FCC PART 15.247

TEST REPORT

For

Sierra Monitor Corporation

1991 Tarob Court, Milpitas California 95035, UNITED STATES

Tested Model: FPA-C41
FCC ID: 2AIVJ-FPAC41

Report Type:	**Equipment Name:**
Original Report	M2M Gateway

Report Number:	RSC190807001-0C
Date of Report Issue:	2019-12-18
Reviewed By:	Sula Huang
Prepared By:	Bay Area Compliance Laboratories Corp. (Chengdu) No.5040, Huilongwan Plaza, No. 1, Shawan Road, Jinniu District, Chengdu, Sichuan, China Tel: +86-28-65525123 Fax: +86-28-65525125 www.baclcorp.com

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TABLE OF CONTENTS

FINAL

FINAL

GENERAL INFORMATION

Product Description for Equipment under Test (EUT)

Applicant	Sierra Monitor Corporation
Product	M2M Gateway
Tested Model	FPA-C41
Multiple Models	FPA-C42, FPA-C41-XXXX, FPA-C42-XXXX (where X can be used as "0-9" for application software changes or marketing purposes only. And the difference of application software changes will not affect the power and other RF parameters.)
FCC ID	2AIVJ-FPAC41
Frequency Range	2402MHz-2480MHz
Modulation Type:	GFSK,π/4-DQPSK,8DPSK
Voltage Range	DC 12-24V
Measure approximately	100 mm (L) x 77 mm (W) x 28 mm (H)
Sample serial number	190807001/01 (assigned by the BACL, Chengdu)
Sample/EUT Status	The test sample was in good condition and received: 2019-08-07

Note: Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.

Objective

This report is prepared on behalf of **Sierra Monitor Corporation** in accordance with Part 2, Subpart J, Part 15, Subparts A 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 15C DTS submissions with FCC ID: 2AIVJ-FPAC41

FINAL

Measurement Uncertainty

Item			Uncertainty
AC power line conducted emission			2.24 dB
Radiated Emission(Field Strength)	30MHz-200MHz	H	4.47 dB
		V	4.73 dB
	200MHz-1GHz	H	4.87 dB
		V	5.93 dB
	1GHz-6GHz		4.51 dB
	6GHz-18GHz		4.49 dB
	18GHz-40GHz		5.48 dB
Conducted RF Power			±0.61dB
Power Spectrum Density			±0.61dB
Occupied Bandwidth			±5%
Conducted Emission			±1.5dB
Humidity			±5%
Temperature			±1℃

Note: The extended uncertainty given in this report is obtained by combining the standard uncertainty times the corresponding inclusion factor K when the inclusion probability is about 95%.

Test Methodology

All measurements contained in this report were conducted with:

ANSI C63.10-2013 American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices.

Test Facility

The test site used by Bay Area Compliance Laboratories Corp. (Chengdu) to collect test data is located No.5040, Huilongwan Plaza, No. 1, Shawan Road, Jinniu District, Chengdu, Sichuan, China.

Bay Area Compliance Laboratories Corp. (Chengdu) lab is accredited to ISO/IEC 17025 by A2LA (Lab code: 4324.01) and the FCC designation No. CN1186 under the FCC KDB 974614 D01. The facility also complies with the radiated and AC line conducted test site criteria set forth in ANSI C63.4-2014.

SYSTEM TEST CONFIGURATION

Description of Test Configuration

The system was configured for testing in engineering mode.

Equipment Modifications

No modification was made to the EUT.

EUT Exercise Software

Test software: “Putty” installed in device was used during test, the setting was configured as below:

Test Software Version		Putty		
Test Frequency		2402MHz	2441MHz	2480MHz
GFSK	Power Level	Default	Default	Default
π/4-DQPSK	Power Level	Default	Default	Default
8PSK	Power Level	Default	Default	Default

Support Equipment List and Details

Manufacturer	Description	Model	Serial Number
DELL	Laptop	E6410	42159296809
Jiuzhou	Adapter	DYS12150UH-A	Unknown

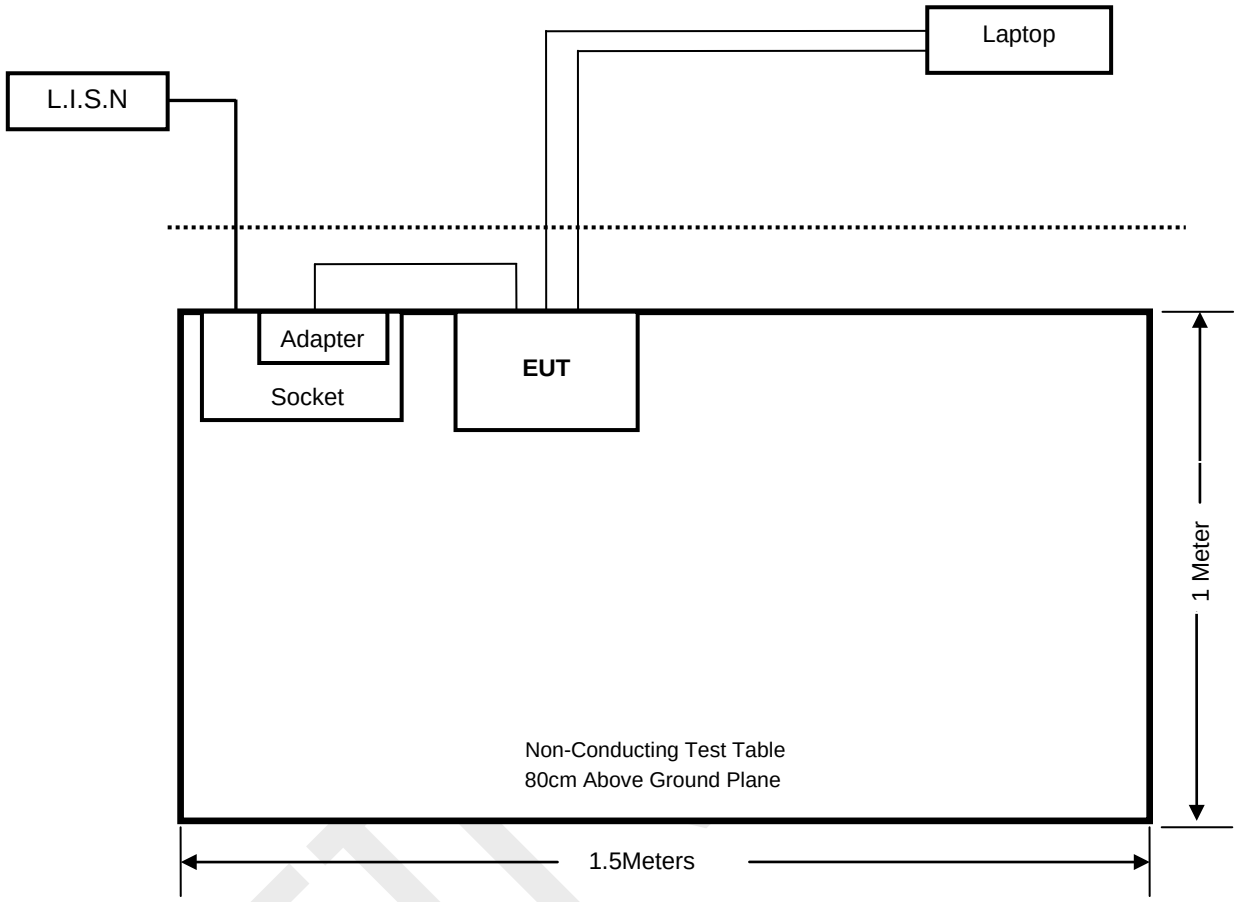
External I/O Cable

Cable Description	Length (m)	From	To
Unshielded DC Power Cable	1.0	Adapter	EUT
Unshielded RJ45 Cable	10.0	EUT	Laptop
Unshielded RS232 Cable	10.0	EUT	Laptop

FINAL

Block Diagram of Test Setup

Conducted Emissions



SUMMARY OF TEST RESULTS

FCC Rules	Description of Test	Result
FCC §15.247 & §1.1310 & §2.1091	MaximuM Permissible exposure (MPE)	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

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.

FINAL

TEST EQUIPMENTS LIST

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Conducted Emission					
Rohde & Schwarz	EMI Test Receiver	ESCI	100028	2019-04-15	2020-04-14
ROHDE&SCHWARZ	L.I.S.N.	ENV216	3560.6550.16	2019-02-25	2020-02-24
EMCO	L.I.S.N.	3810/2BR	9509-1102	NCR	NCR
HP	RF Limiter	11947A	3107A01270	2018-11-02	2019-11-01
Unknown	Conducted Cable	L-E003	000003	2019-08-05	2020-08-04
Rohde & Schwarz	EMC32	EMC32	V 8.52.0	NCR	NCR
Radiated Emission					
EMCT	Semi-Anechoic Chamber	966	001	2017-05-18	2020-05-17
SONOMA INSTRUMENT	Amplifier	310 N	186684	2019-09-06	2020-09-05
SUNOL SCIENCES	Broadband Antenna	JB3	A121808	2017-05-19	2020-05-18
INMET	Attenuator	18N-6dB	N/A	2018-11-27	2019-11-26
Rohde & Schwarz	EMI Test Receiver	ESR3	102456	2019-04-15	2020-04-14
Rohde & Schwarz	Spectrum Analyzer	FSU26	200835	2019-04-15	2020-04-14
ETS	Horn Antenna	3115	003-6076	2017-05-19	2020-05-18
A.H. Systems, Inc	Amplifier	PAM-0118P	467	2019-08-30	2020-08-29
A.H. Systems, Inc	Horn Antenna	SAS-574	510	2017-05-19	2020-05-18
EM Electronics	RF Pre-Amplifier	EM18G40	060725	2019-03-27	2020-03-26
Rohde & Schwarz	EMI Test Receiver	ESIB 40	100215	2019-04-15	2020-04-14
Sinoscite.,Co Ltd	Reject Band Filter	BSF 2402-2480MN	0898-005	2018-11-11	2019-11-10
MICRO-TRONICS	High Pass Filter	HPM50111	G216	2018-11-11	2019-11-10
Unknown	RF Cable (Below 1GHz)	L-E005	000005	2019-09-06	2020-09-05
Unknown	RF Cable (Below 1GHz)	T-E128	000128	2018-11-27	2019-11-26
MICRO-COAX	Flexible microwave cable	T-E237	233522-001	2019-07-19	2020-07-18
Unknown	RF Cable (Above 1GHz)	T-E069	000069	2019-07-24	2020-07-23
Micro-coax	RF Cable (Above 1GHz)	T-E209	MFR 64639 2310	2019-07-19	2020-07-18
Rohde & Schwarz	EMC32	EMC32	V9.10.00	NCR	NCR

FINAL

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
RF Conducted Test					
Rohde & Schwarz	Spectrum Analyzer	FSEM30	100018	2019-04-15	2020-04-14
WEINSCHEL ENGINEERING	Attenuator	1A 10dB	AB1165	2019-08-05	2020-08-04
E-Microwave	DC Block	EMDCB-00036	OE01304225	2019-08-05	2020-08-04
Unknown	RF Cable	Unknown	000007	Each Time	Each Time

FINAL

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

Applicable Standard

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

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

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

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

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

Per 447498 D01 General RF Exposure Guidance v06**,** simultaneous transmission MPE test exclusion applies when the sum of the MPE for all simultaneous transmitting antennas incorporated in a host device, based on the calculated/estimated, numerically modeled or measured field strengths or power density, is ≤ 1.0.

Calculated Formulary:

Predication of MPE limit at a given distance

$$S = PG/4\pi R^2$$

Where:
S = power density (in appropriate units, e.g. mW/cm^2);
P = power input to the antenna (in appropriate units, e.g., mW);
G = power gain of the antenna in the direction of interest relative to an isotropic radiator, the power gain factor, is normally numeric gain;
R = distance to the center of radiation of the antenna (appropriate units, e.g., cm);

For simultaneously transmit system, the calculated power density should comply with:

$$\sum_i \frac{S_i}{S_{Limit,i}} \leq 1$$

Calculated Data:

WiFi or Bluetooth + WCDMA/LTE module (FCC ID: RI7LE910NAV2)

MPE evaluation for single transmission:

Mode	Frequency Range (MHz)	Antenna Gain		Tune-up Conducted Power		Evaluation Distance (cm)	Power Density (mW/cm^2)	MPE Limit (mW/cm^2)
		(dBi)	(numeric)	(dBm)	(mW)			
WLAN	2412-2462	1.9	1.55	21.0	125.89	20	0.039	1.0
BT 3.0	2402-2480	1.9	1.55	9.5	8.91	20	0.003	1.0
WCDMA Band 5	824-849	2.0	1.58	24.5	281.84	20	0.089	0.55
LTE Band 5	824-849	2.0	1.58	24.0	251.19	20	0.079	0.55
WCDMA Band 2	1850-1910	3.0	2.00	24.5	281.84	20	0.112	1.0
LTE Band 2	1850-1910	3.0	2.00	24.0	251.19	20	0.100	1.0
LTE Band 4	1710-1755	3.0	2.00	24.0	251.19	20	0.100	1.0
LTE Band 12	699-716	2.0	1.58	24.0	251.19	20	0.079	0.47
LTE Band 13	777-787	2.0	1.58	24.0	251.19	20	0.079	0.52
LTE Band 17	704-716	2.0	1.58	24.0	251.19	20	0.079	0.47

MPE evaluation for simultaneous transmission:

Note: 1. Wi-Fi & Bluetooth can't transmit simultaneously.
2. Wi-Fi & WCDMA/LTE or Bluetooth&WCDMA/LTE can transmit simultaneously, MPE evaluation is as below formula:

PD1/Limit1+PD2/Limit2+……＜1, PD (Power Density)

The worst case is as below:

Max MPE of Wi-Fi + Max MPE of LTE
= 0.039/1.0+0.079/0.47=0.207＜1.0

Result: MPE evaluation of single and simultaneous transmission meet the requirement of standard.

FINAL

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 2.4G WIFI/Bluetooth antenna, one LTE main antenna and one LTE diversity antenna, fulfill the requirement of this section. Please refer to the EUT photos.

Antenna	Manufacturer	Model Number	Antenna Gain (Max)	Antenna Connector	Antenna Type
WLAN/ Bluetooth	Dongguan YiJia Electronics Communication Technology Co.,Ltd.	GX042S.100001.S01	1.9dBi	IPEX	FPC
LTE Main		AC-Q7027-YZW	2.0dBi (698-960MHz) 3.0 dBi (1710-2700MHz)	SMA(Male)	Monopole
LTE Diversity		AC-Q7027-YZW	2.0 dBi (698-960MHz) 3.0 dBi (1710-2700MHz)	SMA(Male)	Monopole

Result: Compliance

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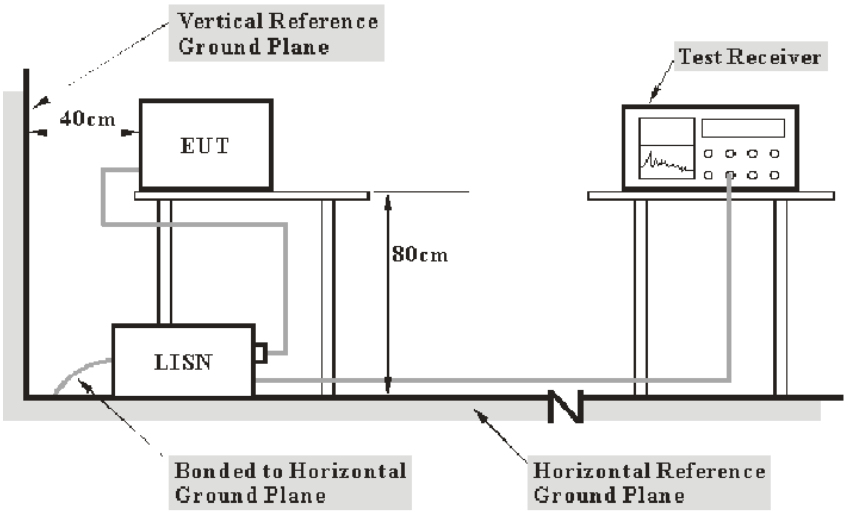
FCC §15.207 (a) – AC LINE CONDUCTED EMISSIONS

Applicable Standard

FCC§15.207

EUT Setup



Note: 1. Support units were connected to second LISN.
2. Both of LISNs (AMN) 80 cm from EUT and at the least 80 cm from other units and other metal planes support units.

The setup of EUT is according with per ANSI C63.10-2013 measurement procedure. The specification used was with the FCC Part 15.207 limits.

The spacing between the peripherals was 10 cm.

EMI Test Receiver Setup

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

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

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

Test Procedure

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

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

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

Corrected Amplitude & Margin Calculation

The basic equation is as follows:

$V_C = V_R + A_C + VDF$

Herein,
V_C: corrected voltage amplitude
V_R: reading voltage amplitude
A_c: attenuation caused by cable loss
VDF: voltage division factor of AMN or ISN

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

Margin = Limit – Corrected Amplitude

Test Data

Environmental Conditions

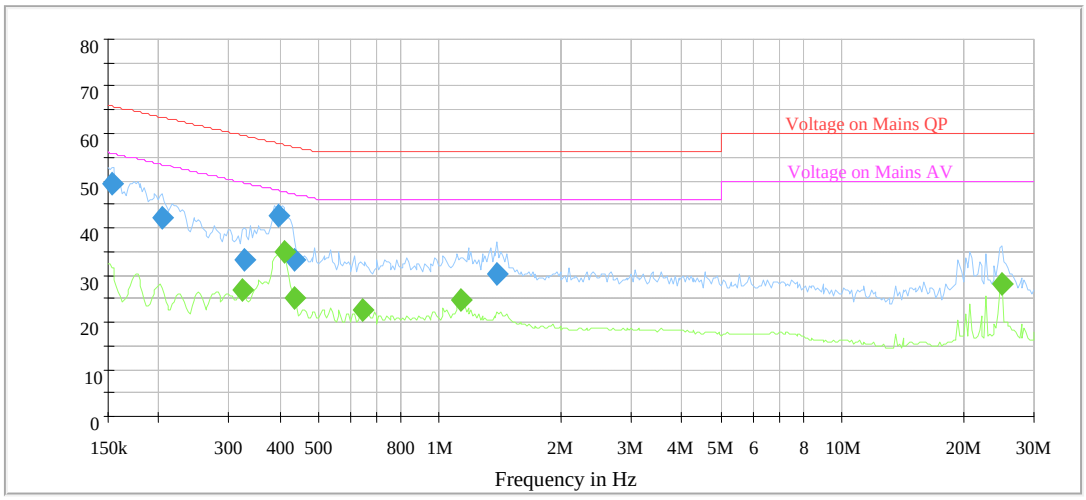
Temperature:	25 °C
Relative Humidity:	57 %
ATM Pressure:	95.2 kPa

The testing was performed by Eric Xiao on 2019-09-24.

Test Mode: Transmitting (BDR mode) - Worst Case

FINAL

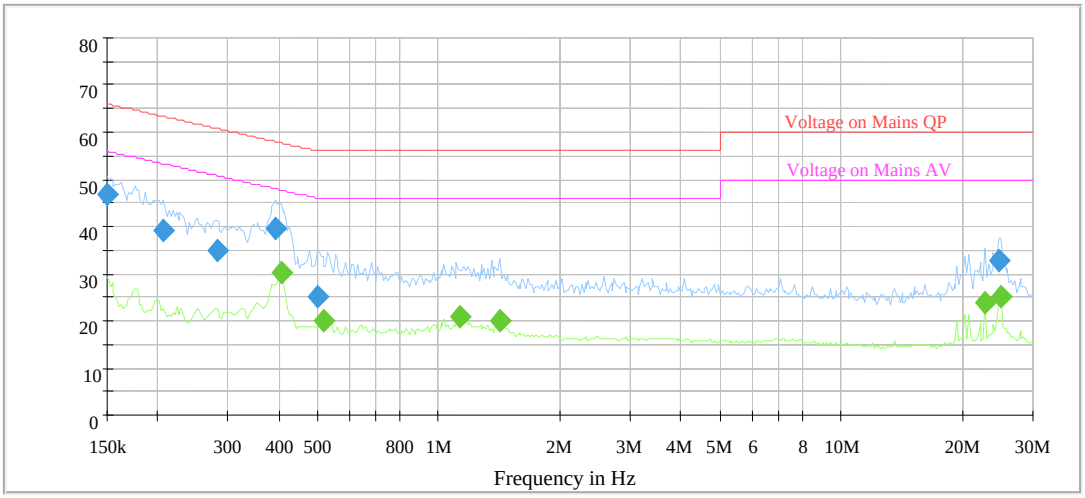
AC120 V, 60 Hz, Line:



Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.153015	49.4	200.0	9.000	L1	19.6	16.4	65.8
0.204199	42.2	200.0	9.000	L1	19.6	21.2	63.4
0.325956	33.2	200.0	9.000	L1	19.6	26.4	59.6
0.397728	42.4	200.0	9.000	L1	19.6	15.5	57.9
0.434989	33.1	200.0	9.000	L1	19.6	24.1	57.2
1.393411	30.1	200.0	9.000	L1	19.6	25.9	56.0

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.322729	26.7	200.0	9.000	L1	19.6	22.9	49.6
0.409780	35.1	200.0	9.000	L1	19.6	12.6	47.7
0.434989	25.1	200.0	9.000	L1	19.6	22.1	47.2
0.641227	22.7	200.0	9.000	L1	19.6	23.3	46.0
1.130656	24.6	200.0	9.000	L1	19.6	21.4	46.0
24.961902	28.1	200.0	9.000	L1	20.4	21.9	50.0

AC120 V, 60 Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.150000	46.6	200.0	9.000	N	19.6	19.4	66.0
0.206241	39.0	200.0	9.000	N	19.6	24.4	63.4
0.280762	35.0	200.0	9.000	N	19.6	25.8	60.8
0.393790	39.6	200.0	9.000	N	19.6	18.4	58.0
0.500009	25.1	200.0	9.000	N	19.6	30.9	56.0
24.714754	32.9	200.0	9.000	N	20.5	27.1	60.0

Frequency (MHz)	Average (dBµV)	Meas. Time (ms)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.405722	30.1	200.0	9.000	N	19.6	17.6	47.7
0.515160	19.9	200.0	9.000	N	19.6	26.1	46.0
1.130656	21.0	200.0	9.000	N	19.7	25.0	46.0
1.421419	19.9	200.0	9.000	N	19.6	26.1	46.0
22.823661	23.9	200.0	9.000	N	20.4	26.1	50.0
24.961902	25.3	200.0	9.000	N	20.5	24.7	50.0

Note:
1) Corrected Amplitude = Reading + Correction Factor
2) Correction Factor =LISN VDF (Voltage Division Factor) + Cable Loss + Transient Limiter
3) Margin = Limit – Corrected Amplitude

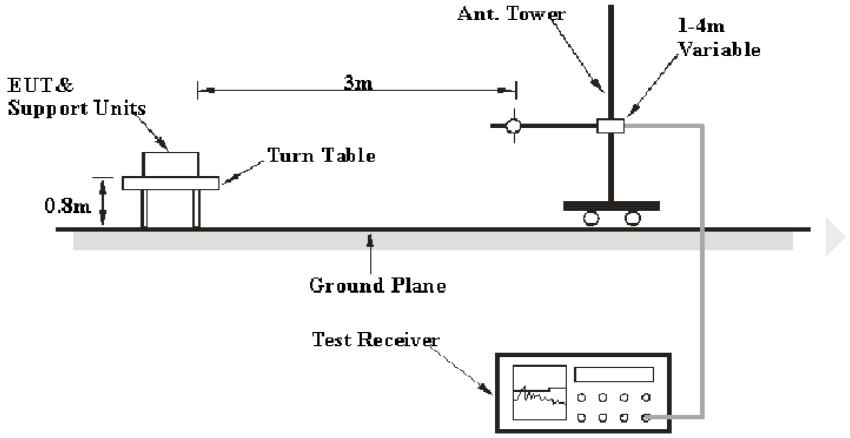
FCC §15.209, §15.205 & §15.247(d) - SPURIOUS EMISSIONS

Applicable Standard

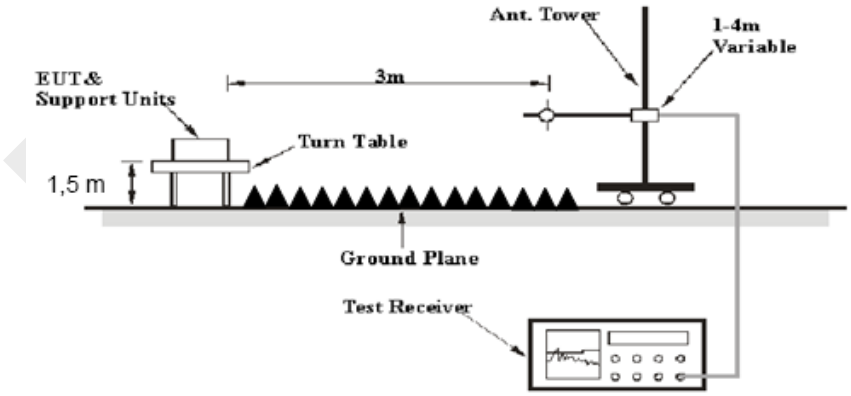
FCC §15.247 (d); §15.209; §15.205;

EUT Setup

Below 1GHz:



Above 1GHz:



The radiated emission tests were performed in the 3 meters test site, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits.

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

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 setup was 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 1GHz	1MHz	3 MHz	/	PK
	1MHz	3 MHz	/	AV

If the maximized peak measured value complies with under the QP/Average limit more than 6dB, then it is unnecessary to perform an QP/Average measurement.

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.

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

FINAL

Test Data

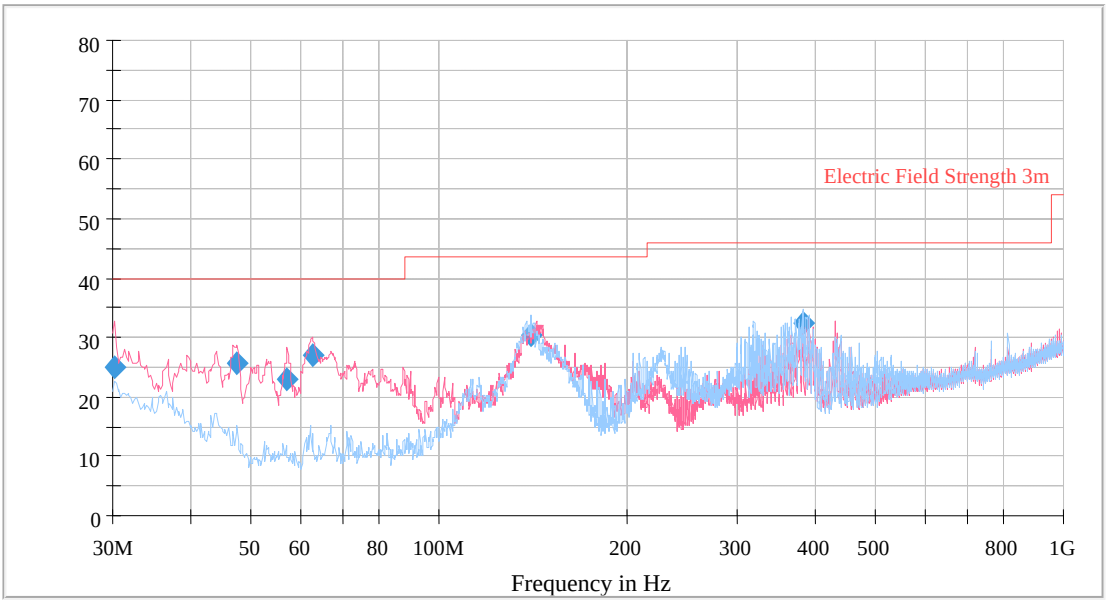
Environmental Conditions

Temperature:	29 °C
Relative Humidity:	60 %
ATM Pressure:	94.9 kPa

The testing was performed by Eric Xiao on 2019-09-25.

Test Mode: Transmitting

30 MHz to 1 GHz: BDR Mode-High channel-Worst Case



Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
30.194000	25.08	40.00	14.92	200.0	120.000	102.0	V	269.0	-5.0
47.460000	25.76	40.00	14.24	200.0	120.000	104.0	V	126.0	-15.2
57.160000	23.05	40.00	16.95	200.0	120.000	107.0	V	345.0	-17.2
62.592000	27.10	40.00	12.90	200.0	120.000	103.0	V	39.0	-17.1
140.580000	30.51	43.50	12.99	200.0	120.000	179.0	H	4.0	-10.3
381.722000	32.46	46.00	13.54	200.0	120.000	102.0	H	269.0	-8.9

1GHz-25GHz:

BDR Mode (GFSK):

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
	Reading	Measurement	Polar	Factor					
MHz	dBµV	PK/AV	H/V	(dB/m)	dB	dB	dBµV/m	dBµV/m	dB
Frequency: 2402 MHz									
2402	73.37	PK	H	28.71	3.55	0.00	105.63	N/A	N/A
2402	62.55	AV	H	28.71	3.55	0.00	94.81	N/A	N/A
2402	65.75	PK	V	28.71	3.55	0.00	98.01	N/A	N/A
2402	54.17	AV	V	28.71	3.55	0.00	86.43	N/A	N/A
2390	28.36	PK	H	28.67	3.54	0.00	60.57	74.00	13.43
2390	16.19	AV	H	28.67	3.54	0.00	48.40	54.00	5.60
4804	60.71	PK	H	33.85	5.05	44.73	54.88	74.00	19.12
4804	48.81	AV	H	33.85	5.05	44.73	42.98	54.00	11.02
7206	46.59	PK	H	36.39	6.43	43.92	45.49	74.00	28.51
7206	33.34	AV	H	36.39	6.43	43.92	32.24	54.00	21.76
9608	57.72	PK	H	37.97	7.39	44.65	58.43	74.00	15.57
9608	42.28	AV	H	37.97	7.39	44.65	42.99	54.00	11.01
Frequency: 2441 MHz									
2441	73.01	PK	H	28.82	3.58	0.00	105.41	N/A	N/A
2441	62.31	AV	H	28.82	3.58	0.00	94.71	N/A	N/A
2441	66.04	PK	V	28.82	3.58	0.00	98.44	N/A	N/A
2441	54.84	AV	V	28.82	3.58	0.00	87.24	N/A	N/A
4882	60.43	PK	H	34.07	5.09	44.72	54.87	74.00	19.13
4882	48.72	AV	H	34.07	5.09	44.72	43.16	54.00	10.84
7323	46.50	PK	H	36.55	6.49	44.23	45.31	74.00	28.69
7323	33.53	AV	H	36.55	6.49	44.23	32.34	54.00	21.66
9764	56.47	PK	H	38.22	7.45	44.50	57.64	74.00	16.36
9764	40.88	AV	H	38.22	7.45	44.50	42.05	54.00	11.95
Frequency: 2480 MHz									
2480	73.42	PK	H	28.94	3.61	0.00	105.97	N/A	N/A
2480	62.63	AV	H	28.94	3.61	0.00	95.18	N/A	N/A
2480	66.77	PK	V	28.94	3.61	0.00	99.32	N/A	N/A
2480	56.02	AV	V	28.94	3.61	0.00	88.57	N/A	N/A
2483.5	32.27	PK	H	28.95	3.61	0.00	64.83	74.00	9.17
2483.5	19.46	AV	H	28.95	3.61	0.00	52.02	54.00	1.98
4960	60.72	PK	H	34.29	5.14	44.71	55.44	74.00	18.56
4960	49.36	AV	H	34.29	5.14	44.71	44.08	54.00	9.92
7440	46.91	PK	H	36.72	6.55	44.54	45.64	74.00	28.36
7440	34.36	AV	H	36.72	6.55	44.54	33.09	54.00	20.91
9920	55.33	PK	H	38.47	7.51	44.34	56.97	74.00	17.03
9920	40.06	AV	H	38.47	7.51	44.34	41.70	54.00	12.30

FINAL

EDR Mode (π/4-DQPSK):

Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
	Reading	Measurement	Polar	Factor					
MHz	dBµV	PK/AV	H/V	(dB/m)	dB	dB	dBµV/m	dBµV/m	dB
Frequency: 2402 MHz									
2402	72.23	PK	H	28.71	3.55	0.00	104.49	N/A	N/A
2402	58.82	AV	H	28.71	3.55	0.00	91.08	N/A	N/A
2402	65.46	PK	V	28.71	3.55	0.00	97.72	N/A	N/A
2402	52.18	AV	V	28.71	3.55	0.00	84.44	N/A	N/A
2390	28.97	PK	H	28.67	3.54	0.00	61.18	74.00	12.82
2390	16.27	AV	H	28.67	3.54	0.00	48.48	54.00	5.52
4804	59.97	PK	H	33.85	5.05	44.73	54.14	74.00	19.86
4804	46.98	AV	H	33.85	5.05	44.73	41.15	54.00	12.85
7206	45.65	PK	H	36.39	6.43	43.92	44.55	74.00	29.45
7206	32.72	AV	H	36.39	6.43	43.92	31.62	54.00	22.38
9608	57.34	PK	H	37.97	7.39	44.65	58.05	74.00	15.95
9608	42.03	AV	H	37.97	7.39	44.65	42.74	54.00	11.26
Frequency: 2441 MHz									
2441	71.67	PK	H	28.82	3.58	0.00	104.07	N/A	N/A
2441	58.60	AV	H	28.82	3.58	0.00	91.00	N/A	N/A
2441	65.75	PK	V	28.82	3.58	0.00	98.15	N/A	N/A
2441	52.18	AV	V	28.82	3.58	0.00	84.58	N/A	N/A
4882	59.63	PK	H	34.07	5.09	44.72	54.07	74.00	19.93
4882	46.54	AV	H	34.07	5.09	44.72	40.98	54.00	13.02
7323	46.18	PK	H	36.55	6.49	44.23	44.99	74.00	29.01
7323	33.23	AV	H	36.55	6.49	44.23	32.04	54.00	21.96
9764	56.19	PK	H	38.22	7.45	44.50	57.36	74.00	16.64
9764	41.31	AV	H	38.22	7.45	44.50	42.48	54.00	11.52
Frequency: 2480 MHz									
2480	71.94	PK	H	28.94	3.61	0.00	104.49	N/A	N/A
2480	58.88	AV	H	28.94	3.61	0.00	91.43	N/A	N/A
2480	66.19	PK	V	28.94	3.61	0.00	98.74	N/A	N/A
2480	52.21	AV	V	28.94	3.61	0.00	84.76	N/A	N/A
2483.5	32.47	PK	H	28.95	3.61	0.00	65.03	74.00	8.97
2483.5	19.93	AV	H	28.95	3.61	0.00	52.49	54.00	1.51
4960	60.07	PK	H	34.29	5.14	44.71	54.79	74.00	19.21
4960	46.91	AV	H	34.29	5.14	44.71	41.63	54.00	12.37
7440	46.75	PK	H	36.72	6.55	44.54	45.48	74.00	28.52
7440	33.76	AV	H	36.72	6.55	44.54	32.49	54.00	21.51
9920	55.87	PK	H	38.47	7.51	44.34	57.51	74.00	16.49
9920	40.73	AV	H	38.47	7.51	44.34	42.37	54.00	11.63

FINAL

EDR Mode (8-DPSK):

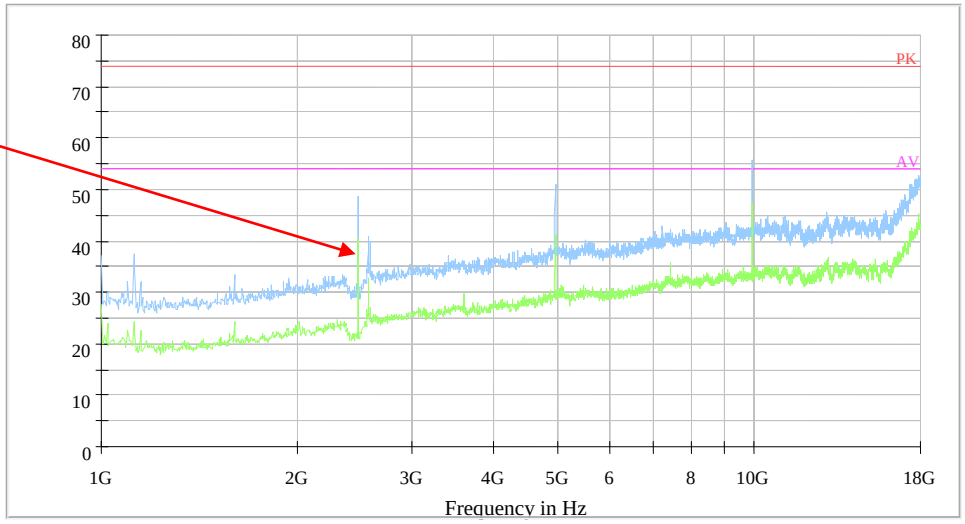
Frequency	Receiver		Rx Antenna		Cable loss	Amplifier Gain	Corrected Amplitude	Limit	Margin
	Reading	Measurement	Polar	Factor					
MHz	dBµV	PK/AV	H/V	(dB/m)	dB	dB	dBµV/m	dBµV/m	dB
Frequency: 2402 MHz									
2402	72.73	PK	H	28.71	3.55	0.00	104.99	N/A	N/A
2402	59.34	AV	H	28.71	3.55	0.00	91.60	N/A	N/A
2402	65.26	PK	V	28.71	3.55	0.00	97.52	N/A	N/A
2402	51.93	AV	V	28.71	3.55	0.00	84.19	N/A	N/A
2390	28.62	PK	H	28.67	3.54	0.00	60.83	74.00	13.17
2390	16.18	AV	H	28.67	3.54	0.00	48.39	54.00	5.61
4804	60.14	PK	H	33.85	5.05	44.73	54.31	74.00	19.69
4804	47.13	AV	H	33.85	5.05	44.73	41.30	54.00	12.70
7206	45.73	PK	H	36.39	6.43	43.92	44.63	74.00	29.37
7206	32.66	AV	H	36.39	6.43	43.92	31.56	54.00	22.44
9608	56.89	PK	H	37.97	7.39	44.65	57.60	74.00	16.40
9608	41.73	AV	H	37.97	7.39	44.65	42.44	54.00	11.56
Frequency: 2441 MHz									
2441	72.18	PK	H	28.82	3.58	0.00	104.58	N/A	N/A
2441	58.90	AV	H	28.82	3.58	0.00	91.30	N/A	N/A
2441	65.33	PK	V	28.82	3.58	0.00	97.73	N/A	N/A
2441	52.19	AV	V	28.82	3.58	0.00	84.59	N/A	N/A
4882	59.95	PK	H	34.07	5.09	44.72	54.39	74.00	19.61
4882	46.87	AV	H	34.07	5.09	44.72	41.31	54.00	12.69
7323	46.01	PK	H	36.55	6.49	44.23	44.82	74.00	29.18
7323	32.99	AV	H	36.55	6.49	44.23	31.80	54.00	22.20
9764	55.80	PK	H	38.22	7.45	44.50	56.97	74.00	17.03
9764	40.89	AV	H	38.22	7.45	44.50	42.06	54.00	11.94
Frequency: 2480 MHz									
2480	72.32	PK	H	28.94	3.61	0.00	104.87	N/A	N/A
2480	58.89	AV	H	28.94	3.61	0.00	91.44	N/A	N/A
2480	66.12	PK	V	28.94	3.61	0.00	98.67	N/A	N/A
2480	52.75	AV	V	28.94	3.61	0.00	85.30	N/A	N/A
2483.5	32.87	PK	H	28.95	3.61	0.00	65.43	74.00	8.57
2483.5	19.76	AV	H	28.95	3.61	0.00	52.32	54.00	1.68
4960	60.11	PK	H	34.29	5.14	44.71	54.83	74.00	19.17
4960	47.05	AV	H	34.29	5.14	44.71	41.77	54.00	12.23
7440	46.57	PK	H	36.72	6.55	44.54	45.30	74.00	28.70
7440	33.76	AV	H	36.72	6.55	44.54	32.49	54.00	21.51
9920	55.41	PK	H	38.47	7.51	44.34	57.05	74.00	16.95
9920	40.17	AV	H	38.47	7.51	44.34	41.81	54.00	12.19

Note:
Corrected Amplitude = Corrected Factor + Reading
Corrected Factor=Antenna factor (RX) + Cable Loss – Amplifier Factor
Margin = Limit- Corr. Amplitude
Spurious emissions more than 20 dB below the limit were not reported.

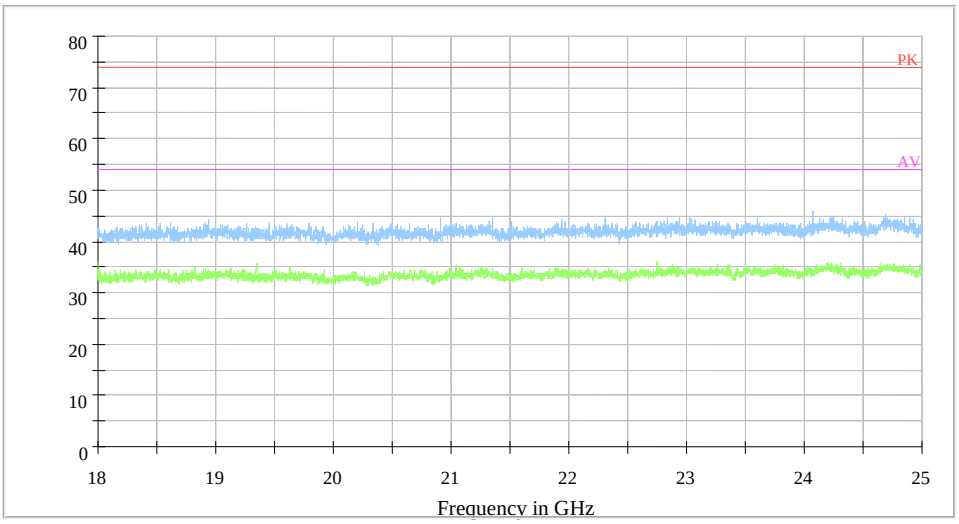
Please refer to the below pre-scan plot of worst case:

EDR Mode (π/4-DQPSK): High Channel _Horizontal_1GHz-18GHz

Fundamental with Reject Band Filter

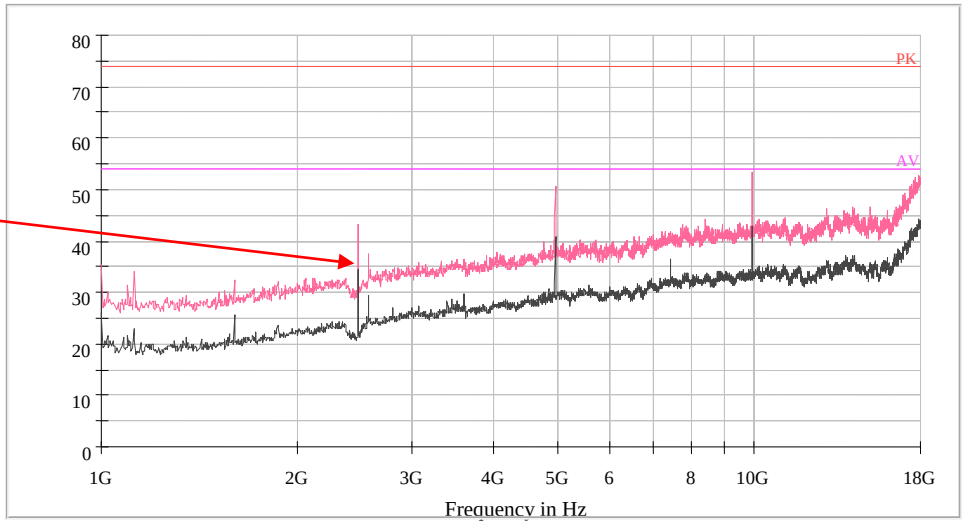


EDR Mode (π/4-DQPSK): High Channel _Horizontal _18GHz-25GHz

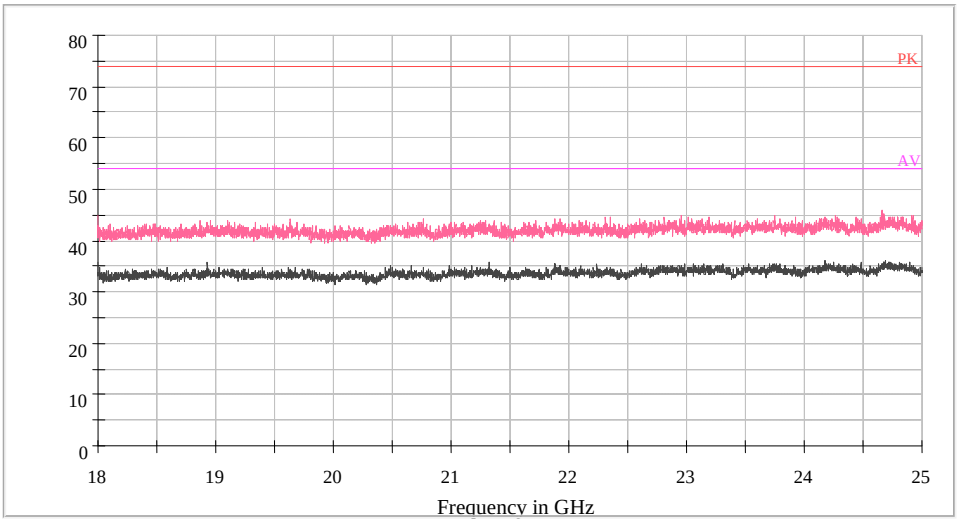


EDR Mode (π/4-DQPSK): High Channel_Vertical_1GHz-18GHz

Fundamental with Reject Band Filter



EDR Mode (π/4-DQPSK): High Channel_Vertical_18GHz-25GHz



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 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 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:	30 °C
Relative Humidity:	68 %
ATM Pressure:	95.4 kPa

The testing was performed by Eric Xiao on 2019-08-08.

Test Result: Compliance.

Please refer to following tables and plots.

Test Mode: Transmitting

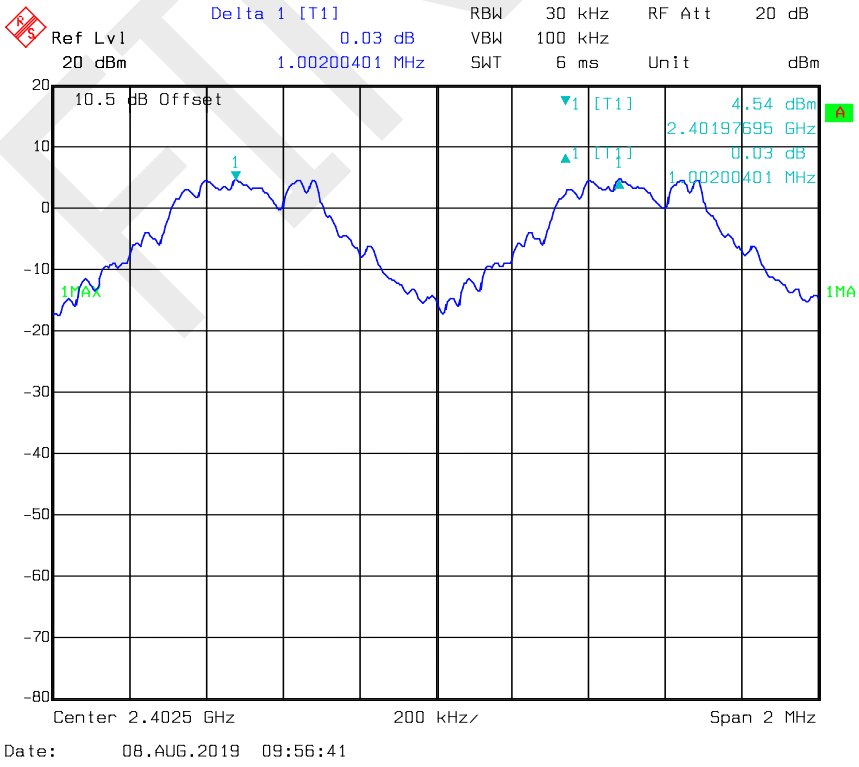
FINAL

Mode	Channel	Frequency	Channel Separation	Limit
		MHz	MHz	MHz
BDR (GFSK)	Low	2402	1.002	0.65
	Adjacent	2403		
	Middle	2441	1.002	0.65
	Adjacent	2442		
	High	2480	0.998	0.65
	Adjacent	2479		
EDR (π/4-DQPSK)	Low	2402	1.006	0.86
	Adjacent	2403		
	Middle	2441	1.002	0.86
	Adjacent	2442		
	High	2480	1.002	0.86
	Adjacent	2479		
EDR (8DPSK)	Low	2402	0.998	0.84
	Adjacent	2403		
	Middle	2441	1.002	0.83
	Adjacent	2442		
	High	2480	1.002	0.84
	Adjacent	2479		

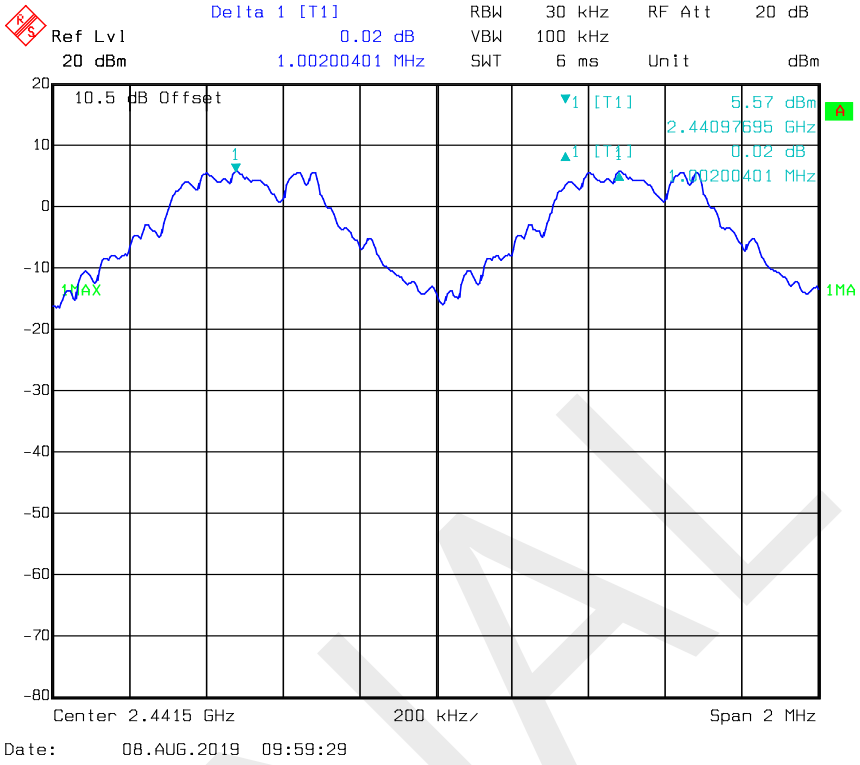
Note: Limit= (2/3) × 20dB bandwidth

BDR Mode (GFSK):

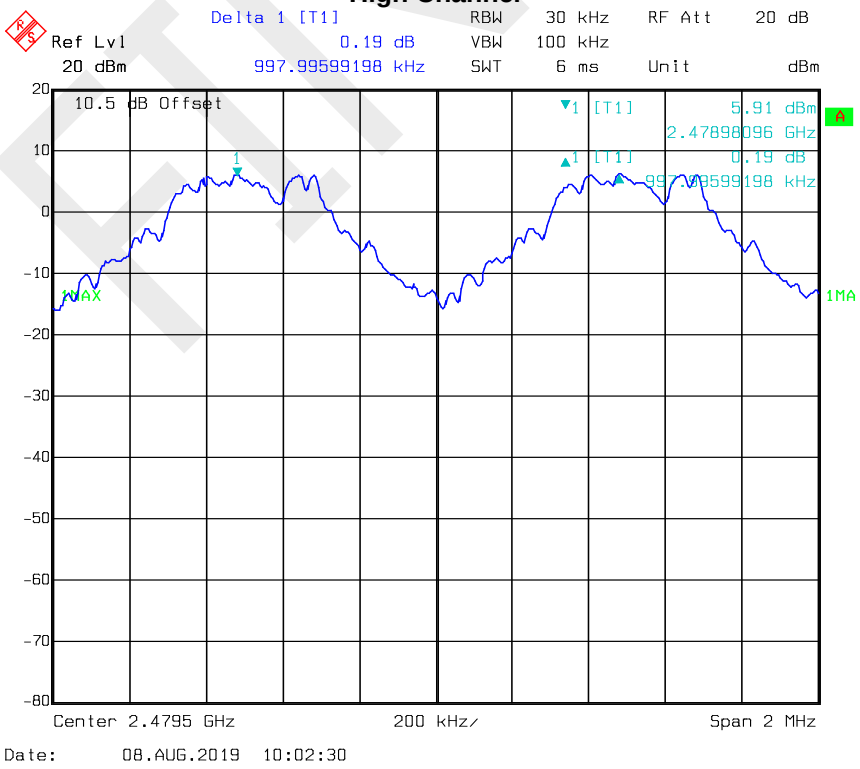
Low Channel



Middle Channel

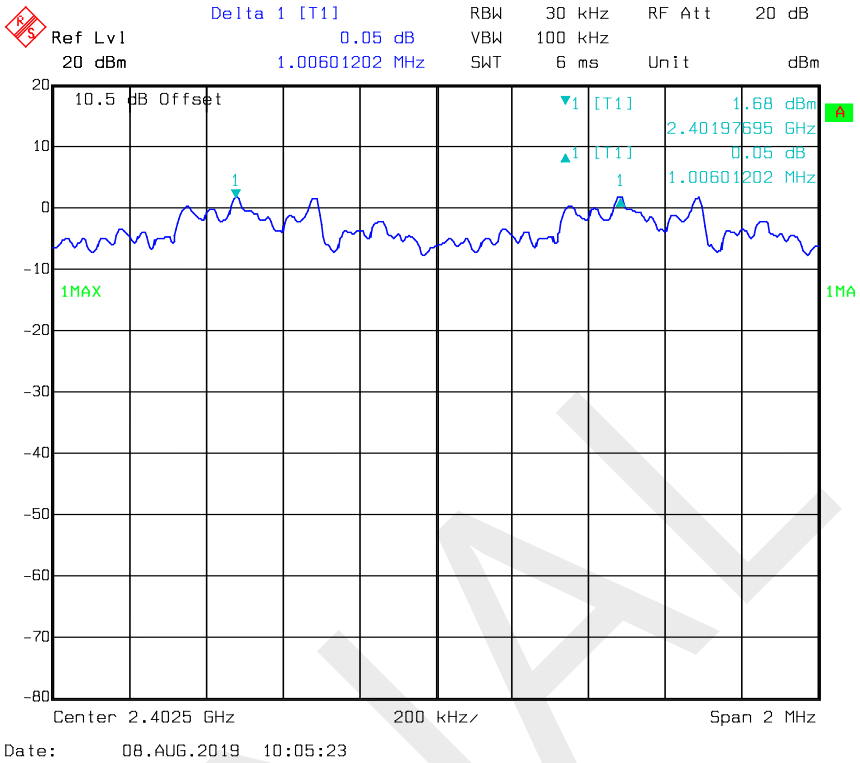


High Channel

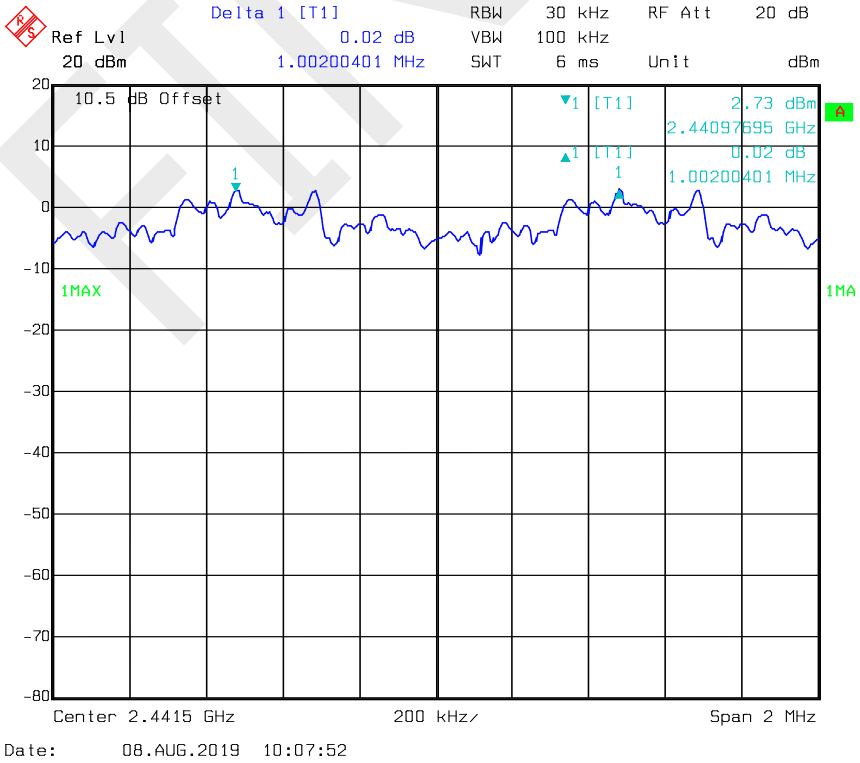


EDR Mode (π/4-DQPSK):

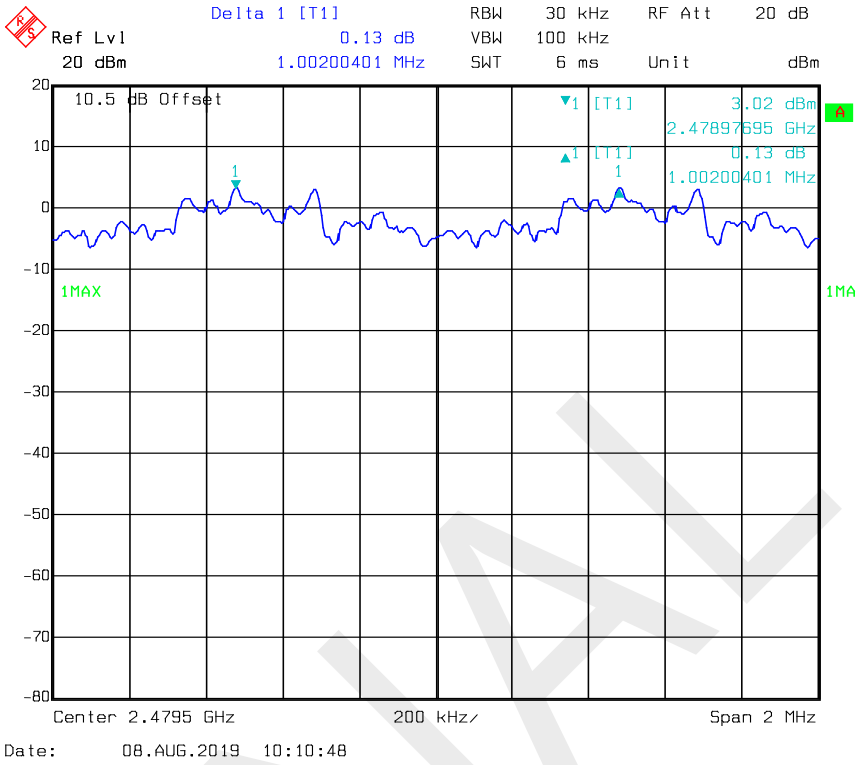
Low Channel



Middle Channel

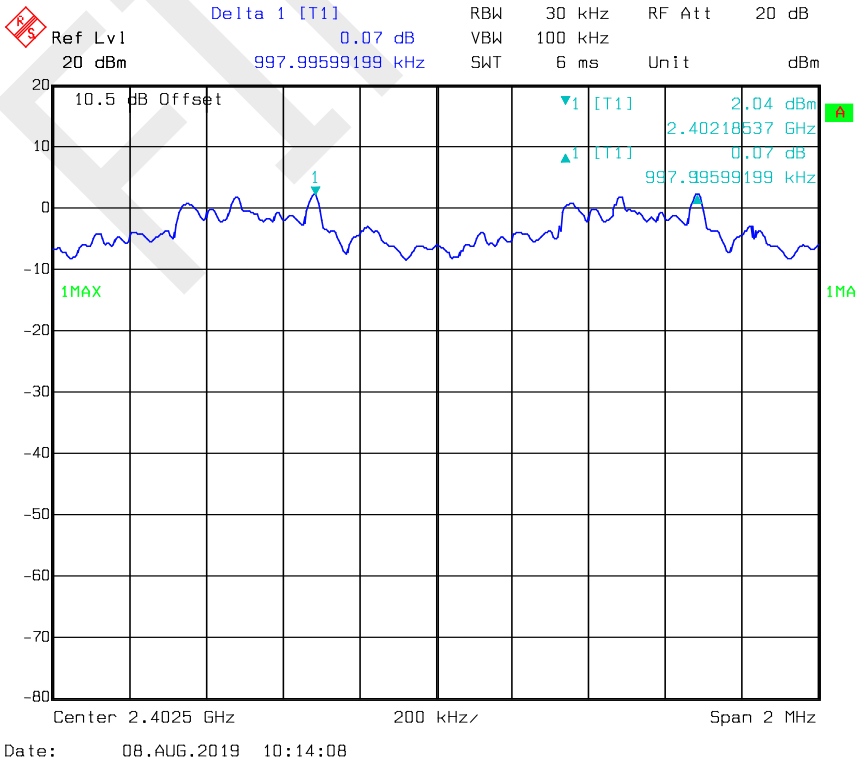


High Channel



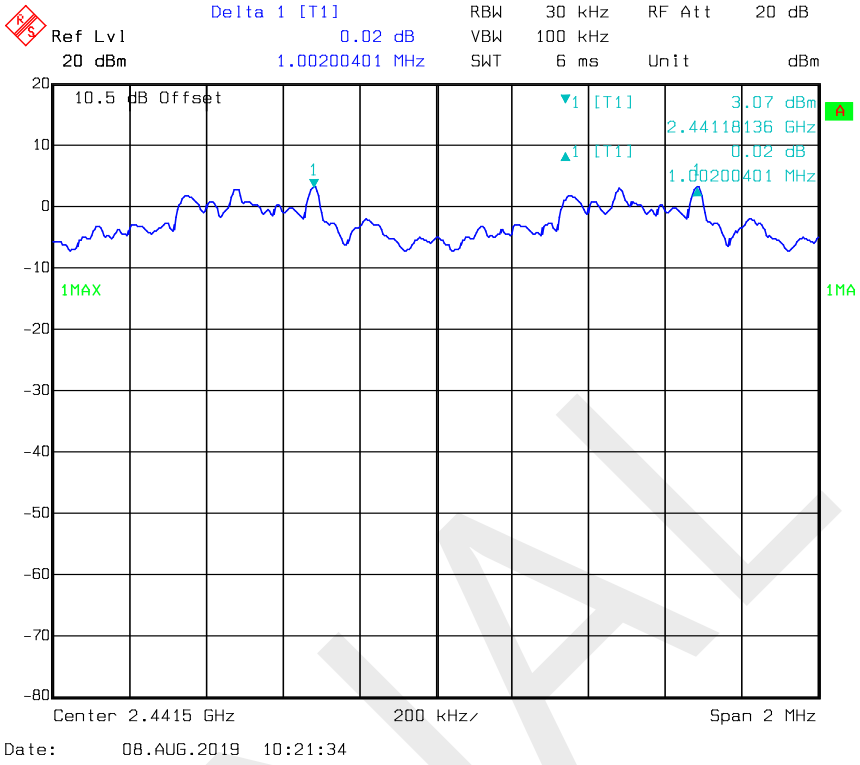
EDR Mode (8-DPSK):

Low Channel

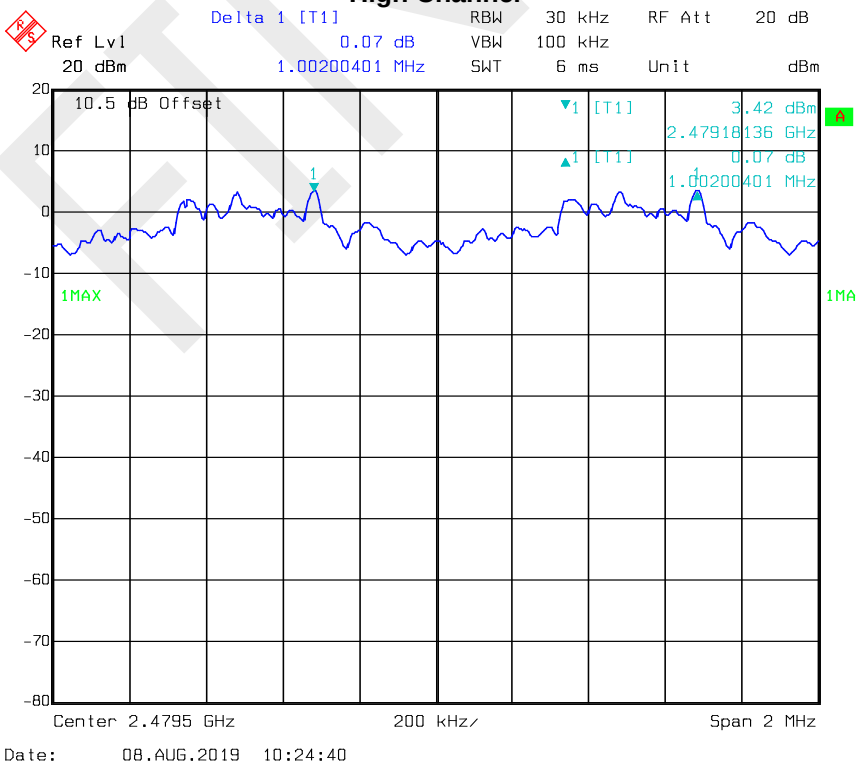


FINAL

Middle Channel



High Channel



FINAL

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 Data

Environmental Conditions

Temperature:	30 °C
Relative Humidity:	68 %
ATM Pressure:	95.4 kPa

The testing was performed by Eric Xiao on 2019-08-08.

Test Result: Compliance.

Please refer to following tables and plots

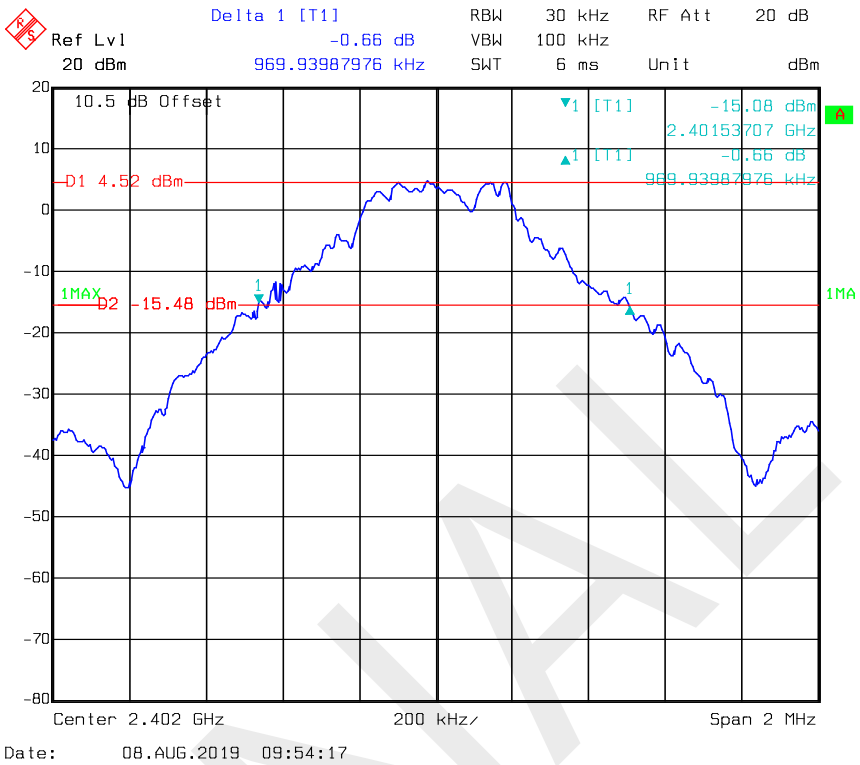
Test Mode: Transmitting

Mode	Channel	Frequency (MHz)	20 dB Bandwidth (MHz)
BDR Mode (GFSK)	Low	2402	0.97
	Middle	2441	0.98
	High	2480	0.97
EDR Mode (π/4-DQPSK)	Low	2402	1.29
	Middle	2441	1.29
	High	2480	1.29
EDR Mode (8DPSK)	Low	2402	1.26
	Middle	2441	1.25
	High	2480	1.26

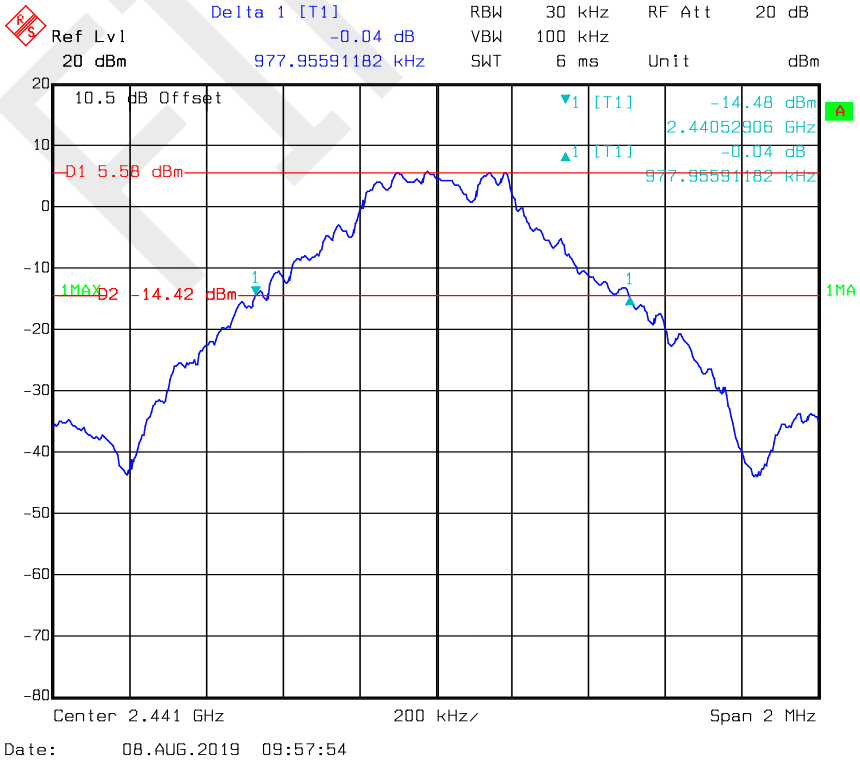
FINAL

BDR Mode (GFSK):

Low Channel

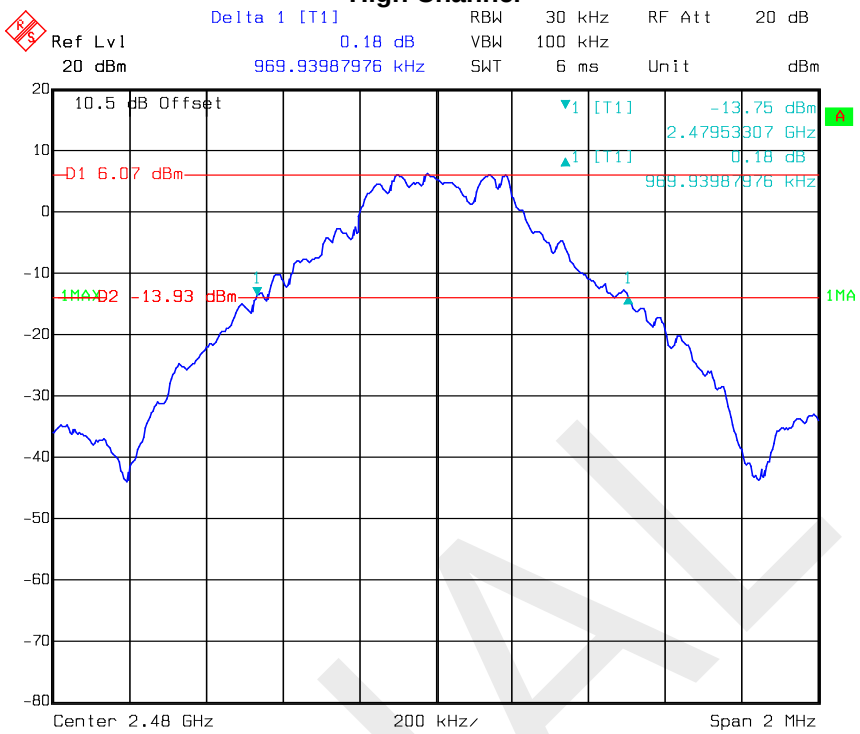


Middle Channel



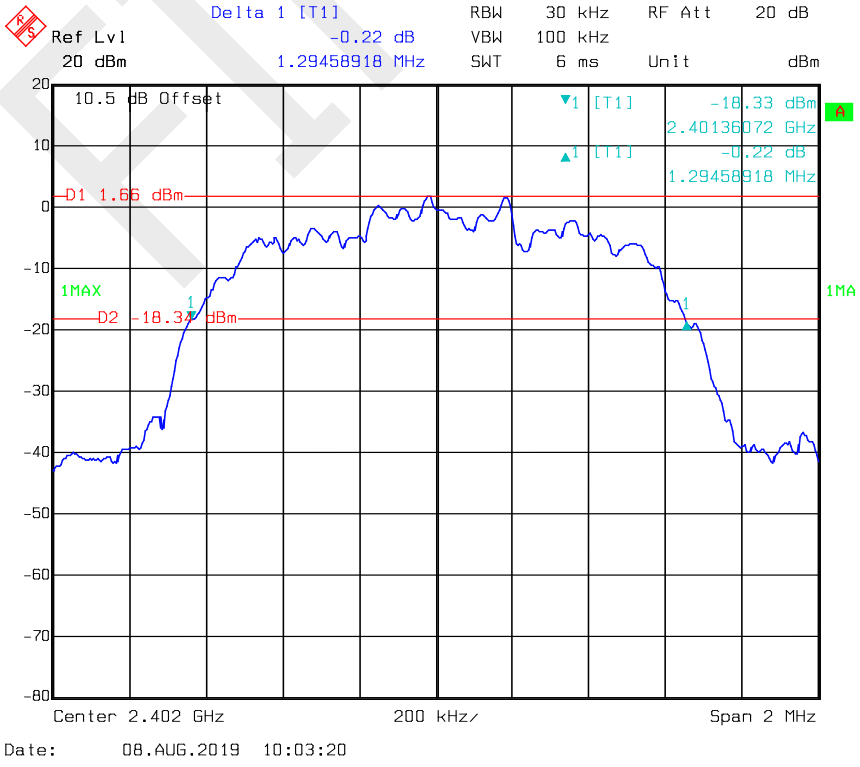
FINAL

High Channel



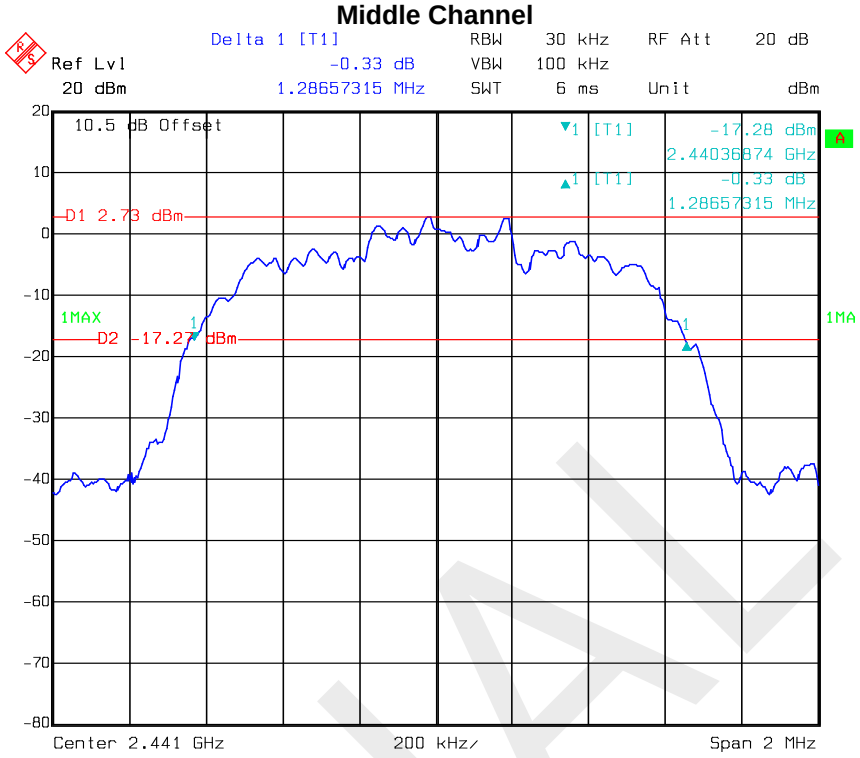
EDR Mode (π/4-DQPSK):

Low Channel



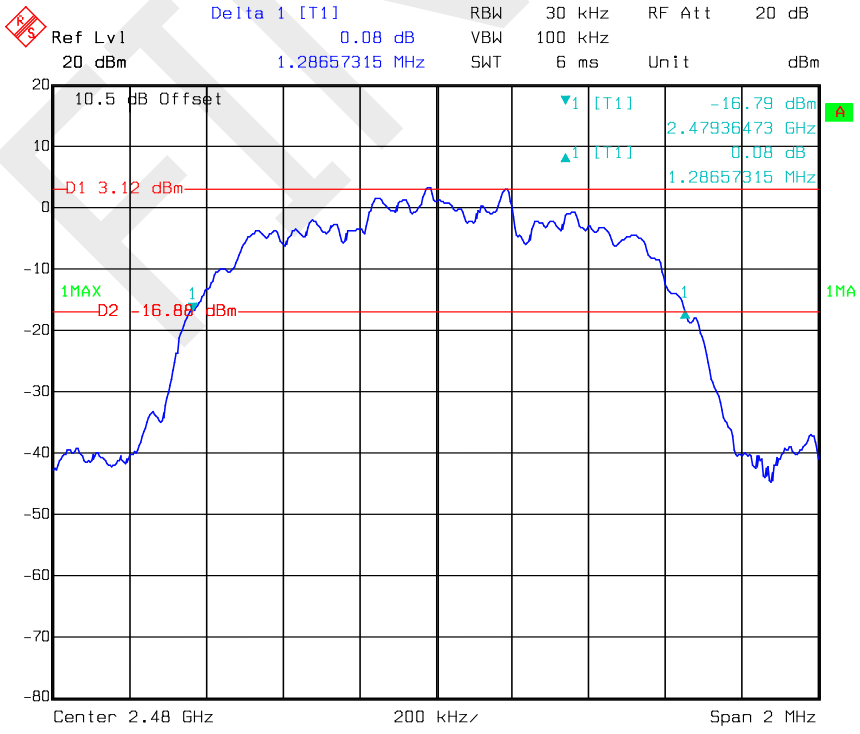
FINAL

Middle Channel



Date: 08.AUG.2019 10:06:09

High Channel

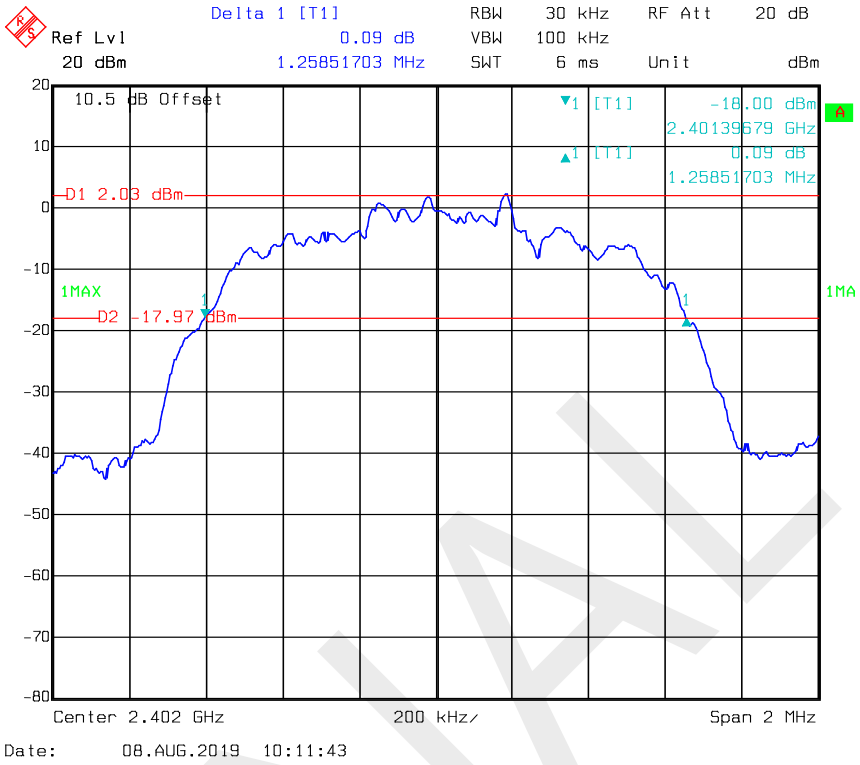


Date: 08.AUG.2019 10:08:42

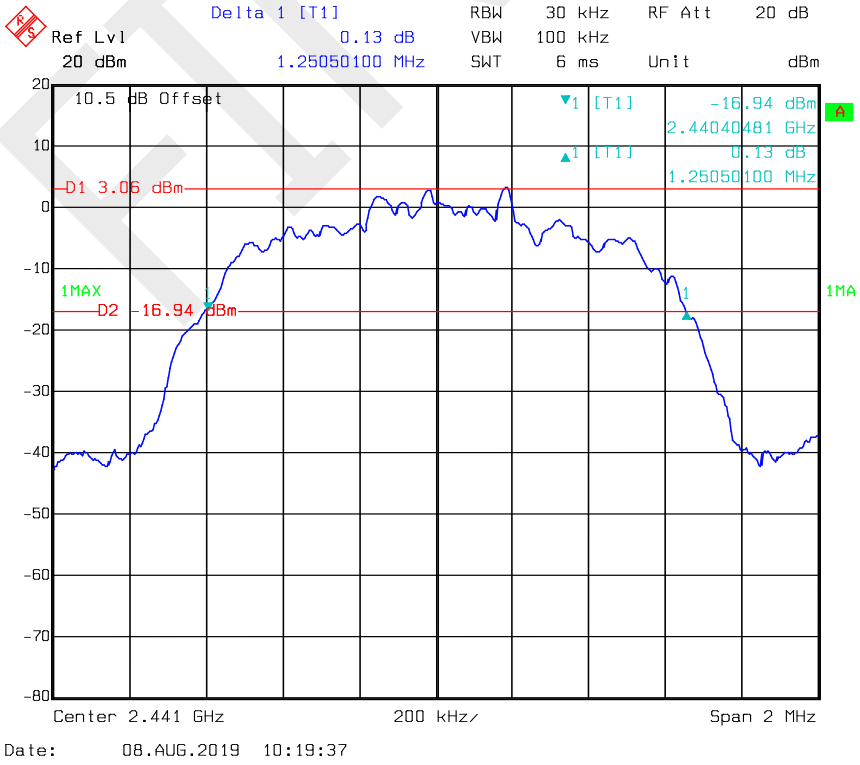
FINAL

EDR Mode (8-DPSK):

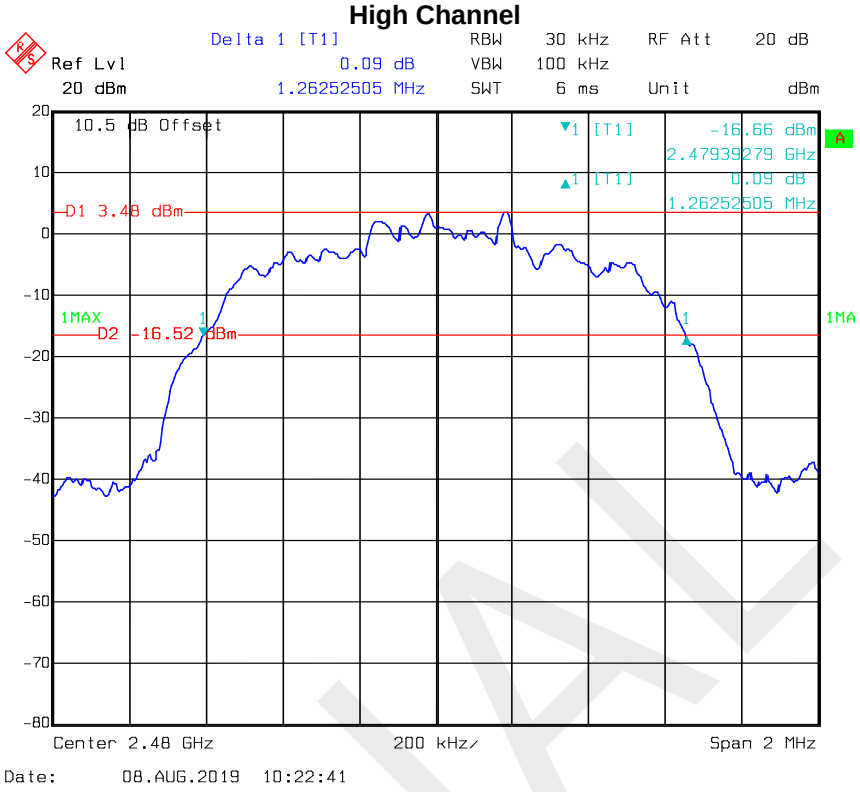
Low Channel



Middle Channel



High Channel



FINAL

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 Data

Environmental Conditions

Temperature:	30 °C
Relative Humidity:	68 %
ATM Pressure:	95.4 kPa

The testing was performed by Eric Xiao on 2019-08-08.

Test Result: Compliance.

Please refer to following tables and plots.

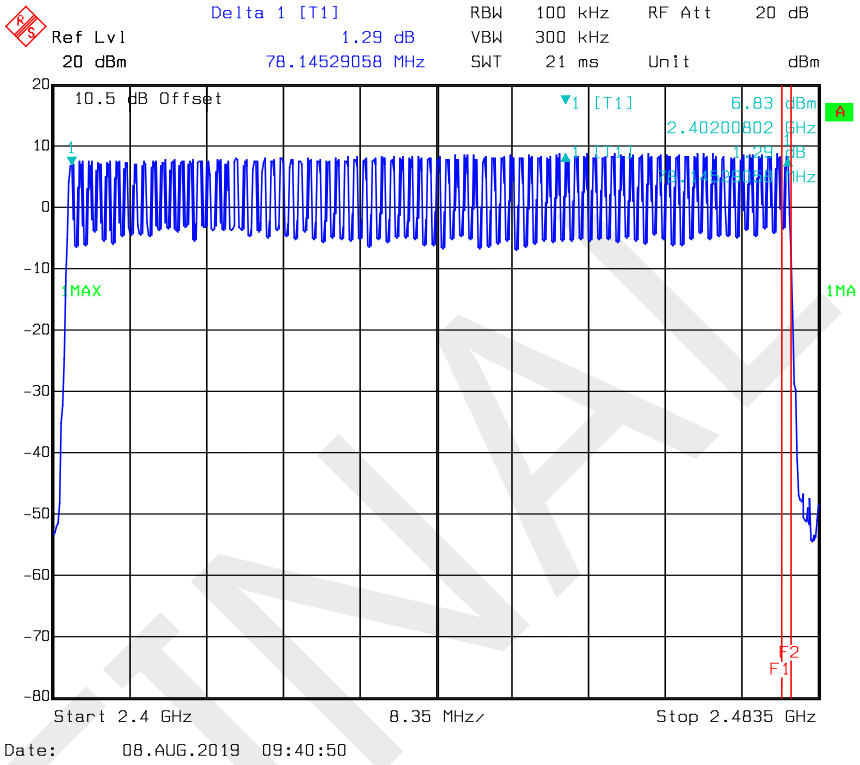
Test Mode: Transmitting

FINAL

BDR Mode (GFSK):

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

Number of Hopping Channels

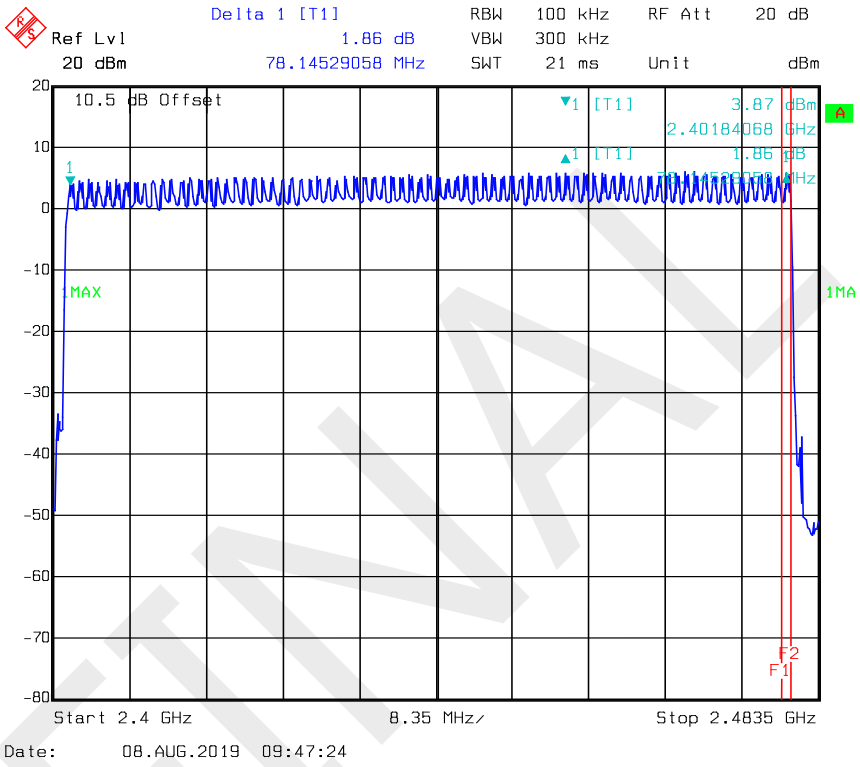


FINAL

EDR Mode (π/4-DQPSK):

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

Number of Hopping Channels

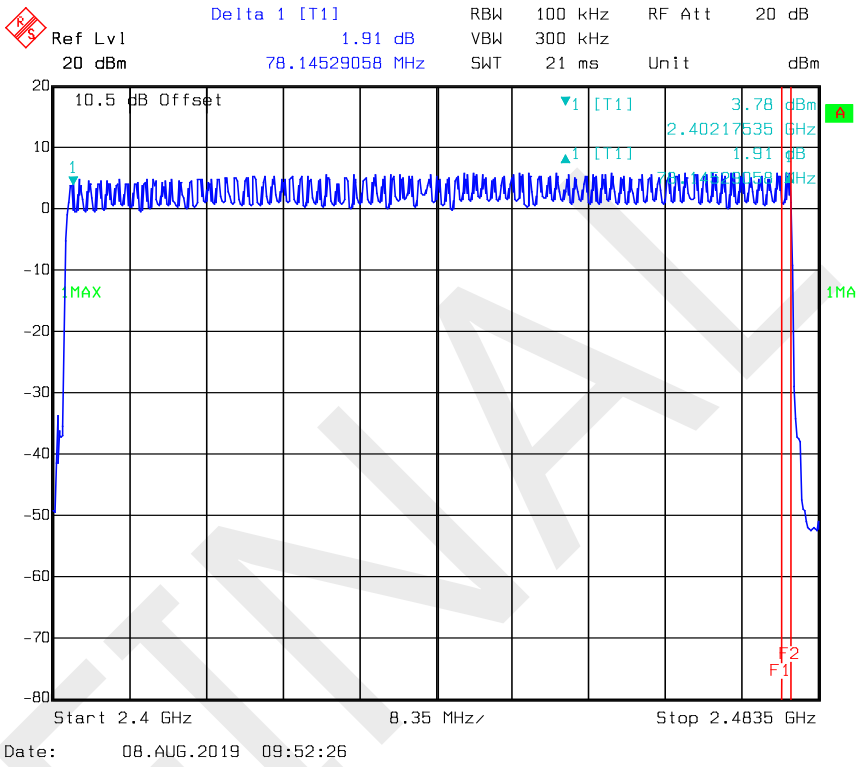


FINAL

EDR Mode (8DPSK):

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

Number of Hopping Channels



FINAL

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 hopping mode, Spectrum Analyzer SPAN was set as 0, the time of single pulse was tested.

Test Data

Environmental Conditions

Temperature:	30 °C
Relative Humidity:	68 %
ATM Pressure:	95.4 kPa

The testing was performed by Eric Xiao on 2019-08-08.

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

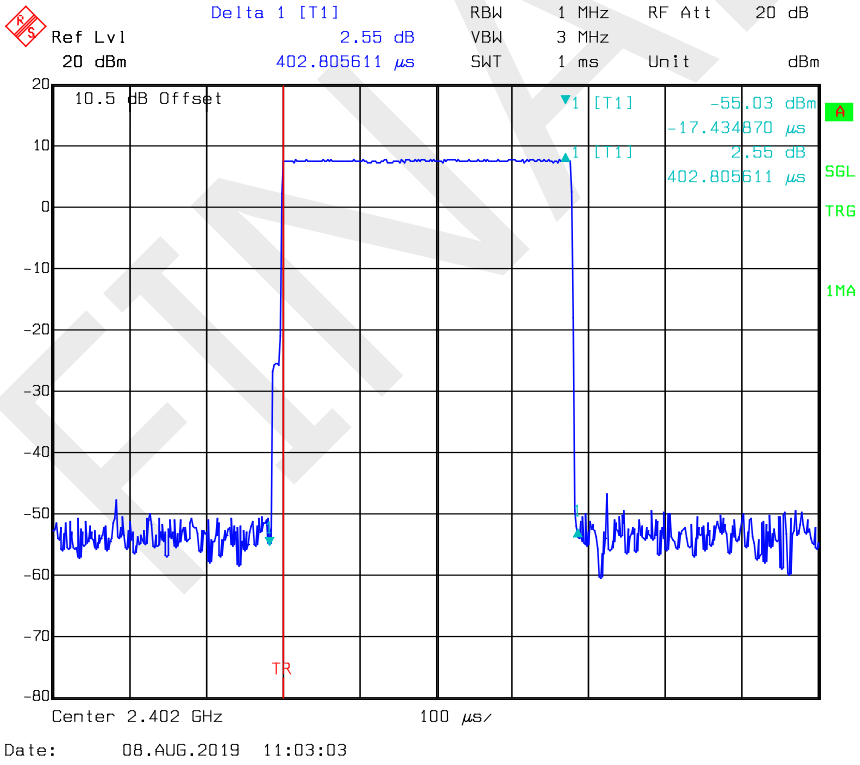
Test Mode: Transmitting

FINAL

BDR Mode (GFSK):

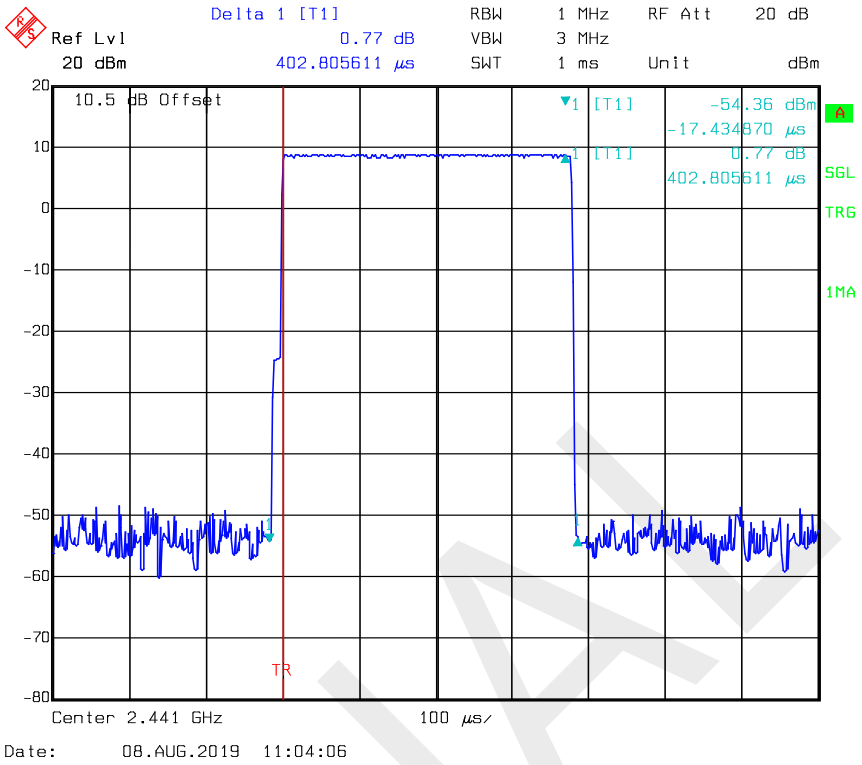
Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
DH1	Low	0.403	0.129	0.4	Compliance
	Middle	0.403	0.129	0.4	Compliance
	High	0.403	0.129	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/2/79) ×31.6 s				
DH3	Low	1.677	0.268	0.4	Compliance
	Middle	1.677	0.268	0.4	Compliance
	High	1.677	0.268	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/4/79) ×31.6 s				
DH5	Low	2.926	0.312	0.4	Compliance
	Middle	2.926	0.312	0.4	Compliance
	High	2.926	0.312	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/6/79) ×31.6 s				

DH1: Low Channel



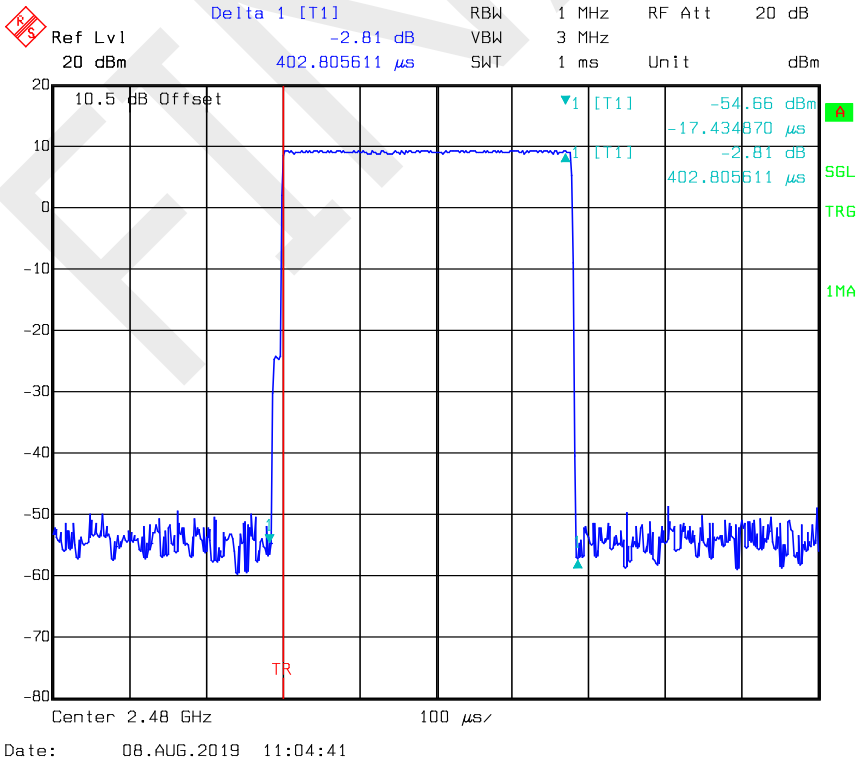
FINAL

DH1: Middle Channel



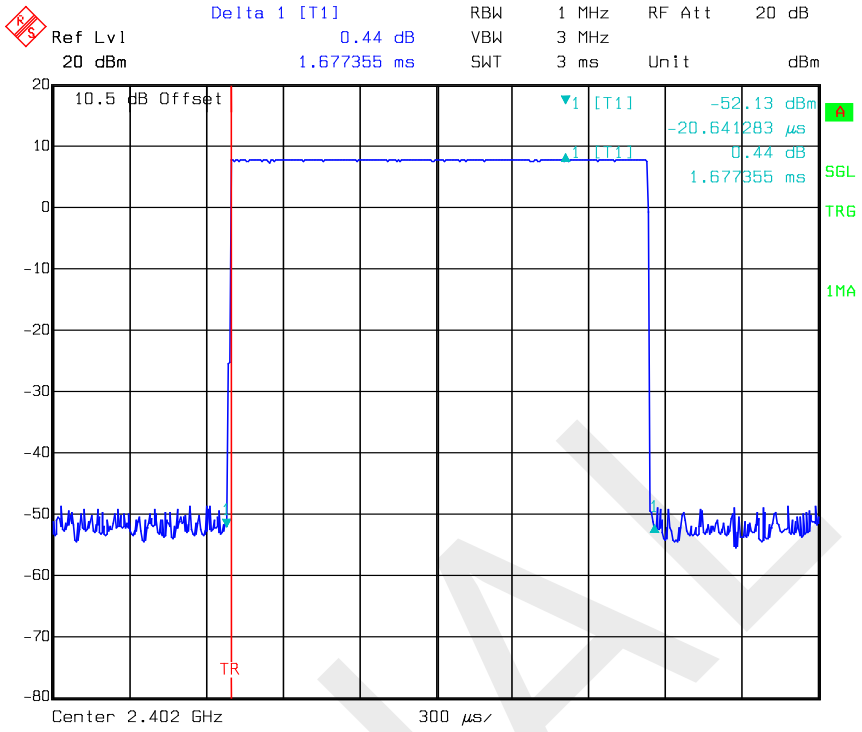
Date: 08.AUG.2019 11:04:06

DH1: High Channel



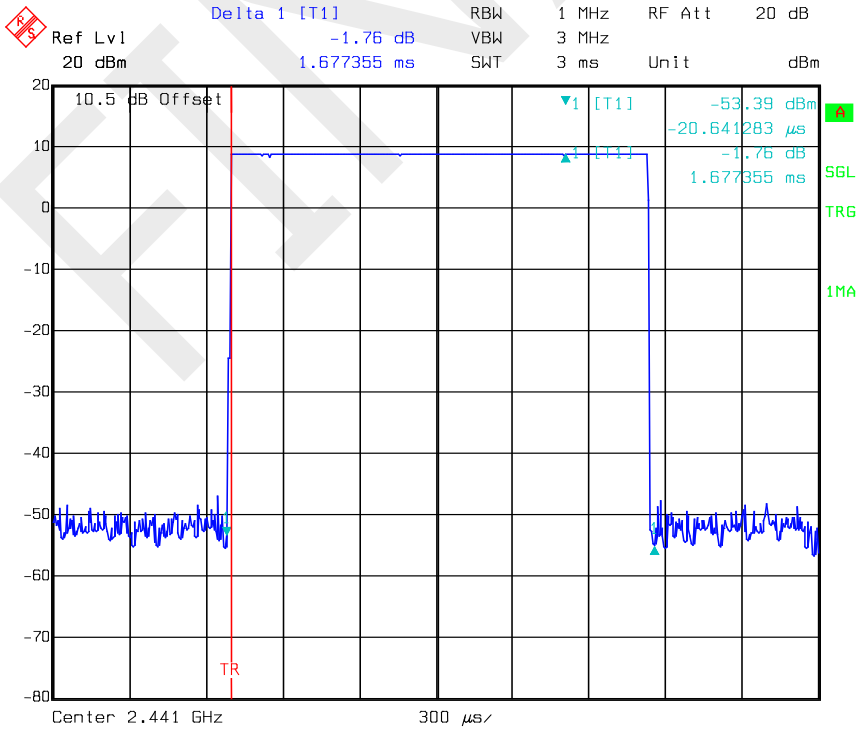
Date: 08.AUG.2019 11:04:41

DH3: Low Channel



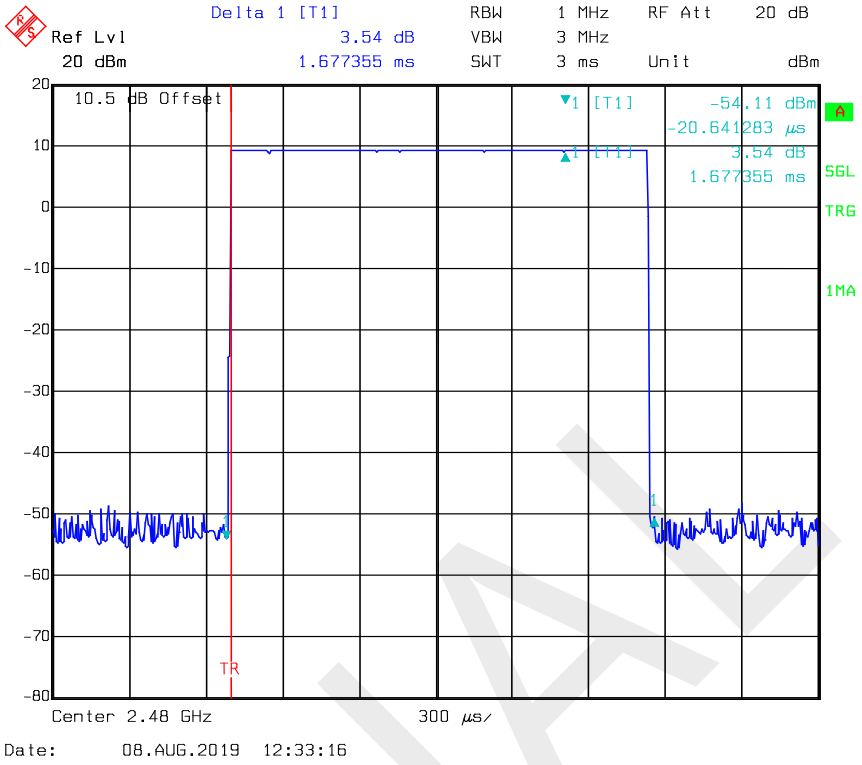
Date: 08.AUG.2019 12:31:27

DH3: Middle Channel

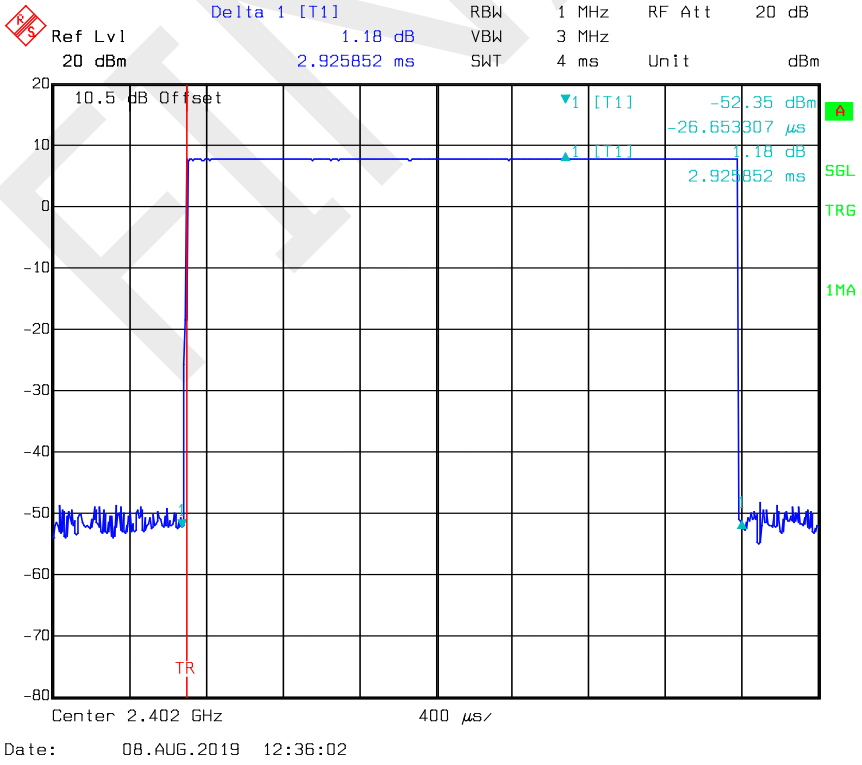


Date: 08.AUG.2019 12:32:02

DH3: High Channel

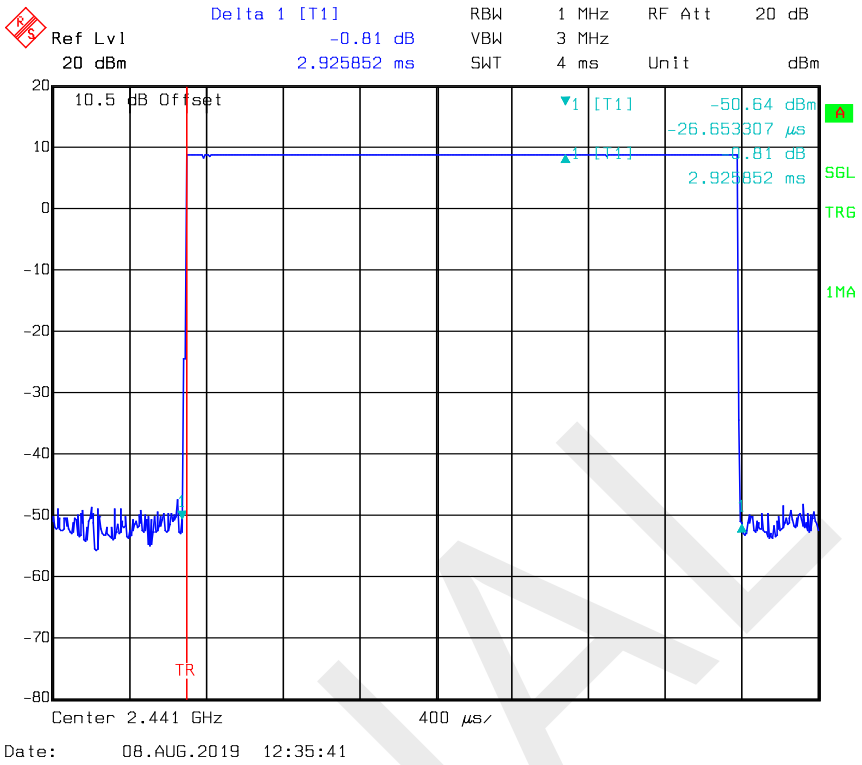


DH5: Low Channel



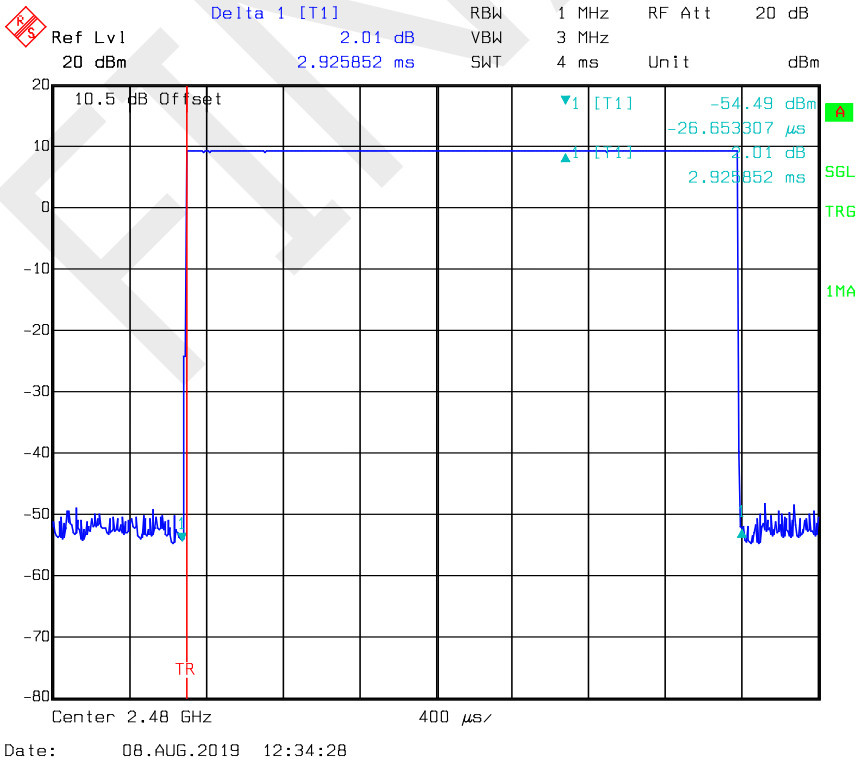
FINAL

DH5: Middle Channel



Date: 08.AUG.2019 12:35:41

DH5: High Channel



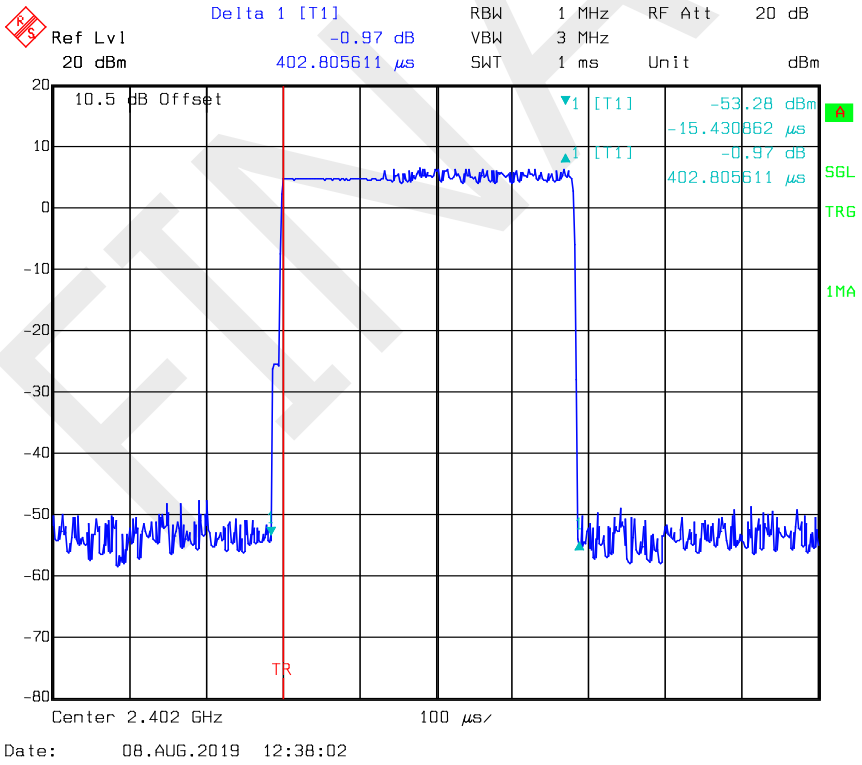
Date: 08.AUG.2019 12:34:28

FINAL

EDR Mode (π/4-DQPSK):

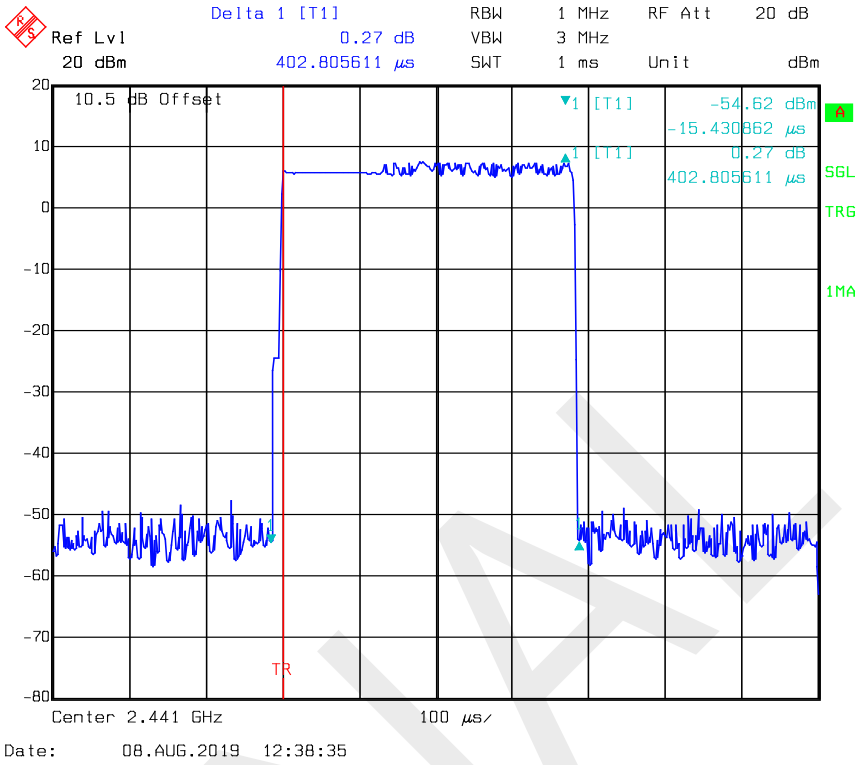
Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
2DH1	Low	0.403	0.129	0.4	Compliance
	Middle	0.403	0.129	0.4	Compliance
	High	0.403	0.129	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/2/79) ×31.6 s				
2DH3	Low	1.665	0.266	0.4	Compliance
	Middle	1.665	0.266	0.4	Compliance
	High	1.665	0.266	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/4/79) ×31.6 s				
2DH5	Low	2.918	0.311	0.4	Compliance
	Middle	2.918	0.311	0.4	Compliance
	High	2.918	0.311	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/6/79) ×31.6 s				

2DH1: Low Channel



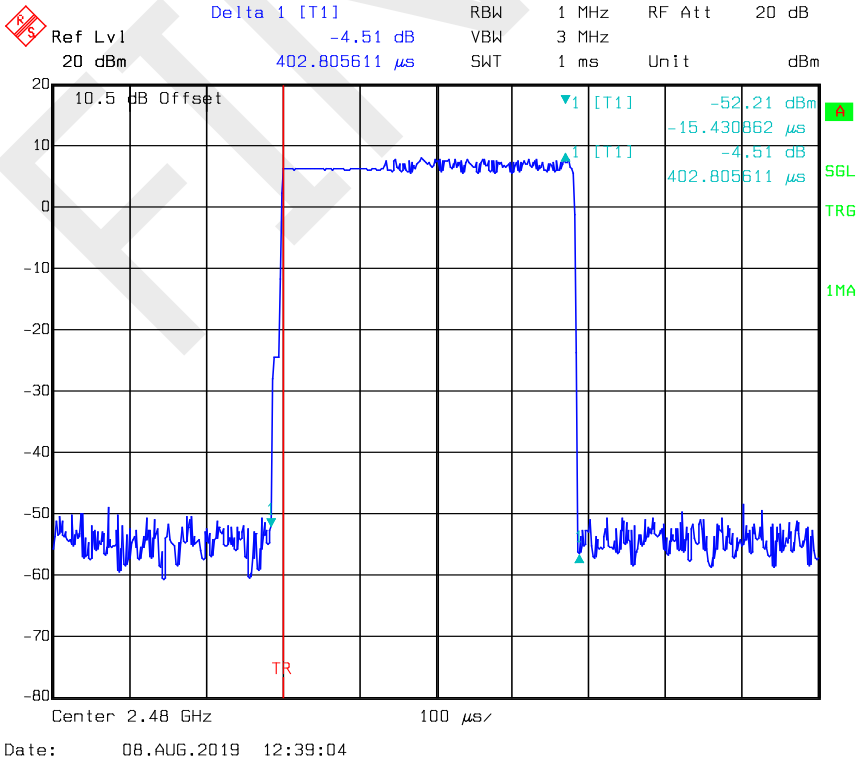
FINAL

2DH1: Middle Channel



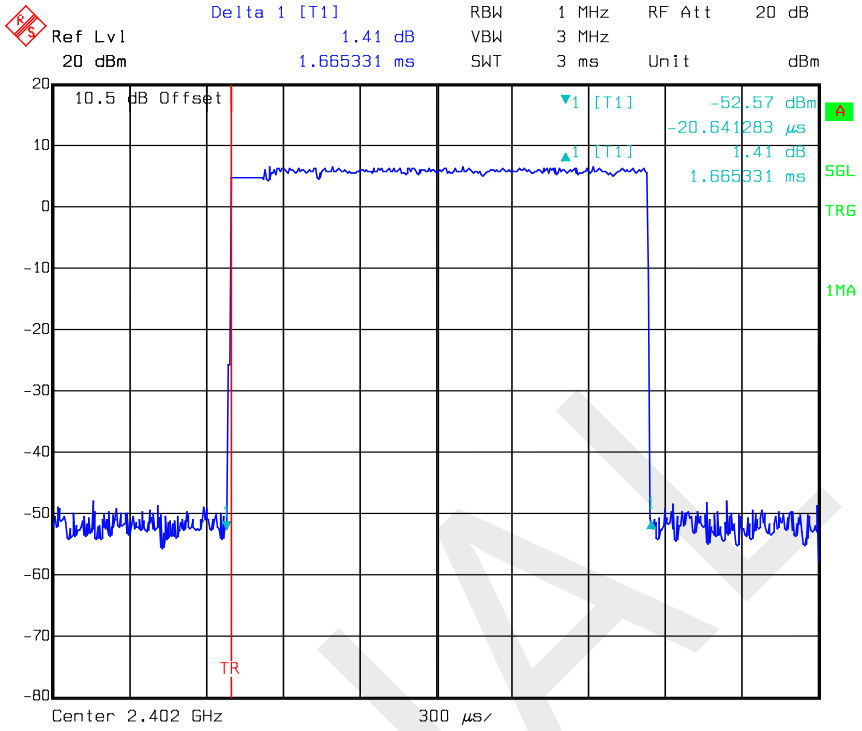
Date: 08.AUG.2019 12:38:35

2DH1: High Channel



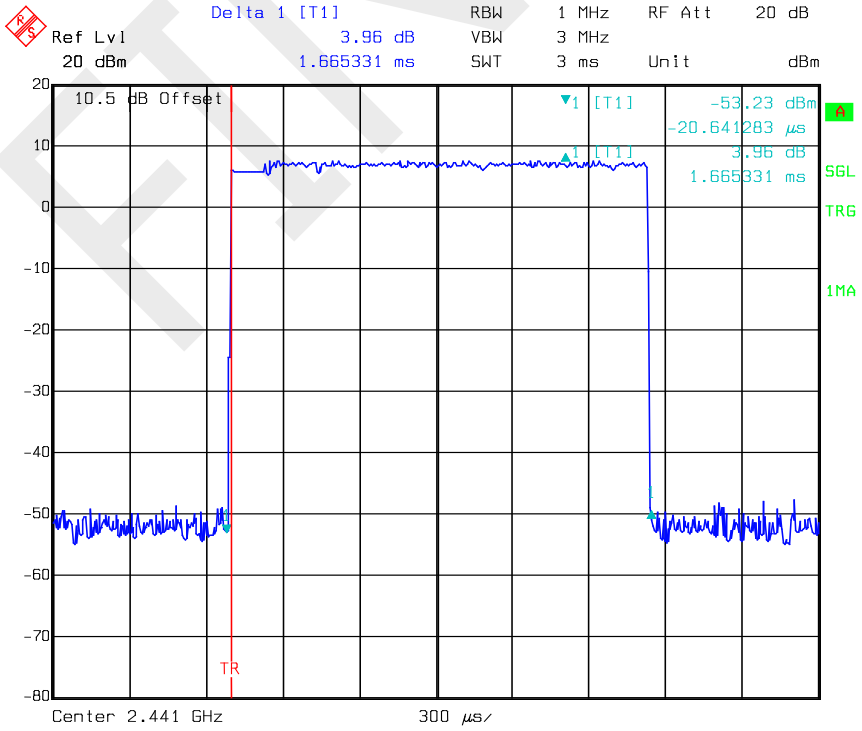
Date: 08.AUG.2019 12:39:04

2DH3: Low Channel



Date: 08.AUG.2019 12:40:45

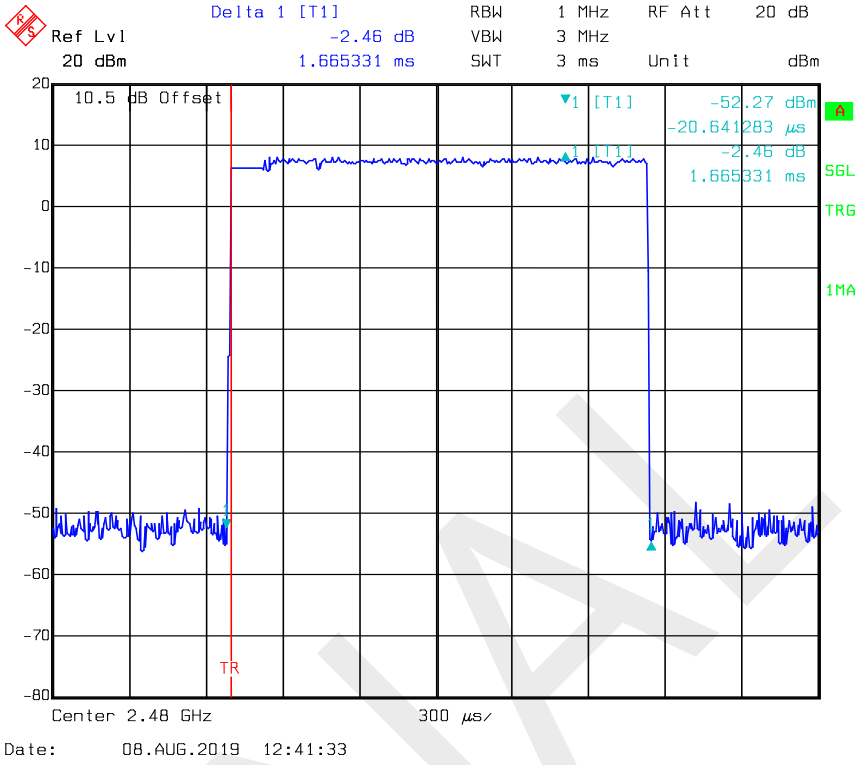
2DH3: Middle Channel



Date: 08.AUG.2019 12:41:07

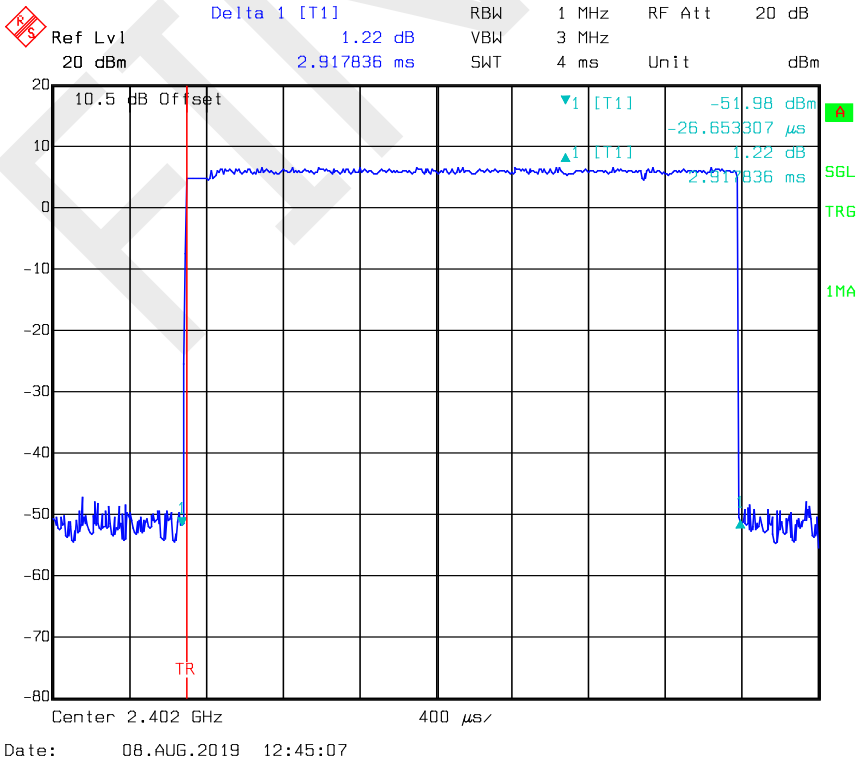
FINAL

2DH3: High Channel



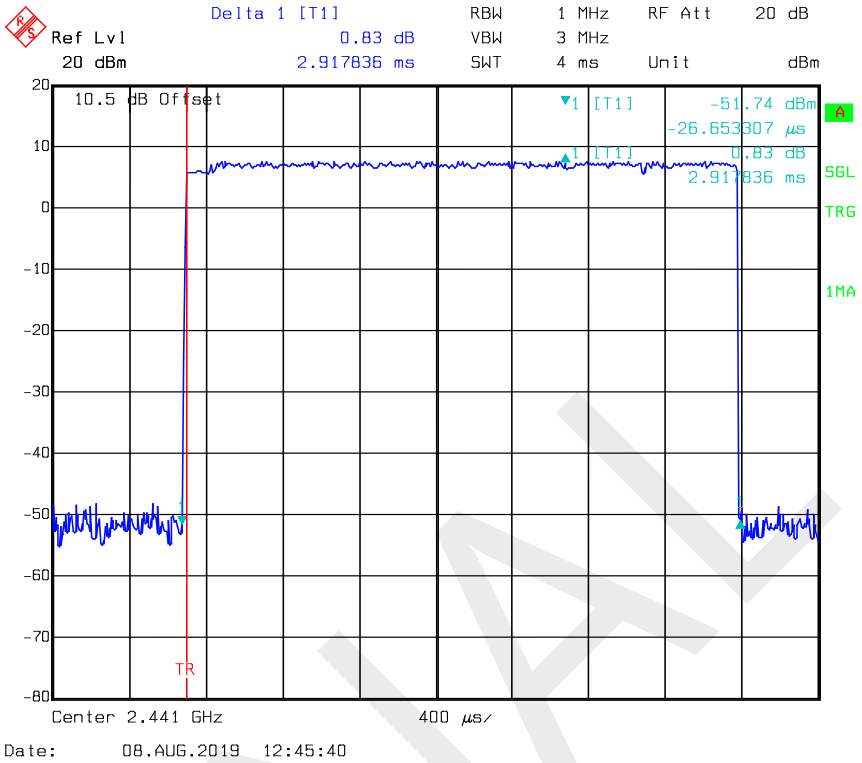
Date: 08.AUG.2019 12:41:33

2DH5: Low Channel



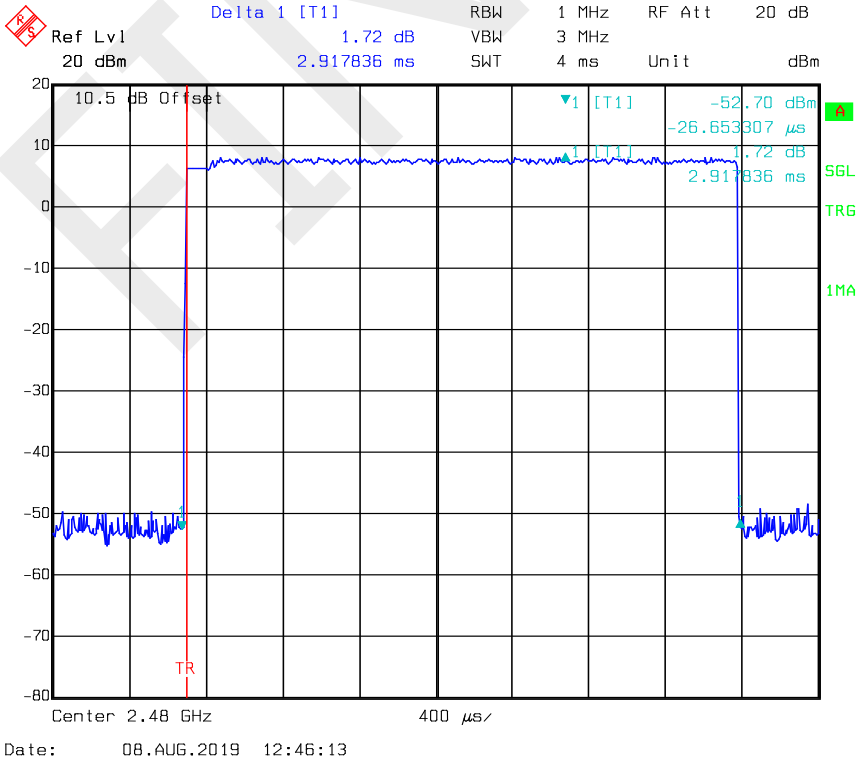
Date: 08.AUG.2019 12:45:07

2DH5: Middle Channel



Date: 08.AUG.2019 12:45:40

2DH5: High Channel

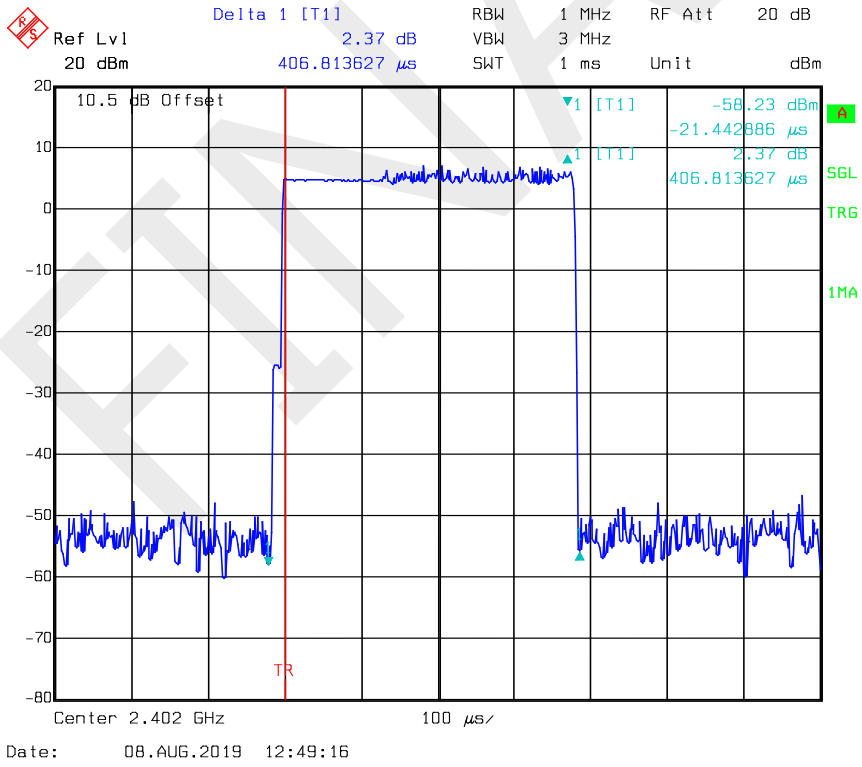


Date: 08.AUG.2019 12:46:13

EDR Mode (8-DPSK):

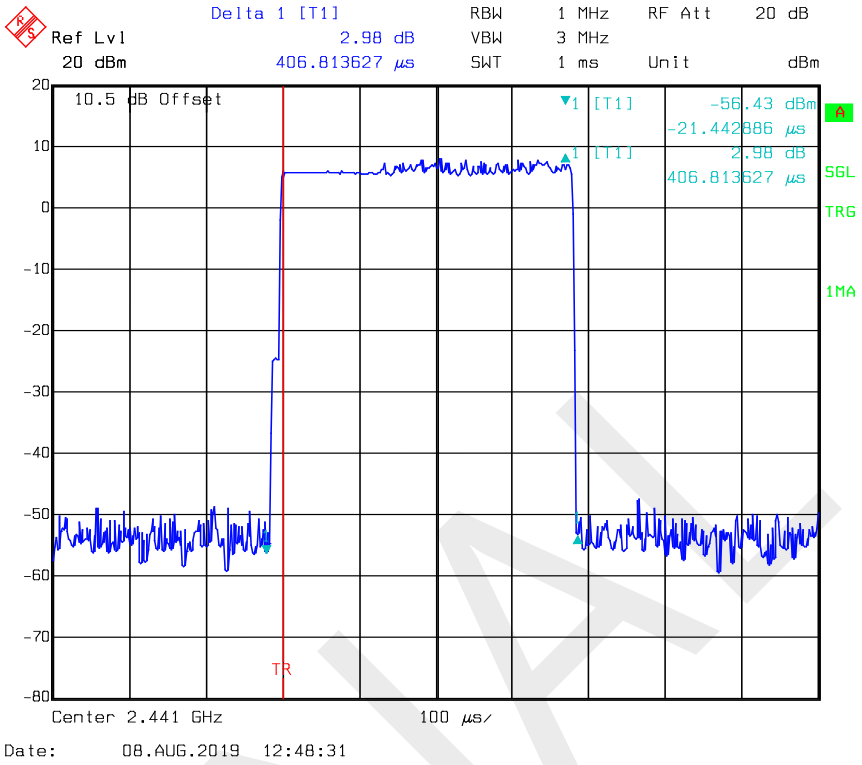
Mode	Channel	Pulse Width (ms)	Dwell Time (s)	Limit (s)	Result
3DH1	Low	0.407	0.130	0.4	Compliance
	Middle	0.407	0.130	0.4	Compliance
	High	0.407	0.130	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/2/79) ×31.6 s				
3DH3	Low	1.665	0.266	0.4	Compliance
	Middle	1.665	0.266	0.4	Compliance
	High	1.665	0.266	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/4/79) ×31.6 s				
3DH5	Low	2.918	0.311	0.4	Compliance
	Middle	2.918	0.311	0.4	Compliance
	High	2.918	0.311	0.4	Compliance
	Note: Dwell time=Pulse time (ms) × (1600/6/79) ×31.6 s				

3DH1: Low Channel



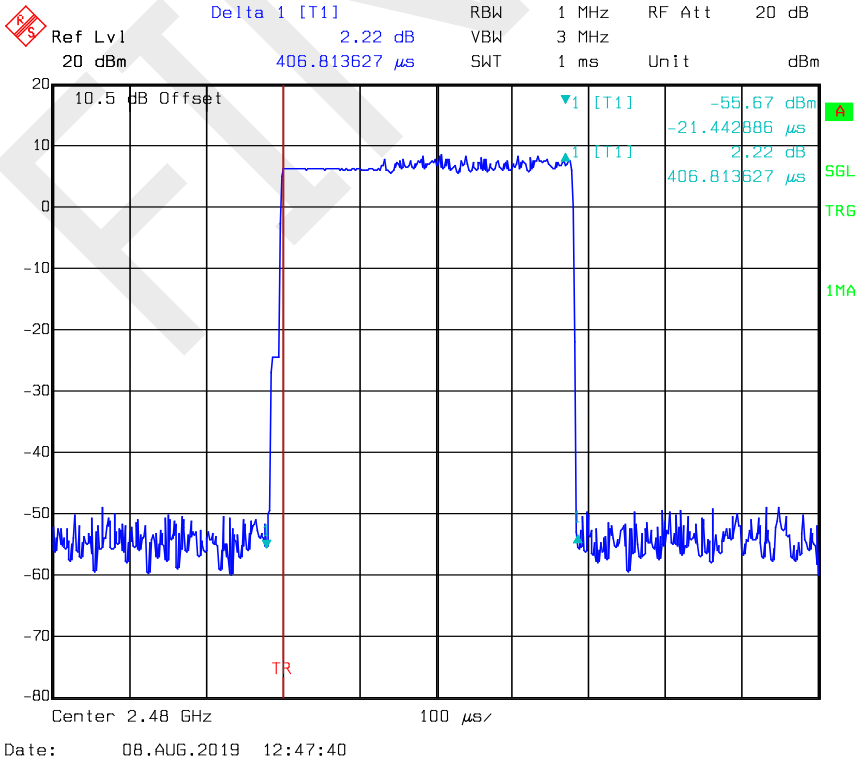
FINAL

3DH1: Middle Channel



Date: 08.AUG.2019 12:48:31

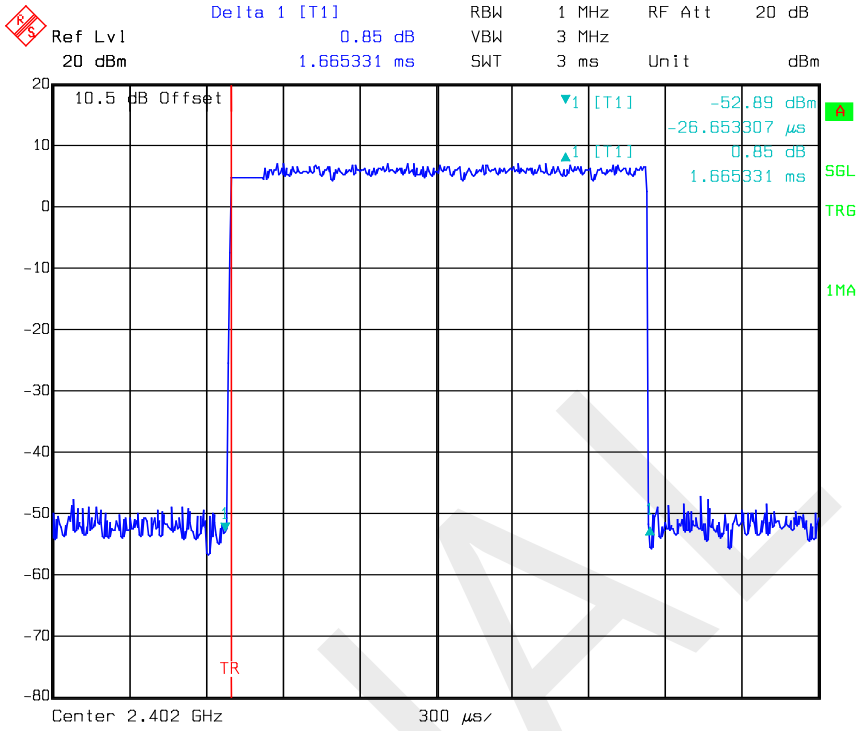
3DH1: High Channel



Date: 08.AUG.2019 12:47:40

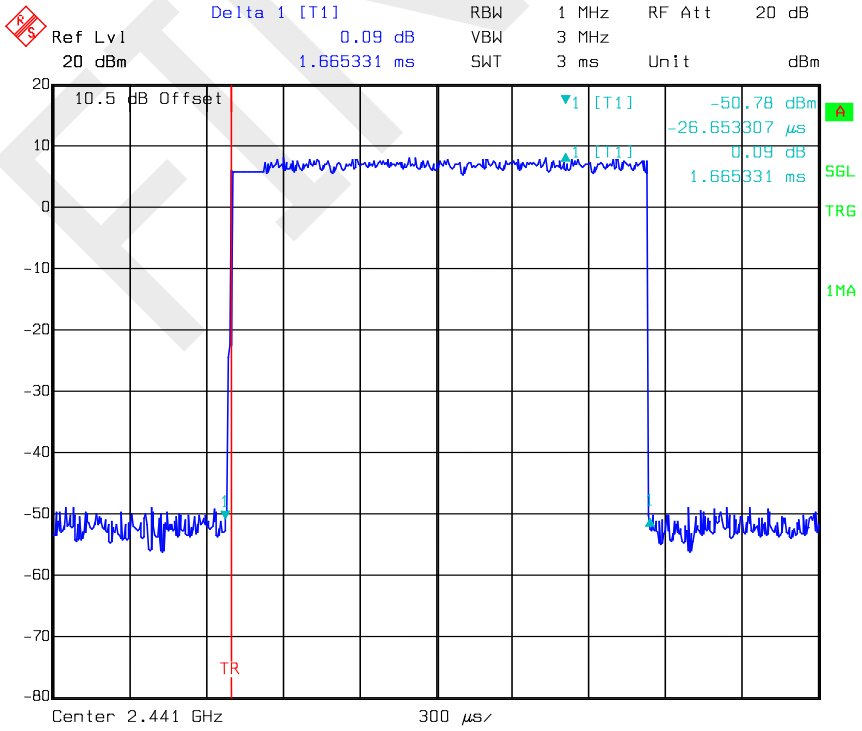
FINAL

3DH3: Low Channel



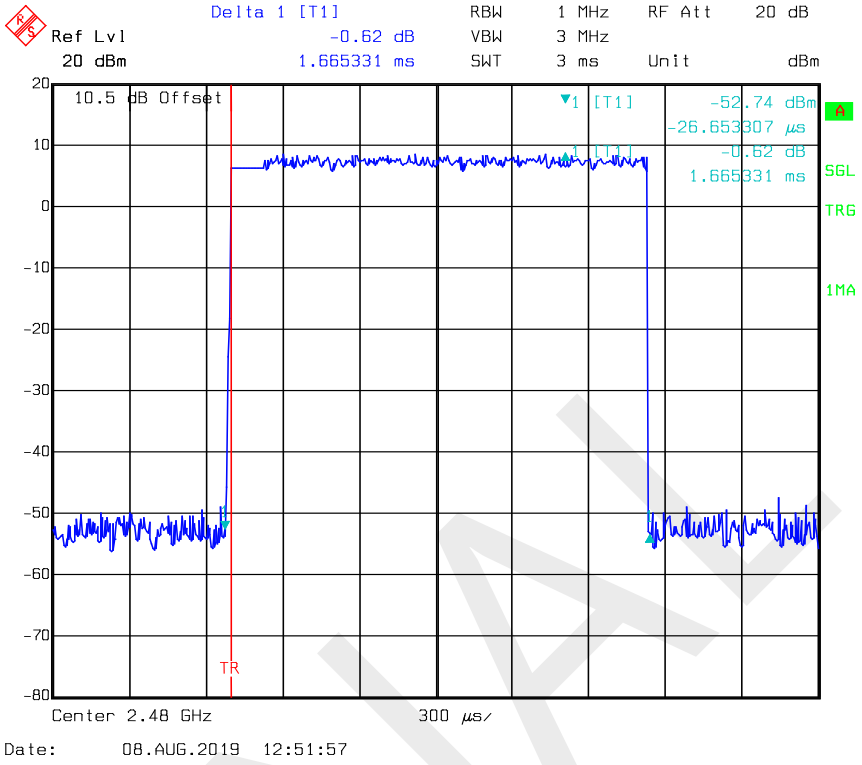
Date: 08.AUG.2019 12:50:56

3DH3: Middle Channel

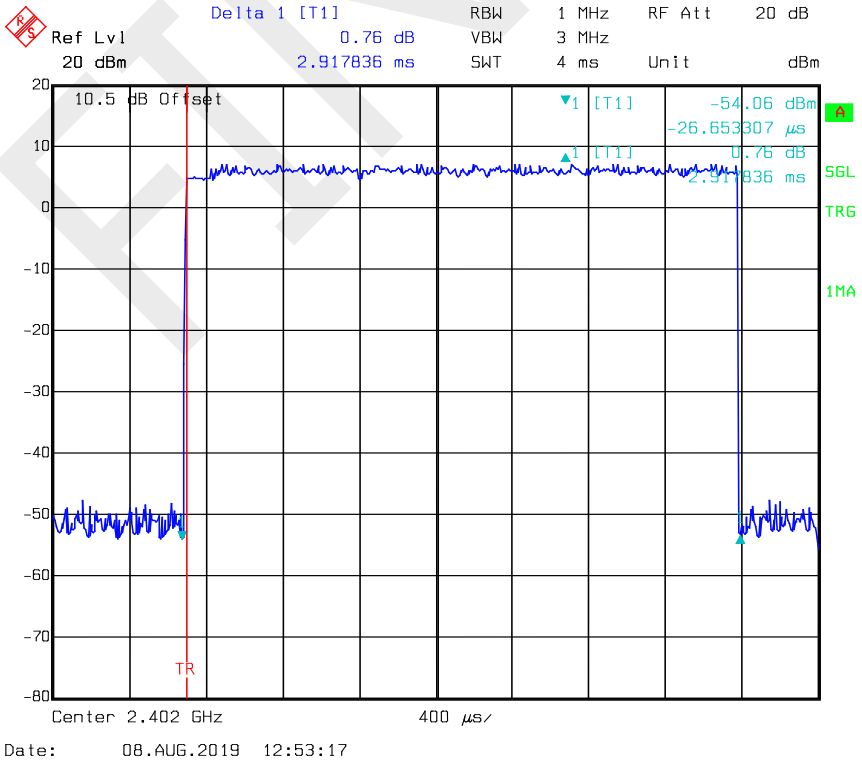


Date: 08.AUG.2019 12:51:27

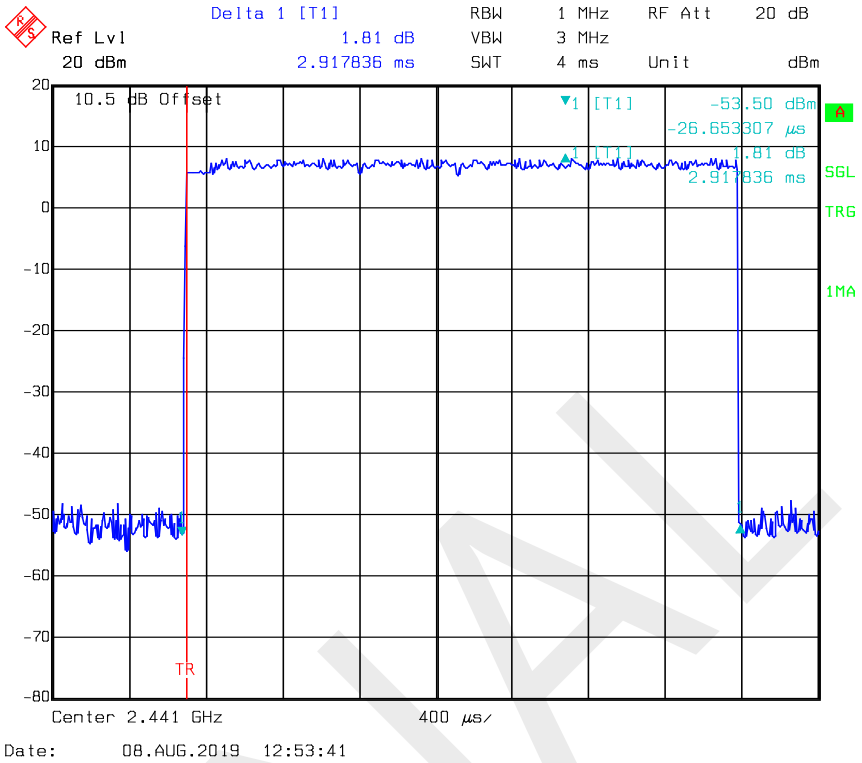
3DH3: High Channel



3DH5: Low Channel

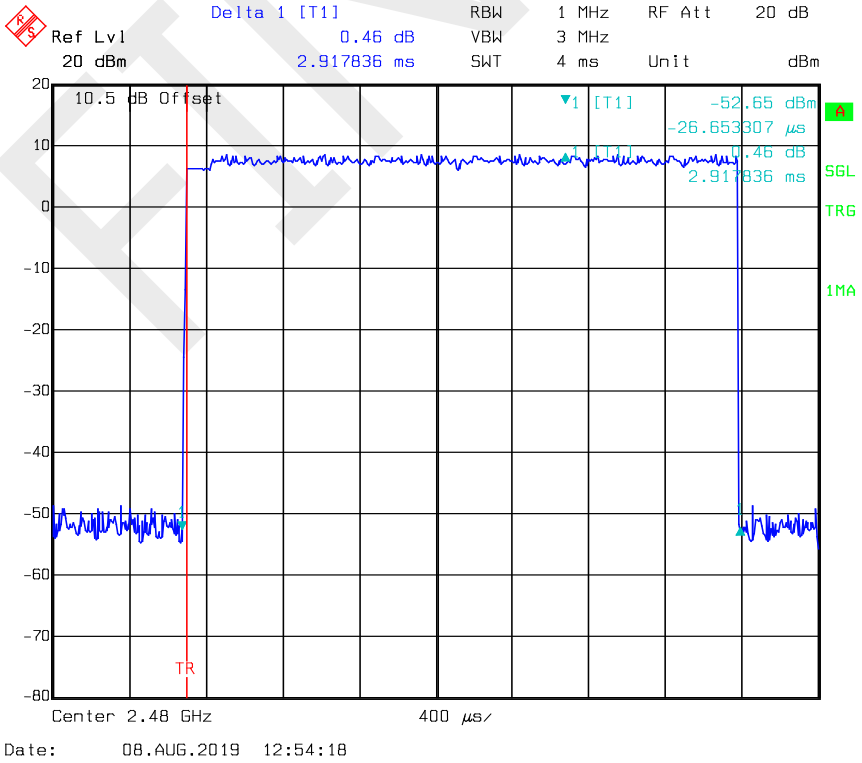


3DH5: Middle Channel



Date: 08.AUG.2019 12:53:41

3DH5: High Channel



Date: 08.AUG.2019 12:54:18

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

Applicable Standard

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

Test Procedure

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

Test Data

Environmental Conditions

Temperature:	30 °C
Relative Humidity:	68 %
ATM Pressure:	95.4 kPa

The testing was performed by Eric Xiao on 2019-08-08.

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

Test Mode: Transmitting

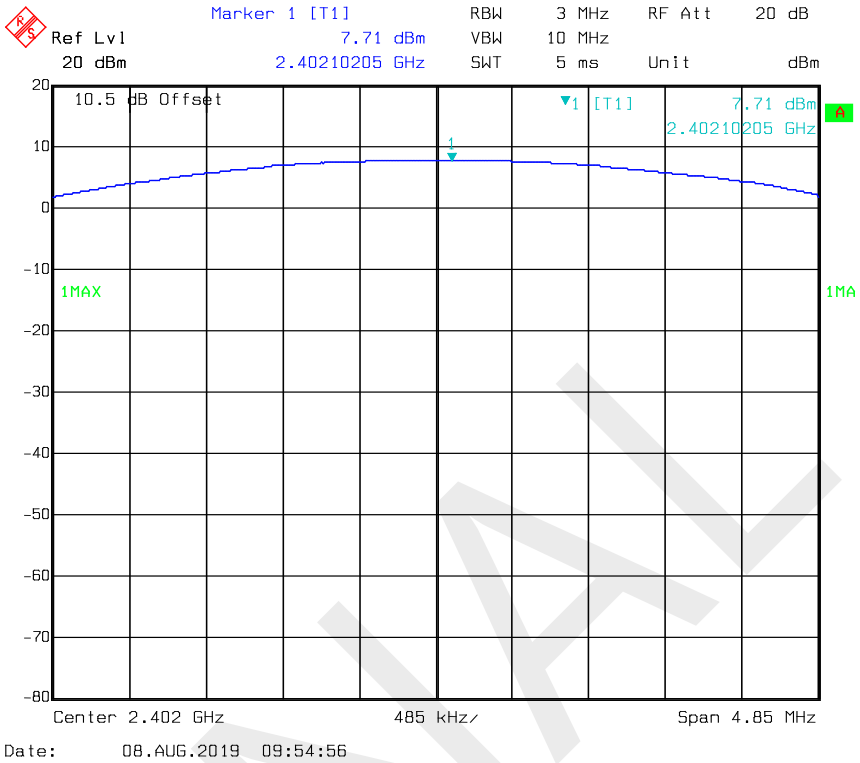
Mode	Channel	Frequency (MHz)	Peak Output power (dBm)	Limit (dBm)
BDR Mode (GFSK)	Low	2402	7.71	21
	Middle	2441	8.66	21
	High	2480	9.21	21
EDR Mode (π/4-DQPSK)	Low	2402	6.91	21
	Middle	2441	7.88	21
	High	2480	8.24	21
EDR Mode (8-DPSK)	Low	2402	7.31	21
	Middle	2441	8.24	21
	High	2480	8.81	21

Note: The data above was tested in conducted mode.

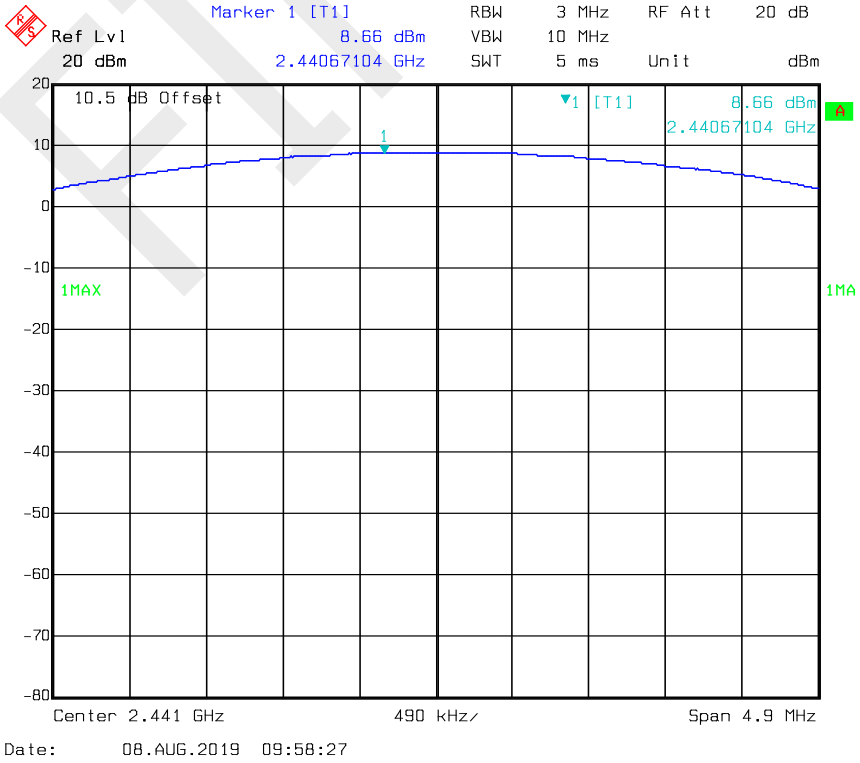
FINAL

BDR Mode (GFSK):

Low Channel

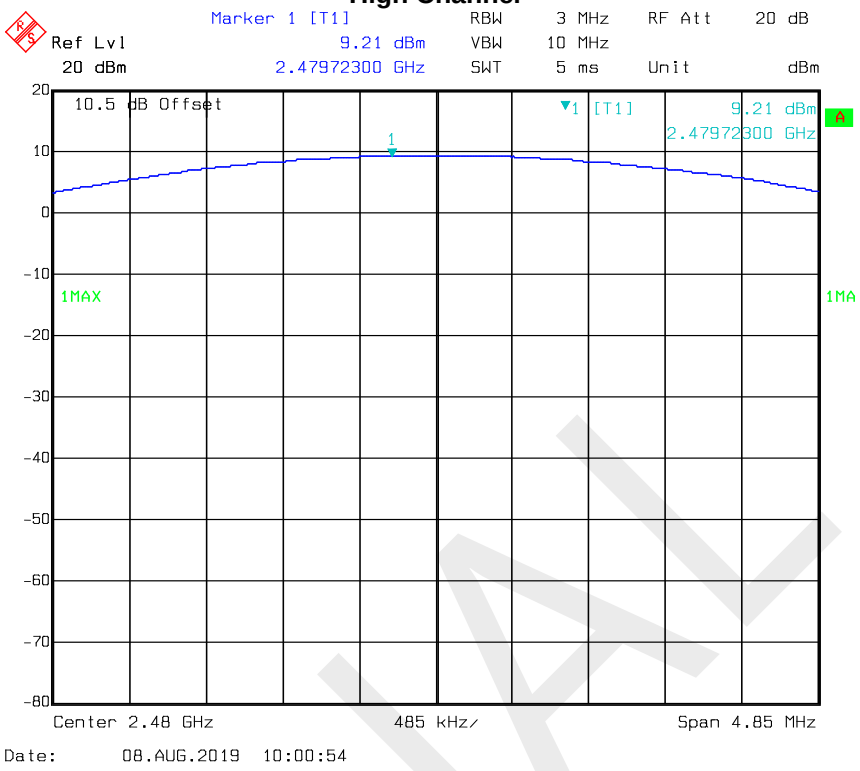


Middle Channel



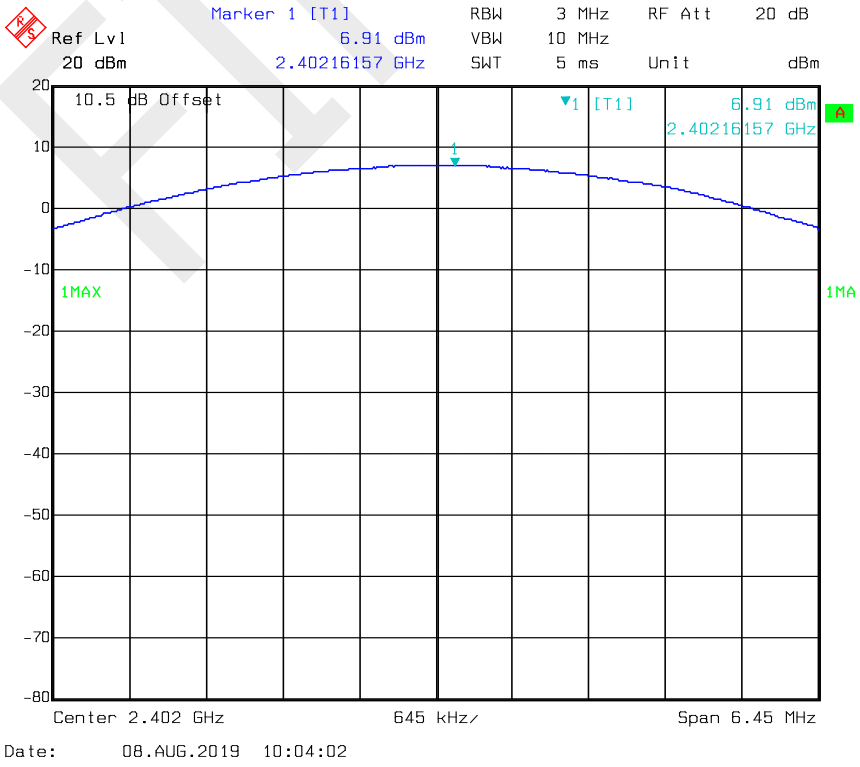
FINAL

High Channel

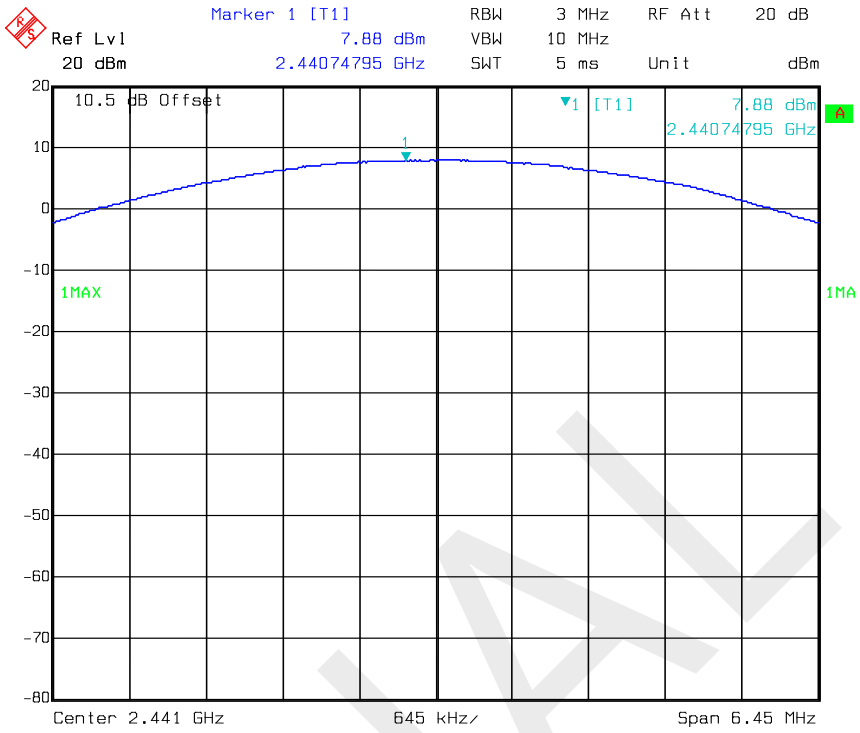


EDR Mode (π/4-DQPSK):

Low Channel

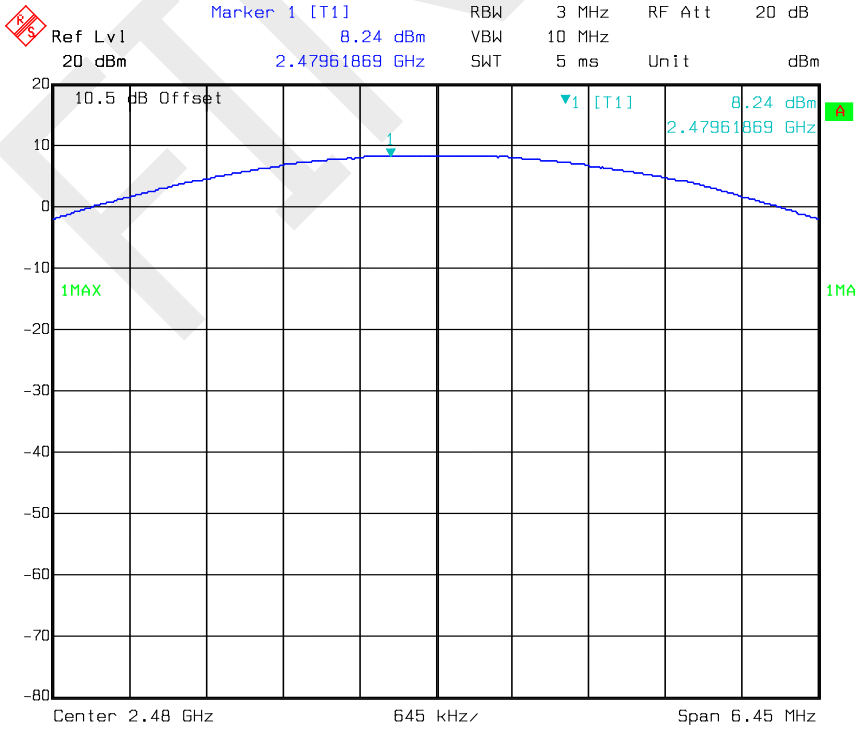


Middle Channel



Date: 08.AUG.2019 10:06:45

High Channel

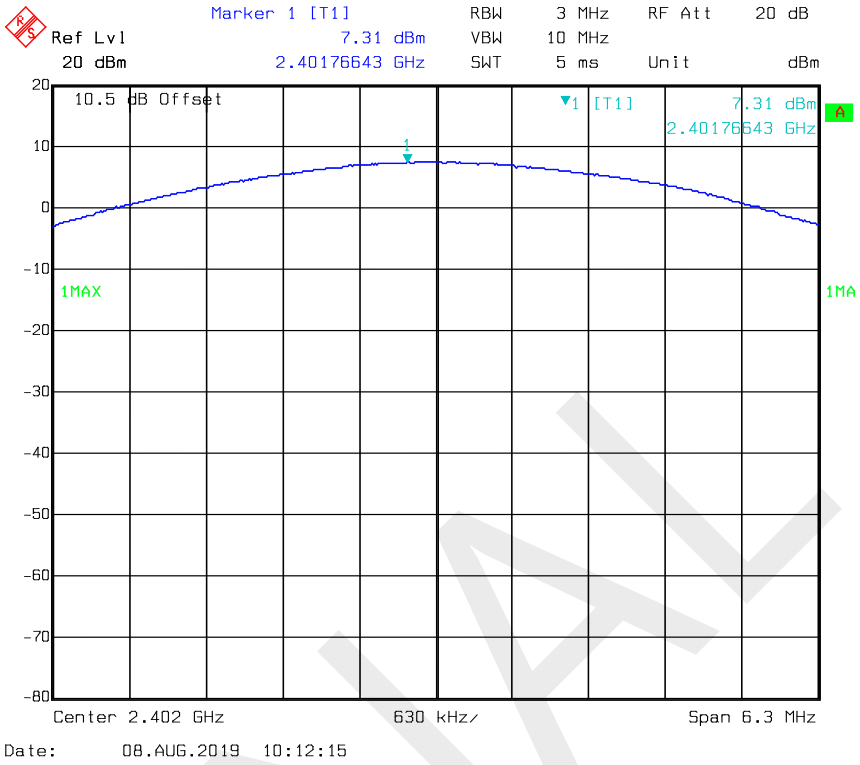


Date: 08.AUG.2019 10:09:21

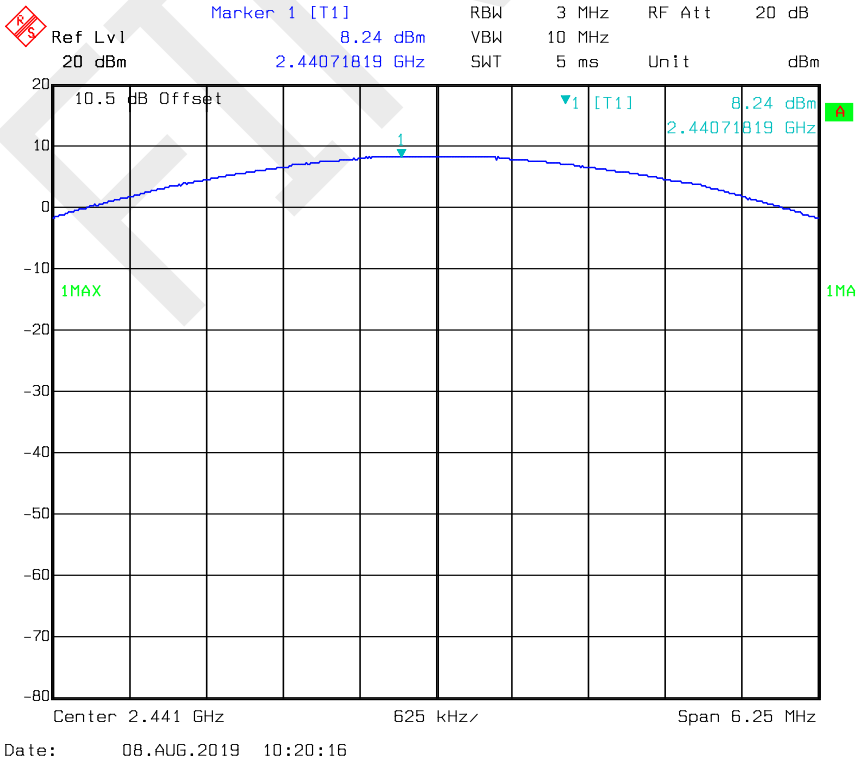
FINAL

EDR Mode (8-DPSK):

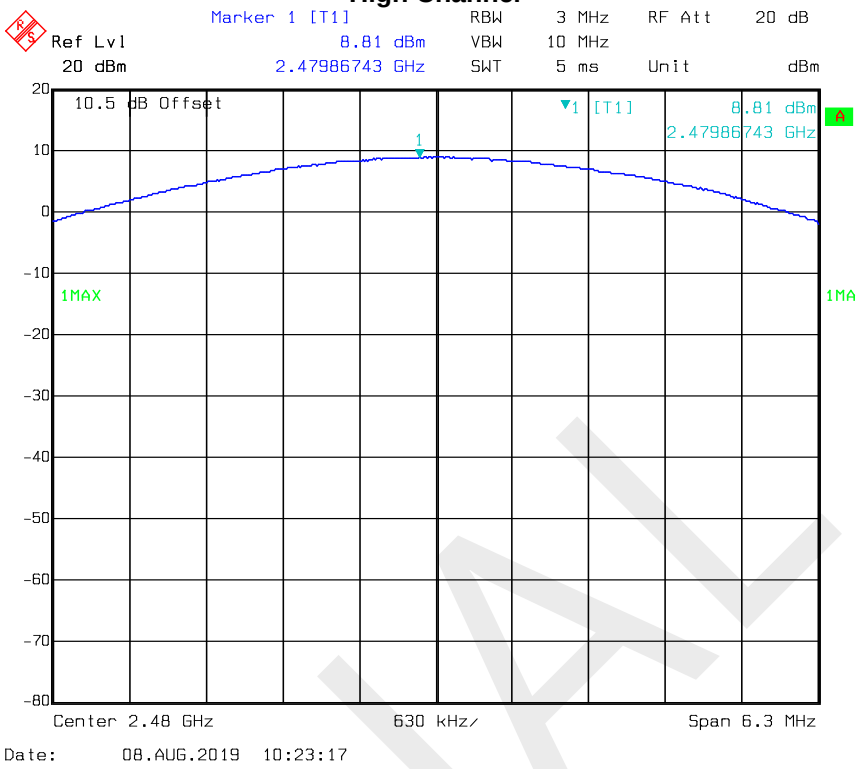
Low Channel



Middle Channel



High Channel



FINAL

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=100 kHz; VBW=300 kHz.
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 Data

Environmental Conditions

Temperature:	30 °C
Relative Humidity:	68 %
ATM Pressure:	95.4 kPa

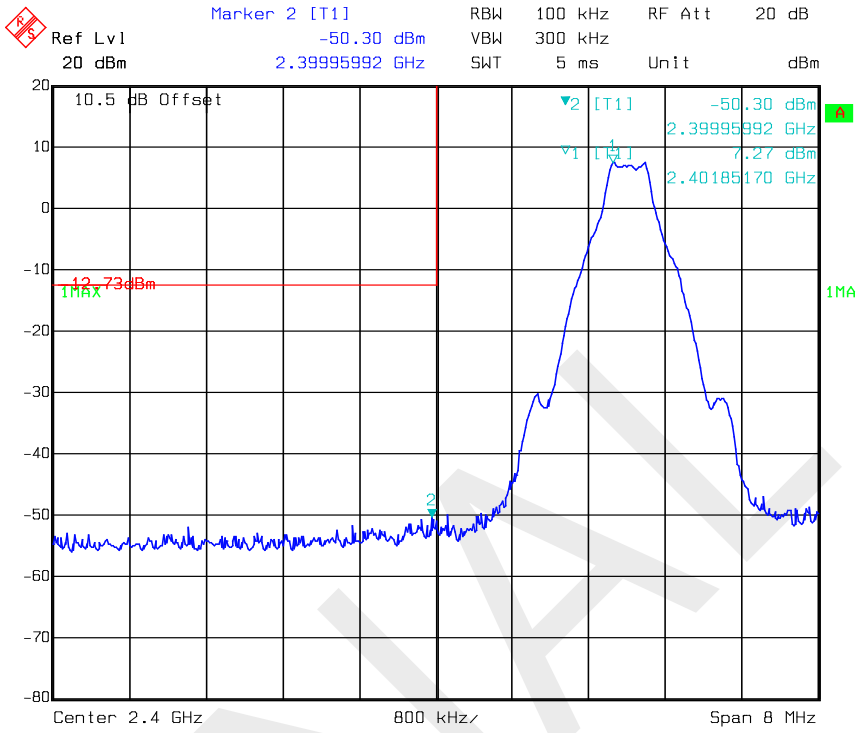
The testing was performed by Eric Xiao on 2019-08-08.

Test Result: Compliance. Please refer to the below plots:

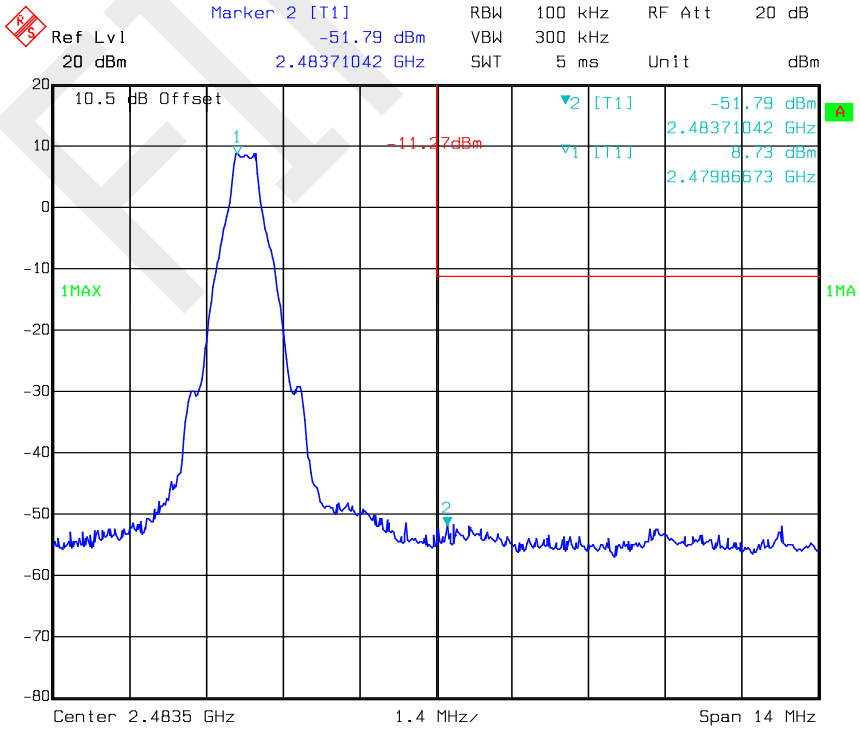
FINAL

Single Channel
BDR Mode (GFSK):

Band Edge, Left Side

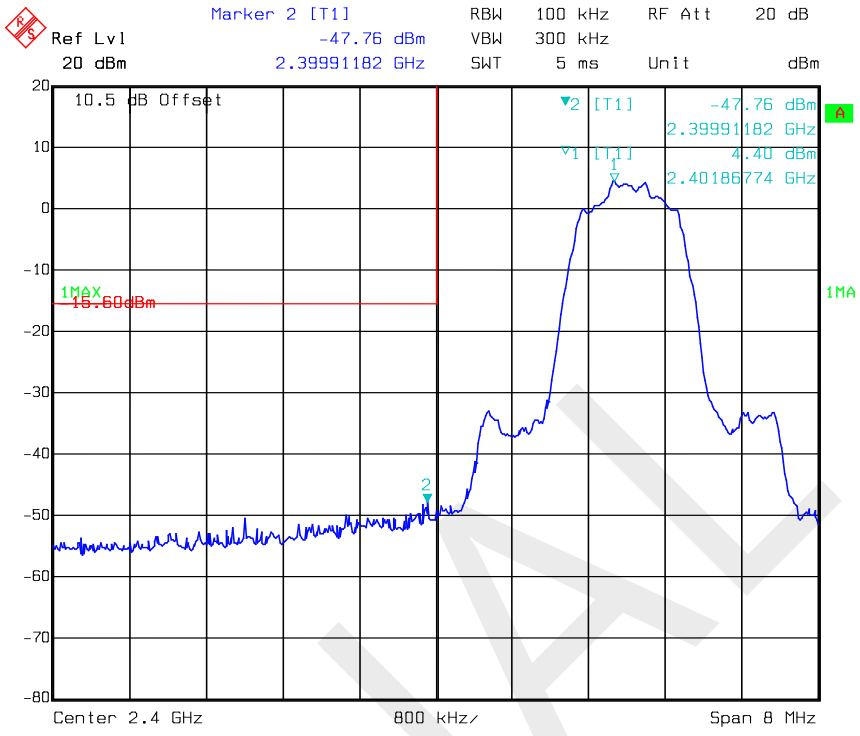


Band Edge, Right Side

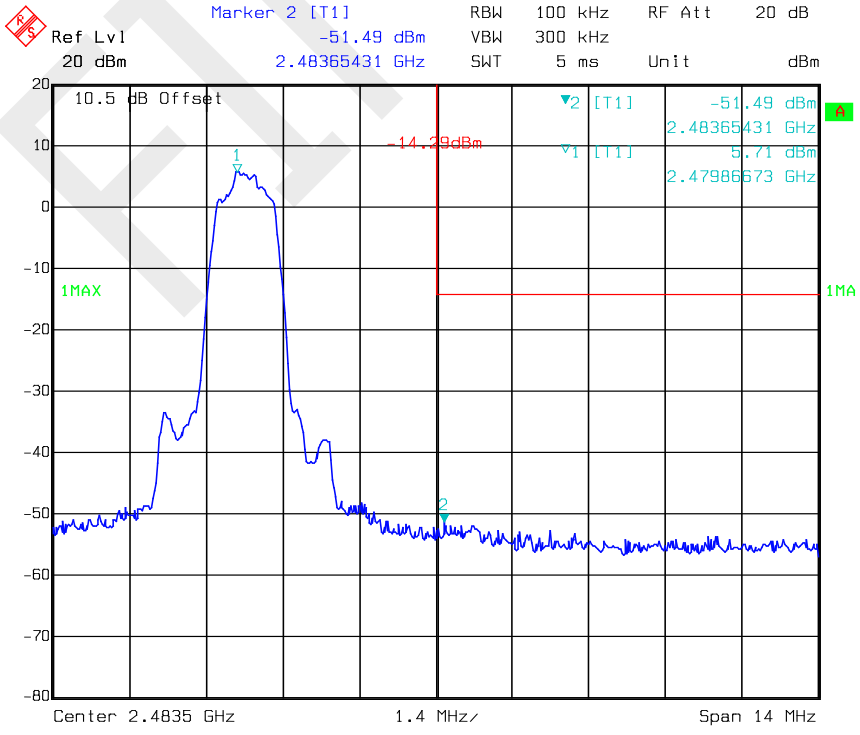


EDR Mode (π/4-DQPSK):

Band Edge, Left Side

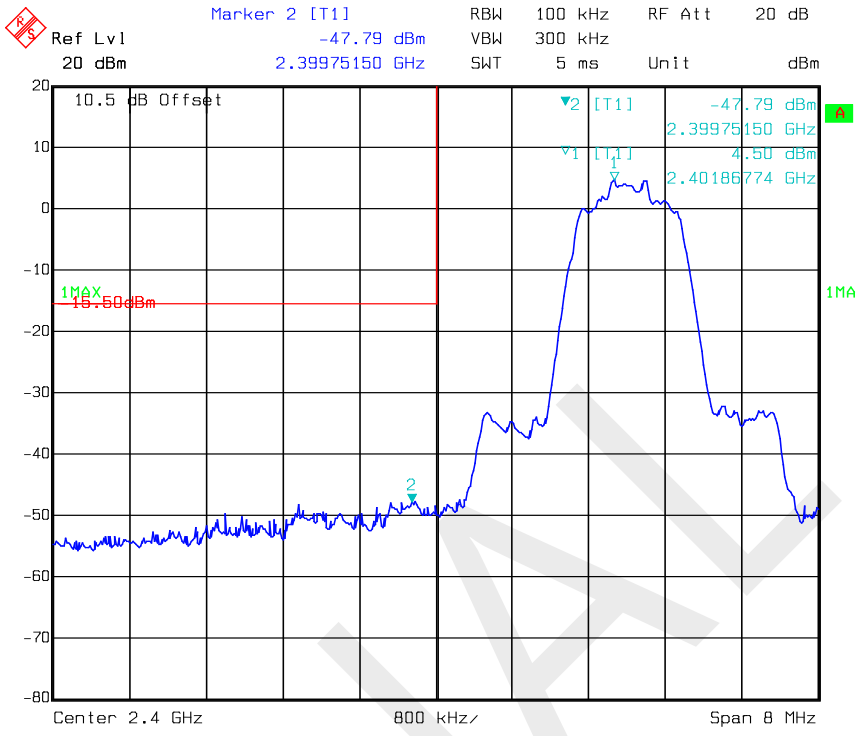


Band Edge, Right Side

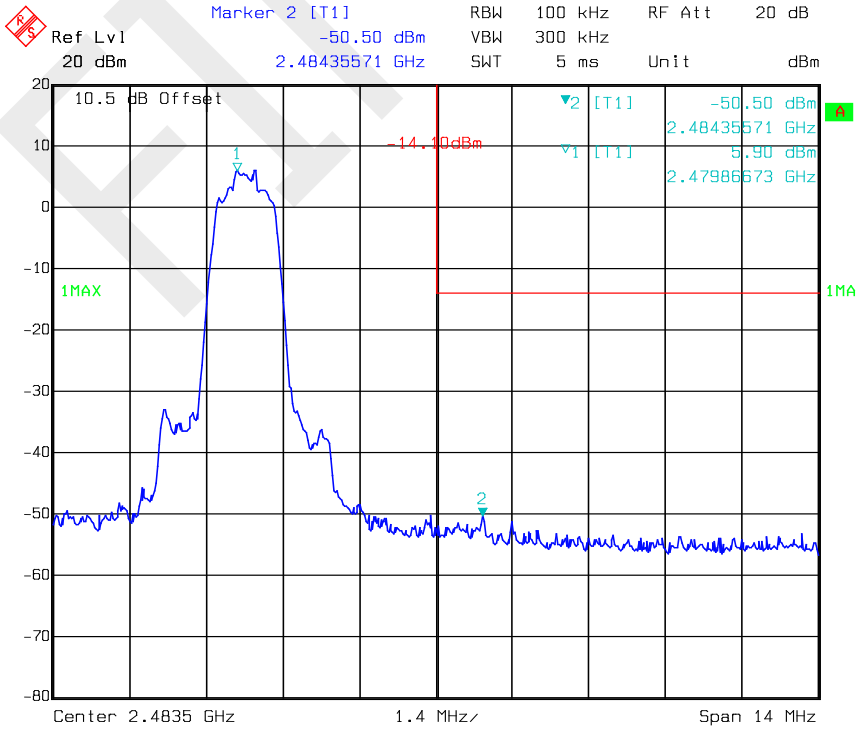


EDR Mode (8-DPSK):

Band Edge, Left Side



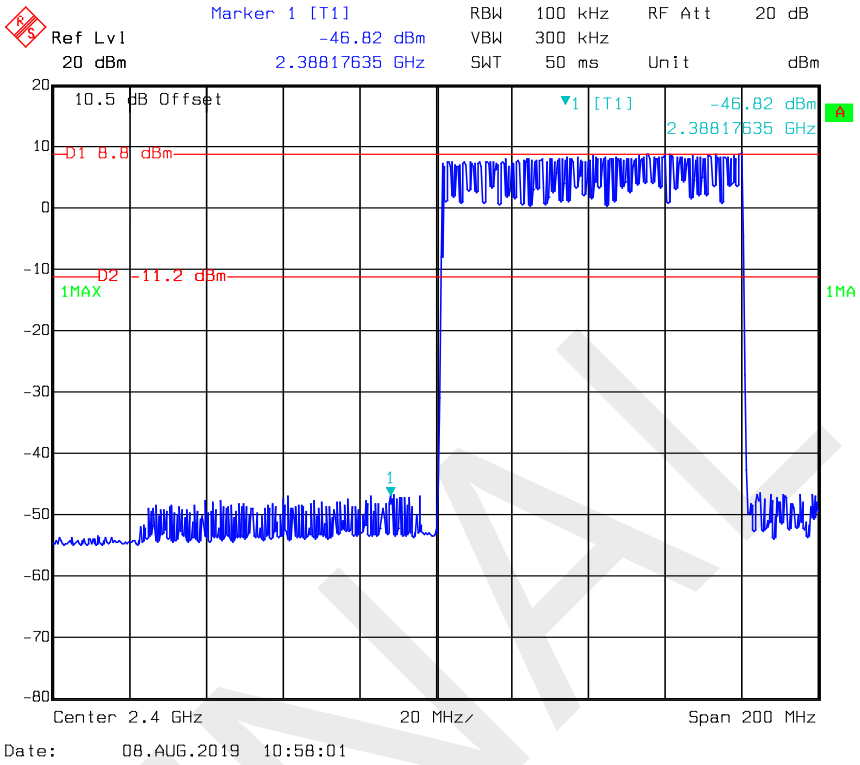
Band Edge, Right Side



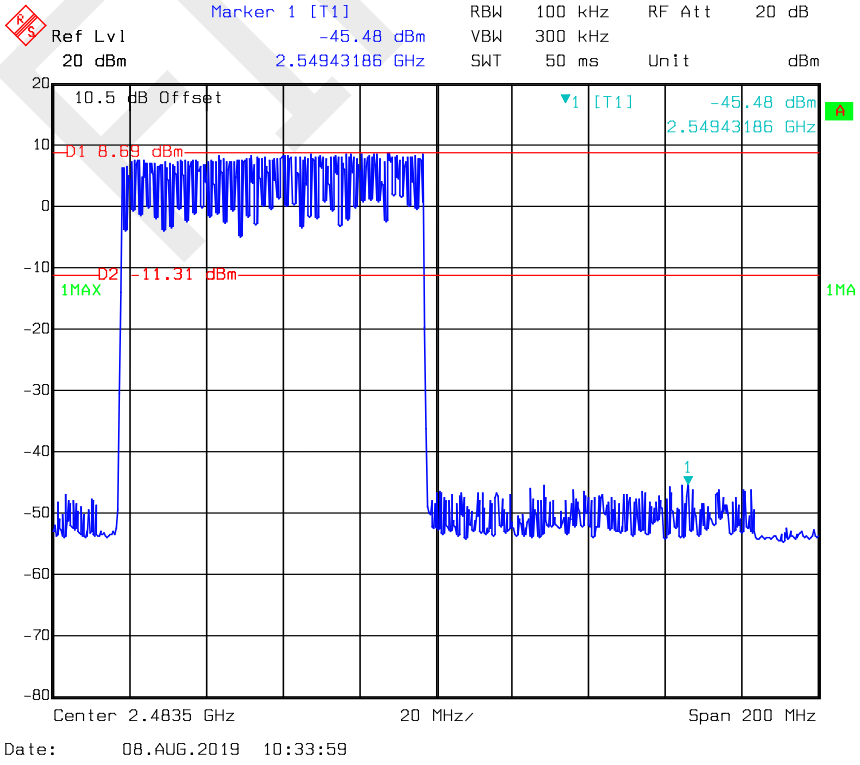
Hopping:

BDR Mode (GFSK):

Band Edge, Left Side

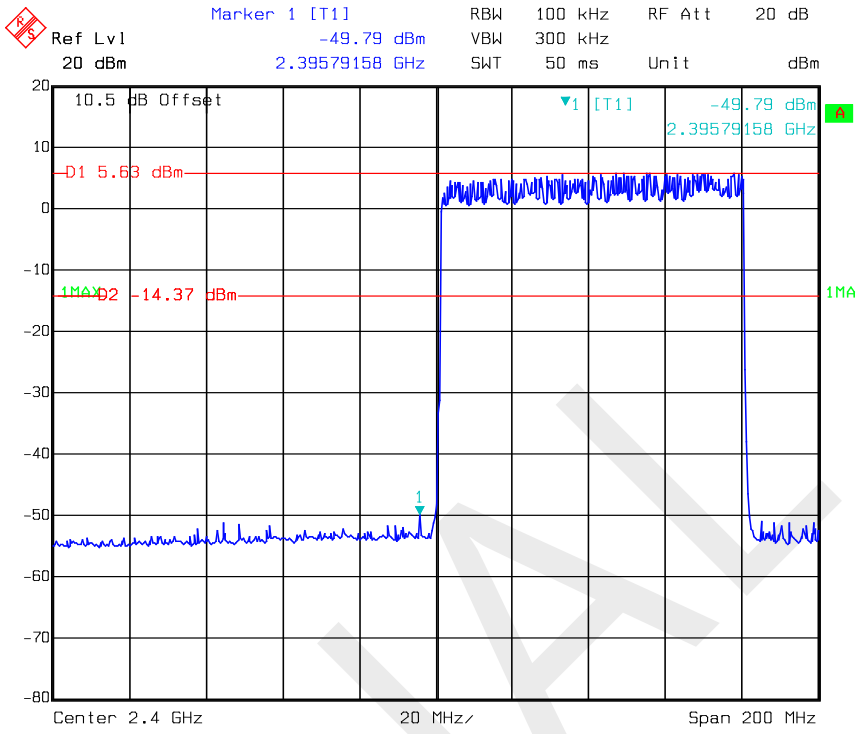


Band Edge, Right Side

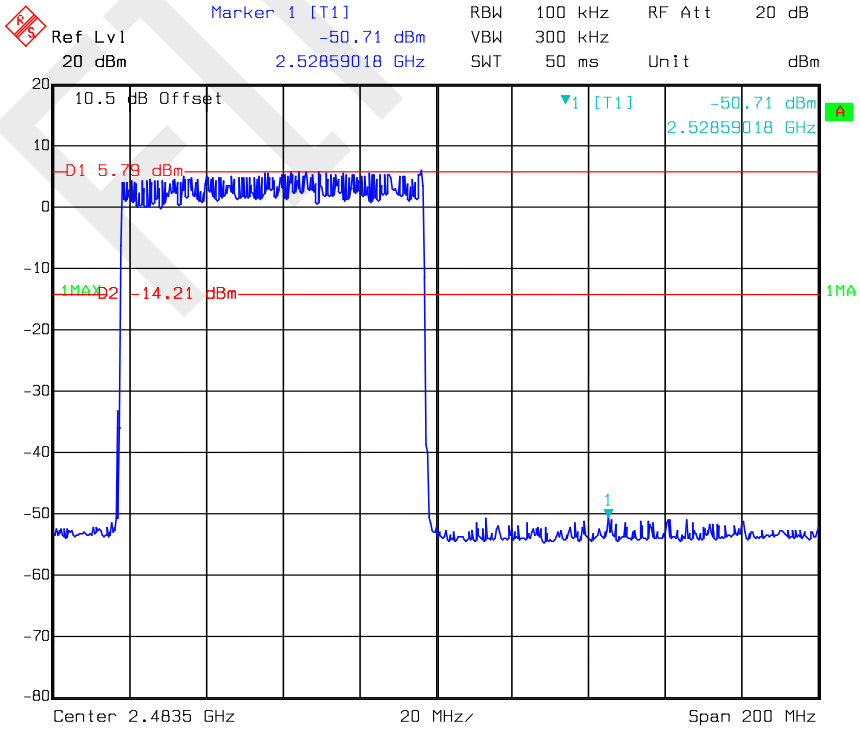


EDR Mode (π/4-DQPSK):

Band Edge, Left Side

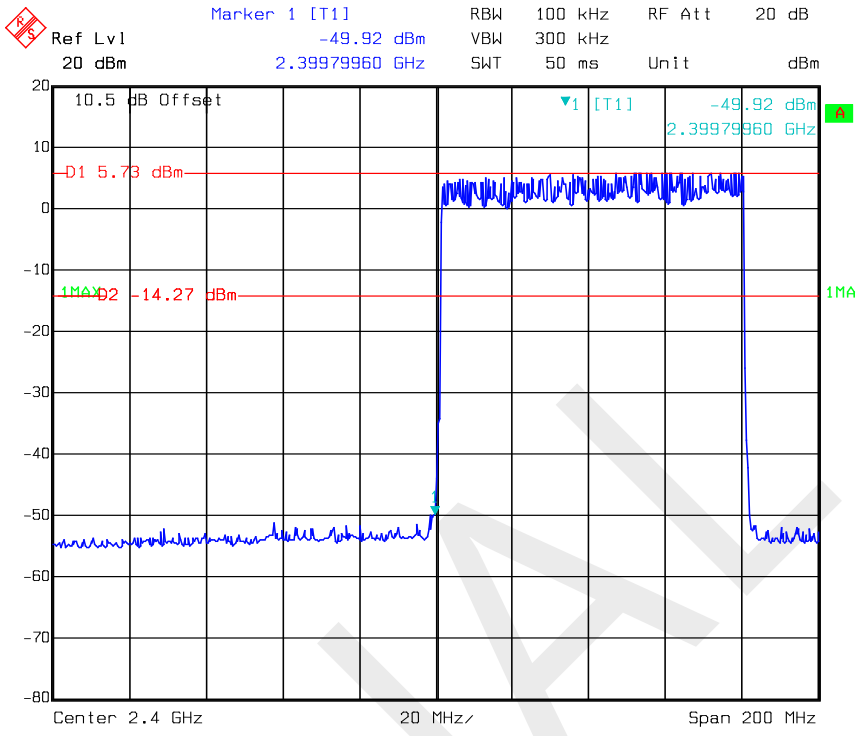


Band Edge, Right Side

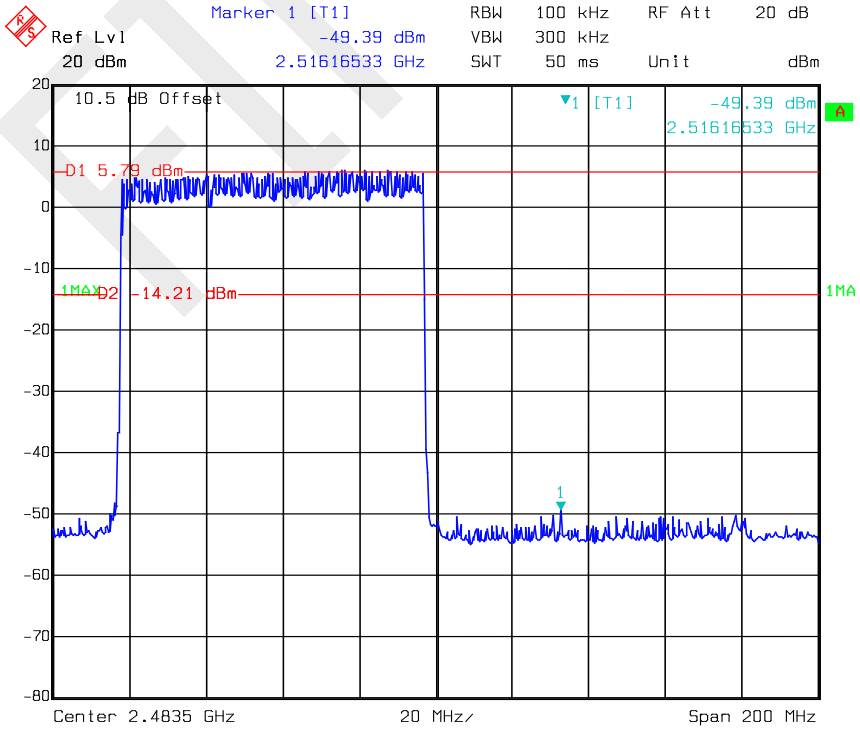


EDR Mode (8-DPSK):

Band Edge, Left Side



Band Edge, Right Side



END OF REPORT