



# FCC PART 15.247

# RSS-GEN, ISSUE 5, MARCH 2019 AMENDMENT 1

# RSS-247, ISSUE 2, FEBRUARY 2017

# TEST REPORT

For

# SZ DJI TECHNOLOGY CO., LTD

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# FCC ID: SS3-RM500E1910 IC: 11805A-RM500E1910

<b>Report Type:</b> Original Report		<b>Product Name:</b> DJI Smart Controller Enterprise
Report Number:	RDG19122	26022-00F
<b>Report Date:</b>	2020-04-21	1
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# **GENERAL INFORMATION**

	EUT Name:	DJI Smart Controller Enterprise
EUT Model:		RM500-ENT
<b>Operation Frequency:</b>		2402-2480MHz
Maximum Peak Output Power (Conducted):		5.54 dBm
Modulation Type:		GFSK, $\pi/4$ -DQPSK, 8DPSK
<b>Rated Input Voltage:</b>		7.2Vdc from battery or DC 3.6-12V from adapter
	Model:	QC24-US
Adapter Information	Input:	100-240VAC~50/60Hz Max 0.8A
mormation	Output:	3.6-8V3A/12V2A
	Serial Number:	RDG191226022-RF-S3
E	UT Received Date:	2019/12/25
EU	T Received Status:	Good

#### **Product Description for Equipment under Test (EUT)**

#### Objective

This report is prepared on behalf of *SZ DJI TECHNOLOGY CO., LTD* in accordance with Part 2, Subpart J, Part 15, Subparts A and C of the Federal Communications Commission's rules, RSS-247, Issue 2, February 2017 of the Innovation, Science and Economic Development Canada, RSS-Gen, Issue 5, March 2019 Amendment 1 of the Innovation, Science and Economic Development Canada.

The tests were performed in order to determine the Bluetooth BDR and EDR mode of EUT compliance with FCC Rules Part 15, Subpart C, and section 15.203, 15.205, 15.207, 15.209 and 15.247 rules, RSS-247, Issue 2, February 2017, RSS-Gen, Issue 5, March 2019 Amendment 1 of the Innovation, Science and Economic Development Canada.

#### **Related Submittal(s)/Grant(s)**

FCC Part 15C DTS,15E NII submissions with FCC ID: SS3-RM500E1910 RSS-247 DTSs, LE-LANs submissions with IC: 11805A-RM500E1910 Part of system submissions with FCC ID: SS3-M3001910, IC: 11805A-M3001910.

#### **Test Methodology**

All measurements detailed in this test report were performed in accordance with ANSI C63.10-2013 "American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices", RSS-247, Issue 2, February 2017 of the Innovation, Science and Economic Development Canada, RSS-Gen Issue 5, March 2019 Amendment 1 of the Innovation, Science and Economic Development Canada.

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

#### **Measurement Uncertainty**

Parameter	Measurement Uncertainty	
Occupied Channel Bandwidth	±5 %	
RF output power, conducted	±0.61dB	
Unwanted Emissions, radiated	30M~200MHz: 4.55 dB,200M~1GHz: 5.92 dB,1G~6GHz: 4.98 dB, 6G~18GHz: 5.89 dB,18G~26.5G:5.47 dB,26.5G~40G:5.63 dB	
Unwanted Emissions, conducted	±1.5 dB	
Temperature	$\pm 1^{\circ}$ C	
Humidity	±5%	
DC and low frequency voltages	±0.4%	
Duty Cycle	1%	
AC Power Lines Conducted Emission	3.12 dB (150 kHz to 30 MHz)	

Note: Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.

#### **Test Facility**

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

The lab has been recognized as the FCC accredited lab under the KDB 974614 D01 and is listed in the FCC Public Access Link (PAL) database, FCC Registration No. : 897218, the FCC Designation No. : CN1220.

The lab has been recognized by Innovation, Science and Economic Development Canada to test to Canadian radio equipment requirements, the CAB identifier : CN0022.

#### Declarations

BACL is not responsible for the authenticity of any test data provided by the applicant. Data included from the applicant that may affect test results are marked with a triangle symbol " $\triangle$ ". Customer model name, addresses, names, trademarks etc. are not considered data.

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

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This report may contain data that are not covered by the accreditation scope and shall be marked with an asterisk " $\bigstar$ ".

# SYSTEM TEST CONFIGURATION

#### **Description of Test Configuration**

The system was configured for testing in engineering mode.

#### **EUT Exercise Software**

The 'DJI RF Certification ' command was used during test, which was provided by manufacturer. The maximum power level was configured by the software as below table:

Mode	Channel	Frequency (MHz)	Power Level Setting
	Low	2402	8
GFSK	Middle	2441	8
	High	2480	8
π/4-DQPSK	Low	2402	8
	Middle	2441	8
	High	2480	8
8DPSK	Low	2402	8
	Middle	2441	8
	High	2480	8

#### **Equipment Modifications**

No modification was made to the EUT.

## **Support Equipment List and Details**

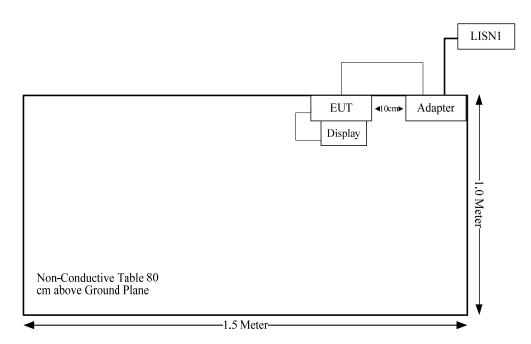
Manufacturer	Description	Model	Serial Number
DЛ	CrystalSky (7.85inch) Display	CS785	/

#### Support Cable List and Details

Cable Description	Shielding Type	Ferrite Core	Length (m)	From Port	То
USB Cable	yes	No	1.2	Adapter	EUT
USB Cable	yes	No	0.2	EUT	Display

Report No.: RDG191226022-00F

# **Block Diagram of Test Setup**



# **SUMMARY OF TEST RESULTS**

Rules	Description of Test	Result
FCC §15.247 (i) & §1.1310 & §2.1093; RSS-102 Clause 4	RF Exposure	Compliance
FCC§15.203; RSS-GEN Clause 6.8	Antenna Requirement	Compliance
FCC§15.207 (a); RSS-Gen Clause 8.8	Conducted Emissions	Compliance
FCC§15.205, §15.209, §15.247(d); RSS-247 Clause 5.5, RSS-Gen Clause 8.10	Spurious Emissions	Compliance
FCC§15.247 (a)(1); RSS-247 Clause 5.1 b) RSS-Gen Clause 6.7	Bandwidth Test	Compliance
FCC§15.247(a)(1); RSS-247 Clause 5.1 b)	Channel Separation Test	Compliance
FCC§15.247(a)(1)(iii); RSS-247 Clause 5.1 d)	Time of Occupancy (Dwell Time)	Compliance
FCC§15.247(a)(1)(iii); RSS-247 Clause 5.1 d)	Quantity of hopping channel Test	Compliance
FCC§15.247(b)(1); RSS-247 Clause 5.4 b)	Peak Output Power Measurement	Compliance
FCC§15.247(d); RSS-247 Clause 5.5	Band Edges	Compliance

# FCC §15.247 (i) & §1.1310 & §2.1093, RSS-102 CLAUSE 4- RF Exposure

#### **Applicable Standard**

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

According to RSS-102 Clause 4 Table 3, SAR limits for device used by the general public.

Body Region	Average SAR (W/Kg)	Averaging Time (minutes)	Mass Average (g)
Whole Body	0.08	6	Whole Body
Localized Head, Neck and Trunk	1.6	6	1
Localized Limbs	4	6	10

#### **Test Result**

Compliance, Please refer to the SAR report: RDG191226022-20.

# FCC §15.203, RSS-GEN CLAUSE 6.8 - 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.

According to RSS-Gen §6.8, The applicant for equipment certification shall provide a list of all antenna types that may be used with the transmitter, where applicable (i.e. for transmitters with detachable antenna), indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna. The test report shall demonstrate the compliance of the transmitter with the limit for maximum equivalent isotropically radiated power (e.i.r.p.) specified in the applicable RSS, when the transmitter is equipped with any antenna type, selected from this list.

For expediting the testing, measurements may be performed using only the antenna with highest gain of each combination of transmitter and antenna type, with the transmitter output power set at the maximum level. However, the transmitter shall comply with the applicable requirements under all operational conditions and when in combination with any type of antenna from the list provided in the test report (and in the notice to be included in the user manual, provided below).

When measurements at the antenna port are used to determine the RF output power, the effective gain of the device's antenna shall be stated, based on a measurement or on data from the antenna's manufacturer. The test report shall state the RF power, output power setting and spurious emission measurements with each antenna type that is used with the transmitter being tested.

For licence-exempt equipment with detachable antennas, the user manual shall also contain the following notice in a conspicuous location:

This radio transmitter [enter the device's ISED certification number] has been approved by Innovation, Science and Economic Development Canada to operate with the antenna types listed below, with the maximum permissible gain indicated. Antenna types not included in this list that have a gain greater than the maximum gain indicated for any type listed are strictly prohibited for use with this device.

Immediately following the above notice, the manufacturer shall provide a list of all antenna types which can be used with the transmitter, indicating the maximum permissible antenna gain (in dBi) and the required impedance for each antenna type.

#### **Antenna Connector Construction**

The EUT has two internal antennas arrangement for WIFI/BT, fulfill the requirement of this section. Please refer to the EUT photos.

Usage	Antenna Chain	Antenna Type	input impedance (Ohm)	Antenna Gain /Frequency Range
WIFI/BT	0	РСВ	50	2.5 dBi/2.4~2.5GHz 3 dBi/5.15~5.25GHz 5 dBi/5.725~5.85GHz
WIFI	1	РСВ	50	2.5 dBi/2.4~2.5GHz 3 dBi/5.15~5.25GHz 5 dBi/5.725~5.85GHz

Result: Compliance.

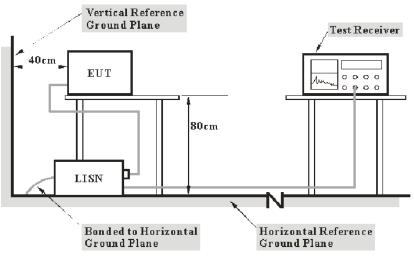
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# FCC §15.207 (a), RSS-GEN CLAUSE 8.8 – AC LINE CONDUCTED EMISSIONS

### **Applicable Standard**

FCC§15.207(a), RSS-GEN CLAUSE 8.8.

## **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 and RSS-Gen limits.

The spacing between the peripherals was 10 cm.

The adapter was connected to the main LISN with a 120 V/60 Hz AC power source.

#### **EMI Test Receiver Setup**

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

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

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

#### **Test Procedure**

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

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

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

## **Corrected Amplitude & Margin Calculation**

The basic equation is as follows:

 $V_C = V_R + A_C + VDF$ 

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

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

Margin = Limit – Corrected Amplitude

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
Unknown	Coaxial Cable	C-NJNJ-50	C-0200-01	2019-09-05	2020-09-05
R&S	Test Software	EMC32	Version8.53.0	N/A	N/A
R&S	Two-line V-network	ENV 216	101614	2019-09-12	2020-09-12
R&S	EMI Test Receiver	ESCI	101121	2019-05-09	2020-05-09

#### **Test Equipment List and Details**

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

## **Test Data**

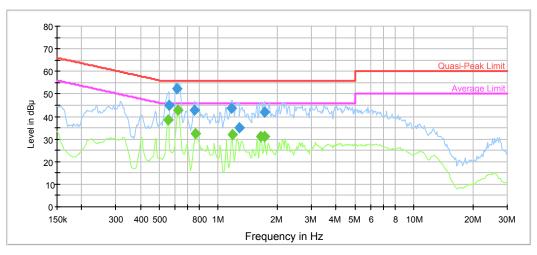
#### **Environmental Conditions**

Temperature:	22.1°C
<b>Relative Humidity:</b>	69%
ATM Pressure:	101.7kPa
Tester:	Sern Xiang
Test Date:	2020-02-25

#### Report No.: RDG191226022-00F

## Test Mode: Transmitting

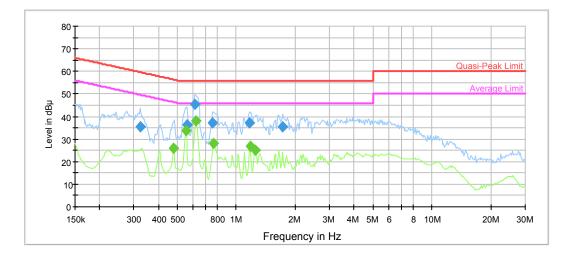




Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.557844	44.8	9.000	L1	9.7	11.2	56.0
0.616207	52.4	9.000	L1	9.7	3.6	56.0
0.759409	42.9	9.000	L1	9.7	13.1	56.0
1.164916	43.5	9.000	L1	9.7	12.5	56.0
1.274051	35.1	9.000	L1	9.7	20.9	56.0
1.717229	42.0	9.000	L1	9.8	14.0	56.0

Frequency (MHz)	Average (dBμV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.552321	38.5	9.000	L1	9.7	7.5	46.0
0.622369	43.0	9.000	L1	9.7	3.0	46.0
0.767003	32.5	9.000	L1	9.7	13.5	46.0
1.176565	32.0	9.000	L1	9.7	14.0	46.0
1.650223	31.2	9.000	L1	9.8	14.8	46.0
1.717229	31.1	9.000	L1	9.8	14.9	46.0

# AC120V, 60 Hz, Neutral:



Frequency (MHz)	QuasiPeak (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.322729	35.3	9.000	Ν	9.6	24.3	59.6
0.563423	36.1	9.000	Ν	9.6	19.9	56.0
0.616207	45.5	9.000	Ν	9.6	10.5	56.0
0.759409	37.3	9.000	N	9.6	18.7	56.0
1.164916	37.3	9.000	N	9.6	18.7	56.0
1.734401	35.3	9.000	Ν	9.6	20.7	56.0

Frequency (MHz)	Average (dBµV)	Bandwidth (kHz)	Line	Corr. (dB)	Margin (dB)	Limit (dBµV)
0.475741	26.1	9.000	Ν	9.6	20.3	46.4
0.552321	33.6	9.000	Ν	9.6	12.4	46.0
0.622369	37.9	9.000	Ν	9.6	8.1	46.0
0.767003	28.0	9.000	Ν	9.6	18.0	46.0
1.176565	27.0	9.000	Ν	9.6	19.0	46.0
1.248947	25.0	9.000	Ν	9.6	21.0	46.0

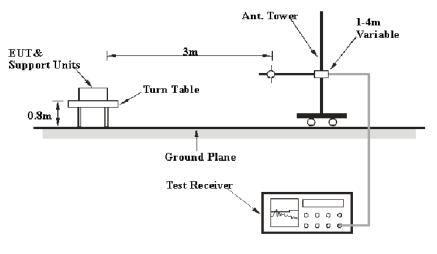
# FCC §15.209, §15.205 & §15.247(d) , RSS-247 CLAUSE 5.5,RSS -GEN CLAUSE 8.10 - SPURIOUS EMISSIONS

## **Applicable Standard**

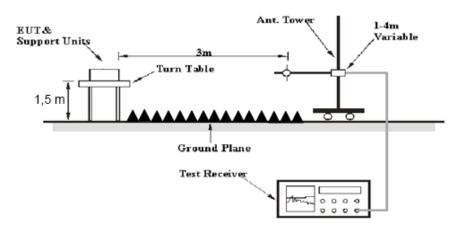
FCC §15.247 (d); §15.209; §15.205; RSS-247 Clause 5.5, RSS-GEN Clause 8.10

## **EUT Setup**

#### Below 1GHz:



#### Above 1GHz:



The radiated emission below 1GHz tests were performed in the 3 meters chamber test site A, above 1GHz tests were performed in the 3 meters chamber test site B, using the setup accordance with the ANSI C63.10-2013. The specification used was the FCC 15.209, and FCC 15.247 limits and the RSS-247 Clause 5.5, RSS-GEN Clause 8.10 limits.

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

The spacing between the peripherals was 10 cm.

#### EMI Test Receiver & Spectrum Analyzer Setup

The system was investigated from 30 MHz to 25 GHz.

According to FCC public notice: DA-00-705, 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	Measurement
30 MHz – 1000 MHz	120 kHz	300 kHz	120 kHz	QP
Above 1 GHz	1MHz	3 MHz	/	РК
Above I GHZ	1MHz	10 Hz	/	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

Manufacturer	Description	Model	Serial Number	Calibration	Calibration Due Date				
				Date	Due Date				
Radiation Below 1GHz									
R&S	EMI Test Receiver	ESR3	102453	2019-09-12	2020-09-12				
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A				
Sunol Sciences	Antenna	JB3	A060611-1	2017-11-10	2020-11-10				
Unknown	Coaxial Cable	C-NJNJ-50	C-0400-01	2019-09-05	2020-09-05				
Unknown	Coaxial Cable	C-NJNJ-50	C-0075-01	2019-09-05	2020-09-05				
HP	Amplifier	8447D	2727A05902	2019-09-05	2020-09-05				
		Radiation Above 1G	Hz						
Agilent	Spectrum Analyzer	E4440A	SG43360054	2019-05-09	2020-05-09				
Farad	Test Software	EZ-EMC	V1.1.4.2	N/A	N/A				
ETS-Lindgren	Horn Antenna	3115	000 527 35	2018-10-12	2021-10-12				
Ducommun Technolagies	Horn Antenna	ARH-4223-02	1007726-01 1304	2017-12-06	2020-12-05				
Unknown	Coaxial Cable	C-SJSJ-50	C-0800-01	2019-09-05	2020-09-05				
Unknown	Coaxial Cable	C-2.4J2.4J-50	C-0700-02	2019-06-27	2020-06-27				
Mini-Circuit	Amplifier	ZVA-213-S+	54201245	2019-09-05	2020-09-05				
Quinstar	Amplifier	QLW-18405536-JO	15964001001	2019-06-27	2020-06-27				
E-Microwave	Band-stop Filters	OBSF-2400-2483.5- S	OE01601525	2019-06-16	2020-06-16				
Micro-tronics	High Pass Filter	HPM50111	S/N-G217	2019-06-16	2020-06-16				

#### **Test Equipment List and Details**

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

#### **Test Data**

#### **Environmental Conditions**

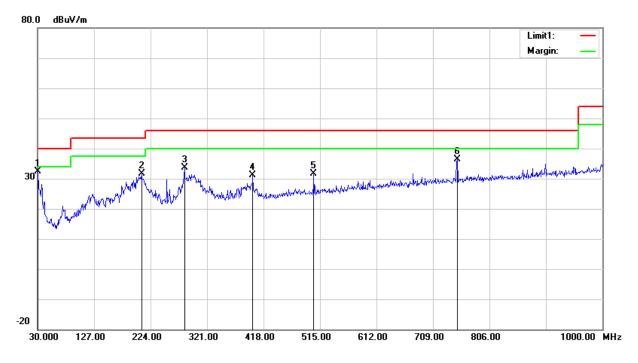
Test Items	Radiation Below 1GHz	Radiation Above 1GHz	
Temperature:	24°C	24°C	
<b>Relative Humidity:</b>	52 %	52 %	
ATM Pressure:	101 kPa	101 kPa	
Tester:	Vern Shen	Bond Qin	
Test Date:	2020-04-17	2020-04-17	

Test Mode: Transmitting

#### Report No.: RDG191226022-00F

#### 1) 30MHz-1GHz(GFSK High channel was the worst)

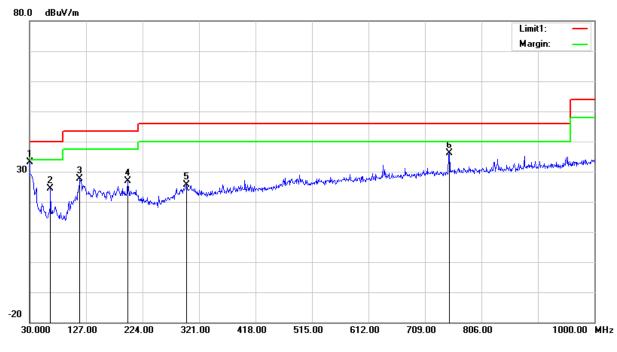
#### Horizontal:



No.	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
	(MHz)	(dBµV)		(dB/m)	(dBµV/m)	(dBµV/m)	(dB)
1	30.9700	31.56	peak	0.91	32.47	40.00	7.53
2	208.4800	39.06	peak	-7.33	31.73	43.50	11.77
3	282.2000	37.79	peak	-4.09	33.70	46.00	12.30
4	399.5700	33.26	peak	-2.03	31.23	46.00	14.77
5	504.3300	31.80	peak	-0.28	31.52	46.00	14.48
6	750.7100	32.75	peak	3.66	36.41	46.00	9.59

#### Report No.: RDG191226022-00F

#### Vertical:



No.	Frequency	Reading	Detector	Corrected	Result	Limit	Margin
	(MHz)	(dBµV)		(dB/m)	(dBµV/m)	(dBµV/m)	(dB)
1	30.0000	31.44	peak	1.72	33.16	40.00	6.84
2	65.8900	36.05	peak	-11.60	24.45	40.00	15.55
3	116.3300	32.65	peak	-5.13	27.52	43.50	15.98
4	198.7800	32.87	peak	-6.08	26.79	43.50	16.71
5	299.6600	29.38	peak	-3.83	25.55	46.00	20.45
6	750.7100	32.47	peak	3.66	36.13	46.00	9.87

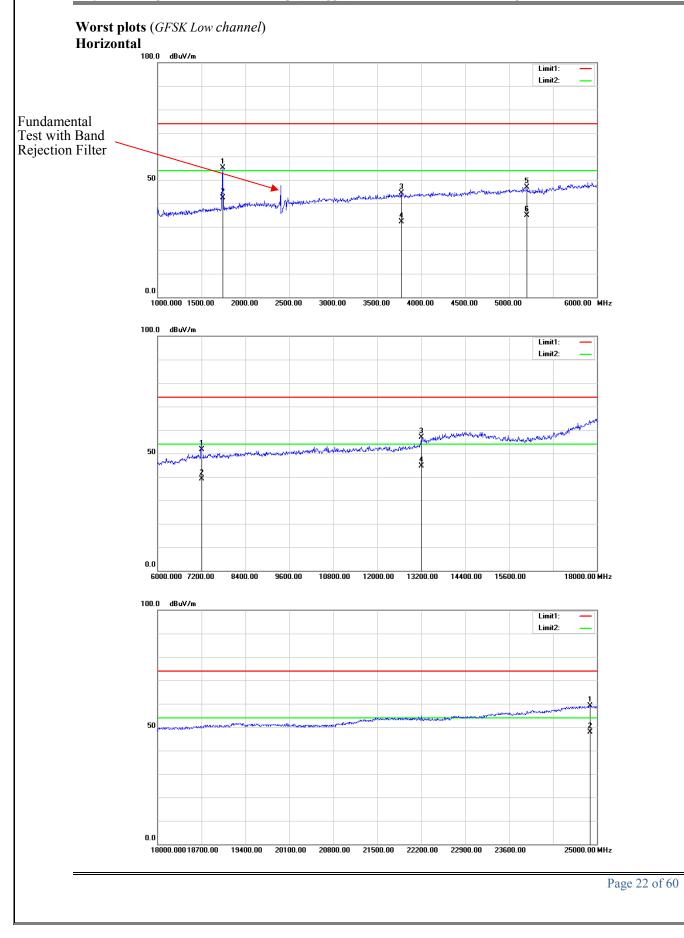
Report No.: RDG191226022-00F

### 2) 1GHz-25GHz:

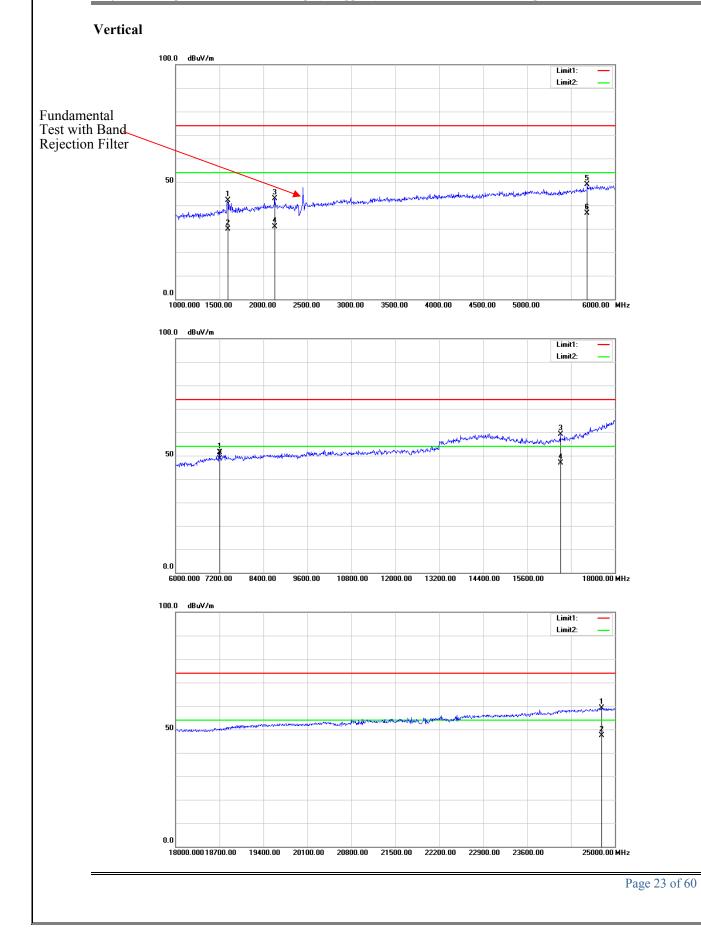
BDR Mode (GFSK) was worst

E	Rec	eiver	Rx A	ntenna	Cable	Amplifier	Corrected	T	M			
Frequency (MHz)	Reading (dBµV)	Detector	Polar (H/V)	Factor (dB/m)	loss (dB)	Gain (dB)	Amplitude (dBµV/m)	Limit (dBµV/m)	Margin (dB)			
	Low Channel: 2402 MHz											
2402.00	62.90	PK	Н	28.10	1.80	0.00	92.80	N/A	N/A			
2402.00	52.41	AV	Н	28.10	1.80	0.00	82.31	N/A	N/A			
2402.00	57.26	PK	V	28.10	1.80	0.00	87.16	N/A	N/A			
2402.00	46.31	AV	V	28.10	1.80	0.00	76.21	N/A	N/A			
2390.00	25.66	PK	Н	28.08	1.80	0.00	55.54	74.00	18.46			
2390.00	13.51	AV	Н	28.08	1.80	0.00	43.39	54.00	10.61			
4804.00	36.33	PK	Н	32.91	3.17	25.60	46.81	74.00	27.19			
4804.00	23.10	AV	Н	32.91	3.17	25.60	33.58	54.00	20.42			
7206.00	36.76	PK	Н	35.74	4.82	25.60	51.72	74.00	22.28			
7206.00	24.12	AV	Н	35.74	4.82	25.60	39.08	54.00	14.92			
			N	Middle Cha	nnel: 244	l MHz						
2441.00	63.07	PK	Н	28.18	1.82	0.00	93.07	N/A	N/A			
2441.00	52.28	AV	Н	28.18	1.82	0.00	82.28	N/A	N/A			
2441.00	48.21	PK	V	28.18	1.82	0.00	78.21	N/A	N/A			
2441.00	37.12	AV	V	28.18	1.82	0.00	67.12	N/A	N/A			
4882.00	35.21	PK	Н	33.06	3.27	25.66	45.88	74.00	28.12			
4882.00	22.59	AV	Н	33.06	3.27	25.66	33.26	54.00	20.74			
7323.00	35.65	PK	Н	36.04	4.62	25.73	50.58	74.00	23.42			
7323.00	22.91	AV	Н	36.04	4.62	25.73	37.84	54.00	16.16			
				High Chan	nel: 2480	MHz						
2480.00	63.04	PK	Н	28.26	1.84	0.00	93.14	N/A	N/A			
2480.00	52.90	AV	Н	28.26	1.84	0.00	83.00	N/A	N/A			
2480.00	53.01	PK	V	28.26	1.84	0.00	83.11	N/A	N/A			
2480.00	43.21	AV	V	28.26	1.84	0.00	73.31	N/A	N/A			
2483.50	26.75	PK	Н	28.27	1.84	0.00	56.86	74.00	17.14			
2483.50	13.89	AV	Н	28.27	1.84	0.00	44.00	54.00	10.00			
4960.00	35.28	PK	Н	33.22	3.23	25.63	46.10	74.00	27.90			
4960.00	23.15	AV	Н	33.22	3.23	25.63	33.97	54.00	20.03			
7440.00	35.12	РК	Н	36.34	4.41	25.85	50.02	74.00	23.98			
7440.00	23.01	AV	Н	36.34	4.41	25.85	37.91	54.00	16.09			

Report No.: RDG191226022-00F



#### Report No.: RDG191226022-00F



# FCC §15.247(a) (1), RSS-247 CLAUSE 5.1 b) - CHANNEL SEPARATION TEST

### **Applicable Standard**

According to FCC §15.247(a) (1), RSS-247 Clause 5.1 b)

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.50 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20dB bandwidth of the hopping channel, whichever is greater provided the systems operate with an output power no greater than 125 mW.

#### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2020-01-09	2021-03-26
yzjingcheng	Coaxial Cable	KTRFBU-141-50	41005012	Each Time	/

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

#### **Test Procedure**

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

#### **Test Data**

#### **Environmental Conditions**

Temperature:	24.2°C
<b>Relative Humidity:</b>	40%
ATM Pressure:	101.9Pa
Tester:	Fay Hu
Test Date:	2020-04-14

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

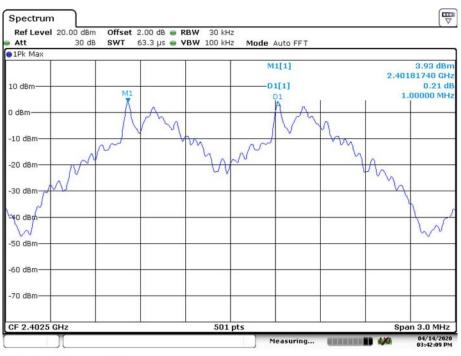
#### Test Mode: Transmitting

#### Report No.: RDG191226022-00F

Mode	Channel	Frequency (MHz)	Channel Separation (MHz)	Limit (MHz)
	Low	2402	1.000	0.53
BDR (GFSK)	Middle	2441	1.000	0.53
(GFSK)	High	2480	1.000	0.53
EDD	Low	2402	1.000	0.76
EDR (π/4-DQPSK)	Middle	2441	1.000	0.76
	High	2480	1.000	0.76
EDR (8DPSK)	Low	2402	1.000	0.77
	Middle	2441	1.000	0.77
	High	2480	1.000	0.77

*Note:*  $Limit = (2/3) \times 20dB$  bandwidth

BDR Mode (GFSK):



Low Channel

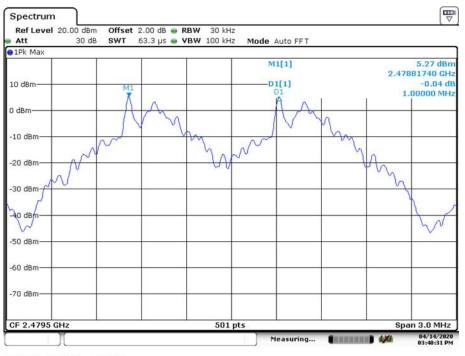
Date: 14.APR.2020 15:42:09

#### Report No.: RDG191226022-00F



**Middle Channel** 

#### **High Channel**



Date: 14.APR.2020 15:40:31

Date: 14.APR.2020 15:41:18

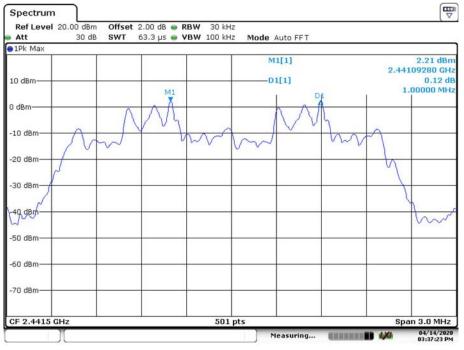
#### 2EDR Mode ( $\pi$ /4-DQPSK):

₩ Spectrum Ref Level 20.00 dBm Att 30 dB Mode Auto FFT ●1Pk Max M1[1] 0.69 dBm 2.40209880 GHz 10 dBm-D1[1] 0.11 dB 1.00000 MHz M1 0 dBm -10 dBm the m -20 dBm -30 dBm 40 dBm n -50 dBm -60 dBm--70 dBm CF 2.4025 GHz 501 pts Span 3.0 MHz 04/14/2020 03:36:12 PM Measuring... 

Low Channel

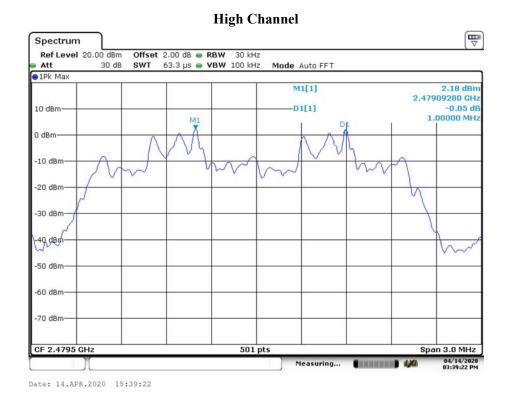
Date: 14.APR.2020 15:36:12

#### **Middle Channel**



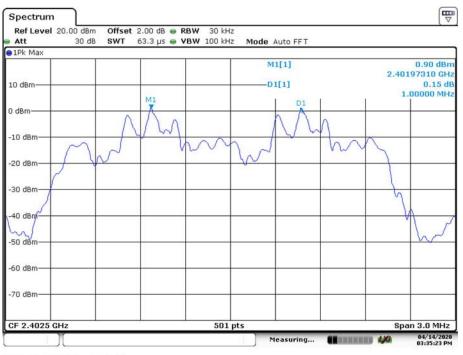
Date: 14.APR.2020 15:37:23

#### Report No.: RDG191226022-00F



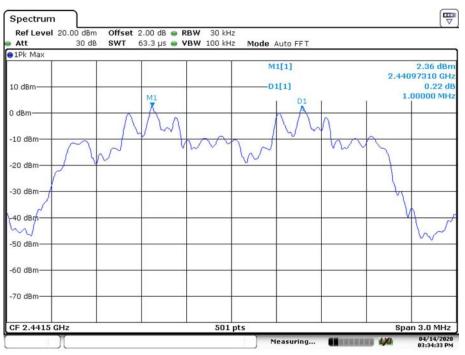
#### 3EDR Mode (8DPSK):





Date: 14.APR.2020 15:35:23

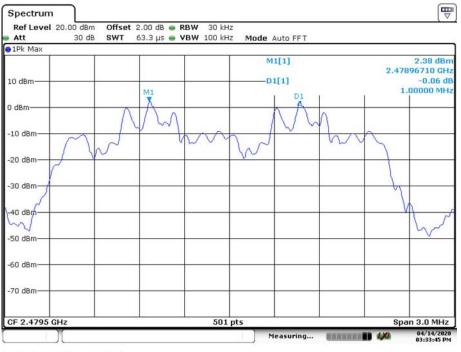
#### Report No.: RDG191226022-00F



#### **Middle Channel**

Date: 14.APR.2020 15:34:33

#### **High Channel**



Date: 14.APR.2020 15:33:45

# FCC §15.247(a) (1), RSS-247 CLUASE 5.1&RSS-GEN CLAUSE 6.7 – BANDWIDTH TESTING

#### **Applicable Standard**

According to FCC §15.247(a) (1):

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.

According to RSS-247 Clause 5.1 b):

b) FHSs shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, FHSs operating in the band 2400-2483.5 MHz 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 that the systems operate with an output power no greater than 0.125 W.

According to RSS-Gen Clause 6.7:

The occupied bandwidth or the "99% emission bandwidth" is defined as the frequency range between two points, one above and the other below the carrier frequency, within which 99% of the total transmitted power of the fundamental transmitted emission is contained. The occupied bandwidth shall be reported for all equipment in addition to the specified bandwidth required in the applicable RSSs.

In some cases, the "x dB bandwidth" is required, which is defined as the frequency range between two points, one at the lowest frequency below and one at the highest frequency above the carrier frequency, at which the maximum power level of the transmitted emission is attenuated x dB below the maximum inband power level of the modulated signal, where the two points are on the outskirts of the in-band emission.

The following conditions shall be observed for measuring the occupied bandwidth and x dB bandwidth:

- The transmitter shall be operated at its maximum carrier power measured under normal test conditions.
- The span of the spectrum analyzer shall be set large enough to capture all products of the modulation process, including the emission skirts, around the carrier frequency, but small enough to avoid having other emissions (e.g. on adjacent channels) within the span.
- The detector of the spectrum analyzer shall be set to "Sample". However, a peak, or peak hold, may be used in place of the sampling detector since this usually produces a wider bandwidth than the actual bandwidth (worst-case measurement). Use of a peak hold (or "Max Hold") may be necessary to determine the occupied / x dB bandwidth if the device is not transmitting continuously.

• The resolution bandwidth (RBW) shall be in the range of 1% to 5% of the actual occupied / x dB bandwidth and the video bandwidth (VBW) shall not be smaller than three times the RBW value. Video averaging is not permitted.

Note: It may be necessary to repeat the measurement a few times until the RBW and VBW are in compliance with the above requirement.

For the 99% emission bandwidth, the trace data points are recovered and directly summed in linear power level terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached, and that frequency recorded. The process is repeated for the highest frequency data points (starting at the highest frequency, at the right side of the span, and going down in frequency). This frequency is then recorded. The difference between the two recorded frequencies is the occupied bandwidth (or the 99% emission bandwidth).

#### **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.
- 5. Use the OBW test function test the 99% Occupied bandwidth.

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2020-01-09	2021-03-26
yzjingcheng	Coaxial Cable	KTRFBU-141- 50	41005012	Each Time	/

#### **Test Equipment List and Details**

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

#### **Test Data**

#### **Environmental Conditions**

Temperature:	24.2°C
<b>Relative Humidity:</b>	40%
ATM Pressure:	101.9Pa
Tester:	Fay Hu
Test Date:	2020-04-14

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

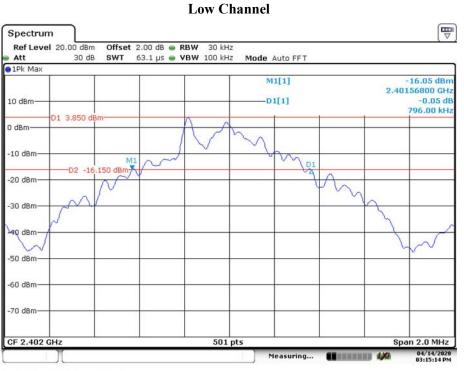
Report No.: RDG191226022-00F

Test Mode: Transmitting

Mode	Channel	Frequency (MHz)	20 dB Bandwidth (MHz)	99% Bandwidth (MHz)
BDR Mode (GFSK)	Low	2402	0.796	0.842
	Middle	2441	0.800	0.850
	High	2480	0.796	0.834
	Low	2402	1.136	1.090
EDR Mode $(\pi/4-DQPSK)$	Middle	2441	1.140	1.094
(/// 1 DQ1 51K)	High	2480	1.140	1.094
	Low	2402	1.160	1.106
EDR Mode (8DPSK)	Middle	2441	1.160	1.110
(001 5K)	High	2480	1.160	1.106

#### 20 dB Bandwidth

BDR Mode (GFSK):



Date: 14.APR.2020 15:15:15

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#### Report No.: RDG191226022-00F



**Middle Channel** 

Date: 14.APR.2020 15:16:31

#### **High Channel**



Date: 14.APR.2020 15:17:44

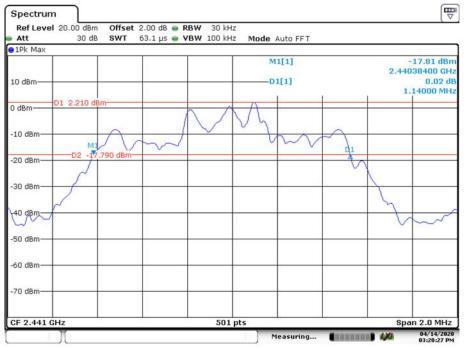
#### 2EDR Mode ( $\pi$ /4-DQPSK):

₩ Spectrum Ref Level 20.00 dBm Att 30 dB Mode Auto FFT ●1Pk Max M1[1] -18.82 dBm 2.40138800 GHz 10 dBm-D1[1] -0.44 dE 1.13600 MHz U dBm-D1 0.940 d -10 dBm Ň 1 -20 dBm-=D2 060 dB -30 dBm 40 dBm-A -50 dBm--60 dBm--70 dBm-CF 2.402 GHz 501 pts Span 2.0 MHz 04/14/2020 03:27:01 PM Measuring... 

Low Channel

Date: 14.APR.2020 15:27:01

#### **Middle Channel**



Date: 14.APR.2020 15:20:27

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#### Report No.: RDG191226022-00F



#### **High Channel**

Date: 14.APR.2020 15:19:11

#### 3EDR Mode (8DPSK):

#### Low Channel



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#### Report No.: RDG191226022-00F



**Middle Channel** 

Date: 14.APR.2020 15:30:02

#### **High Channel**



Date: 14.APR.2020 15:31:10

### Report No.: RDG191226022-00F

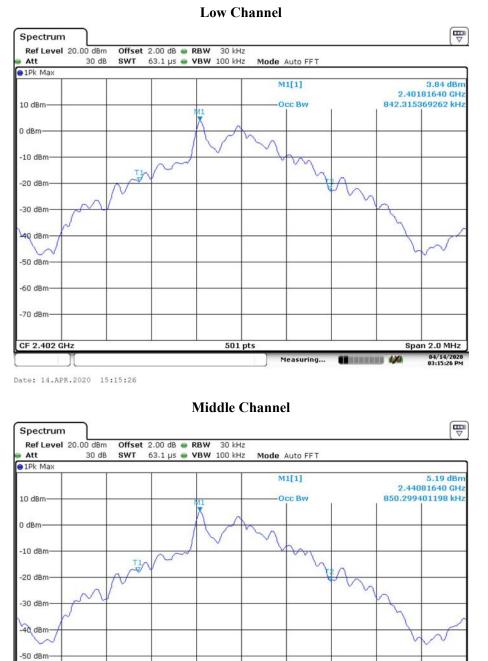
# 99% dB Bandwidth

-60 dBm--70 dBm-

CF 2.441 GHz

Date: 14.APR.2020 15:16:43

BDR Mode (GFSK):



501 pts

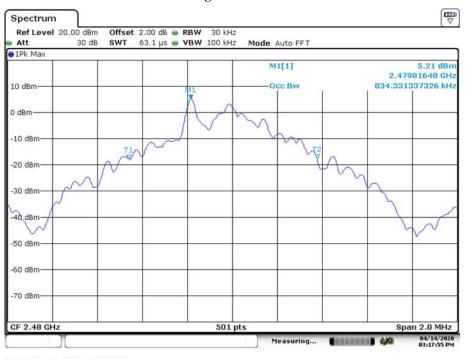
Measuring...

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Span 2.0 MHz

04/14/2020 03:16:43 PM

### Report No.: RDG191226022-00F



# **High Channel**

Date: 14.APR.2020 15:17:55

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

#### Low Channel ₩ Spectrum Ref Level 20.00 dBm Att 30 dB Offset 2.00 dB 🖷 RBW 30 kHz Att SWT 63.1 µs 👄 VBW 100 kHz Mode Auto FFT 91Pk Max M1[1] 0.93 dBm 2.40209580 GHz 1.089820359 MHz 10 dBm Occ Bw M1 0 dBm -10 dBm-1 -20 dBm -30 dBm 40 dBm -50 dBm--60 dBm--70 dBm-CF 2.402 GHz 501 pts Span 2.0 MHz 04/14/2020 03:27:12 PM Measuring...

Date: 14.APR.2020 15:27:12

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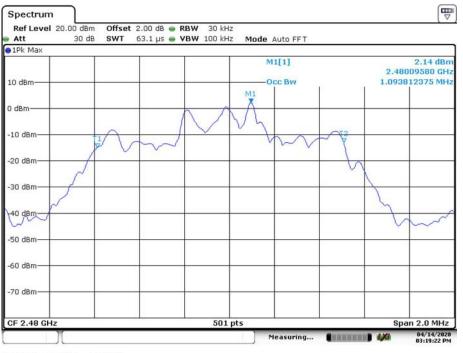
### Report No.: RDG191226022-00F



### **Middle Channel**

Date: 14.APR.2020 15:20:38

### **High Channel**



Date: 14.APR.2020 15:19:22

### Report No.: RDG191226022-00F

# EDR Mode (8DPSK):

₩ Spectrum Ref Level 20.00 dBm Att 30 dB Mode Auto FFT ●1Pk Max M1[1] 0.81 dBm 2.40197210 GHz 10 dBm-Occ Bw 1.105788423 MHz M1 0 dBm X -10 dBm T2 -20 dBm--30 dBm 40 dBm -50 dBm -60 dBm--70 dBm-CF 2.402 GHz 501 pts Span 2.0 MHz 04/14/2020 03:28:40 PM Measuring... 

Low Channel

Date: 14.APR.2020 15:28:40

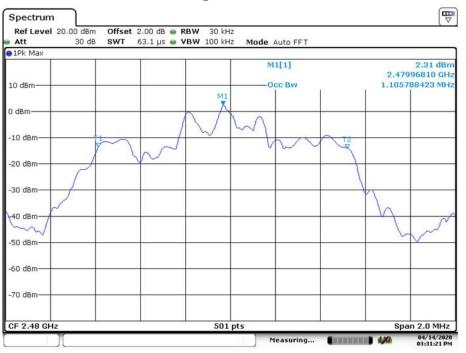
### **Middle Channel**



Date: 14.APR.2020 15:30:10

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### Report No.: RDG191226022-00F



**High Channel** 

Date: 14.APR.2020 15:31:21

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# FCC §15.247(a) (1) (iii), RSS-247 CLAUSE 5.1 d) - QUANTITY OF HOPPING CHANNEL TEST

## **Applicable Standard**

According to FCC §15.247(a) (1) (iii), RSS-247 Clause 5.1 d)

Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

# **Test Procedure**

- 1. Check the calibration of the measuring instrument (SA) using either an internal calibrator or a known signal from an external generator.
- 2. Set the EUT in hopping mode from first channel to last.
- 3. By using the Max-Hold function record the Quantity of the channel.

## **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2020-01-09	2021-03-26
yzjingcheng	Coaxial Cable	KTRFBU-141- 50	41005012	Each Time	/

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

# **Test Data**

### **Environmental Conditions**

Temperature:	24.2°C
<b>Relative Humidity:</b>	40%
ATM Pressure:	101.9Pa
Tester:	Fay Hu
Test Date:	2020-04-14

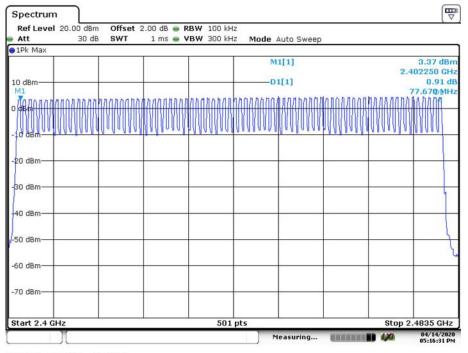
Test Result: Compliance.

Please refer to following tables and plots

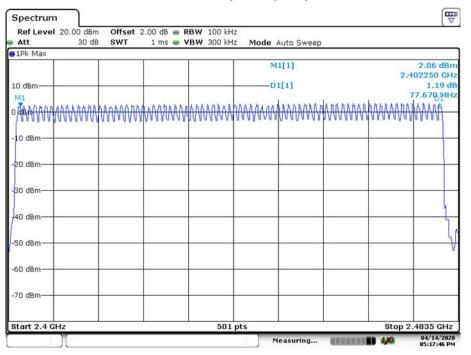
# Test Mode: Transmitting

Test mode	Frequency Range (MHz)	Number of Hopping Channel	Limit
GFSK	2400-2483.5	79	≥15
$\pi/4$ -DQPSK	2400-2483.5	79	≥15
8DPSK	2400-2483.5	79	≥15

### **BDR Mode (GFSK)**



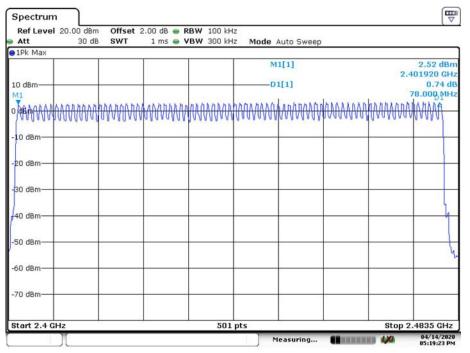
Date: 14.APR.2020 17:16:32



### EDR Mode (π/4-DQPSK)

Date: 14.APR.2020 17:17:47

### EDR Mode (8DPSK)



Date: 14.APR.2020 17:19:24

# FCC §15.247(a) (1) (iii), RSS-247 CLAUSE 5.1 d) - TIME OF OCCUPANCY (DWELL TIME)

### **Applicable Standard**

According to FCC §15.247(a) (1) (iii), RSS-247 Clause 5.1 d):

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; the time of single pulses was tested.

### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2020-01-09	2021-03-26
yzjingcheng	Coaxial Cable	KTRFBU-141- 50	41005012	Each Time	/

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

## **Test Data**

### **Environmental Conditions**

Temperature:	24.2°C
<b>Relative Humidity:</b>	40%
ATM Pressure:	101.9Pa
Tester:	Fay Hu
Test Date:	2020-04-14

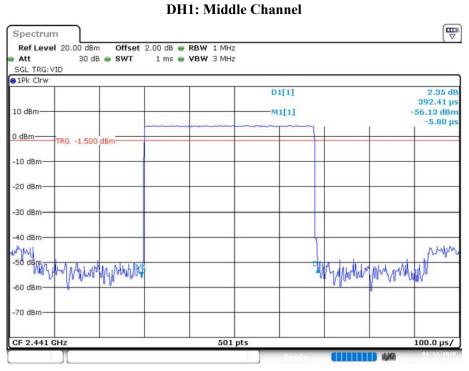
### Test Result: Compliance.

Please refer to following tables and plots

Mode	Packet type	Channel	Frequency (MHz)	Puse width (ms)	Result (s)	Limit (s)
	DH1	Middle	2441	0.392	0.126	(3)
GFSK	DH3	Middle	2441	1.655	0.265	
	DH5	Middle	2441	2.921	0.312	
14	2DH1	Middle	2441	0.398	0.127	
$\pi/4-$ DQPSK	2DH3	Middle	2441	1.667	0.267	0.4
DQFSK	2DH5	Middle	2441	2.911	0.311	
	3DH1	Middle	2441	0.400	0.128	
8DPSK	3DH3	Middle	2441	1.660	0.266	
	3DH5	Middle	2441	2.949	0.315	
Note:						
DH1:Dwell time=Pulse time (ms) $\times$ (1600/2/79) $\times$ 31.6 s						
DH3:Dwell time=Pulse time (ms) $\times$ (1600/4/79) $\times$ 31.6 s						
DH5:Dwell t	ime=Pulse tin	ne (ms) $\times$ (16	500/6/79) ×31.6 s			

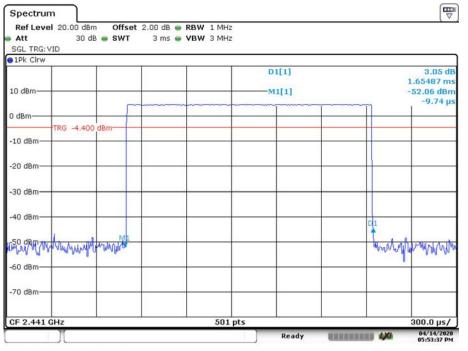
### Test Mode: Transmitting

### BDR Mode (GFSK):



Date: 14.APR.2020 17:35:38

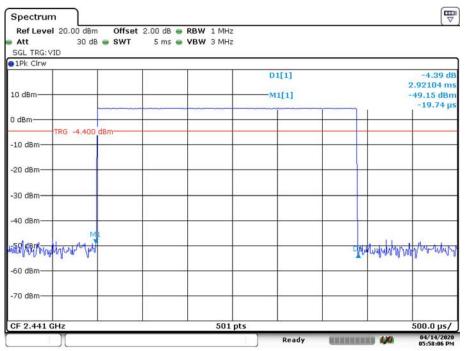
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**DH3: Middle Channel** 

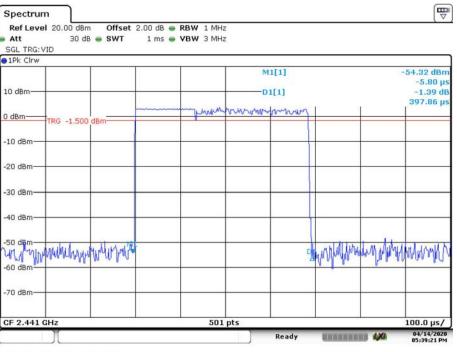
Date: 14.APR.2020 17:53:38





Date: 14.APR.2020 17:58:07

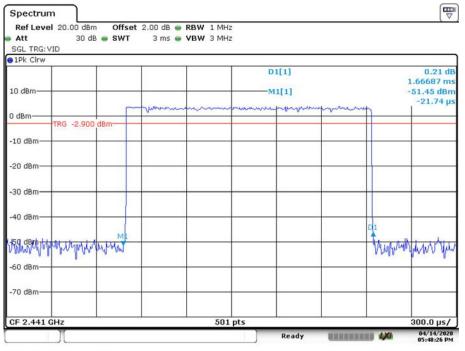
# 2EDR Mode ( $\pi$ /4-DQPSK):



### **2DH1: Middle Channel**

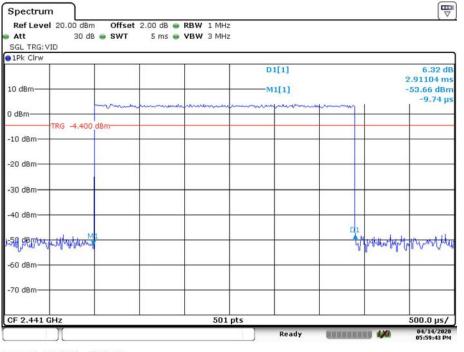
Date: 14.APR.2020 17:39:22

### 2DH3: Middle Channel



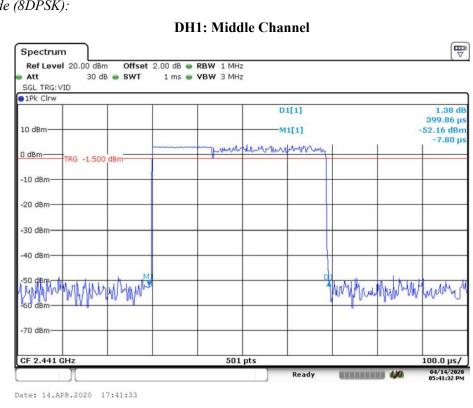
Date: 14.APR.2020 17:48:27

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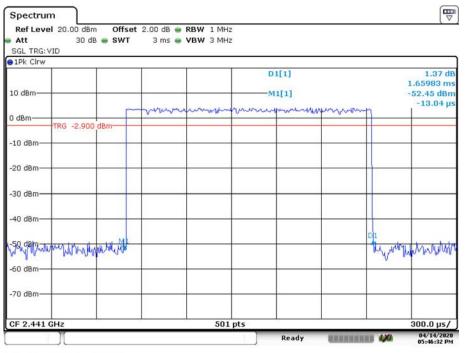


**2DH5: Middle Channel** 

Date: 14.APR.2020 17:59:44



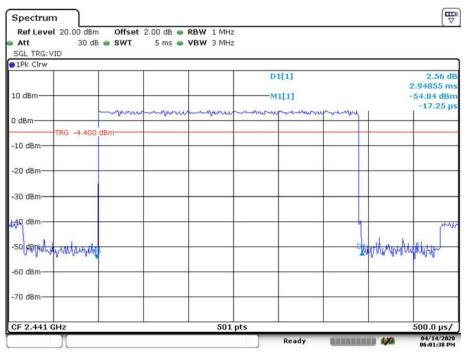
## 3EDR Mode (8DPSK):



#### **DH3: Middle Channel**

Date: 14.APR.2020 17:46:32

### **DH5: Middle Channel**



Date: 14.APR.2020 18:01:38

# FCC §15.247(b) (1), RSS-247 CLAUSE 5.4 b) - 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

According to RSS-247 Clause 5.4 b)

b) For FHSs operating in the band 2400-2483.5 MHz, the maximum peak conducted output power shall not exceed 1.0 W if the hopset uses 75 or more hopping channels; the maximum peak conducted output power shall not exceed 0.125 W if the hopset uses less than 75 hopping channels. The e.i.r.p. shall not exceed 4 W, except as provided in section 5.4(e).

## **Test Procedure**

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

### **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
E-Microwave	Blocking Control	EMDCB- 00036	0E01201048	Each Time	/
Agilent	USB Wideband Power Sensor	U2021XA	MY5425009	2019-05-09	2020-05-09

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

# **Test Data**

### **Environmental Conditions**

Temperature:	24.2°C
<b>Relative Humidity:</b>	40%
ATM Pressure:	101.9Pa
Tester:	Fay Hu
Test Date:	2020-04-14

Test Result: Compliance.

### Report No.: RDG191226022-00F

### Test Mode: Transmitting

Mode	Frequency (MHz)	Peak Conducted Output power (dBm)	Limit (dBm)
	2402	4.18	21
BDR Mode (GFSK)	2441	5.52	21
(OI SK)	2480	5.54	21
	2402	2.99	21
EDR Mode $(\pi/4-DQPSK)$	2441	4.39	21
$(M_{4}-DQ_{1}SK)$	2480	4.25	21
EDR Mode (8DPSK)	2402	2.73	21
	2441	4.32	21
	2480	4.20	21

Note: The data above was tested in conducted mode and the antenna gain is 2.5 dBi, so it meets the EIRP limit for ISED.

# FCC §15.247(d), RSS-247 CLAUSE 5.5 - BAND EDGES TESTING

## **Applicable Standard**

According to FCC §15.247(d):

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)).

### According to RSS-247 Clause 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated device is operating, the RF power that is produced 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 that the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of root-mean-square averaging over a time interval, as permitted under section 5.4(d), the attenuation required shall be 30 dB instead of 20 dB. Attenuation below the general field strength limits specified in RSS-Gen is not required.

## **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/ VBW of spectrum analyzer to 100/300 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.

### Report No.: RDG191226022-00F

# **Test Equipment List and Details**

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSV40	101474	2020-01-09	2021-03-26
yzjingcheng	Coaxial Cable	KTRFBU-141- 50	41005012	Each Time	/

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

## **Test Data**

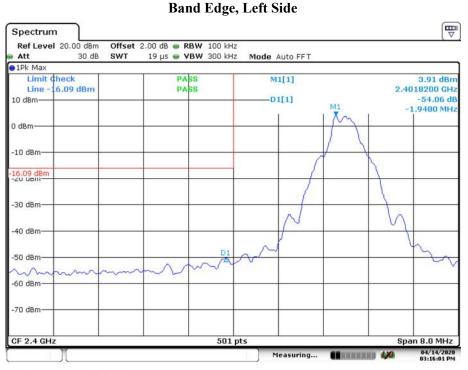
### **Environmental Conditions**

Temperature:	24.2°C
<b>Relative Humidity:</b>	40%
ATM Pressure:	101.9Pa
Tester:	Fay Hu
Test Date:	2020-04-14

Test Result: Compliance

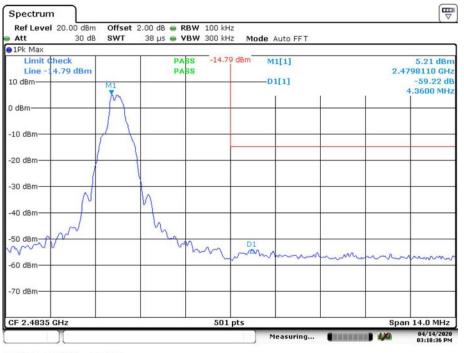
### Report No.: RDG191226022-00F

## Single mode: BDR Mode (GFSK):



Date: 14.APR.2020 15:16:01

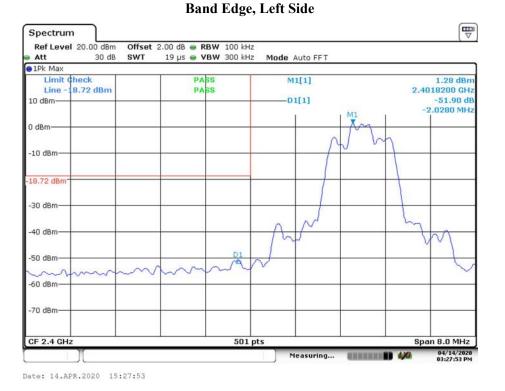
## Band Edge, Right Side



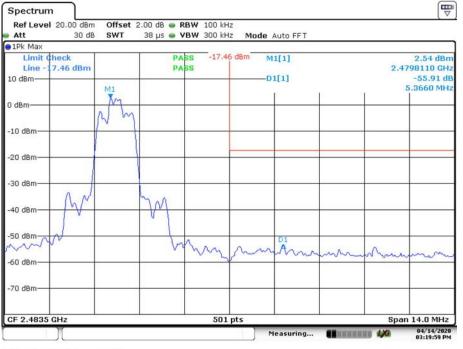
Date: 14.APR.2020 15:18:36

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# 2EDR Mode ( $\pi$ /4-DQPSK):



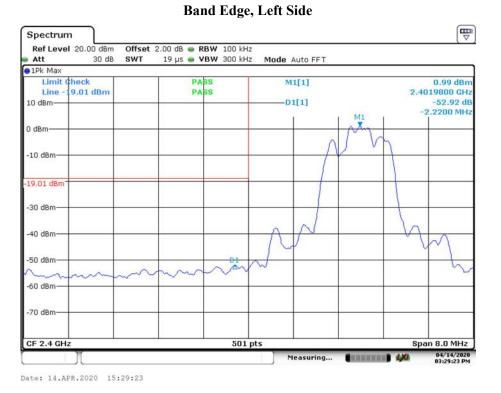
# Band Edge, Right Side



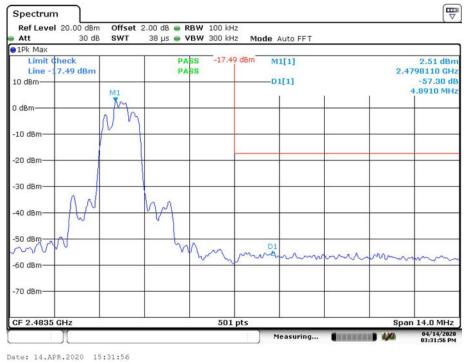
Date: 14.APR.2020 15:19:59

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## 3EDR Mode (8DPSK):

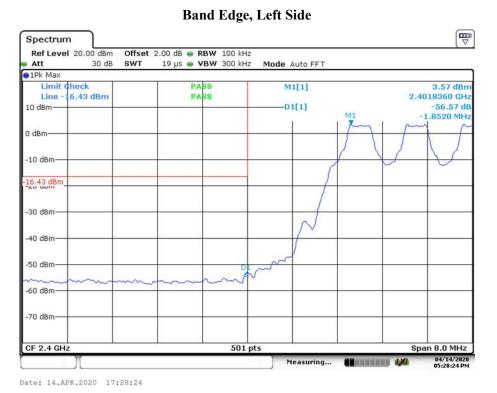


# Band Edge, Right Side

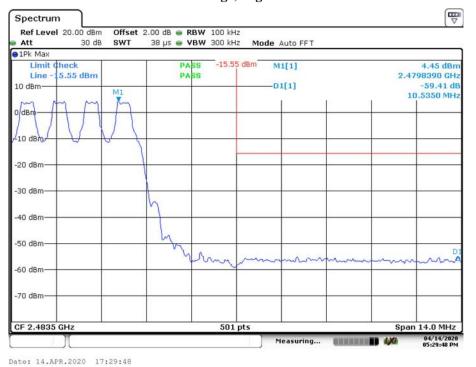


### Report No.: RDG191226022-00F

## Hopping mode: BDR Mode (GFSK):



### Band Edge, Right Side

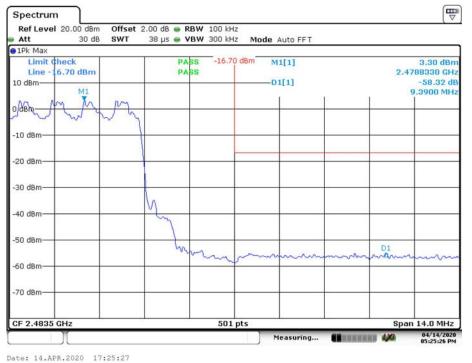


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# 2EDR Mode ( $\pi$ /4-DQPSK):



# Band Edge, Right Side



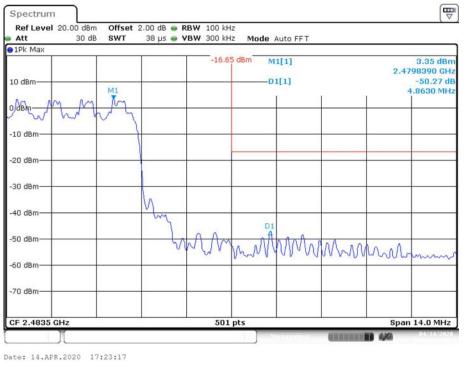


### Report No.: RDG191226022-00F

## 3EDR Mode (8DPSK):



# Band Edge, Right Side



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

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