

## FCC Part 15.247

## Test Information:

<b>Serial No.:</b>	2DCS-3	<b>Test Date:</b>	2024-01-04
<b>Test Site:</b>	RF	<b>Test Mode:</b>	Transmitting
<b>Tester:</b>	Lingling Li	<b>Test Result:</b>	Pass

## Environmental Conditions:

<b>Temperature:</b> (°C)	26.3	<b>Relative Humidity:</b> (%)	55	<b>ATM Pressure:</b> (kPa)	101.5
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## Test Equipment List and Details:

Manufacturer	Description	Model	Serial Number	Calibration Date	Calibration Due Date
R&S	Spectrum Analyzer	FSU26	100147	2023-03-31	2024-03-30
zhuoxiang	Coaxial Cable	SMA-178	211001	Each time	N/A

\* Statement of Traceability: China Certification ICT Co., Ltd (Dongguan) attests that all calibrations have been performed, traceable to National Primary Standards and International System of Units (SI).

Reviewer: panda sun

**20 dB Emission Bandwidth****BDR**

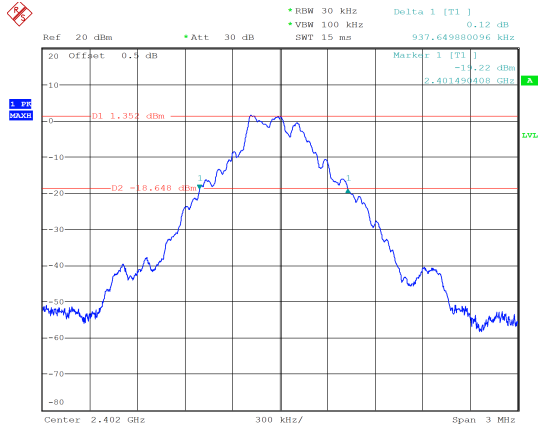
<b>Mode</b>	<b>Value (MHz)</b>	<b>Result</b>
GFSK_Low	0.938	Pass
GFSK_Middle	0.933	Pass
GFSK_High	0.933	Pass

**EDR**

<b>Mode</b>	<b>Value (MHz)</b>	<b>Result</b>
PI/4-DQPSK_Low	1.242	Pass
PI/4-DQPSK_Middle	1.245	Pass
PI/4-DQPSK_High	1.240	Pass
8DPSK_Low	1.228	Pass
8DPSK_Middle	1.221	Pass
8DPSK_High	1.218	Pass

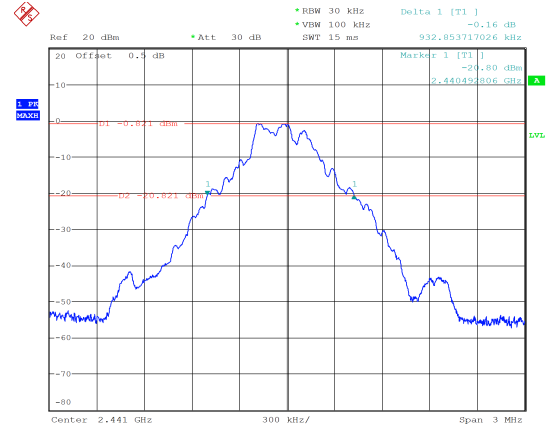
BDR

GFSK\_Low 0.938 MHz



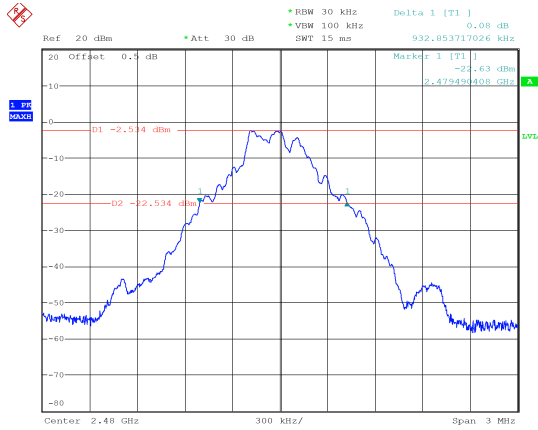
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:32:30

GFSK\_Middle 0.933 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:37:02

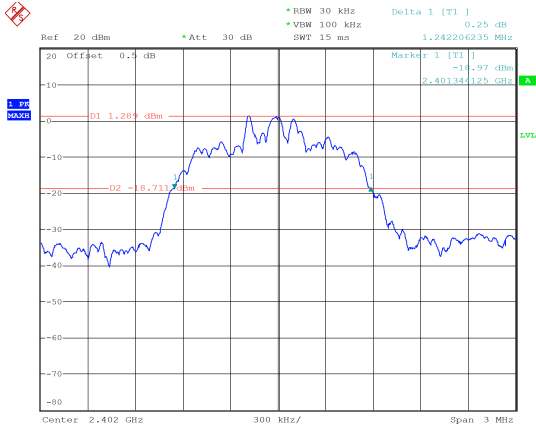
GFSK\_High 0.933 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:41:20

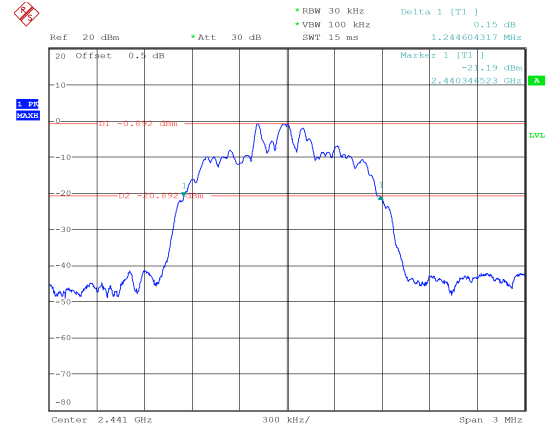
EDR

PI/4-DQPSK\_Low 1.242 MHz



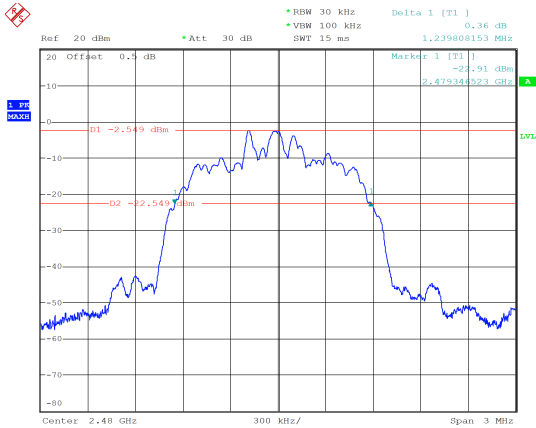
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 10:50:48

PI/4-DQPSK\_Middle 1.245 MHz



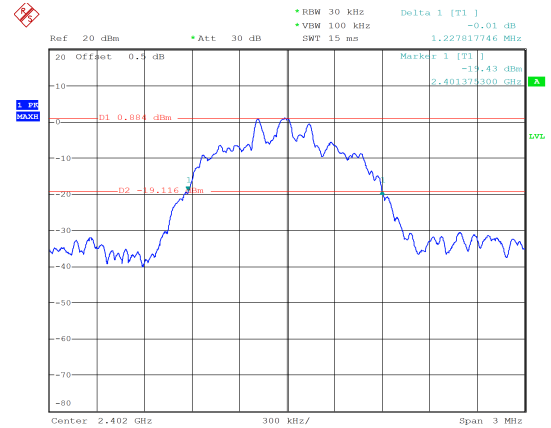
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 10:54:22

PI/4-DQPSK\_High 1.240 MHz



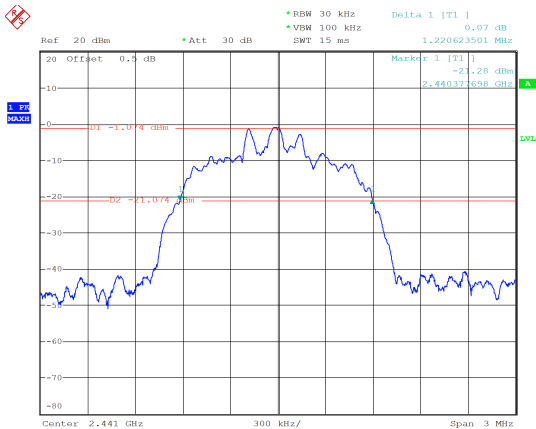
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 10:59:47

8DPSK\_Low 1.228 MHz



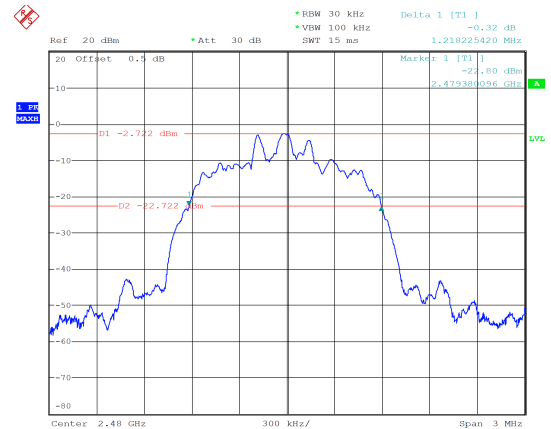
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:13:52

8DPSK\_Middle 1.221 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:16:35

8DPSK\_High 1.218 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:24:17

**99% Occupied Bandwidth****BDR**

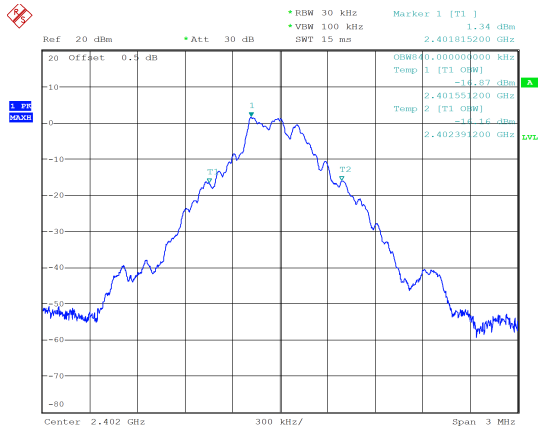
<b>Mode</b>	<b>99% OBW (MHz)</b>
GFSK_Low	0.840
GFSK_Middle	0.838
GFSK_High	0.835

**EDR**

<b>Mode</b>	<b>99% OBW (MHz)</b>
PI/4-DQPSK_Low	1.162
PI/4-DQPSK_Middle	1.138
PI/4-DQPSK_High	1.133
8DPSK_Low	1.154
8DPSK_Middle	1.128
8DPSK_High	1.121

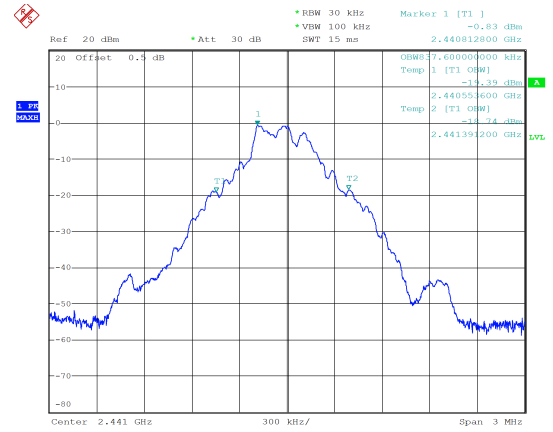
BDR

GFSK\_Low 0.840 MHz



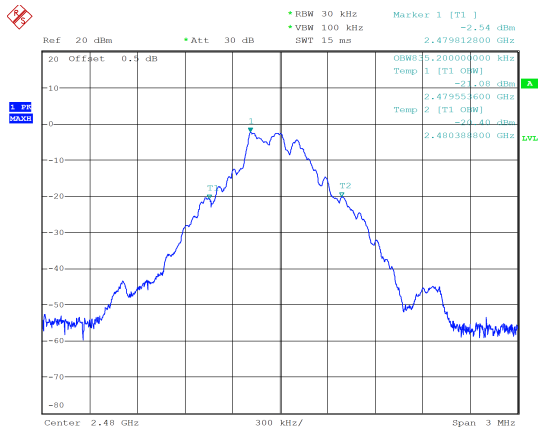
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 10:33:10

GFSK\_Middle 0.838 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 10:37:36

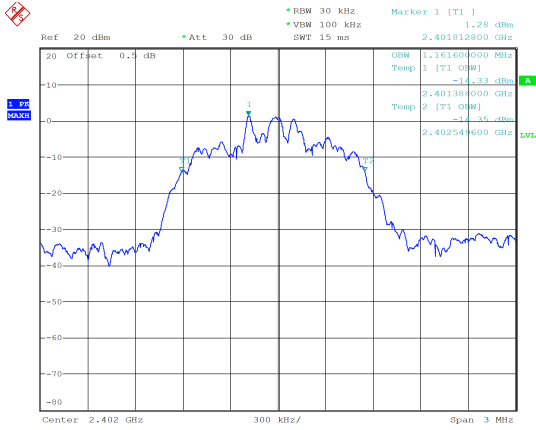
GFSK\_High 0.835 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 10:42:00

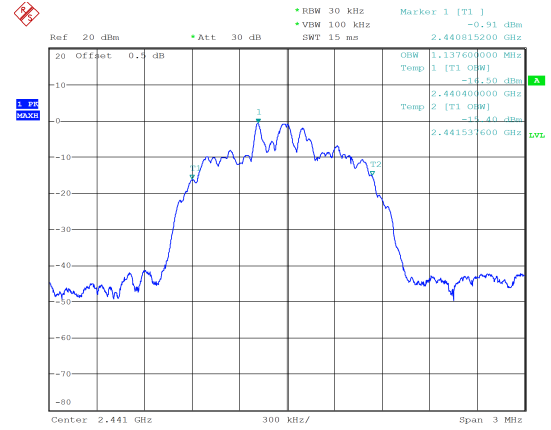
EDR

PI/4-DQPSK\_Low 1.162 MHz



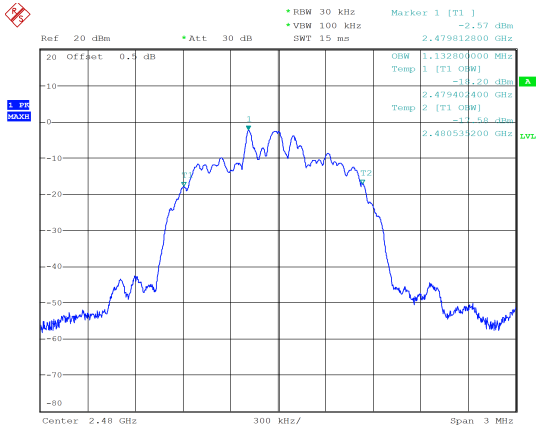
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 10:51:17

PI/4-DQPSK\_Middle 1.138 MHz



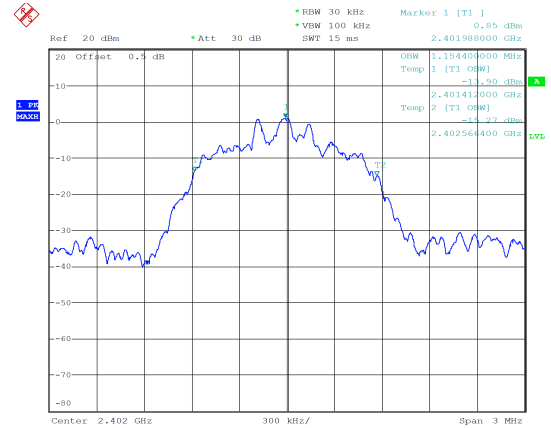
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 10:54:52

PI/4-DQPSK\_High 1.133 MHz



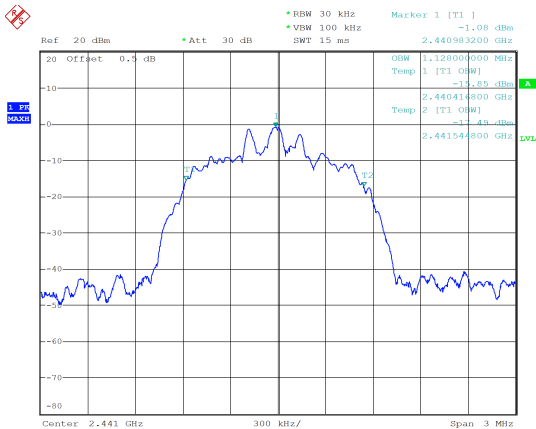
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:00:22

8DPSK\_Low 1.154 MHz



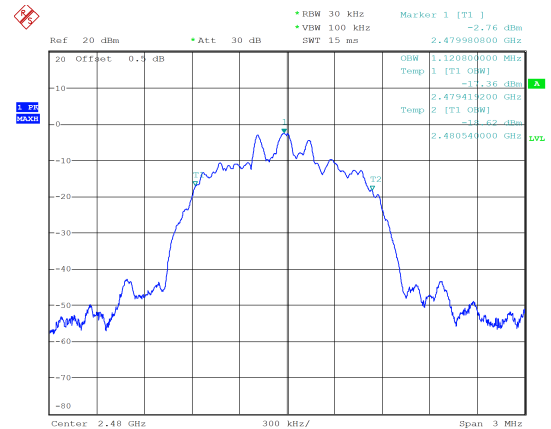
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:14:22

8DPSK\_Middle 1.128 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:17:06

8DPSK\_High 1.121 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:25:04

**Channel Separation****BDR**

<b>Mode</b>	<b>Value (MHz)</b>	<b>Limit (MHz)</b>	<b>Result</b>
GFSK_Low	1.002	0.625	Pass
GFSK_Middle	1.002	0.622	Pass
GFSK_High	1.002	0.622	Pass

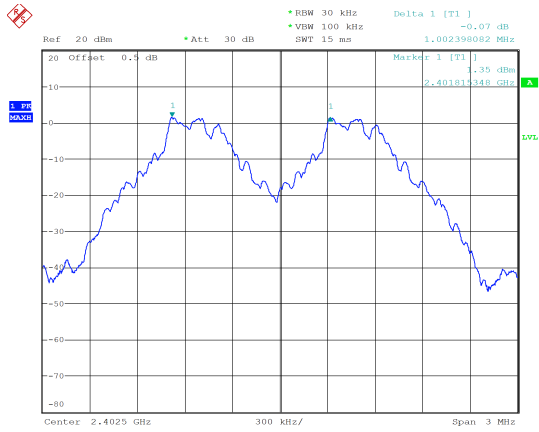
**EDR**

<b>Mode</b>	<b>Value (MHz)</b>	<b>Limit (MHz)</b>	<b>Result</b>
PI/4-DQPSK_Low	1.002	0.828	Pass
PI/4-DQPSK_Middle	1.002	0.830	Pass
PI/4-DQPSK_High	1.002	0.827	Pass
8DPSK_Low	1.007	0.819	Pass
8DPSK_Middle	1.005	0.814	Pass
8DPSK_High	1.002	0.812	Pass



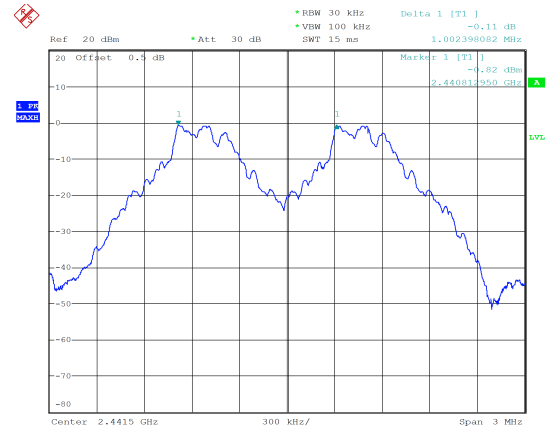
BDR

GFSK\_Low 1.002 MHz



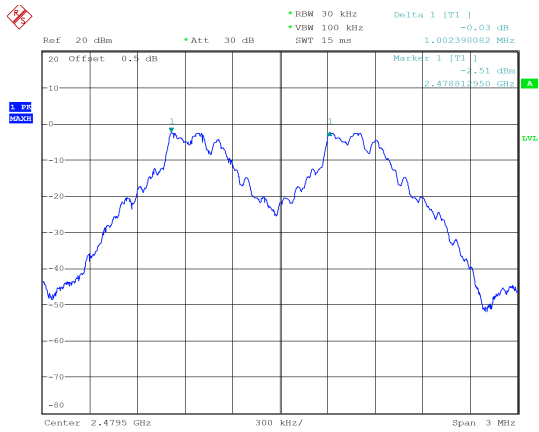
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:34:08

GFSK\_Middle 1.002 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:38:42

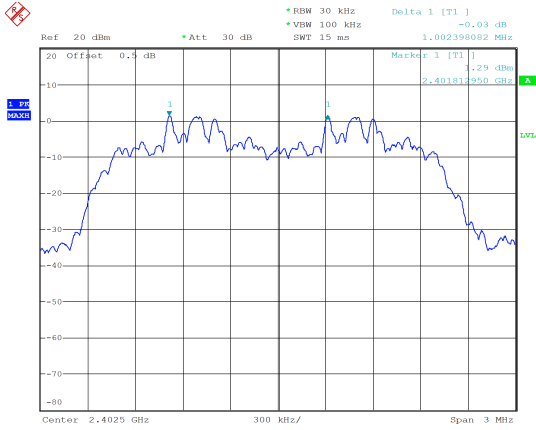
GFSK\_High 1.002 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:42:58

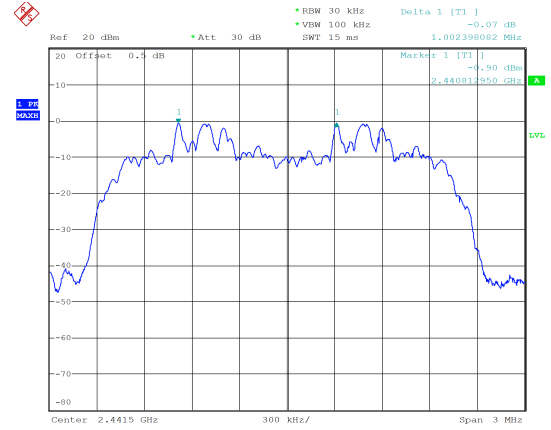
EDR

PI/4-DQPSK\_Low 1.002 MHz



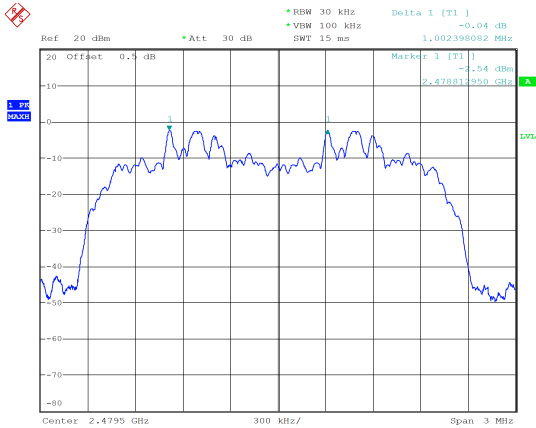
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:53:10

PI/4-DQPSK\_Middle 1.002 MHz



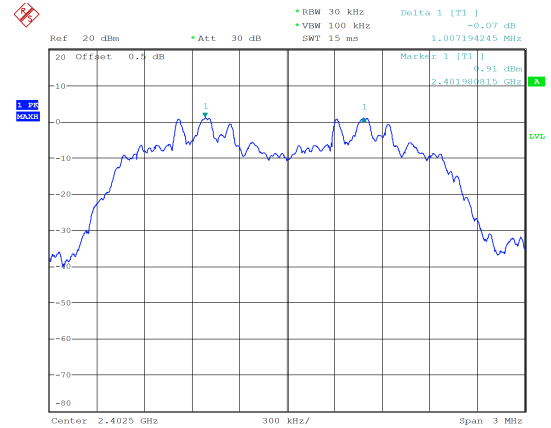
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:55:49

PI/4-DQPSK\_High 1.002 MHz



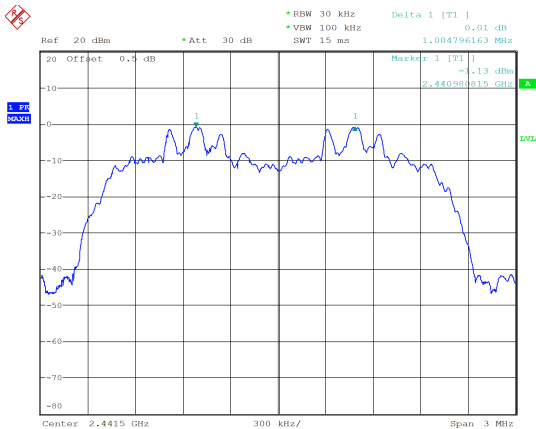
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:01:30

8DPSK\_Low 1.007 MHz



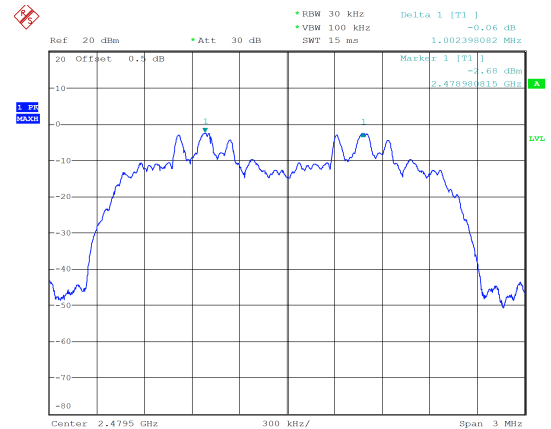
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:15:07

8DPSK\_Middle 1.005 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:21:35

8DPSK\_High 1.002 MHz



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:25:57

**Number of Hopping Frequency****BDR**

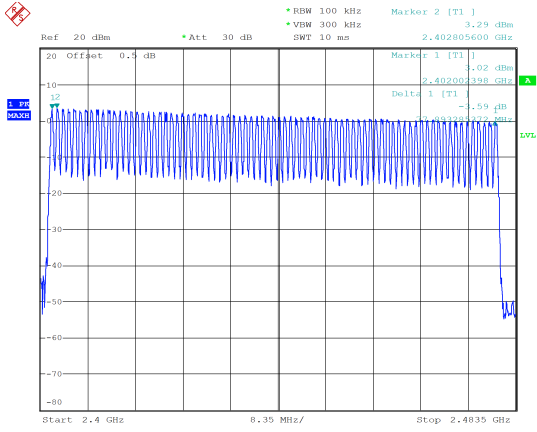
<b>Mode</b>	<b>Value</b>	<b>Limit</b>	<b>Result</b>
GFSK_Hopping	79	15	Pass

**EDR**

<b>Mode</b>	<b>Value</b>	<b>Limit</b>	<b>Result</b>
PI/4-DQPSK_Hopping	79	15	Pass
8DPSK_Hopping	79	15	Pass

BDR

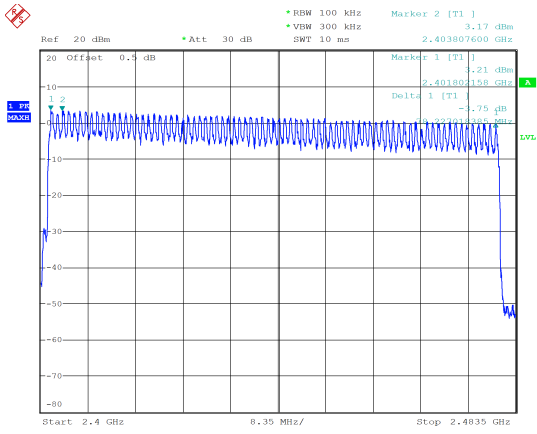
### GFSK\_Hopping 79



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 13:20:03

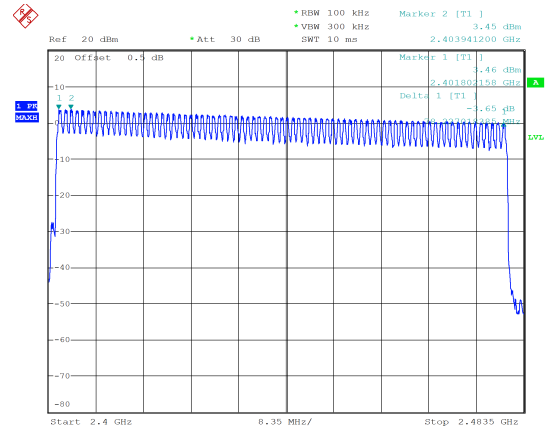
EDR

### PI/4-DQPSK\_Hopping 79



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 13:27:20

### 8DPSK\_Hopping 79



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 13:06:21

**Time of Occupancy (dwell time)****BDR**

Mode	Pulse width (ms)	Dwell time (s)	Limit (s)	Result
GFSK_Hopping_DH1	0.406	0.130	0.400	Pass
GFSK_Hopping_DH3	1.669	0.267	0.400	Pass
GFSK_Hopping_DH5	2.922	0.312	0.400	Pass

**EDR**

Mode	Pulse width (ms)	Dwell time (s)	Limit (s)	Result
PI/4-DQPSK_Hopping_2DH1	0.416	0.133	0.400	Pass
PI/4-DQPSK_Hopping_2DH3	1.674	0.268	0.400	Pass
PI/4-DQPSK_Hopping_2DH5	2.926	0.312	0.400	Pass
8DPSK_Hopping_3DH1	0.417	0.134	0.400	Pass
8DPSK_Hopping_3DH3	1.674	0.268	0.400	Pass
8DPSK_Hopping_3DH5	2.934	0.313	0.400	Pass

**Note:**

**DH1:**Dwell time=Pulse time (ms) × (1600/2/79) ×31.6 s

**DH3:**Dwell time=Pulse time (ms) × (1600/4/79) ×31.6 s

**DH5:**Dwell time=Pulse time (ms) × (1600/6/79) ×31.6 s

**2DH1:** Dwell time=Pulse time (ms) × (1600/2/79) ×31.6 s

**2DH3:** Dwell time=Pulse time (ms) × (1600/4/79) ×31.6 s

**2DH5:** Dwell time=Pulse time (ms) × (1600/6/79) ×31.6 s

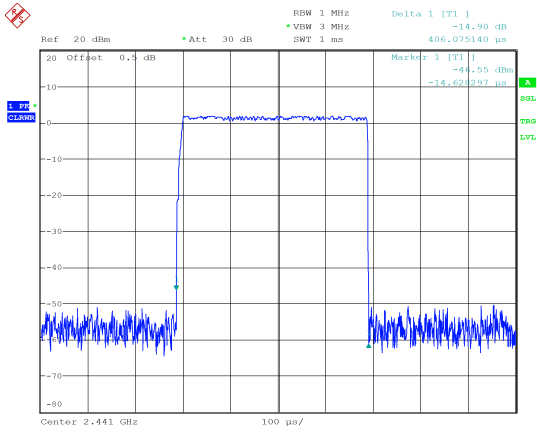
**3DH1:** Dwell time=Pulse time (ms) × (1600/2/79) ×31.6 s

**3DH3:** Dwell time=Pulse time (ms) × (1600/4/79) ×31.6 s

**3DH5:** Dwell time=Pulse time (ms) × (1600/6/79) ×31.6 s

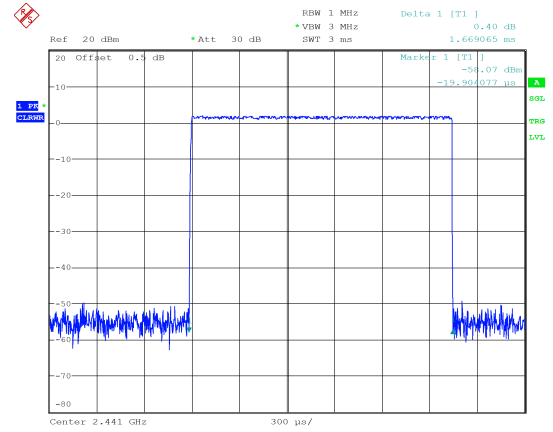
BDR

### GFSK\_Hopping\_DH1 0.406ms



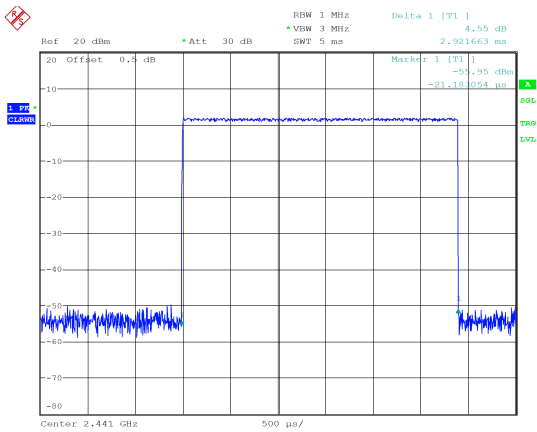
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:34:43

### GFSK\_Hopping\_DH3 1.669ms



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:45:02

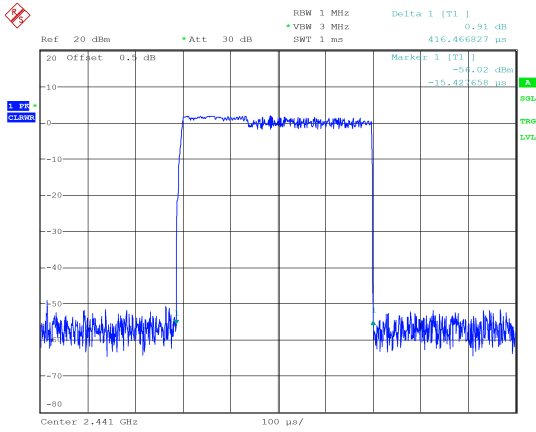
### GFSK\_Hopping\_DH5 2.922ms



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:46:24

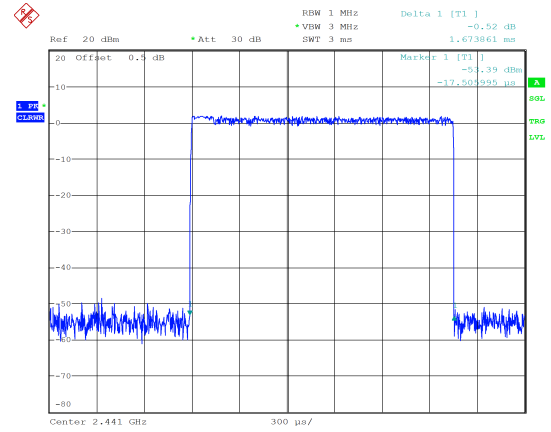
EDR

PI/4-DQPSK\_Hopping\_2DH1  
0.416ms



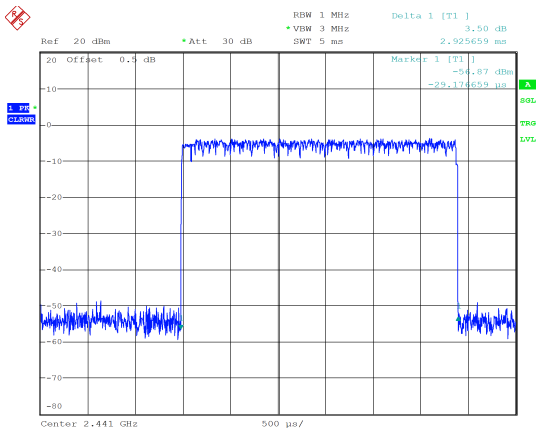
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:47:53

PI/4-DQPSK\_Hopping\_2DH3  
1.674ms



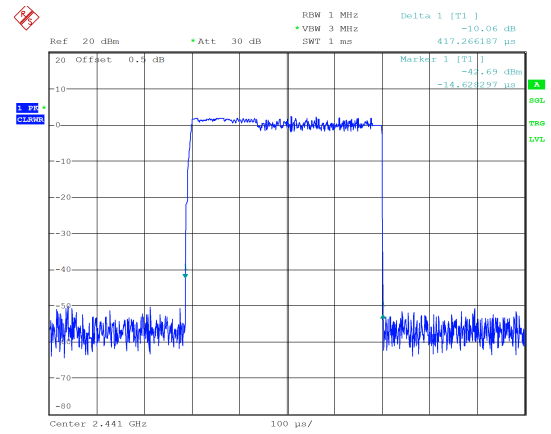
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 13:09:16

PI/4-DQPSK\_Hopping\_2DH5  
2.926ms



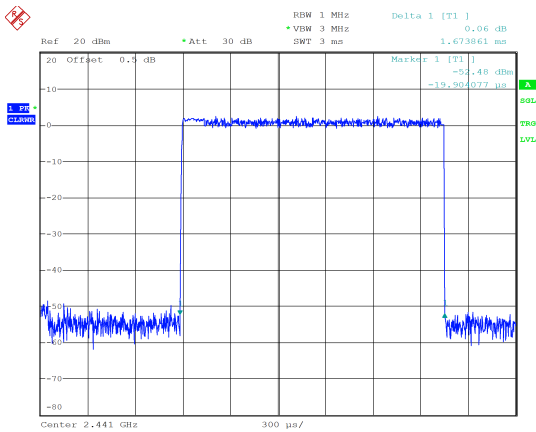
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 13:10:44

8DPSK\_Hopping\_3DH1  
0.417ms



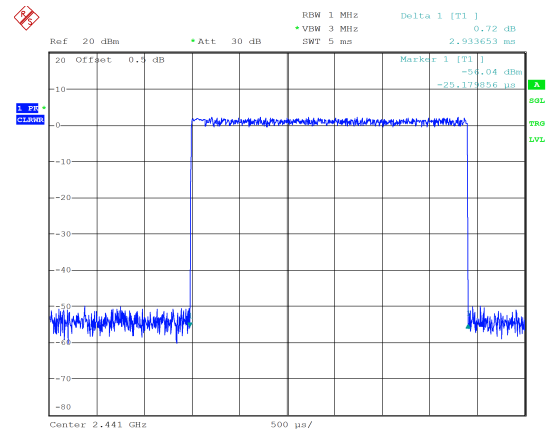
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:57:15

8DPSK\_Hopping\_3DH3  
1.674ms



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 13:11:59

8DPSK\_Hopping\_3DH5  
2.934ms



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 13:13:25



**Maximum Conducted Output Power****BDR**

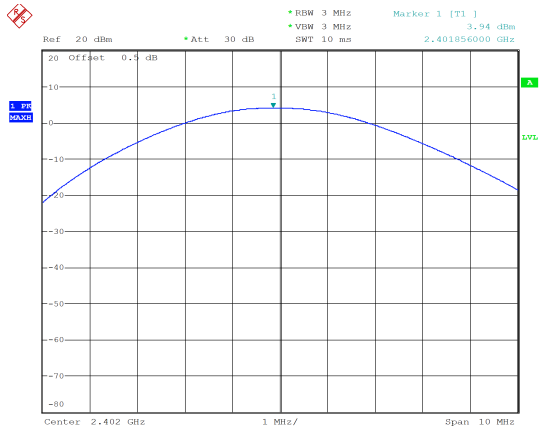
<b>Mode</b>	<b>Value (dBm)</b>	<b>Limit (dBm)</b>	<b>Result</b>
GFSK_Low	3.94	21.00	Pass
GFSK_Middle	1.89	21.00	Pass
GFSK_High	0.26	21.00	Pass

**EDR**

<b>Mode</b>	<b>Value (dBm)</b>	<b>Limit (dBm)</b>	<b>Result</b>
PI/4-DQPSK_Low	4.18	21.00	Pass
PI/4-DQPSK_Middle	2.29	21.00	Pass
PI/4-DQPSK_High	0.79	21.00	Pass
8DPSK_Low	4.55	21.00	Pass
8DPSK_Middle	2.80	21.00	Pass
8DPSK_High	1.34	21.00	Pass

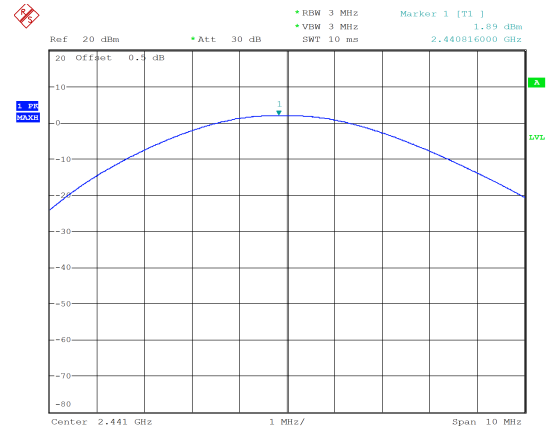
BDR

GFSK\_Low 3.94 dBm



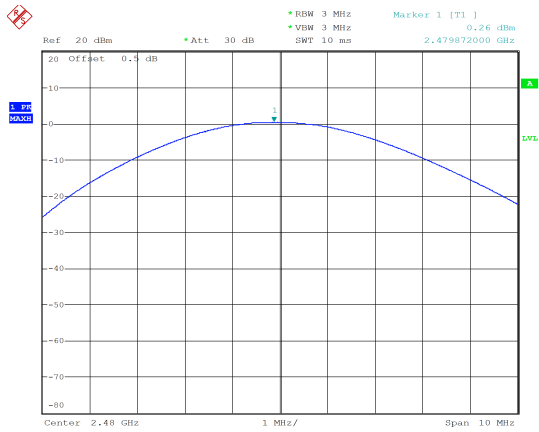
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:30:44

GFSK\_Middle 1.89 dBm



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:36:16

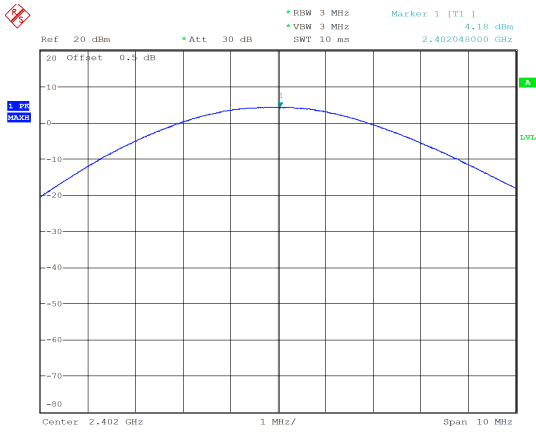
GFSK\_High 0.26 dBm



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:39:08

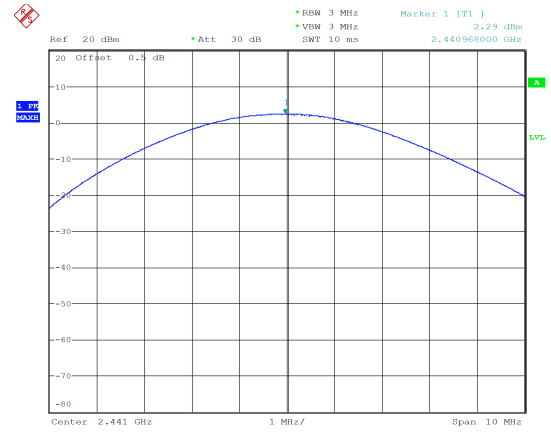
EDR

PI/4-DQPSK\_Low 4.18 dBm



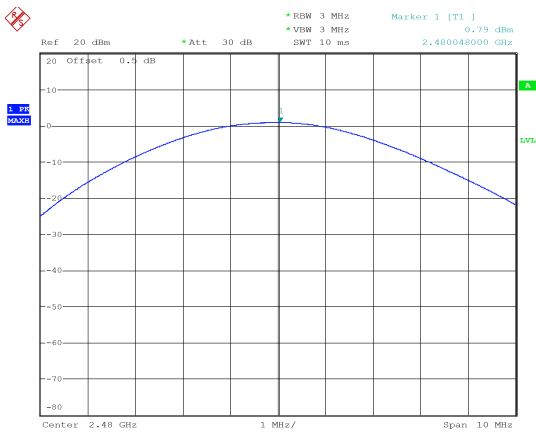
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 10:49:21

PI/4-DQPSK\_Middle 2.29 dBm



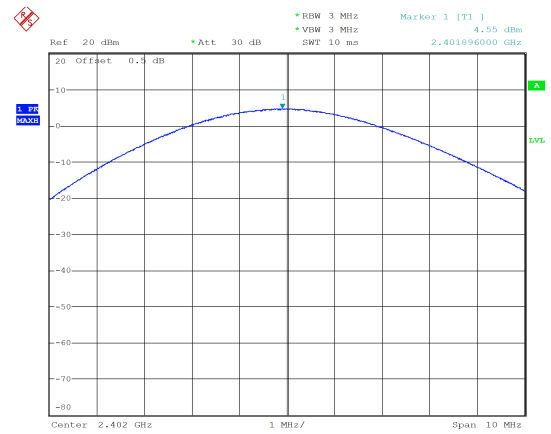
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 10:53:51

PI/4-DQPSK\_High 0.79 dBm



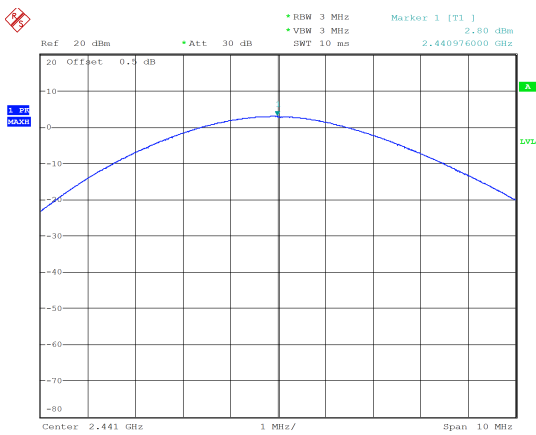
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 10:57:33

8DPSK\_Low 4.55 dBm



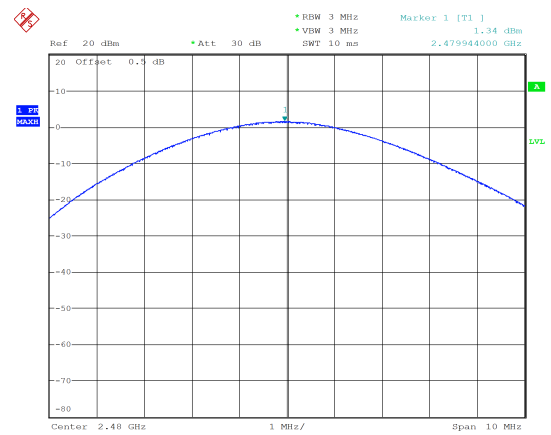
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:12:10

8DPSK\_Middle 2.80 dBm



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:16:10

8DPSK\_High 1.34 dBm



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
Date: 4.JAN.2024 11:22:03

**100 kHz Bandwidth of Frequency Band Edge****BDR**

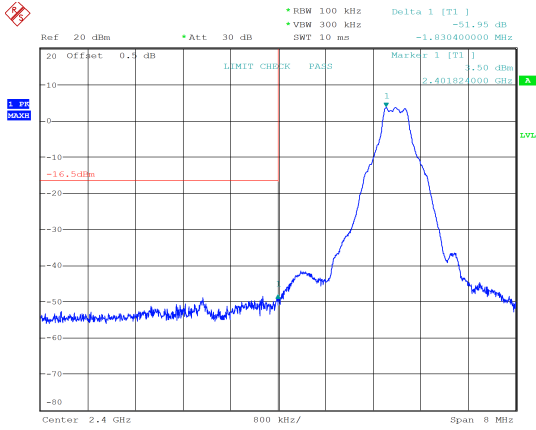
<b>Mode</b>	<b>Value (dB)</b>	<b>Limit (dB)</b>	<b>Result</b>
GFSK_Low	51.95	20.00	Pass
GFSK_High	52.02	20.00	Pass
GFSK_Hopping_Lower	52.89	20.00	Pass
GFSK_Hopping_Upper	52.40	20.00	Pass

**EDR**

<b>Mode</b>	<b>Value (dB)</b>	<b>Limit (dB)</b>	<b>Result</b>
PI/4-DQPSK_Low	43.35	20.00	Pass
PI/4-DQPSK_High	52.13	20.00	Pass
PI/4-DQPSK_Hopping_Lower	43.80	20.00	Pass
PI/4-DQPSK_Hopping_Upper	51.94	20.00	Pass
8DPSK_Low	45.17	20.00	Pass
8DPSK_High	51.31	20.00	Pass
8DPSK_Hopping_Lower	45.32	20.00	Pass
8DPSK_Hopping_Upper	52.07	20.00	Pass

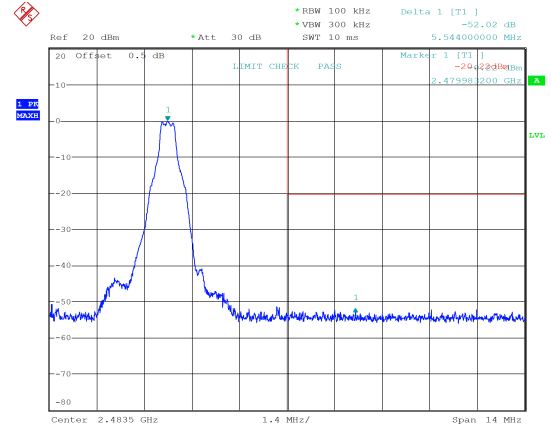
BDR

GFSK\_Low 51.95 dB



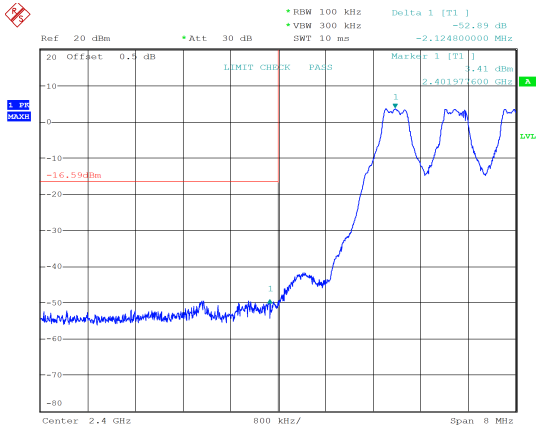
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:31:53

GFSK\_High 52.02 dB



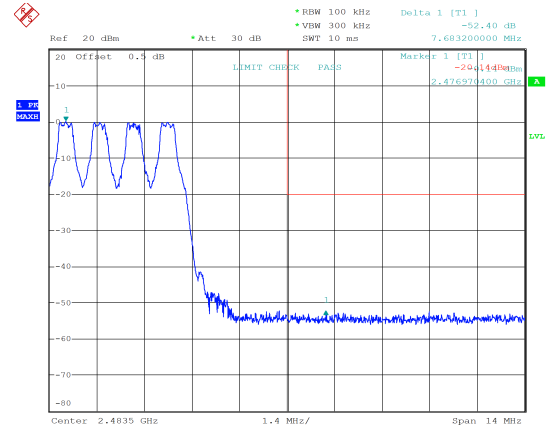
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:40:31

GFSK\_Hopping\_Lower 52.89 dB



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:44:46

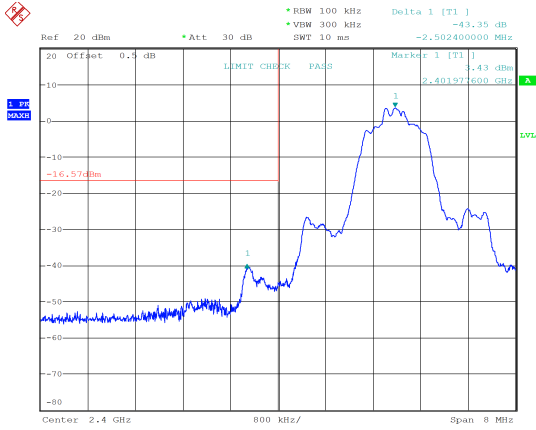
GFSK\_Hopping\_Upper 52.40 dB



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:46:24

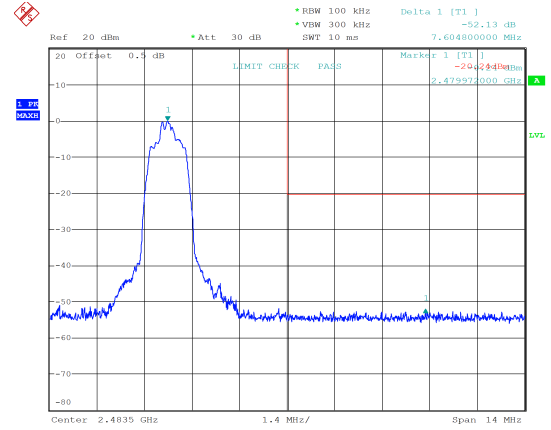
EDR

PI/4-DQPSK\_Low 43.35 dB



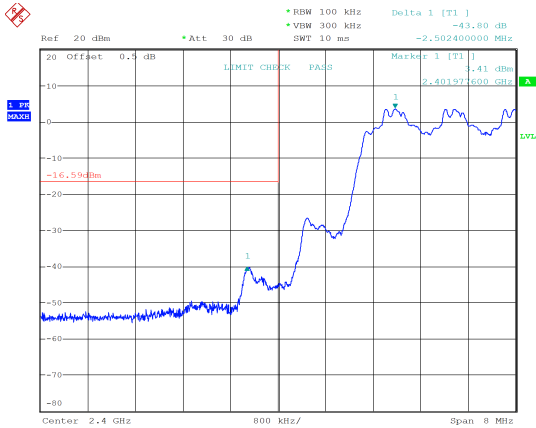
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:50:18

PI/4-DQPSK\_High 52.13 dB



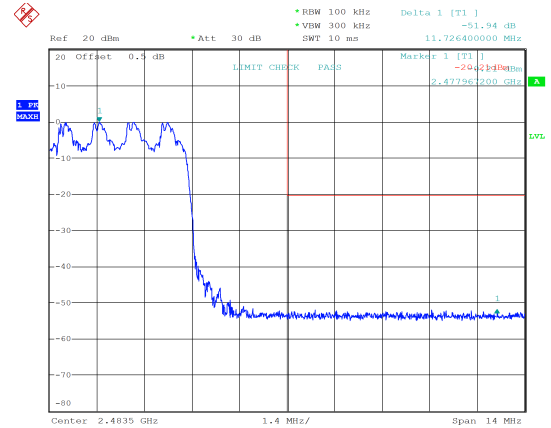
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 10:59:12

PI/4-DQPSK\_Hopping\_Lower 43.80 dB



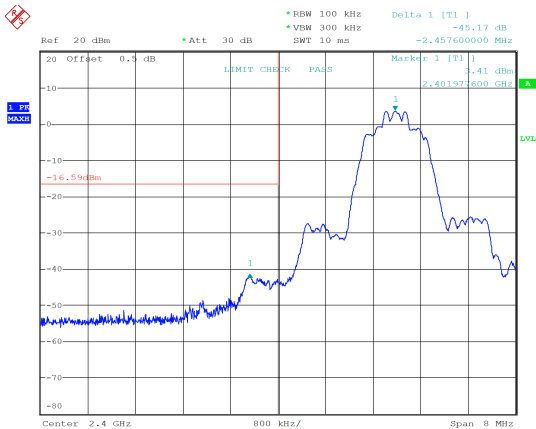
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:04:37

PI/4-DQPSK\_Hopping\_Upper 51.94 dB



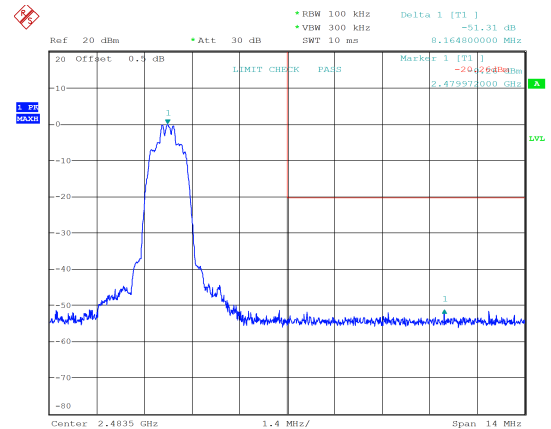
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:11:37

8DPSK\_Low 45.17 dB



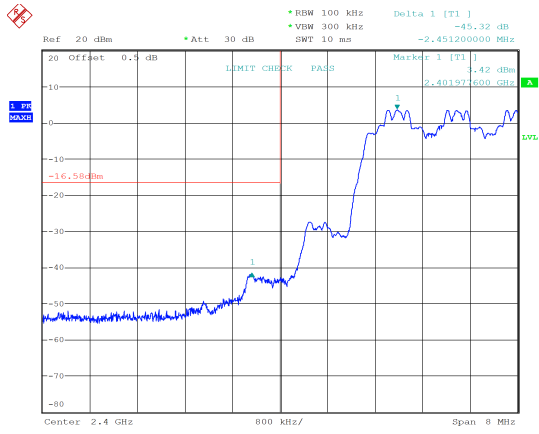
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:13:24

8DPSK\_High 51.31 dB



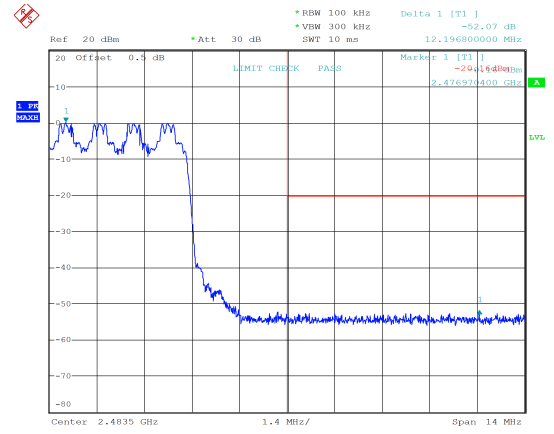
Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:23:39

### 8DPSK\_Hopping\_Lower 45.32 dB



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:28:44

### 8DPSK\_Hopping\_Upper 52.07 dB



Comment: ProjectNo.:CR231163147-RF Tester:Lingling Li  
 Date: 4.JAN.2024 11:30:21