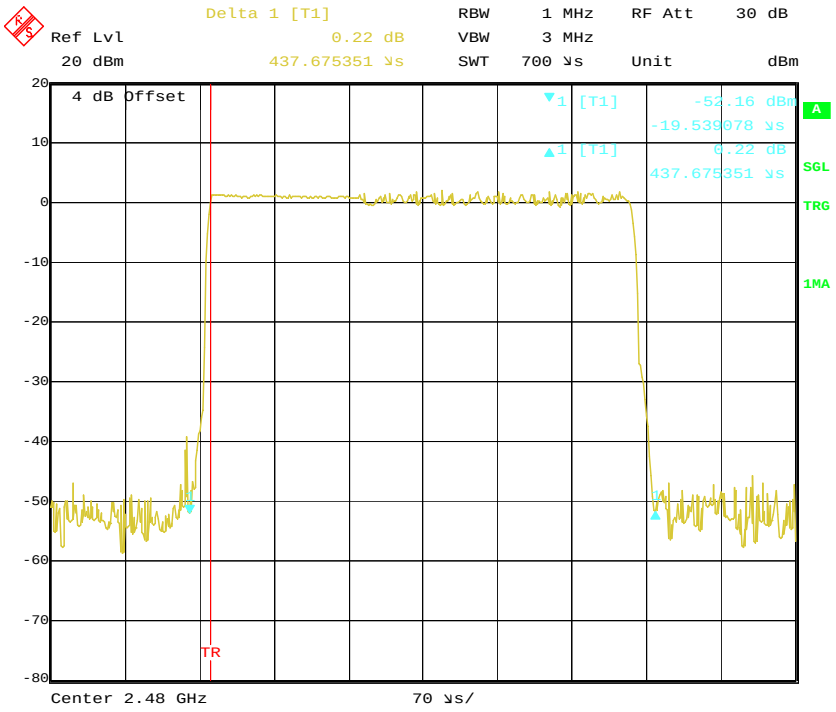
Date: 21.OCT.2013 11:43:56

Pulse time, Middle Channel, 3DH1

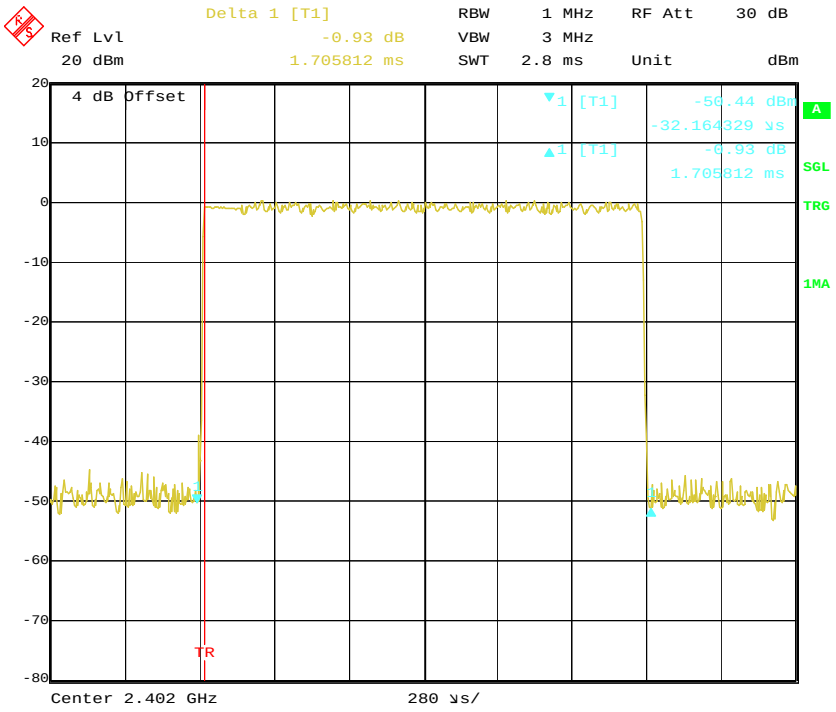


Date: 21.OCT.2013 11:42:28

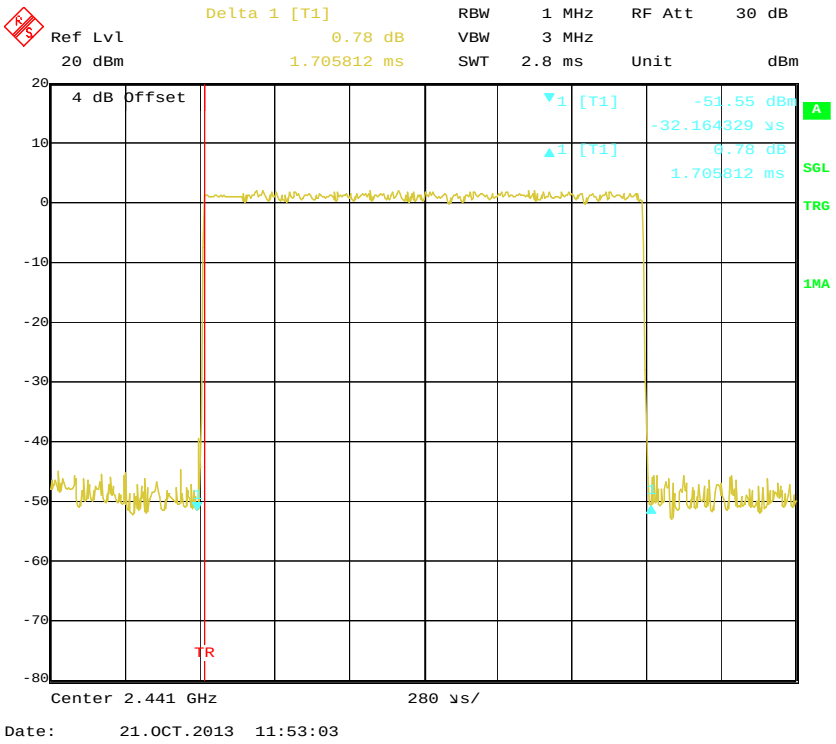
Pulse time, High Channel, 3DH1



Pulse time, Low Channel, 3DH3

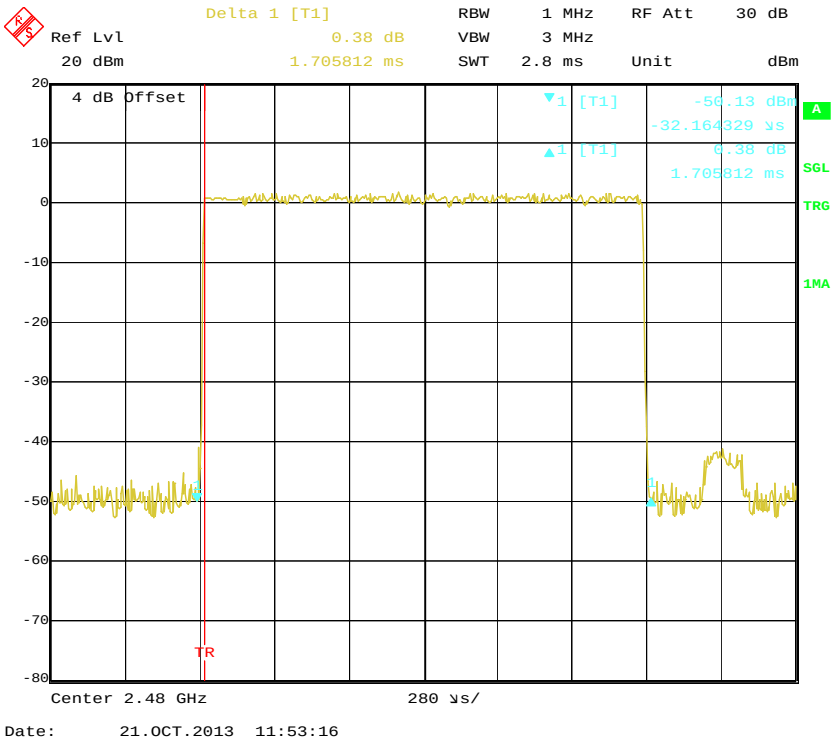


Pulse time, Middle Channel, 3DH3



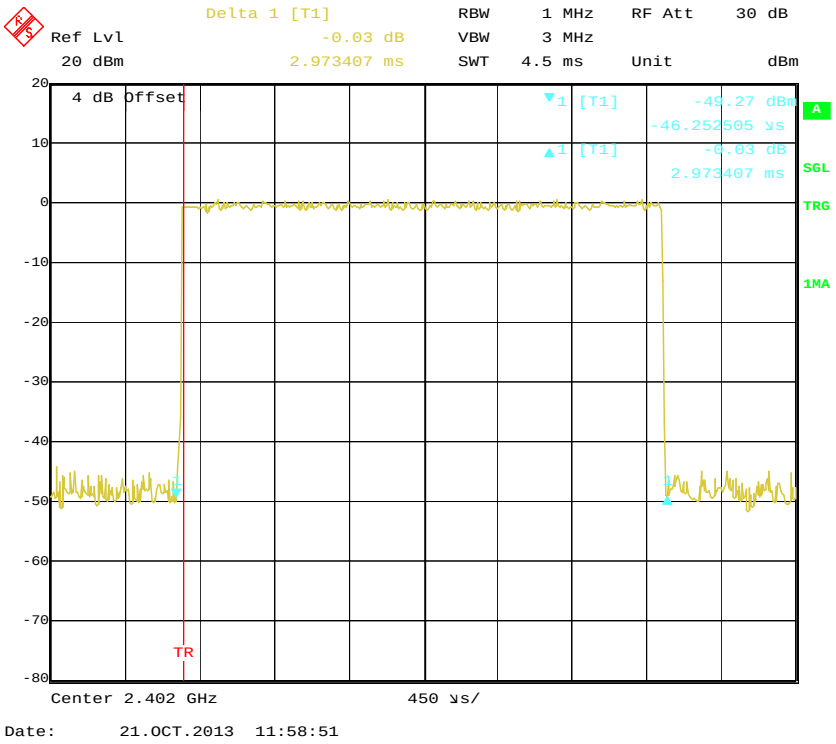
Date: 21.OCT.2013 11:53:03

Pulse time, High Channel, 3DH3

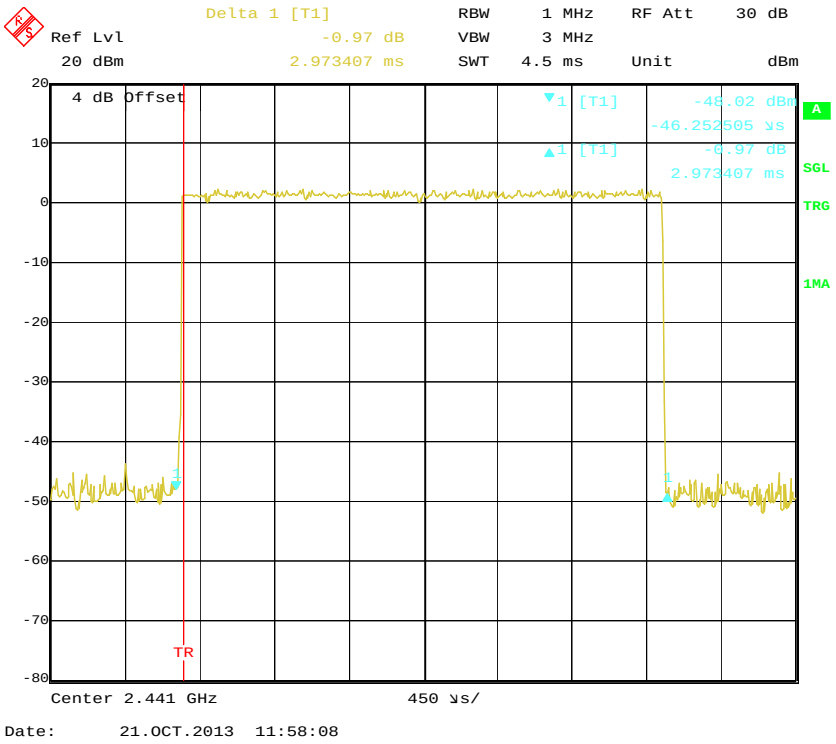


Date: 21.OCT.2013 11:53:16

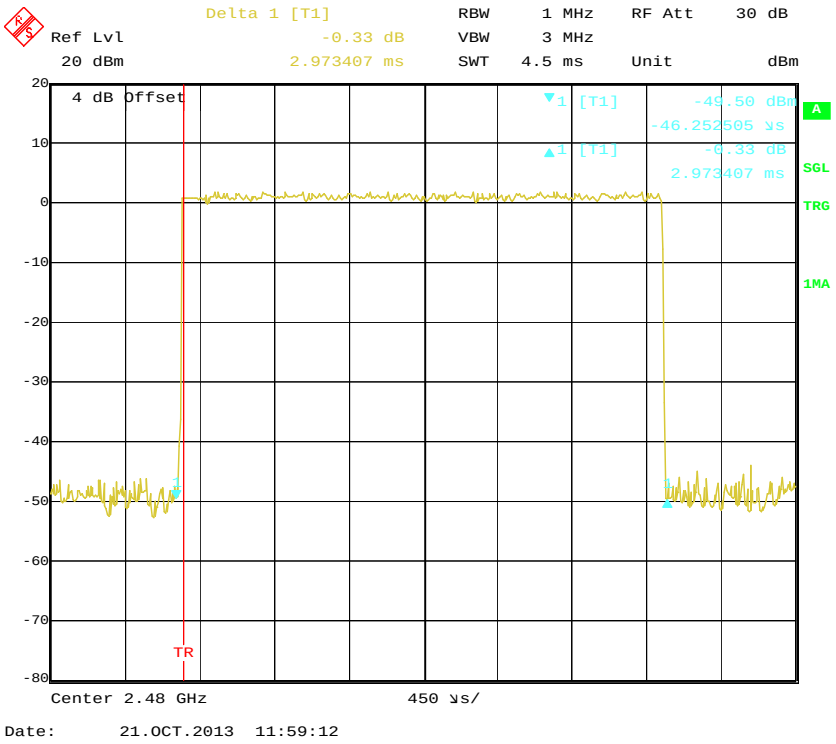
Pulse time, Low Channel, 3DH5



Pulse time, Middle Channel, 3DH5



Pulse time, High Channel, 3DH5



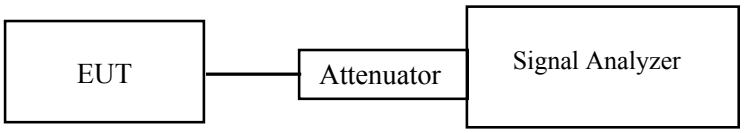
FCC §15.247(b) (1) - PEAK OUTPUT POWER MEASUREMENT

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. And 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
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

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

Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

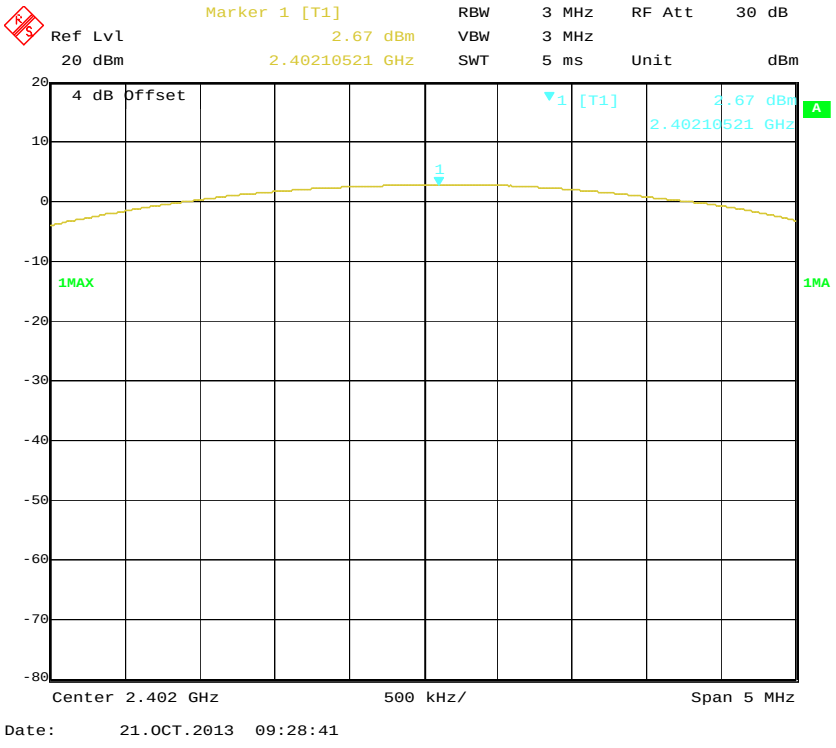
The testing was performed by Gardon Zhang on 2013-10-21.

EUT operation mode: Transmitting

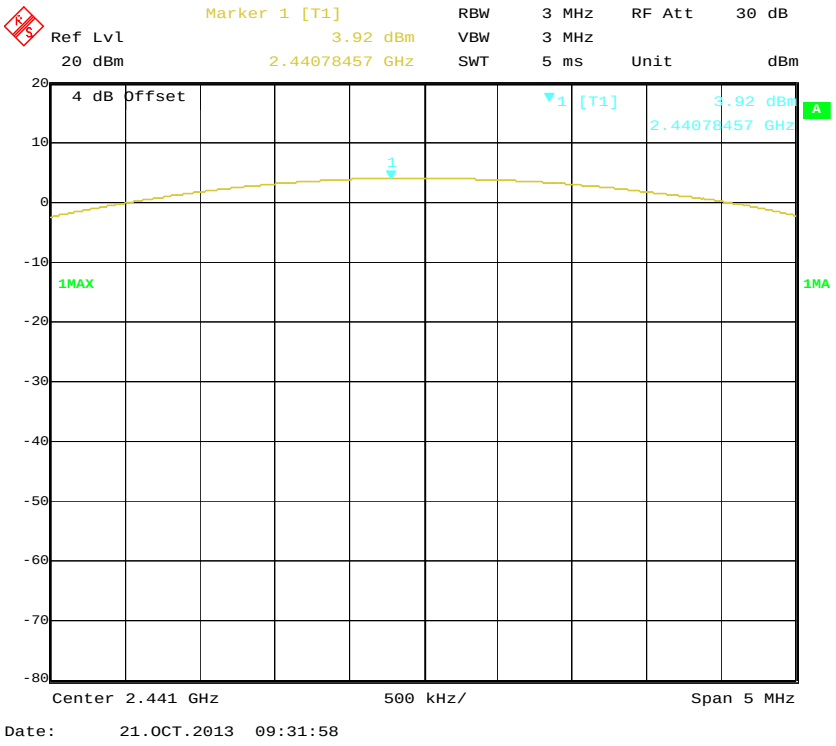
Test Result: Compliance. Please refer to following tables and plots

Mode	Channel	Frequency (MHz)	Conducted Output Power		Limit (mW)
			(dBm)	(mW)	
BDR (GFSK)	Low	2402	2.67	1.849	1000
	Middle	2441	3.92	2.466	1000
	High	2480	3.55	2.265	1000
EDR (π/4-DQPSK)	Low	2402	0.82	1.208	1000
	Middle	2441	2.61	1.824	1000
	High	2480	2.18	1.652	1000
EDR (8DPSK)	Low	2402	1.24	1.330	1000
	Middle	2441	2.86	1.932	1000
	High	2480	2.49	1.774	1000

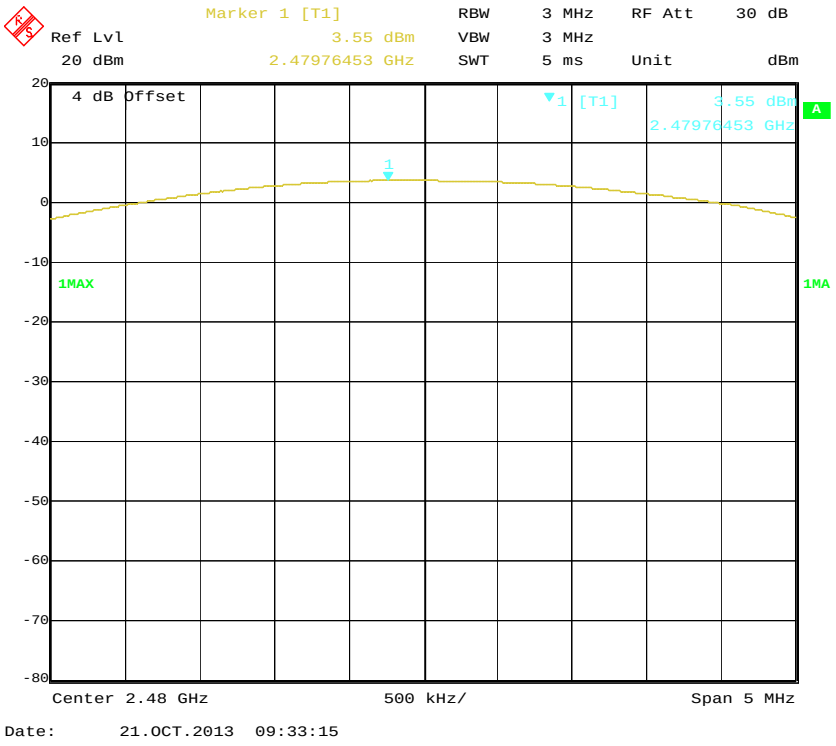
BDR (GFSK): Low Channel



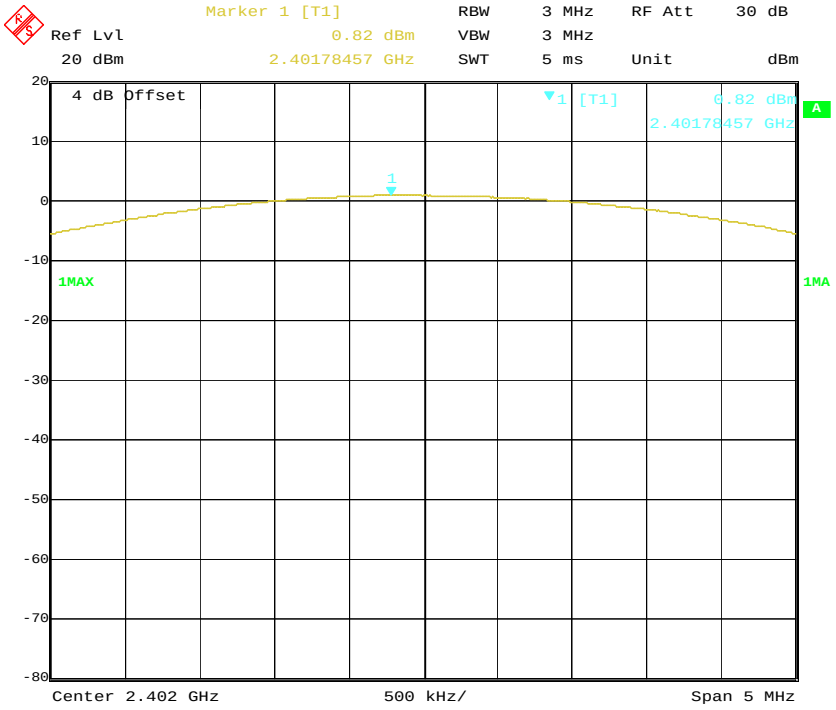
BDR (GFSK): Middle Channel



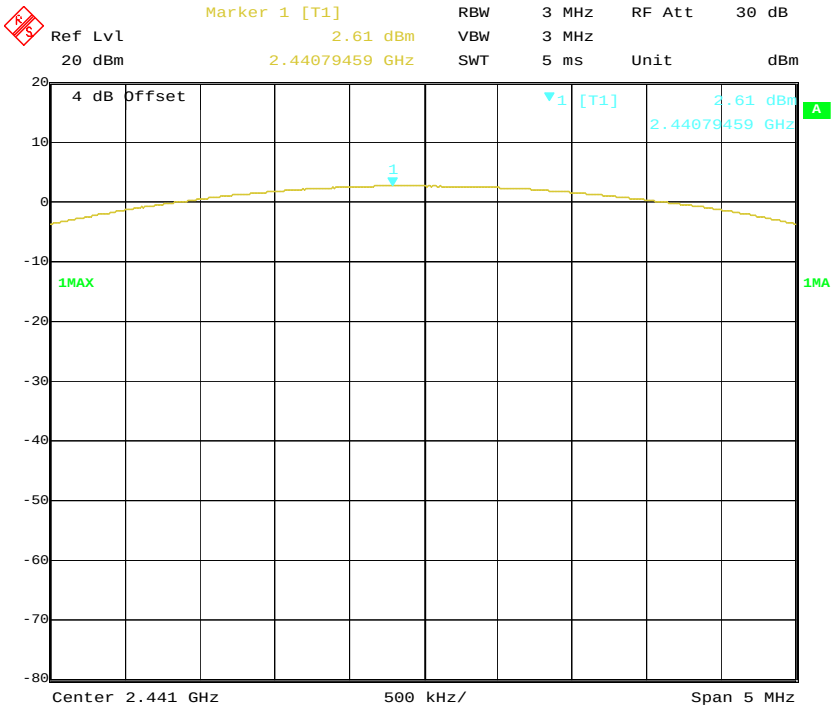
BDR (GFSK): High Channel



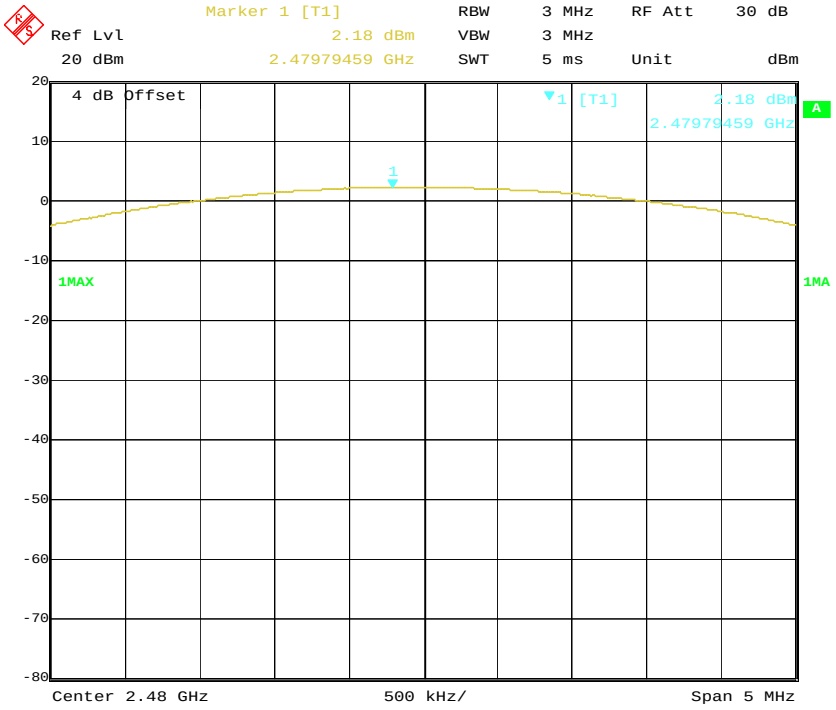
EDR(π/4-DQPSK): Low Channel



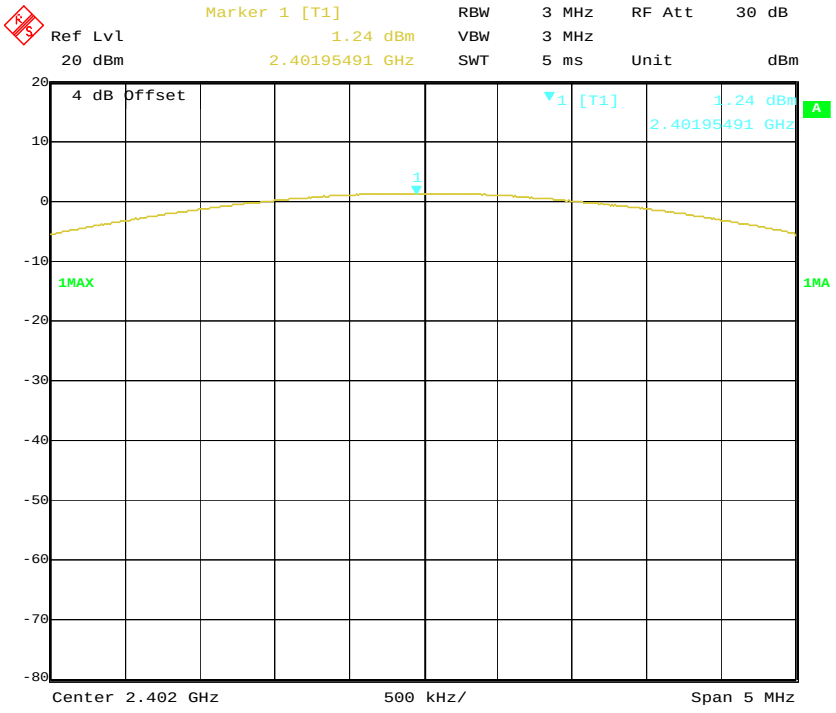
EDR(π/4-DQPSK): Middle Channel



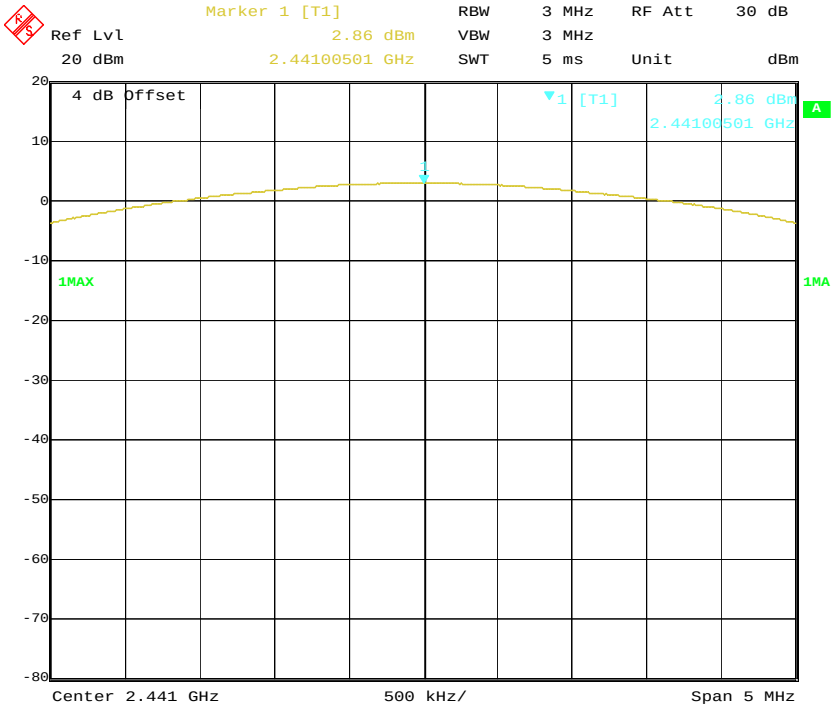
EDR(π/4-DQPSK): High Channel



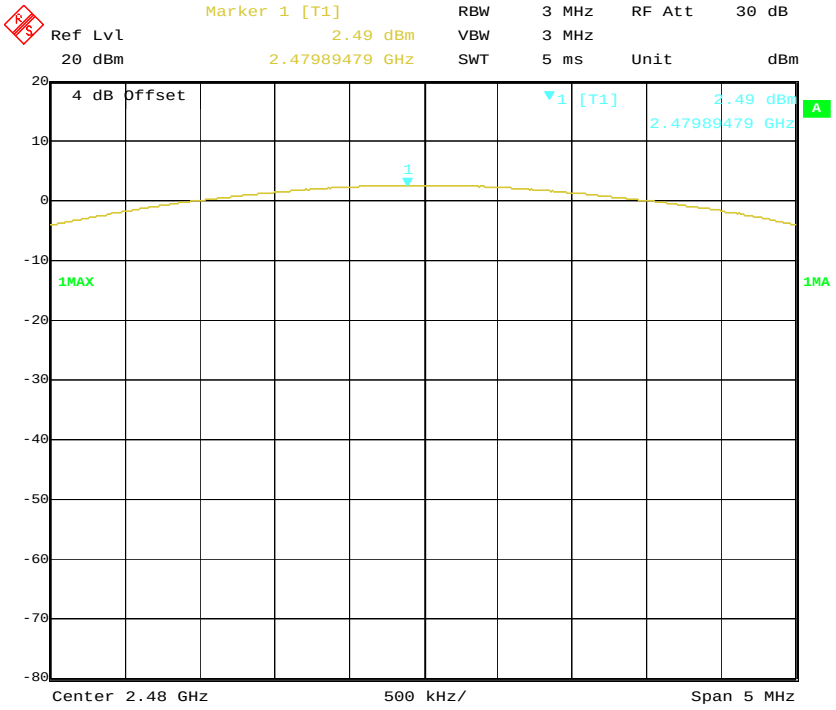
EDR(8DPSK): Low Channel



EDR(8DPSK): Middle Channel



EDR(8DPSK): High Channel



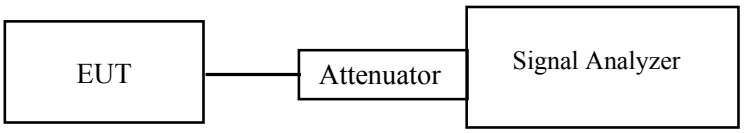
FCC §15.247(d) - BAND EDGES TESTING

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 RBW 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
Rohde & Schwarz	Signal Analyzer	FSIQ26	837405/023	2013-05-31	2014-05-31

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

Test Data

Environmental Conditions

Temperature:	24 ℃
Relative Humidity:	55 %
ATM Pressure:	101.0 kPa

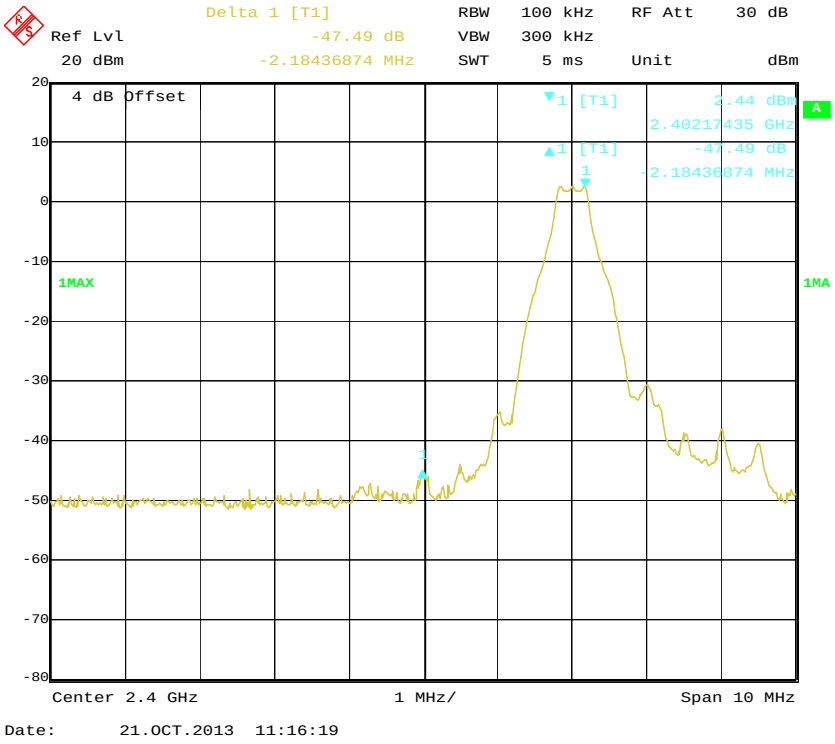
The testing was performed by Gardon Zhang on 2013-10-21.

EUT operation mode: Transmitting

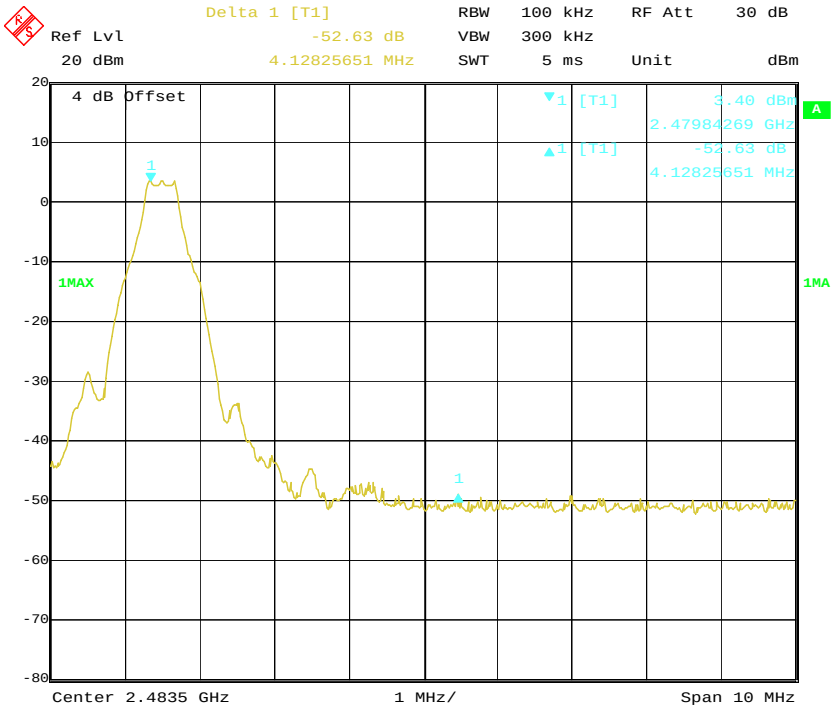
Test Result: Compliance. Please refer to following table and plots.

Frequency Band	Delta Peak to band emission (dBc)	Limit (dBc)	Result
BDR mode (GFSK)			
Left-band	47.49	20	Pass
Right-band	52.63	20	Pass
EDR Mode (π/4-DQPSK)			
Left-band	41.70	20	Pass
Right-band	50.38	20	Pass
EDR Mode (8 DPSK)			
Left-band	41.10	20	Pass
Right-band	50.60	20	Pass

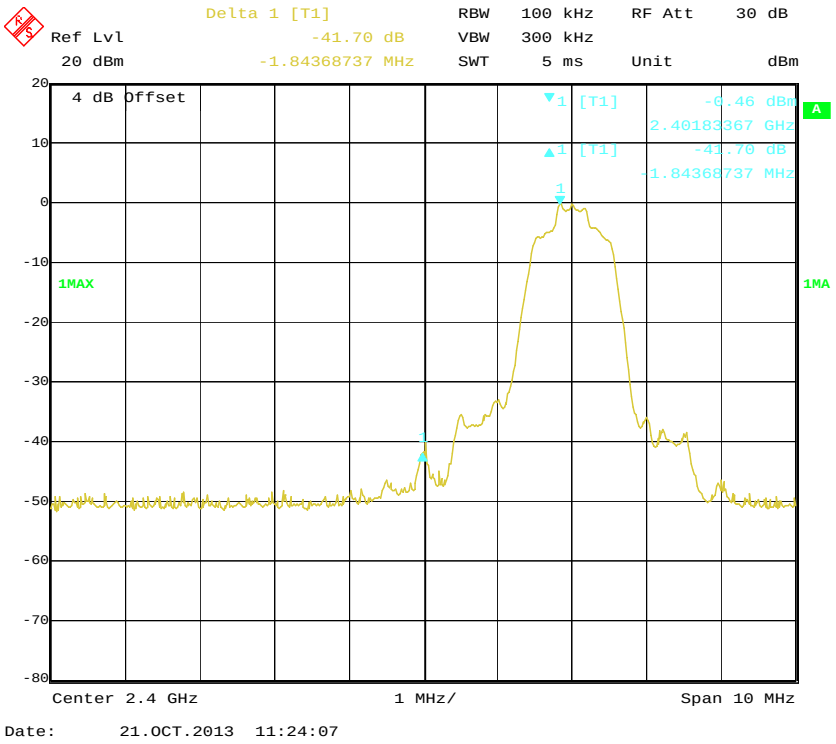
BDR (GFSK): Band Edge-Left Side



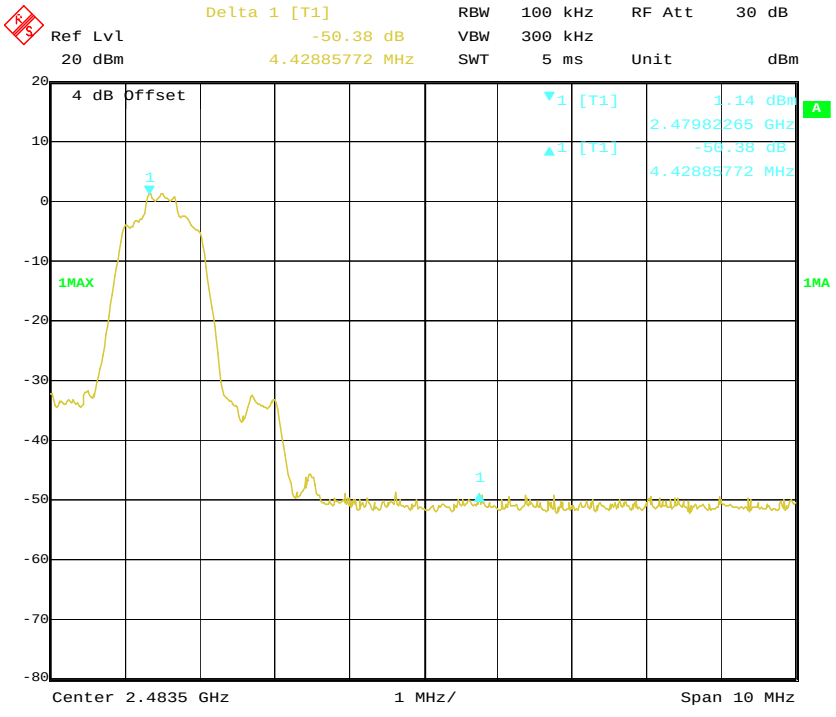
BDR (GFSK): Band Edge-Right Side



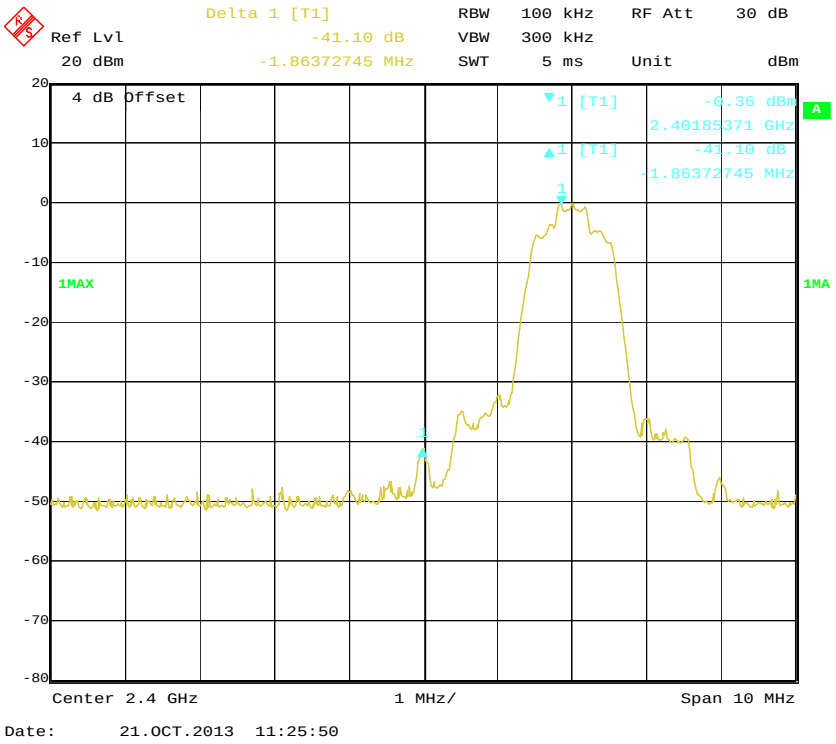
EDR (π/4-DQPSK): Band Edge-Left Side



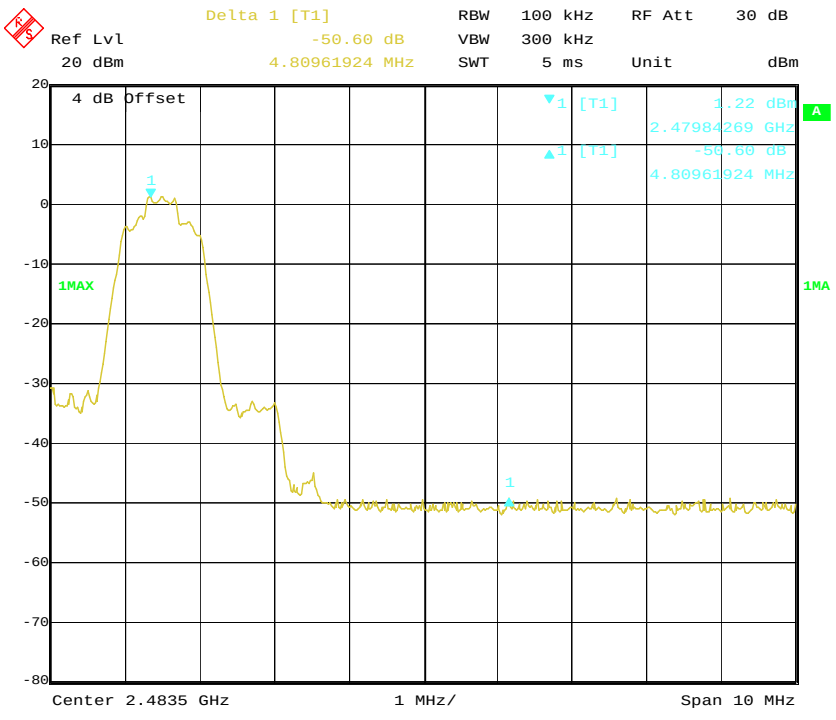
EDR (π/4-DQPSK): Band Edge-Right Side



EDR (8DPSK): Band Edge-Left Side



BDR (8DPSK): Band Edge-Right Side



PRODUCT SIMILARITY DECLARATION LETTER

RTX Hong Kong Ltd.
8/F Corporation Square,8 Lam Lok Street, Kowloon Bay, Hong Kong
Tel: +852 24873718 Fax: +852 24806121

2014-3-24

Product Similarity Declaration Letter

To Whom It May Concern,

We, RTX Hong Kong Ltd. hereby declare that our product DECT Handset; the model G966 DECT Handset and RTX8152 are electrically identical, they have the same PCB layout and schematic, the only difference is the model number for the purpose of market.

Model G966 DECT Handset was tested by BACL.

Please contact me if you have any question.

Signature:

Ted Chong
Engineering Manager

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